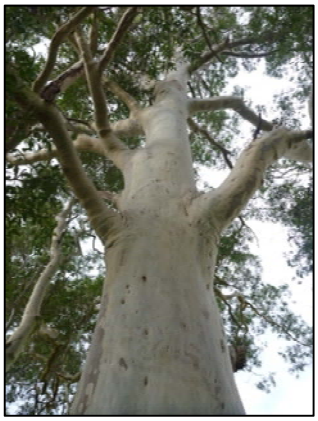

Mount Gilead Rezoning Campbelltown, NSW

Archaeological Assessment and Aboriginal Consultation

September 2013

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Report Register

The following register documents the development and issue of this document.

Issue No.	Notes/Description	Issue Date
v1	Draft for proponent comment	26 July 2013
v5	Draft for RAP comment	13 August 2013
v6	Final following RAP comment	17 September 2013

EXECUTIVE SUMMARY

The Proposed Development

The Mount Gilead project area comprises 210 hectares of gently undulating land located five kilometres south of Campbelltown city centre.

The project area is currently identified on the state government's Metropolitan Development Program (MDP). A rezoning application is to be submitted to the Department of Planning & Infrastructure (DoPI). The rezoning will follow the Proponent Instigated Local Environmental Plan (LEP) Rezoning Process. The process has achieved completion of Step 2 of the planning chart with the Minister's Gateway Determination made on 7 September 2012. The determination has identified that a heritage study is to form part of the next stage submission.

The primary aim of this investigation is to identify Aboriginal cultural heritage sites and areas of archaeological sensitivity or potential that are present within the study area.

The proposed Mount Gilead Rezoning will be assessed under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A ACT).

This report constitutes an archaeological Assessment report under the NSW OEH Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales.

Aboriginal Archaeological Sites/PADs in the Study Area

Six sites/PADs have been previously recorded in the Mount Gilead study area. These comprise:

- two artefact scatters (MGA12 and MGA13);
- one isolated find (MGIF3); and
- three potential archaeological deposits (MG PAD42, MG PAD43 and Mount Gilead Property PAD 52-2-3768).

Six previously unidentified sites were recorded in the course of the current (2013) survey of the Mount Gilead study area. These comprise:

- two artefact scatters (MGA26 and MGA27);
- a culturally modified tree (MGMT1); and
- three PADs (MG PAD44, MG PAD 45 and MG PAD 46).

Therefore a total of twelve recordings are relevant to this assessment - three artefact scatters (MGA13, MGA26 and MGA27), two isolated finds (MGA12 and MGIF3), one modified tree (MGMT1) and six PADs (MG PAD42, MG PAD43, Mount Gilead Property PAD, MG PAD44, MG PAD45 and MG PAD46).

Significance Assessment

Sites MGA13, MGA26 and MGA27 are considered to be of moderate scientific significance for their potential ability to provide information which is of value in scientific analysis and the resolution of potential research questions.

Sites MGA12 and MGIF3 are considered to be of low scientific significance at a local level.

One probable culturally modified tree (MGMT1) is assessed to have high scientific and cultural significance at a local level.

The extent, nature and integrity of potential archaeological deposits at MG PAD42, MG PAD43, Mount Gilead Property PAD, MG PAD44, MG PAD45 and MG PAD46 is unknown at present.

Statutory and Policy Context Implications for the Mount Gilead Rezoning Project

Aboriginal 'objects' as defined under the *National Parks and Wildlife Act 1974* have been identified within the Mount Gilead study area.

It is an offence to knowingly disturb an Aboriginal Object (or site) without an Aboriginal Heritage Impact Permit (AHIP).

Therefore, no development impact should occur within the identified site and PAD areas in the Mount Gilead study area until appropriate permits have been issued by OEH and cultural heritage mitigation works have been completed.

Recommendations

1. Where practicable, explore options in the detailed design stage to conserve *in situ* sites of moderate to high or greater significance, and particularly site MGMT1.

2. A program of archaeological subsurface testing be undertaken within all areas of PAD that are to be directly impacted by the project.

   The extent of the testing should be determined during detailed design, when the exact nature of development impact can be defined.

3. Subsurface testing without the need for an Aboriginal Heritage Permit (AHIP) is provided for under the NSW NPW Act. The *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* must be followed in this situation.

4. Surface artefacts have been recorded at MGA12, MGA13, MGIF3, MGA26 and MGA27.

   Salvage of surface artefacts should be undertaken prior to any impacts in these areas.

   Note: Salvage collection can only be undertaken with an AHIP.

5. Options for avoidance of impacts at MGMT1 should be explored during the detailed design phase.

   If impacts cannot be avoided, consultation should be undertaken with the Aboriginal community regarding options for impact mitigation.

6. All Aboriginal objects collected during site salvage and subsurface testing should be returned to site following development to an area of park or reserve.

7. Consultation should be ongoing with the registered Aboriginal parties throughout the life of the project and should include consultation on:

   i. Methodologies for any future investigations;

   ii. Finalisation of management and mitigation strategies subject to detailed design;

   iii. The provision for comments on a draft version of this report; and

   iv. The future care and management of recovered Aboriginal objects.

8. The unanticipated discoveries protocol at Appendix 3 should be followed in the event that Aboriginal objects or suspected burials are encountered during construction works at Mount Gilead.

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1. INTRODUCTION

1.1 Proponent

This report was commissioned by Old Mill Properties on behalf of Mount Gilead Pty Ltd and S&A Dzwonnik.

1.2 Explanation of the Purpose of the Investigation

The Mount Gilead project area is currently identified on the state government's *Metropolitan Development Program* (MDP). A rezoning application is to be submitted to the Department of Planning & Infrastructure (DoPI). The rezoning will follow the *Proponent Instigated Local Environmental Plan (LEP) Rezoning Process*.

The process has achieved completion of Step 2 of the planning chart with the Minister's Gateway Determination made on 7 September, 2012.

The determination has identified that a heritage study is to form part of the next stage submission.

Key points of the proposed development are:

- Mount Gilead has been on the government's urban release agenda for many years, and a portion of the site is already part of the committed urban footprint.
- Mount Gilead is in close proximity to the existing urban footprint.
- The government has identified Campbelltown as a future sub-regional centre. Mount Gilead presents an excellent opportunity to contribute significantly to achieving this critical mass and to boosting the economic growth of Campbelltown.
- The land currently identified for release in the MDP for Mount Gilead would support the development of 1400-1700 lots.
- Mount Gilead will ensure the protection and enhancement of biodiversity and cultural heritage values.

This report documents the results of an Aboriginal cultural heritage assessment and Aboriginal archaeological assessment of the Mount Gilead Rezoning proposal.

1.3 Subject Area

The project area is located five kilometres south of Campbelltown city centre and comprises 210 hectares (Figure 1.1. and Figure 1.2).

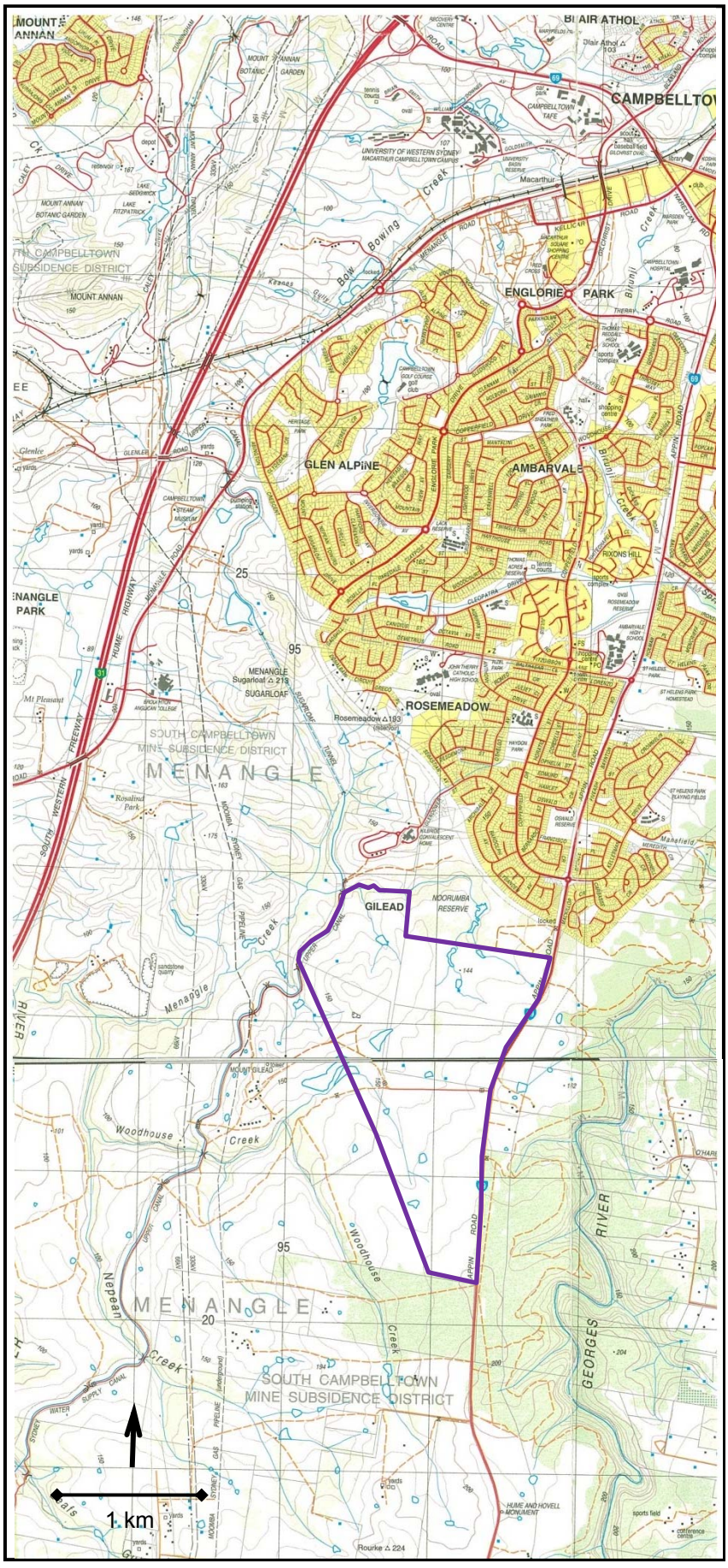

Figure 1.1 Location of Mount Gilead Project Area (purple)
(Base extracts of Appin and Campbelltown 1:25,000 topographic maps)

Figure 1.2 Location of Mount Gilead Rezoning Project (supplied by proponent)

1.4 Objectives of the Assessment

The primary aim of the investigation is to identify Aboriginal and historical cultural heritage sites and areas of archaeological sensitivity or potential that are present within the study area.

1.5 Project Framework

The proposed Mount Gilead Rezoning will be assessed under:

- Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A ACT).

This report constitutes an archaeological assessment report under the NSW OEH Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales.

1.6 This Report

1.6.1 Outline

This report:

- Describes the proposed development/works. (Section 2);
- Describes the previous archaeological work undertaken in the study area (Section 3);
- Describes the landscape context of the study area (Section 4);
- Describes the predictive model employed in the study (Section 6);
- Describes the methodology and sampling strategy employed in the study (Sections 7 and 8);
- Describes the results of the data review, field survey and Aboriginal consultation program conducted in the context of the assessment (Section 9); and
- Provides management measures and recommendations based on the results of the investigation (Sections 13 and 14).

1.6.2 Copyright

1.6.3 Restricted Information

Information in this report relating to the exact location of Aboriginal sites should not be published or promoted in the public domain.

No information provided by Aboriginal stakeholders in this report has been specifically identified as requiring access restrictions due to its cultural sensitivity.

1.6.4 Confidentiality

No information in this report has been classified as confidential.

1.7 Investigators and Contributors

Fieldwork was conducted by archaeologists Nicola Hayes and Deirdre Lewis-Cook.

This report was prepared by Nicola Hayes and Julie Broszniowski and edited by Rebecca Parkes and Kerry Navin.

Nicola has a Bachelor of Arts majoring in Archaeology, a Bachelor of Science and a Graduate Diploma in Archaeology from the Australian National University (ANU).

Deirdre has a Bachelor of Arts majoring in Archaeology and Palaeoanthropology from the University of New England (UNE) and a Master of Arts with Honours specialising in Biological Anthropology from the ANU.

Julie has Master of Arts in Archaeology from the University of Paris and a PhD from the University of Otago.

1.8 Aboriginal Consultation

The NSW OEH has produced a document *Aboriginal cultural heritage consultation requirements for proponents 2010* (NSW OEH 2010) that sets out the requirements for 'consulting with those Aboriginal people who can provide information about the significance of Aboriginal cultural heritage as part of the heritage assessment process that informs any AHIP application' (ibid:1).

The requirements apply to all activities throughout NSW that have the potential to harm Aboriginal *objects* or places and that also require an AHIP. The requirements specify four stages of consultation

Stage 1 - notification of project proposal and registration of interest

Stage 2 - presentation of information about the proposed project

Stage 3 – gathering information about cultural significance

Stage 4 – review of draft cultural heritage assessment report

See Appendix 1 for a consultation log and copies of correspondence.

1.8.1 Stage 1

An advertisement was placed in the:

- Campbelltown Advertiser on the 27th of March 2013; and
- Camden Advertiser on the 27th of March 2013.

Letters were sent to the:

- National Native Title Tribunal;
- Catchment Management Authority;
- NSW OEH;
- Native Title Services Corporation Ltd; and

- Office of the Registrar Aboriginal Land Rights Act 1983.

Following advice received from OEH, letters were sent to:

- Darug Custodial Aboriginal Corporation;
- Darug Tribal Aboriginal Corporation;
- Darug Aboriginal Cultural Heritage Assessments;
- Darug Land Observations;
- Darug Aboriginal Land Care Inc;
- Cubbitch Barta;
- Gunjeewong Cultural Heritage Aboriginal Corporation;
- Peter Falk Consultancy;
- Mr Scott Franks; and
- Gandangara LALC.

The closing date for expressions of interest was 7 May, 2013.

Registrations of interest were received from:

- Darug Aboriginal Land Care (DALC);
- Cubbitch Barta (CB);
- Darug Land Observations (DLO);
- Darug Aboriginal Cultural Heritage Assessments (DACHA); and
- Tharawal Local Aboriginal Land Council (TLALC).

1.8.2 Stage 2 and 3

Methodology and cultural information request was sent to registered groups on 16th May 2013.

Table 1.1 Responses to Submissions - Methodology

Date	Type of Contact (email, phone etc)	Group/Individual	Comment	Response
30/5/13	email	DALC	No objections to the proposed development	Noted
12/06/13	letter	DACHA	No objections to the proposed development	Noted
13/06/13	letter	CB	No objections to the proposed development	Noted

1.8.3 Stage 4

A draft copy of this report, accompanied by an invitation to provide comments, was provided to each of the registered stakeholders on 13 August 2013. One formal comment was received and the results and recommendations were discussed with each RAP during the field assessment and visit, no objections were made.

Response from Cubbitch Barta Native Title Claimants

Response received 17 September 2013 (see Appendix 1).

Table 1.2 Summary of Comment and Response

Comment	Response
The scarred tree should be preserved in situ	It is recommended that the scarred tree be preserved in situ, the aim of the proponent it to achieve this
Concept/master planning should consider negotiating conservation outcomes from other sites	It is recommended that other options to conserve sites will be explored
Test excavations under the Code of Practice should be carried out on all PAD areas	It is recommended that archaeological subsurface testing be undertaken within all areas of PAD
It is first choice to return all artefacts back to country preferably within a reserve area on site	An additional recommendation added for the return to country of artefacts (recommendation 6).
Good planning at this stage of a development will allow for good conservation outcomes for the future of Aboriginal Heritage	All Aboriginal heritage issues will be considered during the master planning stages and detailed design stages of the project.

1.8.4 Field Participation

Representatives from the TLALC and CB were invited to participate in the field survey of the study area. As a result Glenda Chalker (CB) and Neal Sampson (TLALC) participated; see Appendix 1 for participation forms.

A field visit was undertaken with representatives of the DALC, DLO and DACHA on 28th August 2013. Celestine Everingham (DACHA), Des Dyer and Shaun Lynch (DALC) and Ron Workman (DLO) participated.

2. DESCRIPTION OF DEVELOPMENT PROPOSAL

The development proposal involves the construction of approximately 1500 residential lots including supporting infrastructure such as services and roads. Several areas of parkland are planned, the location and extent of these will be determined following completion of all required environmental assessments.

The construction process will involve the clearing, stripping and excavation of areas directly impacted, any archaeological sites within these areas will be directly impacted.

3. PREVIOUS ARCHAEOLOGICAL WORK

3.1 Tribal Boundaries and Traditional Groupings

There have been numerous attempts at mapping the pre-contact and contact territories of Aboriginal people in the Sydney region (Capell 1970; Eades 1976; Kohen 1986, 1988; Mathews 1901a, 1901b; Ross 1988; Tindale 1974). The exact boundaries that existed between Aboriginal people in 1788 are impossible to reconstruct because of the lack of reliable data available from that period of time.

The primary data is limited as the early observers (members of the First Fleet and settlers) did not document how Aboriginal people perceived their own groups, or how they differentiated themselves from one another. Early anthropological work that was carried out is also not totally reliable. The population of Aboriginal people around Sydney was depleted by disease and aggression by Europeans and many of the survivors would have quickly relocated and/or probably joined other groups.

Most tribal boundary reconstructions place the Mount Gilead study area within the Dharawal (Tharawal) tribal area.

Tindale's map of tribal boundaries was constructed in 1940 from fieldwork and existing literature. The boundaries as defined by Tindale (1974) show the Tharawal's northern boundary in Botany Bay extending west to where it adjoins the Gandangara (Gandangarra) and south to just east of Picton then east to the coast above Woonona. Capell (1970) concluded that the territory of the Dharawal (Tharawal) started on the southern shore of Botany Bay and extended to Nowra and Jervis Bay. R.H. Mathews' wrote that 'The Dharook dialect ... was spoken at Campbelltown, Liverpool, Camden, Penrith, and possibly as far east as Sydney' (Mathews 1901a:151).

3.2 Aboriginal History

Few historical accounts mention or record details specific to the Aborigines who lived in the Campbelltown area.

Investigative field expeditions by early settlers to the Cumberland Plains and Cow Pastures are documented, including meetings with Aborigines in these areas. Typical are the references provided by Captain Tench in 1790 (Collins 1798) and Governor Macquarie in 1802 and 1815 (Macquarie 1956), which relate the observation of camp remains and notched trees, and actual encounters with ‘natives’.

Aboriginal observations of the initial incursion of European culture is evidenced from the Cowpasture area by three drawings of bulls which probably represent the original polled cattle which escaped to the area from the First Fleet (Lyon and Urry 1979).

References from the early explorers indicate that there was little contact between coastal and inland tribes. Tench (1793) noted that coastal Aborigines had no knowledge of the region west of what is now known as Parramatta.

Although no reliable appraisal of the number of Aborigines living in the Sydney area was made by early observers, it has been estimated that the population density for the region was between five and 10 individuals per square mile (Maddock 1972). With European settlement this population was quickly decimated, and in less than a century traditional Aboriginal lifestyle patterns in the Sydney area were virtually destroyed.

First white contact with the Aborigines of the area is attributed to two explorers – Ensign Francis Barrallier who crossed through the area in November 1802, and George Caley, a servant of Joseph Banks, who reached the area in December 1802.

In January of 1805, George Caley made an expedition to the Georges River area which he later described as ‘a Journey Towards Jugroy ’ (MacLeod Morgan 1955). The river itself prevented him from crossing, making impossible ‘the idea of visiting Jugroy’ which apparently lay to the east of the

river. Although the meaning of the possibly Aboriginal word '*Jugroy'* is never revealed, Caley does comment on the apparently extensive occupation of the area: 'By the marks or notches on the trees it is much frequented by natives'. This observation was made in forested land in the vicinity of Long Point.

The natural grassy understorey of Cumberland Plains woodland was cleared for the production of wheat and other cereals during the period of agricultural expansion in the Campbelltown district in the early 1800s (Benson and Howell 1990:75).

There was considerable conflict between Aborigines and Europeans in the region. In 1809 Young Bundle with Tedbury (the son of Pemmulwuy the legendary Aboriginal activist) were terrorising and stealing from travellers as well as driving sheep off properties around the Cook and Georges Rivers area (Liston 1988a; Keating 1996). There were more severe conflicts between 1814 and 1816 when the area was gripped by a severe drought (Perry 1963). This combined with the fact that Aborigines' staple food gathering and hunting areas were overtaken by European grazing and cultivation, caused Aborigines to raid crops, thus angering the farmers who retaliated. These conflicts between the increasingly dispossessed Aborigines and the expanding white colony indicates the importance of these fertile plains to Aboriginal subsistence (Officer 1984; Demkiw 1985).

Governor Macquarie advised caution and stated that the loss of part of ones' crop was a small price to pay for peace (Liston 1988a). Tensions however escalated and Aborigines and Europeans were killed in the ensuing struggles.

In 1816 Macquarie ordered the apprehension of Aborigines in the area and if they resisted, their death (Liston 1988a). There were three punitive expeditions, two of which had Aboriginal guides (variously claimed to be Tharawal or Dharug) which were mostly unsuccessful. In 1816 a regiment headed by Wallis perpetrated a massacre of fourteen Aboriginal men, women and children at Appin (Keating 1996; Liston 1988a).

Aboriginal people lived and sought refuge on some properties in the Campbelltown area, especially during the 1814 to 1816 conflicts. The literature records that Charles Throsby sheltered wanted Aboriginal men from authorities in 1816 and there are other references to European farmers being accused of interfering with a punitive expedition led by Wallis (Liston 1988a).

The Macarthurs were known to have Aboriginal people living on their property *Camden Park* and Macarthur's daughter is quoted as writing to a friend praising them and begging her friend to accept them (Liston 1988a). In fact, in 1818 land was marked out on the Macarthur estate for Aborigines who wanted to live there under his protection (Liston 1988a). Many Aborigines did choose to live on the estate. There is oral information from a Tharawal informant that her ancestors lived on Camden Park from 1820 to 1973, being employed by the Macarthurs in various capacities (Aboriginal informant, pers. comm. 1997). After 1816 the Tharawal stayed in the Cow Pastures. This was an area that was mainly used for grazing, so it was more sparsely populated than some neighbouring areas.

The traditional food economy appears to have been predominantly replaced by the 1840s, with most Aborigines being employed by whites on farms, or selling their traditional food items for European goods (Hassell 1902; Jervis 1935, 1949). In a report to a Select Committee on the Aborigines in 1845, a local Campbelltown J. P. reported that:

> 'For the last five to ten years they [the Aborigines] have been gradually decreasing, from the number of about fifteen to twenty, until none can be said to belong to this police district, as a tribe. Their death may be attributed to natural causes' (Select Committee on the Aborigines 1845).

Dairying became the major agricultural industry in the region after the wheat industry collapsed in the 1860s.

In spite of the enormous continuing changes which occurred in tribal culture after the arrival of Europeans some aspects of traditional life appear to have continued in Sydney. Macarthur describes a corroboree which took place on his property (Liston 1988a) and Mathews documented ceremonies in the late 1800s. There is another mention of a ceremony taking place at Denbigh near Camden in

the 1830s (Kohen 1985), and a corroboree involving over 400 individuals at the same place in the mid 1820s (Hassell 1902).

3.3 Material evidence of Aboriginal land use

3.3.1 Regional overview

The Sydney Basin has been the subject of intensive archaeological survey and assessment for many years. This research has resulted in the recording of thousands of Aboriginal sites and a wide range of site types and features. The most prevalent sites or features are isolated finds, open artefact scatters or camp sites, middens, rock shelters containing surface artefacts and/or occupation deposit and/or rock art, open grinding groove sites and open engraving sites. Uncommon site types include scarred trees, quarry and procurement sites. Rare sites include burials, stone arrangements, carved trees, and traditional story or other ceremonial places.

Archaeological studies in the Sydney Basin have generated hundreds of reports and monographs and a number of academic theses. This database has been used to propose varying models regarding regional occupation sequences, exploitation patterns, regional characteristics in site content and site location parameters.

Aborigines have lived in the Sydney region for at least 20,000 years (Stockton and Holland 1974). Late Pleistocene occupation sites have been identified around the fringes of the Sydney Basin at Shaws Creek (13,000 years BP [Before Present]) in the Blue Mountain foothills (Kohen 1985), at Mangrove Creek (11,000 BP) and at Loggers Shelter (Attenbrow 1981). Nanson et al (1987) have suggested that artefacts found in gravels of the Cranebrook Terrace indicate Aboriginal occupation over 40,000 years ago; however, there is some doubt as to the contextual integrity of these artefacts.

The majority of both open and rock shelter sites in the Sydney region date to within the last 3,000 years. A similar trend in occupation age occurs in dated deposits in NSW coastal sites. This has led many researchers to propose that population and occupation intensity increased from this period (Attenbrow 1987; Kohen 1986; McDonald and Rich 1993; McDonald 1994). The increased use of shelters postdates the time when sea levels stabilised after the last ice age around 5,000 years ago (the Holocene Stillstand). Following the stabilisation of sea levels, the development of coastal estuaries, mangrove flats and sand barriers would have increased the resource diversity, predictability, and the potential productivity of coastal environments for Aborigines. In contrast, occupation during the late Pleistocene (prior to 10,000 years BP) may have been sporadic and the Aboriginal population relatively small.

The stone technologies used by Aborigines within the Sydney Basin have not remained static and a sequence of broad scale changes through time has been consistently identified. This is known as the Eastern Regional Sequence and can be applied with various degrees of success and allowances for regional differences, to sites throughout eastern seaboard of Australia.

Recent reviews of the Eastern Regional Sequence have called into question the accuracy of the divisions, pointing out that many of the diagnostic elements, such as bipolar flaking and microlith production, cross the temporal boundaries and vary across regions (Mulvaney and Kamminga 1999). As an alternative, the broad technological changes which were associated with the introduction of a microblade based technology and a smaller tool kit are identified as the ‘Late Phase’ or the Australian Small Tool Phase, which began around 5000-6000 years ago.

This phase was characterised by the successive introduction of different technological innovations that spread or appeared in differing parts of the continent at different times. Tools with a ground edge such as stone hatchets first appear at least 4300 years ago. The occurrence of microblades and retouched microliths dates to about 3000-4000 years ago in the Sydney region. From about 2000 years ago bipolar flaking of quartz begins to increase within southeastern Australian sites, and intensifies over the last 1000 years. A corresponding trend is the disappearance of microblade technologies over this time; however both trends are uneven and are not consistent across and within regions. The Elouera, a thick backed blade, resembling an orange segment appeared around about 1600 years ago. Shell fishhooks used for line fishing first appeared before 700 years ago, and possibly as early as 1100 years (Mulvaney and Kamminga 1999).

Most of the Aboriginal sites which have been located in the broader Campbelltown area were recorded in the context of archaeological surveys. These surveys have been focused on rock art sites and have been conducted by dedicated amateurs, academic researchers, and archaeologists for development impact assessment work. Site types recorded in the course of these studies include rock shelters with art and/or cultural deposit, grinding grooves, artefact scatters, isolated finds, scarred trees, and burials.

3.3.2 Mount Gilead

There have been a number of archaeological surveys conducted over the past thirty five years within, and including parts of, the Mount Gilead study area.

In 1970-71, the Sydney Prehistory Group formed with the aim of recording Aboriginal sites in the sandstone topography around Campbelltown. The group's interest quickly focused on rock art sites and after thirteen years of operation the group published a report with sixty four site recordings (SPG 1983). Four shelter sites (NPWS Site Nos: 52-2-20, 52-2-22, 52-2-23 and 52-2-24) were recorded on Woodhouse Creek [in the Mount Gilead study area] by the Sydney Prehistory Group.

Haglund (1974) surveyed a number of sections of the Moomba-Sydney-Newcastle Gas Pipeline, including a section which traversed the Mount Gilead property (Haglund 1974). Haglund noted that the eastern (main) arm of Woodhouse Creek has 'steep sides with many shelters, several quite large. Five shelters in the area have been found to contain examples of Aboriginal art but none of these is close enough to the easement to be in real danger' (Haglund 1974:6).

Greer and McIntyre (1983) surveyed an area of a proposed sand extraction site 500 x 300 m and a 2.5 km access route on the Mount Gilead property. No archaeological sites were located during this survey.

Officer (1984) analysed the art in the sites that had been recorded on Woodhouse Creek by the Sydney Prehistory Group. This analysis was conducted as part a research for a BA honours thesis.

In 1992, Heffernan and Klaver surveyed two alternative routes for water pipeline easements which formed part of the proposed Macarthur Water Quality Project. The easement was approximately 9 km long and was to be placed immediately adjacent and to the east of the existing Moomba-Sydney natural gas pipeline easement between Ousedale Creek (Appin) and a point northwest of Menangle Sugarloaf Hill (Rosemeadow). Six potential archaeological deposits (PADs) and three isolated finds were located along the Moomba-Sydney Natural Gas Pipeline Easement. One of the isolated finds identified by Heffernan & Klaver is located in the Mount Gilead study area.

In 1994, Tessa Corkill conducted a survey at Mount Gilead, locating three open artefact scatters, three isolated finds and three PADs.

The Eastern Gas Pipeline traverses the Mount Gilead study area. The pipeline easement would have been subject to archaeological survey however few reports have been prepared for the Eastern Gas Pipeline assessments, and there is no report for the Mount Gilead section of the easement.

A small area near the southern extent of the Mount Gilead property was inspected in 2002 by Navin Officer Heritage Consultants (NOHC) in the context of an assessment of Westcliff Colliery longwall panels. No sites were identified in the study area (NOHC 2002a).

The Mount Gilead study area was included in the *Campbelltown Local Government Area Aboriginal Heritage Study* completed in 2002 by NOHC. This study identified all known Aboriginal sites in the Campbelltown LGA and mapped the archaeological and Aboriginal heritage sensitivity of the LGA. Mount Gilead was included in the Campbelltown Aboriginal Heritage Study (NOHC 2002b).

A survey for proposed gas wells and pipelines was conducted in the Mount Gilead property in 2005 on behalf of Sydney Gas. The results of this survey are not available as the report has not been completed, however, Glenda Chalker (Cubbitch Barta NTCG) has kindly provided information about the location of many of the sites recorded in the course of the Sydney Gas survey.

In 2006, NOHC conducted a survey at Mount Gilead. The study area included the current project area as well as a further 400 ha of the Mount Gilead estate. A total of twenty-nine Aboriginal sites, including eleven open scatters, eleven isolated finds, one rock shelter with Aboriginal art and five rock shelters with Aboriginal art and potential archaeological deposit, and forty-three areas of potential archaeological deposit, including thirty-eight rock shelters and five open sites, have been identified within the study area.

Austral Archaeology (2009) undertook an assessment of the proposed Appin sewerage scheme. Three PADs were identified including one, Mount Gilead Property PAD, in the current study area (described below).

Oliver Brown Consulting Archaeology (OBCA 2011) undertook a Due Diligence Aboriginal Cultural Heritage Assessment of track upgrades and barrier installation at Noorumba Reserve, located immediately north of the current study area. The assessment involved a full survey that located 216 artefacts leading to the description of five open artefact sites. These were mapped with fixed boundaries, however, it was noted that an area of high archaeological potential (probable subsurface artefacts) existed in a zone basically along either side of Menangle Creek that ran through part of the Reserve. One of these sites, NR_OC5, is recorded on AHIMS as occurring within the current study area, however, the OBCA 2011 report plots the site within the reserve and not within Mount Gilead.

In November, 2007, AHMS undertook an Aboriginal Heritage Archaeological Assessment of Reserve 4 as well as Noorumba Reserve. The assessment was conducted for the purposes of providing CCC with advice regarding the management of any Aboriginal sites, objects or places that may be affected by the proposed development works.

The 2007 assessment of Reserve 4 identified an artefact scatter, dominated by broken silcrete flakes, located on the unsealed track in the northwest part of the study area. The identification of the scatter, combined with the presence of significant Aboriginal sites within the Noorumba Reserve, indicated that the study area was likely to have moderate archaeological potential (OSC1).

Archaeological and Heritage Management Solutions (AHMS) (2010) undertook archaeological test excavation on OSC1 (AHIMS #52-2-3624). This site is not within the current study area however the site is approximately 500 m north of the study area and is the closest archaeological subsurface investigation undertaken to the study area and within similar landforms that exist within the current study area.

The excavation recovered 291 artefacts (dominated by silcrete, but with representations of tuff, chert, quartz, fine grained siliceous and quartzite), 251 (86%) of which were obtained from the open area excavation located in the southwest corner of the study area. Artefacts were found throughout the soil profile, but predominantly in the A1 and A2 horizons (which were located at varying depths across the study area). The majority of artefactual material (90%) appeared to come from the natural (non-fill) soil profile.

3.4 AHIMS Search Results

A search of the OEH AHIMS was conducted for the area within the following (MGA/GDA) map grid references:

Eastings: 295300 to 296800

Northings: 6220200 to 6222800

Two Aboriginal recording are listed within the Mount Gilead Rezoning study area on the OEH AHIMS. These are sites 52-2-3768-Mount Gilead PAD, and NR OC5.

However, although site NR OC5 is recorded on AHIMS as occurring within the current study area; the associated archaeological report (OBCA 2011) plots the site within the reserve and not within the Mount Gilead study area.

A copy of the AHIMS search is provided in Appendix 2.

3.5 Previously Recorded Sites

In addition to the AHIMS listed site, 52-2-3768, there are five previously recorded sites/PADs within the study area that do not appear on AHIMS (Table 3.1).

These sites/PADs were recorded by Corkill in 1994, Sydney Gas Survey in 2005 and NOHC in 2006.

The sites are MGA12, MGA13, MGIF3, MG PAD42 and MG PAD43.

Table 3.1 Previously Recorded Sites

Name	Code	Location MGA	Site Type
Mount Gilead Aboriginal 12	MGA12	295756.6222369	isolated find
Mount Gilead Aboriginal 13	MGA13	295584.6222544	artefact scatter
Mount Gilead Isolated Find 3	MGIF3	295835.6222010	isolated find
Mount Gilead PAD 42	MG PAD42	295749.6222832	PAD
Mount Gilead PAD 43	MG PAD43	295784.6221809	PAD
Mount Gilead Property PAD 52-2-3768		296270.6221717	PAD

3.6 Existing Predictive Models

An archaeological assessment of the proposed "Wilton Park" residential development was undertaken in 2002 (NOHC 2002c). This project area is located nine kilometres southwest of Mount Gilead and displays typical transitional zone landforms including steep sided tributary gullies in sandstone, and adjacent, elevated remnant plateau land surfaces on shale.

The Wilton Park study further refined the predictive model for transitional zone landforms. The sensitivity of high gradient sandstone slopes and associated riparian corridors was confirmed with the recording of rock shelter sites including art and archaeological deposits. On the elevated and shale-based terrain, it was found that higher artefact densities were associated with drainage lines, either in their upper reaches where they have less developed channels, or up-slope of the break-of-slope marking the edge of tributary gullies and gorges.

These site location patterns remain consistent with preferences identified for the Cumberland Plain. Here, artefact discard is mostly associated with locally elevated, well drained and roughly level ground in relative proximity to a substantial freshwater source. In contrast to the mostly gentle gradients of the Cumberland Plain, where such micro-topographic contexts are typically close to tributary streams, the steep gullies of the transitional zone mean that the desirable camp sites are situated adjacent to the break-of-slope, and above the incised gullies.

There is inadequate data from subsurface investigations to predict the extent to which such sites may extend upslope of the break-of-slope. It is known from the lower gradient topographies of the Cumberland Plain that artefact occurrences rarely occur in high densities more than 100 m from riparian zones. A consequence of this is that the crests of spurs or ridgelines tend not to be a focus for occupation, except for specialised sites such as stone quarries (NOHC 2002b). By way of contrast, where terrain is characterised by higher gradients and more elevated watersheds, the low gradients afforded by crests and basal slopes are more likely to contain sites and in higher artefact densities. This pattern relates both to the proximity to water sources and the use of crests as access

routes. This pattern has been established from investigations on the Woronora Ramp (Navin Officer 1997, 2002b).

In November, 2007, AHMS undertook an Aboriginal Heritage Archaeological Assessment of Reserve 4 as well as Noorumba Reserve. The assessment identified an artefact scatter, dominated by broken silcrete flakes, located on the unsealed track in the northwest part of the study area. The identification of the scatter, combined with the presence of significant Aboriginal sites within the Noorumba Reserve, indicated that the study area was likely to have moderate archaeological potential (OSC1).

The site prediction model for this part of the Cumberland Plain was reconsidered during the 2010 archaeological test excavation on OSC1 (AHIMS #52-2-3624) by AHMS. AHMS concluded that the southwest Cumberland Plain retains a number of significant differences to the northwest Cumberland Plain in terms of site distribution. The former being located within the upper catchment of a large hydrological system, the latter situated in the lower catchment of the same system.

AHMS suggest that studies at Oran Park and Turner Road, and at Hoxton Park Road, all indicate that elevated areas within 250 m of creek lines are of more significant archaeological value in the southwest region of Sydney. Such areas are above the flood zone and erosive power of the hydrological system and are more prevalent than lower slopes in this region.

The investigations presented within AHMS 2010 further correlate with this model, identifying a large artefact scatter on an elevated terrace/gentle slope over 100 m from an unnamed tributary in Noorumba Reserve. Such an area in the northwest Cumberland Plain would be unlikely to identify archaeological material, certainly of this size. Therefore, based on this report and other studies in the area, it would be inaccurate to superimpose the northwest Cumberland Plain models onto the southwest region. Rather, it would appear that the southwest Cumberland Plain retains its own archaeological signature, which is focussed on elevated areas and extending a greater distance from the various tributaries.

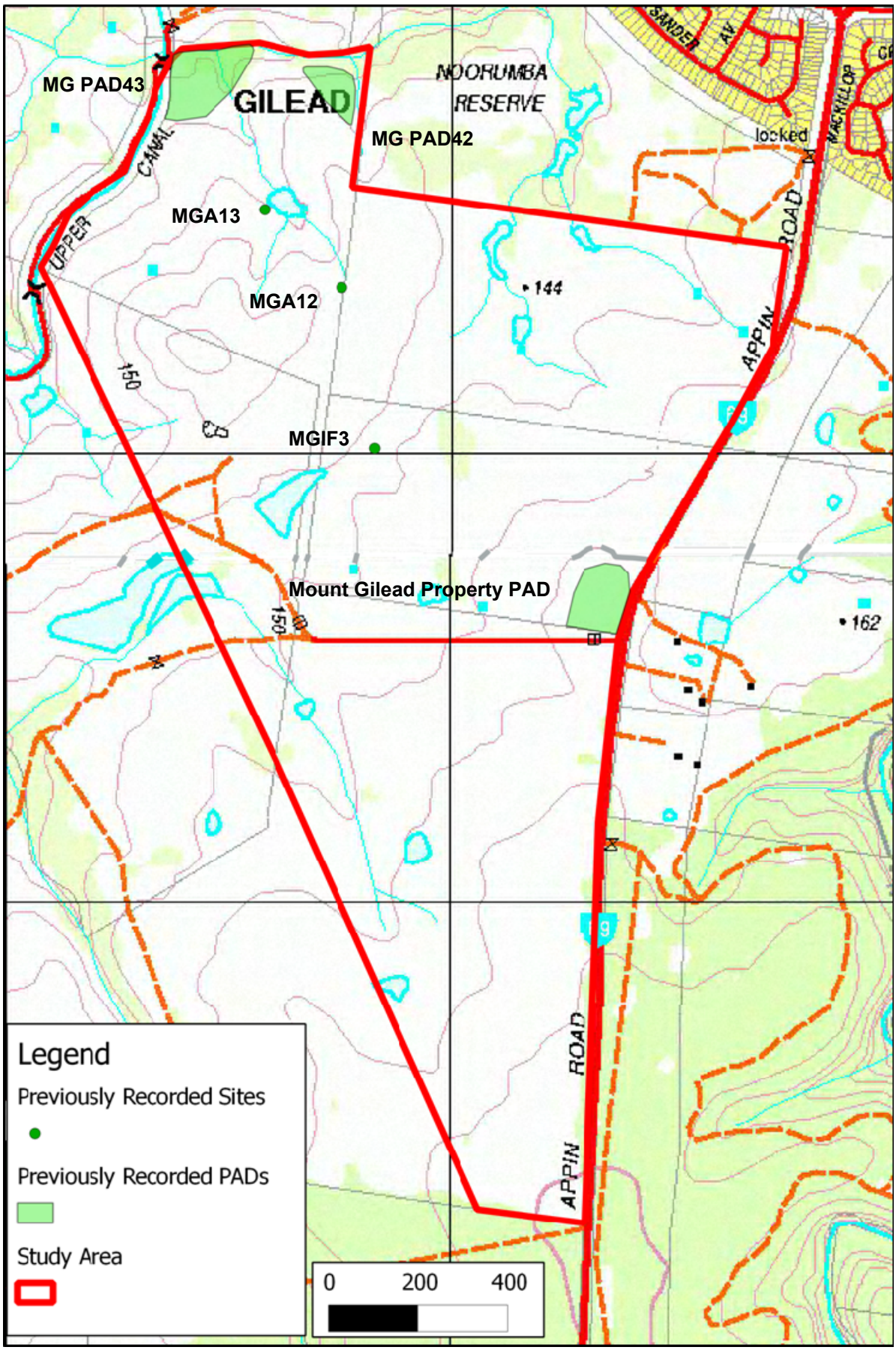

Figure 3.1 Locations of previously recorded Aboriginal sites within the study area (Base extracts of Appin and Campbelltown 1:25,000 topographic maps)

4. LANDSCAPE CONTEXT

4.1 The Sydney Basin

The Mount Gilead study area is located within the Sydney Basin, a large sedimentary basin that dominates the NSW central coast and its fluvial catchments. The Basin consists of various approximately horizontally bedded sedimentary facies that accumulated during a marine transgression at the end of the Late Palaeozoic glaciation, and which was subsequently followed by a marine regression during the Late Permian and Triassic.

There are two geological and structural divisions within the Sydney Basin which are relevant to the Mount Gilead study area - the Cumberland Plain and the Woronora Ramp.

The surface of the Cumberland Plain is predominantly shales of the Wianamatta Group which have weathered to form low to moderately-graded and predominantly undulating landscapes. Surrounding the plain are extensive exposures of the underlying Hawkesbury sandstone, which is relatively resistant to erosion compared to the overlying shales. The Hawkesbury sandstones support steep slopes, minor overhangs and often extensive vertical, or near vertical, escarpments. Sandstone topographies dominate where drainage lines have down-cut through shales to lower valley levels, or where structural uplift has elevated extensive sandstone plateau which have subsequently become incised by fluvial erosion.

Where the Cumberland Plain and the Woronora Ramp come together, there is a transitional zone where the landscape includes features of both divisions. The Mount Gilead study area falls within this zone.

4.2 The Transitional Zone

The Cumberland Plain and the Woronora Ramp grade into each other across a relatively narrow zone in which the landscape takes on features of both these major structural units. From a geological point of view, it could be argued that all of the incised terrain to the west of the Georges River represents a transitional zone due to the presence of Wianamatta Shales on the remnant plateau and ridgeline crests. Moving west from the River, these areas become larger and coalesce, whilst the intervening incised sandstone drainage lines become shallow and give way to open and moderately graded valleys formed on shale bedrock.

However, from an archaeological perspective, the transition between these two landforms is most meaningful when the dominant variable of bedrock geology is combined with topographic variables. Critical factors that define the transitional zone are the change:

- Between sandstone and shale in creek beds;
- In valley morphology between: narrow, moderate and steeply graded valleys, situated between distinct break-of-slopes and dominated by sandstone; and shale based, wide and open valleys, with moderate low gradient slopes, with no break-of-slope, and
- In ridgeline topography between: relatively flat remnant plateau land surfaces located between distinct break-of-slopes; and broad gently graded or rounded crests with relatively distinct watersheds.

4.3 Mount Gilead

The Mount Gilead study area is characterised by the low undulating landscape of the transitional zone. A majority of the study area is on a low northwest facing slope extending from the southern tip of the study area (Figure 4.1). The eastern corner is dominated by a relatively high steep hill name locally as One Tree hill, as there is a lone fig tree at its peak.

The study area is crossed by several tributaries of Woodhouse Creek (south), Menangle Creek (north) and the northern boundary of the study area is this creek as well as the Naroumba Reserve. The study area is placed almost halfway between both the Nepean and Georges Rivers at a location where they are the closest (Figure 4.1).

Both shale and sandstone bedrock exposures are visible. The soil profile, where extant, is typical of the region being a shallow, up to 30 cm sandy or gravelly loam overlaying dense clay.

The study area is dominated by pasture grass with a few remnant stands of trees located along draining/creek lines and in the centre of the study area.

4.4 The Impact of Land use Practices on the Archaeological Record

The Mount Gilead study area has undergone varying degrees of landscape disturbance, primarily as a result of its use for agricultural purposes for almost two hundred years. The area is substantially cleared of original vegetation and is now predominantly under pasture grass. Wheat was produced on the property in the past. Most of the property has been ploughed. Drainage lines have been dammed and this has resulted in changed hydrology and associated erosion. Material (soil, rock, wood) has been has been bulldozed into spoil piles along, and down, many of the creek banks. Service easements (gas, electricity) and unformed roads and tracks traverse the property.

The clearance of vegetation has a variable impact on archaeological sites, depending on the clearing methodology and type of site. Scarred trees will be destroyed. Surface sites such as stone arrangements and ground relief features would be unlikely to survive clearing activities. Early nineteenth century clearing methods involving fire, hand cutting, ringbarking and specific stump removal would have had the least direct impact. Disturbance would have occurred to the subsoil where rootstock and stumps were removed. Mechanised, more intensive and faster clearing methods, such as those employed today and from the mid-twentieth century, would have caused more widespread subsoil impact and consequential dispersal of artefacts and disturbance of archaeological deposits. It is unlikely however that the direct effects of vegetation clearance would destroy most subsurface deposits. Impacts would have been limited to the dispersal and disturbance of artefactual material.

The indirect impacts of clearing would have been locally more severe, such as increased land surface run-off and sedimentation. Bank erosion would have destroyed riparian sites and increased sedimentation rates would have buried and concealed valley floor sites.

The impacts of agriculture and the establishment of agricultural pastures are potentially substantial. Surface site features such as stone arrangements and ground relief will not survive repeated tilling. All forms of ploughing and tilling have the effect of dispersing and disturbing artefacts within the plough zone. In many open archaeological sites the vertical position of artefacts within the soil profile is unimportant due to natural post-depositional movement. The main impact of ploughing in these contexts is damage to artefacts from actual impact, and the spatial displacement of artefacts within a horizontal plane. However, depending on soil and sediment type, some archaeological deposits retain vertical integrity and may have stratigraphy that relates to older and younger features of occupation. In these cases, ploughing will destroy the stratigraphic integrity of the deposit within the plough zone.

The indirect impacts of ploughing and cultivation include the sedimentation of sites located down-slope and downstream, and downstream erosion. Due to the down-slope movement of eroded soil sediments from upper slopes a variably thick layer of historic sediment deposition is frequently encountered on basal slopes and valley floors. This overlies the original pre-European land surface and has the effect of concealing archaeological sites and preventing their detection during surface survey. With the exception of stream-bank sites which are vulnerable to erosion from increased run-off and peak-flow rates, the secondary deposition of sediments from agriculture often protects Aboriginal archaeological sites from further impact, provided they fall below the plough zone.

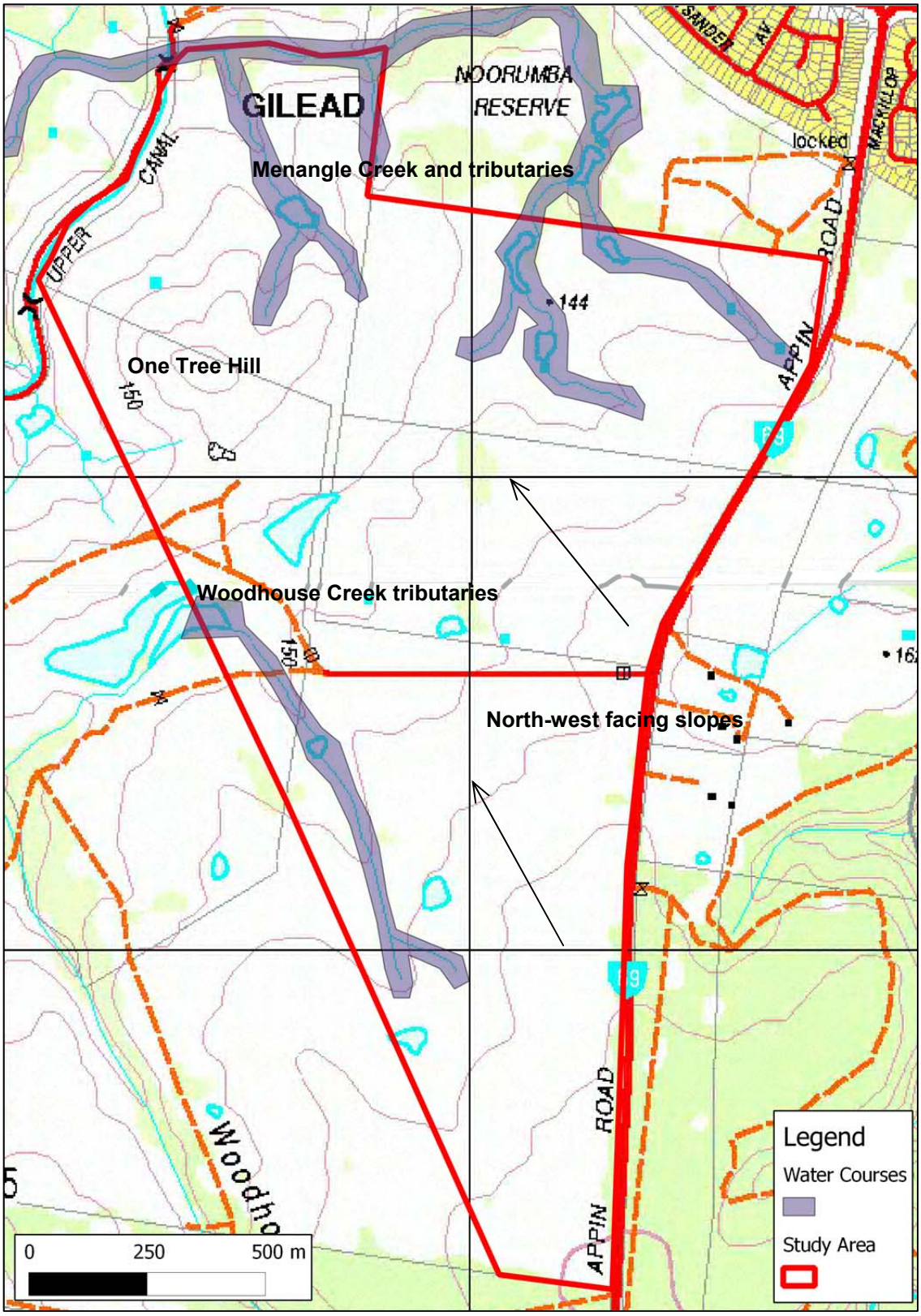

Figure 4.1 Landscape features within the Mt Gilead study area
(Base extracts of Appin and Campbelltown 1:25 000 topographic maps)

5. ABORIGINAL LAND USE

The Mount Gilead landscape is representative of the transitional landscape between the Woronora Ramp and the Cumberland Plain. The drainage lines are characterised by a narrow margin of Hawkesbury sandstone, with the surrounding slopes and crests presenting a typical undulating Cumberland Plain topography. The eastern bank of the Nepean River upstream of its confluence with Menangle Creek represents the last contact of this River with the sandstone of the Woronora Ramp.

Very few archaeological excavations have been undertaken in this transitional zone or within the southwest Cumberland Plain. Archaeological surveys have focussed on the creek lines and sandstone outcrops to the west.

Both Mount Gilead and the Noorumba Reserve to the north have been the focus of archaeological survey several times and one subsurface excavation has been undertaken just outside of the reserve that indicated that the site location models for this part of the Cumberland Plain and by inference the transitional zone may differ from what is typical for the rest of the Cumberland Plain.

Like most of southeast Australia the availability of water is the driving force behind the past use of the land, where there is water readily available there will also be many resources available. Mount Gilead is located almost halfway between both the Nepean and Georges Rivers at a location where they are the closest, which would ensure that this area had or was close to rich exploitable recourses at all times. The location of camp sites then may not have concentrated as close to water as you would normally expect but may have been located in more favourable living locations, for example away from prevailing winds, in areas of strategic views across the landscape or in areas between different types of resources.

Within the study area, it can also be hypothesised that spur line crests and tributary gullies were utilised in combination for through and cross-country access. The lower gradients of the crests and upper slopes, together with their more open vegetation structures probably aided pedestrian travel. In contrast, the continuous sandstone escarpments along lower tributary valleys and the adjoining Nepean River Gorge would have constrained access. In order to access the Nepean River, the gullies of side tributaries would need to have been traversed. In a few cases, spur lines also afforded negotiable and moderate grades to the river.

Essentially the exact character of Aboriginal land use of the area is not well known however some inferences can be made (see also below for a predictive model).

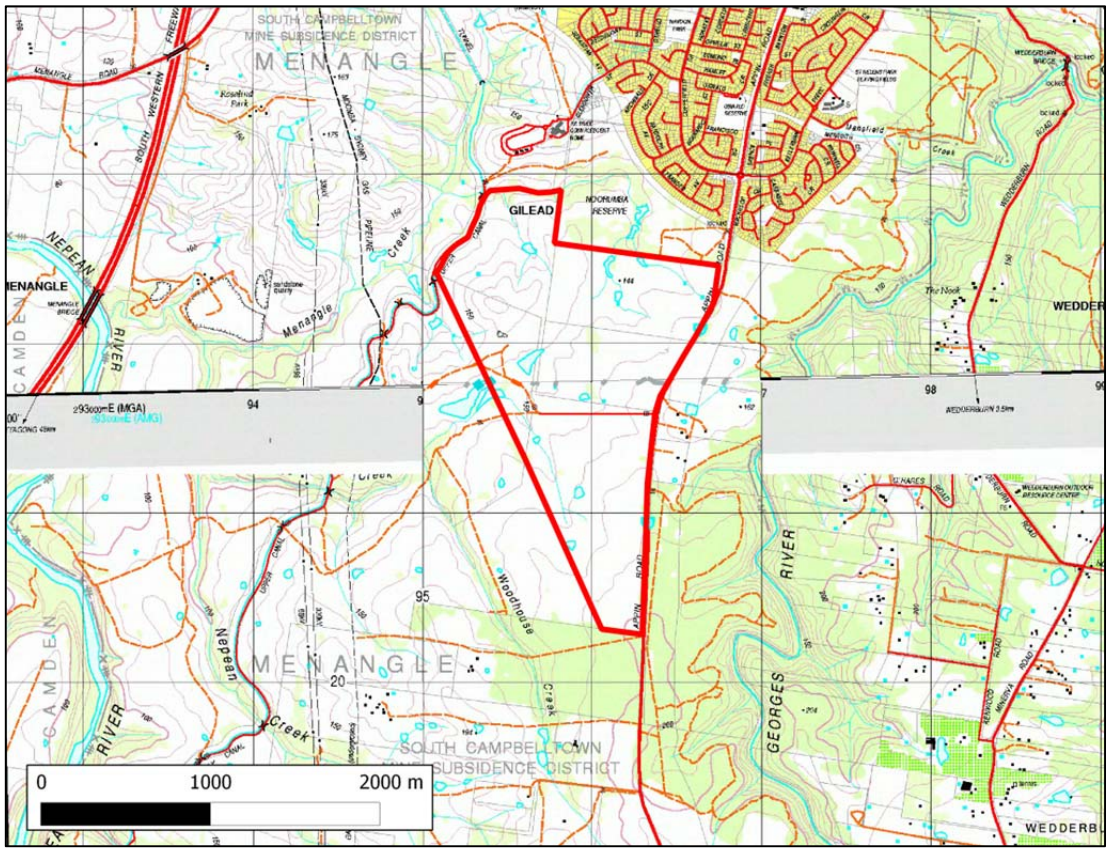

Figure 5.1 Location of Mount Gilead between the Nepean and Georges River (Base extracts of Appin and Campbelltown 1:25 000 topographic maps)

6. PREDICTIVE MODEL

Based on the predictive models for the Cumberland Plain and Woronora Ramps, and the results of other archaeological surveys within the transitional zone topographies of the region, the following predictions can be drafted regarding archaeological potential within the Mount Gilead study area:

- Sites are likely to occur on well drained, relatively level ground adjacent to the Menangle and Woodhouse Creek break-of-slope, and for an undetermined distance upslope;
- In low gradient upper catchment contexts (upstream of gullies associated with a distinct break-of-slope) artefact occurrences are likely to be relatively low in artefact incidence and be situated in close proximity (within 100 m) of drainage lines;
- Sites may occur on well drained, relatively level ground on the crests of both major and minor spur lines. Such sites may be more or less continuous with the break-of-slope zone and display a direct relationship between artefact density and proximity to a water source;
- Sites may occur on the low gradient, upper spur line slopes associated with crests, especially where continuous with the break-of-slope, or a substantial crest line;
- The number and density of artefacts at any site may be, in part, related to the distance to a water source, and the degree of permanence of that source. Sites with a higher incidence of artefacts per area are likely to be situated in relative proximity to substantial water sources (such as second order or greater drainage lines);
- The archaeological sensitivity of spur line crests and adjacent slopes is likely to diminish with distance from substantial water sources. It is hypothesised that sites with greater than background densities of artefacts are most likely to occur on crests that are within 500 m of second order or greater drainage lines

7. SAMPLING STRATEGY

The following landforms are represented within the study area:

- Broad and narrow spur lines;
- Creek lines;
- Tributaries and drainage lines;
- Hill crest and slopes; and
- Knolls

All of these landforms types may be impacted by the development. The archaeological survey sampled each of the landforms.

Transects were undertaken on each landform type.

Transects were completed on foot by four people approximately 20-50 m apart.

Areas of predicted high archaeological sensitivity, such as drainage lines and the immediately adjacent landforms, were targeted for particularly intensive survey.

Survey also included opportunistic inspection of any existing ground exposures encountered within the study area.

All old-growth native trees in the study area were inspected for the presence of culturally derived scars.

8. FIELD METHODS

8.1 Field Survey

The field survey was conducted on the 10 and 11 of July, 2013, by Nicola Hayes (NOHC), Deirdre Lewis-Cook (NOHC), Glenda Chalker (CB) and Neal Sampson (TLALC).

The Field Survey Involved:

1. *Foot survey of the project area*

   The archaeological field survey was completed on foot by following the above sampling strategy.

2. *Field Consultation with Representative Aboriginal Parties (RAPs)*

   RAPs were invited to participate in the field survey. Aboriginal field participants were invited to communicate any knowledge that they may have regarding the cultural heritage values of the study area, archaeological and cultural sites, and the overall landscape.

3 *Site recording*

   All surface archaeological sites, potential archaeological deposits and places of Aboriginal cultural value were documented. All sites had the following details recorded using standardised recording forms.

   - Site name, recorder and date
   - Site type

- GPS coordinates
- Landscape and landform character
- Site dimensions
- Site condition and potential to be larger
- Site content including numbers and artefact types, raw materials and detailed recording of a sample of artefacts.
- Photos
- Any other relevant information, such as oral information and informant details.

8.2 Recording Parameters

The archaeological survey aimed at identifying material evidence of Aboriginal occupation as revealed by surface artefacts and areas of archaeological potential unassociated with surface artefacts. Potential recordings fall into two broad categories: sites and potential archaeological deposits.

Sites

A site is defined as any material evidence of past Aboriginal activity that remains within a context or place which can be reliably related to that activity.

Most Aboriginal sites are identified by the presence of three main categories of artefacts: stone or shell artefacts situated on or in a sedimentary matrix, marks located on or in rock surfaces, and scars on trees.

Frequently encountered site types within southeastern Australia include stone artefact occurrences - including isolated finds and open artefact scatters, coastal and freshwater middens, rock shelter sites - including occupation deposit and/or rock art, grinding groove sites and scarred trees.

Stone Artefact Occurrences

Stone artefact occurrences are the most commonly recorded site type in Australia. They may consist of single artefacts - described as isolated finds; or as a distribution of more than one artefact – often described as an artefact scatter or 'open camp site' when recording surface artefacts, or as a subsurface artefact distribution when dealing with an archaeological deposit.

Where artefact incidence is very low, either in terms of areal distribution (artefacts per square metre) or density (artefacts per cubic metre), then the differentiation of the recording from background artefacts counts or *background scatter* may be an issue.

Isolated finds

An isolated find is a single stone artefact, not located within a rock shelter, and which occurs without any associated evidence of Aboriginal occupation within a radius of 60 metres. Isolated finds may be indicative of random loss or deliberate discard of a single artefact; the remnant of a now dispersed and disturbed artefact scatter; and/or an otherwise obscured or sub-surface artefact scatter.

Except in the case of the latter, isolated finds may be considered to be constituent components of the *background scatter* present within any particular landform.

The distance used to define an isolated artefact varies according to the survey objectives, the incidence of ground surface exposure, the extent of ground surface disturbance, and estimates of *background scatter* or *background discard* densities. In the absence of baseline information relating to background scatter densities, the defining distance for an isolated find must be based on methodological and visibility considerations. Given the varied incidence of ground surface exposure and deposit disturbance within the study area, and the lack of background baseline data, the specification of 60 metres is considered to be an effective parameter for surface survey

methodologies. This distance provides a balance between detecting fine scale patterns of Aboriginal occupation and avoiding environmental biases caused by ground disturbance or high ground surface exposure rates. The 60 metre parameter has provided an effective separation of low density artefact occurrences in similar southeast Australian topographies outside of semi-arid landscapes.

Background scatter

Background scatter is a term used generally by archaeologists to refer to artefacts which cannot be usefully related to a place or focus of past activity (except for the net accumulation of single artefact losses).

There is no single concept for background discard or 'scatter', and therefore no agreed definition. The definitions in current use are based on the postulated nature of prehistoric activity, and often they are phrased in general terms and do not include quantitative criteria. Commonly agreed is that background discard occurs in the absence of 'focused' activity involving the production or discard of stone artefacts in a particular location.

An example of unfocused activity is occasional isolated discard of artefacts during travel along a route or pathway. Examples of 'focused activity' are camping, knapping and heat-treating stone, cooking in a hearth, and processing food with stone tools. In practical terms, over a period of thousands of years an accumulation of 'unfocused' discard may result in an archaeological concentration that may be identified as a 'site'. Definitions of background discard comprising only qualitative criteria do not specify the numbers (numerical flux) or 'density' of artefacts required to discriminate site areas from background discard.

Artefact scatters

Artefacts situated within an open context are classed as an open artefact scatter (or ‘open camp site’) when two or more occur no more than 60 metres away from any other constituent artefact. The 60 metre specification relates back to the definition of an isolated find (*Refer above*). The use of the term *scatter* is intended only to be descriptive of the current archaeological evidence and does not infer the original human behaviour which formed the site.

The term *open camp site* has been used extensively in the past to describe open artefact scatters. This was based on ethnographic modelling suggesting that most artefact occurrences resulted from activities at camp sites. However, in order to separate the description from the interpretation of field evidence, the terms *artefact scatter*, *artefact distribution* or *artefact occurrence* are now more extensively used. The latter two options can also be used to categorise artefacts occurring in subsurface contexts.

Scarred Trees

Trees with scars of Aboriginal origin form the other major type of artefactual evidence. Each tree is normally considered to be a separate site. The identification of a scar as Aboriginal in origin is dependent on a set of inter-related interpretive criteria. The credibility of alternative causal explanations such as natural traumas and other types of human scarring must be tested for each scar.

A range of diagnostic criteria has been developed to assist in the identification of Aboriginal scarred trees. The following criteria are based on archaeological work conducted by Simmons (1977) and Beesley (1989), and the field manual for Aboriginal scarred trees developed by Long (2005):

1. The scar does not normally run to ground level: (scars resulting from fire, fungal attack or lightning nearly always reach ground level). However, ground termination does not necessarily discount an Aboriginal origin (some ethno-historical examples of canoe scars reach the ground);

1(a). If a scar extends to the ground, the sides of the original scar must be relatively parallel: (natural scars tend to be triangular in shape;

2. The scar is either approximately parallel sided or concave, and symmetrical: (few natural scars are likely to have these properties except fire scars which may be symmetrical but are wider at the base than their apex. Surveyors marks are typically triangular, and often adzed);

3. The scar should be reasonably regular in outline and regrowth: scars of natural origin tend to have irregular outlines and may have uneven regrowth;

4. The ends of the scar should be 'shaped', either squared off, or pointed (often as a result of regrowth): (a 'keyhole' profile with a 'tail' is suggestive of branch loss);

5. A scar which contains adze or axe marks on the original scar surface is likely to be the result of human scarring. Their morphology and distribution may lend support to an interpretation of an Aboriginal origin: (marks produced after the scarring event may need to be discounted);

6. The scar must date to the time of Aboriginal bark exploitation within its region: The traditional Aboriginal exploitation of bark probably ceased in most regions between 100 and 150 years ago. However, in some locations associated with Aboriginal settlement, the Aboriginal removal of bark may have continued to the present day, or restarted as part of new cultural movements.

7. The tree must be endemic to the region: (and thus exclude historic plantings).

Field based identification of Aboriginal scars, is based on surface evidence only and will not necessarily provide a definitive classification. In many cases, the possibility of a natural origin cannot be ruled out, despite the presence of several diagnostic criteria or the balance of interpretation leaning toward an Aboriginal origin. For this reason interpretations of an Aboriginal origin are qualified by the recorder's degree of certainty. The following categories were used:

- Aboriginal scar - This is a scar where an Aboriginal origin is considered the most likely. The scar conforms to all of the criteria and a natural origin is considered unlikely and improbable;

- Probable Aboriginal scar - This is a scar that conforms to all of the criteria and where an Aboriginal origin is considered to be the most likely. Despite this, a natural origin cannot be ruled out; and

- Possible Aboriginal scar - This is a scar which conforms to all or most of the criteria and where an Aboriginal origin cannot be reliably considered as more likely than alternative natural causes. The characteristics of this scar will also be consistent with a natural cause.

Potential Archaeological Deposits

A potential archaeological deposit, or PAD, is defined as any location where the potential for subsurface archaeological material is considered to be moderate or high, relative to the surrounding study area landscape.

The potential for subsurface material to be present is assessed using criteria developed from the results of previous surveys and excavations relevant to the region. Where necessary, PADs can be given an indicative rating of their 'archaeological potential' based on a combined assessment of their potential to contain artefacts, and the potential archaeological value of the deposit.

Table 8.1 illustrates the matrix on which this assessment is based. Locations with low potential for artefacts fall below the threshold of classification. In such cases the potential incidence of artefactual material is considered to be the same as, or close to that for background scatter. Where there is moderate potential for artefacts, the predicted archaeological potential parallels the potential significance of the deposit. For deposits with high potential for artefacts, the assessed archaeological potential is weighted positively.

The boundaries of PADs are generally defined by the extent of particular micro-landforms known to have high correlations with archaeological material.

A PAD may or may not be associated with surface artefacts. In the absence of artefacts, a location with potential will be recorded as a PAD.

Where one or more surface artefacts occur on a sedimentary deposit, a PAD may also be identified where there is insufficient evidence to assess the nature and content of the underlying deposit. This situation is due mostly to poor ground surface visibility.

Table 8.1 Matrix showing the basis for assessing the archaeological potential (shown in bolded black text) of a PAD

		Potential to contain Aboriginal objects		
		Low	*Moderate*	*High*
Potential archaeological significance	*Low*	---	**low**	**moderate**
	Moderate	---	**moderate**	**high**
	High	---	**high**	**high**

9. RESULTS

9.1 Summary

Six sites/PADs have been previously recorded in the Mount Gilead study area. These comprise:

- two artefact scatters (MGA12 and MGA13);
- one isolated find (MGIF3); and
- three potential archaeological deposits (MG PAD42, MG PAD43 and Mount Gilead Property PAD 52-2-3768).

Six previously unidentified sites were recorded in the course of the current (2013) survey of the Mount Gilead study area. These comprise:

- two artefact scatters (MGA26 and MGA27);
- a culturally modified tree (MGMT1); and
- three PADs (MG PAD44, MG PAD 45 and MG PAD 46).

Therefore a total of twelve recordings are relevant to this assessment - three artefact scatters (MGA13, MGA26 and MGA27), two isolated finds (MGA12 and MGIF3), one modified tree (MGMT1) and six PADs (MG PAD42, MG PAD43, Mount Gilead Property PAD, MG PAD44, MG PAD45 and MG PAD46).

Site descriptions are provided below. Site information is summarised in Table 9.1. Site locations are provided on Figure 9.13.

9.2 Previously Recorded Sites/PADs

Six previously recorded sites/PADs are located in the study area. These comprise two artefact scatters (MGA12 and MGA13), one isolated find (MGIF3), and three potential archaeological deposits (MG PAD42, MG PAD43 and Mount Gilead Property PAD 52-2-3768).

Mount Gilead Aboriginal 12 (MGA12) - isolated find/artefact scatter

MGA Reference: 295756.6222369 (approximate location)

The site was located on a spur crest, adjacent to a boundary fence in the northern part of the study area in 1994 (Corkill).

The site was initially recorded as an isolated find. The original recorded artefact could not be re-found during the NOHC 2006 assessment, however, a small pink silcrete chip was noted in the general site location. Vegetation in the area comprised pasture grasses.

This site could not be re-found during the current survey.

Mount Gilead Aboriginal 13 (MGA13) - artefact scatter

MGA Reference: 295584.6222544

The site was located around a large dam which is situated on mid-slopes in the northern part of the Mount Gilead study area in 1994 (Corkill). Artefacts had been exposed as a result of erosion. The creek which fills the dam drains north to join a second creek which flows into Menangle Creek.

This site was initially recorded as an artefact scatter by Corkill in 1994, as two separate locations, an artefact scatter 'MG3' on the western side of the dam, and an isolated find 'IF1' on the eastern side of the dam.

This site was again recorded in 2005 during the Sydney Gas survey (no report, no AHIMS site card).

Although numerous artefacts had been visible around the dam in previous site inspections few artefacts were visible in February 2006 (NOHC 2006). Artefacts were reported as occurring over an area approximately 100 x 100 m.

This site was re-found during the current survey. Four artefacts were recorded within the eroding edges of the dam in this location.

Artefacts:

1. flake, brown, mudstone, 28 x 25 x 5 mm
2. flake, brown, mudstone, 11 x 21 x 5 mm
3. flaked piece, brown, mudstone, 40 x 18 x 10 mm
4. flaked piece, orange, quartz, 23 x 20 x 11 mm

Figure 9.1 MGA13 looking south-east towards site

Mount Gilead Isolated Find 3 (MGIF3) - isolated find

MGA Reference: 295835.6222010

This site was located on an intermittent soak or water course approximately one kilometre from Menangle Creek. It was recorded by Corkill in 1994 as an isolated find.

This site could not be re-found during the current survey.

Mount Gilead PAD 42 (MG PAD42)

MGA Reference: 295749.6222832

This PAD was previously recorded as an open context PAD by Sydney Gas Survey 2005.

Based on current knowledge regarding the site location patterns in the region the boundaries of this PAD have been modified following the current investigation.

This PAD now encompasses an area of approximately 240 x 240 m and includes the basal slopes and crest of a north facing spur line above Menangle Creek. This area is analogous to the landscape feature within Noorumba Reserve where substantial artefact scatters have been located.

Ground exposure at this recording primarily comprised areas of surface disturbance. There was <10% ground exposure due to high grass and weed cover across the PAD with 80% visibility within those disturbed areas of the PAD during the current survey. This area has been substantially cleared and ploughed.

It is considered that there is moderate potential for subsurface archaeological deposit to be associated with this PAD, and low to moderate potential for these deposits to be *in situ*.

Figure 9.2 MG PAD42 looking north towards Menangle Creek

Mount Gilead PAD 43 (MG PAD43)

MGA Reference: 295784.6221809

This PAD was recorded as an open context PAD by Corkill in 1994.

Based on current knowledge regarding the site location patterns in the region the boundaries of this PAD have been modified following the current investigation.

This PAD now encompasses an area of approximately 525 x 200 m and includes the mid to basal slopes and crest of a north facing spur line above Menangle Creek and extends to include site MGA13. This area is analogous to the landscape feature within Noorumba Reserve where substantial artefact scatters have been located.

Ground exposure at this recording primarily comprised areas of surface disturbance. There was <10% ground exposure due to high grass and weed cover across the PAD with 80% visibility within those disturbed areas of the PAD during the current survey. This area has been substantially cleared and ploughed.

It is considered that there is moderate potential for subsurface archaeological deposit to be associated with this PAD, and low to moderate potential for these deposits to be *in situ*.

Figure 9.3 MG PAD43 looking north towards Menangle Creek

Figure 9.4 MG PAD 43 looking south

Mount Gilead Property PAD (AHIMS No. 52-2-3768)

MGA Reference: 296270.6221717

This PAD was recorded is an open context PAD by Austral Archaeology in 2010. It was assessed as having only low archaeological potential.

Based on current knowledge regarding the site location patterns in the region the boundaries of this PAD have been modified following the current investigation.

This PAD now encompasses an area of approximately 750 x 175 m the crest and mid to basal slopes of a knoll and west facing spur line. The area is bordered by a drainage line that runs into a tributary of Woodhouse Creek. The area includes site MGA27.

An area at the top of the knoll has been heavily disturbed by the construction of a house and stockyards, consequently this area is excluded from the PAD.

Ground exposure at this recording primarily comprised areas of surface disturbance. There was <20% ground exposure due to high grass and weed cover across the PAD with 80% visibility within those disturbed areas of the PAD during the current survey. This area has been substantially cleared and ploughed.

It is considered that there is moderate potential for subsurface archaeological deposit to be associated with this PAD, and low to moderate potential for these deposits to be *in situ.*

Figure 9.5 Mount Gilead Property PAD looking west

9.3 Previously Unrecorded Sites

Six new sites were recorded during the current survey including two artefact scatters (MGA26 and MGA27), a culturally modified tree (MGMT1) and three PADs (MG PAD44, 45 and 46).

Mount Gilead Aboriginal 26 (MGA26)

MGA Reference: 296143.6222509

This site is a scatter of three artefacts located on a dam wall on the northern edge of the study area. The site is located on the basal slopes and flats adjacent to a tributary of Menangle Creek. The artefacts were located on the eroded dam wall within ant nests.

Ground exposure at the site was 80% within 70% visibility. The site is currently used for grazing and has been impacted by the construction of the dam and bioturbation from ants.

It is considered that there is moderate potential for there to be more surface artefacts, moderate potential for subsurface archaeological deposit to be associated with this site, and low potential for these deposits to be *in situ*. This site is associated with MGPAD44.

Artefacts:

1. flake, red, silcrete, 20 x 15 x 4 mm
2. flake, white, quartz, 7 x 11 x 3 mm
3. flaked piece (broken), white, quartz, 22 x 15 x 8 mm, 40 % cortex

Mount Gilead Aboriginal 27 (MGA27)

MGA Reference: 295982.6221690

This site comprises a scatter of three artefacts located in the eroding edges of a dam in the centre of the study area. The site is located on the basal slopes and flats adjacent to a dammed drainage line that runs into Woodhouse Creek.

Ground exposure at the site was 80% with 60% visibility. The site is currently used for grazing and has been impacted by the construction of the dam and subsequent erosion.

It is considered that there is moderate potential for there to be more surface artefacts and moderate subsurface potential away from any erosion. This site is associated with the modified Mount Gilead Property PAD

Artefacts:

1. flaked piece, grey white, quartz, 14 x 12 x 5 mm
2. flake, red, silcrete, 44 x 36 x 10 mm
3. flaked piece, white, quartz, 15 x 7 x 3 mm

Figure 9.6 MGA27 looking east

Mount Gilead Modified Tree 1 (MGMT1)

MGA Reference: 295505.6221920

This site is a modified tree located on the basal slopes above a drainage line.

The tree is a narrow leaf Ironbark (*Eucalyptus crebra*) in good condition, showing no damage or limb loss.

Tree

Approximate height of tree: 30 m
girth of tree (at breast height 1.2 m) 4 m

Scar

inside scar length (excluding regrowth):	1.25 m
scar length (including regrowth):	2.2 m
maximum width of regrowth	0.47 m
maximum depth of regrowth (including growth into trunk hollow)	0.20 m
maximum scar width (excluding regrowth):	0.7 m
maximum scar width (including regrowth):	1.69 m
height of inside scar above ground:	0.8 m
height of original scar edge above ground	0.4 m
scar faces	north-east
axe marks?	No

The scar has parallel sides and is symmetrical. The scar is almost occluded.

A probable Aboriginal origin is supported by the shape and estimated age of the scar.

Figure 9.7 MGMT1 scar with Glenda Chalker (CB Representative)

Figure 9.8 MGMT1 looking west

Figure 9.9 Looking south towards MGMT1

Mount Gilead PAD 44 (MG PAD44)

MGA Reference: 296195.6222496 to 296576.6222305 to 296428.6222146

This recording is a potential archaeological deposit located on the crest and slopes of a north-west facing spur line that extends between two tributaries of Menangle Creek.

This PAD encompasses an area of approximately 440 x 270 m and includes site MGA26. This area is analogous to the landscape feature within Noorumba Reserve where substantial artefact scatters have been located.

Ground exposure at this recording primarily comprised areas of surface disturbance. There was <10% ground exposure due to high grass and weed cover across the PAD with 80% visibility within those disturbed areas of the PAD during the current survey. This area has been substantially cleared and ploughed.

It is considered that there is moderate potential for subsurface archaeological deposit and moderate potential for these deposits to be *in situ.*

Figure 9.10 MG PAD44 looking north west

Mount Gilead PAD 45 (MG PAD45)

MGA Reference: 296111.6222353 to 296384.6222096 to 296018.6222122

This recording is a potential archaeological deposit located on the crest and slopes of a west facing spur line that extends between two tributaries of Menangle Creek.

This PAD encompasses an area of approximately 400 x 125 m and includes site MGA26. This area is analogous to the landscape feature within Noorumba Reserve where substantial artefact scatters have been located.

Ground exposure at this recording primarily comprised areas of surface disturbance. There was <10% ground exposure due to high grass and weed cover across the PAD with 70% visibility within those disturbed areas of the PAD during the current survey. This area has been substantially cleared and ploughed.

It is considered that there is moderate potential for subsurface archaeological deposit and moderate potential for these deposits to be *in situ.*

Figure 9.11 MG PAD 45 looking north

Mount Gilead PAD 46 (MG PAD46)

MGA Reference: 295511.6221620 to 296146.6220605 to 295982.6220348 to 295656.6220414 to 295247.6221473

This recording is a potential archaeological deposit located on the crest and slopes of a north facing spur line that extends between Woodhouse Creek and one of its tributaries. The majority of this location is outside of the current study area.

This PAD encompasses an area of approximately 440 x 1400 m.

Ground exposure at this recording primarily comprised areas of surface disturbance. There was <10% ground exposure due to high grass and weed cover across the PAD with 70% visibility within those disturbed areas of the PAD during the current survey. This area has been substantially cleared and ploughed.

It is considered that there is moderate potential for subsurface archaeological deposit and moderate potential for these deposits to be *in situ.*

Figure 9.12 MG PAD46 looking north-west

9.4 Inventory of Site Locations

Table 9.1 Inventory of Site Locations

Site Number	Feature(s)	Location	Survey Unit	Landform
Previously Recorded Sites				
MGA12	isolated find	295756.6222369		spur line crest
MGA13 (+PAD)	artefact scatter	295584.6222544		spur line mid-slopes
MGIF3	isolated find	295835.6222010		intermittent soak
MG PAD42	PAD	295749.6222832		spur line basal slopes and crest
MG PAD43	PAD	295784.6221809		spur line mid to basal slopes and crest
Mount Gilead Property PAD	PAD	296270.6221717		spur line crest and mid to basal slopes
Sites Identified in the Current Study				
MGA26 (+PAD)	artefact scatter	296143.6222509		spur line basal slopes and flats
MGA27 (+PAD)	artefact scatter	295982.6221690		spur line basal slopes and flats
MGMT1	modified tree	295505.6221920		spur line basal slopes
MG PAD44	PAD	296195.6222496		spur line crest and slopes
MG PAD45	PAD	296111.6222353		spur line crest and slopes
MG PAD46	PAD	295511.6221620		spur line crest and slopes

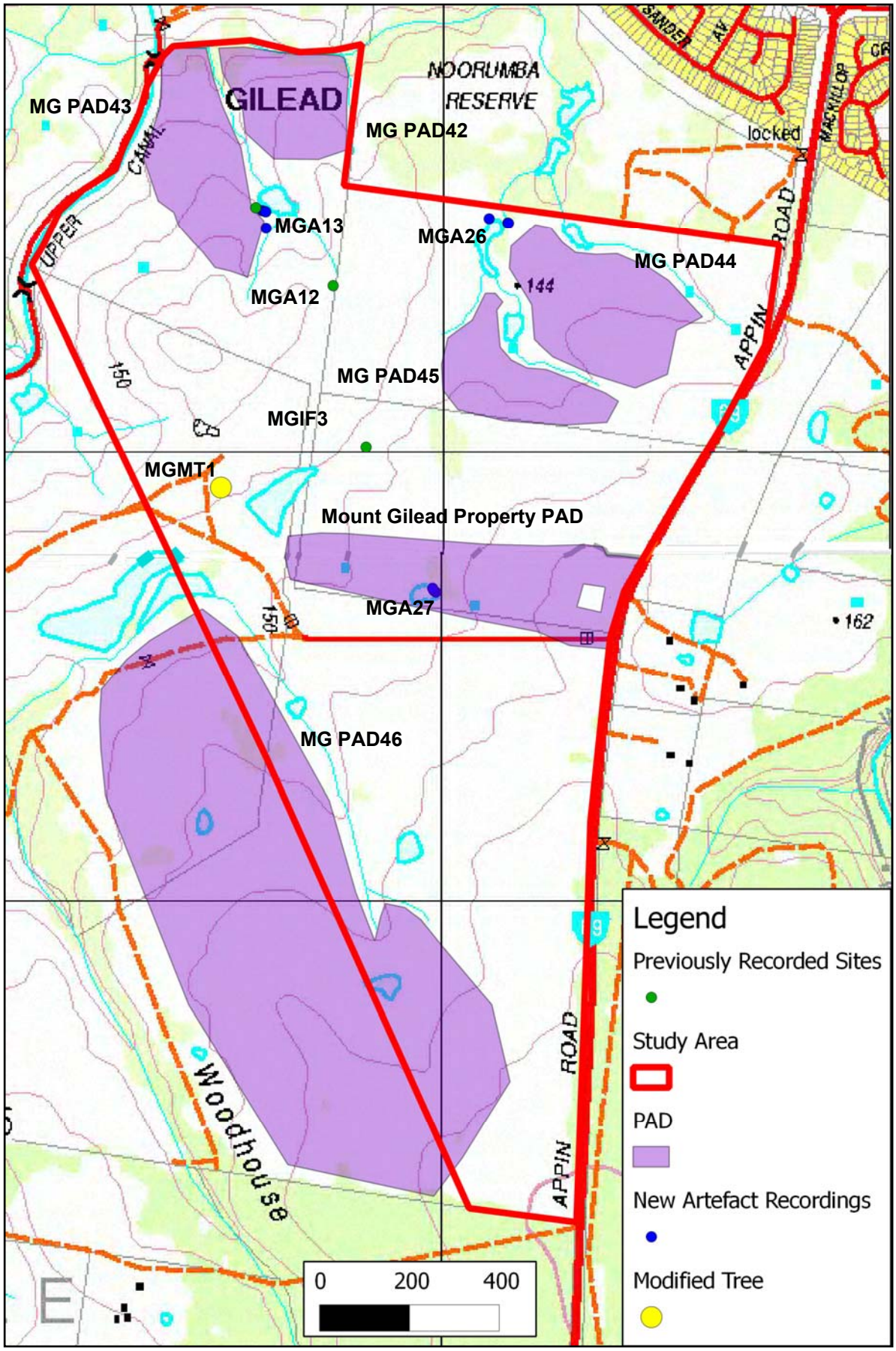

Figure 9.13 Location of sites within the Mt Gilead study area
(Base extracts of Appin and Campbelltown 1:25 000 topographic maps)

9.5 Survey Coverage and Visibility Variables

The effectiveness of archaeological field survey is to a large degree related to the obtrusiveness of the sites being looked for and the incidence and quality of ground surface visibility. Visibility variables were estimated for all areas of comprehensive survey within the study area. These estimates provide a measure with which to gauge the effectiveness of the survey and level of sampling conducted. They can also be used to gauge the number and type of sites that may not have been detected by the survey.

Ground surface visibility is a measure of the bare ground visible to the archaeologist during the survey. There are two main variables used to assess ground surface visibility, the frequency of exposure encountered by the surveyor and the quality of visibility within those exposures. The predominant factors affecting the quality of ground surface visibility within an exposure are the extent of vegetation and ground litter, the depth and origin of exposure, the extent of recent sedimentary deposition, and the level of visual interference from surface gravels. Two variables of ground surface visibility were estimated during the survey:

- A percentage estimate of the total area of ground inspected which contained useable exposures of bare ground; and

- A percentage estimate of the average levels of ground surface visibility within those exposures. This is a net estimate and accounts for all impacting visual and physical variables including the archaeological potential of the sediment or rock exposed.

The obtrusiveness of different site types is also an important factor in assessing the impact of visibility levels. Artefacts made from locally occurring rock such as quartz may be more difficult to detect under usual field survey conditions than rock types that are foreign to the area. The impact of natural gravels on artefact detection was taken into account in the visibility variables estimates outlined above.

The natural incidence of sandstone platforms suitable for grinding grooves or engraving, together with the incidence of old growth trees, are important considerations in identifying both survey effectiveness and site location patterns outside of environmentally determined factors.

Tables 9.2 and 9.3 summarises estimates for the degree to which separate landforms within the study area were examined and also indicates the exposure incidence and average ground visibility present in each case.

Taking into account survey coverage, archaeologically useable exposures, and visibility variables, the effective survey coverage (ESC) was 7.02% of the total survey area. The ESC attempts to provide an estimate of the proportion of the total study area that provided a net 100% level of ground surface visibility to archaeological surveyors.

Figures 9.14 and 9.15 show the survey units across the site.

Table 9.2 Survey Coverage Data

Survey Unit	Landform	Survey unit area (sq m)	Visibility %	Exposure %	Effective coverage area (sq m) survey unit area x visibility % x exposure %	Effective Coverage % (effective coverage area / survey unit area x 100)
1	Spur lines and drainage line	249700	70	10	8739.5	3.5
2	Hill crest and slopes	213800	70	5	7483	3.5
3	Ridge crest	84000	80	10	6720	8
4	Spur lines and drainage line	345200	80	15	41424	12
5	Flats and draining lines	173900	70	5	6086.5	3.5
6	Knoll and slopes	249800	80	10	19984	8
7	Drainage line	30800	80	30	7392	24
8	Drainage line/creek	190200	80	20	30432	16
9	Spur line	573100	70	5	20058.5	3.5
		2,110,500			***148319.5***	***7.02***

Table 9.3 Landform Summary – Sampled areas

Landform	Landform area (sq m)	Area effectively surveyed (sq m) (effective coverage area)	% Landform effectively surveyed (area effectively surveyed / landform area x 100)	Number of sites	Number of Artefacts or Features
Spur lines and drainage line (1, 4, 9)	1168000	70222	6.01	7	6
Hill crest and slopes (2)	213800	7483	3.5	0	
Ridge crest (3)	84000	6720	8	0	
Flats and draining lines (5, 7, 8)	394900	43910.5	11.1	4	4
Knoll and slopes (6)	249800	19984	8	1	
	2,110,500	***148319.5***	***7.02***		

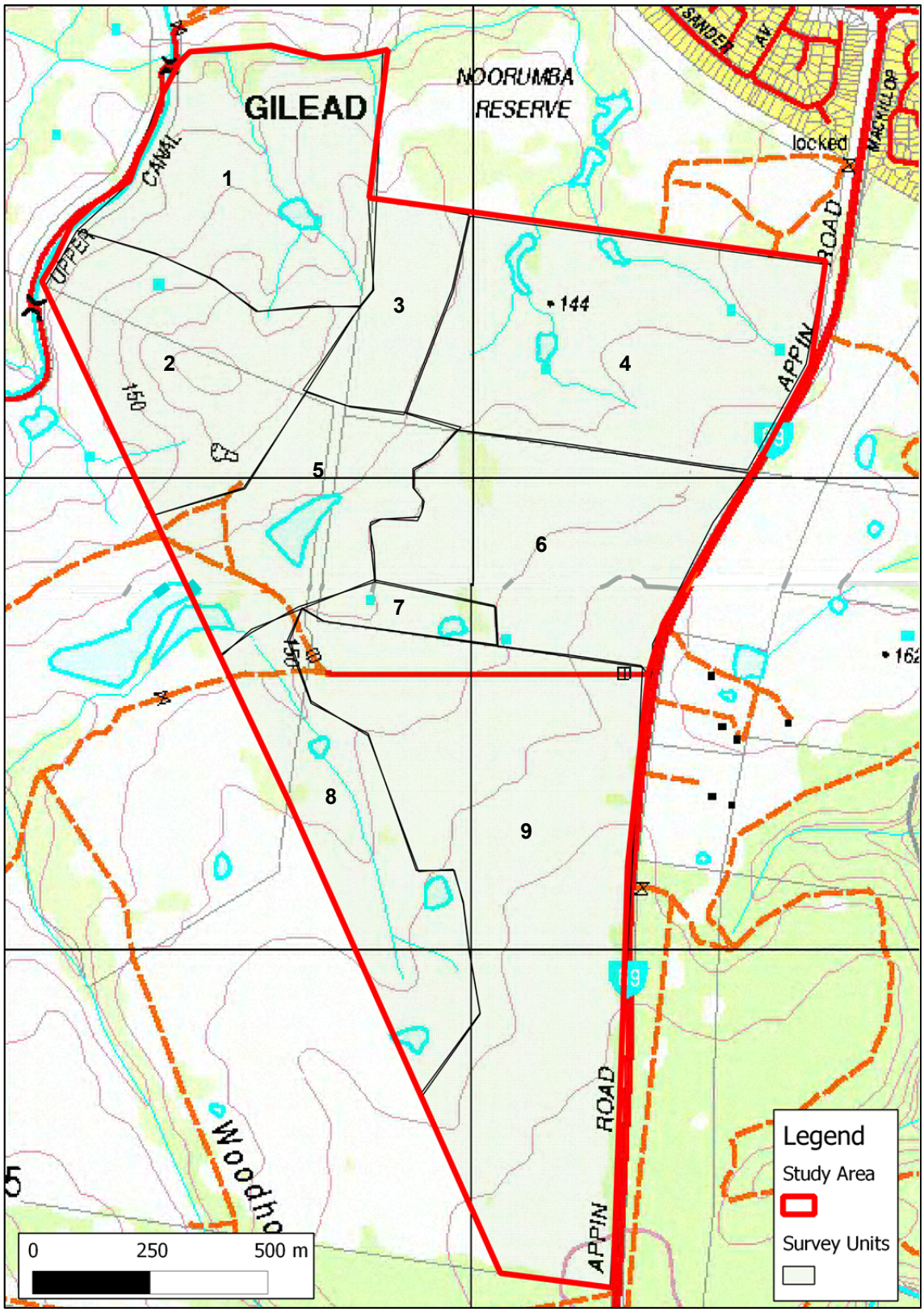

Figure 9.14 Survey Units within the study area
(Base extracts of Appin and Campbelltown 1:25,000 topographic maps)

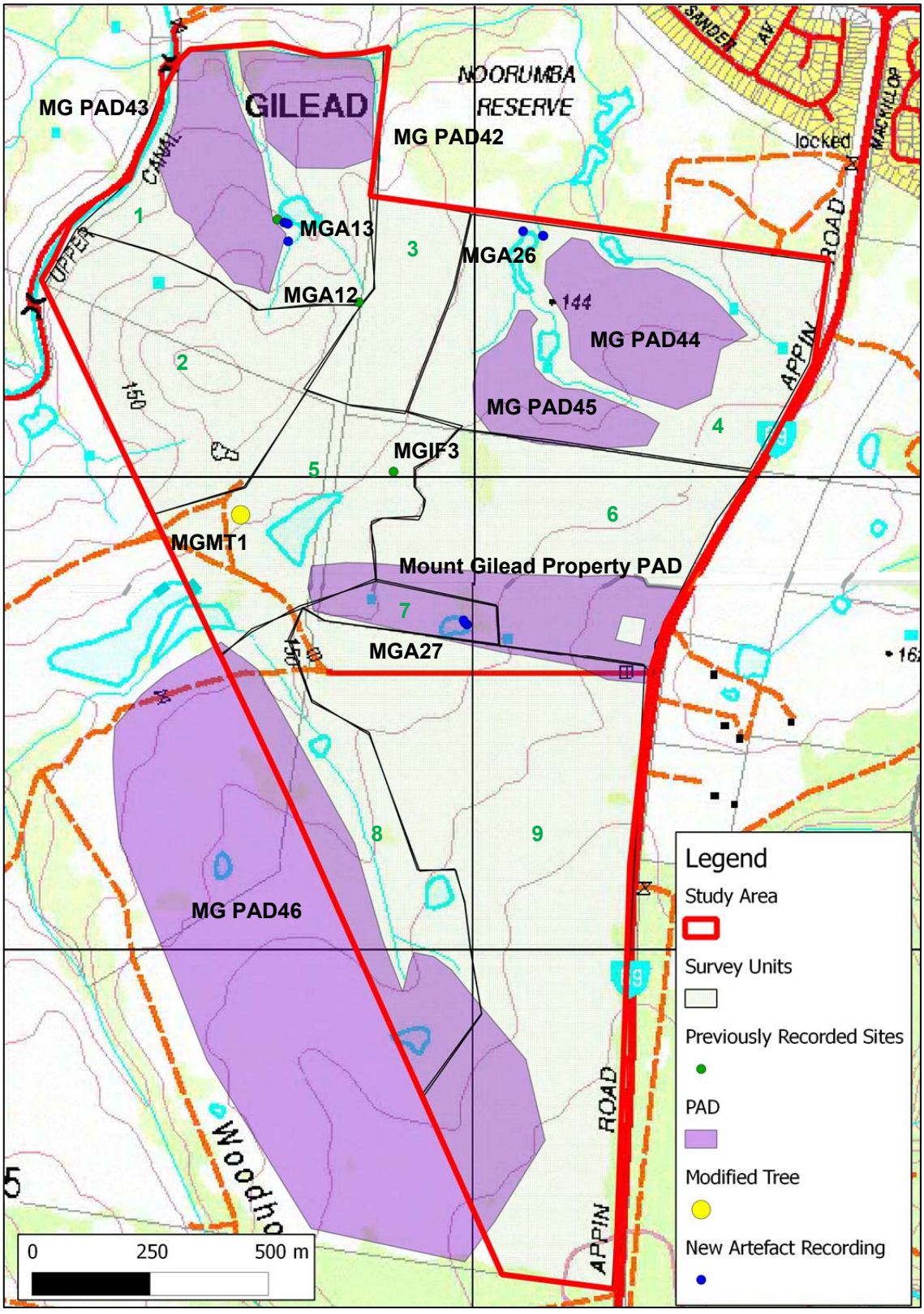

Figure 9.15 Survey Units and recorded sites within the study area
(Base extracts of Appin and Campbelltown 1:25,000 topographic maps)

10. ANALYSIS AND DISCUSSION

The results of the field survey are compatible with the results of previous assessments of the study area and the wider region. The results are in keeping with what is understood thus far regarding Aboriginal land use in the local area and the predictive model outlined above.

Within the study area, artefacts are found close to water and are often exposed in areas that have been impacted by the construction of dams.

The very low visibility across the study area further compounds the uncertainties that exist regarding the regional trends in site location, no sites were found away from waterways however these locations afforded the lowest levels of exposure incidence and visibility.

The identification of several large areas of PAD is based on the site location model and serves to indicate where sites may be located in the landscape but are not currently evidenced on the surface.

Further analysis including archaeological excavation is required to test the predictions. The results of subsurface investigations within the study area would potentially add substantially to the somewhat limited knowledge base that currently exists for the region.

11. SCIENTIFIC VALUES AND SIGNIFICANCE ASSESSMENT

11.1 Assessment Criteria

The Burra Charter of Australia defines cultural significance as 'aesthetic, historical, scientific or social value for past, present and future generations' (Aust. ICOMOS 1987). The assessment of the cultural significance of a place is based on this definition but often varies in the precise criteria used according to the analytical discipline and the nature of the site, object or place.

In general, Aboriginal archaeological sites are assessed using five potential categories of significance:

- significance to contemporary aboriginal people;
- scientific or archaeological significance;
- aesthetic value;
- representativeness; and
- value as an educational and/or recreational resource.

Many sites will be significant according to several categories and the exact criteria used will vary according to the nature and purpose of the evaluation. Cultural significance is a relative value based on variable references within social and scientific practice. The cultural significance of a place is therefore not a fixed assessment and may vary with changes in knowledge and social perceptions.

Cultural significance can be defined as the cultural values of a place held by and manifest within the local and wider contemporary Aboriginal community. Places of significance may be landscape features as well as archaeologically definable traces of past human activity. The significance of a place can be the result of several factors including: continuity of tradition, occupation or action; historical association; custodianship or concern for the protection and maintenance of places; and the value of sites as tangible and meaningful links with the lifestyle and values of community ancestors. Aboriginal cultural significance may or may not parallel the archaeological significance of a site.

Scientific significance can be defined as the present and future research potential of the artefactual material occurring within a place or site. This is also known as archaeological significance.

There are two major criteria used in assessing scientific significance:

1. The potential of a place to provide information which is of value in scientific analysis and the resolution of potential research questions. Sites may fall into this category because they: contain undisturbed artefactual material, occur within a context which enables the testing of certain propositions, are very old or contain significant time depth, contain large artefactual assemblages or material diversity, have unusual characteristics, are of good preservation, or are a constituent of a larger significant structure such as a site complex.

2. The representativeness of a place. Representativeness is a measure of the degree to which a place is characteristic of other places of its type, content, context or location. Under this criteria a place may be significant because it is very rare or because it provides a characteristic example or reference.

The value of an Aboriginal place as an educational resource is dependent on: the potential for interpretation to a general visitor audience, compatible Aboriginal values, a resistant site fabric, and feasible site access and management resources.

The principal aim of cultural resource management is the conservation of a representative sample of site types and variation from differing social and environmental contexts. Sites with inherently unique features, or which are poorly represented elsewhere in similar environment types, are considered to have relatively high cultural significance.

The cultural significance of a place can be usefully classified according to a comparative scale which combines a relative value with a geographic context. In this way a site can be of low, moderate or high significance within a local, regional or national context. This system provides a means of comparison, between and across places. However it does not necessarily imply that a place with a limited sphere of significance is of lesser value than one of greater reference.

The following assessments are made with full reference to the scientific, aesthetic, representative and educational criteria outlined above. Reference to Aboriginal cultural values has also been made where these values have been communicated to the consultants. It should be noted that Aboriginal cultural significance can only be determined by the Aboriginal community, and that confirmation of this significance component is dependent on written submissions by the appropriate representative organisations.

11.2 Identified Cultural Heritage Values

The heritage values identified by the RAPs during this assessment include:

- the importance of Appin Road as a past access road and trading route, the current road alignment follows a traditional route;
- the significance of the area that has access to two major rivers; and
- the significance of the scarred tree as a rare example of past use of the area and its ability to provide a tangible connection to country and to their ancestors.

No further information was provided on any specific area of importance or concern.

11.3 Significance assessment

A total of twelve recordings are relevant to this assessment - three artefact scatters (MGA13+PAD, MGA26+PAD and MGA27+PAD), two isolated finds (MGA12 and MGIF3), one modified tree (MGMT1) and six PADs (MG PAD42, MG PAD43, Mount Gilead Property PAD, MG PAD44, MG PAD45 and MG PAD46).

11.3.1 Artefact Scatters

Five artefact occurrences have been recorded in the study area.

All of the artefacts identified are typical to the region and are of little scientific significance.

Sites MGA13, MGA26 and MGA27 are considered to be of moderate scientific significance for their potential ability to provide information which is of value in scientific analysis and the resolution of potential research questions.

Sites MGA12 and MGIF3 are considered to be of low scientific significance at a local level.

All Aboriginal objects are of cultural significance to the local Aboriginal people as they provide a tangible connection to country and to their ancestors who used and deposited these items.

11.3.2 Modified Tree

One probable culturally modified tree (MGMT1) is located in the study area, and this site is a good representative example of this site type.

Culturally modified trees are rare in the region due to past land use practices.

Culturally modified trees are of cultural significance to the local Aboriginal people as they provide a tangible connection to country and to their ancestors.

Culturally modified trees have the ability to provide information which is of value in scientific analysis and the resolution of potential research questions.

This site is considered to have high scientific and cultural significance at a local level.

11.3.3 Potential Archaeological Deposits

Six areas of potential archaeological deposit are located in the study area (MG PAD42, MG PAD43, Mount Gilead Property PAD, MG PAD44, MG PAD45 and MG PAD46)

The extent, nature and integrity of any archaeological deposits at these locations is unknown at present.

However, these places may have the ability to provide information which is of value in scientific analysis and the resolution of potential research questions.

12. STATUTORY AND POLICY CONTEXT[1]

12.1 National Parks and Wildlife Amendment Bill 2010

The National Parks and Wildlife Amendment Bill 2010 (also known as the Omnibus Bill), was implemented on 1 October 2010 to amend the *National Parks and Wildlife Act 1974* (NPW Act). Existing offences relating to Aboriginal objects and places were replaced with new offences, including a strict liability offence, along with offence exemptions and defences.

Part 6 of the NPW Act provides specific protection for Aboriginal objects and declared Aboriginal places by establishing offences of harm. Harm is defined to mean destroying, defacing, damaging or moving an object from the land. There are a number of defences and exemptions to the offence of harming an Aboriginal object or place. One of the defences is that the harm was carried out under an Aboriginal Heritage Impact Permit (AHIP).

In practice, archaeologists use a methodology that groups 'Aboriginal objects' into various site classifications according to the nature, occurrence and exposure of archaeological material evidence. The archaeological definition of a site may vary according to survey objectives; however a site is not recognised or defined as a legal entity in the Act.

It should be noted that even single and isolated artefacts are protected as Aboriginal objects under the Act.

In 2010 the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* was adopted by clause 3A of the National Parks and Wildlife Regulation 2009 (NPW Regulation). The code allows for the subsurface test excavation of Aboriginal objects without the need for an AHIP. The code establishes the requirements for undertaking test excavation without an AHIP and establishes the requirements that must be followed when carrying out archaeological investigation in NSW where an application for an AHIP is likely to be made.

Additional amendments that commenced on 1 October 2010 include the introduction of new processes for Aboriginal Heritage Impact Permit (AHIP) applications, consultation guidelines to support the Aboriginal Heritage Impact Permits (AHIP) application process, and mechanical provisions such as the transfer and variations of conditions of AHIPs.

12.2 Environmental Planning and Assessment Act 1979

The Environmental Planning and Assessment Act 1979 (EP&A Act) and its regulations, schedules and associated guidelines require that environmental impacts are considered in land use planning and decision making. Environmental impacts include cultural heritage assessment. The Act was reformed by the *Environmental Planning and Assessment Amendment (Infrastructure and other Planning Reform) Act 2005*.

The Part 5 assessment system was created as part of the EP&A Act. The purpose of the Part 5 system is to ensure public authorities fully consider environmental issues before they undertake or approve activities that don't require development consent. As such, it has commonly been used to assess activities such as roads, railways, dredging and forestry works which don't require consent. If these activities are judged by the relevant public authority to significantly affect the environment, then an environmental impact statement will need to be prepared and considered by this authority.

Changes to the EP&A Act which commenced on 1 October, 2011, means that some activities under the Part 5 assessment system will be determined by the Minister for Planning and Infrastructure, following an assessment by the Department.

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[1] The following information is provided as a guide only. Readers are advised to seek qualified legal advice relative to legislative matters.

12.3 Implications for the Mount Gilead Rezoning Project

Aboriginal 'objects' as defined under the *National Parks and Wildlife Act 1974* have been identified within the Mount Gilead study area.

It is an offence to knowingly disturb an Aboriginal Object (or site) without an Aboriginal Heritage Impact Permit (AHIP).

Therefore, no development impact should occur within the identified site and PAD areas in the Mount Gilead study area until appropriate permits have been issued by OEH and cultural heritage mitigation works have been completed.

Note: Subsurface testing without the need for an Aboriginal Heritage Permit (AHIP) is provided for under the NSW NPW Act as long as *the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* is adhered to.

13. IMPACT ASSESSMENT

The exact extent and nature of construction impact is unknown for the study area so for the purposes of this assessment is it assumed that all sites will be directly impacted by the project.

Table 13.1 Impact Assessment

Site Number	Type of Harm	Degree of Harm	Consequence of Harm
MGA12	construction impact	high	total loss
MGA13	construction impact	high	total loss
MGIF3	construction impact	high	total loss
MG PAD42	construction impact	high	total loss
MG PAD43	construction impact	high	total loss
Mount Gilead Property PAD	construction impact	high	total loss
MGA26	construction impact	high	total loss
MGA27	construction impact	high	total loss
MGMT1	construction impact	high	total loss
MG PAD44	construction impact	high	total loss
MG PAD45	construction impact	high	total loss
MG PAD46	construction impact	high	total loss

14. MANAGEMENT AND MITIGATION MEASURES

For the purposes of this assessment is it assumed that all of the identified Aboriginal sites and PADs within the study area will be directly impacted by the Mount Gilead project.

Further assessment of the potential impacts of the project and development of more specific and detailed mitigation measures should be conducted during the detailed design phase of the project.

Given that the proposed impacts to Aboriginal heritage have the potential to result in the loss of heritage values, a range of mitigation strategies should be considered and implemented where applicable, i.e. where it is not practicable to avoid impacts, mitigation strategies will help minimise and/or offset the loss of heritage values.

The following mitigation measures are considered appropriate to manage the impacts of the proposed Mount Gilead:

- Implementation of conservation areas;
- Subsurface testing of archaeological deposits;
- Surface salvage of Aboriginal objects;
- Care and management of recovered artefacts; and
- Ongoing consultation with Aboriginal stakeholders.

14.1 Conservation Areas

Consideration should be given at the detailed design stage to the *in situ* conservation of all sites of moderate to high or greater significance. Particular emphasis should be made to conserve the probable culturally modified tree (MGMT1).

The optimal strategy for realising this objective would be to extend the boundaries of any vegetation buffer/riparian zone/parkland to include these areas. Other options would be conservation within the development area by reserving and delineating the site area as open space and maintaining minimal disturbance. All sites within conservation areas should be identified on relevant construction plans and demarcated by physical fencing during the construction phase of the project so that no inadvertent impact occurs.

14.2 Additional Testing of Archaeological Deposits

Subsurface testing should be undertaken in all areas of identified potential archaeological deposits (PADs) where construction impacts are anticipated.

The aim of the subsurface testing program would be to assess the extent and nature of any subsurface deposit and to refine the predictive model for the region.

14.3 Surface Salvage of Aboriginal Objects

The five artefact occurrences MGA12, MGA13, MGIF3, MGA26 and MGA27 may be directly impacted by the project. The mitigation measure applicable to these sites is the conduct of a surface salvage (collection) program.

14.4 Care and Management of Recovered Artefacts

It is proposed that all Aboriginal objects be repositioned back into the landscape ('returned to country') within reserved open space, in as close a position (as is feasible and safe) to their original find locations. Suitable locations would include any conservation are/ vegetation buffer/riparian zone/parkland. Ongoing consultation with the registered Aboriginal parties would be necessary in order to secure agreement on the exact location(s).

The manner, format and containment of the artefact repositioning would be subject to agreement by the registered Aboriginal parties.

All locations of repositioned artefacts would be recorded on appropriate OEH forms and lodged with the AHIMS, administered by OEH.

In the event that the registered Aboriginal parties resolve to retain some (or all of the artefacts) in the care and custody of one or more individuals or organisations, then this would be subject to the approval of a Care Agreement by the OEH.

In the event that there is no agreement or consensus by the registered Aboriginal parties regarding the long term management of the recovered artefacts, then an application will be made to the Australian Museum (Sydney) for lodgement of the collection. If this application is rejected, then a management solution will be finalised through negotiation between the Moorebank Project Office, Department of Defence, OEH and the Registered Aboriginal Parties.

14.5 Ongoing Consultation

Ongoing consultation should be conducted with the Registered Aboriginal Parties regarding all impacts to cultural heritage.

Further consultation should occur particularly as it relates to culturally modified tree (MGMT1) and the impact, if any to this site.

15. RECOMMENDATIONS

It is recommended that:

1. Where practicable, explore options in the detailed design stage to conserve *in situ* sites of moderate to high or greater significance, and particularly site MGMT1.

2. A program of archaeological subsurface testing be undertaken within all areas of PAD that are to be directly impacted by the project.

   The extent of the testing should be determined during detailed design, when the exact nature of development impact can be defined.

3. Subsurface testing without the need for an Aboriginal Heritage Permit (AHIP) is provided for under the NSW NPW Act. The *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* must be followed in this situation.

4. Surface artefacts have been recorded at MGA12, MGA13, MGIF3, MGA26 and MGA27.

   Salvage of surface artefacts should be undertaken prior to any impacts in these areas.

   Note: Salvage collection can only be undertaken with an AHIP.

5. Options for avoidance of impacts at MGMT1 should be explored during the detailed design phase.

   If impacts cannot be avoided, consultation should be undertaken with the Aboriginal community regarding options for impact mitigation.

6. All Aboriginal objects collected during site salvage and subsurface testing should be returned to site following development to an area of park or reserve.

7. Consultation should be ongoing with the registered Aboriginal parties throughout the life of the project and should include consultation on:

   i. Methodologies for any future investigations;

   ii. Finalisation of management and mitigation strategies subject to detailed design;

   iii. The provision for comments on a draft version of this report; and

   iv. The future care and management of recovered Aboriginal objects.

8. The unanticipated discoveries protocol at Appendix 3 should be followed in the event that Aboriginal objects or suspected burials are encountered during construction works at Mount Gilead.

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APPENDIX 1

RECORD OF ABORIGINAL CULTURAL HERITAGE CONSULTATION REQUIREMENTS FOR PROPONENTS 2010

Example Stage 1a Letter

26th March 2013

The Secretary
Tharawal Local Aboriginal Land Council
PO Box 168
Picton NSW 2571

Navin Officer
heritage consultants pty ltd
abn: 28 092 901 605

Dear Sir/Madam,

Re: Implementation of the DECCW Aboriginal cultural heritage consultation requirements for proponents 2010 for Mount Gilead Rezoning

Navin Officer Heritage Consultants Pty Ltd has been commissioned by Mount Gilead Pty Ltd to undertake a cultural heritage assessment of the rezoning proposal for a parcel of land at Mount Gilead, Campbelltown, NSW (please see attached map).

We are required to implement the Office of Environment and Heritage's *Aboriginal cultural heritage consultation requirements for proponents 2010* for this project.

This requires us to a*scertain, from reasonable sources, the names of Aboriginal people who may hold cultural knowledge relevant to determining the significance of Aboriginal objects or places* relative to the Mount Gilead project area.

I am therefore writing to inform you of this proposal and request that you provide us with the names of Aboriginal people whom you know may hold cultural knowledge relevant to determining the significance of Aboriginal objects or places for the Mount Gilead area.

Please respond in writing within 14 days to:

The Secretary
Navin Officer Heritage Consultants Pty Ltd
4/71 Leichhardt Street
KINGSTON ACT 2604

or by fax to; (02) 6282 9415

Yours faithfully,

(Ms) Nicola Hayes

Example Stage 1b Letter

Ms Leanne Watson
Darug Custodial Aboriginal Corporation

16th April 2013

Navin Officer heritage consultants pty ltd
abn: 28 092 901 605

Dear Ms Watson,

Re: Invitation for expressions of interest for Mount Gilead Rezoning.

Navin Officer Heritage Consultants Pty Ltd has been commissioned by Mount Gilead Pty Ltd to undertake a cultural heritage assessment of the rezoning proposal for a parcel of land at Mount Gilead, Campbelltown, NSW.

We are required to implement the Office of Environment and Heritage's *Aboriginal cultural heritage consultation requirements for proponents 2010* for this project.

This requires us to a*scertain, from reasonable sources, the names of Aboriginal people who may hold cultural knowledge relevant to determining the significance of Aboriginal objects or places* relative to the Mount Gilead project area.

The ACHCRP requires us to write to your organisation and request a registration of interest in the project and as a consequence, be included in community consultation program.

We would be grateful if you could reply to this request by the 30th April 2013, using the following address options:

The Secretary
Navin Officer Heritage Consultants Pty Ltd
4/71 Leichhardt Street
KINGSTON ACT 2604

or by fax to; (02) 6282 9415

or by email to nohc@nohc.com.au

We look forward to working with you on this project.

Yours faithfully,

D Lewis Cook

Deirdre Lewis-Cook

Public notice Campbelltown Advertiser on the 27th of March 2013 and Camden Advertiser on the 27th of March 2013

ABORIGINAL HERITAGE ASSESSMENT

Navin Officer Heritage Consultants Pty Ltd has been commissioned by Mount Gilead Pty Ltd to undertake a cultural heritage assessment of the rezoning proposal for a parcel of land at Mount Gilead, Campbelltown, NSW.

The investigation is required to assess the potential impact of the proposal on Aboriginal cultural heritage values.

The area subject to investigation consists of approximately 175.5 hectares situated on the Appin-Bargo Road south of Campbelltown.

We are implementing the NSW Office of Environment and Heritage *Aboriginal cultural heritage consultation requirements for proponents 2010* for this project.

We invite Aboriginal people who hold cultural knowledge relevant to determining the cultural significance of objects and places in the investigation area, to register an interest in a process of community consultation.

The purpose of this consultation is to assist the proponent and government authorities in the preparation and assessment of legislative requirements, permits and approvals.

Please forward expressions of interest to:

The Secretary
Navin Officer Heritage Consultants Pty Ltd
4/71 Leichhardt Street
Kingston ACT 2604

The closing date for this registration of interest is **(14 days from publications)** 2013

Responses Stage 1a

ntscorp

abn: 71 098 971 209
w: www.ntscorp.com.au

2nd April 2013 ref: OE&H :2-4-13/1

Ms Nicola Hayes
Navin Officer Heritage Consultants Pty Ltd
4/71 Leichhardt Street
Kingston ACT 2604

Dear Nicole

Cultural Heritage Consultation for Mount Gilead rezoning .

I refer to your letter on the 26th March 2013 concerning the above.

I advise that NTSCORP's privacy guidelines restrict us from providing proponents with contact details of traditional owners. However, we will forward your correspondence to any individuals, groups and organisations, whom NTSCORP is aware assert traditional interests within, or hold cultural knowledge about the relevant area.

Please be aware that NTSCORP cannot make a guarantee or undertaking that the recipients of our correspondence represent the entirety of traditional owners for the relevant area.

To assist proponents in following the Aboriginal Cultural Heritage Consultation Requirements, recipients of our correspondence will be invited to register their interest in the project directly with you by the 10th April 2013

Yours faithfully

George Tonna
Land & Notifications Officer
Strategic Development Team

Head Office
Level 1, 44-70 Rosehill Street, Redfern NSW 2016
PO Box 2105 Strawberry Hills NSW 2012
p: + 61 2 9310 3188
f: + 61 2 9310 4177
freecall: 1800 111 844

Regional Office (Coffs Harbour)
Suite 2, 133 West High Street, Coffs Harbour NSW 2450
PO Box 156 Coffs Harbour NSW 2450
p: + 61 2 6651 4588
f: + 61 2 6651 7954

C:\Users\gtonna\Desktop\OEH response.doc

OFFICE OF THE REGISTRAR
ABORIGINAL LAND RIGHTS ACT 1983 (NSW)

11-13 Mansfield Street
Glebe NSW 2037
PO Box 112, Glebe NSW 2037
P. 02 9562 6327 F. 02 9562 6350

The Secretary
Navin Officer Heritage Consultants Pty Ltd
4/71 Leichhardt Street
KINGSTON NSW 2604

2nd April, 2013

Dear Secretary

Re: Request - Search for Registered Aboriginal Owners

I refer to your letter dated 26th March, 2013 regarding Aboriginal stakeholders in the area of Mount Gilead, Campbelltown area in NSW.

I have searched the Register of Aboriginal Owners and the project area described does not have Registered Aboriginal Owners pursuant to Division 3 of the *Aboriginal Land Rights Act* 1983 (NSW).

I suggest you contact the Tharawal Local Aboriginal Land Council. They will be able to assist you in identifying other Aboriginal stakeholders for this project.

Yours sincerely

Shannon Williams
Project Officer
Office of the Registrar, *Aboriginal Land Rights Act* (1983)

NSW GOVERNMENT | Office of Environment & Heritage

Recieved 15-4-13

Our reference: DOC13/12162

Ms Nicola Hayes
Navin Officer Heritage Consultants
4/71 Leichhardt Street
KINGSTON ACT 2604

Dear Ms Hayes,

Thank you for your letter dated 26/3/2013 to the Office of Environment and Heritage (OEH) regarding obtaining a list of the Aboriginal stakeholders that may have an interest in the project at Mount Gilead (Campbelltown LGA).

Before making an application for the issue of an Aboriginal Heritage Impact Permit, the applicant must carry out an Aboriginal community consultation process in accordance with the National Parks and Wildlife Regulation 2009 and completed to the stage described in subclause 80C.

Please find attached the list of Aboriginal stakeholders known to OEH that may have an interest in the project. OEH's list of regional stakeholders is a list of groups, organisations or individuals who may hold cultural knowledge relevant to a proposal in a region. Consultation with Aboriginal people should not be confused with employment. Inclusion on the OEH's list is not an automatic right to employment. It is the decision of a proponent on who they choose to engage to deliver services based on a range of considerations including skills, relevant experience, and OHS considerations. To be clear, the proponent is under no obligation to employ Aboriginal people registered for consultation.

Further, receipt of this information does not remove the requirement of a proponent/consultant to advertise in local print media and contact other bodies seeking interested Aboriginal parties. Consultation with Aboriginal stakeholders must be in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* which can be found on the Office of Environment and Heritage (OEH) public website by accessing the following link:

http://www.environment.nsw.gov.au/resources/cultureheritage/commconsultation/09781ACHconsultreq.pdf

If you wish to discuss any of the above matters further please contact Miranda Morton, Aboriginal Heritage Planning Officer, on (02) 9995 5477.

Yours sincerely

Lou Ewins

LOU EWINS
Manager Planning & Aboriginal Heritage
Office of Environment and Heritage
Department of Premier and Cabinet

PO Box 668 Parramatta NSW 2124
Level 7, 79 George St Parramatta NSW 2150
Tel: (02) 9995 5000 Fax: (02) 9995 6900
ABN 30 841 387 271
www.environment.nsw.gov.au

See consultation log D.

Aboriginal Stakeholders that may have an interest: Camden/Campbelltown LGA and surrounds

✓	Darug Custodial Aboriginal Corporation	Leanne Watson	02 4577 5181 / 0415 770 163	PO Box 81, Windsor NSW 2756
✓	Darug Tribal Aboriginal Corporation	Sandra Lee	02 9622 4081	PO Box 441, Blacktown NSW 2148
✓	Darug Aboriginal Cultural Heritage Assessments	Gordon Morton	02 4567 7421 or 0422 865 831	90 Hermitage Rd, Kurrajong Hills NSW 2758
✓	Darug Land Observations	Gordon Workman	0415 663 763/ fax 02 9831 8868	PO Box 571, Plumpton, NSW 2761
✓	Darug Aboriginal Land Care Inc	Des Dyer	0408 360 814	18a Perigee Close, Doonside 2767
✓	Cubbitch Barta	Glenda Chalker	0427 218 425	55 Nightingale Rd, Pheasants Nest NSW 2574
✓	Gunjeewong Cultural Heritage Aboriginal Corporation *	Cherie Carroll Turrise	(02) 6355 5673	1 Bellvue Place, Portland NSW 2847
✓	Peter Falk Consultancy	Peter Falk	0401 938 060	Po Box 1018 Mittagong NSW 2575
✓	Scott Franks		0404 171 544	PO Box 76, Caringbah NSW 1495
	Tharawal LALC has verbally expressed an interest	Robyn Straub	(02) 46810059	PO Box 20 Buxton NSW 2571
✓	**Gandangara LALC**	Mark (Jack) Johnson	(02) 96025280	PO Box 1038 Liverpool NSW 2170

*Cherie is Ngunnawal Elder however lived in the Western Sydney area during her childhood. She recognises she is not from the area but has associations.

Darug Aboriginal Cultural Heritage Assessments

ABN 51734106483

Gordon Morton & Associates

Mob: 0422 865 831
Fax: 45 677 421

Celestine Everingham
90 Hermitage Rd., Kurrajong Hills, 2758
Ph/Fax: 45677 421
Mob: 0432 528 896

23 . 4 . 13

Attention

Deirdre Lewis Cook
Navin Officer

re: Mount Gilead Rezoning

DAC H.A wish to register our interest in the project at Mt Gilead. We wish to be consulted at all times and be involved in all fieldwork.

Yours Sincerely,
C. Everingham

Cultural Heritage – Building respect for the past and Conservation for the future

Darug Aboriginal Landcare Incorporated
18a Perigee Close
Doonside 2767NSW

ABN 71 301 006 047

Secretary
Navin Officer Heritage Consultants Pty Ltd
4/71 Leichhardt Street
Kingston 2604
ACT

Re: Mount Gilead.

Dear Deirdre,

The Darug Aboriginal Landcare has no objections to the proposed development or rezoning, as this area is on Darug Land.

Our organization would like to register and be consulted and take part in any field Heritage assessment.

We look forward to working with you in the future.

Kind regards

Des Dyer
Public Officer
Darug Aboriginal Landcare
Mobile 0408 360 814

Email desmond4552@hotmail.com

Cubbitch Barta Native Title Claimants
Aboriginal Corporation
55 Nightingale Road,
PHEASANTS NEST. N.S.W. 2574.
29th April, 2013.

Navin Officer Heritage Consultants Pty Ltd.
4/71 Leichardt Street,
KINGSTON. A.C.T. 2604

Dear Deidre,

RE; MT. GILEAD.

Cubbitch Barta would very much like to register an interest in the above project. I was part of the original survey of Mt. Gilead, and have participated in many other surveys for other projects on the property. I have a vast knowledge of the site locations both on the property and adjoining properties.

Yours faithfully,

G. Chalkers

Glenda Chalker
Hon. Chairperson
Phone/Fax 0246841129 0427218425

Received : 2/5/13

Example Letter with Methodology

16th May 2013

Ms Celestine Everingham
Darug Aboriginal Cultural Heritage Assessments

Navin Officer
heritage consultants pty ltd
abn: 28 092 901 605

Dear Celestine,

Re: Methodology for Mount Gilead Rezoning.

As you are aware Navin Officer Heritage Consultants Pty Ltd has been commissioned by Mount Gilead Pty Ltd to undertake a cultural heritage assessment of the rezoning proposal for a parcel of land at Mount Gilead, Campbelltown, NSW.

As you are a registered Aboriginal party for this project please find attached the *Proposed Methodology Aboriginal Heritage Archaeological Field Survey; Mount Gilead* (NOHC 2013) for the project.

The purpose of the methodology document is to provide, for your review and comment, the proposed methodology for the field survey of the project area.

If you would like to make any comments, please provide these to NOHC within the 28 day review period which concludes on 13th July 2013.

The Secretary
Navin Officer Heritage Consultants Pty Ltd
4/71 Leichhardt Street
KINGSTON ACT 2604

or by fax to; (02) 6282 9416

or by email to navinofficer@nohc.com.au

We look forward to working with you on this project.

Yours faithfully,

N. Hayes
Ms Nicola Hayes

Proposed Methodology

Aboriginal Heritage Archaeological Field Survey

Mount Gilead

Navin Officer Heritage Consultants *May 2013*

The Purpose of this Document

The purpose of this document is to provide to registered Aboriginal parties (RAPs), for review and comment, a proposed methodology for the conduct of an archaeological field survey of the Mount Gilead project located to the west of the Georges River.

The review forms part of the Aboriginal consultation procedure required by the NSW Office of Environment and Heritage (OEH) (DECCW 2010).

Registered Aboriginal parties are invited to provide comments and suggestions back to NOHC by 13th July 2013.

NOHC contact information is as follows:

The Secretary
Navin Officer Heritage Consultants Pty Ltd

4/71 Leichhardt Street

Kingston ACT 2604

email: navinofficer@nohc.com.au
phone: 02 62829415
fax: 02 62829416

The Study Area

The study area is located five kilometres south of Campbelltown city centre and comprises 210 hectares. The study area is shown in Figure 1.

The project area is currently identified on the state government's Metropolitan Development Program (MDP). A rezoning application is to be submitted to the Department of Planning & Infrastructure (DoPI). The rezoning will follow the Proponent Instigated LEP Rezoning Process. The process has achieved completion of Step 2 of the JBA chart with the Minister's Gateway Determination made on 7 September 2012. The determination has identified that a heritage study is to form part of the next stage submission.

Study Aims

The primary aim of the field survey is to identify Aboriginal cultural heritage sites and areas of archaeological sensitivity or potential that are present within the study area.

The survey will aim to achieve a level of ground surface coverage that will enable an informed assessment of potential construction impacts on any sites that may be identified.

Methodology

Field Equipment:

The field team will carry the required field recording equipment: such as compass, GPS, site forms, maps, camera and notebook; and required safety equipment such as first aid kits, mobile phones and two way radios.

Each field participant must wear appropriate clothing according to land-owner or client requirements, and if not already specified, a high visibility vest or equivalent, lace-up boots, wide brim hat (or hard hat), and carry a personal supply of water.

The Field Survey Will Involve:

1. *Foot survey of the project area*

   The archaeological field survey will be completed on foot by at least two individuals walking systematic transects and/or selected traverses, spaced a regular distance apart such as between approximately 5-50 m apart. The exact nature and arrangement of the transects/traverses conducted will depend on an in-field assessment of visibility constraints and cultural and archaeological sensitivity.

   Survey will also include opportunistic inspection of any existing ground exposures in the study area.

   Where feasible, all old-growth native trees in the study area will be inspected for the presence of culturally derived scars.

2. *Field Consultation with Representative Aboriginal Parties (RAPs)*

   RAPs will be invited to participate in the field survey according to the protocol defined below. Aboriginal field participants will be invited to communicate any knowledge that they may have regarding the cultural heritage values of the study area, archaeological and cultural sites, and the overall landscape.

   The project team will conduct the cultural assessment program in a culturally sensitive manner and treat the information provided with respect (and in confidence, where requested and required).

3 *Site recording*

   All surface archaeological sites, potential archaeological deposits and places of Aboriginal cultural value will be documented. All sites will have the following details recorded using standardised recording forms.

   - Site name, recorder and date
   - Site type
   - GPS coordinates
   - Landscape and landform character
   - Site dimensions
   - Site condition and potential to be larger
   - Site content including numbers and artefact types, raw materials and detailed recording of a sample of artefacts.
   - Photos
   - Any other relevant information, such as oral information and informant details.

Registered Aboriginal Party Participation in Field Work

The proponent is committed to providing an opportunity to the representatives of registered Aboriginal parties to participate in the conduct of field survey program.

RAP Field Representative Selection Protocol

It is proposed that each registered Aboriginal party which seeks to participate in the field program, submit an application, demonstrating experience and field qualifications. The selection of field participants would be made by the proponent. Representation would be limited to one person per successful registered party application.

Cultural Input from Registered Stakeholders

In order to assess the possible impacts of this proposed development, it is important to assess any potential effects on Aboriginal cultural values.

You (or your organisation or group) are asked to identify whether there are any Aboriginal objects of places of cultural value to Aboriginal people in the area of the proposed project. We also seek your views of the potential management options for any sites/objects that may be found in the project area during the investigation.

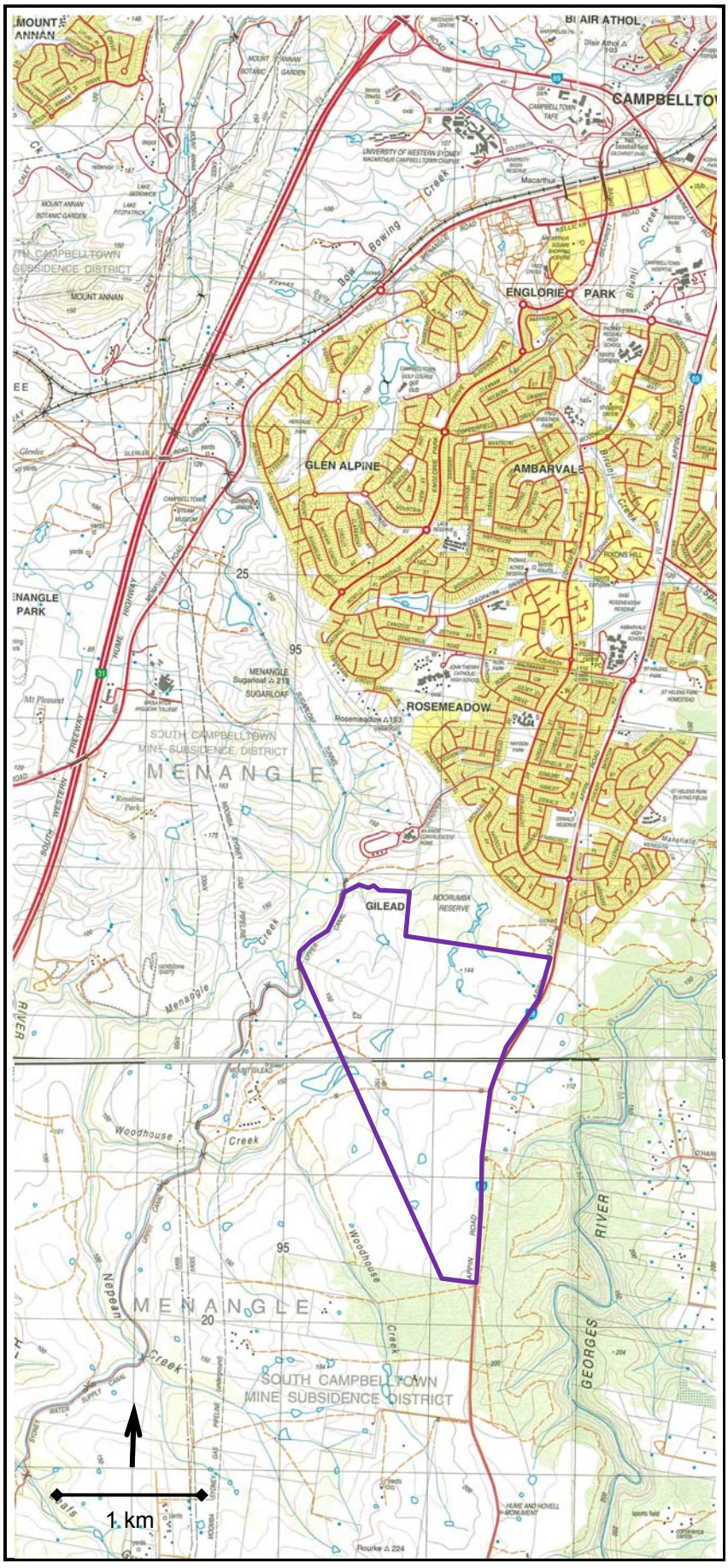
To do this, you (or your organisation or group) are invited to provide a written submission on its views. Your report will be provided to government authorities responsible for making decisions about the development proposal.

Your report will be most effective if it is provided on the letterhead of your organisation and signed by an executive office holder.

Your report will be included in the cultural heritage assessment report. The draft cultural heritage assessment report will be provided to registered stakeholders for comment. Comments and the assessment of potential development impacts on cultural sensitivity conducted by the participants will then be incorporated into the survey report where appropriate.

Report preparation

Information gained in the course of the survey and information provided by the Aboriginal community will be documented in a report (except where information has been identified as culturally sensitive and therefore restricted). The report will detail the survey methodology, results and assessment of significance of identified sites. Recommendations will be provided for the management of sites.



Location of Mount Gilead Project Area (purple)

Recieved 30/5/13

Darug Aboriginal LandCare

Uncle Des Dyer

18a Perigee Close
Doonside 2767NSW

ABN 71 301 006 047

Secretary
Navin Officer Heritage Consultants Pty Ltd
4/71 Leichhardt Street
Kingston 2604
ACT

Re: Mount Gilead.

Dear Deirdre,

The Darug Aboriginal Landcare has no objections to the proposed development or rezoning, as this area is on Darug Land.

Our organization would like to register and be consulted and take part in any field Heritage assessment.

We look forward to working with you in the future.

Kind regards

Des Dyer
Public Officer
Darug Aboriginal Landcare
Mobile 0408 360 814

Email desmond4552@hotmail.com

Darug Aboriginal Cultural Heritage Assessments

ABN 51734106483

Gordon Morton & Associates

Mob: 0422 865 [illegible]
Fax: 45 677 421

Celestine Everingham
90 Hermitage Rd., Kurrajong Hills, 2758
Ph/Fax: 45677 421
Mob: 0432 528 896

12 · 6 · 13

Attention:
Nicola Hayes
Navin Officer

re Methodology for Mount Gilead Rezoning

DAC HH have reviewed your proposed methodology for the rezoning of Mt. Gilead and we support your aims and objectives. We look forward to working with you on this project.

Yours Sincerely,
C. Everingham

Cultural Heritage – Building respect for the past and Conservation for the future

Cubbitch Barta Native Title Claimants
Aboriginal Corporation
55 Nightingale Road,
PHEASANTS NEST. N.S.W. 2574.
10th June, 2013.

Navin Officer Heritage Consultants Pty Ltd.
71 Leichardt Street,
KINGSTON. A.C.T. 2604.

Dear Nicki,

MT. GILEAD.

Thank you for the opportunity to comment on the methodology for the above project. The actual methodology is consistent with the landscapes that exist within the Mt. Gilead property.

I would also like to take this time to mention that I took part in the original survey of the property, when it was originally proposed for development some years ago. This survey did not take in all of the property, and may have only been the same footprint that you may be working with now. As well as that survey, I have also taken part in many other surveys for AGL, Duke Energy, both of which identified other sites on other parts of the property.

My experience in the field over the last twenty years is comprehensive, and I have a vast knowledge of sites within my traditional country. I have worked in all fields of archaeology ranging from foot surveys to excavations, and have worked with Navin Officer many times over the last twenty years.

Yours faithfully,

G. Chalker.

Glenda Chalker
Phone/Fax 02 46841129 0427218425

Example Letter with Draft Report

13th August 2013

Ms Celestine Everingham
Darug Aboriginal Cultural Heritage Assessments

Navin Officer
heritage consultants pty ltd
abn: 28 092 901 605

Dear Celestine,

Re: Methodology for Mount Gilead Rezoning.

As you are aware Navin Officer Heritage Consultants Pty Ltd has been commissioned by Mount Gilead Pty Ltd to undertake a cultural heritage assessment of the rezoning proposal for a parcel of land at Mount Gilead, Campbelltown, NSW.

Draft Report

As you are a registered Aboriginal party for this project please find attached the Please find attached the *Draft Mount Gilead Rezoning* report (NOHC 2013).

We are pleased to provide this copy to your organisation as part of:

- Enabling you to provide information on the cultural significance of Aboriginal objects and/or places on the proposed project area;
- Enabling you to have input into the development of any cultural heritage management options; and
- To provide an opportunity for your organisation to comment on the reports archaeological findings and recommendations.

Given that an assessment of the Aboriginal cultural values of sites can only be made by the Aboriginal community, we invite your organisation to review this report and provide a written response giving your organisations views and assessments.

In particular your response could answer the following questions:

- Does your organisation agree with the site significance assessments and does your organisation have anything to add regarding the Aboriginal cultural significance of these sites and /or the Aboriginal cultural significance of the project area as a whole?
- Does your organisation endorse the recommendations made? Does your organisation have any additional site management requirements, not presented in the report?
- Is there anything else your organisation would like to add, or wish to draw attention to?

The Executive Summary gives an outline of the results and recommendations for the project.

If you would like to make any comments, please provide these to NOHC within the 28 day review period which concludes on 10th September 2013.

Could you please provide a response in writing to the address or fax number listed on this correspondence. Please do not hesitate to contact us if you have any questions about the report, or about providing a written response.

The Secretary
Navin Officer Heritage Consultants Pty Ltd
4/71 Leichhardt Street
KINGSTON ACT 2604

or by fax to; (02) 6282 9416

or by email to navinofficer@nohc.com.au

Site Visit

A site visit is being planned for the 21st August in order to discuss the findings of the report and familiarise you with the project. We ask that you provide one representative for this day. We will be meeting at the entrance to Mount Gilead on Appin Road at 9am.

We look forward to working with you on this project.

Yours faithfully,

N. Hayes
Ms Nicola Hayes

Cubbitch Barta Native Title Claimants
Aboriginal Corporation
55 Nightingale Road,
PHEASANTS NEST. N.S.W. 2574.
2nd September, 2013.

Ms Nicola Hayes,
Navin Officer Heritage Consultants
4 Kingston Warehouse,
71 Leichardt Street,
KINGSTON. ACT 2604.

Dear Nicola,

RE; MT. GILEAD.

Thank you for the opportunity of reviewing the DRAFT Aboriginal Assessment for the above proposed project.

There are a number of things that I would like to comment on;

1. The scarred tree should be conserved at all costs, in an area that allows more than adequate space for the tree and there is no impacts to the tree by roads, pathways or infrastructure such as water, sewerage of power lines . It should also be considered limb loss by the tree in the future, and the impacts on its surroundings, avoiding any possible future issues that may affect the safety of the tree.
2. If there is no concept plan at the moment, then there should be possible negotiated conservation outcomes for possible other registered sites. It is certainly easier to negotiate conservation outcomes before any plans are put into practice.
3. Test excavations under the Code of Practice should be carried out on all PAD areas, using hand excavations only. There has been near to no excavations carried out on the Southern end of the Cumblerland Plain, apart from Reserve 4, nearby. There are several PAD areas which should be investigated further.
4. It is always first choice to return artefacts back to Country, and if there is a conservation area in place it makes it much easier to do so, by reburying and re-recording the location, which should not be information included for the public.
5. Through good planning at this stage of a development allows for good conservation outcomes for the future of Aboriginal Heritage.

The registered Aboriginal parties should be consulted at all times in regards to the development.

Yours faithfully,

G. Chalker.

Glenda Chalker
Hon. Chairperson
Phone/Fax 02 46841129 0427218425

APPENDIX 2

AHIMS HERITAGE REGISTER SEARCH RESULTS

Office of Environment & Heritage

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref Number :
Client Service ID : 100277

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
52-2-3629	NR_OC5	GDA	56	296234	6222503	Open site	Valid	Artefact : 11		102313

Contact **Recorders** Jim Wheeler,Miss.Felicity Barry **Permits**

Report generated by AHIMS Web Service on 10/05/2013 for Julie Broszniowski for the following area at Lot : 59, DP:DP752042 with a Buffer of 50 meters. Additional Info : archaeological assessment. Number of Aboriginal sites and Aboriginal objects found is 1

This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

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Office of Environment & Heritage

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref Number :
Client Service ID : 100278

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
52-2-3768	Mount Gilead Property PAD	GDA	56	296270	6221717	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		101830

Contact | Recorders: Austral Archaeology Pty Ltd | Permits

Report generated by AHIMS Web Service on 10/05/2013 for Julie Broszniowski for the following area at Lot : 61, DP:DP752042 with a Buffer of 50 meters. Additional Info : archaeological assessment. Number of Aboriginal sites and Aboriginal objects found is 1

This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

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APPENDIX 3

UNANTICIPATED DISCOVERY PROTOCOLS

Protocol to follow in the event that Aboriginal object(s) or historical relics (other than human remains) are encountered and no AHIP has been approved

In the event that object(s) which are suspected of being Aboriginal object(s) or relic(s) are encountered during development works, then the following protocol will be followed:

1. Cease any further excavation or ground disturbance, in the area of the find(s);

    a. The discoverer of the find(s) will notify machinery operators in the immediate vicinity of the find(s) so that work can be temporarily halted; and

    b. The site supervisor and the Principal will be informed of the find(s).

2. Do not remove any find(s) or unnecessarily disturb the area of the find(s);

3. Ensure that the area of the find(s) is adequately marked as a no-go area for machinery or further disturbance, and that the potential for accidental impact is avoided;

4. Note the location and nature of the finds, and report the find to:

    a. Relevant project personnel responsible for project and construction direction and management, and

    b. Report the find to the Office of Environment and Heritage (OEH).

5. Where feasible, ensure that any excavation remains open so that the finds can be recorded and verified. An excavation may be backfilled if this is necessary to comply with work safety requirements, and where this action has been approved by the OEH. An excavation that remains open should only be left unattended if it is safe and adequate protective fencing is installed around it.

6. Following consultation with the relevant statutory authority (OEH), and, where advised, any other relevant stakeholder groups, the significance of the finds should be assessed and an appropriate management strategy followed. Depending on project resources and the nature of the find(s), this process may require input from a consulting heritage specialist.

7. Development works in the area of the find(s) may re-commence, if and when outlined by the management strategy, developed in consultation with, and approved by the relevant statutory authority.

8. If human skeletal material is encountered, the protocol for the discovery of human remains should be followed (refer attached).

Protocol to follow in the event of the discovery of suspected human remains

The following protocol will be actioned if suspected human material is revealed during development activities or excavations at Mount Gilead:

1. All works must halt in the immediate area of the find(s) and any further disturbance to the area of the find(s) prevented.

    c. The discoverer of the find(s) will notify machinery operators in the immediate vicinity of the find(s) so that work can be halted; and

    d. The site supervisor and the Principal/Project manager will be informed of the find(s).

2. If there is substantial doubt regarding a human origin for the remains, then consider if it is possible to gain a qualified opinion within a short period of time. If feasible, gain a qualified opinion (this can circumvent proceeding further along the protocol for remains which are not human). If conducted, this opinion must be gained without further disturbance to the find(s) or the immediate area of the find(s).

    (Be aware that the site may be considered a crime scene that retains forensic evidence). If a quick opinion cannot be gained, or the identification is positive, then proceed to the next step.

3. Immediately notify the following of the discovery:

    a. The local Police (this is required by law);

    b. A OEH archaeologist or Aboriginal Heritage Officer from the Central Branch EPRD, Parramatta (9995 5000);

    c. Representative(s) from the Registered Aboriginal Parties (RAP); and

    d. The project archaeologist (if not already notified).

4. Co-operate and be advised by the Police and/or coroner with regard to further actions and requirements concerning the find area. If required, facilitate the definitive identification of the material by a qualified person (if not already completed).

5. In the event that the Police or coroner instigate an investigation, construction works are not to resume in the designated area until approval in writing is gained from the NSW Police.

6. In the event that the Police and/or Coroner advise that they do not have a continuing or statutory role in the management of the finds then proceed with the following steps:

7. If the finds are not human in origin but are considered to be archaeological material relating to Aboriginal occupation then proceed with Protocol for the discovery of Aboriginal objects (other than human remains).

8. If the finds are Aboriginal or probably Aboriginal in origin:

    a. Ascertain the requirements of OEH, the Heritage Branch, the Project Manager, and the views of the AFG, and the project archaeologist.

    b. Based on the above, determine and conduct an appropriate course of action. Possible strategies could include one or more of the following:

        i. Avoiding further disturbance to the find and conserving the remains *in situ*;

        ii. Conducting archaeological salvage of the finds following receipt of any required statutory approvals;

iii. Scientific description (including excavation where necessary), and possibly also analysis of the remains prior to reburial;

iv. Recovering samples for dating and other analyses; and/or

v. Subsequent reburial at another place and in an appropriate manner determined by the AFG.

9. If the finds are non-Aboriginal in origin:

c. Ascertain the requirements of the Heritage Branch, Project Manager, and the views of any relevant community stakeholders and the project archaeologist.

a. Based on the above, determine and conduct an appropriate course of action. Possible strategies could include one or more of the following:

a. Avoiding further disturbance to the find and conserving the remains *in situ*;

b. Conducting archaeological salvage of the finds following receipt of any required statutory approvals;

c. Scientific description (including excavation where necessary), and possibly also analysis of the remains prior to reburial;

d. Recovering samples for dating and other analyses; and/or

e. Subsequent reburial at another place and in an appropriate manner determined in consultation with the Heritage Office and other relevant stakeholders.

10. Construction related works in the area of the remains (designated area) may not resume until the proponent receives written approval in writing from the relevant statutory authority: from the Police or Coroner in the event of an investigation, from OEH in the case of Aboriginal remains outside of the jurisdiction of the Police or Coroner, and from the Heritage Branch in the case of non-Aboriginal remains outside of the jurisdiction of the Police or Coroner.