

disturbance of a topsoil deposit with artefacts does not entirely diminish research value, it may limit the types of questions that may be asked. A heavily cultivated paddock may be unsuited to addressing research questions of small-scale site structure, but it may still be suitable for answering more general questions of implement distribution in a region and raw material logistics.

The capacity of a site to address research questions is predicated on a definition of what the key research issues are for a region. In this region the key research issues revolve around the chronology of Aboriginal occupation, and preferred landscapes for different types of occupation.

An assessment of the scientific significance is set out below.

### **Research Potential**

With the exception of the areas of subsurface potential (discussed in Section 9), eight isolated finds was identified as part of this assessment. All of the finds were located on heavily eroding or disturbed environments. Due to the absence of a soil profile and the lack of any rare or unknown technological attributes, these finds have little to no research value.

The presence of a potentially *in situ*, albeit disturbed, soil profiles in the southern quadrant of the study area provides potential for Aboriginal objects to be present, and hence their identification as PADs. The research potential of this site is therefore considered high until it can be provided otherwise.

### **Condition / Integrity**

Aboriginal objects and sites identified as part of this study retain poor condition and integrity. The sites have been heavily impacted by historical and recent activities, and as such the integrity of the sites is generally low and the condition poor. Historical activities, most notably construction, extraction and land clearing, have led to significant erosion of the soil profiles and mass sediment redistribution within the study area, and hence all archaeological material present is considered in an out of situ context.

The condition and integrity of Aboriginal objects that may be present in the three PADs cannot be made at this time. There has been significant disturbance in the general area, but the visual investigation of these areas indicate disturbance has been variable (if present at all). Further characterisation of this site is required prior to an assessment based on this criterion.

### Representativeness

Aboriginal objects found across the study area are representative of disturbed isolated finds and/or artefact scatters commonly found in the region, that have been subject to ground disturbance. They do not represent the nature of original archaeological deposits at the site. The sites are essentially part of a 'background scatter', typical of a low density of stone artefacts found across most landscapes in southeast Australia (also see Section 5.2). Therefore, the artefactual sites evident within the study area are well represented in the local and regional area.

An assessment of the representativeness of Aboriginal objects that may be present in the three PADs cannot be made at this time. Further characterisation of this site is required prior to an assessment based on this criterion.

### Rarity

The Aboriginal archaeological materials found during the survey have a very low level of rarity when compared with the results of previous archaeological investigations across the region. Disturbed isolated finds and low density artefact scatters such as those found here are not considered to have rarity in either frequency or research potential (i.e. what they can tell us about past Aboriginal occupation).

An assessment of the rarity of Aboriginal objects that may be present in the three PADs cannot be made at this time. Further characterisation of this site is required prior to an assessment based on this criterion.

## 10.4 Summary

The eight isolated finds areas considered to have low archaeological significance. The finds retains low research potential due to an absence of intact soil profile and artefacts with few diagnostic features or technological attributes. Such disturbed low density artefact scatters/isolated find sites are extremely common in the region, and hence the finds cannot be considered more significant through other criteria such as rarity or condition.

At this stage, the significance assessment above only considers the surface expressions of the sites outlined in **Section 9**. The assessment does not consider the significance of potential archaeological subsurface deposits (**Section 9**), which should be considered as the areas outlined in **Figure 33**. At this stage the significance of three PADs cannot be identified due to the lack of information on the presence/absence of Aboriginal objects and their condition. There is some potential that the PADs may retain high research potential based on the presence of a potentially intact soil profile that appear relatively undisturbed for the last 40 years.

Aboriginal community views were sought during the site investigation and have been outlined above (and in **Appendix C**). Feedback from the community indicated the importance of the banks of the Georges River (e.g. Area 1) to the Aboriginal people of the region. They also assign a value to the isolated finds found, regardless of their context.

# 11. IMPACT ASSESSMENT

*Identification of potential development impacts on the Aboriginal heritage values across the development area.*

## 11.1 General

The current investigation indicates that the subject area contains potential archaeological deposits (PADs) and Aboriginal stone artefacts.

This section provides consideration of the potential impacts of the SIMTA proposal upon the PADs identified within the subject area. The purpose of this discussion is to identify the location and potential significance (heritage values) of the areas of potential so that development planning may consider options that will minimise impacts to Aboriginal heritage values within the subject area.

An *impact* is defined here as an action or activity that results in the disturbance, damage or destruction of an Aboriginal object or Aboriginal site.

## 11.2 Potential Impacts

*Integration of assessment with proposed development.*

The following Aboriginal heritage impact assessment is based on the description of the proposed development and the indicative layout plan of the proposed SIMTA facility below (Figure 34).

The SIMTA Concept Plan proposal includes the staged development of the subject area as an intermodal terminal facility with warehouse and distribution facilities, and dedicated rail link between the Southern Sydney Freight Line and the SMITA site. Key components of the SIMTA proposal include:

- Demolition of most of the current buildings and landscape elements at the SIMTA site.
- A rail corridor and rail link, which would link the SIMTA site to the Southern Sydney

Freight Line.

- An intermodal terminal.
- Warehouse and distribution facilities.
- Ancillary terminal facilities

As the design of the SIMTA proposal has yet to be finalised, it is not known precisely what the potential impact will be on PADs 1 to 3, Area 1 and Transects 1 and 7. However, should excavation, grading or the use of metal tracked or heavy vehicles be required in any of the PADs or Area 1, it would have the potential to damage or destroy Aboriginal archaeological deposits or isolated artefacts, which are culturally significant to the RAPs. The process of excavation destroys the integrity of a site, and can also damage artefacts and features. Grading and heavy vehicles driving over sites can damage artefacts where they are located on, or close to the surface. Other development related activities not mentioned here may also potentially impact on the Aboriginal cultural heritage values of the aforementioned sites.

In all other parts of the subject area, the SIMTA proposal is not considered likely to impact any Aboriginal cultural heritage values.



Figure 34 SIMTA Concept Plan and Proposed Development Stages.

## 12. CONCLUSIONS

### 12.1 The SIMTA Site

Using background information, most notably geotechnical information and historical aerial photographs, it can be concluded that both the SIMTA site and proposed rail corridor have been subject to extensive previous impact. While archaeological models and previous regional/local studies all indicate that the subject area has high potential for Aboriginal objects and/or sites due to its proximity to the Georges River and Anzac Creek, previous and existing development has led to such significant changes that the likelihood of such objects/sites surviving is considered low.

It is clear that Defence activities have led to the elevation of almost the entire SIMTA site with introduced fill, (ranging in depth from 1 - 5 meters). It is highly likely that the introduction of this volume of fill would have caused significant detrimental impact to any existing land surface and/or soil profile (and any associated Aboriginal objects) that may have been present within the SIMTA site. Historical aerial photographs revealed that the area closest to Anzac Creek - and the most likely to contain Aboriginal objects/sites - has been extensively altered through the introduction of at least 1 metre of fill and the canalisation of the nearby water depressions and watercourses. A site inspection of the remainder of the SIMTA site, similarly, revealed little evidence of a natural environment, with numerous structures, roads, hard-stands and cultural plantings being present on the site.

No Aboriginal places are registered within the SIMTA site, and the RAPs indicated that they did not consider it to have any Aboriginal cultural heritage value, however, they did state that any isolated artefacts do have Aboriginal cultural heritage value. While sporadic isolated artefacts may occur within the SIMTA site, the presence of intact significant archaeological deposits was considered low.

### 12.2 Proposed Rail Corridor

Investigation of the proposed rail corridor was limited due to access issues. Only the part of the subject area on the eastern side of the Georges River was surveyed. Investigation of background information and some site inspection indicated that much of the proposed rail corridor had been extensively impacted due to sand/gravel extraction industries and a rail corridor. However, it was considered that four areas of the proposed rail corridor require further consideration before development: PAD 1, PAD 2, PAD 3 and Area 1 (Figure 33).

# 13. MITIGATION & MANAGEMENT RECOMMENDATIONS

*This section recommends a management strategy for Aboriginal Heritage within the subject area.*

## 13.1 General

The following recommendations are based upon:

- The appropriate statutory context.
- The results of the archaeological investigation detailed above.
- The views expressed by the RAPs in relation to the management of the heritage values identified in the subject area.

## 13.2 General Recommendations

1. Consultation between SIMTA and relevant Registered Aboriginal Parties (RAPs) should be maintained throughout the design and construction of the SIMTA proposal.
2. Where possible, SIMTA should aim to avoid impacting any known Aboriginal heritage objects, sites or places and places that have potential Aboriginal heritage or cultural values, throughout the life of the SIMTA proposal.
3. Where impact cannot be avoided, SIMTA should choose partial impact rather than complete impact wherever possible and ensure that appropriate measures to mitigate impacts are developed and implemented as required and as appropriate during design, construction and operation of the various stages of the SIMTA proposal.
4. If re-location of any element of the SIMTA proposal outside the area assessed in this study is proposed, further assessment of the additional area(s) should be undertaken to identify and appropriately manage Aboriginal objects/sites/places that may be in this additional area(s).



5. In the event that previously undiscovered Aboriginal objects, sites or places (or potential Aboriginal objects, sites or places) are discovered during construction, all works in the vicinity of the find should cease and SIMTA should determine the subsequent course of action in consultation with a heritage professional, relevant Registered Aboriginal Parties and/or the relevant State government agency as appropriate.
6. Should suspected human skeletal material be identified, all works should cease and the NSW Police and the NSW Coroner's Office contacted. Should the burial prove to be archaeological of Aboriginal origin, consultation with a heritage professional, relevant RAPs and/or the relevant State government agency, should be undertaken by SIMTA.
7. SIMTA should ensure that any reports or documents for the SIMTA proposal concerning Aboriginal heritage comply with applicable statutory requirements (those currently applicable are outlined in this report), are prepared in accordance with best practice professional standards and, where appropriate, ensure findings are provided to OEH AHIMS Registrar and the relevant RAPs.

### 13.3 Site Specific Recommendations

1. To ensure cultural values for both the SIMTA site and proposed rail corridor are appropriately characterised and assessed, Aboriginal consultation should continue to be undertaken in accordance with applicable guidelines and requirements.
2. The artefacts identified in Transect 1 on the SIMTA site, and Transect 7 immediately south of the SIMTA site, should be collected by RAPs in conjunction with a heritage professional before construction commences. A Care and Control Agreement should be completed between SIMTA and the RAPs regarding the future of the artefacts (it is usually preferred that they be reburied nearby).
3. Given the extensive historical disturbance within the remainder of the SIMTA site, it is considered that the likelihood of the presence of intact or significant Aboriginal objects and/or sites is low and no further archaeological investigations are warranted in these remaining areas.
4. In relation to the proposed rail corridor, with the exception of PADs 1 - 3

(Figure 33), it is considered that the likelihood of the presence of intact or significant Aboriginal objects and/or sites is low and no further archaeological investigations are warranted in the remaining areas.

5. Any areas outside those investigated as part of this assessment, most notably those areas within 50 m of the eastern and western banks of the Georges River, should not be impacted without further assessment.
6. Areas of the study area in close proximity to Georges River and the southwestern most corner of the proposed rail corridor, which could not be adequately investigated due to access issues, should be investigated further. The background and predictive models presented in this report may suffice for a conditional approval, however, access and more detailed assessment of these areas is required to fully identify development impacts.

7. In relation to PADs 1 - 3 (Figure 33), it is recommended that, either:

Impacts within these areas are entirely avoided (i.e. no modifications are made to any ground surface in any way, including but not limited to excavation, grading and the use of heavy or metal tracked vehicles); or

Test excavations be undertaken in each of PADs 1 - 3 in accordance with current archaeological practice and any relevant guidelines to determine the nature, extent and significance of any Aboriginal archaeological deposit. Such testing could be undertaken under Section 75U of the *Environmental Planning and Assessment Act 1979*, and be used to inform the assessment prior to lodgment of the EA, or as part of a Statement of Commitments following the approval.

If significant Aboriginal site(s) are identified in PADs 1, 2 or 3, then design of the SIMTA proposal to avoid such sites(s) is the preferred option. However, if it is not considered possible to avoid such site(s), then salvage excavations of the PADs in accordance with current archaeological practice, any relevant guidelines and in consultation with the RAPs should be undertaken to gather as much information on the site(s) as possible prior to disturbance.

8. Based on the comments received throughout the consultation process, the RAPs support the above recommendations (see Appendix C). However, Cubbitch Barta Native Title Claimants has noted the possible presence of a scarred tree at the golf course. Based on this potential for scarred trees

in this area, it is recommended that :

- 8.1 Any proposed impacts to mature trees (greater than 80 years old) in the golf course should be avoided.
- 8.2 If avoidance is not feasible, any mature trees that will be impacted by the proposed development should be inspected to identify and potential Aboriginal cultural scarring. The survey, if required, should be undertaken early in the planning process to avoid any project delays.
- 8.3 Should the survey identify any trees with potential cultural scarring, further heritage assessment and/or mitigation measures may need to be developed.

## 14. REFERENCES

- AHMS (2010) Water Related Services for Northwest and Southwest Growth Centres. Aboriginal cultural heritage Assessment - Desktop Review. Unpublished report to Sydney Water Corporation.
- ARUP (2008) Moorebank Intermodal Terminal: Geotechnical Desk Study Report.
- Atkinson, J (1826) *An account of the state of agriculture and grazing in New South Wales*. J Cross: London.
- Attenbrow, V (2002) *Sydney's Aboriginal Past: Investigating the Archaeological and Historical Records*. UNSW Press: Sydney.
- Attenbrow, V (2004) *What's Changing: Population Size or Land Use. The Archaeology of Upper Mangrove Creek, Sydney Basin. Terra Australis* vol 21. Pandanus Books: Canberra.
- Attenbrow, V, and Negerevich, T (1981) Lucas Heights Waste Disposal Depot. Proposed Extensions. Unpublished report to Metropolitan Waste Disposal Authority.
- Attenbrow, V and Steele, D (1995) Fishing in Port Jackson, New South Wales - More than Met the Eye. *Antiquity* 69:47-60.
- Bannerman, S M, and Hazelton, P A (1990), *Soil Landscapes of the Penrith 1:100,000 Sheet*. Soil Conservation of NSW: Sydney.
- Barrallier, F (1802[1975]) *Journal of the Expedition into the Interior of New South Wales 1802 by order of His Excellency Governor Phillip Gidley King*. Marsh Walsh Publishing: Melbourne.
- Barratt, G (1981) *The Russians at Port Jackson 1814-1822*. Australian Institute of Aboriginal Studies: Canberra.
- Boot, P (1990) Archaeological Survey of Proposed Defence Housing Authority Sub-division at Holsworthy, NSW. Unpublished report to Kinhill Engineers.

Boot, P (1992) Archaeological Survey of Additions to Defence Housing Authority Sub-division at Wattle Grove Development. Unpublished report to Wattle Grove Development.

Boot, P (1993) Artefact Scatters at Wattle Grove, NSW. Unpublished report to Wattle Grove Development.

Boot, P (1994a) Archaeological Survey of Option 3 Land, Defence Housing Authority Sub-division at Wattle Grove, NSW. Unpublished report to Wattle Grove Development.

Boot, P (1994b) Monitoring of Tree and Topsoil Removal from Artefact Scatters at Wattle Grove, NSW. Unpublished report to Wattle Grove Development.

Branagan, D F and Megae, J V S (1969). The Lithology of a coastal Aboriginal settlement at Curracurrang NSW, *Archaeology and Physical Anthropology in Oceania* 4(1):1-17.

Brayshaw, H (1982) Archaeological Survey in West Menai Urban Release Area. Unpublished report to Travers Morgan.

Brian McDonald and Associates (2002) *Defence National Storage Distribution Centre Moorebank Defence Site - Heritage Advice*, December 2002.

*The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance 1999.*

Central West Archaeology and Heritage Services (2002) An Aboriginal Archaeological Study of the proposed Hoxton Park Partial Sewerage Transfer via Liverpool Submain. Unpublished report to Robynne Mills Archaeological & Heritage Services and Sydney Water.

Collins, D (1798[1975]) *An Account of the English Colony in New South Wales* Vol 1. Fletcher, B H (ed), T Cadell Jun. and W Davies: London.

Cook, J (1999) *The Journals*. Edwards, P (ed). Penguin Books: London.

Cultural Heritage Connections (Vanessa Hardy) (2006) Southern Sydney Freight Line Aboriginal Cultural Heritage Assessment. Unpublished report to Parsons Brinckerhoff.

Dallas, M (1988) Archaeological Survey of the Department of Housing Project 12257 Kiawa

Estate, Casula, NSW. Unpublished report to the Department of Housing.

Douglas Partners (2009) Report on Summary Geotechnical Site Conditions. Proposed Intermodal Freight Terminal DNSDC Site- Moorebank Avenue, Moorebank. December 2009. Report prepared for Stockland Development Pty Ltd C/- Arben Management Pty Ltd. Project 71499.

Dyer, C (2005) *The French explorers and the Aboriginal Australians*. University of Queensland Press: St Lucia.

ENSR Aecom (2009) Phase 2 Archaeological Excavations - Oran Park and Turner Road Precincts, South West Sydney, NSW. Unpublished report to Landcom Greenfields Development Corporation.

Grant, J (1803) *The Narrative of a Voyage of Discovery in the years 1800, 1801 and 1802 to New South Wales*. London.

Havard, O (1942) Mrs Felton Matthew's Journal. *Journal and Proceedings of the Royal Australian Historical Society* 29(4):217-52.

Hunter, J (1793[2006]) *An Historical Journey of the Transactions at Port Jackson and Norfolk Island*. Currey, J (ed). The Banks Society: Malvern.

Kohen, J L (1986) Prehistoric Settlement in the Western Cumberland Plain: Resources, Environment, Technology. PhD Thesis, School of Earth Sciences, Macquarie University: Sydney.

Koettig, M and Hughes, P (1983) An Archaeological Survey of the Route of the Proposed Rail Link between East Hills and Glenfield, NSW. Unpublished report to Dames and Moore.

Koettig, M and McDonald, J (1984) Archaeological Survey for Aboriginal Sites in the Upper Mill Creek Area. An Alternative Site for the Lucas Heights Waste Disposal Depot. Unpublished report to Metropolitan Waste Disposal Authority.

Kohen, J (2001) *Allowan - I remain. In search of Sydney's Aboriginal Cultural Heritage Seminar Transcripts*. Historic Houses Trust of NSW: Sydney.

Kohen, J (1986) Prehistoric Settlement in the Western Cumberland Plain: Resources, Environment, Technology. PhD Thesis, School of Earth Sciences, Macquarie University: Sydney.

Lang, J (1839) in SLNSW Aborigines Protection Board 1839, Volume V.

LesryK Environmental Consultants (2002) Flora and Fauna Statement for Defence National Storage Distribution Centre (DNSCD). Report prepared by Deryk Engel and John Speight, August 2000.

Liston, C (1988) The Dharawal and Gandangara in Colonial Campbelltown, New South Wales, 1788-1830. *Aboriginal History* 12(1): 49-62.

McDonald, J (2005) Archaeological Salvage Excavation of Eight Archaeological Landscapes in the Second Ponds Creek Valley, Rouse Hill Development Area, NSW. Report to Rouse Hill Infrastructure and Landcom.

McDonald, J (2002) Archaeological Survey for Aboriginal cultural heritage Sites at the former CSIRO Animal Research Laboratory, Prospect NSW. Report to Rose Consulting Group on behalf of Stockland (Constructors).

McDonald, J (JMCHM) (2001) *Case Study One- Nurragingy Reserve, Blacktown*, as cited in AMBS. 2007. *Eastern Creek Geo-archaeological Model and Strategy Assessment, interpretation and Strategic Conservation of the Archaeological Resource*. Draft report prepared for Hyder Consulting.

McDonald, J (1997) Interim Heritage Management Report: ADI Site St Marys. Vol 1: Text. Report to Lend Lease - ADI Joint Venture in Response to the Section 22 Committee Interim Report.

McDonald, J (JMCHM), (1997) Archaeological Test Excavation of PAD 1 CSIRO Laboratory, Ian Clunies Ross Research Laboratory. Report to CSIRO Australia.

McMah, L A (1965) A Quantitative analysis of the Aboriginal rock carvings of the district of Sydney and the Hawkesbury River. Unpublished BA(Hons) thesis, Department of Anthropology: University of Sydney.

Mathews, R H and Everitt, M M (1900) The Organization, Language and Initiation Ceremonies of the Aborigines of the South-East Coast of N.S. Wales. *Journal and Proceedings of the Royal Society of NSW* 34:262-281.

Navin Officer (1997) Second Sydney Airport Environmental Impact Statement Draft Technical Paper No 11 - Aboriginal Cultural Heritage. Report PPK Environment & Infrastructure for the Department of Transport and Regional Development.

NSW National Parks and Wildlife (1997) *Aboriginal Cultural Heritage Standards & Guidelines Kit*, National Parks and Wildlife Service, NSW, Hurstville.

Organ, M (1990) *A Documentary History of the Illawarra and South Coast Aborigines 1770-1850*. Aboriginal Education Unit, The University of Wollongong: Wollongong.

Ross, A (1988) Tribal and Linguistic Boundaries: A reassessment of the Evidence. In Alpin, G (ed) *Sydney Before Macquarie: A Difficult Infant*. New South Wales University Press: Sydney.

Sefton, C (1981) Archaeological Survey of Proposed Drill Sites and Related Access Tracks at Weddeburn. Unpublished report to Kembla Coal and Coke.

Sefton, C (1982) Archaeological Survey of Proposed Mining Purposes Lease Application Wedderburn Area. Unpublished report Clutha Development.

Sefton, C (1986) Archaeological Survey of Proposed Wedderburn Coal Project. Unpublished report to Kembla Coke and Coal.

Sefton, C (1987) Addendum to: 1986 Report - Archaeological Survey of Proposed Wedderburn Coal Project. Unpublished report to Kembla Coke and Coal.

Sefton, C (1990) Archaeological Survey of Wedderburn Lease Area and Proposals for Monitoring of Sandstone Overhangs for the Effects on Mining and Subsidence. Unpublished report to Kembla Coke and Coal.

Select Committee on the Condition of Aborigines (1845) *New South Wales Aborigines. Report from the Select Committee on the Condition of the Aborigines. Minutes of Evidence and replies to a circular letter*. Government Printing Office: Sydney.



Silcox, R (1980) An Archaeological Survey of Bardens Creek, Lucas Heights. Unpublished report to Metropolitan Waste Disposal Authority.

Smith, K V (1992) King Bungaree. *A Sydney Aborigine meets the great South Pacific explorers 1799-1830*. Kangaroo Press: Kenthurst.

Smith, L J and Crew, D (1988) Archaeological Survey of Yeomans Estate Proposed Subdivision Wedderburn, NSW. Unpublished report to Campbelltown City Council.

Smith, L J (1991) Archaeological Recording of Four Art Sites at Yeomans Estate Proposed Subdivision Wedderburn, NSW. Unpublished report to Yap Yap Pin.

Stanbury, P and Clegg, J (1990) *A Field guide to Aboriginal rock engravings*. Oxford University Press: Melbourne.

Steele, D and Dallas, M (2001) Aboriginal Archaeological Survey of Department of Defence Lands at Moorebank. Unpublished report to Egis Consulting Australia.

Stockton, E and Nanson, G (2004) Cranebrook Terrace Re-visited. *Archaeology in Oceania: 39:59-60*.

Sydney Morning Herald (27 February 1873) The Floods. Liverpool. As reproduced in Brewsher Consulting Pty Ltd, May 2004. Georges River Floodplain Risk Management Study and Plan. Volume 1. Main Report.

Tench, W (1789, 1793 [1979]) *Sydney's First Four Years. A Narrative of the expedition to Botany Bay and A complete account of the settlement at Port Jackson 1788-1791*. Fitzhardinge, L F (ed) Library of Australian History: Sydney.

White, E. And McDonald J (2010) Lithic artefact distribution in the Rouse Hill Development Area, Cumberland Plain, New South Wales. *Australian Archaeology: 70: 29-38*.

Woodhead (2009) Heritage and Environment Management Plan for Holsworthy Training Area, Sydney, NSW. Prepared for the Directorate of Heritage and Biodiversity Conservation, Department of Defence.

## **APPENDIX A:**

## **AERIAL PHOTOGRAPHS OF SUBJECT AREA**



Figure A1: Aerial photograph of the study area in 1930 (Source: Lands and Property Management Authority).



Figure A2: Aerial photograph of the study area in 1955. The development of the base began in the 1940's and is largely formalised by this time. Areas to the northeast and the southern quadrants appear relatively undisturbed (Source: Lands and Property Management Authority).



Figure A3: Aerial photograph of the study area in 1961. By this time the base's roads are formalised and re-landscaping is well established. Further earthworks, most likely the introduction of fill, have occurred in the southern and northeastern quadrant of the study area. The water depression of Anzac Creek within the study area has now been canalised (Source: Lands and Property Management Authority).

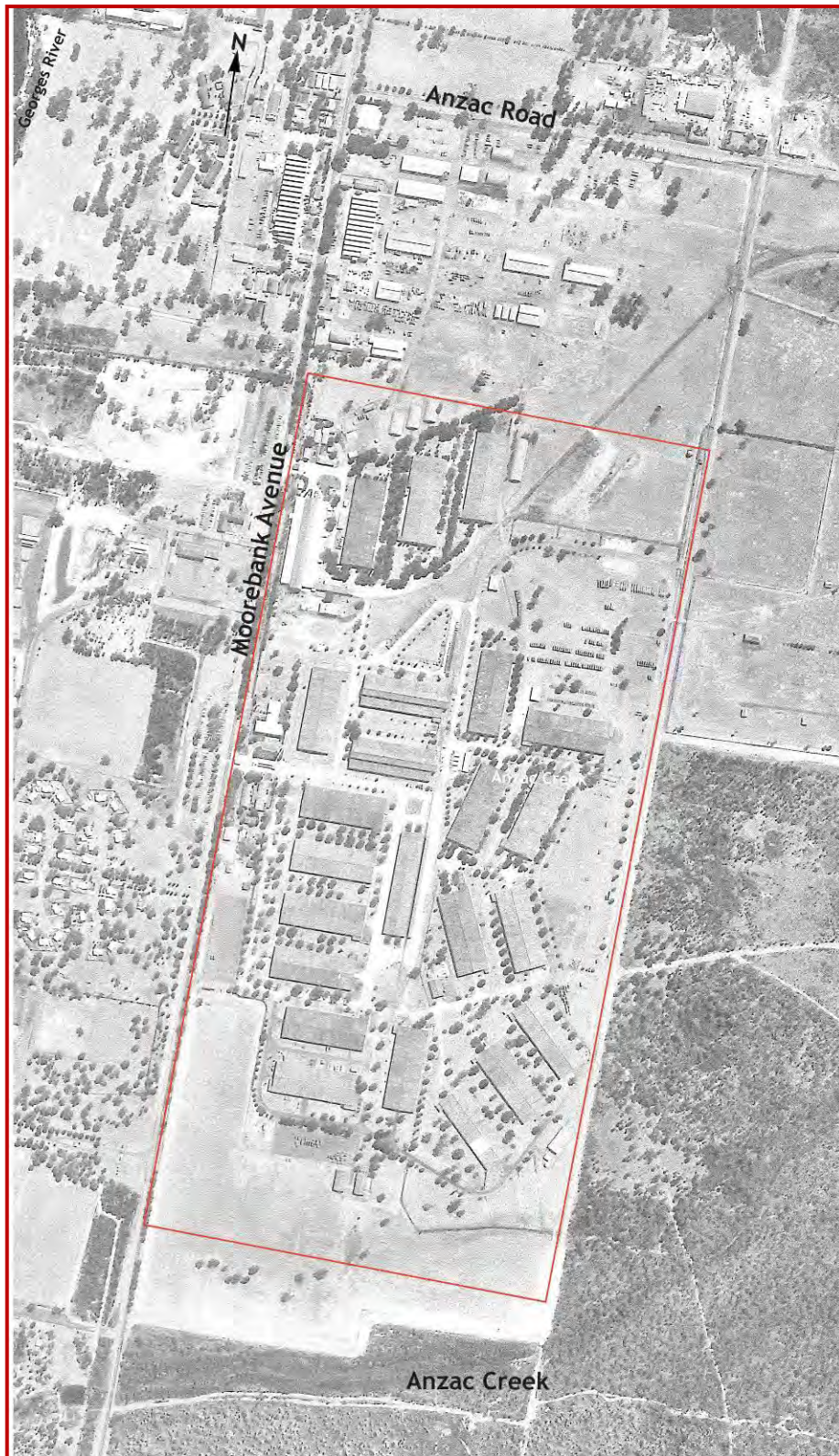


Figure A4: Aerial photograph of the study area in 1965 (Source: Lands and Property Management Authority).



Figure A5: Aerial photograph of the study area in 1979 (Source: Lands and Property Management Authority).



Figure A6: Aerial photograph of the study area in 1986. The development of a rail corridor through the study area has led to additional impacts to Anzac Creek and associated areas. Changes to the northern parts of the study area are also evident (Source: Lands and Property Management Authority).





Figure A7: Aerial photograph of the study area in 1994. The rail corridor to the south is complete by this time, while new structures have been developed in several parts of the study area (Source: Lands and Property Management Authority).

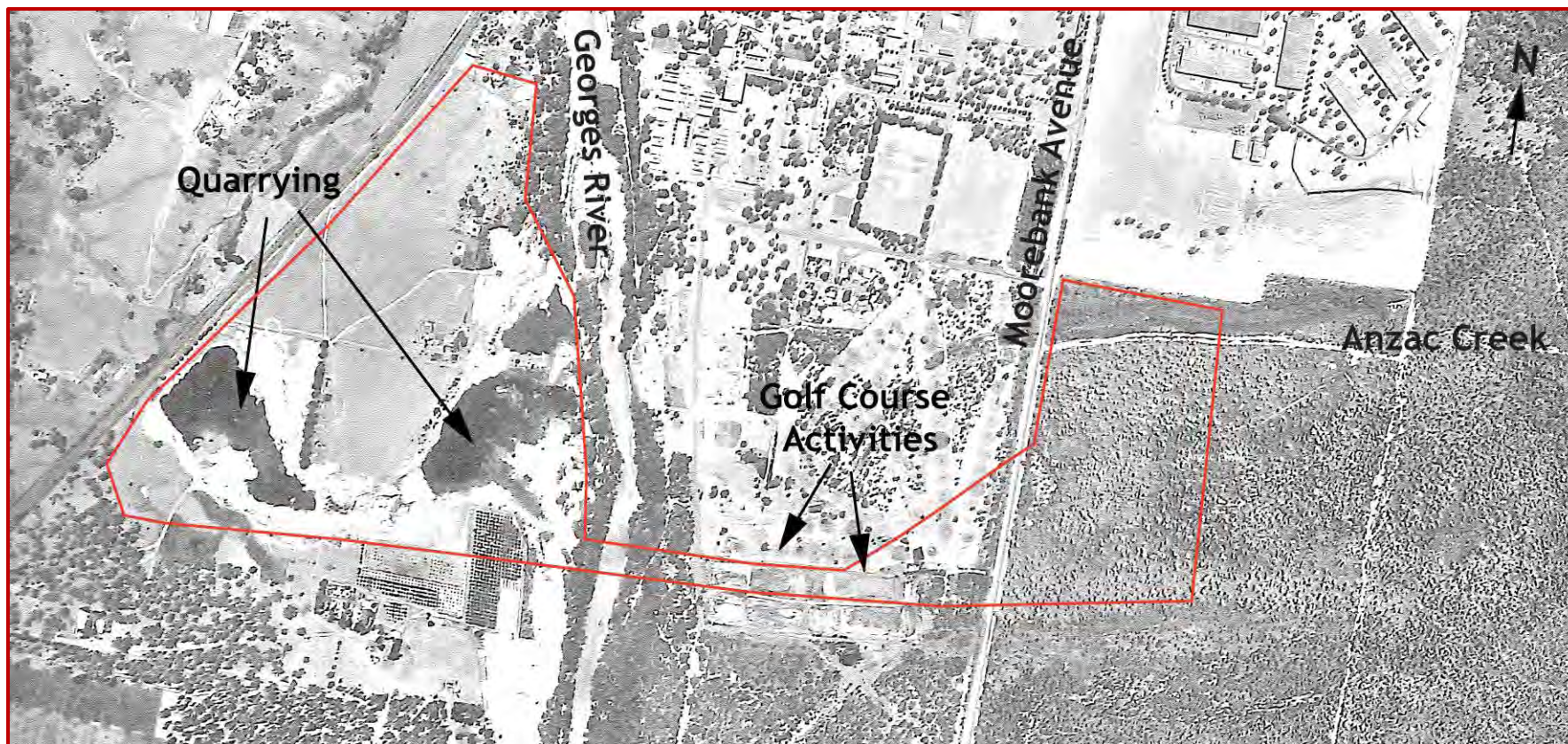


Figure A8: Aerial photograph of the supplementary lands in 1979. Sand/gravel extraction has just begun to the west of Georges River and the golf course, southeast of the study area, has also recently begun construction (Source: Lands and Property Management Authority).

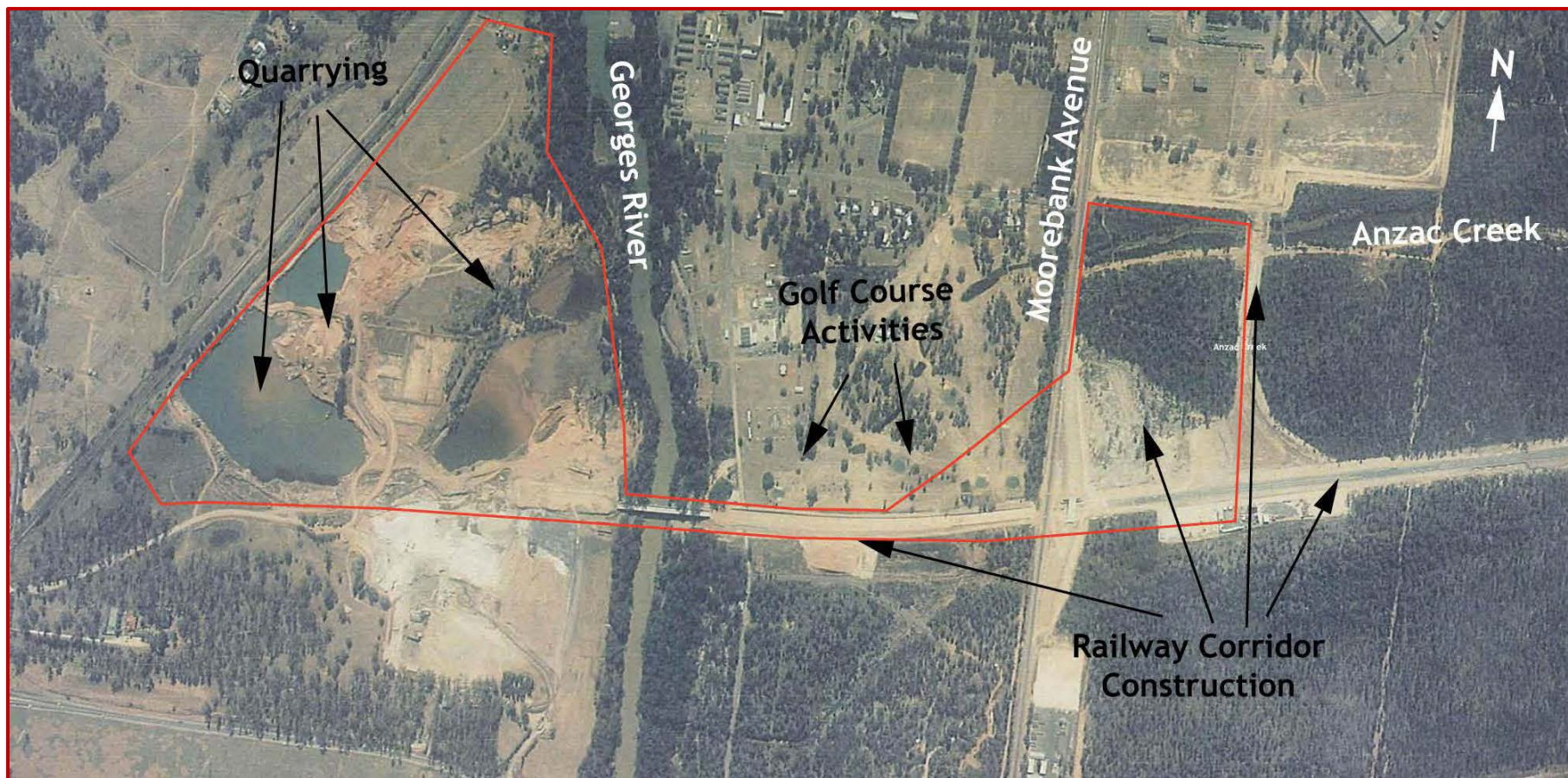


Figure A9: Aerial photograph of the supplementary lands in 1984. Sand/gravel extraction on the west side of Georges River is now extensive and has heavily impacted the proposed area. The area of supplementary lands to the south and west of the quarries on closer inspection is actually a large mullock heap. The construction of the rail corridor has also led to extensive clearance and earthworks through large parts of the supplementary lands (Source: Lands and Property Management Authority).



Figure A10: Aerial photograph of the supplementary lands in 1994. Sand/gravel extraction has reached its maximum extent with the entire supplementary lands west of the Georges River having been modified. The golf course is now established, but recovery of the vegetation from the rail construction is still ongoing (Source: Lands and Property Management Authority).

## **APPENDIX B:**

# **AHIMS DATA AND SITE CARDS**



Archaeological & Heritage Management Solutions Pty Ltd (AH)
349 Annandale Street
Annandale New South Wales 2038
Attention: Anna Biggs

Date: 12 July 2011

Email: annab@arksolutions.com.au

Dear Sir or Madam:

AHIMS Web Service search for the following area at Datum :GDA, Zone : 56, Eastings : 305000 - 311000, Northings : 6237000 - 6244500 with a Buffer of 50 meters. Additional Info : To inform ACHA report for client. conducted by Anna Biggs on 12 July 2011

A search of the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

Table with 2 columns: ID, Aboriginal Place Name. Row 1: 32, Aboriginal sites are recorded in or near the above location. Row 2: 1, Aboriginal places have been declared in or near the above location. \* Row 3: 0, Collingwood Precinct

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the NSW Government Gazette (http://www.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Office of Environment and Heritage's Aboriginal Heritage Information Unit upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
AHIMS records information about Aboriginal sites that have been provided to Office of Environment and Heritage and Aboriginal places that have been declared by the Minister;
Information recorded on AHIMS may vary in its accuracy and may not be up to date .Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
This search can form part of your due diligence and remains valid for 12 months.



Archaeological & Heritage Management Solutions Pty Ltd (AH)
349 Annandale Street
Annandale New South Wales 2038
Attention: Anna Biggs

Date: 12 July 2011

Email: annab@arksolutions.com.au

Dear Sir or Madam:

AHIMS Web Service search for the following area at Datum :GDA, Zone : 56, Eastings : 305000 - 311000, Northings : 6237000 - 6244500 with a Buffer of 50 meters. Additional Info : To inform ACHA report for client. conducted by Anna Biggs on 12 July 2011

A search of the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

Table with 2 columns: ID, Aboriginal Place Name. Row 1: 32, Aboriginal sites are recorded in or near the above location. Row 2: 1, Aboriginal places have been declared in or near the above location. \* Row 3: 0, Collingwood Precinct

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the NSW Government Gazette (http://www.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Office of Environment and Heritage's Aboriginal Heritage Information Unit upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
AHIMS records information about Aboriginal sites that have been provided to Office of Environment and Heritage and Aboriginal places that have been declared by the Minister;
Information recorded on AHIMS may vary in its accuracy and may not be up to date .Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
This search can form part of your due diligence and remains valid for 12 months.



# AHIMS Web Services (AWS)

## Extensive search - Site list report

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-6-2428	Glenfield S.T.	AGD	56	306200	6239600	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	
	<u>Contact</u>									
	<u>Recorders</u>									
45-5-0892	WG1 (Wattle Grove)	AGD	56	309070	6239950	Open site	Valid	Artefact : -	Open Camp Site	2474
	<u>Contact</u>									
	<u>Recorders</u>									
45-5-0724	Kiawaka 1	AGD	56	305950	6240270	Open site	Valid	Artefact : -	Open Camp Site	1360
	<u>Contact</u>									
	<u>Recorders</u>									
45-5-0124	Harris Creek;	AGD	56	307040	6236964	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	
	<u>Contact</u>									
	<u>Recorders</u>									
45-5-2934	H414	AGD	56	307600	6237325	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	<u>Contact</u>									
	<u>Recorders</u>									
45-5-0723	Kiawaka 2	AGD	56	306250	6240150	Open site	Valid	Artefact : -	Open Camp Site	1360
	<u>Contact</u>									
	<u>Recorders</u>									
45-5-3629	Collingwood Park (CW 1)	GDA	56	307600	6243160	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		101316
	<u>Contact</u>									
	<u>Recorders</u>									
52-2-0086	Long Point;Matthews No.1 Shelter;	AGD	56	308300	6237700	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	3184
	<u>Contact</u>									
	<u>Recorders</u>									
45-5-0972	WGO3-1	AGD	56	310620	6239950	Open site	Valid	Artefact : -	Open Camp Site	2826
	<u>Contact</u>									
	<u>Recorders</u>									
45-5-0891	WG2 (Wattle Grove)	AGD	56	309020	6239950	Open site	Valid	Artefact : -	Open Camp Site	2474
	<u>Contact</u>									
	<u>Recorders</u>									
45-5-2968	Site H1025	AGD	56	307280	6237500	Open site	Valid	Artefact : -		
	<u>Contact</u>									
	<u>Recorders</u>									
45-5-0722	Kiawaka 5	AGD	56	306300	6240340	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	1360
	<u>Contact</u>									
	<u>Recorders</u>									
45-5-0794	Holsworthy (H) 2;	AGD	56	309550	6240200	Open site	Valid	Artefact : -	Open Camp Site	1934
	<u>Contact</u>									
	<u>Recorders</u>									
45-5-2355	WGO 3-1; (duplicate copy 45-5-0972)	AGD	56	310620	6239950	Open site	Valid	Artefact : -	Open Camp Site	

Report generated by AHIMS Web Service on 12/07/2011 for Anna Biggs for the following area at Datum :GDA, Zone : 56, Eastings : 305000 - 311000, Northings : 6237000 - 6244500 with a Buffer of 50 meters.Additional Info : To inform ACHA report for client.. Number of Aboriginal sites and Aboriginal objects found is 32

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.





# AHIMS Web Services (AWS)

## Extensive search - Site list report

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	<u>Contact</u>	<u>Recorders</u>	Philip Boot					<u>Permits</u>		
45-5-0889	WG 4 (Wattle Grove)	AGD	56	309130	6240170	Open site	Valid	Artefact : -	Open Camp Site	2474
	<u>Contact</u>	<u>Recorders</u>	Philip Boot					<u>Permits</u>	465	
45-5-2540	Liverpool Weir ocs1	AGD	56	308420	6244040	Open site	Valid	Artefact : -	Open Camp Site	98443
	<u>Contact</u>	<u>Recorders</u>	Jeff Thomas					<u>Permits</u>		
45-5-0890	WG3 (Wattle Grove)	AGD	56	309100	6240030	Open site	Valid	Artefact : -	Open Camp Site	2474
	<u>Contact</u>	<u>Recorders</u>	Philip Boot					<u>Permits</u>	465	
45-5-2883	MB.1	AGD	56	308700	6241700	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Mary Dallas Consulting Archaeologists					<u>Permits</u>		
45-5-2919	H667	AGD	56	306990	6237370	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>		
45-5-2946	H363	AGD	56	307050	6237560	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>		
45-5-2963	Site H928	AGD	56	306840	6237510	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	<u>Contact</u>	<u>Recorders</u>	Bobbie Oakley					<u>Permits</u>		
45-5-0795	Holsworthy (H) 1;	AGD	56	309300	6240120	Open site	Valid	Artefact : -	Open Camp Site	1934
	<u>Contact</u>	<u>Recorders</u>	Philip Boot					<u>Permits</u>	456	
45-5-3639	BC1 (Liverpool)	GDA	56	305214	6237770	Open site	Valid	Artefact : 1		101368
	<u>Contact</u>	<u>Recorders</u>	Mr.Oliver Brown					<u>Permits</u>		
45-5-0720	Kiawaka 3	AGD	56	305980	6240600	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	1360
	<u>Contact</u>	<u>Recorders</u>	Mary Dallas Consulting Archaeologists					<u>Permits</u>	264	
45-5-0721	Kiawaka 4	AGD	56	306000	6240660	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	1360
	<u>Contact</u>	<u>Recorders</u>	Mary Dallas Consulting Archaeologists					<u>Permits</u>		
45-5-0123	George's River;	AGD	56	307040	6236964	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	
	<u>Contact</u>	<u>Recorders</u>	R Etheridge					<u>Permits</u>		
45-5-3531	Glenfield 1	GDA	56	306252	6239702	Open site	Valid	Artefact : 1		
	<u>Contact</u>	<u>Recorders</u>	Australian Museum Business Services (AMBS)					<u>Permits</u>		
45-5-2538	HPR-ST-1	AGD	56	306810	6243650	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	98443
	<u>Contact</u>	<u>Recorders</u>	Robynne Mills					<u>Permits</u>		
45-5-2947	H362	AGD	56	307130	6238300	Open site	Valid	Artefact : -		

Report generated by AHIMS Web Service on 12/07/2011 for Anna Biggs for the following area at Datum :GDA, Zone : 56, Eastings : 305000 - 311000, Northings : 6237000 - 6244500 with a Buffer of 50 meters.Additional Info : To inform ACHA report for client.. Number of Aboriginal sites and Aboriginal objects found is 32

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.



# AHIMS Web Services (AWS)

## Extensive search - Site list report

<u>SiteID</u>	<u>SiteName</u>	<u>Datum</u>	<u>Zone</u>	<u>Easting</u>	<u>Northing</u>	<u>Context</u>	<u>Site Status</u>	<u>SiteFeatures</u>	<u>SiteTypes</u>	<u>Reports</u>
45-5-2931	H581 <u>Contact</u>	AGD	56	306850	6237490	Open site	Valid	Artefact : - <u>Permits</u>		
45-5-2369	WGO3-2;( REFER TO 45-5-0971) <u>Contact</u>	AGD	56	310430	6239900	Open site	Valid	Artefact : - <u>Permits</u>	Open Camp Site	
45-5-0971	WGO3-2 <u>Contact</u>	AGD	56	310430	6239900	Open site	Valid	Artefact : - <u>Permits</u>	Open Camp Site	2826

Report generated by AHIMS Web Service on 12/07/2011 for Anna Biggs for the following area at Datum :GDA, Zone : 56, Eastings : 305000 - 311000, Northings : 6237000 - 6244500 with a Buffer of 50 meters.Additional Info : To inform ACHA report for client.. Number of Aboriginal sites and Aboriginal objects found is 32

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.



# National Parks and Wildlife Service

BOX N189, GROSVENOR STREET POST OFFICE, SYDNEY, NSW 2000. TEL (02) 237 6500

## Standard Site Recording Form



45-5-0722

MAP NAME	EDITION	SCALE	REFERENCE	HEAD OFFICE USE ONLY:
SYDNEY LIVERPOOL	S56-5-ell 9030-11-S	1.250 000 1.250000	3908 8048 0630 4034	NWPS site no: 45-5-722  Site types: SCARRED TREE File nos: 16/11/88 Date: 16/11/88 Filed by: <i>[Signature]</i>

Site name: KIAWAKA 5      Locality/property name: KIAWAKA ESTATE, CABULA      Owner/Manager: DEPT. HOUSING  
Local post office: CABULA      Address: P.O. BOX 466  
NPWS District:      Region: CENTRAL      LIVERPOOL 2170

Reason for investigation (give R.O. instruction no. where applicable):  
IMPACT ASSESSMENT

Portion no: Parish: CITY of LIVERPOOL	Other land category: County:	Plan/sketch/section of site attached? <input checked="" type="checkbox"/> Yes/ <input type="checkbox"/> No. How many?
Air photo refs. (for stereo pair)		Photos taken? Yes/ <input checked="" type="checkbox"/> No How many attached? 2

How to get to the site (refer to permanent features, give best approach to site eg. from above, below, along cliff.  
(Draw diagram on separate sheet.)  
see attached map. Site is southernmost tree in grove 80 m north/west end of Seacodes land.

Other sites in locality? Yes/ No  
Are sites in NPWS Register? Yes/ No  
Site Types include: open camp sites/sanitation.  
Unregistered sites — plans for future recording? Yes/ No

Have artefacts been removed from site? Yes/ No/ don't know. When? —  
By whom?      Deposited where?

Is site important to local Aborigines? Yes/ No/ don't know.  
Give contact(s) name(s) + address(es)  
MR. CRAIG WILLIAMS  
WESTERN METROPOLITAN REGIONAL  
ABORIGINAL LAND COUNCIL

Contacted for this recording? Yes/ No  
(Attach additional information separately) If not, why not?

Verbal/written reference sources (including full title of accompanying report)  
DALY M. 1988 'Archaeological Survey of the Dept. of Housing Project  
12257 Kiawaka Estate Cabula, NSW. C-1360

Checklist: surface visibility, damage/disturbance/ threat to site	Condition of site: OK. has weathered/mossy appearance
--	---

Recommendations for management & protection (attach separate sheet if necessary):  
Preservation + active management eg. antifungal & insecticide spray

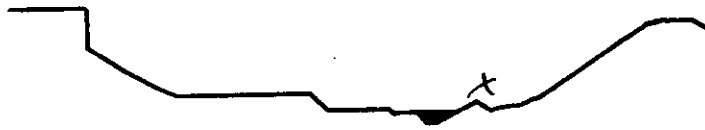
Site recorded by: M. DALY      Date: 20.6.88  
Address/institution: 31 WATERVIEW ST  
BALMAIN NSW

**SITE POSITION & ENVIRONMENT**

OFFICE USE ONLY: NPWS site no:

1. Land form a. ~~beach~~/hill slope/ridge-top, etc:  
 d. mark on diagram provided or on your own sketch the position of the site:

b. site aspect: *open* c. slope: *10°*  
 e. Describe briefly: *on edge of side tributary of perun creek.*



- f. Local rock type: *shale/clays* g. Land use/effect: *grazing / creek dams*

2. Distance from drinking water: Source: *100 m temp creeks. 200 m perun*

3. Resource Zone associated with site (estuarine, riverine, forest etc):

4. Vegetation: *largely cleared pasture land*

5. Edible plants noted:  
 6. Faunal resources (include shellfish):  
 7. Other exploitable resources (river pebbles, ochre, etc):

Site type:

**DESCRIPTION OF SITE & CONTENTS.**

Note state of preservation of site & contents. Do NOT dig, disturb, damage site or contents.

Kiawaka 5 : Scarred Tree  
 Map Ref: Liverpool 1:25,000 0630 4034

- CHECKLIST TO HELP:** length, width, depth, height of site, shelter, deposit, structure, element eg. tree scar, grooves in rock.  
**DEPOSIT:** colour, texture, estimated depth, stratigraphy, contents-shell, bone, stone, charcoal, density & distribution of these, stone types, artefact types.  
**ART:** area of surface decorated, motifs, colours, wet, dry pigment, technique of engraving, no. of figures, sizes, patination.  
**BURIALS:** number & condition of bone, position, age, sex, associated artefacts.  
**TREES:** number, alive, dead, likely age, scar shape, position, size, patterns, axe marks, regrowth.  
**QUARRIES:** rock type, debris, recognisable artefacts, percentage quarried.  
**OTHER SITES EG.** structures (fish traps, stone arrangements, bora rings, mia mias), mythological sites, rock holes, engraved groove channels, contact sites (missions massacres cemeteries) as appropriate

Type of Tree: Eucalypt sp.  
 Age: 100 years +  
 Height: 20m +  
 Girth: 4.95m at scar

Scar Characteristics:  
 Length: 93cm  
 Breadth: 23.5cm  
 Depth of Bark: 13cm  
 Est. Bark Regrowth: 10 - 20cm  
 Height above ground: 47cm

Aspect: S - SE  
 Axe marks: None  
 Condition: Weathered/mossy bar/c  
 Cause of damage: None

Additional comment: Scar/wood is cracked

- Photographic Record
1. View of scar
  2. View of timber grove

Attach sketches etc. eg. plan & section of shelter, show relation between site contents, indicate north, show scale.  
 Attach annotated photos (stereo where useful) showing scale, particularly for art sites.







MAP 1  
 KIAWAKA ESTATE  
 SITES 1-5



# National Parks and Wildlife Service

BOX N189, GROSVENOR STREET POST OFFICE, SYDNEY, NSW 2000. TEL (02) 237 6500  
Standard Site Recording Form



45-5-0723

MAP NAME	EDITION	SCALE	REFERENCE	HEAD OFFICE USE ONLY:
SYDNEY LIVERPOOL	656-5-ed1 9030-11-S	1:250000 1:25000	3907 8047 0425 4015	NWPS site no: 45-5-723  Site types: OPEN ARTIFACT SCATTER File nos: Date: 16/11/88 Filed by: <i>gh</i>

Site name: **KIAWAKA 2** Locality/property name: **KIAWAKA ESTATE, CASULA** Owner/Manager: **DEPT. OF HOUSING**  
 Local post office: **CASULA** Address: **P.O. Box 466 LIVERPOOL 2170**  
 NPWS District: Region: **CENTRAL**

Reason for investigation (give R.O. instruction no. where applicable):  
**IMPACT ASSESSMENT**

Portion no: Parish: <b>CITY OF LIVERPOOL</b>	Other land category: County:	Plan/sketch/section of site attached? Yes/No. How many?
Air photo refs. (for stereo pair)		Photos taken? Yes/No— How many attached? <b>2</b>

How to get to the site (refer to permanent features, give best approach to site eg. from above, below, along cliff. (Draw diagram on separate sheet.)  
**From the end of tatted section of Macquarie Lane, Casula, proceed on foot 80-100m along dirt road due south. Site is located in road scar. See attached Map.**

Other sites in locality? Yes/No: Site Types include: **open camp site, scattered trees**  
 Are sites in NPWS Register? Yes/No. Unregistered sites — plans for future recording? Yes/No.

Have artefacts been removed from site? Yes/No/don't know. When? Deposited where?  
 By whom?

Is site important to local Aborigines? Yes/No/don't know.  
 Give contact(s) name(s) + address(es) **MR CARLY WILLIAMS  
WESTERN METROPOLITAN REGIONAL ABORIGINAL  
LAND COUNCIL**  
 Contacted for this recording? Yes/No: (Attach additional information separately) If not, why not?

Verbal/written reference sources (including full title of accompanying report):  
**DALMAS M. 1988 'Archaeological Survey of Dept. of Housing Project 12257  
Kiwaka Estate, Casula, NSW.' C-1360**

Checklist: surface visibility, damage/disturbance/ threat to site	Condition of site: <b>Crossly disturbed - by underground PMA cable, roadway / stock traffic.</b>
--	--

Recommendations for management & protection (attach separate sheet if necessary):  
**Site will be preserved / further damage averted by covering exposed surfaces with deposit + turf**

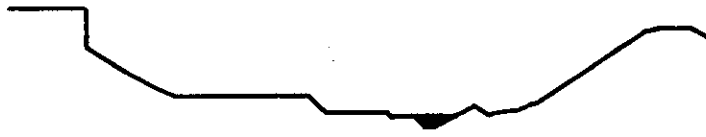
Site recorded by: **DALMAS** Date: **20.6.88**  
 Address/institution: **31 WATERVIEW ST  
BALMAIN 2041**



**SITE POSITION & ENVIRONMENT**

OFFICE USE ONLY: NPWS site no:

1. Land form a. beach/hill slope/ridge top, etc: *spine of spur*      b. site aspect: *open*      c. slope: *—*  
 d. mark on diagram provided or on your own sketch the position of the site:      e. Describe briefly: *see below*



- f. Local rock type: *shale clay*      g. Land use/effect: *cattle/horse pasture  
PMG trench / fence line  
road*

2. Distance from drinking water: *100 m*      Source: *Clentfeld creek*

3. Resource Zone associated with site (estuarine, riverine, forest etc): *woodland*

4. Vegetation: *mostly cleared - grassed for pasture*

5. Edible plants noted:

6. Faunal resources (include shellfish):

7. Other exploitable resources (river pebbles, ochre, etc):

Site type:

**DESCRIPTION OF SITE & CONTENTS.**

Note state of preservation of site & contents. Do NOT dig, disturb, damage site or contents.

**Kiawaka 2 : Open Artefact Scatter**  
 Map Ref: Liverpool 1:25,000      0625 4015

No of artefacts: 21  
 Raw materials present: Silcrete, quartz, chert  
 Area(s) of artefact scatter: 40m x 9m  
 Area(s) of surface exposure: 150m x 30m  
 Maximum artefact density: 3 x 1m<sup>2</sup>  
 Type of recording: total  
 Soil matrix/deposit: Patches of a thin veneer of brown topsoil (gravel rich) over clay (gravel rich) over shale bedrock  
 Site Condition: Grossly disturbed. Over 90% of flat area on spur has had surface and sub-surface disturbances.  
 Site Aspect: Open  
 Site location/features: Site on spine of spur above broad open creek flats (Permanent creek)

Visibility: Good

Photos: 1. Artefacts  
 2. View to South

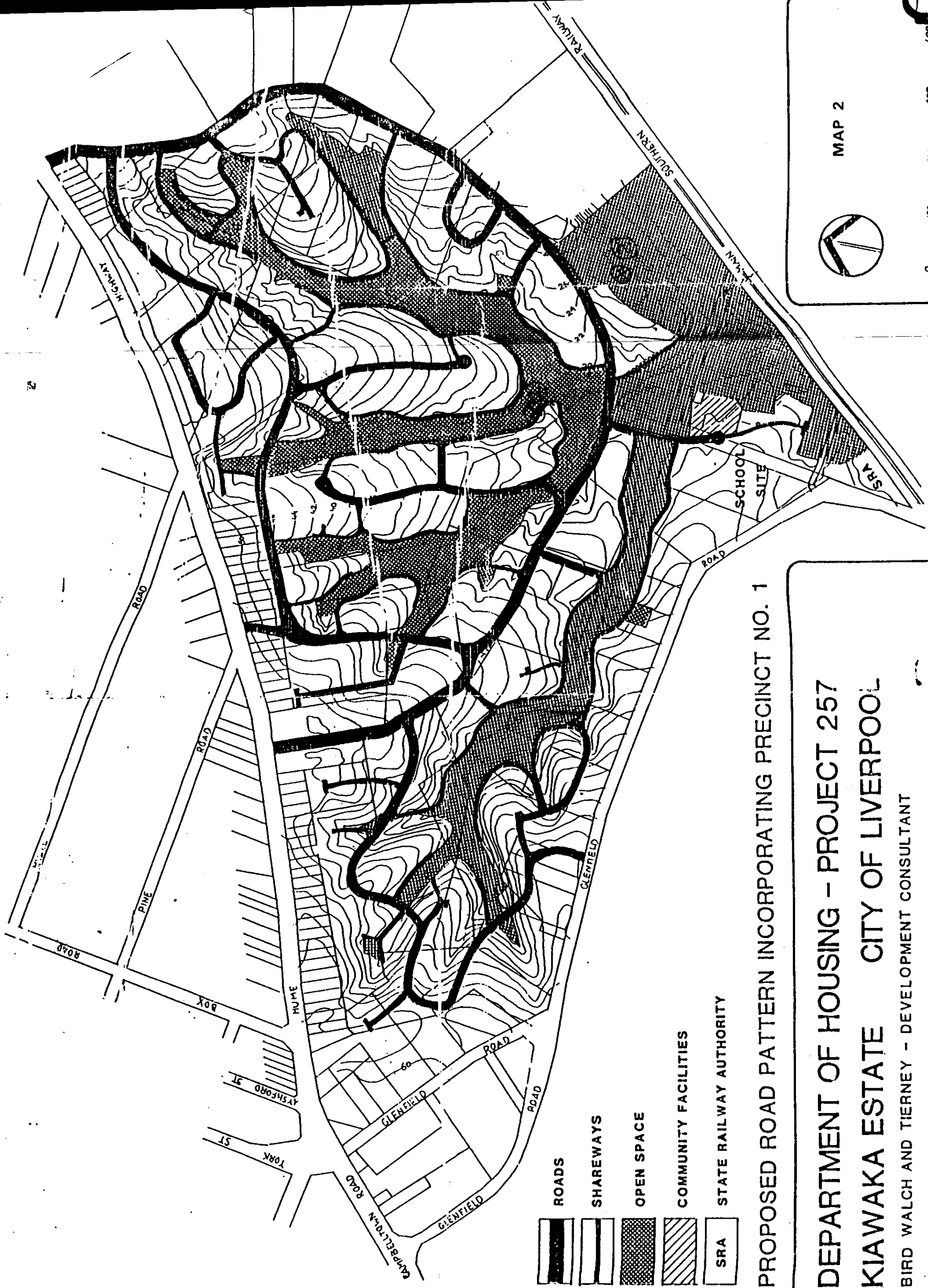
*see attached artefact list.*

- CHECKLIST TO HELP:**  
 length, width, depth, height of site, shelter, deposit, structure, element eg. tree scar, grooves in rock.  
**DEPOSIT:** colour, texture, estimated depth, stratigraphy, contents-shell, bone, stone, charcoal, density & distribution of these, stone types, artefact types.  
**ART:** area of surface decorated, motifs, colours, wet, dry pigment, technique of engraving, no. of figures, sizes, patination.  
**BURIALS:** number & condition of bone, position, age, sex, associated artefacts.  
**TREES:** number, alive, dead, likely age, scar shape, position, size, patterns, axe marks, regrowth.  
**QUARRIES:** rock type, debris, recognisable artefacts, percentage quarried.  
**OTHER SITES EG.** structures (fish traps, stone arrangements, bora rings, mia mias), mythological sites, rock holes, engraved groove channels, contact sites (missions massacres cemeteries) as appropriate

Attach sketches etc. eg. plan & section of shelter, show relation between site contents, indicate north, show scale.  
 Attach annotated photos (stereo where useful) showing scale, particularly for art sites.



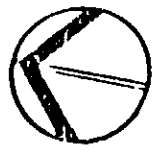




PROPOSED ROAD PATTERN INCORPORATING PRECINCT NO. 1

DEPARTMENT OF HOUSING - PROJECT 257  
 KIWAKA ESTATE CITY OF LIVERPOOL

BIRD WALCH AND TIERNEY - DEVELOPMENT CONSULTANT  
 WELLINGS SMITH AND BYRNES - PLANNERS



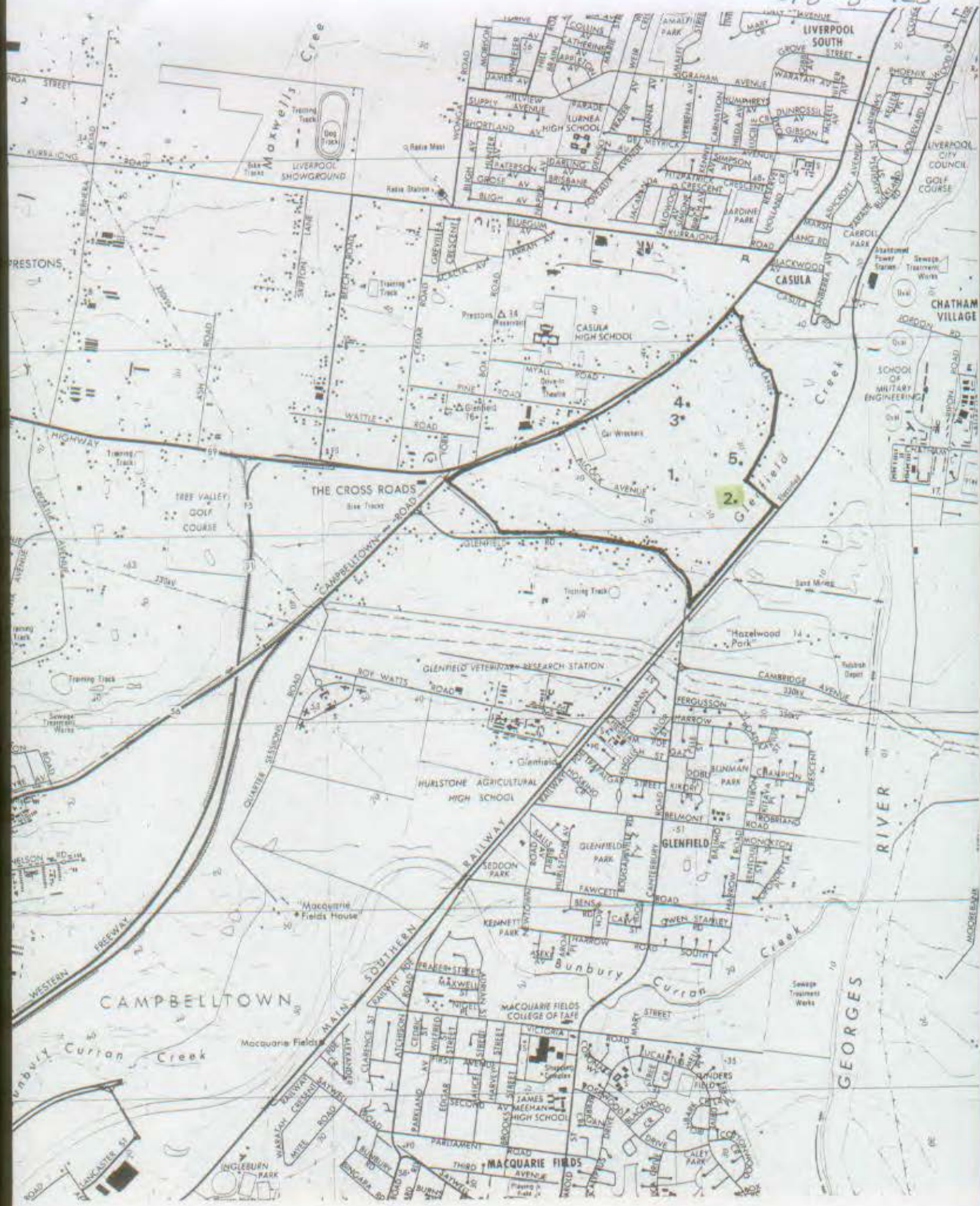
MAP 2



45-5-723



45-5-723



MAP 1

LIAWAKA ESTATE  
SITES 1-5

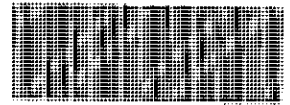




# National Parks and Wildlife Service

Box 1967, Hurstville NSW 2220. Tel: (02) 9585 6444  
Standard Site Recording Form

Revised 5/88



45-5-2883

1:250,000 map sheet: SYDNEY NPWS Code

AMG Grid reference 208700 mE 6240700 mN  
Full reference - please include leading digits  
25K 25K  
5/6

Scale of map used for grid reference  25K, 50K  100K  250K  
Please use largest scale available (preferred)

50K, 100K map name: LIVERPOOL

### HEAD OFFICE USE ONLY:

NPWS Site no: 45-5-2883

Site types:

Accessioned by: \_\_\_\_\_ Date: \_\_\_\_\_

Data entered by: DS/LKS Date: DS

Owner/Manager: Dept of Defence

Address:

Site name: MB1 Locality/property name: Moorebank Defence Lands

NPWS District: \_\_\_\_\_ Region: central

Reason for investigation  
Aboriginal Archaeological Assessment

Portion no: see attached Site Plan

Parish:

Photos taken? Yes

How many attached? see accompanying report

How to get to the site (refer to permanent features, give best approach to site eg. from above, below, along cliff. (Draw diagram on separate sheet.)  
see attached Map. Entry via Arzac Road, Moorebank. Site is 900m south of Arzac Road on east facing slopes of knoll on intersecting dirt roads.

Other sites in locality? Yes Site Types include: open camp site in Wattle Grove  
Are sites in NPWS Register?

Have artefacts been removed from site? No. When? \_\_\_\_\_  
By whom? \_\_\_\_\_ Deposited where? \_\_\_\_\_

Is site important to local Aborigines? Yes.  
Give contact(s) name(s) + address(es) Cubitch Batta NTCHO 65 Winghamale Road Preseli's Nest NSW 2574 ref: Glenda Chalker.  
Therawal L.A.L.C. PO Box 20 Brixton NSW 2571 ref: Janna Symes; Robyn Williams  
Contacted for this recording? Yes.  
(Attach additional information separately) If not, why not?

Verbal/written reference sources (including full title of accompanying report) Dallas & Glade 2003. Aboriginal Archaeological Assessment of Dept. of Defence Lands at Moorebank, NSW NPWS Report Catalogue # \_\_\_\_\_

Checklist: surface visibility, damage/disturbance/threat to site  
Condition of site: Degraded - road surface exposures, graded areas.

Recommendations for management & protection (attach separate sheet if necessary)  
Preserve.

Site recorded by: M. Dallas  
Address/institution: 31 Wattlewood St Belconnen NSW 2041

Date: Aug 2003

**SITE POSITION & ENVIRONMENT**

OFFICE USE ONLY: NPWS site no:

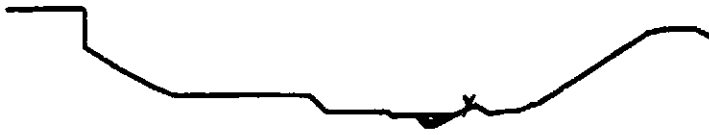
1. Land form a. beach/hill slope/ridge top, etc:

b. site aspect: open

c. slope: 10°

d. mark on diagram provided or on your own sketch the position of the site:

e. Describe briefly: Site extends 50m above low, water logged creek flanks on slightly elevated knoll, supporting Scribbly Gum woodland



f. Local rock type: Wiamanatta shale

g. Land use/effect: Muloon Training Area Dirt Roads

2. Distance from drinking water: 200m

Source: Permanent Creek

3. Resource Zone associated with site (estuarine, riverine, forest etc): Oak, Swamp

4. Vegetation: Eucalypt Woodland, Melaleuca Swamp

5. Edible plants noted:

6. Faunal resources (include shellfish): Wallaby, Kangaroo

7. Other exploitable resources (river pebbles, ochre, etc):

Site type:

Open Camp.

**DESCRIPTION OF SITE & CONTENTS.**

Note state of preservation of site & contents. Do NOT dig, disturb, damage site or contents.  
16 artefacts over 50x50m. 1. Area of exposure 100x150m. on clay & gravel surface. no potential artefact bearing deposit.

**CHECKLIST TO HELP:**

length, width, depth, height of site, shelter, deposit, structure, element eg. tree scar, grooves in rock.

DEPOSIT: colour, texture, estimated depth, stratigraphy, contents-shell, bone, stone, charcoal, density & distribution of these, stone types, artefact types.

ART: area of surface decorated, motifs, colours, wet, dry pigment, technique of engraving, no. of figures, sizes, palmation.

BURIALS: number & condition of bone, position, age, sex, associated artefacts.

TREES: number, alive, dead, likely age, scar shape, position, size, patterns, axe marks, regrowth

QUARRIES: rock type, debris, recognisable artefacts, percentage quarried.

OTHER SITES EG. structures (fish traps, stone arrangements, bora rings, maa maa), mythological sites, rock holes, engraved groove channels, contact sites (missions massacres cemeteries) as appropriate

1. Yellow Silcrete Blade Core 95 x 25 x 29mm: Longest Scar 25/35
2. Milk Quartz Flaked Piece 14 x 13 x 9mm
3. Red Silcrete Pebble Core 35 x 29 x 24: water worn cortex Longest Scar 29/30
4. Pink Quartzite Flake 16 x 26 x 8: Broad Platform
5. Red Silcrete Flake Fragment 54 x 21 x 14: coarse-grained
6. Red Silcrete Flaked Piece 22 x 12 x 12: 20° cortex
7. quartzite splint pebble 29 x 27 x 24: water worn
8. Yellow Silcrete Flaked Piece 30 x 17 x 16
9. Quartzite Flaked Piece 30 x 22 x 20: Burnt
10. Yellow Silcrete Flaked Piece 26 x 16 x 15
11. Red Silcrete Flaked Piece 30 x 26 x 14
12. Yellow Silcrete Core 94 x 60 x 40: Longest Scar 57/60  
[Illustrated in accompanying report]
13. Beige Quartzite Nodule: water worn pebble 42 x 40 x 21
14. Quartzite Flaked Piece: 40 x 26 x 11
15. Yellow Silcrete Flaked Piece: 50 x 40 x 34  
(used moths)
16. Red Silcrete Flake 32 x 28 x 18: Broad Platform

Attach sketches etc. eg. plan & section of shelter, show relation between site contents, indicate north, show scale.

Attach annotated photos (stereo where useful) showing scale, particularly for art sites.

Archaeological Survey Report  
Defence Land – Moorebank – New South Wales

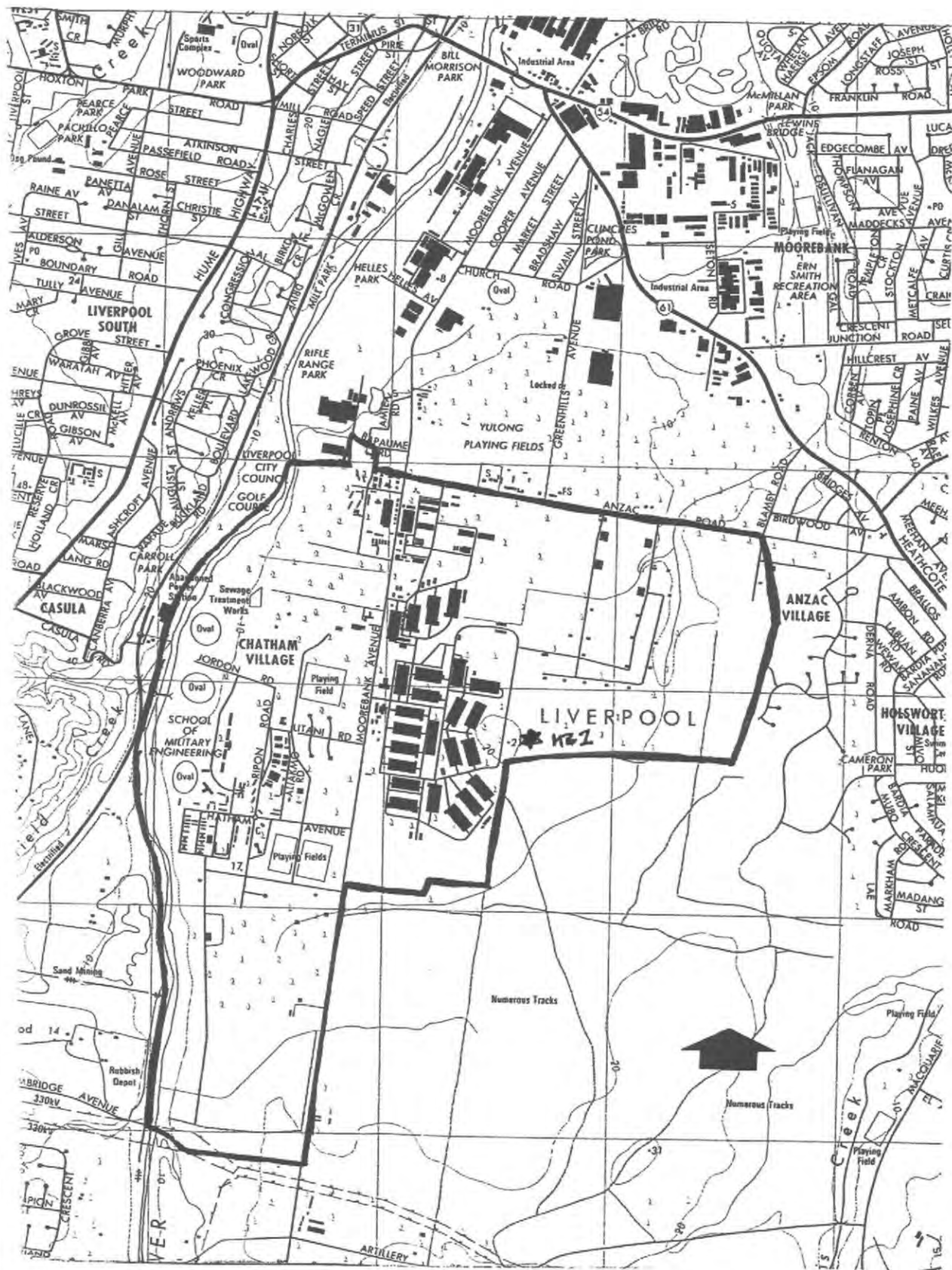


Figure 1: Site Location



# Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220  
Standard Site Recording Form

New Recording  Additional

information

SITE IDENTIFICATION					
Site name	Glenfield 1			NPWS Site Number	45-5-3531
Owner/manager					
Owner Address					
LOCATION					
Location	Lot 9 DP833516				
How to get to the site	Coming from Sydney, travel west on the Hume Highway, bear left at Campbelltown Road, turn left at Glenfield Road, turn right at the roundabout, turn left at the next roundabout, then turn right onto an access road next to the railway line. Walk northeast along the road for approximately 300m. The site is in an area of exposure on the left side of the road, approximately 15m west of a 20km/hr road sign.				
1:250,000 map name				NPWS map code	
AMG Zone	56	AMG Easting	306252	AMG Northing	6239702
Method for grid reference	Hand-held GPS	Map scale (if method = map)	1:25,000	Map name	
NPWS District				NPWS Zone	Sydney Zone
Portion no.				Parish	
SITE DESCRIPTION					
Site type(s)	Isolated find			Site type code (NPWS use only)	
Description of site and contents CHECKLIST: eg. length, width, depth, height of site, shelter, deposit, structure, element eg. tree scar, grooves in rock. DEPOSIT: colour, texture, estimated depth, stratigraphy, contents-shell, bone, stone, charcoal, density & distribution of these, stone types, artefact types. ART: area of decorated surface, motifs, colours, wet/dry pigment, engraving technique, no. of figures, sizes, patination. BURIALS: number & condition of bone, position, age, sex, associated artefacts. TREES: number, alive, dead, likely age, scar shape, position, size, patterns, axe marks, regrowth. QUARRIES: rock type, debris, recognisable artefacts, percentage quarried	<p>This site is located c. 1 km west of the Georges River, within Lot 9 DP833516. The current railway line is present c. 50 m to the north of the site. The exposure is located beside an access road to the sand mine, c. 15 m west of a 20 km/hour sign. The land slopes slightly down to the south, and to the east after the speed sign. A series of houses is present on the southern side of the access road, but are not visible from the site because the southern side of the road has an embankment.</p> <p>The site comprises one piece of heat-shattered red silcrete. Ground surface visibility within the exposure was around 95%.</p>				



# Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220  
Standard Site Recording Form

SITE ENVIRONMENT					
Land form	Flat		Aspect		Slope
Mark position of the site					
Local rock type			Land use/effect		
Distance from drinking water	200m		Source	Glenfield Creek	
Resource zone (eg. estuarine, river, forest)			Vegetation		
Edible plants			Faunal resources (include shellfish)		
Other exploitable resources (eg. ochre)					
Are there other sites in the locality	Yes	Are they in the Sites Register	Yes	Other site types include	Stone artefact scatters, scarred trees
SITE MANAGEMENT					
Site condition	Disturbed				
Management recommendations	Site should not be impacted by the proposed upgrade works to the railway line, however it is recommended that temporary fencing be erected around the site during construction works, so as to prevent accidental impact (eg from vehicle access).				
Have artefacts been removed from site	No		When		
By whom			Deposited at		
Consent applied for	<input type="checkbox"/>		Consent issued	<input type="checkbox"/>	
Date of issue			Consent number		
SITE INSPECTION AND RECORDING					
Reason for investigation	Aboriginal heritage assessment for proposed upgrade of Glenfield railway station				
Were local Aborigines contacted or present for the recording	<input type="checkbox"/> Not contacted <input checked="" type="checkbox"/> Contacted and present <input type="checkbox"/> Contacted but not present	Names and addresses	Cliff Foley Dharawal Local Aboriginal Land Council PO Box 20 Buxton NSW 2571  Alfred Fazldeen Cubbitch Barta Native Title Claimants Aboriginal Corporation 55 Nightingale Road Pheasants Nest NSW 2574  Gordon Morton Darug Aboriginal Cultural Heritage Assessments 28 Calala St Mt Druitt NSW 2770  Justine Coplin Darug Custodian Aboriginal Corporation PO Box 81		





# Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

## Standard Site Recording Form

			<p>Windsor NSW 2756</p> <p>Grey Morley Darug Tribal Aboriginal Corporation PO Box 441 Blacktown NSW 2148</p> <p>Yvonne Simms La Perouse Botany Bay Aboriginal Corporation \\\n2/3 Birch Crescent East Corrimal NSW 2518</p> <p>Keith Ball Wadi Wadi Coomaditchie Aboriginal Corporation 2/3 Birch Crescent East Corrimal NSW 2518</p> <p>Paul Cummins Woronora Plateau Gundungara Elders Council 2/3 Birch Crescent East Corrimal NSW 2518</p>	
<b>Is the site important to local Aborigines</b>				
<b>Verbal/written reference sources</b>	AMBS (in prep) Stage B1 Glenfield Station Aboriginal Heritage Assessment. Report to Parsons Brinckerhoff Australia Pty Ltd.	<b>ASR report number(s)</b>	C- C-	
<b>Photographs taken</b>	Yes	<b>No of Photos attached</b>	2	
<b>Site recorded by</b>	Jenna Weston	<b>Date of recording</b>	28 July, 2008	
<b>Address/institution</b>	Australian Museum Business Services 6 College St Sydney NSW 2010			

Glenfield 1 artefact details.

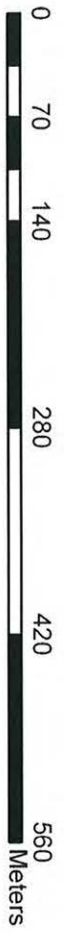
Material	Colour	Maximum Size (cm)	Artefact Type
Silcrete	Red	1	Heat shatter



Glenfield 1 location. View to north, showing train line in background.



Glenfield 1 silcrete artefact.



Map Datum: GDA 1994

