



Urban Colours

cultural resource managers

Cultural Heritage Management Plan

1960–2090 Mickleham Road, Mickleham

Residential Subdivision ("Lindum Vale")

Plan Number: 12270



SPONSOR:

MAB Corporation Pty Ltd (ACN 065 207 230)

CULTURAL HERITAGE ADVISOR:

John Stevens

AUTHORS:

John Stevens and Pamela Ricardi

DATE:

16 June 2015

Title page

1960–2090 Mickleham Road, Mickleham ("Lindum Vale" development)

Cultural Heritage Management Plan Number: 12270

Activity size:	Large
Assessment:	Complex
Sponsor:	MAB Corporation Pty Ltd (ACN 065 207 230)
Cultural Heritage Advisor:	John Stevens
Authors:	John Stevens and Pamela Ricardi
Date:	16 June 2015

Front page shows red gums (E. camaldulensis) within the activity area (Photo: John Stevens)

Acknowledgements

On behalf of Urban Colours, the author would like to thank the following people and organisations for assisting with the development of this Cultural Heritage Management Plan:

MAB Corporation

Chris Engert

Wurundjeri Tribe Land and Compensation Cultural Heritage Council Incorporated (WTLCHCI)

Wade Garvey

Tony Garvey

Thane Garvey

Ron Jones

Robert Mullins

Perry Wandin

Michael Xiberras

Delta Freeman

Kirsty Lewis

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Wurundjeri
Tribe

Land & Compensation
Cultural Heritage
Council Incorporated

18 June 2015

File No. WT0305 CHMP No. 12270

Chris Engert
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MAB Corporation Pty Ltd
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Dear Chris,

Cultural Heritage Management Plan 12270 for 1960–2090 Mickleham Road, Mickleham, Residential Subdivision

I refer to your written notification to the Wurundjeri Tribe Land & Compensation Cultural Heritage Council dated 11 March 2015 seeking approval of the Cultural Heritage Management Plan 12270: 1960–2090 Mickleham Road, Mickleham, Residential Subdivision, date of completion 16 June 2015.

With reference to s.53 and s.62(a)-(e) of the *Aboriginal Heritage Act 2006* (the Act), the Wurundjeri Tribe Land & Compensation Cultural Heritage Council has considered and has approved this plan.

If you require any additional information about this advice, please contact me on the numbers below.

Yours sincerely,

Alex Parmington
Project Manager, Cultural Heritage

Cc. John Stevens, Urban Colours Cultural Resource Managers

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Executive Summary

This CHMP has been prepared in accordance with Part 4 of the Victorian *Aboriginal Heritage Act 2006* and is required by the *Aboriginal Heritage Regulations 2007*. It presents the results of a desktop, standard and complex Aboriginal cultural heritage management plan (CHMP) for a subdivision of land.

The activity area is situated at 1960–2090 Mickleham Road, Mickleham, Victoria (Hume City Council). Mickleham is located approximately 35 km north of the Melbourne CBD. The activity area is bounded to the west by Mickleham Road, to the south by Mt Ridley Road and to the north and east by rural and residential properties (Maps 1 and 2).

The proposed activity involves a residential subdivision and associated community development works. The area will be developed for residential and recreational uses. This will involve the construction of conventional and medium density housing lots, local activity/community centres as well as passive and encumbered (drainage and power line easements) open space. These provisions will also require the construction of new connector roads, access streets, pedestrian and cycle paths, and the installation of subterranean services (water and gas), as well as electrical and optical fibre cables and stormwater systems (Map 3).

The activity area is approximately 140 ha in size and is being developed by MAB Corporation on behalf of the landowner, Harold Cocking.

E 1 The reason for preparing the CHMP

This CHMP has been prepared in accordance with Part 4 of the Victorian *Aboriginal Heritage Act 2006* and is required under r. 6 of the Victorian *Aboriginal Heritage Regulations 2007*. The specific Regulations which trigger the requirement for this plan are (Map 2, Page 46):

- r. 22: the activity area is located within an area of cultural heritage sensitivity as it is located within 50 metres of one registered cultural heritage place which is listed on the Victorian Aboriginal Heritage Register (VAHR): VAHR 7822-0024 (Cocking)
- r.46: the subdivision of land is a high-impact activity.

E 2 The RAP responsible for the Activity Area

The Wurundjeri Tribe Land and Compensation Cultural Heritage Council Inc (WTL&CCHCI) is the RAP appointed by the Aboriginal Heritage Council under the AHA 2006. A Notice of Intent to prepare a CHMP was sent to the RAP on 3 July 2012 2014 (Appendix 1), and a response was received by the Sponsor dated 5 July 2014 indicating that WTL&CCHCI would evaluate the plan (Appendix 1).

E 3 The assessment undertaken

The methodology was developed to meet the requirements for a CHMP. This comprised:

- A desktop assessment which involved research and analysis of the known Aboriginal archaeology of the region and local setting; a description of the ethno-history applicable to the activity area; description of the environment, geology and geomorphology of the activity area and its surrounding landscape; and a review of the land use history of the activity area, and implications for the cultural heritage sensitivity of the activity area.
- A standard ground surface assessment which was undertaken over 8 and 9 October 2012 by Ecology and Heritage Partners Pty Ltd.

- A complex assessment which comprised was conducted in two phases. Phase 1 consisted of the excavation of five 1 m² stratigraphic test pits and 98 40 x 40 cm shovel test pits. Phase 2 consisted of twenty 5 x 1 m mechanical transects and an additional 81 40 x 40 cm shovel test pits. An additional 36 40 x 40cm shovel test pits were excavated during a return to site on 27 August 2014. A total of five 1 m² hand excavated stratigraphic test pits, twenty 5 x 1 m mechanical transects and 215 40cm x 40cm shovel test pits were excavated across an area comprising approximately 140 ha.

E 4 Personnel involved and history of the CHMP

The chief archaeologist and Cultural Heritage Advisor for this CHMP is John Stevens. The Sponsor originally commissioned Ecology and Heritage Partners Pty Ltd (EHP) to undertake a CHMP for the Lindum Vale residential development in July 2009. The desktop and standard assessments were undertaken by EHP staff Pamela Ricardi and Staci Timms in October 2012, and Pamela Ricardi co-authored these sections of the CHMP with CHA John Stevens (then working for EHP).

The Sponsor postponed the CHMP while in negotiations with Hume City Council during 2013. In 2014, the Sponsor re-tendered the complex assessment phase of the CHMP, which was won by Urban Colours Cultural Resource Managers. The complex assessment, heritage assessment, consultation and recommendations for the CHMP were undertaken by John Stevens (B. Arch. (Hons.)), now Principal Archaeologist with Urban Colours Cultural Resource Managers.

E 5 Results of the assessment

Desktop assessment summary

A review of the VAHR at the Office of Aboriginal Affairs Victoria (OAAV) showed that there has been no previous survey conducted within the activity area. However, a previously identified Aboriginal Place (a scarred tree) has been recorded within the activity area (Cocking VAHR 7822-0024). Furthermore, Andrew Long conducted an unpublished desktop review for the Sponsor which included a brief site visit to the activity area (Long, 2008). Following the desktop review and site visit, Long concluded that, due to the absence of major watercourses or drainage lines within the activity area, it is unlikely that occupation sites with high density artefact scatters would be located. However, lower density scatters were considered likely to be located and, given the presence of open woodland within the activity area, scarred trees were also considered likely to be present (Long, 2008).

A total of six registered Aboriginal sites have previously been identified within a 2 km radius of the activity area. These sites consist of a total of two site component types, scarred trees and artefact scatters.

The information gathered on the region in terms of geology, landform and climate, along with the flora and fauna resources available indicates that in the past, the region would have been an area in which Aboriginal people prospered. The search of the VAHR shows that the activity area itself was utilised by Aboriginal people in the past, with one registered cultural heritage site within the boundaries of the activity area. This information coupled with the findings of the previous archaeological research of the area and the availability of natural resources, suggests that artefact scatters, isolated artefacts and scarred trees are the most commonly occurring site types in the area. Artefact scatters are likely to be low-medium in density however, given the large number of mature native trees within the activity area, it is highly likely that this will be the most prevalent site type likely to be encountered within the activity area.

The desktop assessment concluded that scarred trees, isolated artefacts and larger artefact scatters are the types of Aboriginal sites most likely to occur within the activity area.

E 6 Standard assessment summary

The aim of the standard assessment was to undertake surface survey across the activity area in order to identify extant cultural heritage places and to determine the extent and significance of any places identified. The survey was also undertaken to identify potential landforms considered archaeologically sensitive. The survey also sought to identify the presence of Aboriginal scarred trees, hooped trees or carved trees as well as areas of prior ground disturbance as well as areas that may not have been previously disturbed. An understanding of the extent of previous disturbance will assist with the development of an excavation methodology for the complex assessment of this CHMP.

The activity area was surveyed on 8 and 9 October 2014 by Ecology and Heritage Partners Pty Ltd Archaeologist/Cultural Heritage Advisor Pamela Ricardi and Cultural Heritage Technical Officer, Staci Timms, with Tony Garvey and Thane Gannaway Garvey representing the WTLCHCI.

The survey took the form of a pedestrian survey in which three participants walked two metres apart across the entire activity area (Map 7). All mature native trees were examined for evidence of cultural scarring. Ground surface visibility (GSV) throughout the vast majority of the activity area was noted as very poor (0–5%). This was due to thick pasture grass growing throughout most of the activity area. In other sections of the activity area, visibility was obscured by crop plantations. Very few sections of the activity area offered ground surface exposure, namely around the dams, water troughs, trees and vehicle tracks. In these areas, GSV was estimated at 90–100%.

Two prominent landform types were identified within the activity area, the first of which consists of two large gentle rises peaking at the north-western and south-western corners of the property and sloping down towards the centre. The remainder of the activity area comprises a generally flat topography. The two rises have been identified as areas of archaeological likelihood.

No surface cultural heritage material was identified during the standard assessment. However, this is likely to have been due to the very poor GSV encountered throughout the majority of the activity area and not likely to reflect a lack of surface (or subsurface) cultural heritage material within the activity area.

Over 180 mature native trees are located within the activity area. All of these were inspected for cultural scarring. The previously recorded scarred tree Cocking (VAHR 7822-0024) could not be relocated. A total of five scarred trees were newly identified:

- VAHR 7822-3588 (Lindum Vale 1) (Plate 3)
- VAHR 7822-3589 (Lindum Vale 2) (Plate 4)
- VAHR 7822-3590 (Lindum Vale 3) (Plate 5)
- VAHR 7822-3591 (Lindum Vale 4) (Plate 6)
- VAHR 7822-3592 (Lindum Vale 5) (Plate 7).

All scarred trees were in good health at the time of the standard survey in 2012, with a good–excellent state of scar preservation. The girths of the trees ranged from 2.45 m to 4.17 m. All scars were considered to definitely be of Aboriginal origin. Four of the five trees were identified as river red gums (*Eucalyptus camaldulensis*) while the other was an unidentified box gum. The scars ranged from 95–246 cm in length and 45–140 cm in width and were located at heights ranging from 15–48 cm from the base of the tree. All scars had overgrowth and none had evidence of associated toe holds or axe marks.

No caves, cave entrances or rock shelters are present within the activity area.

The results of the standard assessment affirm that a complex assessment is required as it was not possible during the standard assessment to accurately determine the extent of cultural heritage material within the activity area. This was mainly due to the lack of GSV encountered throughout the vast majority of the activity area.

E 7 Complex assessment summary

A subsurface testing program was undertaken for this CHMP because the standard assessment was unable to determine whether subsurface Aboriginal cultural heritage material was present in a subsurface context.

Fieldwork was conducted in two phases. Phase 1 consisted of the excavation of five 1 m² stratigraphic test pits and 98 40 x 40 cm shovel test pits. Phase 2 consisted of twenty 5 x 1 m mechanical transects and an additional 81 40 x 40 cm shovel test pits. An additional 36 40 x 40cm shovel test pits were excavated during a return to site on 27 August 2014. A total of five 1 m² hand excavated stratigraphic test pits, twenty 5 x 1 m mechanical transects and 215 40cm x 40cm shovel test pits were excavated across an area comprising approximately 140 ha. All excavations were 100% sieved.

The subsurface testing was supervised by John Stevens (archaeologist) for Urban Colours Cultural Heritage Managers. Michael Xiberras and Wade Garvey represented WTLCCCHI throughout the duration of the subsurface testing program and Tony Garvey from Have A Dig Excavations provided operational assistance that extended over 14 July to 27 August 2014.

All five scarred trees identified during the standard assessment in 2012 were reinspected and three were found to have been destroyed by fires which swept across the activity area in 2013.

An artefact scatter comprising 60 artefacts and one LDAD (low density artefact distribution) comprising one artefact were identified on a low-lying ridgeline in the extreme south-west and west of the activity area respectively. In addition to the artefact scatter and LDAD, it is clear that Aboriginal people were actively exploiting additional resources at the activity area due to the presence of five recently recorded Aboriginal scar trees.

The artefact scatter site identified at Lindum Vale conforms to the predictive statement developed at desktop level. This landform was defined as archaeologically sensitive prior to the commencement of the subsurface testing program. The landform is similar to the landforms identified as archaeologically sensitive at Merrifield West (CHMP 11705) in that it is raised and, although there is variability across soil profile types at Merrifield West and Lindum Vale, the sensitive ridgeline landform model is consistent across both of these PSP areas, even, in the case at the current Lindum Vale activity area, in the absence of primary resources such as swamps and creeks.

E 8 Recommendations

Recommendation 1 – Lindum Vale 1 (VAHR 7822-3588)

Lindum Vale 1 (VAHR 7822-3588) has been destroyed and burnt to the ground. The scar is no longer visible and the tree has no scientific value and must be removed. The RAP may inspect this tree during their first on-site inspection and may remove the remains of the tree at their discretion; however, it should be noted that the scar is no longer visible on Lindum Vale 1 [VAHR 7822-3588] and as such it is assessed as not being suitable for display purposes. The scar tree must be retained until the RAP has undertaken their first inspection of the activity area. There are no further management recommendations required for this Place.

E 9 Recommendation 2 – Lindum Vale 2 (VAHR 7822-3589)

Lindum Vale 2 (VAHR 7822-3589) has been destroyed and burnt to the ground. The scar is no longer visible and the tree has no scientific value and must be removed. The RAP may inspect this tree during their first on-site inspection and may remove the remains of the tree at their discretion; however, it should be noted that the scar is no longer visible on Lindum Vale 2 [VAHR 7822-3589] and as such it is assessed as not being suitable for display purposes. The scar tree must be retained until the RAP has undertaken their first inspection of the activity area. There are no further management recommendations required for this Place.

E 10 Recommendation 3 – Lindum Vale 3 (VAHR 7822-3590)

The Sponsor has committed to retaining Lindum Vale 3 (VAHR 7822-3590) through the integration of the place into the master plan of the PSP.

In order to mitigate impact to Lindum Vale 3 during development-related activities the TPZ (tree protection zone) will be fenced off using orange webbing and star picket fencing or similar suitable temporary fencing. The fencing will be erected prior to any ground impact activities. The fencing will be marked with appropriate signage restricting access and indicating that this is a "no go zone" for construction vehicles and material storage. The erection, maintenance and cost of the fencing throughout the construction process is the responsibility of the Sponsor. The location of the site will be indicated on the master plan and relevant on-site mapping for contractors / employees. Fencing can only be removed following completion of all development-related activities. A copy of the relevant maps as well a copy of this CHMP must be kept in the site office.

No roads, utilities, infrastructure or ground disturbing activities will occur within the TPZ of VAHR 7822-3590. The current landowner/s of 1960 Mickleham Road, Mickleham must understand where Lindum Vale 3 (VAHR 7822-3590) is located and that harm to its root system or ground disturbance works within the TPZ must be avoided. The tree must not be cut down, defaced or altered in any way. A permit must be sought from Wurundjeri Tribe Land and Compensation Cultural Heritage Council Inc prior to any pruning, lopping or any other activity that will be undertaken for ongoing maintenance and upkeep of VAHR 7822-3590. If a limb of the tree needs to be removed or cut from the tree the RAP must be consulted to discuss the methodology for limb removal.

A low barrier/fence should be constructed around VAHR 7822-3590 along as soon as practicable. This fence must be constructed in a way that will not disturb the root system of the tree. The fence will require periodic maintenance to ensure it does not deteriorate prior to the finalisation of construction-related works. The fence must cover the entire TPZ of the place and no further ground disturbing works can occur within this area.

E 11 Recommendation 4 – Lindum Vale 4 (VAHR 7822-3591)

Lindum Vale 4 (VAHR 7822-3591) has been destroyed and burnt to the ground. The scar is no longer visible and the tree has no scientific value and must be removed. The RAP may inspect this tree during their first on-site inspection and may remove the remains of the tree at their discretion; however, it should be noted that the scar is no longer visible on Lindum Vale 4 [VAHR 7822-3591] and as such it is assessed as not being suitable for display purposes. The scar tree must be retained until the RAP has undertaken their first inspection of the activity area. There are no further management recommendations required for this Place.

E 12 Recommendation 5 – Lindum Vale 5 (VAHR 7822-3592)

The Sponsor has committed to retaining Lindum Vale 5 (VAHR 7822-3592) through the integration of the place into the master plan of the PSP.

In order to mitigate impact to Lindum Vale 5 during development-related activities the TPZ (tree protection zone) will be fenced off using orange webbing and star picket fencing or similar suitable temporary fencing. The fencing

will be erected prior to any ground impact activities. The fencing will be marked with appropriate signage restricting access and indicating that this is a "no go zone" for construction vehicles and material storage. The erection, maintenance and cost of the fencing throughout the construction process is the responsibility of the Sponsor. The location of the site will be indicated on the master plan and relevant on-site mapping for contractors / employees. Fencing can only be removed following completion of all development-related activities. A copy of the relevant maps as well a copy of this CHMP must be kept in the site office.

No roads, utilities, infrastructure or ground disturbing activities will occur within the TPZ of VAHR 7822-3592. The current landowner/s of 1960 Mickleham Road, Mickleham must understand where Lindum Vale 5 (VAHR 7822-3592) is located and that harm to its root system or ground disturbance works within the TPZ must be avoided. The tree must not be cut down, defaced or altered in any way. A permit must be sought from Wurundjeri Tribe Land and Compensation Cultural Heritage Council Inc prior to any pruning, lopping or any other activity that will be undertaken for ongoing maintenance and upkeep of VAHR 7822-3592. If a limb of the tree needs to be removed or cut from the tree the RAP must be consulted to discuss the methodology for limb removal.

A low barrier/fence should be constructed around VAHR 7822-3592 along as soon as practicable. This fence must be constructed in a way that will not disturb the root system of the tree. The fence will require period maintenance to ensure it does not deteriorate prior to the finalisation of construction-related works. The fence must cover the entire TPZ of the place and no further ground disturbing works can occur within this area.

E 13 Recommendation 6 – Cocking (7822-0024)

Cocking (VAHR 7822-0024) could not be relocated during the 2012 field survey or the 2014 excavation program. There is no tree within 40-50 metres of where the place is plotted on ACHRIS and the site card information did not assist with relocation. Since it was recorded in 1975 it is likely that the tree has subsequently been burnt down or the co-ordinates plot the site in a different location than what is recorded on the site card and ACHRIS. Due to the coarse-grained nature of the mapping reference taken for Cocking (VAHR 7822-0024) in 1975 it is also possible that one of the scar tree sites identified during the 2012 survey (Lindum Vale 1-5) is in fact the Cocking scar tree site. As Aboriginal Place VAHR 7822-0024 has been destroyed or removed no management recommendations are required.

E 14 Recommendation 7 – Tamboore 26 (VAHR 7822-3840)

Tamboore 26 is considered to be of low scientific significance. The RAP has agreed that no salvage or protection measures are required for Tamboore 26. The isolated artefact which comprises this place must be placed in a sealed, durable open bottomed vessel to allow contact between artefacts and the soil and reburied in open passive space as close to the location of the place as possible. This procedure can be combined with the reburial of artefacts from Tamboore 25.

E 15 Recommendation 8 – Tamboore 25 (VAHR 7822-3841)

The activity cannot avoid harm to the Aboriginal cultural heritage site Tamboore 25. As a result, the WTLCCCHI specifically requested salvage of the artefacts at Tamboore 25. Tamboore 25 encompasses an area of 812m² which is based on the core distribution of artefacts, rather than landform. The RAP accepts mechanical excavation across the extent of this place as a suitable process for salvage of the place. The following salvage program is required prior to any construction works in the activity area commencing:

- Salvage will be undertaken within the boundaries of Tamboore 25
- Mechanical excavations will occur over an area of 29 metres x 28 metres from the corner of the post and wire fence demarcating the far south western corner of the title boundary at 1960 Mickleham Road, Mickleham.

- If suitable; datable material is identified during the manual excavation program, samples must be collected for dating purposes. For each sample, clean trowels should be used, to avoid cross contamination between samples. OSL dates must be taken from sand samples directly below the location of the artefacts (following spit) provided no disturbance is observed. A minimum of two sand samples should be taken for OSL dating purposes. The samples should be packaged in chemically neutral materials to avoid picking up new C-14 from the packaging. The packaging should also be airtight to avoid contact with atmospheric C-14. Also, the stratigraphy should be carefully examined to determine that a carbon sample location was not contaminated by carbon from a later or an earlier period.
- The cost of dating of archaeological material must be met by the Sponsor.
- Mechanical excavation will consist of a total of twenty-nine transects 28 m long x 1 m wide (width of the excavation bucket) trenches, across the entire site extent. The greatest depth of any of the mechanical transects at Tamboore 25 was 41cm. All artefacts were recovered from this or above this level. Expected depth for all salvage excavations will be approximately 40cm.
- All excavation will occur in 100 mm spits. All artefacts recovered from the excavation must be bagged according to their location and approximate depth in the transect.
- 100% of the removed deposit shall be sieved in a 6 mm mechanical sieve.
- A minimum of two sample section drawings must be completed and included in the salvage report in order to demonstrate the stratigraphy of the Place, and the location of artefacts within these soil horizons.
- A qualified CHA shall supervise the salvage excavations and members of the RAP will also participate in the field work.
- A series of research questions about the artefacts and sites must be examined in the salvage report. These are not to be limited to but should include the following:
 - What is the origin of the raw material?
 - How do the sites relate to others in the region?
 - Is there evidence of use wear or residue?
- Should any *in-situ* cultural deposits be discovered during excavation that are in direct association with datable material then radiometric dating of these deposits and/or features will be arranged by the CHA and the cost must be met by the Sponsor.
- A salvage report describing the results of the salvage program and a detailed artefact analysis will be required. The salvage report must include a spatial analysis of artefact types and material. The salvage report must be submitted to the Wurundjeri and AAV within 90 days of the completion of the works. The CHA will retain these artefacts until the artefact analysis has been completed. Following the completion of the artefact analysis, the artefacts will be returned to the Wurundjeri. A sample of these will be retained for teaching purposes and the remainder will be reburied.

It is unclear where manual salvage will occur as part of the salvage program: however, based on advice from Alan Wandin (11 November 2014) manual salvage should be undertaken via 1mx1m test pit in spits by layer and trowel method wherever more than 10 artefacts are recovered from any one 2m x 1m mechanical scrape. Mechanical excavation must stop at this location (but can recommence elsewhere) and hand excavation must be undertaken in the form of a 1m x 1m excavation square and must follow the following procedure.

- The soil from each spit will be placed in a bucket within the square, weighed and then deposited directly into one of the sieves operating. All soil (100%) will be sieved through 5 mm sieve screens. All soils are to be 100% sieved to basal level (e.g. approximately 40 cm). Excavations will continue until culturally sterile deposits have been reached. At the completion of each spit basal photographs will be taken and excavation sheets will be completed, noting changes in stratigraphic horizons (soil colour and texture), rocks, gravel and other materials not of cultural origin. Munsell (soil colour) and pH levels will also be taken. Sieving will be conducted at a reasonable distance from the excavation area to avoid backfilling of the square. Disturbance around the excavation areas will be kept to a minimum, with only the excavator and excavation recorder present while soil extraction is in progress.
- Upon the completion of the excavation to a sterile layer, stratigraphic horizons will be identified and profiles of two of the trench walls (north perspective and east perspective) will be drawn to provide a concise schematic representation of the stratigraphy as well as to complement the photographs and relate stratigraphic horizons to excavation notes and descriptions.
- All artefacts will be bagged with date, spit number and site name clearly labelled. An extensive analysis of any collected material will be conducted at a location to be decided upon by the RAP and the Cultural Heritage Advisors.
- The archaeological material located will be curated and stored appropriately; this is a matter for discussion between the cultural heritage advisor and the RAP.
- If sufficient samples can be recovered during the salvage program, then any charcoal or other datable material must be collected in the appropriate manner and submitted for radiocarbon (C14) dating. If no charcoal samples are available then soil (sand) samples will be acquired for Optically Stimulated Luminescence (OSL) dating. The cost of this testing is to be met by the Sponsor. Collection of these samples will follow recommendations by Dr Alan Hogg from the Laboratory at the University of Waikato. This institution is very prompt (7 days if necessary) with their determinations and very competitively priced when compared with other dating laboratories. The dating of charcoal samples is priced at NZ \$475 a sample. Dates can be obtained from charcoal samples of 1g; however, an 8–10g sample is deemed optimal. Any faunal remains that may be excavated can also be utilised for dating purposes. The minimum sample weight for C14 radiometric dating of bone is 50g, with the ideal sample weight being 100–200g. For smaller samples of charcoal or faunal skeletal remains, AMS (Accelerator Mass Spectrometry) dating is also available. In this case the minimum sample size for charcoal is 100mg, while for bone it is 1.0–5.0g.

E 16 Recommendation 9 – RAP Access to the Activity Area

The RAP must be involved in three separate site inspections and have access to the locations of all Aboriginal cultural heritage sites identified and recorded in this CHMP (before, during and after works). See RAP inspection procedure shown at Figure 1 below.

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Part 1 | Assessment

1 INTRODUCTION

This mandatory Cultural Heritage Management Plan (CHMP) has been sponsored by MAB Corporation Pty Ltd (ACN 065 207 230) and prepared by Urban Colours Cultural Resource Managers. The author of this plan is John Stevens (B.Arch. (Hons)), a qualified archaeologist and cultural heritage advisor under the requirements of the *Aboriginal Heritage Act 2006*. John Stevens supervised all field surveys and subsurface testing during the development of this CHMP.

1.1 Location of the activity area

The activity area is the proposed Lindum Vale development, located at 1960–2090 Mickleham Road, Mickleham, Victoria (Hume City Council). Mickleham is located approximately 35 km north of the Melbourne CBD (Map 1). The activity area is approximately 140 ha in size and is bounded to the west by Mickleham Road, to the south by Mt Ridley Road and to the north and east by rural and residential properties (Maps 1 and 2).

1.2 Reason for preparing a Cultural Heritage Management Plan

This CHMP has been prepared in accordance with Part 4 of the Victorian *Aboriginal Heritage Act 2006* and is required under r. 6 of the Victorian Aboriginal Heritage Regulations 2007. The specific Regulations which trigger the requirement for this plan are (Map 2, Page 46):

- r. 22: the activity area is located within an area of cultural heritage sensitivity as it is located within 50 metres of one registered cultural heritage place which is listed on the Victorian Aboriginal Heritage Register (VAHR): VAHR 7822-0024 (Cocking)
- r.46: the subdivision of land is a high-impact activity.

This CHMP does not contain detailed information regarding non-Aboriginal historical heritage issues relating to the activity area. Non-Aboriginal historical heritage issues are discussed in a separate report (HV #4219) which has been lodged with the Sponsor and with Heritage Victoria.

1.3 Background to the Cultural Heritage Management Plan

The Sponsor originally commissioned Ecology and Heritage Partners (EHP) to undertake a CHMP for the Lindum Vale residential development in July 2009. Ecology and Heritage Partners lodged a Notice of Intent to the RAP and to OAAV. OAAV responded on 30 July, assigning the Plan Number 12770. EHP received a response from the RAP on 5 July 2012 confirming that they would evaluate CHMP (Appendix 1).

Ecology and Heritage Partners met with the RAP and with the Sponsor to discuss the activity and proposed survey methodology on 3 September 2012 (Table 2). The survey for this CHMP was undertaken by Pamela Ricardi and Staci Timms (Ecology and Heritage Partners) on 8 and 9 October 2012. A total of 5 Aboriginal scar trees were identified during the survey (Section 6.3 and Appendix 4). The Cultural Heritage Advisor for the standard CHMP was John Stevens (Ecology and Heritage Partners). The Sponsor postponed the CHMP while in negotiations with Hume City Council throughout 2013.

In 2014, the Sponsor re-tendered the complex assessment phase of the CHMP, which was awarded to Urban Colours Cultural Resource Managers Pty Ltd.

1.4 RAP Responsible for the Activity Area

The Wurundjeri Tribe Land and Compensation Cultural Heritage Council Inc (WTL&CCHCI) is the RAP appointed by the Aboriginal Heritage Council under the AHA 2006. A Notice of Intent to prepare a CHMP was sent to the RAP on 3 July 2012 2014 (Appendix 1), and a response was received by the Sponsor dated 5 July 2014 indicating that WTL&CCHCI would evaluate the plan (Appendix 1).

1.5 Aims of the Assessment

The aims of the CHMP are:

- To determine the archaeological sensitivity of the activity area
- To re-inspect the one previously recorded Aboriginal scar tree site (Cocking VAHR 7822-0024) and update its site registry card through a Place Inspection Form as required
- Re-assess every mature *E. camaldulensis* (red gum) tree for evidence of scars resultant from Aboriginal modification
- To determine the location, distribution and significance of additional cultural heritage material or places where identified
- To make an assessment of the cultural and scientific significance of any surface or subsurface Aboriginal Places identified within the activity area
- To determine whether harm to Aboriginal Places can be avoided through design or management
- To develop a framework for managing Aboriginal cultural heritage material or places prior to, during and subsequent to proposed development related activities at 1960–2090 Mickleham Road, Mickleham, Victoria.

Aims specific to the complex assessment phase of the CHMP in 2014 are:

- To inspect the five Aboriginal cultural heritage scar tree sites (Lindum Vale 1 VAHR 7822-3588; Lindum Vale 2 VAHR 7822-3589; Lindum Vale 3 VAHR 7822-3590; Lindum Vale 4 VAHR 7822-3591 and Lindum Vale 5 VAHR 7822-3592) recorded during the standard assessment conducted in 2012 by Ecology and Heritage Partners Pty Ltd
- To determine whether there is a subsurface component to Cocking VAHR 7822-0024; Lindum Vale 1 VAHR 7822-3588; Lindum Vale 2 VAHR 7822-3589; Lindum Vale 3 VAHR 7822-3590; Lindum Vale 4 VAHR 7822-3591 and Lindum Vale 5 VAHR 7822-3592.

This CHMP has been undertaken in accordance with the *Guide to Preparing Cultural Heritage Management Plans* (OAAV 2010).

1.6 The Sponsor

The Sponsor of the CHMP is MAB Corporation Pty Ltd (ACN 065 207 230).

The landowner is Harold Cocking c/o 1960–2090 Mickleham Road, Mickleham, Victoria.

The contact person for the Sponsor is:

Chris Engert, Development Manager
MAB Corporation Pty Ltd
Level 5, 441 St Kilda Road
Melbourne Victoria 3004

Telephone: 03 8681 2222

Email: cengert@mabcorp.com.au

1.7 Personnel involved

See Appendix 2 for details of qualifications of all personnel who worked on this CHMP.

1.8 Report Submission

The CHMP was submitted to the RAP for evaluation under Section 62 *Aboriginal Heritage Act* 2006 on 16 June 2015.

2 ACTIVITY DESCRIPTION

The proposed activity involves a residential subdivision and associated community development works. The area will be developed for residential and recreational uses. This will involve the construction of conventional and medium density housing lots, local activity/community centres as well as passive and encumbered (drainage and power line easements) open space. These provisions will also require the construction of new connector roads, access streets, pedestrian and cycle paths, and the installation of subterranean services (water and gas), as well as electrical and optical fibre cables and stormwater systems (Map 3).

These proposed works will involve excavations below topsoil level. As a result, the proposed works will impact on the surface of the land and on buried former land surfaces and consequently, have a negative impact on Aboriginal cultural heritage material present within the activity area.

Lindum Vale was included in the Urban Growth Boundary (UGB) in September 2012 by the Minister for Planning through the Logical Inclusions process. The land was recognised by the Logical Inclusions Advisory Committee in 2012 as an area that should be developed for urban purposes due its proximity essential servicing infrastructure and planned services and facilities in the Merrifield West PSP. The southern neighbourhoods of the Merrifield West PSP (north) are planned to accommodate a proportion of the future Lindum Vale community and this has been reflected in the level and scale of community facilities, retail, education and open space facilities expected to be delivered.

Lindum Vale comprises two separate lane parcels comprising 142 hectares of land generally bounded by Mickleham Road and rural land to the west, the Merrifield West PSP and Outer Metropolitan Ring (OMR) reservation to the north, the exiting Mt Ridley rural-residential area to the east and Mt Ridley Road to the south.

The land includes remnants of its previous use as a dairy farm containing existing dwellings, farm shedding a number of outbuildings and the former Mickleham post office. The land contains a number of existing scattered mature river red gum trees that have remained largely un-touched since farming on the land commenced in the 1930's. Lindum Vale will provide for a future community with a unique living environment dominated by mature river red-gum trees. Lindum Vale is expected support to support up to 1,600 dwellings.

The activity proposed comprises a residential subdivision (Map 3). Activities associated with the development of this project will include:

- Construction of internal roads which may include excavation to a maximum depth of 0.5 m
- Construction of sewers, which may include excavation to a maximum depth of 4.0 m
- Excavation of trenches for the installation of storm water drainage to a maximum depth of 4.0 m
- Excavation of trenches for the installation of water and gas services to a maximum depth of 2.0 m
- Excavation and levelling of ground surfaces for the installation of pavements to a maximum depth of 1.0 m
- Excavation of trenches for the installation of Telstra and power services to a maximum depth of 1.0 m.

- Excavation and construction of keystones for buildings will need to be flexible in order to cater to changes in strata; however the expected maximum depth of keystones is 1.0 - 2.0 m, bearing in mind that all buildings will be dwellings as opposed to large, multi-story buildings.

The impact on current and prior land surfaces within defined areas of development and construction will be extensive, consisting of the removal of all topsoil to approximately 300 mm and localised deeper trenching into subsoils as required for service utilities and foundation trenches. The development will need to address the applicable requirements of Greater Hume Shire Council, including zoning and overlay provisions.

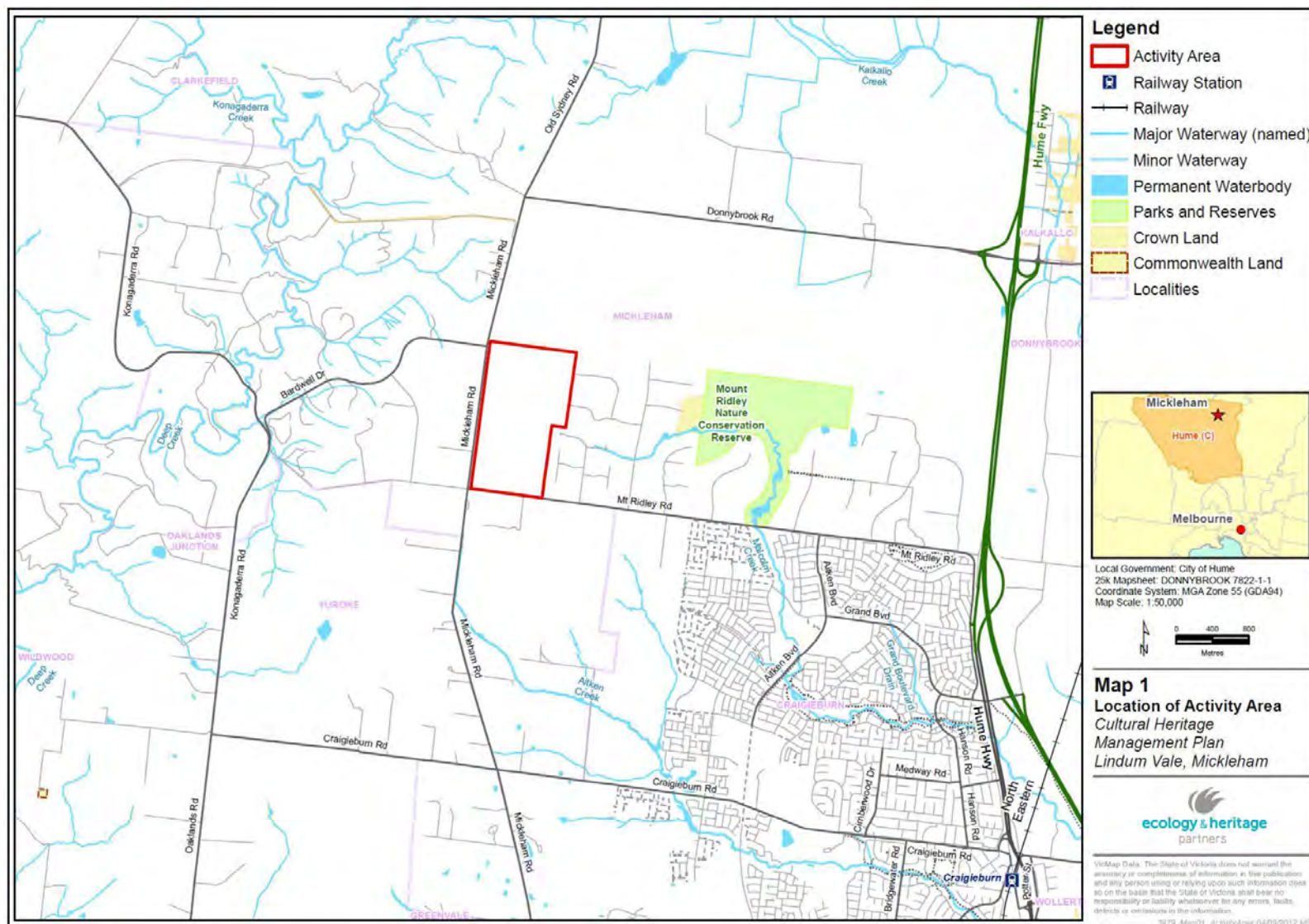
The extensive nature of soil modification during industrial development means that there is a high possibility that any archaeological sites present within the top 1 m will be harmed during the construction process. Areas where surface soils are subject to earthmoving will directly impact any surface Aboriginal sites, such as scatters of stone tools. Overall, industrial development has a very high adverse impact on intact archaeological sites unless mitigation measures are adopted. Adverse impact can generally be minimised through design and site management.

3 EXTENT OF ACTIVITY AREA

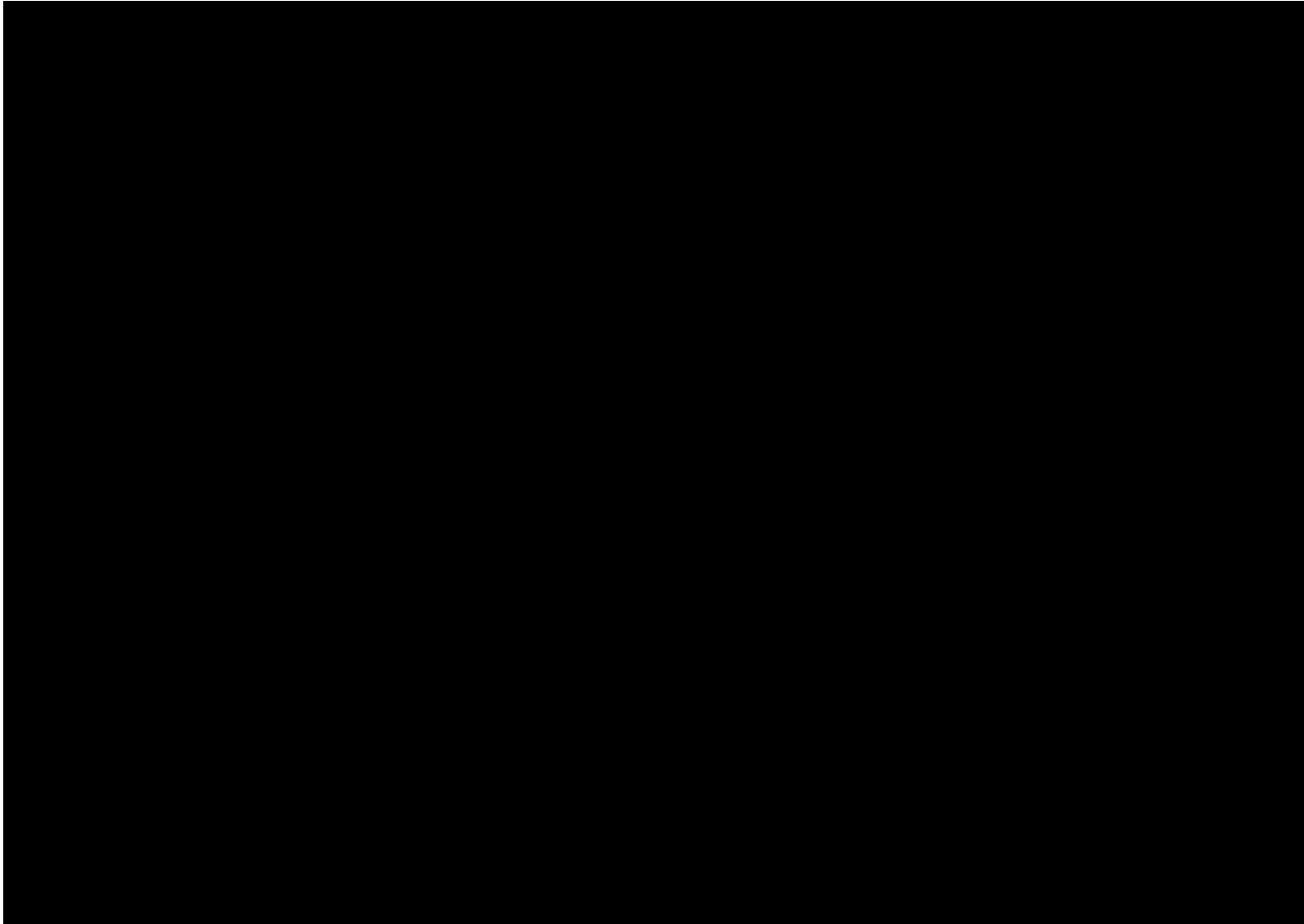
The activity area is the proposed Lindum Vale development, located at 1960–2090 Mickleham Road, Mickleham, Victoria (Hume City Council). The activity area is approximately 140 ha in size and is bounded to the west by Mickleham Road, to the south by Mt Ridley Road and to the north and east by rural and residential properties (Maps 1 and 2).

The cadastral details of the activity area are as follows:

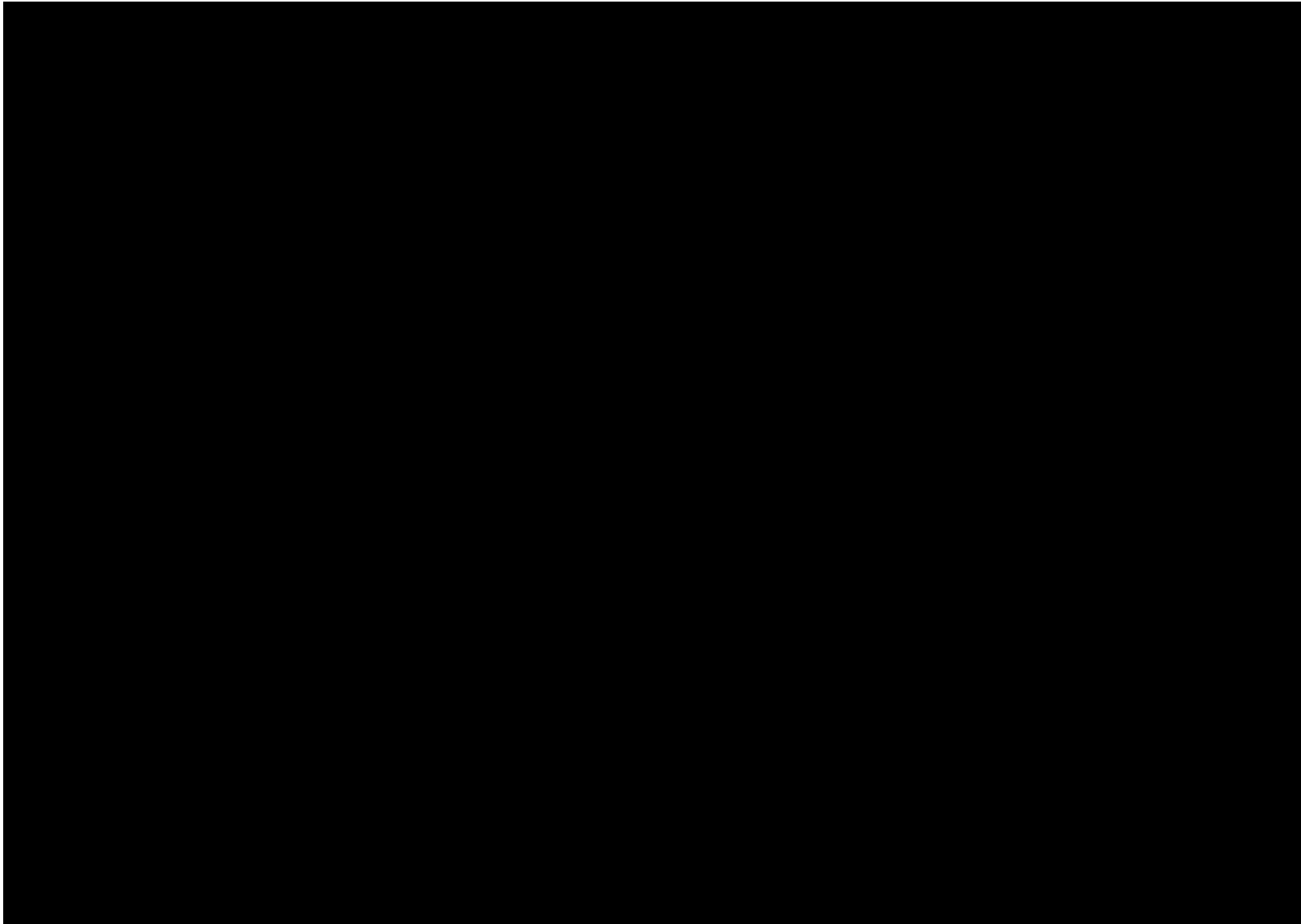
- 1960 Mickleham Road, Mickleham: Lot #: 1 and Title Plan #: TP947278.
- 2040 Mickleham Road, Mickleham: Lot #: 1 and Title Plan #: TP947284.



Map 1: Location of the activity area (courtesy of Ecology and Heritage Partners Pty Ltd)



Map 2: Extent of activity area and cultural heritage sensitivity (supplied by Near Map Image courtesy of Ecology and Heritage Partners Pty Ltd)



Map 3: Proposed development plan (supplied by Sponsor). Format of map courtesy of Ecology and Heritage Partners Pty Ltd

4 DOCUMENTATION OF CONSULTATION

As required under Section 54 of the *Aboriginal Heritage Act* 2006, a Notice of Intent to Prepare a Cultural Heritage Management Plan was submitted to Aboriginal Affairs Victoria (OAAV) by John Stevens on behalf of the Sponsor (MAB Corporation) on 3 July 2012 (Appendix 1). Aboriginal Affairs Victoria notified the Sponsor on 30 July 2012 that they had received notification of the CHMP and allocated CHMP number 12270 to the project. Communication occurred with the sponsor's delegate, Chris Engert, as part of the inception meeting for the project by telephone and email prior to the commencement of the fieldwork and in person on the day of the fieldwork.

Registered Aboriginal Parties (RAPs) are established under Part 10 of the *Aboriginal Heritage Act* 2006. The RAPs have the responsibility for evaluating and allocating approval for CHMPs that relate to their registered area. At the time of undertaking this CHMP, the Wurundjeri Tribe Land and Compensation Cultural Heritage Council Inc. (WTL&CCHCI) was the RAP group for the activity area. It is expected that all necessary statutory approvals in relation to the management of Aboriginal heritage assets and values will be obtained through application to the RAP (in accordance with s.62).

4.1 Consultation in relation to the assessment

As per the RAP's flowchart for a CHMP, the WTL&CCHCI was notified that a Notice of Intent had been submitted to OAAV for allocation of a plan number. A receipt of notification of intent indicating that WTL&CCHCI would evaluate the CHMP was received on Tuesday 5 July 2012 (Appendix 1).

An inception meeting was held with WTL&CCHCI on 3 September 2012. John Stevens (then representing Ecology and Heritage Partners), Darren Griffin, Manager Cultural Heritage (WTL&CCHCI), and Perry Wandin, Ron Jones and Robert Mullins, Elders for WTL&CCHCI, were in attendance (Table 1). John Stevens discussed the following with the Manager, Cultural Heritage and Elders:

- A number of prior CHMPs / cultural heritage assessments have been undertaken across the broader Geographic Region, in particular the approved Merrifield East CHMP (10412) prepared by Long *et al.* (2009) approximately 4 km to the north-east of the activity area as well as the approved Merrifield West CHMP (11705) prepared by Stevens and Alberto (2009), whose activity abuts the northern border of the activity area. It was discussed that robust predictive statements have been established during the course of these two prior assessments in particular which have direct relevance to the current CHMP both in terms of spatial use of landforms and density of archaeological material identified.
- Chandler (2008) conducted a complex CHMP comprising a combination of manual and mechanical subsurface test techniques approximately 4 km north-east of the activity area. In total, 45 shovel test pits were excavated 100 metres apart across the activity area in conjunction with 17 grader scrapes. The grader scrapes were not 100% sieved. The consultants shoveled sediment into sieves at 20 metre intervals from the excavated residual 'windrow' of the scrape. With the exception of one 1m² hand-excavated test pit there was no other controlled excavation undertaken across the activity area. One

previously unregistered low-density Aboriginal cultural heritage place, Merrifield 1 North (VAHR 7822-2282), was identified as part of these investigations.

- The Merrifield West CHMP (11705) which borders the northern boundary of the current activity area was also discussed with the CHA. The subsurface testing program for that CHMP consisted of 190 shovel test pits, 14 1m² hand excavated test pits, two 2x1m hand excavated test pits and 45 100% sieved 10m x 1m mechanical transects and identified a total of 1590 artefacts. In terms of Aboriginal land use practices a total of 11 stone artefacts were identified on the plain and floodplain landform and a total of 1579 artefacts were identified on the crests of small hillocks throughout the activity area. There was a clear correlation between crest landforms and the presence of archaeological material.

In light of the results of excavation program of Merrifield West (CHMP 11705) Darren Griffin, Manager, Cultural Heritage and WTL&CCHCI Elders Perry Wandin (who was present during the Merrifield West investigations and is familiar with the project), Ron Jones and Robert Mullins all agreed that raised landforms to the north of Donnybrook Road have high sensitivity for Aboriginal cultural heritage material while the low-lying plain and flood plain landforms between them have very low potential for Aboriginal cultural heritage material. This premise will be tested within the activity area for this CHMP.

Following the inception meeting, the cultural heritage advisor requested RAP field representatives through fieldwork booking forms to attend the field program. The surface survey was undertaken on 8 and 9 October 2012 by WTL&CCHCI representative Thane Gannaway and Tony Garvey. John Stevens (now representing Urban Colours Cultural Resource Managers) met with the WTL&CCHCI Archaeologist Amanda Boucher and WTL&CCHCI Elders Doreen Garvey-Wandin, Ron Jones and Robert Mullins to discuss the results of the surface survey on 10 July 2014.

One previously registered Aboriginal scar tree (Cocking 7822-0024) is within the activity area (Map 6). The surface survey identified a total of 5 additional Aboriginal scar tree sites (Lindum Vale 1 VAHR 7822-3588; Lindum Vale 2 VAHR 7822-3589; Lindum Vale 3 VAHR 7822-3590; Lindum Vale 4 VAHR 7822-3591 and Lindum Vale 5 VAHR 7822-3592), which were all registered with the VAHR (Map 7). The Sponsor had informed Urban Colours that a bushfire swept through the activity area between the end of the standard survey and the commencement of the complex subsurface excavations, and that some of the Aboriginal scar tree sites may have been destroyed by the grass fires that raged across the Mickleham area in February and March 2014. In light of this development it was seen as important to re-inspect every scar tree during the complex assessment in July and August 2014 to identify the current condition of scars recorded and to subsurface test the perimeter of all scar tree sites to assess whether it contained a subsurface component. Re-inspection of the sites revealed that three *E. camaldulensis* scar trees had been destroyed by fire.

John Stevens discussed an excavation methodology that would be undertaken in two stages.

Stage 1 Manual Excavation

A total of 5 hand-excavated 1m² stratigraphic test pits and 98 shovel test pits excavated by two field teams in random formation across the activity area. These excavations were undertaken 14-16 July 2014. An additional 36 shovel test pits were excavated on 27 August 2014 across a broad ridgeline trending north-south along Mickleham Road from Mt. Ridley Road in the south of the activity area.

Stage 2 Mechanical Excavation and additional shovel test pits

A total of 20 5 x 1 m mechanical transects excavated across the entire activity area and an additional 81 shovel test pits were excavated on 17–23 July and on 27 August 2014.

A total of 20 5 m x 1 m mechanical transects, 5 1m² test pits and 215 shovel test pits were excavated over the course of the subsurface testing program (Map 8). WTL&CCHCI Elders Alan Wandin, Ron Jones and Robert Mullins agreed with the methodology proposed for the subsurface testing program. Subsequent to the second RAP meeting, fieldwork booking forms were lodged with the RAP to undertake Stage 1 subsurface excavations on 7 July 2014. The subsurface testing program was undertaken between Monday 14 July and Thursday 23 July and then again on Wednesday 27 August 2014. WTL&CCHCI representatives Michael Xiberras and Wade Garvey attended the fieldwork as part of Phase 1 excavations. All excavations were 100% sieved through either nested 5 mm and 3 mm sieves or a 6 mm mechanical sieve.

4.2 Consultation in Relation to the Recommendations

Following the fieldwork for the complex assessment a meeting was held on 23 October 2014 to discuss the results. John Stevens (Urban Colours) and Alexander Parmington, Manager Cultural Heritage, and WTL&CCHCI Elders Allan Wandin, Robert Mullins and Ron Jones were in attendance as was the Sponsor of the CHMP (Chris Engert representing MAB Corporation Pty Ltd). WTL&CCHCI Elders stated they were satisfied with the amount of excavations undertaken for the CHMP and reiterated they thought the activity area had been sufficiently tested. All three Elders agreed that no further testing should be undertaken within the activity area; however, as harm to identified Aboriginal cultural heritage place Tamboore 25 (VAHR 7822-3841) could not be avoided, all three Elders stated that they would like the Sponsor and archaeologist to discuss a suitable salvage program for the place. It was decided that 100% of the 29.5 m x 28.0 m site extent should be 100% mechanically excavated and 100% sieved where possible. Elder Allan Wandin stated that if there were any opportunities to undertake controlled excavations that it would be preferable to undertake 1m² stratigraphic test pits rather than mechanical transects. This methodology has been incorporated into Section 9.3.8 and Section 10.8 of this CHMP.

The fourth meeting for this CHMP to discuss a proposed salvage program occurred on 11 November 2014 between Kirsty Lewis, RAP Officer and Elders Robbie Jones, Alan Wandin and Robert Mullins. The archaeologist, with support from the Sponsor's delegate Chris Engert, presented a salvage program that committed to excavating 100% of the site extent using an excavator and mechanical sieve and where possible, controlled excavations. For a summary of the consultation process undertaken as part of this CHMP refer to Table 2.

4.3 Participation in the Conduct of the Assessment

The WTL&CCHCI was represented in the field by Michael Xiberras and Wade Garvey (Table 2). Tony Garvey of Have a Dig excavations resourced and operated plant comprising a 2.5 ton excavator and mechanical sieve between 17 and 23 July 2014. John Stevens, Michael Xiberras and Wade Garvey returned to the activity area to undertake site extent testing on five of the scar trees and Tamboore 25 (VAHR 7822-3841) on 27 August 2014.

All field participants discussed the proposed activity and the results of the assessment. The proposed complex assessment methodology, comprising a combination of 1m² hand-excavated test pits and shovel test pits, was discussed with all representatives on site. Following the conclusion of the field survey, the field team studied the site extents and landforms on a feature survey map of the Merrifield West CHMP and discussed where to place test pits and shovel test pits in order to optimise excavations on particular landforms and target any identified areas of perceived archaeological sensitivity. Locations in this investigation were agreed on based on the Merrifield West site extents of previously registered Aboriginal cultural heritage places Tamboore 6 (VAHR 7822-3394) comprising 1109 artefacts, Tamboore 7 (VAHR 7822-3391) comprising 237 artefacts and Tamboore 10 (VAHR 7822-3393) comprising 83 artefacts which were all identified on crest landforms approximately 3 km north of the current activity area. Both Michael Xiberras and Wade Garvey assisted with the excavation of all manually excavated squares including undertaking layer and trowel excavation, completing spit sheets, sieving and discussing each spit as it was excavated.

Upon completion of the current complex assessment Michael Xiberras and Wade Garvey expressed satisfaction with the outcomes of the amount of excavation that had been undertaken across the activity area over the course of the excavations. Given the highly unproductive clay soil profile on low-lying areas the two field workers and Tony Garvey were satisfied that sufficient testing had been undertaken on this landform type, however, as cultural heritage material was identified on a crest landform in the south-west corner of the activity area it was agreed that additional excavations would be required here if harm was unavoidable.

Table 1: Documentation of consultation with the RAP

Dates	Contact Method	RAP	Representative(s)	Activity
3 September 2012	Meeting	WTL&CCHCI	John Stevens (Ecology and Heritage Partners) ; Chris Engert (MAB); Darren Griffin (WTL&CCHCI); Ron Jones (WTL&CCHCI); Perry Wandin (WTL&CCHCI); Robert Mullins ((WTL&CCHCI);	1 st RAP meeting. Project Development Meeting to discuss the activity and survey
8-9 October 2012	Fieldwork	WTL&CCHCI	Pamela Ricardi (Ecology and Heritage Partners); Staci Timms (Ecology and Heritage Partners); Thane Gannaway Garvey (WTL&CCHCI) Tony Garvey (WTL&CCHCI).	Field survey
10 July 2014	Meeting	WTL&CCHCI	John Stevens (Urban Colours) ; Ron Jones (WTL&CCHCI); Perry Wandin (WTL&CCHCI); Robert Mullins ((WTL&CCHCI); Kirsty Lewis ((WTL&CCHCI).	2 nd RAP meeting. Meeting to discuss the results of the standard assessment and to define the excavation methodology
14-16 July 2014	Stage 1 Fieldwork (manual excavations)	WTL&CCHCI	John Stevens (Urban Colours); Michael Xiberras (WTL&CCHCI); Wade Garvey (WTL&CCHCI).	Subsurface testing program

17–23 July 2014	Stage 2 Fieldwork (manual and mechanical excavations)	WTL&CCHCI Have a Dig	John Stevens (Urban Colours); Michael Xiberras (WTL&CCHCI); Wade Garvey (WTL&CCHCI); Tony Garvey (Have a Dig).	
27 August 2014	Fieldwork (manual excavations)	WTL&CCHCI	John Stevens (Urban Colours); Michael Xiberras (WTL&CCHCI); Wade Garvey (WTL&CCHCI).	Subsurface testing program
23 October 2014	Meeting	WTL&CCHCI	John Stevens (Urban Colours); Chris Engert (MAB Corp); Alexander Parmington (WTL&CCHCI); Ron Jones (WTL&CCHCI); Allan Wandin (WTL&CCHCI); Bobby Mullins (WTL&CCHCI).	3 rd RAP meeting. To discuss results of excavation program and CHMP recommendations
11 November 2014	Meeting	WTL&CCHCI	John Stevens (Urban Colours); Kirsty Lewis (WTL&CCHCI); Robbie Jones (WTL&CCHCI); Allan Wandin ((WTL&CCHCI); Bobby Mullins ((WTL&CCHCI).	4 th RAP meeting to discuss the proposed salvage program

4.4 Summary of Outcomes of Consultation

Consultation with WTL&CCHCI was conducted at key points during the preparation of CHMP 12270. A summary of the consultation process and outcomes of consultation is provided below and summarised in Table 1 above.

- If Tamboore 25 (VAHR 7822-3841) cannot be preserved in open space it should be 100% salvaged;
- Elder Alan Wandin stated that salvage should include manual excavation where possible;
- Two scar tree sites remain undamaged by fire within the activity area. The archaeologists and Sponsor has made a commitment to retain the two extant scar tree sites. Alex Parmington stated that it was important that a TPZ outlining fencing requirements for each of the scar tree sites.
- Where possible if the density of artefacts and soil profile facilitate controlled excavation at Tamboore 25 (VAHR 7822-3841) then this method should be employed in these areas as opposed to mechanical excavation.
- Tamboore 26 (VAHR 7822-3840) an isolated quartz flaked piece is considered to have low significance and will not require salvage, although the artefact must be reburied in an area of open passive space following completion of the salvage program;
- Elder Ron Jones stated that it would be important to engage the Wurundjeri Green Team as part of re-vegetation works within the activity area;
- Alexander Parmington stated that three RAP inspections will take place during the construction phase of the PSP. One inspection prior to the commencement of work, one visit during and one visit after works have been completed.

- Alan Wandin discussed an opportunity for Wurundjeri people to collect wood from the site. The Sponsor was open to this suggestion but stated that this would need to wait until after the salvage program was completed.
- Alexander Parmington requested that if any suitably datable remains were identified during the manual excavation program they should be collected and used to attain dates for Tamboore 25.

5 DESKTOP ASSESSMENT

The desktop assessment reviews the Aboriginal context of the activity area and includes an examination of historical and ethno-historical sources, previously recorded Aboriginal archaeological site types and locations in the geographic region of the activity area and archaeological studies undertaken in the area and environmental factors relevant to Aboriginal cultural heritage. Together, these sources of information can be used to formulate a predictive site model concerning what types of sites are most likely to occur in the activity area, and where these are most likely to occur.

5.1 Geographic Region

The geographic region for this CHMP is the wider Mickleham/Yuroke region, defined as a 4 km radius of the activity area (Map 4). The region within which the activity area is located forms part of the Victorian Volcanic Plain bioregion (DPI 2012a). The bioregion is characterised by volcanic plains vegetated mainly by native grasses and woodlands with many natural wetlands. It has a unique and early history of European settlement due partly to the ease of access of the open grassland plains. The landscape has been radically altered within the last 150 years. Most of the region is private freehold, dominated by agriculture, and there are small blocks of public land. The native vegetation of the Victorian Volcanic Plain bioregion is one of the most depleted in the State (DPI 2012a).

5.1.1 Geomorphology and Landforms

The geographic region is made up of low-lying undulating plains which were formed on volcanic and sedimentary lithologies. The landscapes of the Western Uplands are formed on some of the youngest rocks of Victoria and the soils reflect the underlying lithology and age of the rocks. The youngest landscapes (i.e. the stony rises) have skeletal uniform or gradational soils. The older landscapes have deeper soils varying from friable gradational to strongly textured contrast soils. The friable, finely structured brown gradational soils developed on volcanic ash (tuff). Other soils include sands with coffee rock or sand over clay and clay-rich soils and heavy (uniform) clays (DPI 2012b).

5.1.2 Geology and Soils

The volcanic plains within which the activity area is situated were created by volcanic eruptions over a period of about 5 million years, and are referred to as the Newer Volcanics (Map 4). Much of the plains were formed by lava flows of varying thicknesses. In some areas, the flows are intercepted by scoria and tuff. Lava from the volcanic eruptions tended to be fluid and flowed along the lowest points in the landscape and often resulted in blocked drainage systems. Grasslands are common on much of the region, and at times, trees mark the presence of stony rises (DPI 2012b).

5.1.3 Vegetation

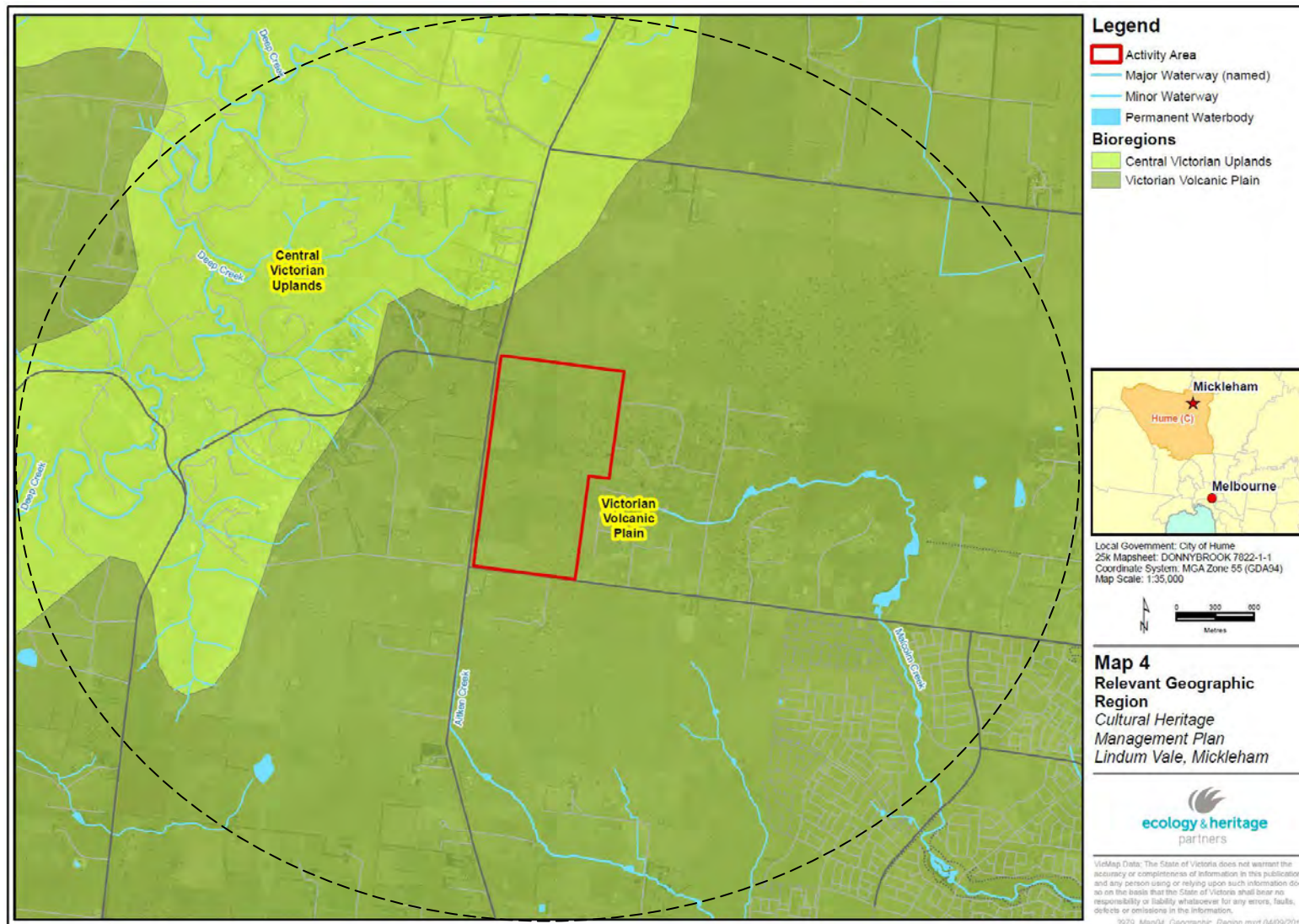
The soils of the Victorian Volcanic Plain bioregion would have historically supported vegetation classified as Plains Grassy Woodland (EVC 55) under the Department of Sustainability and Environment's (DSE) Ecological Vegetation Classes (EVCs) (2010) (Map 5). These vegetation classes would have consisted of large trees such as *Eucalyptus tereticornis* ssp. *Mediana* (Gippsland Redgum) as well as shrubs such as *Allocasuarina littoralis* (Black Sheoak), *Kunzea ericoides* (Brugan), *Primelea humilis* (Common Rice-flower), *Bossiaea prostrata* (Creeping Bossiaea), *Hypericum gramineum* (Small St John's Wort), *Oxalis perennans* (Grassland Wood-sorrel), *Dichondra repens* (Kidney weed), *Poranthera microphylla* (Small Poranthera), *Austrostipa rudis* (Veined Speargrass), *Gahnia radula* (Thatch Saw-sedge), *Themeda triandra* (Kangaroo Grass), *Carex breviculmis*

(Common Grass-sedge), *Lomandra filiformis* (Wattle Matrush), *Schoenus apogon* (Common Bogsedge), *Microlaena stipoides* var. *Stipoides* (Weeping Grass) (DSE 2012a).

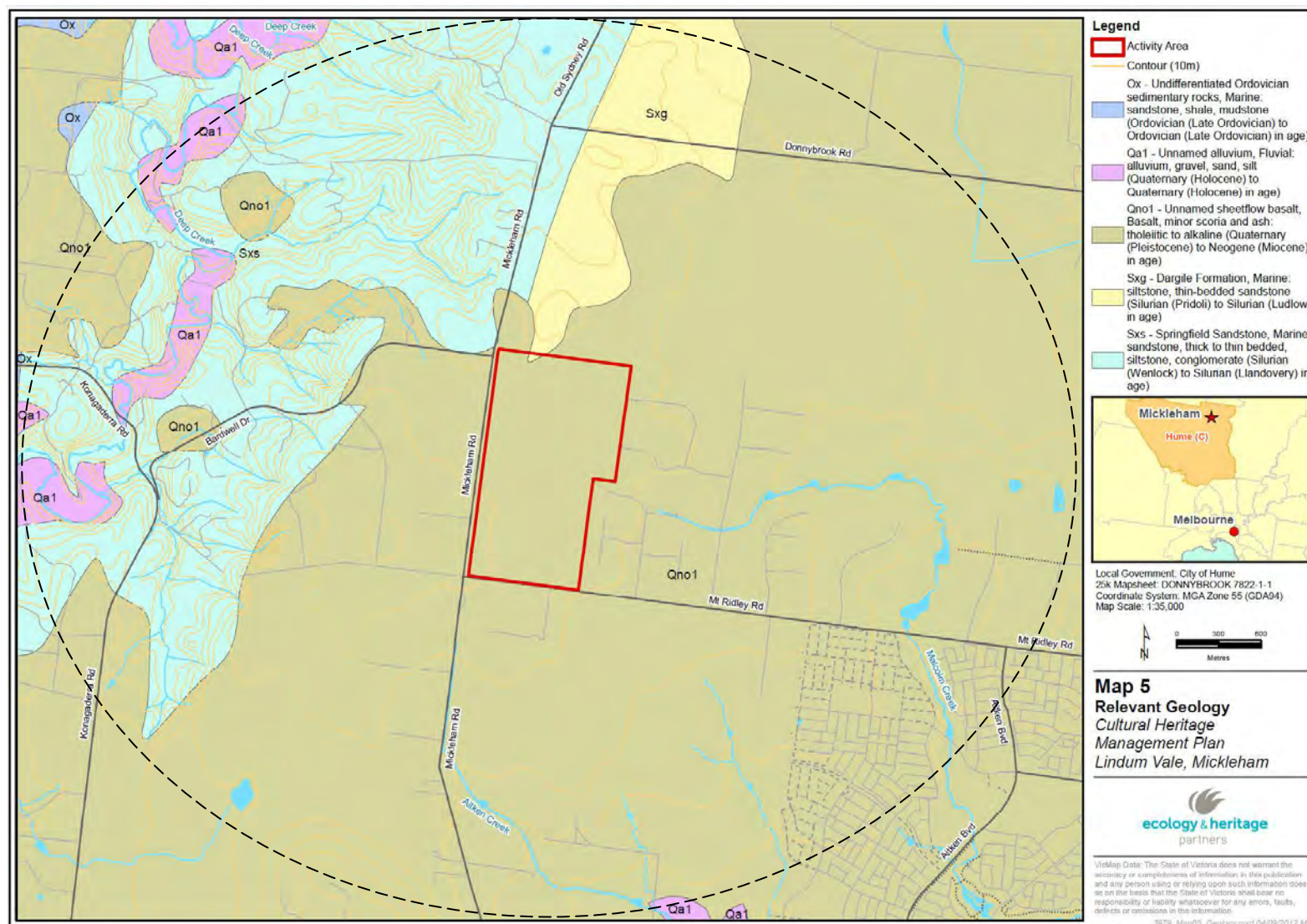
These types of vegetation would have been utilised by Aboriginal people in the area for the creation of weapons and vessels, and would have supported a range of game that could be hunted for food.

5.1.4 Climate

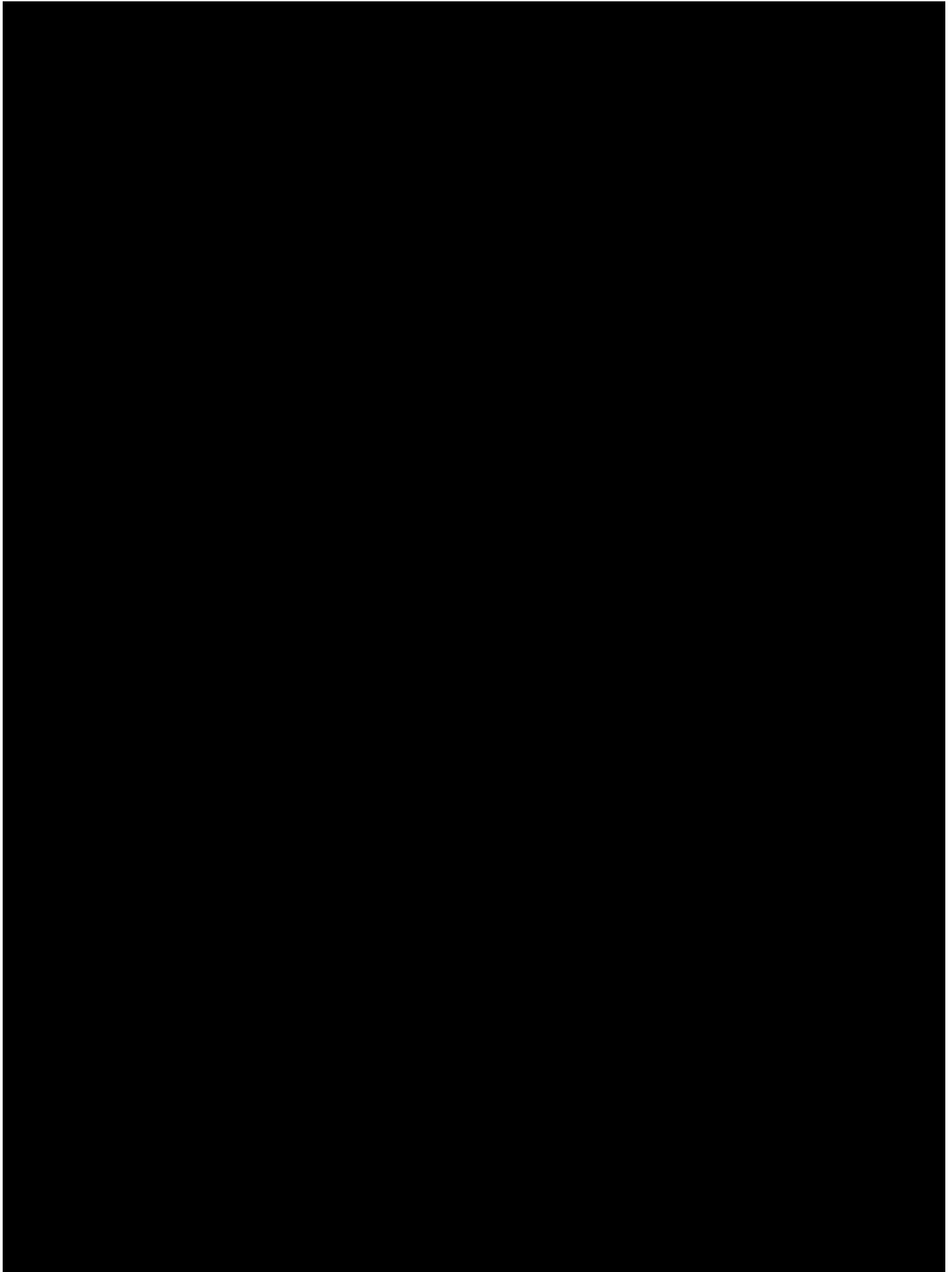
The climate of Mickleham is characterised by warm summers and cool winters; temperatures range between an average maximum of 26.5 °C and minimum of 14.4 °C in February to an average maximum 14.4 °C and minimum 5.4 °C in July. Rainfall varies between a maximum of 64 mm in November and 35.5 mm in July, with annual average rainfalls of 541.9 mm (BOM 2012).



Map 4: The geographic region (courtesy of Ecology and Heritage Partners Pty Ltd)



Map 5: Geology of the activity area and vicinity (courtesy of Ecology and Heritage Partners Pty Ltd)



Map 6: Previously recorded Aboriginal archaeological sites within a 5 km radius of the activity area. (redacted)

5.2 Land use History

By the 1840s, the land around the activity area had been settled by farmers and graziers. Historically, the land to the west of the Sydney Road (now the Hume Freeway), including the current activity area, was predominantly used for sheep grazing (and some cattle grazing too) as the hard red plains in this region were not suitable for cropping. In the 1840s, the region west of the Sydney Road was largely populated by free settlers working as graziers, as opposed to the higher number of convict men working as croppers to the east (Peel 1974: 19–21). The activity area lies within the Mickleham Parish run consisting of 1 square mile which was taken up by James Pearson (Spreadborough and Anderson 1983: 261).

During the latter half of the nineteenth century, the nearby townships of Kalkallo and Craigieburn grew in order to service the growth in travellers from Melbourne to Sydney as well as those travelling to reach the gold mines following the discovery of gold in the colony from 1851 (Payne 1975; 1980 in Feldman and Howell-Meurs, 2006:16). Communication and access to Melbourne were also improved by the opening of the Post Office in Mickleham in 1862 (located just outside the activity area) and by the construction of a railway in the 1870s with stations at Craigieburn, Donnybrook and Somerton (Feldman and Howell-Meurs, 2006:16).

Following the Second World War, the area surrounding the activity area experienced additional growth as the outskirts of Melbourne expanded. New suburbs and industrial areas have been erected where land was previously used for farming purposes (Feldman and Howell-Meurs, 2006:16). Currently, the activity area itself is still used for agricultural and pastoral purposes by a private landholder.

5.3 History and Ethno-history

Archaeological evidence suggests that Aboriginal peoples had occupied all of Australia's environmental zones by 40,000 years BP. In Victoria Aboriginal occupation has been dated at Keilor in Melbourne from a charcoal hearth excavated in 1973 to ca. 31,000 years BP (Flood 1995: 286) and, more recently Hewett and De Lange (2007) obtained dates from the Bend Road site of ca. 35,000 years BP. These dates indicate the potential for Aboriginal archaeology in Victoria to show evidence of early stone tool production and occupation in Victoria during the Middle Pleistocene period.

At the time of European contact, the Mickleham area and the surrounding region lay within the traditional lands of people from the *Woi wurrung* language group. This language group occupied the Yarra and Maribymong watersheds, bounded on the north by the Dividing Range from Mount Baw Baw westward to Mount William and Mount Macedon and on the west by the Werribee River (Clark 1990: 379).

The *Woi wurrung* shared a cultural and linguistic affinity with the *Bun wurrung*, *Ngurai-illam wurrung*, *Djadja wurrung*, *Wada wurrung* and *Duang wurrung* language groups. Collectively these groups were known as the Kulin Nation, occupying the south-central Victorian region (Howitt 1904). This cultural grouping shared similarities in speech, burial practices, initiation, kinship marriage ties and religious beliefs. The language groups within the Kulin Nation adhered to a patrilineal descent system and the *Bunjil/Waa* moiety system. Each clan within the Kulin Nation language groups belonged to either one of two moieties; *Bunjil* (eaglehawk) and *Waa* (crow). Marriage partners were taken from the opposite moiety and membership in the moiety had religious, economic and social implications and obligations that transcended local allegiances and clans (Barwick 1984).

According to Clark, the *Woi wurrung*, *Bun wurrung*, *Ngurai-illam wurrung* and *Duang wurrung* languages were all dialects of the one language, as they share more than 75 percent common vocabulary with each other. Clark refers to these groups as dialectal-tribes and together as the East Kulin Nation (Clark 1990: 369).

The *Woi wurrung* were divided into four clans and each clan was responsible for a specific section of *Woi wurrung* territory. The clan responsible for the Mickleham area was the *Wurundjeri willam*. *Wurundjeri willam* in traditional East Kulin language means 'white gum tree dwellers'. The *Wurundjeri willam* was a patriline of the *Wurundjeri balug* clan (Clark 1990:385). Historical sources suggest that the *Wurundjeri willam* occupied areas along the Yarra, Plenty and Maribymong Rivers (Clark 1990:385). The *Wurundjeri willam* were custodians of sacred sites around the area, including locations such as Aitken Hill, which were important to many neighbouring *Woi wurrung*, *Daung Wurrung*, *Djadja wurrung* and *Wada wurrung* clans. Historical records suggest that the ranges east of Kilmore were used as a meeting place by these groups.

In 1839 the Aboriginal protectorate scheme was introduced in Victoria. Four Assistant Protectors were appointed under a Chief Protector, George Augustus Robinson. The role of the protectorates was to provide food, shelter and medical supplies, record cultural and population information and to indoctrinate Aboriginal peoples into the western European cultural and economic systems. Aboriginal reserves and stations were established across Victoria and Aboriginal peoples were made to move to them. *Woi wurrung* clans moved to the reserves and stations set up at Narre Narre Warren, Mordialloc, Warrandyte, and on the Acheron River. A school for Aboriginal children was also set up on Merri Creek (Presland 1994: 100). The Protectorate was largely unsuccessful and was disbanded in 1849.

The Central Board for the Protection of the Aborigines was founded in 1860 to provide an administrative structure to manage Aboriginal people in Victoria. Under their direction a series of missions and government stations were set up throughout Victoria where Aboriginal people could live (Department for Victorian Communities, AAV Website). In the 1860s the Coranderrk Mission Station was opened near Healesville. Aboriginal people from the *Woi Wurrung* clan moved through, lived and worked on the station almost semi-autonomously up until the 1880s (Presland 1994: 100). Most Aboriginal people of *Woi Wurrung* descent can trace their ancestry to people who were associated with the Coranderrk Mission Station.

While many Aboriginal people lived on the missions and government stations, a significant number of people worked and lived on farms and pastoral stations. Some Aboriginal people farmed the land on smallholdings, or worked in industries such as fishing on the Murray, the goldfields, and in the timber industries. People outside the reserves sometimes gathered together in campsites on the outskirts of towns. They were also involved in sports such as cricket, football and athletics.

By the turn of the century only a small population of Aboriginal people lived on the missions and government stations, with most living and working in the same general area. The last missions and stations were phased out in the 1920s, though some of the land which was once part of the missions is now under the control of Aboriginal communities (Department for Victorian Communities, AAV Website). Pressure from the government forced most of the remaining Aboriginal peoples to leave the Coranderrk Mission Station and it closed in 1924 (Presland 1994: 100).

Since the 1920s, Aboriginal people have continued to live in most areas of Victoria, often with strong ties to their original clan and tribal areas. Aboriginal history this century has been marked by peoples' efforts to maintain their collective identity and culture (Department for Victorian Communities, OAAV Website).

Today the descendants of the *Wurundjeri willam* clan of the *Woi Wurrung* language group are represented by the Wurundjeri Tribe Land and Compensation Cultural Heritage Council Inc.

5.4 Aboriginal places in the geographic region

A search of the Victorian Aboriginal Heritage Register (VAHR) was conducted on by John Stevens on 2 June 2014. Searching an area with this radius ensured that a relevant and representative sample of information was obtained. A site search was initially undertaken by Ecology and Heritage Partners in 2012; however, due to the time lapse between the desktop (2012) and finalisation of the complex (2015), an additional site search was undertaken for previously registered sites within 4 km of the activity area. This site search also captures the 5 Aboriginal scar tree sites, one LDAD and one artefact scatter recorded as part of this CHMP (Section 8.9 and Map 6).

The search identified a total of 115 registered Aboriginal sites within a 4 km radius of the activity area (Map 6). These sites consist of a total of 65 artefact scatters, 26 Object Collections, 13 Scar Trees, 10 LDADs and one Earth Feature (Table 2).

Table 3 shows that stone artefact sites account for more than half of the site component types in the search area (56.5%).

The larger and most diverse artefact scatters are located along Donnybrook Road, recorded by John Stevens during the preparation of CHMP 11705, while those in other parts of the geographic region tend to be smaller scatters or isolated artefacts. Stone artefacts within the geographic region are predominantly manufactured on quartz and fine-grained quartzite / silcrete; however, igneous rock/glass, flint / chert, quartzite and basalt have also been identified. Tool types include cores and unmodified flaking debris as well as hammerstones, grinding stones and a range of formal tools, including edge-ground axes, scrapers and microliths. Backed blades and microliths, are forms associated with the Australian Small Tool Tradition (ASTT) that appears in many parts of Australia in the late Holocene, although ASTT forms are generally rare in sites younger than 1000 years before present (Gould 1969: 235).

Campbell 1982: 62; Hiscock 1994: 267). The steep retouch along one margin of these artefacts is thought to have served to blunt the edge so that they could be hafted into a wooden weapon to form composite tools (Hiscock 1994; McDonald et al 2007). The presence of these items within the geographic region indicates that at least some places were occupied within the last approximately 5000 years (Gould 1969), although for earlier suggested appearance of the ASTT see Hiscock and Attenbrow 1998 and Slack *et al.* 2004) and were probably locations where hunting occurred.

A summary of the Aboriginal archaeological site component types appears in Table 2 and a list of all sites in the search area is shown in Table 3.

Table 2: Summary of previously identified Aboriginal site component types within 2 km of the activity area

Site Type	Quantity	Approx. Percentage (%)
Artefact Scatters	65	56.5
Object Collections	26	22.6
Scar Trees	13	11.3
LDADs	10	8.6
Earth Feature	1	1
Total	115	100

Aboriginal Place No	VAHR Place Name	Component Type	Easting	Northing
7822-0325	SILVERTON 4	Artefact Scatter	████	████
7822-0328	SILVERTON 7	Artefact Scatter	████	████
7822-1252	RI 10	Artefact Scatter	████	████
7822-1253	RI 11	Artefact Scatter	████	████
7822-1254	RI 12	Artefact Scatter	████	████
7822-1255	RI 13	Artefact Scatter	████	████
7822-1468	AITKEN CREEK 1C	Artefact Scatter	████	████
7822-1469	AITKEN CREEK 1B	Artefact Scatter	████	████
7822-2202	MT RIDLEY ROAD 2	Artefact Scatter	████	████
7822-2242	M/CREEK 1	Artefact Scatter	████	████
7822-2243	M/CREEK 2	Artefact Scatter	████	████
7822-2244	M/CREEK 3	Artefact Scatter	████	████
7822-2245	M/CREEK4	Artefact Scatter	████	████
7822-2246	M/CREEK 5	Artefact Scatter	████	████
7822-2267	MERRIFIELD 4	Artefact Scatter	████	████
7822-2281	M/CREEK 8	Artefact Scatter	████	████
7822-2418	AITKEN CREEK DRAINAGE LINE SCATTER 4	Artefact Scatter	████	████
7822-2419	WHITES LANE TRACK SCATTER 2	Artefact Scatter	████	████
7822-2422	AITKEN CREEK NORTH 1	Artefact Scatter	████	████
7822-2432	AITKEN CREEK DRAINAGE LINE SCATTER 1	Artefact Scatter	████	████
7822-2433	AITKEN CREEK DRAINAGE LINE SCATTER 2	Artefact Scatter	████	████

7822-2434	AITKEN CREEK DRAINAGE LINE SCATTER 3	Artefact Scatter	■■■■	■■■■
7822-2435	WHITES LANE TRACK SCATTER 1	Artefact Scatter	■■■■	■■■■
7822-2538	DAVIS LANGDON 1	Artefact Scatter	■■■■	■■■■
7822-2539	DAVIS LANGDON 2	Artefact Scatter	■■■■	■■■■
7822-2540	DAVIS LANGDON 3	Artefact Scatter	■■■■	■■■■
7822-2541	DAVIS LANGDON 4	Artefact Scatter	■■■■	■■■■
7822-2542	DAVIS LANGDON 5	Artefact Scatter	■■■■	■■■■
7822-2543	DAVIS LANGDON 6	Artefact Scatter	■■■■	■■■■
7822-2544	DAVIS LANGDON 7	Artefact Scatter	■■■■	■■■■
7822-2550	DAVIS LANGDON 8	Artefact Scatter	■■■■	■■■■
7822-2551	DAVIS LANGDON 9	Artefact Scatter	■■■■	■■■■
7822-2552	DAVIS LANGDON 10	Artefact Scatter	■■■■	■■■■
7822-2553	DAVIS LANGDON 11	Artefact Scatter	■■■■	■■■■
7822-2554	DAVIS LANGDON 12	Artefact Scatter	■■■■	■■■■
7822-2555	DAVIS LANGDON 13	Artefact Scatter	■■■■	■■■■
7822-2836	Aitken Creek Tributary 1	Artefact Scatter	■■■■	■■■■
7822-2857	Aitken Creek Tributary 2	Artefact Scatter	■■■■	■■■■
7822-2873	Aitken Creek Tributary 4	Artefact Scatter	■■■■	■■■■
7822-2861	Aitken Creek Tributary 5	Artefact Scatter	■■■■	■■■■
7822-2860	Malcolm Creek 10	Artefact Scatter	■■■■	■■■■
7822-2915	Aitken Creek Tributary 6	Artefact Scatter	■■■■	■■■■
7822-2935	Mickleham Road Aitken Creek 1	Artefact Scatter	■■■■	■■■■
7822-2936	Mickleham Road Aitken Creek 2	Artefact Scatter	■■■■	■■■■
7822-2937	Whites Lane Aitken Creek 1	Artefact Scatter	■■■■	■■■■
7822-2999	Whites Lane Aitken Creek 2	Artefact Scatter	■■■■	■■■■
7822-3023	Whites Lane Aitken Creek 3	Artefact Scatter	■■■■	■■■■
7822-3197	550 Craigieburn Road 2 IA	Artefact Scatter	■■■■	■■■■
7822-3198	550 Craigieburn Rd 1	Artefact Scatter	■■■■	■■■■
7822-3394	Tamboore 6	Artefact Scatter	■■■■	■■■■
7822-3391	Tamboore 7	Artefact Scatter	■■■■	■■■■
7822-3380	Tamboore 9	Artefact Scatter	■■■■	■■■■
7822-3393	Tamboore 10	Artefact Scatter	■■■■	■■■■
7822-3383	Tamboore 11 IA	Artefact Scatter	■■■■	■■■■
7822-3385	Tamboore 13 IA	Artefact Scatter	■■■■	■■■■
7822-3384	Tamboore 12 IA	Artefact Scatter	■■■■	■■■■

7822-3392	Tamboore 8	Artefact Scatter	■■■■	■■■■
7822-3407	Tamboore 14	Artefact Scatter	■■■■	■■■■
7822-3390	Tamboore 15 IA	Artefact Scatter	■■■■	■■■■
7822-3386	Tamboore 16 IA	Artefact Scatter	■■■■	■■■■
7822-3387	Tamboore 17 IA	Artefact Scatter	■■■■	■■■■
7822-3388	Tamboore 18 IA	Artefact Scatter	■■■■	■■■■
7822-3389	Tamboore 19 IA	Artefact Scatter	■■■■	■■■■
7822-3408	Tamboore 20	Artefact Scatter	■■■■	■■■■
7822-3841	Tamboore 25	Artefact Scatter	■■■■	■■■■
7822-0325	SILVERTON 4	Earth Feature	■■■■	■■■■
7822-3518	Mt Ridley Road 3	Low Density Artefact Distribution	■■■■	■■■■
7822-3518	Mt Ridley Road 3	Low Density Artefact Distribution	■■■■	■■■■
7822-3518	Mt Ridley Road 3	Low Density Artefact Distribution	■■■■	■■■■
7822-3518	Mt Ridley Road 3	Low Density Artefact Distribution	■■■■	■■■■
7822-3518	Mt Ridley Road 3	Low Density Artefact Distribution	■■■■	■■■■
7822-3518	Mt Ridley Road 3	Low Density Artefact Distribution	■■■■	■■■■
7822-3518	Mt Ridley Road 3	Low Density Artefact Distribution	■■■■	■■■■
7822-3518	Mt Ridley Road 3	Low Density Artefact Distribution	■■■■	■■■■
7822-3518	Mt Ridley Road 3	Low Density Artefact Distribution	■■■■	■■■■
7822-3518	Mt Ridley Road 3	Low Density Artefact Distribution	■■■■	■■■■
7822-3840	Tamboore 26	Low Density Artefact Distribution	■■■■	■■■■
7822-2281	M/CREEK 8	Object Collection	■■■■	■■■■
7822-2281	M/CREEK 8	Object Collection	■■■■	■■■■
7822-2418	AITKEN CREEK DRAINAGE LINE SCATTER 4	Object Collection	■■■■	■■■■
7822-2419	WHITES LANE TRACK SCATTER 2	Object Collection	■■■■	■■■■
7822-2422	AITKEN CREEK NORTH 1	Object Collection	■■■■	■■■■
7822-2432	AITKEN CREEK DRAINAGE LINE SCATTER 1	Object Collection	■■■■	■■■■
7822-2433	AITKEN CREEK DRAINAGE LINE SCATTER 2	Object Collection	■■■■	■■■■
7822-2434	AITKEN CREEK DRAINAGE LINE SCATTER 3	Object Collection	■■■■	■■■■

7822-2435	WHITES LANE TRACK SCATTER 1	Object Collection	■■■■	■■■■
7822-2538	DAVIS LANGDON 1	Object Collection	■■■■	■■■■
7822-2539	DAVIS LANGDON 2	Object Collection	■■■■	■■■■
7822-2540	DAVIS LANGDON 3	Object Collection	■■■■	■■■■
7822-2541	DAVIS LANGDON 4	Object Collection	■■■■	■■■■
7822-2542	DAVIS LANGDON 5	Object Collection	■■■■	■■■■
7822-2543	DAVIS LANGDON 6	Object Collection	■■■■	■■■■
7822-2544	DAVIS LANGDON 7	Object Collection	■■■■	■■■■
7822-2550	DAVIS LANGDON 8	Object Collection	■■■■	■■■■
7822-2551	DAVIS LANGDON 9	Object Collection	■■■■	■■■■
7822-2552	DAVIS LANGDON 10	Object Collection	■■■■	■■■■
7822-2553	DAVIS LANGDON 11	Object Collection	■■■■	■■■■
7822-2554	DAVIS LANGDON 12	Object Collection	■■■■	■■■■
7822-2555	DAVIS LANGDON 13	Object Collection	■■■■	■■■■
7822-2937	Whites Lane Aitken Creek 1	Object Collection	■■■■	■■■■
7822-2999	Whites Lane Aitken Creek 2	Object Collection	■■■■	■■■■
7822-3023	Whites Lane Aitken Creek 3	Object Collection	■■■■	■■■■
7822-3841	Tamboore 25	Object Collection	■■■■	■■■■
7822-0024	COCKING	Scarred Tree	■■■■	■■■■
7822-0025	LOGIE	Scarred Tree	■■■■	■■■■
7822-2236	DONNYBROOK 1	Scarred Tree	■■■■	■■■■
7822-2277	MALCOLM CREEK 6	Scarred Tree	■■■■	■■■■
7822-2885	Aitken Creek Tributary 3	Scarred Tree	■■■■	■■■■
7822-2974	Mickleham Road Plain 1	Scarred Tree	■■■■	■■■■
7822-3409	Tamboore 21	Scarred Tree	■■■■	■■■■
7822-3395	Tamboore 23	Scarred Tree	■■■■	■■■■
7822-3588	Lindum Vale 1	Scarred Tree	■■■■	■■■■
7822-3589	Lindum Vale 2	Scarred Tree	■■■■	■■■■
7822-3590	Lindum Vale 3	Scarred Tree	■■■■	■■■■
7822-3591	Lindum Vale 4	Scarred Tree	■■■■	■■■■
7822-3592	Lindum Vale 5	Scarred Tree	■■■■	■■■■

Table 3: List of previously identified sites within 4 km of the activity area

5.5 Local Council

The activity area is located within and is governed by the Hume Planning Scheme. Planning schemes set out policies and provisions for the use, development and protection of land.

The Heritage Overlay of the Hume Planning Scheme was examined. One heritage place was listed on the Heritage Overlay as present within the activity area. This place is the Former Post Office (HO36) located at 1960 Mickleham Road, Mickleham. This place is a historical site and not an Aboriginal heritage place.

5.6 Previous Archaeological Investigations

Localised and regional archaeological investigations have established the general character of Aboriginal sites located within the same geographic region as the activity area. This information, together with an environmental context, histories of land use and, historical and ethno-historical sources, can be used to form the basis for a site prediction statement.

There has been no previous survey conducted within the activity area. However, a previously identified Aboriginal Place (a scar tree) has been recorded within the activity area (Cocking VAHR 7822-0024). Furthermore, Andrew Long conducted an unpublished desktop review for the Sponsor which included a brief site visit to the activity area (Long, 2008). Following the desktop review and site visit, Long (2008) concluded that, due to the absence of major watercourses or drainage lines within the activity area, it is unlikely that occupation sites with high density artefact scatters would be located. However, lower density scatters were considered likely to be located and, given the presence of open woodland within the activity area, scarred trees were also considered likely to be present (Long, 2008).

A summary of archaeological reports relevant to the geographical region of the activity area appears in Table 4.

Table 4: Archaeological reports relevant to the activity area

Author / Date / Report Number	Description and Location	Results
Feldman, R and Howell-Meurs, J. 2006 Report 3437	A cultural heritage desktop assessment and survey encompassing an area of 56ha, located at 535 Mt Ridley Road, Craigieburn approximately 500 metres east of the activity area.	One new Aboriginal Place (VAHR 7822-1884) and two areas of Aboriginal sensitivity were identified.
Long, A. 2008 Unpublished report to MAB Corporation	A Desktop Cultural Heritage Assessment at 1960-2090 Mickleham Road, Mickleham (Lindum Vale). Undertaken within the activity area.	Long undertook a Desktop-based cultural heritage assessment including a site visit for MAB Corporation to discuss cultural heritage requirements for the PSP development. A previously registered Aboriginal scar tree site (Cocking VAHR 7822-0024) was identified as part of the desktop. No additional sites were identified. No survey for Aboriginal cultural heritage was undertaken during the site visit.

Author / Date / Report Number	Description and Location	Results
Athanasiadis, H. and Tucker, C. 2009 CHMP 10538	A complex CHMP investigated 221.67ha adjacent to Malcolm Creek approximately 750 metres east of the activity area.	The standard assessment involved a pedestrian survey where the team walked in transects 20 m apart. GSV was generally observed as poor. Areas of higher ground and close to Malcolm Creek were identified as sensitive. The complex testing methodology involved 1 x 1 m test pits, shovel test probes and machine trenches. A total of eight new Aboriginal Places were identified during the assessment (6 artefact scatters and 2 scarred trees VAHR 7822-0042-46; 0077-78; 0081). These sites all occur on terraced slopes near Malcolm Creek.
Tasire, A., Nicolson, O. and MacManus, T. 2011 CHMP 11446	A complex CHMP within an area of 3.5 ha located in Craigieburn north-west approximately 2 km south east of the activity area.	No cultural heritage material was identified during the survey, however a number of stone artefacts were located just outside the activity area. The complex testing comprised a total of 24 shovel test probes and one 1 x 1 m test pit. No new Aboriginal Places were identified during the complex assessment.
Stevens, J. and Alberto, A. 2012 CHMP 11705	A complex CHMP within an area of 667 ha for the Merrifield West Precinct Structure Plan approximately 2 km north of the activity area.	The standard assessment comprised a pedestrian and vehicular survey in which a total of 12 new Aboriginal Places were identified. These included scarred trees, isolated artefacts and artefact scatters. The complex testing comprised a total of 14 1 x 1 m test pits, two 2 x 1 m test pits, 45 10 x 1 m mechanical transects and 180 shovel test probes. A total of 23 sites were identified within the activity area (VAHR 7822-3395; 3401; 3406-3409; 3378-3394) comprising 1570 artefacts. The Aboriginal Places were predominantly located on low-lying floodplains associated with the former Kalkallo Swamp or on a low-lying terrace unit.

5.7 Aboriginal Archaeological Site Prediction Statement

The following site prediction statement has been formulated from the review of previous assessments. The statement presented is based on a site type approach. (For further information on site types see AAV 2011).

The review of the previously recorded Aboriginal archaeological sites and previous archaeological investigations indicates that the most likely site types in the activity area are stone artefact scatters, isolated artefacts and scarred trees. Site types considered unlikely to occur in the activity area are shell middens, mounds, quarries, stone arrangements and Aboriginal burials. (*Likely* is an assessment of site types with a 50% or more likelihood of occurring; *Unlikely* is an assessment of site types with a less than 50% likelihood of occurring).

5.7.1 Stone Artefact Scatters

Stone artefact scatters are considered likely to occur in the activity area due to the frequency of this site type occurring within a 2 km radius of the activity area.

Stone tools were made by hitting one piece of stone, called a core, with another called a 'hammerstone', often a pebble. This would remove a sharp fragment of stone called a flake. Both cores and flakes could be used as tools. New flakes were very sharp, but quickly became blunt during use and had to be sharpened again by further flaking, a process called 'retouch'. A tool that was retouched has a row of small flake scars along one or more edges. Retouch was also used to shape a tool.

Not all types of stone could be used for making tools. The best types of stone are rich in silica, hard and brittle. These include quartzite, chert, flint, silcrete and quartz. Aboriginal people quarried such stone from outcrops of bedrock, or collected it as pebbles from stream beds and beaches. Many flaked stone artefacts found on

Aboriginal sites are made from stone types that do not occur naturally in the area. This means they must have been carried over long distances.

Stone tools are the most common evidence of past Aboriginal activities in Australia. They occur in many places and are often found with other remains from Aboriginal occupation, such as shell middens and cooking hearths. They are most common near rivers and creeks. It is easier to find them where there is limited vegetation or where the ground surface has been disturbed, for example by erosion.

Artefact scatters are the material remains of past Aboriginal people's activities. Scatter sites usually contain stone artefacts, but other material such as charcoal, animal bone, shell and ochre may also be present. No two scatters are exactly the same.

Artefact scatters can be found wherever Aboriginal occupation has occurred in the past. Aboriginal campsites were most frequently located near a reliable source of fresh water, so surface scatters are often found near rivers or streams where erosion or disturbance has exposed an older land surface.

5.7.2 Isolated Artefacts

Isolated artefacts are considered likely to occur in the activity area due to the frequency of this site type occurring within a 2 km radius of the activity area.

Isolated artefacts are stone tools which occur singly and may occur anywhere in the landscape. Surface isolated artefacts may be indicative of further subsurface archaeological deposits. This site type can be found anywhere within the landscape, however, they are more likely to occur within contexts with the same favourable characteristics for stone artefact scatter sites.

5.7.3 Scarred Trees

Scarred trees are considered likely to occur in the activity area due to the frequency of this site type occurring within a 2 km radius of the activity area and due to the presence of known remnant vegetation within the activity area.

Aboriginal people caused scars on trees by removing bark for various purposes. The scars, which vary in size, expose the sapwood on the trunk or branch of a tree. Scarred trees are found all over Victoria, wherever there are mature native trees, especially box and red gum. They often occur along major rivers, around lakes and on flood plains.

5.7.4 Shell Middens

Shell middens are considered unlikely to occur in the activity area due to the fact that this site type is not commonly occurring within close proximity to the activity area and that there are no permanent watercourses located within the activity area.

Shell middens may occur in both freshwater and coastal contexts. Shell middens are accumulations of shells produced by Aboriginal people collecting, cooking and eating shellfish. Shell middens often contain evidence of cooking such as charcoal, ash, fire-stones, burnt earth or burnt clay. Sometimes they also contain animal bones, fish bones, stone tools and Aboriginal burials.

Freshwater shell middens are found along river banks and flood plains, near swamps and lakes, and in sand dunes. They are sometimes found in dry areas, where fresh water was once present. Freshwater shell middens usually occur as fairly thin layers or small patches of shell. The shells usually come from both the freshwater mussel (*Velesunio ambiguus*) and river mussel (*Alathyria jacksoni*). The shells may be the remains of just one meal or hundreds of meals eaten over thousands of years.

Freshwater mussel shells may also be found in Aboriginal oven mounds, but usually only in small quantities. Middens may be visible as scatters of broken mussel shell, exposed along vehicle tracks. If you look closely, you may find mussel shells buried in the surrounding soil. Middens are also commonly visible as scatters of mussel shell eroding down the slopes of dunes. Again, the scatters can usually be traced up the dune to the buried shell layer. Shell fragments in the upcast from rabbit burrows in dunes may also indicate a midden.

Shell middens are also found in many areas along the Victorian coast. They can be located in sheltered positions in the dunes, coastal scrub and woodlands, within rockshelters, or on exposed cliff tops with good vantage points. They can occur near rocky or sandy shores and also close to coastal wetlands, inlets, estuaries, bays and river mouths. Coastal shell middens are found as layers of shell exposed in the sides of dunes, banks or cliff tops, or as scatters of shell exposed on eroded surfaces. They range in size from a few metres across to many hundreds of metres and can consist of a thin, single layer, or multiple layers forming a thick deposit.

5.7.5 Mounds

Mounds are considered unlikely to occur in the activity area due to the fact that this site type is not commonly occurring within close proximity to the activity area.

Aboriginal mounds are places where Aboriginal people lived over long periods of time. Mounds often contain charcoal, burnt clay or stone heat retainers from cooking ovens, animal bones, shells, stone tools and, sometimes, Aboriginal burials.

Mounds usually occur near rivers, lakes or swamps but occasionally some distance from water. They are also found on dunes and sometimes among rock outcrops on higher ground.

5.7.6 Quarries

Quarries are considered unlikely to occur in the activity area due to the fact that this site type is not commonly occurring within close proximity to the activity area.

Aboriginal quarries are the sites where Aboriginal people took stone from rocky outcrops to make chipped or ground stone tools for many different purposes. Not all types of stone were suitable for making tools, so an outcrop of good stone that could be easily quarried was a valuable resource. Aboriginal people quarried different types of stone, each with its own special value and use. Stone tools were made from greenstone, silcrete, quartz, quartzite, basalt and chert. Pigments were made from quarried ochre, and grinding tools were made from sandstone.

Some quarries are small, consisting of just a single protruding boulder. Other quarries incorporate many outcrops and areas of broken stone that can cover thousands of square metres.

5.7.7 Stone Arrangements

Stone arrangements are considered unlikely to occur in the activity area due to the fact that this site type is not commonly occurring within close proximity to the activity area.

Aboriginal stone arrangements are places where Aboriginal people have positioned stones deliberately to form shapes or patterns. The purpose of these arrangements is unknown because their traditional use ceased when European settlement disrupted Aboriginal society. They were probably related to ceremonial activities.

Stone arrangements occur where there are plenty of boulders, such as volcanic areas, and where the land could support large bands of people. Surviving stone arrangements are rare in Victoria, and most are in the western part of the State.

5.7.8 Aboriginal Burials

Aboriginal burials are considered unlikely to occur in the activity area due to the fact that this site type is not commonly occurring within close proximity to the activity area.

Aboriginal burials are normally found as clusters of human bones eroding from the ground, or exposed during ground disturbance. Aboriginal customs for honouring and disposing of the dead varied greatly across Victoria, but burial was common. Aboriginal burial sites normally contain the remains of one or two people, although cemeteries that contain the remains of hundreds of people buried over thousands of years have been found. Sometimes the dead person was buried with personal ornaments and artefacts. Charcoal and ochre are also often found in burial sites.

Although Aboriginal burials are quite rare in Victoria, they have been found in almost every kind of landscape, from coastal dunes to mountain valleys. They tend to be near watercourses or in dunes surrounding old lake beds. Many burials have been found on high points, such as dune ridges, within surrounding flat plains. They are often near or within Aboriginal occupation sites such as oven mounds, shell middens or artefact scatters.

5.8 Desktop Assessment – Summary of the Results and Conclusions

The information gathered on the region in terms of geology, landform and climate, along with the flora and fauna resources available indicates that in the past, the region would have been an area in which Aboriginal people prospered. The search of the VAHR shows that the activity area itself was utilised by Aboriginal people in the past, with one registered cultural heritage site within the boundaries of the activity area. This information, coupled with the findings of the previous archaeological research of the area and the availability of natural resources, suggests that artefact scatters, isolated artefacts and scarred trees are the most commonly occurring site types in the area. Artefact scatters are likely to be low to medium in density; however, given the large number of mature native trees within the activity area, it is highly likely that this will be the most prevalent site type likely to be encountered within the activity area.

The desktop assessment indicated that there have been six Aboriginal archaeological sites previously recorded within a 2 kilometre radius of the activity area. Sites including surface and subsurface cultural deposits which contain stone artefacts and scarred trees may be identified in all landforms throughout the geographic region. A review of previous archaeological investigations undertaken in the region indicates that the most likely site types within the activity area are low density subsurface artefact scatters and isolated artefacts. Scarred trees also frequently occur where stands of remnant red gums remain.

The results of the local and regional studies, combined with an understanding of the nature and extent of past survey coverage, can be used to construct a predictive site statement for the region and activity area.

Previous studies indicate that Aboriginal sites are most commonly (though not always) found on higher points overlooking swamps or creeks. Local studies (e.g. Matthews 2007; Chandler and Howell-Meurs, Chandler 2008 and Stevens and Alberto 2012) have shown that cultural heritage sites are present across a diverse range of landform types within the greater geographic region, and can be identified on flat featureless landforms. However, all of these sites are typically characterised as broadly distributed low-density occurrences with low scientific value. While resources are typically situated in low-lying areas within the region and correspondingly resource extraction is expected to occur on low-lying landform types, site distribution patterns at local levels

suggest that Aboriginal cultural heritage material was not necessarily manufactured or discarded as part of the resource extraction activity, and when cultural heritage material is identified at the extraction site it usually reflects discard of a broken implement that has been utilised to undertake a task-specific activity in an expedient context (Stevens and Alberto 2012). Correspondingly these data sets are characterised by isolated occurrences (LDADs) containing many fractured pieces.

Of particular relevance to this study are the two assessments undertaken by Stevens and Alberto (2012) approximately 1.2 km north of the subject activity area. These investigations indicate that high density sites are present in the geographic region, particularly when water sources coincide with sand 'benches' formed by sand transportation during residual activity and slope wash sequences from the highly elevated hills approximately 800 metres further to the west. These high-density sites are comprised of a range of artefact classes and stone raw material types and indicate that biotic, aquatic and geological resources at local levels were accessible and abundant. A total of 99% of the artefacts (n=1590) identified as part of the Merrifield West CHMP were identified on the upper crest of small hillock landforms.

The results of the desktop assessment provide preliminary insight into past Aboriginal land use and allow for the formulation of a series of expectations of the archaeological sensitivity of the geographic region in which the activity area is located. The results of numerous Aboriginal cultural heritage assessments have confirmed the sensitivity of the elevated landform types (e.g. upper crest landforms). More specifically, the greater geographic region is assessed as containing generally low densities of Aboriginal cultural heritage material across a broad area north and south of Donnybrook Road. These occurrences are punctuated by larger, moderate to high density sites containing a high level of lithic variability, stone raw material classes and in some instances a high degree of stratigraphic congruency on crest landforms and, less commonly, on sandy benches overlooking extant and former aquatic corridors and swamps.

In summary, the Desktop Assessment has confirmed that the activity area contains high potential for Aboriginal cultural heritage across raised landforms and low potential across low gradient landforms. The implications of the review of previously registered cultural heritage places and prior studies within the geographic region are:

- A total of 83 previously registered sites have been identified within a radius of 5 km from the activity area. Previously registered Aboriginal cultural heritage places have been located on a range of landforms, but particularly on ridge or upstanding landforms.
- Based on feature level survey mapping, there is one archaeologically sensitive ridge landform in the western section of the activity area.
- The most common cultural heritage site types in the geographic region are stone artefact scatters (n=54), low density artefact distributions (LDADs; n=11), Aboriginal scarred tree sites (n=12), unspecified object collections (n=3) and earth features (n=3).
- Scarred trees are likely to occur in all terrain units where old growth trees survive. There is an extensive red gum (*E. camaldulensis*) open forest within the activity area, all trees are mature and widespread. There is thus high potential for Aboriginal scarred tree sites in the activity area.
- Stone artefact scatters can range from isolated artefacts to extensive scatters of >1000 artefacts.

- The most common stone raw material is silcrete followed by lesser quantities of quartz and metamorphics.
- Dominant stone artefact types are complete flakes; distal, split, proximal and medial flakes and a moderate percentage (e.g. 8%) of diagnostic formal tool types. These artefacts will be manufactured from silcrete, quartz and quartzite.
- Artefact scatters have been located that contain contact archaeology elements such as flaked glass to the south of Donnybrook Road.
- Soil profiles are typically characterized by clay swale deposits across low-lying areas and shallower loam / gravel profiles with some potential for fine-grained bleached Aeolian silts on crest land forms and other capture areas such as the north side of saddles.
- Terrestrial and aquatic resources were abundant across the geographic region and would have supported large populations of people, biota and fauna prior to European colonisation.

6 STANDARD ASSESSMENT

The standard assessment includes a ground survey of the activity area to detect the presence of Aboriginal cultural heritage in or associated with the activity area.

The activity area was surveyed from 8 October 2012 to 9 October 2012 by Ecology and Heritage Partners Pty Ltd Archaeologist/Cultural Heritage Advisor Pamela Ricardi and Cultural Heritage Technical Officer, Staci Timms, with Tony Garvey and Thane Gannaway Garvey representing the WTLCCCHI.

6.1 Methodology of the Standard Assessment

The survey took the form of a pedestrian survey in which three participants walked two metres apart across the entire activity area (Map 7). All mature native trees were examined for evidence of cultural scarring.

6.1.1 Ground Surface Visibility

Ground surface visibility (GSV) throughout the vast majority of the activity area was noted as very poor (0–5%) (Plate 1). This was due to thick pasture grass growing throughout most of the activity area. In other sections of the activity area, visibility was obscured by crop plantations. Very few sections of the activity area offered ground surface exposure, namely around the dams, water troughs, trees and vehicle tracks. In these areas, GSV was estimated at 90–100% (Plate 2).

6.1.2 Effective Survey Coverage

Effective survey coverage calculations are based on the percentage of ground surface exposure and, provide a measure for the detectability of artefacts and the level of survey sampling effort within each landform in the activity area. The calculation assesses the level of average ground surface visibility (GSV) across the activity area in each landform, the extent of isolated exposures with higher or lower GSV than the average and, a calculation of the area within each landform surveyed.

An overview of the effective survey coverage in each landform within the activity area is provided in Table 5.

Table 5: Effective Survey Cover Calculations within the Activity Area

Landform	Total Area (Ha)	Average Landform GSV (%)	Average Landform GSV (Ha)	Isolated Exposure Area (Ha)	Isolated Exposure GSV (%)	Detection Area (ha)	Detection Area (%)	Area of Activity Area Surveyed (ha)	Percentage of Activity Area Surveyed (%)	Effective Survey Coverage (%)
Gentle Rises	98	2.5	2.45	0.01	100	2.5	2.5	98	100.0	2.5
Low-lying Area	12	2.5	0.3	0.01	100	0.3	2.6	12	100.0	2.6
Flats	30	2.5	0.75	0.01	100	0.8	2.5	30	100.0	2.5
Total	140	3	3.5	0.03	0.0	3.5	2.5	140	100.0	2.5

6.2 Limitations of the Standard Assessment

The only major limitation encountered during the standard assessment was the lack of GSV through the majority of the activity area. This greatly hindered the possibility of locating surface cultural heritage material that may be present within the activity area.

6.3 Results of the Standard Assessment

The standard assessment comprised a pedestrian survey of the entire activity area. A total of three dwellings and associated farm outbuildings were identified within the activity area. One of these dwellings is a bluestone structure listed on the Hume Planning Scheme Heritage Overlay as the Former Post Office [REDACTED]. This property also had an associated dry-stone wall. A discussion of these features is included in the historical report HV #4219.

Two prominent landform types were identified within the activity area, the first of which consists of two large gentle rises peaking at the north-western and south-western corners of the property and sloping down towards the centre. The remainder of the activity area comprises a generally flat topography. The two rises have been identified as areas of archaeological likelihood.

No surface cultural heritage material was identified during the standard assessment. However, this is likely to have been due to the very poor GSV encountered throughout the majority of the activity area and not likely to reflect a lack of surface (or subsurface) cultural heritage material within the activity area.

Over 180 mature native trees are located within the activity area. All of these were inspected for cultural scarring. The previously recorded scarred tree Cocking (VAHR 7822-0024) could not be relocated. A total of five scarred trees were newly identified:

- VAHR 7822-3588 (Lindum Vale 1) (Plate 3)
- VAHR 7822-3589 (Lindum Vale 2) (Plate 4)
- VAHR 7822-3590 (Lindum Vale 3) (Plate 5)
- VAHR 7822-3591 (Lindum Vale 4) (Plate 6)
- VAHR 7822-3592 (Lindum Vale 5) (Plate 7).

All scarred trees were in good health at the time of the standard survey in 2012, with a good–excellent state of scar preservation. The girths of the trees ranged from 2.45 m to 4.17 m. All scars were considered to definitely be of Aboriginal origin. Four of the five trees were identified as river red gums (*Eucalyptus camaldulensis*) while the other was an unidentified box gum. The scars ranged from 95–246 cm in length and 45–140 cm in width and were located at heights ranging from 15–48 cm from the base of the tree. All scars had overgrowth and none had evidence of associated toe holds or axe marks. See Table 4 and Appendix 4 for all recorded scarred tree attributes.

No caves, cave entrances or rock shelters are present within the activity area.

The results of the standard assessment affirm that a complex assessment is required as it was not possible during the standard assessment to accurately determine the extent of cultural heritage material within the activity area. This was mainly due to the lack of GSV encountered throughout the vast majority of the activity area (Map 7).

6.4 Significant Ground Disturbance

Previous ground disturbance has occurred within sections of the activity area, comprising the three separate dwellings and associated farm outbuildings, as well as the underground utility infrastructure associated with these dwellings and farm structures (Map 7, Plate 8). Further ground disturbance is also attributed to the excavation of the five dams within the activity area and the removal of basalt boulders (some of which have been stockpiled along with rubbish) (Plate 9).

However, throughout the majority of the activity area, no ground disturbance was noted other than previous ploughing and grazing activities.



Plate 1: Activity area facing west. Photograph showing poor GSV due to crop plantation.



Plate 2: Activity area facing north-east. Photograph showing area of high GSV around water trough.



Plate 3: Lindum Vale 1 (VAHR 7822-3588), facing north



Plate 4: Lindum Vale 2 (VAHR 7822-3589), facing north



Plate 5: Lindum Vale 3 (VAHR 7822-3590), facing north-east.



Plate 6: Lindum Vale 4 (VAHR 7822-3591), facing south-east.



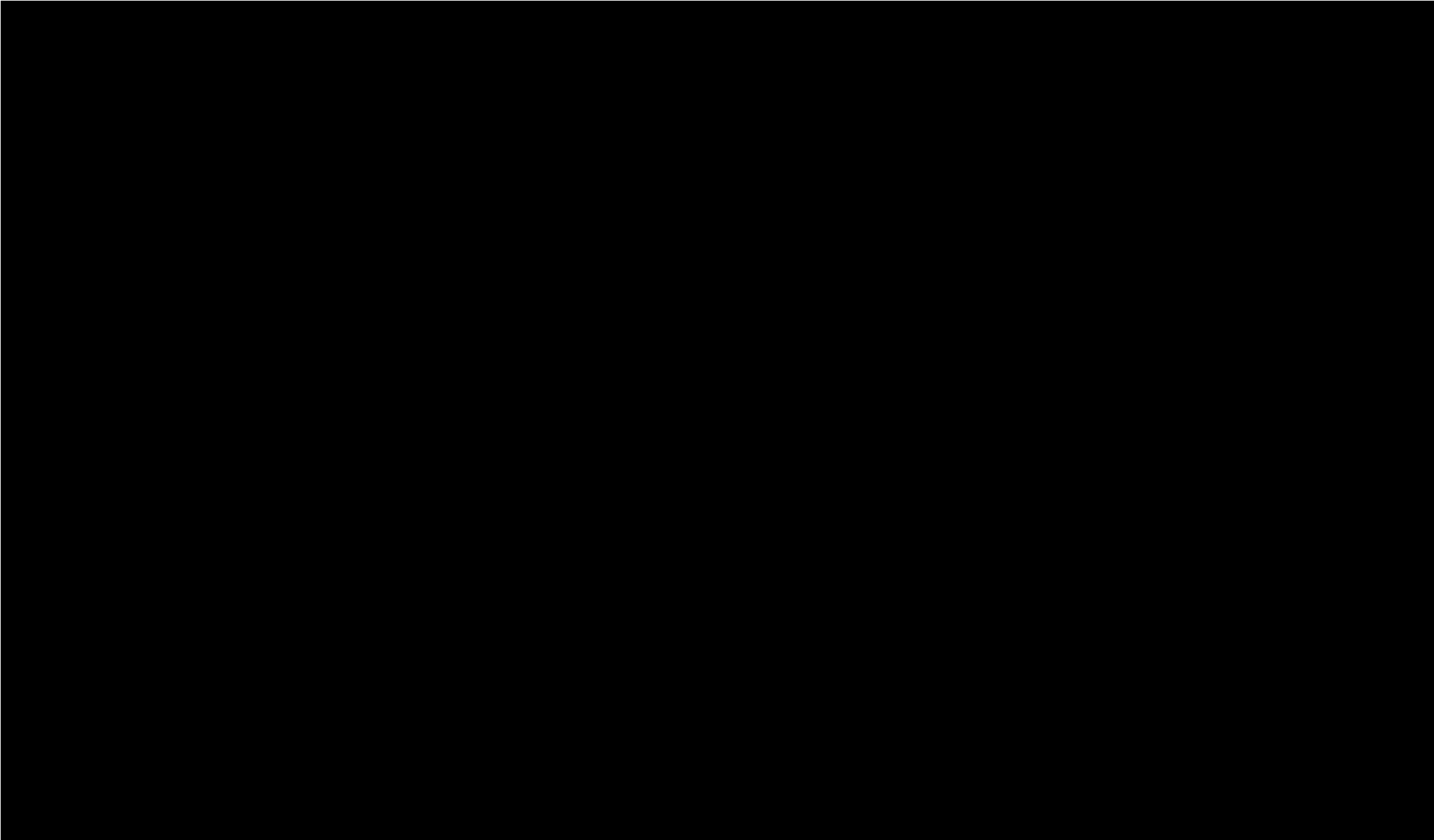
Plate 7: Lindum Vale 5 (VAHR 7822-3592), facing east.



Plate 8: Activity area facing south-east. Photograph showing one of the dwellings and heritage site: Former Post Office (HO36).



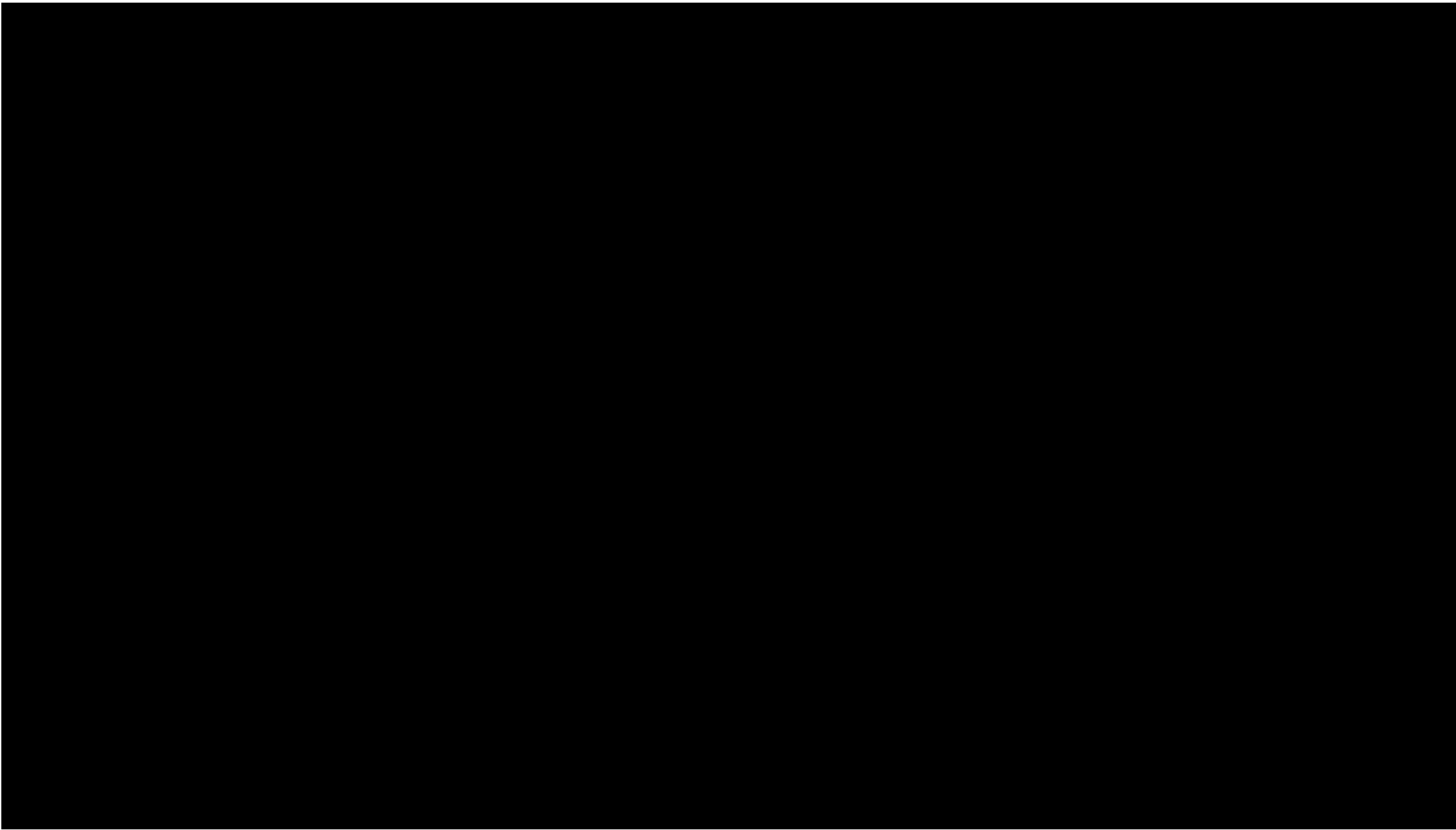
Plate 9: Activity area facing south-west. Photograph showing stockpile of basalt boulders and rubbish.



Map 7: Standard assessment (courtesy of Ecology and Heritage Partners Pty Ltd) (redacted)

Table 5: Aboriginal Places identified during standard assessment

SITE ID	SPECIES	CONDITION	SCARS	TOEHOLDS	GIRTH (cm)	SCAR L (cm)	SCAR W (cm)	SCAR H (cm)	OVERGROWTH TOP (cm)	OVERGROWTH L MID (cm)	OVERGROWTH R MID (cm)	OVERGROWTH L END (cm)	SCAR ORIENTATION	SCAR ORIGIN	SCAR PRESERVATION	AXE MARKS	EASTING (GDA 94 MGA 55)	NORTHING (GDA 94 MGA 55)
Lindum Vale 1 VAHR 7822-3588	Red Gum	Good Health	1	0	417	100	140	38	25	20	30	20	0	Definitely Cultural Origin	Good	0	████	████
Lindum Vale 2 VAHR 7822-3589	Red Gum	Good Health	1	0	380	95	45	30	30	60	60	15	0	Definitely Cultural Origin	Good	0	████	████
Lindum Vale 3 VAHR 7822-3590	Box	Good Health	1	0	245	246	84	48	0	10	7	13	45	Definitely Cultural Origin	Good	0	████	████
Lindum Vale 4 VAHR 7822-3591	Red Gum	Good Health	1	0	317	95	95	15	20	22	18	20	225	Definitely Cultural Origin	Excellent	0	████	████
Lindum Vale 5 VAHR 7822-3592	Red Gum	Good Health	1	0	374	170	30	26	33	24	17	20	45	Definitely Cultural Origin	Good	0	████	████



Map 8: Aboriginal cultural heritage places identified during standard assessment (courtesy of Ecology and Heritage Partners Pty Ltd) (redacted)

Map 9: Areas of Aboriginal cultural likelihood (courtesy of Ecology and Heritage Partners Pty Ltd) (redacted)

7 COMPLEX ASSESSMENT

A subsurface testing program was undertaken for this CHMP because the standard assessment was unable to determine whether subsurface Aboriginal cultural heritage material was present in a subsurface context.

Fieldwork was conducted in two phases. Phase 1 consisted of the excavation of five 1 m² stratigraphic test pits and 98 40 x 40 cm shovel test pits. Phase 2 consisted of twenty 5 x 1 m mechanical transects and an additional 81 40 x 40 cm shovel test pits. An additional 36 40 x 40cm shovel test pits were excavated during a return to site on 27 August 2014. A total of five 1 m² hand excavated stratigraphic test pits, twenty 5 x 1 m mechanical transects and 215 40cm x 40cm shovel test pits were excavated across an area comprising approximately 140 ha (Maps 10, 10a and 10b). All excavations were 100% sieved.

The subsurface testing was supervised by John Stevens (archaeologist). Michael Xiberras and Wade Garvey represented WTLCHCI throughout the duration of the subsurface testing program and Tony Garvey from Have A Dig Excavations provided operational assistance that extended over 14 July to 27 August 2014.

7.1 Aims of the Subsurface Testing

The aims of the Complex Assessment were to:

- To determine the archaeological sensitivity of the activity area
- To re-inspect the one previously recorded Aboriginal scar tree site Cocking (VAHR 7822-0024) and update its registry card through a Place Inspection Form as required
- To re-inspect five new Aboriginal cultural heritage scar tree sites (Lindum Vale 1 VAHR 7822-3588; Lindum Vale 2 VAHR 7822-3589; Lindum Vale 3 VAHR 7822-3590; Lindum Vale 4 VAHR 7822-3591 and Lindum Vale 5 VAHR 7822-3592)
- To determine whether there is a subsurface component to Cocking VAHR 7822-0024; Lindum Vale 1 VAHR 7822-3588; Lindum Vale 2 VAHR 7822-3589; Lindum Vale 3 VAHR 7822-3590; Lindum Vale 4 VAHR 7822-3591 and Lindum Vale 5 VAHR 7822-3592
- Re-assess every mature *E. camaldulensis* (red gum) tree for evidence of scars resultant from Aboriginal modification
- To determine the location, distribution and significance of additional cultural heritage material or places where identified

7.2 Summary of excavations undertaken

A total of five 1m² hand excavated stratigraphic test pits, twenty 5 metre x 1 metre mechanical transects and 215 40 x 40 cm shovel test pits were excavated across an area comprising approximately 140 ha.

There are two landform types within the activity area, a slightly raised north–south trending ridgeline in the western section of the activity area aligned parallel with Mickleham Road (Mickleham Road running north–south has been constructed on the top of this ridge) and a low-lying plains landform across the balance of activity area in the north, east and south (Maps 10, 10a and 10b). The subsurface testing program was undertaken in two phases. Phase 1 comprised a hand excavation testing program and Phase 2 a mechanical excavation testing program. A total of five 1m² hand-excavated stratigraphic test pits were excavated across the activity area. Three

of the stratigraphic test pits (STP 1, 2 and 4) were excavated on the more ridgeline landform in the western section of the activity area and two stratigraphic test pits (STP 3 and 5) were excavated on the low-lying landform in the east and south-east of the activity area respectively (Maps 10, 10a and 10b).

Two stratigraphic test pits (STP 1 and STP 3) were excavated within the cultural heritage sensitivity buffers of Aboriginal scar tree sites (VAHR 7822-3590 and VAHR 7822-3592 respectively). Four shovel test pits were excavated at each additional scar tree site. Excavations at Cocking (VAHR 7822-0024) were based on geographic co-ordinates as this scar tree could not be located during the surface survey. Four shovel test pits were excavated at VAHR 7822-3589 and VAHR 7822-3591, although both of these trees had been burnt down during the 2014 grass fires that swept through the area. Extent testing also occurred around the periphery of the VAHR 7822-3588 scar tree site in the south-east of the activity area; however unfortunately this tree was also lost to the 2014 grass fire (Plate 10).



Plate 10: Lindum Vale 1 (VAHR 7822-3588), destroyed by fire.

Given the size of the activity area (140 ha) and also because a large majority of the activity area (approximately 80% or 112ha) had been recently ploughed with a rotary plough by the land owner, it was decided in consultation with the RAP that a mechanical excavation and shovel test pit excavation program was a more appropriate strategy than 1 m² excavations to assist with identifying Aboriginal cultural heritage material. In light of this, once

five 1m² stratigraphic test pits had been excavated across the activity on all landform types, a mechanical and broader shovel test pit program was implemented to assist with identifying Aboriginal cultural heritage material.

A total of twenty 5 x 1 m mechanical transects were excavated across the greater activity area. Thirteen of the mechanical transects (TR 1; 2; 3; 4; 5; 6; 8; 9; 10; 11; 12; 13 and 20) were excavated across the low-lying areas and 7 mechanical transects (TR 7; 14; 15; 16; 17; 18 and 19) s were excavated in the ridgeline landform in the western section of the activity area (Maps 10, 10a and 10b). In addition to the mechanical excavations and stratigraphic test pits a total of 215 40 cm x 40 cm shovel test pits were excavated in transects across the activity area (Maps 10, 10a and 10b). The shovel test pit program aimed to test both landform types within the activity area. A total of 44 were excavated on the ridgeline landform and 171 were excavated across the low-lying landform within the activity area.

7.3 Methodology of the Manual Subsurface Testing Program (Phase 1)

A combination of five 1 m² stratigraphic test pits and 98 40 cm x 40 cm shovel test pits were undertaken across the entire activity area as part of Stage 1 excavations to determine the presence or absence of Aboriginal cultural heritage places in a subsurface context. Stratigraphic test pits 1; 2 and 4 were excavated on the ridgeline landform in the western section of the activity area while stratigraphic test pits 3 and 5 were excavated on the low-lying landform in the east and south of the activity area (Maps 10, 10a and 10b).

The proposed excavation methodology was discussed and agreed on with the WTLCHCI during the second RAP meeting undertaken on 8 July 2014 and during field operations between 14 July and 27 August 2014.

The stratigraphic composition of the test pits is detailed in Table 6 below. During the subsurface testing, site plans and maps were inspected, photographs of the activity area were taken, and detailed notes were made at differentiated spit layers. Automatic levels were taken and the test pit location was marked on plans provided and their locations recorded with a differential GPS unit. All excavated deposits were 100% sieved through 5 mm wire mesh sieves. All pits were backfilled upon completion.

Spits 1–2 were generally excavated by shovel scrapes from the surface to 100 mm to assist with removing disturbance factors within the upper profile and also to facilitate removal of the extensive root system identified in the first spit. Spits 3–4 were excavated using a combination of pickaxe and shovel scrapes due to the extremely consolidated nature of the profile in all locations within the activity area.

Excavation ceased in the stratigraphic test pit when the loam profile started to develop large ped aggregates that were difficult to remove with pick and shovel and challenging to break down through the 5 mm sieve screen or when plasticine clay was encountered. Stratigraphic test pits 1–5 were excavated to depths of 15–30 cm. There was one context to the stratigraphy in each of the stratigraphic test pits (Table 6).

Tables 6 and 7 below provide a detailed description of the manual and mechanical excavations undertaken within the activity area.

Table 6: Excavation data for all stratigraphic test pits

Stratigraphic Test Pit Number	Description of Soil Profile	Stratigraphic Photograph and Profile	Excavation Description
<p>TEST PIT 1</p> <p><u>1 artefact</u></p>	<p>Spit 1 (0–5 cm): surface comprised dry medium-brown loam mixed with surface detritus (e.g. bark, leaves and other flora). Spit 1 comprised subterranean root mat. A number of small / medium (1–5 cm) rounded basalt floaters identified. Loam undifferentiated, considerable moisture at spit 1, generally consolidated but friable upon impact, reduced as aggregates rather than plasticine. Soil particles show angular structures with high size variability indicating residual sequences, low levels of silica, some biotite, feldspar and clay particles.</p> <p>Spit 2 (5–10 cm): comprised dry medium-brown loam. Loam undifferentiated, moisture increasing and consolidated but friable upon impact, reduced as aggregates rather than plasticine in texture. No additional inclusions, some tree roots.</p> <p>Spit 3 (10–15 cm): comprised dry medium-brown loam. Larger basalt floaters (> 5 cm) apparent. Loam undifferentiated, considerable moisture and consolidated but friable upon impact, reduced as aggregates rather than plasticine. Low levels of silica, some biotite, and feldspar and clay particles. An isolated quartz flaked piece was identified in this spit. No additional inclusions, some tree roots.</p> <p>Spit 4 (15–20 cm): comprised dry medium-brown loam. Loam undifferentiated, considerable moisture becoming more plasticine. Low levels of silica, some biotite, and feldspar and clay particles. No additional inclusions, no tree roots, generally clean homogenous profile.</p> <p>DEPTH OF EXCAVATION: 23 cm</p> <p>MUNSELL: 7.5YR 3/3 dark brown</p> <p>pH LEVEL: 7</p>		<p>Spits 1–2 were excavated by shovel scrapes from the surface to 100 mm to assist with removing disturbance factors within the upper profile and also to facilitate removal of the extensive root system identified in the first spit. Spits 3–4 were excavated by conventional layer and trowel method in 5 cm spits.</p> <p>Excavation ceased in the stratigraphic test pit when the loam profile started to develop large ped aggregates that were difficult to remove with trowel and / or shovel and challenging to break down through the 5 mm sieve screen. Stratigraphic test pit 1 was excavated to a depth of 23 cm in four spits.</p> <p>There was only one context to the stratigraphy which is described in Section 7.5 below.</p> <p>There were no obvious signs of disturbance, apart from market garden activities having remixed the profile, although given the largely undifferentiated sequence this was not very noticeable. It should be noted however that market garden activities have affected the integrity of the plain profile at least to 20–30 cm in depth (i.e. the depth of a rotary plough). Naturally occurring gravel resultant from the decomposition of underlying basalt was present in the test pit in varying quantities and sizes.</p>

Stratigraphic Test Pit Number	Description of Soil Profile	Stratigraphic Photograph and Profile	Excavation Description
TEST PIT 2	<p>Spit 1 (0–5 cm): surface comprised dry medium-brown loam mixed with surface detritus (e.g. bark, leaves and other flora). Spit 1 comprised subterranean root mat. Two pieces of glass and one bottle top identified in spit 1. Loam generally undifferentiated, considerable moisture and consolidated but friable upon impact, reduced as aggregates rather than plasticine. Soil particles show angular structures with high size variability indicating residual sequences, low levels of silica, some biotite, feldspar and clay particles.</p> <p>Spit 2 (5–10 cm): comprised dry medium-brown loam. No inclusions, loam undifferentiated, moisture increasing and consolidated but friable upon impact, reduced as aggregates.</p> <p>Spit 3 (10–15 cm): comprised dry medium-brown loam. Small gravel nodules (< 2 mm) apparent, loam undifferentiated, considerable moisture and consolidated but friable upon impact, reduced as aggregates. Low levels of silica, some biotite, and feldspar and clay particles.</p> <p>Spit 4 (15–20 cm): comprised dry medium-brown loam. Gravel nodules increasing, loam undifferentiated, considerable moisture and consolidated but friable upon impact, reduced as aggregates. Low levels of silica, some biotite, and feldspar and clay particles. No inclusions.</p> <p>Spit 5 (20–25 cm): comprised dry medium-brown loam. Gravel nodules erupting from base, loam undifferentiated, considerable moisture and consolidated but friable upon impact, reduced as aggregates.</p> <p>DEPTH OF EXCAVATION: 25 cm</p> <p>MUNSELL: 7.5 YR 4/2 brown</p> <p>pH LEVEL: 6.5</p>		<p>Spits 1–2 were excavated by shovel scrapes from the surface to 100 mm to assist with removing disturbance factors within the upper profile and also to facilitate removal of the extensive root system identified in the first spit. Spits 3–4 were excavated by conventional layer and trowel method in 5 cm spits. Spit 5 was excavated with a combination shovel / pick due to the consolidated nature of the base.</p> <p>Excavation ceased in the stratigraphic test pit when the loam profile started to develop large ped and / gravel aggregates that were difficult to remove with trowel and / or shovel and challenging to break down through the 5 mm sieve screen. Stratigraphic test pit 2 was excavated to a depth of 25 cm in five spits. There was only one context to the stratigraphy which is described in Section 7.5 below.</p> <p>There were no obvious signs of disturbance, apart from market garden activities having remixed the profile, although given the largely undifferentiated sequence this was not very noticeable. It should be noted however that market garden activities have affected the integrity of the plain profile at least to 20–30 cm in depth (i.e. the depth of a rotary plough). Naturally occurring gravel resultant from the decomposition of underlying basalt was present in the test pit in varying quantities and sizes.</p>

Stratigraphic Test Pit Number	Description of Soil Profile	Stratigraphic Photograph and Profile	Excavation Description
TEST PIT 3	<p>Spit 1 (0–5 cm): surface comprised dry medium-brown loam mixed with surface detritus (e.g. bark, leaves and other flora). Spit 1 comprised subterranean root mat. Loam undifferentiated, considerable moisture and consolidated but friable upon impact, reduced as aggregates, a number of small-medium basalt floaters in upper profile. Soil particles show angular structures with high size variability indicating residual sequences, low levels of silica, some biotite, feldspar and clay particles.</p> <p>Spit 2 (5–10 cm): comprised dry medium-brown loam. Loam undifferentiated underlying basalt floaters, considerable moisture and consolidated but friable upon impact, reduced as aggregates. No additional inclusions.</p> <p>Spit 3 (10–15 cm): comprised dry medium-brown loam. Loam undifferentiated, considerable moisture and consolidated, moderate plasticity, reduced as sheets. Base becoming more plasticine, basalt extrusions from substrate. Low levels of silica, some biotite, and feldspar and clay particles.</p> <p>DEPTH OF EXCAVATION: 15 cm</p> <p>MUNSELL: 7.5YR 3/3 dark brown</p> <p>pH LEVEL: 6</p>		<p>Spits 1–2 were excavated by shovel scrapes from the surface to 100 mm to assist with removing disturbance factors within the upper profile and also to facilitate removal of the extensive root system identified in the first spit. Spit 3 was excavated by shovel and pickaxe due to the plasticine nature of the profile.</p> <p>Excavation ceased in the stratigraphic test pit when the loam profile started to develop large ped aggregates that were difficult to remove with trowel and / or shovel and challenging to break down through the 5 mm sieve screen. Stratigraphic test pit 3 was excavated to a depth of 15 cm in three spits containing a basaltic floor – refer to images. There was only one context to the stratigraphy which is described in Section 7.5 below.</p> <p>There were no obvious signs of disturbance, apart from market garden activities having remixed the profile, although given the largely undifferentiated sequence this was not very noticeable. It should be noted however that market garden activities have affected the integrity of the plain profile at least to 20–30 cm in depth (i.e. the depth of a rotary plough). Naturally occurring gravel resultant from the decomposition of underlying basalt was present in the test pit in varying quantities and sizes.</p>

Stratigraphic Test Pit Number	Description of Soil Profile	Stratigraphic Photograph and Profile	Excavation Description
TEST PIT 4	<p>Spit 1 (0–5 cm): surface comprised dry medium-brown loam mixed with surface detritus (e.g. bark, leaves and other flora). Spit 1 comprised subterranean root mat. Eight pieces of glass, six brick fragments and one bottle top were identified in spit 1. Loam generally undifferentiated, considerable moisture and consolidated but friable upon impact, reduced as aggregates rather than plasticine. Soil particles show angular structures with high size variability indicating residual sequences, low levels of silica, some biotite, feldspar and clay particles.</p> <p>Spit 2 (5–10 cm): comprised dry medium-brown loam. Six brick fragments and two pieces of roof slate were identified in spit 2. No additional inclusions were identified beneath spit 2. Spits 1 and two have slightly grey ash content possibly due to previous fires next to the old homestead. Loam undifferentiated, moisture increasing and consolidated but friable upon impact, reduced as aggregates.</p> <p>Spit 3 (10–15 cm): comprised dry medium-brown loam. Small gravel nodules (< 2 mm) apparent, loam undifferentiated, considerable moisture and consolidated but friable upon impact, reduced as aggregates. Low levels of silica, some biotite, and feldspar and clay particles.</p> <p>Spit 4 (15–20 cm): comprised dry medium-brown loam. Gravel nodules increasing, loam undifferentiated, considerable moisture and consolidated but friable upon impact, reduced as aggregates. Low levels of silica, some biotite, and feldspar and clay particles. No inclusions.</p> <p>Spit 5 (20–25cm): comprised dry medium-brown loam. Gravel nodules erupting from base, loam undifferentiated, considerable moisture and consolidated but friable upon impact, reduced as aggregates.</p> <p>Spit 6 (25–30 cm) comprised dry medium-brown loam to gravel base with large basalt floaters covering floor.</p> <p>DEPTH OF EXCAVATION: 30 cm</p> <p>MUNSELL: 7.5 YR 4/2 brown</p> <p>pH LEVEL: 6.5</p>		<p>Spits 1–2 were excavated by shovel scrapes from the surface to 100 mm to assist with removing disturbance factors within the upper profile and also to facilitate removal of the extensive root system identified in the first spit. Spits 3–4 were excavated by conventional layer and trowel method in 5 cm spits. Spits 5 and 6 were excavated by combination shovel / pick due to the consolidated nature of the profile.</p> <p>Excavation ceased in the stratigraphic test pit when the loam profile started to develop large ped and basaltic gravel nodules that were difficult to remove with trowel and / or shovel and challenging to break down through the 5 mm sieve screen. Stratigraphic test pit 4 was excavated to a depth of 30 cm in six spits. There was only one context to the stratigraphy which is described in Section 7.5 below.</p> <p>There were no obvious signs of disturbance, apart from market garden activities having remixed the profile, although given the largely undifferentiated sequence this was not very noticeable. It should be noted however that market garden activities have affected the integrity of the plain profile at least to 20–30 cm in depth (i.e. the depth of a rotary plough). Naturally occurring gravel resultant from the decomposition of underlying basalt was present in the test pit in varying quantities and sizes.</p>

Stratigraphic Test Pit Number	Description of Soil Profile	Stratigraphic Photograph and Profile	Excavation Description
TEST PIT 5	<p>Spit 1 (0–5 cm): surface comprised dry medium-brown loam mixed with surface detritus (e.g. bark, leaves and other flora). Spit 1 comprised subterranean root mat remnant of former grassland. No inclusions. Loam undifferentiated, some moisture and clay in upper profile friable rather than plasticine and reduced as aggregates. Soil particles show angular structures with high size variability indicating residual sequences, low levels of silica, some biotite, feldspar and clay particles. Small basaltic gravel nodules < 5 mm.</p> <p>Spit 2 (5–10 cm): comprised dry medium-brown loam. No inclusions. Loam undifferentiated other than gravel nodules, moisture increasing.</p> <p>Spit 3 (10–15 cm): comprised dry medium-brown loam. No inclusions. Loam undifferentiated, considerable moisture and consolidated but friable upon impact, reduced as aggregates. Low levels of silica, some biotite, and feldspar and clay particles.</p> <p>Spit 4 (15–20 cm): comprised dry medium-brown loam / clay. Consolidated base, no inclusions other than small gravel nodules. Low levels of silica, some biotite, and feldspar and clay particles. No additional inclusions, no tree roots, generally clean homogenous profile.</p> <p>DEPTH OF EXCAVATION: 19 cm</p> <p>MUNSELL: 7.5 YR 4/2 brown</p> <p>pH LEVEL: 6.5</p>		<p>Spits 1–2 were excavated by shovel scrapes from the surface to 100 mm to assist with removing disturbance factors within the upper profile and also to facilitate removal of the extensive root system identified in the first spit. Spits 3–4 were excavated by conventional layer and trowel method in 5 cm spits.</p> <p>Excavation ceased in the stratigraphic test pit when the loam profile started to develop large ped aggregates that were difficult to remove with trowel. Stratigraphic test pit 5 was excavated to a depth of 19 cm in four spits. There was only one context to the stratigraphy which is described in Section 7.5 below.</p> <p>There were no obvious signs of disturbance, apart from market garden activities having remixed the profile, although given the largely undifferentiated sequence this was not very noticeable. It should be noted however that market garden activities have affected the integrity of the plain profile at least to 20–30 cm in depth (i.e. the depth of a rotary plough). Naturally occurring gravel resultant from the decomposition of underlying basalt was present in the test pit in varying quantities and sizes.</p>

7.4 Methodology of the Mechanical Subsurface Testing Program (Phase 2)

A total of twenty 5 x 1 metre mechanical transects were excavated across all areas of the greater activity area (Maps 10, 10a and 10b). Thirteen of the mechanical transects (TR 1; 2; 3; 4; 5; 6; 8; 9; 10; 11; 12; 13 and 20) were excavated across the low-lying areas and 7 mechanical transects (TR 7; 14; 15; 16; 17; 18 and 19) were excavated in the ridgeline landform in the western section of the activity area (Map 9). Parent basaltic geology was encountered protruding or near the surface in a number of the mechanical trenches excavated in the south-west of the activity area (TR 16; 17; 18 and 19).

The entire 5 metre length of the 5 x 1 m mechanical transects was excavated in separate spits prior to the commencement of the following spit. Spit depth was approximately 10 cm. This allowed for a limited level of spatial control within each square across the length of the 5 metre long transect. At the end of each spit the archaeologist inspected the base of all transects for evidence of stratigraphic variability, charcoal occurrences, artefacts and hearth stains prior to the commencement of the next spit.

Transects were excavated until a clay basal level with a clay percentage of at least 90% was encountered or consolidated basaltic geology was encountered. A total of 100% of all sediment from the 5 x 1 m mechanical transects was sieved through a 6 mm mechanical sieve screen supplied by Have a Dig Excavations. Munsell colours and pH readings were obtained. Photographs were taken of all mechanical transects and DGPS coordinates were recorded at the start point and end point. The archaeologist was present for the entire excavation of all transects and recorded all details throughout the excavation process. Table 7 below provides details of each mechanical transect.



Have A Dig Excavations provided machinery in the form of a 2.5 ton excavator with a 1 m straight-edged mud bucket and one mechanical sieve with a 6 mm gauge (Plate 11).







Plate 11: Mechanical excavation process undertaken in the activity area



Table 6: Excavation data for all mechanical transects

Test pit ID	Description of excavation	Soil profile and stratigraphic profile photo	Photo of Excavation
TRANSECT 1	<p>The entire 5 metre length of the 5 m x 1 m mechanical transect was excavated in separate spits (10 cm approx.) prior to the commencement of the following spit. This allowed for a limited level of spatial control within each square across the length of the 5 metre long transect.</p> <p>At the end of each spit the archaeologist inspected the surface of transect 1 for evidence of stratigraphic variation, charcoal occurrences, artefacts and hearth stains prior to the commencement of the next spit.</p> <p>Transect 1 was excavated until the clay basal layer was encountered. A total of 100% of all sediment from the 5 m x 1 m mechanical transect was sieved through a 6 mm mechanical sieve screen.</p> <p>Munsell colours and pH readings were obtained. Photographs were taken of all mechanical transects and DGPS coordinates were recorded at the start point and end point. The archaeologist was present throughout the entire excavation of transect 1 and recorded all details relating to its excavation.</p> <p>DEPTH OF EXCAVATION: 25 cm</p> <p>MUNSELL: 7.5YR 4/3 brown</p> <p>pH LEVEL: 6.5</p> <p>PRIMARY CO-ORDINATE: [REDACTED]</p>	<p>Scrape 1 (0–10cm approx.): surface comprised dry medium-brown loam supporting root matter mixed with surface detritus. No inclusions other than roots and small onion seeds, loam undifferentiated, medium moisture and consolidated but friable upon impact and reduced as aggregates. Soil particles show angular structures with considerable size variation indicating residual sequences, low levels of silica, some biotite, feldspar and 30-40% clay particles.</p> <p>Scrape 2 (10–20 cm approx.): comprised some plasticine medium-brown clay loam. As per scrape 1 no inclusions loam undifferentiated, increasing moisture content but still consolidated and friable upon impact, reduced as aggregates. Soil particles show angular structures with size variation indicating residual sequences, low levels of silica, some biotite, and feldspar and 60-70% clay particles.</p> <p>Scrape 3 (20–30 cm approx.): comprised plasticine medium-brown clay. No inclusions, clay undifferentiated, increasing moisture and consolidated but highly plasticine. Soil particles show angular structures with considerable size variation indicating residual sequences, low levels of silica, some biotite, and feldspar and 90% clay particles.</p> 	



Test pit ID	Description of excavation	Soil profile and stratigraphic profile photo	Photo of Excavation
TRANSECT 2	<p>The entire 5 metre length of the 5 m x 1 m mechanical transect was excavated in separate spits (10 cm approx.) prior to the commencement of the following spit. This allowed for a limited level of spatial control within each square across the length of the 5 metre long transect.</p> <p>At the end of each spit the archaeologist inspected the surface of transect 2 for evidence of stratigraphic variation, charcoal occurrences, artefacts and hearth stains prior to the commencement of the next spit.</p> <p>Transect 2 was excavated until the clay basal layer was encountered. A total of 100% of all sediment from the 5 m x 1 m mechanical transects was sieved through a 6 mm mechanical sieve screen.</p> <p>Munsell colours and pH readings were obtained. Photographs were taken of all mechanical transects and DGPS coordinates were recorded at the start point and end point. The archaeologist was present throughout the entire excavation of transect 2 and recorded all details relating to its excavation.</p> <p>DEPTH OF EXCAVATION: 23 cm</p> <p>MUNSELL: 7.5YR 5/6 strong brown</p> <p>pH LEVEL: 7</p> <p>PRIMARY CO-ORDINATE [REDACTED]</p>	<p>Scrape 1 (0-10cm approx.) surface comprised plasticine yellow / brown clay / loam supporting root matter mixed with surface detritus. No inclusions other than roots and small onion seeds, 1 glass fragment. Clay / loam undifferentiated, heavy moisture and unable to be reduced. Soil particles show angular structures with considerable size variation indicating residual sequences, low levels of silica, some biotite, feldspar and 80% clay particles.</p> <p>Scrape 2 (10-20 cm approx.): heavy plasticine clay no inclusions clay undifferentiated, increasing moisture content and plasticine and unable to be reduced. Soil particles show angular structures with size variation indicating residual sequences, low levels of silica, some biotite, and feldspar and 100% clay particles.</p> 	



Test pit ID	Description of excavation	Soil profile and stratigraphic profile photo	Photo of Excavation
TRANSECT 3	<p>The entire 5 metre length of the 5 m x 1 m mechanical transect was excavated in separate spits (10 cm approx.) prior to the commencement of the following spit. This allowed for a limited level of spatial control within each square across the length of the 5 metre long transect.</p> <p>At the end of each spit the archaeologist inspected the surface of transect 3 for evidence of stratigraphic variation, charcoal occurrences, artefacts and hearth stains prior to the commencement of the next spit.</p> <p>Transect 3 was excavated until the clay basal layer was encountered. A total of 100% of all sediment from the 5 m x 1 m mechanical transects was sieved through a 6 mm mechanical sieve screen.</p> <p>Munsell colours and pH readings were obtained. Photographs were taken of all mechanical transects and DGPS coordinates were recorded at the start point and end point. The archaeologist was present throughout the entire excavation of transect 3 and recorded all details relating to its excavation.</p> <p>DEPTH OF EXCAVATION: 26 cm</p> <p>MUNSELL: 7.5YR 3/3 dark brown</p> <p>pH LEVEL: 7</p> <p>PRIMARY CO-ORDINATE [REDACTED]</p>	<p>Scrape 1 (0-10cm approx.) surface comprised dry medium-brown loam supporting root matter mixed with surface detritus. No inclusions other than roots, 2 water-borne cobbles and small onion seeds, loam undifferentiated, medium moisture and consolidated but friable upon impact and reduced as aggregates. Soil particles show angular structures with considerable size variation indicating residual sequences, low levels of silica, some biotite, feldspar and 30-40% clay particles.</p> <p>Scrape 2 (10-20 cm approx.): comprised some-plasticine medium-brown clay loam. No inclusions, loam undifferentiated, increasing moisture content but still consolidated and friable upon impact, reduced as aggregates. Soil particles show angular structures with size variation indicating residual sequences, low levels of silica, some biotite, and feldspar and 60-70% clay particles.</p> <p>Scrape 3 (20-30 cm approx.): comprised plasticine medium-brown clay. No inclusions, clay undifferentiated, increasing moisture and consolidated but highly plasticine. Soil particles show angular structures with considerable size variation indicating residual sequences, low levels of silica, some biotite, and feldspar and 90% clay particles.</p> 	



Test pit ID	Description of excavation	Soil profile and stratigraphic profile photo	Photo of Excavation
TRANSECT 4	<p>The entire 5 metre length of the 5 m x 1 m mechanical transect was excavated in separate spits (10 cm approx.) prior to the commencement of the following spit. This allowed for a limited level of spatial control within each square across the length of the 5 metre long transect.</p> <p>At the end of each spit the archaeologist inspected the surface of transect 4 for evidence of stratigraphic variation, charcoal occurrences, artefacts and hearth stains prior to the commencement of the next spit.</p> <p>Transect 4 was excavated until the clay basal layer was encountered. A total of 100% of all sediment from the 5 m x 1 m mechanical transects was sieved through a 6 mm mechanical sieve screen.</p> <p>Munsell colours and pH readings were obtained. Photographs were taken of all mechanical transects and DGPS coordinates were recorded at the start point and end point. The archaeologist was present throughout the entire excavation of transect 4 and recorded all details relating to its excavation.</p> <p>DEPTH OF EXCAVATION: 34 cm</p> <p>MUNSELL: 7.5YR 4/3 brown</p> <p>pH LEVEL: 6.5</p> <p>PRIMARY CO-ORDINATE [REDACTED]</p>	<p>Scrape 1 (0-10cm approx.) surface comprised plasticine yellow / brown clay / loam supporting root matter mixed with surface detritus. No inclusions other than roots and small onion seeds, 1 glass fragment. Clay / loam undifferentiated, heavy moisture and unable to be reduced. Soil particles show angular structures with considerable size variation indicating residual sequences, low levels of silica, some biotite, feldspar and 80% clay particles.</p> <p>Scrape 2 (10–20 cm approx.): heavy plasticine clay no inclusions clay undifferentiated, increasing moisture content and plasticine and unable to be reduced. Soil particles show angular structures with size variation indicating residual sequences, low levels of silica, some biotite, and feldspar and 100% clay particles.</p> <p>Scrape 3 (20–30 cm approx.): comprised plasticine medium-brown clay. No inclusions, clay undifferentiated, increasing moisture and consolidated but highly plasticine. Soil particles show angular structures with considerable size variation indicating residual sequences, low levels of silica, some biotite, and feldspar and 90% clay particles.</p> 	



Test pit ID	Description of excavation	Soil profile and stratigraphic profile photo	Photo of Excavation
TRANSECT 5	<p>The entire 5 metre length of the 5 m x 1 m mechanical transect was excavated in separate spits (10 cm approx.) prior to the commencement of the following spit. This allowed for a limited level of spatial control within each square across the length of the 5 metre long transect.</p> <p>At the end of each spit the archaeologist inspected the surface of transect 5 for evidence of stratigraphic variation, charcoal occurrences, artefacts and hearth stains prior to the commencement of the next spit.</p> <p>Transect 5 was excavated until the clay basal layer was encountered. A total of 100% of all sediment from the 5 m x 1 m mechanical transects was sieved through a 6 mm mechanical sieve screen.</p> <p>Munsell colours and pH readings were obtained. Photographs were taken of all mechanical transects and DGPS coordinates were recorded at the start point and end point. The archaeologist was present throughout the entire excavation of transect 5 and recorded all details relating to its excavation.</p> <p>DEPTH OF EXCAVATION: 22 cm MUNSELL: 7.5YR 3/3 dark brown pH LEVEL: 7 PRIMARY CO-ORDINATE [REDACTED]</p>	<p>Scrape 1 (0-10cm approx.) surface comprised dry medium-brown loam supporting root matter mixed with surface detritus. No inclusions other than 1x gypsum aggregate, roots and small onion seeds, loam undifferentiated, medium moisture and consolidated but friable upon impact and reduced as aggregates. Soil particles show angular structures with considerable size variation indicating residual sequences, low levels of silica, some biotite, feldspar and 30-40% clay particles.</p> <p>Scrape 2 (10-20 cm approx.): comprised some-plasticine medium-brown clay loam. No inclusions, loam undifferentiated, increasing moisture content but still consolidated and friable upon impact, reduced as aggregates. Soil particles show angular structures with size variation indicating residual sequences, low levels of silica, some biotite, and feldspar and 60-70% clay particles.</p> 	



Test pit ID	Description of excavation	Soil profile and stratigraphic profile photo	Photo of Excavation
TRANSECT 6	<p>The entire 5 metre length of the 5 m x 1 m mechanical transect was excavated in separate spits (10 cm approx.) prior to the commencement of the following spit. This allowed for a limited level of spatial control within each square across the length of the 5 metre long transect.</p> <p>At the end of each spit the archaeologist inspected the surface of transect 6 for evidence of stratigraphic variation, charcoal occurrences, artefacts and hearth stains prior to the commencement of the next spit.</p> <p>Transect 6 was excavated until the clay basal layer was encountered. A total of 100% of all sediment from the 5 m x 1 m mechanical transects was sieved through a 6 mm mechanical sieve screen.</p> <p>Munsell colours and pH readings were obtained. Photographs were taken of all mechanical transects and DGPS coordinates were recorded at the start point and end point. The archaeologist was present throughout the entire excavation of transect 6 and recorded all details relating to its excavation.</p> <p>DEPTH OF EXCAVATION: 24 cm MUNSELL: 7.5 YR 5/1 gray pH LEVEL: 7.5 PRIMARY CO-ORDINATE [REDACTED]</p>	<p>Scrape 1 (0–10cm approx.) surface comprised plasticine dark grey clay / loam supporting root matter mixed with surface detritus. No inclusions other than roots and small onion seeds. Clay / loam undifferentiated, heavy moisture and unable to be reduced. Soil particles show angular structures with considerable size variation indicating residual sequences, low levels of silica, some biotite, feldspar and 80% clay particles.</p> <p>Scrape 2 (10–20 cm approx.): heavy plasticine dark grey clay no inclusions clay undifferentiated, increasing moisture content and plasticine and unable to be reduced. Soil particles show angular structures with size variation indicating residual sequences, low levels of silica, some biotite, and feldspar and 100% clay particles</p> 	

Test pit ID	Description of excavation	Soil profile and stratigraphic profile photo	Photo of Excavation
TRANSECT 7	<p>The entire 5 metre length of the 5 m x 1 m mechanical transect was excavated in separate spits (10 cm approx.) prior to the commencement of the following spit. This allowed for a limited level of spatial control within each square across the length of the 5 metre long transect.</p> <p>At the end of each spit the archaeologist inspected the surface of transect 7 for evidence of stratigraphic variation, charcoal occurrences, artefacts and hearth stains prior to the commencement of the next spit.</p> <p>Transect 7 was excavated until the clay basal layer was encountered. A total of 100% of all sediment from the 5 m x 1 m mechanical transects was sieved through a 6 mm mechanical sieve screen.</p> <p>Munsell colours and pH readings were obtained. Photographs were taken of all mechanical transects and DGPS coordinates were recorded at the start point and end point. The archaeologist was present throughout the entire excavation of transect 7 and recorded all details relating to its excavation.</p> <p>DEPTH OF EXCAVATION: 23 cm MUNSELL: 7.5 YR 5/1 gray pH LEVEL: 7 PRIMARY CO-ORDINATE [REDACTED]</p>	<p>Scrape 1 (0-10cm approx.) surface comprised damp dark-brown clay / loam supporting root matter mixed with surface detritus. No inclusions other than 2 x gypsum aggregates, roots and small onion seeds, 2 glass fragments and two water-rolled pebbles. Clay / loam undifferentiated, medium moisture and consolidated but friable upon impact and reduced as aggregates. Soil particles show angular structures with considerable size variation indicating residual sequences, low levels of silica, some biotite, feldspar and 60-70% clay particles.</p> <p>Scrape 2 (10-20 cm approx.): heavy plasticine clay / loam – no inclusions clay / loam undifferentiated, increasing moisture content and plasticine and unable to be reduced. Soil particles show angular structures with size variation indicating residual sequences, low levels of silica, some biotite, and feldspar and 90% clay particles.</p> 	



Test pit ID	Description of excavation	Soil profile and stratigraphic profile photo	Photo of Excavation
TRANSECT 8	<p>The entire 5 metre length of the 5 m x 1 m mechanical transect was excavated in separate spits (10 cm approx.) prior to the commencement of the following spit. This allowed for a limited level of spatial control within each square across the length of the 5 metre long transect.</p> <p>At the end of each spit the archaeologist inspected the surface of transect 8 for evidence of stratigraphic variation, charcoal occurrences, artefacts and hearth stains prior to the commencement of the next spit.</p> <p>Transect 8 was excavated until the clay basal layer was encountered. A total of 100% of all sediment from the 5 m x 1 m mechanical transects was sieved through a 6 mm mechanical sieve screen.</p> <p>Munsell colours and pH readings were obtained. Photographs were taken of all mechanical transects and DGPS coordinates were recorded at the start point and end point. The archaeologist was present throughout the entire excavation of transect 8 and recorded all details relating to its excavation.</p> <p>DEPTH OF EXCAVATION: 22 cm</p> <p>MUNSELL: 7.5YR 3/3 dark brown</p> <p>pH LEVEL: 7</p> <p>PRIMARY CO-ORDINATE [REDACTED]</p>	<p>Scrape 1 (0–10 cm approx.) surface comprised dry medium-brown loam supporting root matter mixed with surface detritus. No inclusions other than roots and small onion seeds, loam undifferentiated, medium moisture and consolidated but friable upon impact and reduced as aggregates. Soil particles show angular structures with considerable size variation indicating residual sequences, low levels of silica, some biotite, feldspar and 30-40% clay particles.</p> <p>Scrape 2 (10–20 cm approx.): comprised some-plasticine medium-brown clay loam. As per scrape 1 no inclusions loam undifferentiated, increasing moisture content but still consolidated and friable upon impact, reduced as aggregates. Soil particles show angular structures with size variation indicating residual sequences, low levels of silica, some biotite, and feldspar and 60-70% clay particles.</p> 	

Test pit ID	Description of excavation	Soil profile and stratigraphic profile photo	Photo of Excavation
TRANSECT 9	<p>The entire 5 metre length of the 5 m x 1 m mechanical transect was excavated in separate spits (10 cm approx.) prior to the commencement of the following spit. This allowed for a limited level of spatial control within each square across the length of the 5 metre long transect.</p> <p>At the end of each spit the archaeologist inspected the surface of transect 9 for evidence of stratigraphic variation, charcoal occurrences, artefacts and hearth stains prior to the commencement of the next spit.</p> <p>Transect 9 was excavated until the clay basal layer was encountered. A total of 100% of all sediment from the 5 m x 1 m mechanical transects was sieved through a 6 mm mechanical sieve screen.</p> <p>Munsell colours and pH readings were obtained. Photographs were taken of all mechanical transects and DGPS coordinates were recorded at the start point and end point. The archaeologist was present throughout the entire excavation of transect 9 and recorded all details relating to its excavation.</p> <p>DEPTH OF EXCAVATION: 21 cm</p> <p>MUNSELL: 7.5YR 3/3 dark brown</p> <p>pH LEVEL: 7</p> <p>PRIMARY CO-ORDINATE [REDACTED]</p>	<p>Scrape 1 (0–10 cm approx.) surface comprised dry medium-brown loam supporting root matter mixed with surface detritus. No inclusions other than 1x gypsum aggregate, roots and small onion seeds, loam undifferentiated, medium moisture and consolidated but friable upon impact and reduced as aggregates. Soil particles show angular structures with considerable size variation indicating residual sequences, low levels of silica, some biotite, feldspar and 30–40% clay particles.</p> <p>Scrape 2 (10–20 cm approx.): comprised some-plasticine medium-brown clay loam. No inclusions, loam undifferentiated, increasing moisture content but still consolidated and friable upon impact, reduced as aggregates. Soil particles show angular structures with size variation indicating residual sequences, low levels of silica, some biotite, and feldspar and 60–70% clay particles.</p> 	



Test pit ID	Description of excavation	Soil profile and stratigraphic profile photo	Photo of Excavation
TRANSECT 10	<p>The entire 5 metre length of the 5 m x 1 m mechanical transect was excavated in separate spits (10 cm approx.) prior to the commencement of the following spit. This allowed for a limited level of spatial control within each square across the length of the 5 metre long transect.</p> <p>At the end of each spit the archaeologist inspected the surface of transect 10 for evidence of stratigraphic variation, charcoal occurrences, artefacts and hearth stains prior to the commencement of the next spit.</p> <p>Transect 10 was excavated until the clay basal layer was encountered. A total of 100% of all sediment from the 5 m x 1 m mechanical transects was sieved through a 6 mm mechanical sieve screen.</p> <p>Munsell colours and pH readings were obtained. Photographs were taken of all mechanical transects and DGPS coordinates were recorded at the start point and end point. The archaeologist was present throughout the entire excavation of transect 10 and recorded all details relating to its excavation.</p> <p>DEPTH OF EXCAVATION: 33 cm MUNSELL: 7.5YR 4/3 brown pH LEVEL: 6.5 PRIMARY CO-ORDINATE [REDACTED]</p>	<p>Scrape 1 (0–10 cm approx.) surface comprised dry medium-brown loam supporting root matter mixed with surface detritus. No inclusions other than 2x gypsum aggregates, roots and small onion seeds, loam undifferentiated, medium moisture and consolidated but friable upon impact and reduced as aggregates. Soil particles show angular structures with considerable size variation indicating residual sequences, low levels of silica, some biotite, feldspar and 30-40% clay particles.</p> <p>Scrape 2 (10–20 cm approx.): comprised some-plasticine medium-brown clay loam. No inclusions, loam undifferentiated, increasing moisture content but still consolidated and friable upon impact, reduced as aggregates. Soil particles show angular structures with size variation indicating residual sequences, low levels of silica, some biotite, and feldspar and 60-70% clay particles.</p> <p>Scrape 3 (20–30 cm approx.): comprised plasticine medium-brown clay. No inclusions, clay undifferentiated, increasing moisture and consolidated but highly plasticine. Soil particles show angular structures with considerable size variation indicating residual sequences, low levels of silica, some biotite, and feldspar and 90% clay particles.</p> 	



Test pit ID	Description of excavation	Soil profile and stratigraphic profile photo	Photo of Excavation
TRANSECT 11	<p>The entire 5 metre length of the 5 m x 1 m mechanical transect was excavated in separate spits (10 cm approx.) prior to the commencement of the following spit. This allowed for a limited level of spatial control within each square across the length of the 5 metre long transect.</p> <p>At the end of each spit the archaeologist inspected the surface of transect 11 for evidence of stratigraphic variation, charcoal occurrences, artefacts and hearth stains prior to the commencement of the next spit.</p> <p>Transect 11 was excavated until the clay basal layer was encountered. A total of 100% of all sediment from the 5 m x 1 m mechanical transects was sieved through a 6 mm mechanical sieve screen.</p> <p>Munsell colours and pH readings were obtained. Photographs were taken of all mechanical transects and DGPS coordinates were recorded at the start point and end point. The archaeologist was present throughout the entire excavation of transect 11 and recorded all details relating to its excavation.</p> <p>DEPTH OF EXCAVATION: 22 cm</p> <p>MUNSELL: 7.5 YR 2.5/3 very dark brown</p> <p>pH LEVEL: 7</p> <p>PRIMARY CO-ORDINATE [REDACTED]</p>	<p>Scrape 1 (0–10 cm approx.) surface comprised damp dark-brown clay / loam supporting root matter mixed with surface detritus. No inclusions other than roots and small onion seeds, 2 glass fragments and two water-rolled pebbles. Clay / loam undifferentiated, medium moisture and consolidated but friable upon impact and reduced as aggregates. Soil particles show angular structures with considerable size variation indicating residual sequences, low levels of silica, some biotite, feldspar and 60–70% clay particles.</p> <p>Scrape 2 (10–20 cm approx.): heavy plasticine clay / loam - no inclusions clay / loam undifferentiated, increasing moisture content and plasticine and unable to be reduced. Soil particles show angular structures with size variation indicating residual sequences, low levels of silica, some biotite, and feldspar and 90% clay particles.</p> 	


Test pit ID	Description of excavation	Soil profile and stratigraphic profile photo	Photo of Excavation
TRANSECT 12	<p>The entire 5 metre length of the 5 m x 1 m mechanical transect was excavated in separate spits (10 cm approx.) prior to the commencement of the following spit. This allowed for a limited level of spatial control within each square across the length of the 5 metre long transect.</p> <p>At the end of each spit the archaeologist inspected the surface of transect 12 for evidence of stratigraphic variation, charcoal occurrences, artefacts and hearth stains prior to the commencement of the next spit.</p> <p>Transect 12 was excavated until the clay basal layer was encountered. A total of 100% of all sediment from the 5 m x 1 m mechanical transects was sieved through a 6 mm mechanical sieve screen.</p> <p>Munsell colours and pH readings were obtained. Photographs were taken of all mechanical transects and DGPS coordinates were recorded at the start point and end point. The archaeologist was present throughout the entire excavation of transect 12 and recorded all details relating to its excavation.</p> <p>DEPTH OF EXCAVATION: 21 cm MUNSELL: 10YR 3/1 very dark grey pH LEVEL: 8 PRIMARY CO-ORDINATE [REDACTED]</p>	<p>Scrape 1 (0–10cm approx.) surface comprised plasticine dark grey clay / loam supporting root matter mixed with surface detritus. No inclusions other than roots and small onion seeds. Clay / loam undifferentiated, heavy moisture and unable to be reduced. Soil particles show angular structures with considerable size variation indicating residual sequences, low levels of silica, some biotite, feldspar and 80% clay particles.</p> <p>Scrape 2 (10–20 cm approx.): heavy plasticine dark grey clay, no inclusions, clay undifferentiated, increasing moisture content and plasticine and unable to be reduced. Soil particles show angular structures with size variation indicating residual sequences, low levels of silica, some biotite, and feldspar and 100% clay particles</p> 	



Test pit ID	Description of excavation	Soil profile and stratigraphic profile photo	Photo of Excavation
TRANSECT 13	<p>The entire 5 metre length of the 5 m x 1 m mechanical transect was excavated in separate spits (10 cm approx.) prior to the commencement of the following spit. This allowed for a limited level of spatial control within each square across the length of the 5 metre long transect.</p> <p>At the end of each spit the archaeologist inspected the surface of transect 13 for evidence of stratigraphic variation, charcoal occurrences, artefacts and hearth stains prior to the commencement of the next spit.</p> <p>Transect 13 was excavated until the clay basal layer was encountered. A total of 100% of all sediment from the 5 m x 1 m mechanical transects was sieved through a 6 mm mechanical sieve screen.</p> <p>Munsell colours and pH readings were obtained. Photographs were taken of all mechanical transects and DGPS coordinates were recorded at the start point and end point. The archaeologist was present throughout the entire excavation of transect 13 and recorded all details relating to its excavation.</p> <p>DEPTH OF EXCAVATION: 21 cm MUNSELL: 10YR 3/1 very dark grey pH LEVEL: 6.5 PRIMARY CO-ORDINATE [REDACTED]</p>	<p>Scrape 1 (0–10cm approx.) surface comprised plasticine dark grey clay / loam supporting root matter mixed with surface detritus. No inclusions other than roots and small onion seeds. Clay / loam undifferentiated, heavy moisture and unable to be reduced. Soil particles show angular structures with considerable size variation indicating residual sequences, low levels of silica, some biotite, feldspar and 80% clay particles.</p> <p>Scrape 2 (10–20 cm approx.): heavy plasticine dark grey clay, no inclusions, clay undifferentiated, increasing moisture content and plasticine and unable to be reduced. Soil particles show angular structures with size variation indicating residual sequences, low levels of silica, some biotite, and feldspar and 100% clay particles.</p> 	


Test pit ID	Description of excavation	Soil profile and stratigraphic profile photo	Photo of Excavation
TRANSECT 14	<p>The entire 5 metre length of the 5 m x 1 m mechanical transect was excavated in separate spits (10 cm approx.) prior to the commencement of the following spit. This allowed for a limited level of spatial control within each square across the length of the 5 metre long transect.</p> <p>At the end of each spit the archaeologist inspected the surface of transect 14 for evidence of stratigraphic variation, charcoal occurrences, artefacts and hearth stains prior to the commencement of the next spit.</p> <p>Transect 14 was excavated until the clay basal layer was encountered. A total of 100% of all sediment from the 5 m x 1 m mechanical transects was sieved through a 6 mm mechanical sieve screen.</p> <p>Munsell colours and pH readings were obtained. Photographs were taken of all mechanical transects and DGPS coordinates were recorded at the start point and end point. The archaeologist was present throughout the entire excavation of transect 14 and recorded all details relating to its excavation.</p> <p>DEPTH OF EXCAVATION: 22 cm MUNSELL: 10YR 3/1 very dark grey pH LEVEL: 7 PRIMARY CO-ORDINATE [REDACTED]</p>	<p>Scrape 1 (0–10 cm approx.) surface comprised plasticine dark grey clay / loam supporting root matter mixed with surface detritus. No inclusions other than roots and small onion seeds. Clay / loam undifferentiated, heavy moisture and unable to be reduced. A large number of brick fragments were identified in Transect 14 due to its close proximity to the bluestone homestead (refer to image below). The same results were evident during the excavation of stratigraphic test pit 4. Soil particles show angular structures with considerable size variation indicating residual sequences, low levels of silica, some biotite, feldspar and 80% clay particles.</p> <p>Scrape 2 (10–20 cm approx.): heavy plasticine dark grey clay, inclusions as per scrape 1, clay undifferentiated, increasing moisture content and plasticine and unable to be reduced. Soil particles show angular structures with size variation indicating residual sequences, low levels of silica, some biotite, and feldspar and 100% clay particles</p> 	

Test pit ID	Description of excavation	Soil profile and stratigraphic profile photo	Photo of Excavation
TRANSECT 15	<p>The entire 5 metre length of the 5 m x 1 m mechanical transect was excavated in separate spits (10 cm approx.) prior to the commencement of the following spit. This allowed for a limited level of spatial control within each square across the length of the 5 metre long transect.</p> <p>At the end of each spit the archaeologist inspected the surface of transect 15 for evidence of stratigraphic variation, charcoal occurrences, artefacts and hearth stains prior to the commencement of the next spit.</p> <p>Transect 15 was excavated until the clay basal layer was encountered. A total of 100% of all sediment from the 5 m x 1 m mechanical transects was sieved through a 6 mm mechanical sieve screen.</p> <p>Munsell colours and pH readings were obtained. Photographs were taken of all mechanical transects and DGPS coordinates were recorded at the start point and end point. The archaeologist was present throughout the entire excavation of transect 15 and recorded all details relating to its excavation.</p> <p>DEPTH OF EXCAVATION: 17 cm MUNSELL: 10YR 3/1 very dark gray pH LEVEL: 7 PRIMARY CO-ORDINATE [REDACTED]</p>	<p>Scrape 1 (0–10 cm approx.) surface comprised plasticine dark grey clay / loam supporting root matter mixed with surface detritus. No inclusions other than roots and small onion seeds. Clay / loam undifferentiated, heavy moisture and unable to be reduced. Soil particles show angular structures with considerable size variation indicating residual sequences, low levels of silica, some biotite, feldspar and 80% clay particles.</p> <p>Scrape 2 (10–20 cm approx.): heavy plasticine dark grey clay no inclusions clay undifferentiated, increasing moisture content and plasticine and unable to be reduced. Soil particles show angular structures with size variation indicating residual sequences, low levels of silica, some biotite, and feldspar and 100% clay particles</p> 	

Test pit ID	Description of excavation	Soil profile and stratigraphic profile photo	Photo of Excavation
<p>TRANSECT 16</p> <p><u>24 artefacts</u></p>	<p>The entire 5 metre length of the 5 m x 1 m mechanical transect was excavated in separate spits (10 cm approx.) prior to the commencement of the following spit. This allowed for a limited level of spatial control within each square across the length of the 5 metre long transect.</p> <p>At the end of each spit the archaeologist inspected the surface of transect 16 for evidence of stratigraphic variation, charcoal occurrences, artefacts and hearth stains prior to the commencement of the next spit.</p> <p>Transect 16 was excavated until the clay basal layer was encountered. A total of 100% of all sediment from the 5 m x 1 m mechanical transects was sieved through a 6 mm mechanical sieve screen.</p> <p>Munsell colours and pH readings were obtained. Photographs were taken of all mechanical transects and DGPS coordinates were recorded at the start point and end point. The archaeologist was present throughout the entire excavation of transect 16 and recorded all details relating to its excavation.</p> <p>A total of 24 artefacts were identified in Transect 16 which have been incorporated into the Tamboore 25 site extent.</p> <p>DEPTH OF EXCAVATION: 31 cm</p> <p>MUNSELL: 10YR 5/6 yellowish brown</p> <p>pH LEVEL: 7.5</p> <p>PRIMARY CO-ORDINATE [REDACTED]</p>	<p>Scrape 1 (0–10cm approx.) surface comprised dry medium-brown loam supporting root matter mixed with surface detritus. No inclusions other than 2x gypsum aggregates, roots and small onion seeds, loam undifferentiated, medium moisture and consolidated but friable upon impact and reduced as aggregates. Soil particles show angular structures with considerable size variation indicating residual sequences, low levels of silica, some biotite, feldspar and 30–40% clay particles. A total of 13 artefacts were identified from scrape 1.</p> <p>Scrape 2 (10–20 cm approx.): comprised some-plasticine medium-brown clay loam. As per scrape 1 no inclusions loam undifferentiated, increasing moisture content but still consolidated and friable upon impact, reduced as aggregates. Soil particles show angular structures with size variation indicating residual sequences, low levels of silica, some biotite, and feldspar and 60–70% clay particles. A total of 8 artefacts were identified from scrape 2.</p> <p>Scrape 3 (20–30 cm approx.): comprised plasticine medium-brown clay. No inclusions, clay undifferentiated, increasing moisture and consolidated but highly plasticine. Soil particles show angular structures with considerable size variation indicating residual sequences, low levels of silica, some biotite, and feldspar and 90% clay particles. A total of 3 artefacts were identified from scrape 3.</p> 	

Test pit ID	Description of excavation	Soil profile and stratigraphic profile photo	Photo of Excavation
<p>TRANSECT 17</p> <p><u>34 artefacts</u></p>	<p>The entire 5 metre length of the 5 m x 1 m mechanical transect was excavated in separate spits (10 cm approx.) prior to the commencement of the following spit. This allowed for a limited level of spatial control within each square across the length of the 5 metre long transect.</p> <p>At the end of each spit the archaeologist inspected the surface of transect 17 for evidence of stratigraphic variation, charcoal occurrences, artefacts and hearth stains prior to the commencement of the next spit.</p> <p>Transect 17 was excavated until the clay basal layer was encountered. A total of 100% of all sediment from the 5 m x 1 m mechanical transects was sieved through a 6 mm mechanical sieve screen.</p> <p>Munsell colours and pH readings were obtained. Photographs were taken of all mechanical transects and DGPS coordinates were recorded at the start point and end point. The archaeologist was present throughout the entire excavation of transect 17 and recorded all details relating to its excavation.</p> <p>A total of 34 artefacts were identified in Transect 16 which have been incorporated into the Tamboore 25 site extent.</p> <p>DEPTH OF EXCAVATION: 32 cm</p> <p>MUNSELL: 10YR 5/6 yellowish brown</p> <p>pH LEVEL: 6.5</p> <p>PRIMARY CO-ORDINATE [REDACTED]</p>	<p>Scrape 1 (0-10cm approx.) surface comprised dry medium yellow brown loam supporting root matter mixed with surface detritus. No inclusions other than roots and small onion seeds, loam undifferentiated, medium moisture and consolidated but friable upon impact and reduced as aggregates. Soil particles show angular structures with considerable size variation indicating residual sequences, low levels of silica, some biotite, feldspar and 30-40% clay particles. A total of 11 artefacts were identified from scrape 1.</p> <p>Scrape 2 (10–20 cm approx.): comprised some-plasticine medium-brown clay loam. As per scrape 1 loam undifferentiated, increasing moisture content but still consolidated and friable upon impact, reduced as aggregates. Soil particles show angular structures with size variation indicating residual sequences, low levels of silica, some biotite, and feldspar and 60-70% clay particles. A total of 13 artefacts were identified from scrape 2.</p> <p>Scrape 3 (20–30 cm approx.): comprised plasticine medium-brown clay. No inclusions, clay undifferentiated, increasing moisture and consolidated but highly plasticine. Soil particles show angular structures with considerable size variation indicating residual sequences, low levels of silica, some biotite, and feldspar and 90% clay particles. A total of 10 artefacts were identified from scrape 3 onto basal bedrock.</p> 	

Test pit ID	Description of excavation	Soil profile and stratigraphic profile photo	Photo of Excavation
TRANSECT 18	<p>The entire 5 metre length of the 5 m x 1 m mechanical transect was excavated in separate spits (10 cm approx.) prior to the commencement of the following spit. This allowed for a limited level of spatial control within each square across the length of the 5 metre long transect.</p> <p>At the end of each spit the archaeologist inspected the surface of transect 18 for evidence of stratigraphic variation, charcoal occurrences, artefacts and hearth stains prior to the commencement of the next spit.</p> <p>Transect 18 was excavated until the clay basal layer was encountered. A total of 100% of all sediment from the 5 m x 1 m mechanical transects was sieved through a 6 mm mechanical sieve screen.</p> <p>Munsell colours and pH readings were obtained. Photographs were taken of all mechanical transects and DGPS coordinates were recorded at the start point and end point. The archaeologist was present throughout the entire excavation of transect 18 and recorded all details relating to its excavation.</p> <p>DEPTH OF EXCAVATION: 21 cm MUNSELL: 10YR 5/6 yellowish brown pH LEVEL: 6.5 PRIMARY CO-ORDINATE [REDACTED]</p>	<p>Scrape 1 (0–10 cm approx.) surface comprised dry medium-brown loam supporting root matter mixed with surface detritus. No inclusions other than roots and small onion seeds, loam undifferentiated, medium moisture and consolidated but friable upon impact and reduced as aggregates. Soil particles show angular structures with considerable size variation indicating residual sequences, low levels of silica, some biotite, feldspar and 30-40% clay particles.</p> <p>Scrape 2 (10–20 cm approx.): comprised some-plasticine medium-brown clay loam. No inclusions, loam undifferentiated, increasing moisture content but still consolidated and friable upon impact, reduced as aggregates. Soil particles show angular structures with size variation indicating residual sequences, low levels of silica, some biotite, and feldspar and 60-70% clay particles.</p> <p>Scrape 3 (20–30 cm approx.): comprised plasticine medium-brown clay. No inclusions, clay undifferentiated, increasing moisture and consolidated but highly plasticine. Soil particles show angular structures with considerable size variation indicating residual sequences, low levels of silica, some biotite, and feldspar and 90% clay particles.</p> 	

Test pit ID	Description of excavation	Soil profile and stratigraphic profile photo	Photo of Excavation
<p>TRANSECT 19</p> <p><u>2 artefacts</u></p>	<p>The entire 5 metre length of the 5 m x 1 m mechanical transect was excavated in separate spits (10 cm approx.) prior to the commencement of the following spit. This allowed for a limited level of spatial control within each square across the length of the 5 metre long transect.</p> <p>At the end of each spit the archaeologist inspected the surface of transect 19 for evidence of stratigraphic variation, charcoal occurrences, artefacts and hearth stains prior to the commencement of the next spit.</p> <p>Transect 19 was excavated until the clay basal layer was encountered. A total of 100% of all sediment from the 5 m x 1 m mechanical transects was sieved through a 6 mm mechanical sieve screen.</p> <p>Munsell colours and pH readings were obtained. Photographs were taken of all mechanical transects and DGPS coordinates were recorded at the start point and end point. The archaeologist was present throughout the entire excavation of transect 19 and recorded all details relating to its excavation.</p> <p>A total of 2 artefacts were identified in Transect 19 which have been incorporated into the Tamboore 25 site extent.</p> <p>DEPTH OF EXCAVATION: 41 cm</p> <p>MUNSELL: 7.5YR 3/3 dark brown</p> <p>pH LEVEL: 7</p> <p>PRIMARY CO-ORDINATE [REDACTED]</p>	<p>Scrape 1 (0-10cm approx.) surface comprised dry medium-brown loam supporting root matter mixed with surface detritus. No inclusions other than roots and small onion seeds, loam undifferentiated, medium moisture and consolidated but friable upon impact and reduced as aggregates. Soil particles show angular structures with considerable size variation indicating residual sequences, low levels of silica, some biotite, feldspar and 30-40% clay particles.</p> <p>Scrape 2 (10-20 cm approx.): comprised some-plasticine medium-brown clay loam. Loam undifferentiated, increasing moisture content but still consolidated and friable upon impact, reduced as aggregates. Soil particles show angular structures with size variation indicating residual sequences, low levels of silica, some biotite, and feldspar and 60-70% clay particles. A total of 2 artefacts were identified from scrape 2.</p> <p>Scrape 3 (20-30 cm approx.): comprised plasticine medium-brown clay. No inclusions, clay undifferentiated, increasing moisture and consolidated but highly plasticine. Soil particles show angular structures with considerable size variation indicating residual sequences, low levels of silica, some biotite, and feldspar and 90% clay particles.</p> 	

Test pit ID	Description of excavation	Soil profile and stratigraphic profile photo	Photo of Excavation
TRANSECT 20	<p>The entire 5 metre length of the 5 m x 1 m mechanical transect was excavated in separate spits (10 cm approx.) prior to the commencement of the following spit. This allowed for a limited level of spatial control within each square across the length of the 5 metre long transect.</p> <p>At the end of each spit the archaeologist inspected the surface of transect 20 for evidence of stratigraphic variation, charcoal occurrences, artefacts and hearth stains prior to the commencement of the next spit.</p> <p>Transect 20 was excavated until the clay basal layer was encountered. A total of 100% of all sediment from the 5 m x 1 m mechanical transects was sieved through a 6 mm mechanical sieve screen.</p> <p>Munsell colours and pH readings were obtained. Photographs were taken of all mechanical transects and DGPS coordinates were recorded at the start point and end point. The archaeologist was present throughout the entire excavation of transect 20 and recorded all details relating to its excavation.</p> <p>DEPTH OF EXCAVATION: 22 cm MUNSELL: 7.5 YR 2.5/3 very dark brown pH LEVEL: 7.5 PRIMARY CO-ORDINATE [REDACTED]</p>	<p>Scrape 1 (0–10 cm approx.) surface comprised plasticine dark grey clay / loam supporting root matter mixed with surface detritus. No inclusions other than roots and small onion seeds. Clay / loam undifferentiated, heavy moisture and unable to be reduced. Soil particles show angular structures with considerable size variation indicating residual sequences, low levels of silica, some biotite, feldspar and 80% clay particles.</p> <p>Scrape 2 (10–20 cm approx.): heavy plasticine dark grey clay no inclusions clay undifferentiated, increasing moisture content and plasticine and unable to be reduced. Soil particles show angular structures with size variation indicating residual sequences, low levels of silica, some biotite, and feldspar and 100% clay particles</p> 	

7.5 Stratigraphy

7.5.1 Stratigraphy of Test Pits 1–5

The stratigraphy of stratigraphic test pits 1; 2 and 4 was practically identical across the ridgeline landform in the west of the activity area and reflects loam / clay mantling residual basalt decomposition deeper in the substrate. Stratigraphic test pits 3 and 5 were excavated on a flat, featureless clay pan that has been subject to intensive agricultural activities over more than 100 years. Consequently, the profile was generally compact across the first two spits and more plasticine and darker from spit 3 to spit 6. The variation in the stratigraphy between the two landforms is attributed to greater surface water run-off on the ridgeline landform, which eventually works its way into profile throughout the lower lying areas and permeates deeper into the substrate. At variable depths beneath the plasticine clays basaltic geology (unnamed sheet flow basalts Qno1) occurs and is widespread across the greater Geographic region (Map 5). Parent geology was encountered protruding from or near surface in a number of the mechanical trenches excavated in the south-west of the activity area (TR 16; 17; 18 and 19). The highly variable texture and size sorting of the extant clays supports a decomposition process between joints within the residual basalts and this seems in line with geological mapping undertaken at Desktop level.

Table 6 provides a detailed account of the stratigraphy of all spits excavated in all stratigraphic test pits.

7.6 Results of Test Pits

Test pit 1

Test pit 1 comprised a generally clean profile of upper agricultural deposits (clay / loam) mantling residual clay deposits and included one isolated quartz flaked piece was identified in spit 3 of this test pit. Additional excavations in the form of a 5 m x 1 m mechanical transect (the equivalent of 5 x 1m² test pits) 10 metres south of test pit 1 as well as one 40 x 40 cm shovel test pit 2 metres north and two shovel test pits 15 metres south-east and south-west of test pit 1 failed to identify additional cultural heritage material (Map 10a). Given the amount of surrounding excavations it is assumed that the artefact is an isolated occurrence. Test Pit 1 was excavated in 4 spits to a depth of 20 cm.

Test pit 2

Test pit 2 comprised a generally clean profile of upper agricultural deposits (clay / loam) mantling residual clay deposits. One metal beer bottle top and two glass fragments were identified in Spit 1. Test Pit 2 was excavated to a depth of 25 cm in 5 spits to a hardened clay base. No Aboriginal cultural heritage material was identified in test pit 2 (Map 10b).

Test pit 3

Test pit 3 comprised a generally clean profile of upper agricultural deposits (clay / loam) mantling residual clay deposits with subsurface basalt extrusions from the base. Test pit 3 contained far higher moisture content than test pits 1 and 2 as it was excavated on low-lying land in the far east of the activity area (Map 10a). Test pit 3 was excavated to a depth of 15cm in 3 spits. No Aboriginal cultural heritage material was identified in test pit 3.

Test pit 4

Test pit 4 comprised a heavily disturbed upper profile (spits 1 and 2) comprising 8 glass fragments, 6 brick fragments and 1 bottle cap in spit 1 and 6 brick fragments and 2 roof slate pieces in spit 2. Disturbance factors are related to the presence of the bluestone homestead located approximately 50 metres to the south of test pit 4 (Map 10b). Spit 3 comprised clay / loam mantling residual clay deposits with no inclusions other residual degrading basalt. Excavations concluded at the base of spit 4 when a compact basaltic base was encountered.

Test pit 4 was excavated to a depth of 30 cm in 6 spits. No Aboriginal cultural heritage material was identified in test pit 4.

Test pit 5

Test pit 5 comprised a generally clean profile of upper agricultural deposits (clay / loam) mantling residual clay deposits with subsurface basalt extrusions from the base. Test pit 5 contained far higher moisture content than test pits 1, 2 and 4 as it was excavated on low-lying land in the far east of the activity area (Map 7). The stratigraphic detail of test pit 5 mirrored test pit 3, which was excavated on the same landform type. Test pit 5 was excavated to a depth of 19 cm in 4 spits. No Aboriginal cultural heritage material was identified in test pit 5.

7.7 Shovel Test Pit Results

A total of 215 40 cm x 40 cm shovel test pits were excavated in a number of transects throughout the activity area (Map 10). The random and widespread linear transect approach to the shovel test pit program was designed to provide even coverage across the activity area in areas that remained untested following the stratigraphic and mechanical transect excavation program, as well to support the notion that the entire activity area comprises heavy clay soil profiles (Tables 6–7; Section 7.5).

At least four shovel test pits were excavated at cardinal points around each of the six scar tree sites regardless of whether the trees were live or had been burnt down. A total of three of the six scar trees were destroyed during the 2014 grass fires that swept through Mickleham in February and March of that year. Two scar tree sites (Lindum Vale 3 VAHR 7822-3590 and Lindum Vale 5 VAHR 7822-3592) are healthy and alive and one scar tree site recorded in 1975 (Cocking 7822-0024) could not be identified (refer to Section 8 for a discussion of all Aboriginal cultural heritage places identified during this CHMP). It is likely that this scar tree site has also burnt down in a fire. Four shovel test pits were excavated at this scar tree site (VAHR 7822-0024), although excavation at this location was necessarily based on geographic co-ordinates. Four shovel test pits were excavated at Lindum Vale 2 (VAHR 7822-3589) and Lindum Vale 4 (VAHR 7822-3591), although both of these trees were burnt down during the 2014 grass fires. No Aboriginal cultural heritage material was identified in any of the four shovel test pits excavated at each of these three scar tree sites. Extent testing comprising four shovel test pits also occurred around the periphery of the Lindum Vale 1 (VAHR 7822-3588) scar tree site in the south-east of the activity area, which was also burnt down during the 2014 fires. No Aboriginal cultural heritage material was identified at this location. Four shovel test pits were excavated at cardinal points around Lindum Vale 3 (VAHR 7822-3590) in the central section of the activity area; however, no Aboriginal cultural heritage material was identified, although one quartz flaked piece was identified in stratigraphic test pit 1 approximately 15 metres south-west of VAHR 7822-3590 (Maps 10, 10a and 10b).

The shovel test pit program expanded on the findings of the stratigraphic test pit program, which established that consolidated clay profiles prevail within the archaeologically sensitive landform in the south-west of the activity area and more plasticine, basalt-rich substrates that have been heavily tilled are consistent across the balance of the activity north and east of the archaeologically sensitive zone (Map 10)

No Aboriginal cultural heritage material was identified from any of the 215 shovel test pits excavated within the activity area. Very few inclusions were identified across the landform and the profile remained largely undifferentiated regardless of the excavation location, with the exception of less subsurface moisture in the archaeologically sensitive zone (Maps 10, 10a and 10b).

All shovel test pits displayed some level of disturbance in the upper 20 cm, likely resultant from market garden activities. Shovel test pit depth ranged from 15 to 45 cm and all shovel test pit locations were photographed, measured and spatially recorded with a Trimble DGPS.



Plate 12: Shovel test pit 20



Plate 13: Shovel test pit 69



Plate 14: Shovel test pit 109



Plate 15: Shovel test pit 141

7.8 Mechanical Transect Results

A total of 60 artefacts were identified in three of the twenty 5 m x 1 m mechanical transects. A total of 24 artefacts were identified in Transect 16, a total of 34 artefacts were identified in Transect 17 and two artefacts were identified in Transect 19 (Map 10, Table 7, Appendix 4).

Transect 1

Transect 1 comprises a 5 m long x 1 m wide mechanically excavated transect (Map 1a). The stratigraphic detail, general excavation data and disturbance factors for Transect 1 have been described in Table 7. Transect 1 was excavated on a low-lying landform in the far north of the activity area. No Aboriginal cultural heritage material was excavated in transect 1.

Transect 2

Transect 2 comprises a 5 m long x 1 m wide mechanically excavated transect (Map 1a). The stratigraphic detail, general excavation data and disturbance factors for Transect 2 have been described in Table 7. Transect 2 was excavated on a low-lying landform in the far north of the activity area. No Aboriginal cultural heritage material was excavated in transect 2.

Transect 3

Transect 3 comprises a 5 m long x 1 m wide mechanically excavated transect (Map 1a). The stratigraphic detail, general excavation data and disturbance factors for Transect 3 have been described in Table 7. Transect 3 was excavated on a low-lying landform in the far north of the activity area. No Aboriginal cultural heritage material was excavated in transect 3.

Transect 4

Transect 4 comprises a 5 m long x 1 m wide mechanically excavated transect (Map 1a). The stratigraphic detail, general excavation data and disturbance factors for Transect 4 have been described in Table 7. Transect 4 was excavated on a low-lying landform in the far north of the activity area. No Aboriginal cultural heritage material was excavated in transect 4.

Transect 5

Transect 5 comprises a 5 m long x 1 m wide mechanically excavated transect (Map 1a). The stratigraphic detail, general excavation data and disturbance factors for Transect 5 have been described in Table 7. Transect 5 was excavated on a low-lying landform in the central section of the activity area. No Aboriginal cultural heritage material was excavated in transect 5.

Transect 6

Transect 6 comprises a 5 m long x 1 m wide mechanically excavated transect (Map 1a). The stratigraphic detail, general excavation data and disturbance factors for Transect 6 have been described in Table 7. Transect 6 was excavated on a low-lying landform in the central section of the activity area. No Aboriginal cultural heritage material was excavated in transect 6.

Transect 7

Transect 7 comprises a 5 m long x 1 m wide mechanically excavated transect (Map 1a). The stratigraphic detail, general excavation data and disturbance factors for Transect 7 have been described in Table 7. Transect 7 was

excavated on a low-lying landform in the central section of the activity area. No Aboriginal cultural heritage material was excavated in transect 7.

Transect 8

Transect 8 comprises a 5 m long x 1 m wide mechanically excavated transect (Map 1a). The stratigraphic detail, general excavation data and disturbance factors for Transect 8 have been described in Table 7. Transect 8 was excavated on a low-lying landform in the central section of the activity area. No Aboriginal cultural heritage material was excavated in transect 8.

Transect 9

Transect 9 comprises a 5 m long x 1 m wide mechanically excavated transect (Map 1b). The stratigraphic detail, general excavation data and disturbance factors for Transect 9 have been described in Table 7. Transect 9 was excavated on a low-lying landform in the eastern section of the activity area. No Aboriginal cultural heritage material was excavated in transect 9.

Transect 10

Transect 10 comprises a 5 m long x 1 m wide mechanically excavated transect (Map 1a). The stratigraphic detail, general excavation data and disturbance factors for Transect 10 have been described in Table 7. Transect 10 was excavated on the defined archaeologically sensitive landform in the western section of the activity area approximately 10 metres south of stratigraphic test pit 1 where an isolated quartz flaked piece was identified. No Aboriginal cultural heritage material was excavated in transect 10.

Transect 11

Transect 11 comprises a 5 m long x 1 m wide mechanically excavated transect (Map 1b). The stratigraphic detail, general excavation data and disturbance factors for Transect 11 have been described in Table 7. Transect 11 was excavated on a low-lying landform in the southern section of the activity area. No Aboriginal cultural heritage material was excavated in transect 11.

Transect 12

Transect 12 comprises a 5 m long x 1 m wide mechanically excavated transect (Map 1b). The stratigraphic detail, general excavation data and disturbance factors for Transect 12 have been described in Table 7. Transect 12 was excavated on a low-lying landform in the south-eastern corner of the activity area. No Aboriginal cultural heritage material was excavated in transect 12.

Transect 13

Transect 13 comprises a 5 m long x 1 m wide mechanically excavated transect (Map 1b). The stratigraphic detail, general excavation data and disturbance factors for Transect 13 have been described in Table 7. Transect 13 was excavated on a low-lying landform in southern section of the activity area. No Aboriginal cultural heritage material was excavated in transect 13.

Transect 14

Transect 14 comprises a 5 m long x 1 m wide mechanically excavated transect (Map 1b). The stratigraphic detail, general excavation data and disturbance factors for Transect 14 have been described in Table 7. Transect 14 was excavated within the defined archaeologically sensitive landform in the western section of the activity area. No Aboriginal cultural heritage material was excavated in transect 14.

Transect 15

Transect 15 comprises a 5 m long x 1 m wide mechanically excavated transect (Map 1b). The stratigraphic detail, general excavation data and disturbance factors for Transect 15 have been described in Table 7. Transect 15 was excavated on a slightly raised landform in the western section of the activity area. No Aboriginal cultural heritage material was excavated in transect 15.

Transect 16

Transect 16 comprises a 5 m long x 1 m wide mechanically excavated transect (Map 1b). The stratigraphic detail, general excavation data and disturbance factors for Transect 16 have been described in Table 7. Transect 16 was excavated within the defined archaeologically sensitive landform in the south-western section of the activity area. A total of 24 artefacts were identified in transect 16 (Map 10b, Table 7 and Appendix 4).

Transect 17

Transect 17 comprises a 5 m long x 1 m wide mechanically excavated transect (Map 1b). The stratigraphic detail, general excavation data and disturbance factors for Transect 17 have been described in Table 7. Transect 17 was excavated within the defined archaeologically sensitive landform in the south-western section of the activity area. A total of 34 artefacts were identified in transect 17 (Map 10b, Table 7 and Appendix 4).

Transect 18

Transect 18 comprises a 5 m long x 1 m wide mechanically excavated transect (Map 1b). The stratigraphic detail, general excavation data and disturbance factors for Transect 18 have been described in Table 7. Transect 18 was excavated within the defined archaeologically sensitive landform in the south-western section of the activity area. No Aboriginal cultural heritage material was excavated in transect 18.

Transect 19

Transect 19 comprises a 5 m long x 1 m wide mechanically excavated transect (Map 1b). The stratigraphic detail, general excavation data and disturbance factors for Transect 19 have been described in Table 7. Transect 19 was excavated within the defined archaeologically sensitive landform in the south-western section of the activity area. A total of 2 artefacts were identified in transect 19 (Map 10b, Table 7 and Appendix 4).

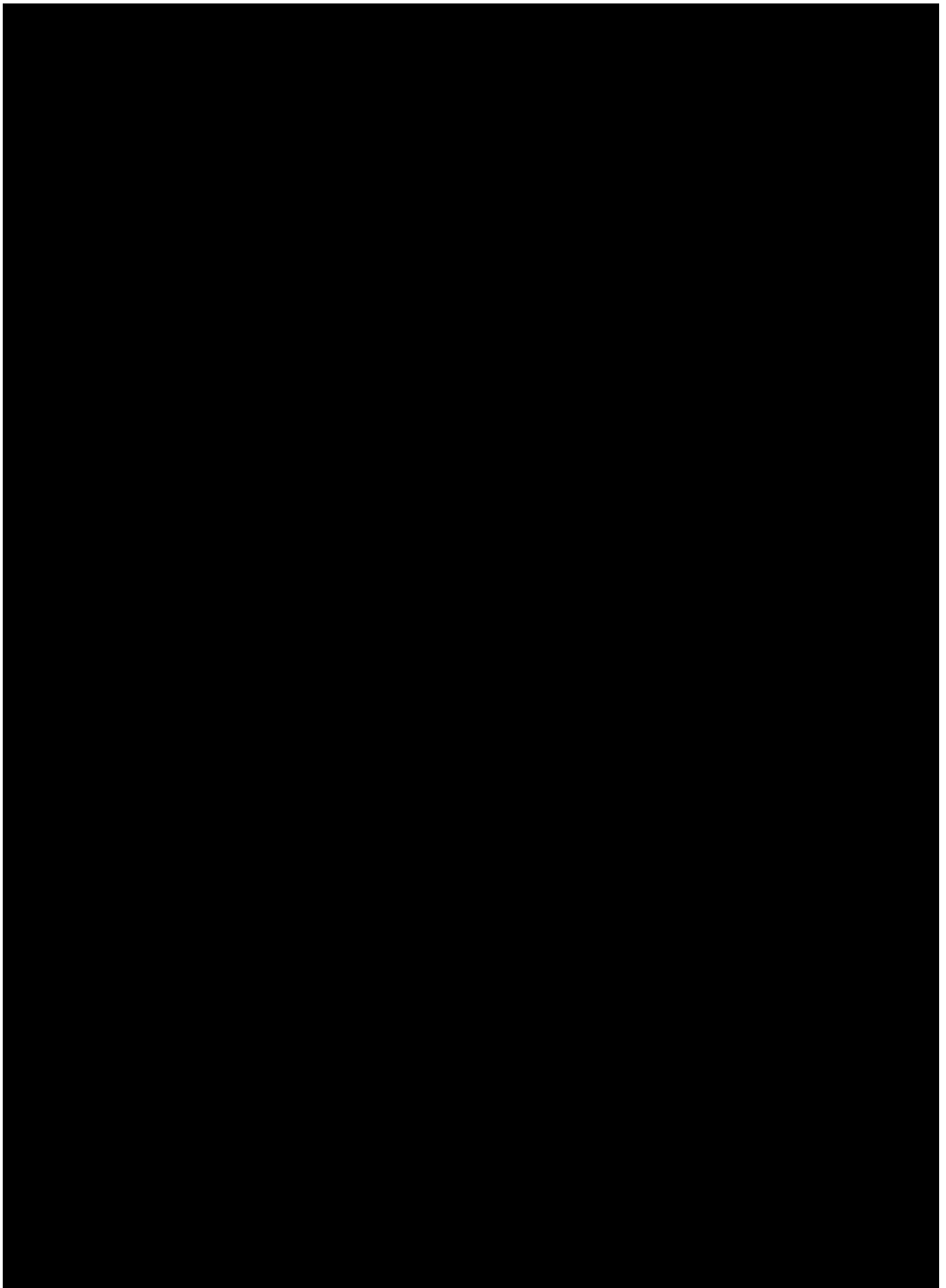
Transect 20

Transect 20 comprises a 5 m long x 1 m wide mechanically excavated transect (Map 1b). The stratigraphic detail, general excavation data and disturbance factors for Transect 20 have been described in Table 7. Transect 20 was excavated on a low-lying landform in southern section of the activity area. No Aboriginal cultural heritage material was excavated in transect 20.

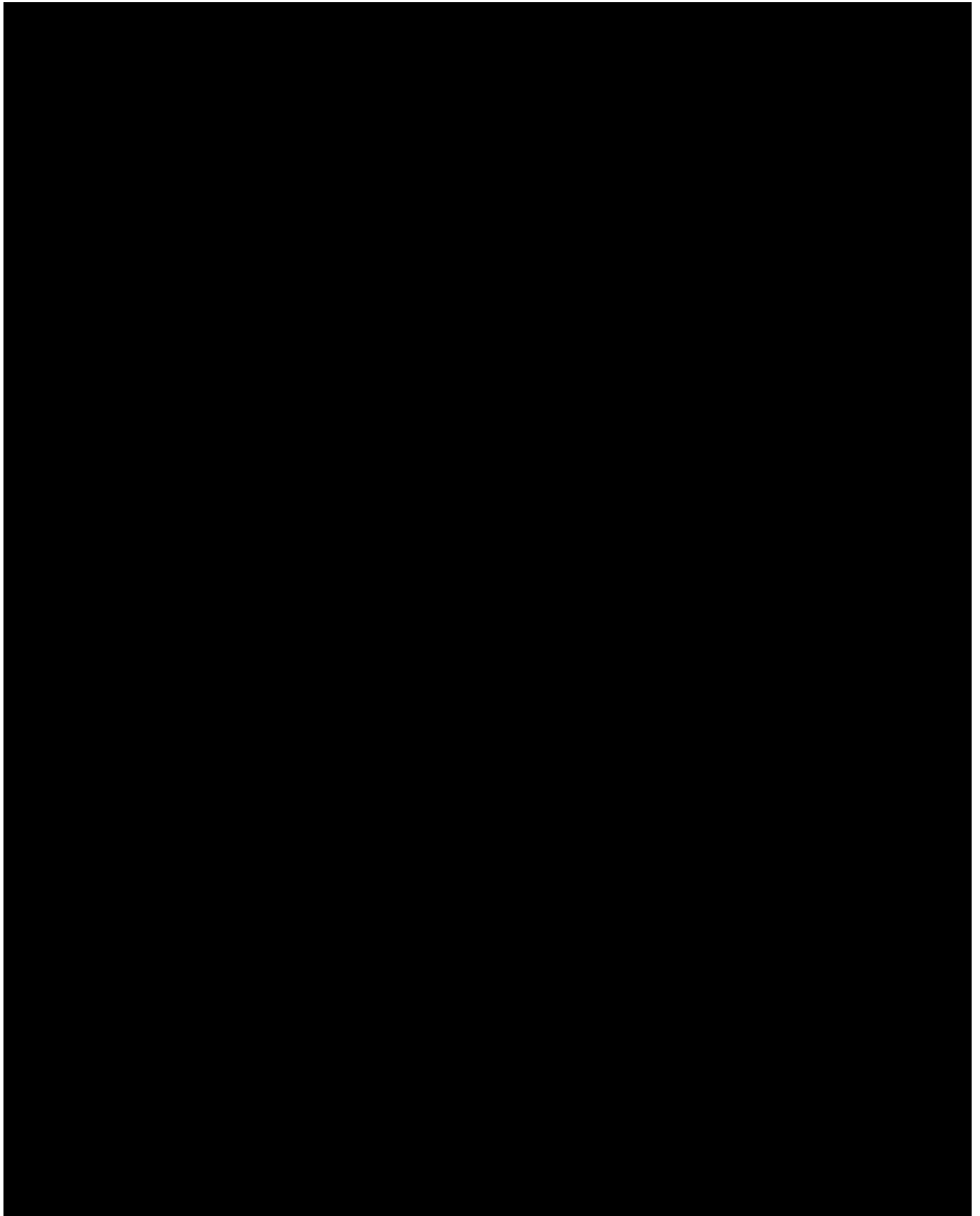
Summary

A total of 20 5 m x 1 metre long mechanical transects were excavated across the entire activity area (Map 7). The mechanical transects generally revealed an undifferentiated clay profile across the activity area with subtle variations in moisture content differentiating between soils on raised areas in the west and soils on low-lying areas in the east. All mechanical transects were excavated to a base comprising greater than 90% clay particles or consolidated core stone basalt. Aboriginal cultural heritage material was identified in three of the twenty transects excavated (TR16, TR17, TR19). No other mechanical transects uncovered Aboriginal cultural heritage material, including transect 10 which was excavated 10 metres south of the isolated quartz flaked piece identified in stratigraphic test pit 1. Very few inclusions were identified across transects other than glass fragments, brick

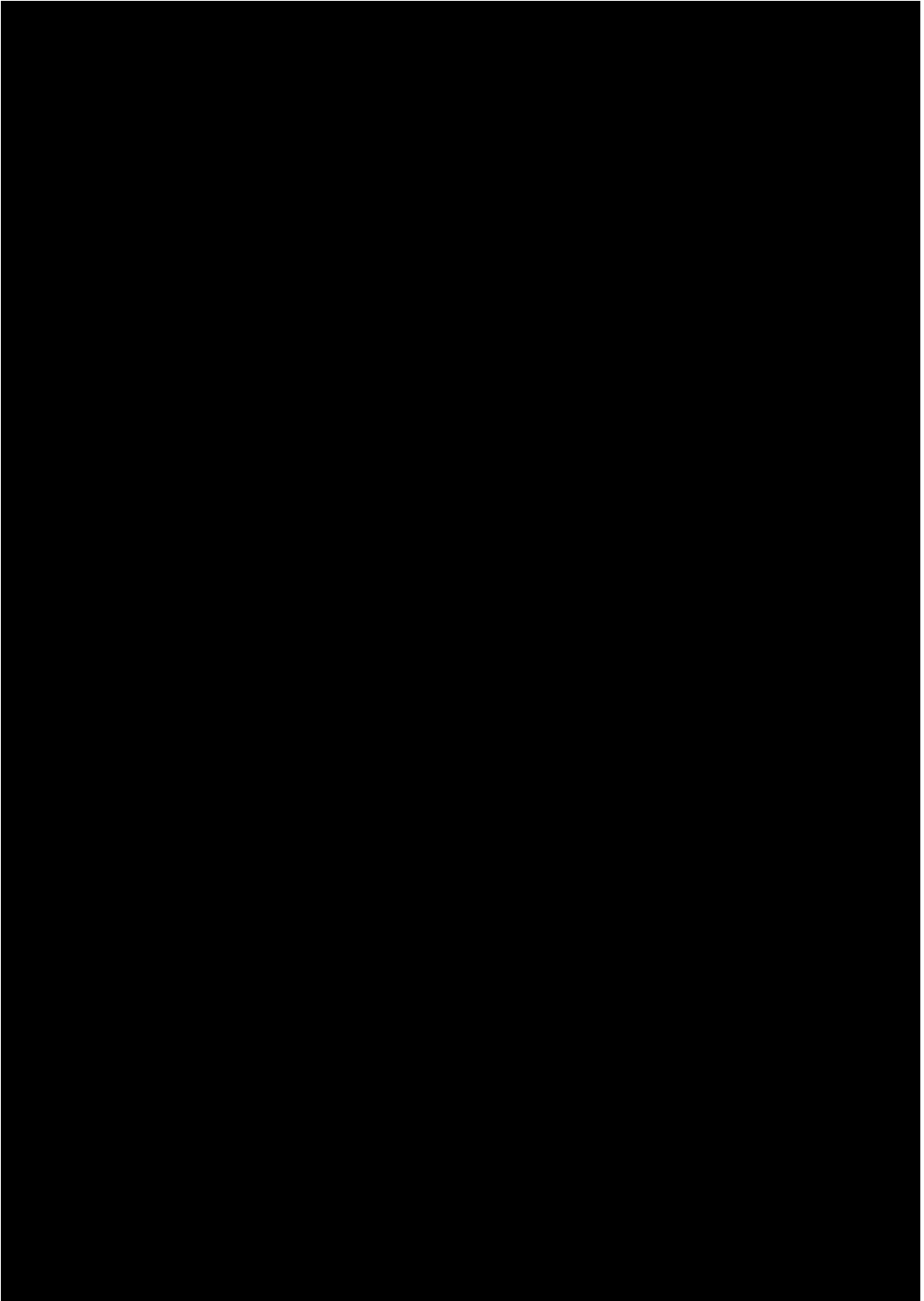
fragments, roof slate and various pieces of iron and steel (Table 7). These inclusions were more prominent in transects excavated near the bluestone homestead in the west of the activity area.



Map 10: Overview of subsurface testing locations across the activity area (redacted)



Map 10a: Complex assessment survey results, north section redacted



Map 10b: Complex assessment survey results, south section (redacted)

7.9 Discussion

Aboriginal people have been present throughout the greater Melbourne region for at least the past 37,000 years BP (Gallus 1983; Hewitt and De Lange 2007). Extensive archaeological datasets from south-west Tasmania suggests that colonisation first occurred there at least 38,000 years BP (Cosgrove 1990). It follows that what is today known as the Melbourne Basin was almost certainly occupied at an earlier timeframe than the current 37,000 year old time depth data suggests.

It is generally agreed that Aboriginal cultural heritage sites within the Melbourne Basin are most likely to be identified on low-lying ridgelines (where present) or on elevated landforms adjacent to primary resources. This premise is reflected in other investigations within the geographic region, particularly at Merrifield West 2 km to the north of the current activity area, where a well-defined archaeological signature is manifest on a number of low-lying ridgeline landforms. During archaeological investigations at Merrifield West (CHMP 11705), a total of 1590 artefacts were identified on slightly raised ridge and crest landforms across the greater activity area; in comparison, only 7 of these artefacts were identified on plain / floodplain or swale landforms (Stevens and Alberto 2012: 338).

This trend is also reflected in the current activity area at Lindum Vale where an artefact scatter comprising 60 artefacts and one LDAD (low density artefact distribution) comprising one artefact were identified on a low-lying ridgeline in the extreme south-west and west of the activity area respectively. In addition to the artefact scatter and LDAD, it is clear that Aboriginal people were actively exploiting additional resources at Lindum Vale due to the presence of five recently recorded Aboriginal scar trees.

The artefact scatter site identified at Lindum Vale conforms to the predictive statement developed at desktop level. This landform was defined as archaeologically sensitive prior to the commencement of the subsurface testing program. The landform is similar to the landforms identified as archaeologically sensitive at Merrifield West (CHMP 11705) in that it is raised and, although there is variability across soil profile types at Merrifield West and Lindum Vale, the sensitive ridgeline landform model is consistent across both of these PSP areas, even, in the case at the current Lindum Vale activity area, in the absence of primary resources such as swamps and creeks.

In further support for this thesis, the CHMP prepared at Merrifield East (CHMP 10412), approximately 2 km east of Merrifield West and 5.4 km north-east of Lindum Vale, identified a total of 6 artefacts on a plain landform devoid of ridgelines. It is clear, at least at a local level, that Aboriginal cultural heritage lithic material has a direct correlation with slightly raised landforms.

Archaeological site densities and complexity across the greater PSP areas at Lindum Vale, Merrifield West and Merrifield East are directly related to landform type rather than the abundance and availability of resources. This variability is inherent in datasets across the geographic region and is highlighted by the finding that Lindum Vale has ten times more artefacts than Merrifield East even though the former is 4–5 km further from Kalkallo Creek (the nearest permanent watercourse). In addition, Merrifield West is further from Kalkallo Creek than Merrifield East, yet Merrifield West yielded 1590 artefacts and Merrifield East yielded 6 artefacts, even though the subsurface testing programs were similar. An additional Aboriginal cultural heritage place comprising 60 artefacts identified on a low-lying ridgeline as part of the current CHMP at Lindum Vale further supports the prediction that artefacts will be more likely to be identified on low-lying ridgelines at great distances from primary resources rather than on flat plain landforms adjacent to them.

8 DETAILS OF ABORIGINAL CULTURAL HERITAGE IN THE ACTIVITY AREA

8.1 Introduction

This section provides an analysis and description of Aboriginal places identified in the activity area. Seven Aboriginal new places were identified in the activity area during the course of the standard and complex assessments. Following descriptions of each place, a detailed analysis will be presented.

8.2 Aboriginal Cultural Heritage Places identified

Seven Aboriginal cultural heritage places were identified within the activity area during the standard and complex assessments of this CHMP.

Five were identified during the standard assessment. These comprise five scar tree sites:

- Lindum Vale 1 (VAHR 7822-3588)
- Lindum Vale 2 (VAHR 7822-3589)
- Lindum Vale 3 (VAHR 7822-3590)
- Lindum Vale 4 (VAHR 7822-3591)
- Lindum Vale 5 (VAHR 7822-3592)

Two stone artefact occurrences were identified during the subsequent excavations for the complex assessment. They comprise one LDAD (Tamboore 26) and one artefact scatter (Tamboore 25):

- Tamboore 26 (VAHR 7822-3840)
- Tamboore 25 (VAHR 7822-3841)

There is one previously registered Aboriginal cultural heritage place within the activity area, comprising one scar tree site:

- Cocking 1 (7822-0024)

This site was not able to be relocated during either the standard or complex assessment.

8.3 Site Formation Processes

Place formation processes were assessed through a study of the landform, soil types, stratigraphy and taphonomic processes using a combination of stratigraphic test pits and mechanical transects.

8.4 Artefact Analysis

A complete artefact analysis is provided in Appendix 4.

8.5 Shell Analysis

There were no shell diagnostics or elements identified during the surface survey within the activity area.

8.6 Faunal Analysis

There were no faunal diagnostics or elements identified during the surface survey within the activity area.

8.7 Radiometric Dating

No dating samples have been taken at this stage of the project as no suitable charcoal samples were identified. There is scope to undertake radiometric dating at CHMP implementation stage.

8.8 RAP Information about Aboriginal Cultural Heritage within the Activity Area

The WTL&CCHCI did not have any locally specific information regarding the activity area. WTL&CCHCI have provided a statement of cultural heritage significance to accompany the assessments undertaken for this CHMP:

For Aboriginal people, there are many different kinds of cultural values associated with the landscapes that were once lived in by their ancestors. These include the tangible values normally recorded during archaeological investigations, such as artefact scatters and scar trees. These places are physical reminders of the cultural lives of the Wurundjeri ancestors and a special connection therefore exists between those places and contemporary Wurundjeri people. This special connection underpins the high significance of these places. Once they are destroyed, the connection is largely destroyed.

There are other values that the Wurundjeri people connect to in landscapes such as the activity area. In this instance, the natural values, including a highly significant waterway, are all integral to the cultural landscape in which Wurundjeri ancestors hunted and gathered and in which they lived their lives for many thousands of years. These landscape characteristics are therefore significant in accordance with Aboriginal tradition. Best practice heritage management, in terms of avoidance of harm to cultural heritage and where harm cannot be avoided, proper management of the disturbance of those values, is integral in the management of these significant cultural places in the activity area.

The area of which the Lindum Vale CHMP is part is a significant cultural landscape for contemporary Wurundjeri people for its traditional and historical association; and its tangible and intangible values.

8.9 Results of the Assessment of Aboriginal cultural heritage material

The cultural heritage sites identified during the field survey are in line with the regional sequences that were developed as part of the Desktop assessment of this CHMP. A total of five scar trees, one artefact scatter and one LDAD were identified as part of this assessment.

The scar trees conform to the predictive statement and were expected at a local level within the Mt. Ridley open red gum woodland [REDACTED]. The scar trees are likely a product of timber resource extraction for the purposes of manufacturing shields, canoes and carrying devices.

The artefact scatter of 60 artefacts over an area of 812m² conforms to the site prediction model and was expected due to the large number of artefacts located on a similar landform in the close vicinity of the activity area (Stevens and Alberto, 2012).

8.10 Cocking (VAHR 7822-0024)

8.10.1 Location of Cocking

Primary Grid Coordinate: [REDACTED]

Address: [REDACTED]

Lot and Plan Number: [REDACTED]

8.10.2 Extent of Cocking

Cocking (7822-0024) has been either destroyed or removed from the activity or the 1975 site card coordinate is incorrect as there is no tree within 50 metres of the coordinate. It is possible that VAHR 7822-0024 is actually one of the scar trees identified and recorded during the 2012 field survey for this CHMP. There are no images or site extent plans for this Place.

8.10.3 Nature of Cocking

Cocking (VAHR 7822-0024) is a scar tree place that likely represents timber extraction for the purposes of creating a shield or canoe. The scar is described as 2.3 metres long and beginning 30 cm from the ground surface. The inside width of the scar is 32 cm, the outside width is 60 cm while the girth of the tree is 3.4 metres. The scar faces in an easterly direction. The Place was recorded on 7 November 1975.

8.10.4 Significance of Cocking

The overall significance of Cocking (VAHR 7822-0024) is assessed as being low because the tree cannot be relocated and may have been destroyed. The scar tree does not have capacity for research potential such as comparative studies with other similar place types within the geographic region.

8.11 Lindum Vale 1 (VAHR 7822-3588)

8.11.1 Location of Lindum Vale 1

Primary Grid Coordinate: [REDACTED]

Address: [REDACTED]

Lot and Plan Number: [REDACTED]

8.11.2 Extent of Lindum Vale 1

Lindum Vale 1 (VAHR 7822-3588) is situated on an open plain towards the south-east of the activity area (Plates 3 and 16; Map 11). The canopy of the tree was approximately 3.1 m in diameter. The tree has been destroyed so the TPZ for this Place has been extinguished.

8.11.3 Nature of Lindum Vale 1

Lindum Vale 1 (VAHR 7822-3588) is a scar tree place that likely represents timber extraction for the purposes of creating a carrying device such as a coolamon. The timber was removed from a red gum (*E. camaldulensis*). The tree is now dead and the scar was completely burnt out and destroyed during the early 2014 grass fires that swept through the Mickleham area (Table 8).

Table 8: Summary of Lindum Vale 1 (VAHR 7822-3588) features

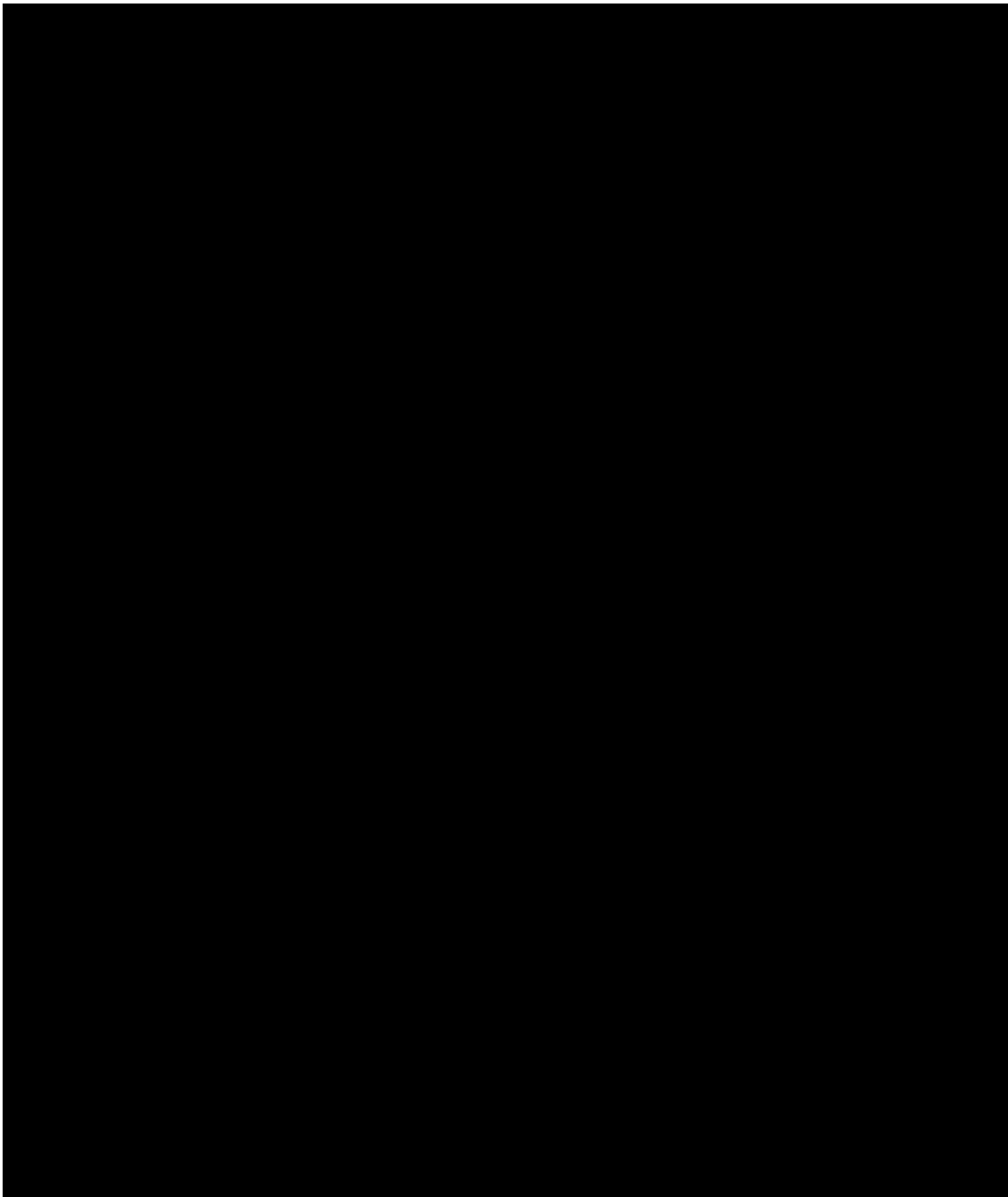
SITE ID	SPECIES	CONDITION	SCARS	TOEHOLDS	GIRTH (cm)	SCAR L (cm)	SCAR W (cm)	SCAR H (cm)	OVERGROWTH TOP (cm)	OVERGROWTH L MID (cm)	OVERGROWTH R MID (cm)	OVERGROWTH BOTTOM (cm)	SCAR ORIENTATION	SCAR ORIGIN	SCAR PRESERVATION	AXE MARKS
ST1 VAHR 7822- 3588	Red Gum	Destroyed	1	0	41 7	10 0	14 0	38	25	20	30	20	0	Definitely Aboriginal	Destroyed	0

8.11.4 *Significance of Lindum Vale 1*

The overall significance of Lindum Vale 1 (VAHR 7822-3588) is assessed as being low because the tree has been destroyed. The scar tree does not have capacity for research potential such as comparative studies with other similar place types within the geographic region.



Plate 16: Lindum Vale 1 (VAHR 7822-3588), destroyed by fire in 2014



Map 11: Extent of Lindum Vale 1 (VAHR 7822-3588) (courtesy of Ecology and Heritage Partners Pty Ltd) (map redacted)

8.12 Lindum Vale 2 (VAHR 7822-3589)

8.12.1 Location of Lindum Vale 2

Primary Grid Coordinate [REDACTED]

Address: [REDACTED]

Lot and Plan Number: [REDACTED]

8.12.2 *Extent of Lindum Vale 2*

Lindum Vale 2 (VAHR 7822-3589) is situated on an open plain in the north of the activity area (Plates 4 and 17; Map 12). The canopy of the tree was approximately 3.3 m in diameter. The tree has been destroyed so the TPZ for this Place has been extinguished.

8.12.3 *Nature of Lindum Vale 2*

Lindum Vale 2 (VAHR 7822-3589) is a scar tree place that likely represents timber extraction for the purposes of creating a carrying device such as a coolamon. The timber was removed from a Red Gum (*E. camaldulensis*). The tree is now dead and the scar was completely burnt out and destroyed during the early 2014 grass fires that swept through the Mickleham area (Table 9).

Table 9: Summary of Lindum Vale 2 (VAHR 7822-3589) features

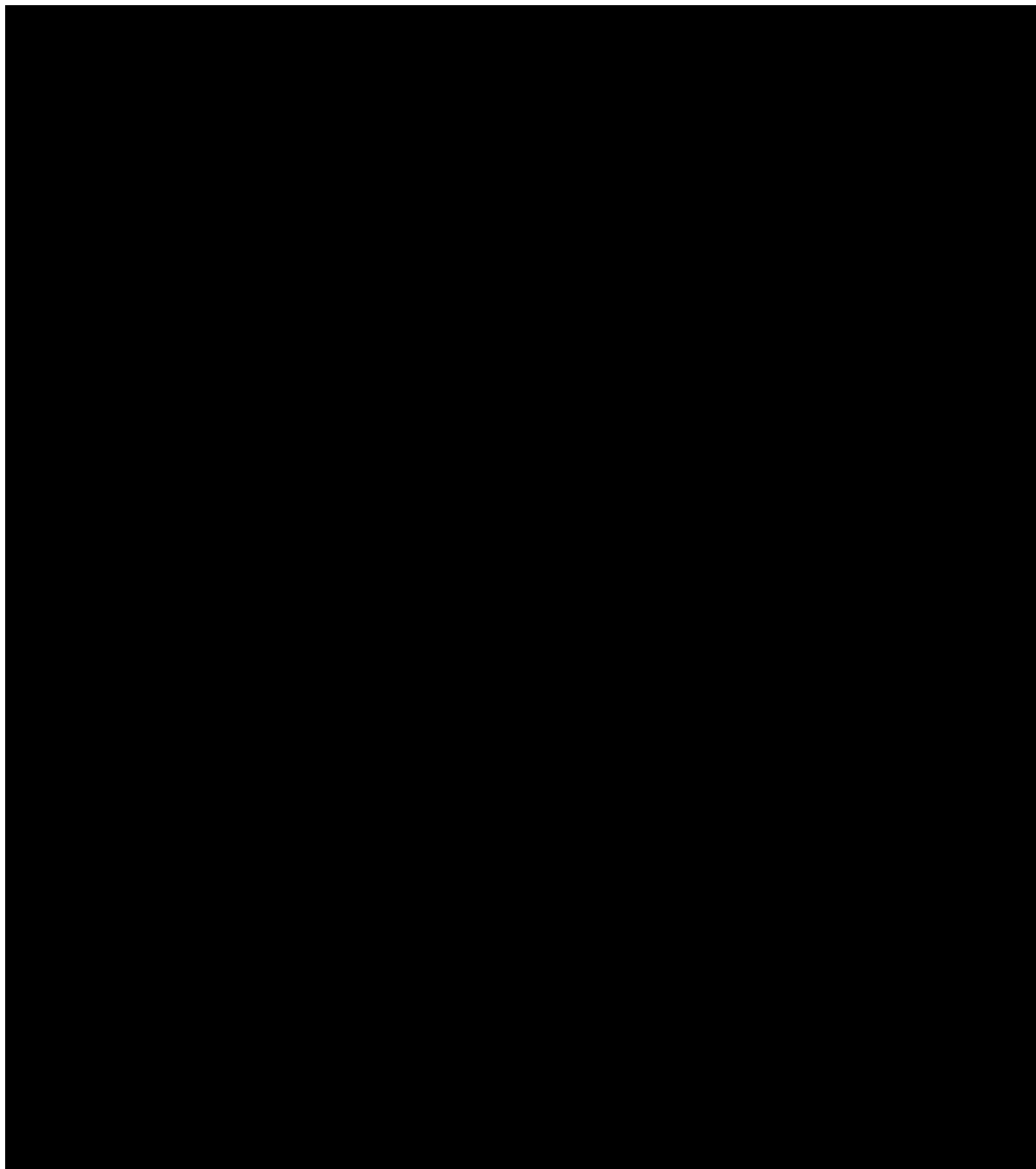
SITE ID	SPECIES	CONDITION	SCARS	TOEHOLDS	GIRTH (cm)	SCAR L (cm)	SCAR W (cm)	SCAR H (cm)	OVERGROWTH TOP (cm)	OVERGROWTH L MID (cm)	OVERGROWTH R MID (cm)	OVERGROWTH BOTTOM (cm)	SCAR ORIENTATION	SCAR ORIGIN	SCAR PRESERVATION	AXE MARKS
ST2 VAHR 7822- 3589	Red Gum	Destroyed	1	0	380	95	45	30	30	60	60	15	0	Definitely Aboriginal	Destroyed	0

8.12.4 *Significance of Lindum Vale 2*

The overall significance of Lindum Vale 2 (VAHR 7822-3589) is assessed as being low because the tree has been destroyed. The scar tree does not have capacity for research potential such as comparative studies with other similar place types within the geographic region.



Plate 17: Lindum Vale 2 (VAHR 7822-3589), destroyed by fire in 2014



Map 12: Extent of Lindum Vale 2 (VAHR 7822-3589) (courtesy of Ecology and Heritage Partners Pty Ltd) (map redacted)

8.13 Lindum Vale 3 (VAHR 7822-3590)

8.13.1 Location of Lindum Vale 3

Primary Grid Coordinate [REDACTED]

Address [REDACTED]

Lot and Plan Number: [REDACTED]

8.13.2 *Extent of Lindum Vale 3*

Lindum Vale 3 (VAHR 7822-3590) is situated on an open plain in the west of the activity area (Plates 5 and 18; Map 13). The canopy of the tree was approximately 3.1 m in diameter in mid-2014. The extent is the current TPZ, being 1.5 times the canopy cover (Map 13). The scar tree will be protected in this existing TPZ.

8.13.3 *Nature of Lindum Vale 3*

Lindum Vale 3 (VAHR 7822-3590) is a scar tree place that likely represents timber extraction for the purposes of creating a shield. The timber was removed from a box tree of undetermined species. The tree is in reasonable health and will be retained in open space and protected in a TPZ during development-related works (Table 10).

Table 10: Summary of Lindum Vale 3 (VAHR 7822-3590) features

SITE ID	SPECIES	CONDITION	SCARS	TOEHOLDS	GIRTH (cm)	SCAR L (cm)	SCAR W (cm)	SCAR H (cm)	OVERGROWTH TOP (cm)	OVERGROWTH L MID (cm)	OVERGROWTH R MID (cm)	OVERGROWTH BOTTOM (cm)	SCAR ORIENTATION	SCAR ORIGIN	SCAR PRESERVATION	AXE MARKS
ST3 VAHR 7822-3590	Box	Good Health	1	0	24 5	24 6	84	48	0	10	7	13	45	Definitely Aboriginal	Good	0

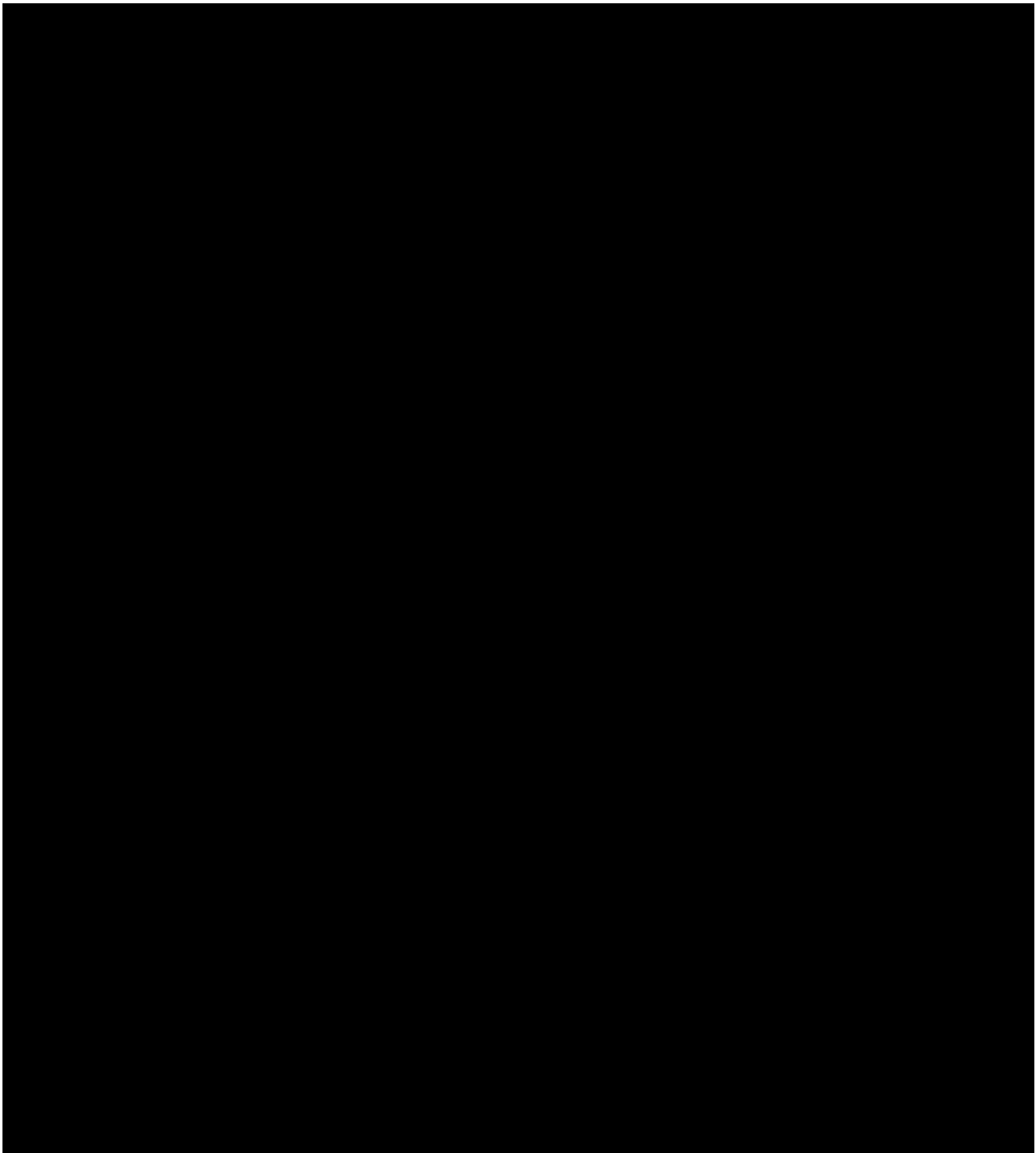
8.13.4 *Significance of Lindum Vale 3*

The overall significance of Lindum Vale 3 (VAHR 7822- 3590) is assessed as being moderate. Scar trees are becoming less frequent on the landscape and their presence does have high significance for Aboriginal people. The scar tree does have the capacity for some research potential such as comparative studies with other similar place types within the geographic region. It is important that all scar trees are retained within the activity area.

Culturally this place has significance for the WTLCHCI.



Plate 18: Lindum Vale 3 (VAHR 7822-3590) in mid-2014



Map 13: Extent of Lindum Vale 3 (VAHR 7822-3590) (courtesy of Ecology and Heritage Partners Pty Ltd) (map redacted)

8.14 Lindum Vale 4 (VAHR 7822-3591)

8.14.1 Location of Lindum Vale 4

Primary Grid Coordinate [REDACTED]

Address: [REDACTED]

Lot and Plan Number: [REDACTED]

8.14.2 *Extent of Lindum Vale 4*

Lindum Vale 4 (VAHR 7822-3591) is situated on an open plain in the north of the activity area (Plates 6 and 19; Map 14). The canopy of the tree was approximately 3.2 m in diameter. The tree has been destroyed so the TPZ for this Place has been extinguished.

8.14.3 *Nature of Lindum Vale 4*

Lindum Vale 4 (VAHR 7822-3591) is a scar tree place that likely represents timber extraction for the purposes of creating a carrying device such as a coolamon. The timber was removed from a Red Gum (*E. camaldulensis*). The tree is now dead and the scar was completely burnt out and destroyed during the early 2014 grass fires that swept through the Mickleham area (Table 11).

Table 11: Summary of Lindum Vale 4 (VAHR 7822-3591) features

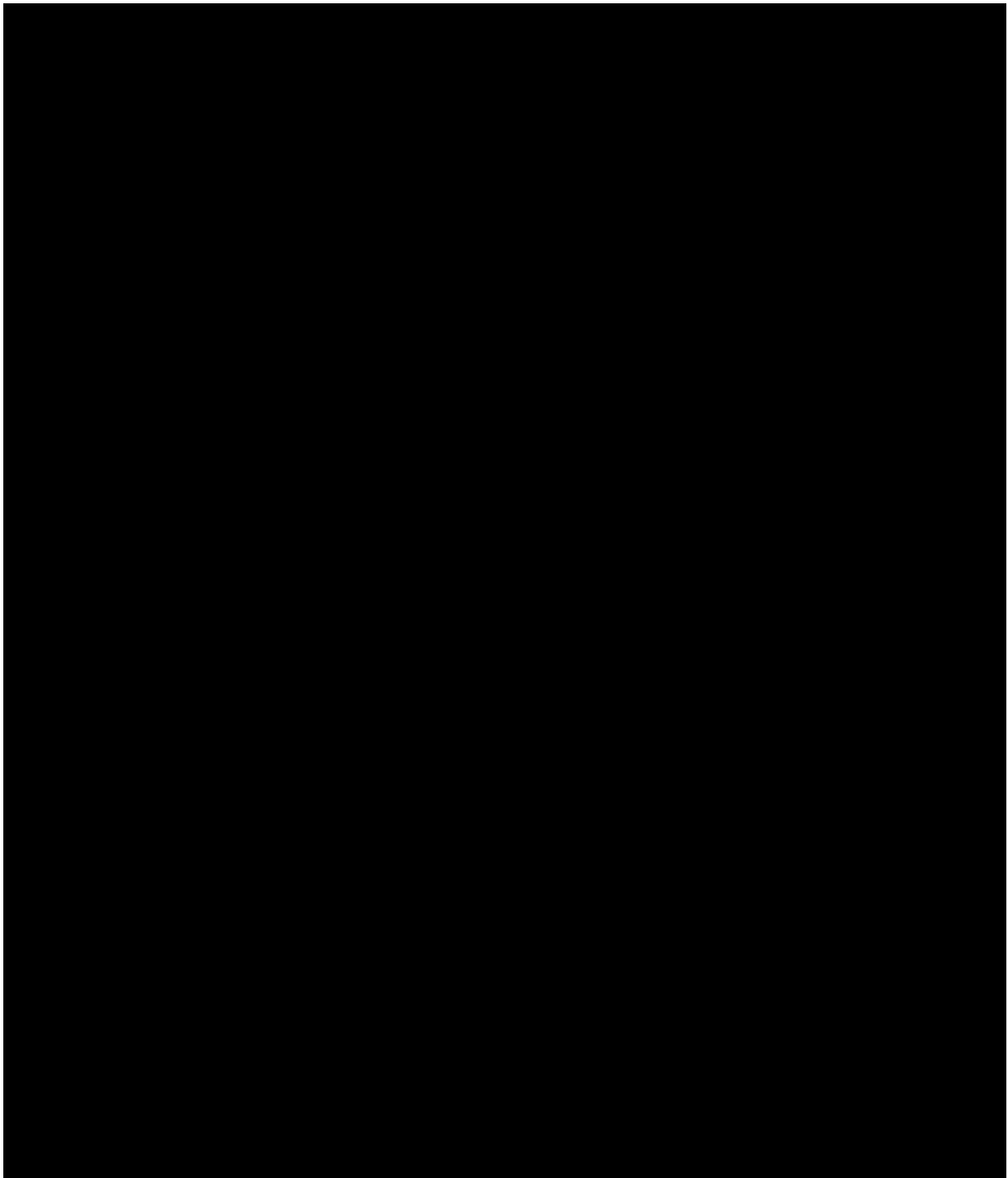
SITE ID	SPECIES	CONDITION	SCARS	TOEHOLDS	GIRTH (cm)	SCAR L (cm)	SCAR W (cm)	SCAR H (cm)	OVERGROWTH TOP (cm)	OVERGROWTH L MID (cm)	OVERGROWTH R MID (cm)	OVERGROWTH BOTTOM (cm)	SCAR ORIENTATION	SCAR ORIGIN	SCAR PRESERVATION	AXE MARKS
ST4 VAHR 7822- 3591	Red Gum	Destroyed	1	0	31 7	95	95	15	20	22	18	20	225	Definitely Aboriginal	Destroyed	0

8.14.4 *Significance of Lindum Vale 4*

The overall significance of Lindum Vale 4 (VAHR 7822-3591) is assessed as being low because the tree has been destroyed. The scar tree does not have capacity for research potential such as comparative studies with other similar place types within the geographic region.



Plate 19: Lindum Vale 4 (VAHR 7822-3591), destroyed by fire



Map 14: Extent of Lindum Vale 4 (VAHR 7822-3591) (courtesy of Ecology and Heritage Partners Pty Ltd)

8.15 Lindum Vale 5 (VAHR 7822-3592)

8.15.1 Location of Lindum Vale 5

Primary Grid Coordinate: [REDACTED]

Address: [REDACTED]

Lot and Plan Number: [REDACTED]

8.15.2 *Extent of Lindum Vale 5*

Lindum Vale 5 (VAHR 7822-3592) is situated on an open plain in the east of the activity area (Plates 7 and 20; Map 15). The canopy of the tree was approximately 3.3 m in diameter in mid-2014. The extent is the current TPZ, being 1.5 times the canopy cover (Map 15). The scar tree will be protected in this existing TPZ.

8.15.3 *Nature of Lindum Vale 5*

Lindum Vale 5 (VAHR 7822-3592) is a scar tree place that likely represents timber extraction for the purposes of creating a shield. The timber was removed from a Red Gum (*E. camaldulensis*). The tree is reasonably healthy and will be retained in open space and protected in a TPZ during development-related works (Table 12).

Table 12: Summary of Lindum Vale 5 (VAHR 7822-3592) features

SITE ID	SPECIES	CONDITION	SCARS	TOEHOLDS	GIRTH (cm)	SCAR L (cm)	SCAR W (cm)	SCAR H (cm)	OVERGROWTH TOP (cm)	OVERGROWTH L MID (cm)	OVERGROWTH R MID (cm)	OVERGROWTH BOTTOM (cm)	SCAR ORIENTATION	SCAR ORIGIN	SCAR PRESERVATION	AXE MARKS
ST5 VAHR 7822-3592	Red Gum	Good Health	1	0	37 4	17 0	30	26	33	24	17	20	45	Definitely Aboriginal	Good	0

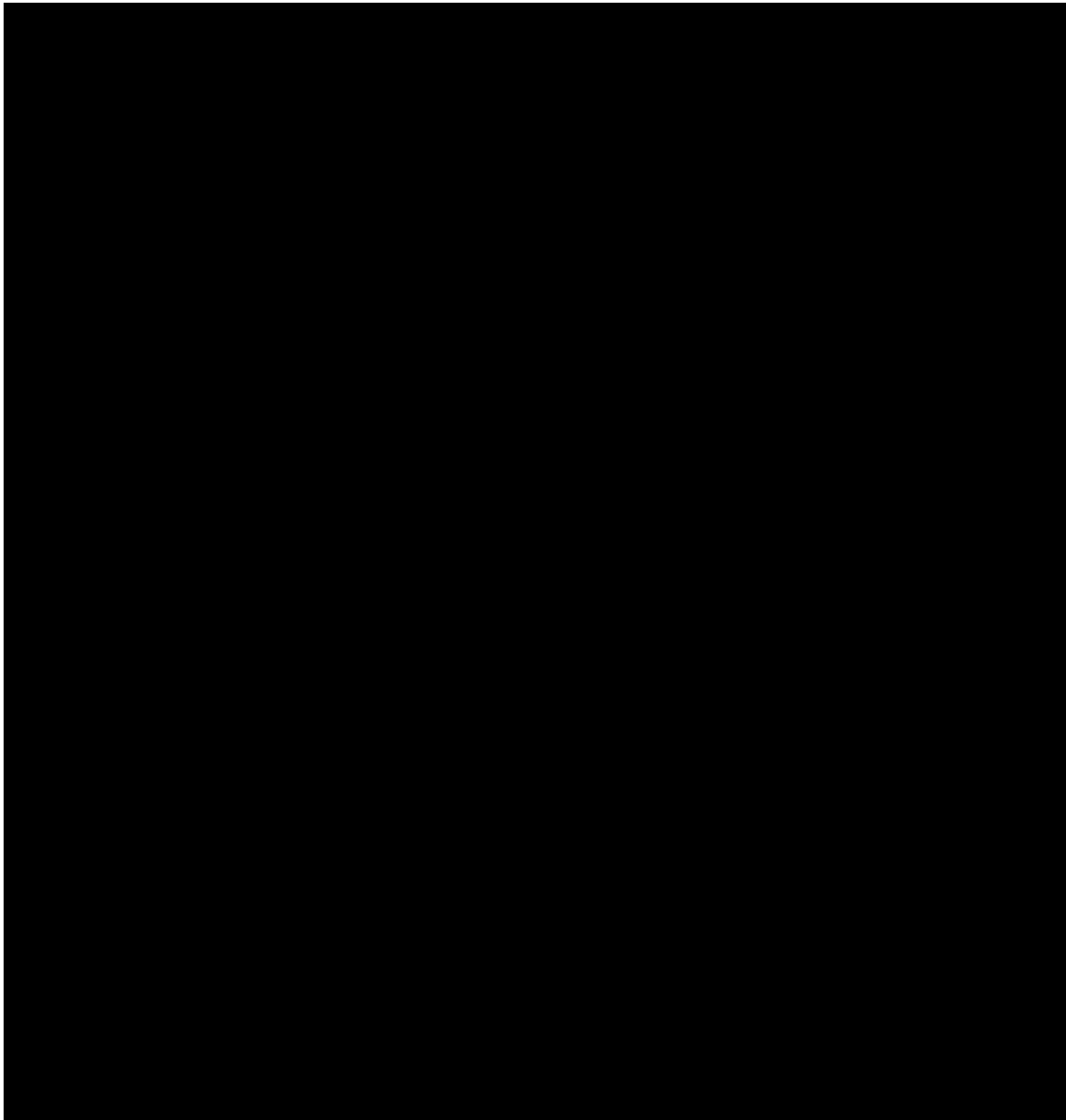
8.15.4 *Significance of Lindum Vale 5*

The overall significance of Lindum Vale 5 (VAHR 7822- 3592) is assessed as being moderate. Scar trees are becoming less frequent on the landscape and their presence does have high significance for Aboriginal people. The scar tree does have the capacity for some research potential such as comparative studies with other similar place types within the geographic region. It is important that all scar trees are retained within the activity area.

Culturally this place has significance for the WTLCHCI.



Plate 20: Lindum Vale 5 (VAHR 7822-3592) in mid-2014



Map 15: Extent of Lindum Vale 5 (VAHR 7822-3592) (courtesy of Ecology and Heritage Partners Pty Ltd) (map redacted)

8.16 Tamboore 26 (VAHR 7822-3840)

8.16.1 Location of Tamboore 26

Primary Grid Coordinate: [REDACTED]

Address [REDACTED]

Lot and Plan Number: [REDACTED]

8.16.2 *Extent of Tamboore 26*

Tamboore 26 (VAHR 7822-3840) comprises one isolated artefact, identified during subsurface excavation at stratigraphic test pit 1 in the west of the activity area (Plates 21–22). The place extent is limited to the location of the isolated artefact (Map 10b).

8.16.3 *Nature of Tamboore 26*

Tamboore 26 (VAHR 7822-3840) comprises one artefact (quartz flaked piece) located during subsurface excavation at stratigraphic test pit 1. The artefact was analysed in the field. A complete artefact analysis is included in Appendix 4.

8.16.4 *Significance of Tamboore 26*

Tamboore 26 (VAHR 7822-3840) is considered to be of low scientific significance due to the disturbed nature of this isolated find; that is, it was recorded in a plough zone in stratigraphic test pit 1. Also, as an isolated occurrence this site type is common in the geographic region and has little educational or interpretive value. Consequently, Tamboore 26 (VAHR 7822-3840) has low preservation value or research potential. Many of the same Place types occur throughout the geographic region.

Culturally this place has significance for the WTLCHCI.



Plate 21: Location of Tamboore 26 (VAHR 7822-3840)



Plate 22: Contents of Tamboore 26 (VAHR 7822-3840)

8.17 Tamboore 25 (VAHR 7822-3841)

8.17.1 Location of Tamboore 25

Primary Grid Coordinate: [REDACTED]

Address: [REDACTED]

Lot and Plan Number: [REDACTED]

8.17.2 Extent of Tamboore 25

Tamboore 25 (VAHR 7822-3841) comprises 60 subsurface artefacts, identified during the mechanical excavation of mechanical transects 16, 17 and 19 in the far south-western corner of the activity area, near the corner of Mt Ridley Road and Mickleham Road (Maps 10b and 16; Appendix 4). The cultural material appears to be in the same stratigraphic sequence across the slope. The place extent was further defined by shovel test pit program where shovel test pits were excavated at 10 metre intervals around the known location of the site (Maps 10b and 16).

8.17.3 Nature of Tamboore 25

Tamboore 25 (VAHR 7822-3841) comprises a subsurface artefact scatter of 60 subsurface artefacts comprising 13 angular fragments, 16 complete flakes, 9 proximal flakes, 6 distal flakes, 5 medial flakes, 3 scrapers, 3 split flakes, two blades, two cores and one distal blade. Stone raw material types were dominated by silcrete (n=55), followed by hornfels (n=3) followed by lesser quantities of quartzite (n=1) and quartz (n=1) from three 5m x 1m mechanical transects.

A complete artefact analysis is included in Appendix 4.

8.17.4 *Significance of Tamboore 25*

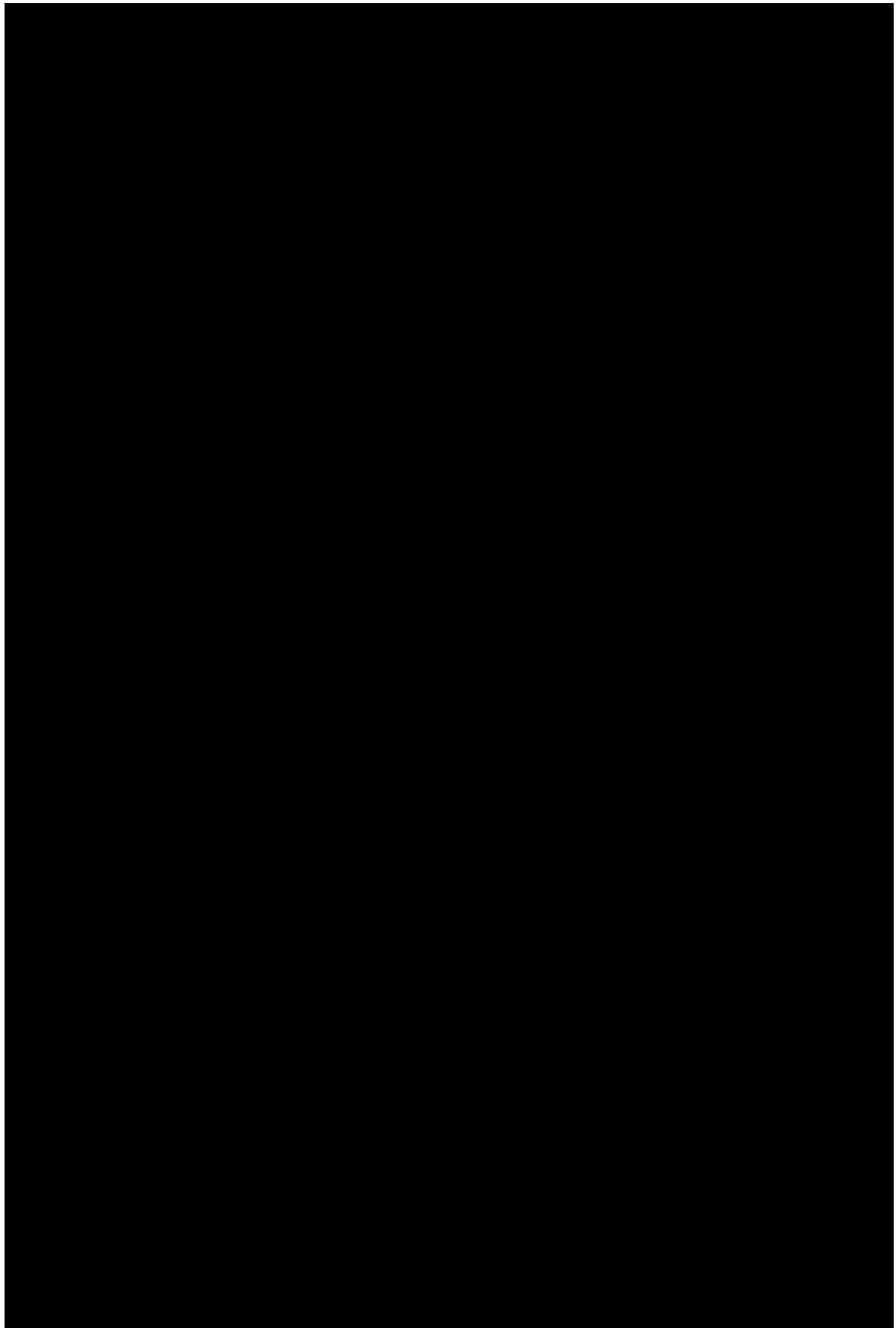
All artefacts excavated at Tamboore 25 (VAHR 7822-3841) have been collected, labelled and stored with the CHA. Tamboore 25 is assessed as having moderate scientific significance.



Plate 23: Location of Tamboore 25 (VAHR 7822-3841)



Plate 24: Sample of artefacts from Tamboore 25 (VAHR 7822-3841)



Map 16: Extent of Tamboore 25 (VAHR 7822-3841) (map redacted)

8.18 Artefact Analysis

The following section offers an overview of the method and results of an analysis of Aboriginal stone artefacts identified at Tamboore 26 (VAHR 7822-3840) and Tamboore 25 (VAHR 7822-3841). The aim of the stone artefact analysis is to determine broad technological and typological characteristics of the assemblage in order to address questions on stone artefact technology, reduction sequence and possible site function. However, due to the low number of Aboriginal stone artefacts identified (n=61), any statistical analysis would be meaningless. It is possible, however, to glean broad conclusions about site function and raw material procurement based on the analysis.

The artefact analysis used the attribute fields established by Aboriginal Affairs Victoria. The Aboriginal stone artefacts were recorded according to a series of technological types based those discussed by Holdaway & Stern (2004: 107–110, 191–197).

Table 13 displays the artefact type and raw material number and percentages. Silcrete (n=55, 90.1%) dominates the assemblage, hornfels is present in small numbers (n=3, 4.9%) while quartz (n=2, 3.2%) and quartzite (n=1, 1.6%) make up the remainder of raw material types in the assemblage. A wide range of artefact types is present, with complete flakes, distal flakes, proximal flakes and angular fragments the most common.

Table 13: Artefact type and raw material at Tamboore 26 (VAHR 7822-A3840) and Tamboore 25 (VAHR 7822-3841).

Artefact type	Raw Material				
	Quartz	Hornfels	Quartzite	Silcrete	Total (%)
Angular Fragment	1			13	14 (22.9%)
Complete Flake	1	1		14	16 (26.2%)
Distal Flake				6	6 (9.8%)
Proximal Flake			1	8	9 (14.7%)
Medial Flake				5	5 (8.1%)
Split Flake		1		2	3 (4.9%)
Distal Blade		1			1 (1.6%)
Backed Blade				2	2 (3.2%)
Core				2	2 (3.2%)
Scraper				3	3 (4.9%)
Total	2 (3.2%)	3 (4.9%)	1 (1.6%)	55 (90.1%)	61 (100%)

Two cores were recorded in the assemblage, suggesting that access to suitable stone raw material may not have been a constraint and that stone raw material was consumed on site.

Complete flakes (n=16) are the most numerous of the artefact classes identified and exceed the total number of flaked pieces (n=14), suggesting that flaking strategies were strategic with little to no experimentation. A greater number of complete flakes over debitage pieces also suggests that cores may have been brought into Lindum Vale at the most optimal stage of their use-life, eliminating the need to reduce them further (and thereby creating a large number of flaked pieces) before suitable working platforms were established. This implies that cores were possibly brought into Lindum Vale ready to knap formal tools / complete flakes with little preparation required.

A total of six formal tool types were identified. These include two thumbnail scrapers, two backed blades and a distal blade. All were manufactured from silcrete with the exception of the distal blade, which was manufactured from a fine-grained hornfels.

Table 14: Cortex presence at Tamboore 26 (VAHR 7822-A3840) and Tamboore 25 (VAHR 7822-3841).

	Cortex %				Total
	5	10	25	50+	
Quartz					
Quartzite					
Silcrete	1	1	2	1	5
Total	1	1	2	1	5

Cortex was present on five artefacts, all silcrete and indicative of commonly available waterworn cobbles or quarry sites. Three of the five silcrete artefacts retained cortex on their platforms. The closest registered silcrete and quartzite quarry sites are located at Maude, approximately 60 km to the south-west.

The average length of the artefacts is 16.7 mm, average width is 14.6 mm and average thickness is 4.6 mm. Forty (65.5%) of the artefacts are under 20 mm in length, fourteen (22.9%) are between 20 mm and 29 mm and six (19.3%) are over 30 mm, the largest, a complete flake, being 40.5 mm long. Only one artefact is less than 10 mm. The absence of very small artefacts may indicate slippage through the 6 mm sieve screen.

Given the small size of the artefact assemblage, it is not possible to make any firm conclusions regarding site use and manufacturing techniques. The presence of cortex on silcrete pebbles indicates that some of the raw material was locally procured, however, only five silcrete flakes displayed cortex, and this may indicate a somewhat mid to late stage of core reduction. The assemblage is broadly similar to others in the area. The largest nearby assemblage, Tamboore 6 (VAHR 7822-3394), is that recorded by Stevens and Alberto in 2012. They analysed 1109 stone artefacts at one site as part of the Merrifield West PSP CHMP approximately 3 km north of the activity area. Differences between that assemblage and Tamboore 25 at Lindum Vale are mainly in the proportion of raw material types. Tamboore 6 (VAHR 7822-3394) at Merrifield West was well represented by Quartzite and Quartz (n=119); however only two quartz artefacts and one quartzite artefact was identified at Lindum Vale.

The aesthetic value of the area has been altered by European land use practices, however, it is likely to retain some important values to Aboriginal people. The historic value of the activity area is based on evidence of Aboriginal occupation and is thus important as it displays an association with the immediate landscape.

The site is considered to have a moderate range of cultural material present. This is based on the presence of formal tool types and numerous complete flakes. The site is also considered to be predominantly *in situ*. While it may have been subject to post-depositional disturbance in the form of agricultural activities, it has appeared to have had little or no disturbance by natural processes. The site is broadly representative of other sites in the region, in that it displays a similar range of raw materials and artefact types. It assessed as having low-moderate significance, which is based on the relatively low density of artefacts found, the fact that it has undergone some natural post-depositional disturbance and the low proportion of formal tool types.

The Site Gazetteer and artefact database are included at Appendix 4.

9 CONSIDERATION OF SECTION 61 MATTERS – IMPACT ASSESSMENT

This section assesses the potential for any future development in the activity area to impact on Aboriginal cultural heritage. CHMPs are required to address matters raised in Section 61 of the *Aboriginal Heritage Act* 2006. These matters concern the management of Aboriginal cultural heritage prior to, during, and after the activity. A discussion of these matters is provided below.

Eight Aboriginal cultural heritage places are located within the activity area at 1960–2090 Mickleham Road Mickleham, comprising six scar trees or scar tree sites (Cocking VAHR 7822-0024; Lindum Vale 1–5 VAHR 7822-3588–3592), one LDAD (Tamboore 26 VAHR 7822-3840) and one artefact scatter (Tamboore 25 VAHR 7822-3841).

One scar tree was recorded in 1975 (Cocking) and five were recorded during the Standard Assessment in 2012 (Lindum Vale 1–5). Of the six scar tree sites, one could not be relocated (Cocking) and three have been destroyed by fires in 2014 (Lindum Vale 1, 2 and 4). The remaining scar trees (Lindum Vale 3 VAHR 7822-3590 and Lindum Vale 5 VAHR 7822-3592) are of high significance to the WTLCCCHI and are of moderate scientific significance.

Tamboore 26 (VAHR 7822-3840) is an isolated quartz flaked piece located in a low-lying plains landform at a depth of 150 mm, approximately 50 metres south-west of scar tree Lindum Vale 3. Tamboore 25 (VAHR 7822-3841) is an artefact scatter consisting of 60 stone artefacts located in a ridgeline landform at depths of between 150 and 350 mm. The assemblage predominantly consists of silcrete flakes and flaked pieces. This place is of high significance to the WTLCCCHI and is of low-moderate scientific significance.

9.1 Can harm to Registered Aboriginal Places be avoided?

9.1.1 Lindum Vale 1 (VAHR 7822-3588)

The Sponsor of this CHMP has committed to retaining all Aboriginal scar tree sites identified during the standard assessment. However, Lindum Vale 1 (VAHR 7822-3588) was destroyed during the grass fires of early 2014 and is no longer standing. As Aboriginal Place VAHR 7822-3588 has been destroyed no avoidance of harm measures are required.

9.1.2 Lindum Vale 2 (VAHR 7822-3589)

The Sponsor of this CHMP has committed to retaining all Aboriginal scar tree sites identified during the standard assessment. However, Lindum Vale 2 (VAHR 7822-3589) was destroyed during the grass fires of early 2014 and is no longer standing. As Aboriginal Place VAHR 7822-3589 has been destroyed no avoidance of harm measures are required.

9.1.3 Lindum Vale 3 (VAHR 7822-3590)

The Sponsor has committed to retaining Lindum Vale 3 (VAHR 7822-3590) through the integration of the Place into the master plan of the PSP.

In order to mitigate impact to Lindum Vale 3 during development-related activities the TPZ (tree protection zone) will be fenced off using orange webbing and star picket fencing or similar suitable temporary fencing. The fencing will be erected prior to any ground impact activities. The fencing will be marked with appropriate signage

restricting access and indicating that this is a "no go zone" for construction vehicles and material storage. The erection, maintenance and cost of the fencing throughout the construction process are the responsibility of the Sponsor. The location of the site will be indicated on the master plan and relevant on-site mapping for contractors / employees. Fencing can only be removed following completion of all development-related activities. A copy of the relevant maps as well as a copy of this CHMP must be kept in the site office.

No roads, utilities, infrastructure or ground disturbing activities will occur within the TPZ of VAHR 7822-3590. The current landowner/s of 1960 Mickleham Road, Mickleham must understand where Lindum Vale 3 (VAHR 7822-3590) is located and that harm to its root system or ground disturbance works within the TPZ must be avoided. The tree must not be cut down, defaced or altered in any way. A permit must be sought from Wurundjeri Tribe Land and Compensation Cultural Heritage Council Inc prior to any pruning, lopping or any other activity that will be undertaken for ongoing maintenance and upkeep of VAHR 7822-3590. If a limb of the tree needs to be removed or cut from the tree the RAP must be consulted to discuss the methodology for limb removal.

A low barrier/fence should be constructed around VAHR 7822-3590 as soon as practicable. This fence must be constructed in a way that will not disturb the root system of the tree. The fence will require periodic maintenance to ensure it does not deteriorate prior to the finalisation of construction-related works. The fence must cover the entire TPZ of the place and no further ground disturbing works can occur within this area.

9.1.4 Lindum Vale 4 (VAHR 7822-3591)

The Sponsor of this CHMP has committed to retaining all Aboriginal scar tree sites identified during the standard assessment. However, Lindum Vale 1 (VAHR 7822-3591) was destroyed during the grass fires of early 2014 and is no longer standing. As Aboriginal Place VAHR 7822-3591 has been destroyed no avoidance of harm measures are required.

9.1.5 Lindum Vale 5 (VAHR 7822-3592)

The Sponsor has committed to retaining Lindum Vale 5 (VAHR 7822-3592) through the integration of the place into the master plan of the PSP.

In order to mitigate impact to Lindum Vale 5 during development-related activities the TPZ (tree protection zone) will be fenced off using orange webbing and star picket fencing or similar suitable temporary fencing. The fencing will be erected prior to any ground impact activities. The fencing will be marked with appropriate signage restricting access and indicating that this is a "no go zone" for construction vehicles and material storage. The erection, maintenance and cost of the fencing throughout the construction process are the responsibility of the Sponsor. The location of the site will be indicated on the master plan and relevant on-site mapping for contractors / employees. Fencing can only be removed following completion of all development-related activities. A copy of the relevant maps as well as a copy of this CHMP must be kept in the site office.

No roads, utilities, infrastructure or ground disturbing activities will occur within the TPZ of VAHR 7822-3592. The current landowner/s of 1960 Mickleham Road, Mickleham must understand where Lindum Vale 5 (VAHR 7822-3592) is located and that harm to its root system or ground disturbance works within the TPZ must be avoided. The tree must not be cut down, defaced or altered in any way. A permit must be sought from Wurundjeri Tribe Land and Compensation Cultural Heritage Council prior to any pruning, lopping or any other activity that will be undertaken for ongoing maintenance and upkeep of VAHR 7822-3592. If a limb of the tree needs to be removed or cut from the tree the RAP must be consulted to discuss the methodology for limb removal.

A low barrier/fence should be constructed around VAHR 7822-3592 as soon as practicable. This fence must be constructed in a way that will not disturb the root system of the tree. The fence will require periodic maintenance to ensure it does not deteriorate prior to the finalisation of construction-related works. The fence must cover the entire TPZ of the place and no further ground disturbing works can occur within this area.

9.1.6 Cocking 1 (VAHR 7822-0024).

Cocking (VAHR 7822-0024) is a previously registered place within the northern section of the activity area. The place was originally recorded in November 1975 but could not be relocated during the August 2012 survey, even though every tree was assessed in the activity area. There is no tree within 40–50 metres of where the place is plotted on ACHRIS and the site card information did not assist with relocation. Since it was recorded in 1975 it is likely that the tree has subsequently been burnt down or the co-ordinates plot the site in a different location than what is recorded on the site card and in ACHRIS. Due to the coarse-grained nature of the mapping reference taken for Cocking (VAHR 7822-0024) in 1975 it is also possible that one of the scar tree sites identified during the 2012 survey (Lindum Vale 1–5) is in fact the Cocking scar tree site. As Aboriginal Place VAHR 7822-0024 has been destroyed or removed no avoidance of harm measures are required.

9.1.7 Tamboore 26 (VAHR 7822-3840)

The nature of the proposed development is such that harm cannot be avoided to Tamboore 26 (VAHR 7822-3840) Tamboore 26 is considered to be of low scientific significance, therefore no avoidance of harm strategies are recommended. The artefact comprises an LDAD and no other material was identified from a 5m x 1 metre mechanical transect 10 metres to the south or two 40 cm x 40 cm shovel test pits 5 metres to the north-east and north-west respectively. The isolated artefact must be placed in a sealed, durable open bottomed vessel to allow contact between artefacts and the soil and reburied in open passive space as close to the location of the place as possible.

9.1.8 Tamboore 25 (VAHR 7822-3841)

The nature of the proposed development is such that harm cannot be avoided to Tamboore 25 (VAHR 7822-3841). Tamboore 25 (VAHR 7822-3841) is considered to be of low-moderate scientific significance. Therefore, salvage of cultural heritage material within the defined site extent at Tamboore 25 (VAHR 7822-3841) is recommended. All cultural heritage material recorded as part of Tamboore 25 must be placed in a sealed, durable open bottomed vessel to allow contact between artefacts and the soil and reburied in open passive space as close to the location of the place as possible.

9.2 Can harm be minimised to registered Aboriginal cultural heritage places

9.2.1 Lindum Vale 1 (VAHR 7822-3588)

The site has been completely destroyed by fire. The remainder of the tree will require removal from site. The scar is no longer intact because the entire trunk has collapsed.

The nature of the proposed activity means that it is not possible to minimise harm to the site. Lindum Vale 1 (VAHR 7822-3588) is now considered to be of low scientific significance, therefore no minimisation of harm strategies are recommended.

9.2.2 Lindum Vale 2 (VAHR 7822-3589)

The site has been completely destroyed by fire. The remainder of the tree will require removal from site. The scar is no longer intact because the entire trunk has collapsed.

The nature of the proposed activity means that it is not possible to minimise harm to the site. Lindum Vale 2 (VAHR 7822-3589) is now considered to be of low scientific significance, therefore no minimisation of harm strategies are recommended.

9.2.3 Lindum Vale 3 (VAHR 7822-3590)

No harm will be caused to the site so no harm minimisation measures are required.

9.2.4 Lindum Vale 4 (VAHR 7822-3591)

The site has been completely destroyed by fire. The remainder of the tree will require removal from site. The scar is no longer intact because the entire trunk has collapsed.

The nature of the proposed activity means that it is not possible to minimise harm to the site. Lindum Vale 4 (VAHR 7822-3591) is now considered to be of low scientific significance, therefore no minimisation of harm strategies are recommended.

9.2.5 Lindum Vale 5 (VAHR 7822-3592)

No harm will be caused to the site so no harm minimisation measures are required.

9.2.6 Cocking (VAHR 7822-0024)

The tree could not be relocated during the 2012 standard survey or the 2014 subsurface testing program. It has likely either burnt down or the co-ordinate that was taken in 1975 is erroneous and it is in fact one of the five scar tree sites identified and recorded during the 2012 survey.

The nature of the proposed activity means that it is not possible to minimise harm to the site. Cocking (VAHR 7822-0024) is now considered to be of low scientific significance, therefore no minimisation of harm strategies are recommended.

9.2.7 Tamboore 26 (VAHR 7822-3840)

The nature of the Lindum Vale PSP master plan is such that it is not possible to minimise harm to Tamboore 26 (VAHR 7822-3840). Tamboore 26 is considered to be of low scientific significance, therefore no minimisation of harm strategies are recommended.

9.2.8 Tamboore 25 (VAHR 7822-3841)

The nature of the Lindum Vale PSP master plan is such that it is not possible to minimise harm to Tamboore 25 (VAHR 7822-3841). Tamboore 25 is considered to be of moderate scientific significance, therefore, salvage of cultural heritage material within Tamboore 25 is recommended.

9.3 Are there particular salvage measures required for Aboriginal cultural heritage places identified within the activity area

9.3.1 Lindum Vale 1 (VAHR 7822-3588)

The Place has been destroyed so no salvage measures are required.

9.3.2 Lindum Vale 2 (VAHR 7822-3589)

The Place has been destroyed so no salvage measures are required.

9.3.3 Lindum Vale 3 (VAHR 7822-3590)

No harm will be caused to the site so no salvage measures are required.

9.3.4 Lindum vale 4 (VAHR 7822-3591)

The Place has been destroyed so no salvage measures are required.

9.3.5 Lindum Vale 5 (VAHR 7822-3592)

No harm will be caused to the site so no salvage measures are required.

9.3.6 Cocking (VAHR 7822-0024)

The Place has been destroyed so no salvage measures are required.

9.3.7 Tamboore 26 (VAHR 7822-3840)

Tamboore 26 (VAHR 7822-3840) is considered to be of low scientific significance. Therefore, with the agreement of the RAP, no salvage measures are required for Tamboore 26.

9.3.8 Tamboore 25 (VAHR 7822-3841)

The activity cannot avoid impacting upon the Aboriginal cultural heritage site Tamboore 25. As a result, the WTLCCCHI specifically requests salvage of the artefacts in the portion of Tamboore 25 that will be impacted. Tamboore 25 encompasses an area of 812m² which is based on the core distribution of artefacts, rather than landform. The RAP accepts mechanical excavation across the extent of this place as a suitable process for salvage of the place. The following salvage program is recommended prior to any construction works in the activity area commencing:

- Salvage will be undertaken within the boundaries of Tamboore 25
- Mechanical excavations will occur over an area of 29 metres x 28 metres from the corner of the post and wire fence demarcating the far south western corner of the title boundary at 1960 Mickleham Road, Mickleham.
- If suitable; datable material is identified during the manual excavation program, samples must be collected for dating purposes. For each sample, clean trowels should be used, to avoid cross contamination between samples. OSL dates must be taken from sand samples directly below the location of the artefacts (following spit) provided no disturbance is observed. A minimum of two sand samples should be taken for OSL dating purposes. The samples should be packaged in chemically neutral materials to avoid picking up new C-14 from the packaging. The packaging should also be airtight to avoid contact with atmospheric C-14. Also, the stratigraphy should be carefully examined to determine that a carbon sample location was not contaminated by carbon from a later or an earlier period.
- The cost of dating of archaeological material must be met by the Sponsor.
- Mechanical excavation will consist of a total of twenty-nine transects 28 m long x 1 m wide (width of the excavation bucket) trenches, across the entire site extent. The greatest depth of any of the mechanical transects at Tamboore 25 was 41cm. All artefacts were recovered from this or above this level. Expected depth for all salvage excavations will be approximately 40cm.
- All excavation will occur in 100 mm spits. All artefacts recovered from the excavation must be bagged according to their location and approximate depth in the transect.
- 100% of the removed deposit shall be sieved in a 6 mm mechanical sieve.

- A minimum of two sample section drawings must be completed and included in the salvage report in order to demonstrate the stratigraphy of the Place, and the location of artefacts within these soil horizons.
- A qualified CHA shall supervise the salvage excavations and members of the RAP will also participate in the field work.
- A series of research questions about the artefacts and sites must be examined in the salvage report. These are not to be limited to but should include the following:
 - What is the origin of the raw material?
 - How do the sites relate to others in the region?
 - Is there evidence of use wear or residue?
- Should any *in-situ* cultural deposits be discovered during excavation that are in direct association with datable material then radiometric dating of these deposits and/or features will be arranged by the CHA and the cost must be met by the Sponsor
- A salvage report describing the results of the salvage program and a detailed artefact analysis will be required. The salvage report must include a spatial analysis of artefact types and material. The salvage report must be submitted to the Wurundjeri and AAV within 90 days of the completion of the works. The CHA will retain these artefacts until the artefact analysis has been completed. Following the completion of the artefact analysis, the artefacts will be returned to the Wurundjeri. A sample of these will be retained for teaching purposes and the remainder will be reburied.

It is unclear where manual salvage will occur as part of the salvage program: however, based on advice from Alan Wandin (11 November 2014) manual salvage should be undertaken via 1mx1m test pit in spits by layer and trowel method wherever more than 10 artefacts are recovered from any one 2m x 1m mechanical scrape. Mechanical excavation must stop at this location (but can recommence elsewhere) and hand excavation must be undertaken in the form of a 1m x 1m excavation square and must follow the following procedure.

- The soil from each spit will be placed in a bucket within the square, weighed and then deposited directly into one of the sieves operating. All soil (100%) will be sieved through 5 mm sieve screens. All soils are to be 100% sieved to basal level (e.g. approximately 40 cm). Excavations will continue until culturally sterile deposits have been reached. At the completion of each spit basal photographs will be taken and excavation sheets will be completed, noting changes in stratigraphic horizons (soil colour and texture), rocks, gravel and other materials not of cultural origin. Munsell (soil colour) and pH levels will also be taken. Sieving will be conducted at a reasonable distance from the excavation area to avoid backfilling of the square. Disturbance around the excavation areas will be kept to a minimum, with only the excavator and excavation recorder present while soil extraction is in progress.
- Upon the completion of the excavation to a sterile layer, stratigraphic horizons will be identified and profiles of two of the trench walls (north perspective and east perspective) will be drawn to provide a concise schematic representation of the stratigraphy as well as to complement the photographs and relate stratigraphic horizons to excavation notes and descriptions.
- All artefacts will be bagged with date, spit number and site name clearly labelled. An extensive analysis of any collected material will be conducted at a location to be decided upon by the RAP and the Cultural Heritage Advisors.
- The archaeological material located will be curated and stored appropriately; this is a matter for discussion between the cultural heritage advisor and the RAP.

- If sufficient samples can be recovered during the salvage program, then any charcoal or other datable material must be collected in the appropriate manner and submitted for radiocarbon (C14) dating. If no charcoal samples are available then soil (sand) samples will be acquired for Optically Stimulated Luminescence (OSL) dating. The cost of this testing is to be met by the Sponsor. Collection of these samples will follow recommendations by Dr Alan Hogg from the Laboratory at the University of Waikato. This institution is very prompt (7 days if necessary) with their determinations and very competitively priced when compared with other dating laboratories. The dating of charcoal samples is priced at NZ \$475 a sample. Dates can be obtained from charcoal samples of 1g; however, an 8–10g sample is deemed optimal. Any faunal remains that may be excavated can also be utilised for dating purposes. The minimum sample weight for C14 radiometric dating of bone is 50g, with the ideal sample weight being 100–200g. For smaller samples of charcoal or faunal skeletal remains, AMS (Accelerator Mass Spectrometry) dating is also available. In this case the minimum sample size for charcoal is 100mg, while for bone it is 1.0–5.0g.

9.4 What custody and management arrangements might be necessary?

The custody and management of Aboriginal cultural heritage is addressed in Part 2 of this CHMP.

Part 2 | Cultural Heritage Management Recommendations

Note: These recommendations become compliance requirements once this Cultural Heritage Management Plan is approved.

10 SPECIFIC CULTURAL HERITAGE MANAGEMENT REQUIREMENTS

10.1 Recommendation 1 – Lindum Vale 1 (VAHR 7822-3588)

Lindum Vale 1 (VAHR 7822-3588) has been destroyed and burnt to the ground. The scar is no longer visible and the tree has no scientific value and must be removed. The RAP may inspect this tree during their first on-site inspection and may remove the remains of the tree at their discretion; however, it should be noted that the scar is no longer visible on Lindum Vale 1 [VAHR 7822-3588] and as such it is assessed as not being suitable for display purposes. The scar tree must be retained until the RAP have undertaken their first inspection of the activity area. The RAP inspection and any tree relocation must be organised and paid for by the site contractor and/or sponsor. There are no further management recommendations required for this Place.

10.2 Recommendation 2 – Lindum Vale 2 (VAHR 7822-3589)

Lindum Vale 1 (VAHR 7822-3589) has been destroyed and burnt to the ground. The scar is no longer visible and the tree has no scientific value and must be removed. The RAP may inspect this tree during their first on-site inspection and may remove the remains of the tree at their discretion; however, it should be noted that the scar is no longer visible on Lindum Vale 2 [VAHR 7822-3589] and as such it is assessed as not being suitable for display purposes. The scar tree must be retained until the RAP have undertaken their first inspection of the activity area. The RAP inspection and any tree relocation must be organised and paid for by the site contractor and/or sponsor. There are no further management recommendations required for this Place.

10.3 Recommendation 3 – Lindum Vale 3 (VAHR 7822-3590)

The Sponsor has committed to retaining Lindum Vale 3 (VAHR 7822-3590) through the integration of the place into the master plan of the PSP.

In order to mitigate impact to Lindum Vale 3 during development-related activities the TPZ (tree protection zone) will be fenced off using orange webbing and star picket fencing or similar suitable temporary fencing. Fencing must be placed in a radius around the tree at a distance of at least 14 metres from the base of the trunk (Figure 1). This distance is well outside the tree root extent and was developed based on the size of the tree and recommendation made by EHP Botanist Mark Stockdale. Fencing will be erected prior to any ground impact activities. The fencing will be marked with appropriate signage restricting access and indicating that this is a "no go zone" for construction vehicles and material storage. The erection, maintenance and cost of the fencing throughout the construction process is the responsibility of the Sponsor. The location of the site will be indicated on the master plan and relevant on-site mapping for contractors / employees. Fencing can only be removed

following completion of all development-related activities. A copy of the relevant maps as well a copy of this CHMP must be kept in the site office.

No roads, utilities, infrastructure or ground disturbing activities will occur within the TPZ of VAHR 7822-3590. The current landowner/s of 1960 Mickleham Road, Mickleham must understand where Lindum Vale 3 (VAHR 7822-3590) is located and that harm to its root system or ground disturbance works within the TPZ must be avoided. The tree must not be cut down, defaced or altered in any way. A permit must be sought from Wurundjeri Tribe Land and Compensation Cultural Heritage Council Inc prior to any pruning, lopping or any other activity that will be undertaken for ongoing maintenance and upkeep of VAHR 7822-3590. If a limb of the tree needs to be removed or cut from the tree the RAP must be consulted to discuss the methodology for limb removal.

A low barrier/fence should be constructed around VAHR 7822-3590 along as soon as practicable. This fence must be constructed in a way that will not disturb the root system of the tree. The fence will require periodic maintenance to ensure it does not deteriorate prior to the finalisation of construction-related works. The fence must cover the entire TPZ of the place and no further ground disturbing works can occur within this area.

Figure 1: Management Recommendation for VAHR 7822-3590 Lindum Vale 3 showing TPZ and extent of fencing required during development-related activities. (redacted)

10.4 Recommendation 4 – Lindum Vale 4 (VAHR 7822-3591)

Lindum Vale 4 (VAHR 7822-3591) has been destroyed and burnt to the ground. The scar is no longer visible and the tree has no scientific value and must be removed. The RAP may inspect this tree during their first on-site inspection and may remove the remains of the tree at their discretion; however, it should be noted that the scar is no longer visible on Lindum Vale 4 [VAHR 7822-3591] and as such it is assessed as not being suitable for display purposes. The scar tree must be retained until the RAP have undertaken their first inspection of the activity area. The RAP inspection and any tree relocation must be organised and paid for by the site contractor and/or sponsor. There are no further management recommendations required for this Place.

10.5 Recommendation 5 – Lindum Vale 5 (VAHR 7822-3592)

The Sponsor has committed to retaining Lindum Vale 5 (VAHR 7822-3592) through the integration of the place into the master plan of the PSP.

In order to mitigate impact to Lindum Vale 5 during development-related activities the TPZ (tree protection zone) will be fenced off using orange webbing and star picket fencing or similar suitable temporary fencing. Fencing must be placed in a radius around the tree at a distance of at least 18.5 metres from the base of the trunk (Figure 1). This distance is well outside the tree root extent and was developed based on the size of the tree and recommendation made by EHP Botanist Mark Stockdale. The fencing will be erected prior to any ground impact activities. The fencing will be marked with appropriate signage restricting access and indicating that this is a "no go zone" for construction vehicles and material storage. The erection, maintenance and cost of the fencing throughout the construction process is the responsibility of the Sponsor. The location of the site will be indicated on the master plan and relevant on-site mapping for contractors / employees. Fencing can only be removed following completion of all development-related activities. A copy of the relevant maps as well a copy of this CHMP must be kept in the site office.

No roads, utilities, infrastructure or ground disturbing activities will occur within the TPZ of VAHR 7822-3592. The current landowner/s of 1960 Mickleham Road, Mickleham must understand where Lindum Vale 5 (VAHR 7822-3592) is located and that harm to its root system or ground disturbance works within the TPZ must be avoided. The tree must not be cut down, defaced or altered in any way. A permit must be sought from Wurundjeri Tribe Land and Compensation Cultural Heritage Council Inc prior to any pruning, lopping or any other activity that will be undertaken for ongoing maintenance and upkeep of VAHR 7822-3592. If a limb of the tree needs to be removed or cut from the tree the RAP must be consulted to discuss the methodology for limb removal.

A low barrier/fence should be constructed around VAHR 7822-3592 along as soon as practicable. This fence must be constructed in a way that will not disturb the root system of the tree. The fence will require period maintenance to ensure it does not deteriorate prior to the finalisation of construction-related works. The fence must cover the entire TPZ of the place and no further ground disturbing works can occur within this area.

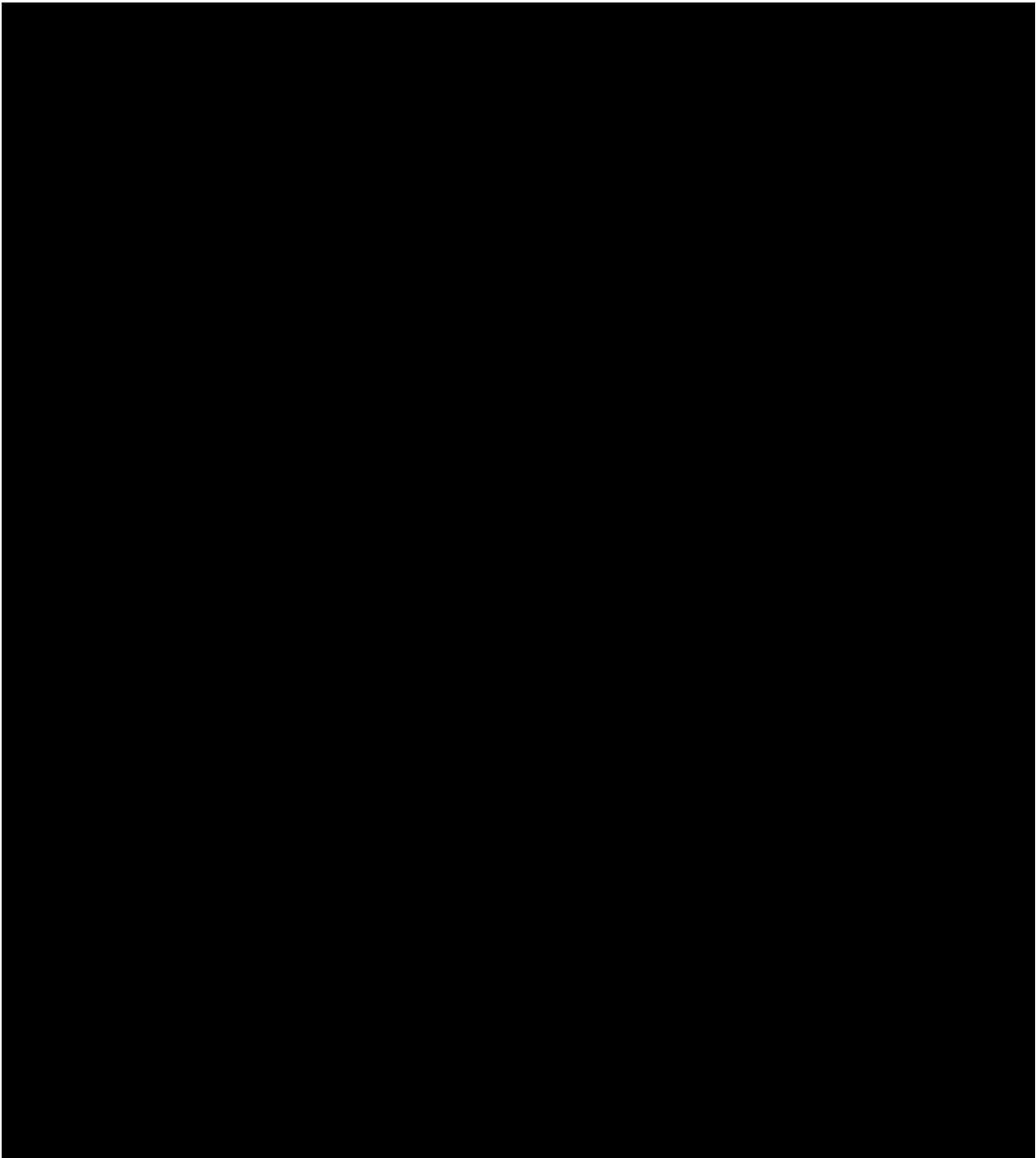


Figure 2: Management Recommendation for VAHR 7822-3592 Lindum Vale 5 showing TPZ and extent of fencing required during development-related activities. (redacted)

10.6 Recommendation 6 – Cocking (7822-0024)

Cocking (VAHR 7822-0024) could not be relocated during the 2012 field survey or the 2014 excavation program. There is no tree within 40-50 metres of where the place is plotted on ACHRIS and the site card information did not assist with relocation. Since it was recorded in 1975 it is likely that the tree has subsequently been burnt down or the co-ordinates plot the site in a different location than what is recorded on the site card and ACHRIS. Due to the coarse-grained nature of the mapping reference taken for Cocking (VAHR 7822-0024) in 1975 it is also possible that one of the scar tree sites identified during the 2012 survey (Lindum Vale 1-5) is in fact the Cocking scar tree site. As Aboriginal Place VAHR 7822-0024 has been destroyed or removed no management recommendations are required.

10.7 Recommendation 7 – Tamboore 26 (VAHR 7822-3840)

Tamboore 26 is considered to be of low scientific significance. The RAP has agreed that no salvage or protection measures are required for Tamboore 26. The isolated artefact which comprises this place must be placed in a sealed, durable open bottomed vessel to allow contact between artefacts and the soil and reburied in open passive space as close to the location of the place as possible. This procedure can be combined with the reburial of artefacts from Tamboore 25.

10.8 Recommendation 8 – Tamboore 25 (VAHR 7822-3841)

The activity cannot avoid harm to the Aboriginal cultural heritage site Tamboore 25. As a result, the WTLCHCI specifically requested salvage of the artefacts at Tamboore 25. Tamboore 25 encompasses an area of 812m² which is based on the core distribution of artefacts, rather than landform. The RAP accepts mechanical excavation across the extent of this place as a suitable process for salvage of the place. The following salvage program is required prior to any construction works in the activity area commencing:

- Salvage will be undertaken within the boundaries of Tamboore 25
- Mechanical excavations will occur over an area of 29 metres x 28 metres from the corner of the post and wire fence demarcating the far south western corner of the title boundary at 1960 Mickleham Road, Mickleham.
- If suitable; datable material is identified during the manual excavation program, samples must be collected for dating purposes. For each sample, clean trowels should be used, to avoid cross contamination between samples. OSL dates must be taken from sand samples directly below the location of the artefacts (following spit) provided no disturbance is observed. A minimum of two sand samples should be taken for OSL dating purposes. The samples should be packaged in chemically neutral materials to avoid picking up new C-14 from the packaging. The packaging should also be airtight to avoid contact with atmospheric C-14. Also, the stratigraphy should be carefully examined to determine that a carbon sample location was not contaminated by carbon from a later or an earlier period.
- The cost of dating of archaeological material must be met by the Sponsor.
- Mechanical excavation will consist of a total of twenty-nine transects 28 m long x 1 m wide (width of the excavation bucket) trenches, across the entire site extent. The greatest depth of any of the mechanical transects at Tamboore 25 was 41cm. All artefacts were recovered from this or above this level. Expected depth for all salvage excavations will be approximately 40cm.
- All excavation will occur in 100 mm spits. All artefacts recovered from the excavation must be bagged according to their location and approximate depth in the transect.
- 100% of the removed deposit shall be sieved in a 6 mm mechanical sieve.
- A minimum of two sample section drawings must be completed and included in the salvage report in order to demonstrate the stratigraphy of the Place, and the location of artefacts within these soil horizons.
- A qualified CHA shall supervise the salvage excavations and members of the RAP will also participate in the field work.
- A series of research questions about the artefacts and sites must be examined in the salvage report. These are not to be limited to but should include the following:

- What is the origin of the raw material?
- How do the sites relate to others in the region?
- Is there evidence of use wear or residue?
- Should any *in-situ* cultural deposits be discovered during excavation that are in direct association with datable material then radiometric dating of these deposits and/or features will be arranged by the CHA and the cost must be met by the Sponsor.
- A salvage report describing the results of the salvage program and a detailed artefact analysis will be required. The salvage report must include a spatial analysis of artefact types and material. The salvage report must be submitted to the Wurundjeri and AAV within 90 days of the completion of the works. The CHA will retain these artefacts until the artefact analysis has been completed. Following the completion of the artefact analysis, the artefacts will be returned to the Wurundjeri. A sample of these will be retained for teaching purposes and the remainder will be reburied.

It is unclear where manual salvage will occur as part of the salvage program: however, based on advice from Alan Wandin (11 November 2014) manual salvage should be undertaken via 1mx1m test pit in spits by layer and trowel method wherever more than 10 artefacts are recovered from any one 2m x 1m mechanical scrape. Mechanical excavation must stop at this location (but can recommence elsewhere) and hand excavation must be undertaken in the form of a 1m x 1m excavation square and must follow the following procedure.

- The soil from each spit will be placed in a bucket within the square, weighed and then deposited directly into one of the sieves operating. All soil (100%) will be sieved through 5 mm sieve screens. All soils are to be 100% sieved to basal level (e.g. approximately 40 cm). Excavations will continue until culturally sterile deposits have been reached. At the completion of each spit basal photographs will be taken and excavation sheets will be completed, noting changes in stratigraphic horizons (soil colour and texture), rocks, gravel and other materials not of cultural origin. Munsell (soil colour) and pH levels will also be taken. Sieving will be conducted at a reasonable distance from the excavation area to avoid backfilling of the square. Disturbance around the excavation areas will be kept to a minimum, with only the excavator and excavation recorder present while soil extraction is in progress.
- Upon the completion of the excavation to a sterile layer, stratigraphic horizons will be identified and profiles of two of the trench walls (north perspective and east perspective) will be drawn to provide a concise schematic representation of the stratigraphy as well as to complement the photographs and relate stratigraphic horizons to excavation notes and descriptions.
- All artefacts will be bagged with date, spit number and site name clearly labelled. An extensive analysis of any collected material will be conducted at a location to be decided upon by the RAP and the Cultural Heritage Advisors.
- The archaeological material located will be curated and stored appropriately; this is a matter for discussion between the cultural heritage advisor and the RAP.
- If sufficient samples can be recovered during the salvage program, then any charcoal or other datable material must be collected in the appropriate manner and submitted for radiocarbon (C14) dating. If no charcoal samples are available then soil (sand) samples will be acquired for Optically Stimulated Luminescence (OSL) dating. The cost of this testing is to be met by the Sponsor. Collection of these samples will follow recommendations by Dr Alan Hogg from the Laboratory at the University of Waikato. This institution is very prompt (7 days if necessary) with their determinations and very competitively priced when compared with other dating laboratories. The dating of charcoal samples is priced at NZ \$475 a sample. Dates can be obtained from charcoal samples of 1g; however, an 8–10g sample is

deemed optimal. Any faunal remains that may be excavated can also be utilised for dating purposes. The minimum sample weight for C14 radiometric dating of bone is 50g, with the ideal sample weight being 100–200g. For smaller samples of charcoal or faunal skeletal remains, AMS (Accelerator Mass Spectrometry) dating is also available. In this case the minimum sample size for charcoal is 100mg, while for bone it is 1.0–5.0g.

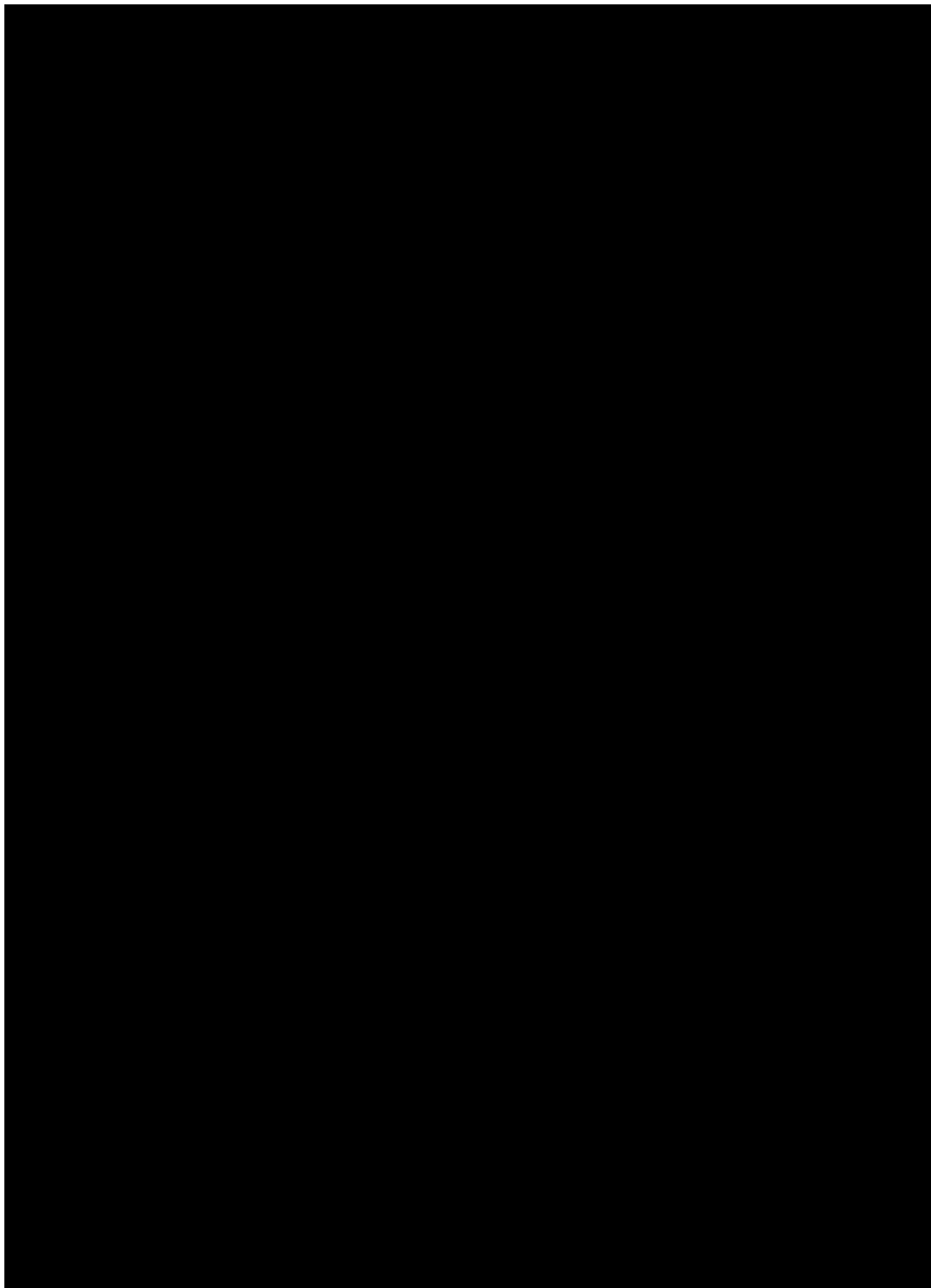


Figure 3: Management Recommendation for VAHR 7822-3841 Tamboore 25 showing 100% salvage of the site extent. (redacted)

10.9 Recommendation 9 – RAP Access to the Activity Area

The RAP must be involved in three separate site inspections and have access to the locations of all Aboriginal cultural heritage sites identified and recorded in this CHMP (before, during and after works). See RAP inspection procedure shown at Figure 1 below.



Wurundjeri Standard Procedure for CHMP Implementation RAP Inspections

The Wurundjeri Council have determined that a number of site inspections will be undertaken by Wurundjeri representatives during the constructions works in order to audit the works and ensure that they comply with the recommendations and contingency plan contained within this CHMP.

There will be three CHMP implementation RAP inspections that must take place during the constructions phase of the activity. The first inspection must take place at the start of the activity and can be combined with the Cross Cultural Training Session (see Recommendation for Cross Cultural Training Session). The second must take place as close as possible to the half way point of the construction works. The third inspection must take place at the end of the construction phase of the activity.

The Wurundjeri Council must be notified a week in advance before these three points are reached during the construction works. A Worker Request Form must be filled out and sent to the Wurundjeri Council to book a Wurundjeri representative in for each of the three inspections.

A Wurundjeri representative will conduct the inspection and fill out the inspection form attached as an Appendix to this CHMP. A cultural heritage advisor/archaeologist may also attend this inspection if necessary. If the inspection reveals suspected non-compliance of the CHMP, then the procedure outlined in Contingency (insert appropriate Contingency for non-compliance number here) will be initiated. If the inspection reveals a suspected breach of the Victorian *Aboriginal Heritage Act* 2006 then these actions must be reported to Aboriginal Affairs Victoria (AAV) immediately and an Inspector may be called out and/or a Stop Order may be issued by AAV.

This procedure must be organised and paid for by the site contractors and/or Sponsor.

Figure 4: WTLCHCI standard procedure for CHMP implementation RAP inspections

10.10 Recommendation 10 – Community consultation to discuss signage / plaques / sculpture

The proponent must engage the RAP in order to invite Elders to undertake a site inspection prior to the commencement of development related activities within the activity area. The proponent must also engage the RAP Green Team to discuss future land management activities (revegetation / care of open space). The cultural consultation committee must also be consulted to discuss options for plaques / artwork / sculpture that link reserves / pathways of open space prior to the finalisation of the design / precinct structure plan in order to acknowledge cultural values at both local and regional levels

10.11 Recommendation 11 – Onsite staff to receive training prior to commencement of activity

Prior to the commencement of the activity, the nominated contractor/s must be advised by the Sponsor of the terms of the plan and their broader responsibilities to the *Aboriginal Heritage Act* (2006). The induction training for on-site staff should include:

- training in Aboriginal cultural heritage sensitivity;
- clear advice on the identity and contact details of the Sponsor's project delegate and contact details for a cultural heritage advisor;
- clear advice on staff responsibilities under the contingency plans contained within this report, in particular regarding the discovery of Aboriginal cultural material and human remains (see Section 10 below).

Please refer to Figure 2 below for procedures relating to the cultural heritage induction. At the RAP's request, a cultural heritage advisor should also be present during the induction to assist with relocating all Aboriginal cultural heritage Places identified in this CHMP. A copy of this CHMP should be kept on site during construction and revegetation works so that it can be referred to if required.



Wurundjeri Standard Procedure for Cultural Heritage Awareness Induction

A cultural heritage awareness induction must be conducted with all site workers/contractors by representatives of the Wurundjeri Tribe Land Council prior to or at the commencement of construction works. A cultural heritage advisor/archaeologist may also attend this training session if necessary. The session must include a brief history of the Aboriginal occupation of the activity area and broader region; a summary of the archaeological investigations conducted within the activity area; specific details of all Aboriginal Places and Heritage located during the CHMP assessment; a summary of the recommendations and contingencies contained within the CHMP; and the obligations of site workers/contractors and Sponsors under the Victorian *Aboriginal Heritage Act 2006*.

The main aim of the cultural heritage awareness induction is to explain the procedures outlined in the CHMP; show the site contractors examples of the most likely Aboriginal cultural heritage material to be located within the activity area; and explain the procedure outlined in the Contingency Plan Section of the CHMP in the unlikely event that this material is uncovered by them during the course of construction works.

This induction must be organised and paid for by the site contractors and/or Sponsor.

Figure 5: WTLCHCI standard procedure for cultural heritage awareness induction

10.12 Recommendation 12 – Approval required for changes to the proposed activity

Should any changes be made to the activity in terms of the nature and extent that the ground is to be impacted, the Sponsor must obtain statutory approval and may be required to submit a new CHMP (Section 52(1) *Aboriginal Heritage Act 2006*).

11 ABORIGINAL CULTURAL HERITAGE MANAGEMENT CONTINGENCIES

11.1 Contingency – Aboriginal Cultural Heritage Sites

If any Aboriginal cultural heritage sites are located during the proposed works at 1960–2090 Mickleham Road, Mickleham the following actions must be undertaken;

- All works within 10 m of the known extent of the relevant discovery area must cease immediately and protective fencing must be erected around the relevant area.
- The person making the discovery shall immediately notify the nominated project delegate for the RAP (or OAAV in the absence of a RAP) and the nominated project delegate for the Sponsor.
- While works are suspended, the nominated project delegates and the Cultural Heritage Advisor must evaluate the Aboriginal cultural heritage.
- An appropriately qualified Cultural Heritage Advisor must be engaged by the Project Sponsor to record and assess the findings and advise on possible management strategies (see Section 11.5: Contingency plan regarding non-compliance).

As far as practicable, the Cultural Heritage Advisor and representative of the RAP must inspect the site within 24 hours of being notified. During this inspection the management of any Aboriginal cultural heritage will be discussed and agreed to. The Cultural Heritage Advisor will be required to record the nature and extent of the site during the initial inspection or, if this is not possible, as soon as practical after the initial inspection is undertaken. Documentation of the site may include subsurface testing to establish the temporal and spatial extent of the site. If the Aboriginal cultural heritage is determined to be significant (i.e. an intact cultural deposit), the RAP may require site protection measures. If this is not possible, a sample salvage excavation, undertaken by a suitably qualified and experienced archaeologist, may be required to obtain adequate data prior to works proceeding.

The RAP will advise the Sponsor's delegate when suspended construction works can recommence.

Failure of parties to reach an agreed course of action will be classed a dispute (see Section 11.4).

Work may recommence within the 10 m buffer of the known extent of the site when:

- Appropriate protective measures have been undertaken.
- The relevant records for the Aboriginal cultural heritage have been completed by the heritage advisor.
- Any dispute has been resolved.

The Cultural Heritage Advisor, the Sponsor and the RAP must ensure that all these measures are followed and that legal obligations and requirements are complied with at all times.

The Cultural Heritage Advisor must submit all relevant site records including VAHR forms to OAAV within fourteen days of completing the assessment of the cultural heritage site.

In the situation that salvage is required then the following process/methodology will be applied by a suitably Cultural Heritage Advisor (i.e. a qualified and experienced archaeologist):

- The soil from each spit will be placed in a bucket within the square, weighed and then deposited directly into one of the sieves operating. All soil (100%) will be sieved through 5 mm sieve screens. All soils are to be 100% sieved to basal level (e.g. 120 cm on the sand ridge and up to 60 cm on the slope of the ridge). Excavations will continue until culturally sterile deposits have been reached. At the completion of each spit basal photographs will be taken and excavation sheets will be completed, noting changes in stratigraphic horizons (soil colour and texture), rocks, gravel and other materials not of cultural origin. Munsell (soil colour) and pH levels will also be taken. Sieving will be conducted at a reasonable distance from the excavation area to avoid backfilling of the square. Disturbance around the excavation areas will be kept to a minimum, with only the excavator and excavation recorder present while soil extraction is in progress.
- Upon the completion of the excavation to a sterile layer, stratigraphic horizons will be identified and profiles of two of the trench walls (north perspective and east perspective) will be drawn to provide a concise schematic representation of the stratigraphy as well as to complement the photographs and relate stratigraphic horizons to excavation notes and descriptions.
- Following this, the trenches will be backfilled to the requirements of the developer and the satisfaction of the Aboriginal field assistants.
- All artefacts will be bagged with date, spit number and site name clearly labelled. An extensive analysis of any collected material will be conducted at a location to be decided upon by the Aboriginal field assistants and the Cultural Heritage Advisors.
- A detailed artefact analysis will be conducted by the archaeologist and the Cultural Heritage Advisor. Analysis methodology will be formalised at a later date; however, it is expected that analysis of artefacts will be concerned with the presence or absence of striking platforms, bulbs of percussion, termination types, raw material type, number of negative flake scars, artefact types, type of reduction technique, edge damage etc. Length, width and weight scales will also be recorded and conjoining analysis will also be undertaken. Use-wear analysis will be conducted using either X20 or X40 magnification on a stereomicroscope. Images of any edge damage or use-wear will be provided and detailed in the salvage report. This will facilitate determinations of which type of stone raw materials were used at the site, the type of artefact technologies manufactured from them and what function (if any) the artefacts may have performed. Artefact types and attributes will be identified using Holdaway and Stern (2004) and artefact terminology will derive from the same source.
- The archaeological material located will be curated and stored appropriately; this is a matter for discussion between the cultural heritage advisor and the relevant Aboriginal community.
- If sufficient samples can be recovered during the salvage program, then any charcoal or other datable material must be collected in the appropriate manner and submitted for radiocarbon (C14) dating. If no charcoal samples are available then soil (sand) samples will be acquired for Optically Stimulated Luminescence (OSL) dating. The cost of this testing is to be met by the Sponsor. Collection of these samples will follow recommendations by Dr Alan Hogg from the Laboratory at the University of Waikato. This institution is very prompt (7 days if necessary) with their determinations and very competitively

priced when compared with other dating laboratories. The dating of charcoal samples is priced at NZ \$475 a sample. Dates can be obtained from charcoal samples of 1g; however, an 8–10 g sample is deemed optimal. Any faunal remains that may be excavated can also be utilised for dating purposes. The minimum sample weight for C14 radiometric dating of bone is 50 g, with the ideal sample weight being 100–200 g. For smaller samples of charcoal or faunal skeletal remains, AMS (Accelerator Mass Spectrometry) dating is also available. In this case the minimum sample size for charcoal is 100 mg, while for bone it is 1.0–5.0 g.

- A summary review of the information gathered will be given to all stakeholders. Copies of all reports associated with the salvage program will be lodged with the Office of Aboriginal Affairs Victoria. This must be completed 60 days after the completion of the salvage excavations.

11.2 Contingency – Aboriginal Cultural Heritage Material

Any Aboriginal cultural heritage recovered or salvaged during works at 1960–2090 Mickleham Road, Mickleham would ordinarily remain the property of the RAP. The custody and management of Aboriginal cultural heritage during the course of the activity should comply with the requirements established by the *Aboriginal Heritage Act* 2006.

For this activity area it will be the responsibility of the Cultural Heritage Advisor to:

- catalogue the Aboriginal cultural heritage;
- label and package the Aboriginal cultural heritage with reference to provenance;
- arrange storage of the Aboriginal cultural heritage in a secure location together with copies of the catalogue and assessment documentation.

Contact details for the Office of Aboriginal Affairs Victoria are:

Office of Aboriginal Affairs Victoria
GPO Box 2392
Melbourne
Vic 3001
Phone: 1800 762 003
Fax: (03) 9208 3292
aboriginalaffairs@dpc.vic.gov.au

11.3 Contingency – Human Burials

If any suspected human burial remains are exposed at any stage of the proposed development, then all works must cease and Victoria Police and the State Coroner's Office should be notified immediately.

If there are reasonable grounds to believe that the remains may be Aboriginal, the OAAV State Control Centre must be contacted immediately on **1300 888 544**.

The following contingency plan is provided in the event of any such discovery within the activity area at 1960–2090 Mickleham Road, Mickleham.

11.3.1 Discovery

All activity in the vicinity of the suspected human remains must cease to ensure minimal damage to the remains.

The remains must be left in place and protected from harm or damage.

11.3.2 Notification

The State Coroner's Office and Victoria Police must be notified immediately. The State Coroner's Office may be contacted at any time on **1300 309 519**. The Office of Aboriginal Affairs State Control Centre must be contacted on **1300 888 544**.

The details of the location and nature of the human remains must be provided to the relevant authorities.

If it is confirmed by these authorities that the discovered remains are Aboriginal skeletal remains, the person responsible for the activity must report the existence of human remains to The Secretary (DPC) in accordance with s.17 of the Act.

11.3.3 Impact Mitigation of Salvage

The Secretary, after taking reasonable steps to consult with any Aboriginal person or body with an interest in the Aboriginal human remains, will determine the appropriate course of action as required by s.18(2)(b) of the Act.

Note: In consultation with any relevant RAP, a Sponsor may consider incorporating a contingency plan to reserve an appropriate area for reburial of any recovered human remains that may be discovered during the activity. This may assist the Secretary in determining an appropriate course of action.

11.3.4 Curation and Further Analysis

The treatment of human remains must be in accordance with the direction of the Secretary and in accordance with s.18 (2) (b) of the *Aboriginal Heritage Act 2006*.

11.3.5 Reburial

Any reburial site(s) must be fully documented by an experienced and qualified archaeologist and clearly marked and all details provided to the Office of Aboriginal Affairs Victoria (OAAV).

Appropriate management measures must be implemented to ensure that the remains are not disturbed in the future.

Do not touch or otherwise interfere with the remains, other than to safeguard them from further disturbance.

Do not contact the media.

11.4 Contingency – Dispute Resolution

Should any or all parties have any concerns regarding non-compliance with this CHMP, they are advised to immediately consult with the cultural heritage advisor and with the Office of Aboriginal Affairs Victoria.

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

Formal Dispute Resolution

- The party raising the dispute must notify of the dispute and its nature and email a copy to the RAP, Sponsor and Cultural Heritage Advisor of this CHMP.
- Project delegates of each party (RAP Alexander Parmington or equivalent and Sponsor Chris Engert or equivalent) must attempt to negotiate a resolution to any dispute related to cultural heritage

management of the activity area within 48 hours of written notice being received that a dispute between parties is deemed to exist. If the project delegates cannot reach an agreement, representatives of both parties must meet to negotiate a resolution to an agreed schedule.

- If representatives of the relevant parties fail to reach an agreement, an independent mediator must be initially sought to assist in resolving the dispute. A timeframe for the independent mediator must be agreed upon by both parties. If an independent mediator cannot be agreed on, mediation shall be effected by a mediator nominated upon the application by either party, by the Victorian Chapter of the Institute of Arbitrators and Mediators or the Dispute Settlement Centre of Victoria.
- If the matter remains unresolved after mediation the Parties shall seek to agree upon the appointment of an independent arbitrator to hear and resolve the matter. In the absence of agreement as to an arbitrator, arbitration shall be effected by an arbitrator nominated upon the application by either Party by the Victorian Chapter of the Institute of Arbitrators and Mediators, or, failing such nomination within 28 days, appointed with the provisions of the *Commercial Arbitration Act (Vic) 1984*.
- A reference to arbitration under this Clause shall be deemed to be a reference to arbitration within the meaning of the laws relating to arbitration in force in the State of Victoria. The arbitrator shall have all the powers conferred by those laws. The arbitrator's decision shall be final, subject to any rights of appeal under the *Commercial Arbitration Act (Vic) 1984*.
- The procedures concerning mediation and arbitration, including payment of costs, shall be agreed between the Parties.
- These arrangements do not preclude any legal recourse open to the Parties being taken but the Parties agree the above avenues will be exhausted before such recourse is made.

In order to facilitate the above procedure:

- The Party with the grievance must notify each other Party of the problem at the earliest opportunity;
- Throughout all stages of the procedure all relevant facts must be clearly identified and recorded;
- All disputes will be jointly investigated; and

Sensible time limits must be allowed for completion of the various stages of discussion. However, the parties must cooperate to ensure that the dispute resolution procedures are carried out as quickly as possible.

The project delegate for the RAP is;

Alexander Parmington, Manager, Cultural Heritage

Wurundjeri Tribe Land & Compensation Cultural Heritage Council Incorporated

1st Floor Providence Building | Abbotsford Convent

1 St Heliers Street | Abbotsford VIC 3067

P.O Box 386 | Abbotsford VIC 3067

Ph: 03 8673 0901 | Direct: 03 8673 0913

alex@wurundjeri.com.au

The project delegate for the Sponsor is;

Chris Engert, Development Manager

MAB Corporation Pty Ltd

Level 5, 441 St Kilda Road

Melbourne Victoria 3004

Telephone: 03 8681 2222

Email: cengert@mabcorp.com.au

11.5 Contingency – Non-compliance with the Cultural Heritage Management Plan

Although no further archaeological investigation has been recommended in this CHMP, it is possible that cultural heritage material may be uncovered during the proposed works. In order to inform the Sponsor of their legal responsibilities in regards to cultural heritage management, specific legislative requirements are provided below.

In addition, a checklist referring to matters that must be complied with under the CHMP is included in Appendix 3.

The monetary value of all listed penalties is current at the time of writing.

Aboriginal Cultural Heritage

Causing harm to Aboriginal cultural heritage is an offence under the *Aboriginal Heritage Act* 2006. Under section 81, the Minister may order a cultural heritage audit to be carried out if there is reason to believe that the sponsor has contravened, or is likely to contravene, the recommendations contained in this CHMP.

Part 3 PROTECTION OF ABORIGINAL CULTURAL HERITAGE

Division 1 Protection from harm

s.27 Harming Aboriginal cultural heritage unlawful

(1) A person is guilty of an offence if:

a) the person knowingly does an act that harms Aboriginal cultural heritage;

and

b) at the time the act was committed the person knew that the thing harmed was Aboriginal cultural heritage.

(2) A person who is guilty of an offence under subsection (1) is liable to a penalty not exceeding:

a) in the case of a natural person, 1800 penalty units or **\$198 216.00**;

b) in the case of a body corporate, 10,000 penalty units or **\$1 101 200.00**.

(3) A person is guilty of an offence if:

a) the person knowingly does an act that harms Aboriginal cultural heritage; and

b) at the time the act was done the person was reckless as to whether the thing harmed was Aboriginal cultural heritage.

(4) A person who is guilty of an offence under subsection (3) is liable to a penalty not exceeding:

a) in the case of a natural person, 1200 penalty units or **\$132 144.00**;

b) in the case of a body corporate, 6000 penalty units or **\$660 720.00**.

(5) A person is guilty of an offence if:

a) the person knowingly does an act that harms Aboriginal cultural heritage; and

b) at the time the act was done the person was negligent as to whether the thing harmed was Aboriginal cultural heritage.

(6) A person who is guilty of an offence under subsection (5) is liable to a penalty not exceeding:

a) in the case of a natural person 600 penalty units or **\$66 072.00**;

(7) An offence under this section is an indictable offence.

s.28 Doing an act likely to harm Aboriginal cultural heritage unlawful

The person knowingly does an act that is likely to harm Aboriginal cultural heritage; and

At the time the act was done the person knew that the act was likely to harm Aboriginal cultural heritage.

A person who is guilty of an offence under subsection (1) is liable to a penalty not exceeding:

In the case of a natural person, 1200 penalty units or **\$132 144.00**;

In the case of a body corporate, 6000 penalty units or **\$660 720.00.**

An offence under this section is an indictable offence.

Note: the provisions of Division 12 Part 1 of the *Crimes Act 1958* (which deal with attempts) apply to indictable offences against this Act.

Division 4 Aboriginal Places and Objects

s. 24 Reporting discovery of Aboriginal places and objects

(1) This section applies if:

a) a person discovers an Aboriginal place or object; and

b) the person knows that the place or object is an Aboriginal place or object.

(2) The person must report the discovery to the Secretary as soon as practicable unless, at the time of making the discovery, the person has reasonable cause to believe that the Register contained a record of the place or object.

Penalty: In the case of a natural person, 60 penalty units or **\$6 607.20**;

In the case of a body corporate, 300 penalty units or **\$33 036.00**.

If a discovery of an Aboriginal place or object is made in the course of works being carried out on any land, the person in charge of the works is deemed for the purposes of this section to be the person who discovered the place or object.

11.6 Provision for Review

Review of this plan can be undertaken at any time by project delegates representing the Sponsor and OAAV, or an agreed independent reviewer, to ensure that all parties are complying with the terms of the plan.

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Appendix 1: Notice of Intent

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

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

For clarification on any of the following please contact Victorian Aboriginal Heritage Register (VAHR) enquiries on 1800-762-003.

SECTION 1 – Sponsor information (mandatory)

Sponsor (natural person or body corporate seeking to undertake the activity):

MAB Corporation Pty Ltd

ABN/ACN:

Contact name: Chris Engert

Postal Address: Level 5, 441 St Kilda Rd, Melbourne 3004

Telephone Number +61 3 8681 2222

Fax number: +61 3 8681 2100

Mobile: 0421 115 722

Email Address: cengert@mabcorp.com.au

Sponsor's agent (if relevant)

Company:

Contact name:

Postal Address:

Telephone Number

Fax number:

Mobile:

Email Address:

SECTION 2 – Description of proposed activity and location

Project Name: Lindum Vale Complex CHMP

List the relevant municipal district/s (ie, Local Council or Shire): Hume City Council

Clearly identify the proposed **activity** for which the cultural heritage management plan is to be prepared (ie, mining, road construction, housing subdivision):

Housing subdivision

Clearly identify the **location** (such as listing cadastral information, attaching a copy of a title search, or indicating the street address):

1960 and 2090 Mickleham Rd, Mickleham (141.75ha total area).

(See map attached)

Attach a map (to scale, with a north arrow and indicating the municipal district - if any) that clearly identifies the activity area and its boundaries in respect of which the cultural heritage management plan is to be prepared.

- Please ensure the map refers to existing roads and features, rather than proposed roads and features, and includes their names.
- Please ensure the map has the activity area outlined on it (this area should include all works relating to the proposed activity including location of temporary buildings, space for machinery, etc).
- The map should have a legend; at least three readily identifiable geographical locations (such as road intersections, parcel boundaries, or road/river crossings) and should state the map's projection.
- **Spatial data (ie a GIS file) containing the Activity Area will assist in the processing of your notification.** Please refer to "Lodging Spatial Data in the VAHR" on the AAV website for further information.

SECTION 3 – Cultural Heritage Advisor

If you would like a Cultural Heritage Advisor (a person who has the qualifications or experience [or both] required under s.189 of the Act) notified of the status of this Cultural Heritage Management Plan, please provide the following details for that person:

John Stevens Ecology and Heritage Partners jstevens@ehpartners.com.au
Name Company (if any) Email address

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

Start date 16/07/2012 Finish date 16/09/2012

SECTION 5 – Why are you preparing this Cultural Heritage Management Plan?

- ☒ A Cultural Heritage Management Plan is required by the Aboriginal Heritage Regulations 2007
What is the High Impact Activity as it is listed in the regulations? Subdivision of land [r.46 (a)]
- Is any part of the activity in an area of cultural heritage sensitivity, as listed in the regulations? ☒ Yes ☐ No (please circle)
- ☐ Other reasons (Voluntary)
- ☐ An Environmental Effects Statement is required
- ☐ A Cultural Heritage Management Plan is required by the Minister for Aboriginal Affairs

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

This section is to be completed only where there is a registered Aboriginal party in relation to the management plan

Wurundjeri Tribe Land and Compensation Cultural Heritage Council Inc.

SECTION 7 – Signature of Sponsor

I certify that to the best of my knowledge and belief that the information supplied is correct and complete.

Signed:  Date: 03/07/2012
[Sponsor]

SECTION 8 – Notification checklist

- ☐ Ensure appropriate attachment/s are completed and attached to this notification (see section 2 of this form).

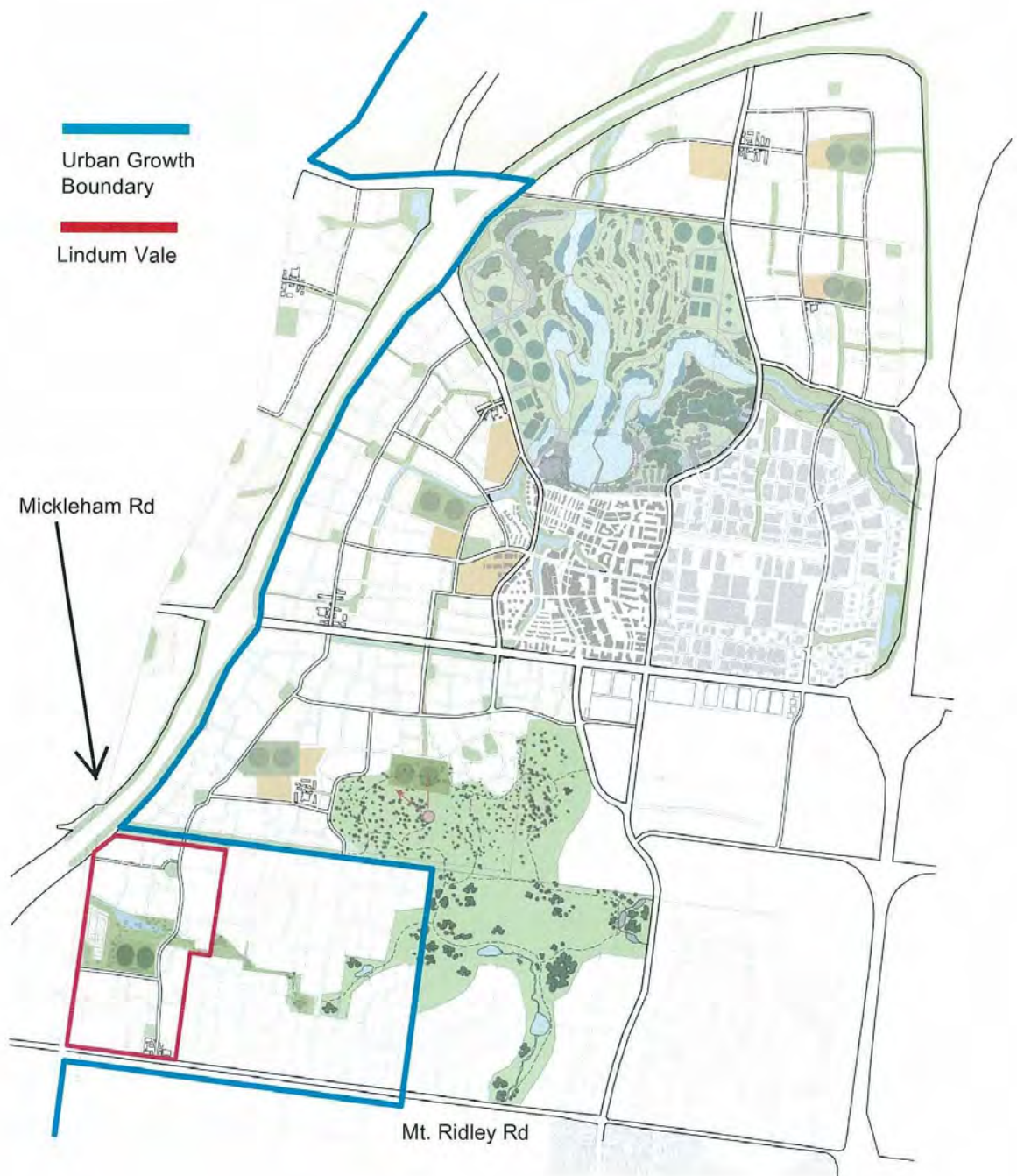
Please ensure this notice and all attached items are sent to the:

Deputy Director
Aboriginal Affairs Victoria
Department of Planning and Community Development
GPO Box 2392
MELBOURNE VIC 3001

OR Email: vahr@dpcd.vic.gov.au

Notes:

- Ensure that any relevant registered Aboriginal party/s is also notified. A copy of this notice may be used for this purpose. (A registered Aboriginal party is allowed up to 14 days to provide a written response to a notification specifying whether or not it intends to evaluate the management plan.)
- In addition to notifying the Deputy Director and any relevant registered Aboriginal party/s, a Sponsor must also notify any owner and/or occupier of any land within the area to which the management plan relates. A copy of this notice may be used for this purpose.





Wurundjeri
Tribe

Land & Compensation
Cultural Heritage
Council Incorporated

5th July 2012

Our Reference: WT00305

MAB Corporation
C/- Chris Engert
Level 5, 441 St Kilda Rd
Melbourne, 3004

Dear Chris,

CULTURAL HERITAGE MANAGEMENT PLAN: LINDUM VALE : 1960 AND 20090 MICKLEHAM RD, MICKLEHAM

I refer to your written notification to the Wurundjeri Tribe Land & Compensation Cultural Heritage Council received the 4th June 2012 of your intention to prepare a cultural heritage management plan for the above activity.

Your notification has been accepted and the Wurundjeri Council advises that it intends to evaluate this plan when complete. We also advise that during the preparation of this plan, the Wurundjeri Tribe Land & Compensation Cultural Heritage Council Inc. wishes to:

- Consult with you in relation to the assessment of the area for the purposes of the plan
- Participate in the conduct of the assessment
- Consult with the sponsor in relation to the recommendations to be included in the plan.

Please note that before any fieldwork program commences it will be necessary for your heritage advisor to participate in a Project Establishment Meeting at the Wurundjeri Council office to discuss the project. It is preferable for the project sponsor to attend the Project Establishment Meeting as well. As the Project Establishment Meeting provides an opportunity for all parties to clarify the aims of the CHMP and methodology for any fieldwork program, it is helpful if you and/or your heritage advisor can bring along the following information to expedite these discussions:

- Aerial photo of the Activity Area
- A clear map of the Activity Area
- Aboriginal site location data within a 5km radius of the Activity Area
- Site cards of any sites already recorded in the Activity Area.

If you require any additional information about this advice, please contact Darren Griffin (Wurundjeri Council Cultural Heritage Manager) by telephone on 03 9416 2905 or 0419 811 888 or by email: darren@wurundjeri.com.au

We look forward to meeting with you soon to discuss the project.

Yours sincerely,

Stephen Fiyalko
Chief Executive Officer

Co EH Partners – John Stevens

1st Floor Providence Building, Abbotsford Convent, 1 St Heliers Street Abbotsford VIC 3067
Phone: 8673 0901 Fax: 8673 0900 Email: info@wurundjeri.com.au
Registration no. A0005530A Abn: 54272 749 968

Original Message-----

From: Paul.Brownrigg@dpcd.vic.gov.au [mailto:Paul.Brownrigg@dpcd.vic.gov.au]

Sent: Monday, 30 July 2012 1:49 PM

To: cengert@mabcorp.com.au; John Stevens; darren@wurundjeri.com.au; rapofficer@wurundjeri.com.au

Cc: Liz.Kilpatrick@dpcd.vic.gov.au; Boheme.Rawoteea@dpcd.vic.gov.au

Subject: Notice of Intent to Prepare CHMP 12270

To whom it may concern,

This email is the formal response. This is an automated response indicating that, on 03-Jul-2012, the Secretary, Department of Planning and Community Development received a Notice of Intent to Prepare a Cultural Heritage Management Plan (CHMP) for:

MAB Corporation Pty Ltd - Subdivision - 1960 to 2090 Mickleham Road, Mickleham

The notification has been allocated the AAV Project Number:

CHMP Plan ID. 12270

Please quote this number when making any future enquires to AAV regarding this project.

If your activity lies within the boundaries of a registered Aboriginal party you must also notify this organisation of your intention to prepare the CHMP (if you have not already done so). Further information about registered Aboriginal parties can be found at:

<http://www1.dpcd.vic.gov.au/aav/heritage/registered>

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Appendix 2: Qualifications of Personnel involved in this CHMP

Annette Xiberras

Cultural Heritage Advisor

Grad Dip, Natural and Cultural Resource Management (Deakin)

Wurundjeri Elder

Annette has been working in the field of Aboriginal cultural heritage since 1989. Her long career in this area has seen her gain numerous formal qualifications in Cultural Heritage Management, and has allowed her to work with some of Victoria's leading archaeological experts. Annette's status as an acknowledged Wurundjeri Elder, and her links with other Victorian Indigenous communities, mean that she has a unique standing and authority within the field of Aboriginal Cultural Heritage Management in Victoria.

Annette's most recent experience has been in preparing Cultural Heritage Management Plans in the Metropolitan Melbourne, Westernport, Mornington Peninsula and Gippsland Regions through her consultancy, Urban Colours Arts and Cultural Heritage Cor

- residential housing developments
- road infrastructure
- pipeline route developments
- urban developments
- mixed use zone developments
- waterway rehabilitation works
- national and state park management projects
- major infrastructure developments

Fields of competence

- Aboriginal archaeological surveys, subsurface testing and excavation
- field excavation and supervision
- project management
- Aboriginal, community and client liaison
- material culture analysis
- cultural heritage management plan composition

Recent employment

2007 – present

Managing Director, Urban Colours Arts and Cultural Heritage Consultants

2004–2005

Cultural Heritage Officer, Central Victoria Program, Aboriginal Affairs Victoria

1999–2004

Regional Manager, Kulin Nations Cultural Heritage Organisation

Education

1994–1995

Archaeological and cultural heritage training

Northern Metropolitan Institute of TAFE

2005–2006

Graduate Diploma, Natural and Cultural Resource Management

Deakin University, Institute of Koori Education

Recipient of Pratt Foundation Scholarship

Selected Aboriginal cultural heritage projects and experience

Rivendale Estate, Drouin – Cultural Heritage Management Plan

Tooradin Airfield Helicopter Hangar – Cultural Heritage Management Plan

1040 Glasscocks Road, Cranbourne – Cultural Heritage Management Plan

Mt Shamrock Quarry Extension, Pakenham – Joint Contractors (with Biosis Research), Archaeological Salvage Operation

Bend Road, EastLink – Archaeological Field Assistant, Wurundjeri Tribe Lands and Cultural Heritage Council Inc

Mt William, Sunbury Rings, Bullum Bullum – Site preservation, restoration and education of future generations

John Stevens

Archaeologist and CHMP author

Bachelor of Archaeology (Honours) La Trobe (2004); Bachelor of Science (Honours) Deakin (1994)

John holds a Bachelor of Archaeology (Hons) degree in Aboriginal Archaeology from La Trobe University and is a former PhD student at the La Trobe University Campus. John also holds an Honours degree in Geomorphology from Deakin University. He is a member of the Australian Archaeological Association, the Society for American Archaeology and has presented and published papers in both Australia and the United Kingdom.

For the past seven years he has developed his project management skills by directing and delivering on large, complex cultural heritage projects including those associated with mining sites (Boral, Xstrata, Barro Group),

PSP-level residential subdivisions (MAB Corp, VicUrban), wind farms (Origin Energy) and major road (VicRoads) and water infrastructure (Melbourne Water, City West Water, Wannon Water, NVIRP) projects.

John has extensive experience with standard and complex CHMPs, team leadership, business and marketing experience, large project management experience, peer reviews, VCAT panel hearings and cultural heritage audits. He has a sound knowledge of cultural heritage legislation across all states and has authored or co-authored over 40 CHMPs.

Pamela Ricardi

Archaeologist

Bachelor of Archaeology, La Trobe (2003); PhD, Melbourne (current)

Pamela is a qualified Archaeologist and Cultural Heritage Advisor with over five years consulting experience working in Victoria. She has over ten years experience working on archaeological excavations in Australia and overseas including Cyprus and Argentina.

Pamela has experience in a variety of tasks including: archaeological surveying; site recording and identification; stone artefact analysis; subsurface testing; and salvage excavations. She has conducted cost estimates; background research; due diligence assessments; communication and consultation with regulatory bodies (AAV and HV), Agents, landowners and RAPs; Historical Heritage Assessments, and Aboriginal CHMPs.

Staci Timms

Assistant Archaeologist and GIS Officer

Grad Dip in Humanities and Social Science (Archaeology), LaTrobe (2013), Masters Spatial Analysis and GIS, James Cook (2005), B. App. Sci (Environmental Management), Deakin (1995)

Staci has 10 years of mapping experience, working in both the private and public sectors. Staci is an expert in a range of GIS and Spatial Analysis facets, such as mobile technologies, desktop analysis and remote sensing.

Along with the ESRI suite of GIS software, Staci is also proficient in the use of Trimble products, MapInfo, Manifold and Quantum GIS. She has worked on large, complex mapping projects from government agencies, such as the Growth Areas Authority, Department of Sustainability and Environment, Vic Roads and Melbourne Water.

Whilst GIS and mapping is her primary focus, Staci also has a strong background in ecological and archaeological consulting, with a good understanding of relevant legislation and requirements for submission under the *Aboriginal Heritage Act 2006*, Victoria's Native Vegetation Framework and the EPBC Act.

Fleur Taylor

Editor

BA (Hons), Melbourne (1996)

Fleur is an editor of more than fifteen years' experience. She is an Accredited Editor of the Institute of Professional Editors Limited and has edited more than 100 CHMPs.

Appendix 3: Compliance checklist

Checklist for compliance with the Cultural Heritage Management Plan

Date: __/__/__

Name: _____

Position: _____

CHMP NO: _____

Title: _____

Period of time covered by checklist: _____

Check YES/NO boxes and complete comments as appropriate

POINT	TASK	YES	NO	COMMENTS
1	Has the CHMP being approved			
2	Is there a designated contact person for dealing with Aboriginal cultural heritage issues? Name of contact person:			
3	Has a map been prepared that shows the location of sites within the activity area?			N/A
4	Has the map referred to in Point 3 been distributed to all on-site workers?			N/A

MANAGEMENT OF ABORIGINAL CULTURAL HERITAGE FOUND DURING THE ACTIVITY. Where appropriate, this section should be completed with the assistance of the Cultural Heritage Advisor.

CONTINGENCY PLANS FOR THE DISCOVERY OF ABORIGINAL CULTURAL HERITAGE

POINT	TASK	YES	NO	COMMENTS
5	Has any previously unrecorded Aboriginal cultural heritage been uncovered during works? If YES, complete Points 7 to 18			
6	Was the designated contact person for dealing with Aboriginal cultural heritage issues immediately notified of the discovery?			
7	Did all works cease within a 20 metre radius buffer of the identified Aboriginal cultural heritage?			
8	Was this buffer clearly marked with safety webbing or other highly visible marker?			
9	Was the Cultural Heritage Advisor notified within 24 hours of the discovery?			
10	Was the Secretary of the Department of Premier and Cabinet notified within 24 hours of the discovery?			
11	Did the Cultural Heritage Advisor notify the RAP of the discovery and invite them to inspect the site within 2 working days of notification?			
12	Did the Cultural Heritage Advisor inspect the discovery within 2 working days of notification?			
13	Did the Cultural Heritage Advisor determine that the discovery was a new site that required registration with the VAHR? If YES, complete Points 17 to 20			

14	Did the RAP, in consultation with the Cultural Heritage Advisor and land manager, provide the land manager with recommendations to be followed in the management of the identified Aboriginal cultural heritage within 5 working days of the site inspection?			
15	Have any recommended measures been implemented?			
16	Have new or updated site record cards for the discovery been submitted to OAAV?			
17	Were further archaeological investigations required? If YES, complete Point 19			
18	Were any further investigations overseen by an appropriately qualified archaeologist and representatives of the RAP?			

CONTINGENCY PLANS FOR ABORIGINAL CULTURAL MATERIALS

POINT	TASK	YES	NO	COMMENTS
19	Have any Aboriginal cultural materials identified on the property been returned to the RAP?			
20	If harm to the discovered Aboriginal cultural heritage could not be avoided have the cultural heritage advisor and representatives of the RAP or RAP applicants undertaken a salvage excavation?			
21	In the case of a salvage program taking place has the following been addressed: Has the salvage program taken place in accordance with R61? Has the Cultural Heritage Advisor completed new or updated site records for the VAHR? Has the Cultural Heritage Advisor catalogued and analysed the found cultural material? Has a report been produced detailing the results of the salvage excavation and analysis of cultural material and been lodged with OAAV or the RAP? Has the Cultural Heritage Advisor arranged for the custody of the cultural heritage material to be passed on to the most appropriate person/group as listed in Section 9.2?			
22	Has the Cultural Heritage Advisor: <ul style="list-style-type: none"> catalogued the Aboriginal cultural heritage? appropriately packaged and labelled the Aboriginal cultural heritage? consulted with the RAP to arrange secure storage of the Aboriginal cultural material and associated documentation? 			

CONTINGENCY PLANS FOR THE DISCOVERY OF HUMAN SKELETAL REMAINS

POINT	TASK	YES	NO	COMMENTS
23	Have any human skeletal remains been uncovered during works? If YES, complete Points 25 to 30			
24	Was the designated contact person for dealing with Aboriginal cultural heritage issues immediately notified of the discovery?			
25	Did all activity in the vicinity cease immediately?			
26	Were the Coroner's Office and Victoria Police notified of the discovery of the remains?			

27	Was the DEPI Emergency Co-ordination Centre notified of the discovery of the remains?			
28	Were the remains identified as Aboriginal? If YES, complete Points 31 to 34.			
29	Did the designated contact person report the discovery of the remains to the Secretary of the Department of Premier and Cabinet?			
30	Was the course of action established by the Secretary of the Department of Premier and Cabinet implemented?			
31	If the remains were reburied, was the location of the reburial documented by a qualified archaeologist and the details provided to OAAV?			
32	Were appropriate management measures implemented to ensure that the remains are not disturbed in the future?			

CONTINGENCY PLANS FOR REVIEWING COMPLIANCE WITH THE CHMP

POINT	TASK	YES	NO	COMMENTS
33	Has communication been maintained between the Sponsor, Cultural Heritage Advisor and RAP?			
34	Have changes in contact details been circulated to all parties?			
35	Were any queries or issues dealt with immediately?			
36	Was last fortnight's checklist for compliance with the Cultural Heritage Management Plan completed?			
37	Was last fortnight's checklist for compliance with the Cultural Heritage Management Plan circulated to the Cultural Heritage Advisor and the RAP?			

CONTINGENCY PLANS FOR DISPUTE RESOLUTION

POINT	TASK	YES	NO	COMMENTS
38	Were these disputes referred to OAAV?			

ADDITIONAL COMMENTS

--

SIGNATURES

Signature of person who completed this checklist:	Signature of designated contact person for dealing with Aboriginal cultural heritage issues:

Appendix 4: Site gazetteer

Site name	Cocking (Previously Registered)
VAHR No	VAHR 7822-0024
Primary grid coordinate	
Cadastral description	
Site type	Scar tree
Landform/topography	Open plain
Site contents	Scar tree
Potential for additional material	Low
Scientific significance	Low (Could not relocate)
Potential for additional knowledge	Low (Could not relocate)
Site name	Lindum Vale 1
VAHR No	VAHR 7822-3588
Primary grid coordinate	
Cadastral description	
Site type	Scar tree
Landform/topography	Open plain
Site contents	Scar tree
Potential for additional material	Low
Scientific significance	Low (Destroyed)
Potential for additional knowledge	Low (Destroyed)
Site name	Lindum Vale 2
VAHR No	VAHR 7822-3589
Primary grid coordinate	
Cadastral description	
Site type	Scar tree
Landform/topography	Open plain
Site contents	Scar tree
Potential for additional material	Low
Scientific significance	Low (Destroyed)
Potential for additional knowledge	Low (Destroyed)
Site name	Lindum Vale 3
VAHR No	VAHR 7822-3590
Primary grid coordinate	
Cadastral description	
Site type	Scar tree
Landform/topography	Open plain

Site contents	Scar tree
Potential for additional material	Low
Scientific significance	Moderate
Potential for additional knowledge	Moderate
Site name	Lindum Vale 4
VAHR No	VAHR 7822-3591
Primary grid coordinate	
Cadastral description	
Site type	Scar tree
Landform/topography	Open plain
Site contents	Scar tree
Potential for additional material	Low
Scientific significance	Low (Destroyed)
Potential for additional knowledge	Low (Destroyed)
Site name	Lindum Vale 5
VAHR No	VAHR 7822-3592
Primary grid coordinate	
Cadastral description	
Site type	Scar tree
Landform/topography	Open plain
Site contents	Scar tree
Potential for additional material	Low
Scientific significance	Medium
Potential for additional knowledge	Medium
Site name	Tamboore 26
VAHR No	VAHR 7822-AAAA
Primary grid coordinate	
Cadastral description	
Site type	LDAD
Landform/topography	Open plain
Site contents	One quartz flaked piece
Potential for additional material	Low
Scientific significance	Low
Potential for additional knowledge	Low
Site name	Tamboore 25
VAHR No	VAHR 7822-BBBB
Primary grid coordinate	
Cadastral description	
Site type	Artefact Scatter
Landform/topography	Crest
Site contents	60 subsurface artefacts comprising 13 angular fragments, 16 complete flakes, 9

	proximal flakes, 6 distal flakes, 5 medial flakes, 3 scrapers, 3 split flakes, two blades, two cores and one distal blade. Stone raw material types were dominated by silcrete (n=55), followed by hornfels (n=3) followed by lesser quantities of quartzite (n=1) and quartz (n=1) from three 5m x 1m mechanical transects.
Potential for additional material	High
Scientific significance	Moderate
Potential for additional knowledge	Moderate

Appendix 5: Artefact database

Easting ■■■■■	Northing	Zone	Depth (mm)	Raw Material	Primary Form	Cortex %	% of Edge with Retouch / Usewear	Flake Platform	Flake Termination	Number of Complete Scars	Longest Scar (axial mm)	Formal Tool / Core Type	Secondary Modifications	Length - axial for flakes & blades (mm)	Width - axial for flakes & blades (mm)	Thickness (mm)	Max Dim. (mm)	Transect REF
							(flakes, blades and angular fragments only)	(complete and proximal flakes and blades only)	(complete, distal and longitudinal split flakes and blades only)	(cores only)	(cores only)							
■■■■■	■■■■■	55	150	Silcrete	Distal Flake				Hinge					16.5	21.8	3.4	21.8	19
■■■■■	■■■■■	55	150	Silcrete	Proximal Flake			Flaked						19.6	19.5	4.6	19.6	19
■■■■■	■■■■■	55	150	Silcrete	Distal Flake				Feather					17.2	9.5	4.3	18	16
■■■■■	■■■■■	55	150	Silcrete	Proximal Flake									15.9	18.3	5.7	18.3	16
■■■■■	■■■■■	55	150	Silcrete	Angular Fragment									26.3	12.5	8.3	26.3	16
■■■■■	■■■■■	55	150	Silcrete	Complete Flake	25		Flaked	Feather					40.5	26.8	16.7	40.5	16
■■■■■	■■■■■	55	150	Silcrete	Complete Flake			Flaked	Hinge					33.5	14.4	4.6	35.6	16
■■■■■	■■■■■	55	150	Silcrete	Blade		60	Crushed	Feather			Backed Blade		25.7	11.8	5.9	25.7	16
■■■■■	■■■■■	55	250	Silcrete	Scaper							Thumb nail Scraper		15.5	17.8	3.8	18.1	16
■■■■■	■■■■■	55	250	Silcrete	Split Distal Flake				Hinge					17.7	21.2	8.2	21.2	16
■■■■■	■■■■■	55	250	Silcrete	Angular Fragment	10								26.2	12	4.6	26.2	16
■■■■■	■■■■■	55	250	Hornfels	Split Distal Flake			Flaked	Hinge					14.4	21.2	4.4	23.2	16
■■■■■	■■■■■	55	250	Silcrete	Proximal Flake			Crushed						15.9	16.1	5.9	19.7	16
■■■■■	■■■■■	55	250	Silcrete	Angular Fragment									20.2	9.4	2.6	21.8	16
■■■■■	■■■■■	55	250	Silcrete	Scaper							Thumb nail Scraper		15.9	19.5	6.7	19.9	16

Easting <div></div>	Northing	Zone	Depth (mm)	Raw Material	Primary Form	Cortex %	% of Edge with Retouch / Usewear	Flake Platform	Flake Termination	Number of Complete Scars	Longest Scar (axial mm)	Formal Tool / Core Type	Secondary Modifications	Length - axial for flakes & blades (mm)	Width - axial for flakes & blades (mm)	Thickness (mm)	Max Dim. (mm)	Transect REF
							(flakes, blades and angular fragments only)	(complete and proximal flakes and blades only)	(complete, distal and longitudinal split flakes and blades only)	(cores only)	(cores only)							
		55	250	Silcrete	Scraper							Round Edged Scraper		14.1	21.8	5.5	21.8	16
		55	250	Silcrete	Distal Flake				Feather					16.4	16.6	5.1	16.6	16
		55	250	Homfels	Complete Flake			Flaked	Feather					19.4	13.7	5.6	19.8	16
		55	300	Silcrete	Distal Flake				Feather					22.3	15.5	5.5	22.3	16
		55	300	Silcrete	Medial Flake									20.3	13.3	3.2	20.3	16
		55	300	Silcrete	Proximal Flake			Crushed						17.2	15.8	3.6	17.5	16
		55	350	Silcrete	Proximal Flake			Flaked						15.8	10.7	4.4	16.1	16
		55	350	Silcrete	Angular Fragment									16.4	12.6	1.9	16.4	16
		55	350	Silcrete	Medial Flake									13.5	11.9	4.4	17.7	16
		55	350	Silcrete	Distal Flake				Feather					19.7	15.9	5.8	19.7	16
		55	350	Homfels	Distal Blade		75		Feather			Backed Blade		16.1	7.7	4.1	16.3	16
		55	150	Silcrete	Medial Flake									14.7	13	2.1	15.4	17
		55	150	Silcrete	Proximal Flake			Flaked						15.6	13.9	2.7	17.2	17
		55	150	Silcrete	Angular Fragment									12.1	7.1	1.4	13.5	17
		55	150	Silcrete	Medial Flake									10.1	11.7	2	13.1	17
		55	150	Silcrete	Angular Fragment									9.6	8.5	3.7	11.6	17
		55	150	Silcrete	Angular Fragment									13.2	9.1	3.7	13.2	17
		55	150	Silcrete	Angular Fragment									12.2	11.8	2.6	13.6	17
		55	150	Silcrete	Core	40				8	17.4	Burin Core		38	32.4	2.6	38	17
		55	150	Silcrete	Complete Flake			Crushed	Feather					37.5	29.8	7.6	37.9	17

Easting GDA 94 MGA 55	Northing	Zone	Depth (mm)	Raw Material	Primary Form	Cortex %	% of Edge with Retouch / Usewear	Flake Platform	Flake Termination	Number of Complete Scars	Longest Scar (axial mm)	Formal Tool / Core Type	Secondary Modifications	Length - axial for flakes & blades (mm)	Width - axial for flakes & blades (mm)	Thickness (mm)	Max Dim. (mm)	Transect REF
							(flakes, blades and angular fragments only)	(complete and proximal flakes and blades only)	(complete, distal and longitudinal split flakes and blades only)	(cores only)	(cores only)							
		55	150	Silcrete	Complete Flake			Flaked	Feather					40.4	20.6	4.7	40.4	17
3		55	150	Silcrete	Complete Flake	20	80	Flaked	Hinge / Retouched					26.3	31.9	9.5	34.4	17
		55	150	Silcrete	Complete Flake			Flaked	Feather					29.5	12.8	4.5	29.5	17
		55	200	Quartzite	Proximal Flake			Flaked						25.8	29.7	13.7	30.5	17
		55	200	Silcrete	Distal Flake	5			Feather					11.7	24.4	5.7	24.4	17
		55	200	Silcrete	Core					9	21.6	Blade Core		23.7	17.8	11.5	23.7	17
		55	200	Silcrete	Blade		60	Flaked	Hinge					23.7	17.6	6.2	24.3	17
		55	200	Silcrete	Complete Flake									14.5	17.9	4.7	19.5	17
		55	200	Silcrete	Medial Flake									15.6	10.2	2.5	17.3	17
		55	200	Silcrete	Complete Flake			Flaked	Hinge					22.1	22.8	5.8	25.7	17
		55	300	Silcrete	Complete Flake			Crushed	Feather					15.8	13.6	3.5	18.5	17
		55	300	Silcrete	Split Flake			Flaked	Feather					16.7	9.7	3.6	18.8	17
		55	300	Silcrete	Proximal Flake			Flaked						13.4	15.5	4.8	19.5	17
		55	300	Silcrete	Complete Flake			Flaked	Feather					19.5	14.4	5.5	21.7	17
		55	300	Silcrete	Angular Fragment									17.7	12.5	2.4	17.7	17
		55	300	Silcrete	Complete Flake			Flaked	Feather					24.3	11.5	5.8	24.3	17
		55	350	Silcrete	Complete Flake			Flaked	Feather					15.7	22.8	4.6	23.8	17
		55	350	Silcrete	Angular Fragment									31.4	16.1	2.8	31.4	17
		55	350	Silcrete	Proximal Flake			Crushed						19.3	11.6	4.5	19.3	17
		55	350	Silcrete	Angular Fragment									17.4	14.6	3.5	19.6	17
		55	350	Silcrete	Complete Flake			Flaked	Hinge					13.3	23.4	2.5	23.4	17

Easting GDA 94 MGA 55	Northing	Zone	Depth (mm)	Raw Material	Primary Form	Cortex %	% of Edge with Retouch / Usewear	Flake Platform	Flake Termination	Number of Complete Scars	Longest Scar (axial mm)	Formal Tool / Core Type	Secondary Modifications	Length - axial for flakes & blades (mm)	Width - axial for flakes & blades (mm)	Thickness (mm)	Max Dim. (mm)	Transect REF
							(flakes, blades and angular fragments only)	(complete and proximal flakes and blades only)	(complete, distal and longitudinal split flakes and blades only)	(cores only)	(cores only)							
■■■■■	■■■■■	55	350	Silcrete	Angular Fragment									15.2	12.9	7.8	16.8	17
■■■■■	■■■■■	55	350	Silcrete	Complete Flake			Flaked	Feather					14.5	16.7	4.9	14.5	17
■■■■■	■■■■■	55	350	Silcrete	Angular Fragment									16.7	8.2	2.1	16.7	17
■■■■■	■■■■■	55	350	Quartz	Complete Flake			Flaked	Feather					20.6	25.9	7.1	25.9	17

Appendix 7: Glossary

Archaeology: The study of the material remains of the human past.

Archaeological site: A place/location of either Aboriginal or non-Aboriginal origin that contains material remains relating to the human past.

Artefact: Any product made by human hands or caused to be made through human actions.

Artefact scatter: A surface scatter of stone artefacts is defined as being the presence of items of cultural material within a given area.

Backed blade (geometric microlith): Backing is the process by which one or more margins contain consistent retouch opposite to the sharp working edge. A backed blade is a blade flake that has been abruptly retouched along one or more margins opposite the sharp working edge. Backed pieces include backed blades and geometric microliths. Backed blades are a feature of the Australian Small Tool Tradition dating from between 5,000 and 1,000 years ago in southern Australia (Mulvaney 1975).

Blade: A long parallel sided flake from a specially prepared core. Blade flakes retain observable and complete fracture planes, platform, lateral margins and termination and are twice as long as they are wide. A broken blade is any stone artefact retaining partial diagnostic features of a blade.

Bipolar: A core or a flake which, presumably, has been struck on an anvil. That is, the core from which the flake has been struck has been rotated before the flake has been struck off. Bifacial platforms often indicate that the flake has come off a heavily worked core.

BP: Before Present. The present is defined as 1950.

Core: An artefact from which flakes have been detached using a hammerstone. Core types include blade, single platform, multiplatform and bipolar forms. These artefacts exhibit a series of negative flake scars, each of which represents the removal of a flake.

Cortex: Original or natural (unflaked) surface of a stone. This may be further divided into nodule, pebble and terrestrial cortex indicating the original source of the material.

Ethnography: The scientific description of living cultures.

Flake

Broken Flake: Any stone retaining partial diagnostic features of a flake

Complete/Whole Flake: An artefact exhibiting a ventral surface (where the flake was originally connected to the core), dorsal surface (the surface that used to be part of the exterior of the core), platform, termination and bulb of percussion.

Distal Flake: Any flake on which the breakage removes the platform but retains the termination

Proximal Flake: Any flake on which the breakage removes the termination but retains the platform.

Primary flake: The first flakes struck off a core in order to create a platform from which other flakes can then be struck.

Secondary flaking/retouch: Secondary working of a stone artefact after its manufacture. This was often done to resharpen stone tools after use, or in the production of formal tool types such as blade flakes and scrapers.

Focal platform: This is a term used to describe the shape of the platform on a flake. A focal platform is narrower than the body of the flake. Focal platform flakes are produced when flakes are struck off near the edge of the platform on a core.

Geometric microlith: Artefacts less than 80 mm in maximum dimension which are backed at one or other end, sometimes at both ends, and sometimes on one lateral margin as well, the result being a form that is symmetrical around its transverse axis.

Hammerstone: A cobble or cobble fragment exhibiting pitting and abrasion as a result of percussion.

Hearth: Usually a subsurface feature found eroding out of a river or creek bank or in a sand ridge – it indicates a place where Aboriginal people cooked food. The remains of a hearth are usually identifiable by the presence of charcoal and sometimes clay balls (like brick fragments) and hearth stones. Remains of burnt bone or shell are sometimes preserved within a hearth.

Historic site: Sites/areas that contain extant (standing) remains of pre-1950 non-Aboriginal occupation. Historic sites may or may not also contain archaeological remains (Aboriginal and/or historic).

Holocene, recent or postglacial period: The time from the end of the Pleistocene Ice Age (c. 10,300 BP) to the present day.

Implement: A general term for tools, weapons etc. made by people.

Microlith: Small (1–3 cm long) stone tools with evidence of retouch; includes 'Bondi Points' segment, scrapers, backed blades, triangles and trapezoids.

In situ: Refers to cultural material that is discovered as being undisturbed and considered to be in its original context. That is, material which, when identified is considered to be in the same location as when the site was abandoned.

Lithic: Anything made of stone.

Pleistocene: The dates for the beginning and end of the Pleistocene generally correspond with the last Ice Age. That is from 3.5 to 1.3 million years ago. The period ends with the gradual retreat of the ice sheets, which reached their present conditions around 10,300 BP.

Raw material: Organic or inorganic matter that has not been processed by people.

Retouch: **Scalar:** Shallow scale like scars on margin with feather terminations, usually small rounded scars.

Step: Small, abrupt flake scars on margin, with step terminations.

Rock shelter/cave: These are sites that are located within a rock shelter/overhang or cave. The archaeological deposits within such sites can vary considerably but are often predominantly lithic. Depending on their location, the archaeological deposits may also include midden deposits of shellfish, fish or terrestrial fauna. Due to the often undisturbed deposits at these sites, they are potentially very valuable sites and are generally considered of high scientific significance. Instances where rock shelter sites also possess artwork on the stone walls are considered rock shelters/art sites combined.

Scar tree: Scars on trees may be the result of removal of strips of bark by Aborigines for the manufacture of utensils, canoes or for shelter; or resulting from small notches chopped into the bark to provide toe and hand holds for climbers after possums, koalas and/or views of the surrounding area. A scar made by humans as opposed to being naturally made by branches falling off etc. is distinguished by the following criteria: symmetry and rounded ends, scar does not extend to the ground, some regrowth has occurred around the edges of the scar, and no holes or knots are present in the heartwood.

Silcrete: A sedimentary rock that is 'formed through the impregnation of a sedimentary layer with silica of quartz grains in a matrix of either amorphous or fine-grained Silica' (Holdaway & Stern 2004:24)

Stratigraphy: Layering.

Stone Artefact: A piece of stone that has been formed by Aboriginal people to be used as a tool or is a by-product of Aboriginal stone tool manufacturing activities. Stone artefacts can be flaked such as points and scrapers or ground such as axes and grinding stones.

Scraper: A tool used for scraping. A flake with one or more margins of continuous retouch.

Thumbnail scraper: A small flake with a convex scraper edge shaped like a thumbnail and located opposite the flake's platform.

TPZ: Tree Protection Zone

Use-wear: Tiny flakes or chips that have been broken off the edges of a stone artefact during use