PROPOSED RESIDENTIAL SUBDIVISION MOLLERS LANE, LEOPOLD

Cultural Heritage Management Plan Number 14185

Sponsor: Chris Marshall (TGM Group Pty Ltd)

Heritage Advisor: Monica Toscano (TerraCulture Pty Ltd)

Author(s): Monica Toscano, Kim White and Daniel Barker (TerraCulture Pty Ltd)

Date: 9 January 2017

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Wathaurung Aboriginal Corporation
ICN 3330
trading as Wadawurrung
ABN 11 312 302 330

10th January 2017

Aboriginal Heritage Act 2006
Section 63

Cultural Heritage Management Plan – Notice of Approval

The Wathaurung Aboriginal Corporation trading as Wadawurrung, acting as the Registered Aboriginal Party hereby approve the cultural heritage management plan referred to below:

'Proposed Residential Subdivision Mollers Lane, Leopold'

Cultural Heritage Management Plan number: 14185

Sponsor: TGM Group Pty Ltd

Heritage Advisor: Monica Toscano

Author: Monica Toscano, Kim White and Daniel Barker

Cover Date: 9th January 2017

Pages: Cover Page, Title Page, i-x, 1-117

Received for Approval: 15th November 2016

Pursuant to s.64(1) of the Act this cultural heritage management plan takes effect upon the granting of this approval and once a copy is lodged with the Secretary of DPC.*

Katrina Thomas
RAP Manager
Wathaurung Aboriginal Corporation
trading as: Wadawurrung

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

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PROPOSED RESIDENTIAL SUBDIVISION MOLLERS LANE, LEOPOLD

Cultural Heritage Management Plan Number 14185

Large Complex Assessment

Sponsor: Chris Marshall (TGM Group Pty Ltd)

Heritage Advisor: Monica Toscano (TerraCulture Pty Ltd)

Author(s): Monica Toscano, Kim White and Daniel Barker (TerraCulture Pty Ltd)

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EXECUTIVE SUMMARY

The Activity Area Location

The Activity Area is located within the township of Leopold covering an area of approximately 42 hectares. The northern side of the Activity Area is bordered by residential housing and the Bellarine Highway. To the east, on the opposing side of Mollers Lane is farmland and rural residences. Farmland extends along the western boundary below the current extent of residential developments. To the south, open farmland looks onto Lake Connewarre. The Activity Area is located within the Parish of Moolap and within the municipality of the City of Greater Geelong.

Activity Description

The proposed activity is a multi-lot residential subdivision located within 2-120 Mollers Lane, Leopold. The entire Activity Area will be subjected to earthworks to allow for various features including lot development, internal roads, services and infrastructure. The drainage of the Activity Area is linked to the more elevated land to the west and as such the ground will have to be stripped and shaped so that it accords with the surrounding levels for not only drainage, but also for easy access. The servicing and infrastructure supply is proposed to a maximum depth of 3 metres which will include power, water, gas and telecommunication services. There will be limited open space and recreation areas within the development, confined to the creek reserves, due to the size and shape of the land. Appendix 2 shows a preliminary plan of the subdivision; although, it is possible that the layout and size of the lots will change closer to the construction phase.

In accordance with Schedule 2, Regulation 6 (2) of the Aboriginal Heritage Regulations 2007, the permitted uses of the land under the relevant planning scheme are listed in Appendix 5.

Assessment Summary

The following is a summary of the Desktop, Standard and Complex Assessments undertaken for this Activity Area.

Desktop Assessment

The Desktop Assessment shows that Aboriginal people would have been present within the geographic region both before and after European settlement. There have been few previous assessments undertaken within the geographic region and all previously registered Aboriginal places in the vicinity consist of low density artefact scatters. One assessment was conducted as part of an analogous residential subdivision to the west at Ash Road (Bullers & Harbour 2012). Bullers and Harbour (2012) recovered two new Aboriginal cultural places: VAHR 7721-1171, a surface artefact; and VAHR 7721-1174, a subsurface artefact. These places were recorded in addition to two previous surface artefacts (VAHR 7721-1172 and 7721-1173) recorded by TerraCulture in 2012. Bullers and Harbour (2012) recorded similar features of recent land use history to the present Activity Area, particularly in relation to the amount and type of ground disturbances found within the Study Area at Ash Road. Broader assessments within the geographic region have primarily been comprised of surface surveys, with sample subsurface testing resulting in very few artefacts being recorded, or none at all (Collins & Marshall 2004; Marshall 2001, 2006). Richards and Jordan (1999) undertook a more detailed assessment of Aboriginal archaeology within the Bellarine Peninsula region. Their results demonstrate an already diminishing amount of Aboriginal cultural heritage material in the landscape, particularly inland (Richards & Jordan 1999: 141). These places had been subjected to heavy disturbances, and are symptomatic of the remaining Aboriginal cultural heritage material across wider Victoria at the time of the assessment.

The review of the geology and geomorphology within the region identified that the Activity Area is situated within the Moorabool Viaduct Sands landform. The proximity of the Activity Area to Lake Connewarre as a permanent local water source, which was likely used as a focal point for hunter/gather activities, makes the presence of Aboriginal cultural heritage material very likely in this region. The land use history has shown that the Activity Area was once part of a larger holding and was used for agricultural purposes. While these farming

activities do not diminish the likelihood of finding artefacts, it is noted that the Activity Area had been ploughed up until the time of the Standard Assessment for the current CHMP (April 2016). It is therefore probable that any Aboriginal cultural material identified during the survey would have been disturbed.

In summary, the Desktop Assessment has shown that the Activity Area is sensitive for Aboriginal cultural heritage. Four previously registered low density artefact scatters were recorded approximately 800 metres to the west of the current Activity Area. Areas of potential sensitivity for the current Activity Area would include areas of high ground, and areas located outside of recent and present land use activities. It is therefore likely that Aboriginal cultural material will be located in the area, in the form of isolated artefacts or low density artefact scatters. The potential for any subsurface cultural material will depend on the extent of ground disturbances and associated activities across the Activity Area.

Standard Assessment

The Standard Assessment consisted of a foot survey across the entire Activity Area apart from inaccessible areas such as dams. Ground surface visibility was good at approximately 60-70%, with the effective survey coverage approximately 80% across the Activity Area. The areas of visibility were largely where fields had been ploughed, with the highest visibility found on the hill rise and surrounding vehicle tracks. Further exposed areas of interest included a water catchment bed which had been exposed during dry conditions prior to the time of the survey. However, this was clearly subject to the effects of modern construction and landscaping. A total of 47 artefacts were identified and recorded during the Standard Assessment. One of these artefacts was later carefully analysed and concluded to actually be a fragmented piece of ceramic with no evidence of artefact identifiers. Therefore, a total of 46 stone artefacts were recorded during the Standard Assessment.

The artefacts associated with the landform rise (n=27) were registered by contour as an Aboriginal Heritage Place with Aboriginal Victoria and named ‘Mollers Lane 1 LDAD’ (VAHR 7721-1341). The landform rise is the highest point within the Activity Area and would have had a clear view over much of the surrounding landscape including Lake Connewarre. The remaining 19 Aboriginal surface stone artefacts not associated with the rise extent of Mollers Lane 1 were included in the registeration of a separate Aboriginal Heritage Place following the results of the Complex Assessment, and named ‘Mollers Lane LDAD’ (VAHR 7721-1343).

While it is likely that the artefacts found in the extent of the rise are associated with the use of this heritage place by Aboriginal people in the past (the high position in the landscape and overlooking nearby Lake Connewarre), it is unlikely that the artefacts were found *in situ*, as the Activity Area has been subjected to ploughing and other farming activities from the early 1900s. As such, many of these artefacts would have been distributed randomly over the Activity Area. It is likely that those artefacts recorded on the landform comprising VAHR 7721-1341 would have been originally located within the immediate vicinity given the geographical importance of this location.

As the Standard Assessment resulted in the identification of Aboriginal cultural heritage, in the form of low density artefact distributions, a Complex Assessment must take place to determine the nature and extent of the places and also to sample the balance of the Activity Area in subsurface contexts.

Complex Assessment

The Complex Assessment was initially comprised of three 1m x 1m test pits and 129 excavated 40cm x 40cm test pits to determine the stratigraphy across the Activity Area and the presence or absence of Aboriginal cultural heritage. Extent radial testing resulted in a further 52 test pits (50cm x 50cm). Therefore, the total number of excavated test pits (including 1m x 1m pits) equalled 184.

The Activity Area is located within the Moorabool Viaduct Sands geological formation, which generally consists of clayey sands and gravel deposits. The soil profiles across the Activity Area were largely consistent, but varied in thickness according to depth of sand accumulation. The areas close to residential developments showed signs of significant disturbance and

some of the ploughed paddocks had noticeably shallower profiles which are likely the result of extensive land use activity. Typical stratigraphy elsewhere in the Activity Area exhibited four distinct layers. These comprised an upper layer (Layer 1) of dark grey loamy sand (often containing modern rubbish material) down to between 15 and 20cm; then a distinct brown loamy sand (Layer 2) down to 35-50cm; Layer 3 consisted of a more compact grey silty sand (50cm+) that frequently contained gravel and grit, overlying a hard yellow orangey clay (Layer 4). Test pit depths varied across the Activity Area with several excavated down to 90-100cm in some parts, and unable to reach the sterile clay layer.

Aboriginal stone artefacts were identified in 10 of the combined 184 test pits excavated in the Activity Area. Within these test pits a total of 18 subsurface artefacts, predominantly quartz and quartzite were recorded. The subsurface artefacts were registered with Aboriginal Victoria as VAHR 7721-1341 within the landform rise, and VAHR 7721-1343 when recorded across the wider Activity Area. The landform rise registered as VAHR 7721-1341 is comprised of seven subsurface artefacts along with the 27 surface artefacts identified during the Standard Assessment. The remaining 11 subsurface artefacts were registered as VAHR 7721-1343 along with the 19 surface stone artefacts identified during the Standard Assessment.

The results of the Complex Assessment suggest that there is likely to be further subsurface Aboriginal artefacts present within the Activity Area. The Aboriginal cultural material is likely to be in the form of low density artefact scatters or as isolated artefacts. Artefacts are unlikely to remain *in situ* due to the high levels of subsurface ground disturbances and ploughing. It is likely the high amount of surface material on the rise comprising Mollers Lane 1 (VAHR 7721-1341) is the result of ground disturbances exposing the cultural material, and therefore little further subsurface material would be present given the shallow deposits excavated and the few artefacts recovered from these 1m x 1m test pits.

Results and Summary of the Aboriginal Cultural Heritage Identified During the Assessment

After the completion of the investigation for this CHMP, 2 newly registered Aboriginal Cultural Heritage Places were recorded; Mollers Lane LDAD (VAHR 7721-1343) and Mollers Lane 1 LDAD (VAHR 7721-1341). Mollers Lane LDAD consists of 11 subsurface artefacts in various locations within the Activity Area and 19 surface stone artefacts. Mollers Lane 1 LDAD consisted of twenty-six surface and seven subsurface artefacts spread over a central portion of the Activity Area with an extent defined by a high landform rise in the landscape.

Management Requirements

Management Prior to the Activity

Due to the design constraints of the proposed subdivision and the low density and dispersed nature of the Aboriginal Heritage Places VAHR 7721-1341 and VAHR 7721-1343, the WAC agreed that harm could not be avoided or be easily minimized. It was agreed that both places should be subject to additional survey and a salvage excavation which would be conducted according to proper archaeological practice using the AV guidelines as the minimum standards.

Salvage Excavations

The salvage excavations must be undertaken by a HA and representatives of the WAC and conducted as follows:

- Prior to the commencement of the salvage excavation VAHR 7721-1341 and VAHR 7721-1343 must be resurveyed and the artefact locations recorded using a differential GPS;
- The surface stone artefacts must be collected and placed in labeled plastic bags with an identifier number and the GPS co-ordinates written on the outside of the bags;

- Archaeological salvage excavation must proceed manually using trowels and other appropriate hand tools;
- The excavation must occur within designated squares of no less and 1m x 1m square each and strung out using string line and the location recorded using a differential GPS. The location and sizes of the salvage squares for each of VAHR 7721-1341 and VAHR 7721-1343 are noted separately below;
- The deposits must be removed according to arbitrary spits of approximately 50 mm in depth. The excavation may revert to deeper removals based on natural stratigraphic changes, if appropriate to do so;
- The depths of the excavation must be recorded according to a dumpy level, total station or other suitable electronic level;
- All excavated deposits must be sieved through a 4mm screen and all archaeological contents collected and bagged according to square and spit;
- The excavation must extend to a deposit that predates human occupation;
- Care must be taken to identify artefacts within the excavation pits, and the location of all artefacts identified in an excavation pit must be recorded in three dimensions (x, y and z) or via the use of a total statio0n and their inclination recorded;
- If any features are identified these must be recorded and excavated in full – if necessary, and in agreement with WAC, the salvage area will need to be extended;
- The progress of the excavation must be recorded in a field note book or on individual spit sheets and these submitted with the final report;
- Charcoal samples or any other material suitable for dating such as shell, must be collected according to standard archaeological practice and samples submitted to an appropriate dating laboratory;
- All archaeological features must be recorded, photographed and drawn including plans and sections of each of the 1m x 1m squares;
- The stone artefacts must be analysed according to technological and functional categories according to AV guidelines;
- The data collected on the stone artefacts recovered during salvage excavation should be compared with the data collected during the Complex Assessment and the differences and similarities discussed in the report;
- The registration details for VAHR 7721-1341 and VAHR 7721-1343 must be changed according to the results of the salvage and to the satisfaction of AV;
- A report which describes the results of the salvage excavation in full must be written and submitted to the WAC and to AV. This report must discuss how the artefact deposits were formed and their likely age; the types and origins of the stone used to manufacture the stone artefacts; the likely uses of these stone artefacts, and more generally how the results of the salvage excavation contribute to an understanding of past Aboriginal use of the Activity Area and to the wider geographic region. Reference must be made to locally dated Aboriginal places associated with Lake Connewarre, and other relevant places on the Bellarine Peninsula.

<u>Mollers Lane 1 LDAD (VAHR 7721-1341)</u>

- A survey and salvage excavation of this place according to the procedures outlined above must be conducted;
- The salvage excavation of this place must be conducted by way of four 2m x 2m square pits located at the deepest points of the deposit and probably either side of the boundary fence that divides the registered extent. If practicable, these squares should be contiguous and reveal as much of the central distribution of the artefact bearing deposits as is possible;
- All subsurface artefacts recovered during the salvage excavations must be retained and properly stored in archival boxes in readiness for their return to the WAC.
- The Sponsor will be responsible for and must pay all costs associated with the salvage excavation of this place.

Molars Lane LDAD (VAHR 7721-1343)

- A survey and salvage excavation of this place according to the procedures outlined above must be conducted;
- The salvage excavation of this place must be conducted by way of 1m x 1m square pits dug at each GPS location where subsurface artefactual material was recorded during the Complex Assessment,- a total of four pits;
- All subsurface artefacts recovered during the salvage excavations must be retained and properly stored in archival boxes in readiness for their return to the WAC;
- The Sponsor will be responsible for and must pay all costs associated with the salvage excavation of this place.

Inductions

- The Sponsor must provide appropriate inductions for construction personnel in regards to the Aboriginal Cultural Heritage within the Activity Area. These inductions will be carried out by the RAP before the commencement of any works and should include information relating to the identification of stone artefacts and deposits in which they may occur. A minimum of 2 weeks notice must be given to the RAP to organise the induction. Those personnel who will be working permanently within the Activity Area must attend this induction. Contractors who are not permanent should be provided with Aboriginal Cultural Heritage information as part of their toolbox induction at the start of their time within the Activity Area. The cost of the induction is to be borne by the Sponsor. The Sponsor's contractors must refer to the checklist that has been prepared to ensure compliance with the requirements of this CHMP (see Appendix 3).

Access

- Access to the Activity Area must be provided to representatives of the Wathaurung Aboriginal Corporation before construction for the purpose of ensuring compliance with the Cultural Heritage Management Plan. The representatives of the Wathaurung Aboriginal Corporation must comply with all OH&S requirements of the Activity Area.

Management Needed During the Activity

- The topsoil must be retained within the Activity Area and can be used as part of the development.
- All works must be restricted to the extent of the Activity Area as is shown in Map 1.
- Access to the Activity Area must be provided to representatives of the Wathaurung Aboriginal Corporation during construction for the purpose of ensuring compliance with the Cultural Heritage Management Plan. The representatives of the Wathaurung Aboriginal Corporation must comply with all OH&S requirements of the Activity Area.
- Approved CHMP must be kept on site.

Management Needed After the Activity

- At the completion of the Activity, the recovered artefacts must be reburied in the activity area, with the location to be negoitiated between the Sponsor and WAC.
- If a reburial takes place, it must be undertaken in accordance with Wathaurung standard procedures for reburial listed in Appendix 4.
- Should any artefacts be recovered during the activity the Contingency Plan in section 9 must be followed.
- Access to the Activity Area must be provided to representatives of the Wathaurung Aboriginal Corporation after construction for the purpose of ensuring compliance with the Cultural Heritage Management Plan. The representatives of the Wathaurung Aboriginal Corporation must comply with all OH&S requirements of the Activity Area.

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Heritage Management Plan. The representatives of the Wathaurung Aboriginal Corporation must comply with all OH&S requirements of the Activity Area.

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PART 1 – ASSESSMENT

1. Introduction

1.1 The use and dissemination of this report

This report contains information that the Aboriginal community may regard as sensitive and should not be released for general public viewing or disseminated in other form without prior consultation with the Wathaurung Aboriginal Corporation (WAC) and with their written permission.

For this report, unless otherwise specified, the term 'Aboriginal Cultural Heritage Place' or derivatives thereof refers to Aboriginal material culture that is archaeological in nature and that can be recorded and assessed for its scientific values by a suitably qualified heritage advisor.

1.2 Preamble to CHMP

TerraCulture Pty Ltd was commissioned by TGM Group Pty Ltd to prepare a Cultural Heritage Management Plan (CHMP) for a proposed subdivision along Mollers Lane in Leopold. The Activity Area is approximately 10 kilometres east of Geelong within the parish of Moolap and within the County of Grant. The Activity Area address is 2-120 Mollers Lane Leopold. The parcel description and lot descriptions are presented in Table 1.

This current CHMP follows Due Diligence advice presented to TGM that the Activity Area was sensitive for Aboriginal cultural heritage. A field inspection of the Activity Area reported the presence of Aboriginal stone artefacts in one location and concluded that there were likely to be additional artefacts elsewhere.

Part of the Activity Area falls within the extent of a previous cultural heritage survey for a pipeline easement. Otherwise, the Activity Area had not been previously assessed for its Aboriginal heritage values. Prior to the commencement of the Due Diligence report and of this CHMP, there were no registered Aboriginal Cultural Heritage Places within the Activity Area and no part of the Activty Area fell within an area of cultural heritage sensitivity. However, given the results of the Due Diligence assessment during which Aboriginal stone artefacts were identified, a CHMP would be required for the proposed subdivision.

1.3 Reasons for Preparing the Management Plan

This CHMP has been prepared pursuant to s.47 of the *Aboriginal Heritage Act* 2006 (the 'Act'). The *Aboriginal Heritage Regulations* 2007 (the 'Regulations') specify the circumstances in which a CHMP is required for an activity or class of activity. Regulation 6 specifies that a CHMP is required if:

- All or part of the Activity Area is within an area of cultural heritage sensitivity; and
- All or part of the activity is a high impact Activity.

The Activity Area is not within an area of cultural sensitivity and there are no registered Aboriginal Heritage Places within the Activity Area.

The Activity falls under Regulation 46; Subdivision of land 46 (1) (a); and is a High Impact Activity within the *Aboriginal Heritage Regulations*.

As a result, this is a *voluntary* Cultural Heritage Management Plan under the Regulations.

1.4 Notice of Intent to Prepare a Management Plan

Under Section 54 of the Act and attached to this CHMP, the Sponsor has submitted a Notice of Intent to Prepare a Cultural Heritage Management Plan to the Wathaurung Aboriginal Corporation (the RAP) and the Secretary, Aboriginal Victoria. A copy of this Notice of Intent to Prepare and a copy of the written response by the Wathaurung specifying that they will evaluate the Management Plan are included in Appendix 1. The owner(s) were also notified by the Sponsor.

1.5 The Name of the Sponsor

Name: Chris Marshall
Organisation: TGM Group Pty Ltd
Address: 1/27-31 Myers Street Geelong 3220
Phone: 03 5202 4600
ABN: 1125568461

1.6 Heritage Advisor

The Heritage Advisors (HA) for this CHMP are Brendan Marshall and Monica Toscano.

Monica holds a Post Graduate Diploma in Classics and Archaeology from the University of Melbourne and has nine years experience in Aboriginal Cultural Heritage assessments in Victoria. Monica has completed some 60 CHMPs including for proposed subdivisions within the City of Greater Geelong.

Brendan has a Bachelor of Arts (Honours) majoring in archaeology (La Trobe University, 1985) and over 25 years experience in heritage consultancy.

1.7 The Names of Owners and/or Occupiers of the Activity Area Land

The Activity Area is within the properties 2-120 Mollers Lane, Leopold where there are 5 titles and the following table records the address, land owners and title information.

Property Number	Address	Owner/Occupier	Lot Number
1	2 Mollers Lane	Alcard	Lot 1 TP167626
2	22 Mollers Lane	Mollers Lane Holding	Lot 2 LP74593
3	32 and 32 A Mollers Lane	Lutheran Church	Lot 1 LP113935
4	42 Mollers Lane	Jones	PC353398
5	92 Mollers Lane	Masek	Lot 1 TP11676

Table 1: Land ownership/occupier details.

The Activity Area includes Mollers Lane and the Bellarine Highway Road reserve to the edge of the bitumen. These roads are maintained by the COGG who was notified of the CHMP.

1.8 Current Zoning

The Mollers Lane Activity Area is currently zoned rural.

1.9 Registered Aboriginal Parties with the responsibility for the Activity Area

The *Aboriginal Heritage Act* 2006 requires consultation with any Registered Aboriginal Parties (RAPs) registered under the Act over the Activity Area.

The Wathaurung Aboriginal Corporation (WAC) is a Registered Aboriginal Party (RAP) under the *Aboriginal Heritage Act* 2006 (Vic) and as defined in that Act, has responsibilities under that Act in relation to the management and administration of Aboriginal cultural heritage matters in the Activity Area.

The WAC has elected to evaluate the CHMP (Appendix 1).

1.10 Organisation of this report

The content of this report follows the approved form and is divided into three sections.

The first of these sections includes the introduction and contains background information on the establishment and conduct of this CHMP. It presents a description of the activity and its extent; information which has been supplied by the sponsor and added to by the HA as required. This is followed by a documentation of the outcome of consultation with the RAP. This consultation covers a wide range of topics from the contents of the report and the conduct of the field assessment, to matters concerning the relevant sections of the *Act*.

The Aboriginal cultural heritage assessment makes up Part Two where the results of the Desktop, Standard and Complex Assessments are presented. This section includes a detailed description of any Aboriginal cultural heritage discovered within the Activity Area during the assessment.

Part Three of this report addresses issues regarding protection, harm avoidance and the management of Aboriginal cultural heritage. Specifically, this section addresses matters in relation to Section 61 of the *Act* and includes an Impact Assessment and Specific Management Requirements which are presented in relation to the timing of activity before, during and after. Contingency Plans upon the discovery of Aboriginal cultural heritage during works are also presented in Part Three.

2. Activity Description

2.1 Description of the Activity

The Activity is a housing subdivision across land that is currently zoned rural. The subdivision includes vehicle roads and the services (telecommunications, sewerage, gas, water and electricity) that are normally required in preparation for housing allotments. The Activity will include the reinstatement of two creeks along natural drainage lines, which will be surrounded by open space.

2.2 The residential development

The Activity has the following components:

- subdivision of the land into housing allotments;
- the construction of storm water drainage pipes and wetland/detention basins;
- the construction of new vehicle roads, footpaths, kerb and channel, and other public infrastructure;
- the upgrade of adjacent vehicle roads, specifically Mollers Lane and the Bellarine Highway (if required);
- provision of electricity, water and gas mains;
- sewerage pipes and pumps;
- telecommunication mains; and
- the construction of open space along the natural drainage lines/creeks.

Appendix 2 shows a preliminary plan of the subdivision, although it is possible that the layout and size of the lots will change closer to the construction phase. The depths of excavation to install these services will range from approximately 2 metres to over 5 metres.

In accordance with Schedule 2, Regulation 6 (2) of the Aboriginal Heritage Regulations 2007, the permitted uses of the land under the relevant planning scheme are listed in Appendix 5.

2.2.1 Housing Allotments

There are approximately 162 housing allotments with an average size of 500m^2 proposed for the entirety of the Activity Area. The actual number and size of housing lots may change as planning progresses but lots are planned for the vast majority of the Activity Area.
The lots may require cutting or filling of the ground to achieve acceptable building levels and this combined with foundations means that construction will cause significant ground disturbance.

2.2.2 Storm Water Drainage

Storm water drainage will be constructed throughout the Activity Area and this will be constructed at a minimum depth of 600mm.

2.2.3 Roads and Footpaths

A network of roads will provide vehicle access through the estate and to connect with Mollers Lane to the east and Ash Road to the west. Road construction will include footpaths and installation of kerbs and channels, with excavation approximately 600mm to two metres in depth.

2.2.4 Mollers Lane and the Bellarine Highway

Road works may be required along the Bellarine Highway and Mollers Lane.

2.2.5 Services

Services will be underground, including telecommunications, water, sewerage, electricity and gas. These will require trenching to a minimum depth of 600mm.

2.2.6 Open space

Open area is presently planned for land either side of the two drainage lines which will be reinstated as creeks. There is a possibility that the dams that are currently retaining water along the northern drainage line will be decommissioned and the drainage line allowed to revert to a more natural form. There is an opportunity to renew a remnant area of wetland to the south, outside the Activity Area, adjacent to Lake Connewarre with the run-off from the estate.

2.3 Possible Impact on Aboriginal Cultural Heritage

The Activity Area is comparable to the small farming allotments that make up much of Leopold's rural land either side of the Bellarine Peninsula's major vehicle roads. Like much of the peninsula, this land was under cultivation soon after the arrival of Europeans. This relatively long history of faming means that remnant vegetation is uncommon and the typically sandy soil has been disturbed at least to the depth of ploughing. The Activity Area samples landforms which, according to location, elevation and form (ridges and gullies close to and overlooking Lake Connewarre), are likely to contain Aboriginal heritage material.

The activity will see excavation across the entirety of the Activity Area. It is possible that any current or former surfaces that may contain evidence of the past Aboriginal occupation will be harmed during the Activity.

3. Extent of Activity Area

The extent of the Activity Area is shown on Map 1. The local planning authority is the City of Greater Geelong (COGG).

3.1 Activity Area Boundaries

The Activity Area consists of approximately 42.45 ha of open farmland on the south-eastern outskirts of Leopold's existing residential area. The northern most end of the Activity Area fronts the Bellarine Highway and the southernmost, private rural property. Mollers Lane is the eastern extent of the Activity Area. This road is mostly unsealed and runs in a north south direction between the Bellarine Highway at its northern end and Lake Connewarre at the southern end. Heading southwards, Mollers Lane descends to the base of the gully that carries the drainage (currently piped beneath the road) that crosses the north-eastern corner of the Activity Area (property No 4) and has been dammed at two locations.

3.2 Road Reserves-Bellarine Highway and Mollers Lane

With the possibility that the Bellarine Highway may have to be widened towards its intersection with Mollers Lane, the Activity area has been extended to include the road side reserves 200m either side of this intersection. It is highly likely, given its close proximity to the asphalt, that this reserve has been significantly disturbed during the construction and maintenance of this road. At the same time, the northern end of the Activity Area is an extension of this landform and has significant potential to retain Aboriginal archaeological sites due to its flatness and close proximity to the first (northern most) of the two drainage lines mentioned above.

Mollers Lane is also included in the Activity Area. This lane has been built up or cut down along much of its length and doesn't intersect with or other wise sample the ridges which are likely to be most sensitive for Aboriginal archaeology.

3.3 Existing Conditions

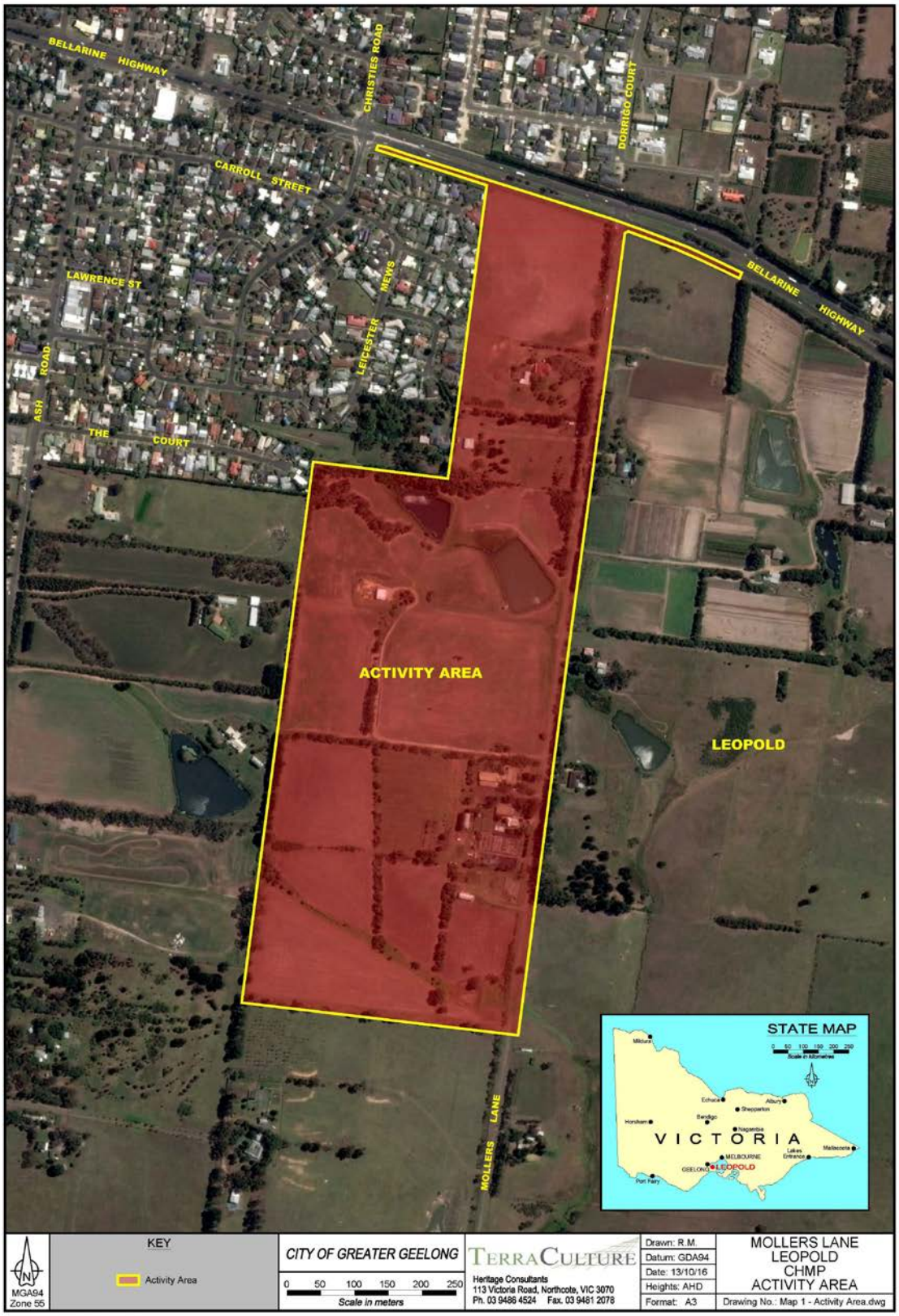
The Activity Area consists of five contiguous properties, all small farm holdings. Common to them all are fences, and all but the northernmost property have vehicle tracks to outbuildings and residences, or along paddock boundaries. All of the paddocks have been or are currently under cultivation. The largest areas of vegetation are associated with the first of the two drainage lines to the north and east of a large dam on property number four which is probably re-growth, at least in part. Otherwise the vegetation consists of planted rows of trees associated with fences, vehicle tracks and buildings.

Although mostly open paddock, the Activity Area includes the following locations where there has been significant prior ground disturbance (earth works) and this is usually associated with the construction of facilities or buildings.

Property Number	Address	Ground disturbance (other than ploughing), exiting facility or building	Approximate Area
2	22 Mollers Lane	Housing compound and landscaping	1.3 ha
4	42 Mollers Lane	Dams and large shed	1.1 ha
5	92 Mollers Lane	Former agricultural college	2.2 ha

Table 2: Existing buildings, associated areas and other facilities where there has been ground disturbance.

The large shed on property number two is in an area that has been levelled and the shed is surrounded by an artificial embankment. The former agricultural college consists of a large brick building, disused hot houses and areas of garden. Much of the ground here has been disturbed to some degree due to the construction of the facility and the use and maintenance of the open gardens. The above table does not include all locations that have suffered prior ground disturbance, only those areas most likely to be significantly affected.



Map 1: Showing Activity Area

4. Documentation of Consultation

4.1 Consultation in Relation to the Assessment

The following tables provide details of all consultation in relation to the assessment of the Activity Area for the purposes of the development of the Management Plan.

Date	Name	Organisation	Consultation
23 March 2016	Katrina Thomas	Wathaurung Aboriginal Corporation (interim RAP Manager)	Project Establishment Meeting- Background of Activity Area discussed with reference to geology and the previously registered places in the vicinity of the Activity Area. Proposed methodology put forward by HA involving a walkover of entire area then 40x40cm test pits every 50 metres covering activity area. 3 1m x 1m test pits would also be excavated, 2 located on the north and south partition of the high landform, and either side of the ridge in the southern partition of the Activity Area. One of these will be positioned in the area of stone artefacts found during the due diligence survey.
	Monica Toscano	TerraCulture Heritage Consultants (HA)	
26 July 2016	Katrina Thomas	Wathaurung Aboriginal Corporation (interim RAP Manager)	Post fieldwork meeting to discuss the results of the Standard and Complex Assessment. Brendan informed that there were 5 sites found which consisted of forty-seven surface artefacts within the Activity Area. Subsurface material was present for each of these sites. The Activity Area is heavily disturbed, and soils were made up of generally brown sandy deposits. Chris explained that: the development would see the reinstatement of two major drainage lines; that Lake Connewarre was a RAMSAR wetland; and any discharge would need to meet Envrionment Protection and Biodiveristy Conservation (EPBC) Act requirements. Katrina suggested the open spaces within the creek reserves was an opportunity for Aboriginal Cultural Heritage interpretation. It was acknowledged that the development plan did not allow for the *in situ* retention of the five places. The reburial of collected artefacts would likely occur within this open space to be discussed by WAC and the sponsor (see management requirements).
	Brendan Marshall	TerraCulture Heritage Consultants (HA)	
	Chris Marshall	TGM group (Sponsor)	
9 September 2016	Kim White	Aboriginal Victoria (AV) Registry	Following the submission of the 5 Aboriginal place site cards to AV Registry, AV advised that the 4 smaller places (initially submitted as Mollers Lane 2-5) would need to be recorded as one LDAD place. Mollers Lane 1 LDAD (VAHR 7721-1341), comprising the large landform scatter, was successfully registered prior to this. Mollers Lane LDAD (VAHR 7721-1343) was re-submitted to AV and registered on 19 September 2016.

Table 3: Documentation of Consultation.

4.2 Participation in the Conduct of the Assessment

Date	Name	Role
Standard Assessment		
4 April 2016	Monica Toscano	Supervising Archaeologist and HA (TerraCulture)
4 April 2016	Kim White	Assistant Archaeologist (TerraCulture)
4 April 2016	Chloe Clarke	Representative (Wathaurung)
4 April 2016	John Clarke	Representative (Wathaurung)
Complex Assessment		
5-8, 11-12 April, 29 June and 1 July 2016	Monica Toscano	Supervising Archaeologist and HA (TerraCulture)
5-8, 11-12 April and 1 July 2016	Kim White	Assistant Archaeologist (TerraCulture)
29 June 2016	Zachary Spielvogel	Archaeologist (TerraCulture)
5-8, 11-12 April, 29 June 2016	Chloe Clarke	Representative (*Wathaurung*)
5-8, 11 April, 29 June and 1 July 2016	John Clarke	Representative (*Wathaurung*)
12 April 2016	Kacie Mitchell	Representative (*Wathaurung*)
1 July 2016	Blair Gilson	Representative (*Wathaurung*)

Table 4: Participation in the Conduct of the Assessment**.**

During the Standard and Complex Assessments, discussions were held with all RAP representatives present regarding the landform and the potential for finding artefacts. All test pits were closed with the agreement of the RAP representatives. At the end of the Complex Assessment, RAP representatives agreed that the amount of testing was sufficient for the Activity Area.

4.3 Summary of Outcomes of Consultation

- No previously registered sites exist within the Activity Area
- Complex Assessment methodology to involve a grid of 40cm x 40cm test pits every 50 metres throughout the Activity Area.
- Three 1m x 1m test pits would also be excavated; two on the ridge line (landform), and one to be located where Aboriginal stone artefacts were identified during the Due Diligence inspection.
- Survey resulted in the recording of 47 surface artefacts; the majority were recorded within the central part of the Activity Area on the landform rise.
- The testing resulted in 18 subsurface artefacts, which includes the results of extent testing for identified Aboriginal Places.
- The entire Activity Area will have to be stripped and reformed due to drainage and access issues.
- Requirements to include:
    - the resurveying of the primary surface collection at Mollers Lane 1 (VAHR 7221-1341);
    - the excavation of four 2m x 2m subsurface extent pits at Mollers Lane 1 (VAHR 7221-1341);
    - the excavation of 1m x 1m pits at the GPS location of subsurface artefacts recorded at Mollers Lane LDAD (VAHR 7721-1343); and

  - the collection of the surface artefacts from all sites which will be given to the RAP. At the completion of the Activity, the sponsor and the RAP must make a decision as to whether there is an appropriate place to rebury the artefacts.
- Requirements to also include the retention of the topsoil within the Activity Area.

5. Aboriginal Cultural Heritage Assessment

5.1 Desktop Assessment

5.1.1 Search of the Victorian Aboriginal Heritage Register

The Desktop Assessment was completed by Monica Toscano (HA) and Kim White. Historical information and relevant background was obtained from published and unpublished documents, statutory registers were accessed and environmental information assessed.

Aboriginal Victoria (AV) maintains an online register called The Aboriginal Cultural Heritage Register and Information System (ACHRIS) of all recorded Aboriginal archaeological places and a library of all published and unpublished reports describing investigations of Aboriginal archaeological sites in Victoria. ACHRIS was accessed on the 1st August 2016 by Monica Toscano (HA) with a map generated showing the location and type of local registered places. Relevant site cards were checked against the reports and maps contained therein.

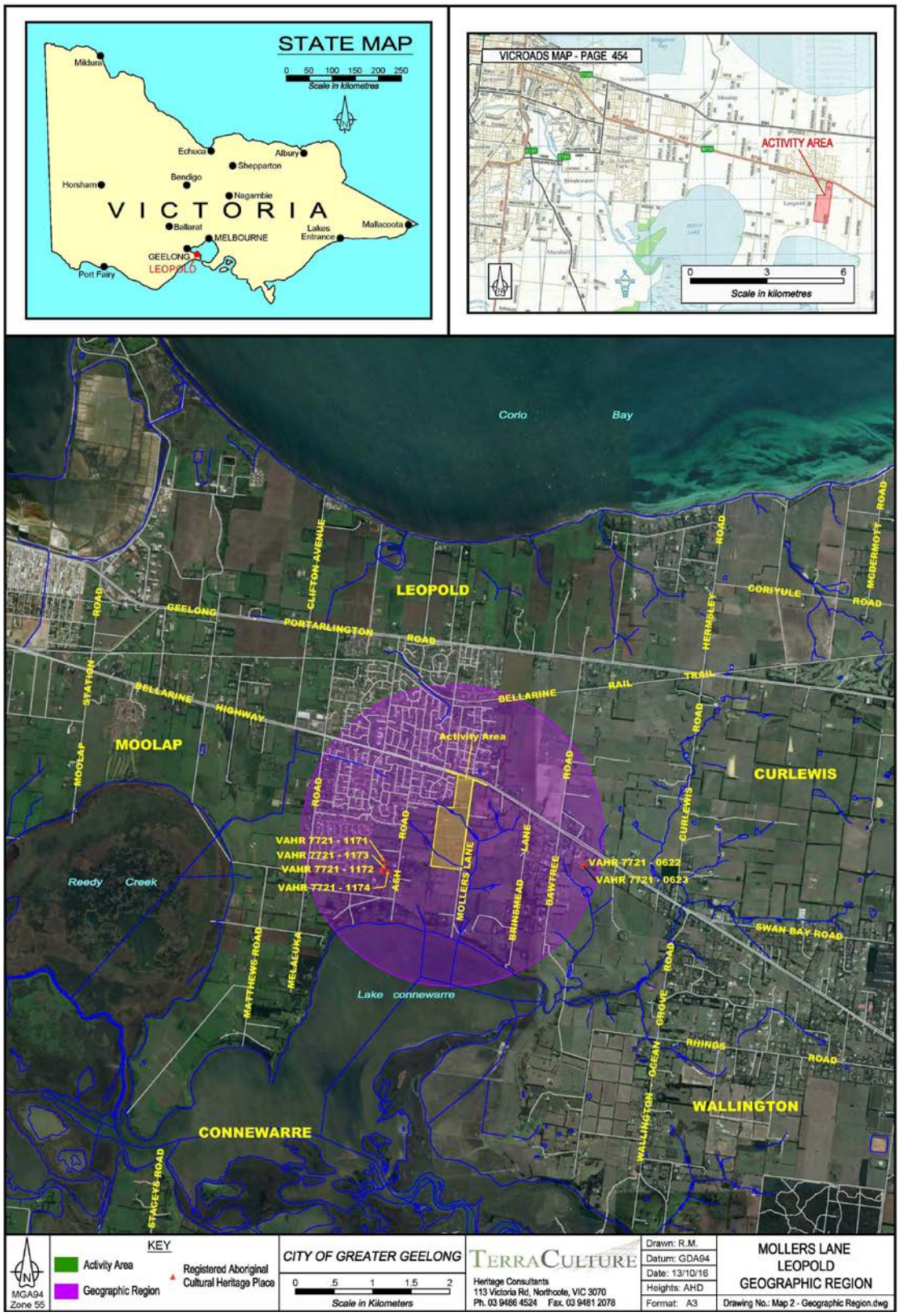
5.1.2 The Geographic Region

Leopold is located east of Point Henry on the western end of the Bellarine Peninsula approximately 12 kilometres east of Geelong. The township has developed on either side of the Bellarine Highway, between Lake Connewarre to the south and the Geelong to Portarlington Road to the north. The Geelong-Portarlington Road is the main road from Geelong to Drysdale and then to the north-eastern end of the Peninsula at Portarlington. At Leopold the Geelong Portarlington Road is aligned east-west adjacent to Port Phillip Bay and is some 1.25 kilometres from the coastal strip.

Leopold has seen considerable housing development during the last decade or so, but is mostly surrounded by small rural holdings. Housing development is the most significant land-use change since European settlement and the early development of the area as a farming district. It also represents the greatest potential threat to the conservation of local archaeological sites and heritage places.

Compared to other towns along the Bellarine Peninsula such as Drysdale or Clifton Springs, Leopold has had relatively few Aboriginal heritage investigations. Its location on the central area of the peninsula and lack of any sensitive landforms (prescribed) such as a named river may be a reason for this apparent absence of investigation. Leopold's setting to the east of the Leopold Fault places it in high terrain and geomorphologically near the western edge of an area known as the Bellarine Hill and Plateau.

For the purposes of this CHMP the geographic region is defined as the area within 2km of the centre of the Activity Area. To include the entire Bellarine Peninsula and Plateau would have incorporated many coastal places irrelevant in the context of this CHMP. The arbitrary 2km region includes Lake Connewarre which is likely to have been a major influence on Aboriginal settlement of the Activity Area and arguably, one of the principal reasons for the occupation of nearby locations, represented archaeologically as stone artefact scatters.



Map 2: Showing Geographic Region and Registered Aboriginal Cultural Heritage Places

5.1.3 Aboriginal Places in the Geographic Region

For the purposes of the Desktop Assessment the geographic region is defined as within approximately 2km from the Activity Area. A search of the Victorian Aboriginal Heritage Register (VAHR) identified six Aboriginal Cultural Heritage Places within the Geographic region.

There are no previously registered Aboriginal Cultural Heritage Places within the Activity Area. The closest recorded Aboriginal Cultural Heritage Places in the region are located approximately 800m to the west of the Activity Area, at Ash Road.

VAHR Place ID	Place Name	Coordinates (GDA94/MGA Zone 55)	Place Type	Approximate Distance from Activity Area
7721-0622	BAWTREE ROAD 1	280583/ 5768676	Artefact Scatter	1.8km east
7721-0623	BAWTREE ROAD 2	280586/ 5768651	Artefact Scatter	1.8km east
7721-1171	146 Ash Road Leopold IA	277923/ 5768727	Artefact Scatter	800m west
7721-1174	160-172 Ash Road IA	277991/ 5768554	Artefact Scatter	800m west
7721-1172	160-172 Ash Road IA2	277896/ 5768583	Artefact Scatter	800m west
7721-1173	160-172 Ash Road IA3	277934/ 5768635	Artefact Scatter	800m west

Table 5: Previously registered sites within the Geographic region.

All Aboriginal Places recorded in the geographic location are artefact scatters. The closest Places to the Activity Area are recorded on the same landform and within the same geology as the present study area (Moorabool Viaduct Sands). Considering this information, it is probable that stone artefacts will be present within the Activity Area, most likely in the form of isolated artefacts or low density scatters.

5.1.4 Distribution and Contents of Aboriginal Archaeological Sites in the Geographic Region

In summary:

- the registry search indicates that there are eleven registered Aboriginal archaeological places in the Geographic region, within about four kilometres of the activity area;
- The closest of these places are located at 146 and 160-172 Ash Road, Leopold. These are 146 Ash Road Leopold 1A (VAHR 7721-1171) and 160-172 Ash Road 1A to 1A3 (VAHR 7721-1172; 7721-1173; and 7721-1174);
- All of these archaeological places take the form of stone artefact scatters, mostly low density and ranging from single isolated pieces to multiple finds;
- the stone artefacts were discovered as surface finds during surveys and subsurface deposits during excavations;
- most of the places are recorded in open land currently used for plantations and stock keeping

On the basis of these results, it is likely that the Activity Area will contain Aboriginal cultural material, most likely in the form of low density artefact scatters exposed on the surface.

5.1.5 Previous Work in the Geographic Region

The Leopold region has been the subject of early Aboriginal assessments which have focused on proposed infrastructure on, or adjacent to the Bellarine Highway, including nearby residential subdivisions. Smaller local studies have occurred closer to the township

Richards, T. and Jordan, J. 1990

In 1995, Aboriginal Affairs Victoria conducted the Barwon Drainage Basin Archaeological Project as part of a Statewide Survey Program. The aim was to describe the nature and condition of the Aboriginal archaeological record in the Barwon River basin and to develop predictive models of site distribution and density, where appropriate.

The Bellarine Peninsula study area extends for 30km east of the City of Geelong into Port Philip Bay and Bass Strait. The Peninsula's southern coastline is exposed to Bass Strait, with the northern and western coasts protected within Port Philip Bay (Richards and Jordan 1999: 130).

One hundred and thirty Aboriginal archaeological places were recorded in the Bellarine study area. Ninety-six of these sites were recorded in defined survey areas covering a total area of 13.6km2. Surface artefact scatters were the most common form of Aboriginal archaeological place on the Bellarine Peninsula (46.1%), with quartz the predominant raw material type. Other materials included flint, chert, quartzite, basalt, limestone, chalcedony and sandstone amongst others.

Richards and Jordan highlighted the effects of recent heavy ground disturbances on all sites surveyed for the Bellarine Peninsula, stating that the poor condition of these places is a reflection of most Victorian Aboriginal cultural heritage places that are only discovered when exposed by some ground disturbance (Richards and Jordan 1999: 141). Clearing, cultivation and development have disturbed a great amount of the existing ground surface on the Peninsula, with few sites left unaffected below the ploughzone (20-25cm+).

The authors conclude that the Bellarine Peninsula was probably a focus of prehistoric Aboriginal occupation, and highly valued for food sources and the ready access to a variety of environmental landforms (woodlands, watercourses, etc). The evidence for the small tools tradition on the Peninsula indicated a general age between ca. 5000 and 150 years BP. This was an expected result given the scarcity of Early Holocene and Late Pleistocene sites across Victoria (Richard and Jordan 1999: 143).

Collins, S. and Marshall, B. 2004

In 2004, TerraCulture conducted an archaeological assessment for Barwon Water on the proposed water transfer duplication pipeline between Leopold and Ocean Grove on the Bellarine Peninsula. The proposed area for assessment commenced at Ash Road, Leopold continuing approximately 7.5km on an east south-east alignment to the Barwon Water Storage Basin on Grubb Road. A field survey was conducted for about 90% of the length of the alignment with mostly good visibility. Two new Aboriginal cultural heritage places were recorded during the survey, as Bawtree Road 1 (VAHR 7721-0622) and Miranda Court 1 (VAHR 7721-0621). Ten geotechnical test pits were excavated along the alignment by geotechnical company BFP, measuring approximately 0.6m wide by 1.5m long and up to 3m deep, depending on underlying sediments. No artefacts were recorded during the geotechnical testing. A rotary hoe was employed for subsurface testing in four locations; two transects for each location were undertaken, varying in length between 30m and 170m, and measuring 1.8m wide. One single retouched quartz tool was recorded from Sample 3 in a grassland area adjacent to a drainage line near Wallington-Ocean Grove Road (Bawtree Road 2, VAHR 7721-0623). It was noted a nearby resident had previously collected stone artefacts in this area.

Marshall, B. 2001

In 2001, TerraCulture undertook an archaeological survey for the proposed construction of the Bellarine Transfer Main Duplication pipeline, running between Marshall and Leopold. The report focused on a 300m stretch of the pipeline route at the Barwon River crossing. An initial field survey was conducted in 2000 on both sides of the Barwon but thick pasture grasses and other vegetation obscured most of the ground at this time. No Aboriginal cultural material was found during the survey. Marshall noted that at the time, few archaeological surveys had been conducted in the Barwon River floodplain, with only a number of scarred-trees identified closer to the Geelong CBD (Marshall 2001: 6-7).

Marshall, B. 2006
An Archaeological survey was conducted by TerraCulture for the proposed residential subdivision at 702-720 Portarlington Road, Leopold. The Activity Area is bordered by Portarlington Road, open paddock and existing residences to the north, the Bellarine Rail Trail and treed paddock with residence to the south, Melaluka Road to the west and Moss Road to the east. Ground visibility was very poor at the time of the survey, and an opportunistic approach to the survey was conducted. Areas for potential Aboriginal cultural material were investigated where surface visibility was highest. No Aboriginal cultural material was recorded during the survey.

Webb, C. 2011
A Cultural Heritage Assessment was conducted by Webb for the rezoning of Ash Road in Leopold in 2011. The Activity Area is bordered by existing housing south of Hazelwood Crescent to the north, Ash Road to the east, and farmland to the south and west. A survey was conducted over a majority of the subject land with the exception of 21-29 Walkers Road (consent not gained), and the front section of 146-155 Ash Road (under crop). Surface visibility was <5%, but two stone artefacts were found on the surface in the property at 160-172 Ash Road. One was located on the northern fence-line and the second on a small rise in the middle of the property. It was concluded that there were likely areas for further Aboriginal cultural material present, but obscured by the limited visibility.

Bullers, R. and Harbour, M. 2012
A Complex Assessment was undertaken by Ecology and Heritage Partners in 2011 for the residential subdivision of Ash Road in Leopold. The Activity Area measured approximately 25.4ha and is bordered by Ash Road to the east, residential properties to the north, farmland to the west, and rural properties to the south. A total of 90 shovel test holes (40cm x 40cm) were excavated, including eight radial test holes. The radial extent testing included two previously identified Aboriginal heritage places (VAHR 7721-1172 and 7721-1173) recorded by TerraCulture in 2011 during the Standard Assessment. Two 1m x 1m test pits were also excavated; the first was located over the previously recorded isolated artefact VAHR 7721-1172. One surface artefact was found in a disturbed context, on a vehicle track near to a damn bank (VAHR 7721-1171). This was identified as a utilised silcrete flake. A second place was recorded as an isolated subsurface artefact (VAHR 7721-1174) found during the Complex Assessment, in the southernmost property of the Activity Area, on higher ground. The artefact was identified as a possible distal flake made from chert. No further artefacts were found in nearby subsurface testing in relation to these places, or during the surface survey.

Conclusion
The review of previous archaeological assessments shows the geographic region is sensitive for surface and subsurface stone artefacts. These are likely to occur as isolated surface and subsurface artefacts and low density artefact scatters. Little subsurface testing has been conducted in the Leopold region. One assessment is located in close proximity to the current Activity Area (Bullers & Harbour 2012). Thorough subsurface testing was conducted for the Activity Area at the Ash Road residential subdivision. However, this only produced one isolated subsurface artefact, while a second Place was recorded in a disturbed surface context. Many of the previous assessments have been hindered by poor surface visibility during the time of survey therefore, it is possible further artefacts were present but unidentified. It is possible that any subsurface material was not accurately identified due to the limited or complete absence of any indicative surface material being found. Extensive disturbance through land-use has also greatly affected the integrity of subsurface deposits in all assessments, which Richards and Jordan had earlier highlighted as a symptomatic issue for the Bellarine region, but also reflects the breadth of remaining Aboriginal places in Victoria today (Richards & Jordan 1999: 143).

A review of the previous assessments demonstrates that, within the geographic region, the potential for identifying surface material is not limited to open fields and paddocks, but have also occurred in areas of greater ground disturbance. Exposed artefacts on the surface, near vehicle tracks and other activities associated with residential premises are common (Bullers & Harbour 2012). Areas of ground elevation are more likely to produce surface artefacts, as

indicated by Bullers and Harbour (2012: 63-66). It is likely that Aboriginal people would have traversed the current Activity Area on the way to Lake Connewarre in the past, which would have been a focal area for hunting and gathering activity. No places exhibiting extensive tool making processes or presence of debitage have been recorded within the immediate geographic region.

5.1.6 Historical and Ethno-historical Accounts in the Geographic Region

As one of the two locations from which Europeans colonised much of Victoria, Geelong has a number of written and illustrated historical accounts on the Aboriginal people of the area. Europeans first made written observations of the Aboriginal people of the Bellarine Peninsula from 1802, when explorers began to chart the entrance of Port Phillip Bay. Most of the accounts however relate to 1836 onwards when there was a permanent European presence. Clark (1990) collated the primary sources of this ethnohistory in his reconstruction of traditional language boundaries in western Victoria. These sources include journal entries and government correspondence produced by explorers such as Matthew Flinders and Charles Grimes, as well as settlers and missionaries, particularly G.A. Robinson, the Chief Aboriginal Protector.

William Buckley, an escaped convict from an aborted 1803 settlement at Sorrento, was adopted by the *Wada wurrung* and lived with them until July 1834. As recorded by Morgan (1852), Buckley's reminiscences have also become an important source of historical data on the Aboriginal clans of the *Wada wurrung* area. Excluding Morgan (1852), most of the historical accounts of the early contact period refer to specific events, usually involving contact and conflict between settlers and the local Aboriginal clan. There is little historical data from this period. However, it may be assumed that at least some clans continued to live in traditional ways.

According to Clark (1990: Fig 11), Leopold falls within the known traditional boundaries of the *Wathaurong* or *Wada wurrung* language group, whose territory included the coast west of the Werribee River to Painkalac Creek at Aireys Inlet. It extended north as far as Fiery and Mt Emu creeks.

The identity of the clan who occupied the Leopold area is not precisely known, but following Clark is likely to be the *Bengalat balug*, the Bellarine Peninsula peoples. Barwon River is believed to have provided the boundary between these and neighbouring clans.

Corris (1968) cited in Clark (1990) believes '(that) there is so little known about the social organisation of the *Wada wurrung* bespeaks the rapidity with which they were physically destroyed by settlers seeking undisputed possession of their land' (Clark 1990: 277). As noted by Clark:

> *By the end of 1836, the sheep runs of the 'ngamadjig' spread round Geelong within a semi-circle of twenty-five miles radius. In the following year streams of squatters from Melbourne and Geelong met and thrust westwards towards the Colac district. The Bacchus Marsh lands were next to be occupied, and then the head-waters of the Leigh and Buninyong.*

5.1.7 The *Wada wurrung* Language Group

The social and spatial organisation of traditional Aboriginal society has been the subject of considerable debate. It is considered by most that Aboriginal society was organised according to local descent groups called clans. Clans were the 'landowning, land renewing and land sustaining unit of Aboriginal society' (Clark 1990: 4-5). Clans occupied estates or home country and the area of land over which the clan hunted and gathered has been called the range. As explained by Clark:

> *…the tract or stretch of country identifiable as the economic range, normally included the estate and was thus owned by clans. The band seasonally occupied and utilised various parts of the range in a settlement pattern that was a response to the group's habitat* (Clark 1990: 4-5).

Clark suggests there were twenty-seven *Wada wurrung* clans at the time of European contact.

> *I have been able to reconstruct 27 Wada wurrung clans. Using Lourandos' (1977) estimates that clan sizes ranged from between 40 to 60, this would give a Wada wurrung population of between 1080 and 1620 at the time of contact. Dawson (1991) estimated clan sizes were 120, and this would give Wada wurrung a population of 3240. The real figure was probably somewhere between 1620 and 3240 (Clark 1990: 307).*

Wada wurrung clans were patrilineal and organised into moieties belonging to either the *Waa* (crow) or *Bunjil* (eaglehawk) moiety – marriage partners were required to belong to different moieties (Clark 1990: 276-7, also see Barwick 1984: 105).
Clark noted that:

> *Clan heads were known as either Nourenit/Narenit or Arweet. The Wada wurrung were the most powerful and influential people in the western district. During his 1841 tour Robinson met with many Wada wurrung clan heads.*

As mentioned marriage was not allowed between two people from the same tribe 'the object of these laws is to prevent marriages between those of one flesh.' (Dawson 1881: 26)

> *Every person is considered to belong to his father's tribe, and cannot marry into it. Besides this division, there is another which is made solely for the purpose of preventing marriages with maternal relatives. The Aborigines are everywhere divided into classes, as everyone is considered to belong to his mother's class, and cannot marry into it in any tribe, as all of the same class are considered brothers and sisters. (*Dawson 1881: 26)

According to Dawson, the Aboriginal people he wrote about from the Western District of Victoria believed in supernatural beings – celestial, infernal and terrestrial. These included good and bad spirits 'of terrestrial spirits there are devils, wraiths, ghosts and witches, the difference between them being somewhat indefinite' (Dawson 1881: 50). There were many creation stories that played an important role within the belief systems of the *Wada wurrung* clans. Within these creation stories, animals have a significant role. One such story is recounted by Dawson:

> *There is a tradition that fire, such as could be safely used, belonged exclusively to the crows inhabiting the Grampian mountains; and as these crows considered it of great value, they would not allow any other animal to get light. However a little bird called Yuulion keer –'fire tail wren'- observing the crows amusing themselves by throwing firesticks about, picked up one and flew away with it. A hawk called Tarrakukk took the firestick from the wren, and set the whole country on fire. From that time there have always been fires from which lights could be obtained* (Dawson 1881: 54).

In this religious system people were identified with a particular animal plant or natural feature, which like themselves, was endowed with life essence by creation ancestors in the Dreamtime (Flood 1990: 273).

The *Wada wurrung* clans who lived on the coast were the first to come into direct contact with the *'ngamadjig/amerjig'* or white man. This occurred by at least 1802 when Lieut. John Murray in the Lady Nelson, charted part of Indented Head and named Swan Bay (Clark 1990: 227). The clan that occupied the areas around Geelong, the *Wada wurrung balug*, was probably the next to have direct contact with the white explorers and likely continued to have periodic interactions between 1802 and 1835.

Bengulat balug
The *Bengulat balug* clan occupied the region of Indented Head (Clark 1990, 171; Table 9). Clark (1990, 169-70) states that the Coastal Watha wurrung people had dealings with white

people from at least February 1802 when Lieutenant John Murray charted part of Indented Head and named Swan Bay. In May 1802, Matthew Flinders climbed the You Yangs, camped at Indented Head and met with several Watha wurrung. William Buckley, the convict who escaped from Lieutenant Colonel David Collins short-lived Sorrento settlement in December 1803, eventually made his way to Indepnted Head, where he was adopted by the Watha wurrung clan, after they recognised him as the resuscitated Murrangurk, a member of the clan long since dead. Buckley lived in this clan until July 1835, when he made himself known to John Batman's party camped at Indented Head. Batman, after his 'treaty' with Woi wurrung and Bun wurrung clan heads in June 1835, produced a deed for the Bellarine Peninsula and Indented Head. The deed identified this land as the possession of the Woi wurrung and Bun wurrung, which clearly suggests the Geelong deed is a fabrication, as this land belonged to the Watha wurrung.

5.1.8 Wada wurrung Hunting and Gathering

The details of traditional *Wada wurrung* settlement patterns, technology and social organisation are unknown. It can be assumed that they were mobile hunters and gatherers who occupied a specific range over which they moved according to subsistence requirements and trading and social obligations.

Plains fauna such as kangaroo and emu were hunted for food. Dawson (1881) writes that several kinds of kangaroo were eaten, as well as wombat, wild dog, porcupine ant-eater, possum and other smaller animals. Fish was also consumed such as eel and shell fish.

'Of fish, the eel is the favourite; but besides it, there are many varieties of fish in the lakes and rivers, which are eaten by the natives' (Dawson 1881).

Smaller foods such as grubs were also part of Indigenous people's diet. These were usually cut out of trees and eaten alive.

'The grubs are about the size of the little finger, and are cut out of trees and dead timber, and are alive, while the work of chopping is going on….that caution is necessary to avoid their powerful mandibles, ever ready to bite the lips or tongue' (Dawson 1881).
The western basalt plains probably provided edible plant species such as Murnong. These were gathered by women using digging sticks with the tubers eaten raw or cooked (Zola and Gott 1990: 52).

> *It is much esteemed on account of its sweetness, and is dug up by the women with the muurang pole. The roots are washed and put into a rush basket made on purpose, and placed on the oven in the evening to be ready for next mornings breakfast. …the cooking of the muurang entails a considerable amount of labour on the women, inasmuch as the baskets are made by them; and as these often get burnt they're rarely served more than twice. The muurang root, when cooked, is call yuwatch. It is often eaten uncooked* (Dawson 1881: 21).

Root plants such as these were abundant as they are safer from animals and birds growing beneath the soils. Plants were also used for medicines, including River mint and Old Man Weed, which were used for colds and chest problems. Gum from gum trees and wattle barks were also used for burns and stomach issues. Plants for medical uses could be prepared in a number of ways; Infusion, steaming, smoking, poultices, and binding of the plants around the head (Zola & Gott 1990: 52).

5.2 *Wada wurrung* Post-Contact History

The presence of *Wada wurrung* people in the area continued to be written about, mostly in government correspondence, until they were forced onto mission stations such as at Buntingdale or until their integration into the broader community. As an indication of their decline Clark records in 1941 that Robinson attributed the decline of the Aboriginal population to disease and natural decay, unnatural causes such as attacks from hostile tribes, and European extermination. Robinson also learned in 1841 that several clans were nearly extinct; including the Carringum bulluk and the Worinyaloke bulluk, Berrequart bulluk and the Wongerer bulluk. Clark notes that a census in 1840 of two Wada wurrung clans, Marpeang bulluk and Tooloora bulluk both has a population of 21. In 1943 Peerickelmmon bulluk was

listed as having a population of 13 and the Burrumbeet bulluk as 26. The decline was also noted by Fyans:

> *Fyans noted that when he arrived in the Geelong district in 1837 he was ordered to assemble all the Aboriginal population to receive gifts. Assisted by William Buckley all the Aborigines within 30 miles of Geelong were assembled, amounting to 297 men, women and children. Each received a blanket and a portion of flour. In 1858 Fyans considered that no more than 20 of these 297 people were alive* (Clark 1990: 299).

In 1860 the Victorian Government established a Central Board "appointed to watch over the interests of Aborigines'. The board worked in two ways, a reserve system, and a system to distribute items such as food and clothing by "local guardians" who functioned as honorary correspondents to the Aboriginal people still living in the surrounding areas. For the *Wada wurrung*, three reserves were gazetted in the first year of the Boards establishment; Steiglitz, Karngun, and Mt Duneed. The rapid decline of the Aboriginal population saw the close of these reserves in the early 1900s. Karngun closed in 1900 with Steiglitz closing in 1902 followed by the Duneed reserve in 1906 (Clark 1990: 300-307).

In 1861, the surviving *Wada wurrung* were gathered onto a parcel of land at Mt Duneed, the Duneed Reserve, on which a 'shelter hut' had been installed (Clark 1990: 300). The remnant population, which around this time appears to have numbered eleven people, were encouraged to stay at the Duneed Reserve and were prohibited from staying in the Geelong Township after sundown.

There is considerable historical detail on the fate of particular individuals. According to Clark the last 'full blood' *Wada wurrung balug* who was known as 'King Billy….whose Aboriginal name was *Waurn Bunyip* or *Worm Banip* died at the Geelong hospital on the 11th of November 1885' (Clark 1990: 306). In relation to other *Wada wurrung* clans Clark records the demise of Billy Leigh of the *Yaawangi* (You Yangs):

> *'Billy Leigh, purported to be the last of the Yawangi (Yaawangi) clan, died on the 9th of August 1912. Billy had been adopted by Fredrick Armytage and his wife, the owners of Wooloomanata Station. He was baptized and confirmed in the Trinity Church of England in Lara, and when he died the Armytages erected a memorial above his grave in the eastern cemetery in Geelong* (Clark 1990: 335).

Wadawurrung post-contact history continues to this day and *Wadawurrung* people are represented by the Wathaurung Aboriginal Corporation and continue the tradition of caring for country.

5.3 Land Use History

Early Settlement of Victoria

In the mid-1830s permanent European settlement of Victoria commenced with the arrival of the first squatters. A 'treaty' was signed in 1835 by John Batman and elders of the local Aboriginal inhabitants for an arrangement to exchange supplies of basic goods for the provision of 600,000 acres of land (Kociumbas 1992: 190-191). The treaty was never recognised by the Government in NSW.

Wynd noted that while "most people are aware that 500,000 acres around Melbourne were purchased (through a deed – 'Batman's Treaty'), it is not so well known that in a separate deed 100,000 acres around Geelong, including the whole of the Bellarine Peninsula, were purchased' (Wynd 1988: 11).

By 1838 squatters had moved into large areas of Victoria and usurped large tracts of land from the resident Aboriginal people for the purpose of grazing livestock. Spreadborough and Anderson (1983: ix) discuss the 'squatting expansion' between 1834 and 1860, noting that '…it was the early squatters who were permitted to become 'free' selectors, choosing and

learning about their land with a fair degree of independence from official control'. The first decade of this expansion saw squatters taking up land across Victoria, particularly on the plains north of Melbourne and running westward to Geelong (Spreadborough & Anderson 1983: Figure 1).

Settlement of the Leopold area

The early European settlement of the Bellarine Peninsula spread from the west. Point Henry was an important landing place, with the eastern side following in the tracks of Batman and other explorers.

Large tracts of land were initially taken up by squatters, many of whom did little more than run stock over loosely defined runs. Mr Thomas Sproat held the 'Bellarine Hills' run of 1,280 acres between 1842 and 1852. Newcombe and Drysdale's 'Bellarine' run was some 1,920 acres and bordered the survey area to the west (see Spreadborough & Anderson 1983: 268-270).

Figure 1: Wood engraving by C.F. Smith of Lake Connewarre, dated 25 July 1863. Image demonstrates the undulating land leading down to the lake post-settlement.

As various land acts became introduced in the 1840s and 50s, squatting runs began to dissolve and were replaced by small farming allotments purchased by 'Selectors'. Modern day Leopold is located within the Parish of Moolap, in the County of Grant.

Kensington Estate

Kensington Estate was subdivided in 1852 and led to the rise of the township known as Kensington. Within the next three years, churches were erected and the town blossomed. By 1885 descriptions of the town were as follows; '…a small village, 52 miles S.W. of Melbourne and 12 miles west of Queenscliff, with Connewarre 2 miles south. The district is a good fruit-growing one. There are two churches and a state school, with a population of about 100 persons, within one mile of the post office…' (Wynd 1988: 103). In 1885 the town name was changed due to the apparent confusion with Melbourne suburb, Kensington, and Leopold was chosen.

Throughout most of the twentieth century Leopold remained a small township servicing the surrounding rural sector. Leopold was previously included as a township within the Rural City of Bellarine before it was abolished in 1993, and subsequently merged (as were other local

and rural municipalities) into the City of Greater Geelong. During the second half of the century and most recently, the area has experienced unprecedented urban growth, and with this the demise of local farms.

Land-use History of Activity Area

The parish plan of Moolap redrawn by the Department of Lands and Survey (1954; see Figure 3) reveals that T. Foster purchased section 17 (of 424 acres / 171.6 hectares), granted on the 14 July 1852, in which the Activity Area is located.

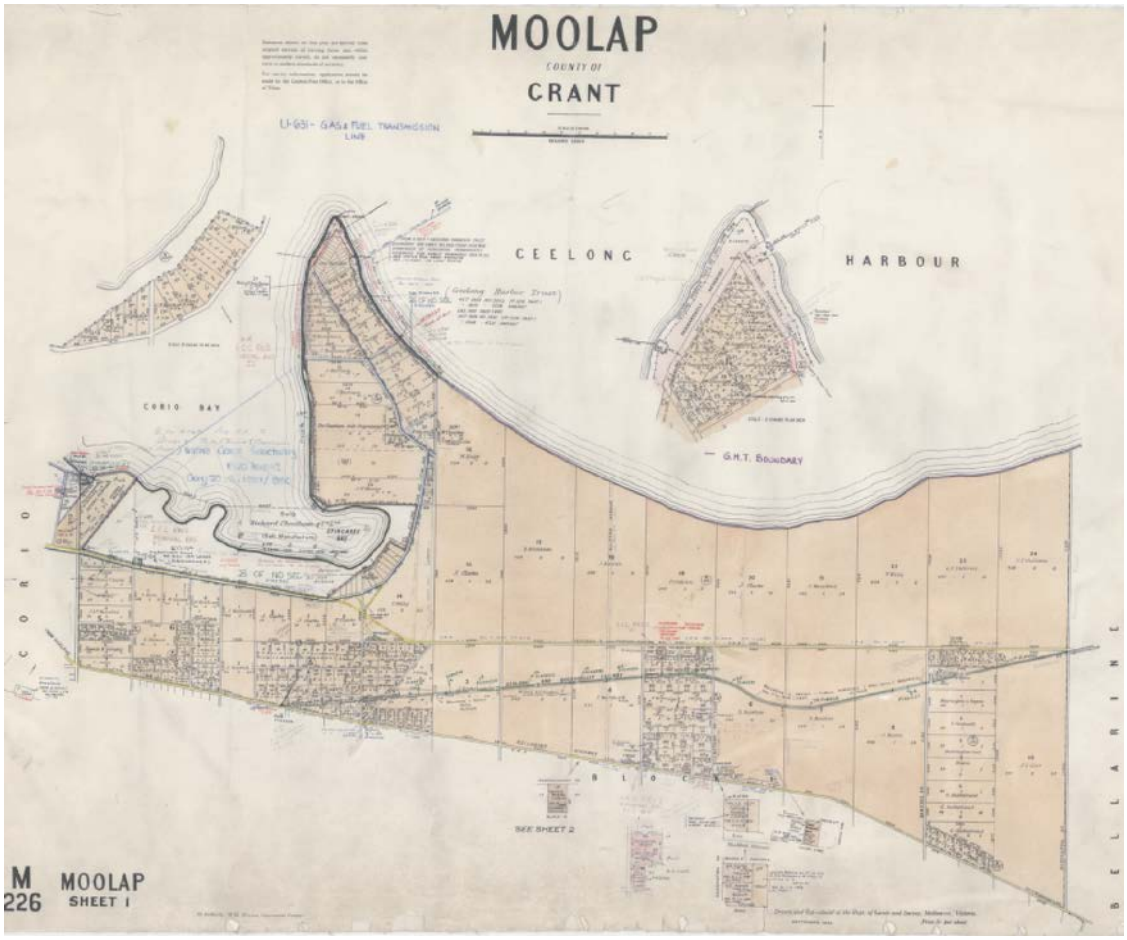


Figure 2: Parish plan of Moolap, north of the Bellarine Highway (DLS 1954).

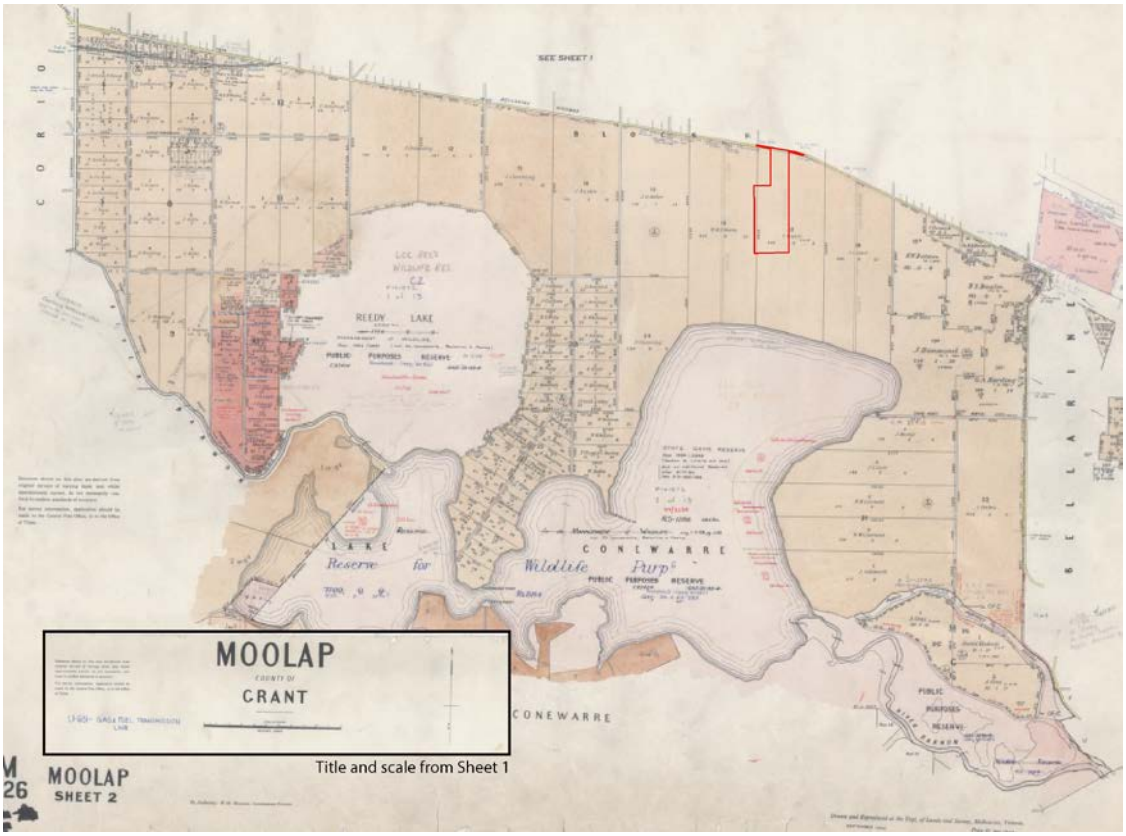


Figure 3: Parish plan of Moolap, south of the Bellarine Highway, with the approximate location of the Activity Area shown in red (adapted from DLS 1954).

Existing conditions

The Activity Area has primarily been used for the growing of crops up to the time of the survey, as well as housing multiple residential dwellings accessible from Mollers Lane. The most recent residential construction occurred to the north-west of the Activity Area, in the neighbouring Ash Road subdivision (Bullers and Harbour 2012).

Figure 4: 2016 aerial image taken from Google showing Activity Area and construction of houses around the north-western boundary.

5.3.1 Landforms and/or geomorphology of the Activity Area

Climate

The climate of the Bellarine Peninsula varies between the Port Phillip Bay and Bass Strait coasts, but generally has a mild maritime climate. Cooler winds from Bass Strait during summer result in Queenscliff having a mean maximum temperature during February (the hottest month) of 22.6 degrees celcius. January is the hottest month for Geelong and has a mean maximum temperature of 25 degrees celcius. Winters are mild with the mean minimum temperature during July at 6.7 degrees celcius in Queenscliff and 5.2 degrees celcius in Geelong. The mean annual rainfall is 606.6mm in Queenscliff and 534.8mm in Geelong (BOM 2016).

Regional Geology and Geomorphology

Leopold is located on the northern side of the Bellarine Peninsula on the Port Phillip Bay coastline. It is located on a notable rise (about 50m ASL) that probably marks a fault between the flat alluvial plain east of Geelong, and the undulating sand hills that comprise the 'plateau' that characterises the central parts of the Bellarine Peninsula.

Bird (1993: 139) provides the following description of the northern coastline of the Bellarine Peninsula:

> *This north coast of the Bellarine Peninsula is a low energy coast with wave action mainly from the north-west. Nevertheless, abrasion ramps have been cut into soft sandstone and clay outcrops at the base of low cliffs, and structural beaches on*

> *the Older Volcanics…. The beaches are narrow, with gravel and shells as well as sand, often covered by heaps of brown seagrass hay, where waves have piled up the leaves of Zostera torn from nearshore marine meadows. In places there is a low at the base of the bluff, with an emerged beach formed when sea level was 1-2 meters higher in mid-Holocene times.*

Heading west and close to Point Henry he notes:

> *Near Leopold the coast bluff declines across a north-south fault, and swings inland beside the Moolap Lowland and down the eastern side of Reedy Lake. The existence of Pleistocene marine fossils around this lake led Gill and Collins (1983) to suggest that a seaway extended through to Lake Connewarre and Barwon Heads about 125,000 years ago, when the sea stood about 7.5 metres above its present level and the Bellarine Peninsula was an island. The present coastline has beaches and beach ridges of shelly sand backed by marshland, which curve out alongside the tabular plateau (another late Pleistocene island) on which the Alcoa aluminium refinery stands, to culminate in the cuspate spit at Point Henry. This spit runs out under Corio Bay as a sinuous shoal, through which Hopetoun Channel has been dredged to provide ship access to the port of Geelong* (Bird 1993: 140).

Local Geology and Geomorphology

The Activity Area is located east of the ridge line that demarcates the eastern boundary of the low lying late Pleistocene plain that was probably part of Corio Bay during periods of high sea level. This ridge (at 30m+ ASL) is part of the hilly terrain that is the predominant landform across the middle sections of the Bellarine Peninsula and forms the northern edge of Lake Connewarre. These hills are dissected by drainage lines that drain the surrounding hills and that form deep gullies and bluffs.

The Activity Area samples a high ridge and its eastern slope and a minor drainage line that diagonally crosses the northeastern paddocks. From Mollers Lane the land rises steadily and a vehicle track and line of trees marks the break in the slope and separates the south-eastern and south-western paddocks. The smaller south-western paddock has a gentle westwards slope.

This drainage line has been dammed in two locations within the central region of the Activity Area. These dams are prominent covering a large area and indicate significant earth works for the forming of the basins and the high embankments which act to contain the water. For the purpose of the subdivision, these dams will be required to be removed and the land reformed here. The development will likewise allow for the renewal of a small estuary at the base of the hills.

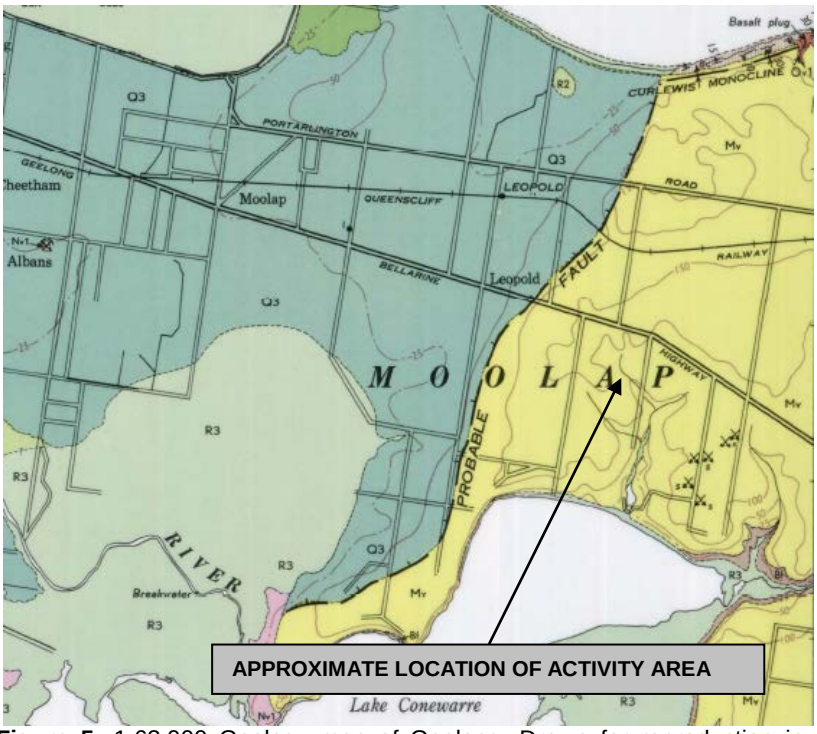


Figure 5: 1:63,000 Geology map of Geelong. Drawn for reproduction in the Department of Mines, 1963.

Hydrology

The closest water source to the Activity Area is Lake Connewarre, located within 1km to the south. The Department Environment and Primary Industries (DEPI) Biodiversity Interactive Map shows the Activity Area located north of Lake Connewarre, and only subsequent post-1788 water courses and tributaries (including modern dams) existing in the landscape (Map 3 below). This corroborates the parish land holders map showing the extent of Lake Connewarre and associated wetlands and also helps to demonstrate the effect of European land use and alteration for this area. Given its proximity to the lake, it is highly probable Aboriginal people traversed the Activity Area in the past, utilising the resources local to the lake and surrounding ecosystem.

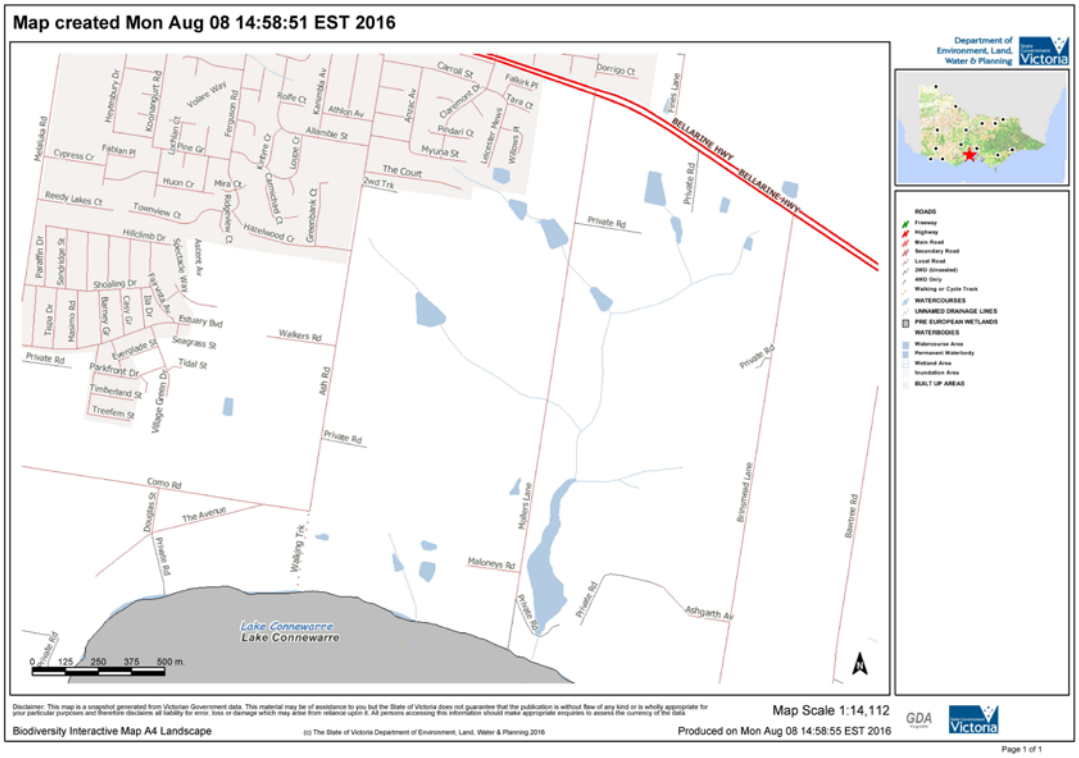


Figure 6: Map showing extent of pre-1788 fresh water sources in relation to the Activity Area (DEPI 2014).

Flora and Fauna

The native flora and fauna of the Bellarine Peninsula has been dramatically reduced since European settlement because of the destruction of habitat by farming and more recently, the development of residential and industrial estates.

In 1803, Grimes describes the northern coastline of the Bellarine Peninsula as ‘gentle rising hills of good land, thinly wooded with low decayen timber’.

5.3.2 Conclusions from the Desktop Assessment

The Desktop Assessment shows that Aboriginal people would have been present within the geographic region both before and after European settlement. There have been few previous assessments undertaken within the geographic region and all previously registered Aboriginal places in the vicinity consist of low density artefact scatters. One assessment was conducted as part of an analogous residential subdivision to the west at Ash Road (Bullers & Harbour 2012). Bullers and Harbour (2012) recovered two new Aboriginal cultural places: VAHR 7721-1171, a surface artefact; and VAHR 7721-1174, a subsurface artefact. These places were recorded in addition to two previous surface artefacts (VAHR 7721-1172 and 7721-1173) recorded by TerraCulture in 2012. Bullers and Harbour (2012) recorded similar features of recent land use history to the present Activity Area, particularly in relation to the amount and type of ground disturbances found within the Study Area at Ash Road. Broader assessments within the geographic region have primarily been comprised of surface surveys, with sample subsurface testing resulting in very few artefacts being recorded, or none at all (Collins & Marshall 2004; Marshall 2001, 2006). Richards and Jordan (1999) undertook a more detailed assessment of Aboriginal archaeology within the Bellarine Peninsula region. Their results demonstrate an already diminishing amount of Aboriginal cultural heritage material in the landscape, particularly inland (Richards & Jordan 1999: 141). These places had been subjected to heavy disturbances, and are symptomatic of the remaining Aboriginal cultural heritage material across wider Victoria at the time of the assessment.

The review of the geology and geomorphology within the region identified that the Activity Area is situated within the Moorabool Viaduct Sands landform. The proximity of the Activity Area to Lake Connewarre as a permanent local water source, which was likely used as a focal point for hunter/gather activities, makes the presence of Aboriginal cultural heritage material very likely in this region. The land use history has shown that the Activity Area was once part of a larger holding and was used for agricultural purposes. While these farming activities do not diminish the likelihood of finding artefacts, it is noted that the Activity Area had been ploughed up until the time of the Standard Assessment for the current CHMP (April 2016). It is therefore probable that any Aboriginal cultural material identified during the survey would have been disturbed.

In summary, the Desktop Assessment has shown that the Activity Area is sensitive for Aboriginal cultural heritage. Four previously registered low density artefact scatters were recorded approximately 800 metres to the west of the current Activity Area. Areas of potential sensitivity for the current Activity Area would include areas of high ground, and areas located outside of recent and present land use activities. It is therefore likely that Aboriginal cultural material will be located in the area, in the form of isolated artefacts or low density artefact scatters. The potential for any subsurface cultural material will depend on the extent of ground disturbances and associated activities across the Activity Area.

5.4 Standard Assessment

5.4.1 Standard Assessment Methods

The Activity Area was surveyed by four participants on the 4th April 2016. Ground visibility was generally good, as many of the open paddocks had been ploughed and soil upturned, while some other areas held ground pasture and minor vegetation. A systematic sampling strategy was used for the entire Activity Area. This consisted of transects with approximately five metre spacing per person. The recording of landform changes and observations were noted and photographed during the survey. Areas of exposed land along vehicle tracks and on top of the large hill rise were given additional careful investigation due to the high visibility.

The following information was collected during the survey:

- information regarding surface exposure and ground surface visibility;
- notes and photographs were taken in order to illustrate prior ground disturbance, as well as changes in aspect or landform; and
- the presence of Aboriginal archaeological Places, their contents, GPS location (in GDA94) and visible extent was recorded. Each new Place was registered with AV.

The following division has been established to assess ground surface visibility. The higher the percentage the less vegetation:

- Excellent visibility 90-100%
- Good 50-90%
- Poor 30-50%
- Very Poor 0-30%

Personnel

The following table lists the participants in the field investigation.

Date	Name	Role
4 April 2016	Monica Toscano	Supervising Archaeologist and HA (TerraCulture)
4 April 2016	Kim White	Assistant Archaeologist (TerraCulture)
4 April 2016	Chloe Clarke	Representative (Wathaurung)
4 April 2016	John Clarke	Representative (Wathaurung)

Table 6: Names of persons who took part in the survey.

Obstacles and Constraints

Ground visibility was good for the majority of the Activity Area. Modern land use activities including heavy ground disturbances, as well as residential and farming structures and rubbish were present in some areas of the Activity Area. Parts of the surveyable ground were either obscured in these areas or otherwise inaccessible.

Survey Results

During the survey, a total of forty-seven surface artefacts were recorded. The majority of ground visibility was good due to many of the crop paddocks having been ploughed and upturned (Photograph 1). Some minor low-lying dry and dead vegetation still persisted across these areas. Vehicle tracks bordered most of the open paddocks, resulting in higher ground exposure. The area located at the top of the landform rise that is intersected by the 'Unnamed' Road (located south to the centre of the Activity Area) was also closely inspected. Thirty-seven surface artefacts were found in the vicinity on and around the rise, spanning both the paddocks north and south of the Unnamed Road. Those areas closest to residential dwellings and associated activities, as well as areas near the watercourses and catchments

(Photograph 2) had poor visibility due to vegetation growth and other disturbances. A further seven surface artefacts were found around the exposed perimeter of the water catchment and adjoining paddock. Two isolated surface artefacts were found further south of the landform rise. One surface artefact was recorded in the ploughed paddock facing the Bellarine Highway. This was collected for identification, but was later concluded to be a non artefactual piece of fragmented ceramic during the detailed artefact analysis. It is highly likely this was broken up amongst the ploughed soil, resulting in the appearance of flaked material.

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Other areas of disturbance were noted on the surface in the form of vehicle access tracks, sheds and structures other than the residences, modern rubbish deposits situated in vegetation and perimeter fence/tree lines, and changes in the landscape created by fill and other redeposited material. The land is flat on the northern edge of the Activity area closest to the Bellarine Highway, sloping gently southwards towards the residence at 22 Mollers Lane. The land then undulates across the ploughed paddocks to the south, with a high landform rise along the central north-south spine of the Activity Area. This is highlighted by the vehicle tracks and paddock bordering tree lines as seen in Map 4 below. A small watercourse runs east-west in the southernmost part of the Activity Area.

Photograph 1: View of Activity Area looking north from south-western edge.

Photograph 2: View of central part of Activity Area, looking east across water catchments and vegetation.

5.4.2 Conclusions from the Standard Assessment

The majority of surface artefacts were found along the top of the landform rise, at the highest point in the Activity Area and within areas of higher ground visibility. The majority of the surface artefacts found are made from quartzite (n=26). Other raw material types present were quartz (n=19) and silcrete (n=1). One other artefact that was recorded displayed characteristics of stone flaking but appears to be ceramic and may have been fragmented during the paddock's ploughing, given its location close to the residence at 2-22 Mollers Lane. Therefore, a total of 46 Aboriginal stone artefacts were recorded during the Standard Assessment.

Artefact types include complete flakes (n=16) and broken flakes (n=9). The broken flakes are further categorised into distal flakes (n=3) proximal flakes (n=5) and medial flakes (n=1). The rest of the assemblage comprises angular fragments (n=14), cores (n=6) and one scraper. The previously mentioned ceramic piece is listed as 'other'. See Table 7 below for artefact distributions. Detailed information for each surface artefact is listed in the artefact annalyis in Appendix 6.

	Flake	Angular Fragment	Proximal Flake	Medial Flake	Distal Flake	Core	Scraper	Other	Total
Quartz	3	11	1	0	2	1	1	0	**19**
Quartzite	13	3	4	1	1	4	0	0	**26**
Silcrete	0	0	0	0	0	1	0	0	**1**
Ceramic	0	0	0	0	0	0	0	1	**1**
Total	**16**	**14**	**5**	**1**	**3**	**6**	**1**	**1**	**47**

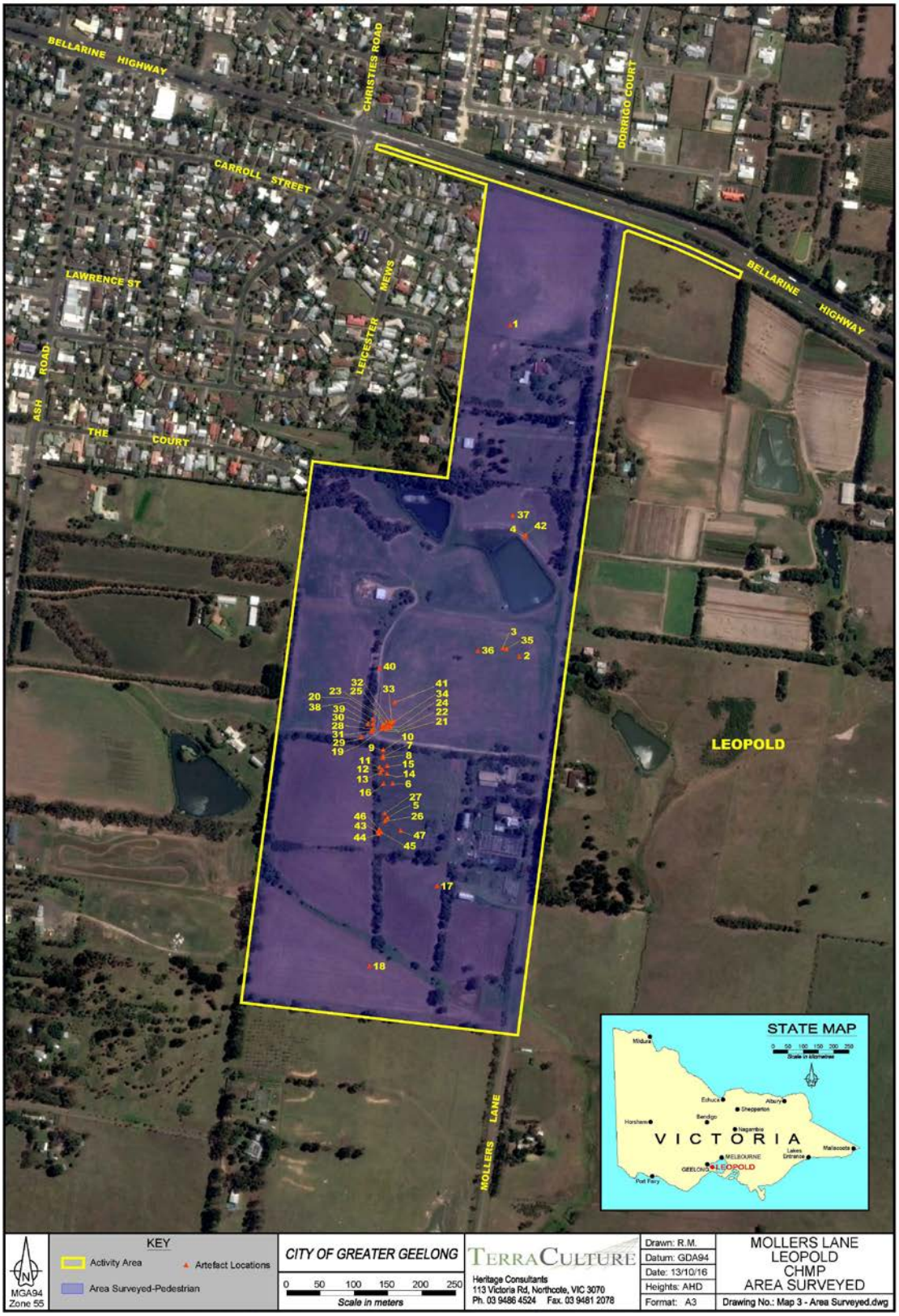
Table 7: Distribution of artefact types and raw materials.

The artefacts associated with the landform rise (n=27) were registered by contour as an Aboriginal Heritage Place with Aboriginal Victoria and named 'Mollers Lane 1 LDAD' (VAHR 7721-1341). The landform rise is the highest point within the Activity Area and would have had a clear view over much of the surrounding landscape including Lake Connewarre. The remaining 19 Aboriginal surface stone artefacts not associated with the rise extent of Mollers Lane 1 were included in the registration of a separate Aboriginal Heritage Place following the results of the Complex Assessment, and named 'Mollers Lane LDAD' (VAHR 7721-1343).

Ground surface visibility was good at approximately 60-70%, with the effective survey coverage approximately 80% across the Activity Area. The areas of visibility were largely subject to the ploughing of the fields, with the highest visibility found on the hill rise and surrounding vehicle tracks. Further exposed areas of interest may include the exposed water catchment bed that has clearly receded in the recent dry conditions at the time of the survey. However, this is of course subject to the effects of modern construction and landscaping.

While it is likely that the artefacts found in the extent of the rise are associated with the use of this heritage place by Aboriginal people in the past (the high position in the landscape and overlooking nearby Lake Connewarre), it is unlikely that the artefacts were found *in situ*, as the Activity Area has been subjected to ploughing and other farming activities from the early 1900s. As such, many of these artefacts would have been distributed randomly over the Activity Area. It is likely that those artefacts recorded on the landform comprising VAHR 7721-1341 would have been originally located within the immediate vicinity given the geographical importance of this location.

As the Standard Assessment resulted in the identification of an Aboriginal cultural heritage place, in the form of a low density artefact scatter, a Complex Assessment must take place to determine the nature and extent of the place and also to sample the balance of the Activity Area in subsurface contexts.



Map 3: Showing the Area Surveyed and Results of the Standard Assessment.

5.5 Complex Assessment

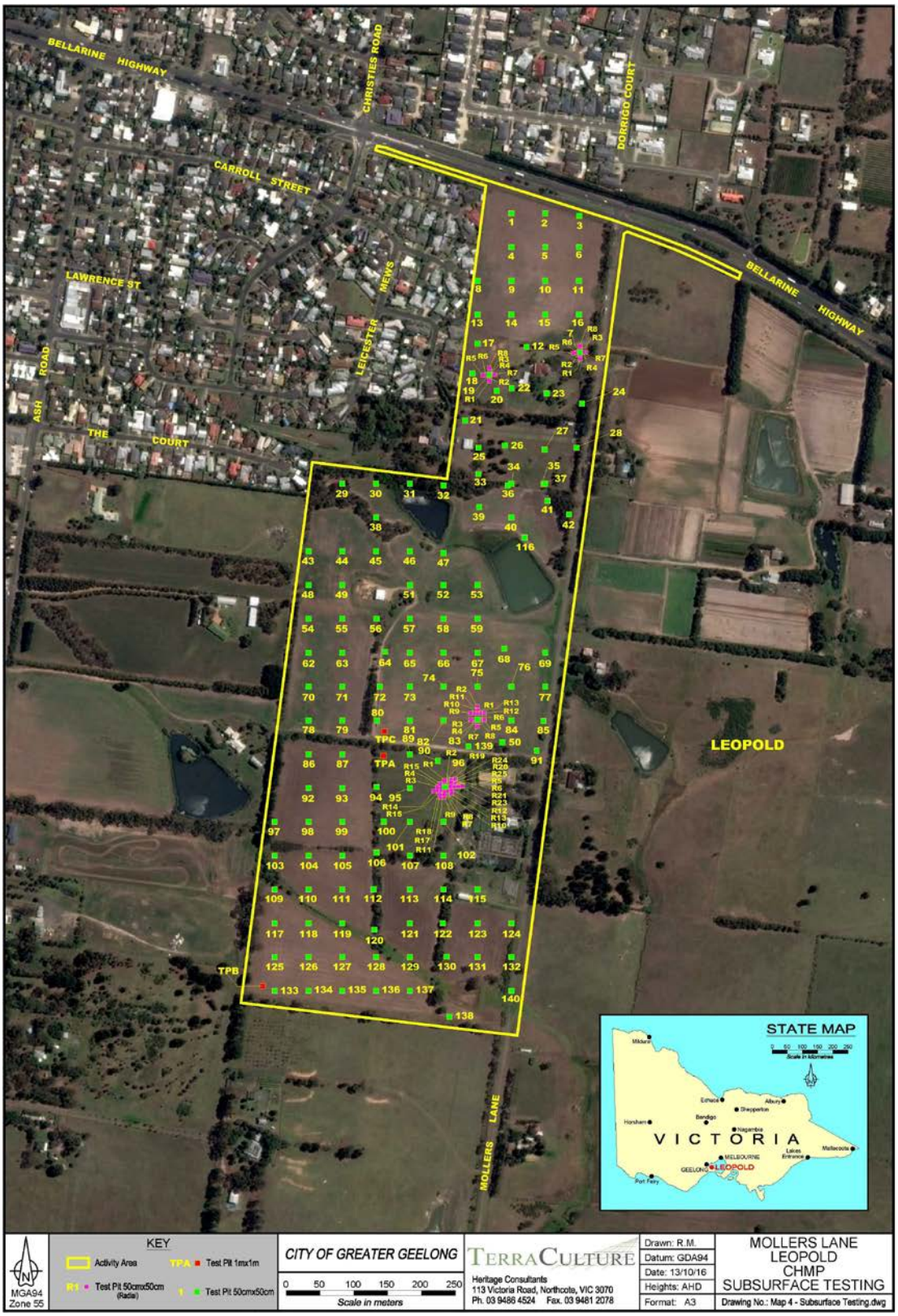
5.5.1 Aims of the Complex Assessment

The aims of the Complex Assessment were to determine whether subsurface Cultural Heritage is present within the Activity Area, and to determine the nature and extent of Aboriginal cultural heritage places, in the form of surface artefacts and scatters, that were found during the Standard Assessment.

5.5.2 Methods of the Complex Assessment

Following Burke and Smith (2004: 66-68), a random and judgment sampling strategy was adopted for the Complex Assessment. The initial subsurface testing proposed a total of 140 40cm x 40cm test pits to be excavated in a grid formation over the entire activity area, with a spacing of approximately 50 metres to establish the presence or absence of artefacts in the remainder of the Activity Area (see Map 5 below). This spacing was altered slightly along the north-eastern edge to accommodate ground that was able to be excavated close to Mollers Lane itself. The proposed testing grid was also altered elsewhere in the Activity area if heavy modern and residential disturbances existed, or other restrictions (vegetation, proximity to watercourses, etc) prevented ready access to these locations. Similarly, any proposed testing was relocated in order to sample the deposit where nearby surface artefacts were recorded during the survey.

The location of each test pit was recorded by a differential GPS (GDA94/MGA Zone 55) with photographs taken at the end depth of each 40cm x 40cm test pit. A depth measurement was taken manually by tape measure. For 1m x 1m test pits (recorded as Test Pits A, B and C), photographs were taken at the end of each spit, followed by an end depth taken with an automatic (dumpy) level with a datum temporarily established. The 1m x 1m test pits were excavated manually, using horizontal control of 10cm spits and recorded in terms of stratigraphy and archaeological content. The 40cm x 40cm test pits were also excavated manually according to stratigraphy. Tools used during excavations included shovel, trowel and brush. Spoil piles were placed approximately one metre from the pit and all deposits were screened using a 5mm gauge sieve. Excavation ceased once a sterile basal layer has been established, or the pit became too deep to readily excavate. No material suitable for radiometric dating was obtained. All artefactual material recovered would be recorded according to AV guidelines.



Map 4: Showing Subsurface Testing

5.5.2.1 Personnel

Table 8 below details the participants of the Complex Assessment:

Date	Name	Role
5-8, 11-12 April, 29 June and 1 July 2016	Monica Toscano	Supervising Archaeologist and HA (TerraCulture)
5-8, 11-12 April and 1 July 2016	Kim White	Assistant Archaeologist (TerraCulture)
29 June 2016	Zachary Spielvogel	Archaeologist (TerraCulture)
5-8, 11-12 April, 29 June 2016	Chloe Clarke	Representative (*Wathaurung*)
5-8, 11 April, 29 June and 1 July 2016	John Clarke	Representative (*Wathaurung*)
12 April 2016	Kacie Mitchell	Representative (*Wathaurung*)
1 July 2016	Blair Gilson	Representative (*Wathaurung*)

Table 8: Names of persons who took part in the subsurface testing.

5.5.3 Results of the Complex Assessment

The following section details the results of the Complex Assessment, comprising of three 1m x 1m and 129 40cm x 40cm test pits excavated throughout the Activity Area. Table 9 and Table 10 below summarise these results. Test pits that were omitted due to access restrictions are indicated within the table, with their proposed GPS co-ordinates still listed.

Test Pit ID	Location (GDA94/MGA Zone 55) Easting	Location (GDA94/MGA Zone 55) Northing	Test Pit Size (cm)	Maximum Depth (cm)	Arts.	Representative Landform
A	278793	5768994	100x100	20	3	Moorabool Viaduct Sands
B	278587	5768670	100x100	34	0	Moorabool Viaduct Sands
C	278767	5769047	100x100	23	4	Moorabool Viaduct Sands

Table 9: 1m x 1m Test Pit Location Summary.

Test Pit ID	Location (GDA94/MGA Zone 55) Easting	Location (GDA94/MGA Zone 55) Northing	Test Pit Size (cm)	Maximum Depth (cm)	Arts.	Representative Landform
1	278956	5769813	40x40	26	0	Moorabool Viaduct Sands
2	279006	5769813	40x40	35	0	Moorabool Viaduct Sands
3	279056	5769809	40x40	14	0	Moorabool Viaduct Sands
4	278956	5769763	40x40	24	0	Moorabool Viaduct Sands
5	279006	5769763	40x40	48	0	Moorabool Viaduct Sands
6	279056	5769763	40x40	29	0	Moorabool Viaduct Sands
7	279057	5769607	40x40	39	1	Moorabool Viaduct Sands
8	278906	5769713	40x40	48	0	Moorabool Viaduct Sands
9	278956	5769713	40x40	38	0	Moorabool Viaduct Sands
10	279006	5769713	40x40	34	0	Moorabool Viaduct Sands
11	279056	5769713	40x40	42	0	Moorabool Viaduct Sands
12	278978	5769715	40x40	56	0	Moorabool Viaduct Sands
13	278906	5769663	40x40	38	0	Moorabool Viaduct Sands
14	278956	5769663	40x40	53	0	Moorabool Viaduct Sands
15	279006	5769663	40x40	38	0	Moorabool Viaduct Sands

16	279056	5769663	40x40	40	0	Moorabool Viaduct Sands
17	278906	5769613	40x40	56	0	Moorabool Viaduct Sands
18	278898	5769576	40x40	60	3	Moorabool Viaduct Sands
19	278922	5769574	40x40	25	0	Moorabool Viaduct Sands
20	278934	5769550	40x40	40	0	Moorabool Viaduct Sands
21	278887	5769506	40x40	30	0	Moorabool Viaduct Sands
22	278956	5769554	40x40	32	0	Moorabool Viaduct Sands
23	279008	5769546	40x40	67	0	Moorabool Viaduct Sands
24	279060	5769531	40x40	24	0	Moorabool Viaduct Sands
25	278907	5769466	Inaccessible	n/a	n/a	Moorabool Viaduct Sands
26	278946	5769469	40x40	72	0	Moorabool Viaduct Sands
27	279005	5769463	40x40	70	0	Moorabool Viaduct Sands
28	279052	5769466	40x40	40	0	Moorabool Viaduct Sands
29	278706	5769411	40x40	53	0	Moorabool Viaduct Sands
30	278756	5769413	40x40	90	0	Moorabool Viaduct Sands
31	278806	5769413	40x40	29	0	Moorabool Viaduct Sands
32	278856	5769410	Inaccessible	n/a	n/a	Moorabool Viaduct Sands
33	278907	5769427	40x40	80	0	Moorabool Viaduct Sands
34	278950	5769410	40x40	55	0	Moorabool Viaduct Sands
35	279003	5769412	40x40	82	0	Moorabool Viaduct Sands
36	279056	5769413	40x40	n/a	n/a	Moorabool Viaduct Sands
37	278706	5769363	40x40	34	0	Moorabool Viaduct Sands
38	278756	5769363	40x40	35	0	Moorabool Viaduct Sands
39	278908	5769376	40x40	40	0	Moorabool Viaduct Sands
40	278956	5769363	40x40	39	0	Moorabool Viaduct Sands
41	279007	5769387	40x40	90	0	Moorabool Viaduct Sands
42	279041	5769367	40x40	39	0	Moorabool Viaduct Sands
43	278656	5769313	40x40	38	0	Moorabool Viaduct Sands
44	278706	5769313	40x40	32	0	Moorabool Viaduct Sands
45	278756	5769313	40x40	30	0	Moorabool Viaduct Sands
46	278806	5769313	40x40	25	0	Moorabool Viaduct Sands
47	278856	5769310	40x40	75	0	Moorabool Viaduct Sands
48	278656	5769263	40x40	45	0	Moorabool Viaduct Sands
49	278706	5769263	40x40	43	0	Moorabool Viaduct Sands
50	278756	5769263	40x40	40	0	Moorabool Viaduct Sands
51	278806	5769263	40x40	42	0	Moorabool Viaduct Sands
52	278856	5769263	40x40	48	0	Moorabool Viaduct Sands
53	278906	5769263	40x40	33	0	Moorabool Viaduct Sands
54	278656	5769213	40x40	70	0	Moorabool Viaduct Sands
55	278706	5769213	40x40	40	0	Moorabool Viaduct Sands
56	278756	5769213	40x40	42	0	Moorabool Viaduct Sands
57	278806	5769213	40x40	32	0	Moorabool Viaduct Sands
58	278856	5769213	40x40	25	0	Moorabool Viaduct Sands
59	278906	5769213	40x40	46	0	Moorabool Viaduct Sands
60	278956	5769213	Inaccessible	n/a	n/a	Moorabool Viaduct Sands
61	279006	5769213	Inaccessible	n/a	n/a	Moorabool Viaduct Sands
62	278656	5769163	40x40	70	0	Moorabool Viaduct Sands
63	278706	5769163	40x40	42	0	Moorabool Viaduct Sands
64	278769	5769164	40x40	29	0	Moorabool Viaduct Sands
65	278806	5769163	40x40	40	0	Moorabool Viaduct Sands
66	278856	5769163	40x40	36	0	Moorabool Viaduct Sands
67	278906	5769163	40x40	38	0	Moorabool Viaduct Sands
68	278945	5769169	40x40	21	0	Moorabool Viaduct Sands
69	279006	5769163	40x40	90	0	Moorabool Viaduct Sands
70	278656	5769113	40x40	92	0	Moorabool Viaduct Sands

71	278706	5769113	40x40	37	0	Moorabool Viaduct Sands
72	278761	5769113	40x40	42	0	Moorabool Viaduct Sands
73	278806	5769113	40x40	33	0	Moorabool Viaduct Sands
74	278856	5769113	40x40	64	0	Moorabool Viaduct Sands
75	278906	5769113	40x40	80	0	Moorabool Viaduct Sands
76	278956	5769113	40x40	32	0	Moorabool Viaduct Sands
77	279006	5769113	40x40	93	0	Moorabool Viaduct Sands
78	278656	5769063	40x40	80	0	Moorabool Viaduct Sands
79	278706	5769063	40x40	34	0	Moorabool Viaduct Sands
80	278756	5769063	40x40	27	0	Moorabool Viaduct Sands
81	278806	5769063	40x40	46	0	Moorabool Viaduct Sands
82	278856	5769063	40x40	74	0	Moorabool Viaduct Sands
83	278906	5769064	40x40	65	1	Moorabool Viaduct Sands
84	278956	5769063	40x40	72	0	Moorabool Viaduct Sands
85	279003	5769062	40x40	100	0	Moorabool Viaduct Sands
86	278656	5769013	40x40	60	0	Moorabool Viaduct Sands
87	278706	5769013	40x40	39	0	Moorabool Viaduct Sands
88	278756	5769013	Became TP A	n/a	n/a	Moorabool Viaduct Sands
89	278806	5769013	Inaccessible	n/a	n/a	Moorabool Viaduct Sands
90	278847	5769003	Inaccessible	n/a	n/a	Moorabool Viaduct Sands
91	278993	5769018	40x40	89	0	Moorabool Viaduct Sands
92	278656	5768963	40x40	44	0	Moorabool Viaduct Sands
93	278706	5768963	40x40	33	0	Moorabool Viaduct Sands
94	278765	5768964	40x40	32	0	Moorabool Viaduct Sands
95	278806	5768963	40x40	50	0	Moorabool Viaduct Sands
96	278856	5768963	40x40	85	1	Moorabool Viaduct Sands
97	278606	5768913	40x40	34	0	Moorabool Viaduct Sands
98	278656	5768913	40x40	40	0	Moorabool Viaduct Sands
99	278706	5768913	40x40	27	0	Moorabool Viaduct Sands
100	278767	5768913	40x40	30	0	Moorabool Viaduct Sands
101	278806	5768913	40x40	50	0	Moorabool Viaduct Sands
102	278856	5768913	40x40	100	0	Moorabool Viaduct Sands
103	278606	5768863	40x40	72	0	Moorabool Viaduct Sands
104	278656	5768863	40x40	20	0	Moorabool Viaduct Sands
105	278706	5768863	40x40	22	0	Moorabool Viaduct Sands
106	278765	5768867	40x40	52	0	Moorabool Viaduct Sands
107	278806	5768863	40x40	100	0	Moorabool Viaduct Sands
108	279029	5769324	Inaccessible	n/a	n/a	Moorabool Viaduct Sands
109	278606	5768813	40x40	78	0	Moorabool Viaduct Sands
110	278656	5768813	40x40	30	0	Moorabool Viaduct Sands
111	278706	5768813	40x40	31	0	Moorabool Viaduct Sands
112	278752	5768813	40x40	28	0	Moorabool Viaduct Sands
113	278806	5768813	40x40	85	0	Moorabool Viaduct Sands
114	278856	5768813	40x40	98	0	Moorabool Viaduct Sands
115	278906	5768813	40x40	45	0	Moorabool Viaduct Sands
116	278974	5769333	40x40	36	0	Moorabool Viaduct Sands
117	278606	5768763	40x40	35	0	Moorabool Viaduct Sands
118	278656	5768763	40x40	38	0	Moorabool Viaduct Sands
119	278706	5768763	40x40	82	0	Moorabool Viaduct Sands
120	278753	5768763	40x40	20	0	Moorabool Viaduct Sands
121	278806	5768763	40x40	30	0	Moorabool Viaduct Sands
122	278854	5768763	40x40	41	0	Moorabool Viaduct Sands
123	278906	5768763	40x40	40	0	Moorabool Viaduct Sands
124	278956	5768763	40x40	25	0	Moorabool Viaduct Sands
125	278606	5768713	40x40	36	0	Moorabool Viaduct Sands

126	278656	5768713	40x40	27	0	Moorabool Viaduct Sands
127	278706	5768713	40x40	43	0	Moorabool Viaduct Sands
128	278756	5768713	40x40	95	0	Moorabool Viaduct Sands
129	278806	5768713	40x40	94	0	Moorabool Viaduct Sands
130	278860	5768713	40x40	27	0	Moorabool Viaduct Sands
131	278906	5768713	40x40	30	0	Moorabool Viaduct Sands
132	278952	5768713	40x40	35	0	Moorabool Viaduct Sands
133	278606	5768663	Became TP B	n/a	n/a	Moorabool Viaduct Sands
134	278656	5768663	40x40	50	0	Moorabool Viaduct Sands
135	278706	5768663	40x40	91	0	Moorabool Viaduct Sands
136	278756	5768663	40x40	87	0	Moorabool Viaduct Sands
137	278806	5768663	40x40	30	0	Moorabool Viaduct Sands
138	278864	5768624	40x40	43	0	Moorabool Viaduct Sands
139	278892	5769024	40x40	56	0	Moorabool Viaduct Sands
140	278956	5768663	Inaccessible	n/a	n/a	Moorabool Viaduct Sands

Table 10: 40x40cm Test Pit Location Summary.

Test Pit Descriptions where Aboriginal Cultural Heritage is Present

Aboriginal cultural heritage was present in four of the 129 40cm x 40cm shovel test pits that were initially excavated, and in two of the 1m x 1m test pits excavated. Below is a detailed description for each of these pits.

1m x 1m Test Pits

Test Pit A

This test pit was located on the southern portion of the landform rise where a surface artefact scatter was recorded during the Standard Assessment (Photograph 3). It is positioned in the paddock south of the 'Unnamed Road' that runs west from Mollers Lane, within the back third of the Activity Area. Test Pit A replaced the grid location for the nearby 40cm x 40cm test pit 88, and was positioned over where surface artefacts had been recorded. This test pit location was selected to determine the stratigraphy of the landform and test whether subsurface Aboriginal cultural heritage is present in the area associated with the surface artefact scatter. This test pit was excavated to a maximum depth of 20cm. Pit stratigraphy is displayed in Appendix 8 and full descriptions for each excavated spit are located within Table 11 below and in Appendix 7.

Photograph 3: View looking west towards top of landform rise, where Test Pit A was located in corner of paddock.

Photograph 4: Test Pit A end levels.

Spit	Stratigraphic description	Artefacts
1	Light grey / brown sandy loam	1
2	Crusty compacted silt	2
(3)	Orange / brown clay	0

Table 11: Stratigraphic summary for Test Pit A.

The stratigraphy for this location was a shallow deposit of light grey/brown sandy loam underlying the ploughed topsoil. This transitioned to a thin crusty silt layer on top of the clay base.

Three artefacts were recovered from Test Pit A. The raw material type was quartzite and consisted of one complete flake, one retouched flake, and one proximal blade.

Test Pit C

This test pit was located within the northern portion of the landform rise where a surface artefact scatter was recorded during the Standard Assessment (Photograph 5). It is positioned in the paddock north of the 'Unnamed Road' that runs west from Mollers Lane, within the back third of the Activity Area. Test Pit C was located just south of the 40cm x 40cm test pit 80 (which contained no artefacts), and was positioned over a concentration of the surface artefacts that were recorded. This test pit location was selected to determine the stratigraphy of the landform and test whether subsurface Aboriginal cultural heritage is present in the area associated with the surface artefact scatter. This test pit was excavated to a maximum depth of 23cm. Pit stratigraphy is displayed in Appendix 8 and full descriptions for each excavated spit are located within Table 12 below and in Appendix 7.

Photograph 5: View looking south along vehicle track towards the surface artefact scatter and location of Test Pit C.

Photograph 6: Test Pit C end levels.

Spit	Stratigraphic description	Artefacts
1	Sandy brown loam	3
2	Darker brown sandy loam	1
(3)	Brown clayey loam on top of brown / orange clay base	0

Table 12: Stratigraphic summary for Test Pit C.

The stratigraphy for this location was a shallow deposit of sandy brown loam underlying the ploughed topsoil. This transitioned to a thin layer of clayey loam on top of the clay base. This shallow profile and soil texture is consistent with that of Test Pit A; however, the soil is noticeably darker in Test Pit C.

Four artefacts were recovered from Test Pit C. They consisted of 2 quartz and 2 quartzite pieces. The quartz comprised one core and one complete flake, and the quartzite comprised one complete flake and one proximal flake.

40cm x 40cm Test Pits

Test Pit 7

Test Pit 7 was located in the northern most section of the Activity Area, close to the fence line between the residence at 2-22 Mollers Lane and the adjoining ploughed paddock that fronts onto the Bellarine Highway. This test pit location was selected to determine the stratigraphy at this location, closer to the residence, and determine the presence or absence of Aboriginal cultural heritage material in the area. Test Pit 7 was relocated to this position from the initial proposed testing grid, on the Mollers Lane roadway. This test pit was excavated to a depth of 39cm. One artefact was recovered at a depth of around 15cm. Pit stratigraphy is displayed in Appendix 8 and full descriptions for each excavated spit are located within Table 13 below and in Appendix 7.

Context ID	Stratigraphic description	Artefacts
1	Brown silty loam	0
2	Compacted brown silt	1
3	Undulating orange / brown clay	0

Table 13: Stratigraphic summary for Test Pit 7.

Test Pit 18

Test Pit 18 was located in the northern most section of the Activity Area, in a designated horse paddock to the west of the residence at 2-22 Mollers Lane. This test pit location was selected to determine the stratigraphy at this location, closer to the residence, and determine the presence or absence of Aboriginal cultural heritage material in the area. Test Pit 18 was renamed and relocated to this position from the initial proposed testing grid in order to avoid ground disturbances (drainage ditch) that were visible on the surface. This test pit was excavated to a depth of 50cm. Three artefacts was recovered at a depth of 40cm. Pit stratigraphy is displayed in Appendix 8 and full descriptions for each excavated spit are located within Table 14 below and in Appendix 7.

Context ID	Stratigraphic description	Artefacts
1	Grey loam sand topsoil	0
2	Dark grey silty sand w/ some gravel and glass	0
3	Light grey silty sand with frequent gravel	3
4	Yellow / brown clay	0

Table 14: Stratigraphic summary for Test Pit 18.

Test Pit 83

Test Pit 83 was located in the central section of the Activity Area, in the open paddock on the east-facing slope of the landform rise containing the surface artefact scatter. This test pit location was selected to determine the stratigraphy at this location and determine the presence or absence of Aboriginal cultural heritage material in the area. This test pit was excavated to a depth of 65cm. One artefact was recovered at a depth of 35cm. Pit stratigraphy is displayed in Appendix 8 and full descriptions for each excavated spit are located within Table 15 below and in Appendix 7.

Context ID	Stratigraphic description	Artefacts
1	Dark sandy loam	1
2	Light ‘white’ sandy loam	0
3	Orange clay	0

Table 15: Stratigraphic summary for Test Pit 83.

Test Pit 96

Test Pit 96 was located in the central section of the Activity Area, in the open paddock west of the residence at 92-120 Mollers Lane. It was located south-east of the rise containing the surface artefact scatter The test pit location was selected to determine the stratigraphy at this location and determine the presence or absence of Aboriginal cultural heritage material in the area. This test pit was excavated to a depth of 85cm. One artefact was recovered at a depth of 25-30cm. Pit stratigraphy is displayed in Appendix 8 and full descriptions for each excavated spit are located within Table 11 below and in Appendix 7.

Context ID	Stratigraphic description	Artefacts
1	Dark sandy loam	1
2	Brown sandy loam	0
3	White sandy loam	0
4	Orange clay	0

Table 16: Stratigraphic summary for Test Pit 96.

Photograph 7: View looking west towards residence, across location of Test Pit 7.

Photograph 8: End levels of Test Pit 18 (depth).

Photograph 9: End levels of Test Pit 83.

Photograph 10: End levels of Test Pit 96.

Photograph 11: End levels of Test Pit 96 (depth).

5.5.4 Extent Testing Results

Extent radial testing was undertaken around the 40cm x 40cm shovel test pits that contained Aboriginal cultural material. Summary excavation information is listed below for each test pit, including an aerial image demonstrating the radial results. The extent testing consisted of lateral test pits in each cardinal direction from the test pit where the artefact was recorded. If another artefact was recorded, further testing was required using the same lateral method. Refer to table 15 below for further details of the radial testing. Artefact-bearing radial test pits are displayed in Photographs 12 to 17 below (pg 48), and stratigraphic drawings are displayed in Appendix 8. Remaining extent testing was carried out on 29th July and 1st August 2016 and test pits were excavated to measurements of 50cm x 50cm. Refer to personnel table for attendees of the extent testing.

Test Pit 7

Extent testing was carried out for Test Pit 7 after a single subsurface artefact was recorded during the initial grid testing of the Complex Assessment. 10m and 5m spaced radial test pits were excavated in each cardinal direction measuring 50cm x 50cm. No further artefacts were identified. The soil profiles were consistent with the original test pit and were very hard, shallow clayey loam deposits. The radial test pits were excavated within an area of the property front garden containing small plants and a watering system just under the ground surface. Pits also extended into the ploughed paddock to the northern side of the dividing property fence line.

Figure 7: Test Pit 7 radial extent excavation summary.

Test Pit 18

Extent testing was carried out around Test Pit 18 after three subsurface artefacts were recorded during the initial grid testing of the Complex Assessment. 10m and 5m spaced radial test pits were excavated in each cardinal direction measuring 50cm x 50cm. No further artefacts were identified. The soil profiles were consistent with the original test pit and were hard dark loam deposits over light grey silt containing gravel. The radial test pits were all excavated within the horse enclosure and also held small amounts of modern rubbish such as glass and ceramic fragments within the upper 20-30cm.

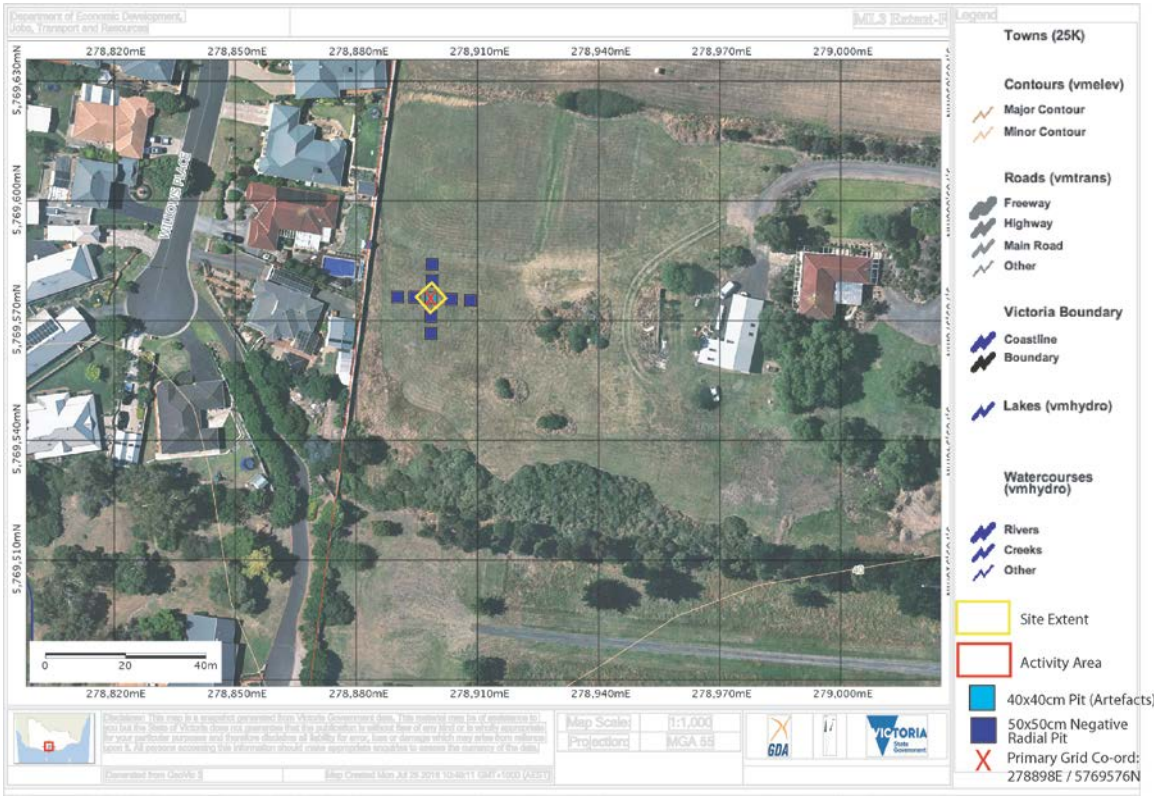


Figure 8: Test Pit 18 radial extent excavation summary.

Test Pit 83

Extent testing was carried out around Test Pit 83 after a single subsurface artefact was recorded during the initial grid testing of the Complex Assessment. 10m and 5m spaced radial test pits were excavated in each cardinal direction measuring 50cm x 50cm. Two artefacts were recorded in the first 10m radial to the north (TP 83 - R1). The soil profiles were consistent with the original test pit and were dark brown sandy loam deposits over light grey brown sand. The radial test pits were all excavated within the open ploughed paddock.

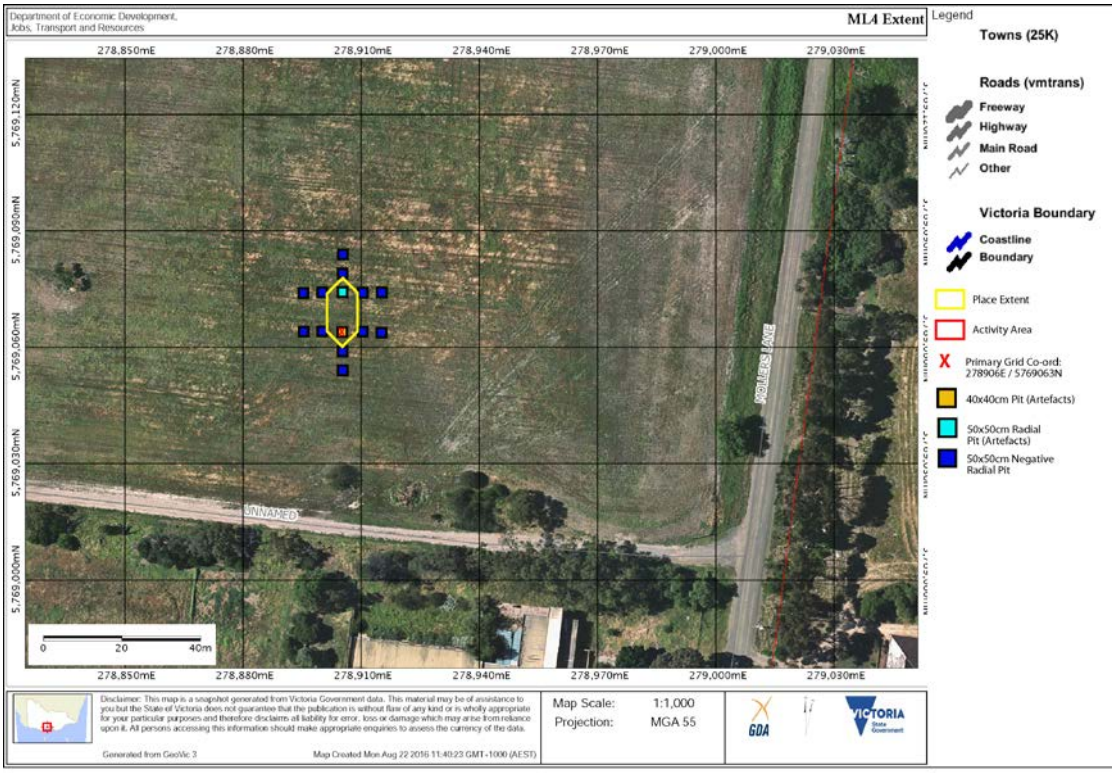


Figure 9: Test Pit 83 radial extent excavation summary.

Test Pit 96

Extent testing was carried out around Test Pit 96 after a single subsurface artefact was recorded during the initial grid testing of the Complex Assessment. 10m and 5m spaced radial test pits were excavated in each cardinal direction measuring 40cm x 40cm. Artefacts were also recorded in the 10m radial to the east (TP 96 - R5) and the 5m radial to the south (TP 96 - R8). The radial testing was completed during the second phase of excavations between the 29 June and 1 August. One further artefact was recorded in the resulting 10m radial to the west of TP 96-R8, recorded as TP 96 - R11. The soil profiles were largely consistent with the original test pit (TP 96) and were dark brown sandy loam deposits over lighter brown yellow sand, excavated up to depths of 100cm. The radial test pits were all excavated within the open ploughed paddock, however, the radial pits to the south and east encountered heavy ground disturbances including layers of redeposited clay and gravel fill (TP 96 - R12, -R13, -R21, -R22, -R23) and a service pipe (TP 96 - R17).

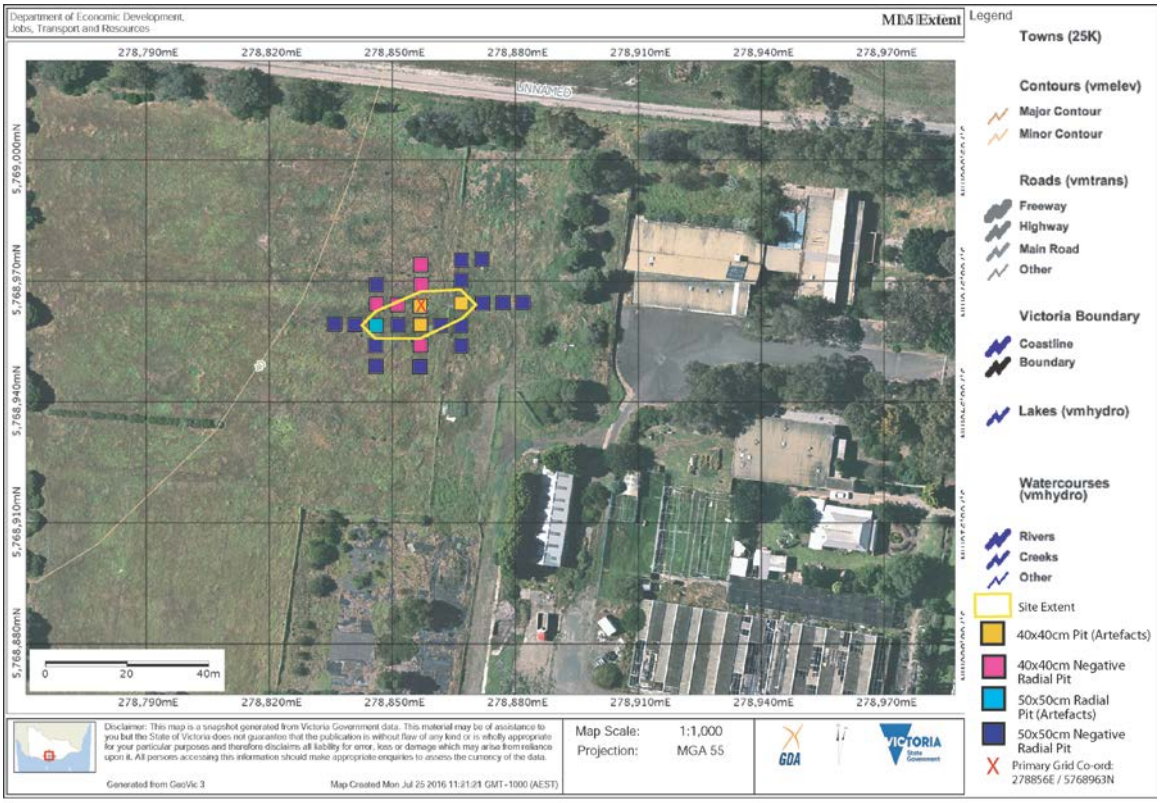


Figure 10: Test Pit 96 radial extent excavation summary.

Photograph 12: End levels of TP 83 – R1.

Photograph 13: Clay fil material visible on surface immediately southeast of TP 96.

Photograph 14: End levels of TP 96 – R5.

Photograph 15: TP 96 – R5 stratigraphy.

Photograph 16: End levels of TP 96 – R8 (depth).

Photograph 17: End levels of TP 96 – R11.

Test Pit ID	Location (GDA94/MGA Zone 55) Easting	Location (GDA94/MGA Zone 55) Northing	Test Pit Size (cm)	Depth (cm)	Arts.	Representative Landform
TP 7 - R1	279057	5769597	50x50	22	0	Moorabool Viaduct Sands
TP 7 - R2	279057	5769601	50x50	20	0	Moorabool Viaduct Sands
TP 7 - R3	279067	5769607	50x50	30	0	Moorabool Viaduct Sands
TP 7 - R4	279065	5769607	50x50	35	0	Moorabool Viaduct Sands
TP 7 - R5	279047	5769606	50x50	29	0	Moorabool Viaduct Sands
TP 7 - R6	279053	5769607	50x50	21	0	Moorabool Viaduct Sands
TP 7 - R7	279057	5769617	50x50	10	0	Moorabool Viaduct Sands
TP 7 - R8	279057	5769612	50x50	30	0	Moorabool Viaduct Sands
TP 18 - RI	278888	5769576	50x50	55	0	Moorabool Viaduct Sands
TP 18 - R2	278893	5769576	50x50	50	0	Moorabool Viaduct Sands
TP 18 - R3	278898	5769566	50x50	60	0	Moorabool Viaduct Sands
TP 18 - R4	278898	5769571	50x50	50	0	Moorabool Viaduct Sands
TP 18 - R5	278898	5769586	50x50	56	0	Moorabool Viaduct Sands
TP 18 - R6	278898	5769596	50x50	50	0	Moorabool Viaduct Sands
TP 18 - R7	278898	5769581	50x50	60	0	Moorabool Viaduct Sands
TP 18 - R8	278898	5769586	50x50	55	0	Moorabool Viaduct Sands
TP 83 - R1	278906	5769074	50x50	70	1	Moorabool Viaduct Sands
TP 83 - R2	278906	5769084	50x50	70	0	Moorabool Viaduct Sands
TP 83 - R3	278896	5769064	50x50	60	0	Moorabool Viaduct Sands
TP 83 - R4	278901	5769064	50x50	64	0	Moorabool Viaduct Sands
TP 83 - R5	278916	5769064	50x50	38	0	Moorabool Viaduct Sands
TP 83 - R6	278911	5769064	50x50	55	0	Moorabool Viaduct Sands
TP 83 - R7	278906	5769054	50x50	65	0	Moorabool Viaduct Sands
TP 83 - R8	278906	5769059	50x50	59	0	Moorabool Viaduct Sands
TP 83 - R9	278896	5769074	50x50	59	0	Moorabool Viaduct Sands
TP 83 - R10	278901	5769074	50x50	69	0	Moorabool Viaduct Sands
TP 83 - R11	278906	5769079	50x50	70	0	Moorabool Viaduct Sands
TP 83 - R12	278916	5769074	50x50	50	0	Moorabool Viaduct Sands
TP 83 - R13	278911	5769074	50x50	60	0	Moorabool Viaduct Sands
TP 96 - R1	278857	5768976	40x40	42	0	Moorabool Viaduct Sands
TP 96 - R2	278857	5768971	40x40	62	0	Moorabool Viaduct Sands
TP 96 - R3	278848	5768969	40x40	53	0	Moorabool Viaduct Sands
TP 96 - R4	278851	5768966	40x40	75	0	Moorabool Viaduct Sands
TP 96 - R5	278867	5768965	40x40	100	1	Moorabool Viaduct Sands
TP 96 - R6	n/a	n/a	Pit number not used	n/a	n/a	n/a
TP 96 - R7	278857	5768954	40x40	75	0	Moorabool Viaduct Sands
TP 96 - R8	278857	5768959	40x40	78	1	Moorabool Viaduct Sands
TP 96 - R9	278857	5768949	50x50	58	0	Moorabool Viaduct Sands
TP 96 - R10	278862	5768959	50x50	85	0	Moorabool Viaduct Sands
TP 96 - R11	278848	5768964	50x50	65	1	Moorabool Viaduct Sands
TP 96 - R12	278867	5768960	50x50	43	0	Moorabool Viaduct Sands
TP 96 - R13	278867	5768955	50x50	90	0	Moorabool Viaduct Sands
TP 96 - R14	278838	5768964	50x50	42	0	Moorabool Viaduct Sands
TP 96 - R15	278843	5768964	50x50	43	0	Moorabool Viaduct Sands
TP 96 - R16	278848	5768974	50x50	51	0	Moorabool Viaduct Sands
TP 96 - R17	278848	5768955	50x50	50	0	Moorabool Viaduct Sands
TP 96 - R18	278848	5768959	50x50	50	0	Moorabool Viaduct Sands

TP 96 - R19	278867	5768975	50x50	90	0	Moorabool Viaduct Sands
TP 96 - R20	278867	5768970	50x50	90	0	Moorabool Viaduct Sands
TP 96 - R21	278877	5768965	50x50	105	0	Moorabool Viaduct Sands
TP 96 - R22	278872	5768965	50x50	84	0	Moorabool Viaduct Sands
TP 96 - R23	278883	5768965	50x50	101	0	Moorabool Viaduct Sands
TP 96 - R24	278872	5768975	50x50	80	0	Moorabool Viaduct Sands

Table 17: 40cm x 40cm and 50cm x 50cm radial test pit Location Summary.

Stratigraphy

Stratigraphic profiles were generally consistent in areas outside of major residential-related ground disturbances. The majority of the central and southern portions of the Activity Area returned the following two common profiles:

a) in areas of shallow deposit (close to residences and higher ground paddocks):

Comparable with the profile as seen in Test Pit C: The stratigraphy for this location was a shallow deposit of sandy brown loam underlying the ploughed topsoil. This transitioned to a thin layer of clayey loam on top of the clay base. This shallow profile and soil texture is consistent with that of Test Pit A; however, the soil is noticeably darker in Test Pit C.

b) in areas of deeper deposit (lower faces of slopes and near to modern water catchments):

The stratigraphic profile in these locations often demonstrated four distinct layers comprising;

Layer 1: Upper layer of dark / grey loamy sand (often containing modern rubbish material) between 15 and 20cm
Layer 2: Distinct lighter brown loamy sand for a further 20-30cm
Layer 3: More compact grey silty sand (50cm+) that frequently contained gravel and grit
Layer 4: Hard yellow / orange clay

As previously mentioned, these two sets of profiles are the most frequently recurring results from the Complex Assessment and extent testing. Areas of fill material and some additional layers containing modern rubbish were recorded in various locations across the Activity Area (e.g. TP 96-R22 and -R24).

Obstacles and Constraints

Some test pits (TPs 25, 32, 36, 60, 61, 89, 90, 108 and 140) were inaccessible due to various obstacles; including their close proximity to the residential properties and associated activities, heavy vegetation, or proximity to watercourses. Test pit 88 became 1m x 1m Test Pit A due to the proximity of surface artefacts for this part of the landform. Test Pit 133 became 1m x 1m Test Pit B to sample the stratigraphy on the southern side of the ridge.

5.5.5 Conclusions from the Complex Assessment

The Complex Assessment initially comprised three 1m x 1m test pits and 129 excavated 40cm x 40cm test pits to determine the stratigraphy across the Activity Area and the presence or absence of Aboriginal cultural heritage. Extent radial testing was undertaken during the Complex Assessment and resulted in a further 52 test pits (50cm x 50cm). Therefore, the total number of excavated test pits (including 1m x 1m pits) equalled 184.

The Activity Area is within the Moorabool Viaduct Sands geological formation, which generally consists of clayey sands and gravel deposits. The soil profiles across the Activity Area were largely consistent, but varied in thickness according to depth of sand accumulation. The areas close to residential developments showed signs of significant disturbance and some of the

ploughed paddocks had noticeably shallower profiles which are likely the result of extensive land use activity. Typical stratigraphy elsewhere in the Activity Area exhibited four distinct layers. These comprised an upper layer (Layer 1) of dark grey loamy sand (often containing modern rubbish material) down to between 15 and 20cm; then a distinct brown loamy sand (Layer 2) down to 35-50cm; Layer 3 consisted of a more compact grey silty sand (50cm+) that frequently contained gravel and grit, overlying a hard yellow orangey clay (Layer 4). Test pit depths varied across the Activity Area with several excavated down to 90-100cm in some parts, and unable to reach the sterile clay layer.

Aboriginal stone artefacts were identified in 10 of the combined 184 test pits excavated in the Activity Area. Within these test pits a total of 18 subsurface artefacts, predominantly quartz and quartzite were recorded. The subsurface artefacts were registered with Aboriginal Victoria as VAHR 7721-1341 within the landform rise, and VAHR 7721-1343 when recorded across the wider Activity Area. The landform rise registered as VAHR 7721-1341 is comprised of seven subsurface artefacts along with the 27 surface artefacts identified during the Standard Assessment. The remaining 11 subsurface artefacts were registered as VAHR 7721-1343 along with the 19 surface stone artefacts identified during the Standard Assessment.

Subsurface excavations resulted in comparatively fewer artefacts than were found on the surface. Possible explanations for this could be that shallow deposits made up mostly of heavy clays were not conducive to subsurface artefacts in high densities and land-use activities such as ploughing were likely to have displaced the shallow artefact bearing deposits. The presence of modern rubbish such as ceramic and glass in deposits down to 40-50cm in some parts of the Activity Area suggest that a large amount of soil displacement took place, and not always in closest proximity to the residences.

Throughout the testing program all parts of the Activity Area were extensively sampled, including all paddocks that showed good visibility during the Standard Assessment. As a result, Test Pits 7 and 18 produced subsurface artefacts that indicate the persistence of isolated cultural material within the Activity Area, and away from the main surface scatter at the centre of the Activity Area. All areas around the identified surface artefacts were given particular investigation, including the excavation of two 1m x 1m test pits in these areas. Extent testing was undertaken to establish the breadth of those Aboriginal Cultural Heritage Places identified in the subsurface testing. These were completed in each case, and greatly assisted in assessing the soil profiles within the landscape, as well as their context in regard to land use and heavy ground disturbances (as evident during Test Pit 96 extent testing).

The results of the Complex Assessment suggest that there is likely to be further subsurface Aboriginal artefacts present within the Activity Area. The Aboriginal cultural material is likely to be in the form of low density artefact scatters or as isolated artefacts. Artefacts are unlikely to remain *in situ* due to the high levels of subsurface ground disturbances and ploughing. It is likely the high amount of surface material on the rise comprising Mollers Lane 1 (VAHR 7721-1341) is the result of ground disturbances exposing the cultural material, and therefore little further subsurface material would be present given the shallow deposits excavated and the few artefacts recovered from these 1m x 1m test pits.

5.6 Details of Aboriginal Cultural Heritage in the Activity Area

5.6.1 Site Formation Processes

The Low Density Artefact Distribution known as Mollers Lane LDAD (VAHR 7721-1343) consists of 11 subsurface artefacts and 19 surface stone artefacts across the Activity Area, as identified during both the Standard and Complex Assessment (including extent testing periods). The Low Density Artefact Distribution known as Mollers Lane 1 LDAD (VAHR 7721-1341), consists of 27 surface and 7 subsurface artefacts recorded close to each other on a central landform rise within the Activity Area. The artefacts are mostly made from quartzite and quartz and consist mainly of waste materials that would have been discarded. There are relatively few other registered Aboriginal cultural heritage places within the geographic region. Isolated artefacts were found to the west at Ash Road, and it is likely that the current Activity Area, in addition to Ash Road, forms part of a broader background scatter within the Leopold region, and particular in the area overlooking Lake Connewarre. The high-ground vantage of Mollers Lane 1 LDAD (VAHR 7721-1341) may have provided a point of visual reference within the wider landscape, with periodic use by Aboriginal people seeking to use the resources surrounding Lake Connewarre. However, much of the Activity Area has been subject to extensive ground disturbances. These disturbances over a prolonged period would have resulted in the movement and exposure of many of the artefacts, making them no longer *in situ.* The extent of the landform's highest point is likewise cut by vehicle tracks, recent vegetation and paddock fences, which would have redeposited material over the ground, as well as other activities causing subsurface disturbances. Mollers Lane LDAD (VAHR 7721-1343) would therefore likely indicate the movement of Aboriginal cultural heritage from around this high-point. The modern disturbances, natural forces and the transient movement of Aboriginal people in the past would all have contributed to the distribution of material across the landscape comprising the current Activity Area.

5.6.2 Artefact Analysis

The methodology adopted for the recording of stone artefacts included a technological and morphological analysis (after Holdaway and Stern 2004) and involved the following;

- Artefact type (e.g. Complete flakes/tools or broken flakes/tools, flaking debris and cores);
- Artefact form (e.g. The morphology type – blade, irregular or point);
- Raw material type (e.g. Silcrete or quartz);
- Artefact dimensions (The length, width and thickness in millimetres);
- Platform Type;
- Termination Type; and,
- Cortex type and amount (*i.e.* the type and amount of the stone's weathered outer surface which can provide information as to where the stone was sourced from; and to determine the stage of artefact manufacture).

Mollers Lane 1 LDAD (VAHR 7721-1341)

Surface Artefacts

Mollers Lane 1 (VAHR 7721-1341) comprised 27 surface artefacts recorded within the place extent during the Standard Assessment. These artefacts are largely examples of waste materials that would have been discarded during the tool manufacturing stage, with the exception of one formal tool type; a scraper. It is likely the presence of these artefacts demonstrate the passage of Aboriginal people within the immediate landscape relating to Lake Connewarre and its resources for hunting and gathering, as well as traversing land between the coast of the Bellarine Peninsula and outer Geelong regions. Details for each artefact are displayed in table 16 below.

Ref. No.	Location (GDA94/MGA Zone 55)	Artefact Type	Material	Platform Type	Termination	Length (mm)	Width (mm)	Thick-ness (mm)
6	278779/ 5768968	proximal flake	quartzite	flaked	snap	26	25	7
7	278765/ 5769008	complete flake	quartz	flaked	feather	11	11	4
8	278765/ 5769006	core	quartz	-	-	52	31	27
9	278765/ 5769018	angular fragment	quartzite	flaked	hinge	25	17	8
10	278765/ 5769018	angular fragment	quartz	-	-	15	9	5
11	278761/ 5768990	angular fragment	quartz	-	-	10	6	5
12	278763/ 5768987	complete flake	quartzite	flaked	step	40	25	13
13	278762/ 5768985	angular fragment	quartz	-	-	10	15	7
14	278771/ 5768982	proximal flake	quartz	flaked	snap	20	13	6
15	278771/ 5768993	angular fragment	quartz	-	-	25	15	10
16	278766/ 5768967	distal flake	quartz	flaked	-	13	14	3
19	278765/ 5769049	complete flake	quartzite	flaked	feather	26	16	5
20	278765/ 5769053	core (fragment)	quartzite	-	-	40	31	14
21	278768/ 5769049	angular fragment	quartzite	-	-	25	23	18
22	278769/ 5769049	complete flake	quartzite	flaked	step	38	20	13
23	278773/ 5769053	core	silcrete	-	-	43	24	21
24	278776/ 5769052	complete flake	quartzite	flaked	feather	20	29	6
25	278771/ 5769059	distal flake	quartz	flaked	-	23	23	6
28	278750/ 5769049	core	quartzite	-	-	24	18	15
29	278734/ 5769035	proximal flake	quartzite	flaked	snap	32	26	4
30	278745/ 5769055	angular fragment	quartz	-	-	24	15	10
31	278748/ 5769046	core	quartzite	-	-	29	13	14
32	278777/ 5769058	angular fragment	quartzite	-	-	16	7	5
33	278779/ 5769058	proximal flake	quartzite	flaked	snap	15	21	3
34	278780/ 5769059	medial flake	quartzite	flaked	-	10	9	6
38	278750/ 5789063	complete flake	quartzite	flaked	feather	33	24	11
39	278750/ 5769056	angular fragment	quartz	-	-	11	10	3

Table 18: Summary of surface artefacts recorded within Mollers Lane 1.

Photograph 18: Quartzite artefact found within Mollers Lane 1 (representative sample).

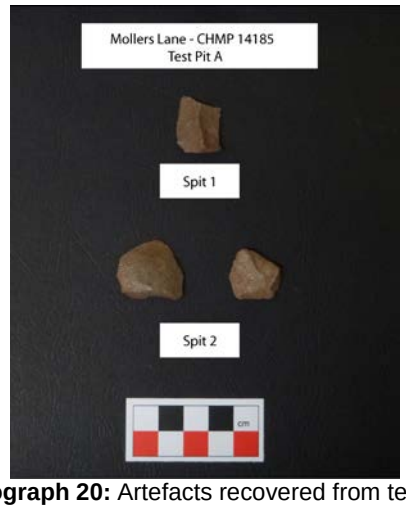
Photograph 19: Quartz scraper found within Mollers Lane 1 (representative sample).

Subsurface artefacts

Seven subsurface artefacts were recovered from Mollers Lane 1 (Photographs 20 and 21 below), where testing comprised two 1m x 1m test pits, as well as one initial 40cm x 40cm test pit (TP 80, located close to the vehicle track) that recovered no artefacts. Table 17 below displays information for each recorded artefact. Refer to chapter 5.5.3 for stratigraphic and excavation details for these artefacts.

Ref. No. for site	Location (GDA94/MGA Zone 55)	Artefact Type	Material	Platform Type	Termination	Length (mm)	Width (mm)	Thick-ness (mm)	Depth (cm)
27	278793/ 5768994	proximal blade	quartzite	flaked	snapped	23	18	7	5
28	278793/ 5768994	retouched flake	quartzite	flaked	feather	24	27	7	15
29	278793/ 5768994	complete flake	quartzite	flaked	feather	21	26	7	15
30	278767/ 5769047	multi-directional core	quartz	-	-	30	23	19	5
31	278767/ 5769047	complete flake	quartzite	flaked	hinge	13	19	6	5
32	278767/ 5769047	proximal flake	quartzite	flaked	snapped	18	13	4	5
33	278767/ 5769047	complete flake	quartz	flaked	feather	10	8	3	15

Table 19: Summary of subsurface artefacts recorded within Mollers Lane 1.



Photograph 20: Artefacts recovered from test pit A, Mollers Lane 1.

Photograph 21: Artefacts recovered from test pit C, Mollers Lane 1 (representative sample).

Mollers Lane LDAD (VAHR 7721-1343)

Mollers Lane LDAD (VAHR 7721-1343) consists of 11 subsurface artefacts and 19 surface stone artefacts found in various contexts outside of the landform place extent of Mollers Lane 1. These artefacts were recorded during both the Standard and Complex Assessment (including the extent radial testing period) and can be summarised in reference to their Test Pit ID number as discussed in the Complex Assessment section:

- TP 7 consisted of a single subsurface artefact found during the Complex Assessment. This was a quartzite flake found at a depth of 15cm close to a residential dwelling.
- TP 18 consisted of three subsurface artefacts found during the Complex Assessment. These consisted of three quartzite flakes at a depth of 60cm; two of these flakes were broken and could be joined. This may have been a result of excavating through the compacted pre-clay layer close to the base of the test pit.
- TPs 83 and 83-R1 consisted of three subsurface artefacts recovered during the Complex Assessment and extent testing. These were one complete flake (quartz), one proximal flake (quartzite) and one bipolar core (quartz), all found between 35 and 50cm.
- TPs 96, 96-R5, -R7 and -R11 consisted of four subsurface artefacts, all made of quartzite, recovered during the Complex Assessment and extent testing. These comprised of one complete flake, one proximal flake, one uni-directional core and one angular fragment.

Ref. No.	Location (GDA94/MGA Zone 55)	Artefact Type	Material	Platform Type	Termination	Length (mm)	Width (mm)	Thickness (mm)
1	278953/ 5769645	other / not artefactual	ceramic	-	-	-	-	-
2	278966/ 5769156	complete flake	quartzite	flaked	feather	56	32	12
3	278942/ 5769168	complete flake	quartzite	flaked	crushed	94	61	25
4	278974/ 5769333	angular fragment	quartz	-	-	21	19	21
5	275771/ 5768918	angular fragment	quartzite	flaked	hinge	31	15	4

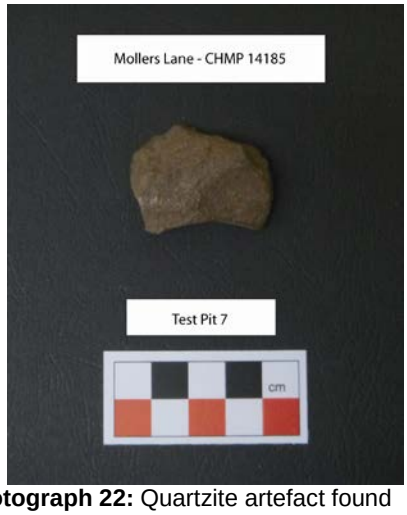
17	278845/ 5769816	angular fragment	quartz	-	-	16	14	3
18	278745/ 5769697	complete flake	quartzite	flaked	hinge	83	70	20
26	278768/ 5768914	distal flake	quartzite	flaked	snap	30	12	5
27	278768/ 5768922	angular fragment	quartzite	-	-	44	21	17
35	278947/ 5769167	complete flake	quartzite	flaked	step	-	-	-
36	278906/ 5769164	complete flake	quartzite	flaked	feather	16	12	3
37	278957/ 5769364	proximal flake	quartzite	flake	snap	29	16	6
40	278760/ 5769139	complete flake	quartz	flake	feather	27	23	15
41	278782/ 5769088	complete flake	quartzite	flake	crushed	23	21	5
42	278975/ 5769334	core	quartzite	-	-	74	56	43
43	278759/ 5768896	angular fragment	quartz	-	-	13	5	4
44	278759/ 5768895	angular fragment	quartz	-	-	19	10	7
45	278762/ 5768897	complete flake / core frag.	quartz	-	-	44	15	17
46	278761/ 5768898	angular fragment	quartz	-	-	15	12	4
47	278791/ 5768898	scraper	quartz	-	-	22	8	2

Table 20: Surface artefacts for VAHR 7721-1343.

Ref. No.	Location (GDA94/MGA Zone 55)	Artefact Type	Material	Platform Type	Termination	L (mm)	W (mm)	T (mm)	Depth (cm)
1	279057/ 5769607	retouched flake	quartzite	single	hinge	39	30	14	15
2	278898/ 5769574	broken flake	quartzite	-	-	28	15	8	50
3	278898/ 5769574	broken flake	quartzite	-	-	31	10	9	50
4	278898/ 5769574	complete flake	quartzite	flaked	feather	17	13	6	50
5	278906/ 5769063	complete flake	quartz	flaked	step	27	25	10	35
6	278906/ 5769073	proximal flake	quartzite	flaked	snapped	23	18	6	50
7	278906/ 5769073	bipolar core	quartz	-	-	34	21	11	40
8	278856/ 5768963	uni-directional core	quartzite	-	-	27	22	13	25-30
9	278867/ 5768965	angular fragment	quartzite	-	-	10	6	5	50

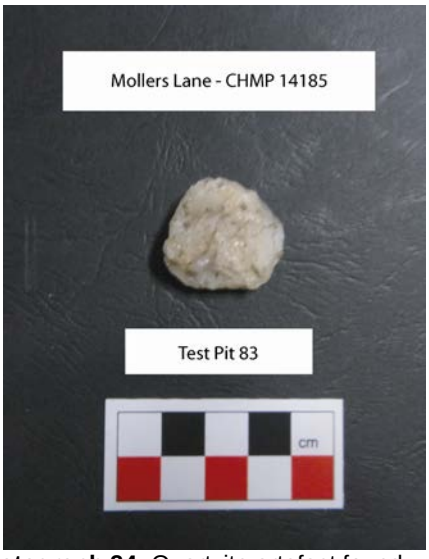
10	278856/ 5768978	proximal flake	quartzite	flaked	snapped	23	32	9	60
11	278846/ 5768978	complete flake	quartzite	flaked	plunge	32	35	9	40-50

Table 21: Subsurface artefacts for VAHR 7721-1343.

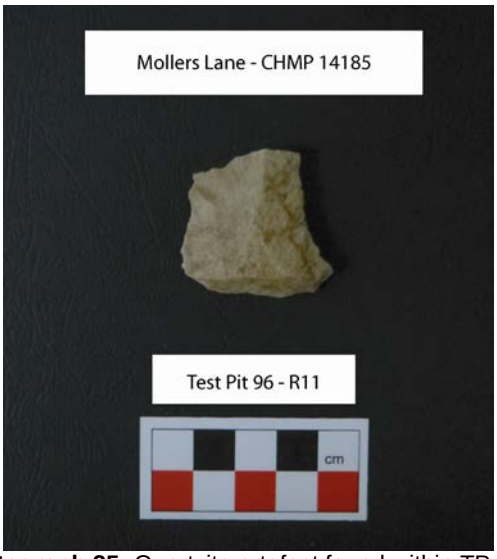


Photograph 22: Quartzite artefact found within Test Pit 7.

Photograph 23: Quartzite artefacts found within Test Pit 18.



Photograph 24: Quartzite artefact found within Test Pit 83.



Photograph 25: Quartzite artefact found within TP 96 – R11.

Comparison of assemblages

The number of subsurface artefacts recorded during the Complex Assessment is too few to infer any meaningful data in relation to the larger quantities found in surface contexts across the Activity Area. However, some general observations can be made regarding raw materials and different tool types. In both surface and subsurface contexts, quartzite (n=35) was the predominant material type over quartz (n=21), with silcrete (n=1) the only other material type recored. Tool types were varied in both surface and subsurface contexts, with a notable increase in the occurrence of angular fragments and complete flakes found on the surface. Broken flakes and cores were found in similar proportional quantities given the amount of pits that were excavated in both the proposed Complex Assessment grid and the extent testing.

The frequency of surface material must again be noted as occurring primarily around the landform rise at the centre of the Activity Area, which was likely used as a periodic focal point for the manufacturing of tools by Aboriginal people in the past. This is due to the high position of the rise in the landscape overlooking Lake Connewarre, as previously discussed.

The comparison of surface to subsurface assemblages therefore liklely indicates the manufacturing of tools within a periodic timeframe for this region, occurring primarily at Mollers Lane 1. The subsurface material recorded within Test Pits 83 and 96 in particular demonstrates the activity of Aborignal people in the past and the movement of Aboriginal cultural heritage around this particular landform. When referring to the stratigraphic information where subsurface material was recorded, it is likely that the presence of Aboriginal cultural heritage across the wider Acitvity Area is due to both the manual transportation of these artefacts by Aboriginal people in the past, and also the effects of modern land use and farming activities. This is because artefacts were recorded at both median levels (15-40cm) where modern material was also present in many areas during test excavations (e.g. as seen in Test Pits A and 7), and also at greater depths (50-60cm) where the soil profile showed little or no evidence of modern disturbance in other parts of the Activity Area (e.g. Test Pit 18).

5.7 Results of the Assessment of Aboriginal Cultural Heritage

Two new Aboriginal Heritage Places were recording during the preparation of this CHMP; they were registered as Mollers Lane LDAD (VAHR 7721-1343) and Mollers Lane 1 LDAD (7721-1341).

Mollers Lane 1 LDAD (VAHR 7721-1341) is a low density artefact distribution comprising 27 surface artefacts recorded during the Standard Assessment, located on a rise in the centre of the Activity Area. A further seven artefacts were found in subsurface contexts during the Complex Assessment, within the landform rise that defines the extent of this place.

Mollers Lane LDAD (VAHR 7721-1343) consists of 19 surface and 11 subsurface artefacts found in various contexts within the Activity Area, external to the place extent of nearby Mollers Lane 1 LDAD (VAHR 7721-1341). These artefacts were recorded during both the Standard and Complex Assessment (including the extent radial testing period).

There were no previously registered Aboriginal Cultural Heritage Places within the Activity Area.

Name and VAHR No.	Coordinates (GDA94/MGA Zone 55)	Cultural Material & Context	Cadastral Information	Year Registered
Mollers Lane LDAD; VAHR 7721 - 1343	278856 / 5768963	Lithic (flaked stone) subsurface isolated artefact	1/LP74593, Parish of Moolap, County of Grant in the City of Greater Geelong	2016
Mollers Lane 1 LDAD; VAHR 7721- 1341	278767/ 5769047	Lithic (flaked stone) surface and subsurface scatter	PC353398, Parish of Moolap, County of Grant in the City of Greater Geelong	2016

Table 22: Summary of the Assessment of Aboriginal Cultural Heritage.

5.7.1 Extent of Mollers Lane 1 LDAD (VAHR 7721-1341)

Mollers Lane 1 LDAD (VAHR 7721-1341) is a low density artefact distribution, identified by various surface and subsurface artefacts recorded during the Standard and Complex Assessments. Mollers Lane 1 was registered as a low density artefact scatter comprising of 27 surface artefacts. The extent of this place has been modelled on the landform rise contour where the scatter is most concentrated (Map 5, Figure 11). A further 7 artefacts were recovered during subsurface testing from two 1m x 1m test pits.

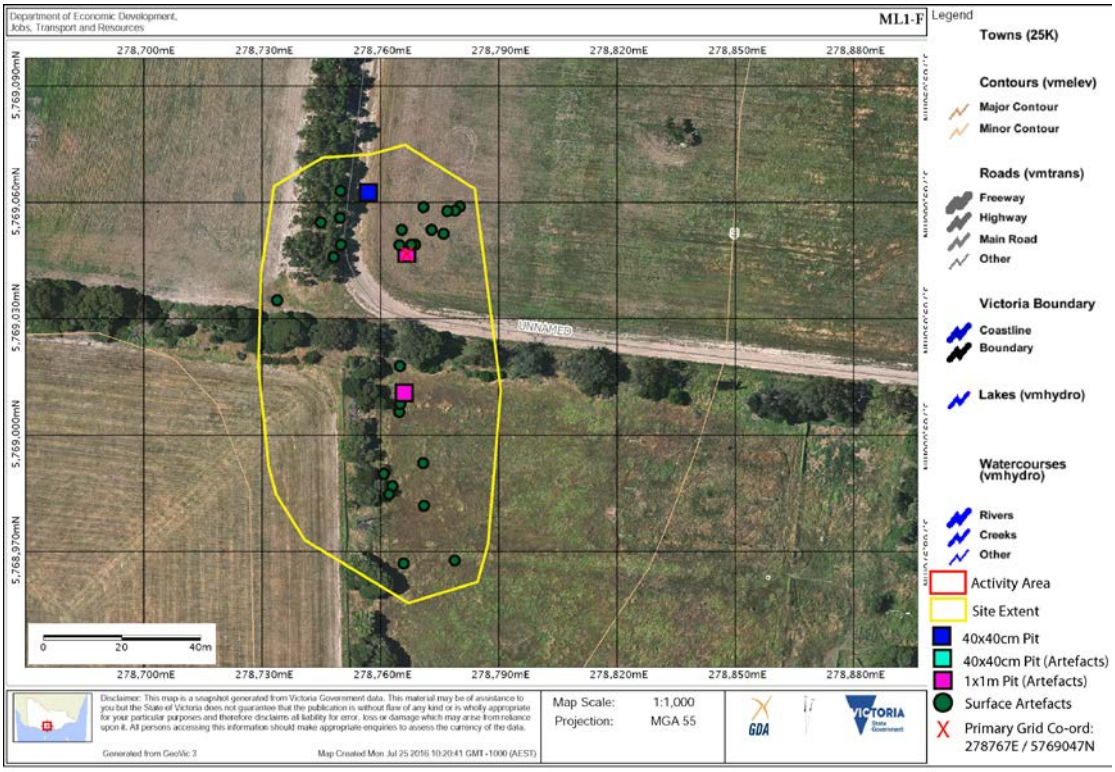


Figure 11: Extent plan of Mollers Lane 1 (VAHR 7721-1341).

5.7.2 Nature of Mollers Lane 1 LDAD (VAHR 7721-1341)

The Aboriginal cultural heritage place recorded as Mollers Lane 1 comprises 27 surface and 7 subsurface artefacts. The majority of artefacts were made from quartzite (n=20) and then quartz (n=13), with the remaining made from silcrete (n=1). Artefact types include complete flakes (n=9) and broken flakes (n=9). The broken flakes can be further categorised into proximal flakes (n=6), distal flakes (n=2) and split flakes (n=1). Other artefact types included a broken blade (proximal blade), one retouched flake and six cores. The remaining 8 artefacts were recorded as angular fragments.

5.7.3 Significance of Mollers Lane 1 LDAD (VAHR 7721-1341)

This type of Aboriginal heritage place is common to the geographic region and is expected, as the same place types have been found in close proximity (within 1km) west of the Activity Area. This place becomes more common further towards the Geelong region and within coastal contexts along the Bellarine Peninsula. Artefact density is low, with 34 artefacts being recorded. Overall, these artefacts do not represent formal tool types but are examples of waste materials that have been discarded, with the exception of one scraper. Due to the extensive land use and ploughing of fields where the artefacts were recorded, it is highly likely they have been disturbed from their *in situ* context and displaced from their original location causing any research and education potential to remain low. This place has also been disturbed as areas of fill are present in the soil (southern partition, south-west of Test Pit A), with artefacts situated on the surface. This suggests that the artefacts have lost their original provenance and are not *in situ.*

As this place is common to the region, is of low density and has been disturbed in parts, it is assessed as being of low archaeological significance.

VAHR no	Site Representatives		Other Data	Research Potential	Educational Potential	Scientific Significance
7721-1341	Regionally common	Locally common	none	poor	poor	low

Table 23: Significance of Mollers Lane 1 LDAD (VAHR 7721-1341).

5.7.4 Extent of Mollers Lane LDAD (VAHR 7721-1343)

Mollers Lane LDAD (VAHR 7721-1343) is a low density artefact distribution, identified by various surface and subsurface artefacts recorded during the Standard and Complex Assessments. Therefore, rather than having an extent, this place is displayed as individual GPS locations within the Activity Area. Refer to Map 3 for locations of surface artefacts and Table 20 for GPS data. Refer to Map 5 for the location of subsurface testing extents, and Table 21 for GPS data of subsurface artefacts. See individual extent testing results (Chapter 5.5.4) for locational figures of subsurface artefacts for VAHR 7721-1343. Subsurface artefacts were recorded and removed from the site during the Complex Assessment, and are stored at the TerraCulture offices in Northcote, Victoria.

5.7.5 Nature of Mollers Lane LDAD (VAHR 7721-1343)

The Aboriginal cultural heritage place recorded as Mollers Lane LDAD (VAHR 7721-1343) comprises 19 surface and 11 subsurface stone artefacts. The majority of artefacts were made from quartzite (n=20) and the remaining were quartz (n=10). Artefact types include complete flakes (n=11), broken flakes (n=6), angular fragments (n=8), cores (n=3), scrapers (n=1) and a retouched flake (n=1). The broken flakes can be further categorised into proximal flakes (n=3), snapped flakes (n=2) and one distal flake.

5.7.6 Significance of Mollers Lane LDAD (VAHR 7721-1343)

This type of Aboriginal heritage place is common to the geographic region and is expected, as the same place types have been found in close proximity (within 1km) west of the Activity Area. This place becomes more common further towards the Geelong region and within coastal contexts along the Bellarine Peninsula. Artefact density is low, with a total of 22 artefacts being recorded. Overall, these artefacts do not represent formal tool types but are examples of waste materials that have been discarded and evidence of the tool making process as indicated by two cores. Due to the extensive land use and ploughing of fields where the artefacts were recorded, it is highly likely they have been disturbed from their *in situ* context and displaced from their original location causing any research and education potential to remain low. This is also indicated by the relatively large area the artefacts have been found across within the Activity Area, and their occurrence in differing soil profiles and contexts (see test pit descriptions, Chapter 0).

As this place is common to the region, is of low density and has been disturbed in parts, this place is assessed as being of low archaeological significance.

VAHR no	Site Representatives		Other Data	Research Potential	Educational Potential	Scientific Significance
7721-1343	Regionally common	Locally common	none	poor	poor	low

Table 24: Significance of Mollers Lane LDAD (VAHR 7721-1343).

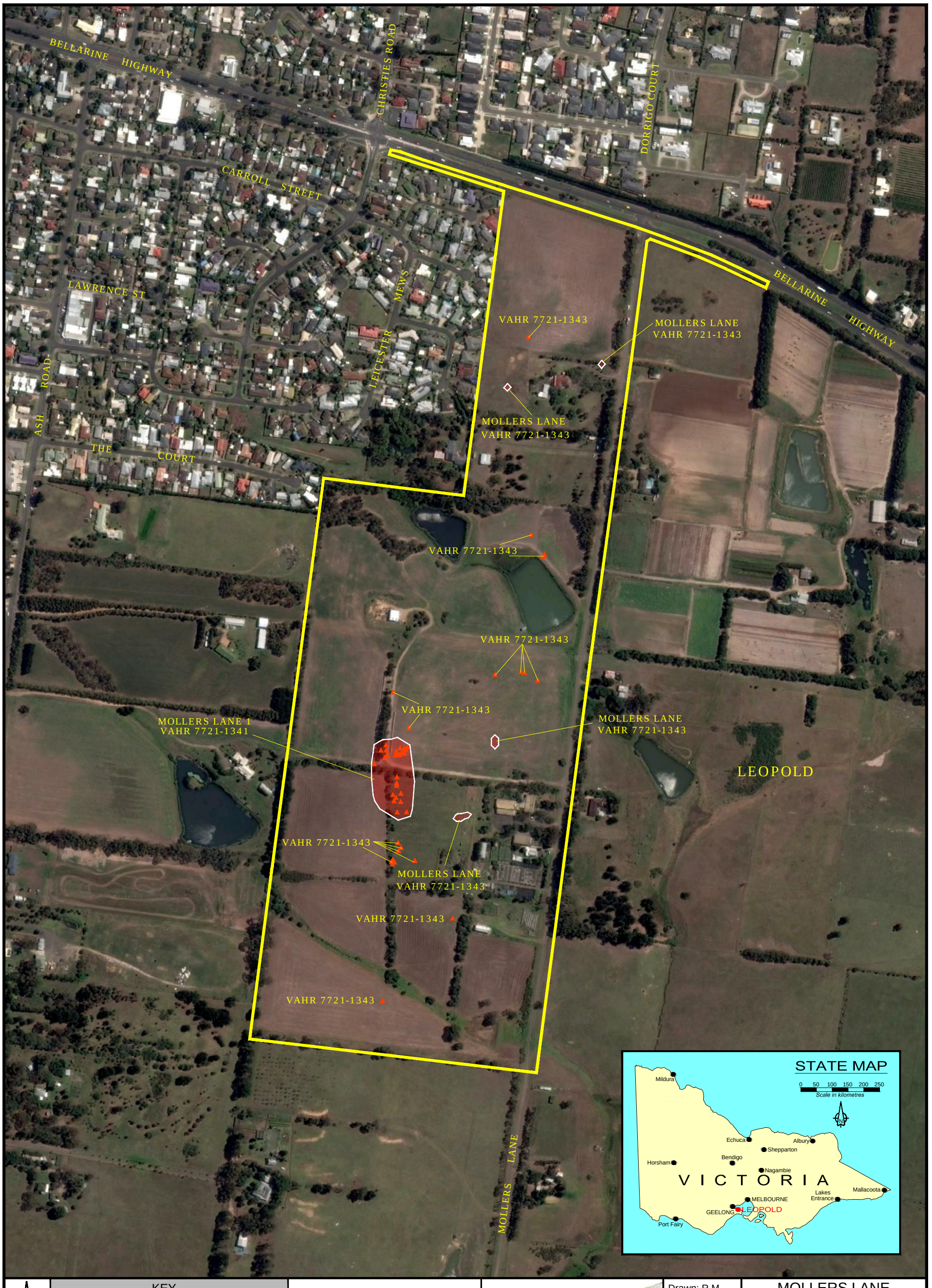
5.7.7 Cultural Significance of places according to Aboriginal Tradition

A general statement of significance for all Aboriginal cultural heritage places from Mr Bryon Powell, Chairperson of the *Wathaurung* Aboriginal Corporation is documented below:

> *All sites within the Wathaurung area are significant in cultural terms as they are a tangible link to our past and a non-renewable source of information about the lifestyle of our ancestors.*

> *The cultural significance afforded to the sites by the Aboriginal community must be given a higher standing than the scientific rating as the scientific rating is based on a European perspective without due regard to the value of the Aboriginal culture as a whole.*

In addition the Wathaurung requested it be noted that the Aboriginal Place is of high social and cultural significance to the *Wada wurrung* specifically and to the wider community more generally.



MAP 5: Showing Aboriginal Cultural Heritage Place Extents.

6. Consideration of Section 61 Matters – Impact Assessment

6.1 Mollers Lane LDAD (VAHR 7721-1343), Mollers Lane 1 LDAD (VAHR 7721-1341)

6.2 Can harm be avoided to Mollers Lane LDAD, Mollers Lane 1 LDAD?

Harm can not be avoided to the above places, as the subdivision will require stripping and shaping of the landscape to accord with surrounding levels for drainage and ready access. This will undoubtedly disturb the relatively low lying deposits where places were identified in this assessment. This work will be prevalent across almost all of the Activity Area to account for the undulations in the landscape, especially with respect to those areas near to the water catchments towards the rear of the Activity Area. As such the entire Activity Area must be stripped and reformed.

6.2.1 Can harm be minimised?

Harm can be mitigated for these places through a salvage operation (see 7.1.1 below).

6.3 Are specific measures needed for the management of Mollers Lane LDAD (VAHR 7721-1343) and Mollers Lane 1 LDAD (VAHR 7721-1341)?

Collection of Artefacts
Surface artefacts within Mollers Lane 1 LDAD (VAHR 7721-1341) must be collected by a HA and WAC representatives. These will then be given to the RAP. All subsurface artefacts within Mollers Lane LDAD (VAHR 7721-1343) have already been removed from the Activity Area and were recorded and stored as a collection by TerraCulture during the assessment of this CHMP.

Salvage
A surface and subsurface salvage will be conducted in conjunction with the RAP for Places within the Activity Area in order to minimise harm (see Section 7.1.1).

Reburial
All artefacts collected from within the Activity Area are to be given to the RAP where they will be prepared for reburial within a durable container. This is to be completed after the Activity has taken place in accordance with the WAC standard procedure for reburial.

Retention of Topsoil
All topsoil stripped during the Activity must stay within the Activity Area. The topsoil can be used for all aspects of the subdivision including but not limited to fill/shape and landscaping.

Inductions for Civil Contractors
The Sponsor must provide appropriate inductions for construction personnel in regards to the Aboriginal Cultural Heritage within the Activity Area. These inductions will be carried out by the RAP before the commencement of any works and should include information relating to the identification of stone artefacts and deposits in which they may occur. A minimum of 2 weeks notice must be given to the RAP to organise the induction. Those personnel who will be working permanently within the Activity Area must attend this induction. Contractors who are not permanent should be provided with Aboriginal Cultural Heritage information as part of their toolbox induction at the start of their time within the Activity Area. The cost of the induction is to be borne by the Sponsor. The Sponsor's contractors must refer to the checklist that has been prepared to ensure compliance with the requirements of this CHMP (see Appendix 3).

6.4 Are there particular contingency plans that might be necessary?

Contingency Plans that are relevant for this Activity Area are detailed in Section 9 of this report. They include the following:

- Dispute resolution (Section 9.1.1);
- Discovery of Aboriginal Cultural Heritage during works (Section 9.2);
- Management of Aboriginal Cultural Heritage discovered during works (Section 9.3); and,
- Reviewing compliance (Section 9.4).

6.5 What custody and management arrangements might be needed?

If any Aboriginal Cultural Heritage is recovered or salvaged from the 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; and,
- Arrange storage of the Aboriginal Cultural Heritage in a secure location with copies of the catalogue and assessment documentation.

The Sponsor will be responsible for the costs associated with the assessment, cataloguing, labelling and packaging of this cultural heritage material.

The custody of Aboriginal heritage (other than human remains) discovered or salvaged during, or after the Activity will be assigned to the Custody of the RAP.

PART 2 - CULTURAL HERITAGE MANAGEMENT REQUIREMENTS AND CONSIDERATIONS

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

7. Specific Cultural Heritage Management Requirements

After the completion of the investigation for this CHMP, two newly registered Aboriginal Cultural Heritage Places were recorded: Mollers Lane LDAD (VAHR 7721-1343); and Mollers Lane 1 LDAD (VAHR 7721-1341). Mollers Lane LDAD consists of 31 surface and subsurface artefacts in various locations within the Activity Area. Mollers Lane 1 LDAD consists of 34 surface and subsurface artefacts spread over a central portion of the Activity Area defined by a high landform rise in the landscape.

7.1 Mollers Lane 1 LDAD (VAHR 7721-1341) and Mollers Lane LDAD (VAHR 7721-1343)

7.1.1 Management Prior to the Activity

Due to the design constraints of the proposed subdivision and the low density and dispersed nature of the Aboriginal Heritage Places VAHR 7721-1341 and VAHR 7721-1343, the WAC agreed that harm could not be avoided or be easily minimized. It was agreed that both places should be subject to additional survey and a salvage excavation which would be conducted according to proper archaeological practice using the AV guidelines as the minimum standards.

Salvage Excavations

The salvage excavations must be undertaken by a HA and representatives of the WAC and conducted as follows:

- Prior to the commencement of the salvage excavation VAHR 7721-1341 and VAHR 7721-1343 must be resurveyed and the artefact locations recorded using a differential GPS;
- The surface stone artefacts must be collected and placed in labeled plastic bags with an identifier number and the GPS co-ordinates written on the outside of the bags;
- Archaeological salvage excavation must proceed manually using trowels and other appropriate hand tools;
- The excavation must occur within designated squares of no less and 1m x 1m square each and strung out using string line and the location recorded using a differential GPS. The location and sizes of the salvage squares for each of VAHR 7721-1341 and VAHR 7721-1343 are noted separately below;
- The deposits must be removed according to arbitrary spits of approximately 50 mm in depth. The excavation may revert to deeper removals based on natural stratigraphic changes, if appropriate to do so;
- The depths of the excavation must be recorded according to a dumpy level, total station or other suitable electronic level;
- All excavated deposits must be sieved through a 4mm screen and all archaeological contents collected and bagged according to square and spit;
- The excavation must extend to a deposit that predates human occupation;
- Care must be taken to identify artefacts within the excavation pits, and the location of all artefacts identified in an excavation pit must be recorded in three dimensions (x, y and z) or via the use of a total statio0n and their inclination recorded;
- If any features are identified these must be recorded and excavated in full – if necessary, and in agreement with WAC, the salvage area will need to be extended;
- The progress of the excavation must be recorded in a field note book or on individual spit sheets and these submitted with the final report;
- Charcoal samples or any other material suitable for dating such as shell, must be collected according to standard archaeological practice and samples submitted to an appropriate dating laboratory;

- All archaeological features must be recorded, photographed and drawn including plans and sections of each of the 1m x 1m squares;
- The stone artefacts must be analysed according to technological and functional categories according to AV guidelines;
- The data collected on the stone artefacts recovered during salvage excavation should be compared with the data collected during the Complex Assessment and the differences and similarities discussed in the report;
- The registration details for VAHR 7721-1341 and VAHR 7721-1343 must be changed according to the results of the salvage and to the satisfaction of AV;
- A report which describes the results of the salvage excavation in full must be written and submitted to the WAC and to AV. This report must discuss how the artefact deposits were formed and their likely age; the types and origins of the stone used to manufacture the stone artefacts; the likely uses of these stone artefacts, and more generally how the results of the salvage excavation contribute to an understanding of past Aboriginal use of the Activity Area and to the wider geographic region. Reference must be made to locally dated Aboriginal places associated with Lake Connewarre, and other relevant places on the Bellarine Peninsula.

Mollers Lane 1 LDAD (VAHR 7721-1341)

- A survey and salvage excavation of this place according to the procedures outlined above must be conducted;
- The salvage excavation of this place must be conducted by way of four 2m x 2m square pits located at the deepest points of the deposit and probably either side of the boundary fence that divides the registered extent. If practicable, these squares should be contiguous and reveal as much of the central distribution of the artefact bearing deposits as is possible;
- All subsurface artefacts recovered during the salvage excavations must be retained and properly stored in archival boxes in readiness for their return to the WAC.
- The Sponsor will be responsible for and must pay all costs associated with the salvage excavation of this place.

Molars Lane LDAD (VAHR 7721-1343)

- A survey and salvage excavation of this place according to the procedures outlined above must be conducted;
- The salvage excavation of this place must be conducted by way of 1m x 1m square pits dug at each GPS location where subsurface artefactual material was recorded during the Complex Assessment,- a total of four pits;
- All subsurface artefacts recovered during the salvage excavations must be retained and properly stored in archival boxes in readiness for their return to the WAC;
- The Sponsor will be responsible for and must pay all costs associated with the salvage excavation of this place.

Inductions

- The Sponsor must provide appropriate inductions for construction personnel in regards to the Aboriginal Cultural Heritage within the Activity Area. These inductions will be carried out by the RAP before the commencement of any works and should include information relating to the identification of stone artefacts and deposits in which they may occur. A minimum of 2 weeks notice must be given to the RAP to organise the induction. Those personnel who will be working permanently within the Activity Area must attend this induction. Contractors who are not permanent should be provided with Aboriginal Cultural Heritage information as part of their toolbox induction at the start of their time within the Activity Area. The cost of the induction is to be borne by the Sponsor. The Sponsor's contractors must refer to the checklist that has been prepared to ensure compliance with the requirements of this CHMP (see Appendix 3).

Access

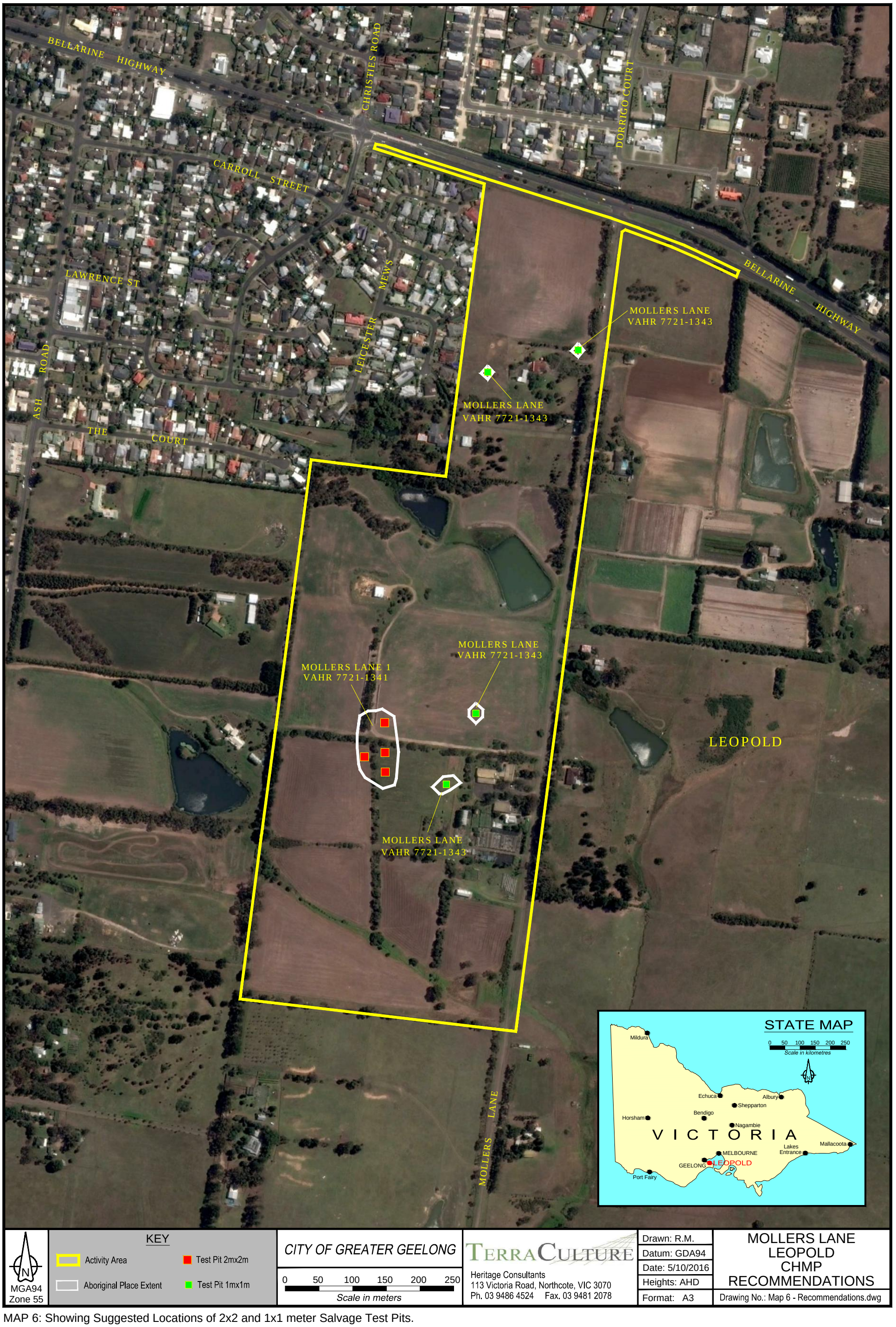
- Access to the Activity Area must be provided to representatives of the Wathaurung Aboriginal Corporation before construction for the purpose of ensuring compliance with the Cultural Heritage Management Plan. The representatives of the Wathaurung Aboriginal Corporation must comply with all OH&S requirements of the Activity Area.

7.1.2 Management Needed During the Activity

- The topsoil must be retained within the Activity Area and can be used as part of the development.
- All works must be restricted to the extent of the Activity Area as is shown in Map 1.
- Access to the Activity Area must be provided to representatives of the Wathaurung Aboriginal Corporation during construction for the purpose of ensuring compliance with the Cultural Heritage Management Plan. The representatives of the Wathaurung Aboriginal Corporation must comply with all OH&S requirements of the Activity Area.
- Approved CHMP must be kept on site.

7.1.3 Management Needed After the Activity

- At the completion of the Activity, the recovered artefacts must be reburied in the activity area, with the location to be negoitiated between the Sponsor and WAC.
- If a reburial takes place, it must be undertaken in accordance with Wathaurung standard procedures for reburial listed in Appendix 4.
- Should any artefacts be recovered during the activity the Contingency Plan in section 9 must be followed.
- Access to the Activity Area must be provided to representatives of the Wathaurung Aboriginal Corporation after construction for the purpose of ensuring compliance with the Cultural Heritage Management Plan. The representatives of the Wathaurung Aboriginal Corporation must comply with all OH&S requirements of the Activity Area.



MAP 6: Showing Suggested Locations of 2x2 and 1x1 meter Salvage Test Pits.

8. Contingency Plans

8.1 Section 61 Matters

8.1.1 Dispute Resolution

The following is the Wathaurung Standard Procedure for dispute resolution

Clause 13(1) Schedule 2 of the Regulations requires that the CHMP must contain a contingency plan for the resolution of any disputes between the Sponsor and relevant RAPs in relation to the implementation of an approved CHMP or the conduct of the activity.

Disputes may occur at various stages during the activity. Procedures for dispute resolution aim to ensure that all parties are fully aware of their rights and obligations, that full and open communication between parties occurs and those parties conduct themselves in good faith.
If a dispute arises that may affect the conduct of the activity, resolution between parties using the following Informal Dispute Resolution guidelines is recommended.

RAP Authorised Project Delegate: Katrina Thomas,
Interim *Wathaurung* RAP Manager
Phone: (03) 4308 0420
Email: katrina@wathcorp.com.au

Sponsor Authorised Project Delegate: Chris Marshall
TGM Group
1/27-31 Myers Street Geelong
5202 4600
chrism@tgmgroup.com

Process:

Informal Dispute Resolution

- The party raising the dispute must complete a Dispute Notification Form (included below) and email or fax a copy to all parties listed above.

- Project delegates (as listed above) of each party (RAP and Sponsor) 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.

Without prejudice to either party, and except where a bona fide safety issue is involved, and/or when the nature of the work or the area affected by the work concerns the matter in dispute, Work should continue in accordance with this Plan while matters in dispute between them are being negotiated in good faith. No party shall be prejudiced as to final settlement by the continuance of work in accordance with this procedure.

Any corrective or remedial activities required by a resolution to a dispute under this Clause (e.g. repairing damage to sites) will be overseen by representatives from the Wadawurrung and will take place in accordance with their instructions.

DISPUTE RESOLUTION NOTIFICATION FORM

Cultural Heritage Plan No

Relevant Party Making the Dispute:

Contact Person:

Date:

Nature of the Dispute:

Proposed Meeting Time/Date & Place:

Relevant parties who have been sent (email or fax) this notification (tick box):

Party to Agreement	Name of Delegate	Fax	Postal Address	Email	Contacted (√)
RAP	Katrina Thomas (WAC Interim RAP Manager)	(03) 4308 0421	PO Box 734 Ballarat VIC 3353	Katrina@wathcorp.com.au	
The Sponsor					
Site Supervisor					
CHA					

8.2 Discovery of Aboriginal Cultural Heritage during Works

8.2.1 Unexpected Discovery of Human Remains

If any suspected human remains are found during any Activity, works must cease. The Victoria Police and the State Coroner's Office (1300 309 519) should be notified immediately. **Do not contact the media.** If there are reasonable grounds to believe that the remains are Aboriginal, the Coronial Admissions and Enquiries hotline must be contacted immediately on 1300 888 544. This advice has been developed further and is described in the following 5 step contingency plan. Any such discovery at the Activity Area must follow these steps.

Discovery

If suspected human remains are discovered, all activity in the vicinity must ***stop*** to ensure minimal damage is caused to the remains; and, the remains must be left in place, and protected from harm or damage.

Notification

Once suspected human skeletal remains have been found, the Coroners Office (1300 309 519) and the Victoria Police must be notified immediately; If there is reasonable grounds to believe that the remains could be Aboriginal, the Coronial Admissions and Enquiries hotline must be immediately notified on 1300 888 544; and all 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 the human remains to the Victoria Aboriginal Heritage Council (VAHC) in accordance with s.17 of the Act.

Impact Mitigation or Salvage

The VAHC, 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.

An appropriate impact mitigation or salvage strategy as determined by the VAHC must be implemented (This will depend on the circumstances in which the remains were found, the number of burials found and the type of burials and the outcome of consultation with any Aboriginal person or body);

Curation and further analysis

- The treatment of salvaged Aboriginal human remains must be in accordance with the direction of the Secretary.

Reburial

- Any reburial site(s) must be fully documented by an experienced and qualified archaeologist, clearly marked and all details provided to AV;
- Appropriate management measures must be implemented to ensure that the remains are not disturbed in the future.

8.2.2 Unexpected Discovery of Aboriginal Cultural Heritage

Discovery

A person who discovers Aboriginal Cultural Heritage during the Activity will immediately notify the site Supervisor and suspend any relevant works at the location of the discovery. An appropriate buffer (i.e. 20 metres in terms of an artefact or twice the extent of a tree canopy (drip-line) for a scarred tree) would be established of the relevant site extent (the “area of exclusion”). Works shall be immediately suspended until the appropriate investigation outlined below is completed;

Notification

The supervisor would immediately contact the Sponsor of the identification of the Cultural Heritage. A RAP representative and a HA would be contacted to evaluate and record the Aboriginal Cultural Heritage and advise on possible management strategies.

In accordance with the requirements of Section 24 of the *Aboriginal Heritage Act* 2006, the person in charge of the Activity will ensure that the Secretary of the Department of Planning and Community Development is notified of the discovery of any Aboriginal Cultural Heritage, by providing the Secretary with completed site record cards (completed by a Cultural Heritage Advisor) as soon as is practicable but within 14 days.

Impact Mitigation or Salvage

The sponsor must make every effort to avoid harm to the Aboriginal Cultural Heritage

Within a period not exceeding three (3) working days a decision/recommendation will be made by the RAP representative in consultation with the Sponsor and the Cultural Heritage Advisor, as to the process to be followed to manage the Aboriginal Cultural Heritage in a culturally appropriate manner, and how to proceed with the works. Such management may include investigation strategies, salvage operations or *in situ* retention of the Aboriginal Place.

In situ retention involves;

- The preservation of an area of land encompassing the Aboriginal Cultural Heritage that is not disturbed by development. This must be an outcome if the cultural heritage is assessed by the RAP and HA to have high significance and good contextual integrity;

Investigation strategies include;

- the surface collection of the Aboriginal Cultural Heritage;
- a briefing to contractors on this heritage by the RAP;
- the hand excavation of test pits (2m x 1m, 1m x 1m or other size as needed) to determine the nature of the Aboriginal Place. Additional, hand excavated test pits (such as 40cm x 40cm test pits) are required if the Place is found to have a stratified subsurface component.
- Samples must be taken for dating analysis (if suitable samples are identified).

Work may recommence within the area of exclusion;

- when an appropriate course of action has been agreed between the Sponsor, and the HA;
- the appropriate protective measures have been taken;
- all parties agree there is no alternative prudent or feasible course of action;
- any relevant Dispute has been resolved.

The sponsor will ensure that the above steps are followed and the legal obligations and requirements are complied with at all times.

Any mitigation measures and/or salvage must be agreed to be WAC.

The Sponsor is to ensure that all appropriate documentation of the Aboriginal Cultural Heritage is completed and submitted to the Secretary of the Department Premier and Cabinet.

8.3 Management of Aboriginal Cultural Heritage Discovered during Works

The RAP has provided the following procedure which must be implemented:

- Every effort to avoid harm to any Aboriginal cultural heritage located must be made. If not possible to preserve *in situ*, Aboriginal cultural material will have been collected and must be managed as follows:
- Custody of Aboriginal cultural heritage must be given to the RAP
- Reburial must take place within 30 days of completion of the activity;
  A reburial location should be identified in the activity area, and this location must be in an area which is protected from future development or disturbance;
  Once reburied, the reburial location must be recorded to sub-metre accuracy by a HA and be relocatable;
- flagging tape should be laid within the hole, at a depth of 30 cm above the reburied cultural material to identify that cultural material is buried below the flagging tape;
- the relevant VAHR site record card must be updated and a ‘collection’ component form must be completed by the HA and lodged with AAV;
- cultural material to be reburied must be placed in a durable container manufactured by WAC;
- a separate container is to be manufactured for each Aboriginal Place to be reburied;
- where an Aboriginal Place is comprised of a large amount of cultural material it will be necessary to manufacture a number of containers to rebury the cultural material;
- the contents of the container must include the cultural material to be reburied, a catalogue of the cultural material to be reburied both on paper and on an archive quality storage medium, a copy of the relevant sections of the CHMP under which the

reburial is being performed, and a handful of soil from the Aboriginal Place from which the cultural material originated;
- a smoking ceremony must be performed prior to the reburial of cultural material;
- the reburial must be attended by Wadawurrung representatives; and
- the cost of the manufacture of the container, the analysis and preparation of the cultural material for reburial, smoking ceremony and Wadawurrung attendance at the reburial must be borne by the Sponsor.

8.4 Reviewing Compliance

To ensure that the work carried out is in compliance with the requirements of the CHMP a copy of the checklist, included as Appendix 3 must be present on site during the Activity and referred to as necessary. Access to the Activity Area must be provided to representatives of the Wathaurung Aboriginal Corporation before, during and after construction for the purpose of ensuring compliance with the Cultural Heritage Management Plan

- All non-compliance issues must result in stop works until such a time as a meeting can be held to determine process to be followed moving forward.
- Compliance with the requirements of an approved CHMP or Cultural Heritage Permit is mandatory under the *Aboriginal Heritage Act* 2006 (Vic). Non-compliance that results in harm to Aboriginal Cultural Heritage is an offence under the *Aboriginal Heritage Act* (2006) and the Sponsor may be charged accordingly;
- Should the requirements of this approved CHMP not be followed then the RAP must be contacted immediately;
- Should the requirements of the approved CHMP not be followed and harm has occurred to Aboriginal Cultural Heritage then AV must be contacted immediately;
- When non-compliance is suspected that has resulted in harm to Aboriginal Cultural Heritage the Minister for Aboriginal Victoria may order a Cultural Heritage audit under Section 80;
- An audit may be undertaken independently of an audit from the Minister in order to ensure compliance;
- Where AV finds a breach of the CHMP has resulted in the harming of Aboriginal Cultural Heritage the sponsor may be directed to remedy the harm.

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APPENDICES

Appendix 1 – Notice of Intent to Prepare a Cultural Heritage Management Plan and Response from RAP

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

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

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

SECTION 1 - Sponsor information

Sponsor:	TGM Group PTY LTD		
ABN/ACN:			
Contact Name:	Chris Marshall		
Postal Address	Po Box 1137 Geelong, Vic, 3220		
Business Number:	52024600	Mobile:	
Email Address:	chrism@tgmgroup.com		

Sponsor's agent (if relevant)

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

SECTION 2 - Description of proposed activity and location

Project Name:	Proposed Subdivision, Mollers Lane, Leopold
Municipal district:	Greater Geelong City Council

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

Subdivision

SECTION 3 - Cultural Heritage Advisor

Monica Toscano	Terraculture Pty Ltd	monica@terraculture.com.au
Name	*Company*	*Email address*

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

Start Date:	10-Mar-2016	Finish Date:	31-Mar-2017

Submitted on:10 Mar 2016

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

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

☑ Other Reasons (Voluntary)

☐ An Environmental Effects Statement is required

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

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

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

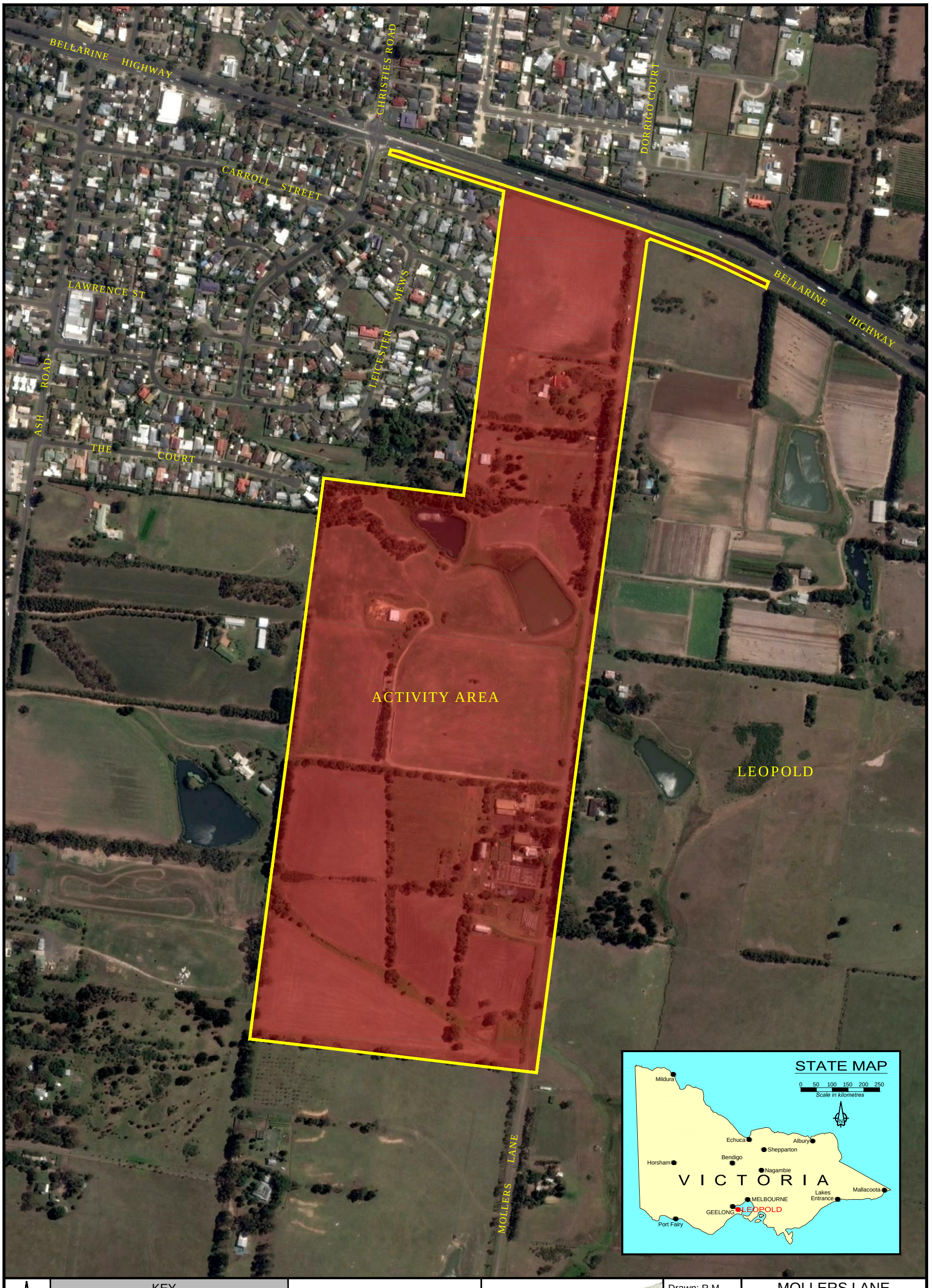
Wathaurung Aboriginal Corporation

SECTION 7 - Notification checklist

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

In addition to notifying the Deputy Director and any relevant registerd Aboriginal party/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 with a map attached may be used for this purpose.

Submitted on:10 Mar 2016



MAP 1: Showing Activity Area.

Wadawurrung
Wathaurung Aboriginal Corporation
trading as Wadawurrung
ABN 11 312 382 330
KN 3330

16th March 2016

TGM Group Pty Ltd
Att:- Chris Marshall
PO Box 1137
GEELONG VIC 3220

To Whom It May Concern,

NOTICE OF INTENT TO PREPARE A CULTURAL HERITAGE MANAGEMENT PLAN

I am writing to acknowledge your written notice of intention to prepare a management plan, received on the 10th March 2016, for the Subdivision – Mollers Lane, Leopold project.

Wathaurung Aboriginal Corporation (WAC) trading as Wadawurrung is the Registered Aboriginal Party (RAP) for the proposed activity area and will:

1. Evaluate the plan when it is completed and
2. Pursuant to s.60 of the *Aboriginal Heritage Act 2006* give notice that the WAC will do all or any of the following-
   (a) Consult with the sponsor in relation to the assessment of the area for the purposes of the plan.
   (b) Consult with the sponsor in relation to the recommendations to be included in the plan.
   (c) Participate in the conduct of the assessment.

To aid in the development of the CHMP, the following process is requested as a minimum:

At least one pre-planning meeting with Sponsor/Cultural Heritage Advisor to determine process and methodology.

One post-investigation meeting to develop appropriate management recommendations.

And for the evaluation of the CHMP, the following is required:

1 hard copy, 1 electronic (PDF or word) copy and full payment to the Wadawurrung Office for evaluation. Once all three are received the 30 day evaluation period will begin.

For further information regarding this advice, please contact

Katrina Thomas on:
0457 008 616
katrina@wathcorp.com.au
Yours sincerely,

Katrina Thomas
RAP Manager
Wathaurung Aboriginal Corporation
trading as: Wadawurrung

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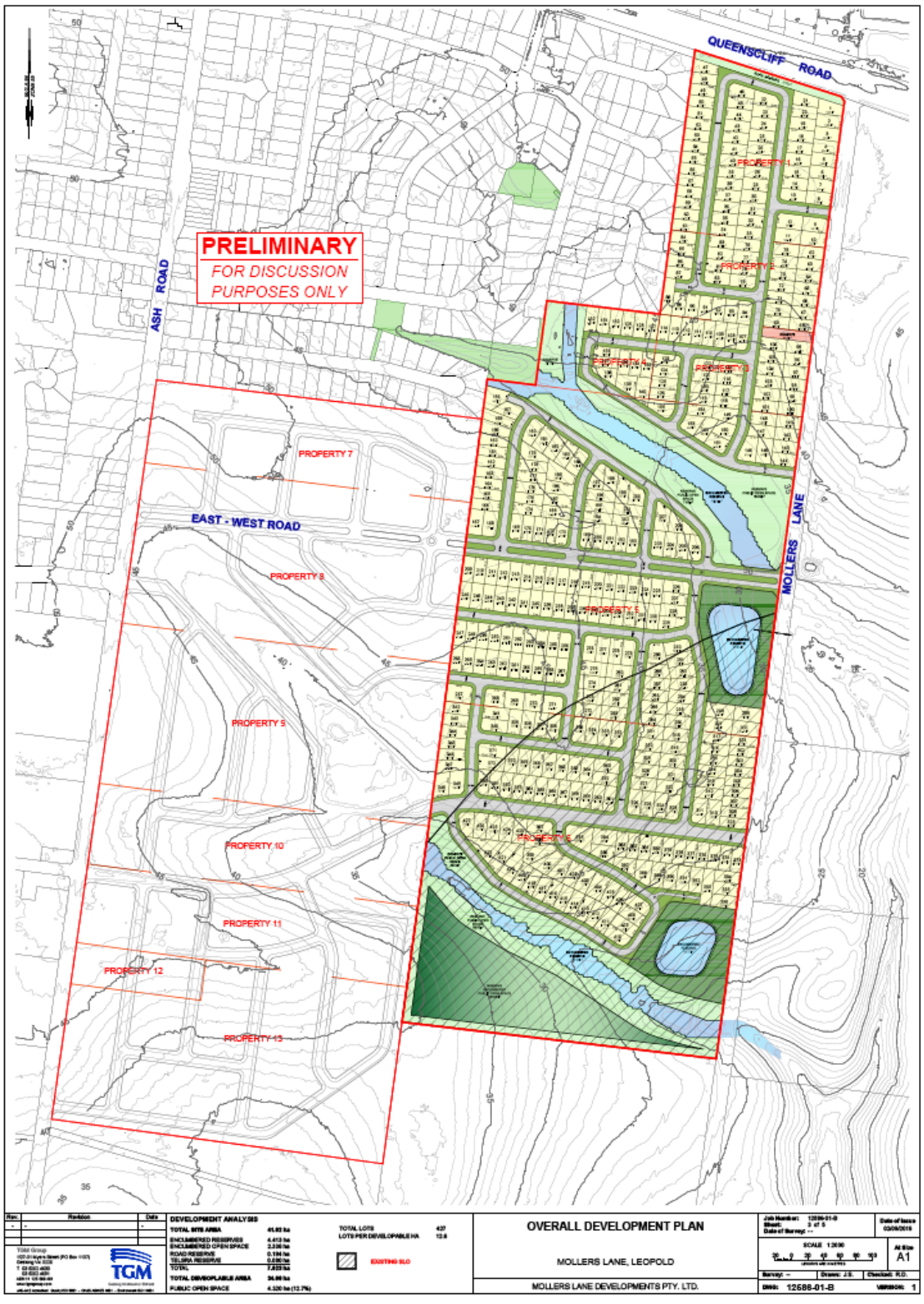
Appendix 2 – Proposed Activity



Appendix 3 – Checklist

Checklist for Compliance with the Management Requirements within CHMP 12664

Task	Section within CHMP	Yes/No
Is a copy of the CHMP 12664 containing this checklist kept onsite?	7.1.2	
Has an induction by the RAP been carried out prior to any ground disturbance?	7.1.1	
Has a collection of the surface artefacts been completed before commencement of the Activity?	7.1.1	
Has a salvage excavation been conducted as specified prior to commencement of the activity?	7.1.1	
Has access to the area been provided to the RAP before, during and after construction, subject to OH&S requirements?	7.1.2	
Has topsoil remained within the Activity Area?	7.1.2	
If unexpected Aboriginal Cultural Heritage was identified during the activity, was the following undertaken -		
▪ Have works ceased within the appropriate buffer zone?	8.2.2	
▪ Have the RAP and Heritage Advisor been notified, and investigated the discovery?	8.2.2	
▪ If Cultural Heritage is discovered has effort been made to avoid harm?	8.2.2	
▪ If agreed to, have adequate protection measures been put in place?	8.2.2	
▪ If agreed to, has salvage excavation been carried out under the supervision of a qualified archaeologist?	8.2.2	
▪ Have all conditions met before recommencing activity?	8.2.2	
▪ Has the Heritage Advisor completed/updated site cards?	8.2.2	
▪ Has cultural material been reburied within 30 days of completion of the activity?	8.3	
If suspected human remains were discovered, were the police, the RAP and AV (1800 762 003) immediately notified?	8.2.1	

Appendix 4 – Wathaurung Standard Procedures for Reburial

Aboriginal cultural material recovered/collected during the course of the assessment, salvage program or activity, must be reburied (insert reburial location as agreed to with WAC) and the following must occur:

- A reburial location should be identified in the activity area, and this location must be in an area which is protected from future development or disturbance;
- Once reburied, the reburial location must be recorded to sub-metre accuracy by a HA and be relocatable;
- Flagging tape should be laid out within the hole, at a depth of 30cm above the reburied cultural material to identify that cultural material is buried below the flagging tape;
- The relevant VAHR site record card must be updated and a 'collection' component form must be completed by the HA and lodged to AV;
- Cultural material to be reburied must be placed in a durable container manufactured by WAC
- A separate container is to be manufactured for each Aboriginal Place to be reburied;
- Where an Aboriginal Place is comprised of a large amount of cultural material it will be necessary to manufacture a number of containers to rebury the collection material;
- The contents of the container must include the cultural material to be reburied, a catalogue of the cultural material to be reburied both on paper and on an archive quality storage medium, a copy of the relevant sections of the CHMP under which the reburial is being performed, and a handful of soil from the Aboriginal Place from which the cultural material originated;
- A smoking ceremony must be performed prior to the reburial of cultural material;
- The reburial must be attended by Wadawurrung Representatives
- The cost of the manufacture of the container, the analysis and preparation of the cultural material for reburial, smoking ceremony and Wadawurrung attendance at the reburial must be borne by the Sponsor

Note that it is the preference of WAC to rebury cultural material within the Aboriginal Place from which the cultural material originated. Where this is not possible WAC must be consulted and may agree to an alternative reburial location. The standard procedure for the reburial of cultural material should be used for any Aboriginal Place that WAC states that a recommendation must be made for reburial of cultural material and also in the Contingencies to allow the reburial of cultural material salvaged or recovered prior to or during the activity. Having recently reburied cultural material in accordance with the standard procedure WAC is able to advise that the costs associated with the reburial of cultural material are estimated at:

- Materials for reburial containers - $13.65 per container
- Manufacture and engraving of reburial containers - $100 per container
- Photocopying of reports, artefact identification and bagging of artefacts - $100 per hour
- Attendance at reburial by Wadawurrung Representatives - $1600 per day
- Smoking ceremony - $100 per day

(All figures quoted are plus GST)

Note that the photocopying of reports, artefact identification and bagging of artefacts is charged at $100 per hour. HAs can reduce the costs associated with this charge by ensuring the cultural material repatriated to WAC is clearly labelled and packaged with reference to provenance details and the easily cross-referenced to the catalogue of cultural material

The attendance at reburial by Wadawurrung Representatives are charged per day. Note that depending upon the number of containers to be reburied it may be necessary to perform the reburial over a number of days.

WAC is conscious of the fact that for large projects the reburial of cultural material may run into a considerable cost for the Sponsor and therefore felt it necessary to formalise the standard procedure that has been included in CHMPs in an informal manner for the past few months to ensure that everyone is aware of the standard procedure and can inform Sponsor's of this procedure from the outset of the project.

Appendix 5 – Schedule to R1Z

32.08 **GENERAL RESIDENTIAL ZONE**

01/07/2014
VC116

Shown on the planning scheme map as **GRZ, R1Z, R2Z or R3Z** with a number (if shown).

Purpose

To implement the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.

To encourage development that respects the neighbourhood character of the area.

To implement neighbourhood character policy and adopted neighbourhood character guidelines.

To provide a diversity of housing types and moderate housing growth in locations offering good access to services and transport.

To allow educational, recreational, religious, community and a limited range of other non-residential uses to serve local community needs in appropriate locations.

32.08-1 **Table of uses**

01/07/2013
V8

Section 1 - Permit not required

Use	Condition
Animal keeping (other than Animal boarding)	Must be no more than 2 animals.
Bed and breakfast	No more than 10 persons may be accommodated away from their normal place of residence. At least 1 car parking space must be provided for each 2 persons able to be accommodated away from their normal place of residence.
Dependent person's unit	Must be the only dependent person's unit on the lot.
Dwelling (other than Bed and breakfast)	
Home occupation	
Informal outdoor recreation	
Medical centre	The gross floor area of all buildings must not exceed 250 square metres. Must not require a permit under clause 52.06-3. The site must adjoin, or have access to, a road in a Road Zone.
Minor utility installation	
Place of worship	The gross floor area of all buildings must not exceed 250 square metres. The site must adjoin, or have access to, a road in a Road Zone.
Railway	
Residential aged care facility	

GENERAL RESIDENTIAL ZONE PAGE 1 OF 7

Use	Condition
Utility installation (other than Minor utility installation and Telecommunications facility)	
Any other use not in Section 1 or 3	

Section 3 – Prohibited

Use
Amusement parlour
Animal boarding
Animal training
Brothel
Cinema based entertainment facility
Horse stables
Industry (other than Car wash)
Intensive animal husbandry
Motor racing track
Nightclub
Office (other than Medical centre)
Retail premises (other than Community market, Convenience shop, Food and drink premises, Plant nursery)
Saleyard
Stone extraction
Transport terminal
Warehouse (other than Store)

32.08-2 Subdivision

01/07/2013
V8

Permit requirement

A permit is required to subdivide land.

An application to subdivide land, other than an application to subdivide land into lots each containing an existing dwelling or car parking space, must meet the requirements of Clause 56 and:

- Must meet all of the objectives included in the clauses specified in the following table.
- Should meet all of the standards included in the clauses specified in the following table.

Class of subdivision	Objectives and standards to be met
60 or more lots	All except Clause 56.03-5.
16 – 59 lots	All except Clauses 56.03-1 to 56.03-3, 56.03-5, 56.06-1 and 56.06-3.
3 – 15 lots	All except Clauses 56.02-1, 56.03-1 to 56.03-4, 56.05-2, 56.06-1, 56.06-3 and 56.06-6.
2 lots	Clauses 56.03-5, 56.04-2, 56.04-3, 56.04-5, 56.06-8 to 56.09-2.

- Adjacent buildings and uses.
- The building form and scale.
- Setbacks to property boundaries.

- The likely effects, if any, on adjoining land, including noise levels, traffic, the hours of delivery and despatch of good and materials, hours of operation and light spill, solar access and glare.
- Any other application requirements specified in a schedule to this zone.

If in the opinion of the responsible authority an application requirement is not relevant to the evaluation of an application, the responsible authority may waive or reduce the requirement.

32.08-9 Exemption from notice and review

01/07/2013
V8

Subdivision

An application to subdivide land into lots each containing an existing dwelling or car parking space is exempt from the notice requirements of Section 52(1)(a), (b) and (d), the decision requirements of Section 64(1), (2) and (3) and the review rights of Section 82(1) of the Act.

32.08-10 Decision guidelines

01/07/2013
V8

Before deciding on an application, in addition to the decision guidelines in Clause 65, the responsible authority must consider, as appropriate:

General

- The State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.
- The purpose of this zone.
- Any other decision guidelines specified in a schedule to this zone.

Subdivision

- The pattern of subdivision and its effect on the spacing of buildings.
- For subdivision of land for residential development, the objectives and standards of Clause 56.

Dwellings and residential buildings

- For the construction and extension of one dwelling on a lot, the objectives, standards and decision guidelines of Clause 54.
- For the construction and extension of two or more dwellings on a lot, dwellings on common property and residential buildings, the objectives, standards and decision guidelines of Clause 55.
- For a development of five or more storeys, excluding a basement, the Design Guidelines for Higher Density Residential Development (Department of Sustainability and Environment 2004).

Non-residential use and development

- Whether the use or development is compatible with residential use.
- Whether the use generally serves local community needs.
- The scale and intensity of the use and development.
- The design, height, setback and appearance of the proposed buildings and works.
- The proposed landscaping.
- The provision of car and bicycle parking and associated accessways.
- Any proposed loading and refuse collection facilities.
- The safety, efficiency and amenity effects of traffic to be generated by the proposal.

32.08-11 **Advertising signs**

01/07/2013
V8

Advertising sign requirements are at Clause 52.05. This zone is in Category 3.

Notes: *Refer to the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement, for strategies and policies which may affect the use and development of land.*

Check whether an overlay also applies to the land.

Other requirements may also apply. These can be found at Particular Provisions.

Appendix 6 – Artefact Analysis

Surface artefacts

Ref No.	GDA94/MGA Zone 55 Easting	GDA94/MGA Zone 55 Northing	Raw Material	Manufacture Type	Colour	Grain	Length (mm)	Width (mm)	Thickness (mm)	Flake Platform	Flake Termination	Modification	Tool Type
1	278953	5769645	ceramic		brown								appeared as though flaked
2	278966	5769156	quartzite	flake	grey white	medium	56	32	12	flaked	feather		complete flake
3	278942	5769168	quartzite	flake	orange	medium	94	61	25	flaked	crushed		flake (maybe core frag.)
4	278974	5769333	quartz	flake	white		21	19	21				angular fragment
5	275771	5768918	quartzite	flake	grey white	medium	31	15	4	flaked	hinge		complete flake
6	278779	5768968	quartzite	flake	grey brown	medium	26	25	7	flaked	snap		proximal flake
7	278765	5769008	quartz	flake	grey white		11	11	4	flaked	feather		complete flake
8	278765	5769006	quartz	flake	white red		52	31	27				core
9	278765	5769018	quartzite	flake	white grey	medium	25	17	8	flaked	hinge		complete flake
10	278765	5769018	quartz	flake	white		15	9	5				angular fragment
11	278761	5768990	quartz	flake	white		10	6	5				angular fragment
12	278763	5768987	quartzite	flake	grey white	medium	40	25	13	flaked	step		complete flake
13	278762	5768985	quartz	flake	white		10	15	7				angular fragment
14	278771	5768982	quartz	flake	grey white		20	13	6	flaked	snap		proximal flake
15	278771	5768993	quartz	flake	grey white	semi-transluscent	25	15	10				angular fragment
16	278766	5768967	quartz	flake	white		13	14	3	flaked	snap		distal flake
17	278845	5769816	quartz	flake	white		16	14	3				angular fragment
18	278745	5769697	quartzite	flake	red brown	medium	83	70	20	flaked	hinge		complete flake
19	278765	5769049	quartzite	flake	pink white	medium	26	16	5	flaked	feather		flake (is complete flake but found as prox and distal frags.)
20	278765	5769053	quartzite	flake	white red		40	31	14				core frag.

21	278768	5769049	quartzite	flake	grey brown	medium	25	23	18				angular fragment
22	278769	5769049	quartzite	flake	grey white	medium	38	20	13	flaked	step		complete flake
23	278773	5769053	silcrete	flake	grey		43	24	21				core
24	278776	5769052	quartzite	flake	orange grey	medium	20	29	6	flaked	feather		complete flake
25	278771	5769059	quartz	flake	red		23	23	6	flaked	snap		distal flake
26	278768	5768914	quartzite	flake	peach	medium	30	12	5	flaked	snap		distal flake
27	278768	5768922	quartzite	flake	red brown	medium	44	21	17				angular fragment
28	278750	5769049	quartzite	flake	brown	medium	24	18	15				core
29	278734	5769035	quartzite	flake	pink peach	medium	32	26	4	flaked	snap		proximal flake
30	278745	5769055	quartz	flake	white		24	15	10				angular fragment
31	278748	5769046	quartzite	flake	brown	medium	29	13	14				core
32	278777	5769058	quartzite	flake	pink grey	medium	16	7	5				angular fragment
33	278779	5769058	quartzite	flake	grey white	medium	15	21	3	flaked	snap		proximal flake
34	278780	5769059	quartzite	flake	yellow white	semi transluscent	10	9	6	flaked	snap		medial flake
35	278947	5769167	quartzite	flake	white					flaked	step		complete flake
36	278906	5769164	quartzite	flake	orange		16	12	3	flaked	feather		complete flake
37	278957	5769364	quartzite	flake			29	16	6	flake	snap		proximal flake
38	278750	5789063	quartzite	flake	grey	medium	33	24	11	flake	feather		complete flake
39	278750	5769056	quartz	flake	white		11	10	3				angular fragment
40	278760	5769139	quartz	flake	white	semi transluscent	27	23	15	flake	feather		complete flake
41	278782	5769088	quartzite	flake	white		23	21	5	flake	crushed		complete flake
42	278975	5769334	quartzite	flake	orange	medium	74	56	43				core
43	278759	5768896	quartz	flake	white		13	5	4				angular fragment
44	278759	5768895	quartz	flake	white		19	10	7				angular fragment
45	278762	5768897	quartz	flake	white		44	15	17				flake / core frag.
46	278761	5768898	quartz	flake	white	crystal	15	12	4				angular fragment
47	278791	5768898	quartz	flake	white		22	8	2			retouched	scraper

Subsurface artefacts

Test Pit	Spit	Ref No.	Raw Material	Manufacture Type	Colour	Grain	Length (mm)	Width (mm)	Thickness (mm)	Flake Platform	Flake Termination	Pl. length	Pl. breadth	Cortex %	Cortex Type	Core Scar No.	Core Platform No.	Modification	Tool Type
A	1	1	quartzite	flake	pink grey	medium	23	18	7	flaked	snapped	13	7	0	-	-	-	-	proximal blade
A	2	1	quartzite	flake	brown grey	medium	24	27	7	flaked	feather	22	7	0	-	-	-	retouch	retouched flake
A	2	2	quartzite	flake	brown grey	medium	21	26	7	flaked	feather	12	6	0	-	-	-	-	complete flake
C	1	1	quartz	flake	orange grey	-	30	23	19	-	-			0	-	6	3	-	multi-directional core
C	1	2	quartzite	flake	red brown	medium	13	19	6	flaked	hinge	18	6	0	-	-	-	-	complete flake
C	1	3	quartzite	flake	red grey	medium	18	13	4	flaked	snapped	7	3	0	-	-	-	-	proximal flake
C	2	1	quartz	flake	white	-	10	8	3	flaked	feather	9	3		-	-	-	-	complete flake
7	-	1	quartzite	flake	brown	medium	39	30	14	single	hinge	16	9	0	-	-	-	retouch	retouched flake
18	-	1	quartzite	flake	brown grey	medium	28	15	8	-	-	-	-	0	-	-	-	-	broken flake
18	-	2	quartzite	flake	brown grey	medium	31	10	9	-	-	-	-	0	-	-	-	-	broken flake
18	-	3	quartzite	flake	brown grey	medium	17	13	6	flaked	feather	13	5	0	-	-	-	-	complete flake
83	-	1	quartz	flake	grey white	-	27	25	10	flaked	step	8	4	0	-	-	-	-	complete flake
83 - R1	-	1	quartzite	flake	yellow	medium	23	18	6	flaked	snapped	9	6	0	-	-	-	-	proximal flake
83 - R1	-	2	quartz	flake	white	-	34	21	11	-	-	-	-	0	-	4	2	-	bipolar core
96	-	1	quartzite	flake	grey white	medium	27	22	13	-	-	-	-	0		5	1	-	uni-directional core
96 - R5	-	1	quartzite	flake	grey	medium	10	6	5	-	-	-	-	0	-	-	-	-	angular fragment
96 - R8	-	1	quartzite	flake	red brown	medium	23	32	9	flaked	snapped	18	7	45	cobble	-	-	-	proximal flake
96 - R11	-	1	quartzite	flake	grey white	-	32	35	9	flaked	plunge	25	9	0	-	-	-	-	complete flake

Appendix 7 – Test Pit Summaries

Test Pit ID No.	Test Pit Type	Max Depth (cm)	Location MGA 55 GDA 94 (Easting)	Location MGA 55 GDA 94 (Northing)	Stratigraphy
1	40x40cm	26	278956	5769813	Sandy topsoil (0-10cm) Gravelly dark loam (10-20cm) Clayey dark loam with gravel (20-26cm) Yellow clay with gravel at 26cm
2	40x40cm	35	279006	5769813	Sandy topsoil (0-10cm) Gravelly dark loam (10-30cm) Light grey silty gravel thin layer (30-35cm) Yellow clay with some gravel at 35cm
3	40x40cm	14	279056	5769809	Topsoil (0-8cm) Clayey gravel (8-10cm) Dark brown / red clay with gravel (10-14cm)
4	40x40cm	24	278956	5769763	Topsoil (0-9cm) Dark loam (9-15cm) Light grey silt with gravel (15-24cm) Yellow / orange clay with some gravel at 24cm
5	40x40cm	48	279006	5769763	Topsoil (0-10cm) Dark gravelly loam (10-22cm) Darker still, compact loam, no gravel (22-33cm) Light grey silt with some gravel (33-48cm) Light yellow clay at 48cm
6	40x40cm	29	279056	5769763	Topsoil (0-10cm) Dark loam with gravel (10-20cm) Sandy loam with more gravel (20-26) Red / brown clay (26-29cm)
7	40x40cm	39	279057	5769607	Brown silty loam (0-10cm) Compacted silt (10-39cm) Brown clay
8	40x40cm	48	278906	5769713	Topsoil (0-8cm) Dark loam with gravel (9-28cm) Lighter loam with gravel, silty (28-36cm) Coarse, large rocks and gravel (36-47cm) Yellow clay at 47cm
9	40x40cm	38	278956	5769713	Topsoil (0-8cm) Dark loamy sand (8-26cm) Light brown sand (26-38cm) Orange / red clay with some gravel at 36cm
10	40x40cm	34	279006	5769713	Topsoil (0-7cm) Dark compact loam (7-15cm) Light brown sand (15-29cm)

					Light brown sand with some gravel (29-33cm) Orange / brown clay at 34cm
11	40x40cm	42	279056	5769713	Topsoil (0-8cm) Dark loamy sand (8-16cm) Light brown sand with some gravel (16-31cm) Light grey compact silty sand with more gravel (31-42cm) Yellow / orange clay at 42cm
12	40x40cm	56	278978	5769715	Compacted silty loam White silty loam with rocks Orange / brown clay at 56cm
13	40x40cm	38	278906	5769663	Topsoil (0-9cm) Dark loam (9-20cm) Light brown silty sand with some gravel (20-25cm) Orange / brown sandy with frequent rocks and gravel (25-38cm) Red clay with gravel at 38cm
14	40x40cm	53	278956	5769663	Dark loamy topsoil (0-10cm) Dark brown sandy loam (10-30cm) Light brown sand with gravel and small rocks (30-37cm) Light brown / yellowish sand (37-53cm) Orange clay with some gravel at 53cm
15	40x40cm	38	279006	5769663	Loose topsoil (0-5cm) Dark loamy sand with gravel (5-15cm) Compact dark sand and more frequent gravel (15-26cm) Light grey compact silt with abundant gravel and large rocks (26-38cm) Hard brown / orange clay with gravel on surface at 38cm
16	40x40cm	40	279056	5769663	Loose topsoil (0-5cm) Dark sand with gravel (5-25cm) Compact light grey sand (25-30cm) Compact light grey sand and frequent gravel (30-40cm) Brown / orange clay with gravel on surface at 40cm
17	40x40cm	56	278906	5769613	Topsoil with roots (0-5cm) Grey loamy sand with gravel (5-20cm) Compact light grey silty sand (20-45cm) Fine powdery sand with abundant gravel (45-55cm) Yellow / brown clay at 56cm
18	40x40cm	50	278898	5769576	Grey loamy sand topsoil (0-5cm) Dark grey loamy sand (5-30cm) Light grey silty sand with frequent gravel (30-

					50cm) Yellow / brown clay at 50cm
19	40x40cm	25	278922	5769574	Hard pan disturbed silt Rubble with clay
20	40x40cm	40	278934	5769550	Dark compacted silt Light silt Brown clay
21	40x40cm	30	278887	5769506	Consistent, compact brown silty loam Orange / brown clay
22	40x40cm	32	278956	5769554	Grass and dark sandy loam (0-2cm) Compact dark sandy loam Brown / orange clay
23	40x40cm	67	279008	5769546	Grass and sandy loam (0-2cm) Dark loam Light sandy loam Orange / brown clay
24	40x40cm	24	279060	5769531	Dark loam Silty loam Red / orange clay
25	40x40cm	n/a	278907	5769466	Grey sandy loam Sandy loam with frequent pebbles Clay
26	40x40cm	72	278946	5769469	Loose sandy loam White sand Orange clay
27	40x40cm	70	279005	5769463	Soft sandy loam (0-40cm) Brown sand (40-70cm) Orange clay (at 70cm)
28	40x40cm	40	279052	5769466	Loose / soft sandy loam Hard pan clay
29	40x40cm	53	278706	5769411	Loamy brown sand with frequent root (0-18cm) Light brown / yellow sand with some pebbles (20-45cm) As previous becoming more compact (45cm-53cm) Orange clay at 53cm
30	40x40cm	90	278756	5769413	Dark grey loam (0-70cm) Sandy clayey loam sandy (70-80cm) Light grey clayey (80-90+cm)
31	40x40cm	29	278806	5769413	Topsoil (0-2cm) Loamy brown sand and dense roots and gravel (2-29cm) Large rocks appear at 29cm preventing further excavation, clay not reached
32	-	n/a	278856	5769410	-

33	40x40cm	80	278907	5769427	Grey sandy loam fill (0-60cm) Light sand with pebbles (60-79cm) Orange clay (at 80cm)
34	40x40cm	55	278950	5769410	Dark grey loamy sand Dark grey loamy clay
35	40x40cm	82	279003	5769412	Dark loamy sand Light sand Clay
36	-	n/a	279056	5769413	-
37	40x40cm	34	278706	5769363	Dark loam topsoil (0-9cm) Light brown sand (9-30cm) Compact light brown sand with frequent gravel (30-34cm) Hard orange clay at 34cm
38	40x40cm	35	278756	5769363	Dark grey sand (0-20cm) Light sandy loam (20-34cm) Orange / brown clay (34-25cm)
39	40x40cm	40	278908	5769376	Dark sandy loam Light silty with rocks Orange clay
40	40x40cm	39	278956	5769363	Dark loamy silt Lighter loam silt Orange clay
41	40x40cm	90	279007	5769387	Dark sandy loam Light sandy loam Clay not reached
42	40x40cm	39	279041	5769367	Silty loam Lighter silt loam with pebbles and frequent tree roots Orange brown clay
43	40x40cm	38	278656	5769313	Dark sandy loam (0-30cm) White sandy loam with some pebbles Orange / brown clay
44	40x40cm	32	278706	5769313	Dark loam / topsoil (0-10cm) Compact light brown / grey sandy with some gravel (10-32cm) Orange clay at 32cm
45	40x40cm	30	278756	5769313	Dark sandy loam (0-20cm) White sandy loam with quartz pebbles Orange / brown clay
46	40x40cm	25	278806	5769313	Disturbed dark brown sand with frequent rocks and pebbles (0-25cm) Orange clay at 25cm
47	40x40cm	75	278856	576930	Sandy loam (0-10cm) Brown sand (10-40cm)

					Red silty Red clay
48	40x40cm	45	278656	5769263	Dark sandy loam (0-30cm)
49	40x40cm	43	278706	5769263	Dark loam topsoil (0-8cm) Light brown compact sand (8-20cm) Light grey compact with more frequent gravel close to clay (20-42cm) Orange clay at 42cm
50	40x40cm	40	278756	5769263	Loose sandy topsoil (0-5cm) Dark grey loamy sand with gravel inclusions (5-20cm) Compact light grey sand with some gravel and small rocks (20-39cm) Undulating brown clay at 40cm
51	40x40cm	42	278806	5769263	Dark loam with roots and rocks (0-30cm) Light grey compact loam (30-42cm) Orange clay at 42cm
52	40x40cm	48	278856	5769263	Brown sandy loam Thin layer of pebbles Orange / grey clay
53	40x40cm	33	278906	5769263	Dark loam Light sandy loam Orange / brown clay
54	40x40cm	70	278656	5769213	Dark loam (0-31cm) White sandy loam (31-60cm) White sand (60-70cm) Orange clay
55	40x40cm	40	278706	5769213	Dark loamy topsoil (0-6cm) Dark loamy sand (5-20cm) Light brown sand with some gravel (20-35cm) Abundant pebbles and roots (35-40cm) Hard orange clay at 40cm
56	40x40cm	42	278756	5769213	Dark sandy loam (0-33cm) Light grey sandy loam (33-41cm) Orange/ red brown clay at 42cm
57	40x40cm	32	278806	5769213	Dark loam topsoil (0-12cm) Light brown sand (12-26cm) Compact sand (26-32cm) Orange clay at 32cm
58	40x40cm	25	278856	5769213	Brown loamy compact Mottled clay, orange/red brown
59	40x40cm	46	278906	5769213	Dark sandy loam (0-26cm) White sand slightly silty (26-46cm) Orange / brown clay at 46cm
60	-	n/a	278956	5769213	-

61	-	n/a	279006	5769213	-
62	40x40cm	70	278656	5769163	Dark loamy sand (0-20cm) Light brown sand (20-50cm) As previous becoming more compact (50-70cm) Yellow / orange clay *absence of gravel / rocks in this pit
63	40x40cm	42	278706	5769163	Dark loam topsoil (0-6cm) Light brown sand (5-20cm) Light brown / grey sand with some pebbles (20-40cm) Compact, orange clay with gravel (40-42cm)
64	40x40cm	29	278769	5769164	Dark sandy loam (0-15cm) Sandy loam with frequent pebbles (15-28cm) Orange clay at 29cm
65	40x40cm	40	278806	5769163	Dark loam topsoil (0-20cm) Light brown sand (20-32cm) Light brown sand with frequent pebbles (32-40cm) Orange clay at 42cm
66	40x40cm	36	278856	5769163	Dark sandy loam Light sandy loam Grey orange clay
67	40x40cm	38	278906	5769163	Dark brown sandy loam (0-20cm) White sandy loam (20-38cm) Orange / brown clay at 38cm
68	40x40cm	21	278945	5769169	Dark brown sandy loam Orange / brown clay
69	40x40cm	90	279006	5769163	Clayey brown loam (0-48cm) Dark loam Clay not reached
70	40x40cm	92	278656	5769113	Dark loamy sand (0-20cm) Light brown / grey loamy sand (20-90cm) Yellow clay at 92cm
71	40x40cm	37	278706	5769113	Dark loam sand (0-9cm) Light brown / grey loamy sand with pebbles (9-37cm) Abundant pebbles close to clay (37-40cm) Orange clay at 40cm
72	40x40cm	42	278761	5769113	Dark grey sandy loam (0-31cm) Lighter sandy loam (31-41cm) Orange clay (41-42cm)
73	40x40cm	33	278806	5769113	Dark loamy sand (0-10cm) Light brown sand (10-33cm) Orange clay at 33cm

74	40x40cm	64	278856	5769113	Dark sandy loam (0-17cm) Orange sand (17-31cm) Light grey sand (31-62cm) Orange Clay (62-64cm)
75	40x40cm	80	278906	5769113	Dark sandy loam (0-43cm) Thin band of reddish sand (43-53cm) Orange / brown clay
76	40x40cm	32	278956	5769113	Dark brown sandy loam Thin band of white sand Orange / brown clay
77	40x40cm	93	279006	5769113	Dark sandy loam Light grey silty sand Clay not reached
78	40x40cm	80	278656	5769063	Dark loamy sand (0-20cm) Compact light brown sand (20-42cm) Light grey silty sand with gravel inclusions (42-72cm) Compact brown sand (72-80cm) Hard yellow clay at 80cm
79	40x40cm	34	278706	5769063	Dark loam (0-9cm) Light brown sand (9-26cm) As previous with more frequent pebbles (26-34cm) Orange clay at 34cm
80	40x40cm	27	278756	5769063	Dark brown sandy loam (0-26cm) Orange clay at 27cm
81	40x40cm	46	278806	5769063	Dark loamy sand (0-20cm) Light brown sand (20-45cm) Orange clay at 45cm
82	40x40cm	74	278856	5769063	Dark sandy loam Yellow sand Orange / grey clay
83	40x40cm	65	278906	5769064	Dark sandy loam (0-38cm) Light white sandy loam (38-65cm) Orange / brown clay at 65cm
84	40x40cm	72	278956	5769063	Dark sandy loam (0-36cm) Lighter sandy loam Orange clay
85	40x40cm	100	279003	5769062	Light brown sandy loam (0-50cm) Reddish brown sand (50-100cm+) Clay not reached
86	40x40cm	60	278656	5769013	Dark sandy loam Light sandy loam with pebbles Orange / brown clay
87	40x40cm	39	278706	5769013	Loamy dark topsoil with roots and rock (0-

					8cm) Dark loamy sand with pebbles (8-26cm) Medium brown loamy sand with frequent rocks (26-39cm) Yellow / orange clay at 29cm
88	-	n/a	278756	5769013	-
89	-	n/a	278806	5769013	-
90	-	n/a	278847	5769003	-
91	40x40cm	89	278993	5769018	Dark loam Light sandy loam with pebbles Orange / brown clay at 89cm
92	40x40cm	44	278656	5768963	Dark topsoil with roots (0-10cm) Compact dark loamy sand (10-24cm) Light grey /brown dense sand (24-44cm) Hard yellow clay at 44cm
93	40x40cm	33	278706	5768963	Dark sandy with roots and rocks (0-24cm) Light brown / grey with frequent rocks (24-33cm) Orange / red clay at 33cm
94	40x40cm	32	278765	5768964	Dark sandy loam Light sandy with quartz pebbles Orange clay
95	40x40cm	50	278806	5768963	Clay fill on surface (0-2cm) Brown sandy loam Light brown sandy Orange / brown clay
96	40x40cm	85	278856	5768963	Dark sandy loam (0-40cm) Brown sandy loam White sandy Orange clay
97	40x40cm	34	278606	5768913	Dark loamy topsoil with quartz pebbles (0-10cm) Light grey compact fine powdery sand with quartz pebbles (10-34cm) Hard yellow clay at 34cm
98	40x40cm	40	278656	5768913	Dark loamy sand with some roots and small rocks (0-25cm) Compact light grey loamy sand with some pebbles (25-40cm) Red / orange clay at 40cm
99	40x40cm	27	278706	5768913	Dark loamy sand with frequent small rocks and roots (0-22cm) Compact light brown sand (22-27cm) Red / orange clay
100	40x40cm	30	278767	5768913	Dark loam Light sandy loam with pebbles Orange / brown clay undulating

101	40x40cm	50	278806	5768913	Dark sandy loam Light sandy loam with quartz pebbles Orange clay
102	40x40cm	100	278856	5768913	Dark sandy loam (0-54cm) Light sandy loam (54-100cm+) Clay not reached
103	40x40cm	72	278606	5768863	Topsoil with roots (0-10cm) Light brown / grey loamy sand with some gravel (10-20cm) Medium grey loam sand (20-45cm) Compact light grey silty sand (45-72cm) Yellow clay at 72cm
104	40x40cm	20	278656	5768863	Light brown / grey loamy sand with abundant large rocks and quartz pebbles (0-20cm) Orange clay at 20cm
105	40x40cm	22	278706	5768863	Topsoil with roots (0-2cm) Light brown coarse sand with abundant quartz pebbles and rocks (2-20cm) Red clay at 20cm
106	40x40cm	52	278765	5768867	Dark loamy sandy Orange sand Orange clay
107	40x40cm	100	278806	5768863	Dark sandy loam (0-50cm) Red brown sandy loam with some clayey clumps (50-100cm+) Clay not reached
108	-	n/a	279029	5769324	-
109	40x40cm	78	278606	5768813	Topsoil (0-2cm) Dark brown compact sand with gravel (2-20cm) Very compact dark brown / grey with some gravel and small quartz pebbles and clayey deposits (20-62cm) Softer light grey silty sand with gravel, still compact (62-78cm) Clay not reach
110	40x40cm	30	278656	5768813	Topsoil with roots (0-6cm) Dark, compact loam with some gravel (6-30cm) Yellow / brown clay at 30cm
111	40x40cm	31	278706	5768813	Topsoil loam with some gravel (0-10cm) Dark clayey loam (10-30cm) Dark brown clay, moist at 31cm
112	40x40cm	28	278752	5768813	Brown grey sandy topsoil with gravel (0-20cm) Larger roots and abundant gravel in loamy sand (20-28cm) Brown / orange clay undulating with slope south at 28cm

113	40x40cm	85	278806	5768813	Dark loamy sand with some rocks (0-30/38cm) Light brown sand with few pebbles (30/380-80cm) Light brown sand with some yellow clay clumps (80-85cm) Orange / yellow clay at 85cm
114	40x40cm	98	278856	5768813	Grey sandy with roots and rubbish (0-25cm) Dark loamy sand (25-60cm) Light brown / grey gravelly sand (60-98cm) *hard deposits at end depth, clay not reached but may be close to
115	40x40cm	45	278906	5768813	Topsoil (0-9cm) Compact grey sand and gravel (9-20cm) Light brown sandy with frequent quartz pebbles (20-45cm) Sticky red / brown clay at 45cm undulating to 50cm
116	40x40cm	36	278974	5769333	Dark sandy loam Brown / orange clay
117	40x40cm	35	278606	5768763	Dark sandy loam (0-25cm) Light sandy (25-35cm) Orange clay at 35cm
118	40x40cm	38	278656	5768763	Dark sandy loam Lighter sand with very frequent rocks and pebbles Orange clay
119	40x40cm	82	278706	5768763	Dark loamy topsoil with roots (0-10cm) Grey / brown loamy sand with small rocks (10-50cm) Compact light grey silty sand with small pebbles (50-80cm) Hard yellow / brown clay at 80cm
120	40x40cm	20	278753	5768763	Light grey / brown loamy sand with frequent gravel (0-20cm) Brown clay undulating with slope southwards at 20cm
121	40x40cm	30	278806	5768763	Dark loamy sand with gravel (0-25cm) Grey loamy sand with clay deposits throughout (25-30cm) Orange clay undulating as high as 20cm (mostly at 30cm)
122	40x40cm	41	278854	5768763	Grey loamy sand with roots and gravel (0-20cm) Light grey / brown compact sand with few pebbles and animal burrow within wall (20-40cm) Hard undulating orange / brown clay at 40cm
123	40x40cm	40	278906	5768763	Dark compact loam sand with some modern material (ceramic/ glass) and gravel (0-30cm) Compact grey loamy sand (30-40cm)

					Orange / brown clay at 40cm
124	40x40cm	25	278956	5768763	Dark clayey sand with few rocks (0-20cm) Compact grey clayey sand (20-25cm) Dark brown clay at 25cm
125	40x40cm	36	278606	5768713	Dark sandy loam (0-26cm) Lighter sandy (26-36cm) Orange clay at 36cm
126	40x40cm	27	278656	5768713	Dark sandy loam (0-25cm) Thin light layer (25-27cm) Orange / brown clay (27-30cm)
127	40x40cm	43	278706	5768713	Dark sandy loam (0-30cm) White sandy loam (30-42cm) Orange clay at 43cm
128	40x40cm	95	278756	5768713	Dark sandy loam (0-65cm) Orange / red sandy loam (65-95cm) Clay not reached
129	40x40cm	94	278806	5768713	Dark loamy sand with very frequent modern rubbish including glass and ceramic (0-40cm) Dark loamy sand, similar to above stopped finding modern material (40-50cm) Light grey compact fine silt (50-94cm) Clay not reached
130	40x40cm	27	278860	5768713	Topsoil (0-2cm) Very compact grey sand with gravel and some clayey deposits closer to base (2-25cm) Hard brown clay with roots over (25-27cm)
131	40x40cm	30	278906	5768713	Dark sandy loam with some gravel and rubbish (0-24cm) Compact light grey sand (24-30cm) Hard dark brown clay with some gravel on surface at 30cm
132	40x40cm	35	278952	5768713	Loose light grey topsoil with grass roots (0-10cm) Dark compact clayey sand containing brick fragments (10-27cm) Light grey compact sand with some gravel (27-35cm) Dark brown clay at 35cm
133	-	n/a	278606	5768663	-
134	40x40cm	50	278656	5768663	Dark brown sandy loam Light sandy loam Orange / brown clay
135	40x40cm	91	278706	5768663	Dark brown sandy loam (0-23cm) Light white sandy (23-33cm) Yellow / orange sand (33-91cm)
136	40x40cm	87	278756	5768663	Dark sandy loam (0-80cm) White sandy loam (80-87cm)

					Clay at 87cm
137	40x40cm	30	278806	5768663	Brown sandy loam (0-30cm) Orange / brown clay at 30cm
138	40x40cm	43	278864	5768624	Grey hard pan silt Lighter silt just before clay Brown clay *lack of sand in this area, near drainage
139	40x40cm	56	278892	5769024	Loose topsoil (0-2cm) Dark grey loamy sand with some gravel (2-30cm) Medium brown sand (30-45cm) Compact light grey silty sand (45-54cm) Yellowish / brown clay undulating at 54cm
140	-	n/a	278956	5768663	-
A	100x100 cm	20	278793	5768994	Loamy sand (0-10cm) Crushed silt (10-20cm) Orange brown clay at 20cm
B	100x100 cm	34	278587	5768670	Dark loam sand with frequent quartz pebbles (0-14cm) Dark loam –clayey (14-34cm) Undulating clay at 34cm at deepest
C	100x100 cm	23	278767	5769047	Sandy brown loam (0-5cm) Darker brown sandy loam (5-18cm) Brown clayey loam (18-22) Brown / orange clay at 22/23cm
7 - R1	50x50cm	22	279057	5769597	Topsoil with grass roots (0-2cm) Light brown with frequent gravel, compact (2-19cm) Red / brown clay with gravel ontop (19-22cm)
7 - R2	50x50cm	20	279057	5769601	Topsoil with grass roots (0-5cm) Light brown with frequent gravel, compact (2-20cm) Red / brown clay with gravel ontop at 20cm
7 - R3	50x50cm	30	279067	5769607	Brown silty loam (0-10cm) Compacted silt (10-30cm) Brown clay
7 - R4	50x50cm	35	279065	5769607	Brown silty loam (0-10cm) Compacted silt (10-35cm) Brown clay
7 - R5	50x50cm	29	279047	5769606	Topsoil with grass roots containing glass (0-5cm) Light brown loamy sand with frequent gravel and rocks (5-24cm) Red / brown clay with gravel ontop (24-29cm)
7 - R6	50x50cm	21	279053	5769607	Topsoil with grass roots containing glass (0-6cm)

					Light brown loamy sand with frequent gravel and rocks (6-20cm) Red / brown clay with gravel ontop (20-21cm)
7 - R7	50x50cm	10	279057	5769617	Loose clayey silt (0-10cm) Orange brown clay
7 - R8	50x50cm	30	279057	5769612	Loose clayey silt (0-30cm) Orange brown clay
18 - RI	50x50cm	55	278888	5769576	Dark loam with frequent modern material (ceramic, glass, etc) (0-35cm) Light grey silt (35-50cm) Orange clay at 50cm
18 - R2	50x50cm	50	278893	5769576	Dark loam and topsoil, heavily disturbed with quartz gravel (0-36cm) Light grey silt with some gravel and quartz pebbles (36-50cm) Orange clay at 50cm
18 - R3	50x50cm	60	278898	5769566	Dark loam containing (0-40cm) Light grey silt (40-60cm) Orange clay at 60cm
18 - R4	50x50cm	50	278898	5769571	Dark loam containing ceramic (0-30cm) Light grey silt (35-50cm) Orange clay at 50cm
18 - R5	50x50cm	56	278898	5769586	Dark loam containing brick frags., glass, heavy gravel (0-36cm) Light grey silty with gravel (36-56cm) Orange clay at 56cm
18 - R6	50x50cm	50	278898	5769596	Dark loam topsoil containing ceramic frags, glass, domestic utensil end (0-35cm) Light grey silty sand (35-45cm) Light grey / brown sand with some quartz pebbles and rocks (45-50cm) Orange clay at 50cm
18 - R7	50x50cm	60	278898	5769581	Dark loam and topsoil, heavily disturbed with quartz gravel (0-38cm) Light grey silt with some gravel and quartz pebbles (38-60cm) Orange clay at 50cm
18 - R8	50x50cm	55	278898	5769586	Dark loam and topsoil, heavily disturbed with quartz gravel (0-40cm) Light grey silt with some gravel and quartz pebbles (40-52cm) Orange appearing at 52cm
83 - R1	50x50cm	70	278906	5769074	Dark loam topsoil (0-20cm) Grey / brown loam sand (20-30cm) Fine light grey sand compact (30-70cm) Orange / yellow clay
83 - R2	50x50cm	70	278906	5769084	Dark loam (0-20cm) Sandy grey brown (20-30cm)

					Light grey fine sand (30-70cm) Orange clay at 70cm
83 - R3	50x50cm	60	278896	5769064	Dark grey / brown ploughed topsoil (0-3cm) Dark grey brown sand (3-25cm) Light brown grey sand (25-35cm) Light grey sand (35-58cm) Orange clay (58-60cm)
83 - R4	50x50cm	64	278901	5769064	Dark grey brown loamy sand loose (ploughed) (0-10cm) Dark grey brown loamy sand (10-28cm) Light brownish grey sand (28-64cm) Orange clay at 64cm
83 - R5	50x50cm	38	278916	5769064	Dark grey loamy sand with rubbish (0-25cm) Light grey / brown sand (25-35cm) Orange clay (35-38cm)
83 - R6	50x50cm	55	278911	5769064	Dark loamy disturbed (0-20cm) Grey brown sand (20-35cm) Light grey fine sand (35-55cm) Orange clay at 55cm
83 - R7	50x50cm	65	278906	5769054	Loose dark grey loam / brown sand (0-6cm) Dark grey / brown loamy soft sand (6-24cm) Light brownish grey sand (24-50cm) Light grey sand with brown clay nodules (50-65cm) Orange clay at 65cm
83 - R8	50x50cm	59	278906	5769059	Loose dark grey loam / brown sand (0-7cm) Dark grey / brown loamy soft sand (7-28cm) Light brownish grey sand (28-54cm) Light grey sand with brown clay nodules (54-59cm) Orange clay at 59cm
83 - R9	50x50cm	59	278896	5769074	Loose dark grey loam / brown sand (0-7cm) Dark grey / brown loamy soft sand (7-28cm) Light brownish grey sand (28-54cm) Light grey sand with brown clay nodules (54-59cm) Orange clay at 59cm
83 - R10	50x50cm	69	278901	5769074	Loose dark grey loam / brown sand (0-11cm) Dark grey / brown loamy soft sand (11-31cm) Light brownish grey sand (31-69cm) Orange clay at 69cm
83 - R11	50x50cm	70	278906	5769079	Dark loam (0-20cm) Sandy grey brown (20-30cm) Light grey fine sand (30-70cm) Orange clay at 70cm

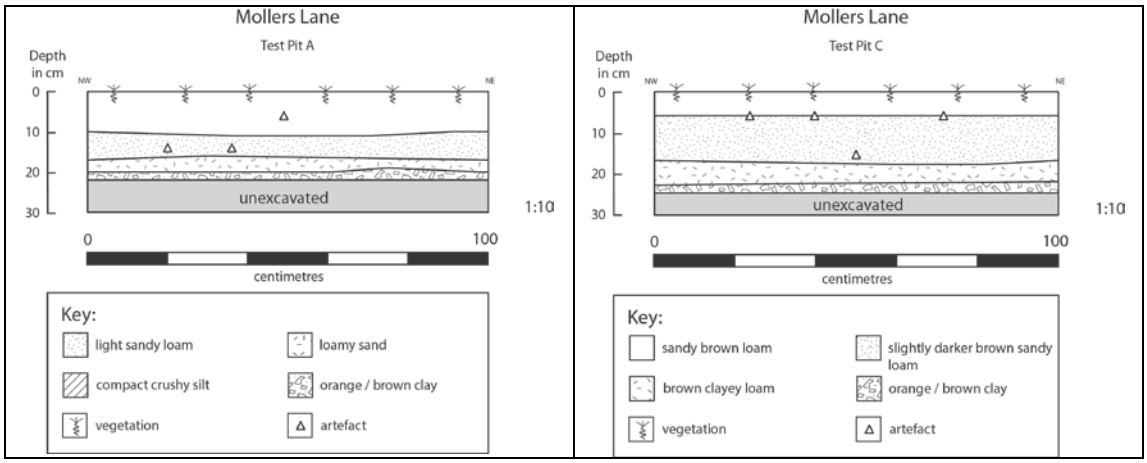
83 - R12	50x50cm	50	278916	5769074	Dark grey loamy sand with rubbish (0-20cm) Light grey / brown sand (20-50cm) Orange clay at 50cm
83 - R13	50x50cm	60	278911	5769074	Dark grey loamy sand with rubbish (0-18cm) Light grey / brown sand (18-60cm) Orange clay at 60cm
96 - R1	40x40cm	42	278857	5768976	
96 - R2	40x40cm	62	278857	5768971	
96 - R3	40x40cm	53	278848	5768969	Loose sandy loam (0-12cm) Compact dark grey sandy loam (12-30cm) Orange brown sandy loam- clayey (30-50cm) Orange brown clay (50-53cm)
96 - R4	40x40cm	75	278851	5768966	Loose sandy loam (0-10cm) Compact dark loam (10-30cm) Brown sandy loam (30-75cm) Orange brown clay at 75cm
96 - R5	40x40cm	100	278867	5768965	Loose dark sandy loam Fine sandy loam Orange / brown loam
96 - R6	Pit number not used	n/a	n/a	n/a	n/a
96 - R7	40x40cm	75	278857	5768954	Loose loamy sand topsoil (0-10cm) Grey loamy sandy with roots and some gravel (10-30cm) Dark grey compact loam sand (30-45cm) Light brown sand with small gravel and quartz pebbles (45-75cm) Orange brown clay at 75cm
96 - R8	40x40cm	82	278857	5768959	Loose loamy sand topsoil (0-10cm) Grey loamy sand (10-20cm) Compact dark loamy sand (20-50cm) Light brown sand (50-78cm) Yellow / brown clay (78-82cm)
96 - R9	50x50cm	58	278857	5768949	Dark grey loamy topsoil (0-20cm) Dark loam (20-43cm) Light brown sandy (43-55cm) *modern service pipe running through centre of pit- excavation stopped. Clay not reached.
96 - R10	50x50cm	85	278862	5768959	Dark loam topsoil heavily disturbed (0-20cm) Thin light grey silt loam (20-25cm) Light brown sand with some quartz grit and pebbles (25-85cm) Orange / brown clay at 85cm

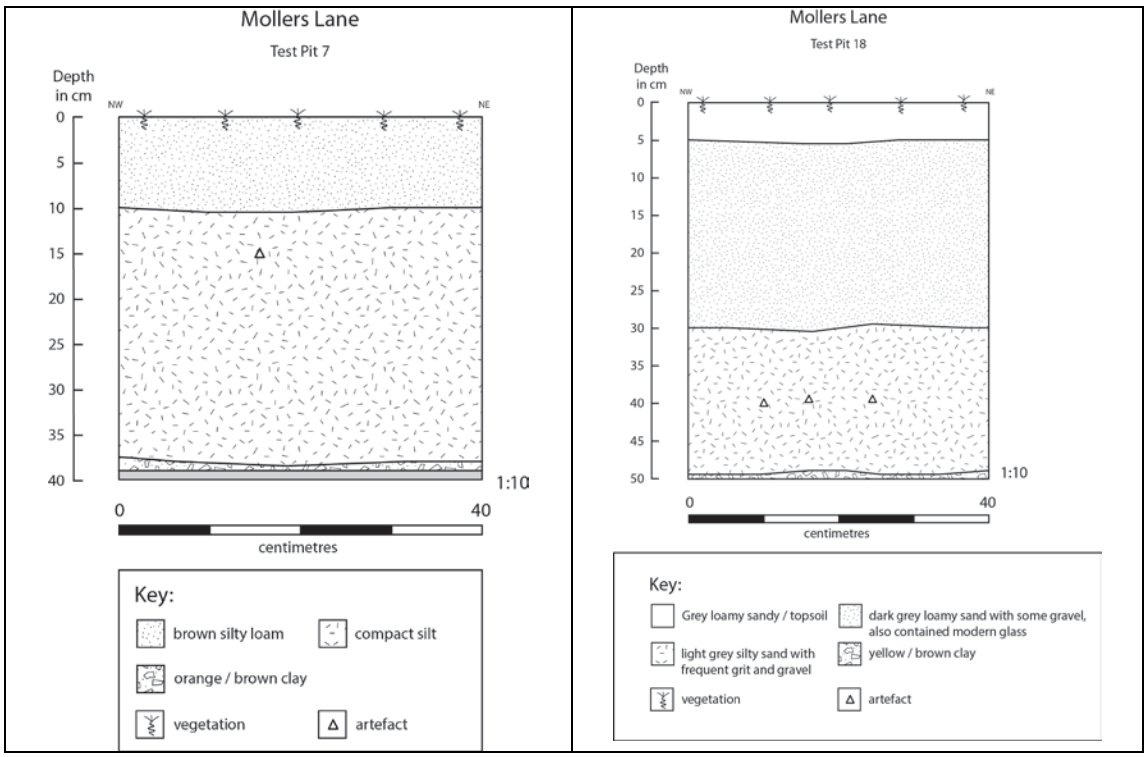
96 - R11	50x50cm	65	278848	5768964	Dark grey loamy topsoil (0-20cm) Light brown sandy loam (20-50cm) Light grey sandy (50-65cm) Orange brown clay at 65cm
96 - R12	50x50cm	43	278867	5768960	Concentrated area of redeposited clay fill, unable to readily excavated through and below this level
96 - R13	50x50cm	90	278867	5768955	Redeposited clay fill (0-25cm) Grainy grey loam fill (25-40cm) Frequent roots, dark grey loam with gravel (40-45cm) Brown / grey sandy with gravel and quartz inclusions (45-80cm) Light grey compact silty sand (80-90cm) Orange / brown clay at 90cm
96 - R14	50x50cm	42	278838	5768964	Dark grey loam topsoil (0-9cm) Dark loam (9-29cm) Light grey sand with quartz pebbles and gravel (29-42cm) Orange clay at 42cm
96 - R15	50x50cm	43	278843	5768964	Dark brown topsoil (0-10cm) Dark brown loam (10-29cm) Light grey sand, lightly oxidised staining (29-43cm) Orange clay at 43cm
96 - R16	50x50cm	51	278848	5768974	Dark brown topsoil (0-11) Dark brown loam (11-36cm) Light grey sand with oxidised orange stains (36-50cm) Pale grey fine sand, undulating over top of clay layer (50-51cm) Orange / brown clay at 51cm
96 - R17	50x50cm	50	278848	5768955	Dark brown loamy topsoil (0-20cm) Light-medium brown sand with quartz pebble inclusions (~4mm diameter) (20-50cm) Orange / brown clay at 50cm
96 - R18	50x50cm	50	278848	5768959	Dark brown loamy topsoil (0-20cm) Light-medium brown sand with frequent quartz pebble inclusions (up to ~10mm diameter) (20-50cm) Orange / brown clay at 50cm
96 - R19	50x50cm	90	278867	5768975	Dark loamy topsoil (0-15cm) Dark grey sandy loam (15-35cm) Light grey with some quartz pebbles (35-45cm) Grey / brown sand with pebbles (45-55cm) Light grey with frequent pebbles (55-70cm) Light grey fine sand with coffee rock appearing (70-90cm)

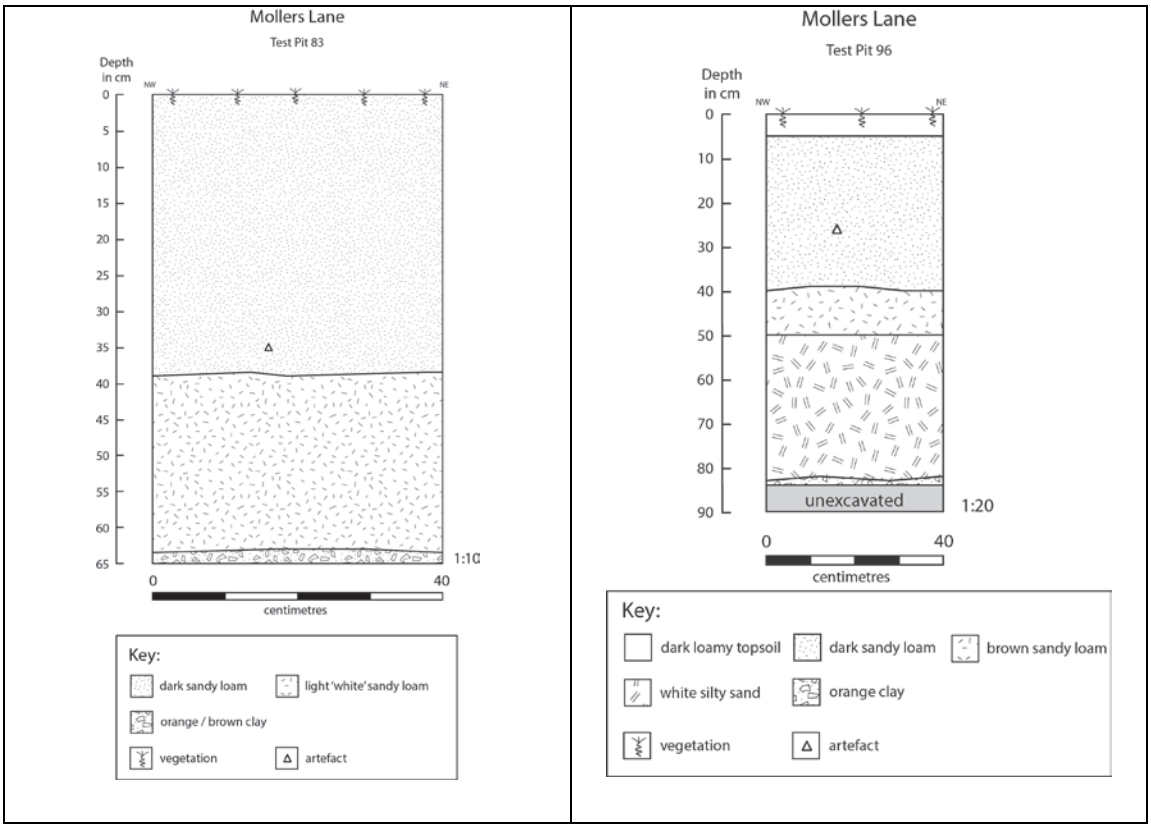
					Orange / yellow clay appearing at 90cm
96 - R20	50x50cm	90	278867	5768970	Loamy topsoil (0-10cm) Dark grey loam (10-30cm) Light grey / brown loam sand (30-40cm) Dark grey silt loam (40-50cm) Light grey silt sand with quartz pebbles (50-90cm) Orange / yellow clay with coffee rock
96 - R21	50x50cm	105	278877	5768965	Dark brown loamy sand (0-9cm) Light grey course sand lens (9-10cm) Dark brown humus, loamy sand (10-18cm) Light grey course sand lens (18-19cm) Brown fine silty sand (19-47cm) Greyish brown sand fine (47-66cm) Greyish brown sand fine with small clasts of indurated sand (66-93cm) Light grey sand, fine to medium coarse (93-105cm) Brown / yellow clay with some induarated sand inclusions at base
96 - R22	50x50cm	84	278872	5768965	Dark brown loam topsoil (0-11cm) Dark grey sandy loam (11-54cm) Orange brown sand (77-83cm) Orange brown clay with undulating sand, pebbles in upper 1cm (83-84cm)
96 - R23	50x50cm	101	278883	5768965	Black and yellow clay redeposited (0-7cm) Disturbed area of dark brown loam and sand (7-47cm) Light grey sand with frequent modern inclusions (47-69cm) (sample taken) Light brown sand (69-93cm) Light grey sand (93-101cm) Orange clay at 101cm
96 - R24	50x50cm	80	278872	5768975	Dark topsoil containing crushed (/) bluestone / gravel (0-5cm) Thin redeposited brown grainy containing crushed (?) bluestone / gravel (5-10cm) Brown grey loamy sand (10-30cm) Dark brown sand (30-50cm) Light brown grey mixture, loamy sand grainy with quartz pebbles (50-60cm) Light grey sand-clayey mixture with large coffee rocks appearing near base Yellow / orange clay

Appendix 8 – Test Pit Stratigraphic Drawings

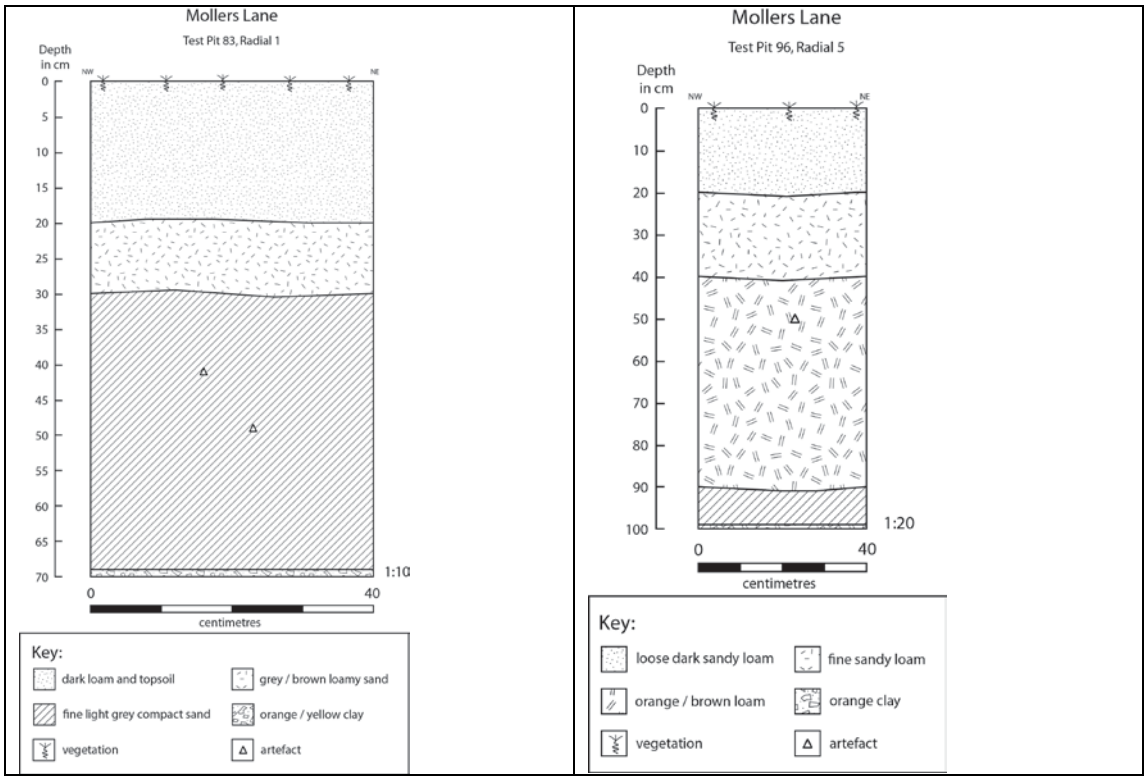
ARTEFACT BEARING TEST PITS

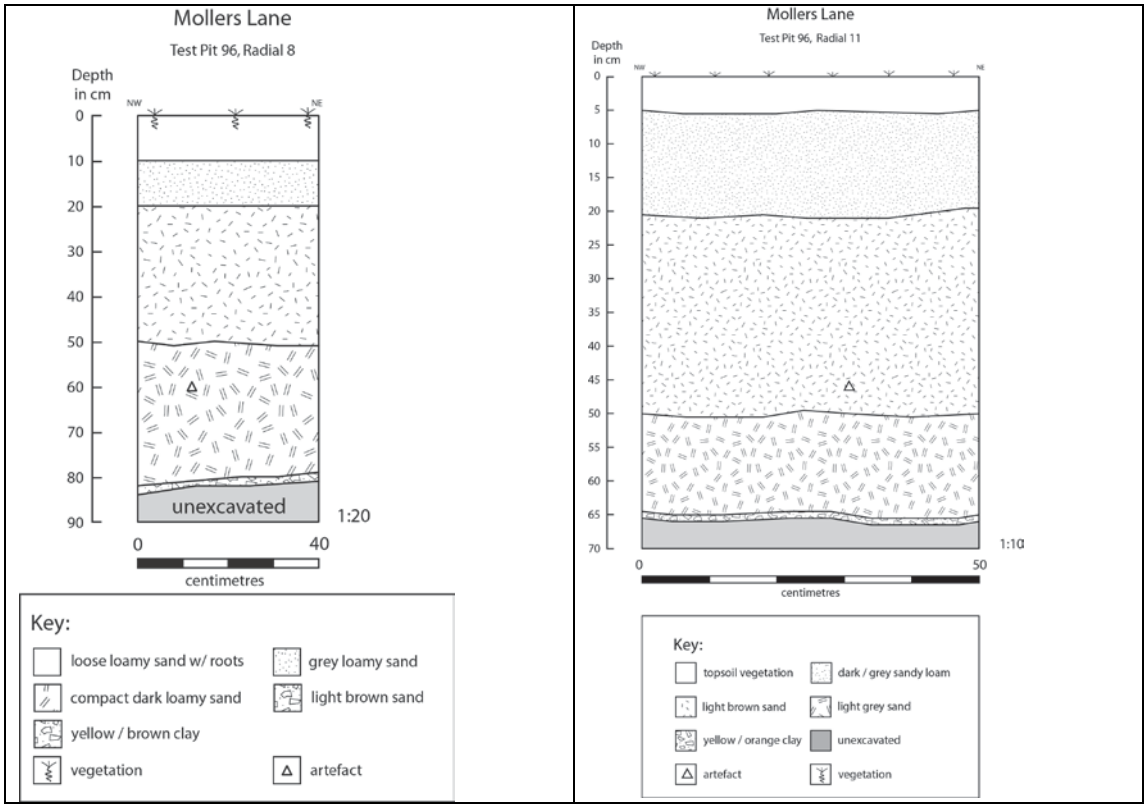





Mollers Lane
Test Pit 83
Depth in cm
NW
NE
0
5
10
15
20
25
30
35
40
45
50
55
60
65
1:10
0
40
centimetres
Key:
dark sandy loam
light 'white' sandy loam
orange / brown clay
vegetation
artefact
Mollers Lane
Test Pit 96
Depth in cm
NW
NE
0
10
20
30
40
50
60
70
80
90
unexcavated
1:20
0
40
centimetres
Key:
dark loamy topsoil
dark sandy loam
brown sandy loam
white silty sand
orange clay
vegetation
artefact

ARTEFACT BEARING RADIAL TEST PITS





Appendix 9 – Glossary

The following glossary presents definitions for words and terms that may have been used in the preceding TerraCulture report.

Archaeological site types or specific stone artefact types that have counterparts elsewhere in the world are usually defined according to their known or inferred use in Aboriginal Australia. The definitions of some terms are based on common usage or convention rather than literal meaning. Italicised words within any definition have also been separately defined.

AV: Aboriginal Victoria
Aboriginal: Referring to indigenous people and their descendants who occupied Australia at the time of European colonisation.
Aboriginal Archaeology: The scientific study of the material remains of past indigenous peoples. Aboriginal archaeology covers both the *pre-contact* (also known as prehistoric) and the *post-contact* period.
Aboriginal Archaeological Place: A location with material evidence of past activity by indigenous people. Activities such as the manufacture and use of stone artefacts have a recognisable archaeological signature. Other activities will have little or no material consequences and are regarded as being archaeologically invisible.
Aboriginal Archaeological Place Types: Aboriginal archaeological Places can be classified into generic types according to their context, fabric and probable function. Aboriginal Affairs Victoria currently recognises some 10-site types including stone artefact scatters, shell middens and scarred trees.
Aboriginal Artefact Scatter: A collection of Aboriginal artefacts usually distributed across the surface of the ground. Stone artefacts are a common component and can be found in association with organic remains, shell, ochre and charcoal. Artefact scatters are the material remains of past Aboriginal use of a location and are generally referable to technological and economic behaviour. They are also called surface scatters.
Aboriginal Burial: Aboriginal interment consisting of human skeletal remains. Aboriginal burials occur in a wide range of forms and physical contexts and may be found with grave goods.
Aboriginal Historic Place: Aboriginal historic places are the locations of events, places or place names that were recorded in historical documents or in oral tradition during the *post contact period*. Unlike Aboriginal archaeological sites, Aboriginal historic places do not necessarily retain any physical evidence of any former structures, activities or specific events.
Activity Area: The area that is under investigation. Also referred to a study area.
Archaeology: Conventionally, the scientific study of the material remains of past human activity.
Artefact: Any object created or modified by humans.
Artefact Scatter: A collection of artefacts usually distributed across the surface of the ground.
Assemblage: Archaeological term used to describe a collection of artefacts associated by a particular place or time and assumed to have been generated by a single group of people. An assemblage can be made from different *artefact* types.
Blade: A *flake* that is at least twice as long as it is wide.
CHMP: Cultural Heritage Management Plan
Coffee Rock: Brown deposits of indurated sands within a soil profile, comprised of humus and iron oxides.
Context: Refers to the place of artefacts or archaeological features with regards to time and space.
Core: A piece of stone from which other stone artefacts are made. In *freehand flaking* the *core* would be struck with a *hammerstone* removing *flakes* and other fragments of stone often referred to as *debitage*.
Core Tool: A *core* displaying signs of use.
Cortex: The weathered external surface of a stone. Cortex often identifies the origins and original form of flaked stone, e.g. river pebbles.
Deposit: A term used to describe buried archaeological material.

Excavation: The systematic removal of archaeological deposits using archaeological techniques.
Flake: A piece of stone detached by percussion or pressure from a *core*. The flake will usually display characteristic features such as a *platform* and *bulb of percussion*. The *core* will display a negative flake scar. These features assist in distinguishing between stone that has been altered through human agency and that which has been naturally shaped.
Ground Exposure: A measure of the quantity of sediment that would normally be buried beneath a modern land surface.
Ground Visibility: A term used to describe the area of the ground's surface that is visible during archaeological field surveys. Effective ground visibility refers to the actual area of ground visible during a field survey calculated as the area of ground inspected multiplied by the percentage of ground visibility.
HA: Heritage Advisor.
Hornfels: Fine grained metamorphic stone, created by contact between sedimentary stones and intrusive igneous masses to produce a stone which is quite hard and durable.
Industry: A single class of artefacts that are consistent in their form and that can be credited to a single group of people.
In situ: *In its original place.*
Layer: A recognisable band of material of varying thickness.
Platform: Face of core that is struck by a *hammerstone*, leaving remnants on both the *core* and the resultant *flake*.
Pleistocene: The geological period equivalent to the last ice age and preceding the *Holocene* from ca 2 million to 10,000 years ago. The late Pleistocene commonly refers to the last 40,000 years *BP*.
RAP: Registered Aboriginal Party
Quartz: A hard mineral that varies from white to blue in colour and in transparency from opaque to clear.
Quartzite: A metamorphic rock formed through the 'recrystallisation of quartz rich sandstone'.
Retouch: Secondary modifications to stone artefacts such as trimming or resharpening. Retouch often indicates use of a stone *flake* and therefore its identification of an actual tool (cf waste flake)
Salvage Excavation: The systematic documentation and recovery of an archaeological site prior to its destruction. Also known as rescue archaeology.
Scarred Trees, *Aboriginal*: Trees that were used as a source of bark to make canoes and other items. Bark was cut using a stone axe and then levered from the sapwood leaving a scar. The bark around the edge of this scar is called regrowth. Natural scarring is common on some trees and is often difficult to distinguish from scars made by Aborigines during the *pre-contact period*.
Scraper: A stone tool made on a *flake* or *core* with steep *retouch* along one or more edges.
Silcrete: A highly siliceous rock formed by the replacement of a parent rock (commonly sandstone) by silica in solution.
Spit: arbitrary quantity of excavated ground.
Stratigraphy: A geological term used to describe the sequence of vertical *layers* and *deposits* that comprise an archaeological site.
Stone Artefacts, *Aboriginal:* Stones that have been modified or used by Aboriginal people.
Subsurface Testing: The testing for buried archaeological material through manual or mechanical excavation.
Survey, *Pedestrian*: The act of looking for archaeological material. Also known as foot survey.

Appendix 10 - Site Gazetteer

VAHR Site Number	Place Name	Archaeological Place Type	Location GDA 94 Zone 55	Cadastral information
7721-1341	Mollers Lane 1 LDAD	Low Density Artefact Distribution	278767E / 5769047N	PC 353398, Parish of Moolap, County of Grant, Municipality of Greater Geelong.
7721-1343	Mollers Lane LDAD	Low Density Artefact Distribution	278856E / 5768963N	1/LP74593, Parish of Moolap, County of Grant, Municipality of Greater Geelong.