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Hydro Aluminium Kurri Kurri Pty Ltd
12-Dec-2014

Hydro Aluminium Smelter Site & Associated Buffer Land

Aboriginal Cultural Heritage Assessment

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Aboriginal Cultural Heritage Assessment

Client: Hydro Aluminium Kurri Kurri Pty Ltd

ABN: 55 093 266 221

Prepared by

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Revision	Revision Date	Details	Authorised	
			Name/Position	Signature
A	03-Sep-2014	Technical Review	Geordie Oakes / Archaeologist	
B	03-Sep-2014	QA Review	Sharmin Lubonski / Associate Director	
C	12-Dec-2014	Final	Kelly Pearsall / Principal Environmental Planner	

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Executive Summary

AECOM Australia Pty Ltd (AECOM) was engaged by Hydro Aluminium Kurri Kurri Pty Ltd (Hydro) to undertake an Aboriginal cultural heritage assessment of the Hydro aluminium smelter site and surrounding Hydro-owned buffer land, off Hart Road, at Kurri Kurri in the Lower Hunter Valley of New South Wales.

Smelter operations at the Kurri Kurri smelter site have been in care and maintenance mode since 2012, with Hydro undertaking preliminary investigations into land capability and future land uses across the smelter site and its associated buffer zone (the 'Project area') since this time. A Preliminary Masterplan has been developed for the Project area and is currently being used to inform further specialist investigations across the site. Alongside those generated through other specialist investigations, the results of the current Aboriginal cultural heritage assessment will assist Hydro in their finalisation of a planning proposal (the 'Planning Proposal') for the Project area, which incorporates residential and employment-related land uses as well as conservation and continuing rural land uses.

This Aboriginal cultural heritage assessment report is to form part of Hydro's Planning Proposal to Cessnock and Maitland City Councils and has been compiled with reference to the NSW Office of Environment and Heritage's (OEH) *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH, 2011) and *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW, 2010b) (the 'Code of Practice'). Aboriginal community consultation for this assessment has been conducted in accordance with OEH's *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (the 'Consultation Requirements') (DECCW, 2010a).

Archaeological survey of Project area was undertaken over an eight day period between 23 June 2014 and 2 July 2014 by a combined field team of two AECOM archaeologists and up to six rostered Registered Aboriginal Party (RAP) field representatives per day. The survey focussed on higher areas of Ground Surface Visibility (GSV) within the western half of the Project area. However, several transects were also completed in the eastern half of the site. In the northeastern and north-central portions of the Project area, particular attention was paid to areas of higher GSV along the margins of Wentworth Swamp, namely cattle tread and fluvial erosion exposures. All survey was conducted on foot, with a total of 51 transects completed over the course of the survey. Recorded transect data indicate that a total survey coverage of 137.5 ha, representing around 7**%** of the Project area, was achieved.

A total of 482 individual Aboriginal cultural lithic items were identified during the current survey, 475 or 98.5% of which are located within the Project area. Employing a 50 m distance convention for site definition, consideration of the location of these items against the mapped and/or described boundaries of valid AHIMS registered sites within the Project area (n = 23) provides a total of 65 new Aboriginal archaeological sites and 20 pre-existing sites (85 sites in total). Newly identified surface sites within the Project area include 31 artefact scatters and 34 isolated artefacts while pre-existing sites consist of 11 artefact scatters and nine isolated artefacts. Of the 20 previously recorded open artefact sites within the Project area, nine were relocated during the current survey.

In addition to identified sites, an assessment of the archaeological sensitivity of land within the Project area has also been undertaken, with three levels of sensitivity - Nil, Low and High - recognised on the basis of observed archaeology (i.e., its distribution and character), the results of previous Aboriginal heritage investigations within and surrounding the Project area, levels of past land disturbance and the predicted complexity of deposits within each category. Identified areas of high archaeological sensitivity within the Project area include elevated low gradient landform elements adjacent to Wentworth Swamp and higher order watercourses.

An assessment of the scientific significance of newly and previously recorded Aboriginal sites within the Project area has been undertaken. Moderate scientific significance has been attributed to eight sites and low scientific significance to 77 sites. No sites of high scientific significance have been identified within the Project area to date. Verbal and written advice received from the 32 RAPs for this assessment indicates that all identified sites within the Project area are culturally significant and need to be cared for appropriately.

Hydro's Preliminary Masterplan for the Project area has been reviewed in relation to its impact on Aboriginal cultural heritage. Consideration of the distribution of identified Aboriginal archaeological sites in relation to the Preliminary Masterplan indicates that 50 sites, including five out of eight sites assessed as being of moderate scientific significance, are located in conservation, rural land use and riparian corridor areas (or combinations thereof). These sites are unlikely to be directly impacted by future residential and employment-related development works within the Project area. A further four sites, two of which have been assessed as being of moderate scientific significance, extend into areas earmarked for employment land uses but are located principally in conservation or riparian corridor areas.

While recognising the potential for site impacts through environmental management works and ongoing rural land use activities, collectively, these 54 sites are considered to represent a significant preservation outcome for the surface Aboriginal archaeological record of the Project area. Compared with residential and employment-related development works, environmental management and ongoing rural land use activities are deemed significantly less likely to result in the destruction of identified sites.

Examination of the Preliminary Masterplan suggests that all remaining Aboriginal archaeological sites within the Project area (n = 31) are likely to be directly impacted by residential and employment-related development works. Impacted sites include 30 sites of low scientific significance and one site of moderate scientific significance. Archaeologically, the potential loss of these sites is considered to be offset by the retention, in conservation, rural land use and riparian corridor areas, of fifty-four sites of equal or greater scientific significance.

Consideration of the suitability of the Preliminary Masterplan with respect to the archaeological sensitivity of land within the Project area indicates a significant preservation outcome for land of high archaeological sensitivity, with the majority comprising conservation and rural land use land that will not be impacted by future residential and employment-related development works within the Project area. Attention is drawn, in particular, to the retention in conservation, rural land use and riparian corridor areas, of the majority of the highly sensitive land associated with Black Waterholes Creek, Swamp Creek and Wentworth Swamp. Land of low archaeological sensitivity is also well represented in areas zoned for conservation and continuing rural land use activities. Proposed residential and employment-related development areas within the Project area correspond principally with areas of low to nil archaeological sensitivity.

Management recommendations for identified Aboriginal heritage constraints within the Project area are as follows:

Aboriginal archaeological sites: where possible, these sites should be conserved as part of the master planning process, with decisions concerning their long-term management to be made in consultation with RAPs. However, where conservation is unfeasible, it is recommended that the Development Control Plan (DCP) for the Project area include a specific development control for known Aboriginal archaeological sites. This control should specify that any works which directly affect these sites will require an Aboriginal Heritage Impact Permit (AHIP) under Part 6 of the NPW Act 1974.

Archaeologically sensitive areas:

Areas of *high archaeological sensitivity* warrant a full Aboriginal cultural heritage assessment prior to any development impacts and it is recommended that the DCP for the Project area include a development control to this effect. Aboriginal cultural heritage assessments in areas of high archaeological sensitivity should be undertaken in accordance with OEH's *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH, 2011), *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW, 2010b) and *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW, 2010a).

Areas of *low archaeological sensitivity* warrant an Aboriginal archaeological due diligence assessment prior to any development impacts and it is recommended that the DCP for the Project area include a development control to this effect. Due diligence assessments in areas of low sensitivity should be undertaken in accordance with OEH's *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (DECCW, 2010c). Visual inspections undertaken for the purposes of a due diligence assessment should include an Aboriginal community representative.

Areas of *nil archaeological sensitivity* do not contain any known Aboriginal heritage constraints and it is recommended that the DCP for the Project area contain a development control to this effect. Nonetheless, the development control should also specify that Aboriginal objects may still occur in these areas and that if impacts to any identified objects cannot be avoided, an AHIP will be required.

1.0 Introduction

AECOM Australia Pty Ltd (AECOM) has been engaged by Hydro Aluminium Kurri Kurri Pty Ltd (Hydro) to undertake an Aboriginal cultural heritage assessment of the Hydro aluminium smelter site and surrounding Hydro-owned buffer land, off Hart Road, at Kurri Kurri in the Lower Hunter Valley of New South Wales (**Figure 1** and **Figure 2**). Smelter operations at the Kurri Kurri smelter site have been in care and maintenance mode since 2012, with Hydro undertaking preliminary investigations into land capability and future land uses across the smelter site and its associated buffer zone (the 'Project area') since this time. A Preliminary Masterplan has been developed for the Project area and is currently being used to inform further specialist investigations across the site. Alongside those generated through other specialist investigations, the results of the current Aboriginal cultural heritage assessment will assist Hydro in their finalisation of a planning proposal (the 'Planning Proposal') for the Project area, which incorporates residential and employment-related land uses as well as conservation and continuing rural land uses.

This Aboriginal cultural heritage assessment report is to form part of Hydro's Planning Proposal to Cessnock and Maitland City Councils and has been compiled with reference to the NSW Office of Environment and Heritage's (OEH) *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH, 2011) and *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW, 2010b) (the Code of Practice). Aboriginal community consultation for this assessment has been conducted in accordance with OEH's *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (the Consultation Requirements) (DECCW, 2010a).

1.1 Assessment Background

The Kurri Kurri aluminium smelter commenced production in 1969 with a single potline. A second potline was commissioned in 1979 and a third added in 1985. In 2002, after assuming ownership of the smelter through its acquisition of VAW Aluminium AG, Hydro undertook an upgrade program - the Smelter Upgrade and Retrofit (SURF) Project - which raised the production capacity of the smelter to 170,000 tonnes of aluminium per annum. Severe financial pressures on the profitability of the smelter, however, resulted in the Hydro Kurri Kurri Board curtailing production from Potline 1 along with cessation of all pot relining effective February 2012. In April 2012, a further Board decision was made to curtail all production at the smelter, with primary metal production ceasing in September 2012 and the production of casthouse products ending the following month. After being in care and maintenance mode since October 2012, the decision to permanently close the Kurri Kurri aluminium smelter was taken in May 2014, allowing for remediation and redevelopment options for the site to be progressed.

Since October 2012, Hydro has undertaken preliminary investigations into land capability and future land uses across the Project area and have developed a Preliminary Masterplan for the site. The Preliminary Masterplan, shown on **Figure 3**, is currently being used to inform further specialist investigations across the Project area. As currently developed, Hydro's Preliminary Masterplan for the Project area presents an opportunity to:

- Create up to 3000 hectares of employment land;
- Provide 1,290 residential lots and 100 large lot residential lots;
- Achieve 730 hectares of conservation land;
- Maintain a viable agricultural landholding; and
- Protect riparian waterways and existing wetlands.

Alongside those generated through other specialist investigations, the results of the current Aboriginal cultural heritage assessment will assist Hydro in their finalisation of the Planning Proposal for the Project area.

Aboriginal cultural heritage assessments conducted for rezoning projects differ from those carried out as part of the traditional development planning approval process in NSW in that physical impacts to identified Aboriginal heritage sites, places and values are not proposed as part of the rezoning process. Rather, the primary aim of these assessments is to identify Aboriginal heritage constraints and opportunities relevant to the development of site masterplans and to provide guidance around the appropriate management of identified heritage values post-rezoning. Once rezoning has been completed, it is the responsibility of individual proponents to conduct, where appropriate, additional Aboriginal heritage investigations into the areas they propose to impact through their respective Development Applications (DAs). Where required, such assessments will involve opportunities for more detailed archaeological investigations (e.g., archaeological test excavation) and conservation outcomes.

As no ground surface impacts are proposed as part of Hydro's Planning Proposal, the current assessment will not be used to support applications for Aboriginal Heritage Impact Permits (AHIPs) under Section 90A of the *National Parks and Wildlife Act 1974* (NPW Act 1974). Such applications will need to be supported by standalone Aboriginal Cultural Heritage Assessment and Aboriginal Archaeological Reports prepared in accordance with the with OEH's *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH, 2011) and the Code of Practice (DECCW, 2010b). A process of Aboriginal community consultation carried out accordance with the Consultation Requirements(DECCW, 2010a) would also need to be demonstrated.

1.2 Assessment Objectives

The overarching objectives of this Aboriginal cultural heritage assessment were as follows:

- to identify the Aboriginal cultural heritage values of the Project area using a combination of background research, Aboriginal community consultation and archaeological survey;
- to assess the suitability of the Hydro's Planning Proposal in relation to Aboriginal cultural heritage;
- to provide appropriate management recommendations for the identified Aboriginal cultural heritage values of the Project area; and
- to compile an Aboriginal cultural heritage assessment report that will assist Council in their assessment of the Hydro's Planning Proposal.

1.3 Project area

The Project area for this assessment, shown on **Figure 2**, comprises the existing Hydro aluminium smelter site and surrounding Hydro-owned buffer land to the immediate north of the township of Kurri Kurri, approximately 29 km northwest of Newcastle and 5 km southwest of Maitland in the Lower Hunter Valley of NSW. Together, the smelter and associated buffer land cover an area of approximately 1,964 ha across the Cessnock and Maitland Local Government Areas (LGAs), with the smelter site accounting for around 3.1% (60 ha) of this total. As shown on **Figure 2**, the recently completed Hunter Expressway traverses the southwestern portion of the Project area while the privately-owned historic Aberdare Railway, which comprises part of the South Maitland Railway, traverses the eastern third of the site.

Situated between MGA grid coordinates 355400 and 362000 east and 6369400 and 6374900 north on the Cessnock 9132-2N 1:100,000 topographic map sheet, the Project area falls wholly within the Central Lowlands region of the Hunter Valley (after Galloway, 1963) and crosscuts the 'Lower Hunter Plain' and 'East Maitland Hills' physiographic regions defined by Matthei (1995). Surrounding townships and hamlets include Abermain to the west-southwest, Heddon Greta to the southeast, Weston to the southwest and Gillieston Heights to the northeast. Parks and reserves in the surrounding area, meanwhile, include the Werakata National Park to the west and southwest, Cessnock State Forest to the west, the Lower Hunter National Park to the south and the Heddon Greta Reserve to the southeast.

The landscape of the Project area can be broadly characterised as flat to undulating, with flat, low-lying swampy terrain in the north-central portion of the Project area giving way, to the south, west and east into low undulating hills dissected by numerous ephemeral drainages. Several elevated flats, some of which could be described as 'plateaus', are also present within the Project area, with the largest and most prominent of these housing Hydro's Kurri Kurri smelter complex towards its southern end. Low undulating hills in easternmost portion of the Project area form part of a larger, north-north-easterly trending belt of elevated undulating terrain that forms the watershed between the Swamp Creek and Wallis Creek catchments. Elevations within the Project area range from 2 to 47 m AHD providing a total local relief of 45 m. Slopes are predominantly very gently (1-3%) to gently (3-10%) inclined. Named watercourses and water bodies within the Project area include Swamp and Black Waterholes Creeks as well as a sizeable portion of the regionally significant Wentworth Swamp, a permanent freshwater wetland system that covers an area of approximately 1,300 ha downstream of Kurri Kurri.

Reference to the NSW Geographical Names Register indicates that the Project area is situated within the Parish of Heddon in the County of Northumberland. Land within the Project area has been registered as Lot 1224828 on DP1082569, Lot 1201503 on DP 1082775, Lot 1215090 on DP 1102156, Lot 1425480 on DP1158546, Lot 1420807 on DP1159325, Lot 1427421 on DP1160801, Lot 1424043 on DP1161547, Lot 444259 on DP166625, Lot 209443 on DP233125, Lot 421359 on DP39701, Lot140801 on DP456769, Lot 554442 on DP456946, Lot 444265 on DP502196, Lot 3872 on DP543057, Lot 558653 on DP547715, Lot 150780 on DP553542, Lot 3622432 on DP589169, Lot 121073 on DP62332, Lot 127974 on DP654206, Lot 238178 on DP71130, Lot

397964 on DP728982, Lot 209444 on DP73597, Lot 362386 on DP755231, Lot 319804 on DP975995, Lot 201888 on DP976895, Lot 147507 on DP976896 and Lot 82659 on DP998540.

1.4 Project Team

The project team for this assessment included personnel from AECOM and 32 Registered Aboriginal Parties (RAPs). Dr Andrew McLaren (Archaeologist, AECOM) managed and participated in all aspects of the assessment detailed in this report. Andrew holds a Bachelor of Arts (1st Class Honours) degree from the University of Queensland in Brisbane, a Master of Cultural Heritage from Deakin University in Melbourne and a PhD in archaeology from the University of Cambridge in England. In addition, he has a total of over 5 years of Australian Aboriginal cultural heritage management experience and thus satisfies the minimum qualifications stipulated in Section 1.6 of the Code of Practice. Andrew was the primary author of this report. Luke Atkinson (Geoarchaeologist, AECOM) contributed to **Section 6.0**.

Other AECOM staff involved in this assessment included Geordie Oakes (Archaeologist, AECOM), Rochelle Coxon (Graduate Archaeologist, AECOM), Sharmin Lubonski (Associate Director, AECOM) and Tim Osborne (Designer, AECOM). Geordie participated in the survey and undertook a technical review of this report. AHIMS site cards for newly identified sites within the Project area were prepared by Rochelle. Unless otherwise specified, all figures within this report were created by Tim. Overarching QA review of this report was provided by Sharmin.

Aboriginal community consultation for this assessment was undertaken in accordance with OEH's Consultation Requirements (DECCW 2010b). Full details of the consultation process undertaken are provided in **Section 3.0**. Aboriginal persons and organisations consulted as part of this assessment are listed in **Table 1**.

Table 1 Registered Aboriginal Parties (RAPs) for the current assessment

Registered Aboriginal Party (RAP)	Primary contact person
Aboriginal Native Title Elders Consultants	Margaret Matthews
Cacatua General Services	Donna Sampson
AGA Services	Adam Sampson
Culturally Aware	Tracey Skene
EMT Cultural & Heritage	Esther Tighe & Mervyn Leslie
Gidawaa Walang Cultural Heritage Consultancy	Annie Hickey
Giwirri Consultants	Rodney Matthews
HSB Heritage Consultants	Patricia Hampton
Hunter Valley Cultural Consultants	Christine Archbold
Jarban & Mugrebea	Les Atkinson
Crimson Rosie	Jeff Matthews
Kauma Pondee Inc	Jill Green
Lower Hunter Aboriginal Incorporated	David ahoy
Mindaribba Local Aboriginal Land Council	Steven Talbott
Ungooroo Aboriginal Corporation	Jessi Garland
Upper Hunter Heritage Consultants	Darrel Matthews
Upper Hunter Wonnarua Council Inc	Rhoda Perry
Wallangan Cultural Services	Maree Waugh
Wanaruah Local Aboriginal Land Council	Noel Downs
Widescope Indigenous Group	Steven Hickey
Kauwul Wonn1 Contracting	Arthur Fletcher

Registered Aboriginal Party (RAP)	Primary contact person
Tocomwall Pty Ltd	Scott Franks
Yinarr Cultural Services	Kathie Kinchela
Amanda Heard	Adam Heard
Lower Hunter Wonnarua Cultural Services	Tom Miller
Gomeroi Namoi	Greg Heard
Amanda Hickey Cultural Services	Amanda Hickey
A1 Indigenous Services	Carolyn Hickey
Kawul Cultural Services	Vicky Slater
HTO Environmental Management Services	Paulette Ryan
HECMO Consultants	Kerren Boyd
Wurrumay Consultants	Kerrie Slater

1.5 The Proponent

The proponent for this assessment is Hydro Aluminium Kurri Kurri Pty Ltd (Hydro), a subsidiary of the global aluminium company Norsk Hydro ASA. Hydro is a registered Australian company (ACN: 093 266 221; ABN: 55 093 266 221) based in Kurri Kurri, NSW.

1.6 Report Structure

This report contains eleven sections. This section - **Section 1.0** - has provided background information on the assessment undertaken. The remainder of the report is structured as follows:

- **Section 2.0** outlines the statutory framework within which this assessment has been undertaken;
- **Section 3.0** details the Aboriginal community consultation program undertaken for this assessment;
- **Section 4.0** describes the existing environment of the Project area and its associated archaeological implications.
- **Section 5.0** describes the archaeological context of the Project area on a regional and local scale. Predictions regarding the nature of the Project area's Aboriginal archaeological record are also provided.
- **Section 6.0** summarises relevant ethnographic information for the Project area.
- **Section 7.0** describes the archaeological survey component of the assessment.
- **Section 8.0** outlines the significance of identified Aboriginal archaeological sites within the Project area.
- **Section 9.0** provides an assessment of the suitability of the Preliminary Masterplan in relation to Aboriginal heritage.
- **Section 10.0** details appropriate management recommendations for the identified Aboriginal heritage values of the Project area; and
- **Section 11.0** lists the references cited in-text.

1.7 Acknowledgements

AECOM gratefully acknowledges the assistance of the following individuals during fieldwork and/or the completion of this report:

- Shannon Sullivan (Planning Manager, ESS Australia)
- Leanne Pringle (Commercial Manager, Hydro);
- Kerry McNaughton (Environment Officer/Buffer Zone Supervisor, Hydro); and

- Ben Fuller (Special Counsel, Gilbert & Tobin Lawyers).

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AECOM

REGIONAL CONTEXT

Aboriginal Cultural Heritage Assessment
Hydro Aluminium Smelter Site & Associated Buffer Land
Kurri Kurri, New South Wales

FIGURE 1

G:\ENVGIS\Projects\60316\60312210 Hydro Aboriginal\FIGURES\60312210 F2 Project Area 28 08 2014 TO

AECOM

PROJECT AREA

Aboriginal Cultural Heritage Assessment
Hydro Aluminium Smelter Site & Associated Buffer Land
Kurri Kurri, New South Wales

FIGURE 2

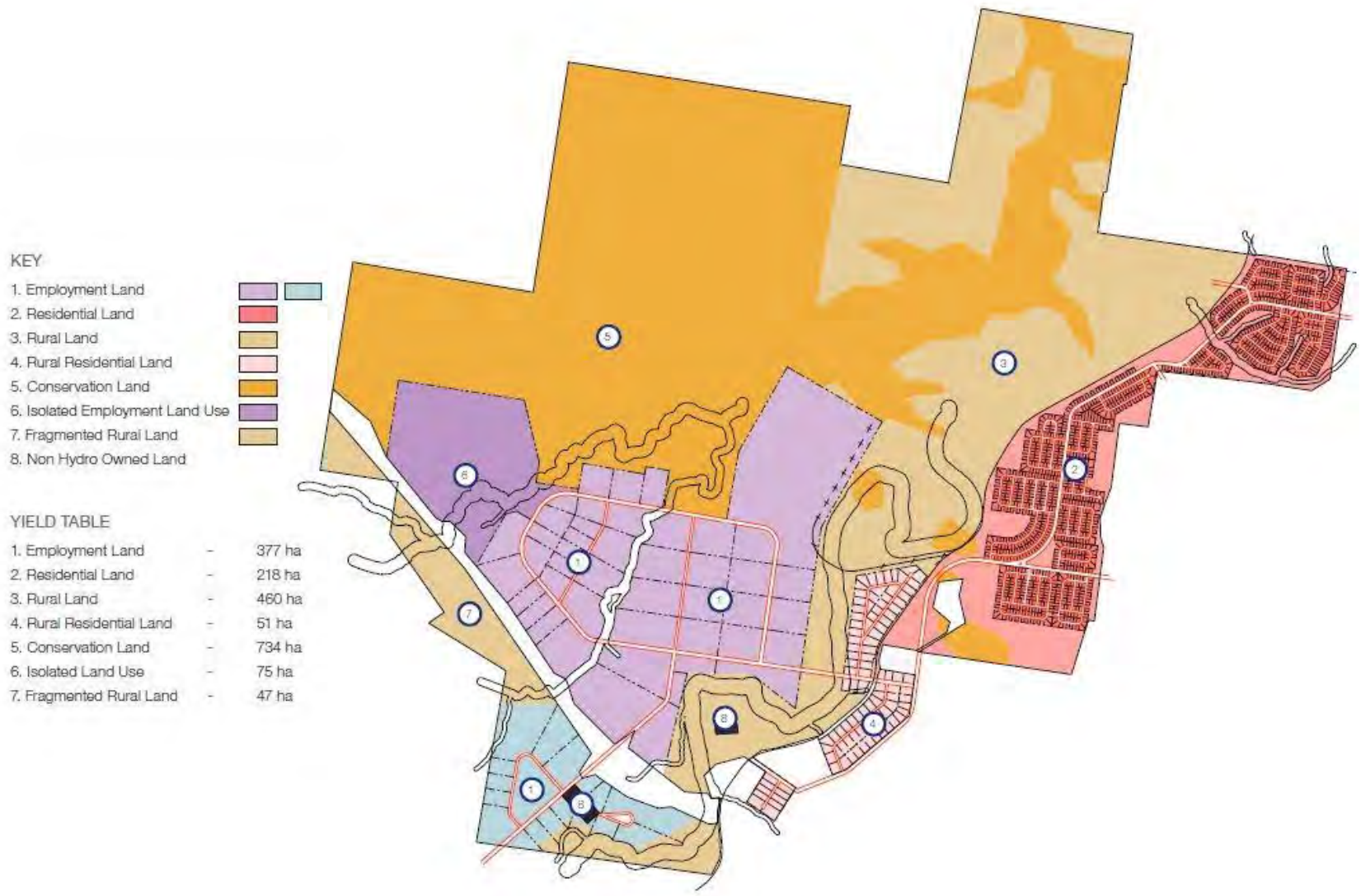


Figure 3 Preliminary Masterplan (Source: Hydro)

2.0 Applicable Policy & Legislation

2.1 Commonwealth Legislation

2.1.1 Aboriginal and Torres Strait Islander Heritage Protection Act 1984

The *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (the ATSIHP Act) provides for the preservation and protection of places, areas and objects of particular significance to Indigenous Australians. The stated purpose of the ATSIHP Act is the *"preservation and protection from injury or desecration of areas and objects in Australia and in Australian waters, being areas and objects that are of particular significance to Aboriginals in accordance with Aboriginal tradition"* (Part I, Section 4).

Under the Act, '*Aboriginal tradition*' is defined as *"the body of traditions, observances, customs and beliefs of Aboriginals generally or of a particular community or group of Aboriginals, and includes any such traditions, observances, customs or beliefs relating to particular persons, areas, objects or relationships"* (Part I, Section 3). A '*significant Aboriginal area*' is an area of land or water in Australia that is of *"particular significance to Aboriginals in accordance with Aboriginal tradition"* (Part I, Section 3). A '*significant Aboriginal object*', on the other hand, refers to an object (including Aboriginal remains) of like significance.

For the purposes of the Act, an area or object is considered to have been be injured or desecrated if:

a) In the case of an area:

   i. it is used or treated in a manner inconsistent with Aboriginal tradition;

   ii. the use or significance of the area in accordance with Aboriginal tradition is adversely affected; and

   iii. passage through, or over, or entry upon, the area by any person occurs in a manner inconsistent with Aboriginal tradition

b) in the case of an object:

   i. it is used or treated in a manner inconsistent with Aboriginal tradition.

The ATSIHP Act can override state and territory laws in situations where a state or territory has approved an activity, but the Commonwealth Minister prevents the activity from occurring by making a declaration to protect an area or object. However, the Minister can only make a decision after receiving a legally valid application under the ATSIHP Act and, in the case of long term protection, after considering a report on the matter. Before making a declaration to protect an area or object in a state or territory, the Commonwealth Minister must consult the appropriate minister of that state or territory (Part 2, Section 13).

2.1.2 Environment Protection and Biodiversity Act 1999

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) took effect on 16 July 2000. Under Part 9 of the EPBC Act, any action that is likely to have a significant impact on a matter of National Environmental Significance may only progress with approval of the Commonwealth Minister for Sustainability, Environment, Water, Population and Communities (SEWPAC). An action is defined as a project, development, undertaking, activity, series of activities, or alteration. An action will also require approval if:

- It is undertaken on Commonwealth land and will have or is likely to have a significant impact;
- It is undertaken outside Commonwealth land and will have or is likely to have a significant impact on the environment on Commonwealth land; and
- It is undertaken by the Commonwealth and will have or is likely to have a significant impact.

The EPBC Act defines 'environment' as incorporating both natural and cultural environments and therefore includes Aboriginal heritage items. Under the Act, protected heritage items are listed on the National Heritage List (items of significance to the nation) or the Commonwealth Heritage List (items belonging to the Commonwealth or its agencies). These two lists replaced the Register of the National Estate (RNE). Statutory references to the RNE in the EPBC Act were removed on 19 February 2012. However, the RNE remains an archive of over 13,000 heritage places throughout Australia.

The heritage registers mandated by the EPBC Act have been consulted and there are no Aboriginal heritage items located within or directly adjacent to the Project area.

2.2 State Legislation & Policies

2.2.1 National Parks and Wildlife Act 1974

The *National Parks and Wildlife Act 1974* (NPW Act), administered by OEH, is the primary legislation for the protection of Aboriginal cultural heritage in NSW. The NPW Act gives the Director General of OEH responsibility for the proper care, preservation and protection of 'Aboriginal objects' and 'Aboriginal places', defined under the Act as follows:

- an *Aboriginal object* is any deposit, object or material evidence (that is not a handicraft made for sale) relating to Aboriginal habitation of NSW, before or during the occupation of that area by persons of non-Aboriginal extraction (and includes Aboriginal remains).
- an *Aboriginal place* is a place declared so by the Minister administering the NPW Act because the place is or was of special significance to Aboriginal culture. It may or may not contain Aboriginal objects.

Part 6 of the NPW Act provides specific protection for Aboriginal objects and places by making it an offence to harm them and includes a 'strict liability offence' for such harm. A 'strict liability offence' does not require someone to know that it is an Aboriginal object or place they are causing harm to in order to be prosecuted. Defences against the 'strict liability offence' in the NPW Act include the carrying out of certain 'Low Impact Activities', prescribed in Clause 80B of the *National Parks and Wildlife Amendment Regulation 2010* (NPW Regulation), and the demonstration of due diligence.

An Aboriginal Heritage Impact Permit (AHIP) issued under Section 90 of the NPW Act is required if impacts to Aboriginal objects and/or places cannot be avoided. An AHIP is a defence to a prosecution for harming Aboriginal objects and places if the harm was authorised by the AHIP and the conditions of that AHIP were not contravened. Consultation with Aboriginal communities is required under OEH policy when an application for an AHIP is considered and is an integral part of the process. AHIPs may be issued in relation to a specified Aboriginal object, Aboriginal place, land, activity or person or specified types or classes of Aboriginal objects, Aboriginal places, land, activities or persons. Section 89A of the NPW Act requires notification of the location of Aboriginal sites within a reasonable time, with penalties for non-notification.

2.2.2 Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act), administered by the NSW Department of Planning and Environment, requires that consideration be given to environmental impacts as part of the land use planning process in NSW. In NSW, environmental impacts are interpreted as including impacts to Aboriginal and non-Aboriginal cultural heritage.

Developments that require development consent from a local council or the Minister for Planning are assessed under Part 4 of the EP&A Act.

2.2.3 Lower Hunter Regional Strategy (LHRS) & Regional Conservation Plan (RCP)

The Lower Hunter Regional Strategy (LHRS), finalised in 2006, details the New South Wales Government's planning priorities for the Lower Hunter Valley and identifies proposed areas of growth. The Regional Conservation Plan (RCP) is a partner document to the LHRS and outlines a 25 year program to direct and drive conservation planning and efforts within the Lower Hunter.

Both individually and in combination, the LHRS & RCP recognise the importance of Aboriginal objects and places to contemporary Aboriginal people, as well as the landscapes associated with them. However, both documents also acknowledge that the continued growth of the Lower Hunter's population and industries will raise challenges for their long-term protection. In recognition of these challenges, the LHRS has identified the following key actions for the long-term protection and management of the Aboriginal and Historic (non-Indigenous) heritage resource of the Lower Hunter Valley:

- Councils are to ensure that Aboriginal cultural and community values are considered in the future planning and management of the local government area;
- The Department of Planning and Environment and Councils will review the scope and quality of the existing statutory lists of heritage items and ensure that all places of significance are included in the heritage schedules of local environmental plans; and
- The cultural heritage values of major regional centres and major towns that will be the focus of urban renewal projects will be reviewed, with the aim of protecting cultural heritage.

The RCP proposes a number of mechanisms to ensure that high value conservation lands in the Lower Hunter Valley are identified, protected and managed for their biodiversity values as well as their Aboriginal cultural heritage values. Stage 1 of the RCP, implemented in 2006, involved the transfer of *c*.20,000 hectares of public high value conservation land into conservation reserves. The transfer of an additional 12,000 hectares of private land into the reserve system is expected to occur under the RCP over the next few years.

2.3 Local Government

As indicated in **Section 1.3**, the Project area cross-cuts the Cessnock and Maitland LGAs. Relevant Environmental Planning Instruments (EPIs) for these LGAs are the Maitland Local Environmental Plan 2011 (Maitland LEP 2011) and Cessnock Local Environmental Plan 2011 (Cessnock LEP 2011).

2.3.1 Cessnock LEP 2011

Clause 5.10 of the Cessnock LEP 2011 provides specific provisions for the protection of heritage items, heritage conservation areas, Aboriginal objects and Aboriginal places of heritage significance within the Cessnock LGA, defined in the LEP as follows:

- A *heritage item* means a building, work, place, relic, tree, object or archaeological site, the location and nature of which is described in Schedule 5 of the LEP;
- A *heritage conservation area* means an area of land of heritage significance:

  (a) shown on the Heritage Map as a heritage conservation area, and

  (b) the location and nature of which is described in Schedule 5 of the LEP,

  and includes any heritage items situated on or within that area.
- An *Aboriginal object* means any deposit, object or other material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of an area of New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains.
- An *Aboriginal place of heritage significance* means an area of land, the general location of which is identified in an Aboriginal heritage study adopted by the Council after public exhibition and that may be shown on the Heritage Map, that is:

  (a) the site of one or more Aboriginal objects or a place that has the physical remains of pre-European occupation by, or is of contemporary significance to, the Aboriginal people. It may (but need not) include items and remnants of the occupation of the land by Aboriginal people, such as burial places, engraving sites, rock art, midden deposits, scarred and sacred trees and sharpening grooves, or

  (b) a natural Aboriginal sacred site or other sacred feature. It includes natural features such as creeks or mountains of long-standing cultural significance, as well as initiation, ceremonial or story places or areas of more contemporary cultural significance.

Under the Cessnock LEP 2011, development consent is required for any of the following:

(a) demolishing or moving any of the following or altering the exterior of any of the following (including, in the case of a building, making changes to its detail, fabric, finish or appearance):

(i) a heritage item,

(ii) an Aboriginal object,

(iii) a building, work, relic or tree within a heritage conservation area,

(b) altering a heritage item that is a building by making structural changes to its interior or by making changes to anything inside the item that is specified in Schedule 5 in relation to the item,

(c) disturbing or excavating an archaeological site while knowing, or having reasonable cause to suspect, that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed,

(d) disturbing or excavating an Aboriginal place of heritage significance,

(e) erecting a building on land:

(i) on which a heritage item is located or that is within a heritage conservation area, or

(ii) on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance,

(f) subdividing land:

(i) on which a heritage item is located or that is within a heritage conservation area, or

(ii) on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance.

Schedule 5 of the Cessnock LEP 2011 provides a list of heritage items and conservation areas within the Cessnock LGA. There are no Aboriginal heritage items listed in this schedule that fall within the Project area.

2.3.2 Maitland LEP 2011

Clause 5.10 of the Maitland LEP 2011 provides specific provisions for the protection of heritage items, heritage conservation areas, Aboriginal objects and Aboriginal places of heritage significance within the Maitland LGA, defined in the LEP as follows:

- A *heritage item* means a building, work, place, relic, tree, object or archaeological site, the location and nature of which is described in Schedule 5 of the LEP;
- A *heritage conservation area* means an area of land of heritage significance:

  (a) shown on the Heritage Map as a heritage conservation area, and

  (b) the location and nature of which is described in Schedule 5 of the LEP,

  and includes any heritage items situated on or within that area.
- An *Aboriginal object* means any deposit, object or other material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of an area of New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains.
- An *Aboriginal place of heritage significance* means an area of land, the general location of which is identified in an Aboriginal heritage study adopted by the Council after public exhibition and that may be shown on the Heritage Map, that is:

  (a) the site of one or more Aboriginal objects or a place that has the physical remains of pre-European occupation by, or is of contemporary significance to, the Aboriginal people. It may (but need not) include items and remnants of the occupation of the land by Aboriginal people, such as burial places, engraving sites, rock art, midden deposits, scarred and sacred trees and sharpening grooves, or

  (b) a natural Aboriginal sacred site or other sacred feature. It includes natural features such as creeks or mountains of long-standing cultural significance, as well as initiation, ceremonial or story places or areas of more contemporary cultural significance.

Under the Maitland LEP, development consent is required for any of the following:

(a) demolishing or moving any of the following or altering the exterior of any of the following (including, in the case of a building, making changes to its detail, fabric, finish or appearance):

(i) a heritage item,

(ii) an Aboriginal object,

(iii) a building, work, relic or tree within a heritage conservation area,

(b) altering a heritage item that is a building by making structural changes to its interior or by making changes to anything inside the item that is specified in Schedule 5 in relation to the item,

(c) disturbing or excavating an archaeological site while knowing, or having reasonable cause to suspect, that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed,

(d) disturbing or excavating an Aboriginal place of heritage significance,

(e) erecting a building on land:

(i) on which a heritage item is located or that is within a heritage conservation area, or

(ii) on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance,

(f) subdividing land:

(i) on which a heritage item is located or that is within a heritage conservation area, or

(ii) on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance.

Schedule 5 of the Maitland LEP 2011 provides a list of heritage items and conservation areas within the Cessnock LGA. There are no Aboriginal heritage items listed in this schedule that fall within the Project area.

3.0 Aboriginal Community Consultation

Aboriginal community consultation acknowledges the right of Aboriginal people to be involved, through direct participation, on matters that directly affect their heritage. Involving Aboriginal people in all facets of the assessment process ensures that they are given adequate opportunity to share information about cultural values, and to actively participate in the development of appropriate management and/or mitigations measures. The successful identification, assessment and management of Aboriginal cultural heritage values are dependent on an inclusive and transparent consultation process.

As indicated in **Section 1.4**, Aboriginal community consultation for the current assessment was undertaken in accordance with OEH's *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW, 2010b) (the Consultation Requirements). The results of the consultation process undertaken are detailed below. A consultation log is provided as **Appendix A**.

3.1 Stage 1 - Notification and Registration

The aim of Stage 1 of the Consultation Requirements is to identify, notify and register Aboriginal people who hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and/or places in the Project area.

3.1.1 Consultation with Regulatory Agencies

Section 4.1.2 of the Consultation Requirements stipulates that proponents are responsible for ascertaining, from reasonable sources of information, the names of Aboriginal people who may hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and/or places. Proponents are required to compile a list of Aboriginal people who may have an interest for the proposed Project area and hold knowledge relevant to determining the cultural significance of Aboriginal objects and/or places by writing to:

a) the relevant regional office of the NSW Office of Environment & Heritage (OEH);

b) the relevant Local Aboriginal Land Council(s);

c) the Registrar, Aboriginal Land Rights Act 1983 for a list of Aboriginal owners;

d) the National Native Title Tribunal for a list of registered native title claimants, native title holders and registered Indigenous Land Use Agreements;

e) Native Title Services Corporation Limited (NTSCORP Limited);

f) The relevant local council(s); and

g) The relevant catchment management authorities for contact details of any established Aboriginal reference group.

In accordance with this requirement, the following agencies were contacted via letter or email on 10 February 2014 requesting information on relevant Aboriginal persons and organisations:

- OEH - Hunter Central Coast Region Office;
- Mindaribba Local Aboriginal Land Council (Mindaribba LALC);
- Office of the Registrar, *Aboriginal Land Rights Act 1983* (NSW);
- The National Native Title Tribunal (NNTT);
- NTSCORP Limited;
- Maitland Shire Council;
- Cessnock Shire Council; and
- Hunter-Central Rivers Catchment Management Authority (HCR CMA).

Responses were received from four agencies and are attached as **Appendix B**:

- The Office of the Registrar responded on 22 February 2014 advising that the Project area does not appear to have Registered Aboriginal Owners pursuant to Division 3 of the *Aboriginal Land Rights Act*

1983 (NSW). They also advised that the Mindaribba LALC may be able to assist in the identification of relevant Aboriginal stakeholders.

- The NNTT responded on 11 February 2014 advising that, as the submitted search request relates to areas of freehold land, native title has been extinguished over these areas.
- Mindaribba LALC responded on 19 February 2014 advising that they would like to register their interest in the Project and would like to be involved in all phases of fieldwork and salvage should any be required; and
- OEH responded on 6 March 2014 providing the details of 75 Aboriginal persons and organisations who may wish to be consulted as part of the assessment.

3.1.2 Public Notification

Section 4.1.3 of the Consultation Requirements requires that, in addition to writing to the Aboriginal people identified by the agencies listed in **Section 3.1.1**, the proponent must also place a notice in the local newspaper circulating in the general location of the proposed project. The notification must outline the project and identify its location.

In accordance with this requirement, a public notice was placed in the Maitland Mercury on 11 March 2014 (**Appendix C**). The closing date for registration via this notice was 25 March 2014, which provided the necessary *minimum* 14 day period for expressions of interest.

No responses to the notice were received prior to or after this date.

3.1.3 Invitations for Expressions of Interest

Section 4.1.3 of the Consultation Requirements requires that proponents must write to the Aboriginal people whose names were obtained through the regulatory agencies and the relevant Local Aboriginal Land Council(s) to notify them of the proposed project and invite them to register an interest in participating in a process of community consultation.

In accordance with this requirement, on 11 March 2014, a letter inviting expressions of interest and containing summary information on the project was sent to all Aboriginal persons and organisations identified by the regulatory agencies. A total of 75 Aboriginal stakeholders were invited to register an interest in being consulted. The closing date for expressions of interest was 25 March 2014, which provided the necessary *minimum* 14 day period for expressions of interest.

By the closing date for expressions of interest, 27 parties had registered an interest in the assessment. An additional five parties registered an interest after this date and were included in the consultation process. Summary information on all RAPs, including registration dates, is provided in **Table 2**.

Table 2 Registered Aboriginal Parties

Registered Aboriginal Party (RAP)	Date of registration	Method of registration	Primary contact person
Aboriginal Native Title Elders Consultants	24-02-14	Email	Margaret Matthews
Cacatua General Services	16-03-14	Email	Donna Sampson
AGA Services	16-03-14	Email	Adam Sampson
Culturally Aware	19-03-14	Email	Tracey Skene
EMT Cultural & Heritage	13-03-14	Phone	Mervyn Leslie
Gidawaa Walang Cultural Heritage Consultancy	14-03-14	Fax	Annie Hickey
Giwirri Consultants	24-02-14	Email & phone	Rodney Matthews
HSB Heritage Consultants	19-03-14	Email	Patricia Hampton
Hunter Valley Cultural Consultants	24-02-14	Email	Christine Archbold
Jarban & Mugrebea	12-03-14	Email	Les Atkinson

Registered Aboriginal Party (RAP)	Date of registration	Method of registration	Primary contact person
Crimson Rosie	23-03-14	Letter	Jeff Matthews
Kauma Pondee Inc	22-03-14	Email	Jill Green
Lower Hunter Aboriginal Incorporated	26-03-14	Email	David Ahoy
Mindaribba Local Aboriginal Land Council	19-02-14	Email	Steven Talbott
Ungooroo Aboriginal Corporation	19-02-14	Email	Jessi Garland
Upper Hunter Heritage Consultants	24-02-14	Email	Darrel Matthews
Upper Hunter Wonnarua Council Inc	20-03-14	Phone	Rhoda Perry
Wallangan Cultural Services	18-03-14	Email	Maree Waugh
Wanaruah Local Aboriginal Land Council	19-03-14	Email	Noel Downs
Widescope Indigenous Group	17-03-14	Email	Steven Hickey
Kauwul Wonn1 Contracting	19-03-14	Email	Arthur Fletcher
Tocomwall Pty Ltd	13-02-14	Phone	Scott Franks
Yinarr Cultural Services	18-03-14	Email	Kathie Kinchela
Amanda Heard	20-02-14	Email	Adam Heard
Lower Hunter Wonnarua Cultural Services	18-02-14	Email	Tom Miller
Gomeroi Namoi	20-02-14	Email	Greg Heard
Amanda Hickey Cultural Services	17-03-14	Email	Amanda Hickey
A1 Indigenous Services	17-02-14	Email	Carolyn Hickey
Kawul Cultural Services	31-03-14	Email	Vicky Slater
HTO Environmental Management Services	07-04-14	Phone	Paulette Ryan
HECMO Consultants	04-04-14	Email	Kerren Boyd
Wurrumay Consultants	07-07-14	Email	Kerrie Slater

3.1.4 Notification of Registered Aboriginal Parties (RAPs)

Section 4.1.6 of the Consultation Requirements requires that the proponent make a record of the names of each Aboriginal person who registered an interest and provide a copy of that record, along with a copy of the EOI letter forwarded to the Aboriginal parties, to the relevant OEH regional office and LALC within 28 days of the closing date for EOIs. Section 4.1.5 of the Consultation Requirements provides the opportunity for Aboriginal persons to withhold their details from being forwarded to these parties.

In accordance with these requirements, on 28 April 2014, a list of the 29 Aboriginal organisations that had registered an interest in the assessment and had not requested their details be withheld, as well as a copy of the EOI letter sent out on 11 March 2014, was forwarded to the relevant OEH regional office (i.e., Hunter Central Coast) and the Mindaribba LALC.

3.2 Stage 2 - Presentation of Information about Project

The aim of Stage 2 of the Consultation Requirements is to provide RAPs with information about the scope of the proposed project and the proposed cultural heritage assessment process.

For the current assessment, presentation of information about the Project area and Hydro's planning proposal was provided to RAPs as part of the registration of interest process detailed in **Section 3.1.3**. Basic information on the proponent and planning proposal was included in the EOI letter mailed on 11 March 2014.

3.3 Stage 3 – Gathering Information about Cultural Significance

The aim of Stage 3 of the Consultation Requirements is to facilitate a process whereby RAPs can:

a) Contribute to culturally appropriate information gathering and the assessment methodology;

b) Provide information that will enable the cultural significance of Aboriginal objects and/or places on the proposed Project area to be determined; and

c) To have input into the development of any cultural heritage management measures.

For current assessment, consultation with RAPs regarding the cultural heritage values of the Project area included:

- A request with the draft assessment methodology for any initial comments regarding the Aboriginal cultural heritage values of the Project area;
- Discussion of cultural heritage values during fieldwork; and
- The provision of a draft report to all RAPs for comment prior to finalisation.

3.3.1 Draft Survey Methodology

Sections 4.3.1 and 4.3.2 of the Consultation Requirements require that the proponent present and/or provide the proposed methodology for the cultural heritage assessment to RAPs and that RAPs be given a minimum of 28 days to review and provide feedback on this methodology.

In accordance with these requirements, on 15 April 2014, all RAPs were sent a draft of AECOM's proposed methodology for this cultural heritage assessment. A request for any initial comments or thoughts regarding the cultural values was also made in the covering letter accompanying the methodology. The specified closing date for comments was 14 May 2014.

Six written and nine verbal responses to the draft methodology were received from RAPs. These responses are summarised in **Table 3**. Where appropriate, AECOM's responses are also provided. Written RAP responses to the draft methodology are attached as **Appendix D**.

Table 3 RAP responses to draft methodology

Registered Aboriginal Party (RAP)	Date of response	Method of response	Summary of response	AECOM response to RAP comments
Aboriginal Native Title Elders Consultants	14.05.14	Verbal	Aboriginal Native Title Elders Consultants agree with the methodology and advise that they have extensive survey and excavation experience in the Kurri Kurri area	None required
Cacatua General Services	15.05.14	Verbal	Cacatua General Services agree with the methodology	None required
AGA Services	14.05.14	Verbal	AGA Services agree with methodology	None required
EMT Cultural & Heritage	14.05.14	Verbal	EMT Cultural & Heritage agree with the methodology	None required
Gidawaa Walang Cultural Heritage Consultancy	05.05.14	Email	Gidawaa Walang Cultural Heritage Consultancy agree with the methodology	None required
Lower Hunter Aboriginal Incorporated	06.05.14	Email with letter	Lower Hunter Aboriginal Incorporated agree with the methodology and believe that all consultation has been undertaken in a proper manner with respect to Aboriginal culture and values. Mr Ahoy (Senior Sites Manager) advises that his family has lived in the Heddon Greta and Kurri Kurri area for many generations and that, while the Project area has stories of hunting camps, no sacred sites are known. The Project area, Mr Ahoy advises, is culturally significant and is known to contain stone artefact sites. In addition, there is high potential for the identification of additional artefacts and camping areas.	None required
Mindaribba Local Aboriginal Land Council		Email with letter	Mindaribba LALC support the rezoning application provided a full assessment is conducted and that any resulting management recommendations are adhered to. In addition, Mindaribba LALC believes that the draft methodology provided is more of a background to the project.	Noted. This Aboriginal cultural heritage assessment report is to form part of a planning proposal to Maitland and Cessnock Shire Councils to rezone land within the Project area. As no ground surface impacts are proposed as part of Hydro's Planning Proposal, the current assessment will not be used to support applications for AHIPs under Section 90A of the NPW Act 1974. Such applications will need to be supported by standalone Aboriginal Cultural

Registered Aboriginal Party (RAP)	Date of response	Method of response	Summary of response	AECOM response to RAP comments
				Heritage Assessment and Aboriginal Archaeological Reports prepared in accordance with OEH guidelines. A process of Aboriginal community consultation carried out accordance with the Consultation Requirements would also need to be demonstrated. AECOM's proposed methodology was outlined in detail in Section 1.6 of draft methodology document provided to RAPs. A brief review of environmental and archaeological data for the Project area and environs was included in the document to give context to this methodology.
Wallangan Cultural Services	14.05.14	Verbal	Wallangan Cultural Services agree with the methodology	None required
Wanaruah Local Aboriginal Land Council	14.05.14	Verbal	Wanaruah Local Aboriginal Land Council is happy for their involvement to be limited to receiving assessment reports.	None required
Kauwul Wonn1 Contracting	13.05.14	Email with letter	Kauwul Wonn1 Contracting has reviewed the draft methodology and find the process of assessment acceptable.	None required
Tocomwall Pty Ltd	15.05.14	Verbal	Tocomwall Pty Ltd agree with the methodology	None required
Lower Hunter Wonnarua Cultural Services	14.05.14	Email with letter	Lower Hunter Wonnarua Cultural Services have reviewed the methodology and believe that it is not a methodology but rather just background information.	Noted. AECOM's proposed methodology was outlined in detail in Section 1.6 of draft methodology document provided to RAPs. A brief review of environmental and archaeological data for the Project area and environs was included in the document to give context to this methodology.
Gomeroi Namoi	15.05.14	Email	Gomeroi Namoi support the rezoning application provided a full assessment is completed over entire Project area and that any associated management recommendations are implemented or addressed prior to fieldwork.	Noted. This Aboriginal cultural heritage assessment report is to form part of a planning proposal to Maitland and Cessnock Shire Councils to rezone land within the Project area. As no ground surface impacts are proposed as part of Hydro's Planning

Registered Aboriginal Party (RAP)	Date of response	Method of response	Summary of response	AECOM response to RAP comments
				Proposal, the current assessment will not be used to support applications for AHIPs under Section 90A of the NPW Act 1974. Such applications will need to be supported by standalone Aboriginal Cultural Heritage Assessment and Aboriginal Archaeological Reports prepared in accordance with OEH guidelines. A process of Aboriginal community consultation carried out accordance with the Consultation Requirements would also need to be demonstrated.
HTO Environmental Management Services	14.05.14	Verbal	HTO Environmental Management Services agree with the methodology	None required
HECMO Consultants	14.05.14	Verbal	HECMO Consultants agree with the methodology	None required

As indicated in **Table 3**, information regarding the cultural values of the Project area was provided by one RAP (i.e., Lower Hunter Aboriginal Incorporated) in their response to the draft methodology.

Mr David Ahoy, Senior Sites Manager for Lower Hunter Aboriginal Incorporated advised that his family has lived in the Heddon Greta and Kurri Kurri area for many generations and that, while the Project area has stories of hunting camps, no sacred sites are known. The Project area, Mr Ahoy advised, is culturally significant and is known to contain stone artefact sites. In addition, Mr Ahoy advised that there is high potential for the identification of additional artefacts and camping areas.

No other specific cultural heritage values relating to the Project area were identified by RAP respondents.

3.3.2 Archaeological Survey

With the exception of the Wonnarua LALC, who had indicated as part of the registration process that they did not wish to participate in the fieldwork component of this assessment, all RAPs who had registered an interest in this assessment prior to the commencement of fieldwork on 23 June 2014 were provided the opportunity to participate in an archaeological survey of the Project area. Owing to the large number of RAPs involved, a fieldwork roster was developed to facilitate equitable RAP involvement.

Notification of the field survey, including insurance requirements, was provided in writing to all relevant RAPs on 13 June 2014 (**Appendix E**). In the end, a total of 26 RAPs provided representatives for survey. RAP field representatives are listed by organisation in **Table 4**.

Table 4 RAP field representatives by organisation

Registered Aboriginal Party (RAP)	Field representative(s)	Field date(s)
Aboriginal Native Title Elders Consultants	Margaret Matthews	01.07.14
Cacatua General Services	Kelly Griffiths	23.06.14
AGA Services	Ashley Sampson	23.06.14
EMT Cultural & Heritage	Lionel Washington	25.06.14
Gidawaa Walang Cultural Heritage Consultancy	Annie Hickey	23.06.14
Giwirri Consultants	Michele Stair	27.06.14
HSB Heritage Consultants	Patricia Hampton	24.06.14
Hunter Valley Cultural Consultants	John Matthews	01.07.14
Jarban & Mugrebea	Les Atkinson	24.06.14
Crimson Rosie	Colleen Stair	01.07.14
Kauma Pondee Inc	David Ahoy	24.06.14
Lower Hunter Aboriginal Incorporated	David Ahoy	25.06.14
Mindaribba LALC	Matthews Yates & Steve Crawford	24.06.14-26.06.14; 30.06.14-02.07.14
Upper Hunter Heritage Consultants	Darrel Matthews	01.07.14
Wallangan Cultural Services	Maree Waugh	25.06.14
Widescope Indigenous Group	Steven Hickey	25.06.14
Kauwul Wonn1 Contracting	Maree Waugh	27.06.14
Tocomwall Pty Ltd	Mary Franks	27.06.14 & 02.07.14
Yinarr Cultural Services	Kathie Kinchela & Kenneth Brown	26.06.14
Amanda Heard	J. Sinclair	30.06.14
A1 Indigenous Services	Steven Hickey	26.06.14

Registered Aboriginal Party (RAP)	Field representative(s)	Field date(s)
Lower Hunter Wonnarua Cultural Services	David Johnson	26.06.14
Amanda Hickey Cultural Services	Paulette Ryan	27.06.14
Kawul Cultural Services	Rod Hickey	30.06.14 & 01.07.14
HTO Environmental Management Services	Paulette Ryan	30.06.14
HECMO Consultants	Maree Waugh	26.06.14

RAP field representatives involved in the survey identified the following social or cultural values for the Project area in conversations with AECOM field staff:

- Wentworth Swamp would have been a focal resource feature for Aboriginal people camping within and passing through the Project area owing to it being a virtual 'supermarket' of floral and faunal resources.
- Mount Tomalpin, which is clearly visible from various parts of the Project area, would have been an important local landmark for Aboriginal people camping within and passing through the Project area and was likely only accessible to selected individuals;
- The concentration of sites around Wentworth Swamp and along Black Waterholes creeks shows that both areas were important hunting and gathering areas;
- The Project area contains a large number of edible and otherwise useful plants;
- The presence of sites in eroded areas shows that the Project area contains a large subsurface archaeological resource;
- All Aboriginal archaeological sites within the Project area are culturally significant as they attest to the use of the site by Aboriginal people in the past;
- The stone artefact assemblages identified during survey are typical of those found locally in terms of being dominated by silcrete artefacts and containing backed artefacts; and
- Stones used for flaked stone artefact manufacture within the Project area were likely sourced from the nearby Hunter River gravels.

3.4 Stage 4 - Review of Draft Assessment Report

The aim of Stage 4 of the Consultation Requirements is to prepare and finalise an Aboriginal cultural heritage assessment report with input from RAPs.

In accordance with Section 4.4.2 of the Consultation Requirements, on7 November 2014, all RAPs were sent a draft of the Aboriginal cultural heritage assessment for review and comment. The specified closing date for comments was 8 December 2014, which provided the necessary minimum 28 day review period.

Two responses to the draft report were received from RAPs: one written and one verbal. Both responses are summarised in **Table 5**. Written RAP responses to the draft report are attached as **Appendix F**.

Table 5 RAP Reponses to draft report

Registered Aboriginal Party (RAP)	Date of response	Response to draft report	AECOM Response
Aboriginal Native Title Elders Consultants	N/A	No response provided	None required
Cacatua General Services	N/A	No response provided	None required
AGA Services	N/A	No response provided	None required
Culturally Aware	N/A	No response provided	None required
EMT Cultural & Heritage	N/A	No response provided	None required
Gidawaa Walang Cultural Heritage Consultancy	11-12-14	Gidawaa Walang Cultural Heritage Consultancy support	None required

Registered Aboriginal Party (RAP)	Date of response	Response to draft report	AECOM Response
		the management recommendations in the draft report.	
Giwirri Consultants	N/A	No response provided	None required
HSB Heritage Consultants	N/A	No response provided	None required
Hunter Valley Cultural Consultants	N/A	No response provided	None required
Jarban & Mugrebea	N/A	No response provided	None required
Crimson Rosie	N/A	No response provided	None required
Kauma Pondee Inc	N/A	No response provided	None required
Lower Hunter Aboriginal Incorporated	N/A	No response provided	None required
Mindaribba Local Aboriginal Land Council	N/A	No response provided	None required
Ungooroo Aboriginal Corporation	N/A	No response provided	None required
Upper Hunter Heritage Consultants	N/A	No response provided	None required
Upper Hunter Wonnarua Council Inc	N/A	No response provided	None required
Wallangan Cultural Services	N/A	No response provided	None required
Wanaruah Local Aboriginal Land Council	11-11-14	Suzie Worth, on behalf of the Wanaruah LALC, advises that the LALC is happy with the report overall but request that the development control triggering due diligence be modified to state that an Aboriginal persons should be present for these assessments.	Noted. AECOM has inserted the following provision into the control in question: “Visual inspections undertaken for the purposes of a due diligence assessment should include an Aboriginal community representative”.
Widescope Indigenous Group	N/A	No response provided	None required
Kauwul Wonn1 Contracting	N/A	No response provided	None required
Tocomwall Pty Ltd	N/A	No response provided	None required
Yinarr Cultural Services	N/A	No response provided	None required
Amanda Heard	N/A	No response provided	None required
Lower Hunter Wonnarua Cultural Services	N/A	No response provided	None required
Gomeroi Namoi	N/A	No response provided	None required
Amanda Hickey Cultural Services	N/A	No response provided	None required
A1 Indigenous Services	N/A	No response provided	None required
Kawul Cultural Services	N/A	No response provided	None required
HTO Environmental Management Services	N/A	No response provided	None required
HECMO Consultants	N/A	No response provided	None required
Wurrumay Consultants	N/A	No response provided	None required

4.0 Existing Environment

The nature and distribution of Aboriginal archaeological materials are closely linked to the environments in which they occur. Environmental variables such as topography, geology, hydrology and vegetation will have played a critical role in influencing how Aboriginal people moved within and utilised their respective Country. Amongst other things, these variables affected the availability of suitable campsites, drinking water, plant and animal resources and raw materials for the production of stone and organic implements. Accordingly, any attempt to predict or interpret the character and distribution of Aboriginal sites in a given landscape must take such environmental factors into account. At the same time, an assessment of historical land use activities and geomorphic processes, both contemporary and historic, allows predictions to be made concerning the survival, visibility and integrity of Aboriginal archaeological materials within the same landscape.

4.1 Physical Setting

As indicated in **Section 1.3**, the Project area is located to the immediate north of the township of Kurri Kurri, approximately 29 km northwest of Newcastle and 5 km southwest of Maitland in the Lower Hunter Valley of NSW. Reference to the Cessnock 1:100,000 Topographic Map Sheet (9132-2N) indicates that the Project area, which covers an area of approximately 1,964 hectares across the Cessnock and Maitland LGAs, is situated between MGA grid coordinates 355400 and 362000 east and 6369400 and 6374900 north (Zone 56).

Surrounding townships and hamlets include Abermain to the west-southwest, Heddon Greta to the southeast, Weston to the southwest and Gillieston Heights to the northeast. Parks and reserves in the surrounding area, meanwhile, include the Werakata National Park to the west and southwest, Cessnock State Forest to the west, the Lower Hunter National Park to the south and the Heddon Greta Reserve to the southeast.

Reference to the NSW Geographical Names Register indicates that the Project area is situated within the Parish of Heddon in the County of Northumberland. Land within the Project area has been registered as Lot 1224828 on DP1082569, Lot 1201503 on DP 1082775, Lot 1215090 on DP 1102156, Lot 1425480 on DP1158546, Lot 1420807 on DP1159325, Lot 1427421 on DP1160801, Lot 1424043 on DP1161547, Lot 444259 on DP166625, Lot 209443 on DP233125, Lot 421359 on DP39701, Lot140801 on DP456769, Lot 554442 on DP456946, Lot 444265 on DP502196, Lot 3872 on DP543057, Lot 558653 on DP547715, Lot 150780 on DP553542, Lot 3622432 on DP589169, Lot 121073 on DP62332, Lot 127974 on DP654206, Lot 238178 on DP71130, Lot 397964 on DP728982, Lot 209444 on DP73597, Lot 362386 on DP755231, Lot 319804 on DP975995, Lot 201888 on DP976895, Lot 147507 on DP976896 and Lot 82659 on DP998540.

4.2 Topography

The Project area is located within the Central Lowlands subregion of the Hunter Valley (after Galloway, 1963) and crosscuts the 'Lower Hunter Plain' and 'East Maitland Hills' physiographic regions defined by Matthei (1995) (see **Figure 4** and **Figure 5**). The topography of the Project area can be broadly characterised as flat to undulating, with level, low-lying swampy terrain in the north-central portion of the site giving way, to the south, west and east into low undulating hills dissected by numerous ephemeral drainage lines. Several elevated flats[1], some of which could be described as 'plateaus', are also present within the Project area, with the largest and most prominent of these housing Hydro's Kurri Kurri smelter complex towards its southern end. Terraces along Swamp Creek attest to the lateral and vertical migration of this locally significant watercourse over time.

Reference to Matthei (1995) indicates that the flat, low-lying terrain that dominates the north-central portion of the Project area forms part of an extensive swampy backplain of the nearby Hunter River. Islands of higher ground within this backplain can be classified as residual rises (*sensu* Speight, 2009). Undulating hills in the eastern half of the Project area, meanwhile, comprise part of a larger, north-northeasterly trending belt of elevated undulating terrain that comprises the watershed between the Wallis Creek and Swamp Creek catchments. In the southern half of the Project area, flood prone creek flats occur in association with Swamp and Black Waterholes Creeks, as well as two of their unnamed higher order tributaries.

Elevations within the Project area range from 2 to 47 m AHD providing a total local relief of up to 45 m. Slopes are predominantly very gently to gently (1-10%) inclined, with moderately (10-32%) inclined slopes also present but comparatively rare. Following Speight (2009), a breakdown of the relative representation of morphological landform units within the Project area is provided in **Table 6**. Identified landform units are shown on **Figure 6**.

[1] A degree of morphological overlap between some of the Project's area 'elevated flats' and 'spur crests' is acknowledged.

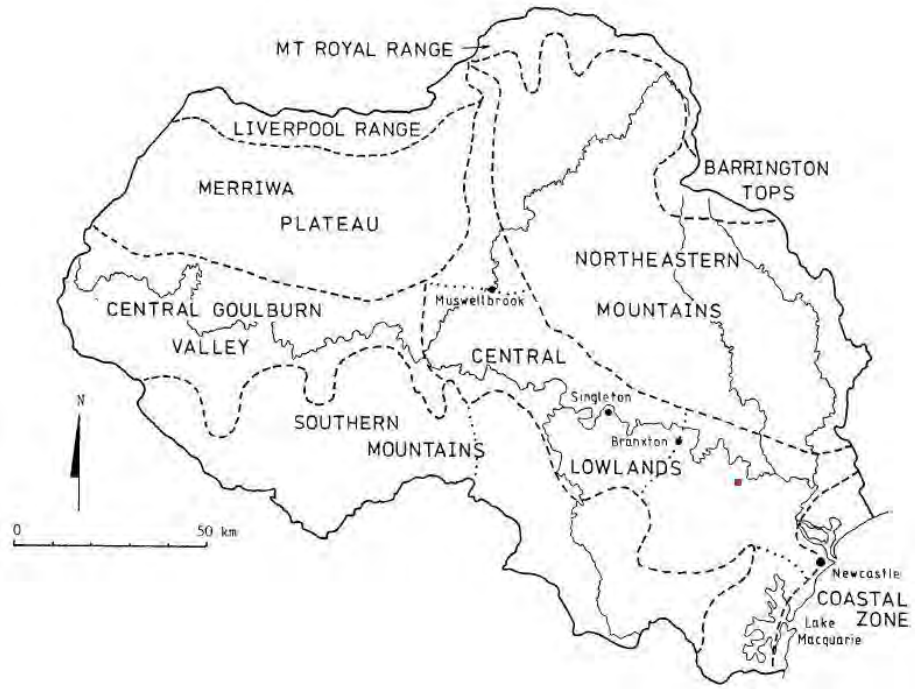


Figure 4 **Subregions of the Hunter Valley (from Hughes, 1984: 4, Fig. 4, after Galloway, 1963). Approximate location of Project area marked with red square.**

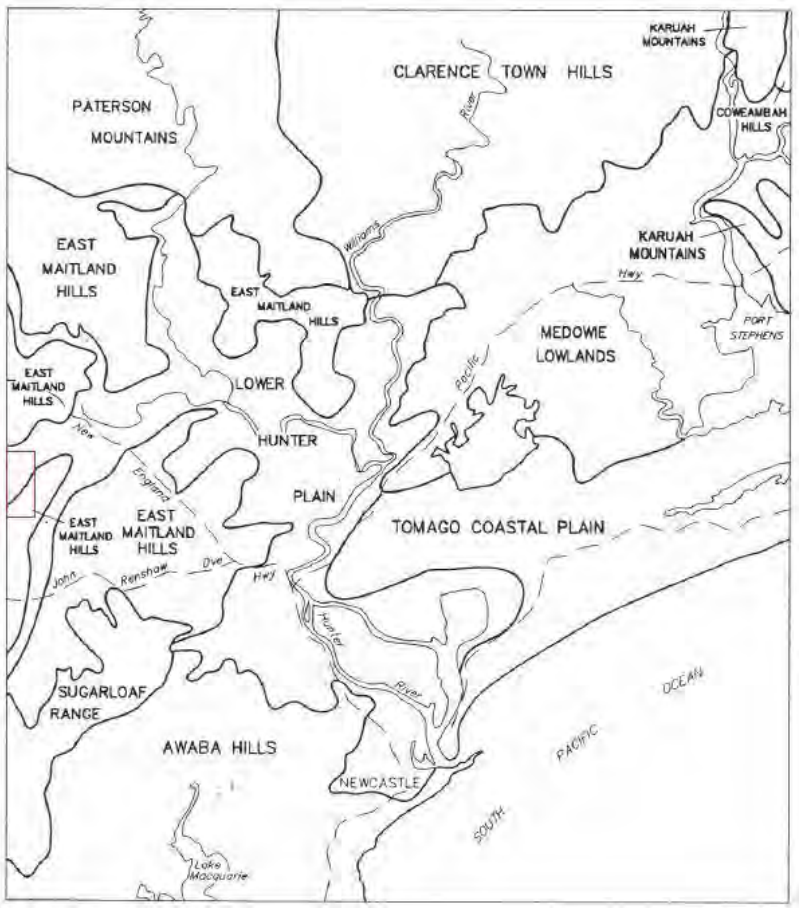


Figure 5 **Physiographic regions of the Newcastle 1:100 000 Map Sheet (from Matthei, 1995). Approximate location of Project area marked in red. Note Project area extends outside of mapped area.**

Table 6 Morphological landform units within the Project area

Landform unit	Area (ha)	%
Simple slope	993	50.6
Swamp	224.7	11.4
Elevated flat	158.1	8.1
Disturbed	142.3	7.2
Spur crest	139.9	7.1
Drainage depression	138.8	7
Crest	73.4	3.7
Flat	63.7	3.2
Residual rise	20	1
Creek terrace	10.8	0.6
Total	**1,964**	**100**

4.3 Hydrology

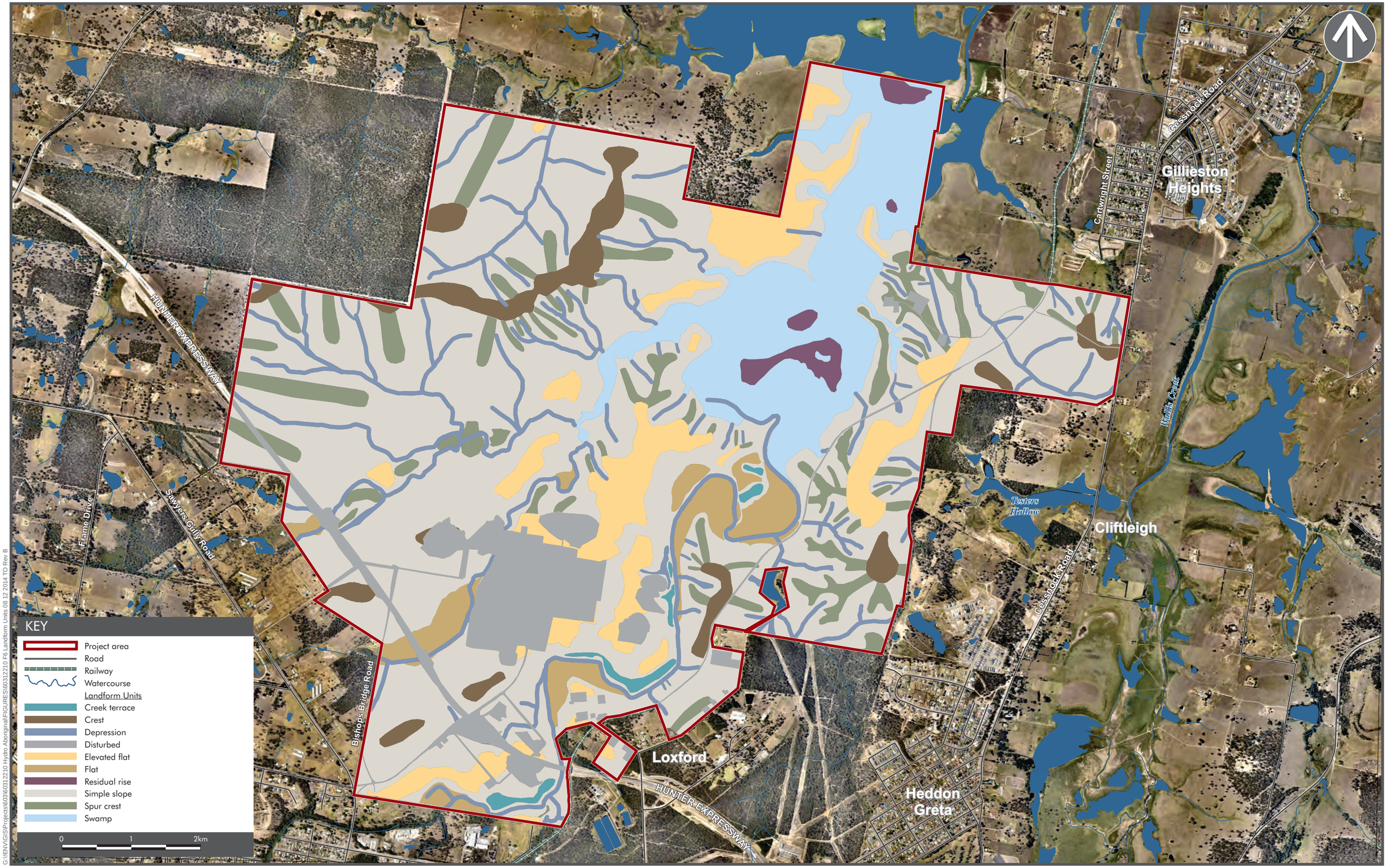
The Project area crosscuts the Swamp Creek and Wallis Creek sub-catchments of the broader Hunter River catchment and contains a sizeable portion of the regionally significant Wentworth Swamp, a permanent wetland system that covers an area of approximately 1,300 hectares downstream of Kurri Kurri and was known historically as Lake Lachlan, after Governor Macquarie's son (Hunter, 2012:19).

Today, Wentworth Swamp comprises a freshwater wetland and is one several Lower Hunter wetland systems that has been incorporated into the NSW Scientific Committee's *Freshwater Wetlands on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner Endangered Ecological Community*. However, prior to the construction of the Wallis Creek Floodgates[2] and the implementation of other Lower Hunter Valley Flood Mitigation Scheme measures, the swamp would have consisted of an estuarine environment subject to the daily tidal cycle of the Pacific Ocean[3], albeit one characterised by a complex mosaic of brackish and freshwater micro-environments (see also **Section 4.5.1** below).

Named watercourses within the Project area include Black Waterholes Creek and Swamp Creek[4], both of which discharge into Wentworth Swamp within the site. Black Waterholes Creek enters the Project area to the west of the existing Hydro smelter complex as a 3rd order stream, while Swamp Creek enters it to the southeast of the complex as a >4th order stream. Terraces along the latter attest to its lateral and vertical migration over time. Swamp Creek joins Wallis Creek at Louth Park *c*.3.4 km northeast of the Project area which, in turn, discharges into the Hunter River at Horseshoe Bend approximately 6 km northeast of the site. Both creeks are susceptible to flooding from the Hunter River, particularly in their lower reaches.

Remaining mapped drainage lines within the Project area consist principally of ephemeral 1st to 2nd order streams that are best described as drainage depressions. Notable exceptions include the unnamed 2nd order stream that borders the Hydro smelter complex to the west, the unnamed 2nd order tributary of Bishops Creek in the northwestern portion of the Project area and the unnamed 2nd order stream that discharges into Wentworth Swamp in the easternmost portion of the site. Other significant watercourses in the vicinity of the Project area include Bishops Creek to the north and Wallis Creek to the east.

[2] First constructed in 1870, the Wallis Creek Floodgates were reconstructed in 1876 and again in 1941
[3] The tidal limit in the Hunter River occurs in the vicinity of Oakhampton, approximately 64 km from the Pacific Ocean.
[4] Downstream of Wentworth Swamp, Swamp Creek is also known as Fishery Creek.



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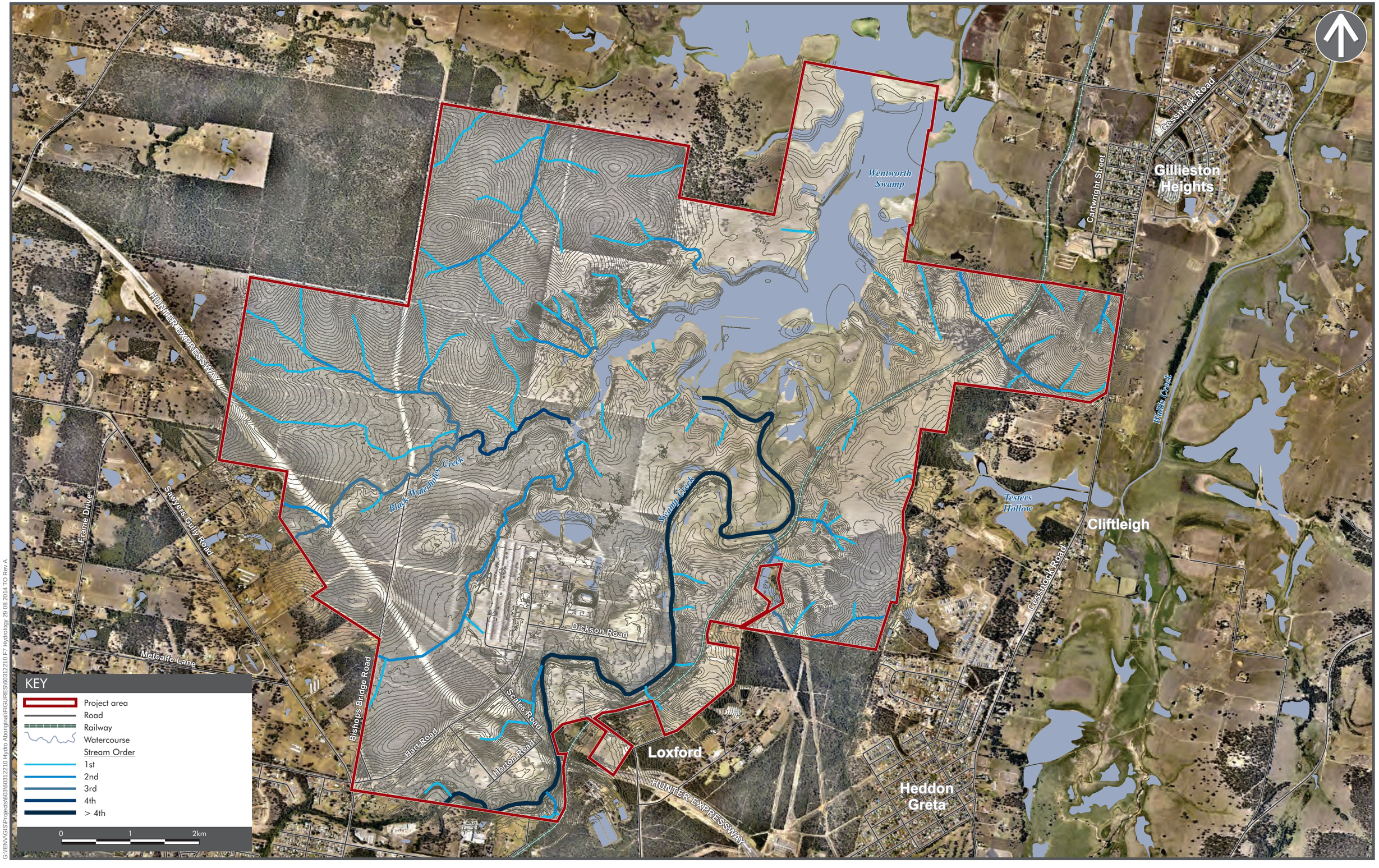
AECOM

LANDFORM UNITS

Aboriginal Cultural Heritage Assessment
Hydro Aluminium Smelter Site & Associated Buffer Land
Kurri Kurri, New South Wales

FIGURE 6



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HYDROLOGY

Aboriginal Cultural Heritage Assessment
Hydro Aluminium Smelter Site & Associated Buffer Land
Kurri Kurri, New South Wales

FIGURE 7

4.4 Surface Geology

Examination of the Newcastle and Singleton 1:250 000 Geological Map Sheets indicates that the surface geology of the Project area consists principally of rocks belonging to the Rutherford Formation (Pdr) of the Early Permian Dalwood Group, with Quaternary Alluvium (Qa) also well represented.

Rocks of the Rutherford Formation, specifically, lithic sandstone, micaceous siltstone, mudstone, shale and erratics, mantle the majority of the elevated flat to undulating terrain surrounding Wentworth Swamp while unconsolidated flood plain alluvium (i.e., clay, silt and sand) of Holocene antiquity blankets the low-lying terrain associated with the swamp and lower reaches of Swamp and Black Waterholes Creeks. Although unconfirmed, reference to Roy et al. (1995)) suggests that Holocene flood plain alluvium within the Project area overlies, at least in places, estuarine muds belonging to the Hunter Valley's now largely infilled palaeoestuary. At Maitland, *c*.5 km northeast of the Project area, up to 8 m of unconsolidated flood plain alluvium overlies estuarine muds that have a total thickness of around 17 m (Roy et al. 1995: 77). A similar if reduced cover of flood plain alluvium is inferred for the Project area given its location relative to the Hunter River.

Other mapped geological formations within the Project area include the Farley Formation of the Dalwood Group, the Greta Coal Measures and the Branxton Formation of the Early Permian Maitland Group. Rocks of the Farley Formation have been mapped as mantling the undulating terrain to the east of Wentworth Swamp and include sandstone, mudstone, siltstone and shale erratics. In the easternmost portion of the Project area, available geological mapping indicates the presence of a narrow belt of rocks belonging to the Greta Coal Measures. These measures are bordered to the east by rocks of the Branxton Formation.

As far as is possible to determine from available documentary sources, no naturally-occurring deposits or outcrops of stone suitable for the production of flaked and/or edge-ground stone tools have been previously identified within or directly adjacent to the Project area. Nonetheless, given that suitable materials are known to occur within some of the geological formations present within and surrounding the Project area, the presence of such features remains a possibility. Outside of the Project area, gravel deposits associated with nearby Hunter River have been identified as a regionally significant source of lithic raw materials for flaked and edge-ground stone tool manufacture (Hiscock, 1986a; Moore, 2000; White, 2012). These deposits, which occur in the form of point and mid-channel gravel bars, as well as 'stranded' terrace and ridge gravels, are known to contain a variety of flakeable rock types including silcrete, silicified tuff (also known as indurated mudstone), quartz, quartzite, chert, petrified wood and various fine-grained volcanic rocks (e.g., White, 1998).

As with flakeable stone, available environmental and archaeological reference materials for the Project area indicate that sandstone outcrops suitable for the grinding of stone hatchet-heads and wooden spears have not been previously identified within it. Regardless, the known presence of sandstone in the Branxton, Farley and Rutherford Formations, as well as the Greta Coal Measures, raises the possibility that such outcrops may, in fact, exist. The presence of grinding groove sites in the surrounding district is similarly suggestive. If present, existing archaeological data for grinding groove sites in the Lower Hunter Valley suggest that flat or relatively flat, low-lying outcrops of fine-grained sandstone near water will have preferentially selected for this task. Alongside food preparation and other tasks (e.g., the grinding of ochre), smaller, portable sandstone blocks may also have been used in this capacity.

4.5 Soils & Geomorphology

4.5.1 The Hunter 'Delta'

As shown on **Figure 8**, the Project area is located at the western extremity of the Hunter "delta", a term first used by David and Etheridge (1890) to describe the broad expanse of floodplains, swamps and channels extending some 35 km inland from the coast at Newcastle. More recently, this same region has been described by Chappell (1993) as a coastal or fluvio-deltaic lowland, the boundaries of which correspond to those portions of bedrock palaeovalleys occupied by Pleistocene and Holocene estuaries now infilled with a "complex assemblage of fluvial, estuarine and coastal-marine sediments of various ages" (Roy et al., 1995: 70). The present day floodplains, swamps and channels of the lower Hunter, Patterson and Williams Rivers define a large infilled estuary whose upper reaches were just west of Maitland (Roy et al., 1995: 70) (**Figure 9**). In common with other southeastern Australian coastal river valleys, formation of the Hunter delta's former Pleistocene and Holocene estuaries was closely tied to glacio-eustatic fluctuations in sea level, the last major cycle of which commenced around 130,000 years ago with the Last Interglacial phase of high sea levels and warm temperatures (Roy et al., 1995: 61) (**Figure 10**).

During the Last Interglacial, *c*.130,000 to 115,000 years ago, conditions in the Hunter delta are believed to have been similar to the present day with an extensive deltaic floodplain blanketing the Lower Hunter Valley (Roy et al., 1995: 70). Raised estuarine shell beds in the greater Maitland area, investigated by David and Etheridge (1890) and others (e.g., Thom & Murray-Wallace, 1988), have been assigned to this phase of sedimentation and are indicative of a sea level around 5 m higher than that of today (Roy et al., 1995: 70). Associated terrace deposits, the modern distribution of which has been mapped by Roy et al. (1995) (**Figure 8**), are remnants of the Last Interglacial floodplain that once covered the lower Hunter valley. The 'Inner Barrier' of the Newcastle Bight Sand Barrier System was also deposited at this time (Roy et al., 1995: 70).

Incision of the present day rivers of the Hunter delta into their respective valleys commenced with the onset of glacial cooling and its attendant (progressive) reduction in sea levels. Erosion and transportation of much of the Last Interglacial floodplain in the millennia leading up to and comprising the Last Glacial Maximum (LGM) (*c*.24,000 to 17,000 years ago) have been attributed to prolonged sub-aerial weathering and the lateral migration of river channels across this low gradient floodplain (Roy et al., 1995: 71). During the LGM, the coastline of the Hunter River 'delta' was on the continental shelf around 25km east of its present position. A zone of gravelly sands on the inner shelf marks the course of the Hunter palaeo channel (Roy & Crawford, 1980). Rising sea levels associated with the Post-glacial marine transgression (*c*.20-6.5ka) subsequently inundated the inner shelf and much of the Lower Hunter Valley, resulting, at the end of the transgression, in an estuary extending approximately 35 km inland from present coastline (**Figure 11**). Initiation of the Outer Barrier of the Newcastle Bight Sand Dune System can also be traced to this period, with sandy shelf deposits reworked landward from *c*.18,000 years ago (Dean-Jones, 1990: 24). Progradation of the Outer Barrier followed the cessation of sea level rise *c*.6,500-6,000 years ago and marked the commencement of "a new cycle of estuarine and deltaic sedimentation" in the Lower Hunter Valley (Roy et al., 1995: 71).

Mid-to-late Holocene sedimentation in the Hunter delta has been discussed in detail by Roy et al. (1995) who describe a dual infilling process involving the building of tidal delta marine sand into the estuary mouth from the open ocean and the deposition of land-supplied fluvial-estuarine sediments through rivers and creeks. Estuarine environments were most common during the mid-Holocene (*c*.6-4 ka) but have progressively decreased in size through estuary infilling. In the case of Wentworth Swamp, progressive infilling associated with a prograding Hunter River delta and sediment influx from local creeks will have slowly transformed what was a shallow estuarine water body into the terrestrial swamp system of today. Alongside changes in the distribution of potable water sources, accompanying changes in the floral and faunal regime of the area occupied by the former estuary are of relevance to understanding past Aboriginal land use within the Project area.

Estuarine muds associated with the Hunter palaeoestuary vary laterally in response to existing environmental conditions. Towards the coast, where salinity levels are relatively stable and the estuary is marine-dominated, the muds are shell-rich. However, further inland, organic-rich muds with less shell predominate, a product of significantly higher freshwater inflows (Roy et al., 1995: 76). At Maitland, *c*.5 km northeast of the Project area, estuarine muds are up to 17 m thick and contain fluvial deltaic sand units. These muds are overlain by up to 8 m of Holocene flood plain alluvium, with well-developed levees present (Roy et al., 1995: 77). Flood plain deposits in this and other portions of the Hunter palaeoestuary have been described as consisting of "complexly interbedded muddy sands and sandy muds with minor organics" (Roy et al., 1995: 71). Sand levels are highest in levees adjacent to the Hunter River and decrease towards backswamps such as Wentworth Swamp. Although site-specific data are lacking, Holocene muds within the current Project area are anticipated to be finer-grained than those closer to modern Hunter River channel.

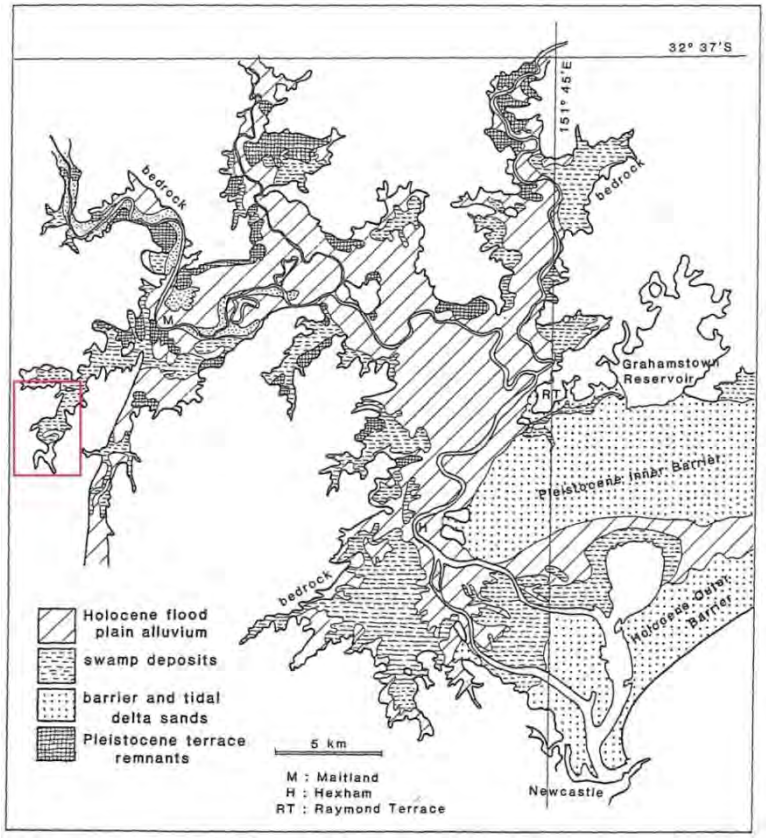

Figure 8 **Map of the Hunter "delta" showing the floodplain and backswamps of the lower Hunter, Williams and Patterson Rivers as well as remnant Pleistocene terrace deposits and the coastal sand barriers of the Newcastle Bight Sand Dune System (from Roy et al., 1995: 66, Fig. 2). Approximate location of Project area marked in red.**

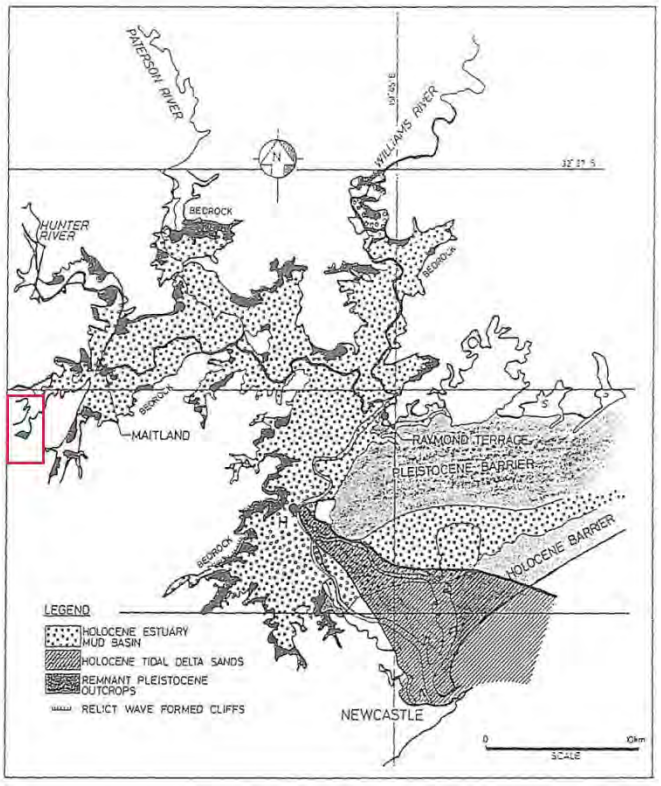

Figure 9 **Map showing the aerial extent of the main Holocene valley fill lithofacies of the Hunter "delta" (from Roy et al., 1995: 72, Fig. 6). Approximate location of Project area marked in red. Note Project area extends outside of mapped area.**

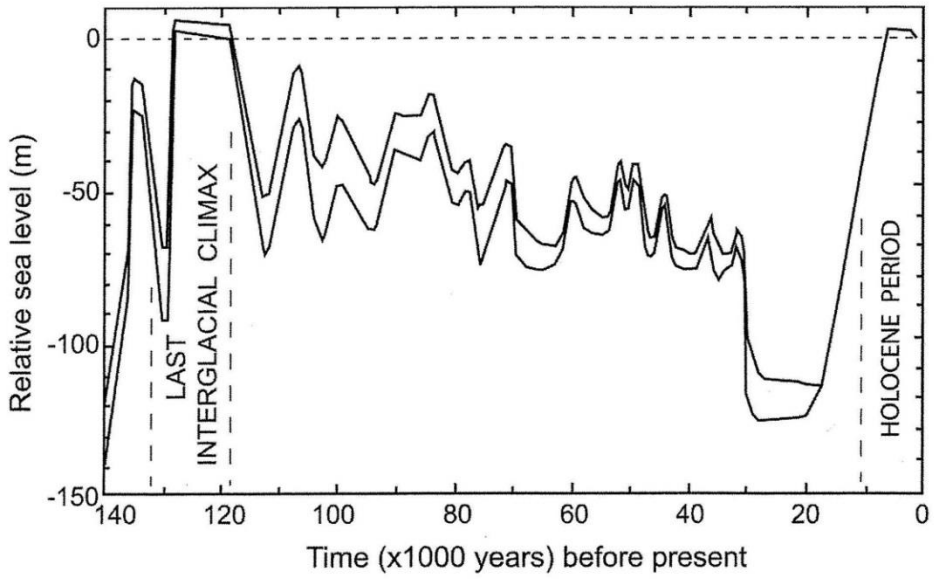

Figure 10 Sea-level changes since the last Inter-glacial period (from Lambeck & Chappell, 2001)

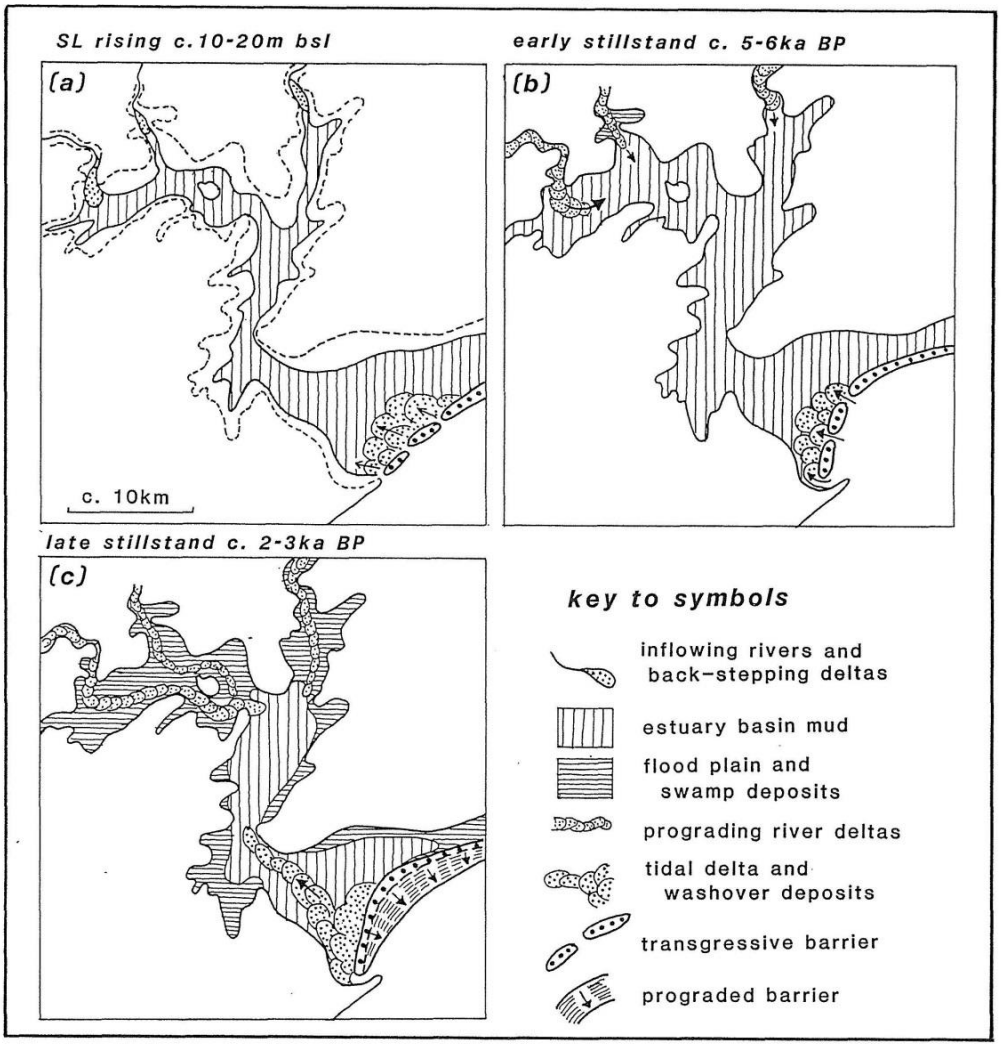

Figure 11 Evolutionary model of the Hunter "delta" (from Roy et al., 1995: 75, Fig. 9).

4.5.2 Soils & Soil Landscapes

Reference to the soil landscape maps produced for the Singleton 1:250,000 Map Sheet (Kovac & Lawrie, 1991) and Newcastle 1:100,000 Map Sheet (Matthei, 1995) indicates that soils within the Project have been mapped as belonging to the Hunter (hu & hua), Branxton (bx), Neath (nh) and Bolwarra Heights (bh & bha) Soil Landscapes. **Table 7** summarises the key characteristics of these landscapes and their dominant soil materials.

Available soils data for the Project area suggest a strong spatial correlation between extant soils and underlying geological units, described in **Section 4.4** above. In floodplain and swampy backplain contexts, A horizon soils consisting of weakly to well-structured clays and pedal loams are inferred from type locations and are expected to overlie medium clays (B Horizons) (Matthei, 1995: 172). Outside of these contexts, texture contrast soil profiles with gravelly loam, sandy loam, sandy clay loam and loamy sand A horizons and clay B Horizons are anticipated (after Kovac & Lawrie, 1991; Matthei 1995), as are deep (>1m) but relatively localised fluvial sand deposits. The latter are expected to be concentrated on landform elements associated with Swamp and Black Waterholes Creeks (e.g., low bordering spur crests and terraces).

Aeolian sand deposits associated with Story et al.'s (1963) Warkworth Land System may also occur within the Project area, with the valley housing Black Waterholes Creek, in particular, retaining significant potential for the presence of such features in view of available land systems mapping (**Figure 12**). These deposits are principally Pleistocene in age but contain loose surface layers that were likely remobilised and reworked during the Holocene. Previous geomorphological investigations of an aeolian sand sheet identified along the western side of Chinamans Hollow Creek to the southwest of the Project area concluded that A horizon sands in that feature were likely of Holocene antiquity on the basis of their looseness and lack of weathering (Hughes, 2002b in ERM, 2003). The typological characteristics of the flaked stone assemblage recovered from these sands were likewise deemed consistent with a Holocene date (ERM, 2003: 51). No stone artefacts were recovered from, or observed within, the coarser, more compact and variably weathered B Horizon sands of the Chinamans Hollow Creek sand sheet, which were assigned, by analogy with other Hunter Valley aeolian sand deposits, a Pleistocene date (Hughes, 2002b in ERM, 2003).

As in other parts of the Hunter Valley, existing archaeological, environmental and historic reference materials for the Project area suggest that a range of geomorphic processes are likely to have affected the Aboriginal archaeological record of the site. Potentially significant phenomena from an archaeological perspective include bioturbation, erosion, alluvial/colluvial aggradation and aeolian processes. Possible effects of these processes include:

- Increased archaeological site visibility in eroded areas;
- Reduced archaeological site visibility in areas of sediment deposition;
- Horizontal and vertical translocation of artefacts;
- Stratigraphic mixing;
- Truncation of archaeological deposits; and
- Creation of thicker (potentially stratified) archaeological deposits in floodplain, slope base and fluvial/aeolian sand deposit contexts.

Table 7 Soil landscapes of the Project area and their dominant soil materials. Soil and landscape data from Kovac & Lawrie (1991) and Matthei (1995).

Soil Landscape & Associated Codes	Geological Unit(s)	Topography	Dominant soils (horizon)	Soil pH	Erodibility[1]	Permeability	Occurrence & Relationships
Hunter (hu, hua & hub)	Quaternary alluvium	Extensive alluvial plains on recent alluvium. Slope gradients <1%. Elevation 2-11m. Local relief to 2m. *Landscape variant hua*: swampy backplains *Landscape variant hub*: ox-bows, recent overbank deposits, crevasse splays and broad levees	hu1 - Friable brown pedal loam (A Horizon)	6.0-7.5	NC: moderate C: moderate W: very low	Moderate	*On floodplains:* Typically, 10-80 cm of hu1 overlies >150 cm of hu5. *On backplains & backswamps*: 10-65 cm of hu2 overlies >80 cm of hu5
			hu2 - Brownish black well-structured clay (A Horizon)	5.5-7.0	NC: moderate C: moderate W: very low	Moderate to low	
			hu3 - Weakly structured brown sand clay loam (A Horizon)	6.0-7.5	NC: moderate C: moderate W: low	Moderate	
			hu4 - Loose dark brown sand (A_1 Horizon)	6.0-6.5	NC: very low C: high W: moderate	High	
			hu5 - Pedal brownish black silty clay to medium clay (B horizon)	6.0-7.5	NC: moderate C: high W: very low	Slow	
			hu6 - Brown well-structured loam (B horizon)	7.0-7.5	NC: very low C: high W: moderate	Moderate	
Bolwarra Heights (bh & bha)	Branxton Formation, Muree Sandstone, Greta Coal Measures and Farley Formation	Rolling low hills. Slope gradients 5-20%. Elevation up to 100 m. Local relief to 80 m. *Landscape variant bha*: shallow (<50 cm) soils	bh1 – Brownish black gravelly loam (A_1 Horizon)	5.5-6.0	NC: moderate C: high W: very low	Moderate to high	*Generally*: Up to 25 cm of bh1 overlies 15-20 cm of bh2, which in turn overlies 75-103 cm of bh3. *Some well drained upper slopes and crests*: up to 25 cm of bh1 overlies 15-30 cm of bh2, which in turn overlies 30-45 cm of bh4. Occasionally, up to 35 cm of bh1 directly overlies bh4. *Poorly drained slopes*: up to 25 cm of bh1 overlies up to 20 cm of bh2, which in turn overlies up to 30 cm of bh3
			bh2 – Earthy gravelly sandy clay loam (A_2 Horizon)	5.0-6.5	NC: high C: high W: very low	Moderate	
			Yellowish brown pedal clay (B_2 Horizon)	4.5-5.5	NC: moderate C: moderate W: very low	Moderate to slow	
			Reddish brown pedal mottled clay (B Horizon)	5.5-6.0	NC: moderate C: moderate W: very low	Moderate to slow	

Soil Landscape & Associated Codes	Geological Unit(s)	Topography	Dominant soils (horizon)	Soil pH	Erodibility[1]	Permeability	Occurrence & Relationships
							In drainage lines: >100 cm of bh1
Branxton (bx)	Farley Formation, Rutherford Formation, Mulbring siltstone, Muree Sandstone, Branxton Formation and Singleton Coal Measures	Undulating rises to low hills and creek flats. Slope gradients 3-5%. Elevations from 50 to 80m. Local relief is 10-40m.	Yellow Podzolic Soils *Topsoil*: Sandy loams to loamy sands *Subsoil:* medium clays	5.5-6.5 5.5	*Topsoil*: Moderate *Subsoil:* Low	*Topsoil & Subsoil*: Slow	Midslopes *Topsoil:* Depth to 20 cm *Depth to bedrock:* +100 cm
			Red Podzolic Soils *Topsoil*: Fine sandy loams to sandy loams *Subsoil:* medium clays	5.5-6.0 6.0	*Topsoil*: Moderate *Subsoil:* Low to Moderate	*Topsoil & Subsoil*: Moderate	Crests and upper slopes *Topsoil:* Depth to 25 cm *Depth to bedrock:* +65 cm
			Yellow Soloths *Topsoil*: Loamy sands to fine sandy loams *Subsoil:* medium clay	6.0-6.5 5.5	*Topsoil*: Moderate *Subsoil:* High	*Topsoil & Subsoil*: Moderate	Lower slopes and drainage lines *Topsoil:* Depth to 25 cm *Depth to bedrock:* +140 cm
			Alluvial Soils (Sands) *Topsoil*: Loamy sands	6.0	*Topsoil*: Low *Subsoil:* Low	*Topsoil & Subsoil*: High	Creek flats and slopes *Topsoil:* Depth to 20 cm *Depth to bedrock:* +60 cm
			Siliceous Sands *Topsoil*: Sandy loams *Subsoil:* Loamy sand	6.0-7.0 5.5	*Topsoil*: Moderate *Subsoil:* Moderate	*Topsoil & Subsoil*: High	Large valley flats *Topsoil:* Depth to 70 cm *Depth to bedrock:* +100 cm

Soil Landscape & Associated Codes	Geological Unit(s)	Topography	Dominant soils (horizon)	Soil pH	Erodibility[1]	Permeability	Occurrence & Relationships
Neath (nh)	Branxton Formation	Undulating low rises and swamps. Slope gradients up to 3%. Elevations from 40 to 80m. Local relief under 30m.	Grey Solodic Soils *Topsoil*: Clayey sands to loamy sands *Subsoil:* Sandy clay	 9.0 8.5	*Topsoil*: Low *Subsoil:* High	*Topsoil & Subsoil*: High	Melaleuca flats *Topsoil:* Depth to 35 cm *Depth to bedrock:* +50 cm
			Yellow Solodic Soils	N/A	N/A	N/A	N/A

[1] NC = Non-concentrated flows; C = Concentrated flows; and W = Wind

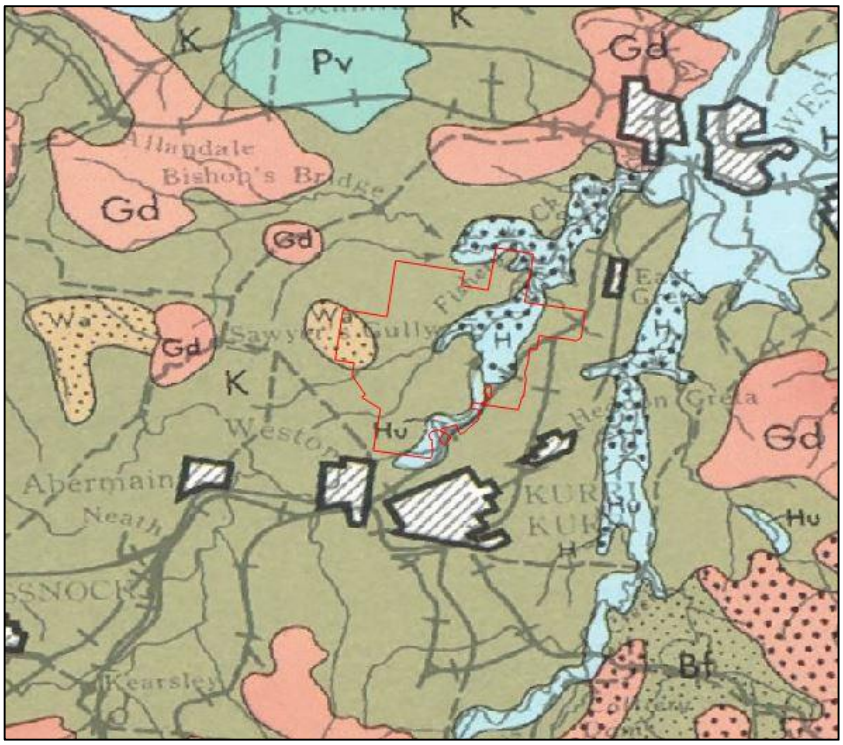

Figure 12 **Georeferenced excerpt from Galloway et al.'s (1963) Land Systems of the Hunter Valley Area Map Sheet showing the location and extent of the Warkworth Land System within the Project area. Other mapped land systems within the Project area include the Killarney (K), Hunter (Hu) and Hexham (H) Land Systems. Project area boundary approximate.**

4.6 Flora & Fauna

Native vegetation within the Project area has been significantly modified as a result of historic European land use practices, with no 'Old Growth' forest remaining and the original wetland vegetation of Wentworth Swamp now highly degraded (FloraSearch, 2004, 2008). Nonetheless, areas of regenerating native vegetation, as well as scattered paddock trees, provide insight into the pre-European settlement floral regime of the site.

In general, the Project area supports a diverse range of natural vegetation communities, with different communities occupying different landscape positions. As previously noted, the Project area contains a sizeable portion of the regionally significant Wentworth Swamp. Permanent and ephemeral wetlands within the Project area support a characteristic suite of freshwater wetland vegetation, albeit one that varies across the site in relation to water permanency and depth. Wetland-bordering forest communities, now almost completely cleared, would have included species such as Forest Redgum (*Eucalyptus tereticornis*), Swamp Oak (*Casuarina glauca*), Snow-in-Summer (*Melaleuca linariifolia*) and Cabbage Gum (*Eucalyptus amplifolia*). For the most part, existing wetlands are surrounded by cleared pasture land characterised by introduced pasture grasses, legumes and weeds. Where clearance has not occurred, slopes above the Project area's wetlands support a clear succession of Redgum and Grey Gum sub-communities which give way, on poorly drained soils, to low heathy woodlands. Woodland composition changes upslope becoming more open and grassy. Upper slopes and crests within the Project area support tall dry forests Ironbark and Spotted Gum. Riparian forest communities of variable floristic composition are also present along watercourses and on adjoining lower slopes.

Although available historical records provide only limited insight into Aboriginal exploitation of plants within the Hunter Valley (Brayshaw, 1987: 74), it can be confidently asserted that the original vegetation communities of the Project area will have supplied Aboriginal people camping within or passing through the site with an extensive array of edible and otherwise useful plant species (**Table 8**). Recorded native vegetation communities and locally occurring aquatic features (e.g., Wentworth Swamp) will likewise have supported a large and diverse range of economic terrestrial, aquatic and avian fauna. Historical evidence for the Aboriginal exploitation of faunal and floral resources within the Lower Hunter Valley is discussed in further detail in **Section 6.4**.

Table 8 Selection of economic plant species identified within the Project area

Botanical name	Common name	Potential Use(s)	Reference(s)
Acacia spp.	Acacia	Seeds & gum edible; wood suitable for making range of implements; bark & gum have medicinal properties	Stewart & Percival, 1997
Eucalypt spp.	Eucalypts	Bark has multiple uses (e.g., shelter, shields, baskets, fish nets); wood suitable for making range of implements (e.g., spears, clubs); leaves, gum & bark have medicinal properties	Stewart & Percival, 1997; Isaacs, 2002
Banksia spp.	Banksia	Nectar can be sucked from flowers or flowers soaked in water to make sweet liquid	Stewart & Percival 1997; Isaacs, 2002: 218
Lambertia formosa	Mountain Devil	As above	Stewart & Percival, 1997
Grevillea spp.	Grevillea	As above	Isaacs, 2002: 224
Hypoxis hygrometrica	Golden Weather-grass	Tubers edible	Isaacs, 2002: 224
Dianella revoluta	Blue Flax Lily	Fruits and seeds edible; roots also edible after pounding and roasting; leaf fibres can be used for string	Stewart & Percival, 1997
Eleocharis sphacelata	Tall Spike-rush	Onion-shaped tubers edible fresh (young) or roasted (older)	Stewart & Percival, 1997
Bursaria spinosa	Blackthorn	Nectar can be sucked from flowers	Isaacs, 2002: 219
Gahnia radula	Thatch Saw-sedge	Seeds can be pounded to produce flour; leaf bases are edible	Stewart & Percival, 1997
Lomandra longifolia	Spiny-headed Matrush	Leaf bases and flowers edible; leaves can be used to make baskets	Stewart & Percival, 1997
Marsilea spp.	Nardoo	Roots can be pounded, meal mixed with water and resulting dough baked	Isaacs, 2002: 225
Melaleuca spp.	Paperbark & Honeymyrtle	Nectar-filled flowers can be soaked in water to sweeten it; bark has multiple uses; (e.g., shelter, dressing for wounds, wrapping)	Stewart & Percival, 1997
Callistemon spp.	Bottlebrush	Flowers can be sucked for nectar	Isaacs, 2002: 219
Persoonia linearis	Narrow-leaved Geebung	Fruits edible	Stewart & Percival, 1997
Portulaca oleracea	Pigweed	Leaves, stems and seeds edible	Stewart & Percival 1997
Cassytha spp.	Devil's Twine	Fruits edible	Low, 1988

Botanical name	Common name	Potential Use(s)	Reference(s)
Pteridium esculentum	Bracken Fern	Rhizomes and fronds edible; rhizomes must be baked or roasted to destroy toxins; young stems can be rubbed on insect bites to relieve stinging/itching	Stewart & Percival, 1997
Typha orientalis	Cumbungi	Rhizomes edible after roasting; fibres can be used to make string; young shoots can be eaten raw; flower spikes can be steamed and eaten	Stewart & Percival, 1997
Xanthorrhoea glauca	Grass Tree	Leaves produce hard waterproof resin that melts when warmed as can be used as binding agent; flowers can be sucked or soaked in water to make sweet drink; leaf bases and growing points edible	Stewart & Percival, 1997
Phragmites australis	Common Reed	Roots edible; Straight flowering stems can be used as spear shafts; leaves can be twisted into rope	Zola & Gott, 1992: 12
Triglochin procerum	Water Ribbons	Tubers edible	Zola & Gott, 1992: 12
Bolboschoenus fluviatilis	Marsh Clubrush	Round corms can be roasted, pounded and made into edible starchy cakes	Zola & Gott, 1992: 13
Arthropodium minus	Small Vanilla Lily	Tubers edible	Zola & Gott, 1992: 25
Clematis glycinoides	Headache Vine	Roots edible; crushed leaves can be inhaled to relieve headache	Zola & Gott, 1992: 25
Eustrephus latifolius	Wombat Berry	Tuberous roots edible	Cribb & Cribb, 1974: 174
Exocarpus strictus	Dwarf Cherry	Fruits edible	Zola & Gott, 1992: 39
Burchardia umbellata	Milkmaids	Roots edible after cooking	Zola & Gott, 1992: 43
Caesia parviflora	Pale Grass-lily	Tubers edible	Zola & Gott, 1992: 44
Thysanotus tuberosus	Fringed Lily	Tubers edible	Zola & Gott, 1992: 44
Diuris sulphurea	Tiger Orchid	Tubers edible	Zola & Gott, 1992: 45
Exocarpus cupressiformis	Native Cherry	Fruits edible	Cribb & Cribb, 1974: 34
Angophora floribunda	Rough-barked Apple	Sap has medicinal properties	Lassak & McCarthy, 2001
Pterostylis spp.	Greenhood orchids	Tubers edible	Zola & Gott,1992: 46
Thelymitra spp.	Sun orchids	Tubers edible	Zola & Gott, 1992: 46
Geranium spp.	Native Geranium	Tubers edible	Zola & Gott, 1992: 47
Rubus parvifolius	Native raspberry	Fruits edible	Zola & Gott, 1992: 49
Billardiera scandens	Apple-berry	Fruits edible	Zola & Gott, 1992: 49

Botanical name	Common name	Potential Use(s)	Reference(s)
Astroloma humifusum	Cranberry heath	Fruits edible	Zola & Gott, 1992: 50
Centipeda cunninghamii	Common Sneezeweed	Plant can be soaked/boiled and resulting liquid used as a tonic for colds and chest complaints	Zola & Gott, 1992: 53
Amyema guadichaudii	Mistletoe	Fruits edible	Zola & Gott, 1992: 53
Themeda australis	Kangaroo Grass	Seeds edible (ground and baked as cakes); leaves and stems contain fibre that can be used to produce string	Zola & Gott, 1992: 58
Poa sp.	Tussock grass	Fibre from grass can be used to make string nets for nets, baskets and mats.	Zola & Gott, 1992: 58
Panicum effusum	Hairy panic grass	Seeds edible (ground and baked)	Issacs, 2002: 226

4.7 European Settlement

Formal European settlement of the greater Kurri Kurri area can be traced to the first half of the 19th century, with John Howe's pioneering expeditions to the Hunter Valley in 1819 and 1820 prompting the construction of the Great North Road (1826-1836) and opening up the Swamp and Wallis Creek valleys for free settlement (Pike et al., 1994). With the access afforded by the Great North Road and Hunter River at nearby Maitland, the 1820s and 30s saw numerous land grants made and taken up in the greater Kurri Kurri area. The earliest of these grants, dated 21 February 1821, was made to one Benjamin Blackburn. Blackburn was granted a 400 acre parcel of land on the banks of Wallis Creek at Richmond Vale. To the northwest of Blackburn's grant, around present day Kurri Kurri, available historic records (including parish maps) indicate that for most, if not all, of the 19th century, land within the Project area comprised part of properties granted to, or purchased by, the following individuals:

- Seth Hawker (50 acres), convict and Sydney saw pit owner;
- Emanuel Hungerford (2,000 acres, 'Lochdon'), Captain in the South Cork Militia;
- Samuel Clift (1,280 acres in two 640 acre lots), grazier;
- Edward D. Day (1,165 acres), police magistrate at Maitland;
- John Callaghan (1,280 acres, in two 640 acre lots), servant of Captain Hungerford;
- Isabella Barbara Campbell[5] (1,280 acres), wife of surveyor Peter Grant Ogilvie; and
- D.Meffan (50 acres), profession and background unknown.

As shown on **Figure 13**, portions of the Project area were also originally reserved as Village Reserve (V.R.) and Travelling Stock Route (T.S.R. 37). Regarding the use(s) of the land owned by the above-named individuals, available historic reference materials suggest an emphasis on beef cattle rearing / grazing, which appears to have comprised the surrounding district's dominant industry until the development of the South Maitland Coalfields in the early 1900s. Unlike areas further to the west, local soils were reportedly unfavourable for crop farming (i.e., principally wheat, but also maize, potatoes and tobacco) (Pike et al., 1994: 6).

The full potential of the South Maitland Coalfields was not realised until Professor T. W. Edgeworth David's detailed survey of 1886. David's discovery of the Greta Coal Measures prompted the then Department of Mines to reserve almost 12,000 hectares of land for coal mining purposes. By 1907, the year in which David's survey report was made public, ten collieries were operating or under development on the South Maitland Coalfields (Pike et al., 1994: 7). Prominent early mines around Kurri Kurri included the Heddon Greta (1900), Stanford Methyr (1900), Pelaw Main (1901) and Hebburn No. 1 (1902) collieries. These were easily sunk tunnel or incline mines. As mining of the seam became increasingly difficult, the 1910s and 20s saw a second generation of predominantly

[5] Note that Isabella Campbell's grant is listed on available parish maps under her trustees' names: C.J and D. Campbell.

deep, high-cost shaft mines commence operation. Alongside the 1st generation collieries, these second generation collieries were served by an extensive network of privately-owned railway lines, known collectively as the South Maitland Railway. Within the current Project area, this historically significant rail system is represented by the Aberdare Railway, which traverses the eastern third of the Project area in a general north-south direction. Constructed between 1901 and 1904, the Aberdare Railway was opened in stages, with the section between Aberdare Junction and Weston completed in 1902, and the remaining section to Cessnock completed in 1904.

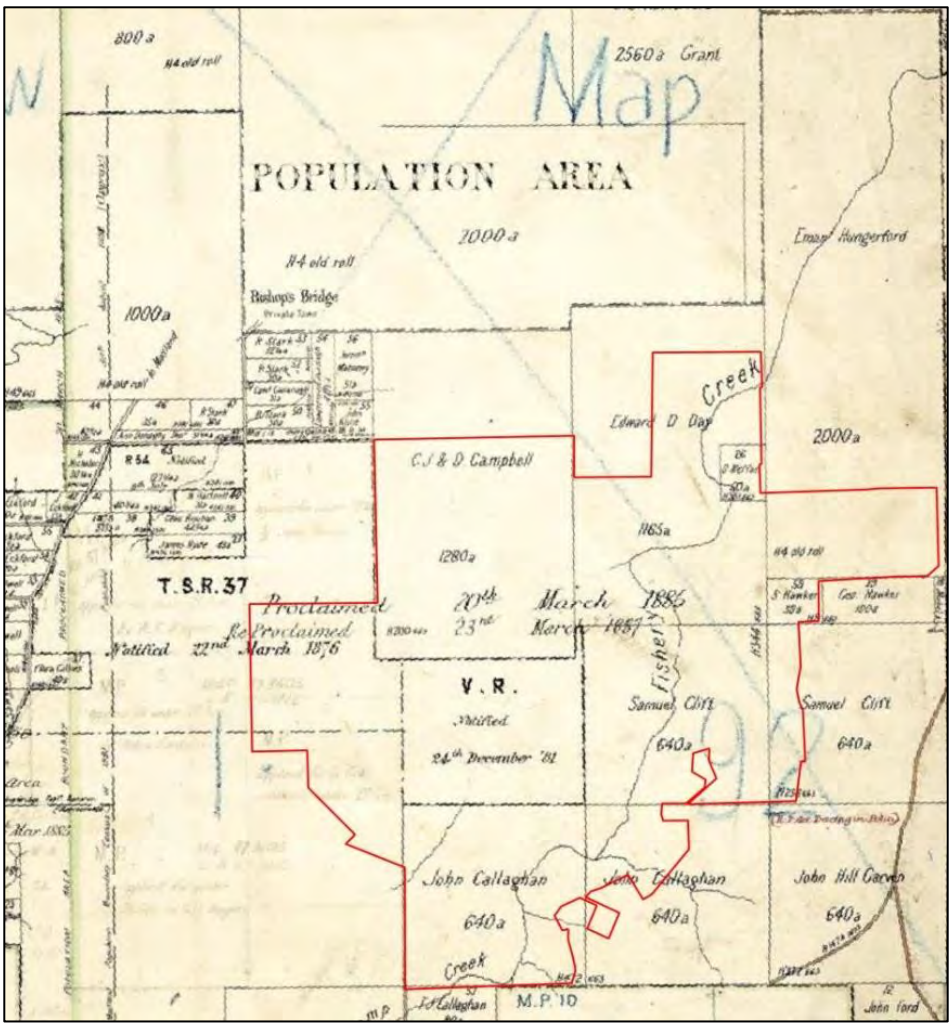

Figure 13 Georeferenced excerpt of 1885 Parish map for the Parish of Heddon (County of Northumberland) with Project area boundary overlaid.

The growth of the coal mining industry resulted in a marked increase in the population of the greater Kurri Kurri area. By the early 1900s, the small villages that had been established around the major collieries like Stanford Methyr and Pelaw Main were no longer able to adequately accommodate the increasing number of workers and their families. Consequently, in 1902, a proposal for the establishment of the town of Kurri Kurri was approved by the Executive Council (Smith, 1979: 4). Land sales commenced the following year and the town of Kurri Kurri grew rapidly. The Kurri Kurri electoral roll of 1903 recorded a population of 1,200 persons, and by February of 1904, the town was being supplied with water (Smith, 1979: 5).

The coal mining industry continued to act as the 'economic base' of the Kurri Kurri area until the 1950s, at which time a large number of collieries began to close due to deepening seams, difficult ground conditions and a general reduction in coal markets. Given that the economy of the area had been largely dependent on the success of the coal mining industry, its decline had a devastating impact on the local economy. Widespread unemployment prompted many locals to move away from the area to pursue work elsewhere, resulting in a decline in the local population. At the same time, demand for local goods and services reduced, small business began to fail, real estate prices dropped and both private and public incomes were reduced (James B. Croft & Associates, 1980: 31).

It was in this depressed economic climate that Alcan Australia Limited (Alcan) made its decision in 1965 to build an aluminium smelter at Kurri Kurri. Establishment at Kurri Kurri was part of a State Government initiative to restore economic stability to the area (James B. Croft & Associates, 1980: 31). Construction works began less than two years later, with metal production commencing in 1969. An initial capacity of less than 25,000 tonnes of aluminium per annum was raised, through two expansion projects, to 150,000 tonnes per annum by 1985, with an associated workforce at this time of around 900 employees (Alcan Australia Limited, 1988: 2). Under Alcan's ownership, approximately half of the aluminium metal from the Kurri Kurri smelter was sent to the company's fabrication plants in Sydney, Melbourne and Brisbane, with the remaining half exported to Japan, Southeast Asia and the USA (Alcan Australia Limited, 1988: 3). In mid-2000, the Kurri Kurri smelter was acquired by the German company VAW Aluminium AG, with the current owner - Norsk Hydro ASA - assuming ownership in 2002.

Alongside the production activities of the Kurri Kurri smelter, recent decades have seen land within the Project area used for a variety of purposes including recreational activities (e.g., Loxford Park Speedway), cattle rearing / grazing, dairying, horse rearing / training / grazing, hobby farming, turf cutting, rural residential development, environmental conservation and public/private transportation (e.g., the Hunter Expressway). The 'Wangara' property, which makes up a significant portion of the buffer zone surrounding the smelter complex, is currently agisted by Hydro for the grazing of cattle. Under Hydro's ownership, Wentworth Swamp and areas of regenerating native vegetation within the buffer land have been fenced to exclude livestock and are monitored annually as part of Hydro's annual environmental management program.

4.8 Land Disturbance

Together with available literary records, historical aerial photographs for the Project area provide a framework for assessing the nature and extent of past ground disturbances within it. Examination of aerials from 1952 (**Figure 14**), 1961, 1975, 1980 (**Figure 15**), 1984, 1998 (**Figure 16**) and 2013, for example, indicate a range of land use activities and associated ground surface impacts across the site. These include:

- Extensive native vegetation clearance;
- The construction and expansion of the Kurri Kurri aluminium smelter;
- Pastoral activities including livestock grazing, fencing, the construction of multiple farm dams and the construction of contour banks for erosion control;
- Hobby farming & ploughing;
- The construction of recreational sporting fields and race tracks;
- The construction of residential dwellings and associated structures and driveways;
- Fluvial erosion activity, particularly along creeklines and on cleared hillslopes; and
- The construction of essential services including power lines and roads (e.g., the Hunter Expressway);

To varying degrees, all of the above-cited land use activities and associated ground impacts are relevant to the survival, integrity and identification of Aboriginal archaeological evidence within the Project area. Key implications for the current assessment include:

- The likely destruction, in areas of grossly modified terrain, of any pre-existing sites and deposit(s);
- The disturbance of pre-existing archaeological deposits through both direct (e.g., ploughing, bulldozing) and indirect (e.g., erosion) means, resulting in a loss of archaeological integrity;
- The likely removal of any culturally scarred trees that once existed within the Project area; and
- An increase, in areas affected by erosion, of archaeological site visibility.

Figure 17 comprises a land disturbance map for the Project area. Two basic levels of disturbance are recognised: minimal to moderate and high. Areas of highly disturbed terrain within the Project area are unlikely to retain evidence of past Aboriginal occupation in surface and subsurface contexts owing the severity of past ground surface disturbances that have occurred within them.

Figure 14 1952 aerial photograph of the Project area and environs (Source: Land & Property Information NSW)

Figure 15 1980 aerial photograph of the Project area and environs (Source: Land & Property Information NSW)

Figure 16 1998 aerial photograph of the Project area and environs (Source: Land & Property Information NSW)

4.9 Key Observations

Key observations to be drawn from a review of the environmental context of the Project area are as follows:

- Prior to European settlement, the floral and faunal resources of the Project area will have been sufficient to facilitate intensive and/or repeated occupation by Aboriginal people;
- Wentworth Swamp, Swamp Creek and Black Waterholes Creek will have been focal resource features for Aboriginal people camping within and passing through the Project area;
- Elevated, low gradient land surfaces in the vicinity of Wentworth Swamp and higher order watercourses are likely to have been favoured for sustained/intensive occupation;
- The Project area is located at the western extremity of what is known as the Hunter 'Delta', a term first used by David and Etheridge (1890) to describe the broad expanse of floodplains, swamps and channels extending some 35 km inland from the coast at Newcastle. More recently, this same region has been described by Chappell (1993) as a coastal or fluvio-deltaic lowland, the boundaries of which correspond to those portions of bedrock palaeovalleys occupied by Pleistocene and Holocene estuaries now infilled with fluvial, estuarine and coastal-marine sediments of various ages;
- Today, Wentworth Swamp comprises a freshwater wetland. However, prior to the construction to the Wallis Creek Floodgates and implementation of other Lower Hunter Valley Flood Mitigation Scheme measures, the swamp will have consisted of an estuarine environment subject to the daily tidal cycle of the Pacific Ocean, albeit one characterised by a complex mosaic of brackish and freshwater micro-environments;
- Outcrops and/or deposits of stone suitable for the production of flaked stone artefacts may be present within the Project area. However, none have been previously identified;
- Outside of the Project area, gravel deposits associated with the nearby Hunter River have been identified as a regionally significant source of lithic raw materials for flaked and edge-ground stone tool manufacture;

- If present, outcropping sandstone within the Project area has the potential to exhibit grooves associated with the sharpening of stone hatchet-heads and/or wooden spears. Grinding groove sites, if present, are most likely to occur along drainage lines;
- Aeolian sand deposits similar to those identified along the western side of Chinamans Hollow Creek to the southwest of the Project area may be present within the current Project area, with the valley housing Black Waterholes Creek, in particular, retaining the highest potential for such features; and
- Native vegetation within the Project area has been extensively modified as a result of European land use practices. Nonetheless, existing areas of regenerating native vegetation retain some, albeit limited, potential for mature trees with cultural scarring. Scattered mature paddock trees may likewise exhibit cultural scars.

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AECOM

LAND DISTURBANCE

Aboriginal Cultural Heritage Assessment
Hydro Aluminium Smelter Site & Associated Buffer Land
Kurri Kurri, New South Wales

FIGURE 17

5.0 Archaeological Context

5.1 Regional Context - The Hunter Valley

Formal archaeological interest in the Aboriginal archaeological record of the Hunter Valley can be traced to the late 1930s, with then Curator of Anthropology at the Australian Museum Fred McCarthy undertaking an archaeological reconnaissance of the Valley in 1939 (Moore, 1970: 29). McCarthy's subsequent investigation, with F.A. Davidson, of an extensive open artefact site on a terrace of the Hunter River at Gowrie, near Singleton, is widely regarded as the first serious archaeological study of stone artefacts in the Hunter Valley proper (McCarthy & Davidson, 1943). MCarthy's early endeavours aside, more detailed investigation of the Valley's Aboriginal archaeological record did not begin until the mid-to-late1960s, a period that witnessed a series of archaeological surveys and site excavations completed as part of the Australian Museum's long term and wide ranging archaeological research project into the Aboriginal prehistory of the Valley (Moore, 1969, 1970, 1981).

Intensive development activities since this time have secured the Hunter Valley's place as one of the most intensively investigated archaeological regions in Australia, with hundreds, if not thousands, of Aboriginal archaeological investigations involving survey and/or excavation having now been undertaken, the majority as part of larger environmental impact assessments associated with coal mining projects. Not surprisingly, these investigations have varied significantly in scale and scope, ranging from targeted small-scale surveys to complex, multi-phase survey and excavation projects over large areas. Nonetheless, together, they have generated a large and diverse body of evidence for past Aboriginal occupation, with thousands of Aboriginal sites now registered on OEH's Aboriginal Heritage Information Management System (AHIMS) database. Together with Dean-Jones and Mitchell's (1993) pioneering environmental study, existing syntheses of the Aboriginal archaeological record of the Hunter Valley (e.g., ERM, 2004; Hughes, 1984; Koettig, 1990; MacDonald & Davidson, 1998) provide a suitable interpretive framework for the current assessment. Key research themes are detailed in brief below.

5.1.1 Open Artefact Sites: Distribution, Contents and Definition

Surface and subsurface distributions of stone artefacts, variously referred to as open artefact sites, open sites and open camp sites, are by far and away the most common and widely distributed form of Aboriginal archaeological site in the Hunter Valley (ERM 2004; Hughes, 1984; MacDonald & Davidson, 1998). Other site types, such as scarred trees, shell middens, quarries, grinding grooves, burials and rock shelters with deposit and/or art or PAD, have also been identified but are comparatively rare. Accordingly, open artefact sites remain the most intensively investigated component of the Aboriginal archaeological record of the Hunter Valley, with site distribution, site structure and the technology of backed artefact manufacture, in particular, comprising key research topics (Baker 1992a, 1992b, 1992c; Hiscock 1986a, 1986b, 1993a; Koettig 1992, 1994; Moore 1997, 2000; White 1999, 2012).

As highlighted by Hughes (1984) and reiterated by numerous other researchers (e.g., ERM 2004;Koettig & Hughes, 1983, 1985; Koettig 1992,1994;Kuskie, 2000; Rich, 1992), existing archaeological survey data for the Hunter Valley indicate a strong trend for the presence of open artefact sites along watercourses, specifically, on creek banks and 'flats' (i.e., flood/drainage plains), terraces and bordering slopes. Although this distribution pattern can be attributed in part to geomorphic dynamics and archaeological sampling bias, with extensive fluvial erosion activity along watercourses resulting in higher levels of surface visibility and, by extension, concentrated survey effort, an occupational emphasis on watercourses is supported by the results of several large scale subsurface salvage projects (e.g., Koettig, 1992, 1994; Kuskie & Clarke, 2004; Kuskie & Kamminga, 2000; MacDonald & Davidson, 1998; OzArk, 2013; Rich, 1992; Umwelt, 2006,Umwelt, in prep). Collectively, these projects have also shown that assemblage size and complexity tend to vary significantly in relation to both the proximity and permanency of potable water sources as well as landform and slope, with larger, more complex[6] assemblages concentrated on elevated, low gradient landform elements adjacent to higher order streams. In the Lower Hunter Valley, a similar pattern has been identified for the permanent to semi-permanent wetlands of the Hunter 'delta' (e.g., Kuskie, 1994; Kuskie & Kamminga, 2000; Umwelt, 2006, in prep). Outside of these contexts, surface and subsurface artefact distributions have typically been found to be sparse and discontinuous and are often referred to as 'background scatter'.

Flaked stone artefacts dominate archaeological assemblages from recorded open artefact sites within the Hunter Valley (Hiscock 1986), with heat fractured rock also well represented. Items such as complete and fragmentary grindstones, hammerstones, edge-ground hatchet-heads, ochre and shell have also been identified though

[6] Those containing a wider variety of raw materials and technological types and/or higher mean artefact densities and features such as knapping floors and hearths.

comparatively infrequently. With the notable exception of 'knapping floors', a relatively common component of the open artefact site record of the Hunter Valley, associated archaeological features (e.g., hearths and heat treatment pits) remain regionally rare phenomena (for examples see Koettig, 1992; Kuskie & Kamminga, 2000).

Defined in slightly different ways by different researchers, knapping floors can be broadly defined as spatially-discrete activity areas in which primacy was given to the reduction of one or more stone packages (White, 1999:152). Recorded knapping floors in the Hunter Valley vary considerably in size and complexity, with some of the largest and most complex examples identified through excavation as opposed to survey. Backed artefacts are a common feature of knapping floors and most of these features were likely specifically associated with their production. At Narama, near Ravensworth, a detailed analysis of the contents of knapping floor and non-knapping floor assemblages revealed significant differences between the two, including variation in the frequency of backed artefacts, other retouched and/or utilised tools and cores, and the application of different reduction strategies (Rich, 1992). Together with differences in the spatial distribution of the two forms of assemblage, this evidence was used to suggest that backed artefact production within the Narama landscape was a highly structured activity, and that knapping floors assemblages were the product of a more restricted range of behaviours than more generalised scatters. Although limited to a single landscape, evidence from other parts of the Valley (e.g., Hiscock, 1986; Koettig, 1992, 1994) provides further support for the suggestion that backed artefact manufacture in the Hunter Valley was a highly structured activity.

Although relevant to a variety of site types, geomorphic processes such as soil erosion, colluvial/fluvial aggradation and aeolian transportation are of particular relevance to the identification and definition of open artefact sites. As in other archaeological contexts (e.g., Attenbrow 2010; Fanning & Holdaway 2004; Fanning *et al*. 2009; Holdaway *et al*. 2000), it is now widely accepted by archaeologists working in the Hunter Valley that the visibility of open artefact sites within the Valley is, for the most part, a product of contemporary and historic geomorphic processes which have variously exposed and obscured them. As demonstrated by numerous large scale archaeological salvage projects within the Valley (e.g., Koettig, 1992, 1994; Kuskie & Clarke, 2004; Kuskie & Kamminga, 2000; MacDonald & Davidson, 1998; OzArk, 2013; Rich, 1992; Umwelt, 2006,Umwelt, in prep), surface artefacts invariably represent only a fraction of the total number of artefacts present within recorded surface open artefact sites, with the majority occurring in subsurface contexts. Artefact exposure, unsurprisingly, is highest on erosional surfaces and lowest on depositional ones. At the same time, in many areas, surface artefacts have been shown through large-scale subsurface testing to form part of more-or-less continuous subsurface distributions of artefacts, albeit with highly variable artefact densities linked to environmental variables such as distance to water, stream order and landform.

Such evidence has posed a significant analytical and interpretive dilemma for archaeologists working in the Hunter Valley. Defining sites on the basis of surface artefacts alone is clearly problematic, with modern site boundaries frequently reflecting the size and distribution of surface exposures as opposed to the actions of Aboriginal people in the past. Nonetheless, for pragmatic reasons, this has been the most commonly used approach, with 'distance' and 'density-based' definitions dominating. In the Hunter Valley, two of the most commonly employed distance-definitions are '*two artefacts within 50m of each other*' and '*two artefacts within 100 m of each other*'. Neither definition is derived from a particular theoretical approach or body of empirical research - they are simply pragmatic devices for site definition. Definitions based on artefact density also vary in their particulars. However, one of most commonly used definitions is that which isolates, within an arbitrarily defined 'background scatter' of one artefact per 100 m², higher density clusters that are subsequently defined as 'sites'.

Kuskie's (1994, 2000) system of open artefact site definition, developed for use in the Hunter Valley and other surrounding regions, is also worthy of note here. In short, this system is predicated on the definition of 'survey areas' within broader 'Archaeological Terrain Units' (ATUs), with the latter comprising discrete, recurring areas of land defined on the basis of landform element and slope class, and the former, an area of a single ATU bounded on all sides by different ATUs (Kuskie, 2000: 65-67). Within this overarching environmental scheme, open artefact sites are defined by the presence of one or more stone artefacts within a survey area, with site boundaries corresponding the boundaries of the broader survey area irrespective of the visible extent of artefacts within it. Spatially discrete occurrences of stone artefacts within a given site boundary are referred to as 'loci' (Kuskie, 2000: 65-66).

5.1.2 Flaked Stone Artefact Technology

Flaked stone artefacts are a ubiquitous element of the Aboriginal archaeological record of the Hunter Valley and, such as, have assumed a preeminent role in archaeological reconstructions of past Aboriginal land use in the region. To date, hundreds, if not thousands, of surface-collected and excavated chipped stone assemblages from the Valley have been analysed, with individual assemblage sizes, research questions, aims, analytical

methodologies and terminological schemes varying significantly between researchers and projects. Studies to date have ranged from basic descriptive accounts of assemblage composition in typological terms to detailed reconstructions of specialised knapping techniques through rigorous technological analyses (including conjoining) and, in some instances, experimental research. Particularly informative analyses in the context of the Hunter Valley include those undertaken by Hiscock (1986a, 1986b, 1993a), Koettig (1992, 1994), Moore (1997, 2000), White (1999, 2012) and Baker (1992a, 1992b, 1992c).

As highlighted by Koettig (1994) and others (e.g., Hiscock 1986a; Hughes 1984), available technological and typological data for surface collected and excavated flaked stone artefact assemblages from the Hunter Valley suggest that the majority of these assemblages belong to what is known as the 'Australian small-tool tradition', a term coined by Gould (1969) to describe what was then thought to be first the first appearance, in the mid-Holocene[7], of a new suite of chipped stone tool forms in the Aboriginal archaeological record of Australia, including Bondi points, geometric microliths, adzes and points (both unifacially and bifacially flaked). Complex, hierarchically-organised reduction sequences associated with the production of these tools contrast markedly with the simple sequences of earlier periods (Moore, 2011). Tools of the Australian small-tool tradition, it has been suggested, formed part of a portable, standardised and multifunctional tool kit aimed specifically at risk reduction (Hiscock, 1994, 2006). Stone artefact assemblages from late Pleistocene and early Holocene contexts, in contrast, are described by archaeologists as belonging to the 'Australian core tool and scraper tradition', a term first used by Bowler *et al*. (1970) to describe the Pleistocene assemblages recovered from Lake Mungo in western New South Wales. Bowler *et al*. (1970) saw the main components of these assemblages - core tools, steep-edged scrapers and flat scrapers - as characteristic of early Australian Aboriginal assemblages and as being of a distinctly different character to those associated with small-tool tradition.

In southeastern Australia, including the Hunter Valley, the Australian small-tool and core tool and scraper traditions are most commonly described in terms of McCarthy's (1967) *Eastern Regional Sequence* (ERS) of stone artefact assemblages. Based on appreciable changes in the composition of chipped stone artefact assemblages over time, the ERS hypothesises a three phase sequence of 'Capertian' (earliest), 'Bondaian*'* and 'Eloueran' (most recent) assemblages and was developed on the basis of McCarthy's (1948, 1964) pioneering analyses of stratified chipped stone assemblages from Lapstone Creek rockshelter, on the lower slopes of the Blue Mountains eastern escarpment, and Capertee 3 rockshelter in the Capertee Valley north of Lithgow. At present, the most widely cited characterisation of the ERS is that of a four-phase sequence beginning with the *Pre-Bondaian* (McCarthy's *Capertian*) and moving successively through the Early, Middle and Late phases of the *Bondaian*, the last of which equates to McCarthy's (1967) *Eloueran* phase. The tripartite division of the Bondaian is based principally on the presence/absence and relative abundance of backed artefacts (Attenbrow, 2010: 101). However, other factors, such as changes in the abundance of bipolar artefacts and different stone materials, and the presence/absence of edge-ground hatchet-heads are also relevant.

Table 9 McCarthy's Eastern Regional Sequence (ESR) of stone artefact assemblages

Current phasing	McCarthy's (1967) Phasing	Approximate date range	Backed artefact frequency	Bipolar artefacts	Edge-ground hatchet heads
Pre-Bondaian	Capertian	30,000-8,000 BP	Absent	Rare	Absent
Early Bondaian	Bondaian	8,000-4,000 BP	Very low	Rare	Absent
Middle Bondaian		4,000-1,000 BP	Very high	Increasingly common	Present
Late Bondaian	Eloueran	1,000 BP to European contact	Very low	Very common	Present

Existing assemblage data indicate that Aboriginal knappers occupying the Hunter Valley utilised a diverse range of lithic raw materials for flaked stone artefact manufacture (Hughes, 1984). However, two rock types - silcrete and silicified tuff (also known as mudstone) - overwhelmingly dominate the region's existing stone artefact record and appear to have been routinely selected for this task, likely due to both basic raw material abundance and their desirable flaking qualities (Hiscock, 1986a). Alongside other, less-commonly exploited raw materials, such as quartz, quartzite, chalcedony, chert, petrified wood and various fine-grained volcanics, both are available in

[7] Note that more recent research into the chronology of backed artefacts and points in Australia (e.g., Hiscock & Attenbrow, 1998, 2004; Hiscock, 1993b) has demonstrated a long history of production and use for these implement types, with both now known to have been produced in the early Holocene and likely in the late Pleistocene as well.

alluvial and colluvial gravel deposits[8] associated with the Hunter River and its tributaries as well as other terrestrial conglomerate units (Raggatt, 1938; see also Hiscock 1986a:14-16). Widely distributed and easily accessible, it would appear that these deposits functioned as the primary source of lithic raw materials for Aboriginal flaked stone tool manufacture in the Hunter Valley proper.

In the Hunter Valley, asymmetrical and symmetrical backed artefacts dominate the retouched components of surface collected/recorded and excavated flaked stone assemblages. Accordingly, the technology of backed artefact manufacture has been a particular focus of research (e.g., Baker, 1992a; Hiscock, 1993a; Koettig, 1992, 1994; Moore, 2000). Studies by Hiscock (1993a), Moore (2000) and others (e.g., Baker, 1992a; Koettig, 1992, 1994; White, 1999, 2012) have demonstrated that backed artefact manufacture in the Hunter Valley was a highly structured activity involving a complex system of raw material procurement, transportation, preparation and reduction. Differences in the technological character of recovered cores and conjoin sets across the Valley indicate a significant degree of variability in the strategies used by Aboriginal knappers to produce blanks for backed artefact manufacture (**Figure 18**). Heat treatment, notably, appears to have been integral component of the backed artefact manufacturing process, with evidence for the thermal alteration of stone packages throughout the reduction process both abundant and widespread. As Hiscock (1993:66) has observed, “the thermal alteration of Hunter Valley silcrete drastically improves flaking qualities and increases the lustre and smoothness of the fracture surface”. Compared with silcrete, evidence for the thermal alternation of indurated mudstone blanks is rare (e.g., Koettig, 1992) and likely reflects the generally higher ‘raw’ flaking quality of this material.

Alongside the reconstruction of backed artefact manufacturing processes, the identification of diachronic change in Bondaian lithic technology in the Hunter Valley has also received considerable analytical and interpretive attention (e.g., Baker, 1992c; Haglund, 1989; Hiscock, 1986a, 1986b). Hiscock’s (1986a) pioneering attribute analysis of a sample of unretouched mudstone flakes recovered from the Sandy Hollow 1 rockshelter excavated by Moore (1970) is of particular significance in this regard and can regarded as the foundation upon which subsequent studies have been carried out. This analysis sought to test a tripartite division of the Sandy Hollow 1 (SH1) assemblage made on the basis of chronological changes in the frequency of backed artefacts. Three phases were recognised: the *Pre-Bondaian*, with no backed artefacts, the *Phase I Bondaian*, with numerous backed artefacts and the *Phase II Bondaian*, with few backed artefacts. Attribute analysis of a sample of 742 complete mudstone flakes from Square AA revealed technological changes consistent with this division, including, but not limited to, changes in the relative frequency of platform preparation and overhang removal as well as flake shape and platform size (see **Table 10**).

Table 10 Hiscock’s relative dating scheme for the Sandy Hollow 1 flaked stone assemblage (after Hiscock, 1986a: 100)

Phase	Date range	Flake type	Knapping practices employed for flake production	Backed artefact frequency
Pre-Bondaian	>1300 BP	Medium-sized, relatively squat flakes with very large platforms	• Large amounts of force applied with little control; • Most normal or inward directions of force application; • Imprecise blow application; • Use of relatively low platform angles on cores; • Very little platform preparation of any kind; • Many blows delivered to cortical surfaces; • No platform faceting; • Infrequent overhang removal; and • Low to moderate amounts of core rotation.	Absent
Phase I Bondaian	1300-800 BP	Larger and more elongate flakes with medium sized platforms	• Relatively high amounts of force; • Mostly normal or inward directions of force application; • Imprecise blow applications; • High platform angles; • Large amounts of platform preparation (principally facetting and larger platform flaking); • Infrequent overhang removal; and	Numerous

[8] I.e., point and mid-channel gravel bars as well as terrace and ridge/slope gravel deposits.

Phase	Date range	Flake type	Knapping practices employed for flake production	Backed artefact frequency
			• High amounts of core rotation.	
Phase II Bondaian	800 BP - Contact	Relatively small and squat flakes with small platforms	• Low to moderate amounts of force; • Outward directions of force application; • Precise application of force; • High platform angles; • Moderate amounts of platform preparation (flaking onto platform but no faceting) • Frequent overhang removal; and • Moderate to low amounts of core rotation.	Few

Having established the validity of the three phase Bondaian sequence at SH1, Hiscock applied the same attribute analysis to a series (n = 15) of flaked stone assemblages recovered from open artefact sites on the Mount Arthur North and Mount Arthur South coal leases and found that individual assemblages could be assigned to one of the three Bondaian phases recognised at SH1. On this basis, Hiscock (1986b) proposed that the attribute analysis employed at SH1 could serve as a relative dating system for open sites in the Hunter Valley. Given the number of open artefact sites within the region, this argument was particularly ground-breaking and has prompted several archaeologists to apply Hiscock's analysis to assemblages from other areas, albeit with mixed success (e.g., Dean-Jones, 1992; Baker, 1992c; Haglund, 1989; Rich, 1991). Difficulties in replicating Hiscock's results, Holdaway (1993:29) has suggested, likely stems from spatial variability in the methods used by Aboriginal knappers to reduce stone, variability itself linked to variables such as raw material type and accessibility, site function and stylistic differences between Aboriginal groups.

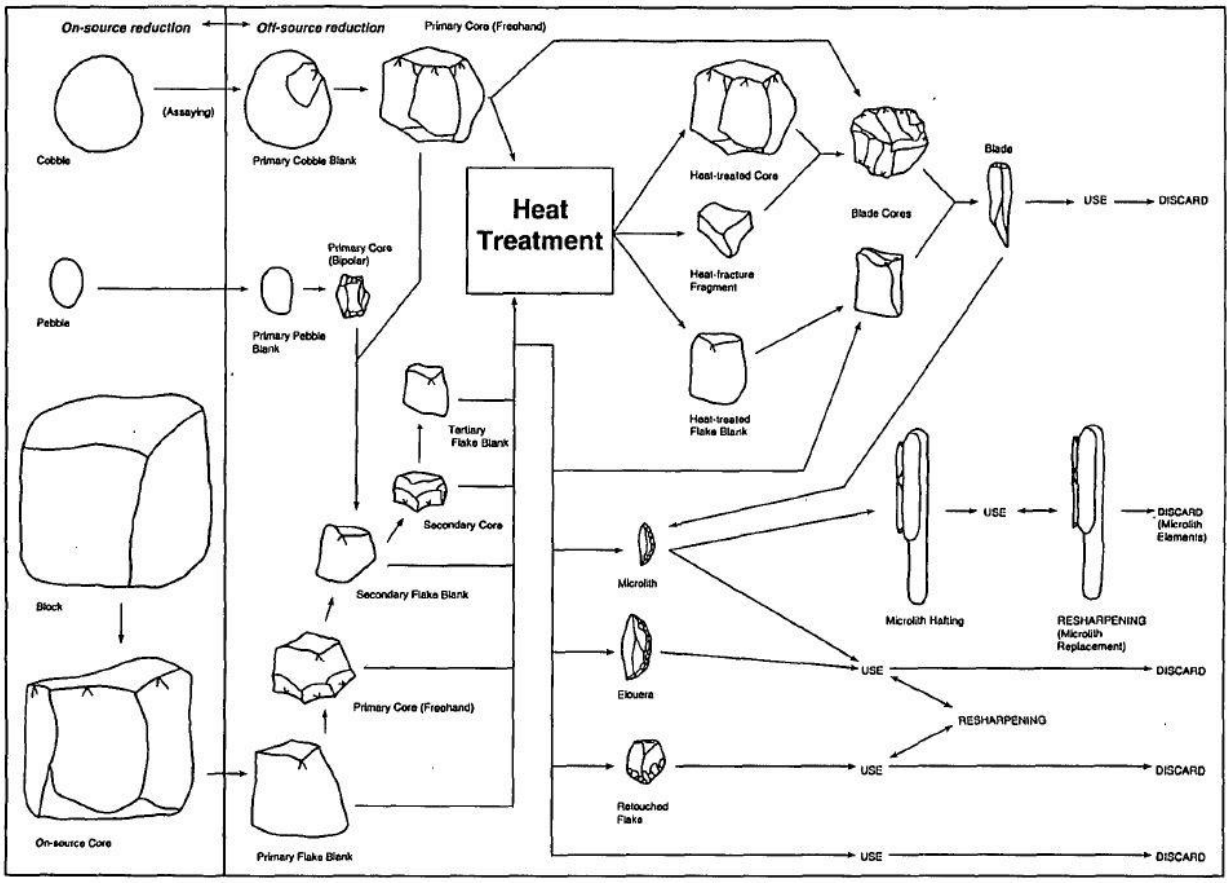

Figure 18: Moore's (2000) reduction model for the technology of Hunter Valley microlith assemblage (from Moore 2000: 29, Fig. 5)

5.1.3 Chronology and Texture-Contrast Soils

As in other parts of the state (e.g., Attenbrow, 2010), evidence for late Pleistocene and/or early Holocene Aboriginal occupation of the Hunter Valley is rare, with dated and undated evidence from these periods obtained from only a handful of sites, two of which (i.e., Moffats Swamp Dune & Galloping Swamp) are located on the Valley's coastal plain (AMBS, 2002; Baker, 1994; Hughes & Hiscock, 2000; Koettig, 1986; Kuskie, in prep.; Rich, 1993; Scarp Archaeology, 2009). In a recent review, Hughes et al. (2014) have attributed the dearth of early sites in the central lowlands of the Hunter Valley to long term geomorphic and soil formation processes, which have acted, they propose, to either remove completely or widely disperse older archaeological materials.

Studies by Koettig (1990), Baker (1994) and Kuskie (in prep) suggest that the chipped stone technology employed by Aboriginal knappers occupying the Hunter Valley during the terminal Pleistocene/early Holocene was focused on the opportunistic or non-specific reduction of early reduction cores (*sensu* Moore 2000) - some of which were very large. Core reduction appears to have geared towards the production of robust flakes for immediate use or retouch into simple scrapers, with no evidence for the complex, hierarchically-organised reduction sequences typical of the mid-to-late Holocene. Tool edges, Moore (2000:36) notes, were refurbished by unifacial retouching. A preference for volcanic materials over silcrete and mudstone has also been noted (Baker, 1994; Koettig, 1990;1992:5), as has the paucity of evidence for deliberate heat treatment (Moore, 2000)

In stark contrast to the late Pleistocene/early Holocene, evidence for mid-to-late Holocene Aboriginal occupation of the Hunter Valley abounds, with numerous excavated sites producing assemblages that can be confidently ascribed to these periods on the basis of radiometric dates and/or their typological/technological profiles. Taken at face value, available radiocarbon determinations suggest a progressive increase in the Aboriginal population of the Hunter Valley over the course of the Holocene (Attenbrow, 2004). However, as argued by Hiscock (2008) on a national scale, it seems likely that the directional population growth suggested by such data is, to a certain extent at least, a product of differential site preservation, with younger sites better preserved than older ones. Other factors, such as the burial of older sites through sediment deposition and aeolian processes and bias in the location of archaeological surveys and excavations, may also be relevant.

Critical to any discussion concerning the antiquity of Aboriginal occupation within the Hunter Valley is the genesis of the texture contrast or duplex soils that are associated with the majority of the Valley's known open artefact sites/deposits. As Kuskie and Clarke (2004: 228) have noted, an understanding of the genesis of these soils, defined by Hughes (1984: 26) as those consisting of "an A horizon of massive, sandy to silty material which gives way abruptly down the profile to clayey material with a blocky structure", is critical for determining both the antiquity and integrity of any Aboriginal archaeological materials contained within them.

Of particular relevance to archaeologists is the observation that while the 'A' and 'B' horizons of some texture contrast soils do, in fact, form a pedogenetic entity, having formed from *in-situ* weathering of parent materials, this is not always the case, with some 'A' horizons representing later colluvial deposits (Dean Jones & Mitchell, 1993). In the Hunter Valley, available radiocarbon determinations and typological data for flaked stone assemblages recovered from excavated 'A' soil horizons have tended to support Hughes' (1984:28) widely cited suggestion that these horizons accumulated over the last 5,000 years. Nonetheless, the potential for older A horizon soils has also been demonstrated (Koettig, 1992: 61; see also Kuskie & Clarke, 2004).

Drawing, in particular, on the research of Humphreys and Mitchell (1983) and Mitchell (1988), Dean Jones and Mitchell (1993) have considered in detail the archaeological implications of existing genesis models for texture contrast soils, both within and outside of the Hunter Valley. Key observations to be drawn from Dean Jones and Mitchell's (1993) review are as follows:

1. Duplex soils do not necessarily indicate great age;
2. Open sites located on texture contrast soils can never be truly stratified in a chronologically useful sense;
3. Stone artefacts on open sites will behave in the same way as natural stones on a hill slope and will be subject to surface dispersion, downslope movement, and differential burial or exposure by bioturbation agents and will commonly form a stone layer; and
4. The only possible means of dating open sites in any meaningful way will be from artefact cultural sequences developed on the basis of stratified assemblages and/or intact hearths. All other dates, especially those based on detrital charcoal, will be spurious.

More broadly, Dean Jones and Mitchell (1993: 63-64) have highlighted a series of geomorphic contexts within the Hunter Valley that they believe represent favourable locations for the preservation of Pleistocene and/or early Holocene archaeological evidence. These include:

- Rock shelters and large middens;
- Aeolian sand deposits (e.g., source bordering dunes);
- The distal portions of low angle alluvial fans;
- Stream junctions where each tributary has a different rate of sediment supply; and
- Colluvial deposits at the base of steeply inclined surfaces.

To date, the two contexts that been shown to have the potential to contain recognisable older archaeological materials include late Pleistocene windblown sand dunes/sheets (e.g., AMBS, 2002) and late Pleistocene/early Holocene colluvial deposits (e.g., Hughes & Hiscock, 2000).

5.1.4 Occupation models

A number of Aboriginal occupation models have been proposed for the Hunter Valley over the past three decades, with existing models based on varying combinations of archaeological, environmental and ethnohistoric data. Key models for the Central and Lower Hunter Valley include those developed by Haglund (1992), Koettig (1992, 1994), Kuskie (2000) and Kuskie and Kamminga (2000). These models are summarised in **Table 11** below.

Table 11 Aboriginal occupation models for the Hunter Valley

Researcher(s)	Year(s)	Project(s)	Area to which the model applies	Summary of model	Reference(s)
Koettig	1992 & 1994	Salvage of sites within the Camberwell and Bulga Coal Mine Leases	Central lowlands	• Repeated occupation of an area is likely to be represented by continuous, or near continuous, distributions of archaeological sites and/or features; • Sporadic or less intensive occupation of an area is likely to be represented by non-continuous or more widely dispersed archaeological sites and/or features; • Continuous to near- continuous distributions of archaeological evidence along watercourses suggest that Aboriginal people did not camp at specific locations; • Frequency of occupation at a given location is likely to have been related to the availability of subsistence resources (e.g., food, water, lithic raw materials); • Some locations may have been foci for Aboriginal occupation owing to the presence of particular resources (e.g., sandstone exposures suitable for grinding hatchet-heads); and • The duration of occupation at a given location may be evidenced by levels of disturbance to associated archaeological deposits, with sites occupied for shorter duration potentially having more intact deposits, as the length of stay may have been insufficient to disperse artefacts or mask the original form of knapping floors.	Koettig, 1992, 1994
Haglund	1992	Salvage of sites along Doctors Creek, Warkworth	Doctors Creek area, Central Hunter Valley	• Kangaroos, wallabies, and other large and small game would have been abundant in the area during dry periods, and would have been hunted by small hunting parties of men who would prepare and repair their hunting equipment in close proximity to watercourses; • Larger family groups likely visited the area during wetter periods when watercourses would be flowing more reliably and moisture dependent plants occurred in greater abundance; • Women and children would procure and process plant foods, such as ferns, yams and other tubers, in the vicinity of creeks and watercourses; • Sporadic visits would have resulted in debris left behind being incorporated into the turf or buried by leaf litter and Casuarina needles more quickly than more intensive, long term visits; and • While some equipment such as grindstones may have been retained and carried throughout the landscape, flakes and other implements were likely manufactured, utilised and discarded on an “as needed” basis.	Haglund, 1992
Kuskie	2000	Archaeological survey of Mount Arthur North Coal Mine Lease	Mount Arthur Area, Central Hunter Valley	• The area has been occupied for at least the past 5,000 years; • Occupation may extend as far back as 30,000 - 40,000 years; • The area has predominantly been occupied by tribes of the Wonnarua language	Kuskie, 2000

Researcher(s)	Year(s)	Project(s)	Area to which the model applies	Summary of model	Reference(s)
				group, although members of neighbouring groups may also have sporadically visited and occupied the area. • The Mount Arthur North area was likely utilised and occupied by Aboriginal people at varying intensities on a seasonal basis; • Occupation was most intensive within 50m of the main watercourses (3rd and 4th order streams); • Aboriginal occupants had a strong preference for camping on level ground adjacent to reliable water sources and potentially more abundant subsistence resources; • Individual campsites were mainly occupied by single nuclear family groups and multiple family groups (bands); • Larger campsites from broader gatherings of people likely took place along the nearby Hunter River flats; • A greater range and frequency of activities were undertaken at camp sites, rather than in the surrounding landscape; • Camp sites along the major watercourses were occupied by small groups of people for varying lengths of time, during both the course of the seasonal round and in different years. • Occupation of camp sites throughout the entire Mount Arthur north area was predominantly sporadic rather than continuous; • Occupation, such as focussed camping, likely also occurred along level to very gentle drainage depressions (particularly 1st and 2nd order streams). These water sources were likely to be intermittent and occupation along these lower order streams may only have occurred when standing water was available; • Most camp sites involved overnight visits of small hunting parties rather than entire family groups; • Other than focussed camping, activities engaged in across the Study Area involved hunting activities (larger game) by small hunting parties of men, and gathering activities by small parties of women and children, along with transitory movement, procurement of lithic resources, and cultural activities. • The utilisation of areas such as simple slopes, ridge crests, spur crests and minor watercourses was less intense than the valley flats where base camps were situated; • Simple slopes were used during hunting or gathering activities in the course of the normal daily or seasonal round, to access higher ground or stone resources, or to move between camp sites. Ridge and spur crests were also used for these purposes and for accessing vantage points or moving to special ceremonial sites;	

Researcher(s)	Year(s)	Project(s)	Area to which the model applies	Summary of model	Reference(s)
				• Vantage points were important to the Aboriginal occupants of the area, particularly gentle to steep upper slopes adjacent to several ridges, which were mainly accessed by groups of men on hunting expeditions, or for security and/or cultural purposes; • Silcrete and tuff were the preferred stone materials, both of which are locally available and likely procured from local sources during the course of the normal daily or seasonal round, with tuff being the preferred material for manufacture of flaked stone tools; • These materials were also procured from other sources within the region, most notably the alluvial gravels of the nearby Hunter River; • Chert, quartz, petrified wood, chalcedony, and porcellanite were also utilised to a lesser extent and were also procured from local sources, probably during the course of the normal seasonal round; • Silcrete was deliberately heat treated to improve its flaking properties. This may have been undertaken at single locations (e.g. a campsite adjacent to a watercourse) or in different locations reflecting the stages of procurement, heat treatment, reduction and use); • Manufacturing stone tools, particularly flaked implements, was likely a casual or opportunistic activity, conducted on an “as needed” basis; • There was little emphasis on rationing or conservation of the use of most stone materials, due to their wide availability; and • The manufacture of microblades (e.g. hunting spear barbs) was also widely undertaken. While likely a planned and organised activity, it did not necessarily occur at base camps, but may also have occurred in places traversed during the course of hunting expeditions on a more casual or opportunistic basis.	
Kuskie & Kamminga	2006	Salvage of sites impacted by the construction of the Hunter Expressway, near Black Hill	Black Hill - Woods Gully - Hexham Wetlands Locality, Lower Hunter Valley	• The locality was occupied by Aboriginal people of the Pambalong Clan and potentially clans of the broader Awabakal language group; • Occupation focussed on wetlands, swamps, lakes, estuaries, the coastline, and potentially also the junctions of multiple resource zones; • Occupation of the area has predominantly occurred within the past 4,000 years; • Occupation may have extended as far back as 30,000 – 40,000 years, but few landscape contexts exist in which archaeological evidence of older occupation would be conserved; • Occupation encompassed the entire region, but at varying intensities, on a seasonal basis, and across different time periods within the overall time-span of occupation; • Seasonal occupation of some resources and localities may not be evidenced in the	Kuskie & Kamminga, 2000

Researcher(s)	Year(s)	Project(s)	Area to which the model applies	Summary of model	Reference(s)
				extant archaeological record; • Occupation of the area reflects a wide range of activities, including transition between locations, hunting, gathering, procurement and utilisation of lithic and other resources, camping, ceremonial and spiritual activities, and burial practices; • Activities conducted and engaged in by the Aboriginal occupants of the area likely included: food procurement, processing, and consumption; production and maintenance of stone and wooden tools and implements; resource procurement; erection of shelters, children's play, ceremonial and spiritual activity, and social and political activity; • Landscape features and variables such as topography, resources, proximity to water, aspect, slope, and cultural preference likely influenced the activities conducted by the Aboriginal occupants of the area; • Few of the activities engaged in by past Aboriginal people are likely to be evident within the archaeological record, other than those involving the use of stone or where preservation conditions permit. • Locally available indurated rhyolitic tuff was the preferred material for knapping and stone tool production, followed by silcrete, which was also able to be procured locally in terrace and alluvial gravels; • Both tuff and silcrete were likely obtained during both daily and seasonal movements throughout the landscape on an "as needs" basis, not during "special purpose trips", and conservation of these materials was not a priority due to their wide availability; • Other locally available stone materials including quartz, quartzite, acidic volcanics, chalcedony and chert were also utilised to a lesser extent; • Non-locally available stone materials such as dacite and rhyodacite (used for grindstones) may have been obtained through trade or exchange with other cultural groups, through special purpose trips, or during visits to other areas during the seasonal round; • Ochre was utilised for ceremonial purposes and may have been procured from sources near Lake Macquarie, the Hunter River, or from outside the region; • Heat treatment of silcrete was undertaken to improve flaking qualities and possibly to obtain desired colours; • A reasonably high proportion of silcrete used in knapping activities was deliberately heat treated, but tuff was not; • Microblade production was a widespread, likely planned and organised, activity with the primary goal of producing microliths (e.g. bondi points) for hunting	

Researcher(s)	Year(s)	Project(s)	Area to which the model applies	Summary of model	Reference(s)
				implements/purposes. • Microblade production may have occurred at both campsites and also in places on transitory routes during hunting expeditions, which may represent more casual or opportunistic behaviour; • Production of microliths was time-consuming and the end result was likely highly desirable and socially valuable; • The investment of time and energy in activities such as heat treatment of silcrete and production of microliths for hunting and fighting spears may have more social than utilitarian values, as floral and smaller faunal subsistence resources would probably have been most prominent in the economy of the local Aboriginal people.; • Casual and opportunistic knapping or selection of flakes to meet requirements on an "as needs" basis was widespread. • A high proportion of knapping products were likely discarded at the site of their manufacture, without use; • Use of bipolar technique was uncommon; • Floral subsistence resources were locally abundant, predominantly obtained and processed by women, and were consumed at campsites and at the site of procurement. • Ferns may have been a staple of the local diet, along with the bulbs and roots of other wetland plants; • Plant preparation sites may include camping places around the margins of Hexham Wetland and other swamps. Tools such as Worimi cleavers were utilised to pound the starch-rich rhizomes of bracken and swamp fern and the roots of other plants obtained from the wetlands; • Eloueras may have been used for extracting the perennial herb cumbungi (*Typha australis*), abundant in the freshwater parts of wetlands, or less likely, tall spike rush (*Eleocharis sphacelata*); • Less portable special tools such as Worimi cleavers and grindstones may have been deliberately stored at base camps; • Faunal resources were processed and consumed at temporary hunters or gatherers camps, at nuclear base camps, campsites of larger congregations of people, and at the site of procurement; • Men hunted for larger game, while women played a key role in gathering plants and obtaining smaller game; • Hunting was a planned and coordinated event;	

Researcher(s)	Year(s)	Project(s)	Area to which the model applies	Summary of model	Reference(s)
				• Fish were obtained by several methods, including boating, hooks and lines, spearing, using hand nets, and creating fish traps; • Strategic management of resources such as fish traps were aimed at increasing the reliability and productivity of food resources; • Nuclear family base camps may have been strategically positioned in relation to food resources, at the conjunction of two or more subsistence zones, close to potable water, and on level or very gently inclined ground. Visual aspect and security may have also been important considerations. • Site occupants of nuclear family base camps may have foraged within an area of up to 10km radius from the campsite; • Campsites in more favourable locations may have been subject to more intensive occupation; and • Community base camps or camps of larger congregations of people tended to be situated on level ground adjacent to plentiful food resources and potable water such as river terraces or flats.	

5.2 Local Context

5.2.1 AHIMS Database

The AHIMS database, administered by OEH, contains records of all Aboriginal objects reported to the Director General of the Department of Premier and Cabinet in accordance with Section 89A of the NPW Act 1974. It also contains information about Aboriginal places which have been declared by the Minister to have special significance with respect to Aboriginal culture. Previously recorded Aboriginal objects and declared Aboriginal places are known as 'Aboriginal sites'.

A search of the AHIMS database on 5 February 2014 for a 10 x 10 km area centred on the Project area (AHIMS search area) identified 107 registered Aboriginal sites, 33 of which can be confirmed - by way of a targeted review of associated site cards and reports - as being located in or within 50 m the Project area.

As is typical for the Hunter Valley, open artefact sites (i.e., artefact scatters and isolated finds) are the most common site type represented within the AHIMS search area, accounting for 80.3% of known sites. Remaining site types include eight areas of Potential Archaeological Deposit (PAD), four grinding groove sites and one Aboriginal Resource and Gathering Area.

AHIMS registered sites in and within 50 m of the Project area are listed in **Table 12**. These sites include 12 artefact scatters, 19 isolated finds and one area of PAD. All are listed on AHIMS as 'valid' sites. However, a review of associated reports suggests that ten have, in fact, been destroyed under approved AHIPs. The remaining 22 sites are presumed extant. Centroid site locations for all AHIMS registered sites within and adjacent to the Project area are shown on **Figure 19**.

Table 12 AHIMS registered sites within the Project area

AHIMS Site ID	Site name	MGAE	MGAN	Site type	Current status
37-6-0865	KK-IF-2	357745	6369639	Isolated find	Presumed extant
37-6-0866	KK-IF-1	358645	6371329	Isolated find	Presumed extant
37-6-1325	Swamp Creek RTA 10 IF (SWC RTA 10IF)	356552	6370460	Isolated find	Destroyed
37-6-1341	Black Waterholes Creek RTA 1 IF	355931	6371919	Isolated find	Destroyed
37-6-1342	Black Waterholes Creek RTA 2 IF	355493	6372397	Isolated find	Destroyed
37-6-1343	Black Waterholes Creek RTA 3 IF	356398	6371297	Isolated find	Destroyed
37-6-1344	Black Waterholes Creek RTA 4 IF (BWC RTA 4 IF)	355521	6372291	Isolated find	Destroyed
37-6-1356	Swamp Creek RTA 4	356662	6370877	Artefact scatter	Destroyed
37-6-1360	Swamp Creek RTA 8 IF	357374	6370471	Isolated find	Destroyed
37-6-1361	Swamp Creek RTA 9	357110	6370738	Artefact scatter	Destroyed
37-6-1362	Swamp Creek RTA 11 IF (formerly PAD9 Swamp Creek)	357735	6369889	Isolated find	Destroyed
37-6-1363	PAD11 Black Waterholes Creek	356196	6371545	PAD	Destroyed
37-6-1644	Swamp Creek Catchment 5 (SCC5)	357054	6370763	Artefact scatter	Presumed extant
37-6-1645	Swamp Creek Catchment 4 (SCC4)	357708	6370097	Isolated find	Presumed extant
37-6-1650	Northern Swamp Tributaries 4 (NST4)	356829	6371946	Artefact scatter	Presumed extant
37-6-1652	Northern Swamp Tributaries 2 (NST2)	356742	6372396	Artefact scatter	Presumed extant
37-6-1953	KK03	359355	6370790	Artefact scatter	Presumed extant
45-3-3387	KK04	357942	6371717	Artefact scatter	Presumed extant
37-6-1954	KK05	358577	6371627	Artefact scatter	Presumed extant

AHIMS Site ID	Site name	MGAE	MGAN	Site type	Current status
37-6-1957	KK09	358372	6371638	Isolated find	Presumed extant
37-6-1958	KK10	357407	6371800	Artefact scatter	Presumed extant
37-6-1959	KK11	357079	6371849	Artefact scatter	Presumed extant
37-6-1960	KK12	356887	6371887	Isolated find	Presumed extant
37-6-1961	KK13	356713	6372765	Isolated find	Presumed extant
37-6-1962	KK14	356727	6372857	Isolated find	Presumed extant
37-6-1963	KK15	356790	6373144	Isolated find	Presumed extant
37-6-1964	KK16	357035	6374632	Isolated find	Presumed extant
37-6-2004	KR01	357959	6370106	Artefact scatter	Presumed extant
37-6-2005	KR02	357528	6370404	Isolated find	Presumed extant
37-6-2006	KR03	357491	6370454	Artefact scatter	Presumed extant
37-6-2007	KR04	357367	6370539	Isolated find	Presumed extant
37-6-2008	KR05	357171	6370683	Isolated find	Presumed extant
37-6-2009	KR06	356187	6371481	Artefact scatter	Presumed extant

5.2.2 Previous Aboriginal Heritage Assessments

Existing AHIMS data indicate that a relatively large number of Aboriginal cultural heritage assessments incorporating survey and/or subsurface investigations have been undertaken in the greater Kurri Kurri area since the early 1980s. Although the number of investigations undertaken in the vicinity of Kurri Kurri is small when compared with areas to the northeast around Maitland, northwest around Singleton and east around the Hunter Estuary, those that have been carried out have resulted in the identification of a significant number of Aboriginal archaeological sites, both in surface and subsurface contexts.

To date, archaeological investigations undertaken for development works located either wholly or partially within the current Project area have included surveys by AMBS (2009a, 2009b), Brayshaw McDonald (1994), Umwelt (2003), ERM (2004) and Mills (1999) as well as excavations by AMBS (in prep) and Umwelt (2006c, in prep).

Umwelt's (2006c) subsurface investigation, undertaken as part of a broader archaeological salvage program for the recently completed Hunter Expressway, was limited to a program of test excavation within and adjacent to the boundaries of AHIMS registered PAD 'PAD11 Black Waterholes Creek' (37-6-1363), now destroyed. Detailed results for this program are pending (Umwelt, in prep). However, preliminary results are available (Umwelt, 2006c). Excavations by AMBS, meanwhile, are understood to have been undertaken as a mitigation response to EnergyAustralia's proposed upgrade to the 33kV Kurri-Rutherford Feeder Split and to have involved targeted salvage excavations of up to 2.25 m^2 (1.5 x 1.5 m) at 25 pole locations along the feeder route. AECOM understands that AMBS is in currently in the process of finalising their reports for this excavation program. Although detailed results are pending, AMBS have provided AECOM with some baseline data concerning the location, extent and results of these excavations.

The results the above-mentioned investigations are summarised in **Table 13** below. Those of a selection of other local assessments are also provided for contextual purposes.

37-6-1964
37-6-1963
37-6-1962
37-6-1961
37-6-1342 (Destroyed)
37-6-1344 (Destroyed)
37-6-1652
37-6-1341 (Destroyed)
37-6-1650
37-6-1960
37-6-1959
37-6-1958
45-3-3387
37-6-1957
37-6-1954
37-6-1363 (Destroyed)
37-6-2009
37-6-1343 (Destroyed)
37-6-0866
37-6-1356
37-6-1644
37-6-1361 (Destroyed)
37-6-2008
37-6-1953
37-6-2007
37-6-1325 (Destroyed)
37-6-1360 (Destroyed)
37-6-2006
37-6-2005
37-6-1645
37-6-2004
37-6-1362 (Destroyed)
37-6-0865
Wentworth Swamp
Black Waterholes Creek
Swamp Creek
Tasters Hollow
Wallis Creek
Gillieston Heights
Cliftleigh
Loxford
Heddon Greta
Cartwright Street
Cessnock Road
HUNTER EXPRESSWAY
Sawyers Gully Road
Frame Drive
Metcalfe Lane
Bishops Bridge Road
Dickson Road
Scales Road
Hart Road
Horton Road

KEY

- Project area
- Road
- Railway
- Watercourse

AHIMS Registered Site

- Artefact scatter
- Isolated artefact
- Potential Archaeological Deposit

0 1 2km

G:\ENVGIS\Projects\60316\60312210 Hydro Aboriginal\FIGURES\60312210 F19 AHIMS Registered Sites 28 08 2014.TO

AECOM

AHIMS REGISTERED SITES

Aboriginal Cultural Heritage Assessment
Hydro Aluminium Smelter Site & Associated Buffer Land
Kurri Kurri, New South Wales

FIGURE 19

Table 13 Previous Aboriginal Heritage Assessments

Consultant	Year	Project / Location	Assessment type	Summary of assessment & results	Reference(s)
L.K. Dyall	1980	Proposed Alumax aluminium smelter, Farley	Survey	Pedestrian survey of proposed smelter site and associated buffer land. Particular attention paid to creek banks, sandstone exposures in creek beds and sandstone-mantled ridgelines. Eighteen open artefact sites and three grinding groove sites identified. Former included one isolated artefact and seventeen artefact scatters. Counts for recorded artefact scatters ranged from two to 195. Largest site located on Stoney Creek. Most sites (n = 12) contained less than ten artefacts. Raw materials recorded as cherts, rhyolite [silicified tuff], quartzites and quartz. Retouched implements restricted to backed blades (n = 4) and scrapers (n = 17). All three grinding groove sites located on exposed sandstone bedrock in creek beds. Largest site contained 68 grooves in three spatially discrete 'lots' of 42, 25 and one groove respectively. Remaining two sites contained 38 and nine grooves respectively, the former in four lots.	Dyall (1980)
H. Brayshaw	1982	Proposed residential development, near Stanford Merthyr	Survey	Pedestrian and vehicle survey of proposed urban development site. No Aboriginal archaeological sites identified during survey. Generally poor GSV conditions noted. "Considerable disturbance" associated with localized bulldozing, rubbish dumping and the construction of transmission lines (n = 5), a bitumen road and railway embankment observed. Brayshaw (1982: 4) concluded that while Aboriginal people were likely to have frequented the study area to hunt and forage the lack of a major resource features(s) would have precluded intensive occupation.	Brayshaw (1982)
A. Djekic	1984	Kurri Kurri to Alcan 132Kv transmission line	Survey	Pedestrian survey of entire transmission line route. Generally poor GSV conditions noted. Five open artefact sites consisting of one isolated artefact and four artefact scatters identified in exposures in vicinity of unnamed creek to north of Kurri Kurri substation. All considered opportunistic surface expressions of associated subsurface deposits. Chert [silicified tuff] dominant raw material, with four quartzite hammerstones also recorded. Areas adjacent to watercourses and swamplands assessed as having high archaeological potential.	Djekic (1984)
E. Rich	1990	Proposed recycling facility, Alcan Aluminium Smelter	Survey	Pedestrian survey of proposed recycling facility site on Lot 811 of DP 728985. Three transects completed across *c*.2.5 ha study area. All areas of exposed ground inspected for stone artefacts. No Aboriginal archaeological sites identified during survey. Lack of sites attributed, in part, to landscape position.	Rich (1990)
M. Koettig	1990	ICI Mining Services Technology Park, near Richmond Vale	Survey	Pedestrian survey of proposed ICI Mining Services Technology Park site. GSV conditions generally poor but several tracks and associated exposures present. No Aboriginal archaeological sites identified during survey. Flood prone alluvial flats on eastern side of 'main' unnamed creek within study area assessed as unsuitable for occupation (Koettig, 1990: 3). Survey results interpreted as a reflection of an absent or "extremely sparse" Aboriginal archaeological record.	Koettig (1990b)
I. Stuart	1994	Proposed Dross Mill, north of Mitchell	Survey	Targeted pedestrian survey of proposed Dross Mill site comprising 8 ha parcel of land bordered to north by Swamp Creek and the south by Mitchell Avenue and a disused railway line. Survey	Stuart (1994)

Consultant	Year	Project / Location	Assessment type	Summary of assessment & results	Reference(s)
		Avenue and south of Swamp Creek		restricted to pre-existing tracks owing to dense vegetation cover. 6.4% of study area surveyed with effective coverage of 3.2%. Single open artefact site identified. Site comprised two stone artefacts - a yellow coarse-grained chert core and a grey chert flake - *c*.9 m apart on vehicle track. Absence of any 'substantial Aboriginal sites' attributed to poor GSV.	
T. Griffiths	1995	Proposed optic fibre cable, Kurri Kurri to Mulbring	Survey	Pedestrian survey of *c*.9 km fibre optic route. GSV along route ranged from 0 to 90% and was highest at creek and gully crossings. No Aboriginal archaeological sites identified.	Griffiths (1995)
R. Mills	1999	Proposed wastewater treatment plant	Survey	Full coverage pedestrian survey of impact areas associated with proposed wastewater treatment plant. Survey area situated on gently sloping land approximately 300 m southeast of Swamp Creek. Unnamed tributary of Swamp Creek also present in the north-eastern portion of the survey area. Southern section of this tributary had been modified by the construction of concrete canal. Western bank noted as having been disturbed via the dumping of soil, brick and concrete materials but retaining some relatively undisturbed sections. Area within and adjacent to existing treatment plant assessed as grossly disturbed. GSV in vicinity of Swamp Creek tributary was poor (<10%) but generally higher on gently inclined hillslope unit owing to presence of vehicle and animal tracks, drainage lines and areas of surface disturbance associated with dam construction. Two isolated stone artefacts and one area of PAD identified. Isolated artefacts consisted of yellow/red 'chert' [silicified tuff] flake and a quartzite hammerstone. Area of PAD encompassed the southern bank of the unnamed tributary of Swamp Creek. Portions of PAD noted to have been subject to considerable impacts from spoil/rubble dumping and the mounding of topsoil. Undisturbed sections of PAD assessed as having "potentially high archaeological sensitivity" (Mills 1999: 12).	Mills (1999)
ERM	2003	Hunter Economic Zone (HEZ)	Test excavation	Archaeological test excavations conducted within the boundary of the Hunter Economic Zone (HEZ). Three landform areas identified as being of archaeological interest prior to fieldwork: 1) valley side slopes along Chinamans Hollow Creek; 2) the north-south trending ridgeline comprising the watershed between Chinamans Hollow Creek and several unnamed tributaries of Wallis Creek (the 'eastern tributaries'); and 3) the headwaters of the 'eastern tributaries'. Geomorphological investigations undertaken prior to test excavation identified previously undescribed aeolian sand deposits on the western side of Chinamans Hollow Creek and confirmed a marked contrast between extant soil units on the eastern and western sides of this watercourse. Topsoils on the ridgeline were assessed as deriving from a combination of *in-situ* weathering of sandstone/conglomerate bedrock and colluvial processes. A horizon sands along the western side of Chinamans Hollow Creek were assessed as being of Holocene antiquity on the basis of their looseness and lack of weathering.	ERM (2003)

Consultant	Year	Project / Location	Assessment type	Summary of assessment & results	Reference(s)
				Two transects consisting of up to 21 backhoe-excavated test pits (2 x 1 m) completed within each targeted landform area. Stone artefacts identified in most test pits with good outlook over Chinamans Hollow Creek. Total of 66 stone artefacts and 57 'shattered fragments' of artefactual stone recovered from test pits along Chinamans Hollow Creek. Artefacts generally recovered from 20 cm below the ground surface to a depth of 1 m. No indications of cultural or natural stratification evident in excavated sand deposits. Artefact-bearing deposits assessed as likely being of Holocene antiquity. Excluding 'shattered pieces', silcrete was the dominant raw material (n = 44), followed by silicified tuff (n = 17), quartz (n = 4) and quartzite (n = 1). In typological terms, the assemblage was dominated by flake debitage (i.e., complete flakes and flake fragments). Formed objects were limited to three backed artefacts. No artefacts were identified in the ridgeline transects and only one in eastern tributary transects. Results interpreted as a reflection of the presence of a "dispersed but readily detectable distribution of artefacts along western side of Chinamans Hollow Creek interfluve" (ERM: 2003: 45). Two surface sites (HEZ1 and HEZ2) also fortuitously identified during fieldwork.	
ERM	2004	Proposed gas pipeline, Seahampton to Rutherford	Survey	*c.*37 km long gas pipeline route assessed via pedestrian and vehicle survey. 4.2 km section of route within Hunter Employment Zone (HEZ) excluded from survey. Four broad landscape units identified for interpretive purposes: 1) Mt Sugarloaf rugged terrain; 2) Wallis Creek gently undulating terrain; 3) Swamp Creek catchment undulating terrain; and 4) Northern swamp tributaries gently undulating terrain. Alluvial and aeolian sands noted as occurring in Units 2, 3 and 4. Total of 21 Aboriginal archaeological sites, consisting of twelve artefact scatters and nine isolated finds, identified during survey. Mudstone [silicified tuff] dominant raw material, with silcrete also well represented. Undisturbed soils within 150 m of Wallis Creek, Swamp Creek and associated 'major' tributaries assessed as having high archaeological potential. Northern swamp tributary area identified as "perhaps the most archaeologically sensitive area" (ERM 2004: 78) due, in part, to the presence of aeolian sands.	ERM (2004)
Umwelt and others	1994-2010	Hunter Expressway	Survey and test excavation	Surface collections and subsurface investigations of Aboriginal sites, areas of PAD and landform units identified as a result of archaeological surveys/inspections undertaken for the F3 to Branxton Highway Link (i.e., Hunter Expressway). Route alignment divided into two sections for the purposes of archaeological assessment, with 'Section 1' comprising the easternmost 4 km of the route near Southampton and 'Section 2' that portion of the route west of Southampton to the Belford Deviation west of Branxton. Archaeological salvage and subsurface testing works completed in three stages prior to development of the Hunter Expressway Aboriginal Cultural Heritage Plan of Management (Umwelt, 2010a). Stage 1 (Section 1) investigations were undertaken under Section 90 Consent #1940 (approved 7 June 2004) and included surface collection of three open artefact sites within the Blue Gum Creek	(Brayshaw, 2001; Brayshaw McDonald, 1994; Umwelt, 2003, 2006a, 2006b, 2006c, 2010a, in prep)

Consultant	Year	Project / Location	Assessment type	Summary of assessment & results	Reference(s)
				catchment, surface collections and subsurface investigations excavations at two sites in the Blue Gum Creek and Minmi Creek catchments, and subsurface testing within the Bluegum Creek landform unit. Stage 2 (Sections 1 & 2) investigations were undertaken under Section 90 Consent #2102 (approved 14 February 2005) and Section #87 Consent #2096 (approved 14 February 2005) and included surface collection of 68 open artefact sites within the Anvil Creek, Bishops Creek, Black Creek, Black Waterholes Creek, Sawyers Gully, Surveyors Creek and Wallis Creek catchments, subsurface investigations of four sites in the Anvil Creek, Black Creek, Swamp Creek and Wallis Creek catchments, subsurface testing of nineteen areas of PAD and subsurface testing of nine landform units across nine different creek catchments. Testing of PAD11 Black Waterholes Creek (37-6-1363) and adjacent landform elements within the current Project area yielded no artefacts. Stage 3 (Section 2) investigations were completed under Section 90 Consent #2562 (approved 19 December 2006) and involved the surface collection of six open artefact sites in the Anvil Creek, Black Creek, Sawyers Gully, Swamp Creek and Wallis Creek catchments and open area excavations at six sites in the Anvil Creek, Sawyers Gully, Surveyors Creek, Wallis Creek, Black Creek and Redhouse Creek catchments. Detailed results for Umwelt's Stage 1, 2 and 3 archaeological salvage/investigation programs are pending (Umwelt, in prep). However, for sites, PADs and landform units subject to subsurface investigations in Stages 1 and 2, Umwelt (2006c): 4.51, Table 4.4) report artefact totals ranging from 0 to 409. Subsurface testing undertaken within the current Project area, completed within and adjacent to previously recorded PAD Black Waterholes Creek PAD 11 (37-6-1363) did not identify any subsurface artefacts and Umwelt recommended that this site should be removed from the AHIMS register.	
Mary Dallas Consulting Archaeologists	2007-2008	Proposed residential development, Lot 114 on DP703265	Survey and test excavation	Pedestrian survey of *c.*30 ha study area located on a prominent north-south trending ridgeline on the eastern side of Cessnock Rd. Study area divided into three survey units for purposes of field survey. Survey Unit 1 comprised the elevated land associated with the prominent north-south trending ridgeline and an associated arm extending eastward into the study area. Survey Unit 2 comprised the east facing and generally steep slopes above Wallis Creek while Survey Unit 3 comprised south facing gently to moderately inclined slopes. Effective survey coverage in all units was very low (1-7%) to dense grass cover. One artefact scatter (GH Campsite 1) and three areas of PAD (GH PAD 1 to 3) identified during survey. GH Campsite 1 located near the base of an east trending spur running from main ridgeline. Site comprised a scatter of "at least 30" artefacts over an area of approximately 75m^2 (15 x 5m). Silcrete dominant raw material. Artefact types included complete and broken flakes and blades, flake/blade fragments and cores. Identified PADs comprised part of a southerly trending spur off main ridgeline (GH PAD 1), an undisturbed low	Mary Dallas Consulting Archaeologist (2007, 2008)

Consultant	Year	Project / Location	Assessment type	Summary of assessment & results	Reference(s)
				mound on the Wallis Creek floodplain (GH PAD 2) and a portion of the main ridgeline trending in an easterly direction (GH PAD 3). Subsequent to the survey described above, in 2008, a program of archaeological test excavation was undertaken within GH PAD1 under Section 90 Consent #2962. This involved the hand excavation of fifteen 1 m^2 pits. Flaked stone pieces representing at least 50 individual stone artefacts were recovered from 13 pits, with an average density of less than eight stone pieces or four individual artefacts per square metre. Silcrete and mudstone co-dominant raw materials. Formal implements restricted to backed artefacts. Results interpreted as a product of transitory movement/casual discard over time.	
Australian Museum Business Services (AMBS)	2009-2010	33kV Kurri-Rutherford Feeder Split	Survey & salvage excavation	*c.*8.25 km long electricity easement between Kurri Kurri and Rutherford subject to full pedestrian survey in 2009. Easement divided into fourteen survey units (transects). Most of the easement (study area) comprised crests and simple slopes over 20 m elevation. The study area also traversed the upper reaches of Swamp Creek and four unnamed drainage lines. Levels of effective coverage uniformly low due to generally poor GSV conditions. Total of eighteen sites, consisting of ten artefact scatters and eight isolated finds, identified during survey. Three previously registered on AHIMS. Artefact counts for scatter sites ranged from two to 103, with three sites (KK04, 37-6-1650 and 37-6-1651) containing over fifty artefacts. Six sites identified as having PAD. Distribution and contents of recorded sites interpreted as reflecting an occupational emphasis on Wentworth Swamp. Of the eighteen identified sites, ten were assessed as being of low scientific significance, four as being of moderate significance and four as being of high significance. Artefacts identified on vehicle tracks at sites KK01, KK02, KK04, KK07, 37-6-1650 and 37-6-1652 subsequently moved off-track under AHIP#1103798. Subsequent to the survey described above, in 2010, salvage excavations were undertaken at 25 pole locations along the feeder route, eighteen of which were located within the Project area for this assessment. In all but one instance, in which excavation was restricted to a 1m^2 pit, excavations at each pole consisted of a 2.25 m^2 (1.5 x 1.5 m) hand excavated pit. Detailed results for these excavations are pending. However, preliminary results data provided to AECOM by AMBS indicate that a total of 300 flaked stone artefacts and six pieces of ochre of potential cultural origin were recovered from 12 pits, with the highest artefact frequencies occurring within AMBS's creek terrace landform unit. Of the eighteen pits excavated within the current Project area, ten yielded artefacts, with counts ranging from 1 to 169. Artefacts recovered from the four test pits excavated in the creek terrace landform unit adjacent to Swamp Creek occurred in deep (>1 m) sand deposits interpreted as being of aeolian origin.	AMBS (2009a)
AMBS	2009	Kurri-Redbank	Survey	*c.*54 km long electricity easement between Kurri Kurri and Redbank subject to full pedestrian	AMBS (2009b)

Consultant	Year	Project / Location	Assessment type	Summary of assessment & results	Reference(s)
		Feeder 953/95R (132kV) upgrade		survey in 2009. Topography of route characterised by undulating terrain with intermittent watercourses as well as large creek flats associated with permanent water courses. Easement divided into 21 survey units on the basis of available soil landscape mapping. Total of 65 sites containing 321 flaked stone artefacts one ground stone hatchet-head and one grinding slab identified during survey. Sites types comprised artefact scatters (n = 41), isolated finds (n = 19), artefact scatters with PADs (n = 4) and one grinding slab site. Artefact counts for scatter sites ranged from two to 40. Silcrete dominant raw material (n = 158, 49.2%), with silicified tuff also reasonably well represented (n = 109, 33.9%). Majority of sites (82%) located within 200 m of watercourses and on flats (n = 35, 53.9%). Results of site distribution analyses interpreted as indicating a similar frequency/intensity of occupation between upland and lowland areas.	
RPS Harper Somers O'Sullivan (RPS HSO)	2009	Farley Waste Water Treatment Works, Owlpen Lane off Wollombi Road	Survey	Full coverage pedestrian survey of Farley Waste Water Treatment Works site. Study area located on alluvial flats associated with Wentworth Swamp. Land to west and north of the site reported as 'elevated' and forming part of a flat-topped ridge. Study area divided into two Survey Units: the area comprising the main waste water works treatment compound (SU 1) and two maturation ponds to the east (SU 2). GSV within SU1 was recorded as 'good' owing to widespread erosion activity. GSV in SU2 was likewise recorded as 'good' with extensive exposures occurring along the banks of the two maturation ponds. Total of five sites identified during survey, all isolated finds within SU2. None considered to be *in-situ*. Study area, in general, assessed as highly disturbed.	RPS HSO (2009)
McCardle Cultural Heritage Pty Ltd	2010	Farley Investigation Area, c. 2km southwest of Rutherford	Survey	Study area included a ridge grading into gently-inclined slopes with numerous drainage lines running north into Stony Creek and south into an unnamed 3rd order creek that discharges into Wentworth Swamp. Study area divided into fourteen survey units for survey. GSV across all survey units was very low due principally to grass cover. Overall effective coverage of 2.15% achieved. Disturbances noted during survey included clearing, fences, grazing, and construction for housing, infrastructure and dams. Total of three sites identified: one artefact scatter (FIA/1) and two isolated finds (FIA/2 and FIA/3). Scatter located on 3rd order stream in an area of exposure measuring 2 m x 1m. Artefacts included three silcrete flake pieces, one silcrete proximal flake and one mudstone complete flake. Area of PAD (PAD FIA/1) comprising the unnamed 3rd order creek situated in the southern portion and land within 50 metres of this creek also identified. PAD assessed as having been subject to minimal disturbance.	McCardle Cultural Heritage (2010)
Umwelt Australia Pty Ltd (Umwelt)	2010-2011	Saddlers Ridge housing subdivision, Gillieston Heights	Monitoring of ground disturbance works	Subsurface testing and monitoring programs undertaken for Mirvac's Stage 1 to 3 and Stage 4 to 11 development areas. Archaeological works for Stage 1 to 3 area included monitoring, test pitting and limited open area excavation. Forty-two test pits (50 cm^2) excavated on slope adjacent to unnamed, spring-fed drainage line. Artefacts located in seven pits, with the highest numbers occurring in TP38 (n = 5) and TP39 (n = 17). TP38 and 39 were subsequently expanded resulting in the recovery of an additional 307 artefacts (10 from TP38 and 297 from TP39). Silcrete dominant	Umwelt (2010a, 2010b)

Consultant	Year	Project / Location	Assessment type	Summary of assessment & results	Reference(s)
				raw material, with silicified tuff and chert also represented. Artefact types included complete and broken flakes, retouched flakes, flaked pieces and cores. Subsurface testing program for Stage 4 to 11 involved the manual excavation of 98 50 cm^2 test pits across a range of landform units. Total of seven artefacts recovered, with the highest number coming from test pits in the simple slope landform unit. High levels of historic disturbance inferred from excavated soil profiles. Subsequent to the completion of the Stage 1 to 3 and Stage 4 to 11 investigations described above, in March 2009, a program of archaeological monitoring was undertaken within the Stage 4 to 11 investigation area under AHIP #3077. AHIP#3077 was issued to cover proposed impacts to AHIMS registered Aboriginal site 38-4-1044 (GillMirv 1) identified during the Stage 4 to 11 subsurface testing program. Total of four artefacts - two mudstone flakes, one broken mudstone flake and one broken quartz flake - recovered from monitoring area. Results deemed consistent with earlier subsurface investigations results (see above) and supportive of the hypothesis that the Stage 4 to 11 area was "subject to less activity by Aboriginal people that resulted in the discard of artefactual material than within the Stage 1 to 3 area".	
Eureka Heritage	2011	Darcy's Peak residential development, Gillieston Heights	Monitoring of ground disturbance works	Aboriginal archaeological monitoring program carried out for GH PAD 1 (AHIMS ID #38-4-1039) (see Mary Dallas Archaeological Consultants 2007, 2008 above) under AHIP#1097239. Monitoring completed alongside historical archaeological investigation owing to overlap between proposed historic excavation areas and registered PAD area. Thirty-four historic excavation squares - each measuring 20 x 20 m - inspected for Aboriginal archaeological materials. One half square (10 x 20) also inspected. Total of 279 flaked stone artefacts recovered from fourteen (41.2%) of the 34 full squares. Most (n = 9, 64.3%) artefact-bearing squares also contained historic (i.e., non-Aboriginal structural remains and/or artefacts) leading the excavators to suggest that "areas suitable for Aboriginal occupation and use, were also considered suitable for occupation and use by the colonists" (Eureka Heritage, 2011:17). Silcrete dominant raw material (n = 221, 79.2%) followed by silicified tuff (n = 51, 18.3%) and chert (n = 4, 2.5%). Formed objects limited to nine backed/retouched artefacts and eighteen cores. Cortex rare suggesting importation of largely to fully decorticated blanks. Mid-Holocene antiquity proposed on typological grounds. Technological and typological character of monitoring assemblage deemed consistent with that recovered by Mary Dallas Archaeological Consultants (2008).	Eureka Heritage (2011)

5.2.3 Synthesis

In common with other regions of the Hunter Valley, previous archaeological surveys and subsurface investigation programs in the greater Kurri Kurri area have identified surface and subsurface deposits of stone artefacts, variously referred to as open artefact sites, artefact scatters, isolated artefacts and open camp sites, as the most common form of evidence of past Aboriginal occupation. Other archaeological site types, including scarred trees and grinding groove sites, have also been identified but are comparatively rare.

Previously identified open artefact sites in the greater Kurri Kurri vary significantly in size and content and have identified in variety of a landform contexts. Although widely distributed, existing survey and excavation data indicate a strong trend for the presence of such sites near water sources, namely wetlands and creeks. At the same time, artefact distribution has been shown to vary significantly in relation to landform and the permanency of water sources, with the largest and most complex sites/deposits identified on elevated, low gradient landform elements adjacent to wetlands and higher order watercourses.

Dominant lithic raw materials for flaked stone artefact production in the area include silcrete and silicified tuff (also known as mudstone), both of which are available in locally occurring alluvial and colluvial gravel deposits. Other, less commonly exploited materials such as quartz, chert, quartzite and petrified wood are likewise available in these deposits. Local flaked stone assemblages have tended to be dominated by items of flake debitage (i.e., complete and broken flakes and flake shatter fragments), with formed objects (i.e., cores and retouched tools) and non-flake debitage items less common.

Previously recorded Aboriginal sites within the Project area consist exclusively of open artefact sites. AHIMS data obtained for the current assessment indicate a total 33 Aboriginal sites in or within 50 m of the Project area, all of which are listed on AHIMS as 'Valid' sites. However, a review of associated reports indicates that ten of these sites have, in fact, been destroyed under approved AHIPs. In keeping with broader local and regional trends, the results of previous archaeological surveys and subsurface investigations within the Project area are collectively suggestive of an occupational emphasis on elevated low gradient landforms overlooking Wentworth Swamp and its associated higher order creek systems.

5.3 Archaeological Predictions

Key archaeological predictions for the Aboriginal archaeological record of the Project are as follows:

- Material evidence of past Aboriginal activity within the Project area is likely to be restricted to flaked stone artefacts in surface and subsurface contexts. However, there remains reasonable potential for the presence of grinding groove sites, stone quarries and scarred trees;
- Most areas, irrespective of the presence or absence of associated surface evidence, will contain subsurface archaeological deposits, albeit of highly variable character and extent;
- Most, if not all, of the Aboriginal archaeological materials present within the Project area will be of mid-to-late Holocene antiquity;
- Should their presence within the Project area be confirmed, aeolian sand deposits retain the greatest potential for the preservation of older evidence of Aboriginal occupation;
- Grinding groove sites, if present, will occur in direct association with watercourses;
- Burial sites, if present, will occur in fluvial or aeolian sand deposits;
- The dominant raw material for flaked stone artefact production within the Project area will be silcrete, with silicified tuff the second most common material;
- Flaked stone assemblages will be dominated by flake debitage (*sensu* Andrefsky 2005), with formed objects (i.e., cores and retouched flakes) comparatively poorly represented;
- The majority of silcrete artefacts will exhibit evidence of thermal alteration;
- Knapping floors, if present, will exhibit evidence indicative of systematic backed artefact manufacture;
- Complete and/or fragmentary backed artefacts will dominate the retouched components of surface and excavated assemblages;
- Tool types of demonstrated temporal significance, if present, will be limited to edge-ground hatchet heads and backed artefacts;

- Surface and subsurface artefact distribution within the Project area will vary significantly in relation to landform, distance to water and stream order; and
- Elevated, low gradient landform elements adjacent to Wentworth Swamp and the Project area's higher order watercourses (e.g., Swamp Creek, Black Waterholes Creek) will contain larger and more complex flaked stone assemblages than landform elements in other contexts.

6.0 Ethnohistoric Context

6.1 Introduction

Information regarding the ways in which Aboriginal people likely used pre-contact landscapes is available to archaeologists through two primary sources: archaeological (i.e., survey and excavation) data and historical records. **Section 5.0** has summarised the Aboriginal archaeological context of the Project area on both a regional and local scale. This section builds on this foundation by summarising relevant ethnohistoric information for the Project area and environs. As in other parts of New South Wales and Australia more broadly, non-Aboriginal people occupying the Lower Hunter Valley began to document Aboriginal culture from first contact, with explorers, missionaries, settlers and the like recording their observations of Aboriginal people and/or their material culture in letters, journals and official reports. Many of these accounts are overtly Eurocentric in tone and the content and veracity of some is, at best, questionable. Nonetheless, taken together, they form an important source of information on Aboriginal lifeways at the time of British colonisation and can, in conjunction with available archaeological data, be used to generate working predictive models of prehistoric Aboriginal land use.

Key sources, both primary and secondary, for the post-contact languages and lifeways of the Aboriginal people occupying the Lower Hunter Valley at contact include: Backhouse (1843), Barrallier (1802), Brayshaw (1987), Caswell (1841), Capell (1970), Dawson (1830), Ebsworth (1826), Enright (1900, 1901, 1932, 1933, 1936, 1937), Elkin (1932), Fawcett (1898a, 1898b), Ford (2010), Gunson (1974) , Hale (1846), Fraser (1892), Haslam et al. (1984), Larmer (1898), Lissarrague (2006), Matthews(1898, 1903), Miller (1887), McKiernan (1911), Threlkeld (1827, 1834, 1836, 1850), Scott (1929) and Sokoloff (1980). Although a detailed review of these sources is beyond the scope of this report, information of particular relevance to the current assessment is summarised below.

6.2 Language Groups & Boundaries

As highlighted by Brayshaw (1987) and a number of other researchers (e.g., ERM, 2004; Kuskie 2012), reconstructing the social and territorial organisation of the Aboriginal groups occupying the Hunter Valley at contact is extremely difficult given the enormous social upheaval that preceded any formal investigations into their languages and lifeways. The sometimes contradictory nature of primary historical records has likewise complicated the situation as has the tendency of early observers to describe all named groups of Aboriginal people, regardless of size and/or composition, as ‘tribes’ (Brayshaw, 1987: 36).

According to Tindale’s (1974) oft-cited tribal map, the current Project area is located at the western extremity of Awabakal territory, very close to the Awabakal’s boundary with the Wonnarua (**Figure 20**). Tindale (1974 describes the territory of the Awabakal as an 1,800 km^2 area centred on Lake Macquarie, south of Newcastle, while that of the Wonnarua is described as a 5,200 km^2 area stretching from “a few miles” above Maitland west to the Dividing Range and south to the divide north of Wollombi. To the south and west of the Awabakal, Tindale (1974) places the Darkinjung, whose tribal territory is described as a 4,700 km^2 area extending south of watershed of Hunter River, from “well south” of Jerry's Plains, east toward Wollombi and Cessnock, south to Wisemans Ferry on the Hawkesbury River, and west to the divide east of Rylstone. To the north of the Awabakal were the Worimi who, according to Tindale (1974), occupied a 3,900 km^2 area extending from the Hunter River to Forster, near Cape Hawke, inland to near Gresford and south to Maitland. Finally, to the north on the Wonnarua, Tindale (1974) places the Geawegal tribe, who are described as occupying the northern tributaries of the Hunter River to Murrurundi and being present at Muswellbrook, Aberdeen, Scone and Mount Royal Range.

Although widely cited, it should be noted that Tindale’s boundaries for the Awabakal ‘tribe’ do not accord with those provided by the missionary Reverend Lancelot Threlkeld, who established an Aboriginal mission at Belmont on Lake Macquarie in 1826[9] (the ‘Bahtahbah’ mission) and is widely regarded as one of the pioneers of Aboriginal studies in New South Wales owing to his detailed recordings, with the assistance of influential Awabakal leader Biraban (aka John McGill), of the language and lifeways of the Awabakal people. Writing in 1828, for example, Threlkeld described the territory of the Awabakal as consisting of:

> The land bounded (to the South) by Reid’s Mistake the entrance to Lake Macquarie, (to the North) by Newcastle & Hunter’s River, (to the West) by five islands on the head of Lake Macquarie 10 miles

[9] Subsequently relocated to Toronto in 1831and named ‘Ebenezer’ mission

> west of our station. This boundary, about 14 miles N and S by 13 E and W, is considered as their own land (Threlkeld 1828 in Ford, 2010: 339) (**Figure 21**)

Tindale's (1974) and Threlkeld's (1828) contradictory accounts notwithstanding, it is clear from available historical records that the former's oft-cited and arguably simplistic division of the Awabakal and Wonnarua into two separate 'tribes' does not adequately capture what was at contact a complex system of social and territorial organisation involving numerous local descent groups (i.e., clans) and bands who, critically, spoke the same language. As Lissarrague (2006: 7) has recently observed, "the evidence from archival sources suggests that the language described by Threlkeld as 'The language of the Hunter River and Lake Macquarie' was spoken by people now known as Awabakal, Kuringgai and Wonnarua". Lissarrague (2006), for her part, has named this language the Hunter River and Lake Macquarie language (HRLM language) and notes that it may also have been spoken by Tindale's (1974) Geawegal 'tribe'.

Figure 20 Excerpt from Tindale's (1974) tribal map (from Kuskie, 2012: 38, Fig. 7, after Tindale, 1974)

Critical to current interpretations of the boundaries of the HRLM language are the observations of Reverend Threlkeld. Threlkeld's own account of the boundaries of this language, which comes from his 1838 report to the then NSW Legislative Council's Committee on the Aborigines Question, is reproduced below:

> The native languages throughout New South Wales, are, I feel persuaded, based upon the same origin; but I have found the dialects of various tribes differ from those which occupy the country around Lake Macquarie; that is to say, of those tribes occupying the limits bounded by North Head of Port Jackson, on the south, and Hunter's River on the north, and extending inland about sixty miles, all of which speak the same dialect.
>
> The native of Port Stephen's use a dialect a little different, but not so much so as to prevent our understanding one another' but at Patrick's Plains the difference is so great, that we cannot communicate with each other; there are blacks who speak both dialects (Threlkeld 1838 in Ford, 2010).

Threlkeld's (1825) earlier observation that "the natives here [i.e., at Lake Macquarie] are connected in a kind of circle extending to the Hawkesbury and Port Stephens" is also worthy of note here (Threlkeld, 1825 in Ford, 2010: 328).

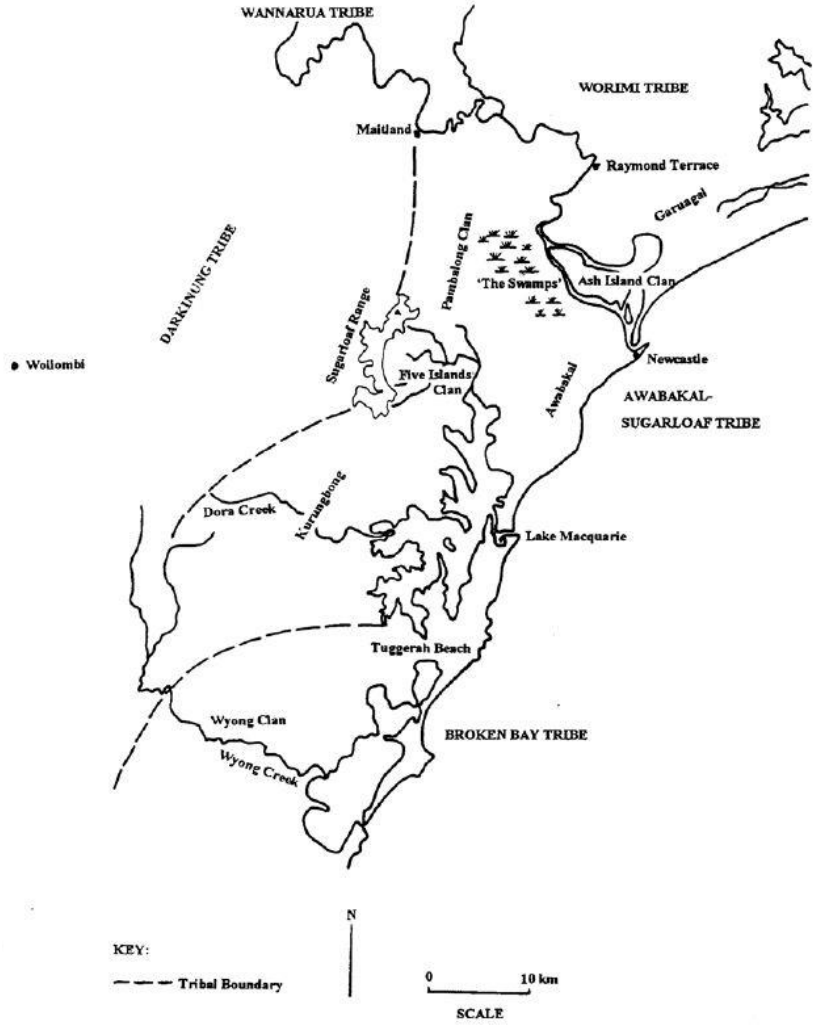

Figure 21 Gunson's (1974) tribal map for the lower Hunter Valley, based on the observations of Reverend Lancelot Threlkeld (from Kuskie, 2012: 39, Fig. 8, after Gunson, 1974).

Threlkeld's observations are clearly of particular relevance to the current assessment and provide strong *primary* evidence for the existence of a single shared language for Tindale's (1974) Awabakal and Wonnarua 'tribes'. At the same time, they suggest that this language differed from that spoken by the Worimi around Port Stephens, being the Kutthung or Kattang language described by Enright (1900, 1901), and those spoken by Aboriginal groups occupying the Mid and Upper Hunter Valley, namely Darkinjung and Kamilaroi (Brayshaw 1987; Ford, 2010). Although Threlkeld's proposed southern extent for the HRLM language does not accord with the observations of other early sources, principally R.H. Matthews, his suggestion of a single shared language for the Aboriginal groups occupying the catchments between the Hawkesbury River estuary of Broken Bay and the estuarine areas of the Lower Hunter River is well supported by available historical records and associated linguistic research (see, in particular, Capell, 1970; Ford, 2010)

Ford's (2010) recently completed historiographic analysis provides further insight into the social and territorial organisation of the Aboriginal groups occupying the Hunter Valley at contact and is also worthy of mention here. Based on his own detailed review of available historical records, Ford (2010) has convincingly argued that, contrary to popular beliefs, the actual 'tribal' and/or language name for the HRLM-speaking Aboriginal groups occupying the estuarine areas of the lower Hunter River at contact was *Wannungine* and not Awabakal, with the latter term coined, alongside 'Guringai' (now Kuringgai), by Scottish ex-school teacher and Maitland resident John Fraser in 1892 (Fraser, 1892). The term *Wannungine,* Ford (2010: 343) notes, was the term that celebrated surveyor and self-taught anthropologist R.H Matthews recorded as the language or tribal name for Aboriginal peoples occupying the coastline southward from the Hunter River estuary to 'Lane Cove', but not extending to the

north shore of Port Jackson, and east to the coastal range[10]. Matthews also identified the term *Wannerawa,* applying it to the southern part of the identified Wannungine area (i.e., around Broken Bay) (Ford, 2010: 344).

Thus, although correctly identified by Matthews, it is Ford's contention that it is Miller's (1887) misapplication of the term *Wannerawa*, *as* 'Wonnarua', to the Mid and Upper Hunter Valley, subsequently reinforced through the publications of disgraced journalist J.W. Fawcett (1898a, 1898b), that has resulted in the historical anomaly of the *Wannerawa* (Miller's (1887) 'Wonnarua') being placed in the Mid and Upper Hunter. Miller's (1887: 352) reference to the principal ornament of the Wonnarua being a "nautilus shell cut into an oval shape and suspended from the neck" is cited as further evidence that Miller should actually have meant his Wonnarua to be coastal people (Ford, 2010: 354). Contrary to Miller's (1887) and Fawcett's (1898a, 1898b) widely cited accounts, Ford's research suggests that, at the time of first European settlement, the mid Hunter was, in fact, occupied by Darkinjung-speaking peoples, whose territory encompassed the ranges bounded by the Hawkesbury River floodplain to the south and the Hunter River floodplain to the north and was bordered to the east/northeast by the coastal *Wannungine (*aka *Wannerawa*) (Ford, 2010: 10). Bordering the Darkinjung to the west/northwest, in the Upper Hunter, were Kamilaroi-speaking peoples, who Ford (2010: 467) suggests had penetrated over the Liverpool Range and were occupying the Hunter Valley as early as 1819.

6.3 Social Organisation

In common with other regions of New South Wales (e.g., Attenbrow, 2010) and Australia more broadly (Peterson, 1976), available historical records suggest that the primary units of social organisation amongst the Aboriginal language groups present in the lower Hunter at contact were the clan and band. Although these terms are often used interchangeably (e.g., Kohen, 1993), following Attenbrow (2010), a distinction can, in fact, be drawn between the two, with clans comprising local descent groups and bands, land-using groups who, though not necessarily all of the same clan[11], camped together and cooperated daily in hunting, fishing and gathering activities. Individual bands will have habitually occupied and exploited the resources of particular tracts of land within the overall territory of their clan. However, the territorial boundaries of each band will have been permeable or elastic in the sense of complex kinship ties facilitating inter-band territorial movements and the reciprocal use and/or exchange of resources (Brayshaw, 1987: 36).

The size of the individual bands occupying the lower Hunter at contact appears to have varied considerably and was no doubt activity and season dependent (Brayshaw, 1987). However, an upper limit of around 70 individuals, consisting of several families, is suggested by available historical records (see, in particular, Table B in Brayshaw, 1987). Individual band sizes notwithstanding, much larger groups of Aboriginal people, numbering in the hundreds, are known to have come together for events such as corroborees, ritual combats and feasts (e.g., Anon, 1877; Scott, 1929: 32; Threlkeld in Gunson, 1974: 55).

Fawcett (1898b) notes the existence of four exogamous clans amongst the Wonnarua, with different clan names for men and women:

> The Wonnah-ruah tribe, like most other tribes, was divided into four classes or clans, and the laws of consanguinity, which existed in this tribe, as other tribes, effectually barred a man's marriage with the women of his own class or clan and also with the class or clan of his mother. Every man in the Wonnah-ruah tribe was either an Ippye (Ipai), a Kumbo, a Murree (Murri), or a Kubbee (Kubbi); and every women an Ippatha (Ipatha), a Butha, a Matha or a Kubbeetha (Kubbitha) (Fawcett, 1898b: 180).

For the coastal Worimi, Elkin (1932) and Enright (1932) report the existence of four 'named local groups', two of which - the Garugal and Maiangal - were 'salt-water' groups and two - the Gamipingal and Buraigal - 'inland' groups. Although unspecified by either author, these groups were likely bands (*sensu* Attenbrow, 2010). Social organisation amongst the Worimi, Elkin (1932) notes, was based on exogamous patrilineal totemic clan membership, with at least twelve clans, known as *tambual*, recognised. Sex totemism was reportedly also practised, with *kulangulan*, the bat, comprising the men's totem and *dilmun*, the wood-pecker, the women's (Elkin, 1932: 361).

As with the Worimi, a total of four named local groups have been reported for the Awabakal (Gunson, 1974), each associated with a particular tract of land within the broader territory of the Awabakal 'tribe' (see **Figure 21**) and led by its own 'chief':

- The *Awabakal-Sugarloaf Tribe*, led by Biraban;

[10] From north to south: the Sugarloaf Range, the Watagan Rage and Peats Ridge.
[11] Some individuals may have been related through marriage.

- The *Pambalong Clan*, led by Gorman/Coleman;
- The *Ash Island Clan*, led by Wallungull; and
- The *Kurungbong*, led by King Ben.

6.4 Settlement & Subsistence

Available historical records attest to exploitation, for food and other resources (e.g., skins for clothing), of a large and diverse range of terrestrial, avian and aquatic fauna by Aboriginal peoples occupying the Lower Hunter Valley at contact. A broad economic division between 'coastal' and 'inland' groups is also evidenced, with the subsistence regimes of those living along the coast geared principally towards the exploitation of marine foods and those of inland groups based chiefly on the exploitation of land mammals (e.g., Ebsworth, 1826: 80).

Along the coast, the accounts of early observers such as Dawson (1830), Scott (1929) and Threlkeld (in Gunson, 1974) are suggestive of a diet based principally on fish and shellfish, with crustacea (i.e., crabs and crayfish) and marine mammals, namely whales and dolphins also consumed, the latter opportunistically (e.g., Threlkeld in Gunson, 1974: 55). Fish, a dietary staple, were caught in a variety of ways including angling (i.e., hook and line fishing), spearing, hand netting and trapping, and were cooked in fires, sometimes in canoes while still on the water (Threlkeld in Gunson, 1974: 190; Scott, 1929: 17-18). Angling was undertaken by women and spearing by men (Dawson, 1830: 314; Scott, 1929: 18; Threlkeld in Gunson, 1974: 54). Crayfish were obtained by diving amongst the rocks, an activity that was undertaken both sexes (cf. Scott, 1929: 19 & Threlkeld in Gunson, 1974: 55). Haslam et al. (1984: 22) report that shellfish were collected by women and children. However, Brayshaw (1987: 76) notes that there is no direct evidence as to who traditionally undertook this task.

The role of marine foods in the diets of Aboriginal groups occupying the lower Hunter at contact was complimented, or supplanted further inland, by a variety of freshwater animal foods, with kangaroos, wallabies, bandicoots, echidnas, possums, flying foxes, kangaroo-rats, koalas, dingos, lizards, goannas and snakes variously reported as having been hunted and/or eaten (see Brayshaw, 1987; Haslam et al., 1984 and Sokoloff, 1980 for primary references). Various species of freshwater and estuarine fish, eels and mussels were also consumed, as were turtles (e.g., Anon, 1877b; Cunningham, 1827: 151; Grant, 1803: 61). Possums appear to have been a favoured food, particularly in inland areas, with a number of early accounts detailing their method of capture and remarking on the tree climbing skills of the Aboriginal people involved (e.g., Dawson, 1830: 238; Scott, 1929: 21). Flying foxes, too, appear to have actively sought out by groups in both areas (e.g., Anon, 1877a; Scott, 1929: 23), though not by the Awabakal at Lake Macquarie who held the animal in high esteem (Threlkeld in Gunson, 1974: 206). Macropods were sometimes stalked and speared by individual huntsmen (Dawson, 1830: 216; Threlkeld in Gunson, 1974: 190). However, their capture was more commonly a communal exercise (Dawson, 1830: 182; Scott, 1929: 20; Threlkeld in Gunson, 1974: 191). Threlkeld (in Gunson, 1974: 206) and Fawcett (1898a: 153) report the burning off of particular tracts of land to promote new growth and attract kangaroos and wallabies.

References to the hunting and consumption of a variety of birds, including the emu, are also present in the writings of a number of early observers (e.g., Fawcett, 1898a; Scott, 1929: 23; Threlkeld in Gunson, 1974: 55, 65). Fawcett (1898a: 153) reports the use of nets to trap emus and use of returning boomerangs to bring down "ducks and other birds". Larvae, namely 'Cabra' or shipworm (Teredo navalis) and other tree dwelling grubs, appear to have been a popular foodstuff in both coastal and inland areas (Anon, 1877b; Scott, 1929: 21-22). Honey collected from the hives of native bees was both eaten directly and mixed with water to form a sweetened drink (Breton, 1833: 195; Dawson, 1830: 60; Scott, 1929: 34-35; Threlkeld in Gunson, 1974: 67, 124).

Compared with their faunal counterparts, the plant food resources of coastal and inland groups are poorly represented in the writings of early colonial observers. Nonetheless, available descriptions do suggest that plants formed a regular part of the diets of groups in both areas. Fern roots, likely those of the bracken fern (*Pteridium esculentum*) and various water ferns (*Blenchum spp.*), appear to have played an important role in the diets of those Aboriginal people occupying the estuarine reaches of the Hunter River (Barrallier, 1802: 81-82; Dawson, 1830: 92; Ebsworth, 1826: 71; Threlkeld in Gunson, 1974: 19). Other plant foods mentioned in the writings of early observers include yams, macrozamia seeds, various fruits and the stems of the water lily (Backhouse, 1843: 380; Caswell, 1841; Scott, 1929: 41; Threlkeld in Gunson, 1974: 74). Nectar obtained from the blossoms of the grass tree (Xanthorrhoea spp.) and flower spikes of the dwarf banksia was also consumed (Dawson, 1830: 244).

Regarding levels of residential mobility, available records suggest that this was generally quite high. Fawcett (1898a), for example, notes of the Wonnarua that: “they had no permanent settlements, but roamed about from place to place within their tribal district, in pursuit of game and fish, which was their chief sustenance, making use periodically of the same camping grounds, generation after generation, unless some special cause operated to induce them to abandon them”. Dawson’s (1830: 172) observation that “they [being the Aboriginal people of Port Stephens area] seldom…stay more than a few days at these places [their camps], frequently not more than one night” is similarly suggestive, as is the 1877 observation, by an anonymous long-term resident of Maitland, that the Aboriginal people with whom he was familiar in the Maitland area “appeared to lead a very restless kind of life, constantly on the move, shifting their camps from one place to another, seldom remaining more than three or four days in one camp” (Anon, 1877e). Along the coast, Sokoloff (1980: 8) has suggested seasonal differences in settlement duration, noting that “the relative abundance of marine sources of food in summer tended to make the natives more sedentary at this time”.

As for the selection of campsites, we limited are to Fawcett’s (1898a: 152) observation that “in choosing the site, proximity to freshwater was one essential, some food supply a second, while a vantage ground in case of attack from an enemy was a third important item”.

6.5 Material Culture

Aboriginal material culture is explicitly linked to the natural environment and resource availability. For the lower Hunter Valley, available historical records identify an extensive array of hunting and gathering ‘gear’ and provide detailed insight into associated materials and manufacturing processes. The form and construction of everyday domestic structures are likewise well documented. Brayshaw (1987), in particular, provides a useful synthesis of both forms of material culture and highlights regional variability in raw material acquisition and utilisation between coastal and inland groups.

Campsites and domestic structures are well-represented in the accounts of early observers and were often the subject of illustration (**Plate 1** and **Plate 2**). Huts, commonly referred to as "gunyers" or “gunyahs”, were of timber and bark construction. Fawcett (1898a: 152) describes the form and construction of huts as follows:

> A couple, or three, forked sticks, a few straight ones, and some sheets of bark, stripped from trees growing nearby, supplied the requisites for the construction of their home. The forked sticks were thrust into the ground and the straight ones placed horizontally in the forks. The sheets of bark were then set up against the horizontal poles in a slanting position, the bark of the structure being toward the windy point of the compass. The sides were frequently enclosed for further shelter, but the front was generally open. Before each one was a small fire, which was seldom allowed to go out, and which was used for warmth, or to cook by.

Similar hut forms and construction methods can be found in the accounts of several other early observers, for example, Scott (1929: 13), Dawson (1830: 171-72), Caswell (1841) and Threlkeld (in Gunson, 1974: 45).

Alongside its use in hut manufacture, tree bark also served as the primary construction medium for canoes, an integral component of the material culture repertoire of Aboriginal peoples occupying the lower Hunter Valley at contact. Available descriptions indicate that canoes were manufactured by bending, with the assistance of fire, a suitable sheet of bark into shape and securing the ends with bark cord or other ‘wild vines’ (Ebsworth, 1826: 82; Dawson, 1830: 79; Fawcett, 1898a; Mrs Ellen Bundock in Brayshaw, 1987: 60; Scott, 1929: 38-39; Threlkeld in Gunson, 1974;). Scott (1929: 39) reports that the gaps between the cord bindings at either end of the canoe were plugged with clay. Clay hearths were also added for warmth and cooking (Threlkeld in Gunson 1974; Scott, 1929: 39). At Lake Macquarie, leaking canoes were repaired by sewing patches of tea tree bark over damaged areas and sealing them with melted grass tree resin (Threlkeld in Gunson, 1974: 54).

Spears, which feature prominently in the literature, were an important component of men’s ‘gear’ and were used in hunting, fishing, combat and ceremony (Scott, 1929: 35; Threlkeld in Gunson, 1974: 67-68). Spears for all purposes, Brayshaw (1987: 65) notes, were of composite manufacture and alongside sea shells, iron tomahawks and pieces of bottle glass, were important trade items, with significant numbers traded inland for possum skin rugs and fur cord (Dawson, 1830: 135-136; Threlkeld in Gunson, 1974: 65). Various hard woods and grass tree stems served as primary spear shafts and were shaped using shell scrapers and pieces of glass (Dawson, 1830: 67, 135; Scott, 1929: 35; Threlkeld in Gunson, 1974: 67-68).

Plate 1 **Joseph Lycett's '*Aborigines resting by camp fire, near the mouth of the Hunter River*', *ca*.1820 (Source: National Library of Australia)**

Plate 2 **Augustus Earle's '*A Native Camp of Australian Savages near Port Stevens, New South Wales*', 1826 (Source: National Library of Australia)**

Threlkeld (in Gunson, 1974: 67) describes the manufacture and use of three different types of spears in the Lake Macquarie area, namely the fishing spear, the hunting spear and the battle spear. Primary shafts, in all three instances, comprised grass tree stems. However, differing types of points were added according to function. For the fishing spear, Threlkeld (in Gunson, 1974) describes the affixing of bone barbs onto three or four 'shorter spears' of fire-hardened wood, themselves fastened to the main spear shaft with bark thread and grass-tree gum, while the hunting spear is described as being equipped with a single hard wood point. The battle spear, Threlkeld (in Gunson, 1974: 67) reports, also had a single hard wood point but differed from its hunting counterpart in having "pieces of sharp quartz stuck along the hard wood joint on one side so as to resemble the teeth of a saw" (Threlkeld in Gunson, 1974: 66). The substitution of glass for quartz on battle spears is also known to have occurred. In common with the Lake Macquarie area, Scott (1929: 35) notes the use, around Port Stephens, of different types of spears for hunting, fishing and combat. Differing functions aside, spears of all varieties were launched using spearthrowers or woomeras, also of composite manufacture (Brayshaw, 1987: 66).

Hatchets, like spears, were an important component of men's 'gear' and were used for variety of tasks including bark and wood removal, animal butchery, cutting toeholds in trees to facilitate climbing and extracting game and honey from logs and trees (Anon, 1877a; Dawson, 1830: 202; Scott, 1929: 41; Threlkeld in Gunson, 1974: 67). Known as *mogo*, hatchets were composite implements consisting of an edge-ground stone hatchet head and withe or flat, hardwood handle, the former secured to the latter using grass tree resin and cord (Dawson, 1830: 202; Fawcett, 1898a: 153; Scott, 1929: 40). Hatchets, Scott (1929: 5) notes, were carried by men in belts worn around the waist. Post-contact, stone hatchets appear to have been rapidly replaced by iron substitutes (Brayshaw, 1987: 66; Dawson, 1830: 16).

Other notable items of men's gear described in the accounts of early observers include several types of hard wood clubs, two types of shield (one broad and one narrow) and returning and non-returning hard wood boomerangs (Anon, 1877b; Scott, 1929: 36-38; Threlkeld in Gunson, 1974: 41, 68). Threlkeld (in Gunson, 1974: 68) also describes the use of a "wooden sword" similar to a boomerang but with "a handle at one end with a bend contrary to the blade".

As for women's gear, Brayshaw (1987: 65) notes that, in addition to their daily use in gathering activities, digging sticks, also known as yamsticks, were status symbols that were sometimes used during altercations. These implements, up to 2m long and *c*.4cm in diameter, were manufactured out of hardwoods, were fire-hardened and typically not decorated (Brayshaw, 1987: 65). Cord used in the manufacture of fishing lines and nets was made by women using the bark of various trees (e.g., the Cabbage-tree (*Livistona australis*) and the Kurrajong (*Brachychiton populneus*) and is reported as having been extremely strong and durable (Ebsworth, 1826: 79; Dawson, 1830: 67; Scott, 1929: 17). Dilly-bags were used by women for carrying small items such as fish-hooks, prepared bark cord, lumps of grass tree resin and food (e.g., fish and shellfish) and were worn slung around the head and draped down the back (Ebsworth, 1826: 79-80).

Fish-hooks were reportedly manufactured out of oyster and pearl shell (Caswell, 1841; Dawson, 1830: 66, 308; Ebsworth, 1826: 79; Threlkeld in Gunson, 1974: 54). Threlkeld (in Gunson, 1974: 54) reports that a suitable shell was simply "ground down on a stone until it became the shape they wished". However, However, Dyall's (2004) analysis of excavated examples from the Birubi Point midden complex suggests a more complex, multi-stage production process. Pieces of fine sandstone, shale and quartzite were used for filing down the hooks (Sokoloff, 1980: 23).

Awls or 'needles' manufactured out of kangaroo bone were used in the repair of canoes and the sewing of skin cloaks (Fawcett, 1898a; Threlkeld in Gunson, 1974: 54). Items of clothing, where worn, included spun possum-fur belts, worn only by men, possum fur headbands and cloaks or rugs made from sewn kangaroo and possum skins (Dawson, 1830: 15-16; Scott, 1929: 5). Cloaks were worn by both men and women.

Alongside women's dilly bags, early accounts indicate the production and use of a variety of other containers, with tea tree bark a common construction material. Threlkeld (in Gunson, 1974: 67, 156), for example, refers to tea-tree bark 'cups' and wooden 'bowls' "formed from some large protuberance of a growing tree" while Dawson (1830: 250) refers to "small baskets" made from tea tree bark.

Although particularly well represented in the archaeological record of the lower Hunter Valley, references to the production and/or use of flaked stone artefacts are virtually absent from the historical record. Excluding hatchets, Threlkeld's (in Gunson, 1974: 67) reference to the use of "pieces of sharp quartz" for barbing battle spears remains the only known primary reference in this respect. Brayshaw (1987: 68), for her part, has proposed that effective absence of flaked stone artefacts from the historical record may be a product of the fact that such artefacts were not being used at the time of European settlement, having been replaced with other materials (e.g.

shell, glass, wood and bone)[12]. However, she also acknowledges that their use may simply have escaped the notice or interest of early observers.

6.6 Ceremony & Ritual

Evidence for ceremonial or ritual behaviour amongst the Aboriginal groups occupying the lower Hunter Valley at contact can be found in the accounts of a number early observers (e.g., Anon, 1877c; Dawson, 1830; Enright, 1936; Fawcett, 1898a, 1898b; Scott, 1929; Threlkeld in Gunson, 1974), with documented 'ceremonial' activities including corroborees, male initiation ceremonies, marriage, ritual combat and various burial, body adornment and modification practices. Although limited in number, references to spiritual beliefs of the Aboriginal groups occupying the region are also present and attest to regional variability in belief systems.

Male initiation ceremonies, in which boys were "initiated into the privileges of manhood" (Fawcett, 1898a: 153), are described by Enright (1936), Fawcett (1898a), Scott (1929) and Threlkeld (in Gunson, 1974). Amongst the Wonnarua, Fawcett (1898a: 152) notes that the male initiation ceremony was known as *Boorool*. Enright (1936: 86), writing on the Worimi people, refers to the ceremony as the *Keeparra* while Scott (1929: 29) cites the terms *poombit* and *bora* in his recollections, noting that the latter was a colloquial term for the former. Initiation grounds, referred to by Scott (1929: 29) as 'poombit grounds', were elaborately prepared and consisted of one or two[13] cleared circles in secluded areas of bushland. Images of animals and other designs were carved into surrounding trees and, in some cases, "figures of raised earth were created on the ground" (Brayshaw, 1987: 83). Threlkeld (in Gunson, 1974: 50-51, 63-65) describes attending, in November 1825, a ceremony "prepatrory to removing the front tooth of several young men who would then be capable of marrying a wife". The site of this ceremony, Threlkeld (in Gunson, 1974) reports, was known as the "Mystic Ring, or Porrobung" and consisted of a circle "thirty-eight feet in diameter" with a small hillock at is centre. Trees near the ring were marked with "representations of locusts, serpents &c on the bark chopped with an axe".

As for the ceremonies themselves, Enright (1936: 87) reports that the *Keeparra*, in which "candidates learnt all those laws which governed his future life", lasted approximately one month but was "only a prelude to a long system of instruction which lasted some five years". Fawcett (1898a: 154), meanwhile, describes a ceremony involving tests of skill and endurance, the teaching of tribal laws, "emblematical dances" and the restricted involvement of women. Scott (1929: 28-34), too, describes the restricted involvement of women and dancing in the poombit or bora ceremonies of the Port Stephens area. Alongside their other important roles, medicine men or native doctors, known as *Karaji* (also spelt *Karadjys*), appear to have played an active role in initiation ceremonies and, together with group elders, were responsible for overseeing initiates' observance of instructed laws (Enright, 1936; Fawcett, 1898a).

Alongside its use in the initiation ceremonies described above, body painting with animal fat and/or ochre was undertaken as part of corroborees and for the purposes of ritual combat. For men, tooth avulsion, body scarification and septum piercing appear to have been undertaken in ceremonies subsequent to that associated with initiation (Fawcett, 1898b; Scott, 1929). Regarding items of personal adornment, Miller (1887: 3543) notes that the "principal ornament" of the Wonnarua was a "nautilus shell cut into an oval shape and suspended from the neck" while Fawcett (1898a: 153), also writing on the Wonnarua, reports that "the girls often adorned themselves with flowers, bone or reed ornaments, and shell necklaces". References to the dressing of men's hair in a conical form with tufts of grass attached are present in Dawson (1830) and Anon (1877c).

Available historical records suggest that burial in the earth was the most common form of burial practised by Aboriginal groups occupying the Lower Hunter Valley at contact, with tea tree bark widely used as a burial shroud (Fawcett, 1898b: 180; McKiernan, 1911: 889; Miller, 1877: 354; Scott, 1929: 3; Threlkeld in Gunson, 1974: 47, 89, 100). Grave goods consisted of items of personal gear such as spear and hatchets (McKiernan, 1911: 889; Threlkeld in Gunson, 1974: 47, 89, 100). Cremation is also known to have been practiced but is poorly represented in the historical record (Threlkeld in Gunson, 1974: 99).

Regarding inter-group conflict, Haslam et al. (1981) have noted of the Hunter Valley as a whole that, although skirmishes were common, major clashes were infrequent. Ritual combat appears to have linked principally to unsanctioned territorial incursions and the abduction of women (Fawcett, 1898b).

[12] Historic references (e.g., Dawson 1830: 67, 135; Scott 1929: 35) to the use of shell scrapers and/or fragments of bottle glass for the shaping/sharpening of wooden spears provide some support for this suggestion.
[13] Where two circles were used, these were separated by a distance of up to 400 m.

Gunson (1974) notes a distinct difference between the spiritual beliefs of the Aboriginal groups occupying the inland and coastal portions of the Hunter Valley at contact. In contrast to the Awabakal of Lake Macquarie[14], for example, whose supreme spiritual entity was known as *Koun* (pronounced cone), the inland Wonnarua and Kamilaroi are understood to have venerated the prominent sky cult hero *Biame*. Threlkeld (1834 in Keary 2009) reports that Koun was known by three names - *Ko-in*, *Tip-pa-kál*, and *Pór-ráng* - and describes him as follows:

> in appearance like a black; he resides in the thick brushes or jungles; he appears occasionally by day, but mostly at night. In general he precedes the coming of the natives from distant parts, when they assemble to celebrate certain mysteries, as knocking out the tooth in the mystic rite, or when performing some dance. He appears painted with pipe clay, and carries a fire-stick in his hand; but, generally, it is the doctors, a kind of Magicians, who alone perceive him, and to whom he says, 'Fear not, come and talk.' At other times he comes when the blacks are asleep, takes them up as an eagle does his prey, and carries them away. The shout of the surrounding party often occasion him to drop his burthen; otherwise, he conveys them to his fireplace in the bush, where close to the fire he carefully deposits his load. The person carried tries to cry out, but cannot feeling almost choked: at daylight, Ko-in disappears, and the black finds himself conveyed safely to his own fire-side!

Available historical accounts indicate that that eagle-hawk (sea eagle) was a totem of particular importance to the Awabakal owing to its strong relationship with Koun, who resembled an eagle-hawk when in flight (Gunson, 1974: 3; Keary, 2009). Circular stone structures observed by Threlkeld on the Sugarloaf Range to the west of Lake Macquarie were explained by Threlkeld's primary informant Biraban as having been placed and assembled by eaglehawks (Keary, 2009).

Another important spiritual entity for the coastal Awabakal was *Puttikan*, a feared supernatural spirit who inhabited the Sugarloaf Range. Threlkeld (in Gunson, 1974: 61) describes *Puttikan* as follows:

> resembling a man but taller in stature; with arms, legs, face, and hair, very long on the head, but the feet are placed contrarily to the face being behind; and the body hairy, like an animal. The flesh is so hard in all parts of the body that it is imprenentrable [sic], except just between the legs, where a spear may penetrate, but at no other part. He is fierce, devouring men, and often pursuing the Aborigines in the mountains.

6.7 Post Contact History

As in other parts of NSW and Australia more generally, the post-contact history of the Aboriginal people of the lower Hunter is primarily one of dispossession and loss, with traditional hunting and camping grounds rapidly claimed and settled by Europeans and populations decimated by introduced diseases. However, active resistance and friendly relations are also attested in available records.

As highlighted by Brayshaw (1987), the introduction of European diseases had a devastating impact on the Aboriginal population of the Hunter Valley, with diseases such as smallpox, typhoid, influenza, scarlet fever, measles, diphtheria, whooping cough and croup causing or contributing to the deaths of large numbers of Aboriginal people. Major small pox epidemics between April and May 1789 and from 1829 to 1831 are known to have had a particularly deleterious impact on the valley's Aboriginal population (Butlin, 1983).

The loss of traditional hunting grounds and a decline in the abundance of game that populated these areas have also been identified as factors relevant to the marked population decline that accompanied European settlement of the Hunter Valley, as has the sexual violence perpetrated by non-Aboriginal men against Aboriginal women (Turner & Blyton, 1995). The destruction, over time, of the complex systems of social and territorial organisation that existed prior to contact has likewise been attributed to such factors, as has the collapse of traditional settlement and subsistence regimes.

Today, modern Awabakal, Wonnarua and Worimi people retain strong cultural connections to the Lower Hunter Valley and are actively involved in the protection and promotion of their culture for future generations.

[14] Dawson's (1830: 153, 158, 163 219, 220, 322) multiple references to an "evil spirit of woods" known as "Coen" suggest that the Worimi of the Port Stephens area, like the Awabakal, venerated *Koun* as opposed to *Biame.*

7.0 Archaeological Survey

7.1 Aims & Objectives

The overarching aim of the archaeological survey undertaken for this assessment was to identify and record any existing surface evidence of past Aboriginal occupation within the Project area. Nested-objectives were as follows:

- To relocate and reassess all extant AHIMS registered sites within the Project area;
- To sample - via pedestrian survey - all landform types within the Project area;
- To identify areas that, irrespective of the presence or absence of surface artefacts, are likely to contain subsurface archaeological deposit; and
- To provide sufficient data to facilitate the development of appropriate management recommendations for the known and potential Aboriginal archaeological resource of the Project area.

7.2 Methodology

In developing an appropriate survey methodology for the current assessment, three key factors were taken into consideration:

- Near-universally poor Ground Surface Visibility (GSV) conditions across the Project area, with areas of higher GSV largely restricted to cleared powerline easements, vehicle tracks and fire trails in the western half of the Project area;
- Very poor survey conditions in areas of regenerating native vegetation across the Project area, with dense undergrowth impeding pedestrian survey and posing a significant OH&S risk; and
- The demonstrably large size of the Project area at *c.*1,964 ha, precluding a full coverage survey;

In view of the above, it was decided that a targeted survey focusing on identified areas of higher GSV in the western half of the Project area should be undertaken. In accordance with Sections 4.3.1 and 4.3.2 of the Consultation Requirements, this was conveyed to all RAPs in the draft assessment methodology document. No objections were raised in relation to AECOM's proposed survey methodology.

Archaeological survey of Project area was undertaken over an eight day period between 23 June 2014 and 2 July 2014 by a combined field team of two AECOM archaeologists and up to six rostered RAP field representatives per day (for a list of RAP field representatives refer to **Table 4** in **Section 3.3.2**). In accordance with the draft survey methodology, the survey focussed on higher areas of GSV within the western half of the Project area. However, several transects were also completed in the eastern half of the site. In the northeastern and north central portions of the Project area, particular attention was paid to areas of higher GSV along the margins of Wentworth Swamp, namely cattle tread exposures and areas of exposed ground associated with wave erosion.

All survey was conducted on foot[15], with a total of 51 transects completed over the course of the survey. The location of each transect completed during survey, including start and end points, was recorded using one of two handheld differential GPS units, with associated transect data (e.g., levels of visibility and exposure) entered directly into the same unit upon the completion of each transect.

All Aboriginal archaeological materials identified during survey were recorded to a standard comparable to that required by the Code of Practice (Requirement 7), with individual artefact locations captured by differential GPS. As with that recorded for individual survey transects, attribute data for all identified Aboriginal artefacts within the Project area were entered directly into a GPS unit using AECOM's standard digital open site recording form.

7.2.1 Site Definition

The definition, in spatial terms, of Aboriginal archaeological sites is a topic of considerable importance to modern cultural heritage management and one that has generated significant discussion in Australian archaeology (e.g., Doleman 2008; Holdaway, 1993; Holdaway et al. 1998, 2000; MacDonald & Davidson 1998; McNiven 1992; Robins 1997; Shiner 2008). Aboriginal archaeological sites can be broadly defined as places in the landscape that retain physical evidence of past Aboriginal activity. Such evidence, of course, can assume a range of forms, depending on the nature of the activity or activities that produced it, and can vary dramatically in quantity and

[15] Although proposed in the draft assessment methodology, no vehicle transects were undertaken during survey.

extent. Some Aboriginal archaeological sites are, by their very nature, easy to define in spatial terms. Scarred trees and rockshelters, for example, can be readily delineated from their surrounding landscapes. Difficulties arise, however, for sites whose present-day physical extent is, more often than not, a product of geomorphic processes, as opposed to the actions of Aboriginal people in the past.

Although relevant to a variety of site types, geomorphic processes such as soil erosion and deposition, are of particular relevance to identification and definition of surface scatters of stone artefacts, commonly referred to as 'open camp sites' or 'artefact scatters'. It is, for example, now widely accepted that the visibility and preservation of such sites are, to a significant extent, products of such processes, both contemporary and historic (Dean-Jones & Mitchell 1993; Fanning et al. 2008, 2009; Shiner 2008). As demonstrated by countless large-scale excavations projects in south-eastern Australia, including the lower Hunter Valley, surface artefacts almost invariably represent only a fraction of the total number of artefacts present within these sites, with the majority occurring in subsurface contexts. Artefact exposure, unsurprisingly, is highest on erosional surfaces and lowest on depositional ones. At the same time, in many areas, surface artefacts have been shown to form part of more-or-less continuous subsurface distributions of artefacts, albeit with highly variable artefact densities linked to environmental variables such as stream order and landform.

Such evidence poses a significant analytical and interpretive dilemma. Defining sites on the basis of surface artefacts alone is clearly problematic, with modern site boundaries invariably reflecting the size and distribution of surface exposures as opposed to the actions of Aboriginal people in the past. Nonetheless, for pragmatic reasons, this is the most commonly used approach, with 'distance' and 'density-based' definitions dominating. In NSW, two of the most commonly employed distance-definitions are '*two artefacts within 50m of each other*' and '*two artefacts within 100 m of each other*'. Neither definition is derived from a particular theoretical approach or body of empirical research - they are simply pragmatic devices for site definition. Definitions based on artefact density also vary in their particulars. However, one of most commonly used definitions is that which isolates, within an arbitrarily defined 'background scatter' of one artefact per 100 m², higher density clusters that are subsequently defined as 'sites'.

Non-site or distributional archaeology offers an alternative approach to distance and density-based site definitions (Ebert 1992; Foley 1981), with individual artefacts, not sites, treated as the basic units of analysis (for published Australian examples see Doelman 2008; Holdaway et al. 2000; McNiven 1992; Robins 1997; Shiner 2008). While recognising the interpretive potential of non-site approaches with respect to data analysis and discussion, their implementation in the context of cultural heritage management studies is difficult. Here, the identification of 'sites' is required for reasons of recording (i.e., their entry into site databases such as AHIMS) as well as ease of relocation, protection, and ongoing management. The identification of spatially-discrete 'sites', therefore, offers the most pragmatic approach to Aboriginal heritage management in impact assessment contexts (but see McDonald (1996) for a different view).

Site definition for the current assessment has been based on the 50 m distance convention cited above. Subsurface archaeological potential, meanwhile, is addressed by the concept of 'archaeological sensitivity', with three levels of sensitivity recognised: nil, low and high (**Table 14**). Akin to the concept of Potential Archaeological Deposit (PAD), archaeologically sensitive areas can be broadly defined as those that retain potential for subsurface archaeological deposit. For the current investigation, levels of archaeologically sensitivity across the Project area have been assessed on the basis of observed archaeology (i.e., its distribution and character), the results of previous Aboriginal heritage investigations within and surrounding the Project are, levels of past land disturbance and the predicted complexity of deposits within each category.

Table 14 Archaeological sensitivity rating scheme

Rating	Definition
Nil	Land with no potential for subsurface archaeological deposit(s) due to past ground disturbance(s).
Low	Subsurface archaeological deposit(s) may be present. Relative to areas of high sensitivity, lower artefact counts, densities and assemblage richness values expected. Integrity of deposit(s) will be dependent on the nature of localised land disturbances.
High	Subsurface archaeological deposit(s) likely to be present. Relative to areas of low sensitivity, higher artefact counts, densities and assemblage richness values expected. Integrity of deposit(s) will be dependent on the nature of localised land disturbances.

7.2.2 Stone Artefact Recording

Stone artefact recording for the current survey involved the recording of a maximum of 13 attributes for individual stone artefacts, with the number of attributes recorded per specimen differing by type. Attributes employed in the current assessment are defined in **Table 15** below. Type definitions can be found in Hiscock (1986) and Holdaway and Stern (2004).

Table 15 Stone artefact attributes

Attribute	Definition	Recorded for
Type	Primary artefact type: flake, flake shatter (*sensu* Andrefsky (2005), flaked piece, core, retouched flake, heat shatter, hammerstone, edge-ground hatchet head and grindstone	All artefacts
Raw material	Lithic raw material on which the artefact was made (e.g., silcrete, silicified tuff, chert, quartz, FGS)	All artefacts
Maximum linear dimension (MLD)	Maximum linear dimension of artefact in millimetres.	All artefacts
Cortex	Presence/absence of cortex	All artefacts
Flake type	Flake sub-type: complete flake, proximal flake and split flake.	All flakes
Tool type	Formal implement type, as defined by Holdaway and Stern (2004).	All retouched flakes and edge-ground implements
Flake length (mm)	Distance between the point of percussion and the furthest distal point of the flake (i.e., length to the most distal point) (after Holdaway and Stern 2004: 138).	All complete flakes
Flake width (mm)	Longest line that can be drawn at right angles to the length dimension (i.e., maximum width) (after Holdaway and Stern 2004: 139).	All complete flakes
Flake thickness (mm)	Maximum distance from dorsal to ventral face (i.e., maximum thickness) (after Holdaway and Stern 2004: 140).	All complete flakes
Platform surface	Nature of the platform surface on complete and proximal flakes: single scar, multiple scar, faceted, cortical, punctiform and crushed/collapsed.	All complete and proximal flakes
Dorsal cortex	Amount of cortex on dorsal surface of flake: none, 1-50%, 51-99% and 100%.	All complete flakes
Core type	Core type: unidirectional, multidirectional, bidirectional, bifacial, bipolar and tranchet.	All complete cores
Core blank	Stone package on which the core was made: cobble/pebble, flake, heat shatter fragment and indeterminate.	All complete cores
Cortex (core)	Amount of cortex remaining on core at discard: none, 1-50%, 51-99% and 100%.	All complete cores
Longest flake scar	Length of longest complete flake scar preserved on core.	All complete cores
Number of striking platforms	Number of striking platforms preserved on core at discard	All complete cores
Number of removals	Number of complete and partial flake scars (>15 mm) preserved on core.	All complete cores
Core length (mm)	Maximum linear dimension of core.	All complete cores
Core width (mm)	Width at mid-point of maximum dimension	All complete cores
Core thickness (mm)	Thickness at mid-point of maximum dimension	All complete cores
Tool state	Complete or broken	All tools
Tool length (mm)	Maximum linear dimension of tool.	All complete tools
Tool width (mm)	Width at mid-point of maximum dimension	All complete tools
Tool thickness (mm)	Thickness at mid-point of maximum dimension	All complete tools

7.3 Results

7.3.1 Survey Coverage and Effective Coverage

As indicated in **Section 7.2** and shown on **Figure 22**, a total of 51 pedestrian transects were completed over the course of the survey. Recorded transect data indicate that a total survey coverage of approximately 141.7 ha was achieved. Excluding those portions of transects falling outside of the Project area provides a revised *total survey coverage* of 137.5 ha, representing around 7**%** of the Project area. A breakdown of survey coverage by landform is provided in **Table 16**.

Effective coverage is an estimate of the area in which archaeological materials are 'detectable'. Calculation of the *total effective coverage* obtained for the current survey indicates that approximately 20.7 ha of land within the Project area was effectively surveyed for Aboriginal archaeological materials. This equates to around 1.1% of the total Project area and 14.6% of the total area surveyed (141.7 ha).

Tabulated estimates of the effective coverage achieved for each of the 51 pedestrian transects completed during survey are provided in **Table H1** in **Appendix H**. Unsurprisingly, levels of effective coverage for transects undertaken in areas of regenerating native bushland to the west, south and northwest of the existing Hydro smelter were, in general, significantly higher than those of transects in the eastern and north-central portions of the site, a product of typically good GSV conditions along the former and typically poor GSV conditions along the latter. As was expected prior to the entering the field, levels of GSV along the cleared vehicle track and fire trails that criss-cross the areas of regenerating native bushland to the west, south and northwest of the existing Hydro smelter were typically very high (**Plate 3** & **Plate 4**). However, exceptions did occur (**Plate 5**). In the eastern and north-central portions of the site, levels of GSV along transects were typically very poor owing to managed native and exotic grass cover (**Plate 6** & **Plate 7**). Nonetheless, areas of higher visibility were also encountered in the form of exposures associated with fluvial erosion (sheet, gully and wave), stock movement and the construction of features such as contour banks, dams and vehicle tracks (**Plate 8**, **Plate 9** & **Plate 10**). Along the margins of Wentworth Swamp, areas of very good to excellent GSV were restricted to cattle tread and fluvial erosion exposures (see **Plate 8** & **Plate 9**).

Consideration of levels of effective survey coverage by landform (**Table 16**) shows that effective coverage was highest within the simple slope landform unit (13.3 ha), with the remaining landform units characterised by significantly lower values. Landform-based cultural lithic counts are consistent with these data in so far as the simple slope unit containing the largest number of surface artefacts. However, given comparable effective coverage totals, the difference in artefact counts between the elevated flat and spur crest units is noteworthy. No cultural lithics were identified within the creek terrace, crest, disturbed, residual rise and swamp landform units.

Table 16 Survey coverage by landform

Landform unit	Area (ha)	%
Creek terrace	1.2	0.9
Crest/Ridge	5.1	3.7
Depression	9.6	7.1
Disturbed	2	1.5
Elevated flat	14.6	10.7
Flood-prone flat	8	5.9
Residual rise	1	0.7
Simple slope	80	59
Spur crest	9.2	6.7
Swamp	5.2	3.8
Total	**135.7**	**100**

Wentworth Swamp
Gillieston Heights
Cessnock Road
Cartwright Street
Wallis Creek
Tysers Hollow
Cliftleigh
Cessnock Road
Swamp Creek
Black Waterholes Creek
HUNTER EXPRESSWAY
Sawyers Gully Road
Frame Drive
Metcalfe Lane
Dickson Road
Bishops Bridge Road
Hart Road
Horton Road
Scales Road
Loxford
HUNTER EXPRESSWAY
Heddon Greta

KEY

- Project area
- Road
- Railway
- Survey transects
- Watercourse

0 1 2km

G:\ENVGIS\Projects\60306\60312210 Hydro Aboriginal\FIGURES\60312210 F22 Survey Transects 28 08 2014 TO

AECOM

SURVEY TRANSECTS

Aboriginal Cultural Heritage Assessment
Hydro Aluminium Smelter Site & Associated Buffer Land
Kurri Kurri, New South Wales

FIGURE 22

Plate 3 **View along part of Transect #16. Note excellent GSV on track.**

Plate 4 **View along part of Transect #14. Note excellent GSV on track.**

Plate 5 **View along part of Transect #6. Note very poor GSV on track, now closed to traffic.**

Plate 6 **View across part of Transect #48. Note very poor GSV conditions owing to native/exotic grass cover.**

Plate 7 **View across part of Transect #47, Swamp Creek floodplain. Note very poor GSV conditions.**

Plate 8 **View across large, artefact-bearing cattle tread exposure on margin of Wentworth Swamp, Transect #43.**

Plate 9 **Artefact-bearing erosion exposure bordering dammed section of Black Waterholes Creek, Transect #24.**

Plate 10 **View across artefact-bearing exposure associated with adjacent contour bank, Transect #50.**

Table 17 Effective coverage by landform with surface artefact counts

Landform unit	Effective coverage (ha)	% of total effective coverage	Number of surface artefacts[16]	% of total artefacts
Creek terrace	0.1	0.4	0	-
Crest	0.6	2.9	0	-
Drainage depression	1.3	6.5	18	3.8
Disturbed	0.3	1.5	0	-
Elevated flat	2	9.5	19	4
Flood-prone flat	1	4.9	11	2.3
Residual rise	0.1	0.4	0	-
Simple slope	13.3	64.2	326	68.6
Spur crest	1.6	7.6	101	21.3
Swamp	0.4	2.1	0	-
Total	**20.7**	**100**	**475**	**100**

7.3.2 Cultural Lithics and Identified Sites

A total of 482 individual cultural lithic items were identified during the current survey, 475 or 98.5% of which are located within the Project area. Employing a 50 m distance convention for site definition, consideration of the location of these items against the mapped and/or described boundaries of valid AHIMS registered sites provides a total of 65 new Aboriginal archaeological sites and 20 pre-existing sites within the Project area (85 sites in total). Newly and previously recorded sites (n = 4) located outside of the Project area are not addressed in this report.

Newly identified surface sites within the Project area include 31 artefact scatters and 34 isolated artefacts while pre-existing sites consist of 11 artefact scatters and nine isolated artefacts. Newly recorded sites account for 85.7% (n= 407) of the identified surface assemblage within the Project area (n = 475) while pre-existing sites account for the remaining 14.3% (n= 68). Summary data on newly and previously identified open artefact sites within the Project area are provided in **Table 18** below. Site locations are shown on **Figure 23**.

AHIMS site cards for all previously identified open artefact sites within the Project area, which contain detailed site descriptions, are attached as **Appendix I**.

7.3.2.1 Open Artefact Sites

As indicated above, a total of 85 open artefact sites (i.e., artefact scatters and isolated finds) have been identified within the Project area, 65 (23.5%) of which are new sites and will be registered on AHIMS.

Of the 20 previously recorded open artefact sites within the Project area, nine were located during the current survey. Notable reductions in the number of artefacts identified within previously recorded artefact scatters KK04 (45-3-3387) and Northern Swamp Tributaries 4 (NST4) (37-6-1650) can be attributed to the off-track movement, in July 2009, of artefacts under AHIP#1103798 (AMBS, 2009a: 105). As indicated in **Table 18**, additional artefacts were located at two previously recorded sites: Northern Swamp Tributaries 2 (NST2) (37-6-1652) and KR02 (37-6-2005). The latter is registered on AHIMS as an isolated artefact. However, it can now be confirmed as an artefact scatter.

Artefact scatters (n = 42) and isolated artefacts (n = 43) are essentially equally represented within the Project area, accounting for 49.4% and 50.5% of the total respectively. Maximum artefact counts for scatter sites range from two to 103, with a mean count of 13.7 (Stdev = 21.6). The majority (n = 27, 64.3%) of scatters contain less than ten artefacts. Scatters containing more than 50 artefacts, conversely, are rare, with only three examples

[16] Note that this total relates only to those artefacts identified within the Project area

present (Hydro-AS02-14; NST4 and KK04). Mean artefact densities, calculated for those sites with known areas (n = 38) using maximum artefact count values, range from 0.001 to 0.039 artefacts per m², with an *overall* mean density of 0.009 artefacts per m².

Excluding those sites with unknown areas (n = 4), open artefact sites within the Project area occupy a total surface area of approximately 133,765 m², representing around 0.7% of the total Project area. Scatter areas range from one to 38,441 m² (mean = 1,651 m²; Stdev = 5,210.4 m²). All isolated finds have been assigned a nominal site area of 1m².

Previously and newly identified open artefact sites within the Project area occur exclusively in contexts consistent with their exposure from subsurface contexts (e.g., fluvial erosion exposures) and, as such, are best conceived of as opportunistic surface manifestations of former subsurface deposits. In common with other parts of the Hunter Valley, a more-or-less continuous subsurface distribution of artefacts across the non-swampy and non-grossly disturbed parts of the Project area is inferred from the results of the current survey and previous archaeological investigations on a local and regional scale, albeit one with highly variable densities linked to key environmental factors such as landform, distance to water, water permanency and slope. Recorded artefacts, importantly, likely represent only a fraction of the total stone artefact resource present within the Project area, with most artefacts occurring in subsurface contexts.

Further discussion on the composition of the combined cultural lithic assemblage (n = 482) recorded during survey is provided in **Section 7.3.3** below.

Table 18 Previously and newly recorded open artefact sites within the Project area: summary information

Site name	Type	AHIMS ID	Centroid Coordinates (MGA Zone 56)		Site area (m²)	No. Cultural lithics	Density (mean, m²)	Environmental Context			
			Easting	Northing				Landform unit(s)	Surface geology	Distance to Water (m)	Slope class(es)
Hydro-AS01-14	Artefact scatter	TBA	357780	6374463	5,085	16	0.003	3; 5; 8	1	20	1; 2; 3; 4
Hydro-AS02-14	Artefact scatter	TBA	359766	6374324	11,015	89	0.008	8	1; 2	<5	1; 2; 3
Hydro-AS03-14	Artefact scatter	TBA	360138	6373383	520	15	0.029	8	2	<5	2; 3; 4
Hydro-AS04-14	Artefact scatter	TBA	360085	6373261	857	11	0.013	8	2	<5	2; 3; 4
Hydro-AS05-14	Artefact scatter	TBA	360256	6373012	315	3	0.010	8	1	<5	1; 2; 3; 4
Hydro-AS06-14	Artefact scatter	TBA	359994	6373142	164	2	0.012	8	2	<5	2; 3; 4
Hydro-AS07-14	Artefact scatter	TBA	359003	6372353	772	30	0.039	8; 10	2	<5	2; 3; 4
Hydro-AS08-14	Artefact scatter	TBA	358265	6372585	1,953	5	0.003	8; 10	2	<5	1; 2; 3; 4
Hydro-AS09-14	Artefact scatter	TBA	358412	6372339	483	2	0.004	5; 8	2	125	1; 2; 3
Hydro-AS10-14	Artefact scatter	TBA	358096	6372326	985	4	0.004	8; 10	2	<5	1; 2; 3;4
Hydro-AS11-14	Artefact scatter	TBA	357628	6372468	458	3	0.007	8	1	30	1; 2; 3
Hydro-AS12-14	Artefact scatter	TBA	357175	6372186	4,094	42	0.010	3; 9	1	20	1; 2; 3
Hydro-AS13-14	Artefact scatter	TBA	357378	6372130	209	7	0.034	8; 9	1	30	1; 2; 3; 5
Hydro-AS14-14	Artefact scatter	TBA	357432	6372247	2,045	13	0.006	8; 9	1	100	1; 2; 3
Hydro-AS15-14	Artefact scatter	TBA	357565	6372127	194	5	0.026	8	1	50	3; 4
Hydro-AS16-14	Artefact scatter	TBA	357531	6372061	338	3	0.009	8	1	45	2; 3
Hydro-AS17-14	Artefact scatter	TBA	357897	6372119	2,405	14	0.006	8	2	50	1; 2; 3
Hydro-AS18-14	Artefact scatter	TBA	358062	6372025	327	6	0.018	8; 9	2	65	2; 3
Hydro-AS19-14	Artefact scatter	TBA	357827	6371996	277	4	0.014	8	2	95	3; 4
Hydro-AS20-14	Artefact scatter	TBA	358459	6371828	847	5	0.006	5	1	250	1; 2; 3
Hydro-AS21-14	Artefact scatter	TBA	357637	6371864	308	2	0.006	5; 8	1	55	3; 4
Hydro-AS22-14	Artefact scatter	TBA	357458	6371685	1,553	13	0.008	8	1	70	1; 2; 3; 4

Site name	Type	AHIMS ID	Centroid Coordinates (MGA Zone 56)		Site area (m²)	No. Cultural lithics	Density (mean, m²)	Environmental Context			
			Easting	Northing				Landform unit(s)	Surface geology	Distance to Water (m)	Slope class(es)
Hydro-AS23-14	Artefact scatter	TBA	358476	6371563	320	4	0.012	5; 8	1	210	1; 2; 3
Hydro-AS24-14	Artefact scatter	TBA	355859	6372140	184	2	0.011	8; 9	1	120	2; 3
Hydro-AS25-14	Artefact scatter	TBA	356555	6371753	2,736	24	0.009	3; 9	1	20	1; 2; 3
Hydro-AS26-14	Artefact scatter	TBA	357247	6371141	2,997	14	0.005	3; 4; 6; 8	1	20	1; 2; 3
Hydro-AS27-14	Artefact scatter	TBA	357148	6370939	871	6	0.007	6	1	85	1; 2
Hydro-AS28-14	Artefact scatter	TBA	357219	6370703	632	2	0.003	4; 8	1	50	1; 2; 3
Hydro-AS29-14	Artefact scatter	TBA	358225	6371002	434	7	0.016	8	1	435	1; 2; 3
Hydro-AS30-14	Artefact scatter	TBA	358420	6371046	1,171	6	0.005	5	1	320	1; 2; 3
Hydro-AS31-14	Artefact scatter	TBA	359541	6371256	498	4	0.008	8	2	30	3; 4
Hydro-IA01-14	Isolated artefact	TBA	357936	6374155	1	1	-	3; 8	1	25	3
Hydro-IA02-14	Isolated artefact	TBA	360899	6373192	1	1	-	3; 8	1	15	3
Hydro-IA03-14	Isolated artefact	TBA	361291	6372936	1	1	-	8	3	55	3
Hydro-IA04-14	Isolated artefact	TBA	356803	6373197	1	1	-	2	1	70	2
Hydro-IA05-14	Isolated artefact	TBA	356844	6373447	1	1	-	8	1	89	3
Hydro-IA06-14	Isolated artefact	TBA	357337	6373419	1	1	-	3; 8	4	30	3
Hydro-IA07-14	Isolated artefact	TBA	357251	6372904	1	1	-	8	1	40	2
Hydro-IA08-14	Isolated artefact	TBA	358051	6372838	1	1	-	8	1	35	3
Hydro-IA09-14	Isolated artefact	TBA	357675	6372531	1	1	-	8	1	80	2
Hydro-IA10-14	Isolated artefact	TBA	357419	6374517	1	1	-	8; 9	1	100	3
Hydro-IA11-14	Isolated artefact	TBA	357234	6372407	1	1	-	8	1	145	3
Hydro-IA12-14	Isolated artefact	TBA	358221	6372373	1	1	-	3; 8	2	<5	3
Hydro-IA13-14	Isolated artefact	TBA	358142	6372209	1	1	-	8	2	95	3

Site name	Type	AHIMS ID	Centroid Coordinates (MGA Zone 56)		Site area (m²)	No. Cultural lithics	Density (mean, m²)	Environmental Context			
			Easting	Northing				Landform unit(s)	Surface geology	Distance to Water (m)	Slope class(es)
Hydro-IA14-14	Isolated artefact	TBA	357200	6372062	1	1	-	8; 9	1	80	3
Hydro-IA15-14	Isolated artefact	TBA	357196	6372010	1	1	-	8	1	100	3
Hydro-IA16-14	Isolated artefact	TBA	357191	6371956	1	1	-	8	1	145	3
Hydro-IA17-14	Isolated artefact	TBA	357758	6371972	1	1	-	5; 8	1; 2	90	2
Hydro-IA18-14	Isolated artefact	TBA	358052	6371829	1	1	-	8	2	88	3
Hydro-IA19-14	Isolated artefact	TBA	355868	6372201	1	1	-	8	1	60	3
Hydro-IA20-14	Isolated artefact	TBA	356482	6372152	1	1	-	3; 8	1	15	3
Hydro-IA21-14	Isolated artefact	TBA	356399	6371678	1	1	-	8	1	88	3
Hydro-IA22-14	Isolated artefact	TBA	356467	6371681	1	1	-	8	1	56	3
Hydro-IA23-14	Isolated artefact	TBA	357177	6371721	1	1	-	8	1	345	1
Hydro-IA24-14	Isolated artefact	TBA	358174	6371607	1	1	-	5; 8	1	45	2
Hydro-IA25-14	Isolated artefact	TBA	358185	6371413	1	1	-	5	1	80	1
Hydro-IA26-14	Isolated artefact	TBA	356661	6371276	1	1	-	8	1	395	3
Hydro-IA27-14	Isolated artefact	TBA	357010	6371196	1	1	-	4; 8	1	260	3
Hydro-IA28-14	Isolated artefact	TBA	356755	6370978	1	1	-	8	1	475	3
Hydro-IA29-14	Isolated artefact	TBA	356946	6370846	1	1	-	6; 8	1	200	2
Hydro-IA30-14	Isolated artefact	TBA	356998	6370750	1	1	-	6	1	100	1
Hydro-IA31-14	Isolated artefact	TBA	357441	6370397	1	1	-	2; 8	1	220	3
Hydro-IA32-14	Isolated artefact	TBA	357661	6370364	1	1	-	8	1	80	3
Hydro-IA33-14	Isolated artefact	TBA	358630	6370333	1	1	-	8	1	45	3
Hydro-IA34-14	Isolated artefact	TBA	358882	6372413	1	1	-	8	2	20	1
KK04	Artefact scatter	45-3-3387	357905	6371719	38,441	13* (previous	0.003	8; 9	1; 2	80	1; 2; 3; 4

Site name	Type	AHIMS ID	Centroid Coordinates (MGA Zone 56)		Site area (m²)	No. Cultural lithics	Density (mean, m²)	Environmental Context			
			Easting	Northing				Landform unit(s)	Surface geology	Distance to Water (m)	Slope class(es)
						total = 103)					
KK05	Artefact scatter	37-6-1954	358542	6371639	6,567	5* (previous total = 17)	0.003	5; 8	1	125	1; 2; 3
KK09	Isolated artefact	37-6-1957	358372	6371638	1	1	-	5	1	345	4
KK10	Artefact scatter	37-6-1958	357408	6371797	6,050	2* (previous total = 6)	0.001	5; 8	1	175	1; 2; 3
KK11	Artefact scatter	37-6-1959	357077	6371847	4,300	3* (not relocated)	0.001	8	1	177	2; 3
KK12	Isolated artefact	37-6-1960	356887	6371887	1	1* (not relocated)	-	3; 8	1	10	1; 2; 3; 4
KK13	Isolated artefact	37-6-1961	356713	6372765	1	1* (not relocated)	-	9	1	220	3
KK14	Isolated artefact	37-6-1962	356732	6372855	1	1	-	8; 9	1	190	3
KK-IF-1	Isolated artefact	37-6-0866	358645	6371329	1	1* (not relocated)	-	3; 8	1	<5	1; 2; 3
KK-IF-2	Isolated artefact	37-6-0865	357745	6369639	1	1* (not relocated)	-	1; 8	4	90	1; 2; 3
KR01	Artefact scatter	37-6-2004	357959	6370106	-	5* (not relocated)	Site area unknown	5; 8	1	75	1; 2; 3
KR02	Artefact scatter	37-6-2005	357514	6370403	476	2* (previous total = 1)	0.004	8	1	225	3; 4
KR03	Artefact scatter	37-6-2006	357491	6370454	-	2* (not relocated)	Site area unknown	2; 8	1	255	1; 2; 3; 4
KR04	Isolated artefact	37-6-2007	357367	6370539	1	1* (not relocated)	-	8	1	295	2; 3
KR05	Isolated artefact	37-6-2008	357171	6370683	1	1* (not relocated)	-	8	1	60	1; 2; 3
KR06	Artefact scatter	37-6-2009	356187	6371481	-	2* (not	Site area	3; 4; 6; 8	1	35	1; 2; 3

Site name	Type	AHIMS ID	Centroid Coordinates (MGA Zone 56)		Site area (m²)	No. Cultural lithics	Density (mean, m²)	Environmental Context			
			Easting	Northing				Landform unit(s)	Surface geology	Distance to Water (m)	Slope class(es)
						relocated)	unknown				
Northern Swamp Tributaries 2 (NST2)	Artefact scatter	37-6-1652	356741	6372410	22,473	20* (previous total = 12)	0.001	3; 8	1	200	1; 2; 3
Northern Swamp Tributaries 4 (NST4)	Artefact scatter	37-6-1650	356823	6372039	10,368	35* (previous total = 52)	0.005	3; 8; 9	1	65	1; 2; 3; 4
Swamp Creek Catchment 4 (SCC4)	Isolated artefact	37-6-1645	357708	6370097	1	1* (not relocated)	-	3; 8	1	75	1; 2; 3; 4
Swamp Creek Catchment 5 (SCC5)	Artefact scatter	37-6-1644	357073	6370752	-	1* (previous total = 2)	Site area unknown	6	1	30	1; 2

[1] **Landform key:** 1 = creek terrace; 2 = crest; 3 = drainage depression; 4 = disturbed; 5 = elevated flat; 6 = flood-prone flat; 7 = residual rise; 8 = simple slope; 9 = spur crest; 10 = swamp

[2] **Surface geology key:** 1 = Rutherford Formation - Dalwood Group; 2 = Quaternary Alluvium; 3 = Branxton Formation - Maitland Group; 4 = Farley Formation - Dalwood Group

[3] **Slope class key:** 1 = level; 2 = very gently inclined; 3 = gently inclined; 4 = moderately inclined

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ABORIGINAL SITES

Aboriginal Cultural Heritage Assessment
Hydro Aluminium Smelter Site & Associated Buffer Land
Kurri Kurri, New South Wales

FIGURE 23

7.3.3 Cultural Lithic Assemblage

As indicated in **Section 7.3.2**, a total of 482 cultural lithic items were identified during the current survey, 475 or 98.9% of which are located within the Project area. A typological breakdown of the combined cultural lithic assemblage recorded during survey (**Table 19**) shows that the majority (69.9%, n = 337) of identified artefacts consisted of flake debitage items (i.e., complete/proximal flakes and flake shatter pieces), with non-flake debitage items (i.e., flaked pieces, 7.5%, n = 36), heat shatters[17] (14.3%, n = 69) and formed objects (*sensu* Moore, 2000) (1.7%, n = 8) comparatively poorly represented. A single broken sandstone grindstone, previously recorded by AMBS (2009a) as site KK15 (37-6-1963) and located outside of the current Project area, was also identified during survey. Complete flakes were the most common flake debitage item identified during survey (n = 208, 43.2%), followed by flake shatter fragments (n = 61, 14.3%), proximal (broken) flakes (n = 49, 10.2%) and split flakes (n = 19, 3.9%). Of the 69 heat shatters identified during survey, 37.7% (n = 26) retained remnant flaked surfaces indicative of post-discard burning. Two were potlids.

Excluding the grindstone, recorded artefacts were, on average, reasonably large, exhibiting an average Maximum Linear Dimension (MLD) of 31±13.9 mm (range: 2.9-117 mm). The largest artefact recorded during survey - an atypically large complete silicified tuff flake - measures 111.6 (L) x 117 (W) x 30.4 (T) mm (**Plate 11**).

As shown in **Table 20**, silcrete was the dominant raw material overall, accounting for 56.8% (n = 274) of the total recorded assemblage. However, silicified tuff was also well represented (35.1%, n = 169). Other, less common raw materials included unidentified Fine Grained Siliceous (FGS) (n = 17, 3.5%), quartz (n = 12, 2.5%), quartzite (n = 5, 1%), volcanic (n = 3, 0.6%), chalcedony (n = 1, 0.2%) and sandstone (n = 1, 0.2%). Notably, cortical artefacts were poorly represented, with only 74 or 15.4% of artefacts exhibiting some cortex. Remnant cortical surfaces, where present, were consistent with the exploitation of water-rolled pebbles and cobbles sourced from one or more alluvial and/or colluvial gravel deposits.

Descriptive statistics for the size and shape of all complete flakes (n = 208) identified during survey indicate a population of relatively large, squat flakes (**Table 20**). Few (n = 29, 13.9%) complete flakes were less than 20 mm in MLD. Elongate flakes (i.e., those exhibiting an elongation ratio ≥2) were likewise relatively rare, with only 13 examples recorded during survey. Striking platforms on complete and proximal flakes were mostly plain (i.e., single scar) (n = 202, 78.6%), with multiple scar (non-faceted) (n = 24, %), crushed/collapsed (n = 14, 5.4%), cortical (n = 14, 5.4%) and punctiform (n = 3, 1.2%) forms also represented. No faceted platforms were observed. In keeping with the paucity of cortex in the assemblage as a whole, the majority (n = 182, 87.5%) of complete flakes in the combined surface assemblage exhibited no dorsal cortex. All but one cortex-bearing flake was recorded as retaining between 1 and 50% dorsal cortex.

Summary data on the 29 cores identified during survey are provided in **Table 22**. As indicated, multidirectional (n = 10, 34.5%) and unidirectional (n = 9, 31%) cores were represented more-or-less equally, with bifacial (n = 7, 24.1) cores also well represented (**Plate 12** and **Plate 13**). Comparatively rare types included two bipolar cores and one bidirectional core. In keeping with the assemblage overall, silcrete cores were most common (n = 14, 48.3%) followed closely by silicified tuff (n = 12, 41.4%) examples. Two quartz cores and one FGS core were also identified. Primary blanks were predominantly of indeterminate form due to extent of reduction. However, both pebble/cobble (n = 9) and flake (n = 6) blanks were also noted. No tranchet flake cores (*sensu* Hiscock, 1993) were recorded. Most cores (n = 16, 55.2%) exhibited no cortex. Where present, cortex was most commonly recorded as 1-50% (n = 11), with only two examples exhibiting more than 50% cortex.

Retouched and edge-ground implements identified during survey consisted of two Bondi points (**Plate 14** and **Plate 15**), one edge-ground hatchet head (**Plate 16**), one thumbnail scraper (**Plate 17**), four miscellaneous retouched flakes and one grindstone (**Plate 18** and **Plate 19**). The two Bondi points were manufactured on silcrete and silicified tuff flakes respectively. Both identified examples are broken. The thumbnail scraper identified in artefact scatter Hydro-AS12-14 appears to have been manufactured on a thermally-altered silcrete flake and exhibits continuous abrupt unifacial (ventral to dorsal) retouch. No macroscopic edge-wear was noted. The edge-ground hatchet head identified in artefact scatter Hydro-AS02-14 was manufactured on a water-rolled cobble assessed in the field as being of volcanic origin. The hatchet has been bifacially flaked, is complete and in good condition. The cutting edge of the implement is located at what, superficially, appears to be the 'butt' end of the implement. The grindstone identified by AMBS (2009a) is broken and measures 205 (L) x 185 (W) x 70 (T) mm. The implement has been split in half and exhibits prominent scratch marks and areas of pitting across the main

[17] All heat shatters identified during the current survey comprised thermally-fractured pieces of stones used locally for stone artefact manufacture. A proportion also exhibited remnant flaked surfaces indicative of post-flaking burning.

grinding surface. These appear to have resulted from the implement being used to stabilise an adjacent fencepost.

Table 19 Typological breakdown of combined cultural lithic assemblage identified during the current survey

Type	Number	%
Complete flake	208	43.2
Heat shatter	69	14.3
Flake shatter	61	12.7
Proximal flake	49	10.2
Flaked piece	38	7.9
Core	29	6
Split flake	19	3.9
Misc. retouched flake	4	0.8
Bondi point	2	0.4
Edge-ground hatchet head	1	0.2
Grindstone	1	0.2
Thumbnail scraper	1	0.2
Total	**482**	**100**

Table 20 Lithic raw materials

Raw material	Number	%
Silcrete	274	56.8
Silicified tuff	169	35.1
FGS	17	3.5
Quartz	12	2.5
Volcanic	3	0.6
Quartzite	5	1.0
Chalcedony	1	0.2
Sandstone	1	0.2
Total	**482**	**100**

Table 21 Descriptive statistics for size and shape of complete flakes identified during survey

Attribute	Complete flakes
Length (mm)	29.3±13 mm (range: 7.1-111.6 mm)
Width (mm)	26.6±11.9 mm (range: 6.1-117 mm)
Thickness (mm)	8.5±4.2 mm (range: 1-30.4 mm)
Elongation ratio	1.2±0.5 (range: 0.2-2.9)
Area (mm^2)	879.3±1023.6 (range: 49.4-13057.2 mm)

Table 22 Summary attribute data for cores identified during survey

No.	Raw material	Length (mm)	Width (mm)	Thick-ness (mm)	Type	Original blank	Cortex	Number of complete/partial scars	Length of longest scar (mm)
1	Silicified tuff	48.5	19.4	12.7	Bifacial	Cobble	1-50%	6	16.6
2	Silcrete	81.5	80.2	62.9	Multidirectional	Cobble	1-50%	8	61.9
3	Silicified tuff	48.7	40.4	39.1	Bifacial	Flake	None	4	26.3
4	Silcrete	45.5	34.2	21.2	Unidirectional	Flake	None	5	16.5
5	Silicified tuff	70	35.4	23.9	Unidirectional	Flake	None	2	22.2
6	Silcrete	65	37	35.1	Multidirectional	Indeterminate	None	6	36.8
7	Silcrete	66.9	59.3	39.9	Bifacial	Indeterminate	1-50%	7	31.7
8	Silicified tuff	90	46.8	31.9	Unidirectional	Cobble	51-99%	8	29.4
9	Silcrete	52.3	50.4	31.6	Multidirectional	Indeterminate	1-50%	3	30.6
10	Silcrete	26.4	21.4	19.5	Unidirectional	Indeterminate	None	8	20.9
11	Silicified tuff	71.1	47.5	35	Multidirectional	Cobble	1-50%	5	29.2
12	Silcrete	56.6	36.2	18.8	Bifacial	Indeterminate	None	2	17.8
13	Silcrete	48.7	35.5	25.7	Bifacial	Flake	None	6	25
14	Silcrete	72.2	53.4	31.7	Unidirectional	Flake	1-50%	4	32.4
15	Silcrete	55.4	34.3	23	Unidirectional	Flake	1-50%	1	15.5
16	Silcrete	48.3	33.7	16.4	Unidirectional	Indeterminate	None	2	31.9
17	Silicified tuff	34.8	23.7	21.4	Multidirectional	Indeterminate	None	3	16.5
18	Quartz	29.2	23.4	19.8	Unidirectional	Cobble	1-50%	2	22.1
19	Silicified tuff	34.4	23	11.2	Bifacial	Indeterminate	None	4	25.8
20	Quartz	20.8	15.5	14.9	Bipolar	Indeterminate	None	2	27.7
21	Silicified tuff	31.3	24.7	19	Bipolar	Cobble	51-99%	3	15.8
22	Silcrete	41.2	35.1	26.8	Multidirectional	Indeterminate	None	4	26.28
23	Silcrete	87	60.7	46.2	Unidirectional	Cobble	1-50%	1	75.2
24	FGS - Other	31	26.3	18.1	Multidirectional	Indeterminate	None	10	18.8
25	Silicified tuff	36.9	28.3	20.7	Multidirectional	Cobble	1-50%	13	23
26	Silicified tuff	36.9	23.2	17.4	Bidirectional	Indeterminate	None	4	20.8
27	Silicified tuff	50.7	35	16.2	Bifacial	Cobble	1-50%	4	16.4
28	Silicified tuff	33.4	34.3	17.8	Multidirectional	Indeterminate	None	5	26.9
29	Silcrete	26.2	25.5	14.9	Multidirectional	Indeterminate	None	4	20.4

Table 23 Summary attribute data for retouched/edge-ground implements identified during survey

Type	Raw material	Length (mm)	Width (mm)	Thick-ness (mm)	Blank	Cortex	Condition	Thermally altered?
Misc. retouched flake	Silcrete	54.8	50.6	19.1	Flake	1-50%	Complete	No
Misc. retouched flake	Silicified tuff	32.6	17.4	8.7	Flake	None	Complete	No
Misc. retouched flake	Silicified tuff	43	36.3	9.5	Flake	None	Complete	No
Misc. retouched flake	Quartzite	74.4	42.3	20.3	Flake	51-99%	Complete	No
Bondi point	Silcrete	26.7	10.4	5.2	Flake	None	Broken	Yes
Bondi point	Silicified tuff	21.6	10.4	5.5	Flake	None	Broken	No
Edge-ground hatchet head	Volcanic	103.4	56.8	24	Cobble	51-99%	Complete	No
Thumbnail scraper	Silcrete	18.5	16.5	5.4	Flake		Complete	Yes
Grindstone	Sandstone	205	185	70	Slab	-	Broken	No

Plate 11 Hydro-AS07-14: atypically large silicified tuff flake

Plate 12 Hydro-AS03-14: multidirectional silicified tuff core

Plate 13 Hydro-AS-12-14: bifacial silcrete core (left) and unidirectional silicified tuff core (right)

Plate 14 Hydro-IA15-14: broken silcrete Bondi point

Plate 15 Hydro-AS23-14: broken silicified tuff Bondi point

Plate 16 Hydro-AS02-14: complete edge-ground hatchet head

Plate 17 Hydro-AS12-14: silcrete thumbnail scraper

Plate 18 AMBS (2009) site KK15 (37-6-1963): broken sandstone grindstone. Note damage to grinding surface.

Plate 19 AMBS (2009) site KK15 (37-6-1963): Profile view of broken sandstone grindstone

7.3.4 Spatial Analysis

The distribution of Aboriginal archaeological materials within any given landscape can be assessed from two analytical positions. The first, known as a *site-based approach*, utilises the 'site' as the basic unit of analysis while the second, referred to as a *non-site approach*, utilises the individual artefact as the unit of analysis. In this section, the latter approach is employed to investigate the relationship between recorded stone artefact locations (n = 475) and the key environmental variables of distance to water, stream order, landform and slope.

7.3.4.1 Distance To and Type of Watercourse

The proximity and permanency of potable water sources are routinely cited as key determinants of Aboriginal settlement patterns. Accordingly, **Table 24** tabulates the relationship of these variables to recorded artefact locations within the Project area[18]. Regarding distance to water, as indicated, the majority (84.8%, n = 403) of artefacts are located within 100 m of a water source, being either a mapped stream or Wentworth Swamp. A trend for higher counts within 50 m of water, which may, it should be noted, relate simply to increased fluvial erosion activity along watercourses and around Wentworth Swamp, is also apparent. Differences in the relative frequency of artefacts between distances classes greater than 100 m from water, meanwhile, are negligible. Distances from water in areas over 251 m range from 252 m to 464 m, with a mean distance of 357 m (Std dev = 72.1).

Most artefacts (59.2%, n = 281) are associated with higher order (i.e., ≥3rd order) streams, with 1st order associations accounting for less than 20% of the total. For 1st and 2nd order streams, examination of the relationship between stream order and distance to water indicates a trend for higher artefact counts between 51 and 100 m of streams of this order. A similar trend is apparent for 3rd order streams. For 4th and >4th order 'streams', namely Swamp Creek, Black Waterholes Creek (part) and Wentworth Swamp, a strong trend for higher counts within 50 m of streams of this order is apparent though consideration of the distribution of ground surface exposures around Wentworth Swamp and along Black Waterholes Creek suggests that this patterning may, in fact, be more apparent than real.

Although complicated by environmental biases, when viewed in conjunction with the results of local test and salvage excavations, the data presented in **Table 24** provide support for the suggestion that the availability of potable water exerted a strong influence on the way in which Aboriginal people utilised the Project area in the past. As demonstrated in other contexts (e.g., Kuskie and Kamminga 2000; Umwelt, in prep), the permanency of freshwater sources appears to have been particularly important, with reliable water sources the focus of repeated activity through time. Historical changes in flows rate and drainage patterns notwithstanding, within the Project area, these sources likely comprised Black Waterholes Creek, Swamp Creek and Wentworth Swamp.

Table 24 Artefact distribution in relation to distance to water and stream order

Distance to water (m)	Stream Order					Total	%
	1st	2nd	3rd	4th	>4th[1]		
0-50	22	27	19	43	157	268	56.4
51-100	41	57	28	8	1	135	28.4
101-150	4	11	2	-	2	19	4
151-200	10	9	-	-	1	20	4.2
201-250	2	3	-	-	6	11	2.3
251+	6	2	1	-	13	22	4.6
Total	**85**	**109**	**50**	**51**	**180**	**475**	**100**

[1] Category includes Wentworth Swamp

7.3.4.2 Landform

As indicated in **Section 7.3.1**, landform-based artefact counts for the current survey are consistent with landform-specific levels of effective coverage in so far as the simple slope unit containing the largest number of surface artefacts (**Table 25**). Nonetheless, calculation of mean artefact densities per m^2 of effective coverage, a calculation that takes inter-landform differences in exposure into account, reveals a minor but significant

[18] Note that Wentworth Swamp is treated here as a >4th order stream.

difference between the co-dominant[19] simple slope and spur crest landform units, with the former exhibiting a higher mean density. Mean densities for the drainage depression, elevated flat and flood-prone flat landform units are identical are comparable to that of the simple slope land forms but significantly lower than that of the spur crest unit. No cultural lithics were identified within the creek terrace, crest, disturbed, residual rise and swamp landform units. However, given inter-landform differences in exposure and GSV, the absence of artefacts from some of these units (e.g. creek terrace, residual rise and swamp) is unsurprising.

Table 25 Artefact distribution in relation to landform

Landform unit	Effective coverage (ha)	% of total effective coverage	Number of surface artefacts	% of total artefacts	Mean density per m^2 of effective coverage
Creek terrace	0.1	0.4	0	-	-
Crest	0.6	2.9	0	-	-
Drainage depression	1.3	6.5	18	3.8	0.001
Disturbed	0.3	1.5	0	-	-
Elevated flat	2	9.5	19	4	0.001
Flood-prone flat	1	4.9	11	2.3	0.001
Residual rise	0.1	0.4	0	-	-
Simple slope	13.3	64.2	326	68.6	0.002
Spur crest	1.6	7.6	101	21.3	0.006
Swamp	0.4	2.1	0	-	-
Total	**20.7**	**100**	**475**	**100**	**-**

7.3.5 Slope

Comparison of artefact counts between slope classes (**Table 26**) reveals a strong trend for higher counts on low to very low gradient land surfaces, with most (n = 384, 80.8%) of artefacts located on level to gently inclined land surfaces. Artefacts are comparatively poorly represented on moderate slopes (n = 91, 19.2%) and absent from steep and very steep slopes.

Table 26 Artefact distribution in relation to slope

Slope class	Number of surface artefacts	% of total artefacts
Level	52	10.9
Very gentle (1-3%)	94	19.8
Gentle (3-10%)	238	50.1
Moderate (10-32%)	91	19.2
Steep (32-56%)	-	0
Very steep (56-100%)	-	0
Total	**475**	**100**

[19] In terms of artefact numbers

7.3.6 Synthesis and Discussion

The archaeological survey undertaken for this assessment has resulted in a significant increase in the known Aboriginal archaeological resource of the Project area. Although limited to the identification of surface evidence, when combined with the results of previous subsurface investigations survey within and adjacent to the Project area, the current investigation has enhanced our understanding of Aboriginal site patterning and occupation on a local scale and has provided an important dataset for guiding the management of the Project area's known and potential Aboriginal archaeological resource into the future.

Aboriginal archaeological sites are widely distributed across the Project area, attesting to an extensive Aboriginal presence in the past. However, in keeping with broader local and regional patterning, the results of the current survey are suggestive of an occupational emphasis on elevated low gradient land surfaces adjacent to Wentworth Swamp and higher order watercourses such as Black Waterholes Creek. The former, in particular, will have been a focal resource area for Aboriginal peoples occupying the greater Kurri Kurri/Maitland area, facilitating sustained or intensive occupation over thousands of years. Collectively, the character of the stone artefact assemblages associated with the newly identified artefact scatter sites surrounding this regionally significant wetland are suggestive of what Shiner (2008), following Schlanger (1992), has described as a 'persistent place' (i.e., a place in the landscape that was the focus of repeated activity through time).

Identified open artefact sites (n = 85) within the Project area vary significantly in size and complexity. Most (n = 70, 82.4%) contain less than 10 artefacts. However, three sites are known to contain more than 50 artefacts. Open artefact sites within the Project area occur exclusively in contexts consistent with their exposure from subsurface contexts and, as such, are best conceived of as opportunistic surface manifestations of former subsurface deposits. In common with other parts of the Hunter Valley, a more-or-less continuous subsurface distribution of artefacts across the non-swampy and non-grossly disturbed parts of the Project area is inferred from the results of the current survey and previous archaeological investigations on a local and regional scale, albeit one with highly variable densities linked to key environmental factors such as landform, distance to water, water permanency and slope. Recorded artefacts, importantly, likely represent only a fraction of the total stone artefact resource present within the Project area, with most artefacts occurring in subsurface contexts.

In common with other local stone artefact assemblages, both surface recorded and excavated, the combined cultural lithic assemblage identified during the current survey attests to an emphasis on the procurement and reduction of locally available lithic raw materials, principally silcrete and silicified tuff but also other materials such as quartz, quartzite and chalcedony. Remnant cortical surfaces indicate the exploitation of water-rolled pebbles and cobbles and it seems likely that most, if not all, of the lithic raw materials used for flaked stone artefact manufacture in the Project area were sourced from locally-occurring alluvial and/or colluvial gravel deposits. At the same time, the rarity of cortex in the assemblage suggests that these materials were typically imported in a largely decorticated state, having been substantially flaked or prepared elsewhere, presumably at or near exploited stone sources. The presence of thermally altered artefacts and heat shatters within the assemblage, meanwhile, is suggestive of two processes: unintentional post-discard burning and deliberate heat treatment to improve flaking quality. Both phenomena are well represented in the archaeological record the Hunter Valley.

Relatively rare on a local and sub-regional scale, the identification of a complete edge-ground hatchet head within the Project area is of particular note. As discussed in **Section 6.5**, available historical records for the lower Hunter Valley indicate that these implements, known as *mogo*, were an important component of men's 'gear' and were used for variety of tasks including bark and wood removal, animal butchery, cutting toeholds in trees and extracting game and honey from logs and trees (Anon, 1877a; Dawson, 1830: 202; Scott, 1929: 41; Threlkeld in Gunson, 1974: 67). Though broken, the presence of a sandstone grindstone in the immediate vicinity of the Project area is likewise of particular significance. These implements are known to have been used to grind not only seeds but also other materials such as animal products and minerals (Veth & O'Connor, 1996). However, in the absence of microscopic use-wear and/or residue data, the function(s) of the grindstone identified by AMBS (2009a) as site KK15 (37-6-1963) remains unclear.

Backed artefacts, two of which were identified during the current survey, are a near-ubiquitous element of the stone artefact record of the Hunter Valley and likely served as multifunctional tools in pre-contact times, with existing residue and use-wear data for the adjacent Sydney Region (e.g., Robertson, 2011) attesting to their use in range of craft and subsistence activities including bone-working, wood-working, plant processing and animal butchery. In southeastern Australia, backed artefacts are known to have been produced as early as 8,500 years BP (Attenbrow & Hiscock 1998). However, between 3,500 BP and 1,400 BP, they were manufactured and discarded in large quantities across numerous sites - the so called "backed artefact proliferation event" (Hiscock 2002). Recent research into this phenomenon, spearheaded by Hiscock (1994, 2002), has identified the onset of

an ENSO-dominated climatic pattern 4,000 to 5,00 years ago as a key causal trigger, with increased backed artefact manufacture interpreted as one of number of technological strategies employed by Aboriginal people to reduce subsistence risks incurred by increased climatic variability.

The thumbnail scraper identified within previously unrecorded artefact scatter Hydro-AS12-14 is an excellent example of its type. These morphologically and technologically distinctive implements, which McCarthy (1976) considered to be one of definitive tools of the Bondaian phase of the Eastern Regional Sequence (ESR), are shaped like thumbnails and are characterised by unifacially-retouched convex scraper edges located opposite the retouched flake's platform (Holdaway and Stern, 2004: 234-235, after Wright, 1970). As noted by Holdaway and Stern (2004: 235), thumbnail scrapers are unique amongst Australian Aboriginal scraper types in being of demonstrated temporal significance, albeit only in Tasmania where they are most numerous in deposits postdating the Last Glacial Maximum (LGM). Outside of Tasmania, thumbnail scrapers have been identified in both Pleistocene and Holocene contexts. However, some authors (e.g., Ross, 1984) have used them as chronological markers for the appearance of the Australian Small Tool Tradition.

In the absence of absolute dates obtained through controlled archaeological excavation and/or a detailed geomorphological dating program, establishing a chronological context for the identified surface Aboriginal archaeological resource of the Project area is difficult. As in other contexts (e.g., Fanning et al. 2008, 2009; Shiner 2008), establishing the temporal history of the various soil units present within the Project area will prove crucial to ascertaining the antiquity of the Aboriginal archaeological materials within it, both in surface and subsurface contexts. In view of the now well documented difficulties associated with the dating of detrital charcoal from duplex or texture contrast soil profiles (Dean-Jones & Mitchell 1993), the identification and dating of features of undoubted or probable anthropogenic origin (e.g, hearths, heat treatment pits) will likewise prove critical.

Although limited in respect to the chronological resolution that it offers, the technological and typological character of the stone artefact assemblage identified during survey offers some insight into the antiquity of Aboriginal occupation within the Project area. As highlighted in **Section 5.1.3**, McCarthy's (1967) ERS of stone artefact assemblages remains, with some modification, the dominant chronological framework for Aboriginal occupation of the Hunter Valley. Based on appreciable changes in the composition of chipped stone artefact assemblages over time, the ERS hypothesises a three phase sequence of 'Capertian' (earliest), 'Bondaian*'* and 'Eloueran' (most recent) assemblages and was developed on the basis of McCarthy's (1948, 1964) pioneering analyses of stratified chipped stone assemblages from Lapstone Creek rockshelter, on the lower slopes of the Blue Mountains eastern escarpment, and Capertee 3 rockshelter in the Capertee Valley north of Lithgow. At present, the most widely cited characterisation of the ERS is that of a four-phase sequence beginning with the *Pre-Bondaian* (McCarthy's *Capertian*) and moving successively through the Early, Middle and Late phases of the *Bondaian*, the last of which equates to McCarthy's (1967) *Eloueran* phase. The tripartite division of the Bondaian is based principally on the presence/absence and relative abundance of backed artefacts (Attenbrow, 2010: 101). However, other factors, such as changes in the abundance of bipolar artefacts and different stone materials, and the presence/absence of edge-ground hatchet-heads are also relevant.

While acknowledging the interpretive difficulties posed by the so-called 'palimpsest problem', technological and typological affinities between the stone artefact assemblage identified during the current survey and other Lower Hunter Valley assemblages, some of which have been dated, are suggestive of a broad Middle to Late Bondaian date (i.e., 4,000 BP to European contact). Typologically, identified tools of demonstrated or purported temporal significance include the edge-ground hatchet head identified in Hydro-AS02-14, the backed artefacts identified at Hydro-IA15-14 and Hydro-AS23-14 and the thumbnail scraper identified in Hydro-AS12-14. No definitive or potential artefacts manufactured out of bottle glass were identified during survey.

7.3.7 Assessment of Archaeological Predictions

In **Section 5.2.3**, a series of predictions regarding the Aboriginal archaeological record of the Project area were made. **Table 27** compares the predictions made with the results of the archaeological survey undertaken as basis for informing future archaeological investigations within and around the Project area.

Table 27 Evaluation of archaeological predictions

Prediction	Assessment
Material evidence of past Aboriginal activity within the Project area is likely to be restricted to flaked stone artefacts in surface and subsurface contexts. However, there remains reasonable potential for the presence of	The results of the current survey support this prediction. All identified sites consist of open artefact sites. No grinding groove sites, stone quarries or scarred trees were identified during survey.

Prediction	Assessment
grinding groove sites, stone quarries and scarred trees.	
Most areas, irrespective of the presence or absence of associated surface evidence, will contain subsurface archaeological deposits, albeit of highly variable character and extent.	Although a large scale subsurface testing program would be required to robustly assess the validity of this prediction, together with their respective find contexts, the widely distributed nature of identified surface sites across the Project area is suggestive of a more-or-less continuous subsurface distribution of artefacts across the non-swampy and non-grossly disturbed portions of the site, albeit one with highly variable densities reflective of variable land use.
Most, if not all, of the Aboriginal archaeological materials present within the Project area will be of mid-to-late Holocene antiquity.	As indicated above, technological and typological affinities between the stone artefact assemblage identified during the current survey and other Lower Hunter Valley assemblages, some of which have been dated, are suggestive of a broad Middle to Late Bondaian date (i.e., 4,000 BP to European contact).
Should their presence within the Project area be confirmed, aeolian sand deposits retain the greatest potential for the preservation of older evidence of Aboriginal occupation.	No definitive or suspected aeolian sand deposits were identified during the current survey. However, the potential for such deposits to exist is acknowledged.
Grinding groove sites, if present, will occur in direct association with watercourses.	No grinding grove sites or sandstone exposures were identified during survey. However, the potential for such sites and features to exist in unsurveyed areas is acknowledged.
Burial sites, if present, will occur in fluvial or aeolian sand deposits.	No burial sites were identified during survey. However, the potential for such sites to exist in unsurveyed and subsurface contexts is acknowledged.
The dominant raw material for flaked stone artefact production within the Project area will be silcrete, with silicified tuff the second most common material.	The results of the current survey support this prediction.
Knapping floors, if present, will exhibit evidence indicative of systematic backed artefact manufacture.	No knapping floors were identified during survey.
Complete and/or fragmentary backed artefacts will dominate the retouched components of surface and excavated assemblages.	The results of the current survey do not support this prediction. Miscellaneous retouched flakes were the most common tool type identified during survey. The function(s) of these tools in unclear.
Tool types of *demonstrated* temporal significance, if present, will be limited to edge-ground hatchet heads and backed artefacts.	The results of the current survey support this prediction. Although of demonstrated temporal significance in Tasmania, in southeastern Australia (including the Hunter Valley) the temporal significance of thumbnail scrapers has yet to be established.
Surface and subsurface artefact distribution within the Project area will vary significantly in relation to landform, distance to water and stream order.	The results of the current survey support this prediction, at least with respect to surface evidence. Spatial analyses completed for this assessment suggest that surface artefact distribution within the Project area varies significantly in relation to landform, distance to water, stream order and slope.
Elevated, low gradient landform elements adjacent to Wentworth Swamp and the Project area's higher order watercourses (e.g., Swamp Creek, Black Waterholes Creek) will contain larger and more complex flaked stone assemblages than landform elements in other contexts.	The results of the current survey support for this prediction.

7.4 Archaeological Sensitivity

Figure 24 presents AECOM's assessment of the archaeological sensitivity of land within the Project area. As indicated in Section **7.2.1**, three levels of archaeological sensitivity are recognised on the basis of observed archaeology (i.e., its distribution and character), the results of previous Aboriginal heritage investigations within and surrounding the Project area, levels of past land disturbance and the predicted complexity of deposits within each category: Nil, Low and High.

As shown on **Figure 24**, the majority of land within the Project area has been assessed as being of low archaeological sensitivity. Areas of low sensitivity are defined here as those that:

- have not been grossly disturbed;
- are located more than 100 m from a mapped higher order (i.e., ≥2 order) stream;
- are located more than 200 m from Wentworth Swamp;
- do not comprise swamp; and
- have not been shown, through archaeological excavation, to contain significant cultural deposits[20].

Buffer sizes for higher order watercourses and Wentworth Swamp have been selected, in part, on the basis of the spatial data presented in but also take into account localised topographic conditions. Areas of low sensitivity within the Project area have the potential to contain subsurface archaeological deposit(s). However, the character of these deposits is predicted to differ to that identified in areas of high sensitivity in respect to artefact counts, densities and assemblage richness values.

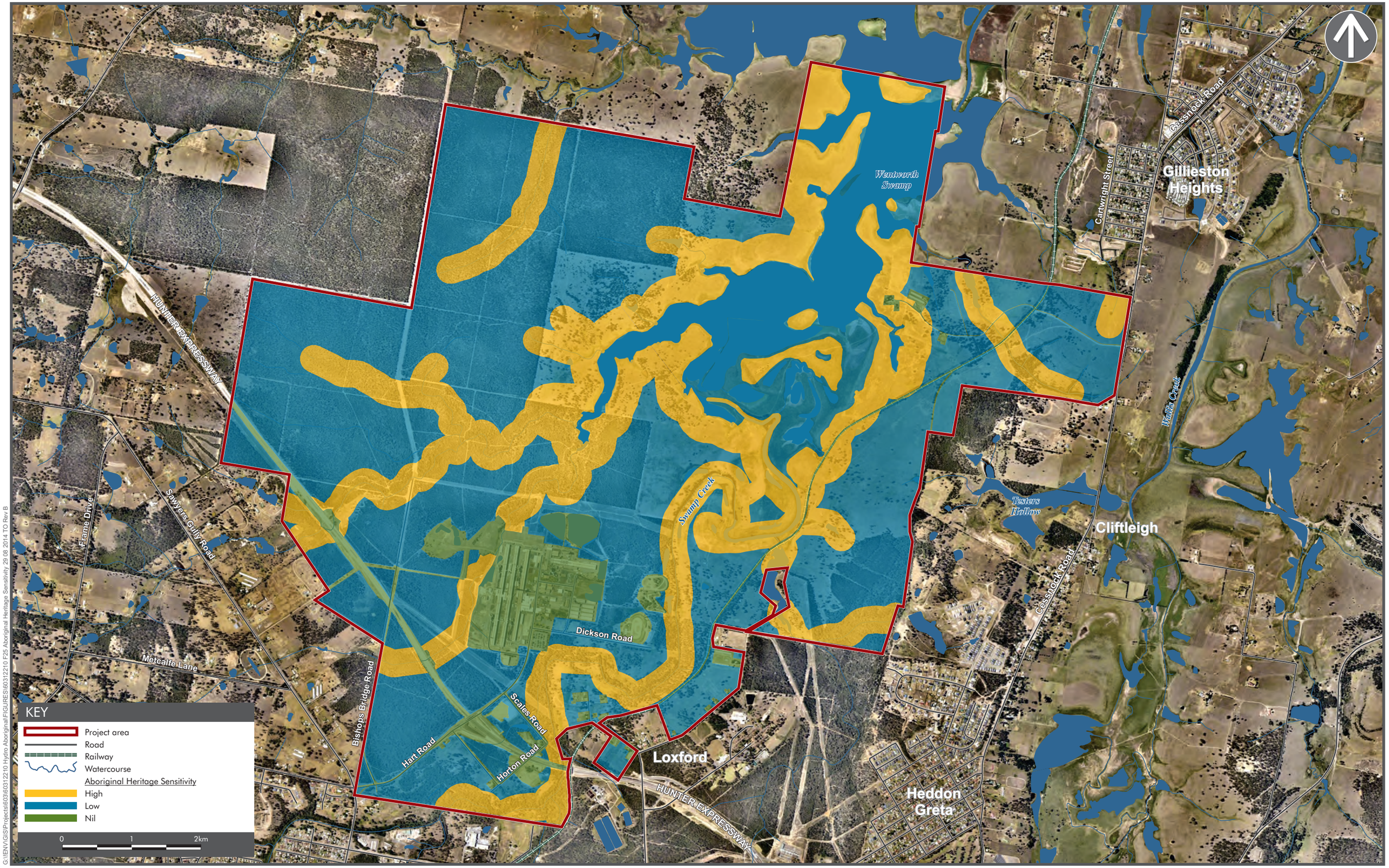
Areas of high archaeological sensitivity are defined here as those that:

- have not been grossly disturbed;
- are located within 100 m of a mapped higher order (i.e., ≥2 order) stream;
- are located within 200 m of Wentworth Swamp;
- do not comprise swamp; and/or
- have been shown, through archaeological excavation, to contain significant cultural deposits.

Relative to areas of low sensitivity, it is predicted that subsurface archaeological deposits located within areas of high sensitivity will exhibit higher mean artefact counts, densities and assemblage richness values (i.e., with respect to the representation of technological types and raw materials). Archaeological features such as knapping floors and hearths are also more likely to occur these areas.

Areas of 'nil' archaeological sensitivity within the Project area comprise those that have been grossly disturbed by modern and/or historic European land use practices. Aboriginal archaeological materials are unlikely to survive in these areas.

[20] Note that this provision applies specifically to the results of AMBS's 2010 archaeological salvage program.



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AECOM

ARCHAEOLOGICAL SENSITIVITY

Aboriginal Cultural Heritage Assessment
Hydro Aluminium Smelter Site & Associated Buffer Land
Kurri Kurri, New South Wales

FIGURE 24

8.0 Significance Assessment

8.1 Principles of Assessment

Heritage sites hold value for different communities in a variety of different ways. All sites are not equally significant and thus not equally worthy of conservation and management (Pearson & Sullivan 1995: 17). One of the primary responsibilities of cultural heritage practitioners, therefore, is to determine which sites are worthy of preservation and management (and why) and, conversely, which are not (and why) (Smith & Burke 2007: 227). This process is known as *the assessment of cultural significance* and, as highlighted by Pearson and Sullivan (1995: 127), incorporates two interrelated and interdependent components. The first involves identifying, through documentary, physical or oral evidence, the elements that make a heritage site significant, as well as the type(s) of significance it manifests. The second involves determining the degree of value that the site holds for society (i.e., its cultural significance) (Pearson & Sullivan 1995: 126)

In Australia, the primary guide to the assessment of cultural significance is the *Australian ICOMOS Charter for Places of Cultural Significance* (1999), informally known as *The Burra Charter*, which defines cultural significance as the "aesthetic, historic, scientific, social or spiritual value for past, present or future generations" of a site or place (ICOMOS 1999: 2). Under the Burra Charter model, the cultural significance of a heritage site or place is assessed in terms of its aesthetic, historic, scientific and social values, none of which are mutually exclusive (**Table 28**). Establishing cultural significance under the Burra Charter model involves assessing all information relevant to an understanding of the site and its fabric (i.e., its *physical* make-up) (ICOMOS 1999: 12). The assessment of cultural significance and the preparation of a statement of cultural significance are critical prerequisites to making decisions about the management of any heritage site or place (ICOMOS 1999: 11).

With respect to Aboriginal sites and places, it is possible to identify two major streams in the overall significance assessment process: the assessment of *scientific value(s)* by archaeologists and the assessment of *social (or cultural) value(s)* by Aboriginal people. These values are discussed in **Sections 8.2** and **8.4** below.

Table 28 Values relevant to determining cultural significance, as defined by The Burra Charter (1999).

Value	Definition
Aesthetic	"Aesthetic value includes aspects of sensory perception for which criteria can and should be stated. Such criteria may include consideration of the form, scale, colour, texture and material of the fabric; the smells and sounds associated with the place and its use" (ICOMOS 1999: 12).
Historic	"Historic value encompasses the history of aesthetics, science and society...[a] place may have historic value because it has influenced, or has been influenced by, an historic figure, event, phase or activity. It may have historic value as the site of an important event" (ICOMOS 1999: 12).
Scientific	"The scientific or research value of a place will depend on the importance of the data involved, on its rarity, quality or representativeness, and on the degree to which the place may contribute further substantial information" (ICOMOS 1999:12).
Social	"Social value embraces the qualities for which a place has become a focus of spiritual, political, national or other cultural sentiment to a majority or minority group" (ICOMOS 1999: 12).

8.2 Scientific (Archaeological) Significance

The scientific (or archaeological) significance of Aboriginal archaeological sites relates primarily to their potential for providing information about past Aboriginal culture and is commonly assessed on the basis of their *research potential, representativeness* and *rarity*. Other criteria, such as aesthetic value and education potential, may also be relevant.

8.2.1 Research Potential

Research potential can be defined as the potential of an archaeological site to address what Bowdler (1981: 129) has referred to as "timely and specific research questions". These questions may relate to any number of issues concerning past human lifeways and environments and, as suggested by Bowdler's quote, will inevitably reflect current trends or problems in academic research (Burke & Smith 2004: 249). For their part, Bowdler and Bickford

(1984: 23-4) suggest that the research potential of an archaeological site can be determined by answering the following series of questions:

1. Can the site contribute knowledge which no other resource can?
2. Can the site contribute knowledge which no other such site can?
3. Is this knowledge relevant to general questions about human history or other substantiative subjects?

Several criteria can be used to assess the research potential of an archaeological site. Particularly important in the context of Aboriginal archaeology are the intactness or integrity of the site in question, its complexity and its potential for archaeological deposit (NPWS 1997: 7). The connectedness of the site to other sites or natural landscape features may also be relevant.

Integrity refers to the extent to which a site has been disturbed by natural and/or anthropogenic phenomena and includes both the state of preservation of particular remains (e.g., animal bones, plant remains) and, where applicable, stratigraphic integrity. Assessments of archaeological integrity are predicated on the notion that undisturbed or minimally disturbed sites are likely to yield higher quality archaeological and/or environmental data than those whose integrity has been significantly compromised by natural and/or anthropogenic phenomena. Establishing levels of preservation or integrity in the context of a surface survey is difficult. Nonetheless, useful rating schemes are available for 'open' sites (Coutts & Witter 1977: 34) and scarred trees (Long 2003).

The *complexity* of a site refers primarily to the nature or character of the artefactual materials or features that constitute it but also includes site structure (e.g., the physical size of the site, spatial patterning in observed cultural materials). In the case of open artefact sites, for example, the principal criteria used to assess complexity are the site's size (i.e., number of artefacts and/or spatial extent), the presence, range and frequency of artefact and raw material types, and the presence of features such as hearths.

Potential for archaeological deposit refers to the potential of a site to contain subsurface archaeological evidence which may, through controlled excavation and analysis, assist in answering questions that are of contemporary archaeological interest. Assessing subsurface potential in the absence of subsurface investigation is difficult. Nonetheless, consideration of a range of factors, including the integrity of the site, the complexity of extant surface evidence, the nature of the local geomorphology (as established through surface observations and documentary research) and the results of previous archaeological excavations in the area, will help inform assessment of this criterion.

Connectedness concerns the relationship between archaeological sites within a given area and may be expressed through a combination of factors such as site location, type and contents. It may, for example, be possible to establish a connection between a stone quarry and hatchet found nearby. Demonstrating connectedness archaeologically, however, is far from straightforward, especially when dealing with surface evidence alone. Ultimately, this difficulty rests with the need to demonstrate contemporaneity between sites that may have been created hundreds, if not thousands, of years apart. As Shiner (2008: 13) has observed, "much of the surface archaeological record documents the accumulation of materials from multiple behavioural episodes occurring over long periods of discontinuous time". Contemporaneity, then, needs to be demonstrated not assumed.

8.2.2 Rarity and Representativeness

Rarity and r*epresentativeness* are related concepts. Rarity refers to the relative uniqueness of a site within its local and regional context. The scientific significance of a site is assessed as higher if it is unique or rare within either context; conversely, it is considered to be of lower significance if it is common in one or both. The concept of representativeness, meanwhile, refers to the question of whether or not a site is "a good example of its type, illustrating clearly the attributes of its significance" (Burke & Smith 2004: 247). Representativeness is an important criterion as one of the primary goals of cultural heritage management is to preserve for future generations a representative sample of all archaeological site types in their full range of environmental contexts.

In common with rarity, assessments of representativeness within a region are dependent on the state of current knowledge concerning the number and type of archaeological sites present within that region[21]. This is a critical point, for as suggested by Kuskie (2000) and others (e.g., Bowdler 1981; Godwin 2011; Pearson & Sullivan 1995), the absence across most of Australia of regional-scale quantitative data for Aboriginal sites and places represents

[21] There is, of course, a temporal fluidity to this criterion (i.e., as knowledge of the Aboriginal archaeology of a region increases, assessed levels of representativeness may change, a point of equal relevance to rarity).

a major constraint in assessments of representativeness and rarity. As stressed by Bowdler (1981) some 30 years ago, detailed regional-scale assessments of the Aboriginal archaeological record of Australia are required to address this issue.

8.3 Assessment of Scientific Significance

An assessment of the scientific significance of the 85 Aboriginal archaeological sites identified within the Project area is presented in **Table 29** below. Following AMBS (2009a, 2009b), a scored ranking system has been employed for the current assessment, with overall significance ratings based on a cumulative 'score' derived from a ranked assessment of the research potential, rarity and representativeness of each site on a local and regional scale. Rankings for each of the criteria discussed above are associated with one of three potentials scores: low (score = 1), moderate (score = 2) and high (score = 3). Overall significance ratings are defined as follows:

- Low significance: score 10-15
- Moderate significance: score 16-25
- High significance: score 26-30

Significance assessments for those previously recorded sites that were not relocated during the current survey (n = 11) have been made on the basis of associated site card and report data.

Table 29 Scientific significance assessment

Site	Site type	Rarity		Represent-ativeness		Integrity		Complexity		PAD		Overall score	Overall significance
		L	R	L	R	L	R	L	R	L	R		
Hydro-AS01-14	AS	1	1	1	1	1	1	1	1	2	2	12	Low
Hydro-AS02-14	AS	1	1	3	2	1	1	3	2	3	3	20	Moderate
Hydro-AS03-14	AS	1	1	2	1	1	1	2	1	3	3	16	Moderate
Hydro-AS04-14	AS	1	1	2	1	1	1	2	1	3	3	16	Moderate
Hydro-AS05-14	AS	1	1	1	1	1	1	1	1	2	2	12	Low
Hydro-AS06-14	AS	1	1	1	1	1	1	1	1	3	3	14	Low
Hydro-AS07-14	AS	1	1	2	1	2	2	2	1	2	2	16	Moderate
Hydro-AS08-14	AS	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-AS09-14	AS	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-AS10-14	AS	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-AS11-14	AS	1	1	1	1	2	2	1	1	2	2	14	Low
Hydro-AS12-14	AS	1	1	2	1	2	2	2	1	2	2	16	Moderate
Hydro-AS13-14	AS	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-AS14-14	AS	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-AS15-14	AS	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-AS16-14	AS	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-AS17-14	AS	1	1	1	1	1	1	1	1	1	1	10	Low

Site	Site type	Rarity		Represent-ativeness		Integrity		Complexity		PAD		Overall score	Overall significance
		L	R	L	R	L	R	L	R	L	R		
Hydro-AS18-14	AS	1	1	1	1	1	1	1	1	2	2	12	Low
Hydro-AS19-14	AS	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-AS20-14	AS	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-AS21-14	AS	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-AS22-14	AS	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-AS23-14	AS	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-AS24-14	AS	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-AS25-14	AS	2	1	2	1	2	2	2	1	3	3	18	Moderate
Hydro-AS26-14	AS	1	1	1	1	1	1	1	1	2	1	11	Low
Hydro-AS27-14	AS	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-AS28-14	AS	1	1	1	1	1	1	1	1	2	1	11	Low
Hydro-AS29-14	AS	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-AS30-14	AS	1	1	1	1	2	2	1	1	2	2	14	Low
Hydro-AS31-14	AS	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-IA01-14	IA	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-IA02-14	IA	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-IA03-14	IA	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-IA04-14	IA	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-IA05-14	IA	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-IA06-14	IA	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-IA07-14	IA	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-IA08-14	IA	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-IA09-14	IA	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-IA10-14	IA	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-IA11-14	IA	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-IA12-14	IA	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-IA13-14	IA	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-IA14-14	IA	1	1	1	1	1	1	1	1	1	1	10	Low

Site	Site type	Rarity		Represent-ativeness		Integrity		Complexity		PAD		Overall score	Overall significance
		L	R	L	R	L	R	L	R	L	R		
Hydro-IA15-14	IA	1	1	1	1	1	1	2	1	1	1	11	Low
Hydro-IA16-14	IA	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-IA17-14	IA	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-IA18-14	IA	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-IA19-14	IA	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-IA20-14	IA	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-IA21-14	IA	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-IA22-14	IA	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-IA23-14	IA	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-IA24-14	IA	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-IA25-14	IA	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-IA26-14	IA	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-IA27-14	IA	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-IA28-14	IA	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-IA29-14	IA	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-IA30-14	IA	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-IA31-14	IA	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-IA32-14	IA	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-IA33-14	IA	1	1	1	1	1	1	1	1	1	1	10	Low
Hydro-IA34-14	IA	1	1	1	1	1	1	1	1	1	1	10	Low
KK04	AS	1	1	3	2	2	2	3	2	3	3	25	Moderate
KK05	AS	1	1	1	1	2	2	1	1	2	2	14	Low
KK09	IA	1	1	1	1	1	1	1	1	1	1	10	Low
KK10	AS	1	1	1	1	1	1	1	1	1	1	10	Low
KK11	AS	1	1	1	1	1	1	1	1	1	1	10	Low
KK12	IA	1	1	1	1	1	1	1	1	1	1	10	Low
KK13	IA	1	1	1	1	1	1	1	1	1	1	10	Low
KK14	IA	1	1	1	1	1	1	1	1	1	1	10	Low

Site	Site type	Rarity		Represent-ativeness		Integrity		Complexity		PAD		Overall score	Overall significance
		L	R	L	R	L	R	L	R	L	R		
KK-IF-1	IA	1	1	1	1	1	1	1	1	1	1	10	Low
KK-IF-2	IA	1	1	1	1	1	1	1	1	1	1	10	Low
KR01	AS	1	1	1	1	1	1	1	1	1	1	10	Low
KR02	AS	1	1	1	1	1	1	1	1	1	1	10	Low
KR03	AS	1	1	1	1	1	1	1	1	1	1	10	Low
KR04	IA	1	1	1	1	1	1	1	1	1	1	10	Low
KR05	IA	1	1	1	1	1	1	1	1	1	1	10	Low
KR06	AS	1	1	1	1	1	1	1	1	1	1	10	Low
NST2	AS	1	1	1	1	1	1	1	1	2	2	12	Low
NST4	AS	1	1	2	1	2	2	2	1	3	3	18	Moderate
SCC4	IA	1	1	1	1	1	1	1	1	1	1	10	Low
SCC5	AS	1	1	1	1	1	1	1	1	2	2	12	Low

8.3.1 Sites of Low Scientific Significance

Seventy-seven sites have been assessed as being of low scientific significance. Low scientific significance ratings for these sites are consistent with them being locally and regionally common site types as well as poor examples of their type. Better examples of these sites exist locally and regional and offer comparable/greater research opportunities. In addition, identified open artefact sites of sites of low scientific significance within the Project area exhibit the following general characteristics:

a) Small assemblage sizes. Forty-three are isolated artefacts;

b) Formed objects (i.e., cores and retouched implements) are rare or absent in associated lithic assemblages;

c) Associated lithic assemblages contain a restricted range of locally and regionally common raw materials;

d) Generally poor integrity; and

e) Limited or no potential for associated subsurface deposit(s).

8.3.2 Sites of Moderate Scientific Significance

Eight sites have been assessed as being of moderate scientific significance. All consist of artefact scatters associated with higher order watercourses and/or Wentworth Swamp. Although artefact scatters are a locally and regionally common site type, these sites are reasonable or good examples of their type. Identified artefact scatters of moderate scientific significance within the Project area exhibit the following general characteristics:

a) Larger and/or more complex lithic assemblages;

b) Generally higher levels of integrity; and

c) Moderate to high potential for associated subsurface deposit(s).

8.3.3 Sites of High Scientific Significance

No sites of high scientific significance have been identified within the Project area to date. However, it is recognised that such sites exists may exist, particularly in subsurface contexts.

8.3.4 Scientific Significance Summary

Table 30 provides a summary of the scientific significance ratings assigned to newly and previously identified Aboriginal archaeological sites within the Project area.

Table 30 Summary of scientific significance assessment

Site Type	Scientific Significance Rating			
	High	Moderate	Low	Total
Artefact scatters	0	8	34	42
Isolated artefacts	0	0	43	43
Total	**0**	**8**	**77**	**85**

8.4 Social/Cultural Values

Social or cultural values refer to the spiritual, traditional, historical and contemporary associations and attachments a place or area has for Aboriginal people. As such, these values and their social significance can only be identified through consultation with Aboriginal people. Accordingly, throughout the assessment process, AECOM have actively sought the opinions of RAPs on this matter, both verbally and in writing. Opportunities for the provision of cultural information have been provided at all stages of the assessment process. Social or cultural values are applicable to sites, items and landscapes.

Throughout the assessment process, RAPs have identified the following social or cultural values for the Project area and its associated Aboriginal archaeological record:

- Wentworth Swamp would have been a focal resource feature for Aboriginal people camping within and passing through the Project area owing to it being a virtual ‘supermarket’ of floral and faunal resources.
- Mount Tomalpin, which is clearly visible from various parts of the Project area, would have been an important local landmark for Aboriginal people camping within and passing through the Project area and was likely only accessible to selected individuals;
- The concentration of sites around Wentworth Swamp and along Black Waterholes creeks shows that both areas were important hunting and gathering areas;
- The Project area contains a large number of edible and otherwise useful plants;
- The presence of sites in eroded areas shows that the Project area contains a large subsurface archaeological resource;
- All Aboriginal archaeological sites within the Project area are culturally significant as they attest to the use of the site by Aboriginal people in the past;
- The stone artefact assemblages identified during survey are typical of those found locally in terms of being dominated by silcrete artefacts and containing backed artefacts; and
- Stones used for flaked stone artefact manufacture within the Project area were likely sourced from the nearby Hunter River gravels.

Hydro-IA10-14
Hydro-AS01-14
Hydro-IA01-14
Hydro-AS02-14
Wentworth Swamp
Gillieston Heights
Cessnock Road
Cartwright Street
Hydro-IA05-14
Hydro-IA06-14
Hydro-IA04-14
Hydro-AS03-14
Hydro-AS04-14
Hydro-AS06-14
Hydro-AS05-14
Hydro-IA02-14
Hydro-IA03-14
HUNTER EXPRESSWAY
KK14
KK13
Hydro-IA07-14
Hydro-IA08-14
Northern Swamp Tributaries 2 (NST2)
Hydro-IA09-14
Hydro-AS11-14
Hydro-AS08-14
Hydro-IA11-14
Hydro-AS13-14
Hydro-IA12-14
Hydro-AS09-10
Hydro-IA34-14
Hydro-AS07-14
Hydro-AS10-14
Hydro-IA19-14
Hydro-AS24-14
Hydro-IA20-14
Hydro-AS12-14
Hydro-AS14-14
Hydro-IA13-14
Hydro-AS15-14
Hydro-IA14-14
Hydro-AS17-14
Hydro-AS16-14
Northern Swamp Tributaries 4 (NST4)
Hydro-IA15-14
Hydro-AS18-14
Hydro-IA16-14
Hydro-AS19-14
KK11
Hydro-IA17-14
Hydro-AS21-14
Hydro-IA18-14
KK12
KK10
Hydro-AS20-14
Swamp Creek
Hydro-AS25-14
Hydro-IA23-14
KK04
KK05
Hydro-IA21-14
Hydro-IA22-14
Hydro-AS22-14
Hydro-IA24-14
KK09
Hydro-AS23-14
Tuters Hollow
Cliftleigh
KR06
Hydro-IA25-14
KK-IF-1
Frame Drive
Sawyers Gully Road
Hydro-IA26-14
Hydro-IA27-14
Hydro-AS26-14
Hydro-AS31-14
Hydro-AS30-14
Hydro-IA28-14
Hydro-AS27-14
Hydro-AS29-14
Cessnock Road
Hydro-IA29-14
Hydro-IA30-14
Swamp Creek Catchment 5 (SCC5)
Dickson Road
Hydro-AS28-14
KR05
Metcalfe Lane
KR04
KR03
KR02
Hydro-IA31-14
Hydro-IA32-14
Hydro-IA33-14
Bishops Bridge Road
Scales Road
Swamp Creek Catchment 4 (SCC4)
KR01
Hart Road
Horton Road
Loxford
KK-IF-2
HUNTER EXPRESSWAY
Heddon Greta
Wallis Creek

KEY

- Project area
- Road
- Railway
- Watercourse

Archaeological Significance

- Low
- Moderate

0 1 2km

G:\ENVGIS\Projects\60306031210 Hydro Aboriginal\FIGURES\60312210 F25 Archaeological Significance 29 09 2014 TO

AECOM

ARCHAEOLOGICAL SIGNIFICANCE

Aboriginal Cultural Heritage Assessment
Hydro Aluminium Smelter Site & Associated Buffer Land
Kurri Kurri, New South Wales

FIGURE 25

9.0 Preliminary Masterplan Assessment

9.1 Introduction

Hydro's Preliminary Masterplan for the Project area has been reviewed in relation to its impact on Aboriginal cultural heritage. This section describes the results of this review process.

Sections 7.3.2 and **7.4** have identified a series of Aboriginal heritage constraints within the Project area including previously and newly recorded Aboriginal archaeological sites (n = 85) and varying levels of archaeological sensitivity. Recorded Aboriginal archaeological sites within the Project area consist exclusively of open artefact sites (i.e., artefact scatters and isolated artefacts). Eight of these sites have been assessed as being of moderate scientific significance and the remaining 77 as being of low scientific significance. Verbal and written advice received from RAPs indicates that all Aboriginal archaeological sites within the Project area, regardless of content, are culturally significant and need to be cared for appropriately.

9.1.1 Aboriginal Archaeological Sites

As indicated, a total of 85 Aboriginal archaeological sites have been identified within the Project area. Consideration of the distribution of these sites in relation to the Preliminary Masterplan indicates that 50 sites, including five out of eight sites assessed as being of moderate scientific significance, are located in areas earmarked for conservation, rural land use and riparian corridor (or combinations thereof) (**Table 30**). These sites are unlikely to be directly impacted by future residential and employment-related development works within the Project area, as shown on the Preliminary Masterplan. A further four sites, two of which have been assessed as being of moderate scientific significance, extend into areas earmarked for employment land uses but are located principally in conservation or riparian corridor areas.

While recognising the potential for site impacts through environmental management works and ongoing rural land use activities, collectively, these 54 sites are considered to represent a significant preservation outcome for the surface Aboriginal archaeological record of the Project area. Compared with residential and employment-related development works, environmental management and ongoing rural land use activities are deemed significantly less likely to result in the destruction of identified sites.

Examination of the Preliminary Masterplan suggests that all remaining Aboriginal archaeological sites within the Project area (n = 31) are likely to be directly impacted by residential and employment-related development works. Impacted sites include 30 sites of low scientific significance and one site of moderate scientific significance. Archaeologically, the potential loss of these sites is considered to be offset by the retention, in conservation, rural land use and riparian corridor areas, of fifty-four sites of equal or greater scientific significance.

Table 31 Preliminary Masterplan assessment

Site	Site type	Scientific Significance	Land use category
Hydro-AS01-14	Artefact scatter	Low	Conservation
Hydro-AS02-14	Artefact scatter	Moderate	Conservation & Rural
Hydro-AS03-14	Artefact scatter	Moderate	Conservation
Hydro-AS04-14	Artefact scatter	Moderate	Conservation
Hydro-AS05-14	Artefact scatter	Low	Conservation
Hydro-AS06-14	Artefact scatter	Low	Conservation
Hydro-AS07-14	Artefact scatter	Moderate	Conservation
Hydro-AS08-14	Artefact scatter	Low	Conservation
Hydro-AS09-14	Artefact scatter	Low	Employment

Site	Site type	Scientific Significance	Land use category
Hydro-AS10-14	Artefact scatter	Low	Conservation
Hydro-AS11-14	Artefact scatter	Low	Conservation
Hydro-AS12-14	Artefact scatter	Moderate	Conservation
Hydro-AS13-14	Artefact scatter	Low	Conservation
Hydro-AS14-14	Artefact scatter	Low	Conservation
Hydro-AS15-14	Artefact scatter	Low	Conservation
Hydro-AS16-14	Artefact scatter	Low	Conservation
Hydro-AS17-14	Artefact scatter	Low	Conservation
Hydro-AS18-14	Artefact scatter	Low	Conservation
Hydro-AS19-14	Artefact scatter	Low	Conservation
Hydro-AS20-14	Artefact scatter	Low	Employment
Hydro-AS21-14	Artefact scatter	Low	Employment
Hydro-AS22-14	Artefact scatter	Low	Employment
Hydro-AS23-14	Artefact scatter	Low	Employment
Hydro-AS24-14	Artefact scatter	Low	Conservation
Hydro-AS25-14	Artefact scatter	Moderate	Isolated Employment
Hydro-AS26-14	Artefact scatter	Low	Riparian Corridor & Employment
Hydro-AS27-14	Artefact scatter	Low	Employment
Hydro-AS28-14	Artefact scatter	Low	Employment
Hydro-AS29-14	Artefact scatter	Low	Employment
Hydro-AS30-14	Artefact scatter	Low	Employment
Hydro-AS31-14	Artefact scatter	Low	Residential
Hydro-IA01-14	Isolated artefact	Low	Conservation
Hydro-IA02-14	Isolated artefact	Low	Rural
Hydro-IA03-14	Isolated artefact	Low	Residential
Hydro-IA04-14	Isolated artefact	Low	Conservation
Hydro-IA05-14	Isolated artefact	Low	Conservation
Hydro-IA06-14	Isolated artefact	Low	Conservation
Hydro-IA07-14	Isolated artefact	Low	Conservation

Site	Site type	Scientific Significance	Land use category
Hydro-IA08-14	Isolated artefact	Low	Conservation
Hydro-IA09-14	Isolated artefact	Low	Conservation
Hydro-IA10-14	Isolated artefact	Low	Conservation
Hydro-IA11-14	Isolated artefact	Low	Conservation
Hydro-IA12-14	Isolated artefact	Low	Conservation
Hydro-IA13-14	Isolated artefact	Low	Conservation
Hydro-IA14-14	Isolated artefact	Low	Conservation
Hydro-IA15-14	Isolated artefact	Low	Conservation
Hydro-IA16-14	Isolated artefact	Low	Employment
Hydro-IA17-14	Isolated artefact	Low	Conservation
Hydro-IA18-14	Isolated artefact	Low	Conservation
Hydro-IA19-14	Isolated artefact	Low	Conservation
Hydro-IA20-14	Isolated artefact	Low	Isolated Employment
Hydro-IA21-14	Isolated artefact	Low	Isolated Employment
Hydro-IA22-14	Isolated artefact	Low	Isolated Employment
Hydro-IA23-14	Isolated artefact	Low	Rural
Hydro-IA24-14	Isolated artefact	Low	Employment
Hydro-IA25-14	Isolated artefact	Low	Employment
Hydro-IA26-14	Isolated artefact	Low	Employment
Hydro-IA27-14	Isolated artefact	Low	Employment
Hydro-IA28-14	Isolated artefact	Low	Employment
Hydro-IA29-14	Isolated artefact	Low	Employment
Hydro-IA30-14	Isolated artefact	Low	Employment
Hydro-IA31-14	Isolated artefact	Low	Employment
Hydro-IA32-14	Isolated artefact	Low	Employment
Hydro-IA33-14	Isolated artefact	Low	Rural
Hydro-IA34-14	Isolated artefact	Low	Conservation
KK04	Artefact scatter	Moderate	Conservation & Employment
KK05	Artefact scatter	Low	Employment

Site	Site type	Scientific Significance	Land use category
KK09	Isolated artefact	Low	Employment
KK10	Artefact scatter	Low	Employment
KK11	Artefact scatter	Low	Employment
KK12	Isolated artefact	Low	Employment
KK13	Isolated artefact	Low	Conservation
KK14	Isolated artefact	Low	Conservation
KK-IF-1	Isolated artefact	Low	Rural
KK-IF-2	Isolated artefact	Low	Rural
KR01	Artefact scatter	Low	Rural
KR02	Artefact scatter	Low	Employment
KR03	Artefact scatter	Low	Employment
KR04	Isolated artefact	Low	Employment
KR05	Isolated artefact	Low	Employment
KR06	Artefact scatter	Low	Rural
NST2	Artefact scatter	Low	Conservation & Isolated Employment
NST4	Artefact scatter	Moderate	Conservation & Isolated Employment
SCC4	Isolated artefact	Low	Rural
SCC5	Artefact scatter	Low	Employment

9.1.2 Archaeological Sensitivity

Consideration of the suitability of the Preliminary Masterplan with respect to assessed levels of archaeological sensitivity across the Project area indicates a significant preservation outcome for land of high archaeological sensitivity, with the majority comprising conservation and rural land use land that will not be impacted by future residential and employment-related development works within the Project area. Attention is drawn, in particular, to the retention in conservation, rural land use and riparian corridor areas, of the majority of the highly sensitive land associated with Black Waterholes Creek, Swamp Creek and Wentworth Swamp. Land of low archaeological sensitivity is also well represented in areas zoned for conservation and continuing rural land use activities.

Proposed residential and employment-related development areas within the Project area correspond principally with areas of low to nil archaeological sensitivity.

10.0 Management Recommendations

10.1 Introduction

As indicated in **Section 1.1**, Aboriginal cultural heritage assessments conducted for rezoning projects differ from those carried out as part of the traditional development planning approval process in NSW in that physical impacts to identified Aboriginal heritage sites, places and values are not proposed as part of the rezoning process. Rather, the primary aim of these assessments is to identify Aboriginal heritage constraints and opportunities relevant to the development of site masterplans and to provide guidance around the appropriate management of identified values post-rezoning. Once rezoning has been completed, it is the responsibility of individual proponents to conduct, where appropriate, additional Aboriginal heritage investigations into the areas they propose to impact through their respective Development Applications (DAs). Where required, such assessments will involve opportunities for more detailed archaeological investigations (e.g., archaeological test excavation) and conservation outcomes.

As no ground surface impacts are proposed as part of Hydro's Planning Proposal, the current assessment will not be used to support applications for Aboriginal Heritage Impact Permits (AHIPs) under Section 90A of the *National Parks and Wildlife Act 1974* (NPW Act 1974). Such applications will need to be supported by standalone Aboriginal Cultural Heritage Assessment and Aboriginal Archaeological Reports prepared in accordance with the with OEH's *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH, 2011) and the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW, 2010b). A process of Aboriginal community consultation carried out accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW, 2010a) would also need to be demonstrated.

10.2 Management Advice

Sections 7.3.2 and **7.4** have identified a series of Aboriginal heritage constraints within the Project area including previously and newly recorded Aboriginal archaeological sites (n = 85) and varying levels of archaeological sensitivity. This section provides appropriate management recommendations for these constraints in view of the master planning process currently underway.

10.2.1 Aboriginal Archaeological Sites

A total of 85 Aboriginal archaeological sites have been identified within the Project area, all of which consist of open artefact sites (i.e., artefact scatters and isolated artefacts). Where possible, these sites should be conserved as part of the master planning process, with decisions concerning their long-term management to be made in consultation with RAPs. However, where conservation is unfeasible, it is recommended that the Development Control Plan (DCP) for the Project area include a specific development control for known Aboriginal archaeological sites. This control should specify that any works which directly affect these sites will require an AHIP under Part 6 of the NPW Act 1974.

As indicated above, applications for an AHIP must be accompanied by Aboriginal Cultural Heritage Assessment and Aboriginal Archaeological Reports prepared in accordance with the with OEH's *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH, 2011) and the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW, 2010b). Applications must also provide evidence of consultation with the Aboriginal communities. Consultation is required under Part 8A of the NPW Regulation and is to be conducted in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* DECCW, 2010a).

10.2.2 Archaeological Sensitivity

As indicated, three levels of Aboriginal archaeological sensitivity have been identified across the Project area on the basis of basis of observed archaeology (i.e., its distribution and character), the results of previous Aboriginal heritage investigations within and surrounding the Project area, levels of past land disturbance and the predicted complexity of deposits within each category. Appropriate management options and recommendations for each level of sensitivity are as follows:

Areas of *high archaeological sensitivity* warrant a full Aboriginal heritage assessment prior to any development impacts and it is recommended that the DCP for the Project area include a development control to this effect. Aboriginal cultural heritage assessments in areas of high archaeological sensitivity should be undertaken in accordance with OEH's *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW*

(OEH, 2011), *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW, 2010b) and *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW, 2010a).

Areas of *low archaeological sensitivity* warrant an Aboriginal archaeological due diligence assessment prior to any development impacts and it is recommended that the DCP for the Project area include a development control to this effect. Due diligence assessments in areas of low sensitivity should be undertaken in accordance with OEH's *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (DECCW, 2010c).

Areas of *nil archaeological sensitivity* do not contain any known Aboriginal heritage constraints and it is recommended that the DCP for the Project area contain a development control to this effect. Nonetheless, the development control should also specify that Aboriginal objects may still occur in these areas and that if impacts to any identified objects cannot be avoided, an AHIP will be required.

10.3 Aboriginal Heritage Controls for DCP

The following Aboriginal heritage controls are proposed for inclusion in the DCP for the Project area:

1. Known Aboriginal archaeological sites within the Project area are shown on [insert relevant figure number]. An AHIP issued under Part 6 of the National Parks and Wildlife Act 1974 (NPW Act 1974) is required for any works which directly affect these sites.
2. Areas of high archaeological sensitivity, shown on [insert relevant figure number], warrant a full Aboriginal cultural heritage assessment prior to any development works. If impacts to any Aboriginal objects identified through these assessments cannot be avoided, an AHIP issued under Part 6 of the National Parks and Wildlife Act 1974 (NPW Act 1974) will be required. Consultation with relevant Aboriginal persons and organisations is required under OEH policy when an application for an AHIP is considered and should be conducted in accordance with OEH's *Aboriginal Cultural Heritage Consultation Requirements for Proponents*.
3. Areas of low archaeological sensitivity, shown on [insert relevant figure number], warrant an Aboriginal archaeological due diligence assessment prior to any development works. This assessment is to be conducted in accordance with OEH's *Due Diligence Code of Practice for the protection of Aboriginal Objects in New South Wales*. Visual inspections undertaken for the purposes of a due diligence assessment should include an Aboriginal community representative. Depending on the results of the due diligence assessment undertaken, a full Aboriginal cultural heritage assessment may be required.
4. Areas of nil archaeological sensitivity, shown on [insert relevant figure number], do not contain any known Aboriginal heritage constraints. However, Aboriginal objects may still occur in these areas. If any Aboriginal objects are encountered during development, and impacts cannot be avoided, an AHIP issued under Part 6 of the National Parks and Wildlife Act 1974 (NPW Act 1974) will be required.

11.0 References Cited

Alcan Australia Limited. (1988). *Alcan in the Hunter Valley*. Kurri Kurri: Alcan Australia Limited.

Andrefsky, W. (2005). *Lithics: Macroscopic Approaches to Analysis*. Cambridge University Press. doi:10.2307/2694821

Anonymous. (1877a). Reminiscences - No. 1. *The Maitland Mercury & Hunter River General Advertiser*. Maitland.

Anonymous. (1877b). Reminiscences - No. 2. *The Maitland Mercury & Hunter River General Advertiser*. Maitland.

Anonymous. (1877c). Reminiscences No. 4. *The Maitland Mercury & Hunter River General Advertiser*. Maitland.

Attenbrow, V. (2004). What's Changing: Population Size or Land-Use Patterns? The Archaeology of Upper Mangrove Creek, Sydney Basin. *Terra Australis*, *21*.

Attenbrow, V. (2010). *Sydney's Aboriginal Past: Investigating the archaeological and historical records*. Sydney: University of New South Wales Press Ltd.

Australian Museum Business Services. (2002). *Extension of Warkworth Coal Mine: Archaeological Assessment of Aboriginal Heritage*. Unpublished report for Coal and Allied Operations.

Australian Museum Business Services. (2009a). *Kurri Kurri Aboriginal Heritage Assessment for the 33kV Kurri-Rutherford Feeder Split: Stage 1 and Stage 2 Works*. Unpublished report for Energy Australia.

Australian Museum Business Services. (2009b). *Kurri-Redbank Feeder 953/95R (132kV) Upgrade: Aboriginal Heritage Assessment, Hunter Valley,NSW*. Unpublished report for Energy Australia.

Backhouse, J. A. (1843). *A Narrative of a Visit to the Australian Colonies*. London: Hamilton Adams.

Baker, N. (1992a). Evidence From the Analysis of Backed Artefacts. In *Narama Salvage Project Lower Bayswater Creek Hunter Valley, NSW: Technological Studies. Vol. 4.* (pp. 43–76). Unpublished report for Envirosciences Pty Ltd & Narama Joint Venture.

Baker, N. (1992b). Evidence From the Analysis of Cores. In *Narama Salvage Project Lower Bayswater Creek Hunter Valley, NSW: Technological Studies. Vol. 4.* (pp. 10–42). Unpublished report for Envirosciences Pty Ltd & Narama Joint Venture.

Baker, N. (1992c). Evidence From the Analysis of Whole Flakes. In *Narama Salvage Project Lower Bayswater Creek Hunter Valley, NSW: Technological Studies. Vol. 4.* (pp. 77–92). Unpublished report for Envirosciences Pty Ltd & Narama Joint Venture.

Baker, N. (1994). *Moffats Swamp Dune: Final Report on Archaeological Site Salvage, Testing & Artefact Analysis*. Unpublished report for RZM Pty Ltd.

Barrallier, F. (1802). Letter to C.F.Greville. Banks Papers, Brabourne Collection. Mitchell Library MS A78-3.

Bickford, A., & Sullivan, S. (1984). Assessing the research significance of historic sites. In S. Sullivan & S. Bowdler (Eds.), *Site survey and significance assessment in Australian Archaeology* (1st ed., pp. 19–26). Canberra: Australian Institute of Aboriginal Affairs.

Bowdler, S. (1981). Unconsidered trifles? Cultural resource management, environmental impact statements and archaeological research in New South Wales. *Australian Archaeology*, *12*.

Bowler, J., Jones, R., Allen, H., & Thorne, A. (1970). Pleistocene Human Remains From Australia: A Living Site and Human Cremation from Lake Mungo, Western New South Wales. *World Archaeology*, *2*, 29–60.

Brayshaw, H. (1982). *Archaeological Survey of Planned Urban Development Area, Kurri Kurri East, Hunter Valley*. Unpublished report for Jonathan Falk Planning.

Brayshaw, H. (1987). *Aborigines of the Hunter Valley: A Study of Colonial Records.* Scone and Upper Hunter Historical Society.

Brayshaw, H. (2001). *Proposed Highway Link F3 to Branxton: Update of Archaeological Assessment*. Unpublished report for NSW Roads and Traffic Authority (RTA).

Brayshaw McDonald Pty Ltd. (1994). *National Highway Extension F3 to New England Highway at Branxton, Hunter Valley, NSW*. Unpublished report for Connell Wagner Pty Ltd.

Burke, H., & Smith, C. (2004). *The Archaeologist's Field Handbook*. Sydney: Allen & Unwin.

Burke, H., & Smith, C. (2004). *The Archaeologist's Field Handbook*. Sydney: Allen & Unwin.

Butlin, N. G. (1983). *Our Original Aggression: Aboriginal Populations of Southeastern Australia 1788-1850*. Sydney: Allen & Unwin.

Capell, A. (1970). Aboriginal Languages in the South Central Coast, New South Wales: Fresh Discoveries. *Oceania*, *41*, 20–27.

Caswell, E. (1841). Letter to C. Jackson, October 19. Mitchell Library MS.Ac. 147.

Chappell, J. M. (1993). Holocene Evolution of Fluvio-Deltaic Lowlands: Comparison of the Clarence and Tweed valleys of Northern NSW with Other Systems in Different Estuarine and Tectonic Regimes. In G. J. Brierley, A. Brooks, & R. Ferguson (Eds.), *Fieldnotes for Floodplain Systems along the Coastal Plain of New South Wales. 5th International Fluvial Sedimentology Conference: Field Excursion Guide #1*.

Coutts, P. J. F., & Witter, D. C. (1977). Summer Field Programme of the Victoria Archaeological Survey. *Australian Archaeology*, *6*.

Cribb, A. B., & Cribb, J. W. (1974). *Wild Food in Australia*. Sydney: Collins.

David, T. W. E., & Etheridge, R. (1890). The Raised-Beaches of the Hunter River Delta. *Records of the Geological Survey of New South Wales*, *2*, 37–52.

Dawson, R. (1830). *The Present State of Australia*. London: Smith & Elder.

Dean-Jones, P. (1990). *Newcastle Bight Aboriginal Sites Study*. A Report to the National Parks and Wildlife Service and National Estate Grants Commitee.

Dean-Jones, P. (1992). *Archaeological Investigations of Aboriginal Sites, Proposed North Western Open Cut Area*. Unpublished report for Lemington Coal Mines Ltd.

Dean-Jones, P., & Mitchell, P. (1993). *Environmental Modelling for Archaeological Site Potential in the Central Lowlands of the Hunter Valley. Hunter Valley Aboriginal Sites Assessment Project.* Report to unknown.

Djekic, A. (1984). *An Archaeological Survey of the Route of the Kurri-Kurri to Alcan 132 KV Transmission Line*. Unpublished report for NSW Electricity Commission.

Doelman, T. (2008). *Time to Quarry: The Archaeology of Stone Procurement in Northwestern New South Wales, Australia* (BAR Intern.). Oxford: Archaeopress.

Dyall, L. K. (1980). *Report on Aboriginal Relics in Area of Proposed Smelter at Farley, N.S.W.* Unpublished report for Dames and Moore.

Dyall, L. K. (2004). *The Aboriginal Middens at Birubi: An Account of Surface Collections (1964-1977) on the Aboriginal Site at Birubi, near Port Stpehens, New South Wales, and its Subsequent Excavation in 1978 and 1979*. Unpublished report.

Ebert, J. I. (1992). *Distributional Archaeology*. Albuquerque: University of New Mexico Press.

Ebsworth, H. . (1826). A Letter Book, Kept at Sydney and Port Stephens. ML.MS.B852.

Elkin, A. P. (1932). Notes on the Social Organization of the Worimi, a Kattang-Speaking People. *Oceania*, *2*(3), 359–363.

Enright, W. J. (1900). The Language, Weapons and Manufactures of the Aborigines of Port Stephens, NSW. *Journal and Proceedings of the Royal Society of New South Wales*, *24*, 103–118.

Enright, W. J. (1901). Aboriginal Districts and Notes [Location of Minyowie, Kurringgai, Darknung, WonnahRuah, Kamilaroi, Warrangine, Gringai; Comments on Difference in Dialects]. *Science of Man*, *4*(5), 80–81.

Enright, W. J. (1932). The Kattang (Kutthung) or Worimi: An Aboriginal Tribe. *Mankind*, *1*(4), 75–77.

Enright, W. J. (1933). Further Notes on the Worimi. *Mankind*, *1*(7), 161–162.

Enright, W. J. (1936). The Worimi Tribe. *Newcastle and Hunter District Historical Society Journal and Proceedings*, *1*, 85–89.

Enright, W. J. (1937). Notes on the Aborigines of the North Coast of New South Wales. *Mankind*, *2*(4), 88–91.

Environmental Resources Management Australia Pty Ltd (ERM). (2003). *Aboriginal Archaaeology Retrieval Excavation, Hunter Economic Zone, Kurri Kurri: Test Excavation Report*. Unpublished report for Cessnock City Council.

Environmental Resources Management Australia Pty Ltd (ERM). (2004a). *Gap Analysis - Upper Hunter Valley Aboriginal Heritage Baseline Study*. Unpublished report for Upper Hunter Valley Aboriginal Heritage Trust.

Environmental Resources Management Australia Pty Ltd (ERM). (2004b). *Heritage Assessment for the Proposed Gas Pipeline from Seahampton to Rutherford: Field Survey and Desktop Assessment*. Unpublished report for Harper Somers O'Sullivan.

Eureka Heritage. (2011). *Aboriginal Heritage Impact Permit 1097239 Salvage Report, Darcy's Peak Residential Development, The Former Dagworth Estate, 235 Cessnock Road, Gillieston Heights*. Unpublished report for Stockland Residential.

Fanning, P. C., & Holdaway, S. J. (2004). Artifact Visibility at Open Sites in Western New South Wales, Australia. *Journal of Field Archaeology*, *29*, 255–271.

Fanning, P. C., Holdaway, S. J., & Rhodes, E. J. (2008). A New Geoarchaeology of Aboriginal Artefact Deposits in Western NSW, Australia: Establishing Spatial and Temporal Geomorphic Controls on the Surface Archaeological Record. *Geomorphology*, *101*(3), 524–532. doi:10.1016/j.geomorph.2007.04.027

Fanning, P. C., Holdaway, S. J., Rhodes, E. J., & Bryant, T. G. (2009). The Surface Archaeological Record in Arid Australia: Geomorphic Controls on Preservation, Exposure, and Visibility. *Geoarchaeology*, *24*(2), 121–146.

Fawcett, J. . (1898a). Notes on the Customs and Dialect of the Wonnah-ruah Tribe. *Science of Man*, *1*(8), 180–181.

Fawcett, J. . (1898b). Notes on the Customs and dialect of the Wonnah-Ruah Tribe. *Science of Man*, *1*(7), 152–154.

FloraSearch. (2004). *Hydro Aluminium Kurri Kurri: Flora Assessment*. Unpublished report for Hydro Aluminium Kurri Kurri Pty Ltd.

FloraSearch. (2008). *Hydro Aluminium Kurri Kurri: Baseline Wetland Vegetation Survey*. Unpublished report for Hydro Aluminium Kurri Kurri Pty Ltd.

Foley, R. (1981). *Off-site Archaeology and Human Adaption in Eastern Africa. An Analysis of Regional Artefact Density in the Amboseli, Southern Kenya* (BAR Intern.). Oxford: British Archaeological Reports.

Ford, G. E. (2010). *Darkinung Recognition: An Analysis of the Historiography for the Aborigines from the Hawkesbury-Hunter Ranges ti the Northwest of Sydney*. University of Sydney.

Fraser, J. (1892). *An Australian Language as Spoken by the Awabakal the People of Awaba or Lake Macquarie (Near Newcastle, New South Wales) Being an Account of Their Language, Traditions and Customs by LE Threlkeld. Re-arranged, Condensed and Edited, With an Introduction by*. Sydney: Charles Potter, Government Printer.

Galloway, R. W. (1963). Geomorphology of the Hunter Valley. In R. Story, R. W. Galloway, R. H. M. van de Graaff, & A. D. Tweedie (Eds.), *General Report on the Lands of the Hunter Valley. Land Research Series No. 8*. Melbourne: CSIRO.

Godwin, L. (2011). The Application of Assessment of Cumulative Impacts in Cultural Heritage Management: A Critique. *Australian Archaeology*, *73*(73), 88–91.

Gould, R. (1969). Puntutjarpa Rockshelter: A Reply to Messrs Glover and Lampert. *Archaeology and Physical Anthropology in Oceania*, *4*, 229–237.

Griffiths, T. (1995). *An Investigation for Aboriginal Sites and Relics of a Proposed Optic Fibre Cable Route from Kurri Kurri to Mulbring in the Lower Hunter Valley, NSW*. Unpublished report for Telecom Australia.

Gunson, N. (1974). *Australian Reminiscences and Papers of LE Threlkeld, Missionary to the Aborigines 1824-1859*. Canberra: Australian Institute of Aboriginal Affairs.

Haglund, L. (1989). Technological Change: a comparison of developments in the Goulburn and Hunter River Valleys. Report to AIAS Canberra, ACT.

Haglund, L. (1992). *Archaeological Investigations At Doctors Creek, Warkworth, NSW: Salvage Excavation and Surface Collection in Compliance with NPWS Salvage Requirements.* Unpublished report for Warkworth Mining Ltd.

Hale, H. (1846). The Languages of Australia. In *United States Exploring Expedition During the Years 1838, 1839, 1840, 1841, 1842. Under the Command of Charles Wilkes, USN. Vol. 6. Ethnography and Philology by Horatio Hale, Philologist of the Expedition*. Philadelphia: Lea & Blanchard.

Haslam, P., Heath, J., Jakes, B., James, B., Needham, B., Sokoloff, B., … West, J. (1984). *Aborigines of the Hunter Valley: Booklet 1*. Department of Education, Hunter Region, Hunter Social Studies Association, Ministry for Aboriginal Affairs NSW.

Hiscock, P. (1986a). *A Technological Analysis of Stone Artefact Assemblages from the Hunter River Valley Region. NSW National Parks and Wildlife Service Hunter Valley Region Archaeology Project: Stage 1. Vol 4a.* Unpublished report for the NSW National Parks and Wildlife Service.

Hiscock, P. (1986b). Technological Change in the Hunter River Valley and the Interpretation of Late Holocene Change in Australia. *Archaeology in Oceania*, *21*, 29–39.

Hiscock, P. (1993a). Bondian Technology in the Hunter Valley, New South Wales. *Archaeology in Oceania*, *28*, 65–76.

Hiscock, P. (1993b). The Distribution of Points Within Nauwalabila 1. *The Beagle*, (10), 173–178.

Hiscock, P. (1994). Technological Responses to risk in Holocene Australia. *Journal of World Prehistory*, *8*(3), 267–292.

Hiscock, P. (2002). Pattern and Context in the Holocene Proliferation of Backed Artefacts in Australia. In R. Elston & S. Kuhn (Eds.), *Thinking small: global perspectives on microlithization* (pp. 163–177). Archaeological Papers of the American Anthropological Association.

Hiscock, P. (2006). Blunt to the Point: Changing Technological Strategies in Holocene Australia.

Hiscock, P. (2008). *Archaeology of Ancient Australia*. Abingdon, UK: Taylor & Francis. doi:10.4324/9780203448359

Hiscock, P., & Attenbrow, V. (1998). Early Holocene Backed Artefacts from Australia.

Hiscock, P., & Attenbrow, V. (2004). A Revised Sequence of Backed Artefact Production at Capertee 3. *Archaeology in Oceania*, *39*(2), 49–63.

Holdaway, S. (1993). *Hunter Valley Aboriginal Sites Assessment Project Archaeological Assessment Standards and Methodological Design*. Unpublished report for NSW National Parks and Wildlife service.

Holdaway, S., Fanning, P., & Witter, D. C. (2000). Prehistoric Aboriginal Occupation of the Rangelands: Interpreting the Surface Archaeological Record of Far Western NSW. *The Rangeland Journal*, *22*(1), 44–57.

Holdaway, S., & Stern, N. (2004). *A record in stone: the study of Australia's flaked stone artefacts*. Canberra: Museum Victoria and Aboriginal Studies Press, Australian Institute of Aboriginal and Torres Strait Islander Studies.

Holdaway, S., Witter, D. C., & Fanning, P. (1998). New approaches to open site Spatial Archaeology in Sturt National Park, New South Wales, Australia. *Archaeology in Oceania*.

Hughes, P. (1984). *Hunter Valley Region Archaeology Project Stage 1, Volume 1: An overview of the archaeology of the Hunter Valley, its environmental setting and the impact of development*. Report to National Parks and Wildlife Service.

Hughes, P., & Hiscock, P. (2000). *Archaeological and Geomorphological Excavations at the Proposed Carrington Mine site, Hunter Valley, NSW*. Unpublished report for Environmental Resources Management Australia.

Hughes, P., Spooner, N., & Questiaux, D. (2014). The Central Lowlands of the Hunter valley, NSW: Why So Few Early Sites Have Been Found in this Archaeologically-rich Landscape. *Australian Archaeology*, *79*, 34–44.

Humphreys, G. S., & Mitchell, P. B. (1983). A Preliminary Assessment of the Role of Bioturbation and Rainwash on Sandstone Hillslopes in the Sydney Basin. In R. W. Young & G. C. Nanson (Eds.), *Aspects of Australian Sandstone Landscapes [Australian and New Zealand Geomorphology Research Group Special Publication 1]* (pp. 65–80). Wollongong: University of Wollongong.

Hunter, C. (2012). *Bound for Wallis Plains: Maitland's Convict Settlers*. Maitland: Maitland City Council.

ICOMOS (Australia). (2013). *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance*. Burwood, Victoria: Australia ICOMOS. Retrieved from http://australia.icomos.org/wp-content/uploads/The-Burra-Charter-2013-Adopted-31.10.2013.pdf

Isaacs, J. (2002). *Bush Food: Aboriginal Food and Herbal Medicine*. Marleston: JB Books.

James B. Croft & Associates. (1980). *Environmental Impact Statement for Expansion of an Aluminium Smelter. Line III Kurri Kurri, NSW. Vol. 1.* Unpublished report prepared for Alcan Australia Limited.

Jo McDonald Cultural Heritage Management Pty Ltd. (1996). The conservation of landscapes: a strategic approach to cultural heritage management. *Tempus*, *6*, 113–121.

Koettig, M. (1986). *Test Excavations at Six Locations along the Proposed Pipeline Route between Singleton and Glennies Creek Dam, Hunter Valley Region, NSW*. Report to the Public Works Department by Margrit Koettig.

Koettig, M. (1990a). *Regional Study of Heritage Significance. Central Lowlands: Hunter Valley. Electricity Commission Holdings. Vol. 3: Assessment of Aboriginal Sites.* Unpublished report for Electricity Commission of NSW.

Koettig, M. (1990b). *Survey for Aboriginal Sites in the Area of the Proposed ICI Mining Services Technology Park, Richmond Vale, Near Kurri Kurri, Hunter Valley*. Unpublished report for Mitchell McCotter.

Koettig, M. (1992). *Salvage Excavations of Aboriginal Sites on the Camberwell Lease*. Report to Camberwell Coal Pty Ltd.

Koettig, M. (1994). *Bulga Lease Authorisation 219 Salvage Excavations. Volume 1: Overview of Results* (p. 711). Bulga: Unpublished report for Saxonvale Coal Pty Ltd.

Koettig, M., & Hughes, P. (1983). Archaeological Investigations on the United Collieries Coal Lease, Warkworth, Hunter Valley, NSW. A report to United Collieries, Pty Ltd, Singleton, NSW.

Koettig, M., & Hughes, P. (1985). *Archaeological Investigations at Plashett Dam, Mount Arthur North and Mount Arthur South in the Hunter Valley, NSW - Volume 2: The archaeological survey* (Vol. 2). Unpublished report for the Electricity Commission fo New South Wales and Mount Arthur South Coal Pty Lt.

Kohen, J. (1993). *Darug and their Neighbours: The Traditional Aboriginal Owners of the Sydney Region*. Sydney: Darug Link in assoc. with Blacktown and District Historical Society.

Kovac, M., & Lawrie, J. W. (1991a). *Soil Landscapes of the Singleton 1:250 000 Sheet*. Sydney: Soil Conservation Service of NSW.

Kovac, M., & Lawrie, J. W. (1991b). *Soil Landscapes of the Singleton 1:250 000 Sheet*. Sydney: Soil Conservation Service of NSW.

Kuskie, P. (1994). *Further Archaeological Investigations of Lot 1 DP 559519, Thornton, NSW*. Unpublished report for Gutteridge Haskins & Davey Pty Ltd.

Kuskie, P. J. (n.d.). *Salvage of Aboriginal Heritage Sites at South Lemington*. Unpublished report for Lemington Coal Mine Pty Ltd.

Kuskie, P. J. (2000a). *An Aboriginal Assessment of the Proposed Mount Arthur North Coal Mine, Near Muswellbrook, Hunter Valley, New South Wales*. Report to Dames and Moore.

Kuskie, P. J. (2000b). *An Aboriginal Assessment of the Proposed Mount Arthur North Coal Mine, Near Muswellbrook, Hunter Valley, New South Wales*. (HLA-Envirosciences Pty. Ltd., Ed.)*Environmental Impact Statement and Statement of Environmental Effects, Proposed Jerrys Plains Coal Terminal, Rail Spur and Associated Infrastructure.* Canberra: Report prepared by South Eastern Archaeology to Umwelt (Australia) Pty. Ltd.

Kuskie, P. J. (2012). *Tasman Extension Project, Cessnock and Lake Macquarie Local Government Areas, Hunter Valley, New South Wales: Aboriginal Cultural Heritage Asssessment*. Unpublished report for Donaldson Coal Pty Ltd.

Kuskie, P. J., & Clarke, E. (2004). *Salvage of Aboriginal Heritage Sites in the Mount Arthur North Coal Mine Lease: Volume A*. Report to BHP Billiton-Hunter Valley Energy Coal.

Kuskie, P. J., & Kamminga, J. (2000). *Salvage of Aboriginal Archaeological Sites in Relation to the F3 Freeway, Near Lenaghans Drive, Black Hill, New South Wales. Vol. A: Report.* Unpublihsed report for NSW Roads & Traffic Authority.

Lambeck, K., & Chappell, J. (2001). Sea Level Change Through the Last Glacial Cycle. *Science*, *292*, 679–686.

Larmer, J. (1898). “Brisbane Water and Tuggerah Beach Lakes” and “Hunter”s River, Brisbane Water and Newcastle’. *Journal of the Royal Society of New South Wales*, *32*, 223–225.

Lassak, E., & McCarthy, T. (2001). *Australian Medicinal Plants*. Sydney: New Holland.

Lissarrague, A. (2006). *A Salvage Grammar and Wordlist of the Language From the Hunter River and Lake Macquarie*. Nambucca Heads: Muurrbay Aboriginal Language and Culture Cooperative.

LKSJ:KLSK:SLKS:K. (1990). Regional Study of Heritage Significance, Central Lowlands, Hunter Valley. Report by HLA Envirosciences for the Electricity Commission of NSW.

Long, A. (2003). *Scarred Trees: An Identification and Recording Manual* (pp. 1–39). Prepared for Aboriginal Affairs Victoria.

Low, T. (1988). *Wild Food Plants of Australia*. Sydney: Angus & Robertson.

MacDonald, K., & Davidson, I. (1998a). Bayswater Archaeological Research Project: Volume 1. Armidale: School of Human and Environmental Studies, University of New England.

MacDonald, K., & Davidson, I. (1998b). *Bayswater Archaeological Research Project: Volume 1*. Armidale: School of Human and Environmental Studies, University of New England.

Mary Dallas Consulting Archaeologists. (2007). *Aboriginal Archaeological Survey & Assessment Report: Lot 114 in DP703265, Cessnock Road, Gillieston Heights, NSW*. Unpublished report for Stockland Developments Pty Ltd.

Mary Dallas Consulting Archaeologists. (2008). *Aboriginal Archaeological Test Excavavtion: Area of Potential Archaeological Deposit (AHIMS #38-4-1039) in Lot 1 in DP1118847, Cessnock Road, Gillieston Heights, NSW*. Unpublished report for Pulver Cooper & Blackley Pty Ltd on behalf of Stockland developments Pty Ltd.

Matthei, L. E. (1995). *Soil Landscapes of the Newcastle 1:100000 sheet*. Sydney: Department of Land and Water Conservation.

Matthews, R. H. (1898). Initiation Ceremonies of the Native Tribes of Australia. *Proceeding of the American Philosophical Society*, *37*(157), 54–73.

Matthews, R. H. (1903). Languages of the Kamilaroi and Other Aboriginal Tribes of New South Wales. *Journal of the Anthropological Institute of Great Britain and Ireland*, *33*, 259–283.

McCardle Cultural Heritage Pty Ltd. (2010). *Farley Investigation Area: Indigenous Archaeological Due Diligence Assessment*. Unpublished report for ADW Johnson Pty Ltd on behalf of the Farley Landowners Group.

McCarthy, F. D. (1948). The Lapstone Creek Excavation. Two Culture Periods Revealed in Eastern New South Wales. *Records of the Australian Museum*, *22*(1), 1–34.

McCarthy, F. D. (1964). The Archaeology of the Capertee Valley, New South Wales. *Records of the Australian Museum*, *26*(6), 197–264.

McCarthy, F. D. (1967). *Australian Aboriginal Stone Implements* (2nd Ed.). Sydney: The Australian Museum Trust.

McCarthy, F. D., & Davidson, F. (1943). The Elouera Industry of Singleton, Hunter River, New South Wales. *Records of the Australian Museum*, *21*(4), 210–230.

McKiernan, B. (1911). Some Notes on the Aborigines of the Lower Hunter River. *Anthropos*, *6*, 885–892.

McNiven, I. (1992). Shell Middens and Mobility: The Use of Off-site Faunal Remains, Queensland, Australia. *Journal of Field Archaeology*, *19*(4), 495–508.

Miller, R. (1887). The Hunter River. The Wonnarua Tribe and Language. In E. M. Curr (Ed.), *The Australian Race* (pp. 352–357). Melbourne: Government Printer.

Mills, R. (1999). *A Heritage Assessment for the Proposed New Wastewater Treatment Plant at Kurri Kurri*. Unpublished report for Sinclair Knight Merz on behalf of Hunter Water Corporation.

Mitchell, P. B. (1988). The Influence of Vegetation, Animals and Micro-organisms on Soil Processes. In H. A. Viles (Ed.), *Biogeomorphology* (pp. 43–82). Oxford: Basil Blackwell.

Moore, D. (1969). The Prehistory of the Hunter River Valley. *Australian Natural History*, *16*(5), 166–171.

Moore, D. (1970). Results of an Archaeological Survey of the Hunter River Valley, New South Wales, Australia. Part I: The Bondaian Industry of the Upper Hunter and Goulburn River Valleys. *Records of the Australian Museum*, *28*(2), 25–64. doi:10.3853/j.0067-1975.28.1970.421

Moore, D. (1981). Results of an Archaeological Survey of the Hunter River Valley, New South Wales, Australia. Part II: Problems of the Lower Hunter and Contacts with the Hawkesbury Valley. *Records of the Australian Museum*, *33*(9), 388–442.

Moore, M. (1997). *Further Technological Descriptions of Artefacts Excavated at Bettys Creek, Mt Owen Mine, Hunter Valley, NSW. Archaeological Test Excavations of Aboriginal Sites at Bettys Creek, Mt Owen Mine, Hunter Valley, NSW. Vol. 2.* Unpublished report for Mt Owen Mine, BHP Coal Australia.

Moore, M. W. (2000). Technology of Hunter Valley microlith assemblages, New South Wales. *Australian Archaeology*, *51*, 28–39.

Moore, M. W. (2013). Simple Stone Flaking in Australasia: Patterns and Implications. *Quaternary International*, *285*, 140–149.

NSW Department of Environment Climate Change & Water. (2010a). *Aboriginal Cultural Heritage Consultation Requirements for Proponents*. Department of Environment, Climate Change and Water.

NSW Department of Environment Climate Change & Water. (2010b). *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*. Department of Environment, Climate Change and Water.

NSW Department of Environment Climate Change & Water. (2010c). *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW*. NSW Department of Environment, Climate Change and Water.

NSW Office of Environment & Heritage. (2011). *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW*. Office of Environment and Heritage.

OzArk Environmental & Heritage Pty Ltd. (2013). *Aboriginial Archaeological Values Assessment Bulga Optimisation Project*.

Pearson, M., & Sullivan, S. (1995). *Looking After Heritage Places: The Basics of Heritage Planning for Managers, Landowners and Administrators*. Carlton: Melbourne University Press.

Peterson, N. (1976). *Tribes and Boundaries in Australia*. (N. Peterson, Ed.). Camberra: Australian Institute of Aboriginal and Torres Strait Islander Studies.

Pike, P., Walker, M., & Associates. (1994). *City of Cessnock Heritage Study. Vol. 1: Historical Context Report*. Unpublished report for Cessnock City Council.

Raggatt, H. G. (1938). Note on Some Silicified Sands ('Grey Billy') in the Hunter Valley (N.S.W.). *Journal and Proceedings of the Royal Society of NSW*, *72*, 318–324.

Rich, E. (1990). Archaeological Survey of Proposed Recycling Facility at the Alcan Aluminium Smelter at Kurri Kurri, NSW. Ravensworth: Unpublished report for Envirosciences Pty Limited.

Rich, E. (1991). *Investigation of Aboriginal Sites SW3 and SC4 at South Wambo, Near Bulga, NSW*. Unpublished report for Envirosciences Pty Ltd.

Rich, E. (1992). *Narama Salvage Project, Lower Bayswater Creek, Hunter Valley, NSW. Vol 1: Overview*. Unpublished report for Envirosciences Pty Ltd & Narama Joint Venture.

Rich, E. (1993). *Archaeological Investigation of Sites 37-5-63 and 37-5-126, Hunter Valley No.1 Mine*. Unpublished report for Coal and Allied Operations Pty Ltd.

Robertson, G. (2011). Aboriginal Use of Backed Artefacts at Lapstone Creek Rock-shelter , New South Wales : An Integrated Residue and Use-wear Analysis, (23), 83–101.

Robins, R. (1997). Patterns in the Landscape: A Case Study in Nonsite Archaeology from Southwest Queensland. *Memoirs of the Queensland Museum, Cultural Heritage Series*, *1*(1), 23–56.

Ross, A. (1984). *If There Were Water: Prehistoric Settlement Patterns in the Victorian Mallee*. Macquarie University, Sydney.

Roy, P. S., & Crawford, E. A. (1980). Quaternary Geology of the Newcastle Bight Inner Continental Shelf, New South Wales. *Records of the Geological Survey of New South Wales*, *19*, 145–188.

Roy, P. S., Hudson, J. P., & Boyd, R. L. (1995). Quaternary Geology of the Hunter Delta - An Estuarine Valley-Fill Case Study. In *Engineering Geology of the Newcastle-Gosford Region: Proceedings of Conference, University of Newcastle 9New South Wales), 5-7 Feb 1995*. Springfield: Conference Publications on behalf of Australian Geomechanics Society.

RPS Harper Somers O'Sullivan Pty Ltd. (2009). *Draft Cultural Heritage Assessment for a Proposed Upgrade of farley Waste Water Treatment Works at Owlpen Lane off Wollombi Road, Farley, NSW*. Unpublished report for Hunter Water Corporation.

Scarp Archaeology. (2009). *Warkworth Sands Archaeological Project*. Unpublished report for Rio Tinto Coal Australia.

Schlanger, N. (1992). Recognising Persistent Places in Anasazi Settlement Systems. In *Space, Time and Archaeological Landscapes* (pp. 91–112). New York: Plenum Press.

Scott, W. (1929). *The Port Stephens Blacks: Recollections of William Scott*. Dungog: The Chronical Office.

Shiner, J. (2008). *Place as Occupational Histories: An Investigation of the Deflated Surface Archaeological Record of Pine Point and Langwell Stations, Western New South Wales, Australia* (BAR Intern.). Oxford: Archaeopress.

Smith, C., & Burke, H. (2007). *Digging It Up Down Under: A Practical Guide to Doing Archaeology in Australia*. New York: Springer.

Smith, G. (Ed.). (1979). *Kurri Kurri 1904-1979*. Kurri Kurri: Kurri Kurri Civic Committee.

Sokoloff, B. (1980). *The Worimi: Hunter Gatherers at Port Stephens*. Raymond Terrace: Raymond Terrace and District Historical Society.

Speight, J. G. (2009). Landform. In R. C. McDonald Isbell, R.F., Speight, J.G., Walker, J. and Hopkins, M.S. (Ed.), *Australian soil and land survey field handbook* (3rd ed., pp. 15–72). Melbourne: CSIRO Publishing.

Stewart, K., & Percival, B. (1997). *Bush Foods of New South Wales: A Botanic Record and an Aboriginal Oral History* (p. 52). Sydney: Royal Botanic Gardens Sydney.

Story, R., Galloway, R. W., van de Graaf, R. H. M., & Tweedie, A. D. (1963). *General Report on the Lands of the Hunter Valley*. *Land research Series No 8*. Melbourne: CSIRO.

Stuart, I. (1994). *An Archaeological Survey of a Proposed Dross Mill at Kurri Kurri, Hunter Valley, NSW*. Unpublished report.

Thom, B. G., & Murray-Wallace, C. V. (1988). Last Intergacial (Stage 5e) Estuarine Sediments at Largs, New South Wales. *Australian Journal of Earth Sciences*, *35*, 571–574.

Threlkeld, L. E. (1827). *Specimens of a Dialect of the Aborigines of New South Wales; Being the First Attempt to Form Their Speech Into a Written Language*. Sydney: Monitor Office.

Threlkeld, L. E. (1834). *An Australian Grammar, Comprehending the Principles and Natural Rules of the Language as Spoken by the Aborigines in the Vicinity of Hunter's River, Lake Macquarie & c.* Sydney: Stphens & Stokes.

Threlkeld, L. E. (1836). *An Australian Spelling Book in the Language as Spoken by the Aborigines in the Vicinity of Hunter's River, Lake Macquarie, New South Wales*. Sydney: Stephens & Stokes.

Threlkeld, L. E. (1850). *A Key to the Structure of the Aboriginal Language Being an Analysis of the Particles Used as Suffixes, to Form the Various Modifications of the Verbs; Shewing the Essential Powers, Abstract Roots, and Other Perculiarities of the Language Spoken by the Abo*. Sydney: Kemp & Fairfax.

Tindale, N. B. (1974). *Aboriginal Tribes of Australia: Their Terrain, Environmental Controls, Distribution, Limits and Proper Names*. Canberra: Australian University Press.

Turner, J., & Blyton, G. (1995). *The Aboriginals of Lake Macquarie: A Brief History*. Speers Point: Lake Macquarie City Council.

Umwelt (Australia) Pty Ltd. (n.d.). *Hunter Expressway - Stage 4 Results of the Stage 1, 2 and 3 Subsurface Investigation and Surface and Subsurface Salvage*. Unpublished report for NSW Roads and Traffic Authority (RTA).

Umwelt (Australia) Pty Ltd. (2003). *Proposed National Highway Link F3 to Branxton: Additional Aboriginal Heritage Assessment*. Unpublished report for NSW Roads and Traffic Authority (RTA).

Umwelt (Australia) Pty Ltd. (2006a). *Proposed National Highway Link F3 to Branxton - Stage 2 Research Design and Methodology to Accompany a DEC Section 87 Preliminary Research Permit Apoplication and a DEC Section 90 Consent Application*. Unpublished report for NSW Roads and Traffic Authority (RTA).

Umwelt (Australia) Pty Ltd. (2006b). *Proposed National Highway Link F3 to Branxton - Stage 3 Research Design and Methodology to Accompany a DEC Section 90 Consent Application*. Unpublished report for Roads and Traffic Authority.

Umwelt (Australia) Pty Ltd. (2006c). *Proposed National Highway Link F3 to Branxton: Preliminary Report Stage 2 Section 90 Salvage and section 87 Subsurface Investigation*. Unpublished report for NSW Roads and Traffic Authority (RTA).

Umwelt (Australia) Pty Ltd. (2010a). *Hunter Expressway: Aboriginal Cultural Heritage Plan of Management*. Unpublished management plan for NSW RTA.

Umwelt (Australia) Pty Ltd. (2010b). *Salvage Report - DECC s90 Consent #2714, Gillieston Heights, NSW*. Unpublished report for Mirvac Homes Pty Ltd.

Umwelt (Australia) Pty Ltd. (2010c). *Section 87/90 AHIP Salvage of Artefacts from the Stage 4 to 11 Areas, Saddlers Ridge Estate, Gillieston Heights, NSW*. Unpublished report for Mirvac Homes Pty Ltd.

Veth, P., & O'Connor, S. (1996). A Preliminary Analysis of Basal grindstones from the Carnarvon Range, Little Sandy Desert. *Australian Archaeology*, *43*, 20–22.

White, B. (2012). Minimum Analytical Nodules and Lithic Activities at Site W2, Hunter Valley, New South Wales. *Australian Archaeology*, *75*, 25–36.

White, E. (1998). *Archaeological Salvage of Sites B10 & B33, Bengalla Mine, Hunter Valley, NSW*. Report prepared for Bengalla Mining Company.

White, E. (1999). *From Artefacts to the Actions of People in Prehistory: a Behavioural Study of the W2 Stone Artefact Assemblage, Hunter Valley, NSE*. University of Sydney.

Wright, R. V. S. (1970). Flaked Stone Material from GGW-1. *Memoirs of the National Museum of Victoria*, *30*, 79–92.

Zola, N., & Gott, B. (1992). *Koorie Plants, Koorie People: Traditional Aboriginal Food, Fibre and Healing Plants of Victoria*. Melbourne: Koorie Heritage Trust.

Appendix A

Aboriginal Community Consultation Log

Date	To/From AECOM	Organisation	Contact person(s)	Method of contact	AECOM representative	Summary
10.02.14	From AECOM	OEH	-	Letter	A.McLaren	Letter to request information regarding Aboriginal individuals and/or organisations who may hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects/places in the area of the project.
10.02.14	From AECOM	Mindaribba LALC	-	Letter	A.McLaren	As above
10.02.14	From AECOM	Office of the Registrar	-	Letter	A.McLaren	As above
10.02.14	From AECOM	National Native Title Tribunal	-	Email with letter attachment	A.McLaren	As above
10.02.14	From AECOM	NTSCORP Limited	-	Letter	A.McLaren	As above
10.02.14	From AECOM	Maitland Shire Council	-	Letter	A.McLaren	As above
10.02.14	From AECOM	Cessnock Shire Council	-	Letter	A.McLaren	As above
10.02.14	From AECOM	Hunter-Central Rivers Catchment Management Authority	-	Letter	A.McLaren	As above
11.02.14	To AECOM	National Native Title Tribunal	Sylvia Jagtman	Email with letter attachment	A.McLaren	Response to AECOM's letter dated 10.02.14 advising results of Native Title search request.
13.02.14	To AECOM	Tocomwall Pty Ltd	Scott Franks	Phone	A.McLaren	Scott has advised receipt of project information through NTSCORP. Verbal registration of interest.
18.02.14	To AECOM	Lower Hunter Wonnarua Cultural Services	Thomas Miller	Email with letter attachment	A.McLaren	Email with letter attachment advising that LHWCS wish to register their interest in being consulted for the project. LHWCS have advised that they wish to be included in all aspects of the assessment in a paid capacity. Mr Miller advises that he is a registered Native Title Claimant in the Hunter Valley (Registration number: NC 02/07, N6008/02).
19.02.14	To AECOM	Mindaribba LALC	Steven Talbott	Email with letter attachment	A.McLaren	Response to AECOM's letter dated 10.02.14 advising that Mindaribba LALC wish to register their interest being consulted for in the project.

19.02.14	To AECOM	Ungooroo Aboriginal Corporation (UAC)	Jessi Garland	Email with letter attachment	A.McLaren	Letter advising that UAC wish to register their interest in being consulted for the project.
20.02.14	To AECOM	-	Amanda Heard	Email	A.McLaren	Email from A.Heard indicating that she wishes to register an interest in being consulted for the project.
20.02.14	To AECOM	Gomeroi Namoi	Greg Heard	Email	A.McLaren	Email from G.Heard indicating that Gomeroi Namoi wish to register their interest in being consulted for the project and have knowledge of the area through previous heritage assessments.
22.02.14	To AECOM	Office of the Registrar, *Aboriginal Land Rights Act 1983*	Tabatha Dantoine	Letter	A.McLaren	Response to AECOM's letter dated 10.02.14 advising that the Project area does not appear to have Registered Aboriginal Owners pursuant to Division 3 of the *Aboriginal Land Rights Act 1983* (NSW)
24.02.14	To AECOM	Wanaruah LALC	Noel Downs	Email with letter attachment	A.McLaren	E-mail with .pdf attachment containing requests for registration from Giwirri Consultants (signed R.Matthews), Hunter Valley Cultural Consultants (signed C.Archbold), Upper Hunter Heritage and Culture (signed D.Matthews) and Aboriginal Native Title Consultants (signed Margaret Matthews).
25.02.14	From AECOM	Wanaruah LALC	Noel Downs	Email	A.McLaren	Email to thank Mr Downs for passing on requests for registrations and request for clarification regarding Wanaruah LALC's intentions regarding registration.
25.02.14	To AECOM	Wanaruah LALC	Noel Downs	Email	A.McLaren	Response from Mr Downs advising that as the Project area is located in the Cessnock/Kurri Kurri area it likely falls outside of the Wanaruah LALC's boundaries.
06.03.14	To AECOM	OEH	Nicole Davis	Email with letter attachment	A.McLaren	Response to AECOM's letter dated 10.02.14 providing list of known Aboriginal parties for the Kurri Kurri area (n = 75).

11.03.14	From AECOM	All Aboriginal parties identified by OEH in letter dated 06.03.14 (n = 75)	Various	Letter	A.McLaren	Expression of Interest (EOI) letter with project information included.
12.03.14	To AECOM	Jarban & Mugrebea	Les Atkinson	Email with letter attachment	A.McLaren	Response to AECOM's EOI letter dated 11.03.14 advising that Jarban & Mugrebea wish to register their interest in being consulted for the project.
13.03.14	From AECOM	Gomeroi Namoi	Greg Heard	Email with letter attachment	A.McLaren	Expression of Interest (EOI) letter provided for Gomeroi Namoi's information/ records following registration request on 20.02.14.
13.03.14	From AECOM	-	Amanda Heard	Email with letter attachment	A.McLaren	Expression of Interest (EOI) provided for Ms Heard's information/ records following registration request on 20.02.14.
13.03.14	From AECOM	LHWCS	Tom Miller	Email with letter attachment	A.McLaren	Expression of Interest (EOI) letter with project information included. Provided for LHWCS's information/ records following registration request on 18.02.14.
13.03.14	To AECOM	E&T Culture & Heritage	Mervyn Leslie for Esther Tighe	Phone	A.McLaren	Phone call to register Esther Tighe's interest in being consulted for the Project.
14.03.14	To AECOM	Gidawaa Walang	Ann Hickey	Fax	A.McLaren	Fax to register interest in being consulted for the Project.
16.03.14	To AECOM	Cacatua General Services	Donna Sampson	Email with letter attachment	A.McLaren	Letter to register interest in being consulted for the Project.
16.03.14	To AECOM	AGA Services	Adam Sampson	Email with letter attachment	A.McLaren	Letter to register interest in being consulted for the Project.
17.03.14	To AECOM	Amanda Hickey Cultural Services	Amanda Hickey	Email	A.McLaren	Email to register interest in being consulted for the Project.
17.03.14	To AECOM	Widescope Indigenous Group	Steven Hickey	Email	A.McLaren	Email to register interest in being consulted for the Project.
17.03.14	To AECOM	A1 Indigenous Services	Carolyn Hickey	Email	A.McLaren	Email to register interest in being consulted for the Project.
18.03.14	To AECOM	Wallangan Cultural Services	Maree Waugh	Email	A.McLaren	Email to register interest in being consulted for the Project.
18.03.14	To AECOM	Yinarr Cultural Services	Kathie Kinchela	Email with letter attachment	A.McLaren	Letter to register interest in being consulted for the Project.
19.03.14	To AECOM	Culturally Aware	Tracey Skene	Email	A.McLaren	Email to register interest in being consulted for the Project.

19.03.14	From AECOM	Mindaribba LALC	Steve Talbott	Email with letter attachment	A.McLaren	Copy of EOI letter provided by email in response to a telephone query from Mr Talbott regarding the whereabouts of Mindaribba LALC's EOI letter. Advised that Mindaribba LALC's EOI was sent via post on 11 March 2014.
19.03.14	To AECOM	Giwirri Consultants	Rodney Matthews	Phone	A.McLaren	Verbal request to register interest in being consulted for the Project. Confirmed earlier registration through N.Downs.
19.03.14	To AECOM	HSB Consultants	Patricia Hampton	Email with letter attachment	A.McLaren	Letter to register interest in being consulted for the Project.
19.03.14	To AECOM	Wanaruah LALC	Suzie Worth	Email with letter attachment	A.McLaren	Letter to register interest in being consulted for the Project. Wanaruah LALC have advised that they do not wish to participate in fieldwork as the project falls outside of Wanaruah LALC boundary.
19.03.14	To AECOM	Kawul Wonn1 Contracting	Suzie Worth for Arthur Fletcher	Email with letter attachment	A.McLaren	Letter to register interest in being consulted for the Project.
20.03.14	To AECOM	Upper Hunter Wonnarua Council	Rhoda Perry	Phone	A.McLaren	Phone message to register interest in being consulted for the Project.
20.03.14	To AECOM	Yinarr Cultural Services	Kathie Kinchela	Email with letter attachment	A.McLaren	Copy of registration letter received on 18.03.14.
22.03.14	To AECOM	Ka-u-ma Pondee	Jill Green	Email	A.McLaren	Email to register interest in being consulted for the Project.
25.03.14	To AECOM	Tocomwall Pty Ltd	Scott Franks	Phone	A.McLaren	Verbal confirmation of registration
23.03.14	To AECOM	-	Jeff Matthews	Letter	A.McLaren	Letter to register interest in being consulted for the Project.
26.03.14	To AECOM	Lower Hunter Aboriginal Incorporated	David Ahoy	Email	A.McLaren	Email to register interest in being consulted for the Project.
31.03.14	To AECOM	Kawul Cultural Services	Vicky Slater	Email with letter attachment	A.McLaren	Letter to register interest in being consulted for the Project.
04.04.14	To AECOM	HECMO Consultants	Karen Boyd	Email with letter attachment	A.McLaren	Letter to register interest in being consulted for the Project.
07.04.14	To AECOM	HTO Environmental Management Services	Paulette Ryan	Phone	A.McLaren	Registering interest in being consulted for the Project.

07.04.14	To AECOM	HTO Environmental Management Services	Paulette Ryan	Email with attachments	A.McLaren	Email advising current contact details.Certificate of currency for business insurance also provided.
15.04.14	From AECOM	All RAPs	Various	Draft methodology	A.McLaren	Draft methodology for RAP review
28.04.14	From AECOM	Mindaribba LALC	Lea-Anne Ball	Letter	A.McLaren	Letter notifying Mindaribba LALC of RAPs for project
28.04.14	From AECOM	OEH	Nicole Davis	Letter	A.McLaren	Letter notifying Mindaribba LALC of RAPs for project
05.05.14	To AECOM	Giddawaa Walang Cultural Heritage	Annie Hickey	Email	A.McLaren	Response to draft methodology. GWCH agree with the methodology. Brief overview of skills/experience and insurance details also provided.
06.05.14	To AECOM	Lower Hunter Aboriginal Incorporated	David Ahoy	Email with letter attachment	A.McLaren	Response to draft methodology. LHAI agree with the methodology and have indicated that all consultation has been “presented in the proper manner with respect to Aboriginal Culture and Values”. Brief overview of skills/experience and insurance details also provided.
13.05.14	To AECOM	Kauwul Wonn1 Contracting	Suzie Worth for Arthur Fletcher	Email with letter attachment	A.McLaren	Response to draft methodology. Kauwul Wonn1 Contracting have reviewed the methodology and find it acceptable. Brief overview of skills/experience and insurance details also provided.
14.05.14	From AECOM	Amanda Hickey Cultural Services	Amanda Hickey	Phone	A.McLaren	Phone call to discuss draft methodology. No answer. Message and contact details left on answerphone.
14.05.14	From AECOM	A1 Indigenous Services	Carolyn Hickey	Phone	A.McLaren	Phone call to discuss draft methodology. Carolyn will have a look today and provide response.
14.05.14	From AECOM	-	Amanda Heard	Phone	A.McLaren	Phone call to discuss draft methodology. No answer. Message and contact details left on answerphone.
14.05.14	From AECOM	Widescope Indigenous Group	Steven Hickey	Phone	A.McLaren	Phone call to discuss draft methodology. No answer. No answerphone service. AECOM phone number sent by text.
14.05.14	To AECOM	Amanda Hickey Cultural Services	Amanda Hickey	Phone	A.McLaren	Return call from earlier message. Organisation secretary is looking it over and will provide response.

14.05.14	From AECOM	Wallangan Cultural Services	Maree Waugh	Phone	A.McLaren	Phone call to discuss draft methodology. No answer. No answerphone service.
14.05.14	From AECOM	Yinarr Cultural Services	Kathie Kinchela	Phone	A.McLaren	Phone call to discuss draft methodology. No answer. Message and contact details left on answerphone.
14.05.14	From AECOM	AGA Services	Adam Sampson	Phone	A.McLaren	Phone call to discuss draft methodology. Adam agrees with the methodology.
14.05.14	From AECOM	Cacatua General Services	Donna Sampson	Phone	A.McLaren	Phone call to discuss draft methodology. No answer. Message and contact details left on answerphone.
14.05.14	From AECOM	Aboriginal Native Title Elders Consultants	John Matthews	Phone	A.McLaren	Phone call to discuss draft methodology. John agrees with the methodology and has indicated that they have participated in a number of surveys in the Kurri Kurri area.
14.05.14	To	Wallangan Cultural Services	Maree Waugh	Phone	A.McLaren	Return call from earlier message. Maree agrees with the methodology.
14.05.14	From AECOM	Culturally Aware	Tracey Skene	Phone	A.McLaren	Phone call to discuss draft methodology. No answer. Message and contact details left on answerphone.
14.05.14	From AECOM	Esther Tighe	Mervyn Leslie	Phone	A.McLaren	Phone call to discuss draft methodology. Mervyn has reviewed and agrees with draft methodology. Mervyn has indicated that Esther is also happy with the methodology.
14.05.14	From AECOM	Giwirri Consultants	Rodney Matthews	Phone	A.McLaren	Phone call to discuss draft methodology. No answer. Message and contact details left on answerphone.
14.05.14	From AECOM	Hunter Valley Cultural Consultants	Christine Archbold	Phone	A.McLaren	Phone call to discuss draft methodology. No answer. Message and contact details left on answerphone.
14.05.14	From AECOM	Upper Hunter Heritage & Culture	Darrel Matthews	Phone	A.McLaren	Phone call to discuss draft methodology. No answer. Message and contact details left on answerphone.
14.05.14	From AECOM	HSB Heritage Consultants	Patricia Hampton	Phone	A.McLaren	Phone call to discuss draft methodology. No answer. Message and contact details left on answerphone.
14.05.14	From AECOM	Jarban & Mugrebea	Les Atkinson	Phone	A.McLaren	Phone call to discuss draft methodology. Les has indicated

						that due to other commitments he has not had a chance to review the methodology. Should he get a chance, he will have a look over it and respond.
14.05.14	From AECOM	-	Jeff Matthews	Phone	A.McLaren	Phone call to discuss draft methodology. Jeff at work. Message asking Jeff to call A.McLaren provided.
14.05.14	From AECOM	Kauma Pondee Inc	Jill Green	Phone	A.McLaren	Phone call to discuss draft methodology. No answer. No answerphone.
14.05.14	From AECOM	HECMO Consultants	Kerren Boyd	Phone	A.McLaren	Phone call to discuss draft methodology. Kerren agrees with the methodology.
14.05.14	From AECOM	HTO Environmental Management Services	Paulette Ryan	Phone	A.McLaren	Phone call to discuss draft methodology. Paulette is happy with the methodology.
14.05.14	From AECOM	Ungooroo Aboriginal Corporation	Jessi Garland	Phone	A.McLaren	Phone call to discuss draft methodology. No answer. No answerphone.
14.05.14	From AECOM	Lower Hunter Wonnarua Cultural Services	Tom Miller	Phone	A.McLaren	Phone call to discuss draft methodology. No answer. Name and contact details sent as text.
14.05.14	From AECOM	Wanaruah LALC	Noel Downs	Phone	A.McLaren	Phone call to discuss draft methodology. Noel has indicated that Wanaruah LALC is happy for their involvement to be limited to receiving assessment reports.
14.05.14	To AECOM	Lower Hunter Wonnarua Cultural Services	Tom Miller	Phone	A.McLaren	Return call from earlier message. Tom has indicated that he will review the methodology and provide response by email.
14.05.14	To AECOM	-	Amanda Heard	Phone	A.McLaren	Return call from earlier message. Amanda will look it over when she gets back to office and provide response by email.
14.05.14	From AECOM	Kawul Cultural Services	Vicky Slater	Phone	A.McLaren	Phone call to discuss draft methodology. No answer. No answerphone.
14.05.14	To AECOM	Kauma Pondee Inc	Jill Green	Phone	A.McLaren	Return call from earlier message. Jill will look it over tonight and has requested a phone call in the morning to discuss. A.McLaren to call.
14.05.14	To AECOM	Lower Hunter Wonnarua	Tom Miller	Email with letter	A.McLaren	Response to draft methodology provided as letter. Mr Miller

		Cultural Services		attachment		states that he has reviewed the draft methodology and believes that it is not a methodology but rather "just background information".
15.05.14	To AECOM	Tocomwall Pty Ltd	Scott Franks	Phone	A.McLaren	Return call from earlier message. Scott has reviewed the draft methodology and supports it.
15.05.14	From AECOM	Kauma Pondee Inc	Jill Green	Phone	A.McLaren	Follow-up phone call from 14.05.14. No answer. No answerphone.
15.05.14	To AECOM	Mindaribba LALC	Steve Talbott	Email with letter attachment	A.McLaren	Response to draft methodology provided as letter. Mindaribba LALC state that they support "the rezoning application in particular provided that a full Aboriginal Heritage Assessment is conducted and any recommendations that may follow such assessment are adhered to". In addition, they state that "Mindaribba believes the methodology that we have received is more of a back ground of the project".
15.05.14	To AECOM	Gomeroi Namoi	Greg Heard	Email	A.McLaren	Response to draft methodology. Mr Heard states that "Gomeroi Namoi support rezoning application providing a full Aboriginal Heritage Assessment is carried out on entire Project area". In addition, he states that "should there be any recommendations following such an assessment those recommendations are to be implemented or addressed prior to development approval".
15.05.14	To AECOM	Cacatua General Services	Donna Sampson	Phone	A.McLaren	Donna has reviewed the draft methodology and supports it.
10.06.14	From AECOM	All RAPs (excluding Wanaruah LALC)	Various	Email & phone	A.McLaren	Verbal and written requests for insurance certificates
13.06.14	From AECOM	All RAPs (excluding those without email)	Various	Email with letter attachment	A.McLaren	Provision of fieldwork notification letter & Subcontractor's Statement
13.06.14	From AECOM	All RAPs without email	Various	Letter (Express-post)	A.McLaren	Provision of fieldwork notification letter & Subcontractor's Statement
13.06.14	To AECOM	Lower Hunter Wonnarua	Tom Miller	Email	A.McLaren	Response to fieldwork notification letter. Mr Miller has requested to know if there is

		Cultural Services				only one day of survey and, if not, why Lower Hunter Wonnarua Cultural Services has only received one day. Mr Miller notes the he has "walked the whole of this area as this is were [sic] my family grew up around my cousins lived out in this area". Response requested.
13.06.14	From AECOM	Lower Hunter Wonnarua Cultural Services	Tom Miller	Email	A.McLaren	Response to query above. Mr Miller informed that the survey is scheduled to run for a total of 8 days and that AECOM, under direction from Hydro, has developed a roster to provide all Registered Aboriginal Parties with an opportunity to be involved in the survey. Noted that a roster has been necessary given the large number of RAPs for this project (n = 31). Noted that Mindaribba LALC will be represented each day of the survey, as directed by Hydro, with all other RAPs spread across the survey period. Noted that any cultural information Mr Miller can provide before or after the survey would be most welcomed.
18.06.14	From AECOM	Upper Hunter Heritage and Culture	Darrel Matthews	Phone	A.McLaren	Phone call to follow up re insurances and Subcontractor's Statement. Darrel has confirmed he will send through.
18.06.14	From AECOM	Hunter valley Cultural Consultants	Christine Archbold	Phone	A.McLaren	Phone call to follow up re insurances and Subcontractor's Statement. No answer. Message left.
18.06.14	From AECOM	Mindaribba LALC	Steve Talbott	Phone	A.McLaren	Phone call to follow up re insurances and Subcontractor's Statement. No answer. Message left.
18.06.14	From AECOM	Cacatua General Services	Donna Sampson	Phone	A.McLaren	Phone call to follow up re Subcontractor's Statement. No answer. Message left.
18.06.14	To AECOM	Cacatua General Services	Donna Sampson	Phone	A.McLaren	Response to earlier phone message. Donna to provide Subcontractor's Statement by COB today.
18.06.14	From AECOM	Gidawaa Walang Cultural Heritage Consultancy	Annie Hickey	Phone	A.McLaren	Phone call to follow up re Subcontractor's Statement. No answer. Message left.
18.06.14	From	HSB Heritage	Patricia	Phone	A.McLaren	Phone call to follow up re Subcontractor's Statement.

	AECOM	Consultants	Hampton			Patricia will provide today.
18.06.14	To AECOM	Mindaribba LALC	Steve Talbott	Phone	A.McLaren	Response to earlier phone message. Steve will get admin to send through today. Steve will also arrange Subcontractor's Statement and Workers Compensation Insurance for Gomeroi Namoi.
01.07.14	To AECOM	Wurrumay Consultant	Kerrie Slater	Email	A.McLaren	Email from K.Slater regrading fieldwork and registration. Kerrie notes that she sent her EOI for the project by fax on 25-03-14 and is aware that fieldwork has been undertaken. Request to be involved in project.
02.07.14	From AECOM	Wurrumay Consultant	Kerrie Slater	Email	A.McLaren	Response to email above. Informed Kerrie that fieldwork has just been completed and that fax was never received. Offer to register interest in project and be provided with draft report extended.
02.07.14	To AECOM	Wurrumay Consultant	Kerrie Slater	Email	A.McLaren	Kerrie has confirmed that she would like to register her organisation for the project.
7.11.14	From AECOM	All RAPs	Various	Mail	A.McLaren	Draft report for RAP review
11.11.14	To AECOM	Wanaruah LALC	Suzie Worth	Phone	A.McLaren	Suzie Worth, on behalf of the Wanaruah LALC, advises that the LALC is happy with the report overall but request that the development control triggering due diligence be modified to state that an Aboriginal persons should be present for these assessments.
11.12.14	To AECOM	Gidawaa Walang Cultural Heritage Consultancy	Annie Hickey	Email	A.McLaren	Gidawaa Walang Cultural Heritage Consultancy support the management recommendations in the draft report.

Appendix B

Agency Responses

NSW GOVERNMENT | Office of Environment & Heritage

Our reference: DOC14
Contact: Nicole Davis (02) 4908 6825

Dr Andrew P McLaren
Archaeologist
AECOM
PO Box Q410
QVB Post Office NSW 1230

Dear Dr McLaren

Re: Request for information on Aboriginal people who may hold cultural knowledge relevant to Kurri Kurri NSW

Thank you for your correspondence to the Office of Environment and Heritage (OEH) dated 10 February 2014, regarding Aboriginal cultural heritage consultation for the proposed rezoning for future residential and employment-related development. I apologise for the delay in responding.

Please find enclosed a list of known Aboriginal parties for the Kurri Kurri Area that OEH considers likely to have an interest in the proposal. Note this is not necessarily an exhaustive list of all interested Aboriginal parties. Receipt of this list does not remove the requirement for a proponent/consultant to advertise the proposal in the local print media and contact other bodies and community groups seeking interested Aboriginal parties, in accordance with the OEH '*Aboriginal cultural heritage consultation requirements for proponents 2010*' (the CRs).

OEH would also like to take this opportunity to remind the proponent and consultant to:

- Ensure the project documents the full consultation process in the Aboriginal Cultural Heritage Assessment Report and to include copies of all correspondence sent or received from all relevant stakeholders (including Aboriginal stakeholders and the agencies listed in section 4.1.2 of the CRs). Omission of these records in the final report may cause delays in the assessment of the Aboriginal Heritage Impact Permit application or require parts of the consultation process to be repeated if the evidence provided to OEH does not demonstrate that the consultation process has been fair, equitable and transparent.

- Ensure OEH is provided with evidence that reasonable attempts have been made to contact the relevant parties associated with the CRs. If this is not provided then OEH will deem that the consultation process has not complied with the CRs. OEH considers evidence of reasonable efforts to contact relevant parties would include, but not be limited to, multiple forms of communication; faxes (with confirmation slips demonstrating successful transmission), an e-mail log, registered post details, copies of letters and a phone call log

- Full details of the consultation requirements and the relevant Fact Sheets can be located on the OEH website at: www.environment.nsw.gov.au/licences/consultation.htm.

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- Forward to OEH any changes to the contact details of interested Aboriginal parties, or information regarding additional parties, so that OEH can update its records.

- Ensure that consultation is fair, equitable and transparent. If the Aboriginal parties express concern or are opposed to parts of or the entire project, OEH expects that evidence will be provided to demonstrate the efforts made to find common ground between the opponents and the proponent.

If you require further information or clarification please do not hesitate to contact me on (02) 4908 6825.

Yours sincerely

NMR 06/3/2014

Nicole Davis
Archaeologist- Hunter Central Coast
Regional Operations and Heritage

ABORIGINAL PARTIES IN THE AREA OF INTEREST

1. Aboriginal Native Title Elders Consultants
   Margaret Matthews
   16a Mahogany St
   MUSWELLBROOK NSW 2333
   0417 725 956

2. Aliera French Trading
   12 Haydon Street
   MUSWELLBROOK NSW 2333
   (02) 6541 2765
   0421 299 963
   Aliera.french.trading@hotmail.com

3. Alison Sampson
   36 Hill Street
   CAROONA NSW 2343
   0401 151 124 or 0434 642 004
   alliekat29@hotmail.com

4. Black Creek Aboriginal Corporation
   Tracey White
   PO Box 168
   KURRI KURRI NSW 2327
   (02) 4990 6747
   (02) 4990 6747
   blackcreek@idl.net.au

5. Bullen Bullen
   Lloyd Mathews
   16B Mahogany Avenue
   MUSWELLBROOK NSW 2333
   0417 725 956

6. Cacatua Culture Consultants
   Donna & George Sampson
   Unit 1b/11 Glenwood Drive
   THORNTON NSW 2322
   (02) 4028 6942
   (02) 4028 6943
   0403 765 019 - 0434 877 016
   cacatua@resetdsl.net.au

7. Carrawonga Consultants
   Cheryl Moodie & Justin Matthews
   11 Coolibah Close
   MUSWELLBROOK NSW 2333
   0411 958 511
   0401 154 328

8. Culturally Aware
   Tracey Skene
   7 Crawford Place
   MILLFIELD NSW 2325

9. D F T V Enterprises
Derrick Vale Sr
5 Mountbatten Close
RUTHERFORD NSW 2320
0438 812 197
deckavale@hotmail.com

10. Deslee Talbott Consultants
Deslee Matthews
Unit 2/19 South Street
GUNNEDAH NSW 2380
0431 205 336

11. Devine Diggers Aboriginal Cultural Consultants
Deidre Perkins
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HEDDON GRETA NSW 2321
(02) 49374573
(02) 49374573
0425 654 290
divinediggers@bigpond.com

12. DRM Cultural Management
Helen Faulkner
81 Wansbeck Valley Rd
CARDIFF NSW 2285
0412 369 661

13. Esther Tighe
1/86 Edward Street
GUNNEDAH NSW 2380
(02) 67427105
(02) 67422125
0422 648 350

14. Gidawaa Walang & Barkuma Neighbourhood Centre Inc.
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(02) 4937 1094
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15. Giwiirr Consultants,
Michele Stair
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MUSWELLBROOK NSW 2333
(02) 6541 0506
0432214402

16. Griffiths Group
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17. HECMO Consultants
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18. Hielamon Cultural Consultants
Clifford Johnson
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0478 828 745

19. HSB Heritage Consultants
Patricia Hampton
35 Larool Street
Sth TAMWORTH NSW 2340
0424 142 216
pamelaann@live.com.au

20. Hunter Traditional Owner,
Paulette Ryan
14 Barton Avenue
SINGLETON HEIGHTS
(02) 6574 4906
0432 672 273

21. Hunter Valley Aboriginal Corporation
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MUSWELLBROOK NSW 2333

22. Hunter Valley Cultural Consultants
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23. Hunter Valley Cultural Surveying
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165 Susan St
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(02) 6541 0525
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0423 930 690
hvcs@bigpond.com

24. Hunter Valley Natural & Cultural Resources
David French
Flat1/72-11Tindale St
MUSWELLBROOK NSW 2333
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25. I & E Aboriginal Culture and Heritage
Ivy Jaeger
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26. Jarban + Mugrebea
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les.atkinson@hotmail.com

27. Jeff Matthews
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28. JLC Cultural Services
Jenny-Lee Chambers
39 Goulburn Drive
SANDY HOLLOW NSW 2333
0432 087 829

29. Jumbunna Traffic Management Group Pty Ltd
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TERALBA NSW 2284
(02) 4965 8105
jtmanagement@live.com.au

30. Kauma Pondee Inc.
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31. Kawul Cultural Services
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32. KL. KG Saunders Trading Services
Krystal & Kylie Saunders
06 Bowfield Place
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0412 693 952 – 0434 553 307

33. Lorraine Towney
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0403 427 894

34. Lower Hunter Aboriginal Incorporated
Les Ahoy
74 Hayden Brook Road
BOORAGUL NSW 2284
0411 095 249
lowerhunterai@gmail.com

35. Lower Hunter Wonnarua Council Inc.
Lea-Anne Ball Uncle Tommy Miller
51 Bowden Street
HEDDON GRETA NSW 2321
(02) 4937 2694
0447 266 590 (LM), 0402 636 521 (Uncle)
tn.miller@southernphone.com.au or lea-anne.ball@bigpond.com

36. Lower Wonnaruah Tribal Consultancy Pty Ltd
Barry Anderson
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BULGA NSW 2330
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37. Michelle Saunders
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38. Mindaribba Local Aboriginal Land Council
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EAST MAITLAND NSW 2323
(02) 4934 8511
(02) 4934 8544
0402 927 449

39. Mingga Consultants
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11 Coolibah Close
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40. Mooki Plains Management
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28 Herbert Street
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41. Mooki Plains Management
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42. Murrawan Cultural Consultants Pty Ltd
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43. Moreeites
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44. Muswellbrook Cultural Consultants
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45. Rebecca Lester
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46. Ngarramang-Kuri Aboriginal Culture & Heritage Group
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0466 589 238
abie@yarnteen.com.au

47. Roger Noel Matthews Consultancy
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48. Ron Smith
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49. Roslyn Sampson
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51. Smith Dhagaans Cultural Group
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52. St Clair Singleton Aboriginal Corporation
Cultural Heritage Officer
PO Box 710
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53. Steven Saunders
35 Walhallow Village
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54. T & G Culture Consultants
19 O'Donnell Cres
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55. Thawan Heritage Consultant
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56. Trevor Robinson
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57. Ungooroo Aboriginal Corporation
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58. Ungooroo Cultural & Community Services
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59. Upper Hunter Heritage Consultants
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60. Upper Hunter Wonnarua Council Inc.
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17/174 John Street
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61. Valley Culture
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62. Waabi Gabinya Cultural Consultancy
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63. Wallangan Cultural Services
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64. Wanaruah Custodians,
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65. Wanaruah Local Aboriginal Land Council
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66. Warragil Cultural Services
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67. Wattaka Wonnarua C.C. Service
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(02) 6571 2609
0432 977 178
deshickey@bigpond.com

68. Widescope Indigenous Group Pty Ltd
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0425 230 693
widescope.group@live.com

69. Wonn1 Contracting
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wonn1sites@gmail.com

70. Wonnarua Culture Heritage
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0401 028 807

71. Wonnarua Nation Aboriginal Corporation
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SINGLETON NSW 2330
(02) 6571 5419
0412 593 020

72. Wonnaruah Elders Council
Uncle Tommy Miller
PO Box 184
SINGLETON NSW 2330

73. Wurrumay Consultants
Kerrie Slater
PO Box 817
SINGLETON NSW 2330
0423 935 556
Wurrumay@hotmail.com

74. Yarrawalk (A division of Tocomwall Pty Ltd)
Scott Franks
PO Box 76
CARINGBAH NSW 1495
0404 171 544
scott@tocomwall.com.au

75. Yinarr Cultural Services
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GUNGAL NSW 2333
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0432 720 623
yinarrculturalservices@bigpond.com

MINDARIBBA
LOCAL ABORIGINAL LAND COUNCIL

1A Chelmsford Drive, Metford NSW 2323 | PO Box 401, East Maitland NSW 2323
P: 02 4015 7000 | F: 02 4934 8544 | E: admin@mindaribbalalc.org

Dr Andrew McLaren

AECOM Australia

PO BOX Q410

Sydney

NSW 2000

RE: ABORIGINAL CULTURAL HERITAGE ASSESSMENT HYDRO SMELTER SITE AND SURROUNDING HYDRO OWNED BUFFER LAND AT KURRI KURRI

HI Andrew

Mindaribba Local Aboriginal Land Council would like to register our interest in the above said project. We wish to be involved in all phases including the fieldwork and salvage should any be required.

Mindaribba LALC has an obligation under the NSW Aboriginal Land Rights Act to protect and preserve our culture and heritage and to ensure that such assessments are carried out in line with the various acts.

Thanking you

Stephen Talbott

Mindaribba LALC

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

Dr Andrew McLaren
AECOM
Level 21, 420 George Street
Sydney NSW 2000

Dear Mr McLaren

Re: Request - Search for Registered Aboriginal Owners

I refer to your letter dated 10 February 2014 regarding Aboriginal Cultural Heritage Assessment within Kurri Kurri area in NSW.

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

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

Yours sincerely

Tabatha Dantoine
Administration Officer
Office of the Registrar, *Aboriginal Land Rights Act* (1983)
22 January 2014

National Native Title Tribunal

Sydney Office, Operations East
Level 16
Law Courts Building
Queens Square
Sydney NSW 2000
GPO Box 9973
Sydney NSW 2001
Telephone (02) 9227 4000
Facsimile (02) 9227 4030

11 February 2014

Dr Andrew McLaren
AECOM Australia Pty Ltd
PO Box Q410, QVB PO
SYDNEY NSW 2000

Our Reference: 6022/14SJ
Your Reference: Hydro Kurri Kurri

Dear Dr McLaren

Native Title Search Results for Freehold Tenure
within the Cessnock & Maitland Local Government Areas

Thank you for your search request in relation to the above areas, received on 10 February 2014.

As it appears that your request was related to areas of land which are freehold, it should be noted that under the *Native Title Act 1993* (Cwlth), the valid grant of a freehold estate (other than certain types of Aboriginal and Torres Strait Islander land) on or before 23 December 1996 is known as a 'previous exclusive possession act'. This means that native title has been extinguished over the area.

Native title claimants are not allowed to include land and waters covered by previous exclusive possession acts in their applications; therefore they would normally exclude freehold areas. Although a native title application may be made over freehold land on the basis that freehold was invalidly granted, the chances of this happening are very low.

The Tribunal is not the custodian of the data for freehold estates. To determine whether a particular parcel of land is freehold land, you may wish to seek such information from the relevant state government custodian.

If you have any further queries, please do not hesitate to contact me on the numbers listed below.

Yours sincerely

Sylvia Jagtman | SENIOR CASE MANAGEMENT ASSISTANT
National Native Title Tribunal | Sydney Office
Level 16, Federal Law Courts Building, Queens Square, Sydney, New South Wales 2000
Telephone (02) 9227 4013 | Facsimile (02) 9227 4030 | Email sylvia.jagtman@nntt.gov.au
Shared country, shared future.

Searching the NNTT Registers in New South Wales

Search service

On request the National Native Title Tribunal may search its public registers for you. A search may assist you in finding out whether any native title applications (claims), determinations or agreements exist over a particular area of land or water.

In New South Wales native title cannot exist on privately owned land including family homes or farms.

What information can a search provide?

A search can confirm whether any applications, agreements or determinations are registered in a local government area. Relevant information, including register extracts and application summaries, will be provided.

In NSW because we cannot search the registers in relation to individual parcels of land we search by local government area.

Most native title applications do not identify each parcel of land claimed. They have an external boundary and then identify the areas not claimed within the boundary by reference to types of land tenure e.g., freehold, agricultural leasehold, public works.

What if the search shows no current applications?

If there is no application covering the local government area this only indicates that at the time of the search either the Federal Court had not received any claims in relation to the local government area or the Tribunal had not yet been notified of any new native title claims.

It does not mean that native title does not exist in the area.

Native title may exist over an area of land or waters whether or not a claim for native title has been made.

Where the information is found

The information you are seeking is held in three registers and on an applications database.

National Native Title Register

The National Native Title Register contains determinations of native title by the High Court, Federal Court and other courts.

Register of Native Title Claims

The Register of Native Title Claims contains applications for native title that have passed a registration test.

Registered claims attract rights, including the right to negotiate about some types of proposed developments.

Register of Indigenous Land Use Agreements

The Register of Indigenous Land Use Agreements contains agreements made with people who hold or assert native title in an area.

The register identifies development activities that have been agreed by the parties.

Schedule of Native Title Applications

The Schedule of Native Title Applications contains a description of the location, content and status of a native title claim.

This information may be different to the information on the Register of Native Title Claims, e.g., because an amendment has not yet been tested.

How do I request a native title search?

Download the Search Request Form from the Tribunal's website at - http://www.nntt.gov.au/Applications-And-Determinations/Registers/Pages/Search-The-Tribunal-Registers.aspx

Email to: NSWEnquiries@nntt.gov.au
Post to: GPO Box 9973 Sydney NSW 2001
For additional enquiries: 02 9227 4000

Appendix C

Public Notice - Maitland Mercury

Call for Registrations

Aboriginal Cultural Heritage Assessment

Hydro Aluminium Smelter Site and Associated Buffer Land, Hart Road, Kurri Kurri, NSW

AECOM Australia Pty Ltd (AECOM) is seeking to identify Aboriginal persons or organisations who wish to be consulted in relation to an Aboriginal cultural heritage assessment of the Hydro Aluminum smelter site and surrounding Hydro-owned buffer land at Kurri Kurri, New South Wales.

The assessment, which will include an archaeological survey component, will consider the potential rezoning and development by Hydro Aluminium Kurri Kurri Pty Ltd of part of the project area for residential and employment-related uses.

Interested Aboriginal persons and/or organisations are invited to register their interest in writing to:

Dr Andrew McLaren
AECOM Australia Pty Ltd
PO Box Q410, QVB PO
Sydney NSW 1230
Phone: +61 2 8934 0547
Fax: +61 2 8934 0001
Email: andrew.mclaren@aecom.com

Expressions of interest should include current contact details. The closing date for registration is Tuesday 25th March 2014.

Further information regarding the project will be provided upon registration.

The details of any Aboriginal person or organisation who registers an interest will be forwarded to the Office of Environment and Heritage (OEH) and the Mindaribba Local Aboriginal Land Council, unless requested otherwise at the time of registration.

Please note that registration does not guarantee employment during fieldwork.

Appendix D

RAP Responses to Draft Assessment Methodology

McLaren, Andrew

From: Barkuma <barkumanc@hotmail.com>
Sent: Monday, 5 May 2014 3:25 PM
To: McLaren, Andrew
Subject: Hydro Aluminium Smelter site

Dear Andrew,
Giddawaa Walang Cultural Heritage Consultancy agree with the proposed draft methodology for the above project. We have approx. 12 years experience in field work and have been involved in fieldwork within the study area. We have worked with Umwelt for the hunter expressway project, also with AMBS -Kurri to Redbank feeder and with Hunter Water on the Farley pipeline upgrade.I would prefer to talk about cultural values at a later date with you.I have also faxed our current insurances to you.

Thank You for the opportunity to register for this project.

Ann Hickey
Project Officer

Barkuma Neighbourhood Centre Inc.
76 Lang Street, Kurri Kurri NSW 2327
Phone: (02) 4937 1094
Fax: (02) 4936 4449
www.barkuma.org.au

McLaren, Andrew

From: stephen talbott <gomeroi.namoi@outlook.com>
Sent: Thursday, 15 May 2014 1:12 PM
To: McLaren, Andrew
Subject: response for smelter kurri kurri

Hi Andrew
Gomeroi Namoi support rezoning application providing a full Aboriginal Heritage Assessment is carried out on entire project area. Also should there be any recommendations following such an assessment those recommendations are to be implemented or addressed prior to development approval

Thanking you

Greg Heard

On behalf of Gomeroi Namoi T/O

Wonn1
Entity of Kauwul Pty Ltd
619 Main Road Glendale, 2285
PHONE: 0249547751 Mobile: 0402146193
ABN: 27 153 953 363

13 May 2014

Dr A P McLaren
Archaeologist
AECOM Australia
PO Box Q410
QVB Post Office NSW 1230
Email: andrew.mclaren@aecom.com

Dear Andrew

RE: EXPRESSION OF INTEREST – DRAFT ASSESSMENT METHODOLOGY FOR THE HYRO ALUMINIUM SMELTER SITE AND ASSOCIATED BUFFER LAND OFF HART ROAD AT KURRI KURRI NSW

In response to your letter dated 15 April 2014, Arthur Fletcher of Kauwul Pty Ltd trading as Wonn1 Contracting would like to resubmit an expression of interest to be consulted and to participate in any fieldwork required to express and determine the cultural significance of Aboriginal objects and places near and within the Kurri Kurri area.

We have reviewed the above draft Assessment Methodology and find that the process of assessment is acceptable. We therefore submit the following details:

Registered Aboriginal Party: Kauwul Wonn1 Contracting

Brief Description of Skills and Experience:
Arthur Fletcher has had many years' experience in cultural heritage/archaeological survey and excavation work within the Hunter Valley on projects including mining, infrastructure and development sites. He has worked with EnergyAustralia, Hunter Water, RTA/RMS including Hunter Expressway, ARTC and on many mine sites. Arthur has had sites training through NSW NPWS and continues to expand cultural heritage knowledge independently through his association with skilled knowledge-holder Elders within the Hunter Valley and further afield. He has undertaken many inductions for RTA, ARTC and carries SGS Induction cards for Xstrata and Rio Tinto Coal & Allied sites (Induction cards are available upon request).

(White Card: Arthur Fletcher Work Cover CG100787865SEQ1 11/03/2006)

Statement of Physical Fitness to Undertake the Necessary Sites Work:
Arthur is physically fit and will be able to complete the specific project tasks required within acceptable survey terrain limits and climate.

Statement of Cultural Knowledge and/or Connection with Country:
Arthur is a Wonnarua/Gringai elder with knowledge of cultural lore and a concentrated interest, knowledge and understanding of cultural heritage sites within the Lower Hunter and Upper Hunter regions, and spiritual beliefs of his traditional Country.

Organisations Commercial Rates and Terms of Engagement:
Total rates per day (including travel and GST) = $700.00/day
Terms of payment is 14 day following your receipt of our invoice.

Certificates of Currency:
Both the Certificates of Currency for Workers Compensation and Public Liability Insurance are attached to this letter as requested.

Thank you once again for this opportunity to lodge an expression of interest for this project. We look forward to hearing from you soon.

Kind regards

Suzie Worth
For Arthur C Fletcher
Wonn1 (Kauwul Pty Ltd)

(Attached)

Markey Insurance Brokers ABN 83 002 301 288
Cooks Hill Commercial Centre 235 Darby Street
(PO Box 909) Newcastle NSW 2300
Ph (02) 49256555 Fax (02) 49295156
Email: insurance@markeygroup.com.au
- Member of the National Insurance Brokers Association of Australia
- Registered General Insurance Brokers
- Australian Financial Services Licensee Lic No 240567

Issued: 30 October 2013

CERTIFICATE OF INSURANCE

In our capacity as insurance brokers, we confirm having arranged insurance as follows:

INSURED:	Kauwul Pty Ltd T/As Wonn1	
INSURANCE CLASS:	Public and Products Liability	
SITUATION:	Australia Wide	
BUSINESS DESCRIPTION:	Cultural Site Officer	
INTEREST:	Legal Liability for Personal Injury or Property Damage within the Territorial Limits that happens in connection with the Insured's Business	
LIMIT OF INDEMNITY:	**PUBLIC LIABILITY** **PRODUCTS LIABILITY**	**$20,000,000** **$20,000,000**
PERIOD OF INSURANCE:	31/10/2013 - 31/10/2014 *4.00pm Local Standard Time at the Insured's head office*	
INSURER:	QBE Insurance (Australia) Ltd	
POLICY NUMBER:	120A691476BPK	

This certificate is subject always to the terms, conditions and limitations of the policy and is issued as a matter of record only. It does not alter or extend the coverage provided by the policy or assume its continuity beyond the date stated or confer rights under the policy to any party other than the parties noted as the Insured. Please refer to your policy wording for full terms and conditions.

In arranging this certificate, we do not guarantee that the insurance outlined will continue to remain in force for the period referred to as the policy may be cancelled or altered by either party to the contract at any time in accordance with the terms and conditions of the policy or in accordance with the terms of the "Insurance Contracts Act". We accept no responsibility or liability to advise any party who may be relying on this certificate of such alteration to or cancellation of the policy of insurance.

We confirm insurance has been arranged in accordance with your details, please note this certificate is subject to the premium having been paid in full.

Signed by and on behalf of
MARKEY GROUP PTY LIMITED

Sarah Nixon
Internal Broker

CERTIFICATE OF CURRENCY

CGU Workers Compensation

KAUWUL PTY LIMITED
619 Main Road
GLENDALE NSW 2285

Dear Sir/Madam,

1. STATEMENT OF COVERAGE

The following policy of insurance covers the full amount of the employer's liability under the Workers Compensation Act 1987.

This Certificate is valid from 31/10/2013 to 31/10/2014.

The information provided in this Certificate of Currency is correct at: 06/11/2013

2. EMPLOYERS INFORMATION

POLICY NUMBER	WGB111112510122
LEGAL NAME	KAUWUL PTY LIMITED
TRADING NAME	WONN1 SITE ABBO
ABN	27153953363
TRUST NAME	
TRUST ABN	

WorkCover Industry Classification Number (WIC)	Industry	Numbers of Workers*	Wages**
782920	Technical Services nec	6	$53,861.00

* Number of workers includes contractors/deemed workers
**Total wages estimated for the current period

3. IMPORTANT INFORMATION

Principals relying on this certificate should ensure it is accompanied by a statement under section 175B of the Workers Compensation Act 1987. Principals should also check and satisfy themselves that the information is correct and ensure that the proper workers compensation insurance is in place, ie. compare the number of employees on site to the average number of employees estimated; ensure that the wages are reasonable to cover the labour component of the work being performed; and confirm that the description of the industry/industries noted is appropriate.

A principal contractor may become liable for an outstanding premium of the sub contractor if the principal has failed to obtain a statement or has accepted a statement where there was reason to believe it was false.

Yours Faithfully

NSW WorkCover Scheme

NICOLE BELL

CGU Workers Compensation (NSW) Ltd – Agent for the NSW WorkCover Scheme
ABN 83 564 379 108/007
Phone: 1300 666 506 Fax: 02 9088 9709

Lower Hunter Aboriginal Incorporated

5 Killara Drive
Cardiff South NSW 2285
Email – Lowerhunterai@gmail.com
ABN: 8192 4628 138

14/05/2014

Dr Andrew P McLaren
Archaeologist
AECOM Australia Pty Ltd
Level 21, 420 George St
Sydney NSW 2000

RE: Hydro Aluminium Smelter Site, Kurri Kurri.

Dear Dr Andrew

On behalf of Lower Hunter Aboriginal Incorporated (LHAI) I would to state that the LHAI traditional owners and relevant members have been presented with the proposed Aboriginal Cultural Heritage Assessment Methodology.
LHAI members agreed with the methodology and that all consultation was presented in the proper manna with respect to Aboriginal Culture and Values.

My family has lived in the area for many generations and still currently live at Heddon Greta and Kurri Kurri.
The proposed area has stories of a hunting camps but no known sacred sites, it is still culturally significant to the Aboriginal People with artefacts already discovered it is a very good possibility of more being uncovered as well discovering the camping grounds.

LHAI would also like to be considered for paid participation for this project as this is in our family's area which we have lived for many years and have cultural knowledge past down from our ancestors.
We are fully insured and our rates are $68.75 per hour (min 4 hours) + $50 Travel allowance.
We have worked in ground surveying archaeological excavations and surveyed many areas and have worked with a number of organisations such as:
Umwelt, Mcheritage, RPS, Streat Archaeological, AMAC, RTA and many more.

Lower Hunter Aboriginal Incorporated

LHAI members would like to recommend:

- Stakeholders included in the survey and salvage operations to have Aboriginal identified Site Officers with necessary qualifications (Cultural & Heritage Sites Certificate) to ensure best results for the protection of Culture and Heritage. The interests and obligations of Aboriginal people relate to the protection of Aboriginal cultural heritage. It is only Aboriginal people who can determine who is accepted by their community as being authorised to speak for Country and its associated cultural heritage. Where there is a dispute about who speaks for Country, it is appropriate for Aboriginal people, not OEH or the proponent, to resolve this dispute in a timely manner to enable effective consultation to proceed.
- Stakeholder working party is established with regular meetings where the proposed works can be updated and discussed.
- Potential significant features recorded and managed in a proper way with respect to Aboriginal Culture.
- Artefacts recovered to be reburied on site in an offset by the Proponent or stored at the Mindaribba LALC.

Executive Summary

The LHAI has Site Officers and members of the community and have been involved in public projects in the past and have vast knowledge of Aboriginal Culture and Heritage in and around the Hunter Valley.
Our Sites Officers have more than 30 years of experience and are properly certified with all the necessary qualifications.
The Lower Hunter Aboriginal Incorporated (LHAI) has a responsibility for ongoing protection and conservation of the Aboriginal Culture and Heritage in the hunter region and recommends that all proposed projects and cultural heritage works in Hunter Valley area to be assessed by a Lower Hunter Aboriginal Incorporated Cultural and Heritage Officer.

Yours sincerely

David Ahoy
Senior Sites Manager
LHAI
Mobile – 0411095249

Lower Hunter Wonnarua Cultural Services
ABN: 21 808 659 440

RE. DRAFT ASSESSMENT METHODOLOGY for the HYDRO ALUMINIUM SMELTER SITE of Hart Road, Kurri Kurri. Cessnock LGA

Dear Dr Andrew P McLaren,

I have reviewed your Draft Methodology for the Hydro Aluminium Smelter Site off Hart Road, Kurri Kurri. N.S.W. To me what I have seen is that this is not a METHODOLOGY but what it is just background information. There is lot of misinformation in those reports from other researcher/organization as I with other people from Mindaribba L.A.L.C.

Yours truly,

Thomas Miller
WONNARUA ELDER Lower Hunter Wonnarua Cultural Services

Postal Address: 51 Bowden Street Heddon Greta, NSW 2321 Mobile: 0402 636 521 Fax: 0249 372 694
email: tn.miller@southernphone.com.au

Andrew McClaren

AECOM Australia

PO BOX Q410

QUB Post Office

NSW 1230

RE: ABORIGINAL HERITAGE ASSESSMENT HYDRO ALUMINIMUM SMELTER SITE AND ASSOCIATED BUFFER LAND KURRI KURRI NSW

Hi Andrew

Mindaribba Local Aboriginal Land Council supports the rezoning application in particular provided that a full Aboriginal Heritage Assessment is conducted and any recommendations that may follow such assessment are adhered to. Also Mindaribba believes the methodology that we have received is more of a back ground of the project .

Thanking you

Stephen Talbott

Sites Officer Mindaribba

Appendix E

RAP Fieldwork Notification

AECOM Australia Pty Ltd
Level 21, 420 George Street
Sydney NSW 2000
PO Box Q410
QVB Post Office NSW 1230
Australia
www.aecom.com

+61 2 8934 0000 tel
+61 2 8934 0001 fax
ABN 20 093 846 925

EXAMPLE

13 June 2014

Amanda Hickey
Amanda Hickey Cultural Services
41 Dempsey Street
Emu Heights NSW 2750

Dear Amanda,

Re: Archaeological field survey for Hydro Aluminium smelter site & associated buffer land, Kurri Kurri

AECOM is requesting **one field representative** from your organisation to participate in the archaeological survey component of the Aboriginal Cultural Heritage Assessment currently being undertaken for the Hydro Aluminium smelter site and associated buffer land, off Hart Road, at Kurri Kurri, NSW.

A representative from your organisation is requested for one day being **Friday 27 June 2014**

Field Representative Information

Project Description: Archaeological survey of Hydro Aluminium smelter site & associated buffer land

Meeting Place: Car Park 1, Hydro Aluminium smelter site, off Hart Rd, Kurri Kurri (see map below).

Meeting Time: Please be at the meeting place at 8:00am ready to sign in. A brief safety induction will be conducted on arrival prior to commencement of works. Work hours will be 8:00am to 4:00pm.

AECOM Contact: Andrew McLaren (02) 8934 0547 or 0403 753 165

What to Bring: Water, morning tea and lunch

PPE (High visibility clothing, hard hat, long pants, boots, safety/sun glasses, gloves)

Chair to sit on at lunchtime

Invoicing information:

Rate: $600 per day (ex-GST)

Please address and send invoices to: Hydro Aluminium Kurri Kurri Pty Ltd

kurri.finance@hydro.com

Please note that if your company is not registered for GST this should not be included on your invoice. Incorrect invoices will not be processed by Hydro's finance department.

If you could please provide confirmation of availability of one field representative by **COB Friday 20 June 2014** and complete and return the attached Subcontractor's Statement it would be most appreciated.

Please note that completion of the attached Subcontractor's Statement is a mandatory requirement for engagement by Hydro and participation in the survey.

Should you have any questions please don't hesitate to contact me via email (andrew.mclaren@aecom.com), fax (02 8934 0001) or phone (02 8934 0547, 0403 753 165).

Figure 1 **Survey meeting place**

Yours faithfully,

Dr Andrew P McLaren
Archaeologist
andrew.mclaren@aecom.com

Mobile: 0403 753 165
Direct Dial: +61 2 8934 0547
Direct Fax: +61 2 8934 0001

New South Wales

SUBCONTRACTOR'S STATEMENT
REGARDING WORKERS COMPENSATION, PAY-ROLL TAX AND REMUNERATION (Note 1)

☐ Workers Compensation
s175B *Workers Compensation Act 1987*

☐ Pay-roll tax
Part 5B s31G-31J *Pay-roll Tax Act 1971*

☐ Remuneration
ss127, 127A *Industrial Relations Act 1996*

Sub Contractor: _____ ABN: _____
(Business name)

of _____
(Address of subcontractor)

has entered into a contract with _____ *(Note 2)*
(Business name of principal contractor)

ABN: _____ For work between: ____/____/____ and ____/____/____ *(Note 3)*
Date *Date*

and/or Payment Claim Details: _____ *(Note 4)*

Nature of contract work: _____ *(Note 5)*

DECLARATION

I, _____ a Director of / a person authorised by the subcontractor on whose behalf this
(delete as appropriate)
declaration is made, hereby state that the abovementioned subcontractor:

Is either

- ❑ A sole trader or partnership without workers or subcontractors *(Note 6)*.
  OR
- ❑ Has and will maintain in force valid workers compensation insurance, policy _____
  (Policy Number)
  held with _____ as indicated on the attached Certificate of
  (Insurance Company)
  Currency dated _____, in respect of work done in connection with the contract, during any period of the contract and has paid all workers compensation insurance premiums payable in connection with the contract *(Note 7)*.

❑ Is ❑ Is not also a principal contractor in connection with the work under contract *(Note 8)*.

❑ Has ❑ Has not been given a written statement by subcontractors in connection with the work.

❑ Is ❑ Is not required to be registered as an employer under the *Pay-roll Tax Act 1971* _____.
(Pay-roll tax client No.)

❑ Has paid all pay-roll tax due in respect of employees who performed the work for the principal contractor, as required at the date of this statement *(Note 9)*.

❑ Has paid all remuneration payable to relevant employees, for work done under the contract during the period outlined above *(Note 10)*.

Signature _____ **Full Name** _____
(please print)

Position/Title _____ Dated _____

WARNING

- Any subcontractor, who knowingly provides a principal contractor with a written statement that is false, is guilty of an offence (Maximum penalty 100 units or $11,000).
- Any written statement will not relieve the principal contractor of liability if, at the time the written statement was provided, the principal contractor believed the written statement to be false.
- The principal contractor must retain a copy of any written statement for a period of not less than five years (Pay-roll tax), six years (Remuneration) or seven years (Workers compensation).
- **This statement must be accompanied by the relevant Certificate of Currency to comply with section 175B of the *Workers Compensation Act 1987***

NOTES

1. This form is prepared for the purpose of section 175B of the *Workers Compensation Act 1987*, Part 5B section 31G-31J of the *Pay-roll Tax Act 1971* and section 127 of the *Industrial Relations Act 1996*. If this form is completed in accordance with these provisions, a principal contractor is relieved of liability for workers compensation premiums, pay-roll tax and remuneration payable by the subcontractor.

2. For the purpose of this statement, a principal contractor is a person (or other legal entity), who has entered into a contract with another person (or other legal entity), referred to as the subcontractor, and employees/workers of that subcontractor will perform the work under contract. The work must be connected to the business undertaking of the principal.

3. In order to meet the requirements of s127 *Industrial Relations Act 1996*, a statement in relation to remuneration must state the period to which the statement relates.

   Section 127(6) *Industrial Relations Act 1996* defines remuneration as '*remuneration or other amounts payable to relevant employees by legislation, or under an industrial instrument, in connection with work done by the employees.*'

   Section 127(11) of the *Industrial Relations Act 1996* states '*to avoid doubt, this section extends to a principal contractor who is the owner or occupier of a building for the carrying out of work in connection with the building so long as the building is owned or occupied by the principal contractor in connection with a business undertaking of the principal contractor.*'

4. Payment claim details – Where a subcontractor has entered into a payment schedule with a principal contractor they must identify the period or payment to which the statement applies.

5. An accurate description of the work covered by the contract must be included.

6. In completing the statement, a subcontractor declares that they are a sole trader or partnership without workers or subcontractors and is not required to hold workers compensation insurance.

7. In completing the statement, a subcontractor declares that workers compensation premiums payable up to and including the date(s) on the statement have been paid, and all premiums owing during the term of the contract will be paid.

8. It is important to note that a business could be both a subcontractor and a principal contractor, if a business 'in turn' engages subcontractors to carry out work. If your business falls within this category you should also obtain statements from your subcontractors.

9. In completing the statement, a subcontractor declares that all pay-roll tax payable relating to work undertaken as part of the contract has been paid.

10. In completing the statement, a subcontractor declares that all remuneration payable has been paid.

    It is noted that definitions of employer, employee, remuneration, and specific provisions for employers of outworkers in the clothing trades are as defined in s127A of the *Industrial Relations Act 1996*.

11. Failure to complete this statement may result in the principal contractor withholding any payment due to the subcontractor. Any penalty for late payment under the contract does not apply to any payment withheld under this subsection. Subcontractors may wish to keep a copy of the statement for their own records.

For more information, please visit the WorkCover website **www.workcover.nsw.gov.au**, Office of State Revenue website **www.osr.nsw.gov.au**, or Office of Industrial Relations, Department of Commerce website **www.commerce.nsw.gov.au**. Copies of the *Workers Compensation Act 1987*, the *Pay-roll Tax Act 1971* and the *Industrial Relations Act 1996* can be found at **www.legislation.nsw.gov.au**.

Appendix F

RAP Responses to Draft Report

McLaren, Andrew

From: Barkuma <barkumanc@hotmail.com>
Sent: Thursday, 11 December 2014 3:59 PM
To: McLaren, Andrew
Subject: Hydro Aluminium

Hello Andy,

RE: Review of Draft Aboriginal Cultural Heritage Assessment Report for Hydro Aluminium Smelter Site & Associated Buffer Land, Kurri Kurri NSW.
Gidawaa Walang Cultural Heritage Consultancy support the Management Recommendations in the above Draft Report.

Yours sincerely
Ann Hickey

ps. I am sorry I missed the 8th of December

Barkuma Neighbourhood Centre Inc.
76 Lang Street, Kurri Kurri NSW 2327
Phone: (02) 4937 1094
Fax: (02) 4936 4449
www.barkuma.org.au

Appendix G

AHIMS Search Results

AHIMS Web Services (AWS)
Search Result

Your Ref Number : Kurri Kurri Hydro

Client Service ID : 123991

AECOM Australia Pty Ltd (previously HLA-Envirosciences)

Level 21 420 George Street
SYDNEY New South Wales 2000

Attention: Andrew Peter Mclaren

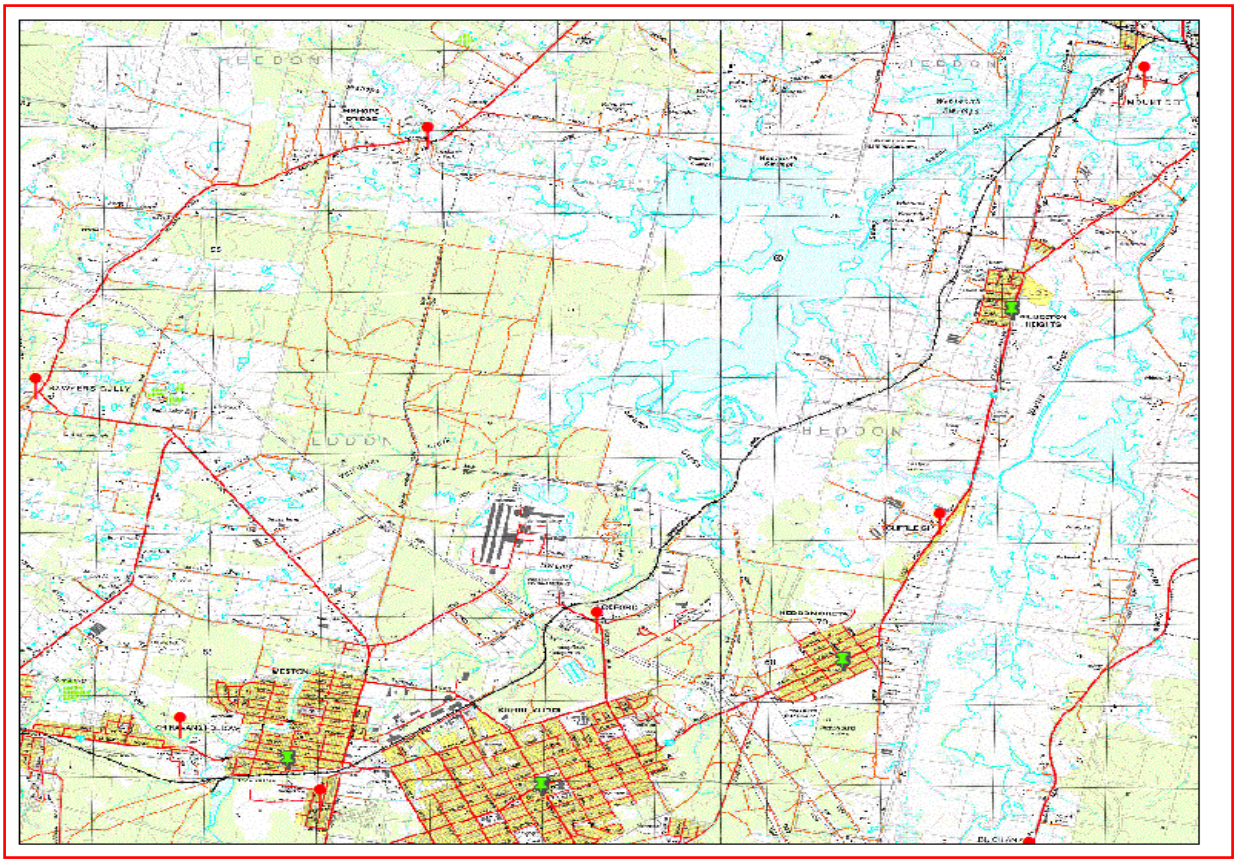
Email: andrew.mclaren@aecom.com

Date: 05 February 2014

Dear Sir or Madam:

AHIMS Web Service search for the following area at Datum :GDA, Zone : 56, Eastings : 353528 - 363528, Northings : 6367313 - 6377313 with a Buffer of 0 meters. Additional Info : Aboriginal Archaeological Assessment, conducted by Andrew Peter Mclaren on 05 February 2014.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



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

107	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

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.

PO BOX 1967 Hurstville NSW 2220
43 Bridge Street HURSTVILLE NSW 2220
Tel: (02)9585 6345 (02)9585 6471 Fax: (02)9585 6094

ABN 30 841 387 271
Email: ahims@environment.nsw.gov.au
Web: www.environment.nsw.gov.au

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref Number : Kurri Kurri Hydro

Client Service ID : 123991

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
38-4-1018	GH Campsite 1	AGD	56	363166	6374506	Open site	Valid	Aboriginal Resource and Gathering : -		100898,100987,102231,102388
	Contact Searle	**Recorders**	Mary Dallas Consulting Archaeologists					**Permits**		
38-4-1019	GH PAD3	AGD	56	363190	6374880	Open site	Valid	Potential Archaeological Deposit (PAD) : -		100504,100898,100987,102231,102388
	Contact Searle	**Recorders**	Mary Dallas Consulting Archaeologists					**Permits**	2721	
38-4-1005	Gillieston Heights 1	AGD	56	362380	6374055	Open site	Destroyed	Artefact : 1		100966,102231,102388
	Contact	**Recorders**	Umwelt (Australia) Pty Limited,Ms.Amanda Reynolds					**Permits**	2714,2715	
38-4-1006	Gillieston Heights 2	GDA	56	362396	6374623	Open site	Destroyed	Artefact : 1		100966,102231,102388
	Contact S Scanlon	**Recorders**	Umwelt (Australia) Pty Limited,Ms.Amanda Reynolds					**Permits**	2714,2715	
38-4-1036	GHS IF1	AGD	56	362116	6373707	Open site	Valid	Artefact : 1		102231
	Contact	**Recorders**	Mary Dallas Consulting Archaeologists,Paul Irish Consultant Archaeologist					**Permits**	3555,3592	
38-4-1037	GHS PAD 1	AGD	56	362600	6373400	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact Lower Wonnarua Tribal Counc	**Recorders**	Mary Dallas Consulting Archaeologists,Mr.Paul Irish					**Permits**	3555,3569,3592	
38-4-1038	GHS PAD 2	AGD	56	362700	6373650	Open site	Valid	Potential Archaeological Deposit (PAD) : -		102231
	Contact Lower Wonnarua Tribal Counc	**Recorders**	Mary Dallas Consulting Archaeologists,Paul Irish Consultant Archaeologist					**Permits**		
38-4-1306	STANFORD MERTHYR AS4	GDA	56	359890	6367977	Open site	Valid	Artefact : -		
	Contact	**Recorders**	RPS Australia East Pty Ltd -Hamilton,Ms.Laraine Nelson					**Permits**		
38-4-1308	RPS STANFORD METHYR IF2	GDA	56	359982	6368022	Open site	Valid	Artefact : -		
	Contact	**Recorders**	RPS Australia East Pty Ltd -Hamilton,Ms.Laraine Nelson					**Permits**		
38-4-1309	RPS STANFORD METHYR IF3	GDA	56	360196	6368134	Open site	Valid	Artefact : -		
	Contact	**Recorders**	RPS Australia East Pty Ltd -Hamilton,Ms.Laraine Nelson					**Permits**		
38-4-1310	RPS STANFORD METHYR IF4	GDA	56	360233	6368157	Open site	Valid	Artefact : -		
	Contact	**Recorders**	RPS Australia East Pty Ltd -Hamilton,Ms.Laraine Nelson					**Permits**		
38-4-1366	Wallis Creek RTA 8	GDA	56	360032	6368267	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Umwelt (Australia) Pty Limited,Miss.Stephanie Howden					**Permits**		
38-4-1367	Wallis Creek RTA 9	GDA	56	359970	6368362	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Umwelt (Australia) Pty Limited,Miss.Stephanie Howden					**Permits**		
38-4-1368	Wallis Creek RTA 10 IF	GDA	56	360221	6367962	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Umwelt (Australia) Pty Limited,Miss.Stephanie Howden					**Permits**		

Report generated by AHIMS Web Service on 05/02/2014 for Andrew Peter Mclaren for the following area at Datum :GDA, Zone : 56, Eastings : 353528 - 363528, Northings : 6367313 - 6377313 with a Buffer of 0 meters. Additional Info : Aboriginal Archaeological Assessment. Number of Aboriginal sites and Aboriginal objects found is 107

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
38-4-1369	Wallis Creek RTA 11 IF	GDA	56	360275	6367838	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Umwelt (Australia) Pty Limited,Miss.Stephanie Howden					**Permits**		
38-4-1330	Wallis Creek RTA19IF	GDA	56	360092	6367526	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Umwelt (Australia) Pty Limited,Miss.Stephanie Howden					**Permits**		
38-4-1331	Wallis Creek RTA20IF	GDA	56	360110	6367448	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Umwelt (Australia) Pty Limited,Miss.Stephanie Howden					**Permits**		
38-4-1332	Wallis Creek RTA21IF	GDA	56	360123	6367319	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Umwelt (Australia) Pty Limited,Miss.Stephanie Howden					**Permits**		
38-4-1334	Wallis Creek RTA23IF	GDA	56	359942	6367838	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Umwelt (Australia) Pty Limited,Miss.Stephanie Howden					**Permits**		
38-4-1335	Wallis Creek RTA24IF	GDA	56	360006	6367695	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Umwelt (Australia) Pty Limited,Miss.Stephanie Howden					**Permits**		
38-4-1376	Figtree Lane Sewer Project Artefacts	GDA	56	361931	6375357	Open site	Valid	Artefact : 3		
	Contact Mr.Thomas Miller	**Recorders**	Ms.Mary Dallas					**Permits**	3433	
38-4-1372	RPS Farley AS3	GDA	56	361725	6376715	Open site	Valid	Artefact : 32		
	Contact	**Recorders**	RPS Australia East Pty Ltd -Hamilton,Miss.Philippa Sokol					**Permits**		
38-4-1373	RPS Farley IF1	GDA	56	361437	6376404	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	RPS Australia East Pty Ltd -Hamilton,Miss.Philippa Sokol					**Permits**	3445	
38-4-1374	FWW5	GDA	56	361438	6375865	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Ms.Gillian Goode,RPS Australia East Pty Ltd -Hamilton					**Permits**	3445	
38-4-1347	Lot 4 and 52 DP868890	GDA	56	362645	6375169	Open site	Valid	Aboriginal Resource and Gathering : -, Artefact : -		
	Contact Mindaribba Local Aboriginal L	**Recorders**	RPS Australia East Pty Ltd -Hamilton,Miss.Philippa Sokol					**Permits**	3412	
37-6-0865	KK-IF-2	AGD	56	357640	6369450	Open site	Valid	Artefact : -	Isolated Find	98174,102135
	Contact	**Recorders**	Mrs.Robynne Mills					**Permits**		
37-6-0866	KK-IF-1	AGD	56	358540	6371140	Open site	Valid	Artefact : -	Isolated Find	98174,102231
	Contact	**Recorders**	Mrs.Robynne Mills					**Permits**		
37-6-1325	Swamp Creek RTA 10 IF (SWC RTA 10IF)	AGD	56	356447	6370271	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Umwelt (Australia) Pty Limited,Leila McAdam					**Permits**	2102	
37-6-1233	Hebden Estate Isolated find	AGD	56	354550	6367700	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Dominic Steele Archaeological Consulting					**Permits**	2047	
37-6-1341	Black Waterholes Creek RTA 1 IF	AGD	56	355826	6371730	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Umwelt (Australia) Pty Limited,Leila McAdam					**Permits**	2102	
37-6-1342	Black Waterholes Creek RTA 2 IF	AGD	56	355388	6372208	Open site	Valid	Artefact : 1		

Report generated by AHIMS Web Service on 05/02/2014 for Andrew Peter Mclaren for the following area at Datum :GDA, Zone : 56, Eastings : 353528 - 363528, Northings : 6367313 - 6377313 with a Buffer of 0 meters. Additional Info : Aboriginal Archaeological Assessment. Number of Aboriginal sites and Aboriginal objects found is 107

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	Contact	**Recorders**	Umwelt (Australia) Pty Limited,Leila McAdam					**Permits**	2102	
37-6-1343	Black Waterholes Creek RTA 3 IF	AGD	56	356293	6371108	Open site	Valid	Artefact : 1		102231
	Contact	**Recorders**	Umwelt (Australia) Pty Limited,Leila McAdam					**Permits**	2102	
37-6-1344	Black Waterholes Creek RTA 4 IF (BWC RTA 4 IF)	AGD	56	355416	6372102	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Umwelt (Australia) Pty Limited,Leila McAdam					**Permits**	2102	
37-6-1345	Sawyers Gully RTA 1	AGD	56	354438	6373476	Open site	Valid	Artefact : 4		
	Contact	**Recorders**	Umwelt (Australia) Pty Limited,Leila McAdam					**Permits**	2102	
37-6-1346	Sawyers Gully RTA 2 IF	AGD	56	354033	6373623	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Umwelt (Australia) Pty Limited,Leila McAdam					**Permits**	2102	
38-4-0898	Cliftleigh 1	AGD	56	361284	6371336	Open site	Valid	Artefact : 1		102231,102388
	Contact T Russell	**Recorders**	Ms.Penny Mccardle					**Permits**		
38-4-0814	Swamp Creek RTA 2	AGD	56	359614	6368267	Open site	Destroyed	Artefact : 6		
	Contact	**Recorders**	Umwelt (Australia) Pty Limited,Leila McAdam					**Permits**	2102	
37-6-1355	Swamp Creek RTA 3	AGD	56	359052	6369135	Open site	Valid	Artefact : 10		102388
	Contact	**Recorders**	Umwelt (Australia) Pty Limited,Leila McAdam					**Permits**	2102	
37-6-1356	Swamp Creek RTA 4	AGD	56	356557	6370688	Open site	Valid	Artefact : 4		
	Contact	**Recorders**	Umwelt (Australia) Pty Limited,Leila McAdam					**Permits**	2102	
37-6-1357	Swamp Creek RTA 5 IF	AGD	56	358943	6368993	Open site	Valid	Artefact : 1		102388
	Contact	**Recorders**	Umwelt (Australia) Pty Limited,Leila McAdam					**Permits**	2102	
37-6-1358	Swamp Creek RTA 6 IF	AGD	56	359229	6369057	Open site	Valid	Artefact : 1		102388
	Contact	**Recorders**	Umwelt (Australia) Pty Limited,Leila McAdam					**Permits**	2102	
37-6-1359	Swamp Creek RTA 7 IF	AGD	56	358425	6369259	Open site	Valid	Artefact : 1		102388
	Contact	**Recorders**	Umwelt (Australia) Pty Limited,Leila McAdam					**Permits**	2102	
37-6-1360	Swamp Creek RTA 8 IF	AGD	56	357269	6370282	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Umwelt (Australia) Pty Limited,Leila McAdam					**Permits**	2102	
37-6-1361	Swamp Creek RTA 9	AGD	56	357005	6370549	Open site	Valid	Artefact : 7		
	Contact	**Recorders**	Umwelt (Australia) Pty Limited,Leila McAdam					**Permits**	2102	
37-6-1362	Swamp Creek RTA 11 IF (formerly PAD9 Swamp Creek)	AGD	56	357630	6369700	Open site	Valid	Potential Archaeological Deposit (PAD) : 1, Artefact : -		
	Contact	**Recorders**	Umwelt (Australia) Pty Limited,Leila McAdam					**Permits**	2096,2562	
37-6-1363	PAD11 Black Waterholes Creek	AGD	56	356091	6371356	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		102231

Report generated by AHIMS Web Service on 05/02/2014 for Andrew Peter Mclaren for the following area at Datum :GDA, Zone : 56, Eastings : 353528 - 363528, Northings : 6367313 - 6377313 with a Buffer of 0 meters. Additional Info : Aboriginal Archaeological Assessment. Number of Aboriginal sites and Aboriginal objects found is 107

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	Contact	**Recorders**	Umwelt (Australia) Pty Limited,Leila McAdam					**Permits**	2096	
37-6-1364	Sawyers Gully RTA 11 (formerly PAD12 Sawyers Gully)	AGD	56	354542	6373239	Open site	Valid	Potential Archaeological Deposit (PAD) : 1, Artefact : -		
	Contact	**Recorders**	Umwelt (Australia) Pty Limited,Leila McAdam					**Permits**	2096,2562	
38-4-1059	GH PAD 2	AGD	56	363390	6374930	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		100898,100987
	Contact	**Recorders**	Ms.Mary Dallas					**Permits**		
38-4-1044	GillMirv 1	AGD	56	362795	6373915	Open site	Destroyed	Artefact : 11		102388
	Contact Mindaribba Local Aboriginal L	**Recorders**	Umwelt (Australia) Pty Limited					**Permits**	2715,2954,3077	
38-4-1039	GH PAD 1	AGD	56	363020	6374500	Open site	Valid	Artefact : 117, Potential Archaeological Deposit (PAD) : -		100987,101097
	Contact Mr.Stephen Talbott	**Recorders**	Mary Dallas Consulting Archaeologists,Paul Irish Consultant Archaeologist					**Permits**	2962,3071,3604	
37-6-1957	KK09	GDA	56	358372	6371638	Open site	Valid	Artefact : 1		102231
	Contact	**Recorders**	Australian Museum Consulting (AM Consulting),Ms.Tessa Boer-Mah					**Permits**	3203	
37-6-1958	KK10	GDA	56	357407	6371800	Open site	Valid	Artefact : 3		102231
	Contact	**Recorders**	Australian Museum Consulting (AM Consulting),Ms.Tessa Boer-Mah					**Permits**	3203	
37-6-1959	KK11	GDA	56	357079	6371849	Open site	Valid	Artefact : 1		102231
	Contact	**Recorders**	Australian Museum Consulting (AM Consulting),Ms.Tessa Boer-Mah					**Permits**	3203	
37-6-1960	KK12	GDA	56	356887	6371887	Open site	Valid	Artefact : 1		102231
	Contact	**Recorders**	Australian Museum Consulting (AM Consulting),Ms.Tessa Boer-Mah					**Permits**	3203	
38-4-1156	GHN 1 PAD	GDA	56	363068	6375437	Open site	Valid	Potential Archaeological Deposit (PAD) : -		102231
	Contact	**Recorders**	RPS Australia East Pty Ltd -Hamilton					**Permits**	3162	
37-6-2004	KR01	GDA	56	357959	6370106	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Australian Museum Consulting (AM Consulting),Ms.Tessa Boer-Mah					**Permits**	3201	
37-6-2005	KR02	GDA	56	357528	6370404	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Australian Museum Consulting (AM Consulting),Ms.Tessa Boer-Mah					**Permits**	3201	
37-6-2006	KR03	GDA	56	357491	6370454	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Australian Museum Consulting (AM Consulting),Ms.Tessa Boer-Mah					**Permits**	3201	
37-6-2007	KR04	GDA	56	357367	6370539	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Australian Museum Consulting (AM Consulting),Ms.Tessa Boer-Mah					**Permits**	3201	

Report generated by AHIMS Web Service on 05/02/2014 for Andrew Peter Mclaren for the following area at Datum :GDA, Zone : 56, Eastings : 353528 - 363528, Northings : 6367313 - 6377313 with a Buffer of 0 meters. Additional Info : Aboriginal Archaeological Assessment. Number of Aboriginal sites and Aboriginal objects found is 107

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
37-6-2008	KR05	GDA	56	357171	6370683	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Australian Museum Consulting (AM Consulting),Ms.Tessa Boer-Mah					**Permits**	3201	
37-6-2009	KR06	GDA	56	356187	6371481	Open site	Valid	Artefact : -		102231
	Contact	**Recorders**	Australian Museum Consulting (AM Consulting),Ms.Tessa Boer-Mah					**Permits**	3201	
37-6-2010	KR07	GDA	56	354120	6373825	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Australian Museum Consulting (AM Consulting),Ms.Tessa Boer-Mah					**Permits**	3201	
38-4-1138	GH PAD 1 (Berefield)	GDA	56	363120	6374650	Open site	Valid	Potential Archaeological Deposit (PAD) : -		100898
	Contact	**Recorders**	Mr.Paul Irish,Ms.Mary Dallas					**Permits**		
37-6-1961	KK13	GDA	56	356713	6372765	Open site	Valid	Artefact : 1		102231
	Contact	**Recorders**	Australian Museum Consulting (AM Consulting),Ms.Tessa Boer-Mah					**Permits**	3203	
37-6-1962	KK14	GDA	56	356727	6372857	Open site	Valid	Artefact : 1		102231
	Contact	**Recorders**	Australian Museum Consulting (AM Consulting),Ms.Tessa Boer-Mah					**Permits**	3203	
37-6-1963	KK15	GDA	56	356790	6373144	Open site	Valid	Artefact : 1		102231
	Contact	**Recorders**	Australian Museum Consulting (AM Consulting),Ms.Tessa Boer-Mah					**Permits**		
37-6-1964	KK16	GDA	56	356790	6373144	Open site	Valid	Artefact : -		102231
	Contact	**Recorders**	Australian Museum Consulting (AM Consulting),Ms.Tessa Boer-Mah					**Permits**		
38-4-1173	FWW 1 (Maitland)	GDA	56	361292	6376190	Open site	Valid	Artefact : 2		102231
	Contact	**Recorders**	Ms.Gillian Goode					**Permits**	3445	
38-4-1174	FWW 2 (Maitland)	GDA	56	361367	6376236	Open site	Valid	Artefact : 1		102231
	Contact	**Recorders**	Ms.Gillian Goode					**Permits**	3445	
38-4-1175	FWW 3 (Maitland)	GDA	56	361532	6376018	Open site	Valid	Artefact : 1		102231
	Contact	**Recorders**	Ms.Gillian Goode					**Permits**	3445	
38-4-1176	FWW 4 (Mailtand)	GDA	56	361327	6376068	Open site	Valid	Artefact : 1		102231
	Contact	**Recorders**	Ms.Gillian Goode					**Permits**	3445	
38-4-1149	KKO1 (Beresfield)	GDA	56	359679	6369869	Open site	Valid	Artefact : 3		
	Contact	**Recorders**	Australian Museum Consulting (AM Consulting),Ms.Tessa Boer-Mah					**Permits**	3151	
38-4-1150	KKO2 (Beresfield)	GDA	56	359819	6369944	Open site	Valid	Artefact : 3		
	Contact	**Recorders**	Australian Museum Consulting (AM Consulting),Ms.Tessa Boer-Mah					**Permits**	3151	
37-6-1953	KK03	GDA	56	359355	6370790	Open site	Valid	Artefact : 10		
	Contact	**Recorders**	Australian Museum Consulting (AM Consulting),Ms.Tessa Boer-Mah					**Permits**	3203	
37-6-1954	KK05	GDA	56	358577	6371627	Open site	Valid	Artefact : 17		102231
	Contact	**Recorders**	Australian Museum Consulting (AM Consulting),Ms.Tessa Boer-Mah					**Permits**	3203	
37-6-1955	KK07	GDA	56	356742	6372396	Open site	Valid	Artefact : 2		102231

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	Contact	**Recorders**	Australian Museum Consulting (AM Consulting),Ms.Tessa Boer-Mah					**Permits**	3151,3203	
37-6-1956	KK08	GDA	56	359497	6370657	Open site	Destroyed	Artefact : 1		
	Contact	**Recorders**	Australian Museum Consulting (AM Consulting),Ms.Tessa Boer-Mah					**Permits**	3203,3640	
38-4-1615	Wallis Creek RTA 26 IF	GDA	56	360164	6368047	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Umwelt (Australia) Pty Limited,Mr.Kirwan Williams					**Permits**		
38-4-1617	RPS Farley WSEA 1	GDA	56	361257	6376313	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Ms.Tessa Boer-Mah,RPS					**Permits**		
38-4-1467	Wallis Creek RTA 13 IF	GDA	56	360056	6368233	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Umwelt (Australia) Pty Limited,Mr.Kirwan Williams					**Permits**		
38-4-1468	Wallis Creek RTA 12	GDA	56	360583	6367333	Open site	Valid	Artefact : 4		
	Contact	**Recorders**	Umwelt (Australia) Pty Limited					**Permits**		
38-4-1595	FWW2	GDA	56	361367	6376236	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Ms.Gillian Goode					**Permits**		
38-4-1589	Farley Quarry AS01	GDA	56	361956	6376969	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Hunter Water Corporation					**Permits**	3445	
38-4-1590	Farley Quarry IA02	GDA	56	362017	6376998	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Hunter Water Corporation					**Permits**	3445	
38-4-0076	Farley;	AGD	56	359800	6376100	Open site	Valid	Artefact : -	Open Camp Site	533,102231,102388
	Contact	**Recorders**	Len Dyall					**Permits**		
38-4-0077	Farley;W;	AGD	56	359900	6376800	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	102231,102388
	Contact	**Recorders**	Len Dyall					**Permits**		
37-6-0172	Farley;Farley O;	AGD	56	356481	6376740	Open site	Valid	Artefact : -	Open Camp Site	102231,102646
	Contact	**Recorders**	Len Dyall					**Permits**		
37-6-0267	Kurri Kurri No.1;	AGD	56	359420	6369460	Open site	Valid	Artefact : -	Open Camp Site	783,102388
	Contact	**Recorders**	A Djekic					**Permits**		
37-6-0268	Kurri Kurri No 2.;	AGD	56	359450	6369680	Open site	Valid	Artefact : -	Open Camp Site	783
	Contact	**Recorders**	A Djekic					**Permits**		
37-6-0269	Kurri Kurri No.3;	AGD	56	359480	6369790	Open site	Valid	Artefact : -	Open Camp Site	783,102388
	Contact	**Recorders**	A Djekic					**Permits**		
37-6-0270	Kurri Kurri No.4;	AGD	56	359490	6369810	Open site	Valid	Artefact : -	Open Camp Site	783,102135,102388
	Contact	**Recorders**	A Djekic					**Permits**		

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
37-6-0271	Kurri Kurri No.5;	AGD	56	359520	6369890	Open site	Valid	Artefact : -	Open Camp Site	102135,102388
	Contact	**Recorders**	A Djekic					**Permits**		
37-6-0123	Bishop's Bridge Farley I	AGD	56	359223	6376792	Open site	Valid	Artefact : -	Open Camp Site	102231,102388,102646
	Contact	**Recorders**	Len Dyall					**Permits**		
37-6-0124	Bishop's Bridge Farley K	AGD	56	357395	6376758	Open site	Valid	Artefact : -	Open Camp Site	102231,102646
	Contact	**Recorders**	Len Dyall					**Permits**		
37-6-0125	Bishop's Bridge;Farley;M;	AGD	56	357666	6376946	Open site	Valid	Artefact : -	Open Camp Site	102231,102646
	Contact	**Recorders**	Len Dyall					**Permits**		
37-6-0126	Bishop's Bridge;Farley;J;	AGD	56	359423	6375882	Open site	Valid	Artefact : -	Open Camp Site	102231,102388,102646
	Contact	**Recorders**	Len Dyall					**Permits**		
37-6-0127	Bishop's Bridge;Farley;X;	AGD	56	358506	6376047	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	102231,102388
	Contact	**Recorders**	Len Dyall					**Permits**		
37-6-0128	Bishop's Bridge Farley Y	AGD	56	358961	6376147	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	102231,102388
	Contact	**Recorders**	Len Dyall					**Permits**		
37-6-0129	Bishop's Bridge;Farley;Z;	AGD	56	359234	6376244	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	102231,102388,102646
	Contact	**Recorders**	Len Dyall					**Permits**		
37-6-1644	Swamp Creek Catchment 5	AGD	56	356949	6370574	Open site	Valid	Artefact : 2		100062
	Contact Searle	**Recorders**	Ms.Tudur Llwyd Davies					**Permits**	2520,2660	
37-6-1645	Swamp Creek Catchment 4	AGD	56	357603	6369908	Open site	Valid	Artefact : 1		100062
	Contact Searle	**Recorders**	Ms.Tudur Llwyd Davies					**Permits**	2520,2660	
37-6-1650	Northern Swamp Tributaries 4	AGD	56	356724	6371757	Open site	Valid	Artefact : 29		100062,102231
	Contact Searle	**Recorders**	Ms.Tudur Llwyd Davies					**Permits**	2520,2660,3151,3203	
37-6-1651	Northern Swamp Tributaries 3	AGD	56	357052	6374611	Open site	Valid	Artefact : 40		100062,102231
	Contact Searle	**Recorders**	Ms.Tudur Llwyd Davies					**Permits**	2520,2660,3151,3203	
37-6-1652	Northern Swamp Tributaries 2	AGD	56	356637	6372207	Open site	Valid	Artefact : 2		100062,102231
	Contact Searle	**Recorders**	Ms.Tudur Llwyd Davies					**Permits**	2520,2660,3151,3203	
37-6-1653	Northern Swamp Tributaries 1	AGD	56	353795	6375473	Open site	Valid	Artefact : 20		100062
	Contact Searle	**Recorders**	Ms.Tudur Llwyd Davies					**Permits**	2520,2660	

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref Number : Kurri Kurri Hydro

Client Service ID : 123991

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
37-6-2090	Chinamans Hollow IF1	GDA	56	355094	6368443	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Doctor.Tim Owen					**Permits**		
37-6-2093	Chinamans Hollow PAD	GDA	56	355069	6368415	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Doctor.Tim Owen					**Permits**		

Report generated by AHIMS Web Service on 05/02/2014 for Andrew Peter Mclaren for the following area at Datum :GDA, Zone : 56, Eastings : 353528 - 363528, Northings : 6367313 - 6377313 with a Buffer of 0 meters. Additional Info : Aboriginal Archaeological Assessment. Number of Aboriginal sites and Aboriginal objects found is 107

Appendix H

Survey Coverage Data

Table H1: Survey Coverage Data

Transect Id	Landform unit(s)[1]	Length (m)	Survey unit area (m²)	Visibility (%)	Exposure (%)	Effective coverage area (m²)	Effective coverage (%)
01	2,3,8,9	1822.6	25582.7	70	30	5372.4	21
02	3,5,8,9	1188.2	16234.4	80	40	5195.0	32
03	3,8	1698.1	11957.8	80	10	956.6	8
04	2,3,8	2563.4	17865.0	70	30	3751.7	21
05	2,3,8,9	762.5	11362.1	90	40	4090.4	36
06	2,3,8,9	1129.7	7697.9	40	10	307.9	4
07	3,8	599.5	17474.3	70	30	3669.6	21
08	3,8,9	977.4	9850.7	80	40	3152.2	32
09	3,8	1740.3	1201.8	60	10	72.1	6
10	2,3,8,9	986.3	22207.7	70	20	3109.1	14
11	3,8,9	3318.3	9855.3	80	30	2365.3	24
12	3,8,9	1429.6	5132.1	90	40	1847.5	36
13	3,5,8,9	505.5	14369.4	90	40	5173.0	36
14	3,8,9	1029	16349.1	90	40	5885.7	36
15	3,8	531.6	5392.0	70	20	754.9	14
16	3,8,9	1627.6	10360.1	90	50	4662.1	45
17	3,5,8,9	2740	12822.8	90	20	2308.1	18
18	3,8,9	843.7	18680.8	90	60	10087.6	54
19	3,5,8,9	1101.3	7476.7	90	50	3364.5	45
20	3,8,9	291.3	2989.8	70	30	627.9	21
21	3,5,8	740	11084.7	80	30	2660.3	24
22	3,5,8,9	761.5	32687.5	90	40	11767.5	36
23	8	1175.3	3783.7	50	10	189.2	5
24	3,5,8,10	370.6	11828.9	90	30	3193.8	27
25	3,8,9	1619.1	7690.4	90	40	2768.5	36
26	3,5,8,9	782.3	4047.9	60	10	242.9	6
27	3,5,8	397.1	7896.2	90	40	2842.6	36
28	4,5,8	761.9	17442.4	90	30	4709.5	27
29	3,5,8	1152	7689.5	90	10	692.1	9

Transect Id	Landform unit(s)[1]	Length (m)	Survey unit area (m²)	Visibility (%)	Exposure (%)	Effective coverage area (m²)	Effective coverage (%)
30	3,8,9	471.3	14959.6	90	40	5385.4	36
31	3,8	372	13273.2	90	60	7167.6	54
32	4,8	1126.4	17061.7	90	10	1535.6	9
33	4,8	648.4	3797.5	90	40	1367.1	36
34	4,8	987.1	7242.4	90	30	1955.5	27
35	2,3,4,6,8	1030.1	20893.7	90	40	7521.7	36
36	2,3,4,6,8	1093	22152.2	80	30	5316.5	24
37	4,6,8	922.1	18742.3	80	30	4498.2	24
38	3,4,8	2458.9	12603.4	60	10	756.2	6
39	5,8	3503.7	2424.8	60	20	291.0	12
40	1,4,8	1424.3	8509.1	40	10	340.4	4
41	3,8	692.7	6999.3	80	70	3919.6	56
42	3,4,6,8,9	556.3	26676.5	70	10	1867.4	7
43	3,5,8,10	234.8	176439.0	90	10	15879.5	9
44	2,3,5,8,9	615.1	124684.0	70	10	8727.9	7
45	3,6,8,9	757.9	50142.2	70	10	3510.0	7
46	2,3,4,8	2495.9	15464.9	50	10	773.2	5
47	1,3,5,6,8,9,10	4494.2	226295.2	90	10	20366.6	9
48	3,4,5,8,9	799.9	88944.3	60	10	5336.7	6
49	3,8,9	2978	16305.4	70	10	1141.4	7
50	2,3,8	4729.7	44696.1	50	30	6704.4	15
51	3,7,8,9,10	2220.3	89692.8	80	10	7175.4	8

[1]**Landform:** 1 = Creek terrace; 2 = Crest; 3 = Drainage depression; 4 = Disturbed; 5 = Elevated flat; 6 = Flood-prone flat; 7 = Residual rise; 8 = Simple slope; 9 = Spur crest; 10 = Swamp

Appendix I

AHIMS Site Cards

[ ] New recording [ ] Additional Info

National Parks and Wildlife Service

Box 1967, Hurstville NSW 2220. Tel: (02) 9585 6444

Standard Site Recording Form Revised 5/88

NPWS Code

1:250,000 map sheet: _____

AMG Grid reference (Full reference - please include leading digits)

250K 3 5 7 6 4 0 mE (25K) 250K 6 3 6 9 4 5 0 mN (5/6 | 25K)

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

1:25K, 50K, 100K map name: CESSNOCK

HEAD OFFICE USE ONLY:

NPWS Site no: 37-6-0865

Site types:

Accessioned by: _____ Date: _____

Data entered by: _____ Date: _____

Owner/Manager:

Address:

37-6-0865

Site name: KK-IF-2 Locality/property name.

NPWS District: Region:

Reason for investigation

UPGRADE OF KURRI KURRI SEWERAGE TREATMENT PLANT.

Portion no:

Parish:

Photos taken? ✓

How many attached? (1)

How to get to the site (refer to permanent features, give best approach to site on foot from above, below, along cliff...)

(Draw Kurri Kurri is located 8km east of Cessnock and approximately 280km south-west of Sydney. The Sewerage Treatment Plant is located approximately 1km due north of the town. Access is from McLeod Road.

Other sites in locality? YES Site Types include: OCS, IF.

Are sites in NPWS Register? YES

Have artefacts been removed from site? When?

By whom? NO Deposited where? / NO.

Is site important to local Aborigines?

Give contact(s) name(s) + address(es) NO

Contacted for this recording? BARRY ANDERSON, TRACY MILLER WOONARUAH TRIBAL COUNCIL

(Attach additional information separately) If not, why not?

Verbal/written reference sources (including f: **A Heritage Assessment for the proposed new wastewater Treatment plant at Kurri Kurri**

NPWS Report Catalogue #

Checklist: surface visibility, damage/disturbance/ threat to site

Condition of site:

HIGHLY DISTURBED

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

AVOID. IF NOT POSSIBLE APPLICATION FOR CONSENT TO DESTROY WITHOUT FURTHER INVESTIGATION

Site recorded by: Robynne Mills

Address/institution: 60 Wolfin Street Newtown NSW 2042

Date: 10/6/99.

SITE POSITION & ENVIRONMENT

OFFICE USE ONLY: NPWS site no:

1. Land form a. beach / hill slope / ridge top, etc: b. site aspect: c. slope:

d. mark on diagram provided *or* on your own sketch the position of the site: e. Describe briefly:

f. Local rock type: SHALE g. Land use/effect: FARMED / GRAZED / CLEARED

2. Distance from drinking water: 1 km Source: SWAMP CREEK

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

4. Vegetation: TEA TREE, SCRUB, Blackbutt.

5. Edible plants noted: NIL

6. Faunal resources (include shellfish): NIL

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

Site type:

DESCRIPTION OF SITE & CONTENTS.

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

This isolated artefact was located approximately 150m west of the main pumping station, on the north western boundary of the development site ((Map 2, Sketch 2, Photo 6). The artefact was located on the northern side of the access track to the pumping station. Visibility in the vicinity of the artefact was approximately 20%. No other artefacts or PAD areas were identified. The artefact is a quartzite hammerstone 10.2 x 8.7 x 4cm. There is an abraded area on one end and the stone fits well in the hand. There is a smooth area on one face but no evidence of the artefact having been used as an anvil.

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.

[ ] New recording [ ] Additional Info

National Parks and Wildlife Service

Box 1967, Hurstville NSW 2220. Tel: (02) 9585 6444

Standard Site Recording Form Revised 5/88

NPWS Code

1:250,000 map sheet: _____

AMG Grid reference (Full reference - please include leading digits)

250K 3 5 8 5 4 0 mE (25K) 250K 6 3 7 1 1 4 0 mN (5/6 25K)

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

1:25K, 50K, 100K map name: CESSNOCK

HEAD OFFICE USE ONLY:

NPWS Site no: 37-6-0866

Site types:

Accessioned by: _____ Date: _____

Data entered by: _____ Date: _____

Owner/Manager:

Address:

Site name: KK-IF-1 Locality/property name. SEWERAGE TREATMENT WORKS

NPWS District: Region:

Reason for investigation

UPGRADE OF TREATMENT WORKS

37-6-0866

Portion no:

Parish:

Photos taken? V

How many attached? IN REPORT.

How to get to the site (refer to permanent features, give best approach to site eg. from above, below, along cliff. (Draw dia

Kurri Kurri is located 8km east of Cessnock and approximately 280km south-west of Sydney. The Sewerage Treatment Plant is located approximately 1km due north of the town. Access is from McLeod Road.

Other sites in locality? YES Site Types include: OCS,

Are sites in NPWS Register? YES

Have artefacts been removed from site? When?

By whom? NO Deposited where? /

Is site important to local Aborigines?

Give contact(s) name(s) + address(es) NO

Contacted for this recording? BARRY ANDERSON WONARUAH TRIBAL COUNCIL

(Attach additional information separately) If not, why not?

Verbal/written reference sources (including full title of accompanying report) NPWS Report Catalogue #

A HERITAGE ASSESSMENT FOR THE PROPOSED WASTEWATER SEWERAGE PLANT, KURRI KURRI

Checklist: surface visibility, damage/disturbance/ threat to site

Condition of site:

HEAVILY DISTURBED

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

AVOID OR APPLICATION FOR CONSENT TO DESTROY

Site recorded by: Robynne Mills

Address/institution: 60 Watkin Street Newtown NSW 2042

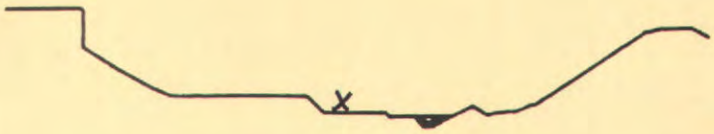
Date: 10/6/99.

SITE POSITION & ENVIRONMENT

OFFICE USE ONLY: NPWS site no:

1. Land form a. beach / hill slope / ridge top, etc: b. site aspect: c. slope:

d. mark on diagram provided *or* on your own sketch the position of the site: e. Describe briefly: CREEK TERRACE



f. Local rock type: SHALE g. Land use/effect: ELECTRICITY EASEMENT

2. Distance from drinking water: 500m Source: SWAMP CREEK.

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

4. Vegetation: OPEN FOREST

5. Edible plants noted: NIL

6. Faunal resources (include shellfish): NIL

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

Site type:

ISOLATED FIND

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

DESCRIPTION OF SITE & CONTENTS.

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

This isolated artefact was located on the northern boundary of the proposed development area (Map 2, Sketch 1, Photo 5). The artefact was located on an ant's nest on the edge of a cleared area approximately 5m x 8m. Visibility in the vicinity of the artefact was approximately 20%. No other artefacts or PAD areas were identified. The artefact is a yellow/red chert flake 1.8 x 1.5 x 0.4cm with 40% water worn cortex. This flake has a bulb, platform (focal) and euralia scar. 2 negative flake scars are present on the dorsal surface extending from the platform and the termination is absent.

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.

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

New Recording ☒ Additional information ☐

Site name	Swamp Creek Catchment 5	**NPWS Site Number**	37-6-1644
Owner/manager			
Owner Address			

Location	approx half way across the easement from Hart Road to Bishops Bridge Road, 20m west of an area of reeds associated with a dry swamp				
How to get to the site	follow Hart Road north-east to the junction with the electricity easement, turn left (north-west) and follow the easement for c100m.				
1:250,000 map name	Cessnock			**NPWS map code**	
AMG Zone	56	**AMG Easting**	356949	**AMG Northing**	6370574
Method for grid reference	Hand-held GPS	**Map scale (if method = map)**		**Map name**	
NPWS District				**NPWS Zone**	Northern Zone
Portion no.	N/A			**Parish**	Heddon

Site type(s)	open stone artefact scatter site	**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	two artefacts, one mudstone, one silcrete, were found within 10m of each other on aeolian sands exposed area of sparse vegetation cover beneath the electricity cables the potential for subsurface deposits containing further archaeological artefacts is high		

Version: June 1998	Data entered by:	Date entered:

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

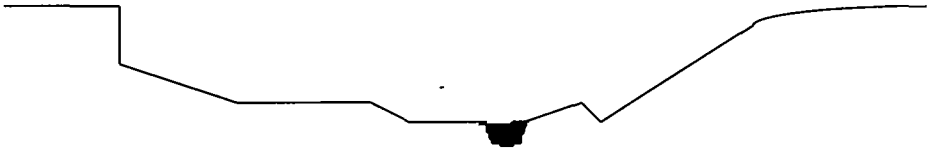
	Attach photographs and sketches, eg. plan & section of shelter. **Do NOT dig, disturb or damage site or contents.**

Version: June 1998	Data entered by:	Date entered:

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

Land form	flat		**Aspect**		**Slope**
Mark position of the site					
Local rock type	?		**Land use/effect**	electricity easement	
Distance from drinking water	c20m		**Source**	swamp	
Resource zone (eg. estuarine, river, forest)	forest		**Vegetation**	eucalypt	
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**	No	**Other site types include**	artefact scatters

Site condition	Disturbed	disturbance and soil displacement associated with the construction of the electricity easement, including holes for the electrical poles
Management recommendations	Monitoring under a s90 consent	

Have artefacts been removed from site	No	**When**	
By whom		**Deposited at**	
Consent applied for	☐	**Consent issued**	☐
Date of issue		**Consent number**	

Reason for investigation	A survey was commissioned by Harper Somers O'Sullivan as part of an REF for a pipeline route from Seahampton to Rutherford		
Were local Aborigines contacted or present for the recording	☐ Not contacted ☒ Contacted and present ☐ Contacted but not present	**Names and addresses**	Lower Hunter Wonnarua Council Inc 19 O'Donnell Cres Metford NSW 2323 Lower Wonnarua Tribal Consultancy Pty Ltd 156 The Inlet Rd Bulga NSW 2330 Mindaribba Local Aboriginal Land Council Lot 475 Chelmsford Medford NSW 2323 PO Box 401 EAST MAITLAND NSW 2320

Version: June 1998	Data entered by:	Date entered:

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

Is the site important to local Aborigines	yes		
Verbal/written reference sources	ERM (2004) Heritage assessment for the proposed gas pipeline from Seahampton to Rutherford	**ASR report number(s)**	C- C-
Photographs taken	Yes	**No of Photos attached**	1
Site recorded by	Tudur Llwyd Davies	**Date of recording**	21 May, 2004
Address/institution	Environmental Resources Management Australia, Building C, 33 Saunders Street, Pyrmont, NSW 2009		

Version: June 1998	Data entered by:	Date entered:

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

New Recording ☒ Additional information ☐

Site name	Swamp Creek Catchment 4	**NPWS Site Number**	37-6-1645
Owner/manager			
Owner Address			

Location	on the easement directly to the south of Scales Road, c5m south of a first order tributary of Swamp Creek						
How to get to the site	follow Hart Road north-east to Scales road, turn right (south-east) into Scales road and proceed c400m						
1:250,000 map name	Cessnock				**NPWS map code**		
AMG Zone	56	**AMG Easting**	357603		**AMG Northing**	6369908	
Method for grid reference	Hand-held GPS	**Map scale (if method = map)**		**Map name**			
NPWS District					**NPWS Zone**	Northern Zone	
Portion no.	N/A				**Parish**	Heddon	

Site type(s)	isolated stone artefact site	**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

one blade core found 5m south of the tributary of Swamp Creek

visibility low over most of site, with c4x15m area clear of vegetation and heavily disturbed

the potential for subsurface deposits containing further archaeological artefacts is moderate

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

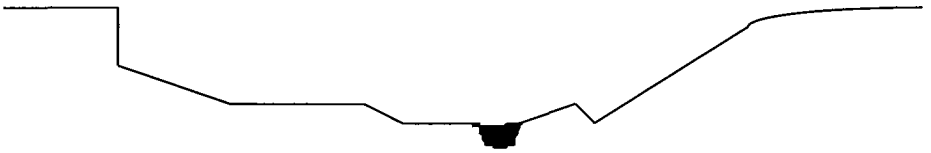
	Attach photographs and sketches, eg. plan & section of shelter. **Do NOT dig, disturb or damage site or contents.**

Version: June 1998	Data entered by:	Date entered:

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

Land form	within open depression associated with creek	**Aspect**		**Slope**	
Mark position of the site					
Local rock type	?	**Land use/effect**	vehicle track, electricity easement		
Distance from drinking water	c5m	**Source**	1st order tributary of Swamp Creek		
Resource zone (eg. estuarine, river, forest)	forest	**Vegetation**	eucalypt		
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**	No	**Other site types include**	artefact scatters

Site condition	Disturbed	disturbance and soil displacement associated with heavy vehicle use, and the construction, including post hole excavation, of a fence line and the electricity easement	
Management recommendations	Monitoring under a s90 constent		
Have artefacts been removed from site	No	**When**	
By whom		**Deposited at**	
Consent applied for	☐	**Consent issued**	☐
Date of issue		**Consent number**	

Reason for investigation	A survey was commissioned by Harper Somers O'Sullivan as part of an REF for a pipeline route from Seahampton to Rutherford		
Were local Aborigines contacted or present for the recording	☐ Not contacted ☒ Contacted and present ☐ Contacted but not present	**Names and addresses**	Lower Hunter Wonnarua Council Inc 19 O'Donnell Cres Metford NSW 2323 Lower Wonnarua Tribal Consultancy Pty Ltd 156 The Inlet Rd Bulga NSW 2330 Mindaribba Local Aboriginal Land Council Lot 475 Chelmsford Medford NSW 2323 PO Box 401 EAST MAITLAND NSW 2320

Version: June 1998	Data entered by:	Date entered:

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

Is the site important to local Aborigines	yes		
Verbal/written reference sources	ERM (2004) Heritage assessment for the proposed gas pipeline from Seahampton to Rutherford	**ASR report number(s)**	C- C-
Photographs taken	Yes	**No of Photos attached**	2
Site recorded by	Tudur Llwyd Davies	**Date of recording**	20 May, 2004
Address/institution	Environmental Resources Management Australia, Building C, 33 Saunders Street, Pyrmont, NSW 2009		

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

New Recording ☒ Additional information ☐

Site name	Northern Swamp Tributaries 4	**NPWS Site Number**	37-6-1650
Owner/manager			
Owner Address			

Location	west of an unnamed track running south from Wollombi Road in Bishops Bridge						
How to get to the site	travel c.185m down unnamed track which begins c.185 m west of the bridge over Bishops Creek on Wollombi Road, c.500 m south-west of its junction with Ravensfield Road						
1:250,000 map name	~~Greta~~ Cessnock				**NPWS map code**		
AMG Zone	56	**AMG Easting**	356724		**AMG Northing**	6371757	
Method for grid reference	Hand-held GPS	**Map scale (if method = map)**		**Map name**			
NPWS District					**NPWS Zone**	Northern Zone	
Portion no.	N/A				**Parish**	Gosforth	

Site type(s)	open stone artefact scatter site	**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

artefacts found eroding from a bulldozed section of a bank composed of aeolian sands. Total of twenty-nine artefacts were found - one blade, one retouched flake and twenty seven flakes.

exposure - 30m bulldozed section of bank and either side of track which runs through the bank. Vegetation cover obscures view outside these areas

the potential for subsurface deposits containing further archaeological artefacts is high

Version: June 1998	Data entered by:	Date entered:

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

Land form	southern bank of an open depression associated with the creek	**Aspect**		**Slope**	
Mark position of the site					
Local rock type	?		**Land use/effect**	vehicle track	
Distance from drinking water	c40m		**Source**	tributary of Bishops Creek	
Resource zone (eg. estuarine, river, forest)	forest		**Vegetation**	eucalypt	
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**	No	**Other site types include**	artefact scatters

Site condition	Very disturbed	site is heavily disturbed as a bulldozed section transects the site. Other disturbance is associated with vehicle use through the bulldozed cutting	
Management recommendations	Monitoring under an s90 consent		
Have artefacts been removed from site	No	**When**	
By whom		**Deposited at**	
Consent applied for	☐	**Consent issued**	☐
Date of issue		**Consent number**	

Reason for investigation	A survey was commissioned by Harper Somers O'Sullivan as part of an REF for a pipeline route from Seahampton to Rutherford		
Were local Aborigines contacted or present for the recording	☐ Not contacted ☒ Contacted and present ☐ Contacted but not present	**Names and addresses**	Lower Hunter Wonnarua Council Inc 19 O'Donnell Cres Metford NSW 2323 Lower Wonnarua Tribal Consultancy Pty Ltd 156 The Inlet Rd Bulga NSW 2330 Mindaribba Local Aboriginal Land Council Lot 475 Chelmsford Medford NSW 2323 PO Box 401 EAST MAITLAND

Version: June 1998	Data entered by:	Date entered:

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

			NSW 2320

Is the site important to local Aborigines	yes		
Verbal/written reference sources	ERM (2004) Heritage assessment for the proposed gas pipeline from Seahampton to Rutherford	**ASR report number(s)**	C- C-
Photographs taken	Yes	**No of Photos attached**	2
Site recorded by	Tudur Llwyd Davies	**Date of recording**	21 May, 2004
Address/institution	Environmental Resources Management Australia, Building C, 33 Saunders Street, Pyrmont, NSW 2009		

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

New Recording ☐ Additional ☒

information

SITE IDENTIFICATION					
Site name	37-6-1650			NPWS Site Number	
Owner/manager	Crown land				
Owner Address	Crown land				
LOCATION					
Location	Junction of Black Waterholes Creek and Bishops Bridge road				
How to get to the site	Head north from Weston, Hunter Valley, NSW to Bishops Bridge Road, site is located at the junction of Black Waterholes Creek and Bishops Bridge road.				
1:250,000 map name				NPWS map code	
GDA Zone	56	GDA Easting	See below	GDA Northing	
Method for grid reference	Hand-held GPS	Map scale (if method = map)	1:25,000	Map name	
NPWS District				NPWS Zone	Coffs Habour
Portion no.				Parish	
SITE DESCRIPTION					
Site type(s)				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

As observed in recent survey site extends from E356828,6371934N to E356810, N6372132, GDA94 Zone 56

This site is located north of Black Waterholes Creek. Terrain ranges from flat to gentle slopes (near the watercourses). Artefacts were observed eroding from the road cutting, particularly on the western edge of the easement, as well as a substantial scatter of artefacts across the access track.

Fifty-two artefacts were identified and were produced primarily from silcrete, although silicified tuff and chert were also present. Yellow silcrete artefacts were most common, closely followed by red silcrete. Approximately, 78 percent of artefacts at the site were flakes, of which 75 percent were less than 30mm in length. The mean length of complete flakes was 27.3mm, 19.4mm for width and 9mm for thickness.

Other artefact types identified included cores, core fragments and broken flakes, but were present in small quantities. All artefacts identified were associated with stone tool manufacture and not tools were identified.

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

SITE ENVIRONMENT

Land form	Simple slope	**Aspect**	south	**Slope**	5
Mark position of the site					
Local rock type	Mudstone, sandstone, shale	**Land use/effect**	Electricity easement		
Distance from drinking water	235m	**Source**	Black Waterholes ck		
Resource zone (eg. estuarine, river, forest)	Inland	**Vegetation**	Kurri Sand Swamp Woodland		
Edible plants	None observed	**Faunal resources** (include shellfish)	None observed		
Other exploitable resources (eg. ochre)	None observed				
Are there other sites in the locality	yes	**Are they in the Sites Register**	Yes	**Other site types include**	Artefact Scatters

SITE MANAGEMENT

Site condition	Good, but very disturbed in track		
Management recommendations			
Have artefacts been removed from site	No	**When**	
By whom		**Deposited at**	
Consent applied for	☐	**Consent issued**	
Date of issue		**Consent number**	

SITE INSPECTION AND RECORDING

Reason for investigation			
Were local Aborigines contacted or present for the recording	☐ Not contacted ☒ Contacted and present ☐ Contacted but not present	**Names and addresses**	Mindaribba Local Aboriginal Land Council, PO Box 401, EAST MAITLAND NSW 2323; Barkuma Neighbourhood Centre/ Gidawaa Walang, 76 Lang Street, KURRI KURRI NSW 2327; Aboriginal Native Title Consultants, 16A Mahogany Ave, MUSWELLBROOK NSW 2333; Hunter Valley Aboriginal Corporation, PO BOX 579, MUSWELLBROOK NSW 2333; Wonnarua Culture Heritage, 19 O'Donnell Cresent, METFORD 2322
Is the site important to local Aborigines	Although this site is important for demonstrating Aboriginal occupation of the area, it does not have specific cultural significance to the Aboriginal community		
Verbal/written reference sources	AMBS (2009) *Kurri Kurri Aboriginal Heritage Assessment for the 33kV Kurri-Rutherford Feeder Split*, report to EnergyAustralia	**ASR report number(s)**	C- C-
Photographs taken	Yes	**No of Photos attached**	
Site recorded by	Christopher Langeluddecke & Tessa Boer-Mah	**Date of recording**	Feb 2009
Address/institution			

Version: June 1998 Data entered by: Date entered:

Table Proportion of Stone Raw Materials at AHIMS#37-6-1650

Artefact Type	Count	Percent
Silcrete	42	80.2
Silicified Tuff	5	9.6
Chert	5	9.6
Total	52	

Table Silcrete Colour

Colour	Count	Percent
Yellow	22	52.4
Red	18	42.9
Orange	1	2.4
White	1	2.4
Total	52	

Table Types of Artefacts at AHIMS#37-6-1650

Artefact Type	Count	Percent	Association
Flake	40	76.9	Stone Tool Manufacture 100%
Core Fragment	5	9.6	
Broken Flake	5	9.6	
Core	2	3.8	
Total			

Table Size distribution of complete flakes at AHIMS#37-6-1650

Size Range in mm	Count	Percent
10-19	8	20.0
20-29	22	55.0
30-39	4	10.0
40-49	4	10.0
50-59	1	2.5
60-69	1	2.5
10-19	8	20.0
20-29	22	55.0
Total	67	

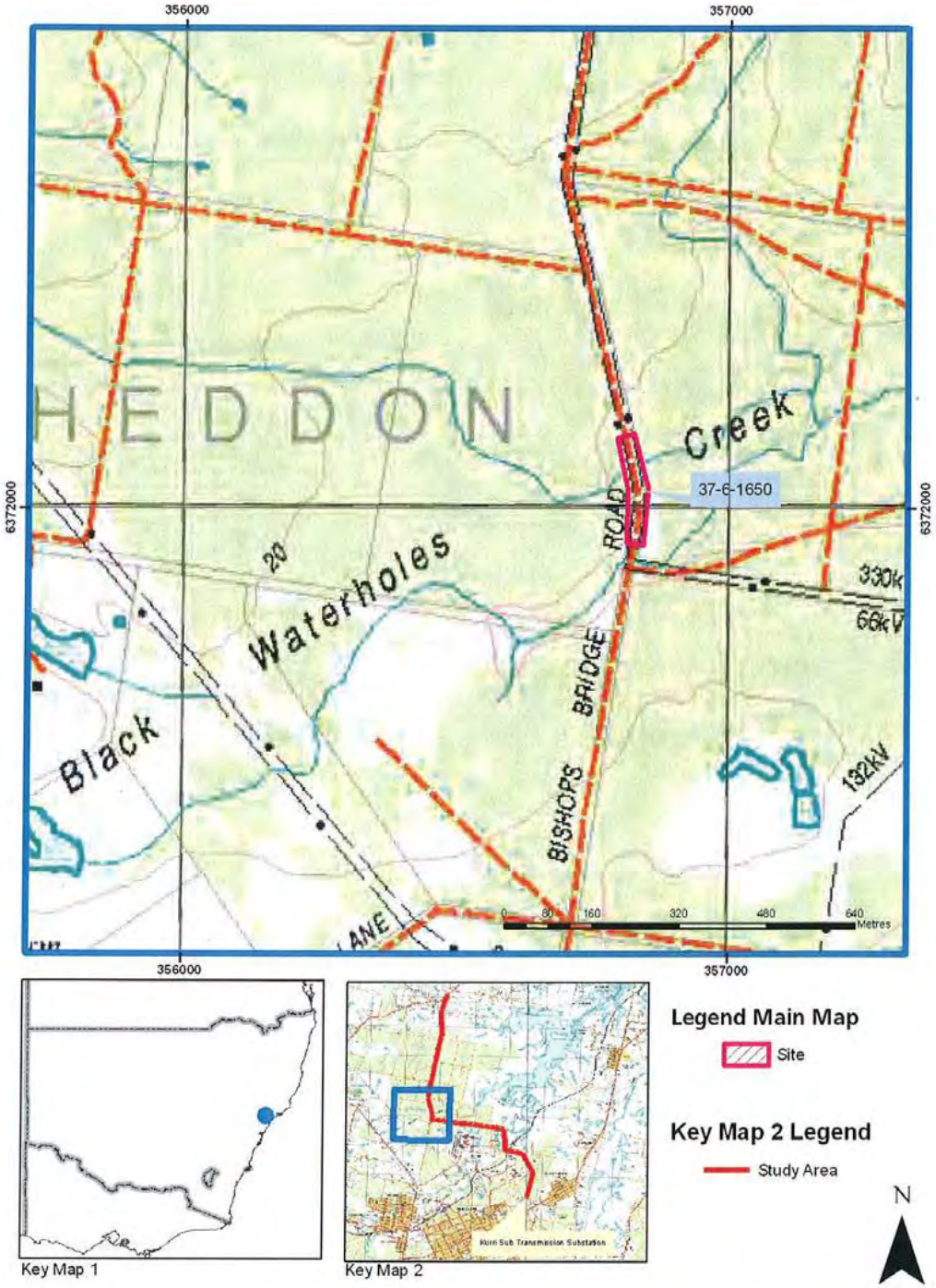
Table Length, Width and Thickness of complete flakes from AHIMS#37-6-1650

	Minimum	Maximum	Mean	Standard Deviation
Length	10.0	68.0	27.3	11.6
Width	7.0	31.0	19.4	6.7
Thickness	3.0	34.0	9.0	5.7

Figure AHIMS Site #37-6-1650, view to west. Artefacts present along eroded section adjacent to the track.

Figure AHIMS#37-6-1650, view to north

Figure Artefacts from AHIMS#37-6-1650



Background Topographic data © Land and Property Information NSW (2001) Cessnock 9132-2N 1:25000 Topographic and Orthophoto Map, 2nd Edition
Horizontal datum: GDA94/MGA Zone 56

AMBS

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

New Recording ☒ Additional information ☐

Site name	Northern Swamp Tributaries 2	**NPWS Site Number**	37-6-1652
Owner/manager			
Owner Address			

Location	on Bishops Bridge Road, 50m south of a 1st order tributary of Black Waterholes Creek					
How to get to the site	From Hart Road (north of Kurri Kurri), travel c2.75km north along Bishops Bridge Road					
1:250,000 map name	Cessnock			**NPWS map code**		
AMG Zone	56	**AMG Easting**	356637	**AMG Northing**		6372207
Method for grid reference	Hand-held GPS	**Map scale (if method = map)**		**Map name**		
NPWS District				**NPWS Zone**		Northern Zone
Portion no.	N/A			**Parish**		Heddon

Site type(s)	open stone artefact scatter site	**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	Two silcrete flakes found in an area of sparse vegetation on flat ground overlooking a first order tributary of Black Waterholes Creek Exposure - c.7x2 m area of sparse vegetation directly to the west of the vehicle track The potential for subsurface deposits containing further archaeological artefacts is high		

Version: June 1998 Data entered by: Date entered:

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

Land form	crest flat	**Aspect**		**Slope**	
Mark position of the site					
Local rock type	?	**Land use/effect**	vehicle track/electricity easement		
Distance from drinking water	c.50 m	**Source**	1st order tributary of Black Waterholes Creek		
Resource zone (eg. estuarine, river, forest)	forest	**Vegetation**	eucalypt		
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**	No	**Other site types include**	artefact scatters

Site condition	Disturbed	disturbance associated with the construction of the electricity easement, including post hole excavation and vehicle use	
Management recommendations	monitoring under an s90 consent		
Have artefacts been removed from site	No	**When**	
By whom		**Deposited at**	
Consent applied for	☐	**Consent issued**	☐
Date of issue		**Consent number**	

Reason for investigation	A survey was commissioned by Harper Somers O'Sullivan as part of an REF for a pipeline route from Seahampton to Rutherford		
Were local Aborigines contacted or present for the recording	☐ Not contacted ☒ Contacted and present ☐ Contacted but not present	**Names and addresses**	Lower Hunter Wonnarua Council Inc 19 O'Donnell Cres Metford NSW 2323 Lower Wonnarua Tribal Consultancy Pty Ltd 156 The Inlet Rd Bulga NSW 2330 Mindaribba Local Aboriginal Land Council Lot 475 Chelmsford Medford NSW 2323 PO Box 401 EAST MAITLAND NSW 2320

Version: June 1998	Data entered by:	Date entered:

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

Is the site important to local Aborigines	yes		
Verbal/written reference sources	ERM (2004) Heritage assessment for the proposed gas pipeline from Seahampton to Rutherford	**ASR report number(s)**	C- C-
Photographs taken	Yes	**No of Photos attached**	**1**
Site recorded by	Tudur Llwyd Davies	**Date of recording**	20 May, 2004
Address/institution	Environmental Resources Management Australia, Building C, 33 Saunders Street, Pyrmont, NSW 2009		

Version: June 1998	Data entered by:	Date entered:

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

New Recording ☐ Additional ☒

information

SITE IDENTIFICATION					
Site name	37-6-1652			NPWS Site Number	
Owner/manager	Crown land				
Owner Address	Crown land				
LOCATION					
Location	300m north of the junction of Black Waterholes Creek and Bishops Bridge road				
How to get to the site	Head north from Weston, Hunter Valley, NSW to Bishops Bridge Road, site is located 300 m north of the junction of Black Waterholes Creek and Bishops Bridge road.				
1:250,000 map name				NPWS map code	
GDA Zone	56	GDA Easting	See below	GDA Northing	
Method for grid reference	Hand-held GPS	Map scale (if method = map)	1:25,000	Map name	
NPWS District				NPWS Zone	Coffs Habour
Portion no.				Parish	
SITE DESCRIPTION					
Site type(s)				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

As observed in recent survey site extends from E356790,N6372217 to E355695, N6372616, GDA 94 Zone 56

This site was previously recorded by ERM (2004) north of an unnamed tributary of Black Waterhole's Creek.

Twelve artefacts were identified made from silcrete, silicified tuff and indurated mudstone. The exposed ground surface comprised sandy silt with small ironstone gravels (>5mm).

Proportion of Stone Raw Materials at AHIMS# 37-6-1652

Artefact Type	Count	Percent
Silcrete	8	66.7
Silicified Tuff	3	25.0
Indurated Mudstone	1	8.3
Total	**12**	

Types of Artefacts at AHIMS# 37-6-1652

Artefact Type	Count	Percent
Flake	8	66.7
Flake-Core	3	25.0
Graver	1	8.3
Total	**12**	

Reference:
ERM (2004) *Heritage Assessment for the Proposed Gas Pipeline from Seahampton to*

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

SITE ENVIRONMENT

Land form	Simple slope	**Aspect**	south	**Slope**	5
Mark position of the site					
Local rock type	Mudstone, sandstone, shale	**Land use/effect**	Electricity easement		
Distance from drinking water	235m	**Source**	Black Waterholes ck		
Resource zone (eg. estuarine, river, forest)	Inland	**Vegetation**	Kurri Sand Swamp Woodland		
Edible plants	None observed	**Faunal resources** (include shellfish)	None observed		
Other exploitable resources (eg. ochre)	None observed				
Are there other sites in the locality	yes	**Are they in the Sites Register**	Yes	**Other site types include**	Artefact Scatters

SITE MANAGEMENT

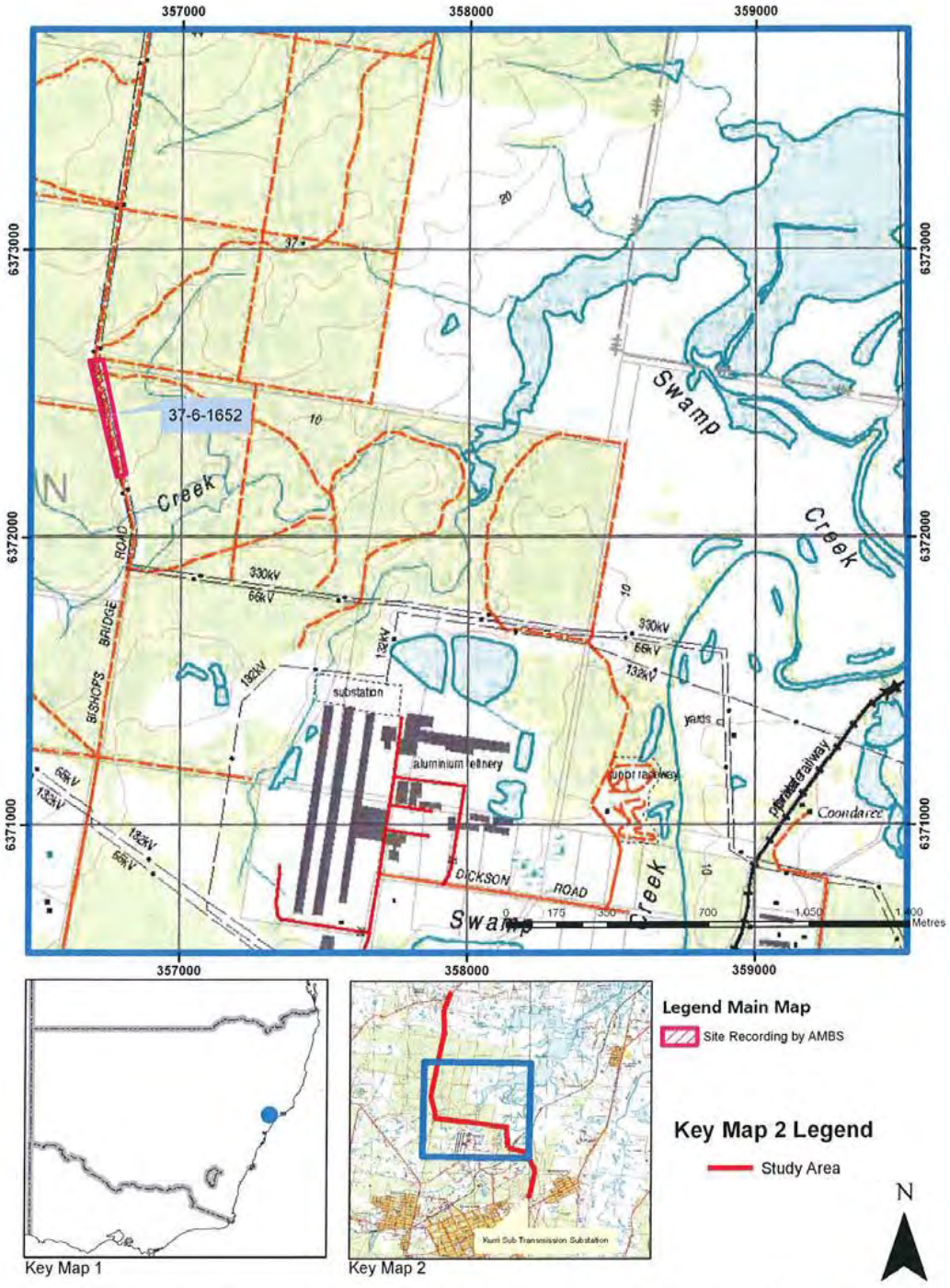
Site condition	Good, but very disturbed in track		
Management recommendations			
Have artefacts been removed from site	No	**When**	
By whom		**Deposited at**	
Consent applied for	☐	**Consent issued**	
Date of issue		**Consent number**	

SITE INSPECTION AND RECORDING

Reason for investigation			
Were local Aborigines contacted or present for the recording	☐ Not contacted ☒ Contacted and present ☐ Contacted but not present	**Names and addresses**	Mindaribba Local Aboriginal Land Council, PO Box 401, EAST MAITLAND NSW 2323; Barkuma Neighbourhood Centre/ Gidawaa Walang, 76 Lang Street, KURRI KURRI NSW 2327; Aboriginal Native Title Consultants, 16A Mahogany Ave, MUSWELLBROOK NSW 2333; Hunter Valley Aboriginal Corporation, PO BOX 579, MUSWELLBROOK NSW 2333; Wonnarua Culture Heritage, 19 O'Donnell Cresent, METFORD 2322
Is the site important to local Aborigines	Although this site is important for demonstrating Aboriginal occupation of the area, it does not have specific cultural significance to the Aboriginal community		
Verbal/written reference sources	AMBS (2009) *Kurri Kurri Aboriginal Heritage Assessment for the 33kV Kurri-Rutherford Feeder Split*, report to EnergyAustralia	**ASR report number(s)**	C- C-
Photographs taken	Yes	**No of Photos attached**	
Site recorded by	Christopher Langeluddecke & Tessa Boer-Mah	**Date of recording**	Feb 2009
Address/institution			

Version: June 1998	Data entered by:	Date entered:

View north of AHIMS# 37-6-1652, artefacts marked with orange flags.



Background Topographic data © Land and Property Information NSW (2001) Cessnock 9132-2N 1:25000 Topographic and Orthophoto Map, 2nd Edition
Horizontal datum: GDA94/MGA Zone 56

AMBS

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

New Recording ☒ Additional information ☐

SITE IDENTIFICATION					
Site name	KK05			NPWS Site Number	37-6-1954
Owner/manager	Hydro Aluminium				
Owner Address	Hydro Aluminium Buffer Manager: Kerry McNaughton, Hart Rd., Loxford, NSW 2326, Australia				
LOCATION					
Location	2.5km North north west of Kurri Sub-Transmission Station				
How to get to the site	Take Main road north from Kurri Kurri towards Heddon Greta, turn left to Kurri Sub-Transmission Station (at junction of Main Road, Stanford Road and Lang St), site is 2.5km north north west of sub-transmission station.				
1:250,000 map name	Cessnock			NPWS map code	
GDA Zone	56	GDA Easting	358577	GDA Northing	6371627
Method for grid reference	Hand-held GPS	Map scale (if method = map)		Map name	
NPWS District				NPWS Zone	Coffs Harbour
Portion no.	Lot 317 DP755231			Parish	
SITE DESCRIPTION					
Site type(s)	Artefact Scatter			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

Artefacts were identified west of Swamp Creek, in the vicinity of the existing electricity poles. Artefacts were located within the vehicle track on slight slope with a gradual gradient.

Seventeen artefacts were identified at KK05, the majority of which were made from silcrete, although silicified tuff, chert and quartzite artefacts were also present. Artefact types identified were flakes and complete flakes.

Table Proportion of Stone Raw Materials at KK05

Artefact Type	Count	Percent
Silcrete	13	76.5
Silicified Tuff	2	11.8
Chert	1	5.9
Quartzite	1	5.9
Total	**17**	

Table Types of Artefacts at KK05

Artefact Type	Count	Percent
Flake	13	76.5%
Broken Flake	4	23.5%
Total	**17**	

Version: June 1998 | Data entered by: | Date entered:

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

SITE ENVIRONMENT

Land form	Simple slope	**Aspect**	east	**Slope**	10
Mark position of the site					
Local rock type	Mudstone, sandstone, shale	**Land use/effect**	Electricity easement		
Distance from drinking water	50-400m	**Source**	Swamp ck		
Resource zone (eg. estuarine, river, forest)	Inland	**Vegetation**	Kurri Sand Swamp Woodland		
Edible plants	None observed	**Faunal resources** (include shellfish)	None observed		
Other exploitable resources (eg. ochre)	None observed				
Are there other sites in the locality	yes	**Are they in the Sites Register**	yes	**Other site types include**	Artefact scatters

SITE MANAGEMENT

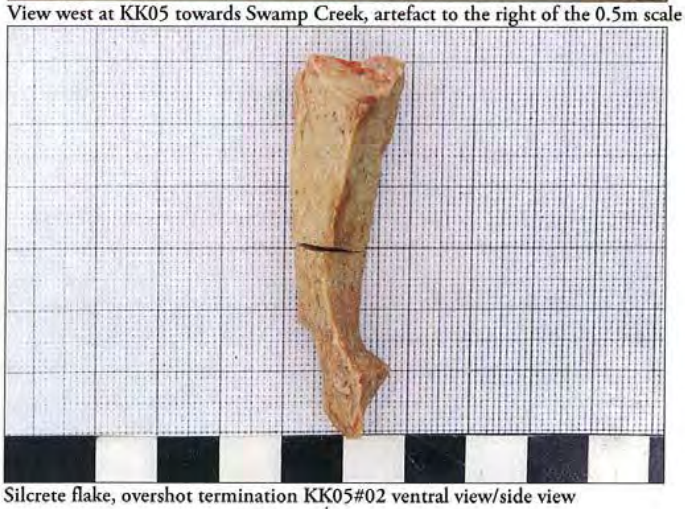
Site condition	Generally good		
Management recommendations			
Have artefacts been removed from site	No	**When**	
By whom		**Deposited at**	
Consent applied for	☐	**Consent issued**	
Date of issue		**Consent number**	

SITE INSPECTION AND RECORDING

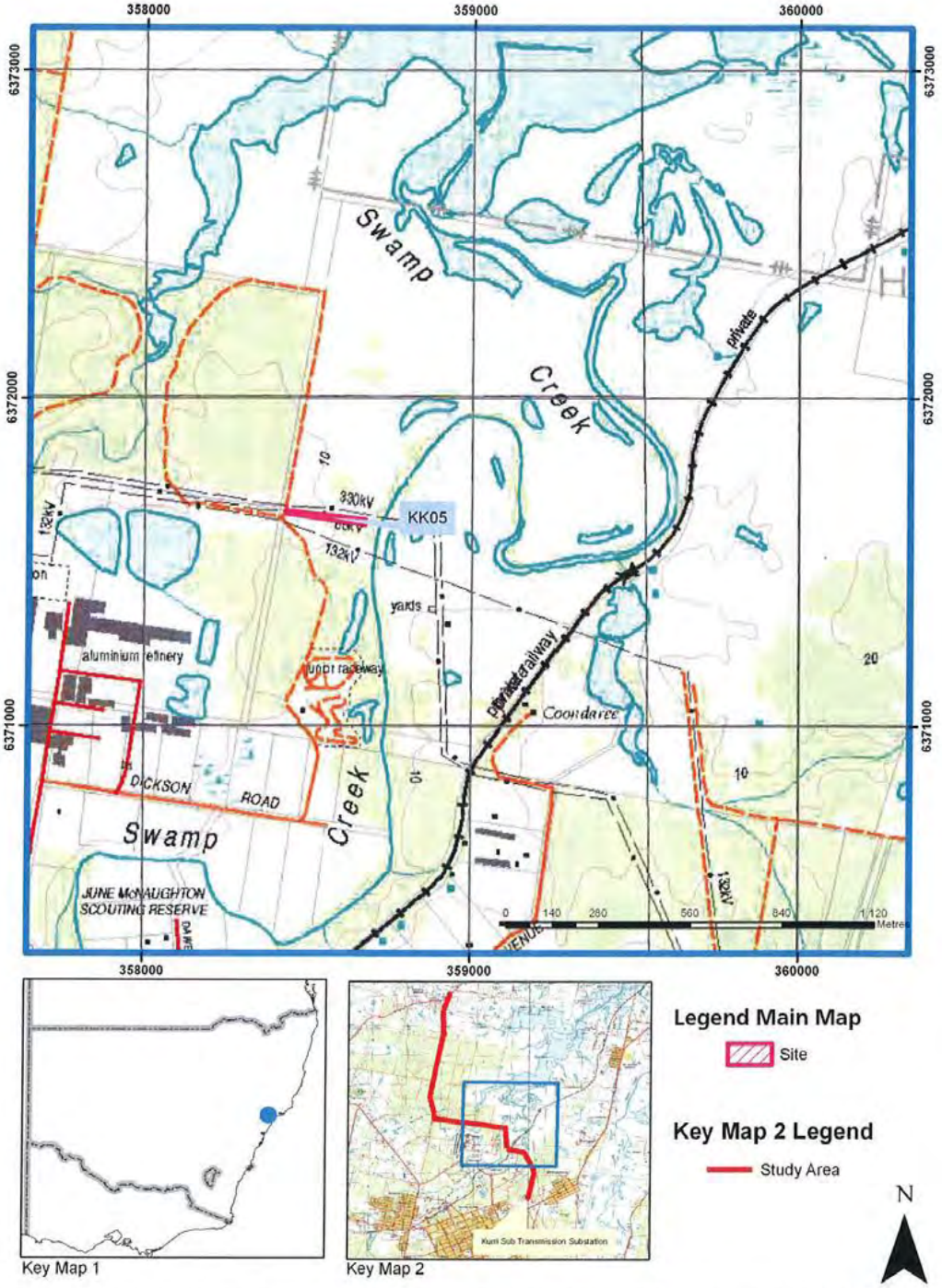
Reason for investigation	Proposed works to electricity easement		
Were local Aborigines contacted or present for the recording	☐ Not contacted ☒ Contacted and present ☐ Contacted but not present	**Names and addresses**	Mindaribba Local Aboriginal Land Council, PO Box 401, EAST MAITLAND NSW 2323; Barkuma Neighbourhood Centre/ Gidawaa Walang, 76 Lang Street KURRI KURRI NSW 2327; Aboriginal Native Title Consultants, 16A Mahogany Ave, MUSWELLBROOK NSW 2333; Hunter Valley Aboriginal Corporation, PO BOX 579, MUSWELLBROOK NSW 2333; Wonnarua Culture Heritage, 19 O'Donnell Cresent, METFORD 2322
Is the site important to local Aborigines	Although this site is important for demonstrating Aboriginal occupation of the area, it does not have specific cultural significance to the Aboriginal community		
Verbal/written reference sources	AMBS (2009) *Kurri Kurri Aboriginal Heritage Assessment for the 33kV Kurri-Rutherford Feeder Split*, report to EnergyAustralia	**ASR report number(s)**	C- C-
Photographs taken	Yes	**No of Photos attached**	
Site recorded by	Christopher Langeluddecke & Tessa Boer-Mah	**Date of recording**	Feb 2009
Address/institution	AMBS 6 College Street, Sydney, NSW 2010		

Version: June 1998	Data entered by:	Date entered:

View west at KK05 towards Swamp Creek, artefact to the right of the 0.5m scale in the foreground



Silcrete flake, overshot termination KK05#02 ventral view/side view



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Horizontal datum: GDA94/MGA Zone 56

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Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

New Recording ☒ Additional information ☐

SITE IDENTIFICATION

Site name	KK10	**NPWS Site Number**	37-6-1958
Owner/manager	Hydro Aluminium		
Owner Address	Hydro Aluminium Buffer Manager: Kerry McNaughton, Hart Rd., Loxford, NSW 2326, Australia		

LOCATION

Location	3.3km north west of Kurri Sub-Transmission Station				
How to get to the site	Take Main road north from Kurri Kurri towards Heddon Greta, turn left to Kurri Sub-Transmission Station (at junction of Main Road, Stanford Road and Lang St), site is 3.3 km north west of sub-transmission station.				
1:250,000 map name	Cessnock			**NPWS map code**	
GDA Zone	56	**GDA Easting**	357407	**GDA Northing**	6371800
Method for grid reference	Hand-held GPS	**Map scale (if method = map)**		**Map name**	
NPWS District				**NPWS Zone**	Coffs Harbour
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

This scatter is located on a crest between two unnamed tributaries of Swamp Creek. Six artefacts were identified including three flakes were identified along with two broken flakes. One flake core was identified which is likely related to the Redbank reduction strategy (Hiscock 1993).

KK10 artefact details, dimensions in millimetres

Artefact Type	Raw material	Colour	Max. Length	Max. Width	Max. Thickness
Flake	Silcrete	Orange	43	50	12
Flake	Silicified Tuff	Cream	19	17	6
Flake	Silcrete	Red	41	19	10
Flake-Core	Indurated Mudstone	Orange	33	38	55
Broken Flake	Silcrete	Red	17	18	6
Broken Flake	Silicified Tuff	Cream	12	12	3

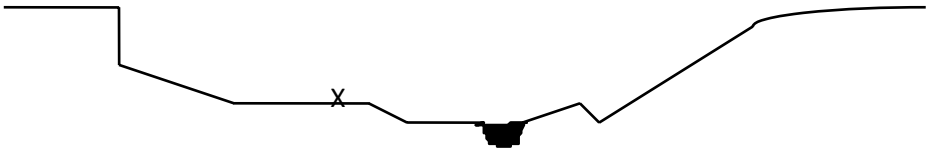
Hiscock, P (1993) "Bondaian technology in the Hunter Valley, New South Wales". *Archaeology in Oceania* 28(2): 64-75.

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

SITE ENVIRONMENT

Land form	crest	**Aspect**	0	**Slope**	0
Mark position of the site					
Local rock type	Mudstone, sandstone, shale	**Land use/effect**	Electricity easement		
Distance from drinking water	190m	**Source**	Tributary of Black Waterholes ck		
Resource zone (eg. estuarine, river, forest)	Inland	**Vegetation**	Kurri Sand Swamp Woodland		
Edible plants	None observed	**Faunal resources** (include shellfish)	None observed		
Other exploitable resources (eg. ochre)	None observed				
Are there other sites in the locality	yes	**Are they in the Sites Register**	yes	**Other site types include**	Artefact scatters

SITE MANAGEMENT

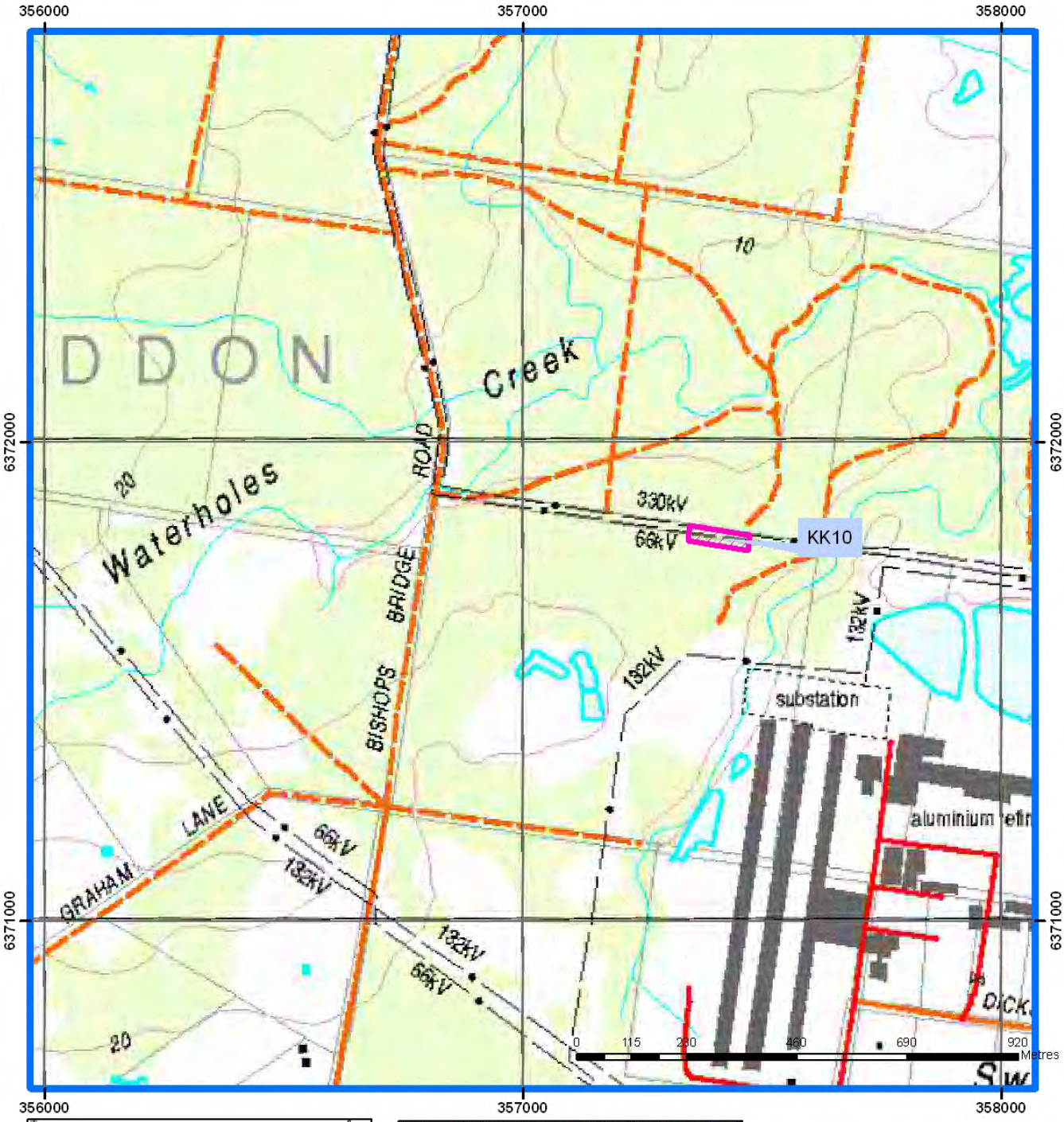
Site condition	Good		
Management recommendations			
Have artefacts been removed from site	No	**When**	
By whom		**Deposited at**	
Consent applied for	☐	**Consent issued**	
Date of issue		**Consent number**	

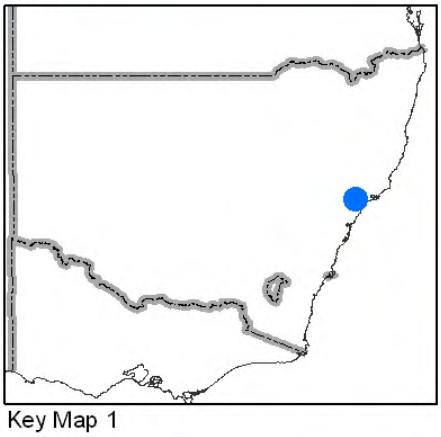
SITE INSPECTION AND RECORDING

Reason for investigation	Proposed works to electricity easement		
Were local Aborigines contacted or present for the recording	☐ Not contacted ☒ Contacted and present ☐ Contacted but not present	**Names and addresses**	Mindaribba Local Aboriginal Land Council, PO Box 401, EAST MAITLAND NSW 2323; Barkuma Neighbourhood Centre/ Gidawaa Walang, 76 Lang Street, KURRI KURRI NSW 2327; Aboriginal Native Title Consultants, 16A Mahogany Ave, MUSWELLBROOK NSW 2333; Hunter Valley Aboriginal Corporation, PO BOX 579, MUSWELLBROOK NSW 2333; Wonnarua Culture Heritage, 19 O'Donnell Cresent, METFORD 2322
Is the site important to local Aborigines	Although this site is important for demonstrating Aboriginal occupation of the area, it does not have specific cultural significance to the Aboriginal community		
Verbal/written reference sources	AMBS (2009) *Kurri Kurri Aboriginal Heritage Assessment for the 33kV Kurri-Rutherford Feeder Split*, report to EnergyAustralia	**ASR report number(s)**	C- C-
Photographs taken	Yes	**No of Photos attached**	
Site recorded by	Christopher Langeluddecke & Tessa Boer-Mah	**Date of recording**	Feb 2009
Address/institution	AMBS 6 College Street, Sydney, NSW 2010		

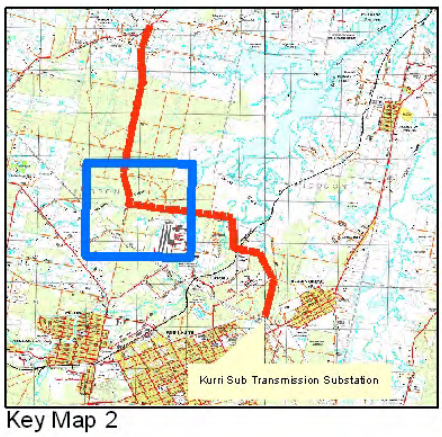
Version: June 1998 Data entered by: Date entered:

View to west, KK10





Key Map 1



Key Map 2

Legend Main Map

Site

Key Map 2 Legend

Study Area

N

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Horizontal datum: GDA94/MGA Zone 56

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Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

New Recording ☒ Additional information ☐

SITE IDENTIFICATION

Site name	KK11	**NPWS Site Number**	37-6-1959
Owner/manager	Hydro Aluminium		
Owner Address	Hydro Aluminium Buffer Manager: Kerry McNaughton, Hart Rd., Loxford, NSW 2326, Australia		

LOCATION

Location	3.5km north west of Kurri Sub-Transmission Station				
How to get to the site	Take Main road north from Kurri Kurri towards Heddon Greta, turn left to Kurri Sub-Transmission Station (at junction of Main Road, Stanford Road and Lang St), site is 3.5 km north west of sub-transmission station.				
1:250,000 map name	Cessnock			**NPWS map code**	
GDA Zone	56	**GDA Easting**	357079	**GDA Northing**	6371849
Method for grid reference	Hand-held GPS	**Map scale (if method = map)**		**Map name**	
NPWS District				**NPWS Zone**	Coffs Harbour
Portion no.				**Parish**	

SITE DESCRIPTION

Site type(s)	Artefact Scatter	**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

This scatter is located on a crest between two unnamed tributaries of Swamp Creek, approximately 230m west of KK10. Three artefacts were identified including two flakes and one broken flake. One flake was which was yellow in surface colour was slightly damaged revealing that the interior stone colour was red-brown in colour which indicates that the artefact surface is extremely weathered. There was no evidence for heat damage, caused by bushfire, (or similar) on this artefact.

KK11 artefact details, dimensions in millimetres

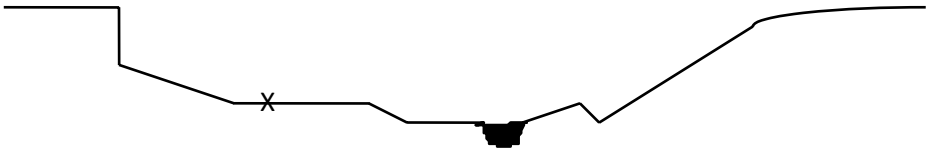
Artefact Type	Raw material	Colour	Max. Length	Max. Width	Max. Thickness
Flake	Indurated Mudstone	Yellow (Red)	15	15	4
Flake	Indurated Mudstone	Yellow	12	15	3
Broken Flake	Silicified Tuff	Cream	11	30	6

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

SITE ENVIRONMENT

Land form	crest	**Aspect**	0	**Slope**	0
Mark position of the site					
Local rock type	Mudstone, sandstone, shale	**Land use/effect**	Electricity easement		
Distance from drinking water	190m	**Source**	Tributary of Black Waterholes ck		
Resource zone (eg. estuarine, river, forest)	Inland	**Vegetation**	Kurri Sand Swamp Woodland		
Edible plants	None observed	**Faunal resources** (include shellfish)	None observed		
Other exploitable resources (eg. ochre)	None observed				
Are there other sites in the locality	yes	**Are they in the Sites Register**	yes	**Other site types include**	Artefact scatters

SITE MANAGEMENT

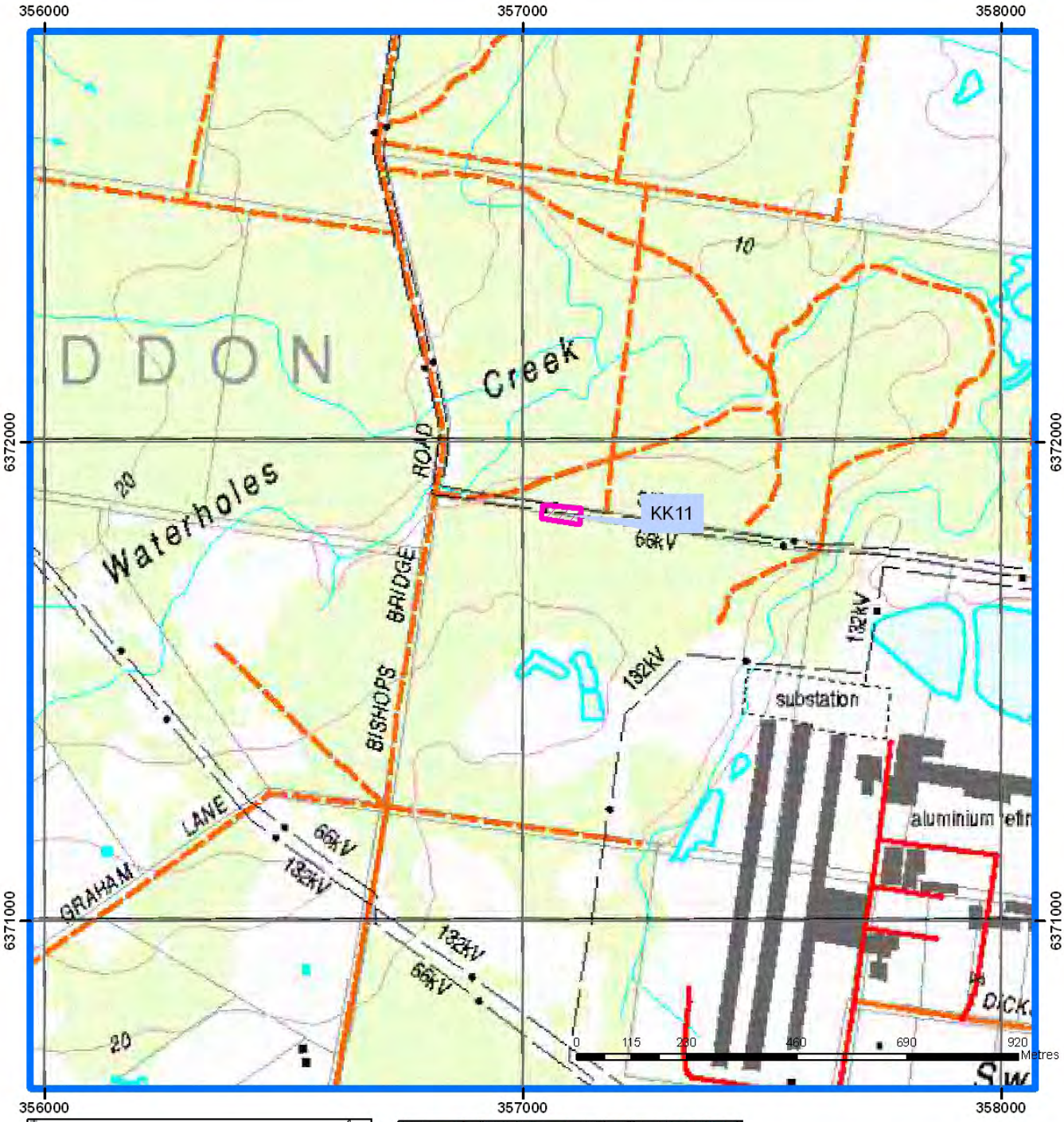
Site condition	Good		
Management recommendations			
Have artefacts been removed from site	No	**When**	
By whom		**Deposited at**	
Consent applied for	☐	**Consent issued**	
Date of issue		**Consent number**	

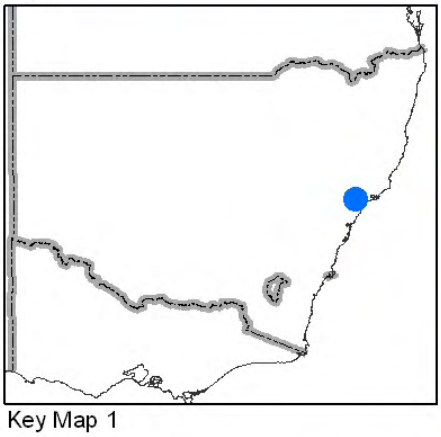
SITE INSPECTION AND RECORDING

Reason for investigation	Proposed works to electricity easement		
Were local Aborigines contacted or present for the recording	☐ Not contacted ☒ Contacted and present ☐ Contacted but not present	**Names and addresses**	Mindaribba Local Aboriginal Land Council, PO Box 401, EAST MAITLAND NSW 2323; Barkuma Neighbourhood Centre/ Gidawaa Walang, 76 Lang Street, KURRI KURRI NSW 2327; Aboriginal Native Title Consultants, 16A Mahogany Ave, MUSWELLBROOK NSW 2333; Hunter Valley Aboriginal Corporation, PO BOX 579, MUSWELLBROOK NSW 2333; Wonnarua Culture Heritage, 19 O'Donnell Cresent, METFORD 2322
Is the site important to local Aborigines	Although this site is important for demonstrating Aboriginal occupation of the area, it does not have specific cultural significance to the Aboriginal community		
Verbal/written reference sources	AMBS (2009) *Kurri Kurri Aboriginal Heritage Assessment for the 33kV Kurri-Rutherford Feeder Split*, report to EnergyAustralia	**ASR report number(s)**	C- C-
Photographs taken	Yes	**No of Photos attached**	
Site recorded by	Christopher Langeluddecke & Tessa Boer-Mah	**Date of recording**	Feb 2009
Address/institution	AMBS 6 College Street, Sydney, NSW 2010		

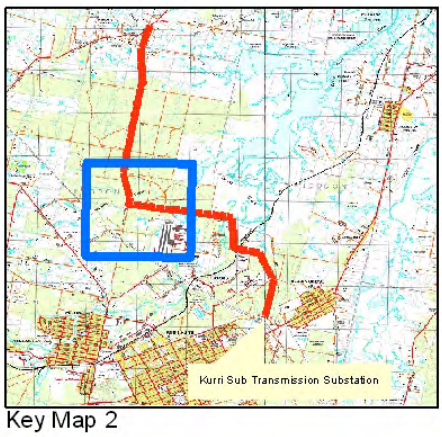
Version: June 1998 Data entered by: Date entered:

View to west, KK11 (Flagged artefacts, beneath white arrows)





Key Map 1



Key Map 2

Legend Main Map

Site

Key Map 2 Legend

Study Area

N

Background Topographic data © Land and Property Information NSW (2001) Cessnock 9132-2N 1:25000 Topographic and Orthophoto Map, 2nd Edition
Horizontal datum: GDA94/MGA Zone 56

AMBS

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

New Recording ☒ Additional information ☐

SITE IDENTIFICATION

Site name	KK13	**NPWS Site Number**	37-6-1961
Owner/manager	Crown land		
Owner Address	Crown land		

LOCATION

Location	4.5 km north west of Kurri Sub-Transmission Station				
How to get to the site	Take Main road north from Kurri Kurri towards Heddon Greta, turn left to Kurri Sub-Transmission Station (at junction of Main Road, Stanford Road and Lang St), site is 4.5 km north west of sub-transmission station.				
1:250,000 map name	Cessnock			**NPWS map code**	
GDA Zone	56	**GDA Easting**	356713	**GDA Northing**	6372765
Method for grid reference	Hand-held GPS	**Map scale (if method = map)**		**Map name**	
NPWS District				**NPWS Zone**	Coffs Harbour
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

This isolated find was adjacent to the access track. This flake-scraper had usewear along both its lateral margins and was made from cream coloured silcrete. Only the proximal end of this tool was present, having been broken through its middle.

KK13 artefact details, dimensions in millimetres

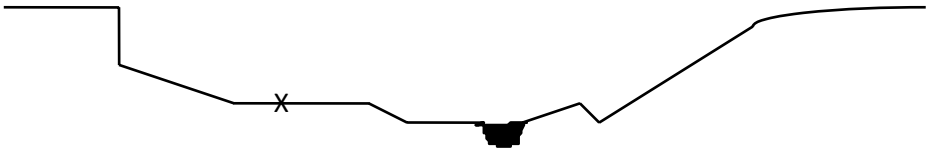
Artefact Type	Raw material	Colour	Max. Length	Max. Width	Max. Thickness
Flake-Scraper	Silcrete	Cream	67	45	16

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

SITE ENVIRONMENT

Land form	crest	**Aspect**	0	**Slope**	0
Mark position of the site					
Local rock type	Mudstone, sandstone, shale	**Land use/effect**	Electricity easement		
Distance from drinking water	235m	**Source**	Black Waterholes ck		
Resource zone (eg. estuarine, river, forest)	Inland	**Vegetation**	Hunter-Macleay Dry Sclerophyll Forest		
Edible plants	None observed	**Faunal resources** (include shellfish)	None observed		
Other exploitable resources (eg. ochre)	None observed				
Are there other sites in the locality	yes	**Are they in the Sites Register**	yes	**Other site types include**	Artefact scatters

SITE MANAGEMENT

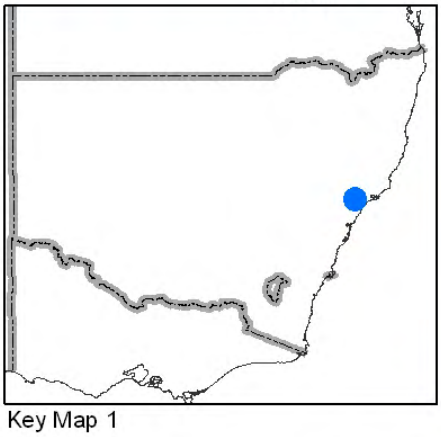
Site condition	Good		
Management recommendations			
Have artefacts been removed from site	No	**When**	
By whom		**Deposited at**	
Consent applied for	☐	**Consent issued**	
Date of issue		**Consent number**	

SITE INSPECTION AND RECORDING

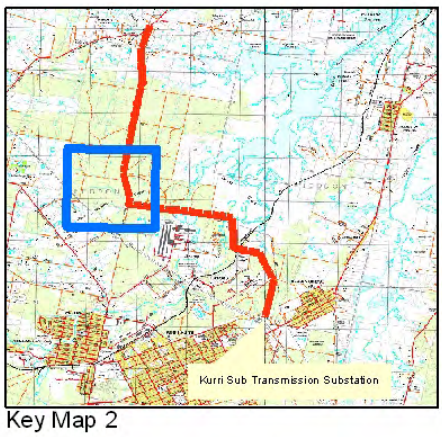
Reason for investigation	Proposed works to electricity easement		
Were local Aborigines contacted or present for the recording	☐ Not contacted ☒ Contacted and present ☐ Contacted but not present	**Names and addresses**	Mindaribba Local Aboriginal Land Council, PO Box 401, EAST MAITLAND NSW 2323; Barkuma Neighbourhood Centre/ Gidawaa Walang, 76 Lang Street, KURRI KURRI NSW 2327; Aboriginal Native Title Consultants, 16A Mahogany Ave, MUSWELLBROOK NSW 2333; Hunter Valley Aboriginal Corporation, PO BOX 579, MUSWELLBROOK NSW 2333; Wonnarua Culture Heritage, 19 O'Donnell Cresent, METFORD 2322
Is the site important to local Aborigines	Although this site is important for demonstrating Aboriginal occupation of the area, it does not have specific cultural significance to the Aboriginal community		
Verbal/written reference sources	AMBS (2009) *Kurri Kurri Aboriginal Heritage Assessment for the 33kV Kurri-Rutherford Feeder Split*, report to EnergyAustralia	**ASR report number(s)**	C- C-
Photographs taken	Yes	**No of Photos attached**	
Site recorded by	Christopher Langeluddecke & Tessa Boer-Mah	**Date of recording**	Feb 2009
Address/institution	AMBS 6 College Street, Sydney, NSW 2010		

Version: June 1998 Data entered by: Date entered:


Flake-Scraper (dorsal view left, ventral view right)



Key Map 1



Key Map 2

Legend Main Map

Site

Key Map 2 Legend

Study Area

N

Background Topographic data © Land and Property Information NSW (2001) Cessnock 9132-2N 1:25000 Topographic and Orthophoto Map, 2nd Edition
Horizontal datum: GDA94/MGA Zone 56

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Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

New Recording ☒ Additional information ☐

SITE IDENTIFICATION

Site name	KK14	**NPWS Site Number**	37-6-1962
Owner/manager	Crown land		
Owner Address	Crown land		

LOCATION

Location	4.6 km north west of Kurri Sub-Transmission Station				
How to get to the site	Take Main road north from Kurri Kurri towards Heddon Greta, turn left to Kurri Sub-Transmission Station (at junction of Main Road, Stanford Road and Lang St), site is 4.6 km north west of sub-transmission station.				
1:250,000 map name	Cessnock			**NPWS map code**	
GDA Zone	56	**GDA Easting**	356727	**GDA Northing**	6372857
Method for grid reference	Hand-held GPS	**Map scale (if method = map)**		**Map name**	
NPWS District				**NPWS Zone**	Coffs Harbour
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

This isolated find was identified approximately 4m from the access track. This indurated mudstone flake was slightly damaged, but revealed that the yellow surface colour was produced by weathering and that the internal colour of the stone was red-brown.

KK14 artefact details, dimensions in millimetres

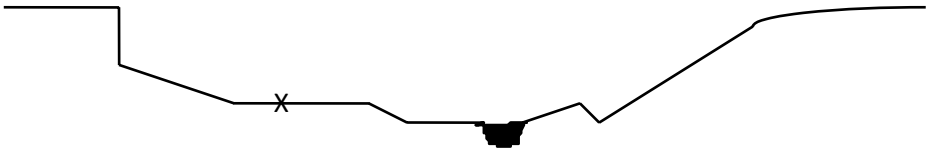
Artefact Type	Raw material	Colour	Max. Length	Max. Width	Max. Thickness
Flake	Indurated Mudstone	Yellow (Red)	18	15	6

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

SITE ENVIRONMENT

Land form	crest	**Aspect**	0	**Slope**	0
Mark position of the site					
Local rock type	Mudstone, sandstone, shale	**Land use/effect**	Electricity easement		
Distance from drinking water	280m	**Source**	Black Waterholes ck		
Resource zone (eg. estuarine, river, forest)	Inland	**Vegetation**	Hunter-Macleay Dry Sclerophyll Forest		
Edible plants	None observed	**Faunal resources** (include shellfish)	None observed		
Other exploitable resources (eg. ochre)	None observed				
Are there other sites in the locality	yes	**Are they in the Sites Register**	yes	**Other site types include**	Artefact scatters

SITE MANAGEMENT

Site condition	Good		
Management recommendations			
Have artefacts been removed from site	No	**When**	
By whom		**Deposited at**	
Consent applied for	☐	**Consent issued**	
Date of issue		**Consent number**	

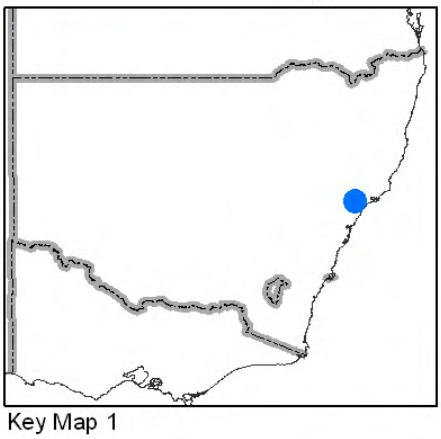
SITE INSPECTION AND RECORDING

Reason for investigation	Proposed works to electricity easement		
Were local Aborigines contacted or present for the recording	☐ Not contacted ☒ Contacted and present ☐ Contacted but not present	**Names and addresses**	Mindaribba Local Aboriginal Land Council, PO Box 401, EAST MAITLAND NSW 2323; Barkuma Neighbourhood Centre/ Gidawaa Walang, 76 Lang Street, KURRI KURRI NSW 2327; Aboriginal Native Title Consultants, 16A Mahogany Ave, MUSWELLBROOK NSW 2333; Hunter Valley Aboriginal Corporation, PO BOX 579, MUSWELLBROOK NSW 2333; Wonnarua Culture Heritage, 19 O'Donnell Cresent, METFORD 2322
Is the site important to local Aborigines	Although this site is important for demonstrating Aboriginal occupation of the area, it does not have specific cultural significance to the Aboriginal community		
Verbal/written reference sources	AMBS (2009) *Kurri Kurri Aboriginal Heritage Assessment for the 33kV Kurri-Rutherford Feeder Split*, report to EnergyAustralia	**ASR report number(s)**	C- C-
Photographs taken	Yes	**No of Photos attached**	
Site recorded by	Christopher Langeluddecke & Tessa Boer-Mah	**Date of recording**	Feb 2009
Address/institution	AMBS 6 College Street, Sydney, NSW 2010		

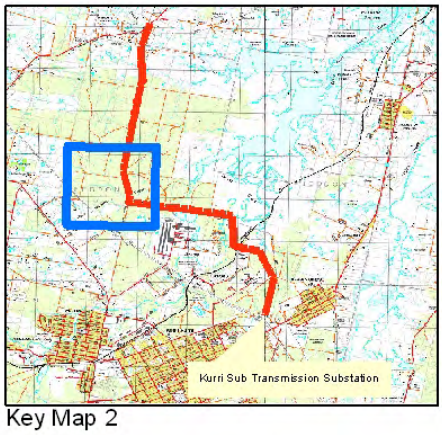
Version: June 1998 Data entered by: Date entered:

Mudstone flake KK14 (dorsal view)

KK14, view to South



Key Map 1



Key Map 2

Legend Main Map

Site

Key Map 2 Legend

Study Area

N

Background Topographic data © Land and Property Information NSW (2001) Cessnock 9132-2N 1:25000 Topographic and Orthophoto Map, 2nd Edition
Horizontal datum: GDA94/MGA Zone 56

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NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

New Recording ☒ Additional Information ☐

SITE IDENTIFICATION					
Site name	KR01			**NPWS Site Number**	37-6-2004
Owner/manager					
Owner Address					

LOCATION					
Location	Electricity Easement (Please see report)				
How to get to the site	Map attached				
1:250,000 map name	Singleton SI5601			**NPWS map code**	
GDA Zone	56	**GDA Easting**	357959	**GDA Northing**	6370106
Method for grid reference	Hand-held GPS	**Map scale (if method = map)**	1:25,000	**Map name**	
NPWS District	Northern			**NPWS Zone**	Northeast
Portion no.	Lot722, DP755231			**Parish**	

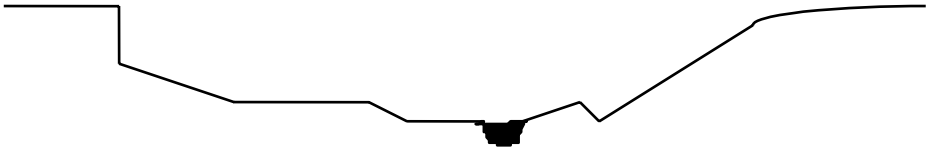
SITE DESCRIPTION			
Site type(s)	Artefact Scatter	**Site type code (NPWS use only)**	
Description of site and contents CHECKLIST: eg. length, width, depth, height of site, shelter, deposit, structure, element eg. tree scar, grooves in rock. DEPOSIT: colour, texture, estimated depth, stratigraphy, contents-shell, 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	The artefact scatter was identified within, and on the margins of, vehicle track and was 40 x 14m in area. The scatter mainly comprises flakes, made from silicified tuff, silcrete and indurated mudstone. . **Attach photographs and sketches, eg. plan & section of shelter.** **Do NOT dig, disturb or damage site or contents.**		

Version: June 1998	Data entered by:	Date entered:

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

SITE ENVIRONMENT						
Land form	Simple Slope		**Aspect**	NW	**Slope**	2°
Mark position of the site						
Local rock type	Please see report		**Land use/effect**	Please see report		
Distance from drinking water	135m		**Source**	Swamp Creek		
Resource zone (eg. estuarine, river,	Please see report		**Vegetation**	Please see report		
Edible plants	None observed		**Faunal resources** (include shellfish)	None observed		
Other exploitable resources (eg.	Please see report					
Are there other sites in the locality	Yes	**Are they in the Sites Register**	Yes	**Other site types include**	Artefact Scatters, Isolated Finds, PADs	

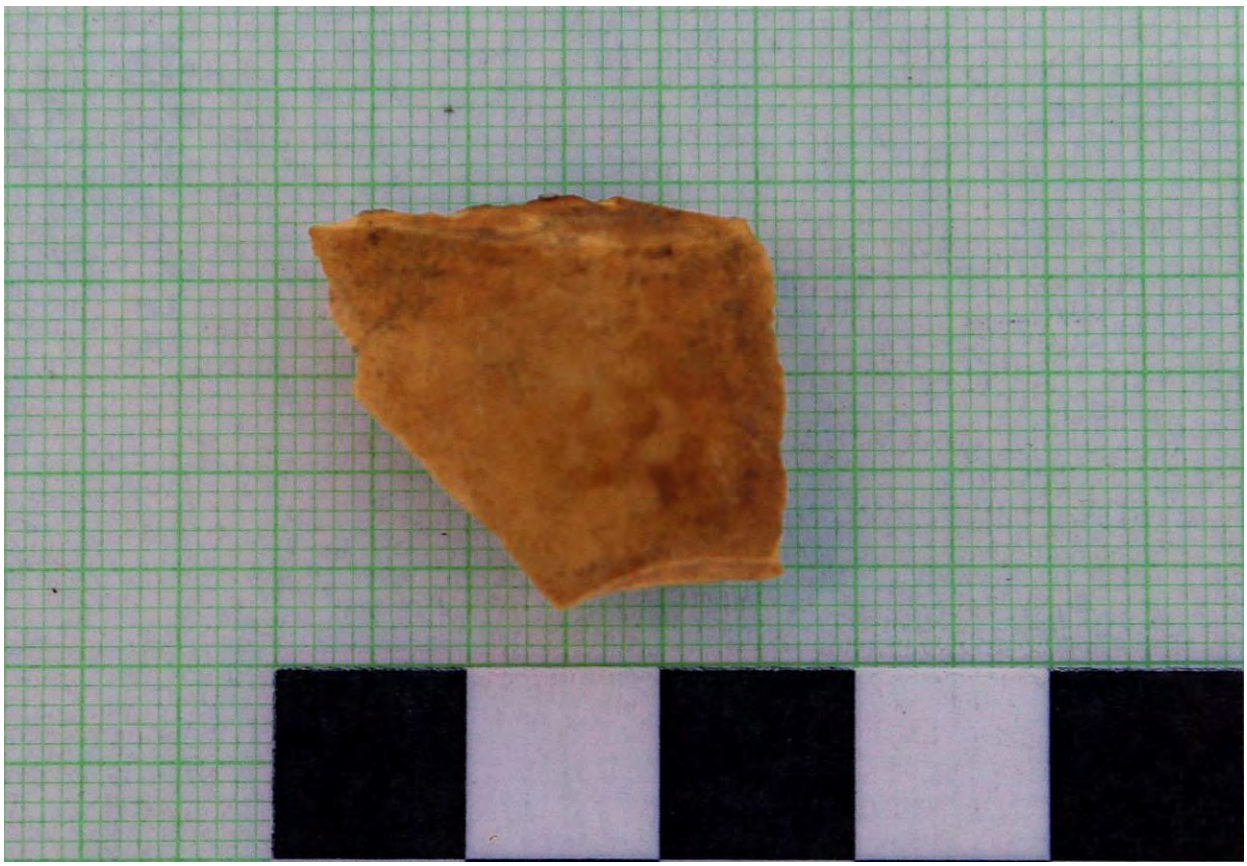
SITE MANAGEMENT			
Site condition	Disturbed		
Management recommendations			
Have artefacts been removed	No	**When**	
By whom		**Deposited at**	
Consent applied for	☐	**Consent issued**	
Date of issue		**Consent number**	

SITE INSPECTION AND RECORDING			
Reason for investigation	Proposed upgrade to the 132kV Kurri-Redbank Feeder 953/95R		
Were local Aborigines contacted or present for the recording	☐ Not contacted ☒ Contacted and present ☐ Contacted but not present	**Names and addresses**	Mindaribba LALC (PO Box 401 EAST MAITLAND NSW 2323) and others please see report.
Is the site important to local Aborigines			
Verbal/written reference sources	AMBS. 2009. Kurri-Redbank Feeder 953/95R (132kV) Upgrade: Aboriginal Heritage Assessment, Hunter Valley NSW. Report to EnergyAustralia	**ASR report number(s)**	C- C-
Photographs taken	Yes	**No of Photos attached**	
Site recorded by	Tessa Boer-Mah and Ngaire Richards	**Date of recording**	May 2009
Address/institution	AMBS, 6 College St, Sydney NSW 2010		

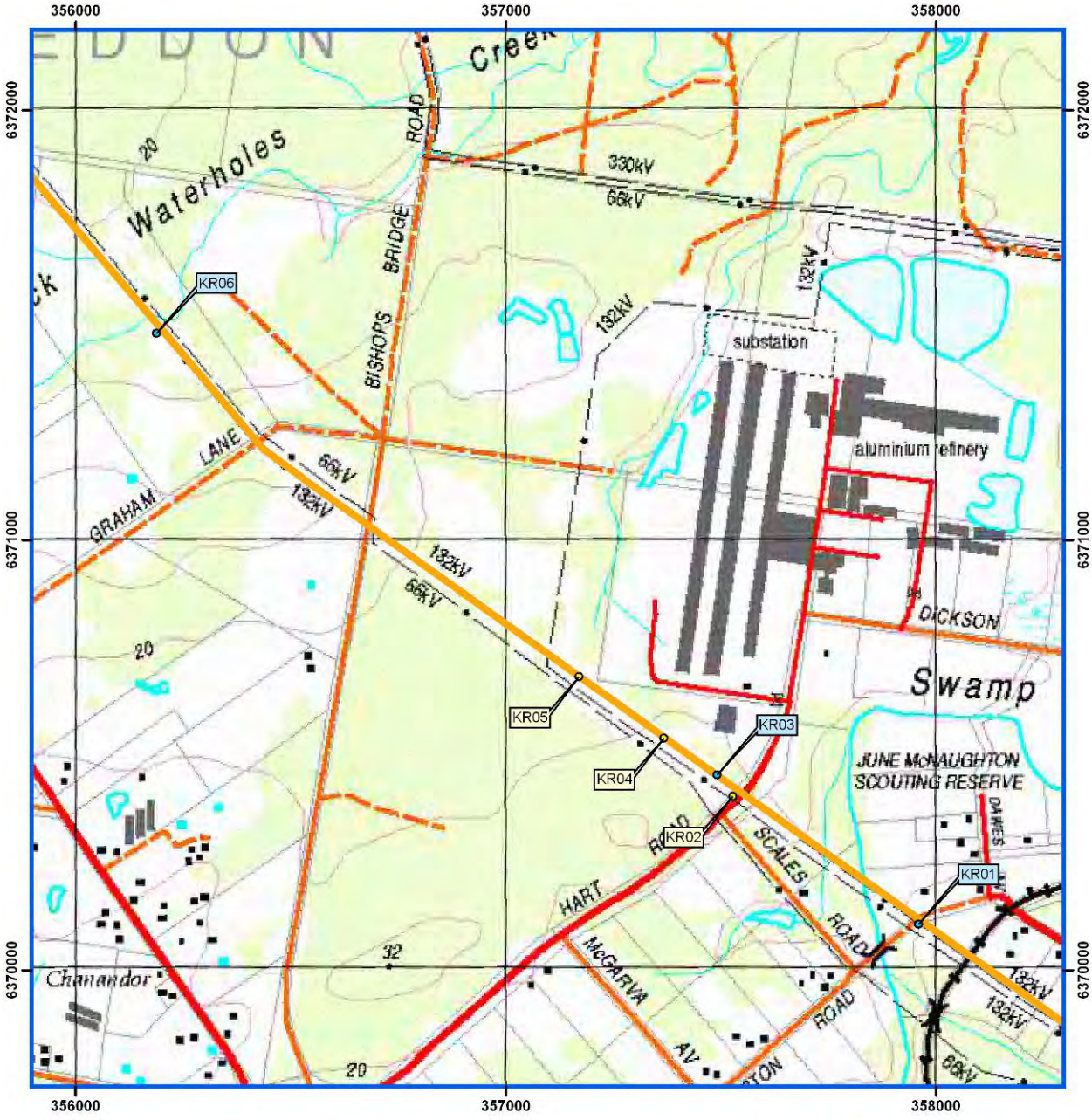
Version: June 1998	Data entered by:	Date entered:

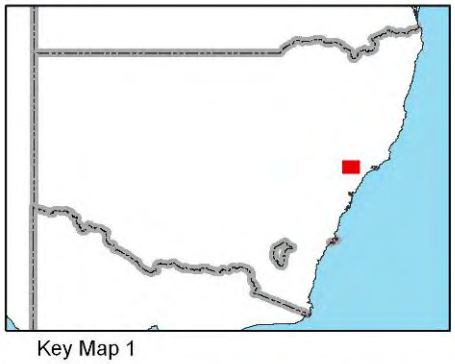
Site	Artefact Type	Raw Material	Colour	Max Length (mm)	Max Width (mm)	Max Thickness (mm)	Weight (g)	Cortex (%)
KR01	Flake	Silicified Tuff	Cream	18	15	12	2.1	0
KR01	Broken Flake	Silicified Tuff	Brown	19	19	7	3.6	0
KR01	Flake	Silicified Tuff	Red/Yellow	18	7	3	0.4	0
KR01	Flake	Silcrete	Red	22	14	3	1.1	0
KR01	Flake	Indurated Mudstone	Brown	11	4	3	0.0	0

Site KR01, artefacts scattered across track

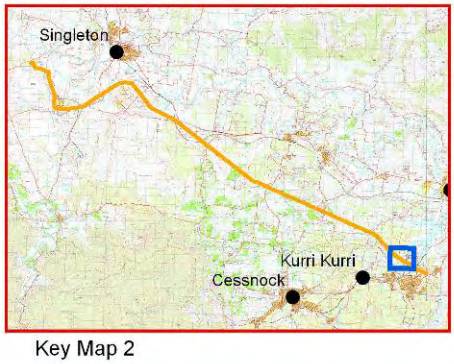


Artefact from KR01





Key Map 1



Key Map 2

Legend

- Isolated Find
- Artefact Scatter
- Easement
- Built-Up Areas

N

Background data © Land and Property Information NSW (2001) 1:25000 Topographic and Orthophoto Map
Horizontal datum: GDA94/MGA Zone 56

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

New Recording ☒ Additional Information ☐

SITE IDENTIFICATION					
Site name	KR02			**NPWS Site Number**	37-6-2005
Owner/manager					
Owner Address					

LOCATION					
Location	Electricity Easement (Please see report)				
How to get to the site	Map attached				
1:250,000 map name	Singleton SI5601			**NPWS map code**	
GDA Zone	56	**GDA Easting**	357528	**GDA Northing**	6370404
Method for grid reference	Hand-held GPS	**Map scale (if method = map)**	1:25,000	**Map name**	
NPWS District	Northern			**NPWS Zone**	Northeast
Portion no.	Lot16, DP1082775			**Parish**	

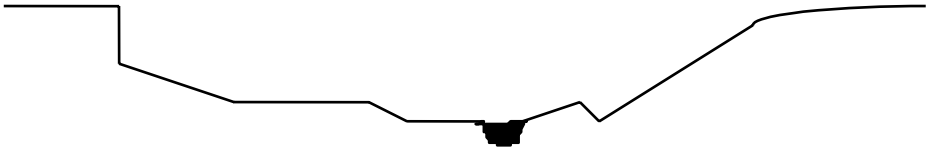
SITE DESCRIPTION			
Site type(s)	Isolated Find	**Site type code (NPWS use only)**	
Description of site and contents CHECKLIST: eg. length, width, depth, height of site, shelter, deposit, structure, element eg. tree scar, grooves in rock. DEPOSIT: colour, texture, estimated depth, stratigraphy, contents-shell, 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	This isolated find was identified along a fence line, in an area with obvious disturbance from the road easement as well as the installation of the fence. One broken flake was identified (proximal portion only) made from fine grained volcanic material. **Attach photographs and sketches, eg. plan & section of shelter.** **Do NOT dig, disturb or damage site or contents.**		

Version: June 1998	Data entered by:	Date entered:

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

SITE ENVIRONMENT						
Land form	Simple Slope		**Aspect**	SE	**Slope**	1°
Mark position of the site						
Local rock type	Please see report		**Land use/effect**	Please see report		
Distance from drinking water	250m		**Source**	Unnamed		
Resource zone (eg. estuarine, river,	Please see report		**Vegetation**	Please see report		
Edible plants	None observed		**Faunal resources** (include shellfish)	None observed		
Other exploitable resources (eg.	Please see report					
Are there other sites in the locality	Yes	**Are they in the Sites Register**	Yes	**Other site types include**	Artefact Scatters, Isolated Finds, PADs	

SITE MANAGEMENT			
Site condition	Disturbed		
Management recommendations			
Have artefacts been removed	No	**When**	
By whom		**Deposited at**	
Consent applied for	☐	**Consent issued**	
Date of issue		**Consent number**	

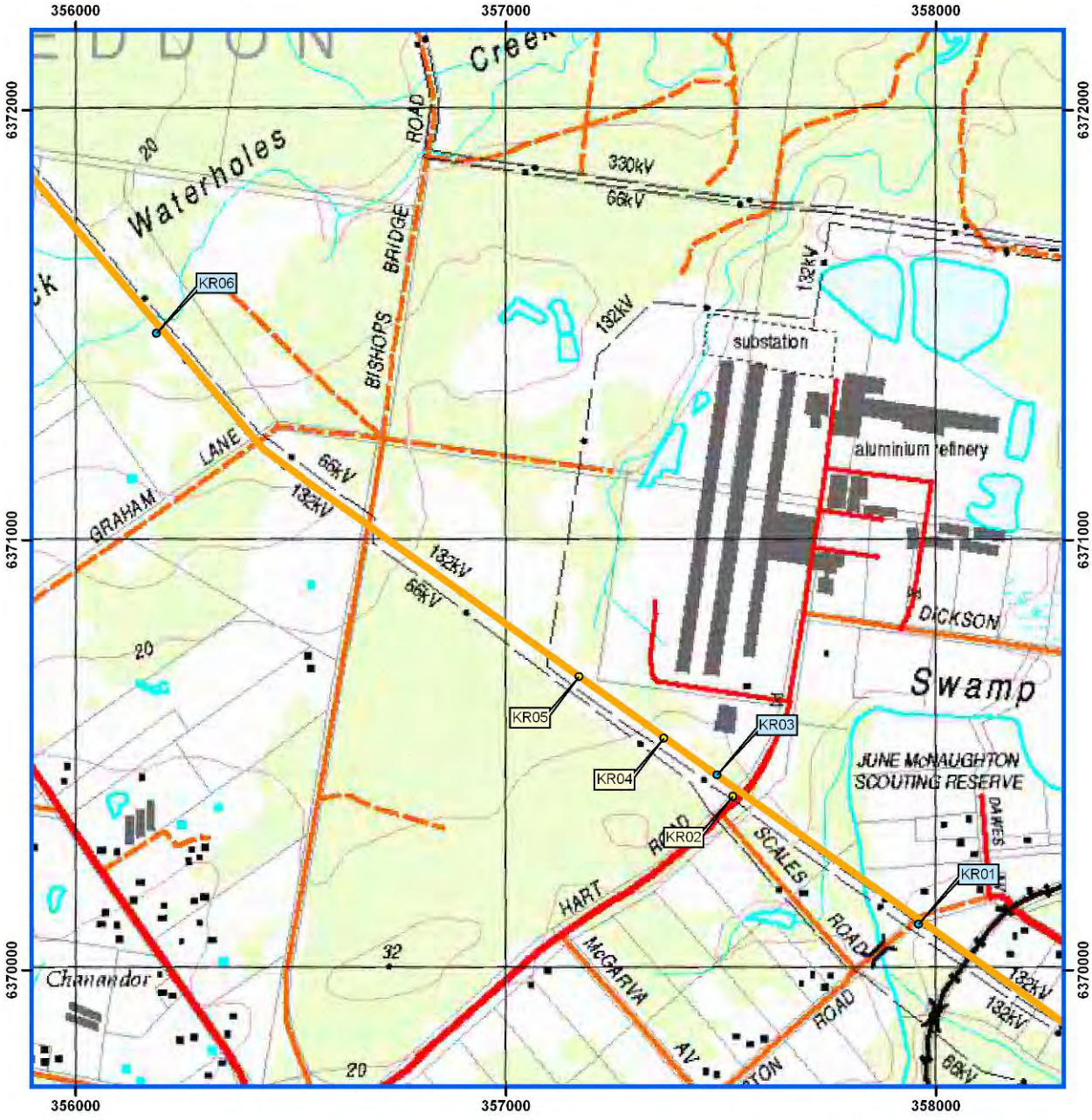
SITE INSPECTION AND RECORDING			
Reason for investigation	Proposed upgrade to the 132kV Kurri-Redbank Feeder 953/95R		
Were local Aborigines contacted or present for the recording	☐ Not contacted ☒ Contacted and present ☐ Contacted but not present	**Names and addresses**	Mindaribba LALC (PO Box 401 EAST MAITLAND NSW 2323) and others please see report.
Is the site important to local Aborigines			
Verbal/written reference sources	AMBS. 2009. Kurri-Redbank Feeder 953/95R (132kV) Upgrade: Aboriginal Heritage Assessment, Hunter Valley NSW. Report to EnergyAustralia	**ASR report number(s)**	C- C-
Photographs taken	Yes	**No of Photos attached**	
Site recorded by	Tessa Boer-Mah and Ngaire Richards	**Date of recording**	May 2009
Address/institution	AMBS, 6 College St, Sydney NSW 2010		

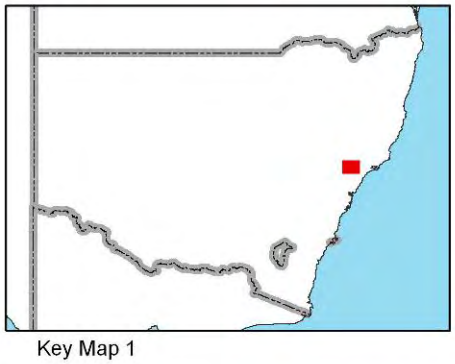
Version: June 1998	Data entered by:	Date entered:

Site	Artefact Type	Raw Material	Colour	Max Length (mm)	Max Width (mm)	Max Thickness (mm)	Weight (g)	Cortex (%)
KR02	Broken Flake	Volcanic	Grey	26	30	7	3.9	0

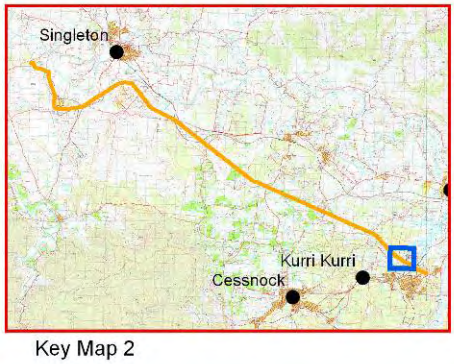
Site KR02

Artefact from KR02





Key Map 1



Key Map 2

Legend

- Isolated Find
- Artefact Scatter
- Easement
- Built-Up Areas

N

Background data © Land and Property Information NSW (2001) 1:25000 Topographic and Orthophoto Map
Horizontal datum: GDA94/MGA Zone 56

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

New Recording ☒ Additional Information ☐

SITE IDENTIFICATION					
Site name	KR03			**NPWS Site Number**	37-6-2006
Owner/manager					
Owner Address					

LOCATION					
Location	Electricity Easement (Please see report)				
How to get to the site	Map attached				
1:250,000 map name	Singleton SI5601			**NPWS map code**	
GDA Zone	56	**GDA Easting**	357491	**GDA Northing**	6370454
Method for grid reference	Hand-held GPS	**Map scale (if method = map)**	1:25,000	**Map name**	
NPWS District	Northern			**NPWS Zone**	Northeast
Portion no.	Lot16, DP1082775			**Parish**	

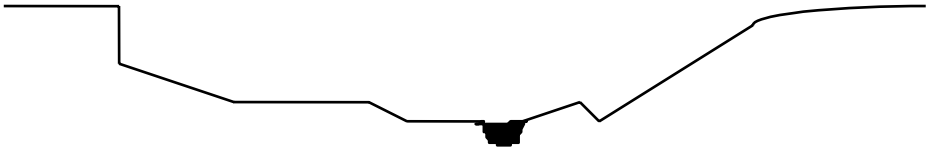
SITE DESCRIPTION			
Site type(s)	Artefact Scatter	**Site type code (NPWS use only)**	
Description of site and contents CHECKLIST: eg. length, width, depth, height of site, shelter, deposit, structure, element eg. tree scar, grooves in rock. DEPOSIT: colour, texture, estimated depth, stratigraphy, contents-shell, 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	Two flakes were identified both made from grey silcrete. Artefacts were located within current vehicle track 15m apart. **Attach photographs and sketches, eg. plan & section of shelter.** **Do NOT dig, disturb or damage site or contents.**		

Version: June 1998	Data entered by:	Date entered:

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

SITE ENVIRONMENT					
Land form	Crest	**Aspect**	0	**Slope**	
Mark position of the site					
Local rock type	Please see report	**Land use/effect**	Please see report		
Distance from drinking water	300m	**Source**	Unnamed		
Resource zone (eg. estuarine, river,	Please see report	**Vegetation**	Please see report		
Edible plants	None observed	**Faunal resources** (include shellfish)	None observed		
Other exploitable resources (eg.	Please see report				
Are there other sites in the locality	Yes	**Are they in the Sites Register**	Yes	**Other site types include**	Artefact Scatters, Isolated Finds, PADs

SITE MANAGEMENT			
Site condition	Disturbed		
Management recommendations			
Have artefacts been removed	No	**When**	
By whom		**Deposited at**	
Consent applied for	☐	**Consent issued**	
Date of issue		**Consent number**	

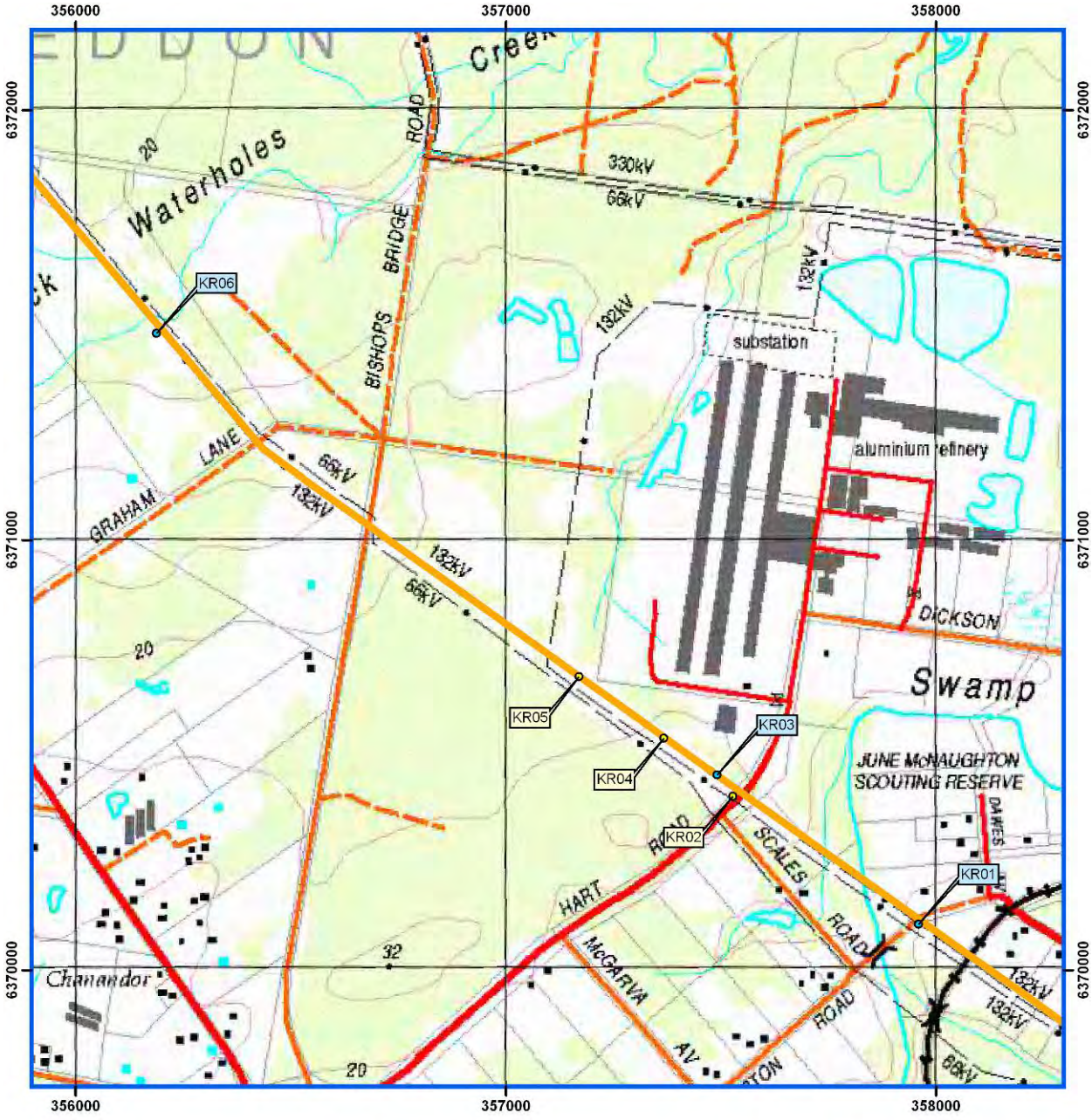
SITE INSPECTION AND RECORDING			
Reason for investigation	Proposed upgrade to the 132kV Kurri-Redbank Feeder 953/95R		
Were local Aborigines contacted or present for the recording	☐ Not contacted ☒ Contacted and present ☐ Contacted but not present	**Names and addresses**	Mindaribba LALC (PO Box 401 EAST MAITLAND NSW 2323) and others please see report.
Is the site important to local Aborigines			
Verbal/written reference sources	AMBS. 2009. Kurri-Redbank Feeder 953/95R (132kV) Upgrade: Aboriginal Heritage Assessment, Hunter Valley NSW. Report to EnergyAustralia	**ASR report number(s)**	C- C-
Photographs taken	Yes	**No of Photos attached**	
Site recorded by	Tessa Boer-Mah and Ngaire Richards	**Date of recording**	May 2009
Address/institution	AMBS, 6 College St, Sydney NSW 2010		

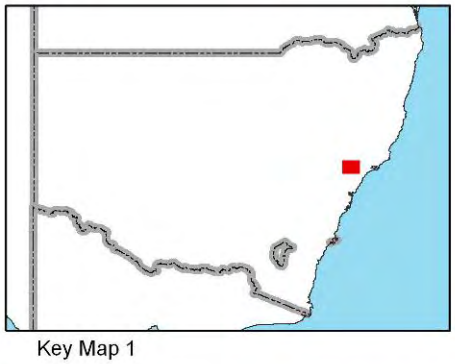
Version: June 1998	Data entered by:	Date entered:

Site	Artefact Type	Raw Material	Colour	Max Length (mm)	Max Width (mm)	Max Thickness (mm)	Weight (g)	Cortex (%)
KR03	Broken Flake	Silcrete	Grey	26	12	9	2.9	0
KR03	Flake	Silcrete	Grey	24	25	6	4.9	0

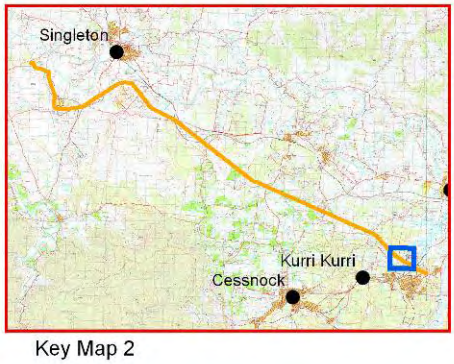
Site KR03

Artefact from KR03





Key Map 1



Key Map 2

Legend

- Isolated Find
- Artefact Scatter
- Easement
- Built-Up Areas

N

Background data © Land and Property Information NSW (2001) 1:25000 Topographic and Orthophoto Map
Horizontal datum: GDA94/MGA Zone 56

AMBS

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

New Recording ☒ Additional Information ☐

SITE IDENTIFICATION					
Site name	KR04			**NPWS Site Number**	37-6-2007
Owner/manager					
Owner Address					

LOCATION					
Location	Electricity Easement (Please see report)				
How to get to the site	Map attached				
1:250,000 map name	Singleton SI5601			**NPWS map code**	
GDA Zone	56	**GDA Easting**	357367	**GDA Northing**	6370539
Method for grid reference	Hand-held GPS	**Map scale (if method = map)**	1:25,000	**Map name**	
NPWS District	Northern			**NPWS Zone**	Northeast
Portion no.	Lot16, DP1082775			**Parish**	

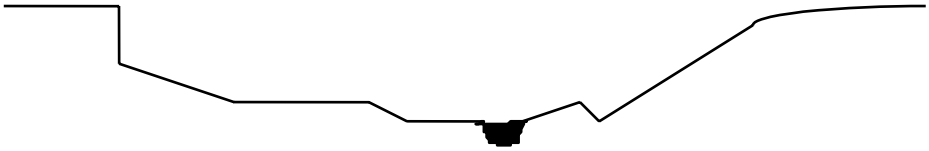
SITE DESCRIPTION			
Site type(s)	Isolated Find	**Site type code (NPWS use only)**	
Description of site and contents CHECKLIST: eg. length, width, depth, height of site, shelter, deposit, structure, element eg. tree scar, grooves in rock. DEPOSIT: colour, texture, estimated depth, stratigraphy, contents-shell, 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	This isolated find was identified with current vehicle track on a gentle slope. The flake identified was made from cream coloured silicified tuff. **Attach photographs and sketches, eg. plan & section of shelter.** **Do NOT dig, disturb or damage site or contents.**		

Version: June 1998	Data entered by:	Date entered:

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

SITE ENVIRONMENT					
Land form	Simple Slope	**Aspect**	NW	**Slope**	1°
Mark position of the site					
Local rock type	Please see report	**Land use/effect**	Please see report		
Distance from drinking water	450m	**Source**	Unnamed		
Resource zone (eg. estuarine, river,	Please see report	**Vegetation**	Please see report		
Edible plants	None observed	**Faunal resources** (include shellfish)	None observed		
Other exploitable resources (eg.	Please see report				
Are there other sites in the locality	Yes	**Are they in the Sites Register**	Yes	**Other site types include**	Artefact Scatters, Isolated Finds, PADs

SITE MANAGEMENT			
Site condition	Disturbed		
Management recommendations			
Have artefacts been removed	No	**When**	
By whom		**Deposited at**	
Consent applied for	☐	**Consent issued**	
Date of issue		**Consent number**	

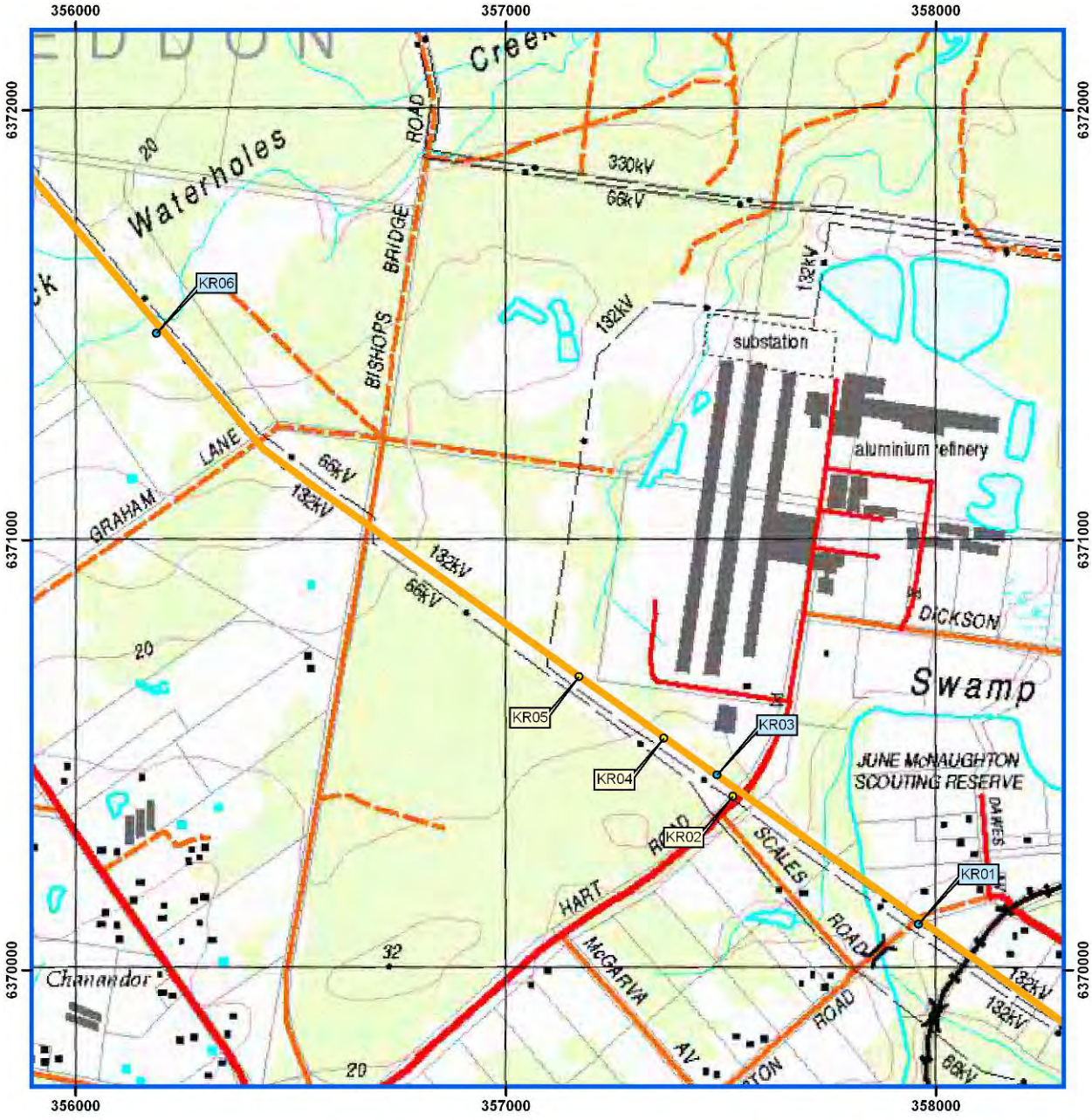
SITE INSPECTION AND RECORDING			
Reason for investigation	Proposed upgrade to the 132kV Kurri-Redbank Feeder 953/95R		
Were local Aborigines contacted or present for the recording	☐ Not contacted ☒ Contacted and present ☐ Contacted but not present	**Names and addresses**	Mindaribba LALC (PO Box 401 EAST MAITLAND NSW 2323) and others please see report.
Is the site important to local Aborigines			
Verbal/written reference sources	AMBS. 2009. Kurri-Redbank Feeder 953/95R (132kV) Upgrade: Aboriginal Heritage Assessment, Hunter Valley NSW. Report to EnergyAustralia	**ASR report number(s)**	C- C-
Photographs taken	Yes	**No of Photos attached**	
Site recorded by	Tessa Boer-Mah and Ngaire Richards	**Date of recording**	May 2009
Address/institution	AMBS, 6 College St, Sydney NSW 2010		

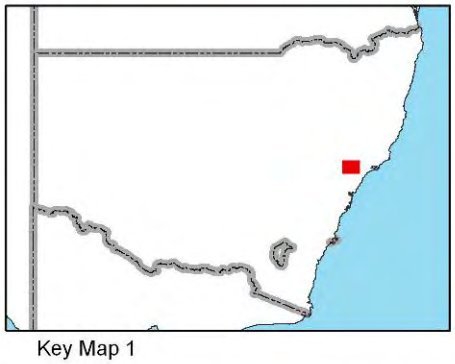
Version: June 1998	Data entered by:	Date entered:

Site	Artefact Type	Raw Material	Colour	Max Length (mm)	Max Width (mm)	Max Thickness (mm)	Weight (g)	Cortex (%)
KR04	Flake	Silicified Tuff	Cream	36	48	12	16.7	0

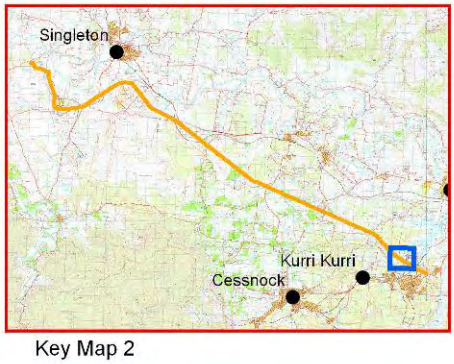
Site KR04

Artefact from KR04





Key Map 1



Key Map 2

Legend

- Isolated Find
- Artefact Scatter
- Easement
- Built-Up Areas

N

Background data © Land and Property Information NSW (2001) 1:25000 Topographic and Orthophoto Map
Horizontal datum: GDA94/MGA Zone 56

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

New Recording ☒ Additional Information ☐

SITE IDENTIFICATION					
Site name	KR05			**NPWS Site Number**	37-6-2008
Owner/manager					
Owner Address					

LOCATION					
Location	Electricity Easement (Please see report)				
How to get to the site	Map attached				
1:250,000 map name	Singleton SI5601			**NPWS map code**	
GDA Zone	56	**GDA Easting**	357171	**GDA Northing**	6370683
Method for grid reference	Hand-held GPS	**Map scale (if method = map)**	1:25,000	**Map name**	
NPWS District	Northern			**NPWS Zone**	Northeast
Portion no.	Lot16, DP1082775			**Parish**	

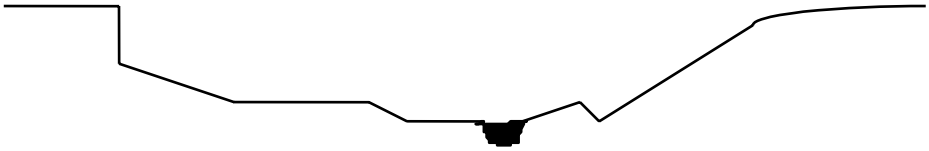
SITE DESCRIPTION			
Site type(s)	Isolated Find	**Site type code (NPWS use only)**	
Description of site and contents CHECKLIST: eg. length, width, depth, height of site, shelter, deposit, structure, element eg. tree scar, grooves in rock. DEPOSIT: colour, texture, estimated depth, stratigraphy, contents-shell, 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	This isolated find was identified within a current vehicle track and within 3m of an existing timber electricity pole. The find comprised a broken fragment, proximal the artefact was made from orange silcrete. **Attach photographs and sketches, eg. plan & section of shelter.** **Do NOT dig, disturb or damage site or contents.**		

Version: June 1998	Data entered by:	Date entered:

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

SITE ENVIRONMENT					
Land form	Flat	**Aspect**	0	**Slope**	
Mark position of the site					
Local rock type	Please see report	**Land use/effect**	Please see report		
Distance from drinking water	110m	**Source**	Unnamed		
Resource zone (eg. estuarine, river,	Please see report	**Vegetation**	Please see report		
Edible plants	None observed	**Faunal resources** (include shellfish)	None observed		
Other exploitable resources (eg.	Please see report				
Are there other sites in the locality	Yes	**Are they in the Sites Register**	Yes	**Other site types include**	Artefact Scatters, Isolated Finds, PADs

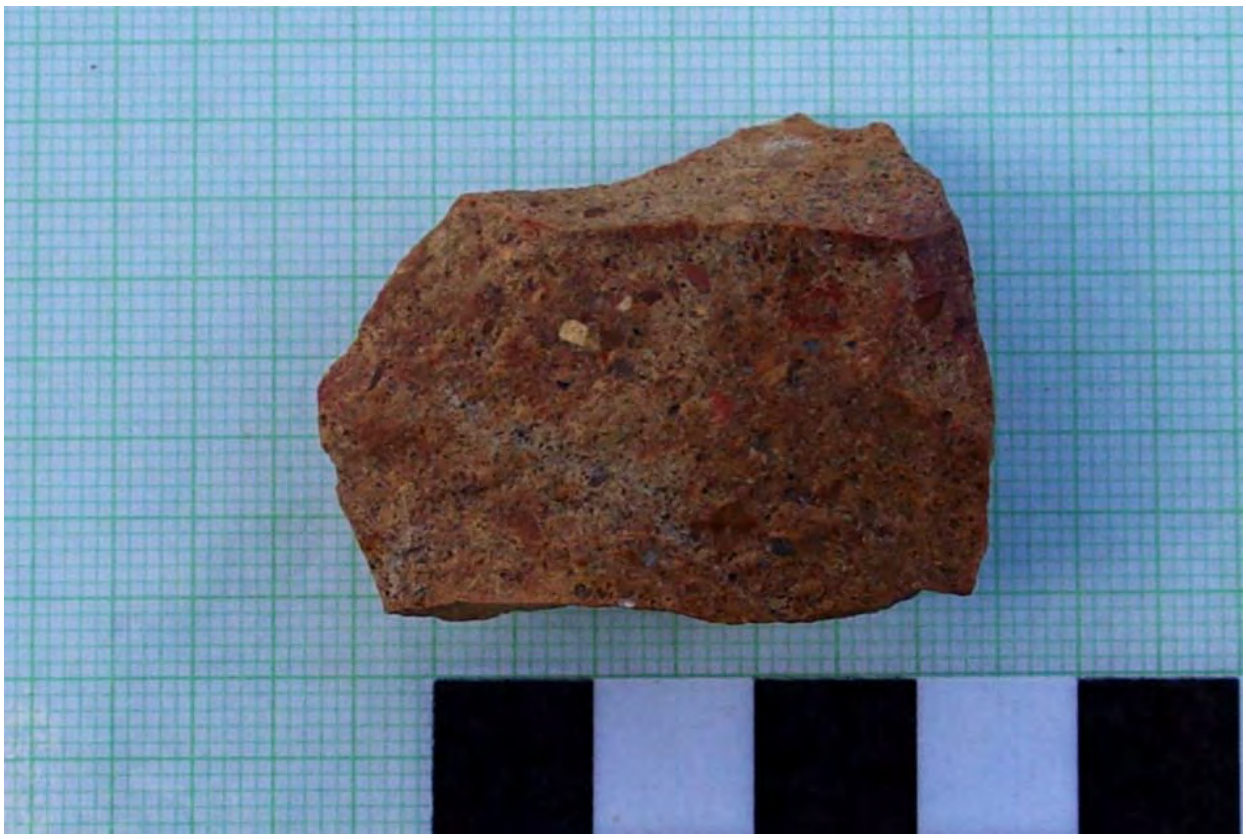
SITE MANAGEMENT			
Site condition	Disturbed		
Management recommendations			
Have artefacts been removed	No	**When**	
By whom		**Deposited at**	
Consent applied for	☐	**Consent issued**	
Date of issue		**Consent number**	

SITE INSPECTION AND RECORDING			
Reason for investigation	Proposed upgrade to the 132kV Kurri-Redbank Feeder 953/95R		
Were local Aborigines contacted or present for the recording	☐ Not contacted ☒ Contacted and present ☐ Contacted but not present	**Names and addresses**	Mindaribba LALC (PO Box 401 EAST MAITLAND NSW 2323) and others please see report.
Is the site important to local Aborigines			
Verbal/written reference sources	AMBS. 2009. Kurri-Redbank Feeder 953/95R (132kV) Upgrade: Aboriginal Heritage Assessment, Hunter Valley NSW. Report to EnergyAustralia	**ASR report number(s)**	C- C-
Photographs taken	Yes	**No of Photos attached**	
Site recorded by	Tessa Boer-Mah and Ngaire Richards	**Date of recording**	May 2009
Address/institution	AMBS, 6 College St, Sydney NSW 2010		

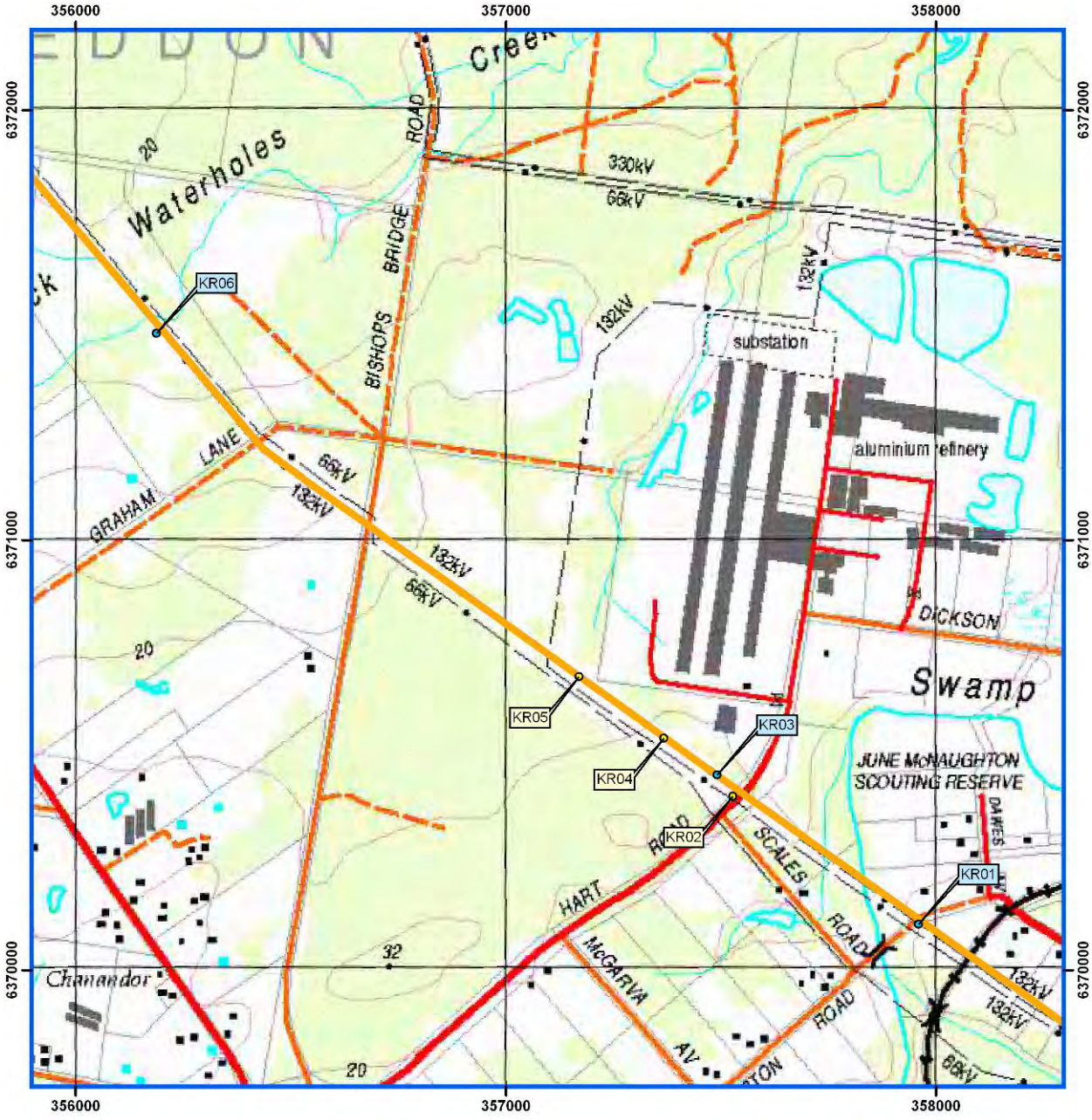
Version: June 1998	Data entered by:	Date entered:

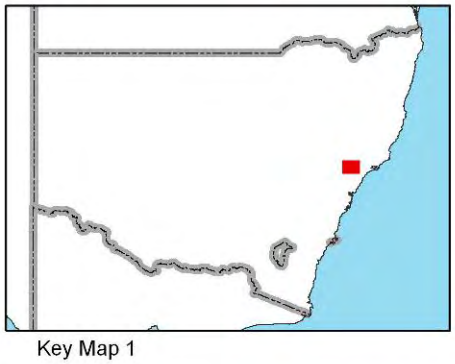
Site	Artefact Type	Raw Material	Colour	Max Length (mm)	Max Width (mm)	Max Thickness (mm)	Weight (g)	Cortex (%)
KR05	Broken Flake	Silcrete	Orange	25	40	17	21.7	0

Site KR05

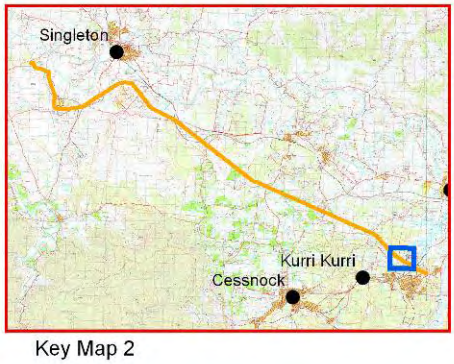


Artefact from KR05





Key Map 1



Key Map 2

Legend

- Isolated Find
- Artefact Scatter
- Easement
- Built-Up Areas

N

Background data © Land and Property Information NSW (2001) 1:25000 Topographic and Orthophoto Map
Horizontal datum: GDA94/MGA Zone 56

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

New Recording ☒ Additional Information ☐

SITE IDENTIFICATION					
Site name	KR06			**NPWS Site Number**	37-6-2009
Owner/manager					
Owner Address					

LOCATION					
Location	Electricity Easement (Please see report)				
How to get to the site	Map attached				
1:250,000 map name	Singleton SI5601			**NPWS map code**	
GDA Zone	56	**GDA Easting**	356187	**GDA Northing**	6371481
Method for grid reference	Hand-held GPS	**Map scale (if method = map)**	1:25,000	**Map name**	
NPWS District	Northern			**NPWS Zone**	Northeast
Portion no.	Lot13, DP1082775			**Parish**	

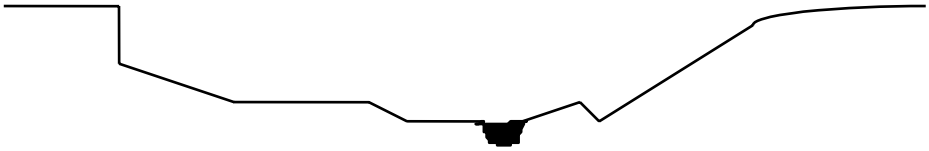
SITE DESCRIPTION			
Site type(s)	Artefact Scatter	**Site type code (NPWS use only)**	
Description of site and contents CHECKLIST: eg. length, width, depth, height of site, shelter, deposit, structure, element eg. tree scar, grooves in rock. DEPOSIT: colour, texture, estimated depth, stratigraphy, contents-shell, 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	Two artefacts were identifed on an eroding bank and within the existing vehicle track, 10 metres apart. Both artefacts were made from silcrete, one core fragmentand one flake. **Attach photographs and sketches, eg. plan & section of shelter.** **Do NOT dig, disturb or damage site or contents.**		

Version: June 1998	Data entered by:	Date entered:

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

SITE ENVIRONMENT					
Land form	Break of Slope	**Aspect**		**Slope**	
Mark position of the site					
Local rock type	Please see report	**Land use/effect**	Please see report		
Distance from drinking water	40m	**Source**	Black Water Hole Creek		
Resource zone (eg. estuarine, river,	Please see report	**Vegetation**	Please see report		
Edible plants	None observed	**Faunal resources** (include shellfish)	None observed		
Other exploitable resources (eg.	Please see report				
Are there other sites in the locality	Yes	**Are they in the Sites Register**	Yes	**Other site types include**	Artefact Scatters, Isolated Finds, PADs

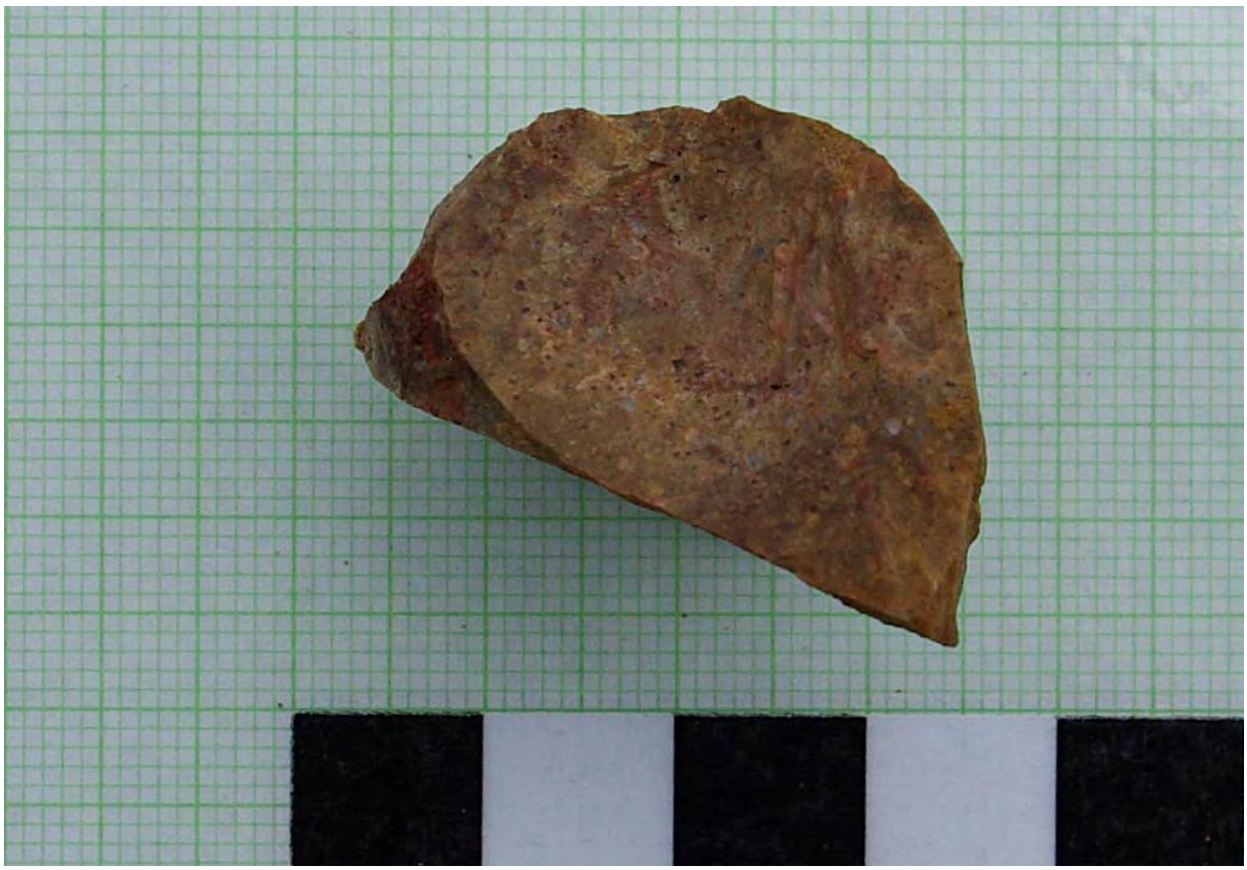
SITE MANAGEMENT			
Site condition	Disturbed		
Management recommendations			
Have artefacts been removed	No	**When**	
By whom		**Deposited at**	
Consent applied for	☐	**Consent issued**	
Date of issue		**Consent number**	

SITE INSPECTION AND RECORDING			
Reason for investigation	Proposed upgrade to the 132kV Kurri-Redbank Feeder 953/95R		
Were local Aborigines contacted or present for the recording	☐ Not contacted ☒ Contacted and present ☐ Contacted but not present	**Names and addresses**	Mindaribba LALC (PO Box 401 EAST MAITLAND NSW 2323) and others please see report.
Is the site important to local Aborigines			
Verbal/written reference sources	AMBS. 2009. Kurri-Redbank Feeder 953/95R (132kV) Upgrade: Aboriginal Heritage Assessment, Hunter Valley NSW. Report to EnergyAustralia	**ASR report number(s)**	C- C-
Photographs taken	Yes	**No of Photos attached**	
Site recorded by	Tessa Boer-Mah and Ngaire Richards	**Date of recording**	May 2009
Address/institution	AMBS, 6 College St, Sydney NSW 2010		

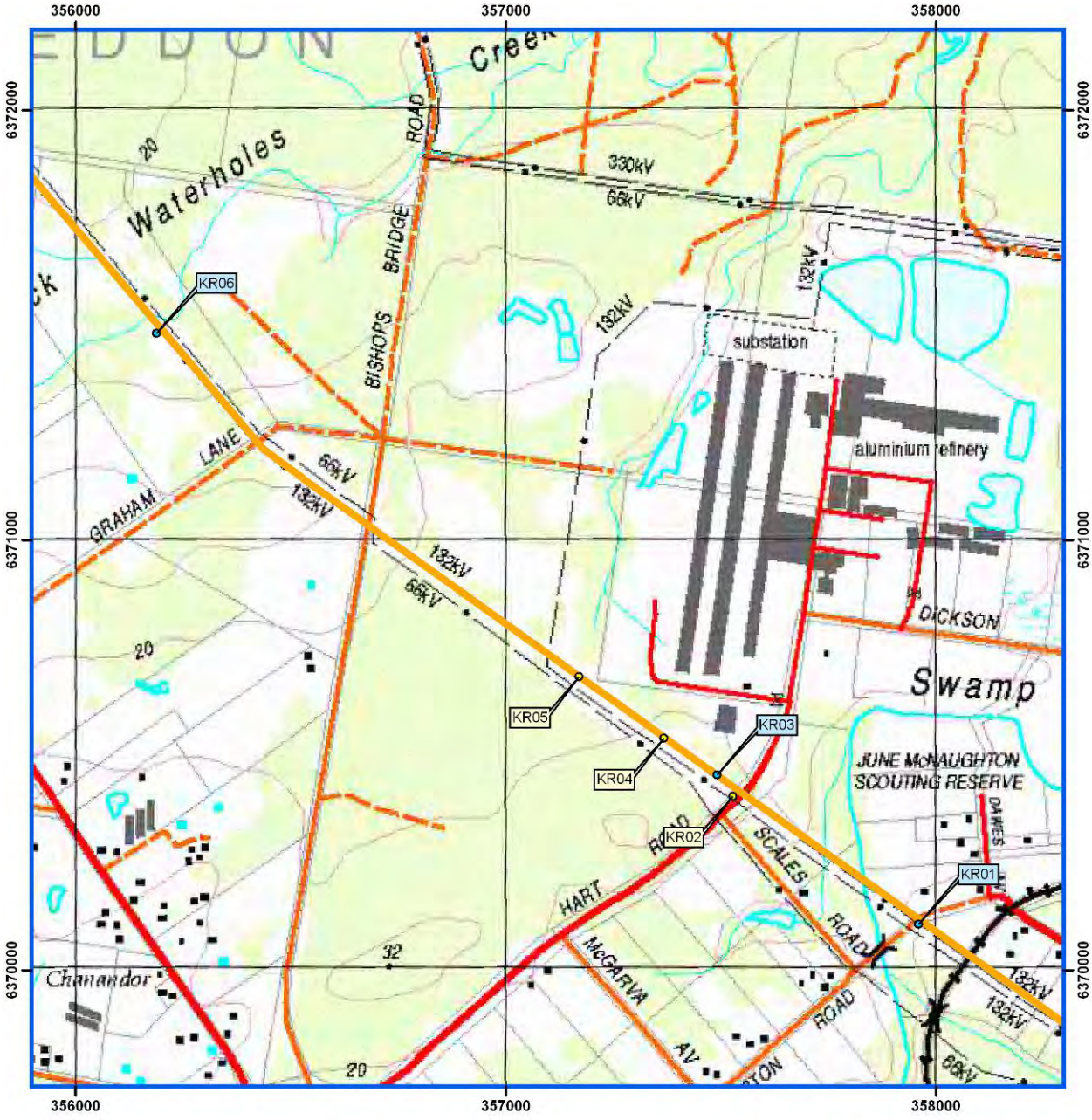
Version: June 1998	Data entered by:	Date entered:

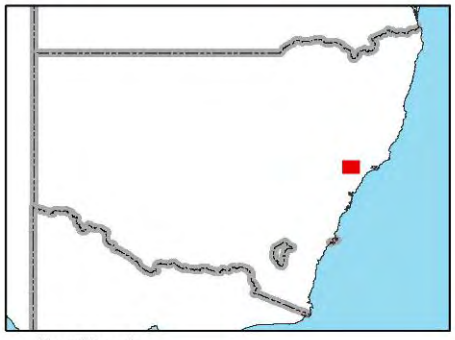
Site	Artefact Type	Raw Material	Colour	Max Length (mm)	Max Width (mm)	Max Thickness (mm)	Weight (g)	Cortex (%)
KR06	Flake	Silcrete	Cream	13	16	5	1.2	0
KR06	Core (Fragment)	Silcrete	Pink	32	20	20	16.2	0

Site KR06

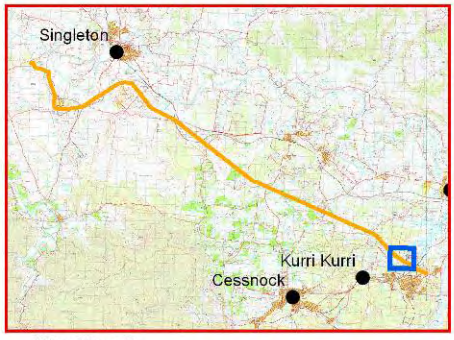


Artefact from KR06





Key Map 1



Key Map 2

Legend

- Isolated Find
- Artefact Scatter
- Easement
- Built-Up Areas

N

Background data © Land and Property Information NSW (2001) 1:25000 Topographic and Orthophoto Map
Horizontal datum: GDA94/MGA Zone 56

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

New Recording ☒ Additional information ☐

SITE IDENTIFICATION

Site name	KK04	NPWS Site Number	45-3-3387
Owner/manager	Hydro		
Owner Address	Hydro, Buffer Manager: Kerry McNaughton, Hart Rd, Loxford, NSW 2326		

LOCATION

Location	2.8km northwest of Kurri Sub-Transmission Station				
How to get to the site	Take Main road north from Kurri Kurri towards Heddon Greta, turn left to Kurri Sub-Transmission Station (at junction of Main Road, Stanford Road and Lang St), site is 2.8km northwest of sub-transmission station.				
1:250,000 map name	Cessnock			NPWS map code	
GDA Zone	56	GDA Easting	357942	GDA Northing	6371717
Method for grid reference	Hand-held GPS	Map scale (if method = map)	1:25,000	Map name	
NPWS District				NPWS Zone	Coffs Harbour
Portion no.	Lot 317 DP755231			Parish	

SITE DESCRIPTION

Site type(s)	Artefact Scatter and PAD	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

Artefacts scattered across this site extend east from an unnamed tributary of Blackwater Holes Creek to the junction of an unnamed track (part of a loop track) joining the access track from the north. The site extent is 415 metres from the edge of the creek; however, artefacts tend to cluster on small rises along the access track. Most artefacts were identified in the exposed areas of the access track; however, it is likely the grassed area on either side of the track also contains artefacts and likely sub-surface deposit (PADs).

One-hundred and three artefacts were identified at KK04. The majority were made from silcrete, followed by silicified tuff and minor proportions of quartz, chert, indurated mudstone, fine-grained silicious material, petrified wood and quartzite. Red silcrete was most common, followed by yellow silcrete.

Flakes were the most common artefact at KK04, ranging in size from 7mm to 90mm. The majority of flakes were less than 30mm in length (~70%), although there were larger flakes present. The mean value for flake length was 27.2 mm, for width 24.7mm and thickness 9.7mm

Proportion of Stone Raw Materials at KK04

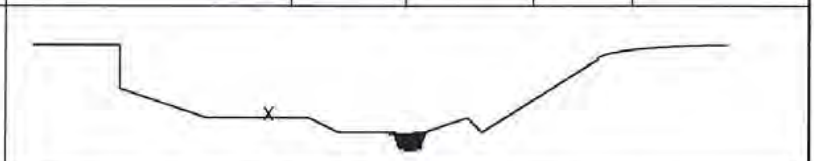
Artefact Type	Count	Percent
Silcrete	75	72.8
Silicified Tuff	16	15.5
Indurated Mudstone	3	2.9
Quartz	3	2.9
Chert	3	2.9
FGS	1	1.0
Petrified Wood	1	1.0
Quartzite	1	1.0
Total	103	

Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

SITE ENVIRONMENT

Land form	Flat	**Aspect**	0	**Slope**	0
Mark position of the site					
Local rock type	Mudstone, sandstone, shale	**Land use/effect**	Electricity easement		
Distance from drinking water	40m	**Source**	Swamp Creek		
Resource zone (eg. estuarine, river, forest)	Inland	**Vegetation**	Kurri Sand Swamp Woodland		
Edible plants	None observed	**Faunal resources** (include shellfish)	None observed		
Other exploitable resources (eg. ochre)	None observed				
Are there other sites in the locality	yes	**Are they in the Sites Register**	yes	**Other site types include**	Artefact scatters

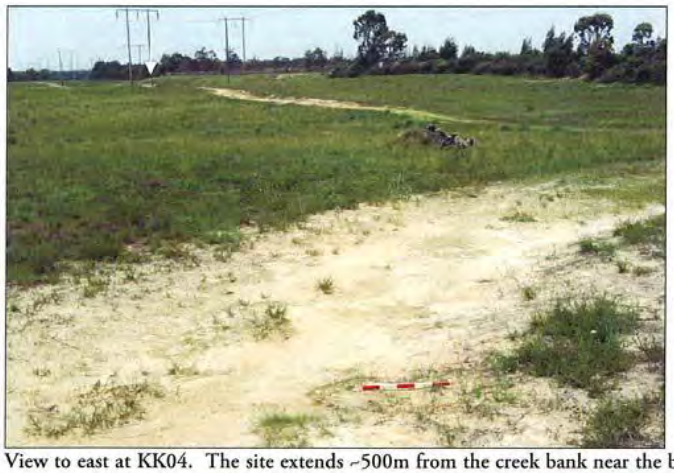
SITE MANAGEMENT

Site condition	Excellent in undisturbed areas		
Management recommendations			
Have artefacts been removed from site	No	**When**	
By whom		**Deposited at**	
Consent applied for	☐	**Consent issued**	
Date of issue		**Consent number**	

SITE INSPECTION AND RECORDING

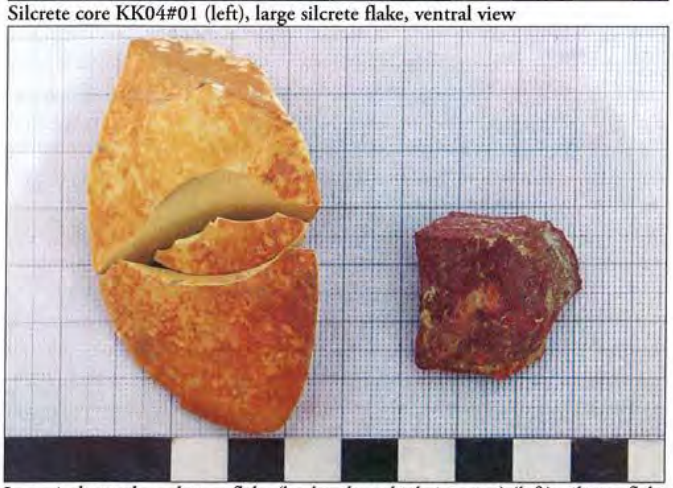
Reason for investigation	Proposed works to electricity easement		
Were local Aborigines contacted or present for the recording	☐ Not contacted ☒ Contacted and present ☐ Contacted but not present	**Names and addresses**	Mindaribba Local Aboriginal Land Council, PO Box 401, EAST MAITLAND NSW 2323; Barkuma Neighbourhood Centre/ Gidawaa Walang, 76 Lang Street KURRI KURRI NSW 2327; Aboriginal Native Title Consultants, 16A Mahogany Ave, MUSWELLBROOK NSW 2333; Hunter Valley Aboriginal Corporation, PO BOX 579, MUSWELLBROOK NSW 2333; Wonnarua Culture Heritage, 19 O'Donnell Cresent, METFORD 2322
Is the site important to local Aborigines	Although this site is important for demonstrating Aboriginal occupation of the area, it does not have specific cultural significance to the Aboriginal community		
Verbal/written reference sources	AMBS (2009) *Kurri Kurri Aboriginal Heritage Assessment for the 33kV Kurri-Rutherford Feeder Split*, report to EnergyAustralia	**ASR report number(s)**	C- C-
Photographs taken	Yes	**No of Photos attached**	
Site recorded by	Christopher Langeluddecke & Tessa Boer-Mah	**Date of recording**	Feb 2009
Address/institution	AMBS 6 College Street, Sydney, NSW 2010		

Version: June 1998	Data entered by:	Date entered:

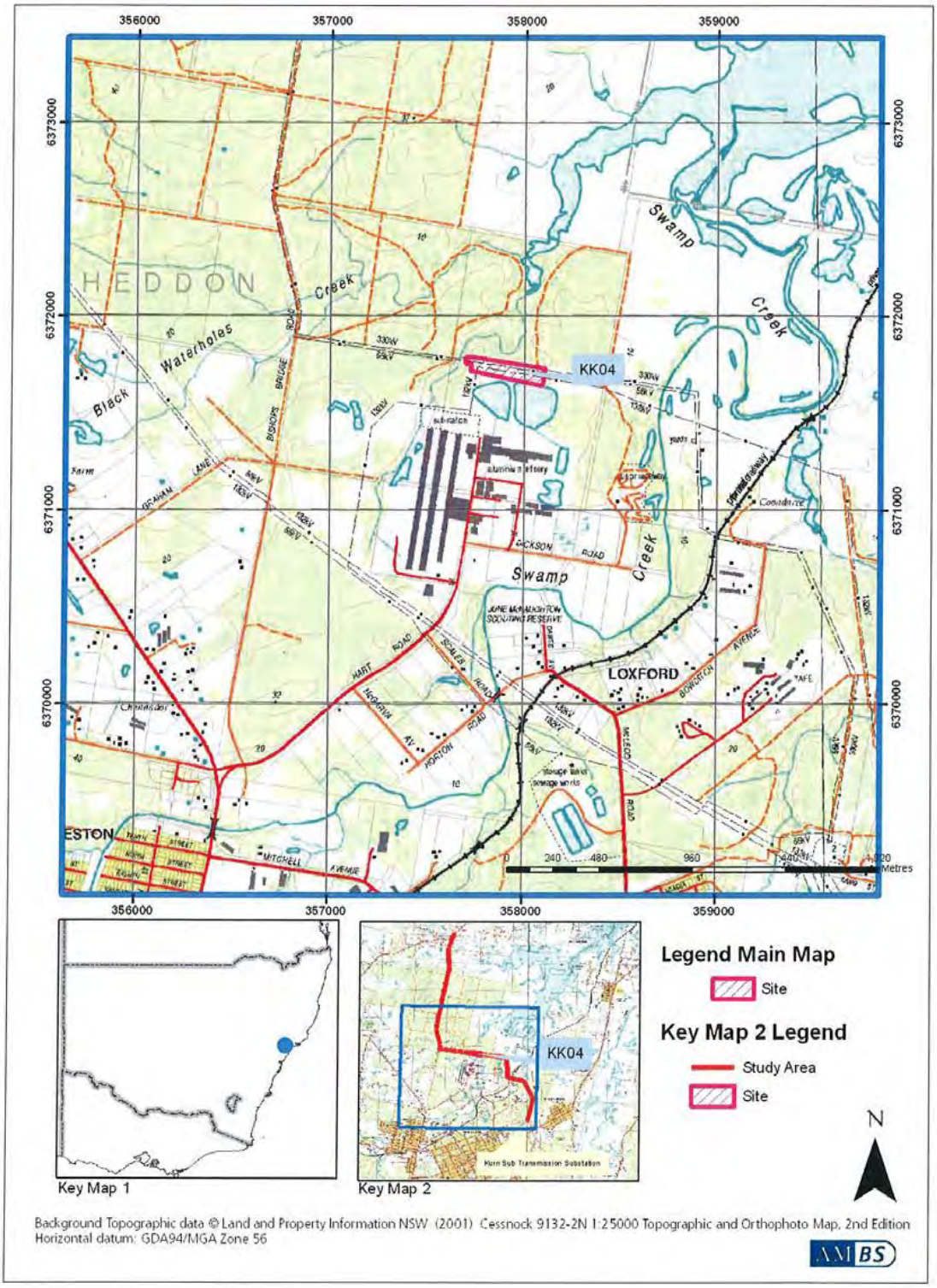


View to east at KK04. The site extends ~500m from the creek bank near the bend in the access track to junction of another track which joins the access track from the north, artefact to the left of the 0.5m scale in the foreground.

Silcrete core KK04#01 (left), large silcrete flake, ventral view



Large indurated mudstone flake (broken by vehicle impacts) (left), silcrete flake (right), ventral views



Background Topographic data © Land and Property Information NSW (2001) Cessnock 9132-2N 1:25000 Topographic and Orthophoto Map, 2nd Edition
Horizontal datum: GDA94/MGA Zone 56

AMBS

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___-___-____

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-AS01-14

Easting: 357780 Northing: 6374463 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title: Dr | Surname: McLaren | First Name: Andrew | Initials

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Slope

[ ] degrees

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [x] Flat
- [x] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

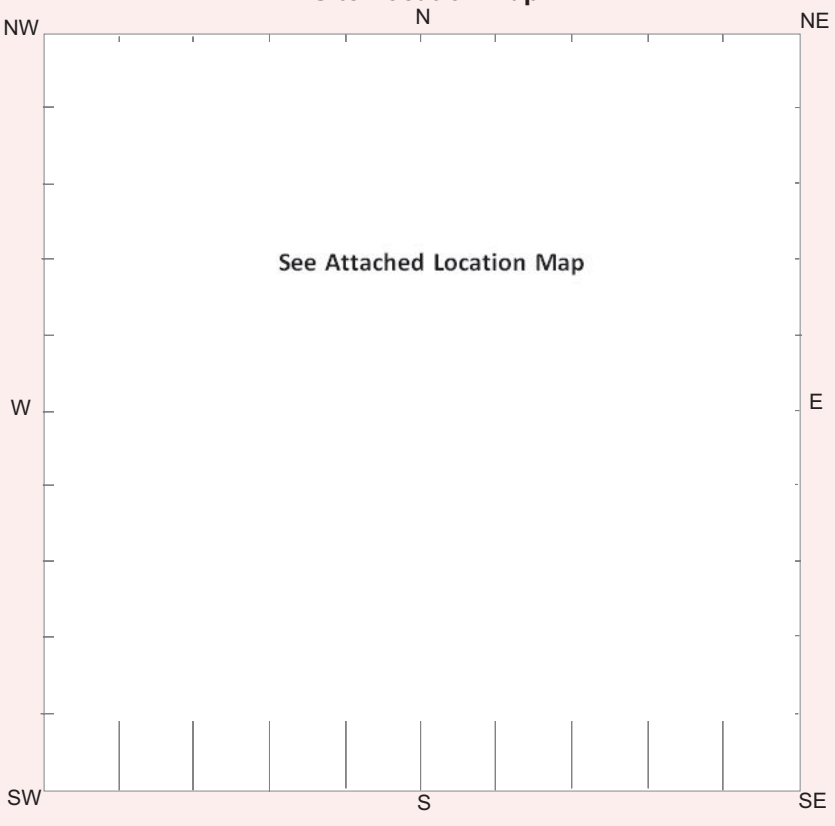
Water

Distance to permanent water source	150 metres
Distance to temporary water source	20 metres
Name of nearest permanent water source	Bishops Ck
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.:

Primary report

I.D. [ ] (I.D. Office Use only)

'Hydro Aluminium Smelter Site & Associated Buffer Land - Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

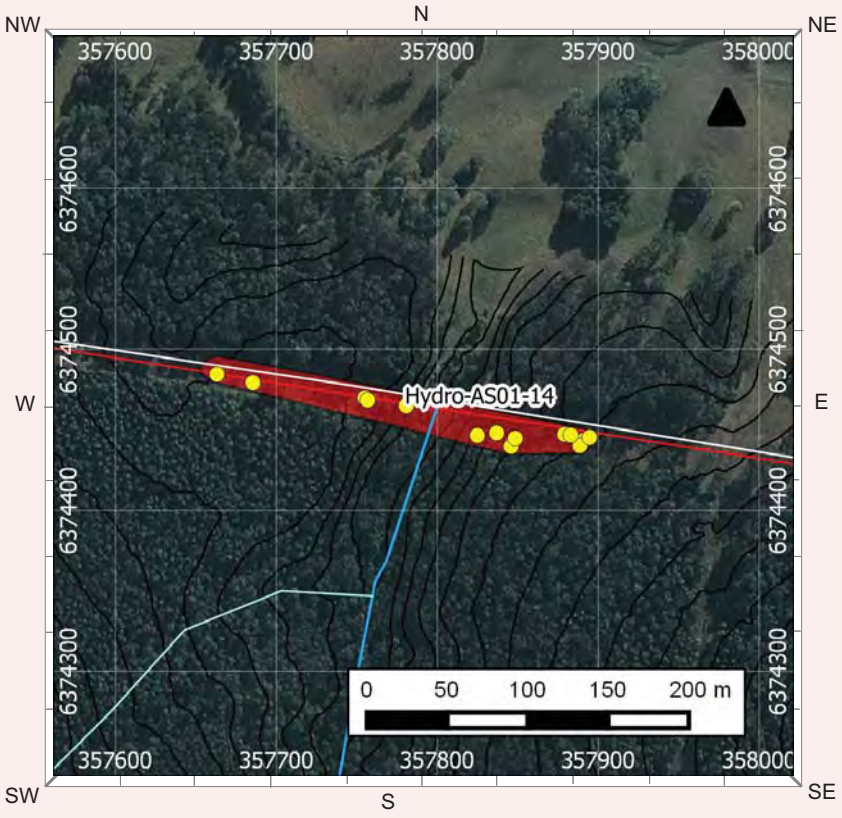
- [ ] N-S
- [ ] NE-SW
- [x] E-W
- [ ] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open Site Dimensions (m)

- [ ] Total length of visible site
- [ ] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-AS01-14 consists of a low density artefact scatter on and adjacent to an unsealed, east-west trending access track/fire trail on Lot 1 of DP166625. The sites straddles an unnamed 2nd order tributary of Bishops Creek. Artefacts occur on the track itself and in adjacent exposures created by gully/sheetwash erosion and ant activity. Surrounding native vegetation comprises regenerating Broad-leaved Ironbark Forest. Recorded artefacts (n = 16) include 10 complete flakes, 4 proximal flakes, 1 flaked piece and 1 bifacial core. Raw materials include silcrete (9), silicified tuff (5), quartz (1) and FGS (1). Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track use, ant activity and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-AS01-14

Plate 1 View across site Hydro-AS01-14, looking east

Plate 2 View across site Hydro-AS01-14, looking west

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___ ___

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-AS02-14

Easting: 359766 Northing: 6374324 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title: Dr | Surname: McLaren | First Name: Andrew | Initials

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [x] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [x] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [x] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] N/A

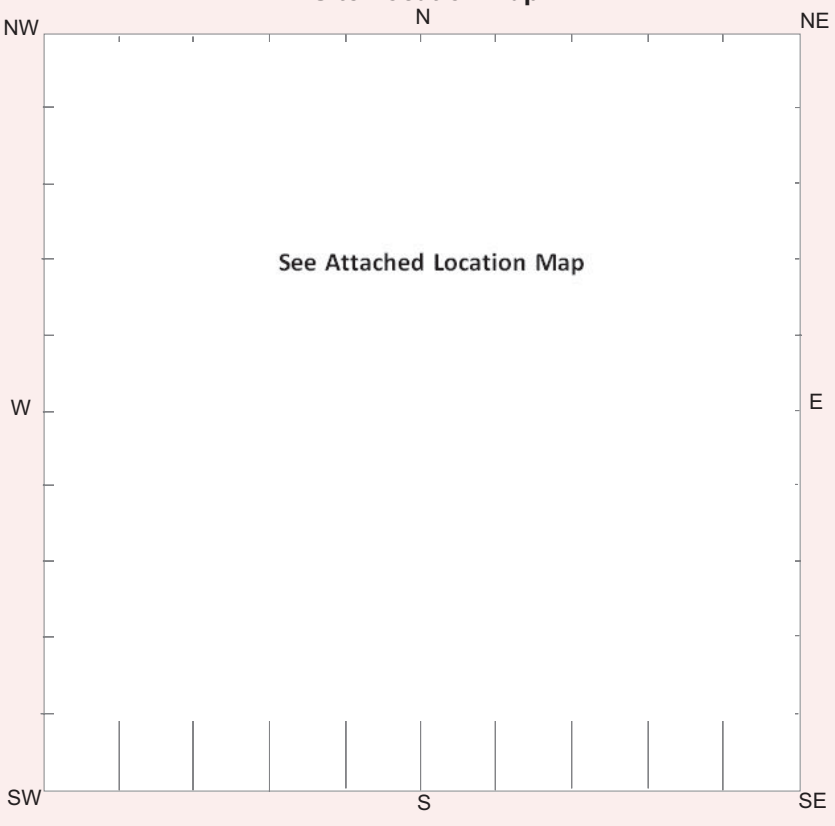
Water

Distance to permanent water source	-5 metres
Distance to temporary water source	metres
Name of nearest permanent water source	W e n t S w m p
Name of nearest temporary water	

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report

I.D. [ ] (I.D. Office Use only)

'Hydro Aluminium Smelter Site & Associated Buffer Land - Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014)

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- ☐ Boulder
- ☐ Wind erosion
- ☐ Water erosion
- ☐ Rock collapse

Rock Surface Condition

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Condition of Ceiling

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Shelter Aspect

- ☐ North
- ☐ North East
- ☐ East
- ☐ South East
- ☐ South
- ☐ South West
- ☐ West
- ☐ North West

Open Site

Site Orientation

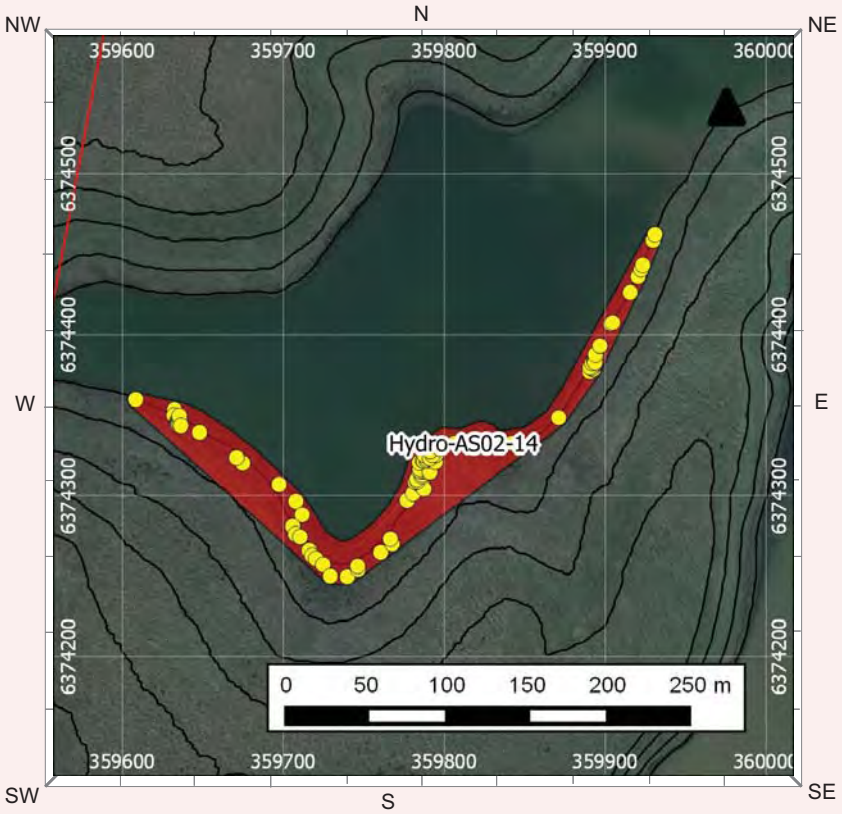
- ☐ N-S
- ☐ NE-SW
- ☑ E-W
- ☐ SE-NW
- ☐ N/A

Features

- ☐ 1. Aboriginal Ceremony & Dreaming
- ☐ 2. Aboriginal Resource & Gathering
- ☐ 3. Art
- ☑ 4. Artefact
- ☐ 5. Burial
- ☐ 6. Ceremonial Ring
- ☐ 7. Conflict
- ☐ 8. Earth Mound
- ☐ 9. Fish Trap
- ☐ 10. Grinding Groove
- ☐ 11. Habitation Structure
- ☐ 12. Hearth
- ☐ 13. Non Human Bone & Organic Material
- ☐ 14. Ochre quarry
- ☐ 15. Potential Archaeological Deposit
- ☐ 16. Stone Quarry
- ☐ 17. Shell
- ☐ 18. Stone Arrangement
- ☐ 19. Modified Tree
- ☐ 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- ☐ Internal length
- ☐ Internal width
- ☐ Shelter height
- ☐ Shelter floor area

Open Site Dimensions (m)

- ☐ Total length of visible site
- ☐ Average width of visible site
- ☐ Estimated area of visible site
- ☐ Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-AS02-14 consists of an extensive low-density artefact scatter in a large erosion/cattle tread exposure on the margin of Wentworth Swamp on Lot 1 of DP73597. The site is situated on a gently to very gently inclined simple slope on the western side of a flat-topped peninsula of land extending into the swamp. The artefact-bearing exposure runs for approximately 470m along the edge of the swamp and has a maximum width of around 30 m. Recorded artefacts (n = 89) include 32 complete flakes, 5 proximal flakes, 2 split flakes, 4 flake shatter fragments, 9 flaked pieces, 6 cores (1 multidirectional, 2 unidirectional, 1 bifacial and 2 bipolar), 2 misc. retouched flakes, 28 heat shatters and 1 edge-ground hatchet head. Raw materials include silicified tuff (48), silcrete (33), quartz (5), FGS (1) and volcanic (2). Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, cattle trampling and erosion. GSV within the exposure is excellent (91-100%). Land immediately upslope of the current artefact-bearing exposure is considered to have high subsurface archaeological potential.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-AS02-14

Plate 1 Hydro-AS02-14: edge-ground hatchet head

Plate 2 Hydro-AS02-14: quartz bipolar core

Plate 3 View across site Hydro-AS02-14, looking east

Aboriginal Site Recording Form

AHIMS Aboriginal Heritage Information Management System

NSW Government Office of Environment & Heritage

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office Use Only

Site Number

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title	Surname	First Name	Initials

Organisation

Address

Phone number Fax

Client on system ☐

☐ **Knowledge Holder**

Title	Surname	First Name	Initials

Organisation

Address

Phone number Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-AS03-14

Easting: 360138 Northing: 6373383 AGD/GDA: GDA

Mapsheet:

Zone 56 Location Method: Differential GPS

Other Registration:

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 89340001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [x] Undulating plain

Slope

[ ] degrees

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [x] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [x] Swamp
- [ ] Terrace
- [ ] Terrace flat

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] N/A

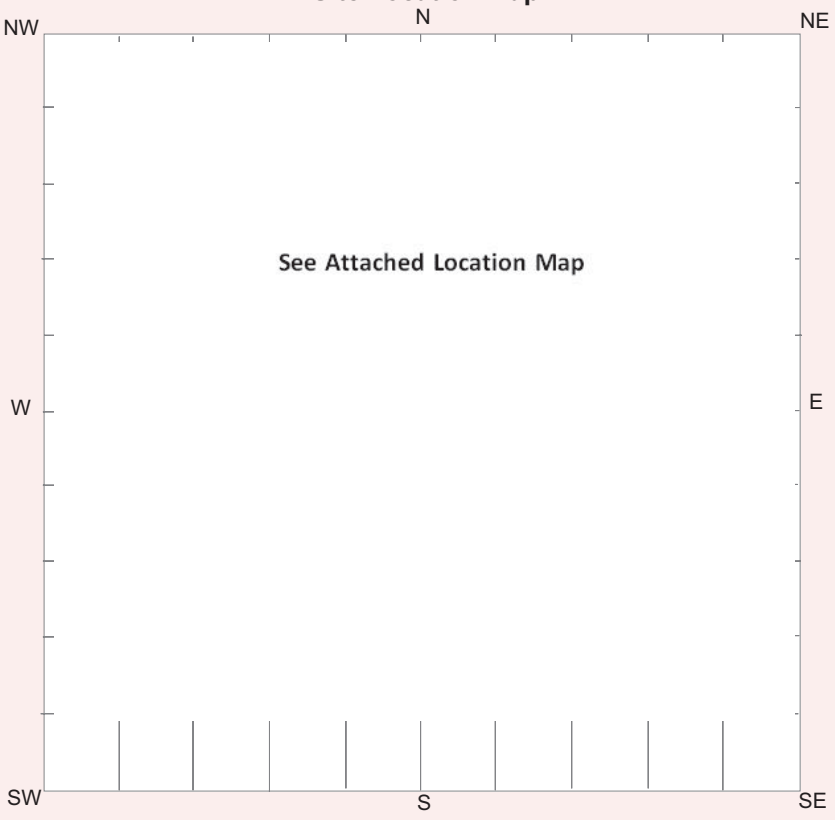
Water

Distance to permanent water source	-5 metres
Distance to temporary water source	metres
Name of nearest permanent water source	W e n t S w m p
Name of nearest temporary water	

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via 'Wangara' property, off Main Road, south of Gillieston Heights. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report I.D.

(I.D. Office Use only)

'Hydro Aluminium Smelter Site & Associated Buffer Land - Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- ☐ Boulder
- ☐ Wind erosion
- ☐ Water erosion
- ☐ Rock collapse

Rock Surface Condition

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Condition of Ceiling

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Shelter Aspect

- ☐ North
- ☐ North East
- ☐ East
- ☐ South East
- ☐ South
- ☐ South West
- ☐ West
- ☐ North West

Open Site

Site Orientation

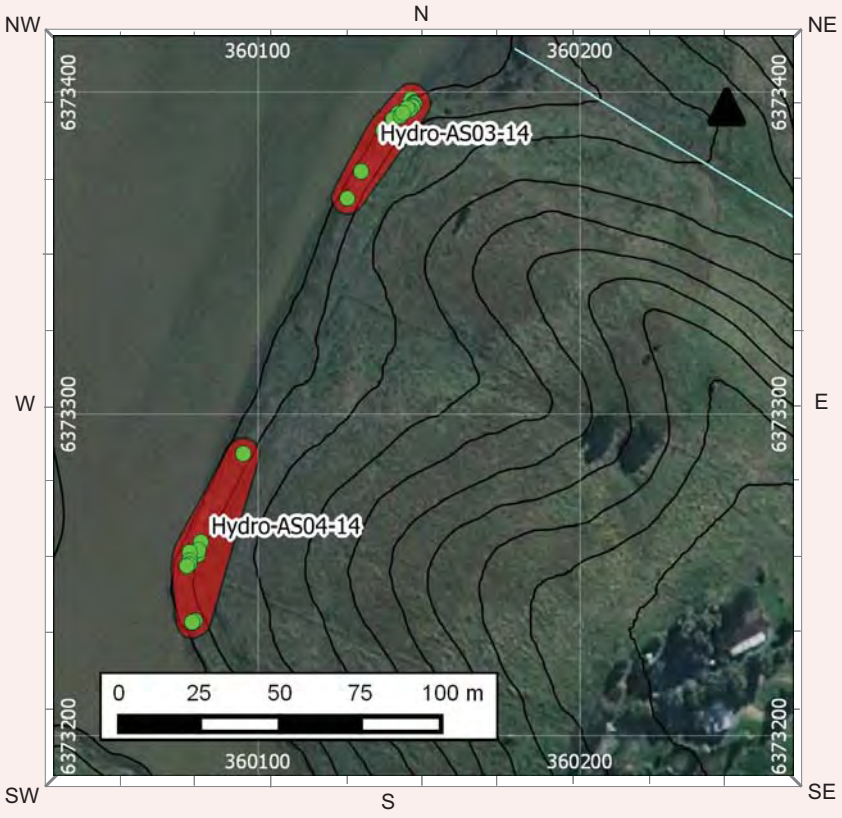
- ☐ N-S
- ☑ NE-SW
- ☐ E-W
- ☐ SE-NW
- ☐ N/A

Features

- ☐ 1. Aboriginal Ceremony & Dreaming
- ☐ 2. Aboriginal Resource & Gathering
- ☐ 3. Art
- ☑ 4. Artefact
- ☐ 5. Burial
- ☐ 6. Ceremonial Ring
- ☐ 7. Conflict
- ☐ 8. Earth Mound
- ☐ 9. Fish Trap
- ☐ 10. Grinding Groove
- ☐ 11. Habitation Structure
- ☐ 12. Hearth
- ☐ 13. Non Human Bone & Organic Material
- ☐ 14. Ochre quarry
- ☐ 15. Potential Archaeological Deposit
- ☐ 16. Stone Quarry
- ☐ 17. Shell
- ☐ 18. Stone Arrangement
- ☐ 19. Modified Tree
- ☐ 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- ☐ Internal length
- ☐ Internal width
- ☐ Shelter height
- ☐ Shelter floor area

Open Site Dimensions (m)

- ☐ Total length of visible site
- ☐ Average width of visible site
- ☐ Estimated area of visible site
- ☐ Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-AS03-14 consists of an artefact scatter on the eastern margin of Wentworth Swamp on Lot 1 of DP73597. The scatter is situated at the base of a gently inclined simple slope approximately 200 m northwest of the Wangara homestead complex. Artefacts have eroded out of adjacent soil profiles. Recorded artefacts (n = 15) include 9 complete flakes, 3 flake shatter fragments, 1 heat shatter, 1 multidirectional core and 1 bidirectional core. Raw materials include silicified tuff (10), silcrete (3) and FGS (2). Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, cattle trampling and erosion. Land immediately upslope of the current artefact-bearing exposure is considered to have high subsurface archaeological potential.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-AS03-14

Plate 1 Hydro-AS03-14: Bidirectional silicified tuff core (on left) and silicified tuff flake (on right)

Plate 2 Hydro-AS03-14: mutlidirectional silicified tuff core

Plate 3 View across site Hydro-AS03-14, looking southwest

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number | | | – | | – | | | | |

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-AS04-14

Easting: 360085 Northing: 6373261 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title | Surname | First Name | Initials

Dr | McLaren | Andrew

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [x] Undulating plain

Slope

[ ] degrees

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [x] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [x] Swamp
- [ ] Terrace
- [ ] Terrace flat

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] N/A

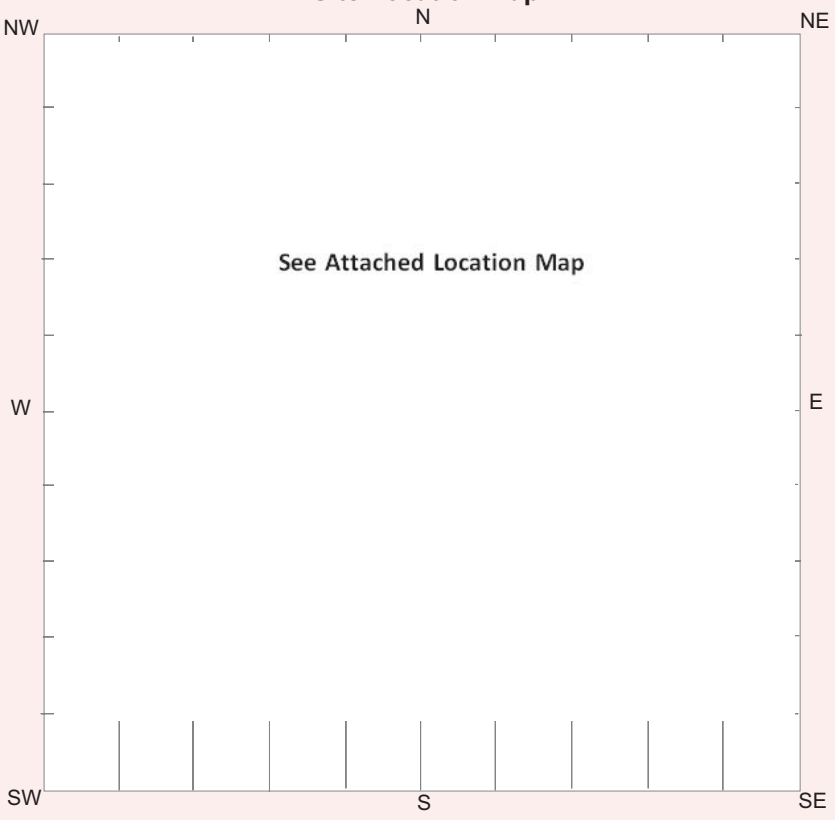
Water

Distance to permanent water source	-5 metres
Distance to temporary water source	metres
Name of nearest permanent water source	W e n t S w m p
Name of nearest temporary water	

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via 'Wangara' property, off Main Road, south of Gillieston Heights. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report I.D.

(I.D. Office Use only)

'Hydro Aluminium Smelter Site & Associated Buffer Land - Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- ☐ Boulder
- ☐ Wind erosion
- ☐ Water erosion
- ☐ Rock collapse

Rock Surface Condition

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Condition of Ceiling

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Shelter Aspect

- ☐ North
- ☐ North East
- ☐ East
- ☐ South East
- ☐ South
- ☐ South West
- ☐ West
- ☐ North West

Open Site

Site Orientation

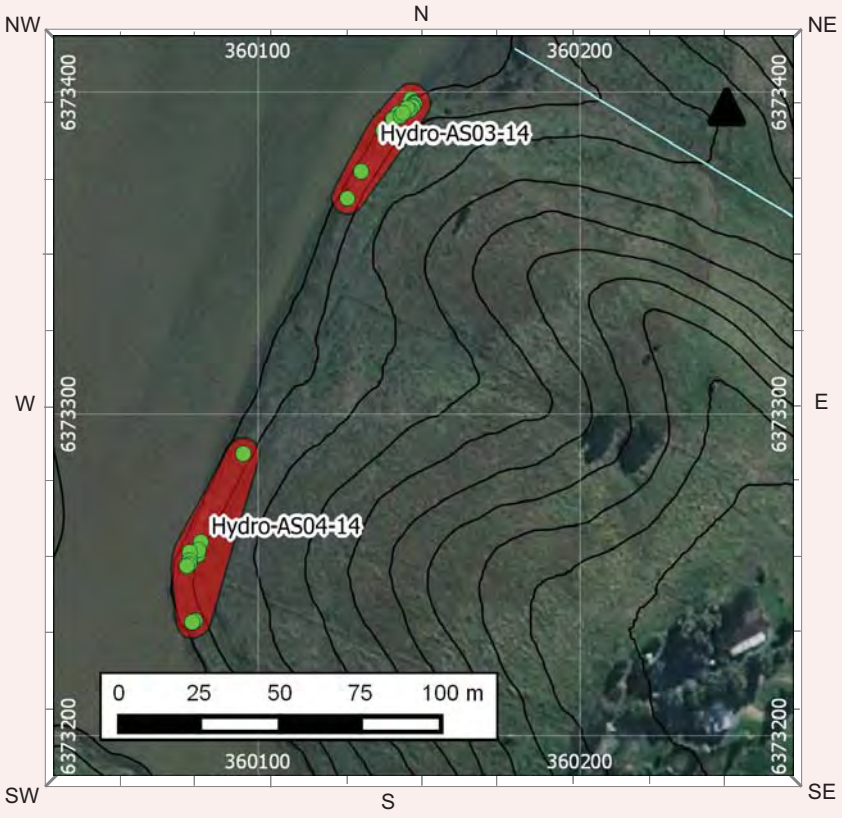
- ☐ N-S
- ☑ NE-SW
- ☐ E-W
- ☐ SE-NW
- ☐ N/A

Features

- ☐ 1. Aboriginal Ceremony & Dreaming
- ☐ 2. Aboriginal Resource & Gathering
- ☐ 3. Art
- ☑ 4. Artefact
- ☐ 5. Burial
- ☐ 6. Ceremonial Ring
- ☐ 7. Conflict
- ☐ 8. Earth Mound
- ☐ 9. Fish Trap
- ☐ 10. Grinding Groove
- ☐ 11. Habitation Structure
- ☐ 12. Hearth
- ☐ 13. Non Human Bone & Organic Material
- ☐ 14. Ochre quarry
- ☐ 15. Potential Archaeological Deposit
- ☐ 16. Stone Quarry
- ☐ 17. Shell
- ☐ 18. Stone Arrangement
- ☐ 19. Modified Tree
- ☐ 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- ☐ Internal length
- ☐ Internal width
- ☐ Shelter height
- ☐ Shelter floor area

Open Site Dimensions (m)

- ☐ Total length of visible site
- ☐ Average width of visible site
- ☐ Estimated area of visible site
- ☐ Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-AS04-14 consists of an artefact scatter on the eastern margin of Wentworth Swamp on Lot 1 of DP73597. The scatter is situated at the base of gently inclined simple slope approximately 150 m west of the Wangara homestead complex. Artefacts have eroded out of adjacent soil profiles. One artefact was recorded in-situ at a depth of c.40 cm. Recorded artefacts (n = 11) include 7 complete flakes, 1 heat shatter, 2 multidirectional cores and 1 bifacial core. Raw materials include silcrete (5), silcified tuff (4) and FGS (2). Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance and ongoing erosion. Land immediately upslope of the current artefact-bearing exposure is considered to have high subsurface archaeological potential.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-AS04-14

Plate 1 Hydro-AS04-14: In-situ bifacial silicified tuff core (to right of flag - flag is 50 cm long)

Plate 2 Hydro-AS04-14: multidirectional silcrete core

Plate 3 View across site Hydro-AS04-14, looking south southwest

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___-___-____

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-AS05-14

Easting: 360256 Northing: 6373012 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [x] Undulating plain

Slope

[ ] degrees

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [x] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [x] Swamp
- [ ] Terrace
- [ ] Terrace flat

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] N/A

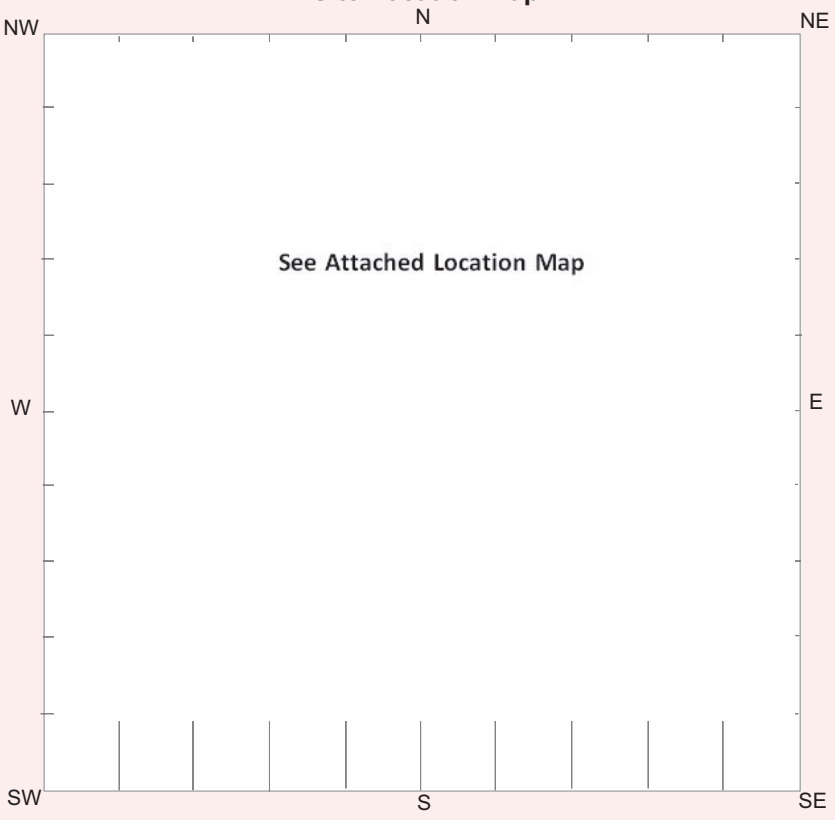
Water

Distance to permanent water source	-5 metres
Distance to temporary water source	metres
Name of nearest permanent water source	W e n t S w m p
Name of nearest temporary water	

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via 'Wangara' property, off Main Road, south of Gillieston Heights. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report I.D.

(I.D. Office Use only)

'Hydro Aluminium Smelter Site & Associated Buffer Land - Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- ☐ Boulder
- ☐ Wind erosion
- ☐ Water erosion
- ☐ Rock collapse

Rock Surface Condition

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Condition of Ceiling

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Shelter Aspect

- ☐ North
- ☐ North East
- ☐ East
- ☐ South East
- ☐ South
- ☐ South West
- ☐ West
- ☐ North West

Open Site

Site Orientation

- ☐ N-S
- ☐ NE-SW
- ☐ E-W
- ☑ SE-NW
- ☐ N/A

Features

- ☐ 1. Aboriginal Ceremony & Dreaming
- ☐ 2. Aboriginal Resource & Gathering
- ☐ 3. Art
- ☑ 4. Artefact
- ☐ 5. Burial
- ☐ 6. Ceremonial Ring
- ☐ 7. Conflict
- ☐ 8. Earth Mound
- ☐ 9. Fish Trap
- ☐ 10. Grinding Groove
- ☐ 11. Habitation Structure
- ☐ 12. Hearth
- ☐ 13. Non Human Bone & Organic Material
- ☐ 14. Ochre quarry
- ☐ 15. Potential Archaeological Deposit
- ☐ 16. Stone Quarry
- ☐ 17. Shell
- ☐ 18. Stone Arrangement
- ☐ 19. Modified Tree
- ☐ 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features

Site Dimensions

Closed Site Dimensions (m)

- ☐ Internal length
- ☐ Internal width
- ☐ Shelter height
- ☐ Shelter floor area

Open Site Dimensions (m)

- ☐ Total length of visible site
- ☐ Average width of visible site
- ☐ Estimated area of visible site
- ☐ Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-AS05-14 consists of an artefact scatter in an erosion/cattle tread exposure at the head of an inlet off Wentworth Swamp on Lot 1 of DP73597. The site is situated at the base of a moderately inclined simple slope approximately 185 south-southeast of the Wangara homestead complex. Artefacts have eroded out of an adjacent soil profile. Recorded artefacts (n = 3) include 2 complete flakes, both manufactured out of silicified tuff, and 1 silcrete heat shatter. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, extensive cattle trampling and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-AS05-14

Plate 1 Hydro-AS05-14: silicified tuff flake

Plate 2 View across site Hydro-AS05-14, looking northwest

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___-___-____

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-AS06-14

Easting: 359994 Northing: 6373142 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [x] Undulating plain

Slope

[ ] degrees

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [x] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [x] Swamp
- [ ] Terrace
- [ ] Terrace flat

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] N/A

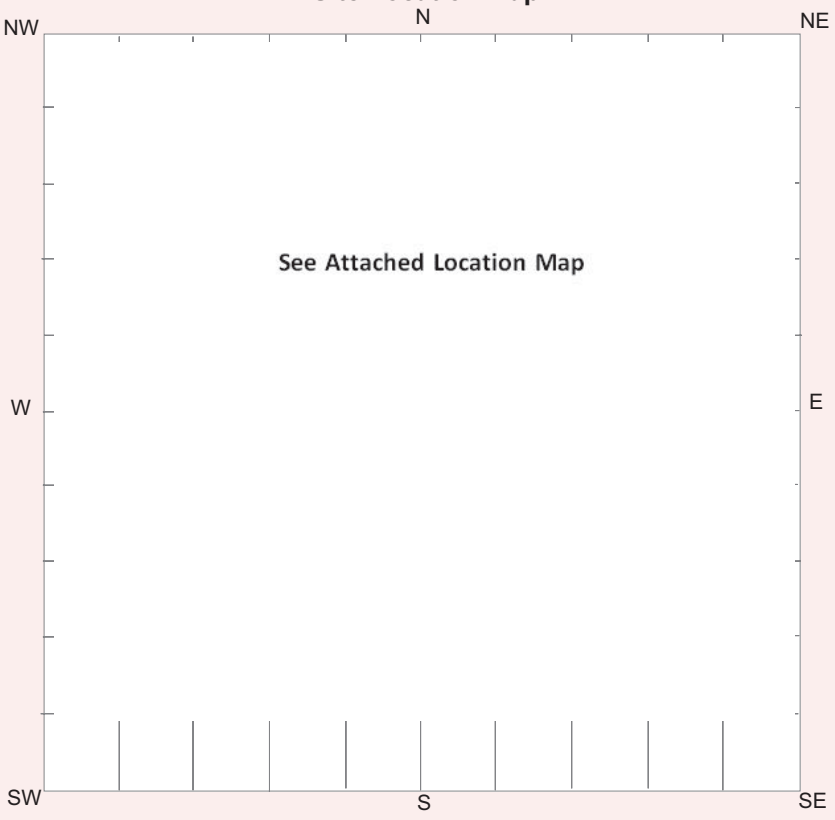
Water

Distance to permanent water source	-5 metres
Distance to temporary water source	metres
Name of nearest permanent water source	W e n t S w m p
Name of nearest temporary water	

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via 'Wangara' property, off Main Road, south of Gillieston Heights. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report I.D.

(I.D. Office Use only)

'Hydro Aluminium Smelter Site & Associated Buffer Land - Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

- [ ] N-S
- [ ] NE-SW
- [ ] E-W
- [x] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features

Site Dimensions

Closed Site Dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open Site Dimensions (m)

- [ ] Total length of visible site
- [ ] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-AS06-14 is an artefact scatter located around MGA grid reference 359994 6373142 on Lot 1 of DP73597. The site is situated on a peninsula of land extending into Wentworth Swamp, approximately 240 m southwest of the Wangara homestead complex. The site comprises two artefacts, a complete silicified tuff flake and a silcrete heat shatter, in two small (<1m2) erosion expsoures approximately 6 m apart. The exposure containing the silcrete heat shatter is on the edge of the swamp and is actively eroding through wave action. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance and erosion. Land immediately upslope of the current artefact-bearing exposures is considered to have high subsurface archaeological potential.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-AS06-14

Plate 1 Hydro-AS06-14: silicified tuff flake (on left) and silcrete heat shatter (on right)

Plate 2 View across site Hydro-AS06-14, looking south

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage
NSW GOVERNMENT

Office Use Only

Site Number ___ ___

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-AS07-14

Easting: 359003 Northing: 6372353 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [x] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [x] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [x] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] N/A

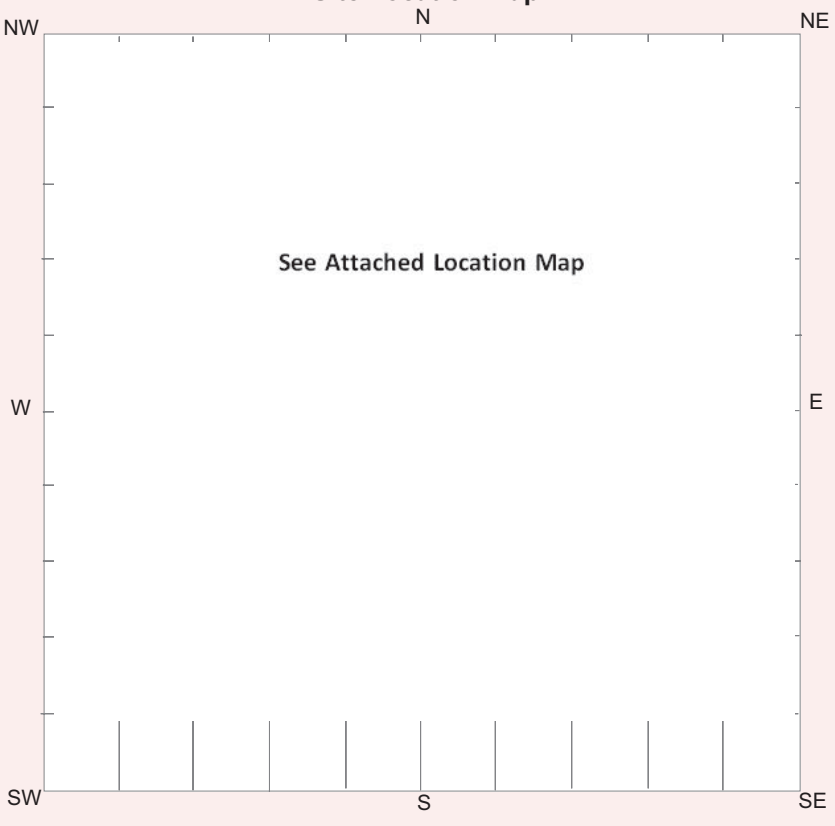
Water

Distance to permanent water source	-5 metres
Distance to temporary water source	metres
Name of nearest permanent water source	Swamp Ck
Name of nearest temporary water	

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.:

Primary report

I.D. (I.D. Office Use only):

'Hydro Aluminium Smelter Site & Associated Buffer Land - Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- ☐ Boulder
- ☐ Wind erosion
- ☐ Water erosion
- ☐ Rock collapse

Rock Surface Condition

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Condition of Ceiling

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Shelter Aspect

- ☐ North
- ☐ North East
- ☐ East
- ☐ South East
- ☐ South
- ☐ South West
- ☐ West
- ☐ North West

Open Site

Site Orientation

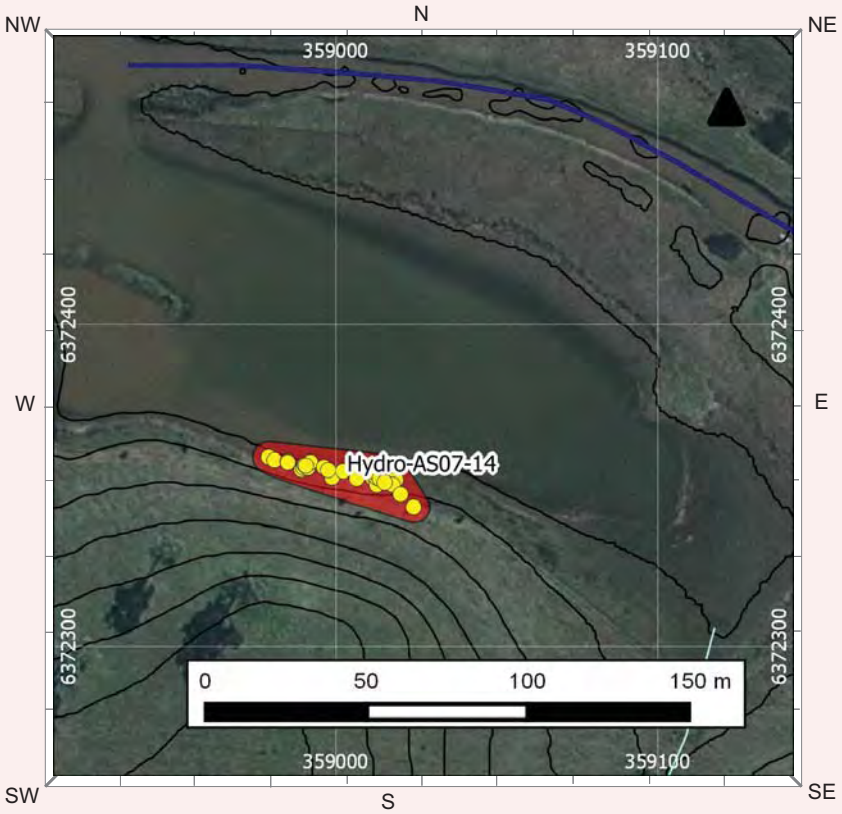
- ☐ N-S
- ☐ NE-SW
- ☑ E-W
- ☐ SE-NW
- ☐ N/A

Features

- ☐ 1. Aboriginal Ceremony & Dreaming
- ☐ 2. Aboriginal Resource & Gathering
- ☐ 3. Art
- ☑ 4. Artefact
- ☐ 5. Burial
- ☐ 6. Ceremonial Ring
- ☐ 7. Conflict
- ☐ 8. Earth Mound
- ☐ 9. Fish Trap
- ☐ 10. Grinding Groove
- ☐ 11. Habitation Structure
- ☐ 12. Hearth
- ☐ 13. Non Human Bone & Organic Material
- ☐ 14. Ochre quarry
- ☐ 15. Potential Archaeological Deposit
- ☐ 16. Stone Quarry
- ☐ 17. Shell
- ☐ 18. Stone Arrangement
- ☐ 19. Modified Tree
- ☐ 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- ☐ Internal length
- ☐ Internal width
- ☐ Shelter height
- ☐ Shelter floor area

Open Site Dimensions (m)

- ☐ Total length of visible site
- ☐ Average width of visible site
- ☐ Estimated area of visible site
- ☐ Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-AS07-14 consists of an artefact scatter on the edge of a billabong associated with Swamp Creek. The site is situated on a gently to moderately inclined cleared simple slope. Artefacts occur principally in a large (c.50 x 5 m) erosion/cattle tread exposure directly adjacent to the billabong but were also recorded in exposures on and adjacent to an unsealed access track a short distance upslope. Recorded artefacts (n = 30) include 14 complete flakes, 6 proximal flakes, 1 split flake, 2 flake shatter fragments, 1 flaked piece, 1 unidirectional core, 4 heat shatters and 1 misc. retouched flake. Raw materials include silicified tuff (16), silcrete (9), quartz (2), quartzite (1) and FGS (2). Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track use, cattle trampling and erosion. GSV within the main exposure is excellent (91-100%).

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-AS07-14

Plate 1 Hydro AS07-14: large silicified tuff flake

Plate 2 View across site Hydro-AS07-14, looking northwest

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___-___-____

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-AS08-14

Easting: 358265 Northing: 6372585 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [x] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [x] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] N/A

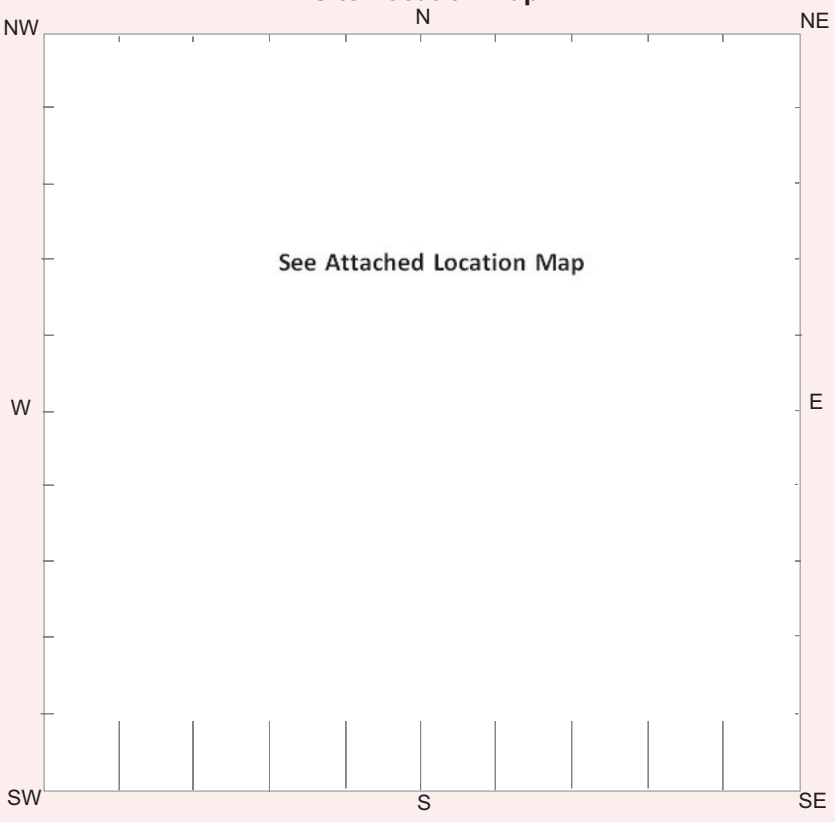
Water

Distance to permanent water source	-5 metres
Distance to temporary water source	metres
Name of nearest permanent water source	W e n t S w m p
Name of nearest temporary water	

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report

I.D. [ ] (I.D. Office Use only)

'Hydro Aluminium Smelter Site & Associated Buffer Land - Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- ☐ Boulder
- ☐ Wind erosion
- ☐ Water erosion
- ☐ Rock collapse

Rock Surface Condition

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Condition of Ceiling

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Shelter Aspect

- ☐ North
- ☐ North East
- ☐ East
- ☐ South East
- ☐ South
- ☐ South West
- ☐ West
- ☐ North West

Open Site

Site Orientation

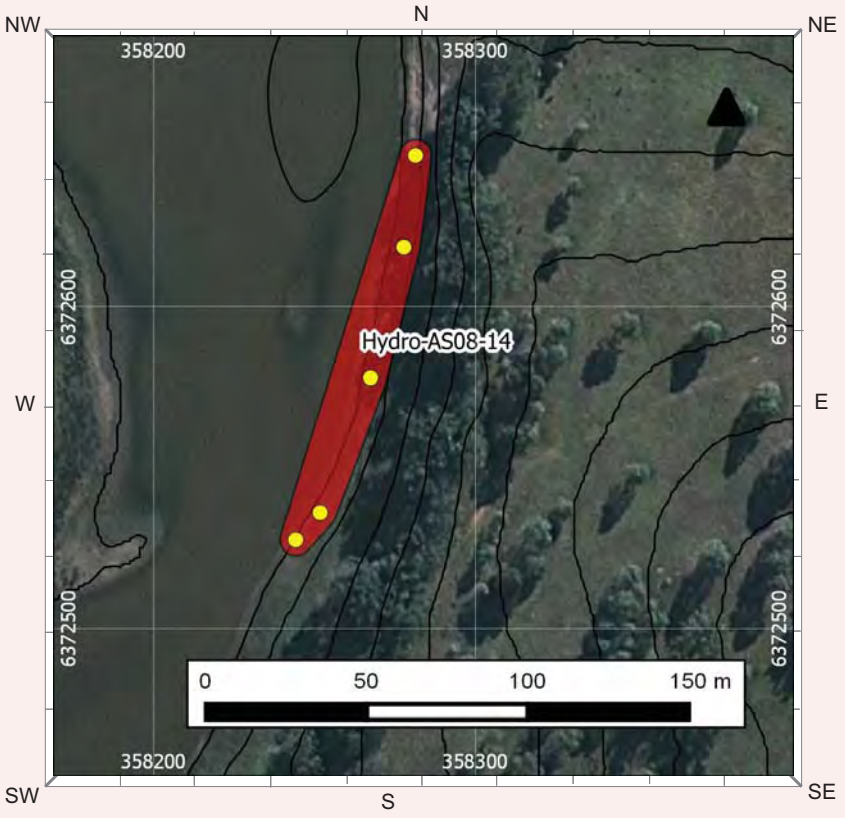
- ☑ N-S
- ☐ NE-SW
- ☐ E-W
- ☐ SE-NW
- ☐ N/A

Features

- ☐ 1. Aboriginal Ceremony & Dreaming
- ☐ 2. Aboriginal Resource & Gathering
- ☐ 3. Art
- ☑ 4. Artefact
- ☐ 5. Burial
- ☐ 6. Ceremonial Ring
- ☐ 7. Conflict
- ☐ 8. Earth Mound
- ☐ 9. Fish Trap
- ☐ 10. Grinding Groove
- ☐ 11. Habitation Structure
- ☐ 12. Hearth
- ☐ 13. Non Human Bone & Organic Material
- ☐ 14. Ochre quarry
- ☐ 15. Potential Archaeological Deposit
- ☐ 16. Stone Quarry
- ☐ 17. Shell
- ☐ 18. Stone Arrangement
- ☐ 19. Modified Tree
- ☐ 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- ☐ Internal length
- ☐ Internal width
- ☐ Shelter height
- ☐ Shelter floor area

Open Site Dimensions (m)

- ☐ Total length of visible site
- ☐ Average width of visible site
- ☐ Estimated area of visible site
- ☐ Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-AS08-14 consists of a low density artefact scatter in a linear erosion/cattle tread exposure running along the edge of Wentworth Swamp on Lot 1 of DP166625. The site is situated at the base of a partially cleared gently to moderately inclined simple slope. Recorded artefacts (n = 5) include 3 complete flakes, 1 heat shatter and 1 multidirectional core. Raw materials include silicified tuff (2), silcrete (2) and FGS (1). GSV within the exposure is excellent (91-100%). Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, extensive cattle trampling and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-AS08-14

Plate 1 View across site Hydro-AS08-14, looking north

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___-___-____

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-AS09-14

Easting: 358412 Northing: 6372339 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [ ] Lower slope
- [ ] Mid slope
- [x] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

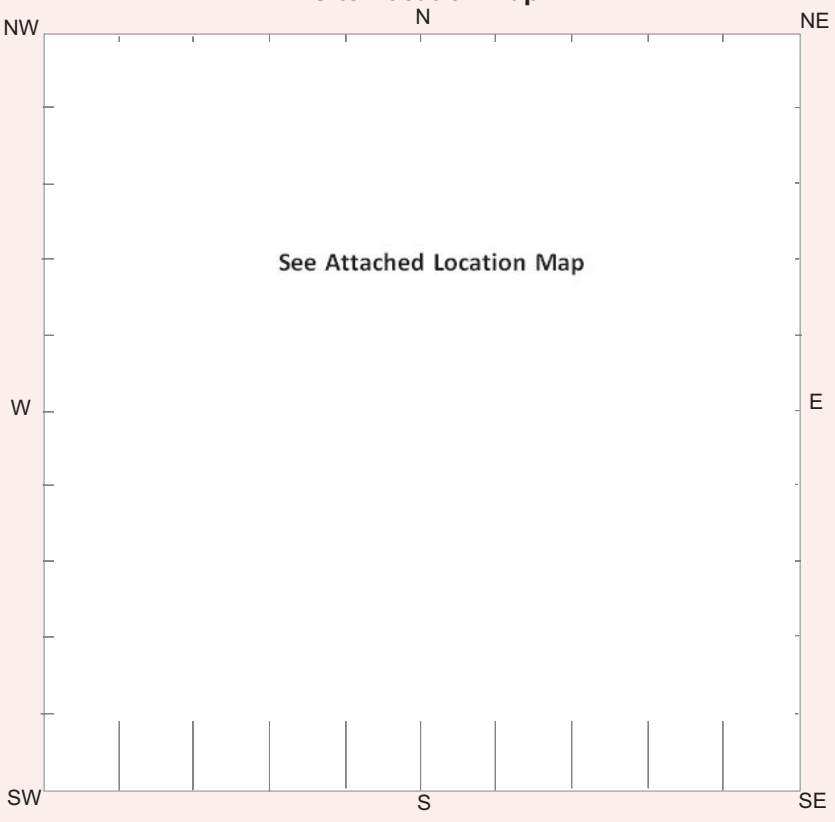
Water

Distance to permanent water source	220 metres
Distance to temporary water source	125 metres
Name of nearest permanent water source	W e n t S w m p
Name of nearest temporary water	U n n a m e d

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.:

Primary report

I.D. (I.D. Office Use only):

'Hydro Aluminium Smelter Site & Associated Buffer Land - Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- ☐ Boulder
- ☐ Wind erosion
- ☐ Water erosion
- ☐ Rock collapse

Rock Surface Condition

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Condition of Ceiling

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Shelter Aspect

- ☐ North
- ☐ North East
- ☐ East
- ☐ South East
- ☐ South
- ☐ South West
- ☐ West
- ☐ North West

Open Site

Site Orientation

- ☐ N-S
- ☐ NE-SW
- ☑ E-W
- ☐ SE-NW
- ☐ N/A

Features

- ☐ 1. Aboriginal Ceremony & Dreaming
- ☐ 2. Aboriginal Resource & Gathering
- ☐ 3. Art
- ☑ 4. Artefact
- ☐ 5. Burial
- ☐ 6. Ceremonial Ring
- ☐ 7. Conflict
- ☐ 8. Earth Mound
- ☐ 9. Fish Trap
- ☐ 10. Grinding Groove
- ☐ 11. Habitation Structure
- ☐ 12. Hearth
- ☐ 13. Non Human Bone & Organic Material
- ☐ 14. Ochre quarry
- ☐ 15. Potential Archaeological Deposit
- ☐ 16. Stone Quarry
- ☐ 17. Shell
- ☐ 18. Stone Arrangement
- ☐ 19. Modified Tree
- ☐ 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features

Site Dimensions

Closed Site Dimensions (m)

- ☐ Internal length
- ☐ Internal width
- ☐ Shelter height
- ☐ Shelter floor area

Open Site Dimensions (m)

- ☐ Total length of visible site
- ☐ Average width of visible site
- ☐ Estimated area of visible site
- ☐ Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-AS09-10 comprises an artefact scatter on an unsealed east-west trending access track / fire trail running between Lot 1 on DP166625 and Lot 317 on DP755231. The site is situated on a gently inclined simple slope approximately 70 m east of an entrance gate to Lot 1 and access track leading into Lot 317 . Native vegetation to the south of the site, in Lot 317, comprises regenerating Lowland Redgum Forest. Two artefacts - a complete silcrete flake and silcrete flake shatter fragment - were identified on the track approximately 30m apart. GSV on-site is excellent (91-100%). Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-AS09-14

Plate 1 Hydro-AS09-14: silcrete flake

Plate 2 View across site Hydro-AS09-14, looking southwest

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___ ___

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-AS10-14

Easting: 358096 Northing: 6372326 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title | Surname | First Name | Initials

Dr | McLaren | Andrew

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [x] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [x] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] N/A

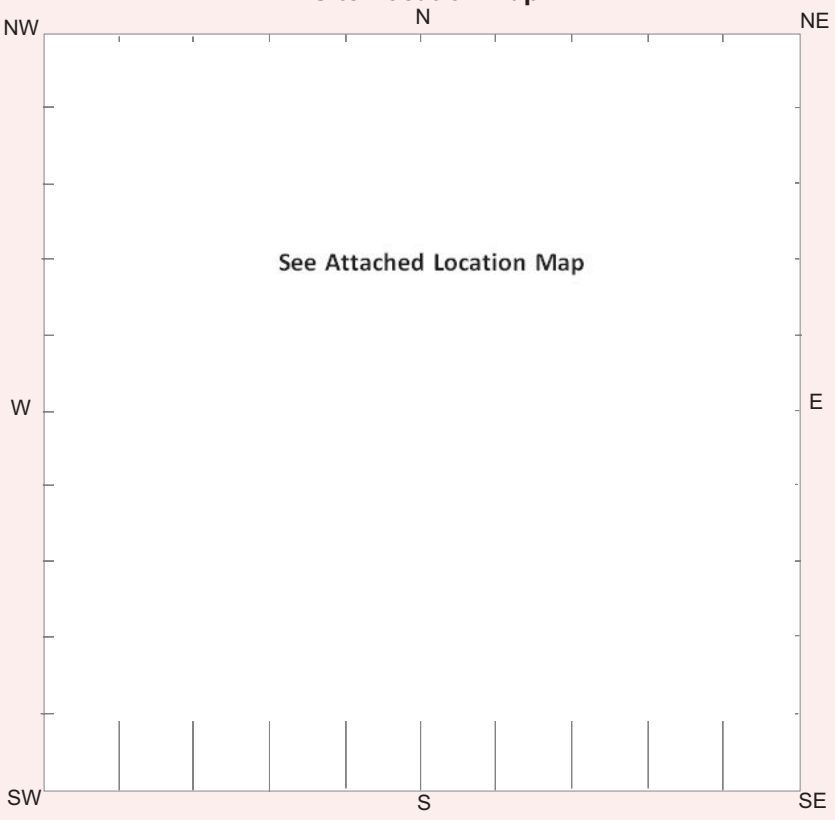
Water

Distance to permanent water source	-5 metres
Distance to temporary water source	metres
Name of nearest permanent water source	Black Wat
Name of nearest temporary water	

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.:

Primary report

I.D. (I.D. Office Use only):

'Hydro Aluminium Smelter and Associated Buffer Land - Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

- [ ] N-S
- [x] NE-SW
- [ ] E-W
- [ ] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features

Site Dimensions

Closed Site Dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open Site Dimensions (m)

- [ ] Total length of visible site
- [ ] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-AS10-14 is an artefact scatter located in an erosion exposure on the eastern side of a dammed section of Black Waterholes Creek on Lot 317 of DP755231. The site is situated at the base of a moderately inclined simple slope, approximately 65 m northeast of the confluence of Black Waterholes Creek and an unnamed 2nd order tributary. Bordering native vegetation to the south and east comprises regenerating Lowland Redgum Forest. The site comprises four artefacts: 1 unidirectional silcrete core, 1 silcrete flake shatter fragment, 1 complete silcrete flake and 1 split silicified tuff flake. The artefact-bearing exposure is approximately 100 m long and has a maximum width of around 5 m. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation removal, periodic flooding, cattle trampling and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-AS10-14

Plate 1 Hydro-AS10-14: unidirectional silcrete core

Plate 2 View across part of site Hydro-AS10-14, looking northeast

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___ ___

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-AS11-14

Easting: 357628 Northing: 6372468 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title | Surname | First Name | Initials

Dr | McLaren | Andrew

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [x] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [x] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

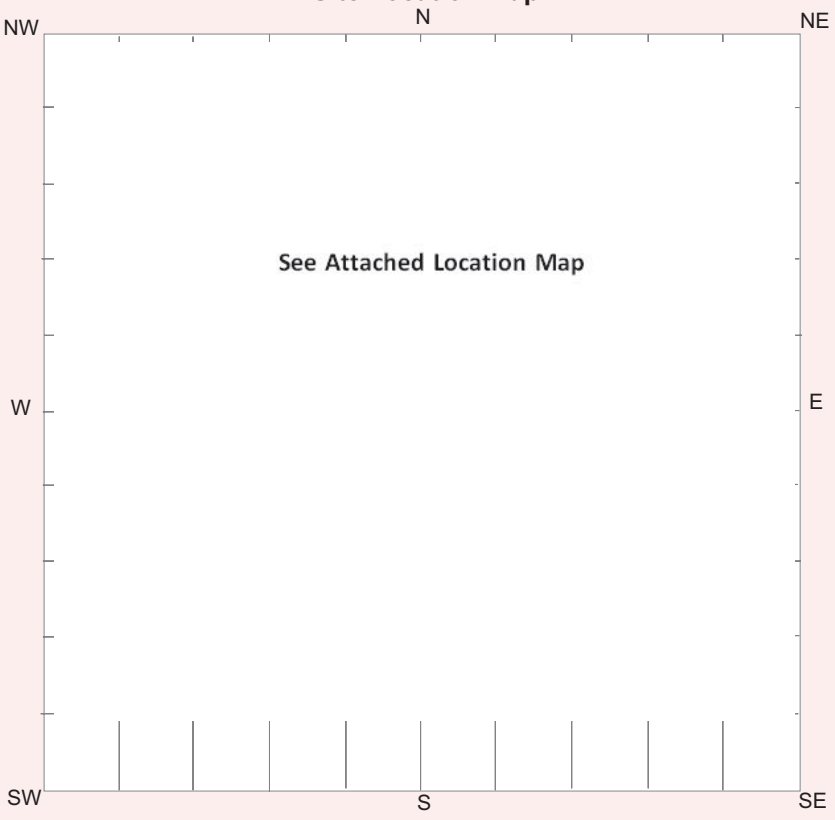
Water

Distance to permanent water source	150 metres
Distance to temporary water source	30 metres
Name of nearest permanent water source	Black Wat
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.:

Primary report I.D.

(I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

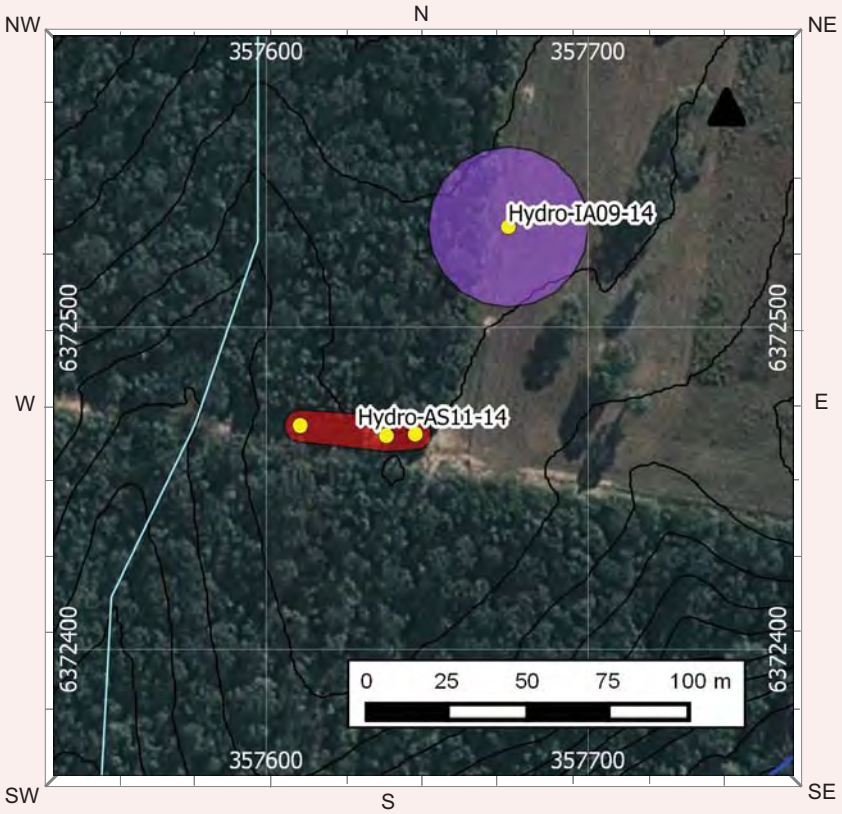
- [ ] N-S
- [ ] NE-SW
- [x] E-W
- [ ] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open Site Dimensions (m)

- [ ] Total length of visible site
- [ ] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-AS11-14 comprises a low density artefact scatter on an unsealed east-west trending access track/fire trail running between Lot 1 on DP166625 and Lot 316 on DP755231. The site is situated on a level to very gently inclined elevated 'flat' that gives way to the west to an unnamed 1st order drainage depression. Surrounding native vegetation comprises regenerating Kurri Sand Swamp Woodland. Three artefacts were identified along a c.40 m section of the access track at a maximum density of 1 artefact per m² . Recorded artefacts (n = 3) include 1 complete silcrete flake, 1 silcrete flake shatter fragment and 1 silcrete heat shatter. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-AS11-14

Plate 1 View across site Hydro-AS11-14, looking west

Aboriginal Site Recording Form

AHIMS Aboriginal Heritage Information Management System

NSW GOVERNMENT Office of Environment & Heritage

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office Use Only

Site Number __ - __ - ____

Date received __/__/__ Date entered into system __/__/__ Date catalogued __/__/__

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title	Surname	First Name	Initials

Organisation

Address

Phone number Fax

Client on system ☐

☐ **Knowledge Holder**

Title	Surname	First Name	Initials

Organisation

Address

Phone number Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-AS12-14

Easting: 357175 Northing: 6372186 AGD/GDA: GDA

Mapsheet

Zone 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 89340001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [x] Undulating plain

Slope

[ ] degrees

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [x] Crest
- [ ] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [x] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

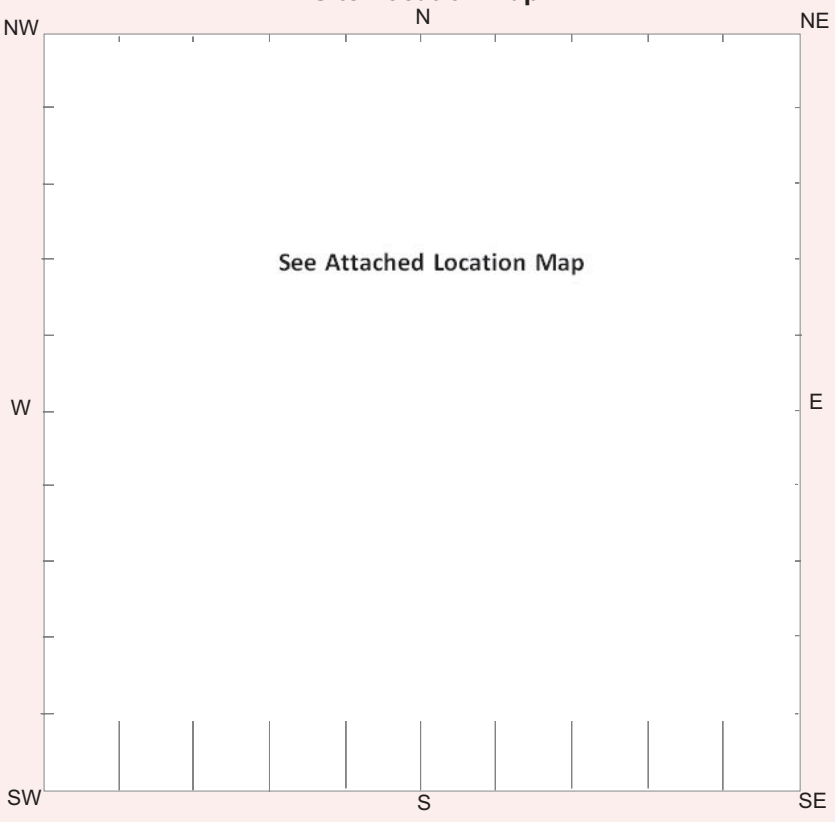
Water

Distance to permanent water source	-5 metres
Distance to temporary water source	-5 metres
Name of nearest permanent water source	Black Wat
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.:

Primary report I.D.

(I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- ☐ Boulder
- ☐ Wind erosion
- ☐ Water erosion
- ☐ Rock collapse

Rock Surface Condition

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Condition of Ceiling

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Shelter Aspect

- ☐ North
- ☐ North East
- ☐ East
- ☐ South East
- ☐ South
- ☐ South West
- ☐ West
- ☐ North West

Open Site

Site Orientation

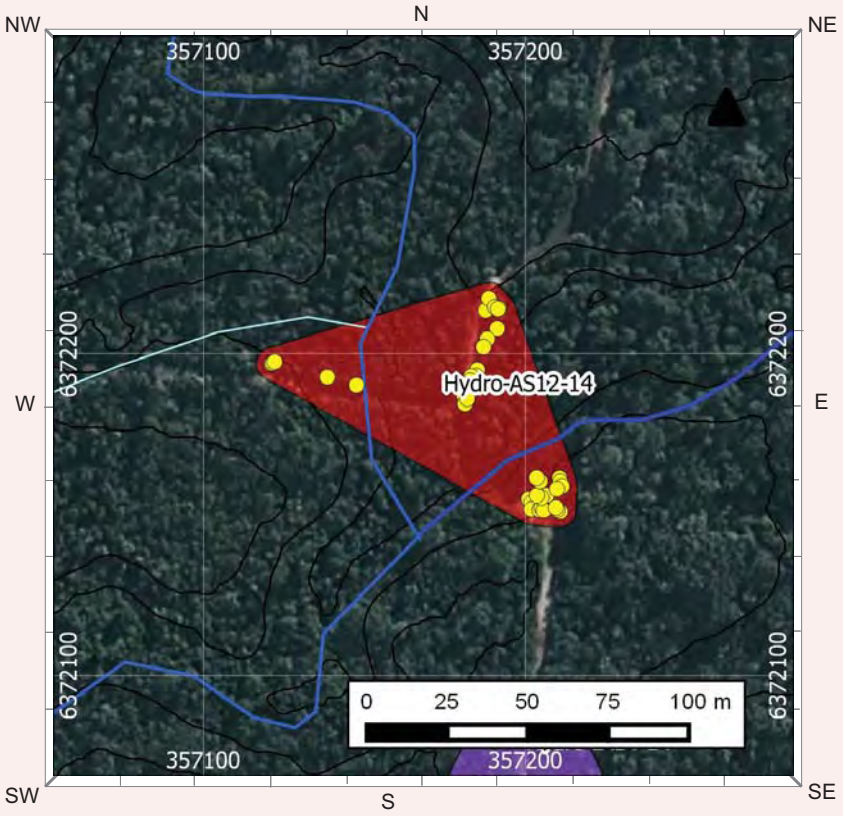
- ☑ N-S
- ☐ NE-SW
- ☐ E-W
- ☐ SE-NW
- ☐ N/A

Features

- ☐ 1. Aboriginal Ceremony & Dreaming
- ☐ 2. Aboriginal Resource & Gathering
- ☐ 3. Art
- ☑ 4. Artefact
- ☐ 5. Burial
- ☐ 6. Ceremonial Ring
- ☐ 7. Conflict
- ☐ 8. Earth Mound
- ☐ 9. Fish Trap
- ☐ 10. Grinding Groove
- ☐ 11. Habitation Structure
- ☐ 12. Hearth
- ☐ 13. Non Human Bone & Organic Material
- ☐ 14. Ochre quarry
- ☐ 15. Potential Archaeological Deposit
- ☐ 16. Stone Quarry
- ☐ 17. Shell
- ☐ 18. Stone Arrangement
- ☐ 19. Modified Tree
- ☐ 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- ☐ Internal length
- ☐ Internal width
- ☐ Shelter height
- ☐ Shelter floor area

Open Site Dimensions (m)

- ☐ Total length of visible site
- ☐ Average width of visible site
- ☐ Estimated area of visible site
- ☐ Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-AS12-14 is an artefact scatter located around MGA grid reference 357175 6372186 on Lot 316 of DP755231. The site is situated across a series of elevated, low gradient rises/spur crests adjacent to Black Waterholes Creek. Identified artefacts occur principally on unsealed access tracks/ fire trails but also in adjacent erosion exposures. Bordering native vegetation comprises regenerating Kurri Sand Swamp Woodland. Three loose 'clusters' incorporating 19 (northern), 18 (southern) and 5 (western) artefacts respectively are apparent, with a max observed density of 5 artefacts per m2. Recorded artefacts (n = 42) include 16 complete flakes, 4 proximal flakes, 2 split flakes, 9 flake shatter fragments, 5 flaked pieces, 3 heat shatters, 1 unidirectional core, 1 bifacial core and 1 thumbnail scraper. Silcrete (30) is the dominant raw material, followed by silicified tuff (9), quartz (2) and quartzite (1). Overall site condition can be characterised as poor. Relevant disturbance factors include access track / fire trail use, native vegetation clearance and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-AS12-14

Plate 1 Hydro-AS12-14: silcrete bifacial core (left) and unidirectional silicified tuff core (right)

Plate 2 Hydro-AS12-14: silcrete thumbnail scraper

Plate 3 View across part of site Hydro-AS12-14, looking south

Plate 4 View across part of site Hydro-AS12-14, looking southeast

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage
NSW GOVERNMENT

Office Use Only

Site Number | | | _ | | _ | | | | | |

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-AS13-14

Easting: 357378 Northing: 6372130 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [x] Flat
- [ ] Lower slope
- [ ] Mid slope
- [x] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

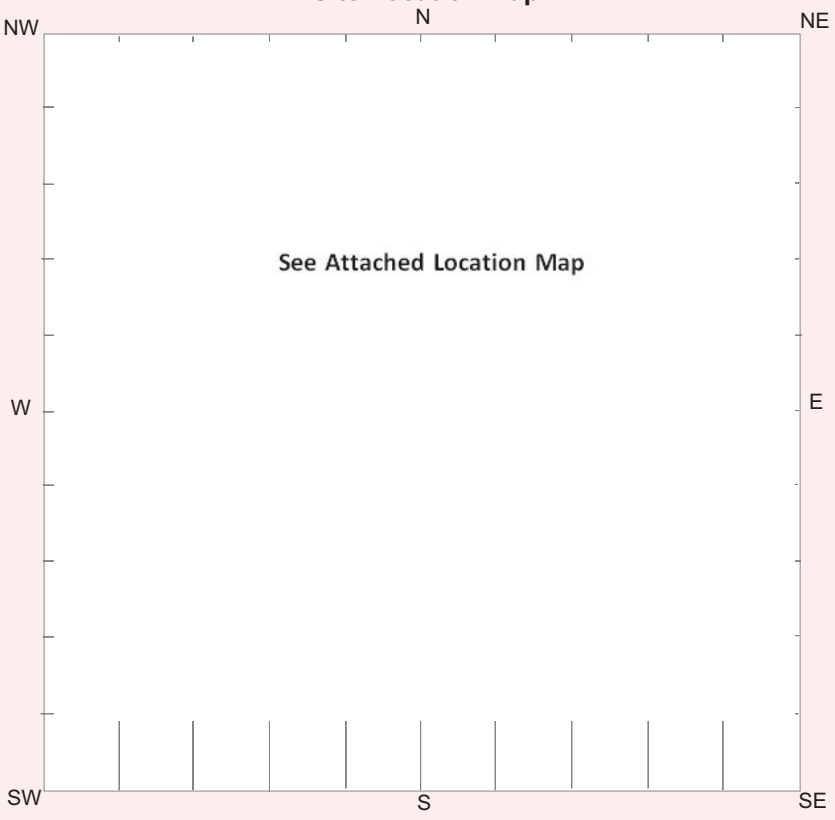
Water

Distance to permanent water source	25 metres
Distance to temporary water source	220 metres
Name of nearest permanent water source	Black Wat
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report I.D. (I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

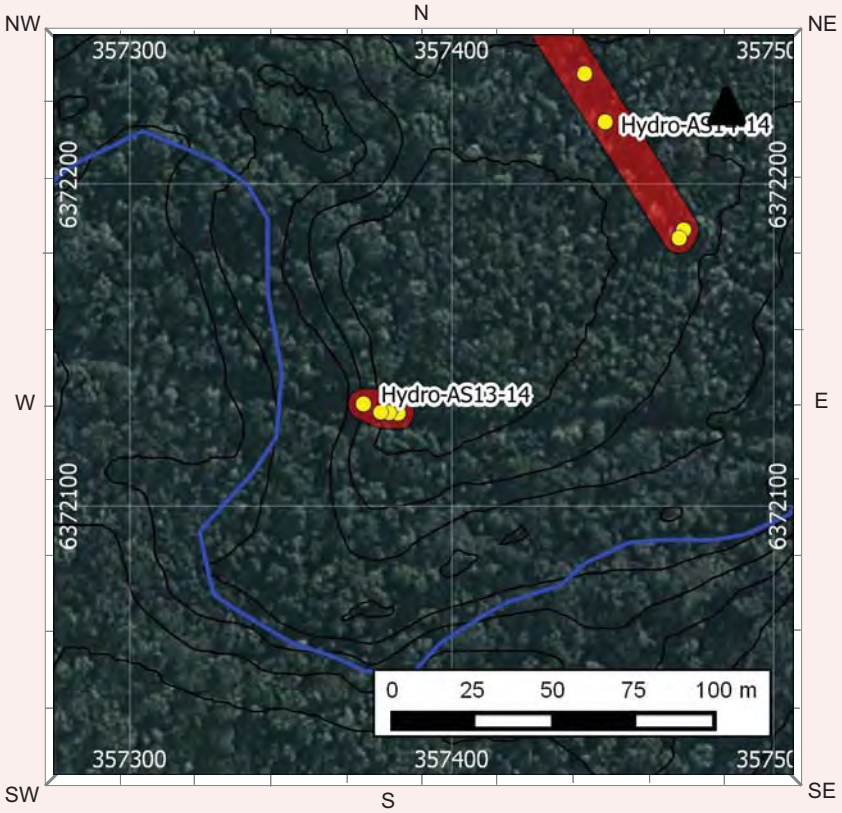
- [ ] N-S
- [ ] NE-SW
- [x] E-W
- [ ] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open Site Dimensions (m)

- [ ] Total length of visible site
- [ ] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-AS13-14 comprises a low density artefact scatter on an unsealed east-west trending access track/fire trail on Lot 316 of DP755231. The site is situated on the western edge of a level to very gently inclined elevated 'flat' bordered to the west by a short, moderately inclined simple slope leading down to Black Waterholes Creek c.25 m to the west of the site. Surrounding native vegetation comprises regenerating Kurri Sand Swamp Woodland and Lowland Redgum Forest, with the latter occurring to the west of the site in association with Black Waterholes Creek. Seven artefacts were identified along a c.10 m section of the access track at a maximum density of 2 artefacts per m². The westernmost identified artefact, located on the bordering moderately inclined simple slope, appears to have washed into place from further upslope. Recorded artefacts (n = 7) include 3 complete flakes (1 x silicified tuff, 2 x silcrete), 2 silcrete heat shatters and 2 silcrete flaked pieces. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track use, ant activity and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-AS13-14

Plate 1 View across site Hydro-AS13-14, looking west

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___ ___

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-AS14-14

Easting: 357432 Northing: 6372247 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title | Surname | First Name | Initials

Dr | McLaren | Andrew

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [x] Flat
- [x] Lower slope
- [x] Mid slope
- [x] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

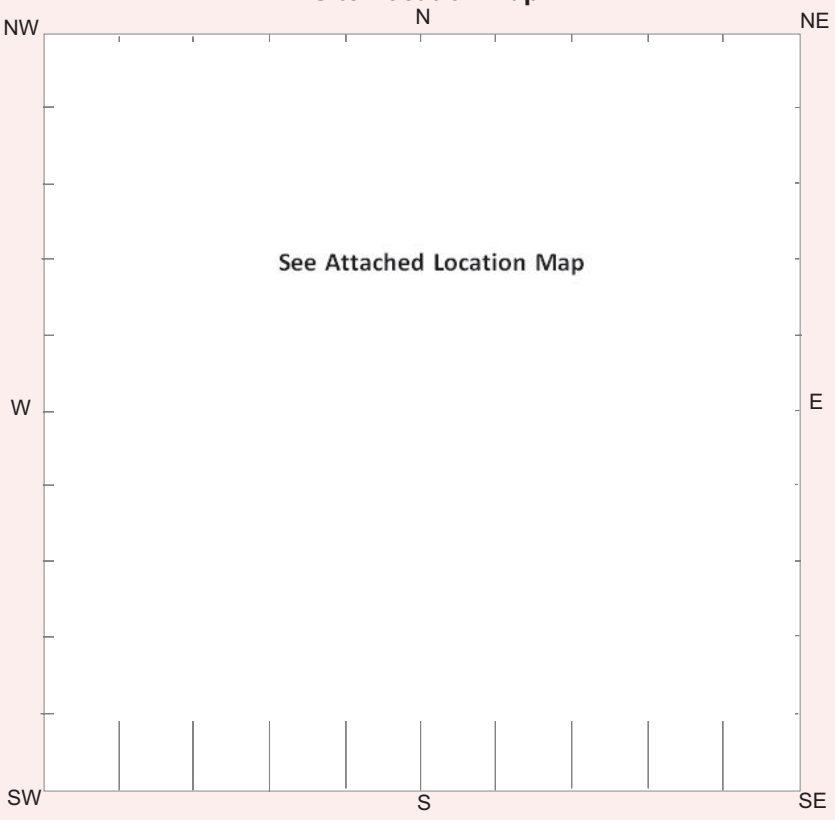
Water

Distance to permanent water source	60 metres
Distance to temporary water source	90 metres
Name of nearest permanent water source	Black Wat
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report I.D.

(I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- ☐ Boulder
- ☐ Wind erosion
- ☐ Water erosion
- ☐ Rock collapse

Rock Surface Condition

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Condition of Ceiling

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Shelter Aspect

- ☐ North
- ☐ North East
- ☐ East
- ☐ South East
- ☐ South
- ☐ South West
- ☐ West
- ☐ North West

Open Site

Site Orientation

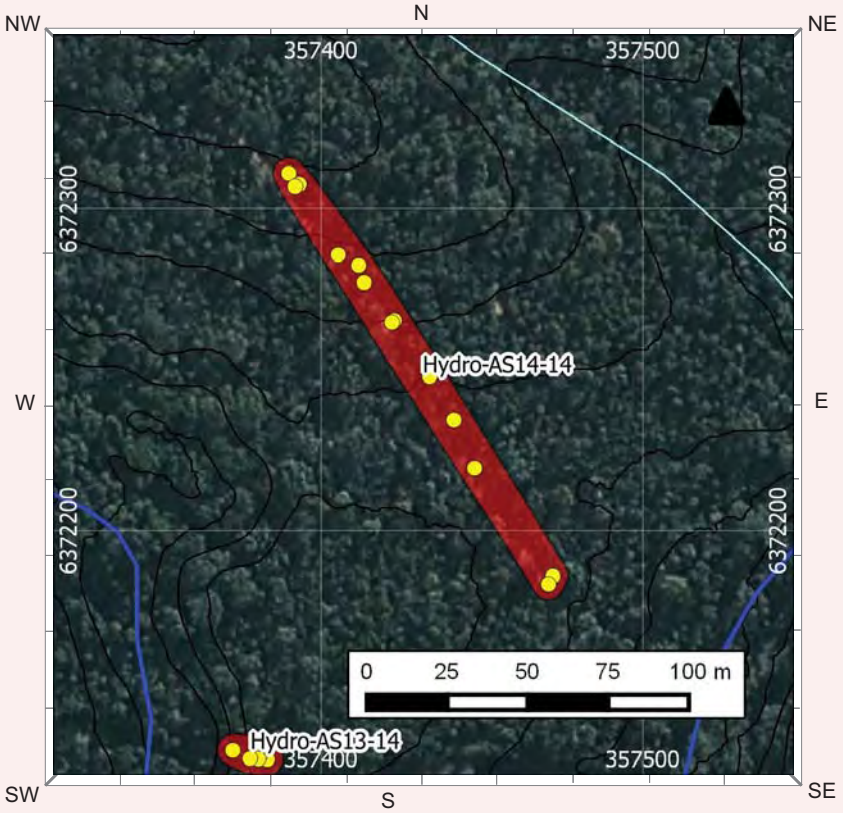
- ☐ N-S
- ☐ NE-SW
- ☐ E-W
- ☑ SE-NW
- ☐ N/A

Features

- ☐ 1. Aboriginal Ceremony & Dreaming
- ☐ 2. Aboriginal Resource & Gathering
- ☐ 3. Art
- ☑ 4. Artefact
- ☐ 5. Burial
- ☐ 6. Ceremonial Ring
- ☐ 7. Conflict
- ☐ 8. Earth Mound
- ☐ 9. Fish Trap
- ☐ 10. Grinding Groove
- ☐ 11. Habitation Structure
- ☐ 12. Hearth
- ☐ 13. Non Human Bone & Organic Material
- ☐ 14. Ochre quarry
- ☐ 15. Potential Archaeological Deposit
- ☐ 16. Stone Quarry
- ☐ 17. Shell
- ☐ 18. Stone Arrangement
- ☐ 19. Modified Tree
- ☐ 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- ☐ Internal length
- ☐ Internal width
- ☐ Shelter height
- ☐ Shelter floor area

Open Site Dimensions (m)

- ☐ Total length of visible site
- ☐ Average width of visible site
- ☐ Estimated area of visible site
- ☐ Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-AS14-14 comprises a low density artefact scatter on an unsealed NW-SE trending access track/fire trail on Lot 316 of DP755231. The site is situated on a gently inclined simple slope that transitions towards the southeast into a level to very gently inclined elevated 'flat'. Surrounding native vegetation comprises regenerating Kurri Sand Swamp Woodland. Seven artefacts were identified along a c.150 m section of the access track at a maximum density of 2 artefacts per m². Recorded artefacts (n = 7) include 8 complete flakes (3 x silicified tuff, 4 x silcrete and 1 x quartz), 3 flake shatter fragments (2 x silicified tuff, 1 x silcrete) and two flaked pieces (1 x silcrete, 1 x silicified tuff). Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-AS14-14

Plate 1 View across part of site Hydro-AS14-14, looking north (flags removed)

Plate 2 View across part of site Hydro-AS14-14, looking northwest

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

NSW GOVERNMENT Office of Environment & Heritage

Office Use Only

Site Number | | | _ | | _ | | | | | |

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Client on system ☐

Client on system ☐

Geographic Location

Site Name: Hydro-AS15-14

Easting: 357565 Northing: 6372127 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title | Surname | First Name | Initials

Dr | McLaren | Andrew

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [ ] Lower slope
- [x] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

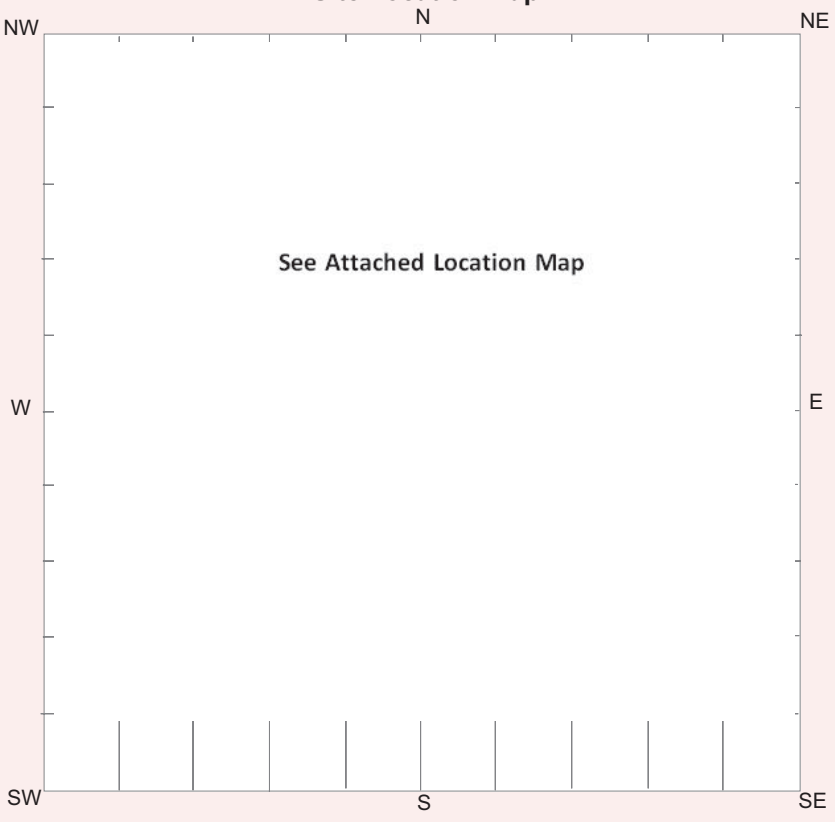
Water

Distance to permanent water source	50 metres
Distance to temporary water source	metres
Name of nearest permanent water source	Black Wat
Name of nearest temporary water	

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.:

Primary report I.D.

(I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

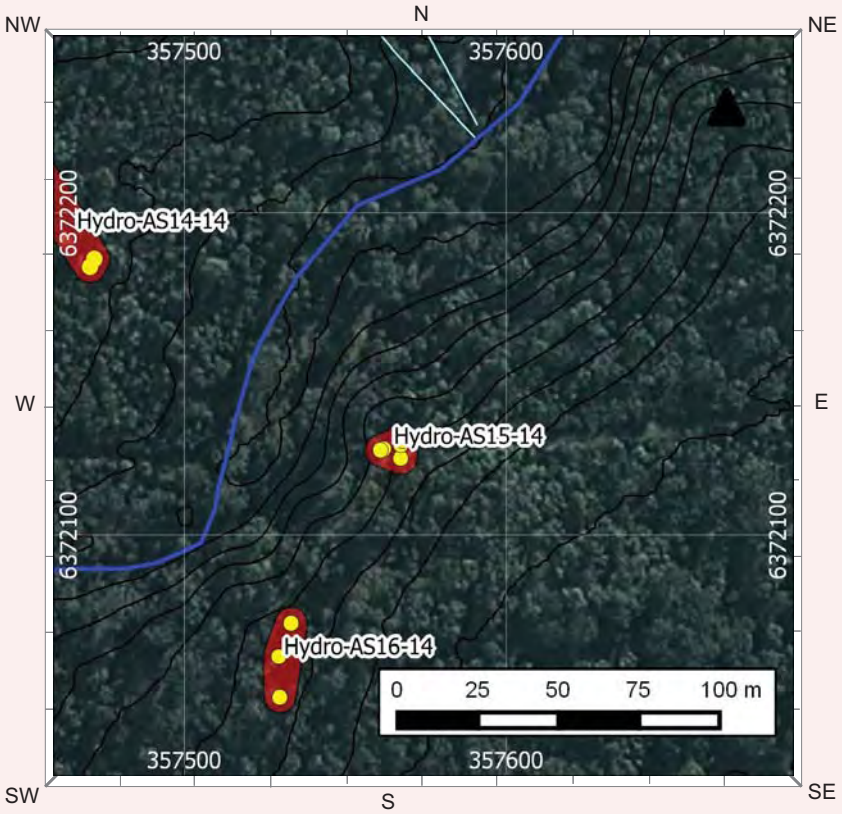
- [ ] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [x] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open Site Dimensions (m)

- [ ] Total length of visible site
- [ ] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-AS15-14 comprises a low density artefact scatter on an unsealed east-west trending access track/fire trail on Lot 316 of DP755231. The site is situated on a gently to moderately inclined simple slope around 50 m east of Black Waterholes Creek . Surrounding native vegetation comprises regenerating Lowland Redgum Forest. Five artefacts were identified along a c.7 m section of the access track at a maximum density of 2 artefacts per m². Recorded artefacts (n = 5) include 1 complete silcrete flake, 3 silcrete flake shatter fragments and 1 silcrete heat shatter. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-AS15-14

Plate 1 View across site Hydro-AS15-14, looking west

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___-___-____

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-AS16-14

Easting: 357531 Northing: 6372061 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title | Surname | First Name | Initials

Dr | McLaren | Andrew

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [ ] Lower slope
- [x] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

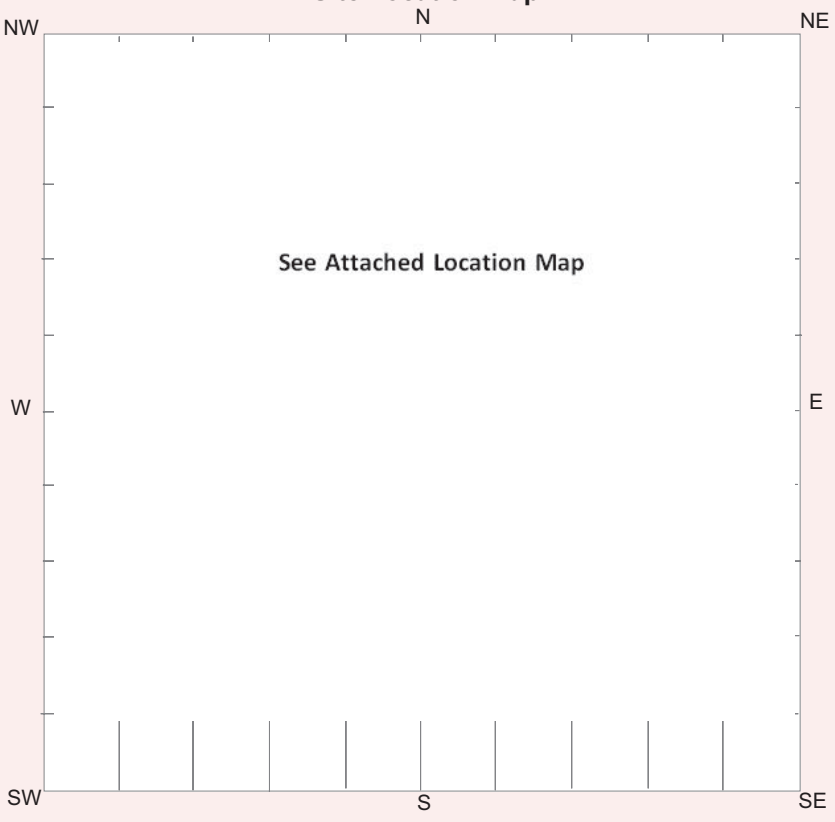
Water

Distance to permanent water source	40 metres
Distance to temporary water source	metres
Name of nearest permanent water source	Black Wat
Name of nearest temporary water	

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report I.D.

(I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

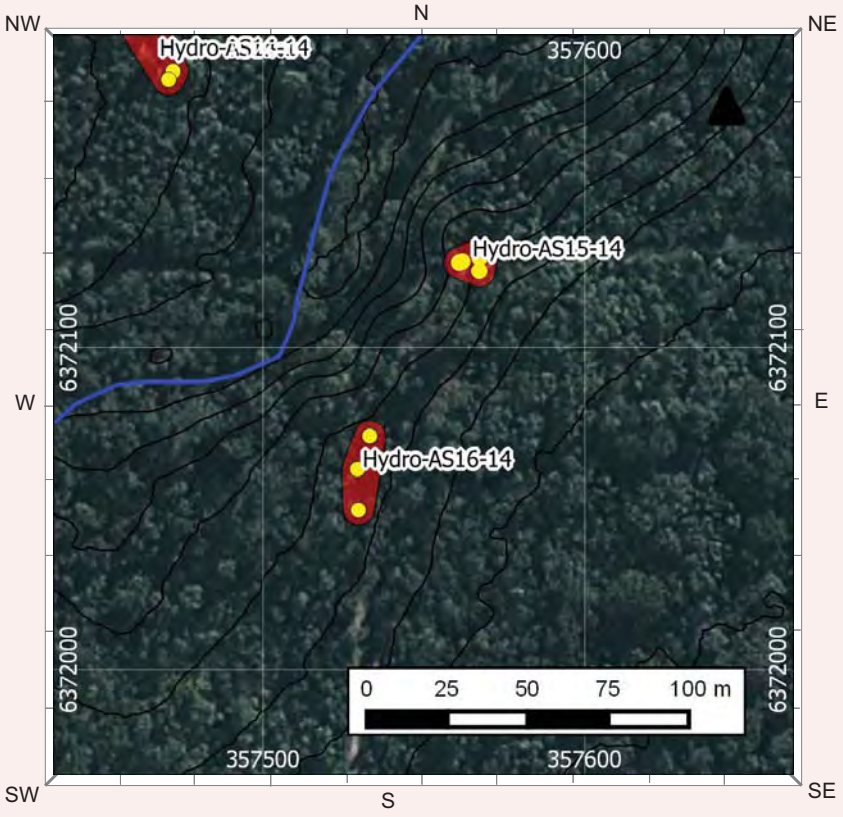
- [x] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open Site Dimensions (m)

- [ ] Total length of visible site
- [ ] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-AS16-14 comprises a low density artefact scatter on an unsealed north-south trending access track/fire trail on Lot 316 of DP755231. The site is situated on a gently inclined simple slope approximately 40 southeast of Black Waterholes Creek. Surrounding native vegetation comprises regenerating Lowland Redgum Forest. Three artefacts were identified along a c.20 m section of the access track at a maximum density of 1 artefact per m². Recorded artefacts include 2 complete silicified tuff flakes and 1 silcrete flaked piece. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-AS16-14

Plate 1 View across site Hydro-AS16-14, looking north

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___ ___

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-AS17-14

Easting: 357897 Northing: 6372119 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [x] Lower slope
- [x] Mid slope
- [x] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

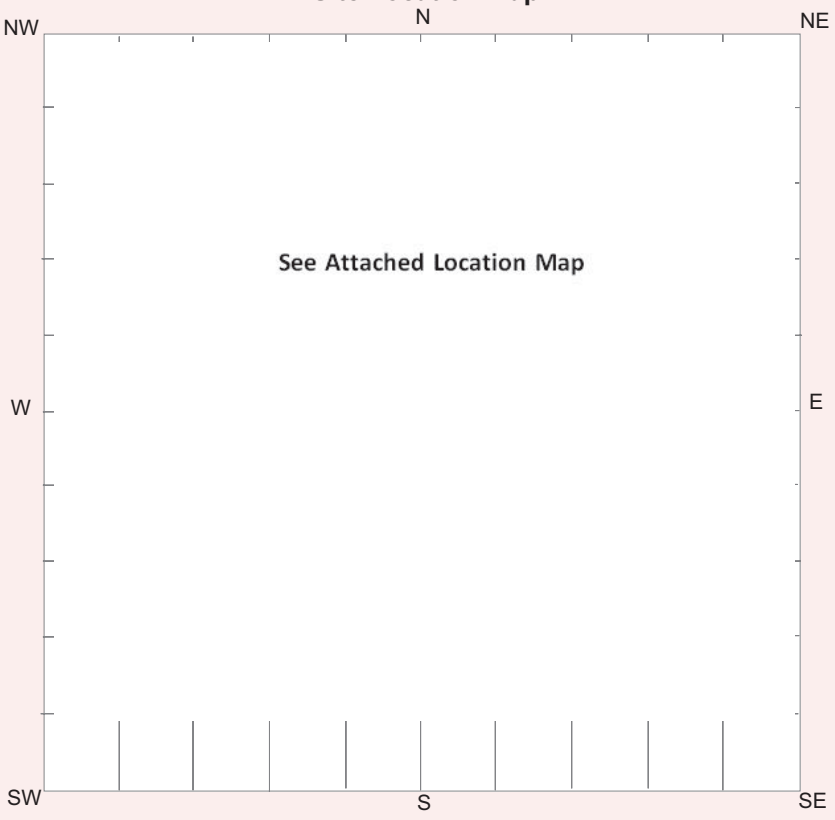
Water

Distance to permanent water source	120 metres
Distance to temporary water source	50 metres
Name of nearest permanent water source	Black Wat
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report I.D.

(I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

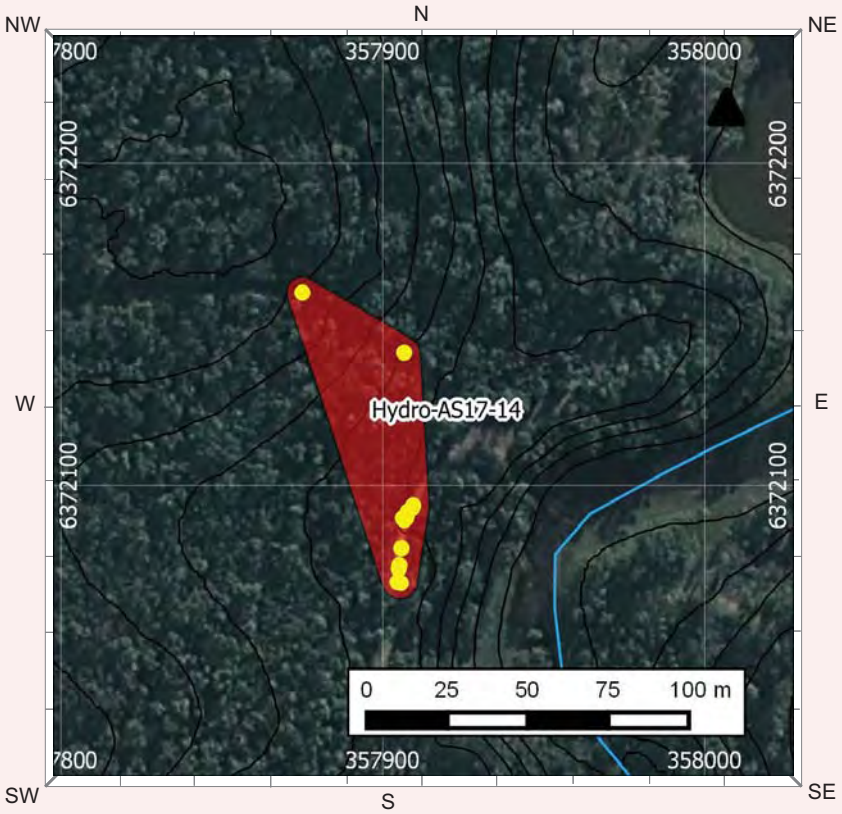
- [x] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open Site Dimensions (m)

- [ ] Total length of visible site
- [ ] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-AS17-14 comprises a low density artefact scatter on an unsealed access track/fire trail on Lot 317 of DP755231. The site is situated on a gently to very gently inclined simple slope to the west of an unnamed 2nd order tributary of Black Waterholes Creek. Surrounding native vegetation comprises regenerating Lowland Redgum Forest and Kurri Sand Swamp Woodland. Three artefacts were identified along a c.125 m section of the access track in two loose 'clusters'. The smaller of the two clusters contains only 2 artefacts (c.35 m apart). The larger cluster contains 12 artefacts, with a maximum observed density of 4 artefacts per m2. Recorded artefacts (n = 14) include 5 complete flakes (3 x silcrete, 2 x silicified tuff), 1 proximal silcrete flake, 1 silcrete flake shatter fragment and seven silcrete heat shatters. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track use, ant activity and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-AS17-14

Plate 1 View across part of site Hydro-AS17-14, looking south

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

AHIMS Aboriginal Heritage Information Management System

NSW Government | Office of Environment & Heritage

Office Use Only

Site Number __-__-____

Date received __/__/__ Date entered into system __/__/__ Date catalogued __/__/__

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title	Surname	First Name	Initials

Organisation

Address

Phone number Fax

Client on system ☐

☐ **Knowledge Holder**

Title	Surname	First Name	Initials

Organisation

Address

Phone number Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-AS18-14

Easting: 358062 Northing: 6372025 AGD/GDA: GDA

Mapsheet

Zone 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 89340001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [ ] Lower slope
- [x] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

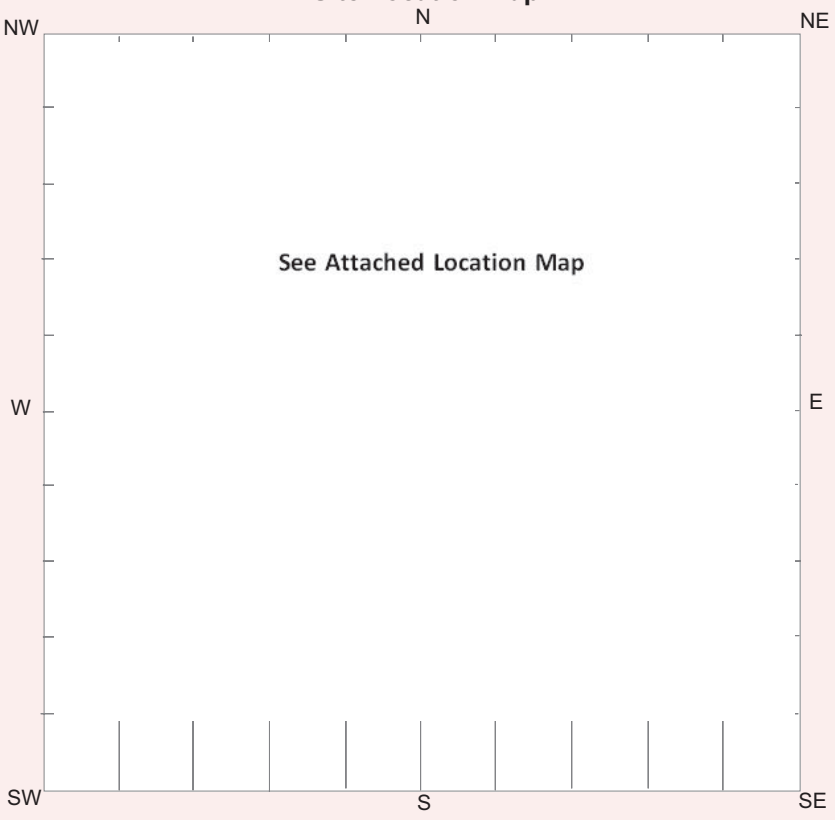
Water

Distance to permanent water source	130 metres
Distance to temporary water source	80 metres
Name of nearest permanent water source	Black Wat
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.:

Primary report I.D.

(I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- ☐ Boulder
- ☐ Wind erosion
- ☐ Water erosion
- ☐ Rock collapse

Rock Surface Condition

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Condition of Ceiling

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Shelter Aspect

- ☐ North
- ☐ North East
- ☐ East
- ☐ South East
- ☐ South
- ☐ South West
- ☐ West
- ☐ North West

Open Site

Site Orientation

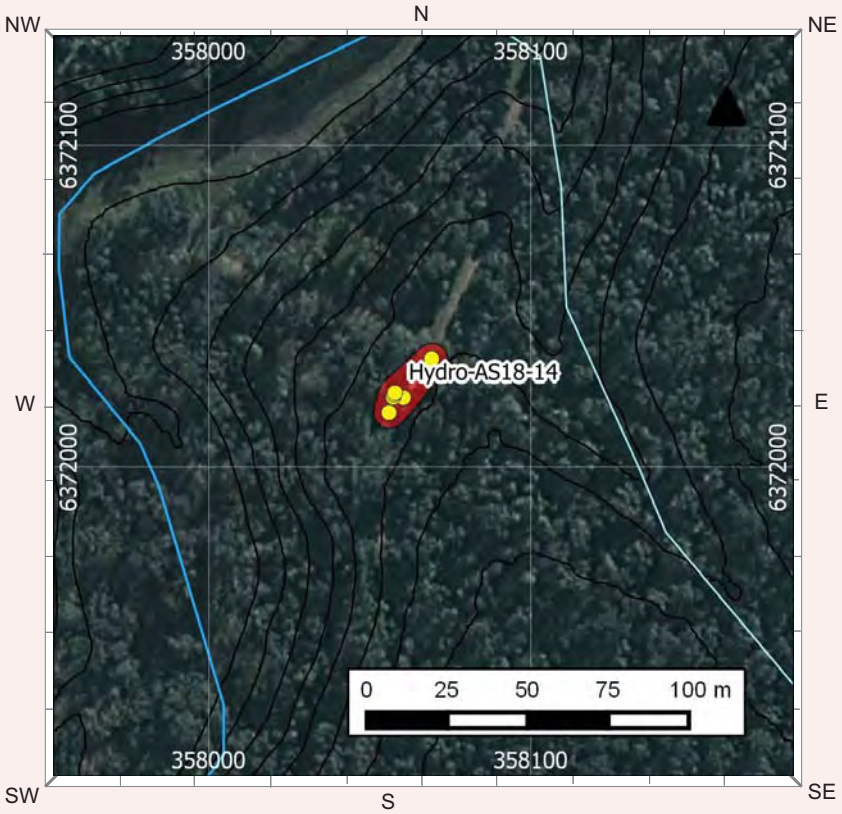
- ☐ N-S
- ☑ NE-SW
- ☐ E-W
- ☐ SE-NW
- ☐ N/A

Features

- ☐ 1. Aboriginal Ceremony & Dreaming
- ☐ 2. Aboriginal Resource & Gathering
- ☐ 3. Art
- ☑ 4. Artefact
- ☐ 5. Burial
- ☐ 6. Ceremonial Ring
- ☐ 7. Conflict
- ☐ 8. Earth Mound
- ☐ 9. Fish Trap
- ☐ 10. Grinding Groove
- ☐ 11. Habitation Structure
- ☐ 12. Hearth
- ☐ 13. Non Human Bone & Organic Material
- ☐ 14. Ochre quarry
- ☐ 15. Potential Archaeological Deposit
- ☐ 16. Stone Quarry
- ☐ 17. Shell
- ☐ 18. Stone Arrangement
- ☐ 19. Modified Tree
- ☐ 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- ☐ Internal length
- ☐ Internal width
- ☐ Shelter height
- ☐ Shelter floor area

Open Site Dimensions (m)

- ☐ Total length of visible site
- ☐ Average width of visible site
- ☐ Estimated area of visible site
- ☐ Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-AS18-14 comprises a low density artefact scatter on an unsealed north-south trending access track/fire trail on Lot 317 of DP755231. The site is situated on a gently inclined simple slope to the east of an unnamed 2nd order tributary of Black Waterholes Creek. Surrounding native vegetation comprises regenerating Lowland Redgum Forest. Six artefacts were identified along a c.20 m section of the access track at a maximum density of 2 artefacts per m² . Recorded artefacts (n = 6) include 3 complete FGS flakes, 2 heat shatters (1 x silcrete, 1 x silicified tuff) and 1 silcrete flaked piece. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-AS18-14

Plate 1 Hydro-AS18-14: FSG flakes

Plate 2 View across site Hydro-AS18-14, looking northeast

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number | | | – | | – | | | | |

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-AS19-14

Easting: 357827 Northing: 6371996 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [x] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

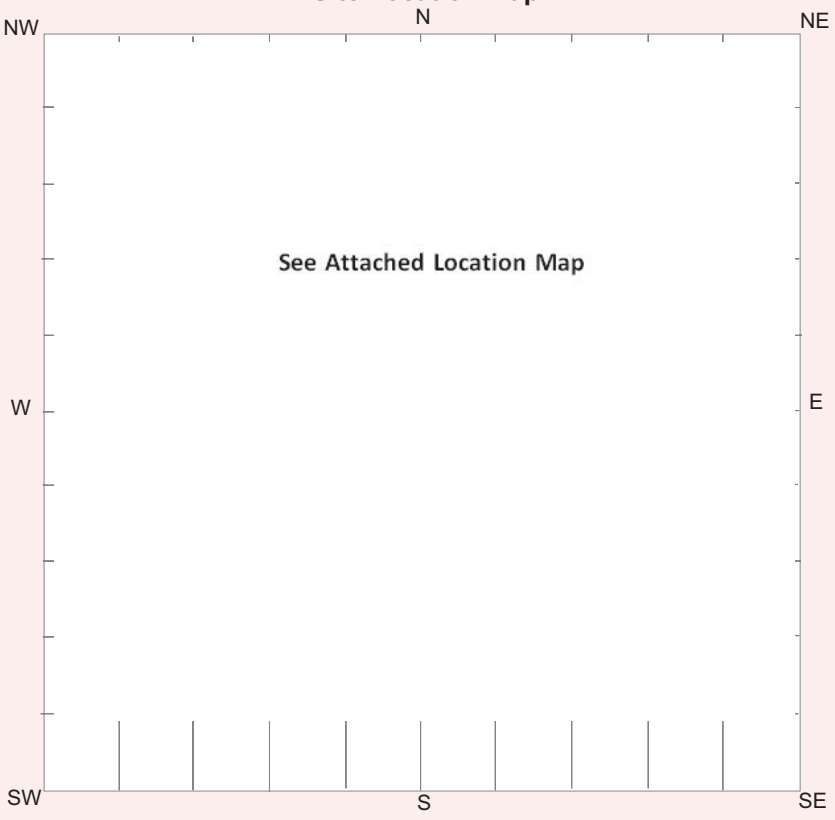
Water

Distance to permanent water source	250 metres
Distance to temporary water source	100 metres
Name of nearest permanent water source	Black Wat
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.:

Primary report

I.D. [ ] (I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- ☐ Boulder
- ☐ Wind erosion
- ☐ Water erosion
- ☐ Rock collapse

Rock Surface Condition

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Condition of Ceiling

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Shelter Aspect

- ☐ North
- ☐ North East
- ☐ East
- ☐ South East
- ☐ South
- ☐ South West
- ☐ West
- ☐ North West

Open Site

Site Orientation

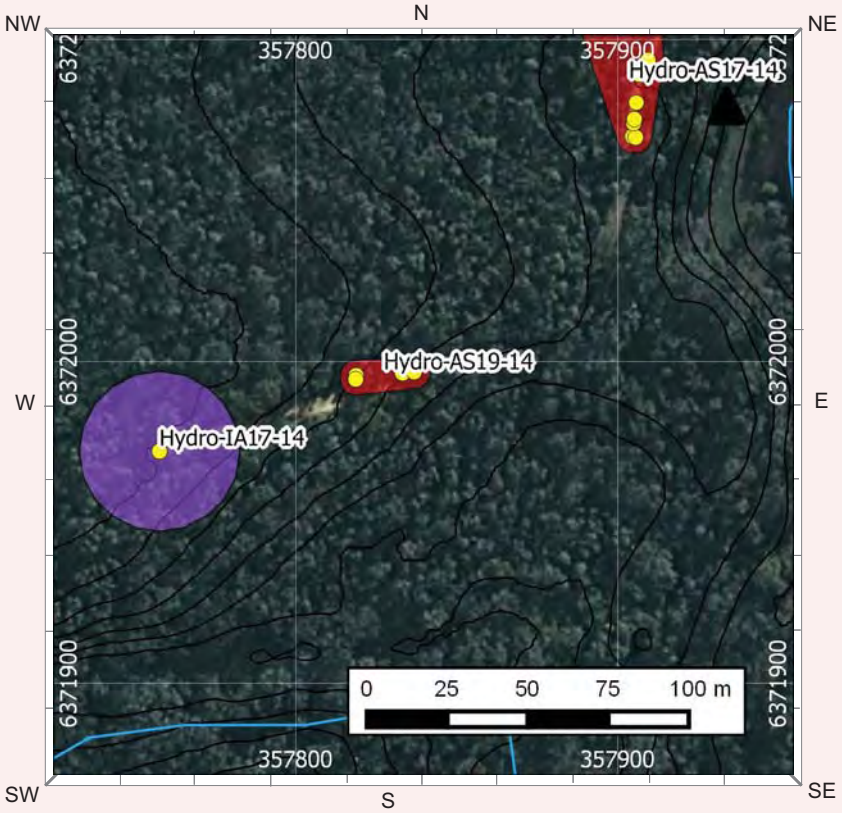
- ☐ N-S
- ☐ NE-SW
- ☑ E-W
- ☐ SE-NW
- ☐ N/A

Features

- ☐ 1. Aboriginal Ceremony & Dreaming
- ☐ 2. Aboriginal Resource & Gathering
- ☐ 3. Art
- ☑ 4. Artefact
- ☐ 5. Burial
- ☐ 6. Ceremonial Ring
- ☐ 7. Conflict
- ☐ 8. Earth Mound
- ☐ 9. Fish Trap
- ☐ 10. Grinding Groove
- ☐ 11. Habitation Structure
- ☐ 12. Hearth
- ☐ 13. Non Human Bone & Organic Material
- ☐ 14. Ochre quarry
- ☐ 15. Potential Archaeological Deposit
- ☐ 16. Stone Quarry
- ☐ 17. Shell
- ☐ 18. Stone Arrangement
- ☐ 19. Modified Tree
- ☐ 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- ☐ Internal length
- ☐ Internal width
- ☐ Shelter height
- ☐ Shelter floor area

Open Site Dimensions (m)

- ☐ Total length of visible site
- ☐ Average width of visible site
- ☐ Estimated area of visible site
- ☐ Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-AS19-14 comprises a low density artefact scatter on an unsealed NE-SW trending access track/fire trail on Lot 317 of DP755231. The site is situated on a gently inclined simple slope to the north of an unnamed 2nd order tributary of Black Waterholes Creek. Surrounding native vegetation comprises regenerating Kurri Sand Swamp Woodland. Four artefacts were identified along a c.20 m section of the access track at a maximum density of 2 artefacts per m² . Recorded artefacts include 2 complete flakes (1 x silcrete, 1 x silicified tuff), 1 silcrete flake shatter fragment and 1 silcrete heat shatter. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track use and significant erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-AS19-14

Plate 1 View across site Hydro-AS19-14, looking northeast

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___-___-____

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name Hydro-AS20-14

Easting 358459 Northing 6371828 AGD/GDA GDA

Mapsheet

Zone 56 Location Method Differential GPS

Other Registration

Primary Recorder

Title | Surname | First Name | Initials

Dr | McLaren | Andrew

Organisation AECOM Australia Pty Ltd

Address 420 George Street Sydney NSW

Phone number 89340000 Fax 893400001

Date recorded 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [x] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [x] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

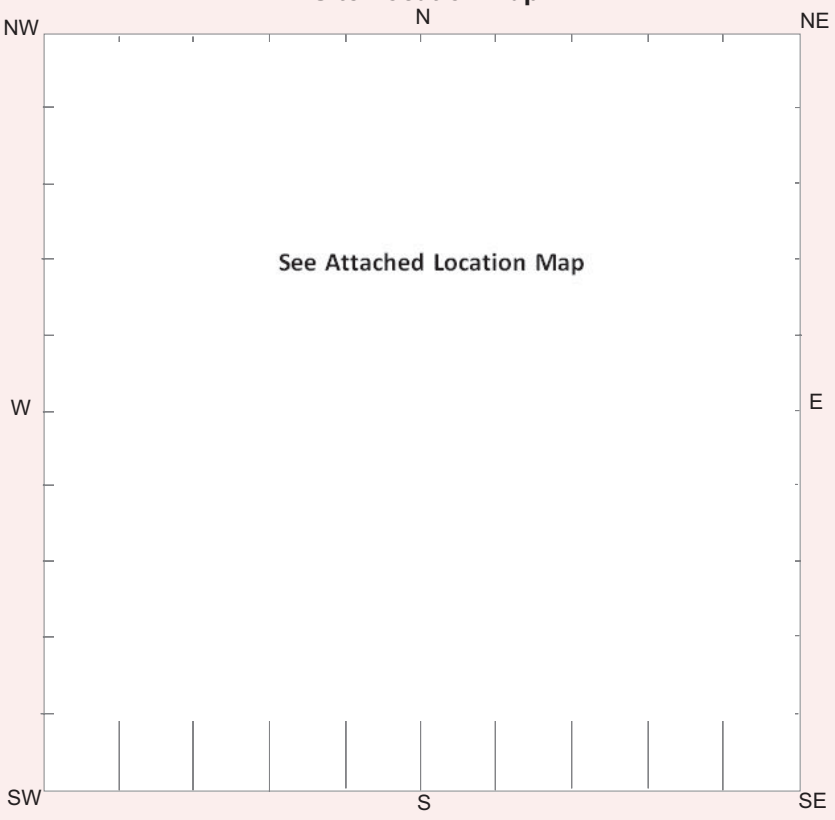
Water

Distance to permanent water source	335 metres
Distance to temporary water source	260 metres
Name of nearest permanent water source	Swamp Ck
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via 'Wangara' property, off Main Road, south of Gillieston Heights. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report **I.D.** [ ] (I.D. Office Use only)

'Hydro Aluminium Smelter Site & Associated Buffer Land - Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- ☐ Boulder
- ☐ Wind erosion
- ☐ Water erosion
- ☐ Rock collapse

Rock Surface Condition

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Condition of Ceiling

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Shelter Aspect

- ☐ North
- ☐ North East
- ☐ East
- ☐ South East
- ☐ South
- ☐ South West
- ☐ West
- ☐ North West

Open Site

Site Orientation

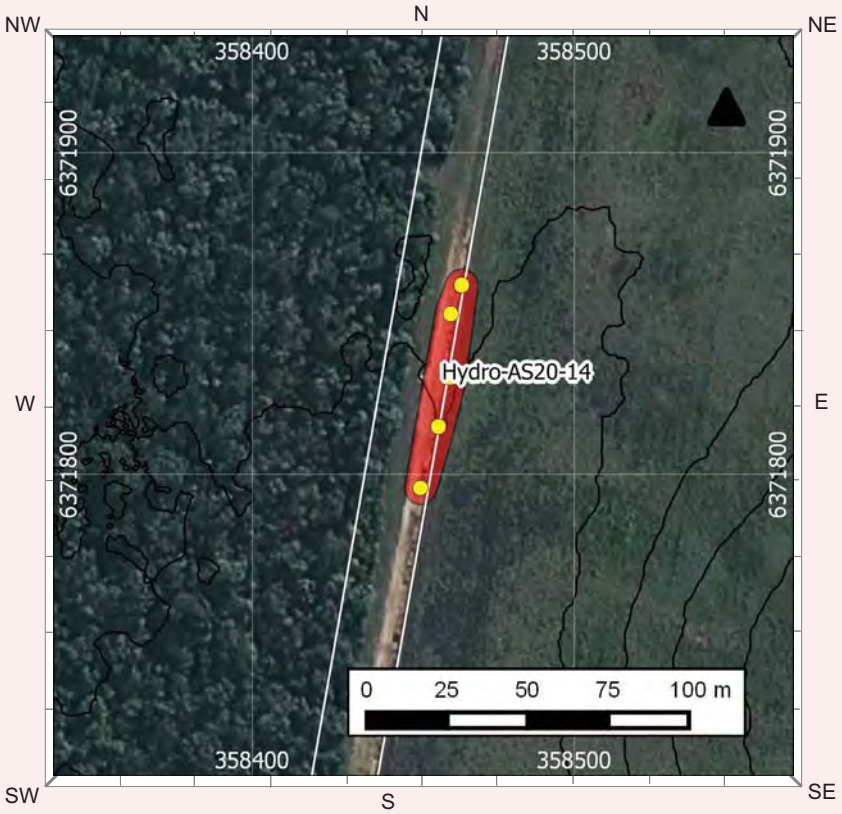
- ☑ N-S
- ☐ NE-SW
- ☐ E-W
- ☐ SE-NW
- ☐ N/A

Features

- ☐ 1. Aboriginal Ceremony & Dreaming
- ☐ 2. Aboriginal Resource & Gathering
- ☐ 3. Art
- ☑ 4. Artefact
- ☐ 5. Burial
- ☐ 6. Ceremonial Ring
- ☐ 7. Conflict
- ☐ 8. Earth Mound
- ☐ 9. Fish Trap
- ☐ 10. Grinding Groove
- ☐ 11. Habitation Structure
- ☐ 12. Hearth
- ☐ 13. Non Human Bone & Organic Material
- ☐ 14. Ochre quarry
- ☐ 15. Potential Archaeological Deposit
- ☐ 16. Stone Quarry
- ☐ 17. Shell
- ☐ 18. Stone Arrangement
- ☐ 19. Modified Tree
- ☐ 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- ☐ Internal length
- ☐ Internal width
- ☐ Shelter height
- ☐ Shelter floor area

Open Site Dimensions (m)

- ☐ Total length of visible site
- ☐ Average width of visible site
- ☐ Estimated area of visible site
- ☐ Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-AS20-14 comprises a low density artefact scatter on and adjacent to an unsealed north-south trending access track/fire trail running along the eastern boundary of Lot 317 on DP755231. The site is situated on the eastern side of the broad, level to very gently inclined 'plateau' that houses the Hydro smelter complex at its southern end. Native vegetation to the west of the site comprises regenerating Kurri Sand Swamp Woodland. Five artefacts were identified along a c.65 m section of the access track and adjacent deflated spoil pile at a maximum density of 1 artefact per m². The spoil pile is associated with a drainage channel constructed parallel and adjacent to the access track. Recorded artefacts (n = 5) include 1 complete silcrete flake, 2 split flakes (1 x silcrete, 1 x silicified tuff) and 2 flake shatter fragments (1 x silcrete, 1 x silicified tuff). Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track use, earthworks and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-AS20-14

Plate 1 View across site Hydro-AS20-14, looking south

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___-___-____

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-AS21-14

Easting: 357637 Northing: 6371864 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title | Surname | First Name | Initials

Dr | McLaren | Andrew

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [ ] Lower slope
- [ ] Mid slope
- [x] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

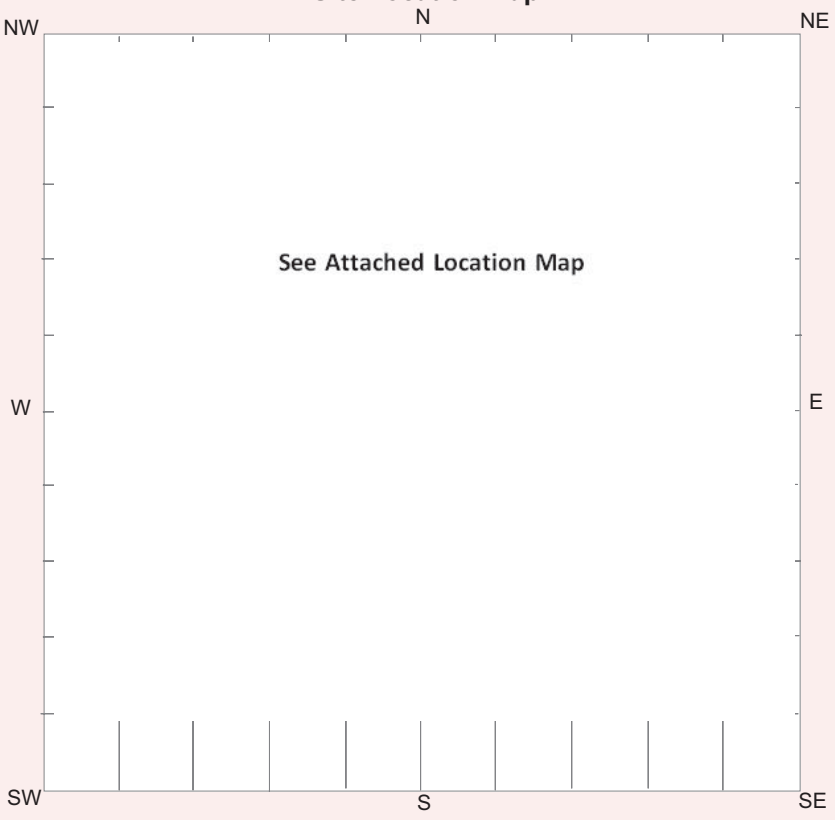
Water

Distance to permanent water source	270 metres
Distance to temporary water source	60 metres
Name of nearest permanent water source	Black Wat
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report I.D.

(I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- ☐ Boulder
- ☐ Wind erosion
- ☐ Water erosion
- ☐ Rock collapse

Rock Surface Condition

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Condition of Ceiling

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Shelter Aspect

- ☐ North
- ☐ North East
- ☐ East
- ☐ South East
- ☐ South
- ☐ South West
- ☐ West
- ☐ North West

Open Site

Site Orientation

- ☑ N-S
- ☐ NE-SW
- ☐ E-W
- ☐ SE-NW
- ☐ N/A

Features

- ☐ 1. Aboriginal Ceremony & Dreaming
- ☐ 2. Aboriginal Resource & Gathering
- ☐ 3. Art
- ☑ 4. Artefact
- ☐ 5. Burial
- ☐ 6. Ceremonial Ring
- ☐ 7. Conflict
- ☐ 8. Earth Mound
- ☐ 9. Fish Trap
- ☐ 10. Grinding Groove
- ☐ 11. Habitation Structure
- ☐ 12. Hearth
- ☐ 13. Non Human Bone & Organic Material
- ☐ 14. Ochre quarry
- ☐ 15. Potential Archaeological Deposit
- ☐ 16. Stone Quarry
- ☐ 17. Shell
- ☐ 18. Stone Arrangement
- ☐ 19. Modified Tree
- ☐ 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features

Site Dimensions

Closed Site Dimensions (m)

- ☐ Internal length
- ☐ Internal width
- ☐ Shelter height
- ☐ Shelter floor area

Open Site Dimensions (m)

- ☐ Total length of visible site
- ☐ Average width of visible site
- ☐ Estimated area of visible site
- ☐ Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-AS21-14 comprises an artefact scatter on an unsealed north-south trending access track/fire trail running - at this point along its course - along the boundary of Lots 316 and 317 of DP755231. The site is situated on a gently inclined simple slope on the eastern side of a level to very gently inclined elevated 'flat' or plateau to the northwest of the existing Hydro smelter complex. An unnamed 2nd order tributary of Black Waterholes Creek is located around 60 m to the west of the site. Surrounding native vegetation comprises regenerating Kurri Sand Swamp Woodland (to the west) and Lowland Redgum Forest (to the east). The site comprises two artefacts - both complete flakes (1 x silcrete, 1 x silicified tuff) - approximately 13 m apart. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-AS21-14

Plate 1 Hydro-AS21-14: silcrete flake

Plate 2 View across site Hydro-AS21-14, looking south

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___ ___

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-AS22-14

Easting: 357458 Northing: 6371685 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [x] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [x] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [x] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

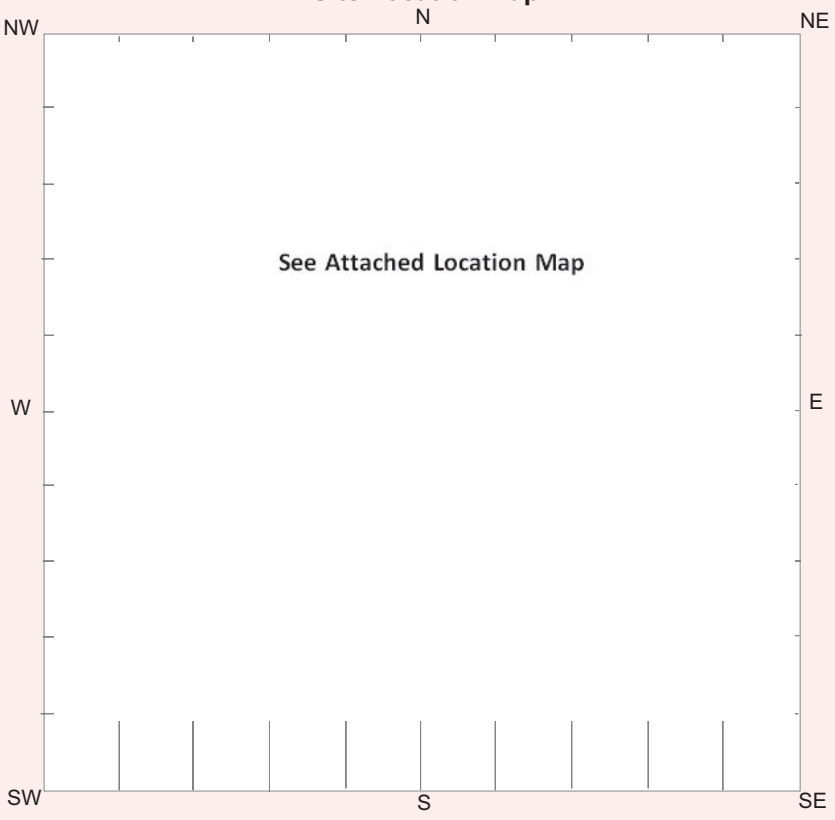
Water

Distance to permanent water source	340 metres
Distance to temporary water source	70 metres
Name of nearest permanent water source	Black Ck
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report I.D. (I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

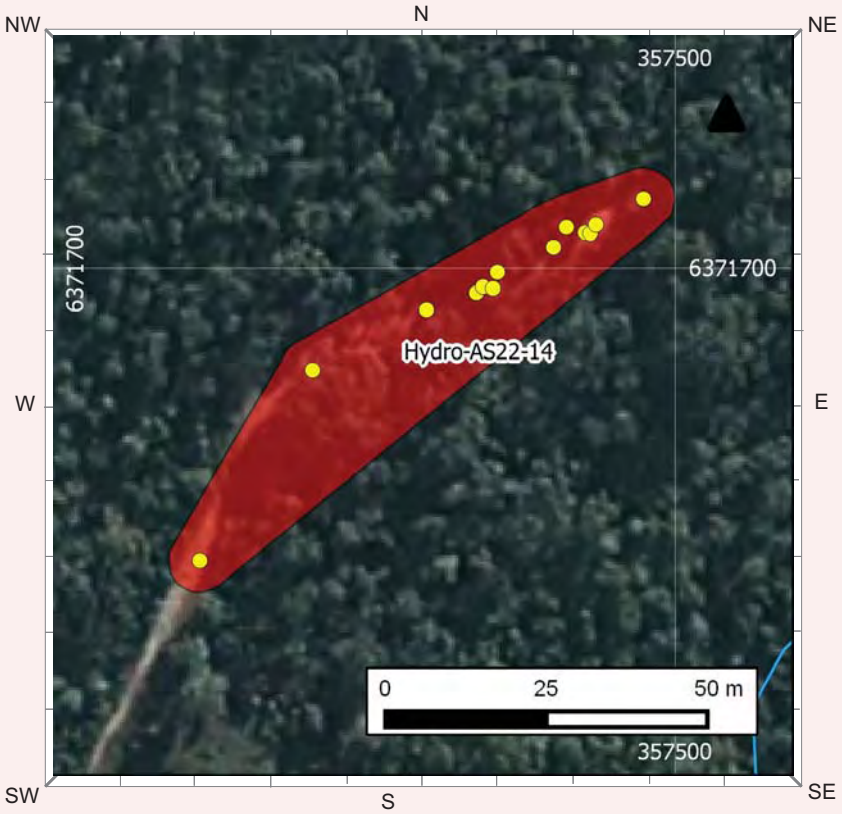
- [ ] N-S
- [x] NE-SW
- [ ] E-W
- [ ] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open Site Dimensions (m)

- [ ] Total length of visible site
- [ ] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-AS22-14 consists of a low density artefact scatter on an unsealed access track/fire trail on Lot 319 of DP755231. The site is situated on a gently inclined simple slope approximately 150 m northwest of the existing Hydro smelter complex and c.70 to 90 m west of an unnamed 2nd order tributary of Black Waterholes Creek. Surrounding native vegetation comprises regenerating Kurri Sand Swamp Woodland and Broad-leaved Ironbark Forest. Thirteen artefacts were identified along a c.95 m section of the access track at a maximum density of 2 artefacts per m² . Recorded artefacts (n = 13) include 4 complete flakes, 3 proximal flakes, 4 flake shatter fragments, 1 flaked piece and1 heat shatter. All but one artefact - manufactured out of silicified tuff - were made out of silcrete. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-AS22-14

Plate 1 View across part of site Hydro-AS22-14, looking southwest

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___-___-____

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-AS23-14

Easting: 358476 Northing: 6371563 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title: Dr | Surname: McLaren | First Name: Andrew | Initials

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [x] Undulating plain

Slope

[ ] degrees

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [ ] Lower slope
- [ ] Mid slope
- [x] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [x] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] N/A

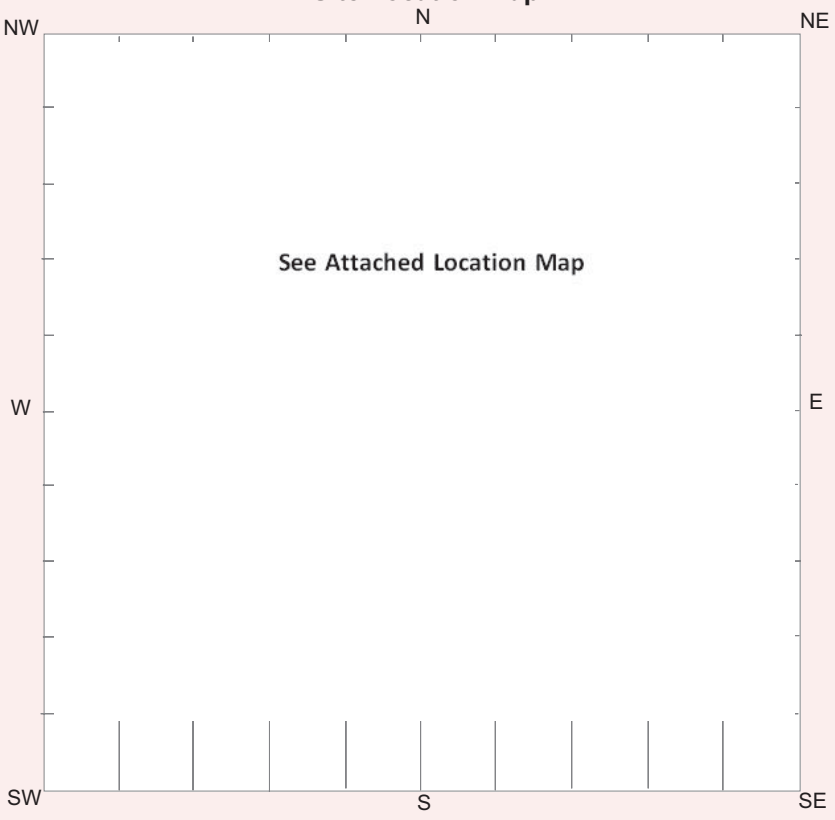
Water

Distance to permanent water source	210 metres
Distance to temporary water source	metres
Name of nearest permanent water source	Swamp Ck
Name of nearest temporary water	

Directions for Relocation

Site located in electricity easement in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report I.D.

(I.D. Office Use only)

'Hydro Aluminium Smelter Site & Associated Buffer Land - Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

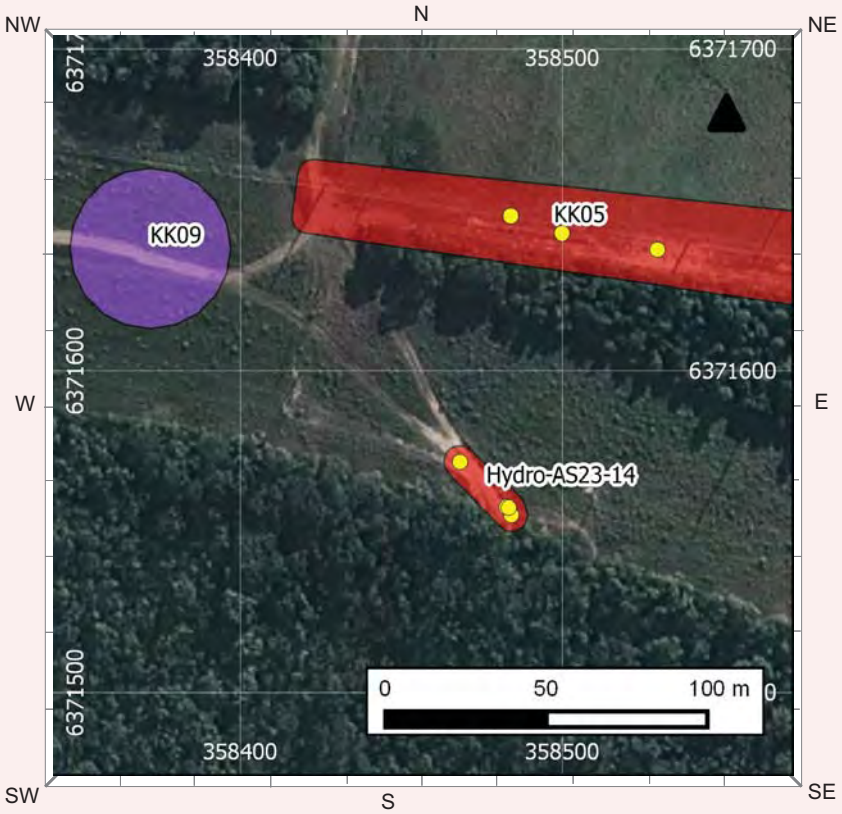
- [ ] N-S
- [ ] NE-SW
- [ ] E-W
- [x] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open Site Dimensions (m)

- [ ] Total length of visible site
- [ ] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-AS23-14 comprises an artefact scatter on an unsealed access track on Lot 2 of DP233125. The site is situated in heavily eroded section of track immediately southeast of the junction of three access tracks. The landscape position of the site is that of a gently inclined simple slope approximately 210 m west of Swamp Creek. Surrounding native vegetation comprises regenerating Lowland Redgum Forest (to the south) and Kurri Sand Swamp Woodland (isolated block to the north) . Four artefacts were identified during survey: 3 complete flakes (2 silcrete, 1 silicified tuff) and a broken silicified tuff Bondi point. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track use and significant erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-AS23-14

Plate 1 Hydro-AS23-14: broken silicified tuff Bondi point

Plate 2 View across site Hydro-AS23-14, looking southeast

Aboriginal Site Recording Form

AHIMS Aboriginal Heritage Information Management System

NSW Government — Office of Environment & Heritage

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office Use Only

Site Number [ ]

Date received [/ /] Date entered into system [/ /] Date catalogued [/ /]

Entered by (I.D.) [ ]

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title	Surname	First Name	Initials

Organisation:

Address:

Phone number: Fax:

Client on system ☐

☐ **Knowledge Holder**

Title	Surname	First Name	Initials

Organisation:

Address:

Phone number: Fax:

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-AS24-14

Easting: 355859 Northing: 6372140 AGD/GDA: GDA

Mapsheet:

Zone 56 Location Method: Differential GPS

Other Registration:

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 89340001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [ ] Lower slope
- [ ] Mid slope
- [x] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

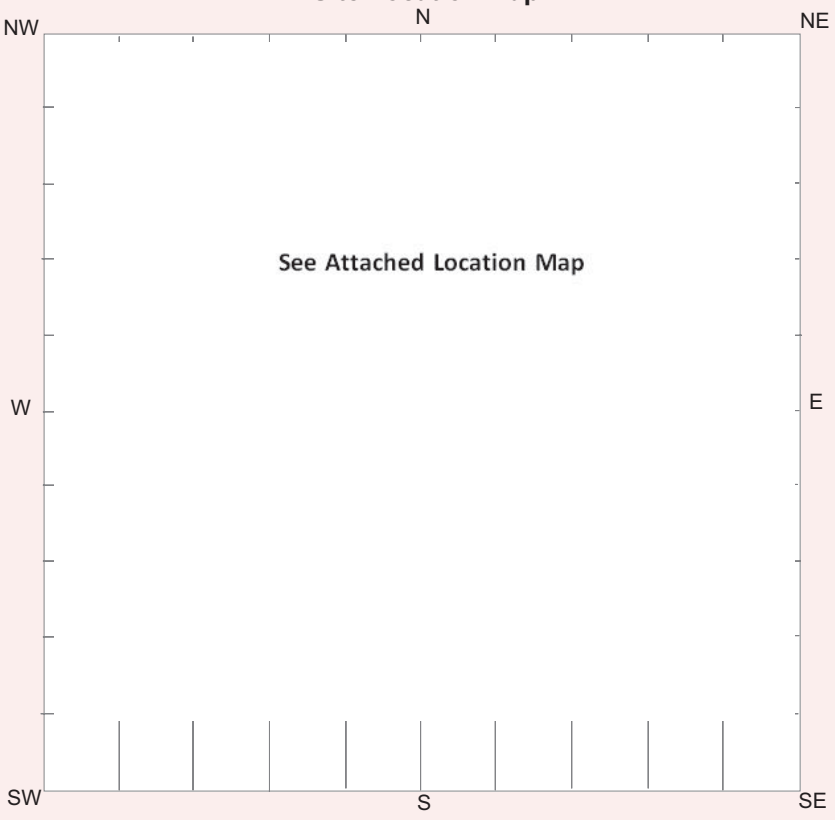
Water

Distance to permanent water source	610 metres
Distance to temporary water source	120 metres
Name of nearest permanent water source	Black Wat
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report I.D.

(I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- ☐ Boulder
- ☐ Wind erosion
- ☐ Water erosion
- ☐ Rock collapse

Rock Surface Condition

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Condition of Ceiling

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Shelter Aspect

- ☐ North
- ☐ North East
- ☐ East
- ☐ South East
- ☐ South
- ☐ South West
- ☐ West
- ☐ North West

Open Site

Site Orientation

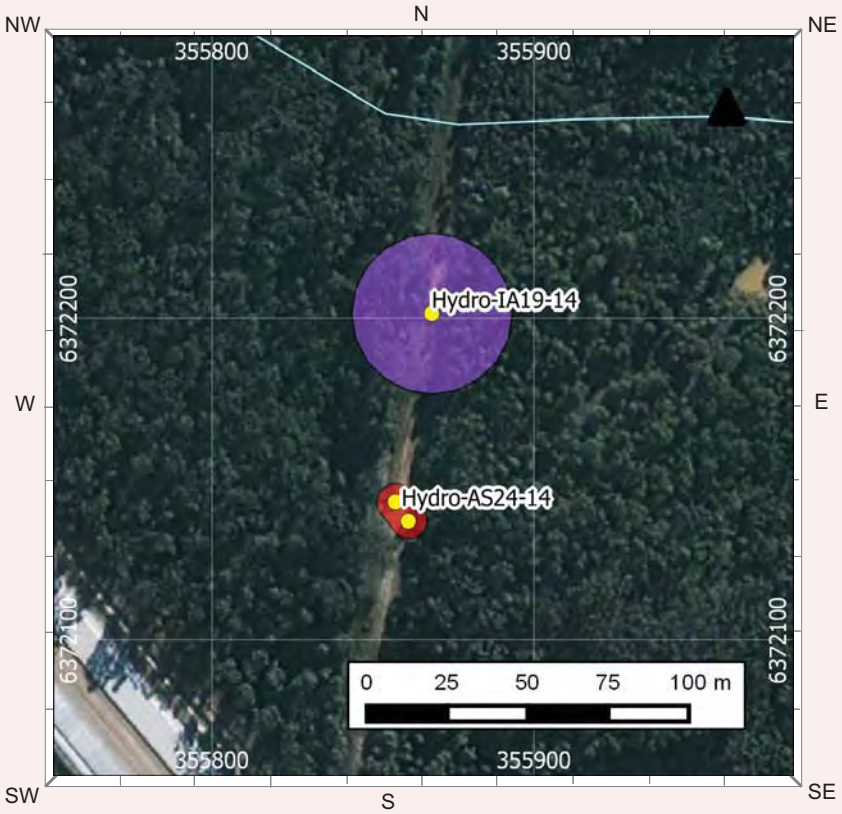
- ☐ N-S
- ☐ NE-SW
- ☐ E-W
- ☑ SE-NW
- ☐ N/A

Features

- ☐ 1. Aboriginal Ceremony & Dreaming
- ☐ 2. Aboriginal Resource & Gathering
- ☐ 3. Art
- ☑ 4. Artefact
- ☐ 5. Burial
- ☐ 6. Ceremonial Ring
- ☐ 7. Conflict
- ☐ 8. Earth Mound
- ☐ 9. Fish Trap
- ☐ 10. Grinding Groove
- ☐ 11. Habitation Structure
- ☐ 12. Hearth
- ☐ 13. Non Human Bone & Organic Material
- ☐ 14. Ochre quarry
- ☐ 15. Potential Archaeological Deposit
- ☐ 16. Stone Quarry
- ☐ 17. Shell
- ☐ 18. Stone Arrangement
- ☐ 19. Modified Tree
- ☐ 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- ☐ Internal length
- ☐ Internal width
- ☐ Shelter height
- ☐ Shelter floor area

Open Site Dimensions (m)

- ☐ Total length of visible site
- ☐ Average width of visible site
- ☐ Estimated area of visible site
- ☐ Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-AS24-12 consists of an artefact scatter on an unsealed, north-south trending access track/fire trail that runs along the boundary of Lots 10 and 11 of DP1082775. The site is situated on a gently inclined simple slope overlooking (to the north) an unnamed 1st order drainage depression. Surrounding native vegetation comprises regenerating Broad-leaved Ironbark Forest. The site comprises two artefacts - one complete silcrete flake and one proximal silicified tuff flake - approximately 7 m apart. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track/fire trail use and significant erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-AS24-14

Plate 1 Hydro-AS24-14: broken silicified tuff flake

Plate 2 Hydro-AS24-14: silcrete flake

Plate 3 View across site Hydro-AS24-14, looking north

Aboriginal Site Recording Form

AHIMS Aboriginal Heritage Information Management System

NSW Government | Office of Environment & Heritage

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office Use Only

Site Number

Date received __/__/__ Date entered into system __/__/__ Date catalogued __/__/__

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title	Surname	First Name	Initials

Organisation

Address

Phone number Fax

Client on system ☐

☐ **Knowledge Holder**

Title	Surname	First Name	Initials

Organisation

Address

Phone number Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-AS25-14

Easting: 356555 Northing: 6371753 AGD/GDA: GDA

Mapsheet

Zone 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 89340001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [x] Crest
- [ ] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] N/A

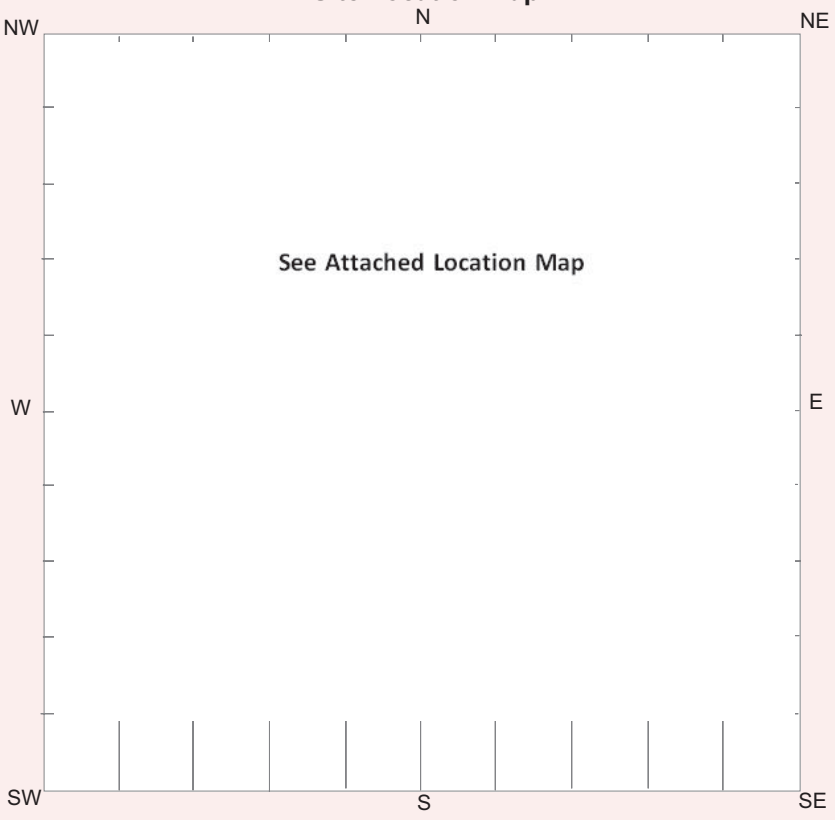
Water

Distance to permanent water source	20 metres
Distance to temporary water source	15 metres
Name of nearest permanent water source	Black Wat
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report I.D.

(I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- ☐ Boulder
- ☐ Wind erosion
- ☐ Water erosion
- ☐ Rock collapse

Rock Surface Condition

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Condition of Ceiling

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Shelter Aspect

- ☐ North
- ☐ North East
- ☐ East
- ☐ South East
- ☐ South
- ☐ South West
- ☐ West
- ☐ North West

Open Site

Site Orientation

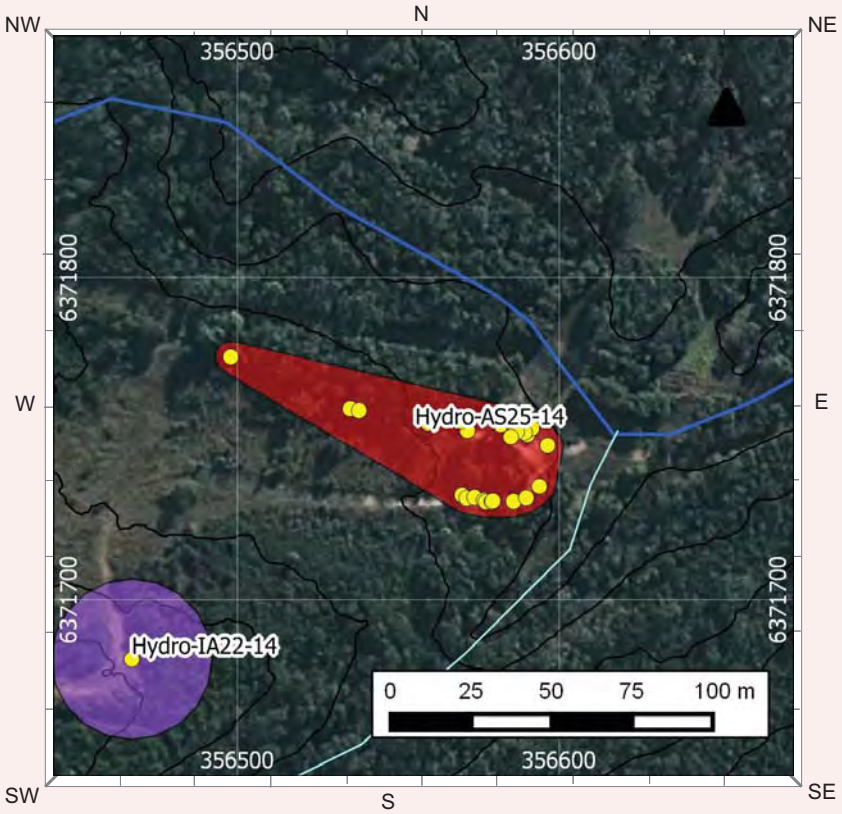
- ☐ N-S
- ☐ NE-SW
- ☐ E-W
- ☑ SE-NW
- ☐ N/A

Features

- ☐ 1. Aboriginal Ceremony & Dreaming
- ☐ 2. Aboriginal Resource & Gathering
- ☐ 3. Art
- ☑ 4. Artefact
- ☐ 5. Burial
- ☐ 6. Ceremonial Ring
- ☐ 7. Conflict
- ☐ 8. Earth Mound
- ☐ 9. Fish Trap
- ☐ 10. Grinding Groove
- ☐ 11. Habitation Structure
- ☐ 12. Hearth
- ☐ 13. Non Human Bone & Organic Material
- ☐ 14. Ochre quarry
- ☐ 15. Potential Archaeological Deposit
- ☐ 16. Stone Quarry
- ☐ 17. Shell
- ☐ 18. Stone Arrangement
- ☐ 19. Modified Tree
- ☐ 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- ☐ Internal length
- ☐ Internal width
- ☐ Shelter height
- ☐ Shelter floor area

Open Site Dimensions (m)

- ☐ Total length of visible site
- ☐ Average width of visible site
- ☐ Estimated area of visible site
- ☐ Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-AS25-14 is an artefact scatter located around MGA grid reference 356555 6371753 on Lot 14 of DP1082775. The site is situated on an elevated, low gradient spur crest approximately 25 m west of the confluence of Black Waterholes Creek and an unnamed 1st order tributary. Artefacts were identified on a c.135 m stretch of unselaed access track / fire trail, with a prominent dog-leg occurring closest to the creek. GSV on the track is excellent (91-100%). Surrounding native vegetation comprises regenerating Kurri Sand Swamp Woodland. Recorded artefacts (n = 24) include 9 complete flakes, 5 proximal flakes, 2 split flakes, 2 flake shatter fragments and 6 heat shatters. Raw materials are restricted to silcrete (13) and silicified tuff (11). Overall site condition can be characterised as poor. Relevant disturbance factors include access track / fire trail use, native vegetation clearance and erosion. Land in the immediate vicinity of the access track is considered to have high subsurface archaeological potential.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-AS25-14

Plate 1 View across part of site Hydro-AS25-14, looking northeast

Plate 2 View across part of site Hydro-AS25-14, looking southeast

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___ ___

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-AS26-14

Easting: 357247 Northing: 6371141 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [x] Flat
- [x] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [x] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [x] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

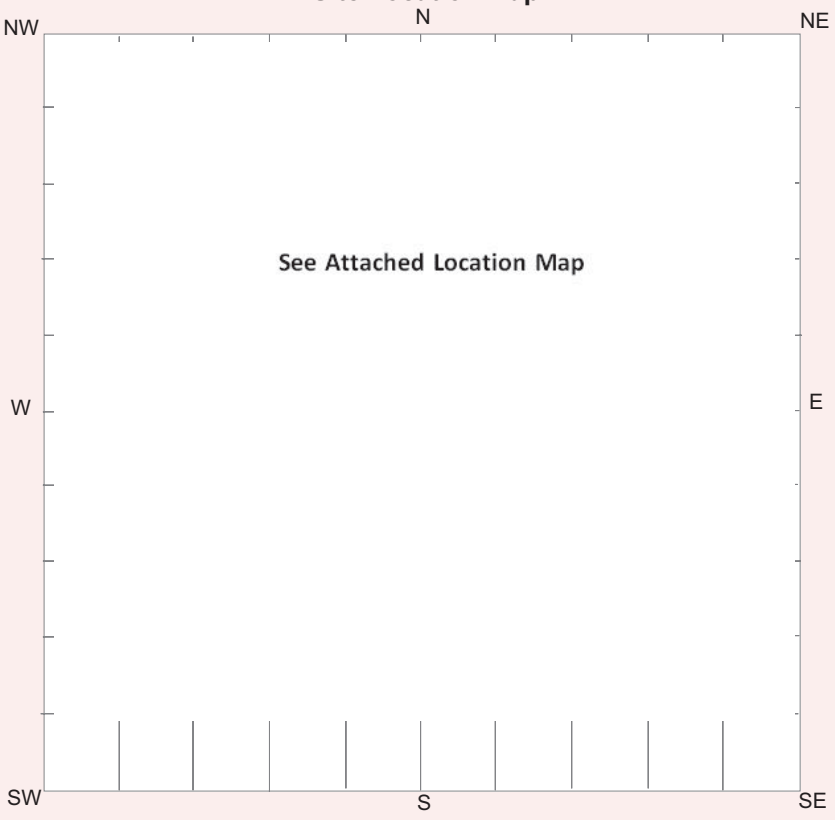
Water

Distance to permanent water source	760 metres
Distance to temporary water source	-5 metres
Name of nearest permanent water source	Swamp Ck
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report I.D.

(I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

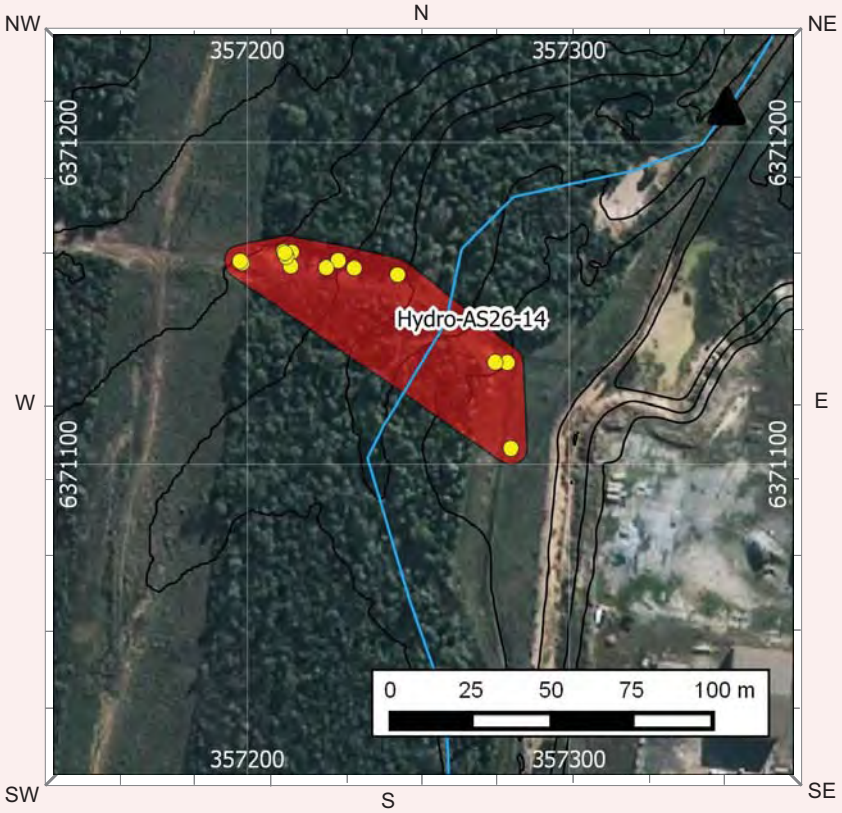
- [ ] N-S
- [ ] NE-SW
- [ ] E-W
- [x] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open Site Dimensions (m)

- [ ] Total length of visible site
- [ ] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-AS26-14 is an artefact scatter located around MGA grid reference 357247 6371141. Artefacts occur in a series of erosion exposures in two cleared fire breaks to the west of the existing Hydro smelter complex. The majority of artefacts are located in the east-west trending fire-break and occur in exposures on either side of a similarly oriented fencline. Moving from west to east, the site incorporates a gently inclined simple slope, an unnamed 2nd order drainage depression and the elevated flat or 'plateau' housing the smelter complex (identified artefacts occur on the western edge of this plateau). GSV in the artefact-bearing exposures is generally very good to excellent. Surrounding native vegetation comprises regenerating Kurri Sand Swamp Woodland. Recorded artefacts (n = 14) include 7 complete flakes, 1 proximal flake, 1 split flake, 2 flake shatter fragments, 2 flaked pieces and 1 heat shatter . Silcrete (9) is the dominant raw material, followed by silicified tuff (4) and quartzite (1). Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, some light vehicle use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-AS26-14

Plate 1 View across part of site Hydro-AS26-14, looking east

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number | | | – | | – | | | | | |

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-AS27-14

Easting: 357148 Northing: 6370939 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title | Surname | First Name | Initials

Dr | McLaren | Andrew

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [x] Undulating plain

Slope

[ ] degrees

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [x] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

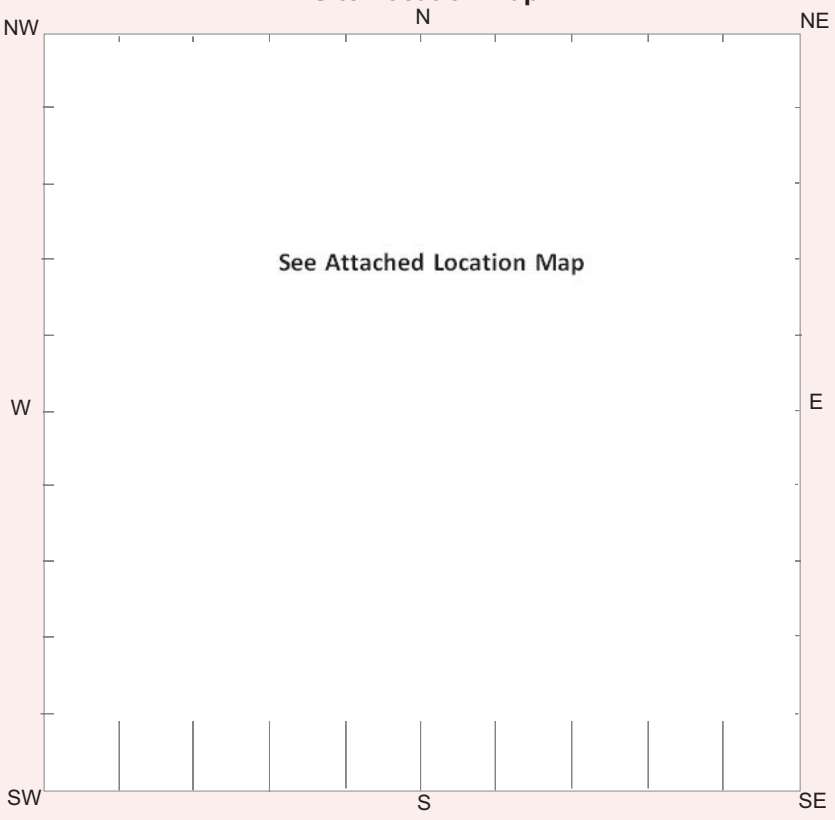
Water

Distance to permanent water source	750 metres
Distance to temporary water source	90 metres
Name of nearest permanent water source	Swamp Ck
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.:

Primary report I.D.

(I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

- [x] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features

Site Dimensions

Closed Site Dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open Site Dimensions (m)

- [ ] Total length of visible site
- [ ] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-AS27-14 consists of a low density artefact scatter on and adjacent to an unsealed north-south trending access track/fire trail on Lot 16 of DP1082775. The site is situated on a level to very gently inclined creek 'flat' associated with an unnamed 2nd order tributary of Black Waterholes Creek, which is located between 85 and 100 m to the east of the site. Surrounding native vegetation comprises regenerating Kurri Sand Swamp Woodland. Six artefacts were identified along a c.75 m section of the access track, as well as two adjacent exposures, at a maximum density of 1 artefact per m² . Recorded artefacts (n = 6) include 1 silcrete flake shatter fragment, 2 split silcrete flakes, 1 complete silicified tuff flake, 1 silcrete flaked piece and 1 proximal silcrete flake. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track use, powerline emplacement works and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-AS27-14

Plate 1 View across site Hydro-AS27-14, looking north

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number | | | – | | – | | | | |

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-AS28-14

Easting: 357219 Northing: 6370703 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title | Surname | First Name | Initials

Dr | McLaren | Andrew

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [x] Undulating plain

Slope

[ ] degrees

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [x] Flat
- [x] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

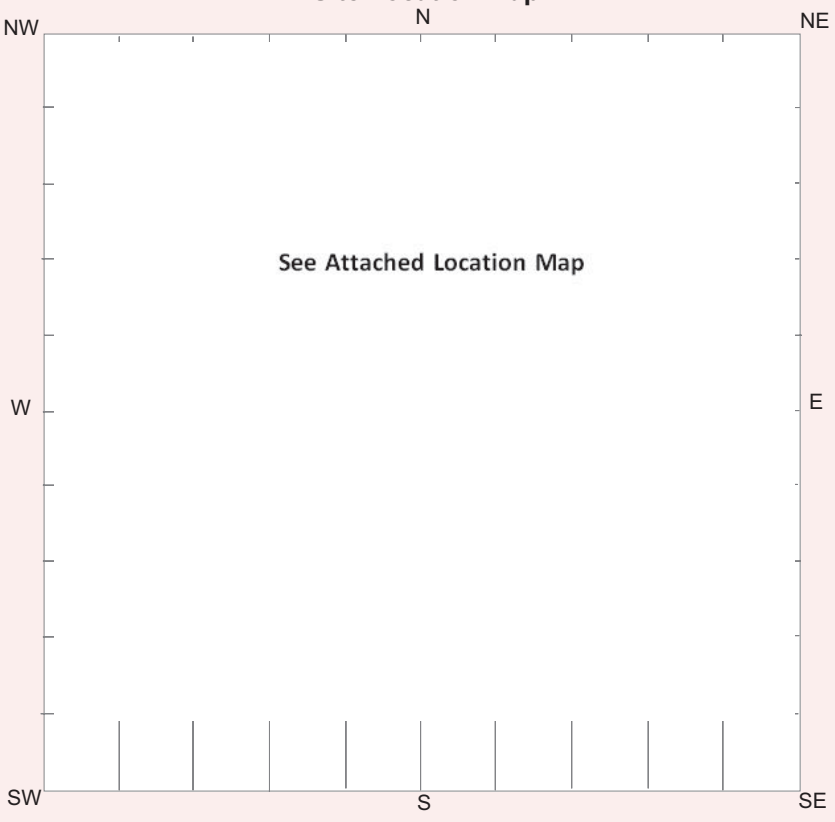
Water

Distance to permanent water source	600 metres
Distance to temporary water source	50 metres
Name of nearest permanent water source	Swamp Ck
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report I.D.

(I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- ☐ Boulder
- ☐ Wind erosion
- ☐ Water erosion
- ☐ Rock collapse

Rock Surface Condition

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Condition of Ceiling

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Shelter Aspect

- ☐ North
- ☐ North East
- ☐ East
- ☐ South East
- ☐ South
- ☐ South West
- ☐ West
- ☐ North West

Open Site

Site Orientation

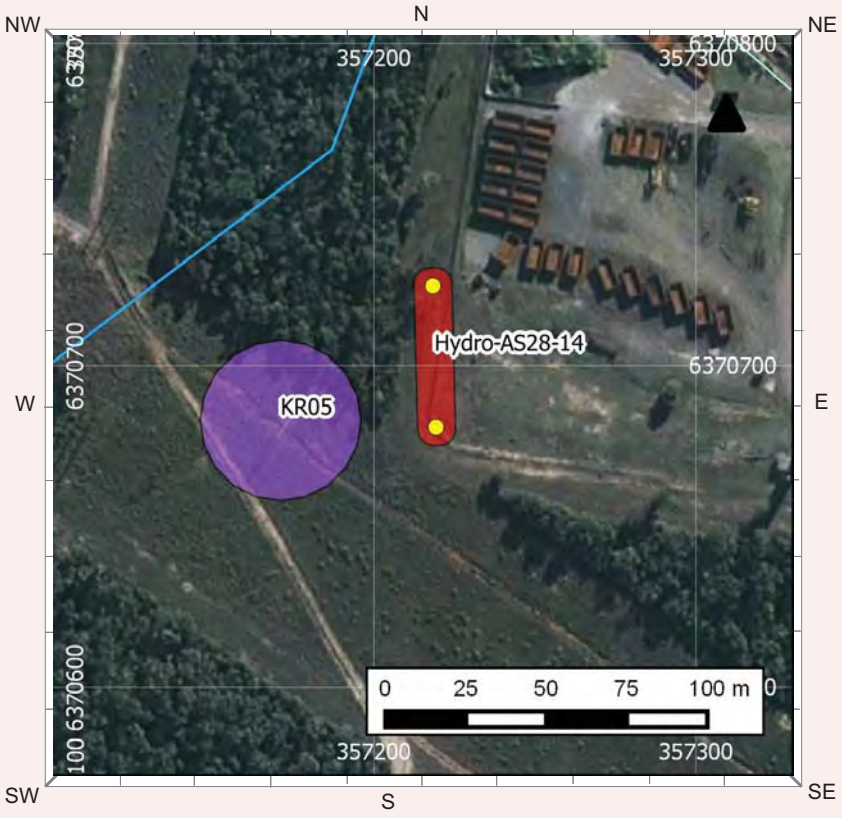
- ☑ N-S
- ☐ NE-SW
- ☐ E-W
- ☐ SE-NW
- ☐ N/A

Features

- ☐ 1. Aboriginal Ceremony & Dreaming
- ☐ 2. Aboriginal Resource & Gathering
- ☐ 3. Art
- ☑ 4. Artefact
- ☐ 5. Burial
- ☐ 6. Ceremonial Ring
- ☐ 7. Conflict
- ☐ 8. Earth Mound
- ☐ 9. Fish Trap
- ☐ 10. Grinding Groove
- ☐ 11. Habitation Structure
- ☐ 12. Hearth
- ☐ 13. Non Human Bone & Organic Material
- ☐ 14. Ochre quarry
- ☐ 15. Potential Archaeological Deposit
- ☐ 16. Stone Quarry
- ☐ 17. Shell
- ☐ 18. Stone Arrangement
- ☐ 19. Modified Tree
- ☐ 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- ☐ Internal length
- ☐ Internal width
- ☐ Shelter height
- ☐ Shelter floor area

Open Site Dimensions (m)

- ☐ Total length of visible site
- ☐ Average width of visible site
- ☐ Estimated area of visible site
- ☐ Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-AS28-14 is an artefact scatter located in a cleared, north-south trending firebreak to the immediate west of the existing Hydro smelter complex. The landscape position of the site is that of a very gently to gently inclined simple slope which gives way, to the west, to an unnamed 2nd order drainage depression. Native vegetation to the west of the site comprises regenerating Kurri Sand Swamp Woodland. The site comprises two artefacts, both complete flakes (1 x silcrete, 1 x silicified tuff), located in exposures approximately 40 m apart. The southernmost of the two artefacts is situated in an exposure directly adjacent to the smelter's complex main security fence. Overall site condition can be characterised as poor. Relevant disturbance factors native vegetation clearance, fence emplacement works, erosion and mowing.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-AS28-14

Plate 1 Hydro-AS28-14: silcrete flake

Plate 2 View across site Hydro-AS28-14, looking south

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___-___-____

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-AS29-14

Easting: 358225 Northing: 6371002 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [x] Undulating plain

Slope

[ ] degrees

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [x] Flat
- [x] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [x] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [x] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] N/A

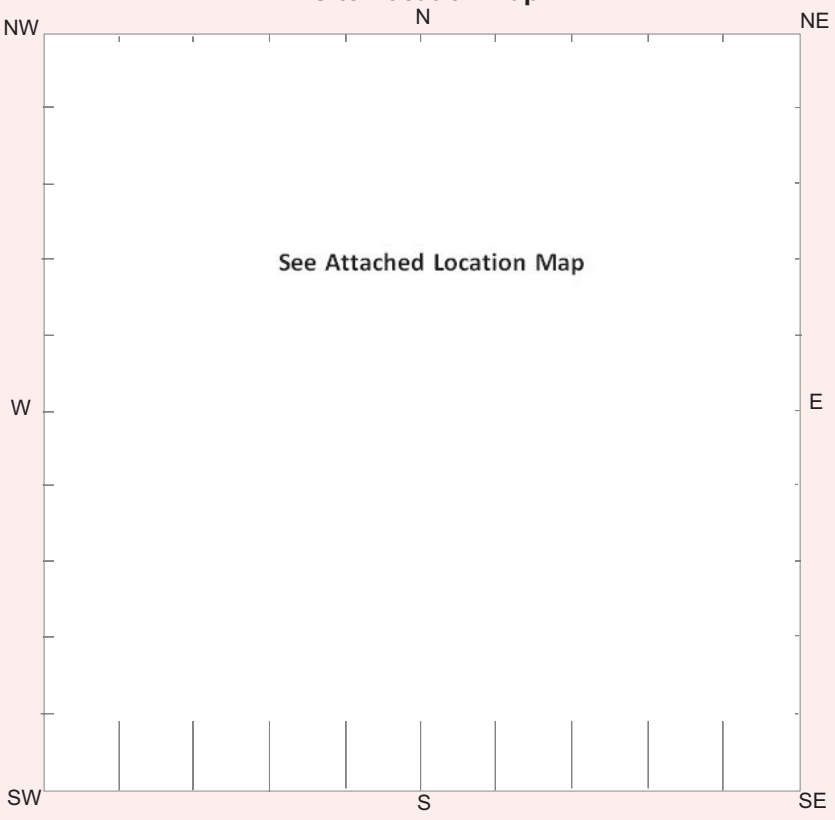
Water

Distance to permanent water source	495 metres
Distance to temporary water source	metres
Name of nearest permanent water source	Swamp Ck
Name of nearest temporary water	

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report I.D.

(I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

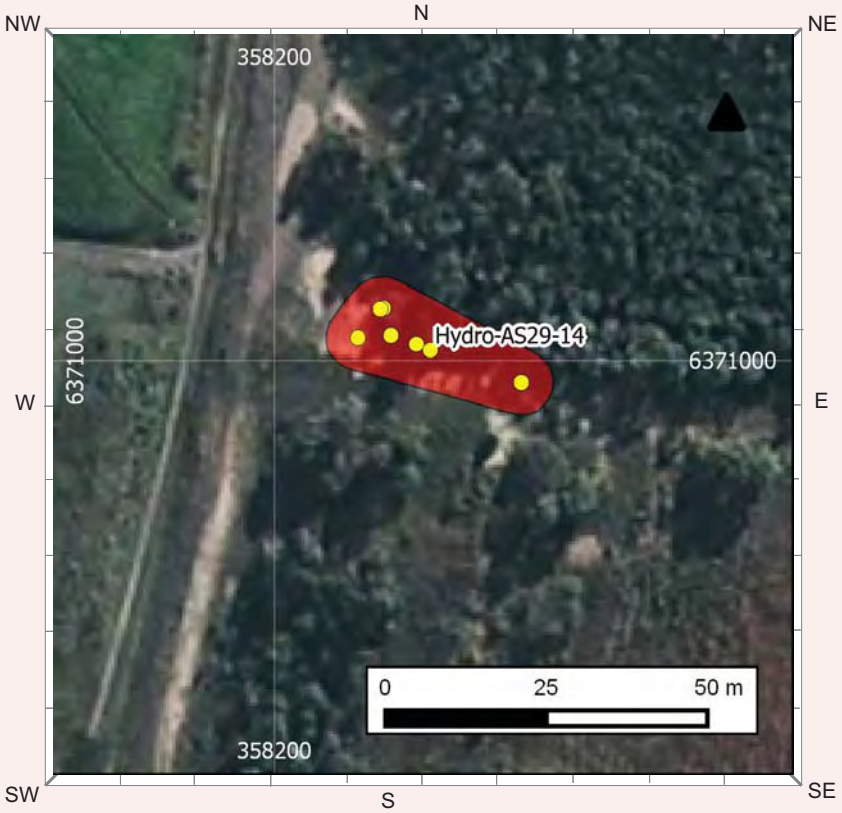
- [ ] N-S
- [ ] NE-SW
- [x] E-W
- [ ] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open Site Dimensions (m)

- [ ] Total length of visible site
- [ ] Average width of visible site
- [4 3 4m] Estimated area of visible site
- [ ] Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-AS29-14 is an artefact scatter located around MGA grid reference 358225 6371002 on Lot 1 of DP456769. The site is located in an erosion exposure in a cleared firebreak approximately 25 m east of Hydro smelter's main eastern security fence. An unsealed north-south trending access track parallel and adjacent to this fence is located around 15 m to the west of the site. GSV within the artefact-bearing exposure is excellent (91-100%). Native vegetation to the north of the site comprises regenerating Kurri Sand Swamp Woodland. Recorded artefacts (n = 7) include 4 complete flakes, 1 proximal flake and 2 flake shatter fragments, all manufactured out of silcrete. Overall site condition can be characterised as poor. Relevant disturbance factors include light vehicle movements, native vegetation clearance and significant (ongoing) erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-AS29-14

Plate 1 View across site Hydro-AS29-14, looking west

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___ ___

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name Hydro-AS31-14

Easting 359541 Northing 6371256 AGD/GDA GDA

Mapsheet

Zone 56 Location Method Differential GPS

Other Registration

Primary Recorder

Title | Surname | First Name | Initials

Dr | McLaren | Andrew

Organisation AECOM Australia Pty Ltd

Address 420 George Street Sydney NSW

Phone number 89340000 Fax 893400001

Date recorded 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [x] Lower slope
- [x] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

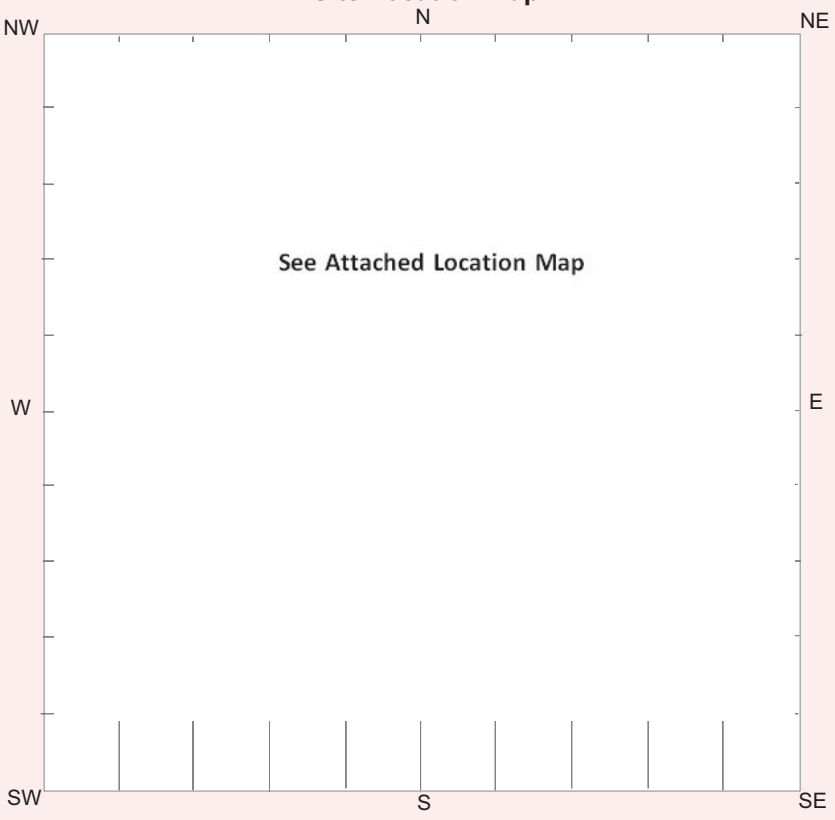
Water

Distance to permanent water source	245 metres
Distance to temporary water source	40 metres
Name of nearest permanent water source	Swamp Ck
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via 'Wangara' property, off Main Road, south of Gillieston Heights. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report

I.D. [ ] (I.D. Office Use only)

'Hydro Aluminium Smelter Site & Associated Buffer Land - Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

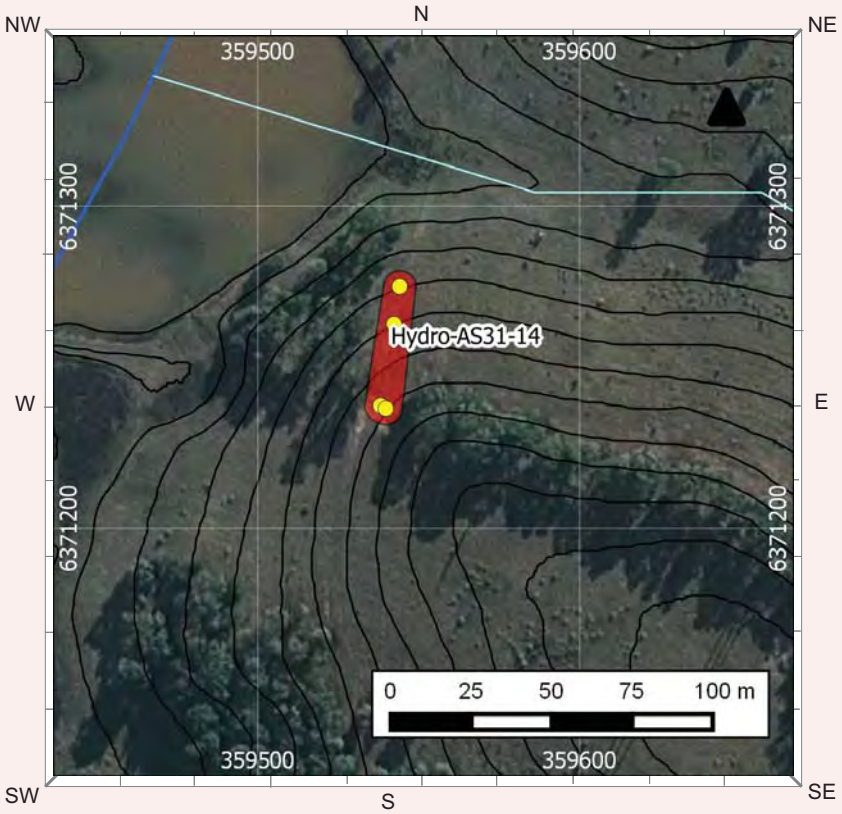
- [x] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open Site Dimensions (m)

- [ ] Total length of visible site
- [ ] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-AS31-14 consists of an artefact scatter on and adjacent to an unsealed north-south trending access track on Lot 1 of DP998540. The site is situated on a cleared, gently inclined simple slope to the east of an unnamed 3rd order tributary of Swamp Creek, which has been dammed and is crossed further downstream by the Aberdare Railway. Two artefacts were identified on the access track, approximately 10m apart, and two in an adjacent upslope exposure created by sheetwash erosion. The latter are located within 1 m of each other. Recorded artefacts (n = 4) include 1 multidirectional FGS core, 1 complete silicified tuff flake, 1 proximal silcrete flake and 1 silicified tuff flaked piece. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-AS31-14

Plate 1 Hydro-AS31-14: multidirectional FGS core

Plate 2 View across site Hydro-AS31-14, looking north

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___-___-____

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-IA01-14

Easting: 357936 Northing: 6374155 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [x] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

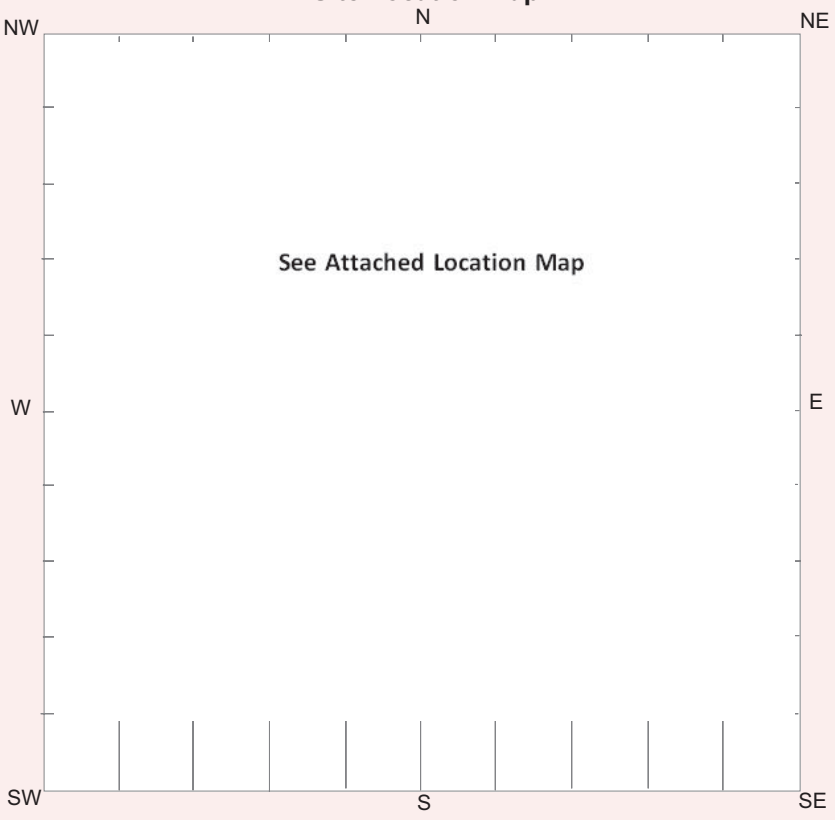
Water

Distance to permanent water source	metres
Distance to temporary water source	20 metres
Name of nearest permanent water source	
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report I.D.

(I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

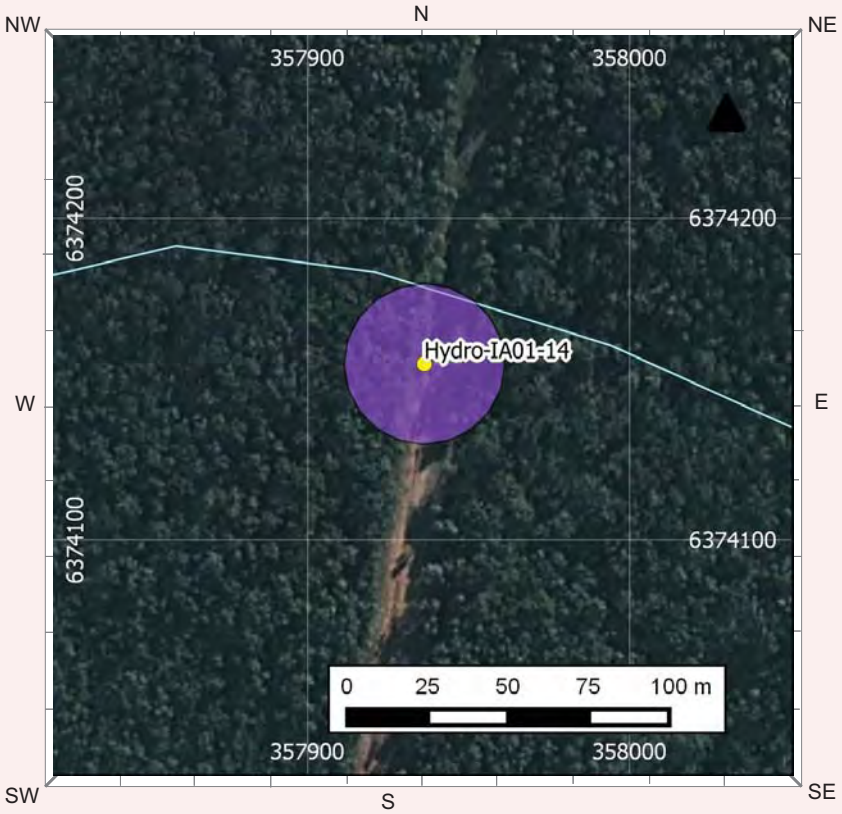
- [ ] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [x] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

	Internal length
	Internal width
	Shelter height
	Shelter floor area

Open Site Dimensions (m)

1m	Total length of visible site
1m	Average width of visible site
1m	Estimated area of visible site
1m	Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-IA1-14 consists of a multidirectional silcrete flake core on an unselaed, north-south trending access track/fire trail on Lot 1 of DP166625. The landscape position of the artefact is that of a gently inclined (3-10%) lower slope to the immediate south of an unnamed 1st order drainage line/depression. Surrounding native vegetation comprises regenerating Broad-leaved Ironbark Forest. The core measures 81.5 (L) x 80.2 (W) x 62.9 (T) mm and has been thermally-altered, likely post-discard. GSV on-site is excellent (91-100%). Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track/fire trail use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-IA01-14

Plate 1 Hydro-IA01-14: multidirectional silcrete core

Plate 2 View across site Hydro-IA01-14, looking south

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number | | | – | | – | | | | |

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-IA02-14

Easting: 360899 Northing: 6373192 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [x] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [x] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [x] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [x] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] N/A

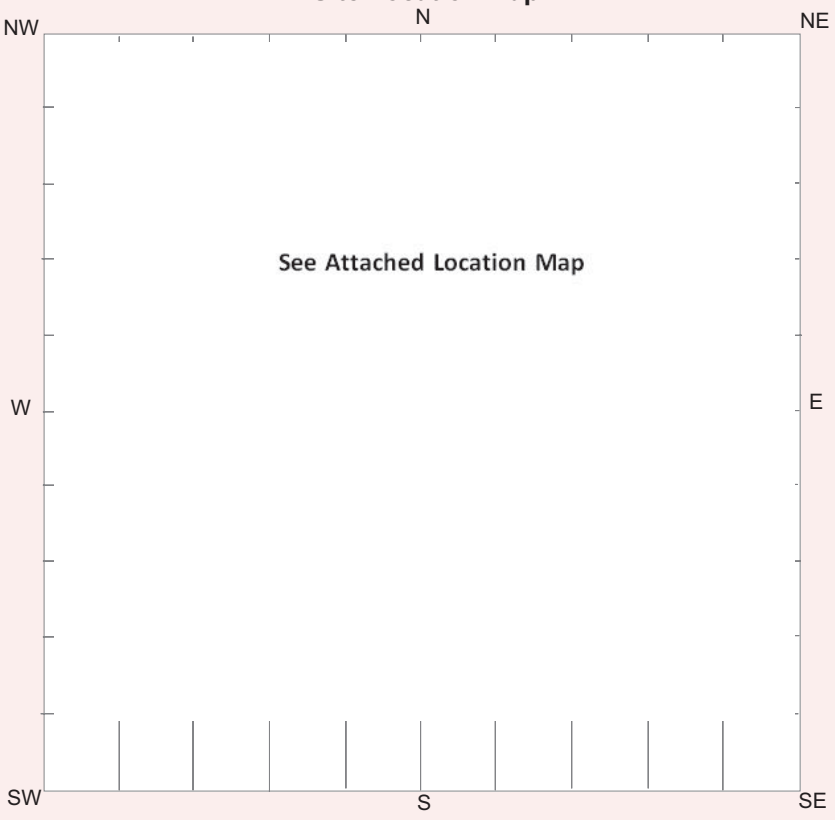
Water

Distance to permanent water source	-5 metres
Distance to temporary water source	metres
Name of nearest permanent water source	Kurri Swamp
Name of nearest temporary water	

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via 'Wangara' property, off Main Road, south of Gillieston Heights. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report I.D.

(I.D. Office Use only)

'Hydro Aluminium Smelter Site & Associated Buffer Land - Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- ☐ Boulder
- ☐ Wind erosion
- ☐ Water erosion
- ☐ Rock collapse

Rock Surface Condition

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Condition of Ceiling

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Shelter Aspect

- ☐ North
- ☐ North East
- ☐ East
- ☐ South East
- ☐ South
- ☐ South West
- ☐ West
- ☐ North West

Open Site

Site Orientation

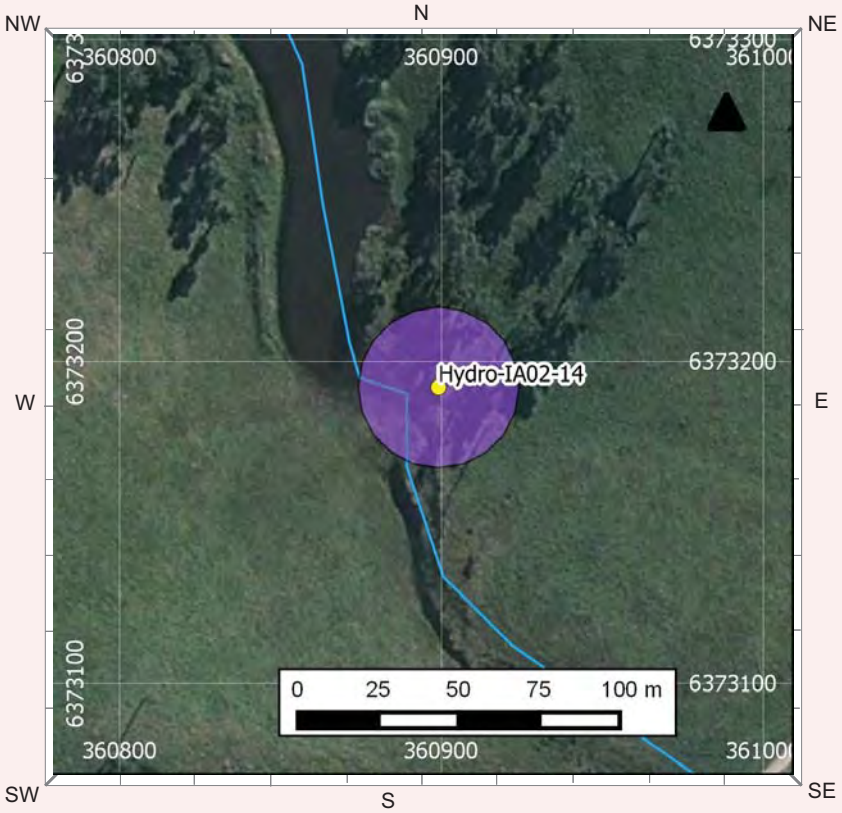
- ☐ N-S
- ☐ NE-SW
- ☐ E-W
- ☐ SE-NW
- ☑ N/A

Features

- ☐ 1. Aboriginal Ceremony & Dreaming
- ☐ 2. Aboriginal Resource & Gathering
- ☐ 3. Art
- ☑ 4. Artefact
- ☐ 5. Burial
- ☐ 6. Ceremonial Ring
- ☐ 7. Conflict
- ☐ 8. Earth Mound
- ☐ 9. Fish Trap
- ☐ 10. Grinding Groove
- ☐ 11. Habitation Structure
- ☐ 12. Hearth
- ☐ 13. Non Human Bone & Organic Material
- ☐ 14. Ochre quarry
- ☐ 15. Potential Archaeological Deposit
- ☐ 16. Stone Quarry
- ☐ 17. Shell
- ☐ 18. Stone Arrangement
- ☐ 19. Modified Tree
- ☐ 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- ☐ Internal length
- ☐ Internal width
- ☐ Shelter height
- ☐ Shelter floor area

Open Site Dimensions (m)

- 1m Total length of visible site
- 1m Average width of visible site
- 1m Estimated area of visible site
- 1m Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-IA2-14 consists of a complete silcrete flake in a cattle tread/fluvial erosion exposure on Lot 60 of DP975994. The landscape position of the site is that of a gently inclined (3-10%) lower slope to the immediate east of an unnamed 2nd order drainage line/depression. Prior to damming, the stream to the west of the site would have discharged directly into Wentworth Swamp. The flake measures 10.6 (L) x 15.2 (W) x 2.1 (T) mm, has no dorsal cortex and a plain striking platform. GSV within the exposure is excellent (91-100%) but very poor (0-10%) outside of it. No other artefacts were observed within the exposure. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, cattle trampling and significant, ongoing erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-IA02-14

Plate 1 Hydro-IA02-14: silcrete flake

Plate 2 View across site Hydro-IA02-14, looking north

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number | | | – | | – | | | | |

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-IA03-14

Easting: 361291 Northing: 6372936 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [ ] Lower slope
- [x] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] N/A

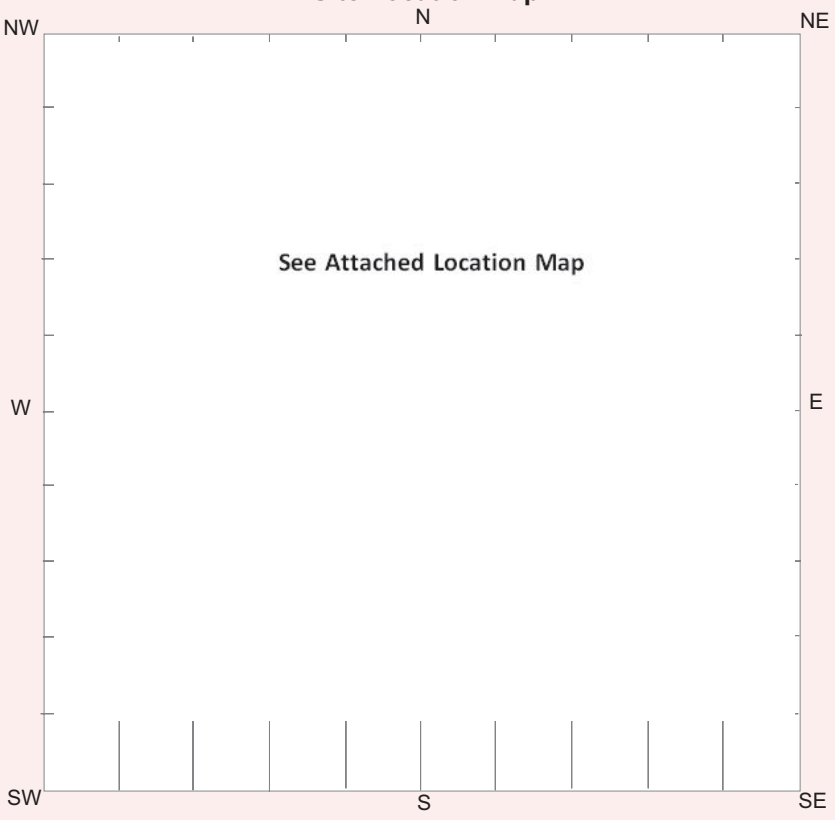
Water

Distance to permanent water source	1,030 metres
Distance to temporary water source	55 metres
Name of nearest permanent water source	Went Swmp
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via 'Wangara' property, off Main Road, south of Gillieston Heights. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report I.D.

(I.D. Office Use only)

'Hydro Aluminium Smelter Site & Associated Buffer Land - Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- ☐ Boulder
- ☐ Wind erosion
- ☐ Water erosion
- ☐ Rock collapse

Rock Surface Condition

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Condition of Ceiling

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Shelter Aspect

- ☐ North
- ☐ North East
- ☐ East
- ☐ South East
- ☐ South
- ☐ South West
- ☐ West
- ☐ North West

Open Site

Site Orientation

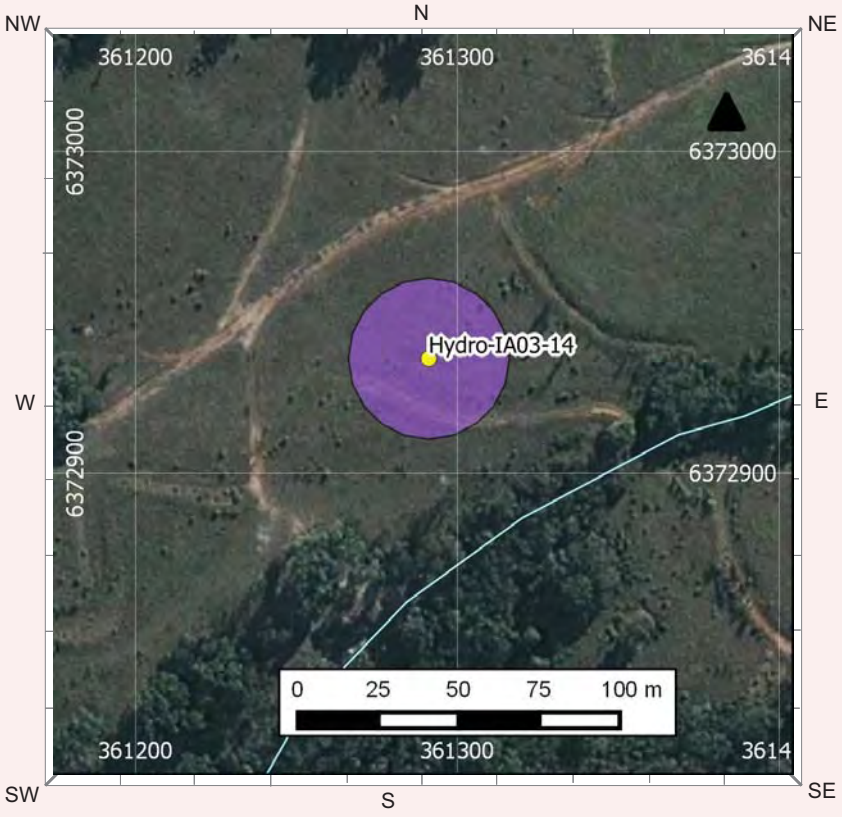
- ☐ N-S
- ☐ NE-SW
- ☐ E-W
- ☐ SE-NW
- ☑ N/A

Features

- ☐ 1. Aboriginal Ceremony & Dreaming
- ☐ 2. Aboriginal Resource & Gathering
- ☐ 3. Art
- ☑ 4. Artefact
- ☐ 5. Burial
- ☐ 6. Ceremonial Ring
- ☐ 7. Conflict
- ☐ 8. Earth Mound
- ☐ 9. Fish Trap
- ☐ 10. Grinding Groove
- ☐ 11. Habitation Structure
- ☐ 12. Hearth
- ☐ 13. Non Human Bone & Organic Material
- ☐ 14. Ochre quarry
- ☐ 15. Potential Archaeological Deposit
- ☐ 16. Stone Quarry
- ☐ 17. Shell
- ☐ 18. Stone Arrangement
- ☐ 19. Modified Tree
- ☐ 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- ☐ Internal length
- ☐ Internal width
- ☐ Shelter height
- ☐ Shelter floor area

Open Site Dimensions (m)

- 1m Total length of visible site
- 1m Average width of visible site
- 1m Estimated area of visible site
- 1m Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-IA3-14 consists of a complete silcrete flake in an exposure adjacent to a contour bank on the northern boundary of Lot 5 on DP456946. The exposure in question appears to be associated with the construction of the adjacent contour bank. The landscape position of the site is that of a gently inclined (3-10%) mid slope. The flake measures 48.2 (L) x 35 (W) x 15.7 (T) mm, has no dorsal cortex and a plain striking platform. GSV within the exposure is fair (31-50%). No other artefacts were observed within the exposure. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, contour bank construction and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-IA03-14

Plate 1 Hydro-IA03-14: broken silcrete flake

Plate 2 View across site Hydro-IA03-14, looking southwest

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage
NSW GOVERNMENT

Office Use Only

Site Number ___ ___

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-IA04-14

Easting: 356803 Northing: 6373197 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [x] Crest
- [ ] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [x] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

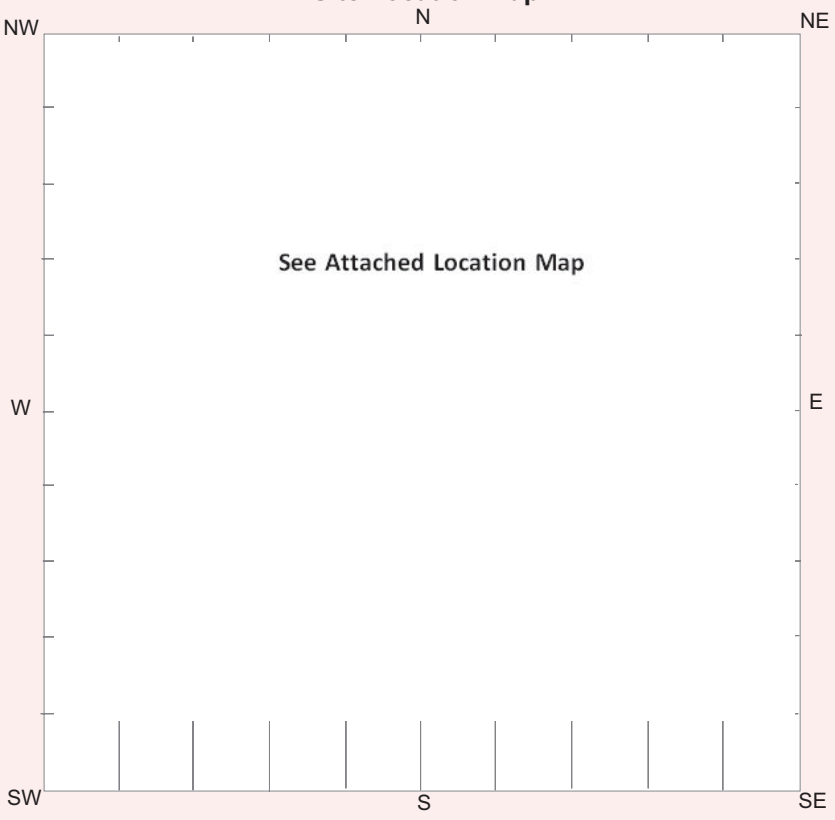
Water

Distance to permanent water source	1,300 metres
Distance to temporary water source	75 metres
Name of nearest permanent water source	Black Wat
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located just off Bishops Ridge Road (now closed to the public) in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.:

Primary report

I.D. [ ] (I.D. Office Use only)

'Hydro Aluminium Smelter Site & Associated Buffer Land - Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- ☐ Boulder
- ☐ Wind erosion
- ☐ Water erosion
- ☐ Rock collapse

Rock Surface Condition

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Condition of Ceiling

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Shelter Aspect

- ☐ North
- ☐ North East
- ☐ East
- ☐ South East
- ☐ South
- ☐ South West
- ☐ West
- ☐ North West

Open Site

Site Orientation

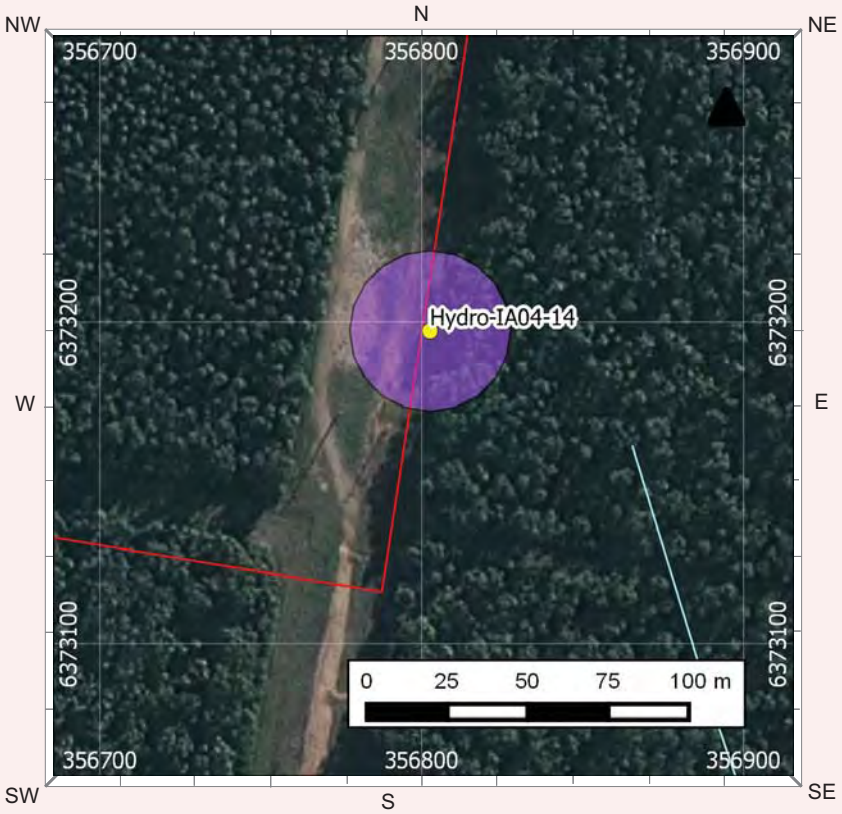
- ☐ N-S
- ☐ NE-SW
- ☐ E-W
- ☐ SE-NW
- ☑ N/A

Features

- ☐ 1. Aboriginal Ceremony & Dreaming
- ☐ 2. Aboriginal Resource & Gathering
- ☐ 3. Art
- ☑ 4. Artefact
- ☐ 5. Burial
- ☐ 6. Ceremonial Ring
- ☐ 7. Conflict
- ☐ 8. Earth Mound
- ☐ 9. Fish Trap
- ☐ 10. Grinding Groove
- ☐ 11. Habitation Structure
- ☐ 12. Hearth
- ☐ 13. Non Human Bone & Organic Material
- ☐ 14. Ochre quarry
- ☐ 15. Potential Archaeological Deposit
- ☐ 16. Stone Quarry
- ☐ 17. Shell
- ☐ 18. Stone Arrangement
- ☐ 19. Modified Tree
- ☐ 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- ☐ Internal length
- ☐ Internal width
- ☐ Shelter height
- ☐ Shelter floor area

Open Site Dimensions (m)

- 1m Total length of visible site
- 1m Average width of visible site
- 1m Estimated area of visible site
- 1m Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-IA4-14 consists of a silicified tuff flake shatter fragment on an unsealed, north-south trending access track/fire trail running along the western boundary of Lot 1 on DP166625. Bishops Ridge Rd is located to the immediate west of the site. The landscape position of the site is that of a cleared crest (slope = very gently inclined, 1-3%). Surrounding native vegetation comprises regenerating Broad-leaved Ironbark Forest. The artefact has a maximum linear dimension of 22.8 mm and retains no cortex. GSV on-site is excellent (91-100%). No other artefacts were observed in the vicinity. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track/fire trail use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-IA04-14

Plate 1 Hydro-IA04-14: silicified tuff flake shatter fragment

Plate 2 View across site Hydro-IA04-14, looking north

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___-___-____

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-IA05-14

Easting: 356844 Northing: 6373447 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [ ] Lower slope
- [x] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [x] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

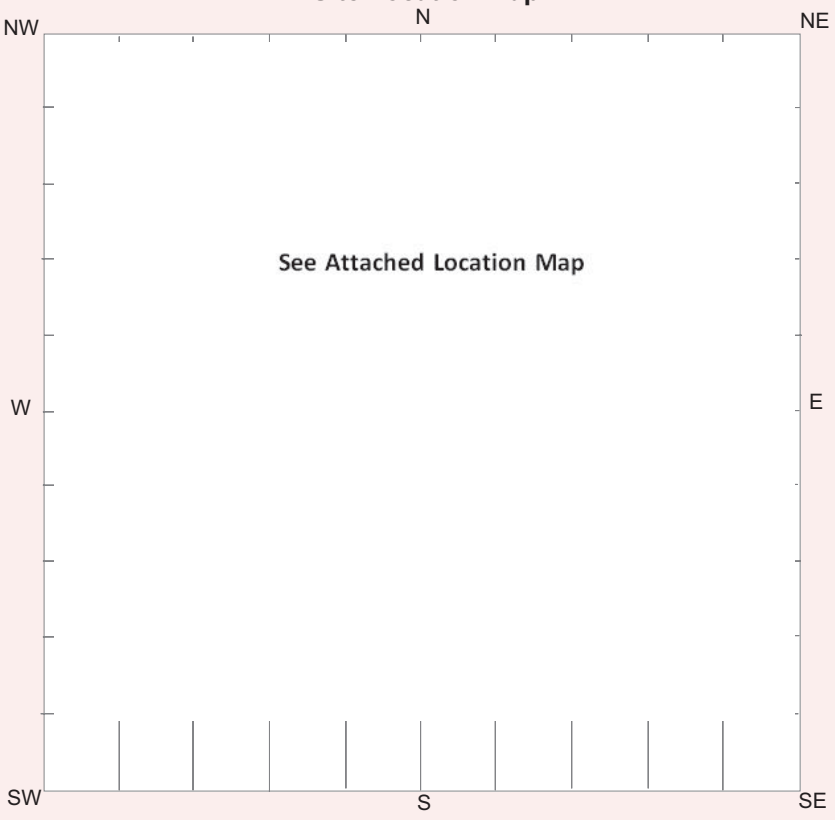
Water

Distance to permanent water source	1,400 metres
Distance to temporary water source	90 metres
Name of nearest permanent water source	Black Wat
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located just off Bishops Ridge Road (now closed to public) in Hydro-owned Buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report I.D.

(I.D. Office Use only)

'Hydro Aluminium Smelter Site & Associated Buffer Land - Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

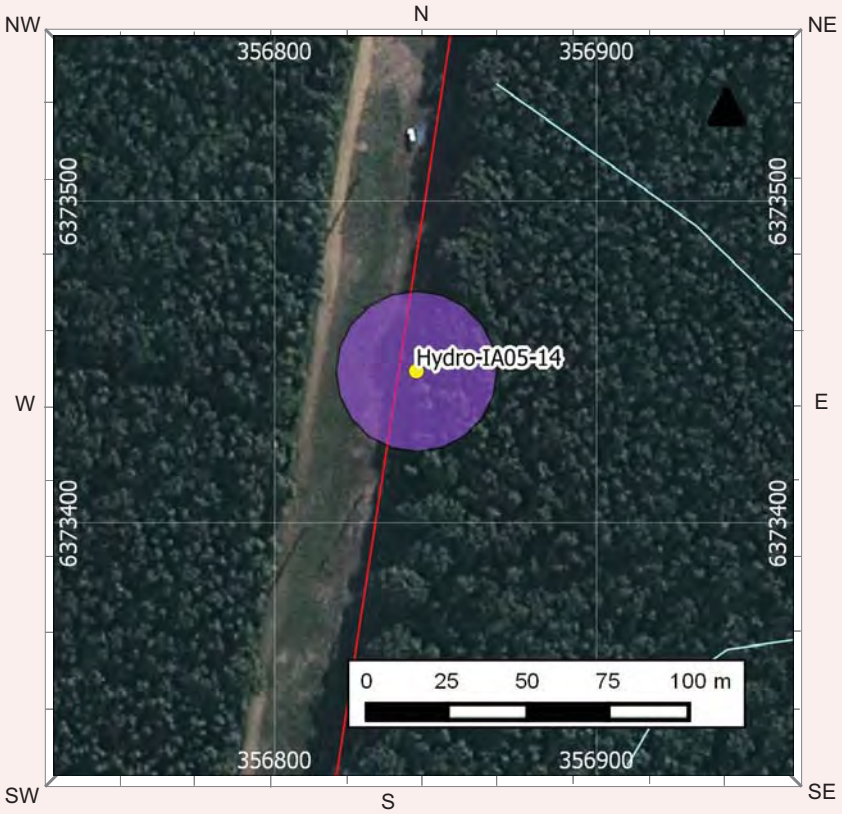
- [ ] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [x] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

	Internal length
	Internal width
	Shelter height
	Shelter floor area

Open Site Dimensions (m)

1m	Total length of visible site
1m	Average width of visible site
1m	Estimated area of visible site
1m	Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-IA5-14 consists of a broken (proximal) silcrete flake adjacent to an ants nest on an unsealed access track/fire trail running along the western boundary of Lot 1 of DP166625. Bishops Ridge Rd is located to the immediate west of the site. The landscape position of the site is that of a cleared, gently inclined (3-10%) mid slope. Surrounding native vegetation comprises regenerating Broad-leaved Ironbark Forest. The artefact, which has been broken by heat, has a maximum linear dimension of 35.1 mm and retains no cortex. GSV on-site is poor (11-30%) due to the presence of an ironstone lag deposit. No other artefacts were observed in the vicinity. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track/fire trail use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-IA05-14

Plate 1 Hydro-IA05-14: broken silcrete flake

Plate 2 View across site Hydro-IA05-14, looking north

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___-___-____

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-IA06-14

Easting: 357337 Northing: 6373419 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [x] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [x] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [x] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

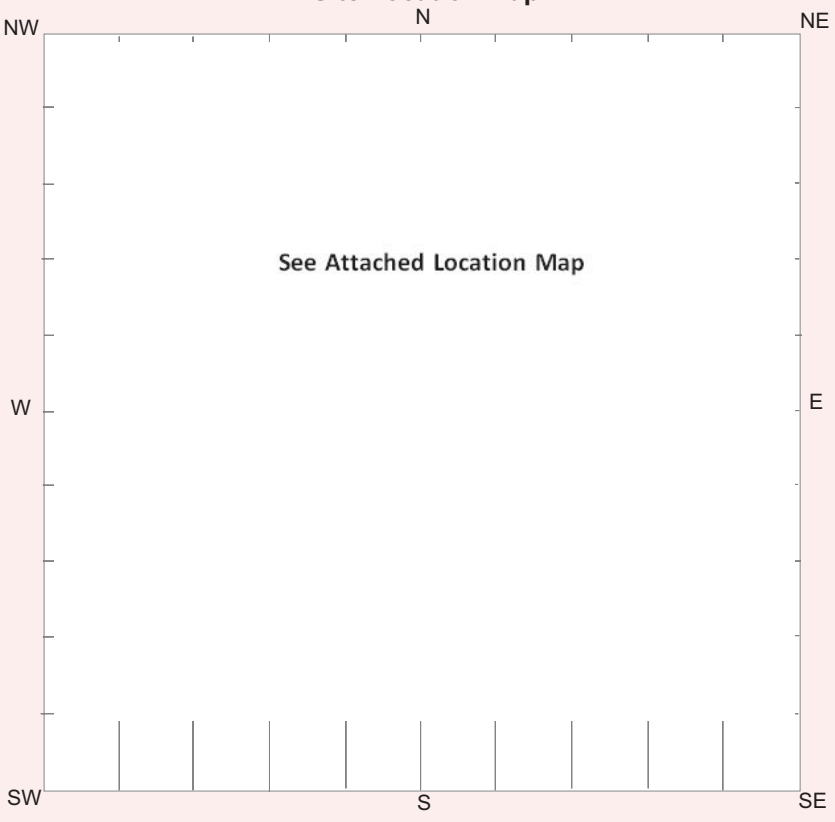
Water

Distance to permanent water source	1,020 metres
Distance to temporary water source	30 metres
Name of nearest permanent water source	Went Swmp
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.:

Primary report I.D.

(I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

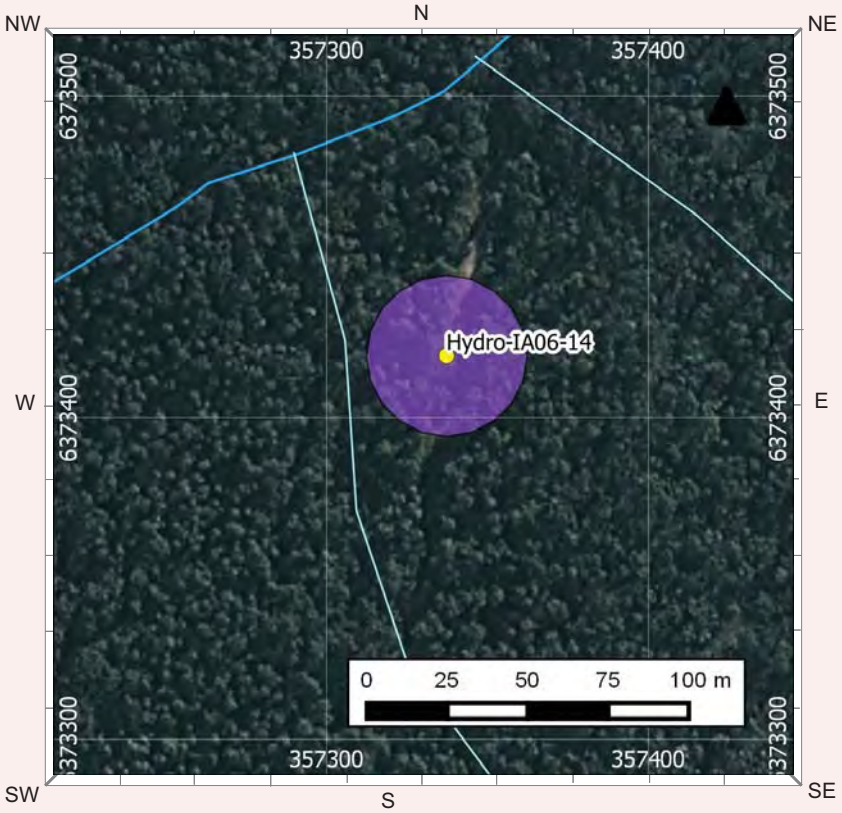
- [ ] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [x] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

	Internal length
	Internal width
	Shelter height
	Shelter floor area

Open Site Dimensions (m)

1m	Total length of visible site
1m	Average width of visible site
1m	Estimated area of visible site
1m	Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-IA6-14 consists of a complete FGS flake on an unsealed, north-south trending access track/fire trail on Lot 1 of DP166625. The landscape position of the site is that of a gently inclined (3-10%) spur crest between two unnamed 1st order drainage depressions. Surrounding native vegetation comprises regenerating Broad-leaved Ironbark/Spotted Gum Forest. The flake measures 53 (L) x 43 (W) x 14.9 (T) mm, has a cortical platform and no dorsal cortex. Marginal edge-damage is likely post-depositional given the artefact's location. GSV on-site is excellent (91-100%). No other artefacts were observed in the vicinity. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track/fire trail use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-IA06-14

Plate 1 Hydro-IA06-14: FGS flake

Plate 2 View across site Hydro-IA06-14, looking north

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___-___-____

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-IA07-14

Easting: 357251 Northing: 6372904 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [ ] Lower slope
- [ ] Mid slope
- [x] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [x] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

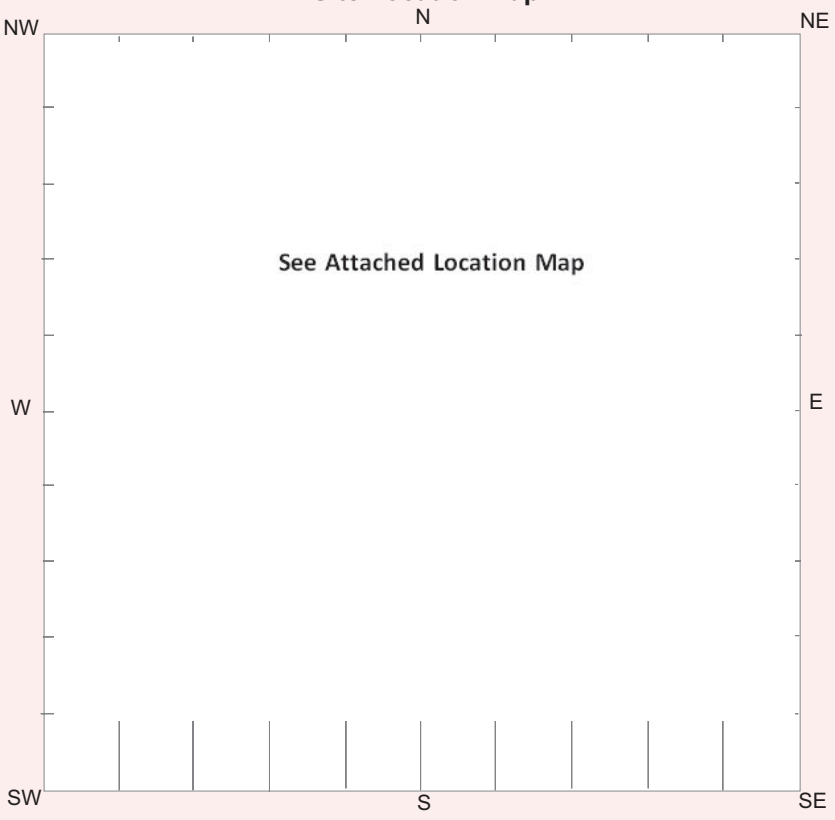
Water

Distance to permanent water source	690 metres
Distance to temporary water source	45 metres
Name of nearest permanent water source	Black Wat
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.:

Primary report I.D.

(I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

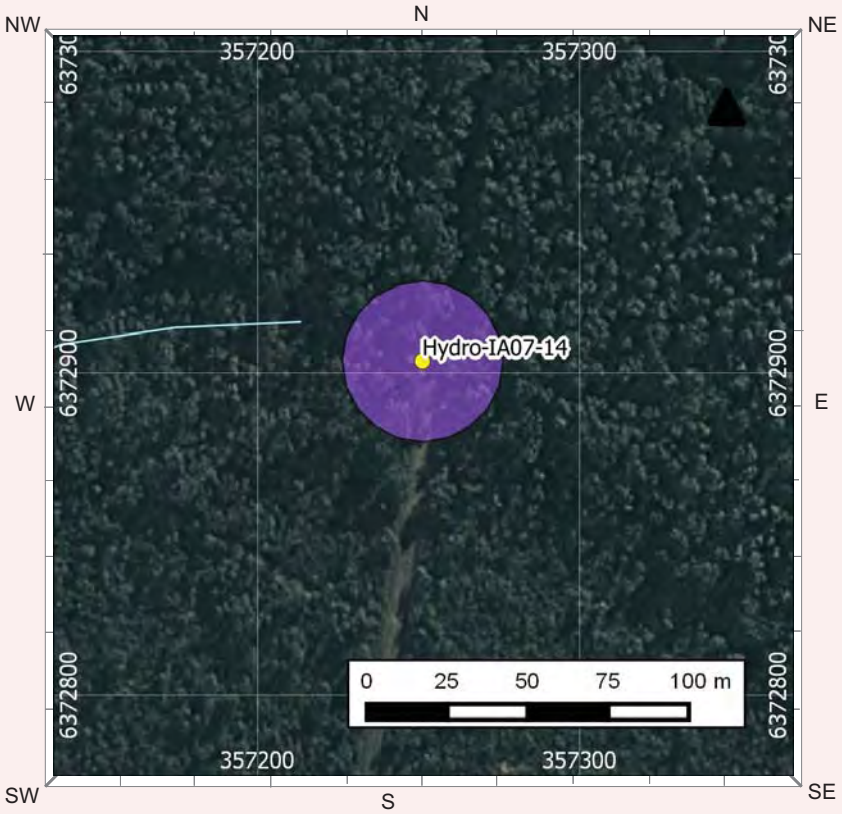
- [ ] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [x] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open Site Dimensions (m)

- [1m] Total length of visible site
- [1m] Average width of visible site
- [1m] Estimated area of visible site
- [1m] Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-IA7-14 consists of a broken (proximal) FGS flake on an unsealed, north-south trending access track/fire trail on Lot 1 of DP166625. The landscape position of the site is that of a gently inclined (3-10%) upper slope. Surrounding native vegetation comprises regenerating Broad-leaved Ironbark Forest and Kurri Sand Swamp Woodland. The flake has a maximum linear dimension of 21.3 mm and exhibits no cortex. GSV on-site is poor (11-30%) due principally to an ironstone lag deposit. No other artefacts were observed in the vicinity. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track/fire trail use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-IA07-14

Plate 1 Hydro-IA07-14: broken FGS flake

Plate 2 View across site Hydro-IA07-14, looking south

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___ ___

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-IA08-14

Easting: 358051 Northing: 6372838 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [x] Crest
- [ ] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [x] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] N/A

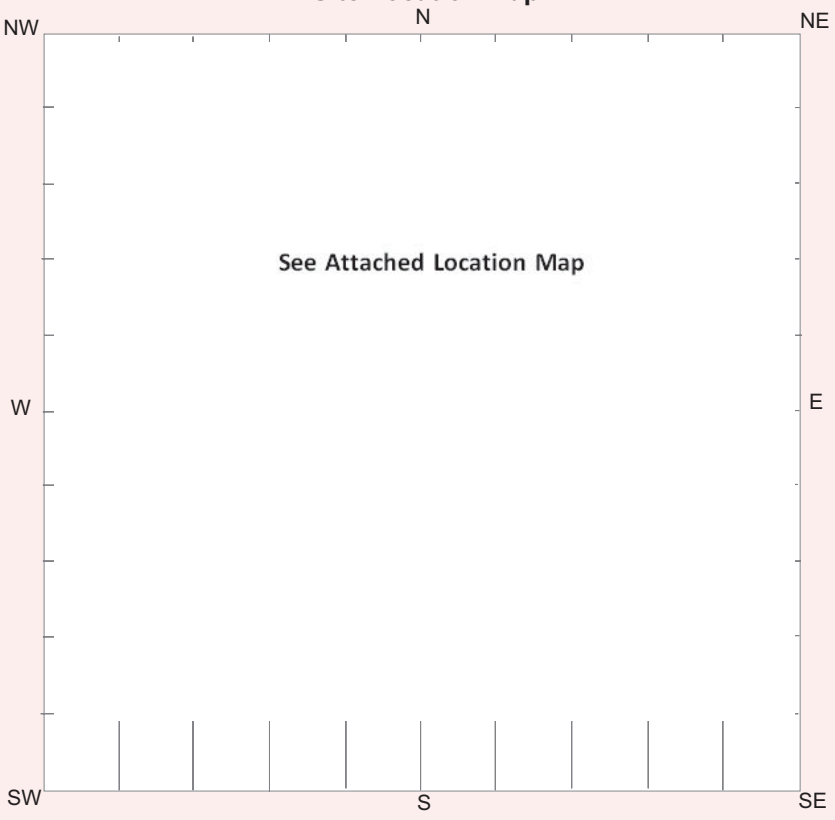
Water

Distance to permanent water source	115 metres
Distance to temporary water source	35 metres
Name of nearest permanent water source	W e n t S w m p
Name of nearest temporary water	U n n a m e d

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report I.D.

(I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

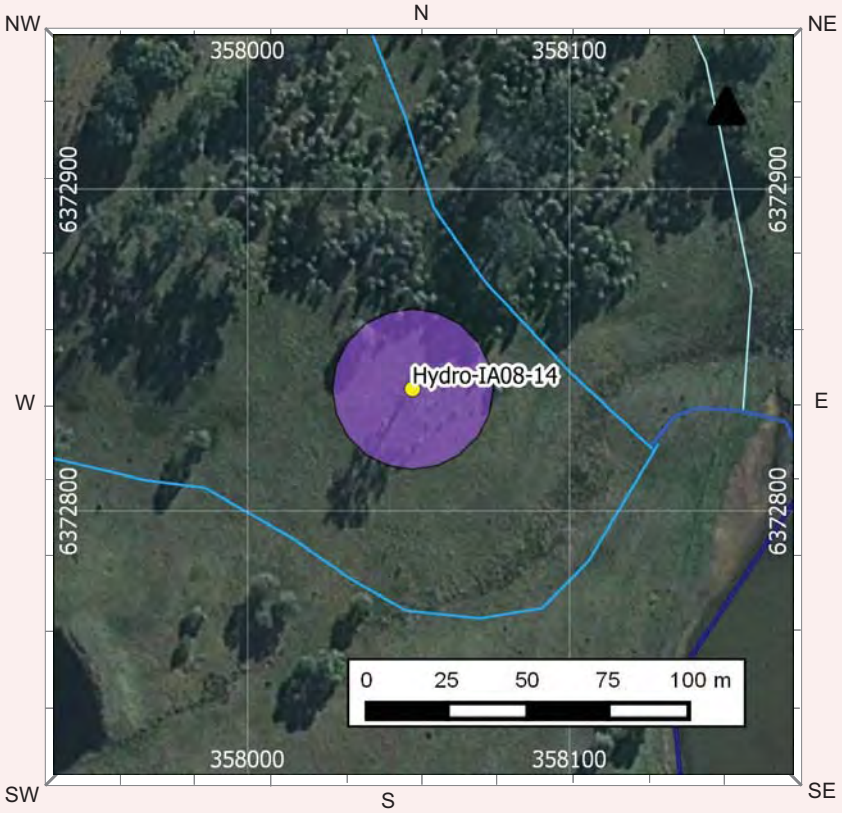
- [ ] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [x] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

	Internal length
	Internal width
	Shelter height
	Shelter floor area

Open Site Dimensions (m)

1m	Total length of visible site
1m	Average width of visible site
1m	Estimated area of visible site
1m	Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-IA8-14 consists of a silcrete flake shatter fragment in a small exposure at the base of a mature ironbark tree on Lot 1 of DP166625. The landscape position of the site is that of a gently-inclined (3-10%) spur crest between two unnamed 2nd order drainage depressions. The artefact has a maximum linear dimension of 12.2 mm and exhibits no cortex. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, cattle trampling and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-IA08-14

Plate 1 Hydro-IA08-14: silcrete flake shatter fragment

Plate 2 View across site Hydro-IA08-14, looking south

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___-___-____

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-IA09-14

Easting: 357675 Northing: 6372531 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [x] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] N/A

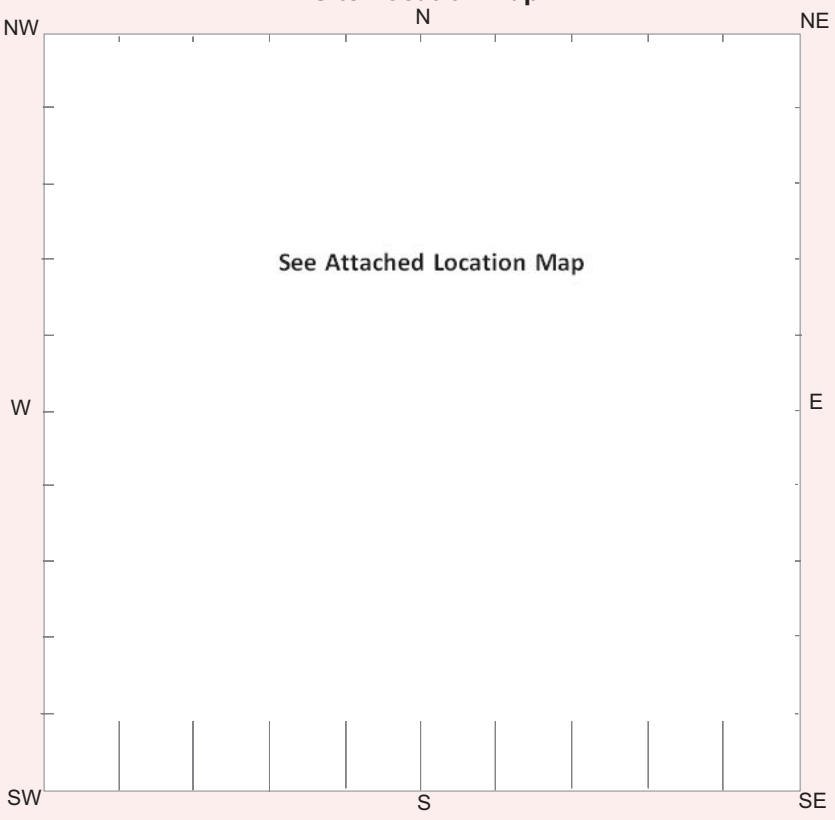
Water

Distance to permanent water source	185 metres
Distance to temporary water source	70 metres
Name of nearest permanent water source	Black Wat
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.:

Primary report I.D.

(I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

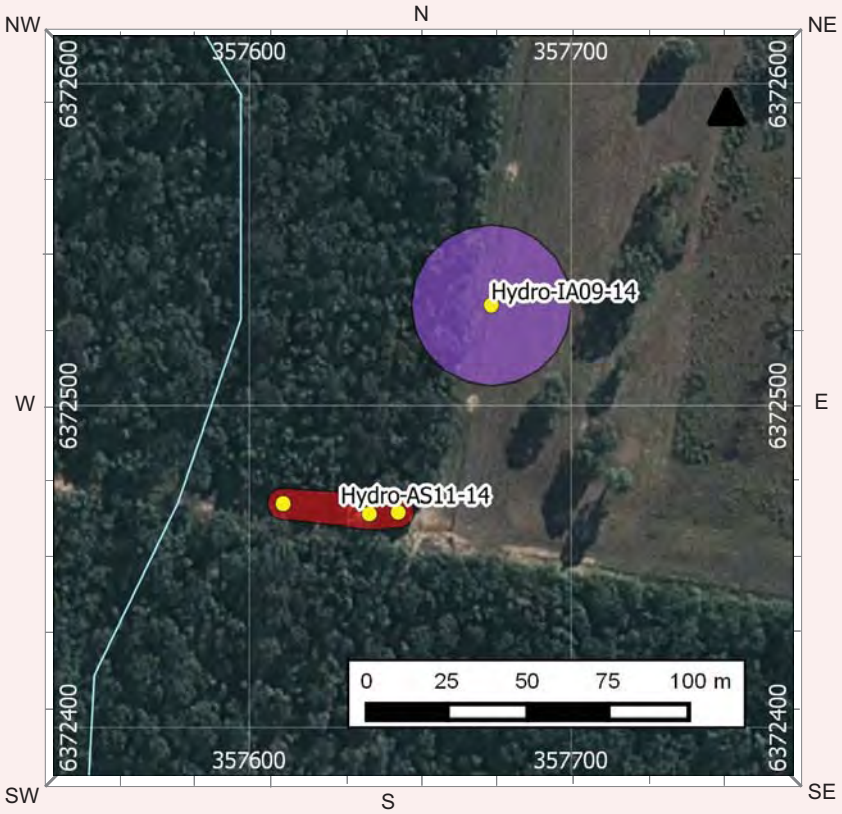
- [ ] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [x] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open Site Dimensions (m)

- [1m] Total length of visible site
- [1m] Average width of visible site
- [1m] Estimated area of visible site
- [1m] Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-IA9-14 consists of a multidirectional silcrete core on an unsealed, north-south trending access track/fire trail on Lot 1 of DP166625. The landscape position of the site is that of a very gently inclined (1-3%) lower slope that grades to the east into a elevated flat. Native vegetation to the west comprises regenerating Kurri Sand Swamp Woodland. The core measures 65 (L) x 37 (W) x 35.1 (T) mm and exhibits no cortex. GSV on the track is excellent (91-100%) but poor (11-30%) to very poor (0-10%) off it. No other artefacts were observed in the vicinity. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track/fire trail use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-IA09-14

Plate 1 Hydro-IA09-14: multidirectional silcrete core

Plate 2 View across site Hydro-IA09-14, looking south

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___-___-____

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-IA10-14

Easting: 357419 Northing: 6374517 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [x] Crest
- [ ] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] N/A

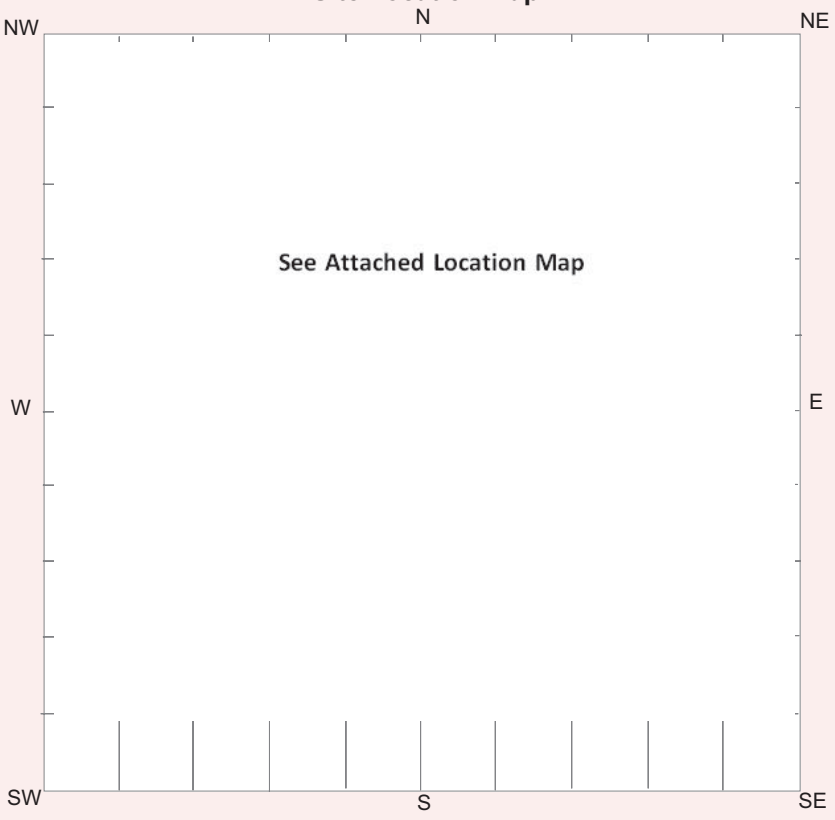
Water

Distance to permanent water source	300 metres
Distance to temporary water source	80 metres
Name of nearest permanent water source	Bishops Ck
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.:

Primary report I.D.

(I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- ☐ Boulder
- ☐ Wind erosion
- ☐ Water erosion
- ☐ Rock collapse

Rock Surface Condition

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Condition of Ceiling

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Shelter Aspect

- ☐ North
- ☐ North East
- ☐ East
- ☐ South East
- ☐ South
- ☐ South West
- ☐ West
- ☐ North West

Open Site

Site Orientation

- ☐ N-S
- ☐ NE-SW
- ☐ E-W
- ☐ SE-NW
- ☑ N/A

Features

- ☐ 1. Aboriginal Ceremony & Dreaming
- ☐ 2. Aboriginal Resource & Gathering
- ☐ 3. Art
- ☑ 4. Artefact
- ☐ 5. Burial
- ☐ 6. Ceremonial Ring
- ☐ 7. Conflict
- ☐ 8. Earth Mound
- ☐ 9. Fish Trap
- ☐ 10. Grinding Groove
- ☐ 11. Habitation Structure
- ☐ 12. Hearth
- ☐ 13. Non Human Bone & Organic Material
- ☐ 14. Ochre quarry
- ☐ 15. Potential Archaeological Deposit
- ☐ 16. Stone Quarry
- ☐ 17. Shell
- ☐ 18. Stone Arrangement
- ☐ 19. Modified Tree
- ☐ 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features

Site Dimensions

Closed Site Dimensions (m)

- ☐ Internal length
- ☐ Internal width
- ☐ Shelter height
- ☐ Shelter floor area

Open Site Dimensions (m)

- 1m Total length of visible site
- 1m Average width of visible site
- 1m Estimated area of visible site
- 1m Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-IA10-14 consists of a silcrete flake shatter fragment on an unsealed, east-west trending access track/fire trail running along the northern boundary of Lot 1 of DP166625. The landscape position of the site is that of a gently inclined (3-10%) spur crest. Surrounding native vegetation comprises regenerating Broad-leaved Ironbark Forest. The artefact has a maximum linear dimension of 39.7 mm, exhibits no cortex and has been thermally altered. GSV on the track is excellent (91-100%) but poor (11-30%) to very poor (0-10%) off it. No other artefacts were observed in the vicinity. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track/fire trail use and fluvial erosion activity.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-IA10-14

Plate 1 Hydro-IA10-14: silcrete flake shatter fragment

Plate 2 View across site Hydro-IA10-14, looking east

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___ ___

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name Hydro-IA11-14

Easting 357234 Northing 6372407 AGD/GDA GDA

Mapsheet

Zone 56 Location Method Differential GPS

Other Registration

Primary Recorder

Title | Surname | First Name | Initials

Dr | McLaren | Andrew

Organisation AECOM Australia Pty Ltd

Address 420 George Street Sydney NSW

Phone number 89340000 Fax 893400001

Date recorded 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [x] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [x] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

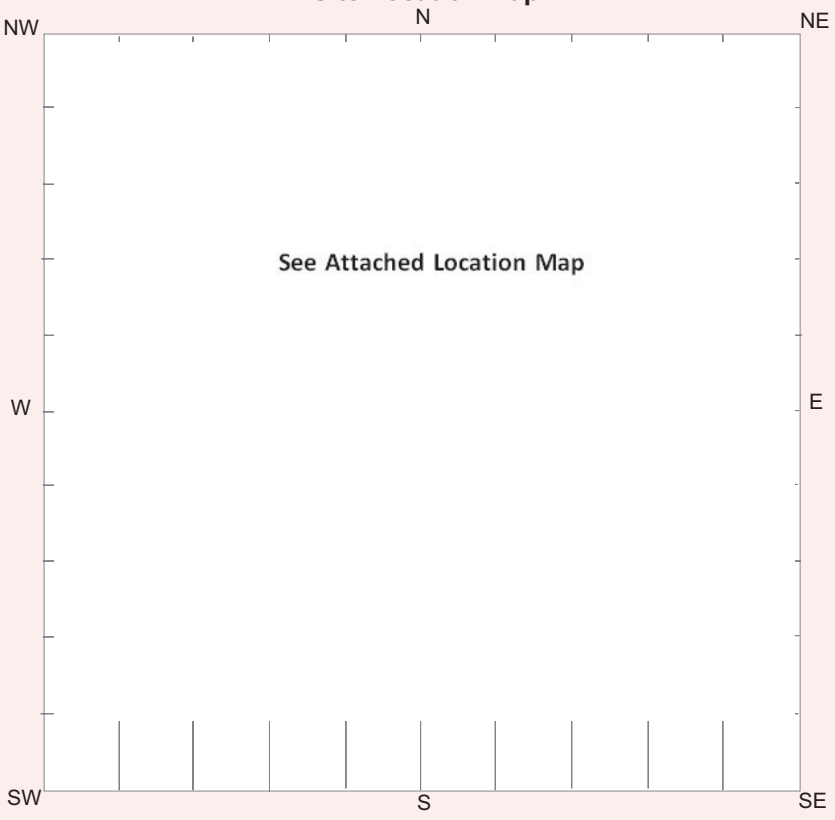
Water

Distance to permanent water source	200 metres
Distance to temporary water source	150 metres
Name of nearest permanent water source	Black Wat
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.:

Primary report I.D.

(I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

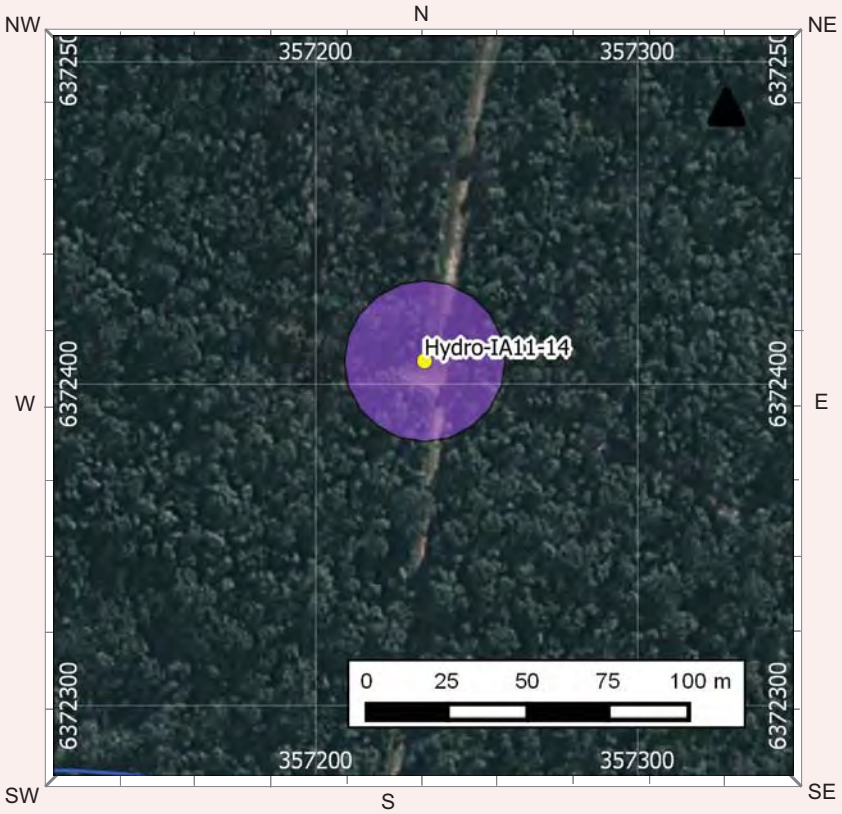
- [ ] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [x] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open Site Dimensions (m)

- [1m] Total length of visible site
- [1m] Average width of visible site
- [1m] Estimated area of visible site
- [1m] Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-IA10-14 consists of a complete silcrete flake on an unsealed access track/fire trail on Lot 316 of DP755231. The artefact is located at the intersection of two access tracks/fire trails: one trending north-south and the other northwest-southeast. The landscape position of the site is that of a gently inclined (3-10%) lower slope. Surrounding native vegetation comprises regenerating Kurri Sand Swamp Woodland. The flake, which measures 42.4 (L) x 28.2 (W) x 9.8 (T) mm, exhibits no dorsal cortex, has a plain striking platform and has been thermally altered. GSV on the access track is generally excellent (91-100%) but poor (11-30%) to very poor (0-10%) in places owing to ironstone lag deposit. No other artefacts were observed in the vicinity. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track/fire trail use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-IA11-14

Plate 1 Hydro-IA11-14: silcrete flake

Plate 2 View across site Hydro-IA11-14, looking east

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___-___-____

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-IA12-14

Easting: 358221 Northing: 6372373 AGD/GDA: GDA

Mapsheet

Zone 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title | Surname | First Name | Initials

Dr | McLaren | Andrew

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [x] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

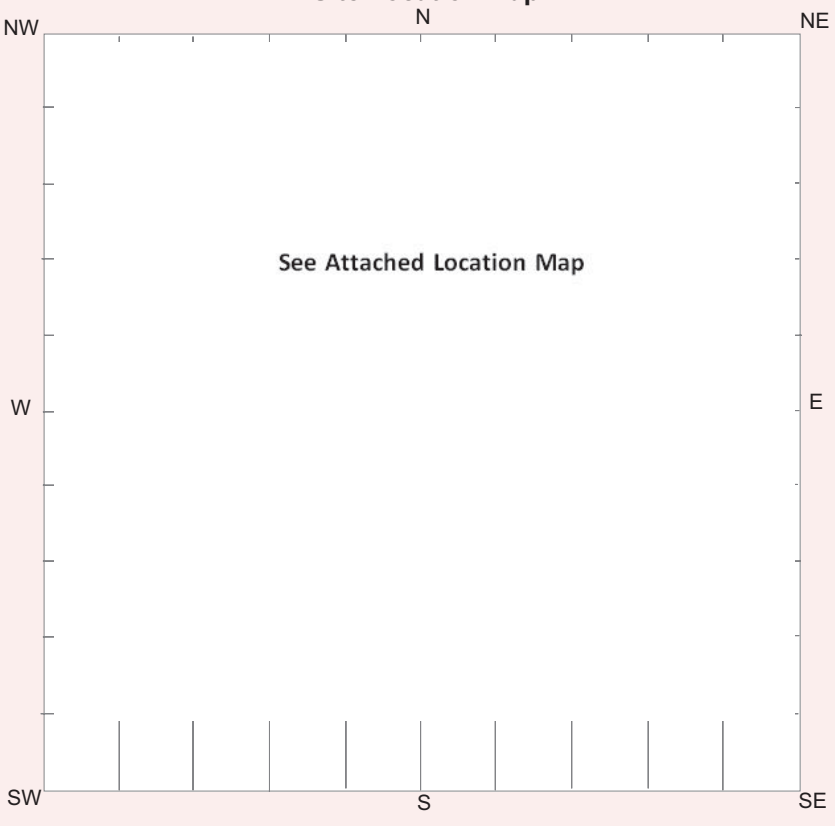
Water

Distance to permanent water source	60 metres
Distance to temporary water source	5 metres
Name of nearest permanent water source	W e n t S w m p
Name of nearest temporary water	U n n a m e d

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report I.D.

(I.D. Office Use only)

'Hydro Aluminium Smelter Site & Associated Buffer Land - Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

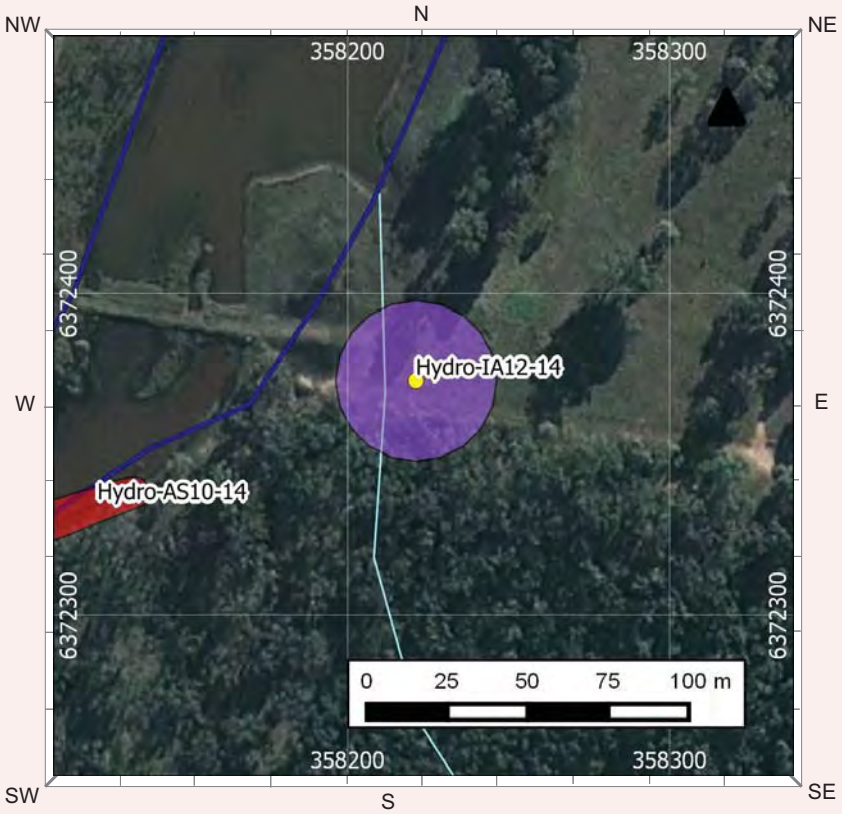
- [ ] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [x] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open Site Dimensions (m)

- [1m] Total length of visible site
- [1m] Average width of visible site
- [1m] Estimated area of visible site
- [1m] Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-IA12-14 consists of a complete silcrete flake on an unsealed, east-west trending access track running between Lot 1 of DP166625 and Lot 317 of DP755231. The landscape position of the site is that of a gently inclined (3-10%) lower slope overlooking an unnamed 1st order drainage depression. Native vegetation to the south comprises regenerating Lowland Redgum Forest. The flake, which measures 20.5 (L) x 21.5 (W) x 7.5 (T) mm, exhibits no dorsal cortex, has a plain striking platform and has been thermally altered. GSV on-site is fair (31-50%). No other artefacts were observed in the vicinity. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track/fire trail use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-IA12-14

Plate 1 Hydro-IA12-14: silcrete flake

Plate 2 View across site Hydro-IA12-14, looking east

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___ ___

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-IA13-14

Easting: 358142 Northing: 6372209 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [x] Crest
- [ ] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [x] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

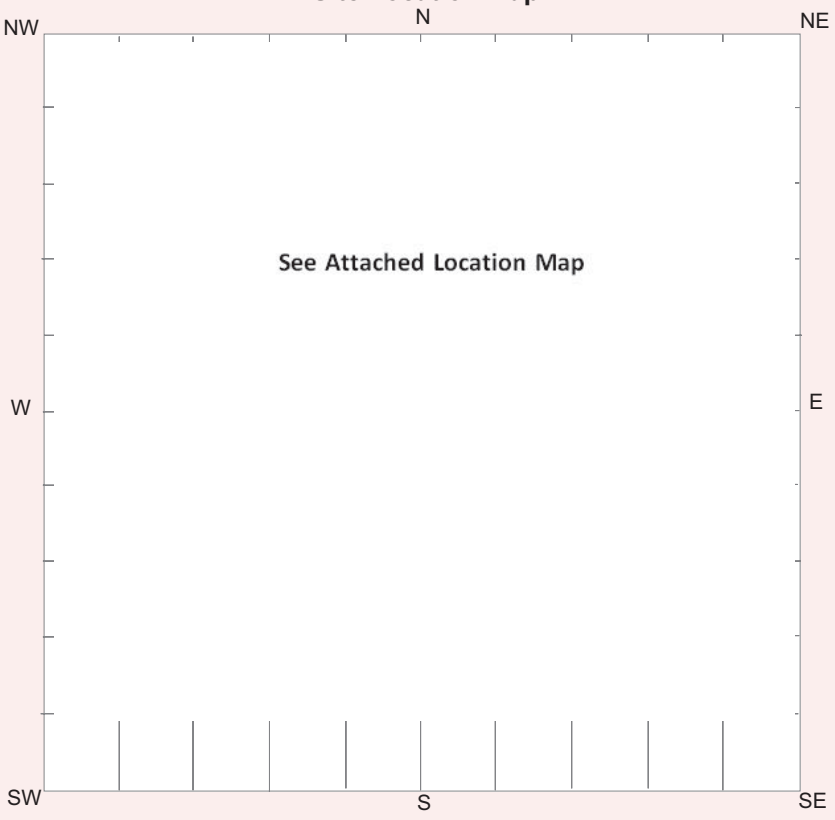
Water

Distance to permanent water source	60 metres
Distance to temporary water source	95 metres
Name of nearest permanent water source	W e n t S w m p
Name of nearest temporary water	U n n a m e d

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.:

Primary report

I.D. [ ] (I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

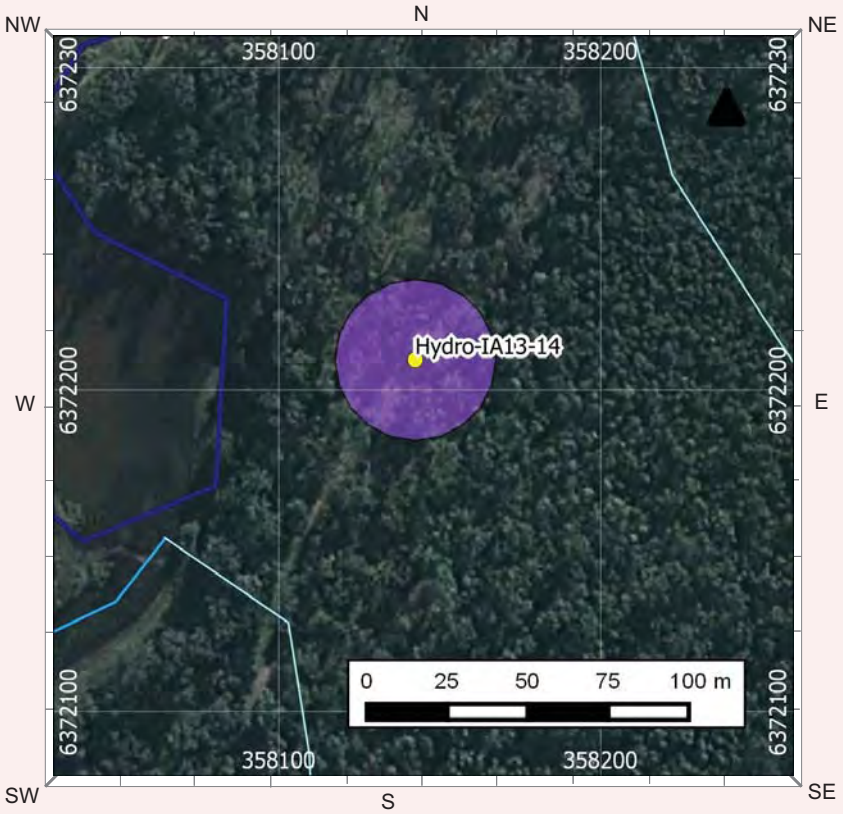
- [ ] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [x] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open Site Dimensions (m)

- [1m] Total length of visible site
- [1m] Average width of visible site
- [1m] Estimated area of visible site
- [1m] Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-IA13-14 consists of a quartz flake shatter fragment on an unsealed access track/fire trail on Lot 317 of DP755231. The landscape position of the site is that of a gently inclined (3-10%) spur crest between two unnamed 1st order drainage depressions. Surrounding native vegetation comprises regenerating Lowland Redgum Forest. The artefact has a maximum linear dimension of 14.3 mm and exhibits no cortex. GSV on the track ranges from excellent (91-100%) to very poor (0-10%) owing to a central grass strip. No other artefacts were observed in the vicinity. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track/fire trail use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-IA13-14

Plate 1 Hydro-IA13-14: quartz flake shatter fragment

Plate 2 View across site Hydro-IA13-14, looking north northeast

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___ ___

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-IA14-14

Easting: 357200 Northing: 6372062 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [x] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [x] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

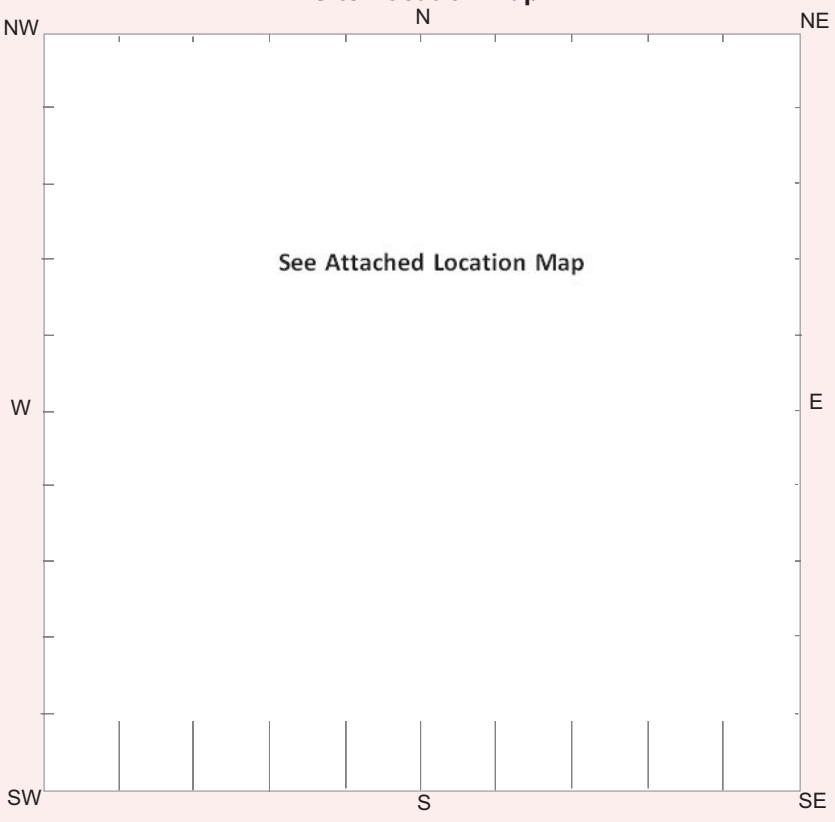
Water

Distance to permanent water source	90 metres
Distance to temporary water source	metres
Name of nearest permanent water source	Black Wat
Name of nearest temporary water	

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.:

Primary report

I.D. (I.D. Office Use only):

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

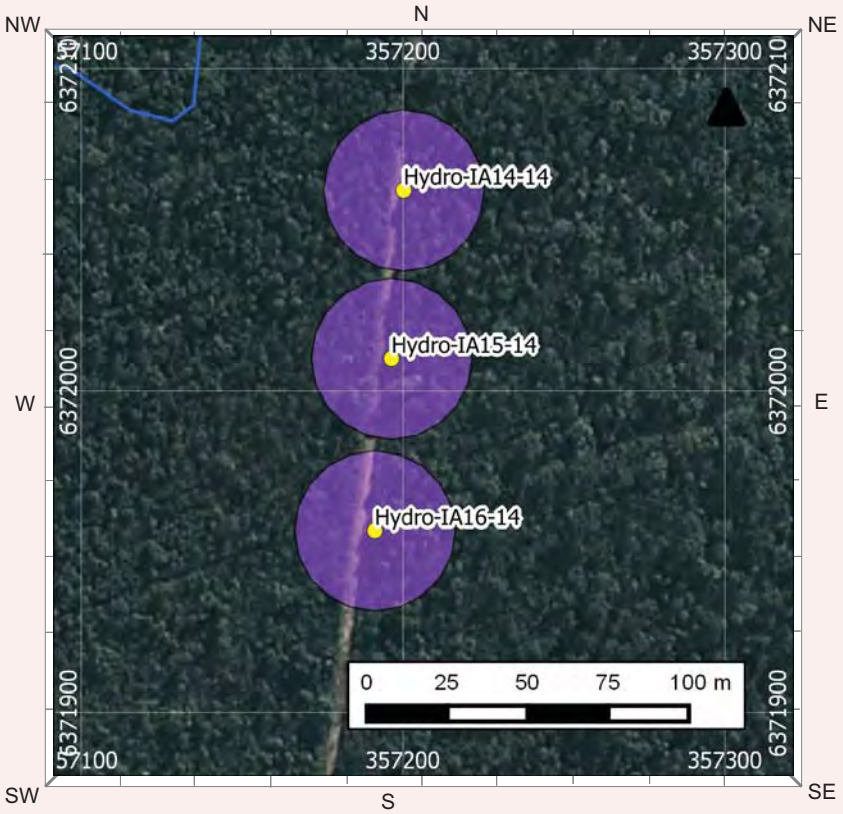
- [ ] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [x] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open Site Dimensions (m)

- [1m] Total length of visible site
- [1m] Average width of visible site
- [1m] Estimated area of visible site
- [1m] Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-IA14-14 consists of a broken (proximal) silcrete flake on an unsealed, north-south trending access track/fire trail on Lot 316 of DP755231. The landscape position of the site is that of a gently inclined (3-10%) lower slope. Surrounding native vegetation comprises regenerating Kurri Sand Swamp Woodland. The artefact has a maximum linear dimension of 35.7 mm, exhibits no cortex and has been thermally-altered . GSV on-site is excellent (91-100%). No other artefacts were observed in the vicinity. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track/fire trail use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-IA14-14

Plate 1 Hydro-IA14-14: broken silcrete flake

Plate 2 View across site Hydro-IA14-14, looking south

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office Use Only

Site Number

Date received / /   Date entered into system / /   Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title	Surname	First Name	Initials

Organisation

Address

Phone number   Fax

Client on system ☐

☐ **Knowledge Holder**

Title	Surname	First Name	Initials

Organisation

Address

Phone number   Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-IA15-14

Easting: 357196   Northing: 6372010   AGD/GDA: GDA

Mapsheet

Zone: 56   Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000   Fax: 89340001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [x] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [x] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

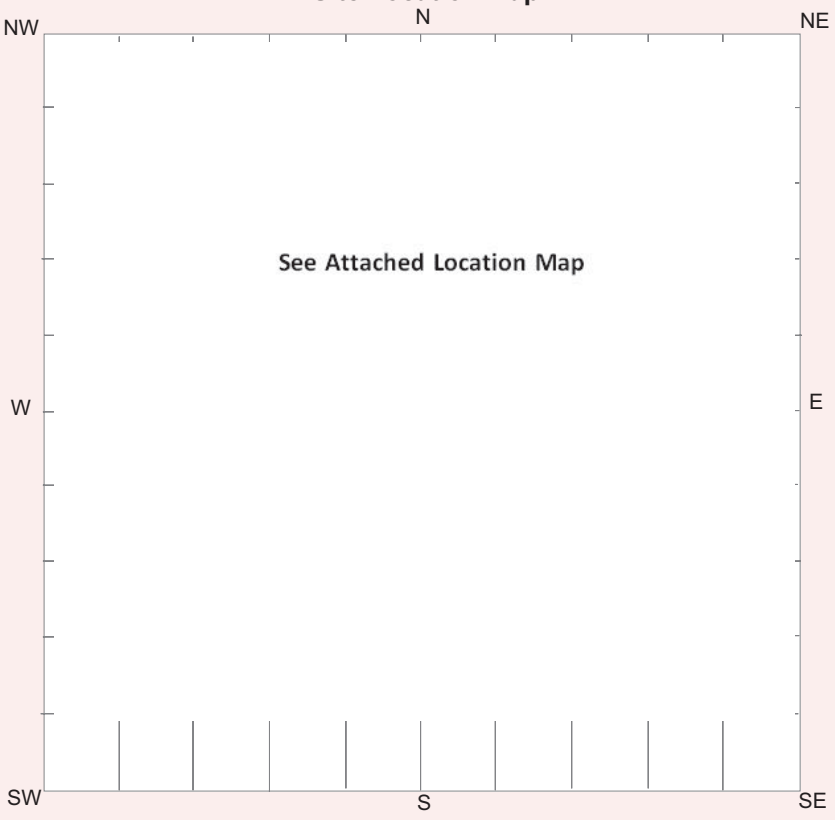
Water

Distance to permanent water source	140 metres
Distance to temporary water source	metres
Name of nearest permanent water source	Black Wat
Name of nearest temporary water	

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report I.D.

(I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

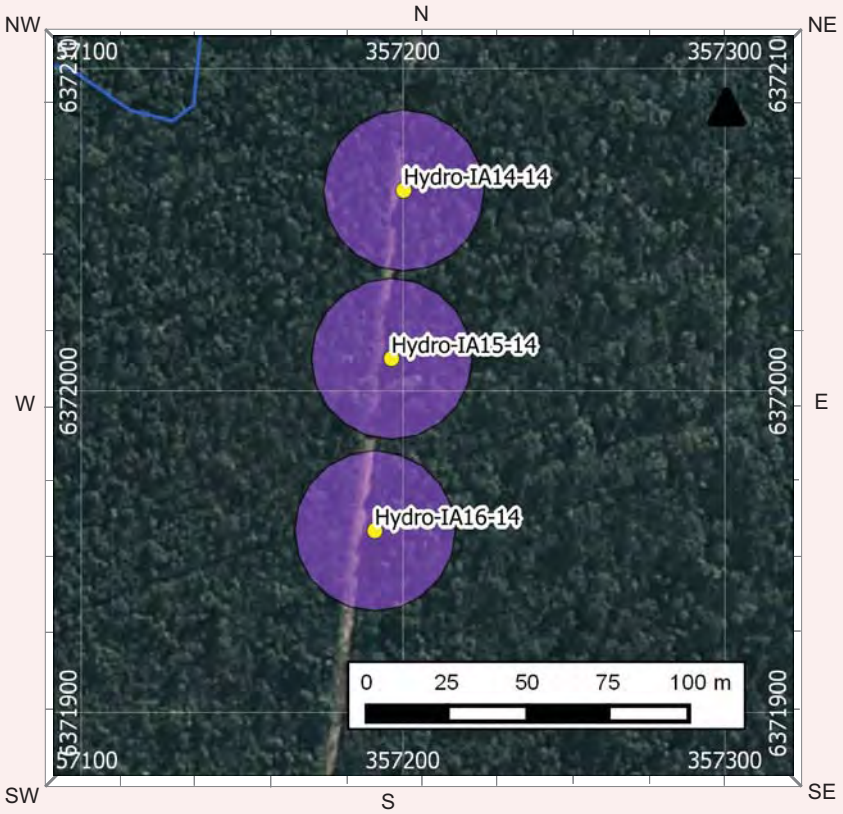
- [ ] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [x] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open Site Dimensions (m)

- [1m] Total length of visible site
- [1m] Average width of visible site
- [1m] Estimated area of visible site
- [1m] Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-IA15-14 consists of a broken silcrete Bondi point on an unsealed, north-south trending access track/fire trail on Lot 316 of DP755231. The landscape position of the site is that of a gently inclined (3-10%) lower slope. Surrounding native vegetation comprises regenerating Kurri Sand Swamp Woodland. The Bondi point, which measures 26.7 (L) x 10.4 (W) x 5.2 (T) mm and was manufactured on a flake, is missing its tip and exhibits no cortex. GSV on-site is excellent (91-100%). No other artefacts were observed in the vicinity. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track/fire trail use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-IA15-14

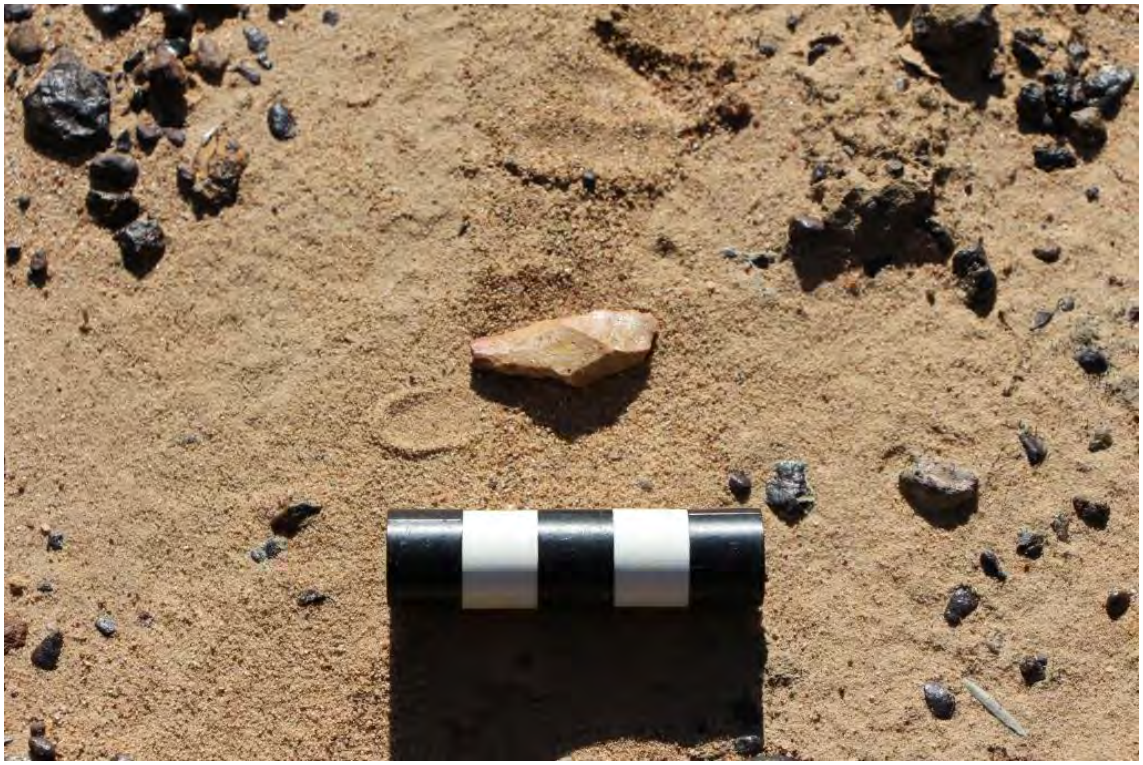


Plate 1 Hydro-IA15-14: broken silcrete Bondi point

Plate 2 View across site Hydro-IA15-14, looking south

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office Use Only

Site Number

Date received
Date entered into system
Date catalogued
Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-IA16-14

Easting: 357191 Northing: 6371956 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title: Dr
Surname: McLaren
First Name: Andrew
Initials

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 89340001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [x] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [x] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

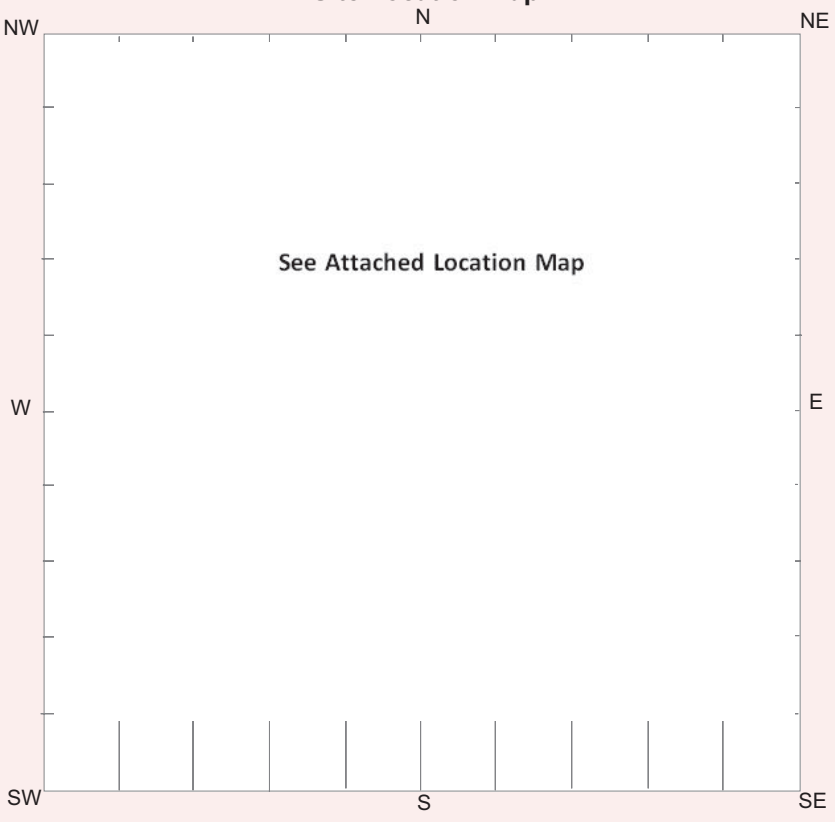
Water

Distance to permanent water source	190 metres
Distance to temporary water source	metres
Name of nearest permanent water source	Black Wat
Name of nearest temporary water	

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report I.D.

(I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

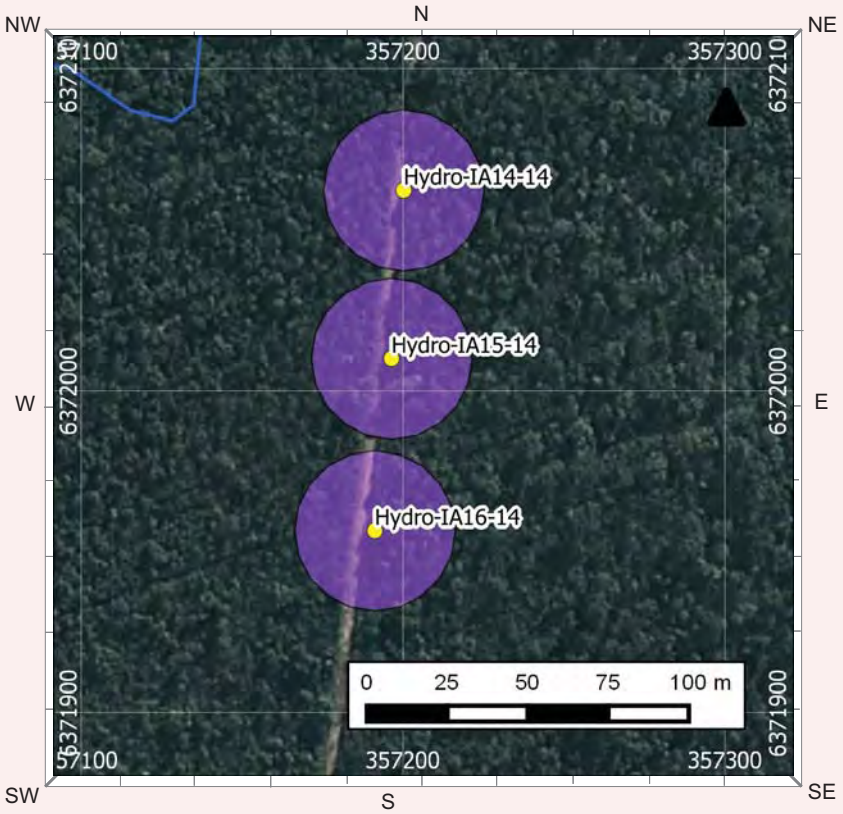
- [ ] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [x] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open Site Dimensions (m)

- [1m] Total length of visible site
- [1m] Average width of visible site
- [1m] Estimated area of visible site
- [1m] Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-IA16-14 consists of a complete silcrete flake on an unsealed, north-south trending access track/fire trail on Lot 316 of DP755231. The landscape position of the site is that of a gently inclined (3-10%) lower slope. Surrounding native vegetation comprises regenerating Kurri Sand Swamp Woodland. The flake, which measures 47.3 (L) x 48.6 (W) x 15.3 (T) mm, exhibits no dorsal cortex and has a multiple conchoidal platform. GSV on-site is excellent (91-100%). No other artefacts were observed in the vicinity. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track/fire trail use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-IA16-14

Plate 1 Hydro-IA16-14: complete silcrete flake

Plate 2 View across site Hydro-IA16-14, looking south

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___-___-____

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-IA17-14

Easting: 357758 Northing: 6371972 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [x] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

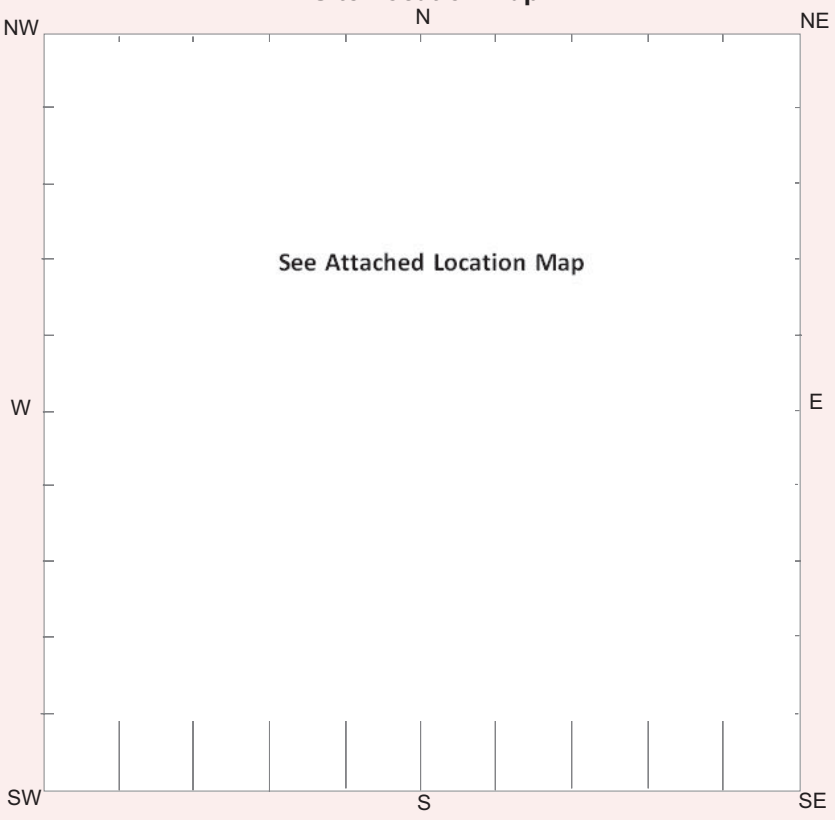
Water

Distance to permanent water source	300 metres
Distance to temporary water source	85 metres
Name of nearest permanent water source	Black Wat
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.:

Primary report I.D.

(I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- ☐ Boulder
- ☐ Wind erosion
- ☐ Water erosion
- ☐ Rock collapse

Rock Surface Condition

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Condition of Ceiling

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Shelter Aspect

- ☐ North
- ☐ North East
- ☐ East
- ☐ South East
- ☐ South
- ☐ South West
- ☐ West
- ☐ North West

Open Site

Site Orientation

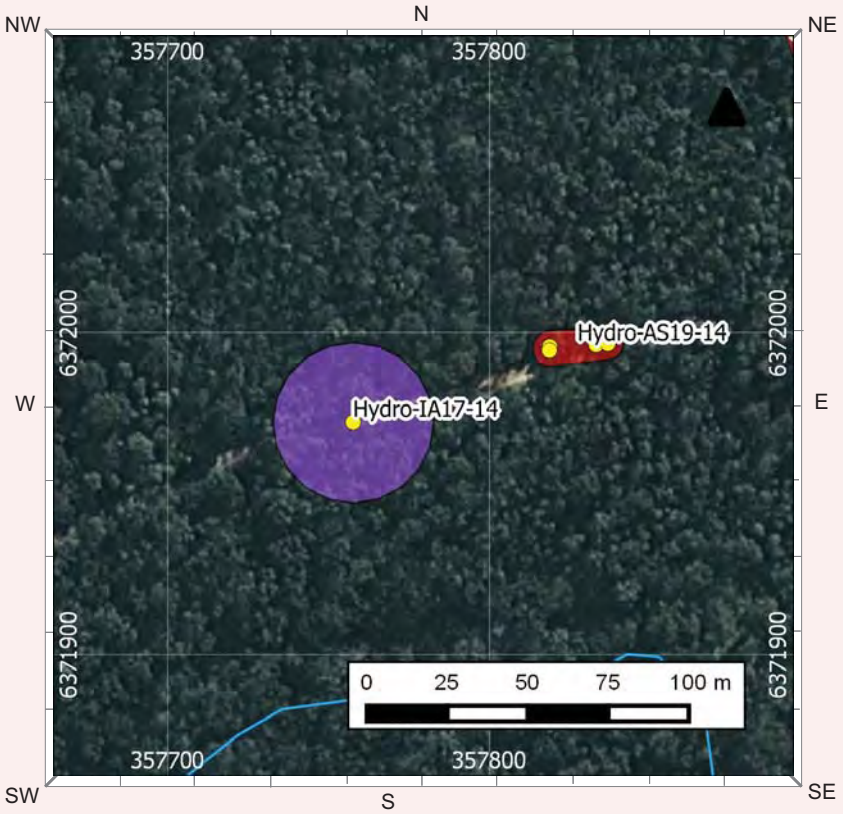
- ☐ N-S
- ☐ NE-SW
- ☐ E-W
- ☐ SE-NW
- ☑ N/A

Features

- ☐ 1. Aboriginal Ceremony & Dreaming
- ☐ 2. Aboriginal Resource & Gathering
- ☐ 3. Art
- ☑ 4. Artefact
- ☐ 5. Burial
- ☐ 6. Ceremonial Ring
- ☐ 7. Conflict
- ☐ 8. Earth Mound
- ☐ 9. Fish Trap
- ☐ 10. Grinding Groove
- ☐ 11. Habitation Structure
- ☐ 12. Hearth
- ☐ 13. Non Human Bone & Organic Material
- ☐ 14. Ochre quarry
- ☐ 15. Potential Archaeological Deposit
- ☐ 16. Stone Quarry
- ☐ 17. Shell
- ☐ 18. Stone Arrangement
- ☐ 19. Modified Tree
- ☐ 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- ☐ Internal length
- ☐ Internal width
- ☐ Shelter height
- ☐ Shelter floor area

Open Site Dimensions (m)

- 1m Total length of visible site
- 1m Average width of visible site
- 1m Estimated area of visible site
- 1m Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-IA17-14 consists of a complete silicified tuff flake on an unsealed access track/fire trail on Lot 317 of DP755231. The site is located on the eastern edge of a level to very gently inclined elevated flat or plateau to the north of the existing Hydro smelter complex. Surrounding native vegetation comprises regenerating Kurri Sand Swamp Woodland. The flake, which measures 25.3 (L) x 16.2 (W) x 7.5 (T) mm, has a plain platform and exhibits no cortex. GSV on-site is excellent (91-100%). No other artefacts were observed in the vicinity. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track/fire trail use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___ ___

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-IA18-14

Easting: 358052 Northing: 6371829 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [ ] Lower slope
- [x] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [x] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

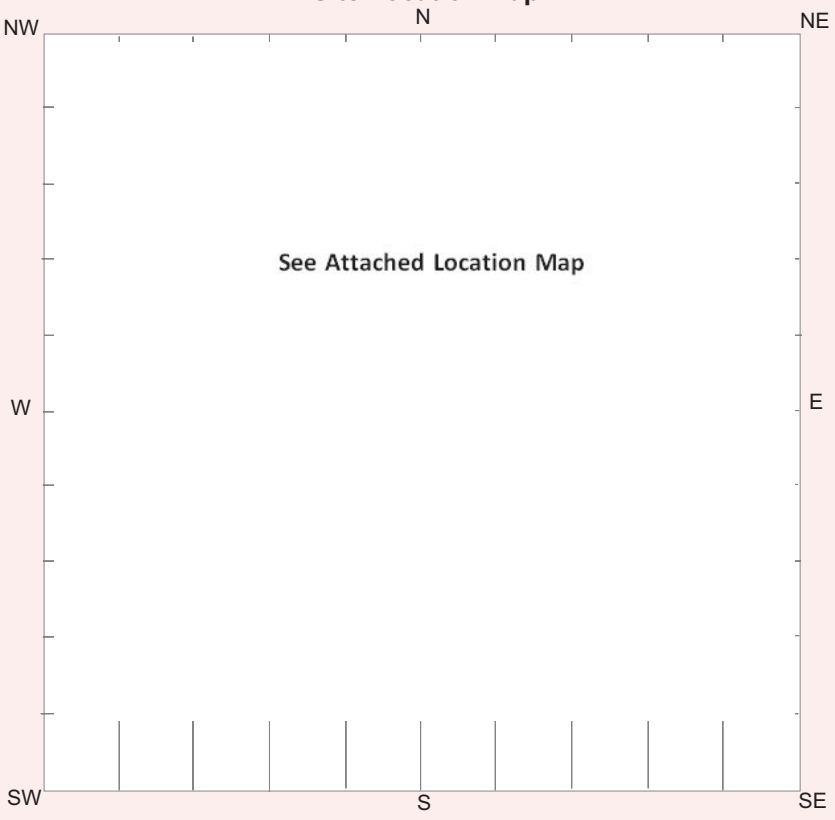
Water

Distance to permanent water source	460 metres
Distance to temporary water source	85 metres
Name of nearest permanent water source	Black Wat
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.:

Primary report I.D.

(I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

General Site Information

Closed Site

Shelter/Cave Formation

- ☐ Boulder
- ☐ Wind erosion
- ☐ Water erosion
- ☐ Rock collapse

Rock Surface Condition

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Condition of Ceiling

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Shelter Aspect

- ☐ North
- ☐ North East
- ☐ East
- ☐ South East
- ☐ South
- ☐ South West
- ☐ West
- ☐ North West

Open Site

Site Orientation

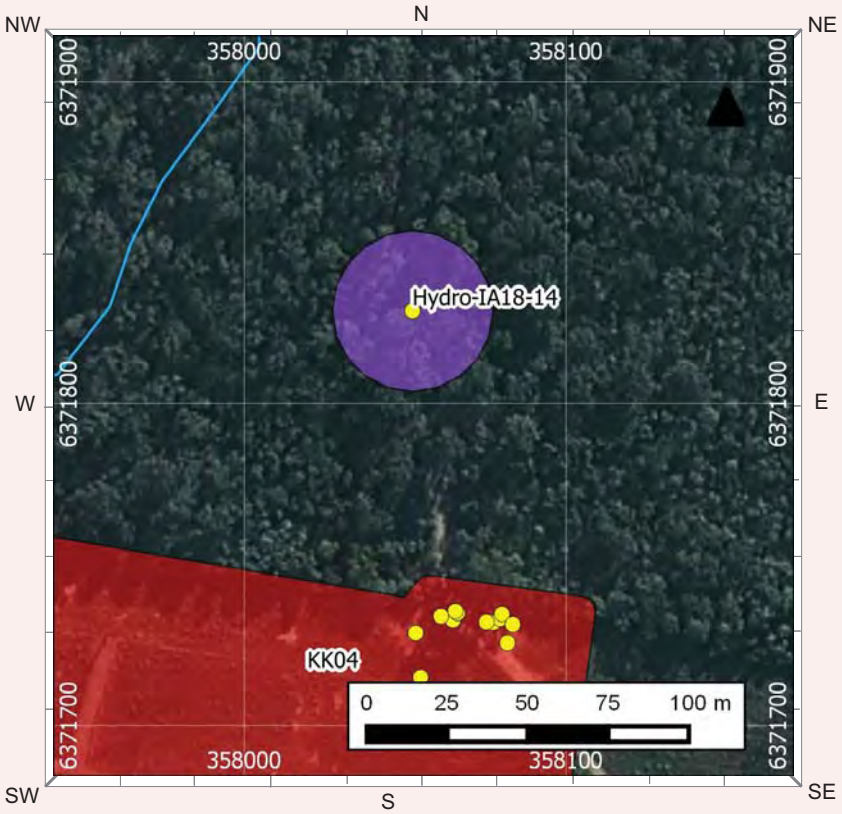
- ☐ N-S
- ☐ NE-SW
- ☐ E-W
- ☐ SE-NW
- ☑ N/A

Features

- ☐ 1. Aboriginal Ceremony & Dreaming
- ☐ 2. Aboriginal Resource & Gathering
- ☐ 3. Art
- ☑ 4. Artefact
- ☐ 5. Burial
- ☐ 6. Ceremonial Ring
- ☐ 7. Conflict
- ☐ 8. Earth Mound
- ☐ 9. Fish Trap
- ☐ 10. Grinding Groove
- ☐ 11. Habitation Structure
- ☐ 12. Hearth
- ☐ 13. Non Human Bone & Organic Material
- ☐ 14. Ochre quarry
- ☐ 15. Potential Archaeological Deposit
- ☐ 16. Stone Quarry
- ☐ 17. Shell
- ☐ 18. Stone Arrangement
- ☐ 19. Modified Tree
- ☐ 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- ☐ Internal length
- ☐ Internal width
- ☐ Shelter height
- ☐ Shelter floor area

Open Site Dimensions (m)

- 1m Total length of visible site
- 1m Average width of visible site
- 1m Estimated area of visible site
- 1m Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-IA18-14 consists of a broken silicified tuff flake on an unsealed access track/fire trail on Lot 317 of DP755231. The landscape position of the site is that of a gently inclined (3-10%) simple slope. Surrounding native vegetation comprises regenerating Kurri Sand Swamp Woodland and Lowland Redgum Forest. The flake, which has a maximum linear dimension of 61.3 mm, has a plain platform and exhibits no cortex. GSV on-site is excellent (91-100%). No other artefacts were observed in the vicinity. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track/fire trail use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-IA18-14

Plate 1 Hydro-IA18-14: broken silicified tuff flake

Plate 2 View across site Hydro-IA18-14, looking north

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___ ___

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name Hydro-IA19-14

Easting 355868 Northing 6372201 AGD/GDA GDA

Mapsheet

Zone 56 Location Method Differential GPS

Other Registration

Primary Recorder

Title | Surname | First Name | Initials

Dr | McLaren | Andrew

Organisation AECOM Australia Pty Ltd

Address 420 George Street Sydney NSW

Phone number 89340000 Fax 893400001

Date recorded 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [ ] Lower slope
- [x] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [x] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

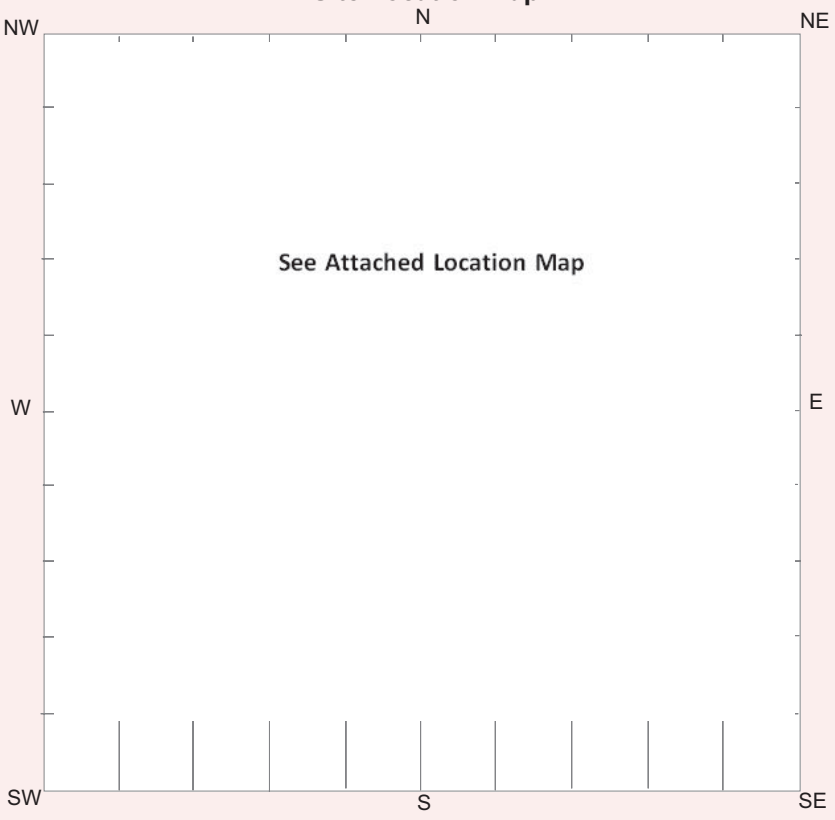
Water

Distance to permanent water source	640 metres
Distance to temporary water source	60 metres
Name of nearest permanent water source	Black Wat
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.:

Primary report

I.D. [ ] (I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

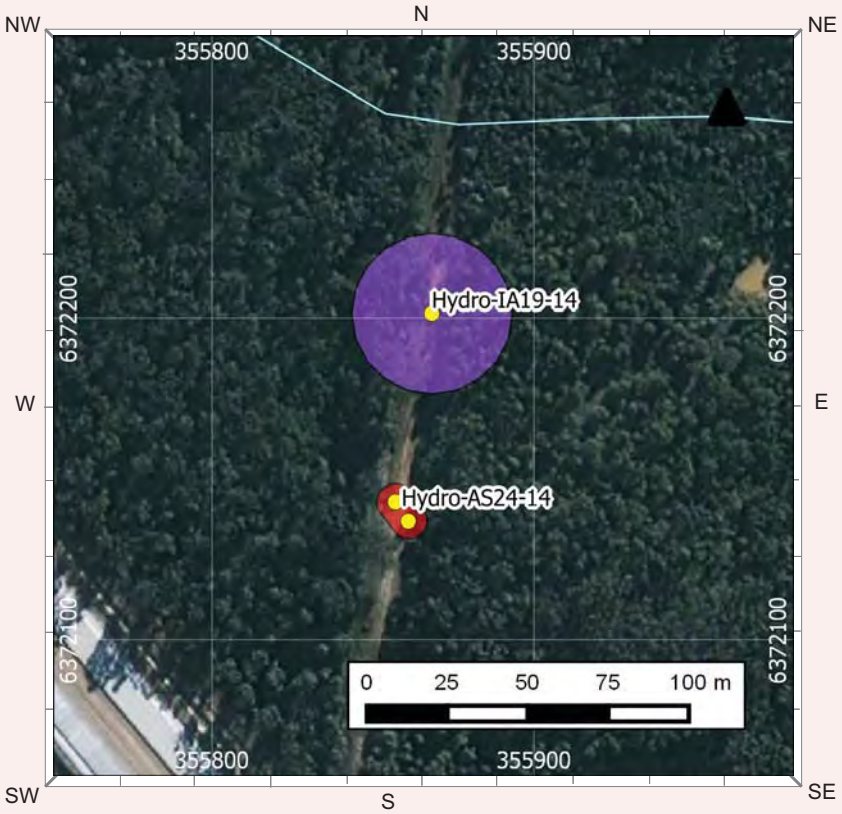
- [ ] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [x] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

	Internal length
	Internal width
	Shelter height
	Shelter floor area

Open Site Dimensions (m)

1m	Total length of visible site
1m	Average width of visible site
1m	Estimated area of visible site
1m	Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-IA19-14 consists of a complete silicified tuff flake on the western edge of an unsealed, north-south trending access track/fire trail that runs along the boundary of Lots 10 and 11 of DP1082775. The landscape context of the site is that of a gently inclined (3-10%) mid slope overlooking (to the north) an unnamed 1st order drainage depression. Surrounding native vegetation comprises regenerating Broad-leaved Ironbark Forest. The flake, which measures 26.5 (L) x 26.3 (W) x 8.4 (T) mm, has a plain platform and exhibits no cortex. GSV on-site is poor (11-30%). No other artefacts were observed in the vicinity. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track/fire trail use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-IA19-14

Plate 1 Hydro-IA19-14: silicified tuff flake

Plate 2 View across site Hydro-IA19-14, looking north

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___ ___

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-IA20-14

Easting: 356482 Northing: 6372152 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [x] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [x] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

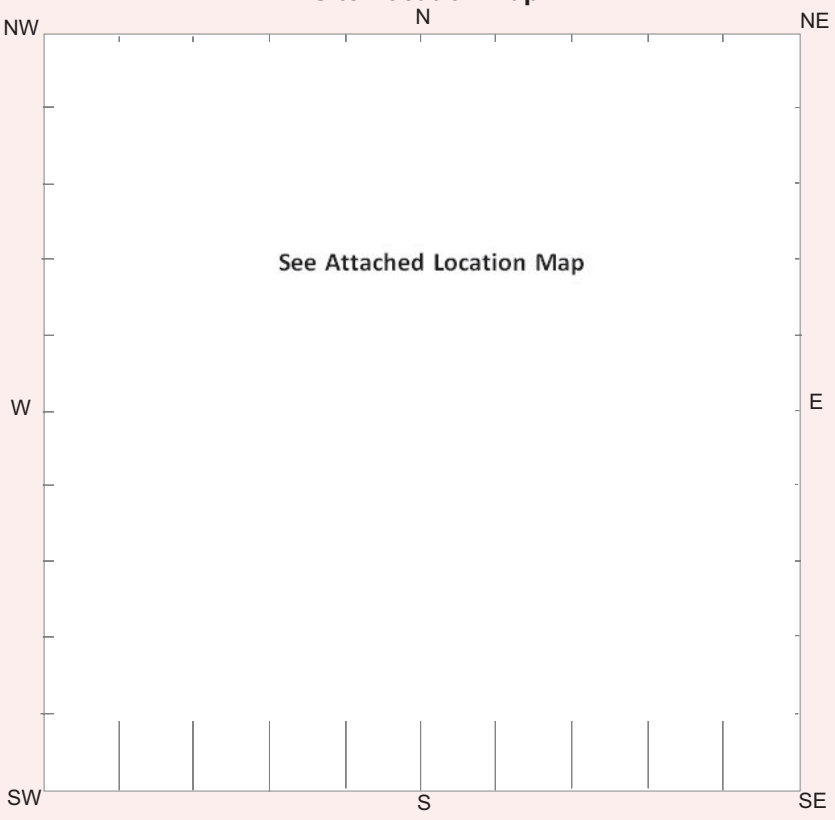
Water

Distance to permanent water source	400 metres
Distance to temporary water source	10 metres
Name of nearest permanent water source	Black Wat
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report

I.D. (I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

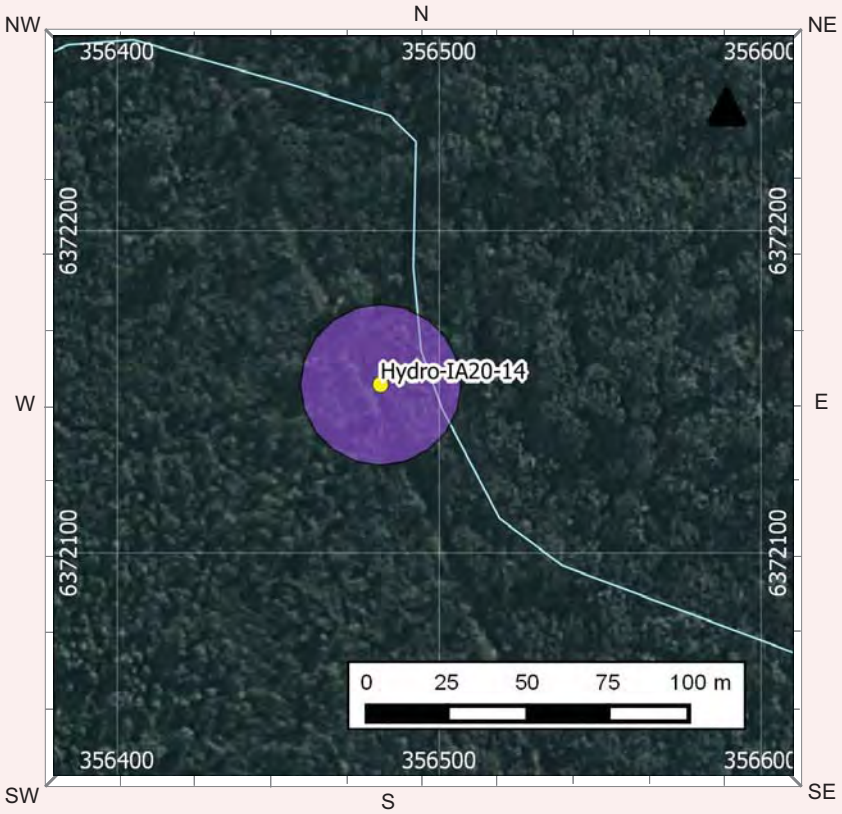
- [ ] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [x] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open Site Dimensions (m)

- [1m] Total length of visible site
- [1m] Average width of visible site
- [1m] Estimated area of visible site
- [1m] Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-IA20-14 consists of a complete silcrete flake on an unsealed access track/fire trail on Lot 356 of DP755231. The site is located on the western edge of an unnamed 1st order drainage depression. Surrounding native vegetation comprises regenerating Kurri Sand Swamp Woodland. The flake, which measures 45.6 (L) x 56.2 (W) x 10.8 (T) mm, has a cortical platform and exhibits 1-50% dorsal cortex. GSV on-site is excellent (91-100%). No other artefacts were observed in the vicinity. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track/fire trail use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-IA20-14

Plate 1 Hydro-IA20-14: silcrete flake

Plate 2 View across site Hydro-IA20-14, looking southeast

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___ ___

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-IA21-14

Easting: 356399 Northing: 6371678 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [x] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [x] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] N/A

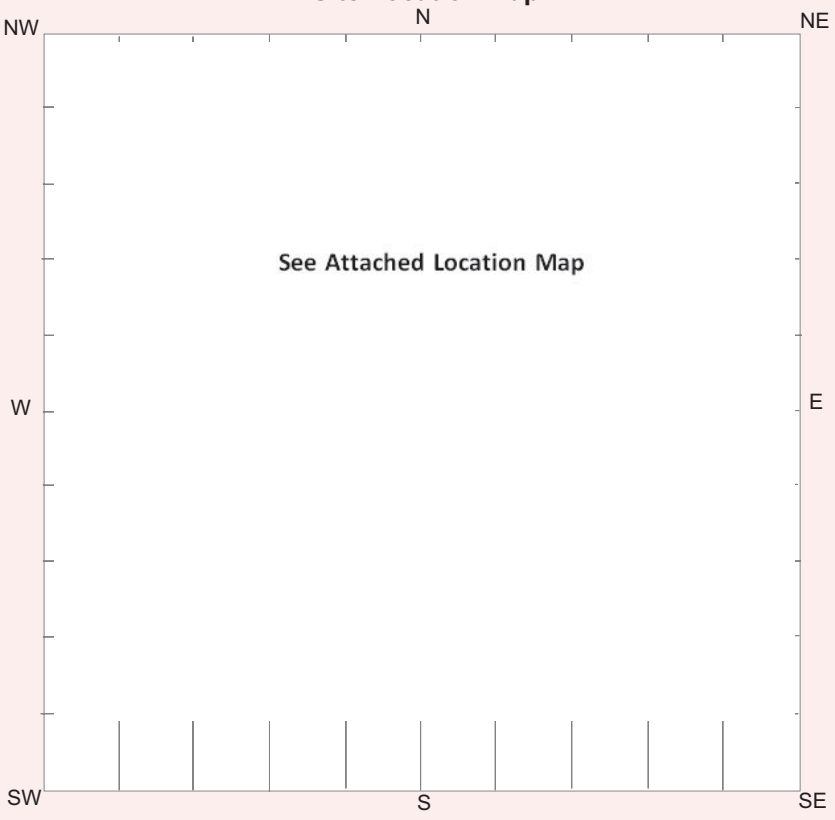
Water

Distance to permanent water source	95 metres
Distance to temporary water source	90 metres
Name of nearest permanent water source	Black Wat
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report I.D.

(I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

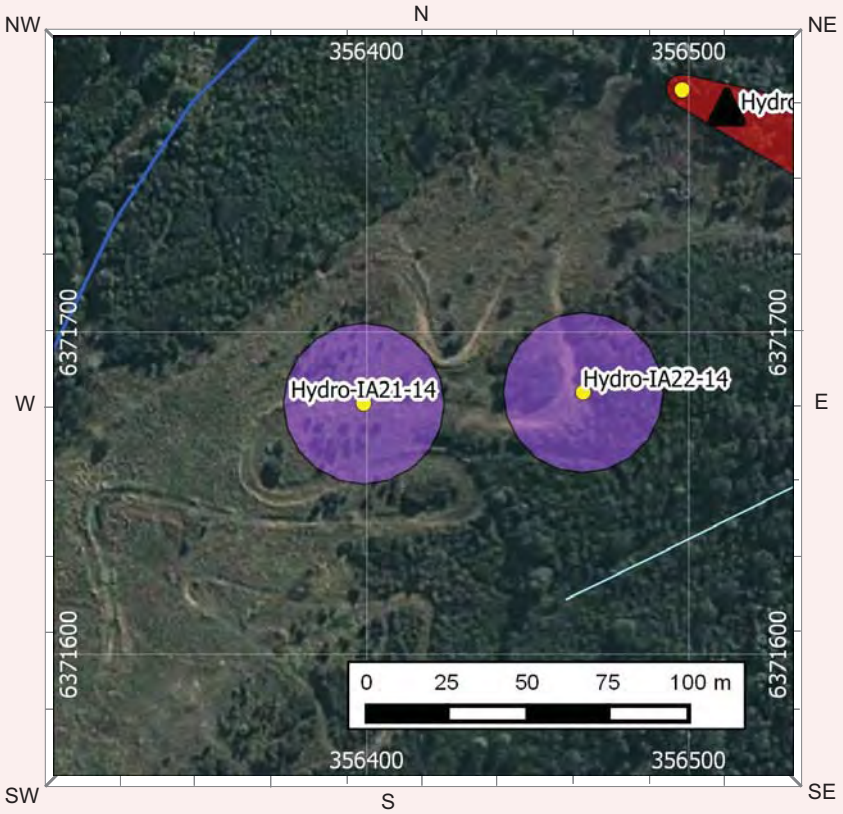
- [ ] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [x] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open Site Dimensions (m)

- [1m] Total length of visible site
- [1m] Average width of visible site
- [1m] Estimated area of visible site
- [1m] Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-IA21-14 consists of a unidirectional silcrete core on the edge of a former dirt bike race track on Lot 14 of DP1082775. The landscape position of the site is a gently inclined (3-10%) simple slope. Surrounding native vegetation comprises regenerating Kurri Sand Swamp Woodland. The core, manufactured on a flake, measures 26.5 (L) x 26.3 (W) x 8.4 (T) mm and exhibits a single flake removal. Some cortex (1-50%) is present. GSV on-site is very poor (0-10%). No other artefacts were observed in the vicinity. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance and the construction and use of the dirt bike track.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-IA21-14

Plate 1 Hydro-IA12-14: unidirectional silcrete core

Plate 2 View across site Hydro-IA21-14, looking east

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___-___-____

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name Hydro-IA22-14

Easting 356467 Northing 6371681 AGD/GDA GDA

Mapsheet

Zone 56 Location Method Differential GPS

Other Registration

Primary Recorder

Title | Surname | First Name | Initials

Dr | McLaren | Andrew

Organisation AECOM Australia Pty Ltd

Address 420 George Street Sydney NSW

Phone number 89340000 Fax 893400001

Date recorded 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [x] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

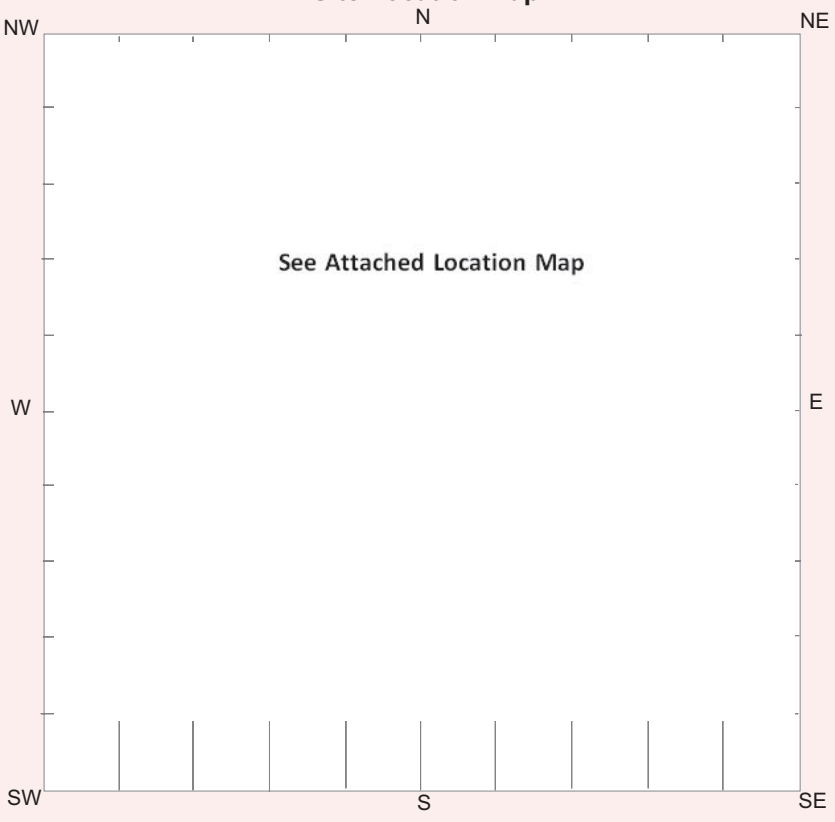
Water

Distance to permanent water source	150 metres
Distance to temporary water source	55 metres
Name of nearest permanent water source	Black Wat
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.:

Primary report I.D.

(I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

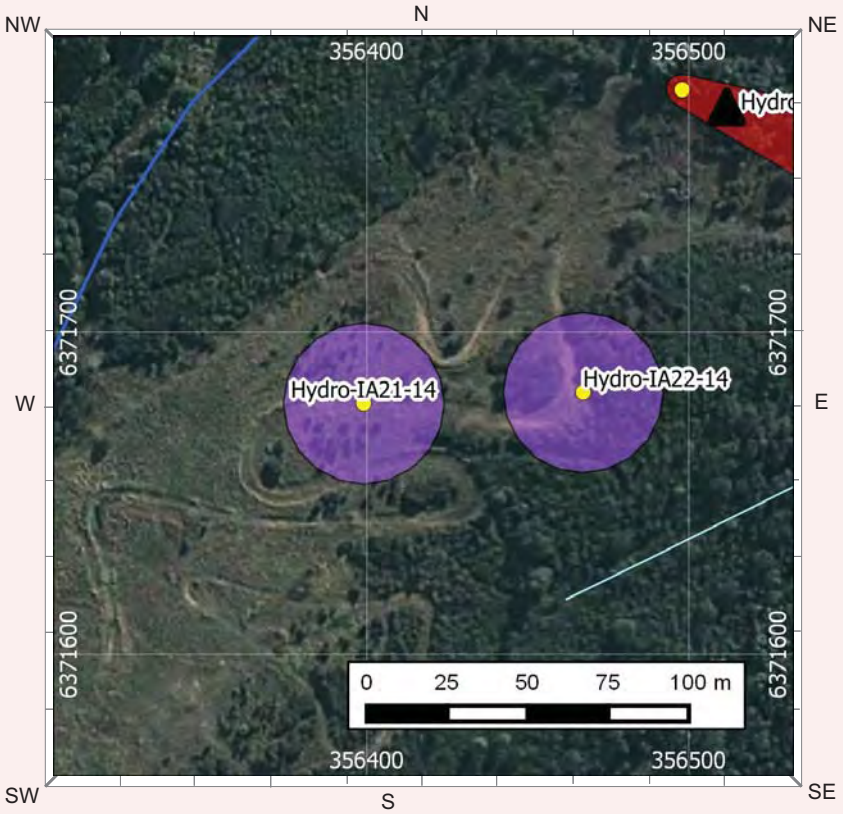
- [ ] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [x] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open Site Dimensions (m)

- [1m] Total length of visible site
- [1m] Average width of visible site
- [1m] Estimated area of visible site
- [1m] Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-IA22-14 consists of a split silicified tuff flake on a former dirt bike race track on Lot 14 of DP1082775. The landscape position of the site is a gently inclined (3-10%) simple slope. Surrounding native vegetation comprises regenerating Kurri Sand Swamp Woodland. The artefact has a maximum linear dimension of 19.6 mm and exhibits no cortex. Some cortex (1-50%) is present. GSV on-site is excellent (91-100%). No other artefacts were observed in the vicinity. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance and the construction and use of the dirt bike track.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-IA22-14

Plate 1 Hydro-IA22-14: silcrete tuff flake

Plate 2 View across site Hydro-IA22-14, looking south

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number | | | – | | – | | | | |

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-IA23-14

Easting: 357177 Northing: 6371721 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [ ] Lower slope
- [x] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [x] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

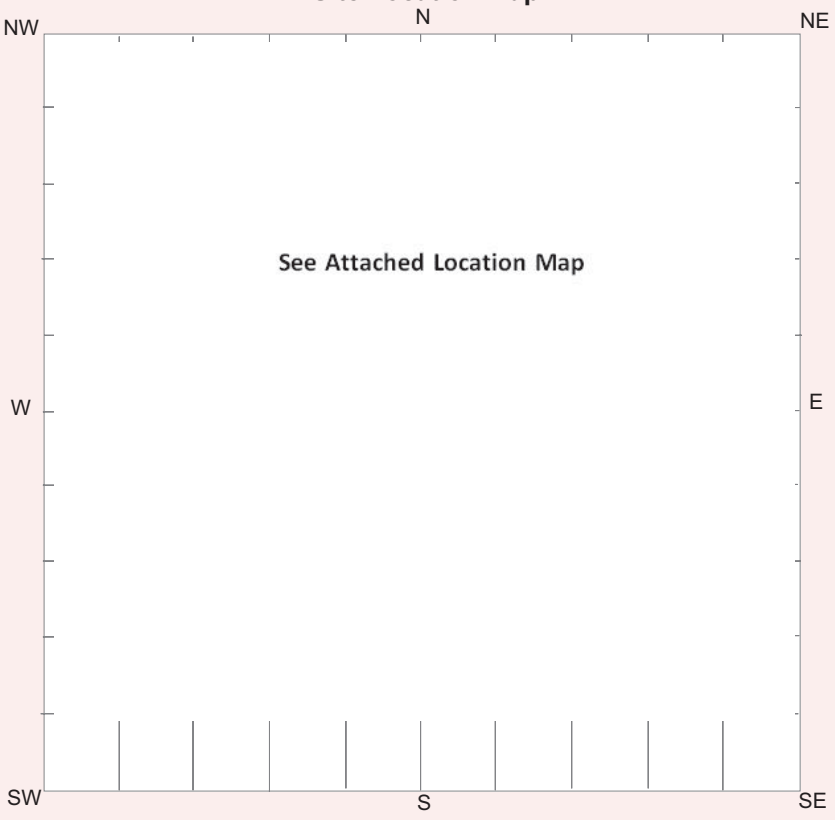
Water

Distance to permanent water source	330 metres
Distance to temporary water source	350 metres
Name of nearest permanent water source	Black Wat
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.:

Primary report I.D.

(I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

- [ ] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [x] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features

Site Dimensions

Closed Site Dimensions (m)

	Internal length
	Internal width
	Shelter height
	Shelter floor area

Open Site Dimensions (m)

1m	Total length of visible site
1m	Average width of visible site
1m	Estimated area of visible site
1m	Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-IA23-14 consists of a complete silicified tuff flake on an unsealed access track/ fire trail on Lot 319 of DP755231. The landscape position of the site is a very gently inclined (1-3%) mid slope. Surrounding native vegetation comprises regenerating Kurri Sand Swamp Woodland. The flake, which measures 24.1 (L) x 11.7 (W) x 5.3 (T) mm, has a plain platform and exhibits no dorsal context. GSV on-site is excellent (91-100%). No other artefacts were observed in the vicinity. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track/fire trail use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-IA23-14

Plate 1 Hydro-IA23-14: silicified tuff flake

Plate 2 View across site Hydro-IA23-14, looking south

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office Use Only

Site Number

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-IA24-14

Easting: 358174 Northing: 6371607 AGD/GDA: GDA

Mapsheet:

Zone 56 Location Method: Differential GPS

Other Registration:

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 89340001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [x] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [x] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

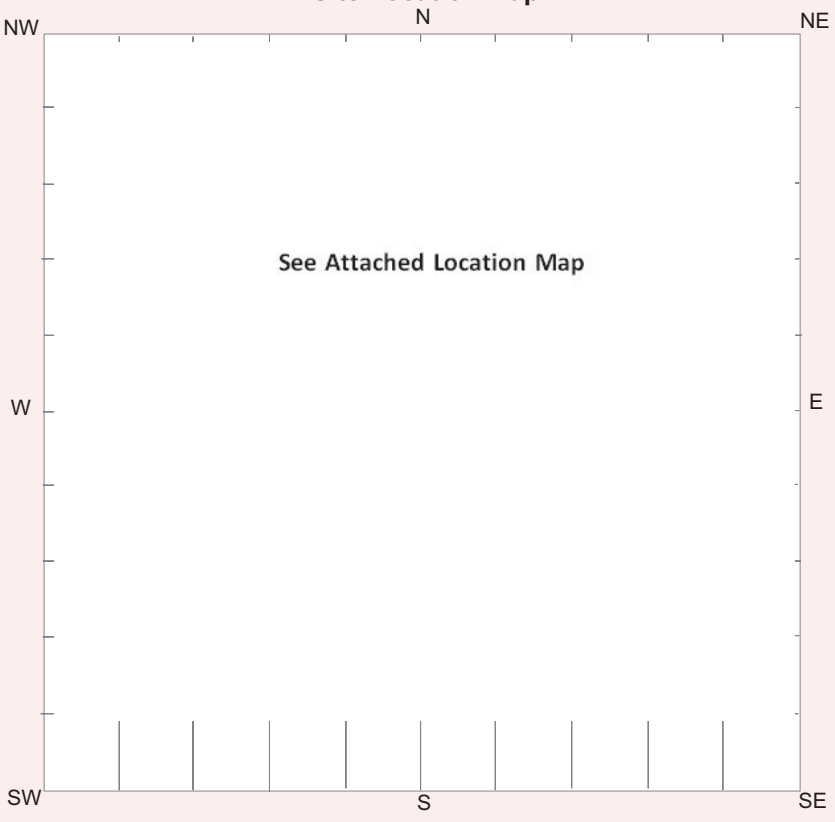
Water

Distance to permanent water source	530 metres
Distance to temporary water source	310 metres
Name of nearest permanent water source	Swamp Ck
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in electricity easement in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map).

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report

I.D. [ ] (I.D. Office Use only)

'Hydro Aluminium Smelter Site & Associated Buffer Land - Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- ☐ Boulder
- ☐ Wind erosion
- ☐ Water erosion
- ☐ Rock collapse

Rock Surface Condition

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Condition of Ceiling

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Shelter Aspect

- ☐ North
- ☐ North East
- ☐ East
- ☐ South East
- ☐ South
- ☐ South West
- ☐ West
- ☐ North West

Open Site

Site Orientation

- ☐ N-S
- ☐ NE-SW
- ☐ E-W
- ☐ SE-NW
- ☑ N/A

Features

- ☐ 1. Aboriginal Ceremony & Dreaming
- ☐ 2. Aboriginal Resource & Gathering
- ☐ 3. Art
- ☑ 4. Artefact
- ☐ 5. Burial
- ☐ 6. Ceremonial Ring
- ☐ 7. Conflict
- ☐ 8. Earth Mound
- ☐ 9. Fish Trap
- ☐ 10. Grinding Groove
- ☐ 11. Habitation Structure
- ☐ 12. Hearth
- ☐ 13. Non Human Bone & Organic Material
- ☐ 14. Ochre quarry
- ☐ 15. Potential Archaeological Deposit
- ☐ 16. Stone Quarry
- ☐ 17. Shell
- ☐ 18. Stone Arrangement
- ☐ 19. Modified Tree
- ☐ 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features

Site Dimensions

Closed Site Dimensions (m)

- ☐ Internal length
- ☐ Internal width
- ☐ Shelter height
- ☐ Shelter floor area

Open Site Dimensions (m)

- 1m Total length of visible site
- 1m Average width of visible site
- 1m Estimated area of visible site
- 1m Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-IA24-14 consists of a broken (proximal) silicified tuff flake on an unsealed access track/fire trail on Lot 318 of DP755231. The site is located on a broad elevated flat or plateau that houses the Kurri Kurri smelter complex towards its southern end. Native vegetation to the south of the site comprises regenerating Kurri Sand Swamp Woodland. The artefact has a maximum linear dimension of 23.1 mm. GSV on-site is excellent (91-100%). No other artefacts were observed in the vicinity. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track/fire trail use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-IA24-14

Plate 1 Hydro-IA24-14: broken silicified tuff flake

Plate 2 View across site Hydro-IA24-14, looking southeast

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number | | | – | | – | | | | | |

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-IA25-14

Easting: 358185 Northing: 6371413 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title: Dr | Surname: McLaren | First Name: Andrew | Initials

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [x] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [x] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

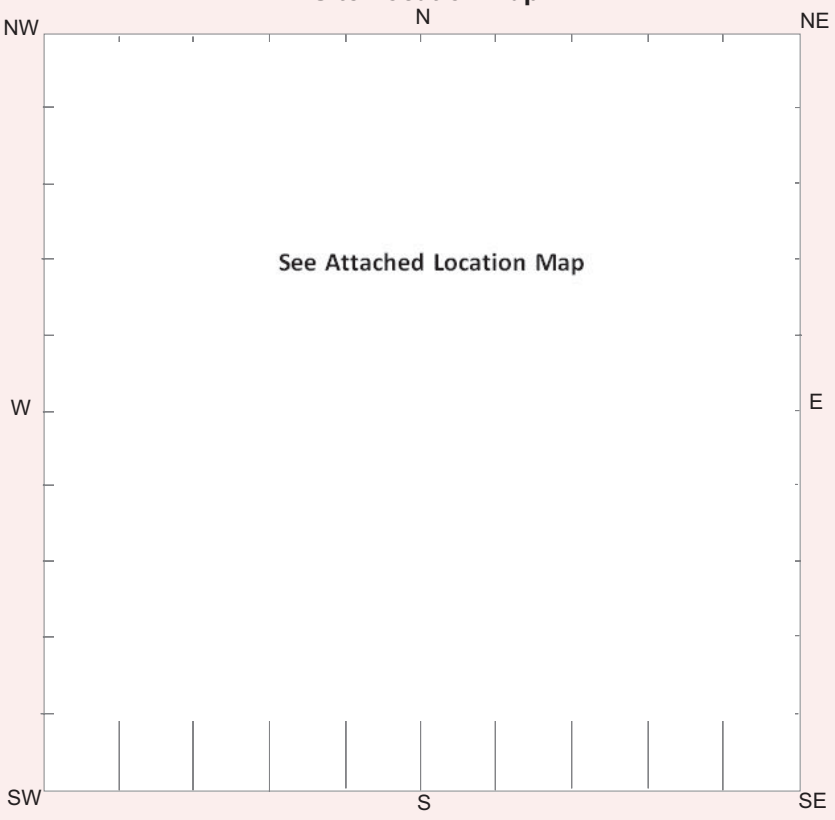
Water

Distance to permanent water source	510 metres
Distance to temporary water source	465 metres
Name of nearest permanent water source	Swamp Ck
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.:

Primary report I.D.

(I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- ☐ Boulder
- ☐ Wind erosion
- ☐ Water erosion
- ☐ Rock collapse

Rock Surface Condition

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Condition of Ceiling

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Shelter Aspect

- ☐ North
- ☐ North East
- ☐ East
- ☐ South East
- ☐ South
- ☐ South West
- ☐ West
- ☐ North West

Open Site

Site Orientation

- ☐ N-S
- ☐ NE-SW
- ☐ E-W
- ☐ SE-NW
- ☑ N/A

Features

- ☐ 1. Aboriginal Ceremony & Dreaming
- ☐ 2. Aboriginal Resource & Gathering
- ☐ 3. Art
- ☑ 4. Artefact
- ☐ 5. Burial
- ☐ 6. Ceremonial Ring
- ☐ 7. Conflict
- ☐ 8. Earth Mound
- ☐ 9. Fish Trap
- ☐ 10. Grinding Groove
- ☐ 11. Habitation Structure
- ☐ 12. Hearth
- ☐ 13. Non Human Bone & Organic Material
- ☐ 14. Ochre quarry
- ☐ 15. Potential Archaeological Deposit
- ☐ 16. Stone Quarry
- ☐ 17. Shell
- ☐ 18. Stone Arrangement
- ☐ 19. Modified Tree
- ☐ 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features

Site Dimensions

Closed Site Dimensions (m)

- ☐ Internal length
- ☐ Internal width
- ☐ Shelter height
- ☐ Shelter floor area

Open Site Dimensions (m)

- 1m Total length of visible site
- 1m Average width of visible site
- 1m Estimated area of visible site
- 1m Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-IA25-14 consists of a split silcrete flake on an unsealed access track/fire trail on Lot 318 of DP755231. The site is located on a broad elevated flat or plateau that houses the Kurri Kurri smelter complex towards its southern end. Surrounding native vegetation comprises regenerating Kurri Sand Swamp Woodland. The flake, which has been thermally altered, has a maximum linear dimension of 26.6 mm and exhibits no cortex. GSV on-site is excellent (91-100%). No other artefacts were observed in the vicinity. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track/fire trail use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-IA25-14

Plate 1 Hydro-IA25-14: silcrete flake

Plate 2 View across site Hydro-IA25-14, looking southeast

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___ ___

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-IA26-14

Easting: 356661 Northing: 6371276 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [x] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [x] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

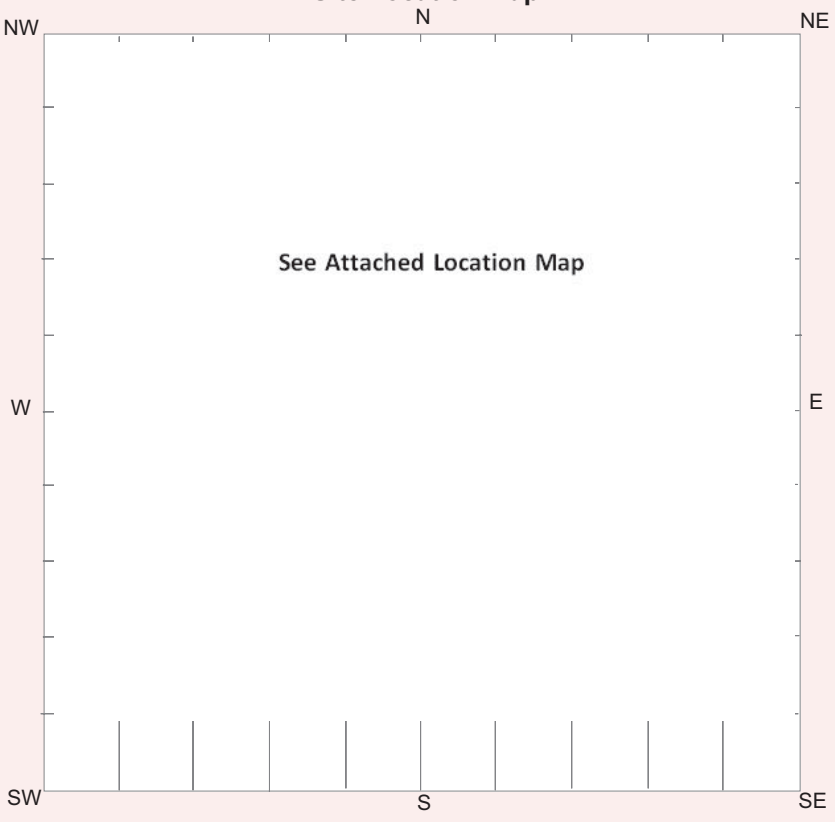
Water

Distance to permanent water source	550 metres
Distance to temporary water source	600 metres
Name of nearest permanent water source	Black Wat
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report I.D.

(I.D. Office Use only)

'Hydro Aluminium Smelter Site & Associated Buffer Land - Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

- [ ] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [x] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features

Site Dimensions

Closed Site Dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open Site Dimensions (m)

- [1m] Total length of visible site
- [1m] Average width of visible site
- [1m] Estimated area of visible site
- [1m] Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-IA26-14 consists of a unidirectional silcrete core in a cleared access track/fire trail reserve on Lot 14 of DP1082775. The landscape position of the site is that of a gently (3-10%) inclined lower slope. Surrounding native vegetation comprises regenerating Kurri Sand Swamp Woodland. The core, manufactured on a large flake, measures 72.2 (L) x 53.4 (W) x 31.7 (T) mm and retains 1-50% water-rolled cortex. GSV on-site is fair (31-50%). Ironstone gravels are locally abundant. No other artefacts were observed in the vicinity. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-IA26-14

Plate 1 Hydro-IA26-14: unidirectional silcrete core

Plate 2 View across site Hydro-IA26-14, looking northwest

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___ ___

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-IA27-14

Easting: 357010 Northing: 6371196 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [x] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [x] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

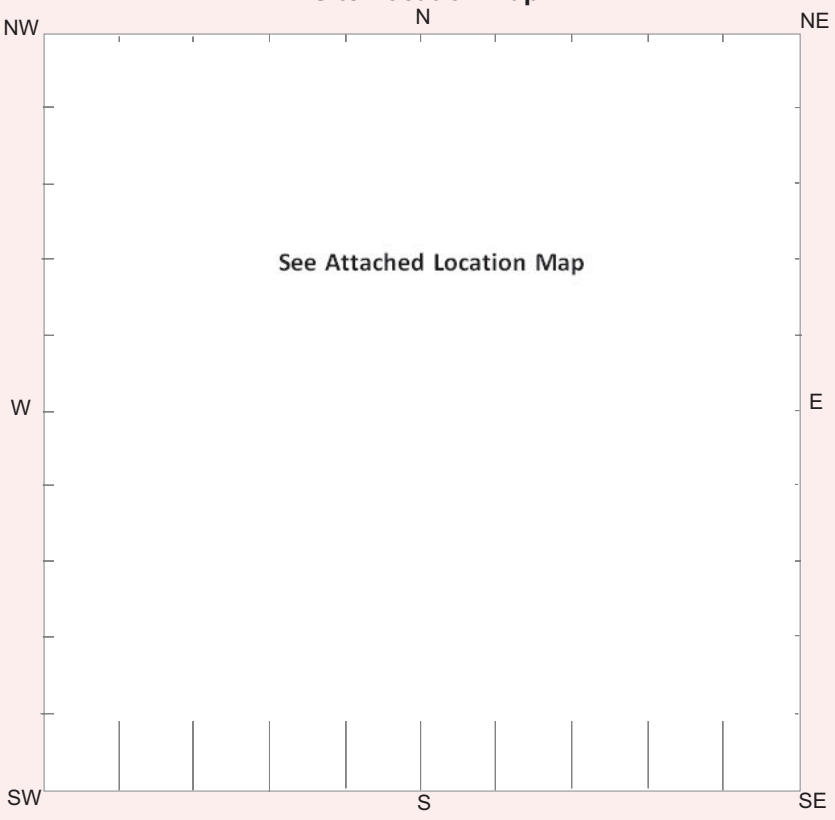
Water

Distance to permanent water source	665 metres
Distance to temporary water source	250 metres
Name of nearest permanent water source	Black Wat
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.:

Primary report I.D.

(I.D. Office Use only)

Hydro Aluminium Smelter Site & Associated Buffer Land – Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- ☐ Boulder
- ☐ Wind erosion
- ☐ Water erosion
- ☐ Rock collapse

Rock Surface Condition

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Condition of Ceiling

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Shelter Aspect

- ☐ North
- ☐ North East
- ☐ East
- ☐ South East
- ☐ South
- ☐ South West
- ☐ West
- ☐ North West

Open Site

Site Orientation

- ☐ N-S
- ☐ NE-SW
- ☐ E-W
- ☐ SE-NW
- ☑ N/A

Features

- ☐ 1. Aboriginal Ceremony & Dreaming
- ☐ 2. Aboriginal Resource & Gathering
- ☐ 3. Art
- ☑ 4. Artefact
- ☐ 5. Burial
- ☐ 6. Ceremonial Ring
- ☐ 7. Conflict
- ☐ 8. Earth Mound
- ☐ 9. Fish Trap
- ☐ 10. Grinding Groove
- ☐ 11. Habitation Structure
- ☐ 12. Hearth
- ☐ 13. Non Human Bone & Organic Material
- ☐ 14. Ochre quarry
- ☐ 15. Potential Archaeological Deposit
- ☐ 16. Stone Quarry
- ☐ 17. Shell
- ☐ 18. Stone Arrangement
- ☐ 19. Modified Tree
- ☐ 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features

Site Dimensions

Closed Site Dimensions (m)

- ☐ Internal length
- ☐ Internal width
- ☐ Shelter height
- ☐ Shelter floor area

Open Site Dimensions (m)

- 1m Total length of visible site
- 1m Average width of visible site
- 1m Estimated area of visible site
- 1m Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-IA27-14 consists of a broken (proximal) silcrete flake on an unsealed access track/fire trail running along the southern boundary of Lot 319 on DP755231. The landscape position of the site is that of a very gently (1-3%) inclined lower slope. Surrounding native vegetation comprises regenerating Kurri Sand Swamp Woodland. The flake, which has been thermally altered, has a maximum linear dimension of 34.4 mm and exhibits no cortex. GSV on-site is good (51-70%). Ironstone gravels are locally abundant. No other artefacts were observed in the vicinity. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track/fire trail use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-IA27-14

Plate 1 Hydro-IA27-14: broken silcrete flake

Plate 2 View across site Hydro-IA27-14, looking northwest

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___ ___

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-IA28-14

Easting: 356755 Northing: 6370978 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [ ] Lower slope
- [ ] Mid slope
- [x] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [x] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [x] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] N/A

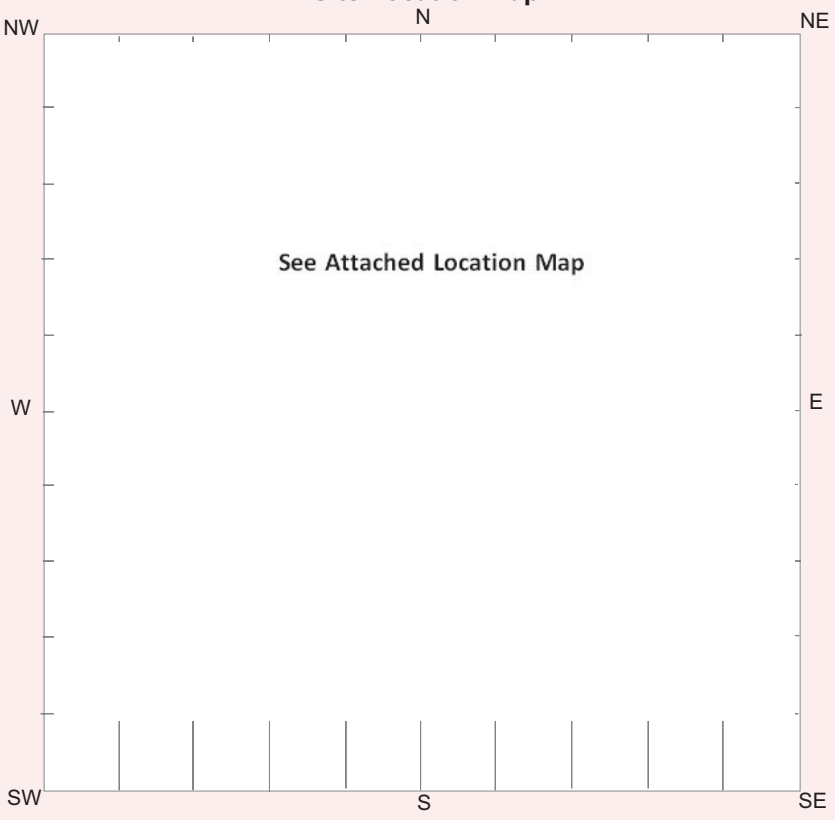
Water

Distance to permanent water source	550 metres
Distance to temporary water source	395 metres
Name of nearest permanent water source	Black Wat
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in electricity easement in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report

I.D. [ ] (I.D. Office Use only)

'Hydro Aluminium Smelter Site & Associated Buffer Land - Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

- [ ] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [x] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features

Site Dimensions

Closed Site Dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open Site Dimensions (m)

- [1m] Total length of visible site
- [1m] Average width of visible site
- [1m] Estimated area of visible site
- [1m] Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-IA28-14 consists of a bifacial silcrete core on an unsealed access track within a cleared powerline easement on Lot 16 of DP1082775. The landscape position of the site is that of a gently (3-10%) inclined upper slope. Surrounding native vegetation comprises regenerating Kurri Sand Swamp Woodland and Broad-leaved Ironbark/Spotted Gum Forest. The core, manufactured on a flake, measures 48.7 (L) x 35.5 (W) x 25.7 (T) mm and and exhibits no cortex. GSV on the track is generally very good (71-90%) to excellent (91-100%) though locally abundant ironstone gravels blanket the track in areas. No other artefacts were observed in the vicinity. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track/fire trail use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-IA28-14

Plate 1 Hydro-IA28-14: bifacial silcrete core

Plate 2 View across site Hydro-IA28-14, looking northwest

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___-___-____

Date received ___/___/___ Date entered into system ___/___/___ Date catalogued ___/___/___

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name Hydro-IA29-14

Easting 356946 Northing 6370846 AGD/GDA GDA

Mapsheet

Zone 56 Location Method Differential GPS

Other Registration

Primary Recorder

Title | Surname | First Name | Initials

Dr | McLaren | Andrew

Organisation AECOM Australia Pty Ltd

Address 420 George Street Sydney NSW

Phone number 89340000 Fax 893400001

Date recorded 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [x] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [x] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] N/A

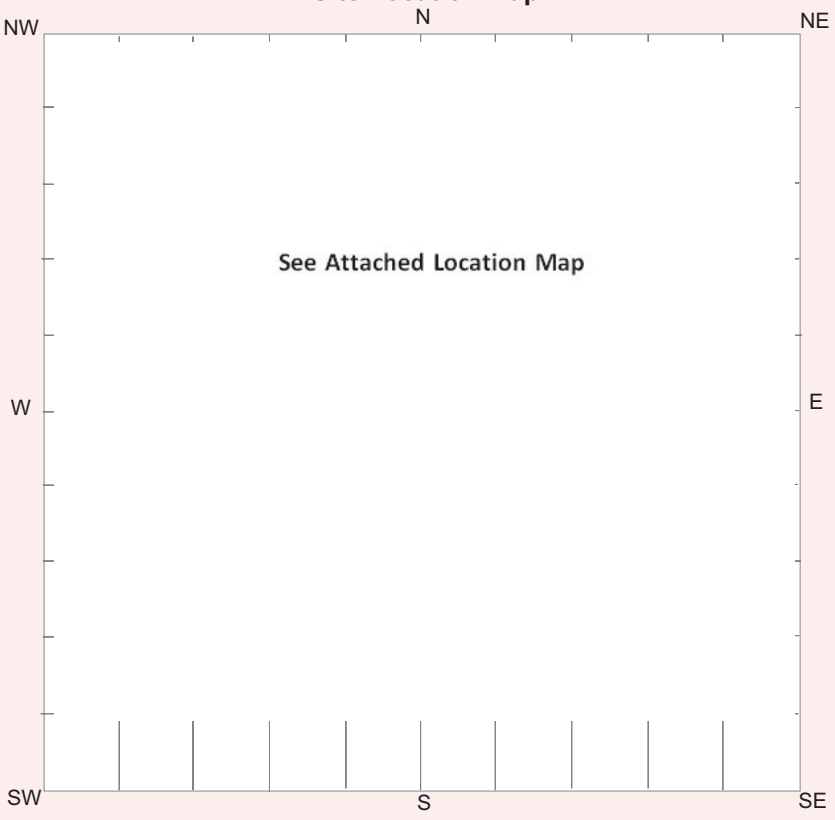
Water

Distance to permanent water source	915 metres
Distance to temporary water source	265 metres
Name of nearest permanent water source	S w a m p C k
Name of nearest temporary water	U n n a m e d

Directions for Relocation

Site located in electricity easement in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report I.D.

(I.D. Office Use only)

'Hydro Aluminium Smelter Site & Associated Buffer Land - Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014)

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- ☐ Boulder
- ☐ Wind erosion
- ☐ Water erosion
- ☐ Rock collapse

Rock Surface Condition

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Condition of Ceiling

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Shelter Aspect

- ☐ North
- ☐ North East
- ☐ East
- ☐ South East
- ☐ South
- ☐ South West
- ☐ West
- ☐ North West

Open Site

Site Orientation

- ☐ N-S
- ☐ NE-SW
- ☐ E-W
- ☐ SE-NW
- ☑ N/A

Features

- ☐ 1. Aboriginal Ceremony & Dreaming
- ☐ 2. Aboriginal Resource & Gathering
- ☐ 3. Art
- ☑ 4. Artefact
- ☐ 5. Burial
- ☐ 6. Ceremonial Ring
- ☐ 7. Conflict
- ☐ 8. Earth Mound
- ☐ 9. Fish Trap
- ☐ 10. Grinding Groove
- ☐ 11. Habitation Structure
- ☐ 12. Hearth
- ☐ 13. Non Human Bone & Organic Material
- ☐ 14. Ochre quarry
- ☐ 15. Potential Archaeological Deposit
- ☐ 16. Stone Quarry
- ☐ 17. Shell
- ☐ 18. Stone Arrangement
- ☐ 19. Modified Tree
- ☐ 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features

Site Dimensions

Closed Site Dimensions (m)

- ☐ Internal length
- ☐ Internal width
- ☐ Shelter height
- ☐ Shelter floor area

Open Site Dimensions (m)

- 1m Total length of visible site
- 1m Average width of visible site
- 1m Estimated area of visible site
- 1m Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-IA29-14 consists of a complete silcrete flake on an unsealed access track within a cleared powerline easement on Lot 16 of DP1082775. The landscape position of the site is that of a very gently (1-3%) inclined lower slope. Surrounding native vegetation comprises regenerating Kurri Sand Swamp Woodland. The flake, which has been thermally altered, measures 39.5 (L) x 51.9 (W) x 18.1 (T) mm, has a plain platform and exhibits no dorsal cortex. GSV on the track is generally very good (71-90%) to excellent (91-100%) though locally abundant ironstone gravels blanket the track in areas. No other artefacts were observed in the vicinity. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track/fire trail use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-IA29-14

Plate 1 Hydro-IA29-14: silcrete flake

Plate 2 View across site Hydro-IA29-14, looking northwest

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___-___-____

Date received ___/___/___ Date entered into system ___/___/___ Date catalogued ___/___/___

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name Hydro-IA30-14

Easting 356998 Northing 6370750 AGD/GDA GDA

Mapsheet

Zone 56 Location Method Differential GPS

Other Registration

Primary Recorder

Title | Surname | First Name | Initials

Dr | McLaren | Andrew

Organisation AECOM Australia Pty Ltd

Address 420 George Street Sydney NSW

Phone number 89340000 Fax 893400001

Date recorded 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [x] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [x] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] N/A

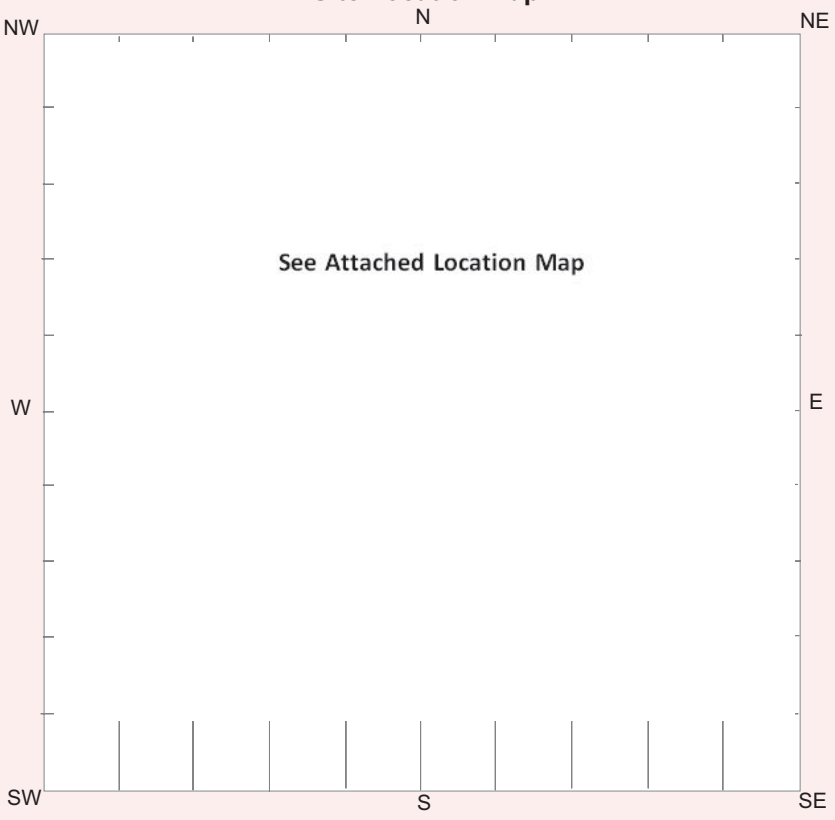
Water

Distance to permanent water source	830 metres
Distance to temporary water source	100 metres
Name of nearest permanent water source	Swamp Ck
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in electricity easement in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report

I.D. [ ] (I.D. Office Use only)

'Hydro Aluminium Smelter Site & Associated Buffer Land - Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014)

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- ☐ Boulder
- ☐ Wind erosion
- ☐ Water erosion
- ☐ Rock collapse

Rock Surface Condition

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Condition of Ceiling

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Shelter Aspect

- ☐ North
- ☐ North East
- ☐ East
- ☐ South East
- ☐ South
- ☐ South West
- ☐ West
- ☐ North West

Open Site

Site Orientation

- ☐ N-S
- ☐ NE-SW
- ☐ E-W
- ☐ SE-NW
- ☑ N/A

Features

- ☐ 1. Aboriginal Ceremony & Dreaming
- ☐ 2. Aboriginal Resource & Gathering
- ☐ 3. Art
- ☑ 4. Artefact
- ☐ 5. Burial
- ☐ 6. Ceremonial Ring
- ☐ 7. Conflict
- ☐ 8. Earth Mound
- ☐ 9. Fish Trap
- ☐ 10. Grinding Groove
- ☐ 11. Habitation Structure
- ☐ 12. Hearth
- ☐ 13. Non Human Bone & Organic Material
- ☐ 14. Ochre quarry
- ☐ 15. Potential Archaeological Deposit
- ☐ 16. Stone Quarry
- ☐ 17. Shell
- ☐ 18. Stone Arrangement
- ☐ 19. Modified Tree
- ☐ 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features

Site Dimensions

Closed Site Dimensions (m)

- ☐ Internal length
- ☐ Internal width
- ☐ Shelter height
- ☐ Shelter floor area

Open Site Dimensions (m)

- 1m Total length of visible site
- 1m Average width of visible site
- 1m Estimated area of visible site
- 1m Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Hydro-IA30-14 consists of a complete silcrete flake in a cleared powerline easement on Lot 16 of DP1082775. The artefact is located in a sheetwash erosion exposure to the immediate south of a linear strip of regenerating Kurri Sand Swamp Woodland. The landscape position of the site is that of a level creek flat associated with an unnamed 2nd order tributary of Black Waterholes Creek. Surrounding native vegetation comprises regenerating Kurri Sand Swamp Woodland. The flake measures 25 (L) x 37 (W) x 6.6 (T) mm, has a cortical platform and exhibits no dorsal cortex. GSV within the exposure is excellent (91-100%). No other artefacts were observed in the vicinity. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance and erosion.

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-IA30-14

Plate 1 Hydro-IA30-14: silcrete flake

Plate 2 View across site Hydro-IA30-14, looking southeast

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___ ___

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-IA31-14

Easting: 357441 Northing: 6370397 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [ ] Lower slope
- [ ] Mid slope
- [x] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [x] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [x] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] N/A

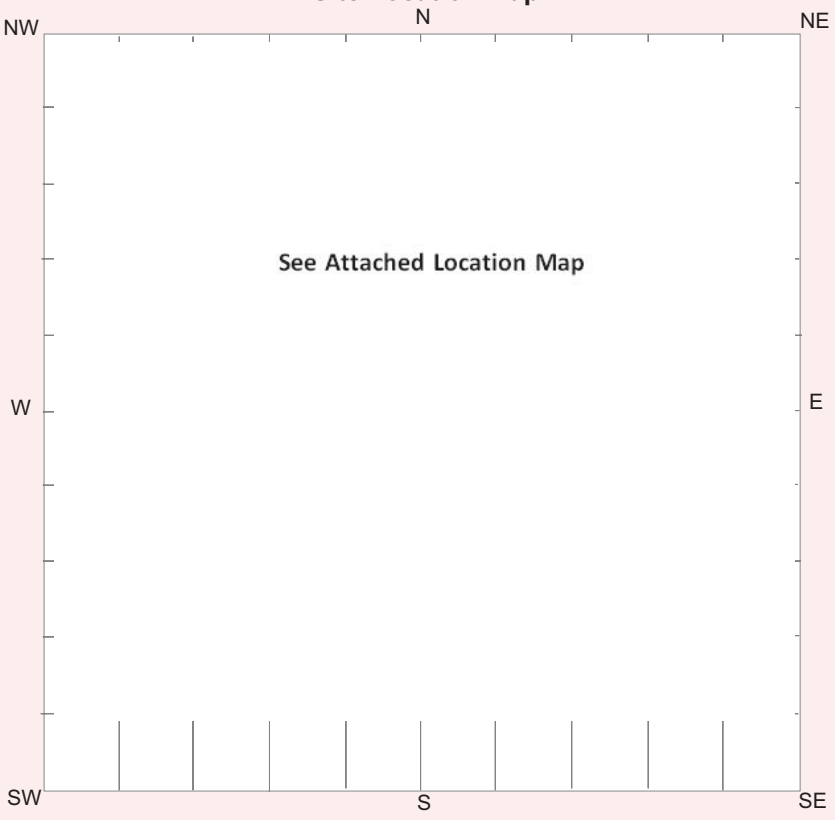
Water

Distance to permanent water source	360 metres
Distance to temporary water source	225 metres
Name of nearest permanent water source	Swamp Ck
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in electricity easement in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report I.D.

(I.D. Office Use only)

'Hydro Aluminium Smelter Site & Associated Buffer Land - Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

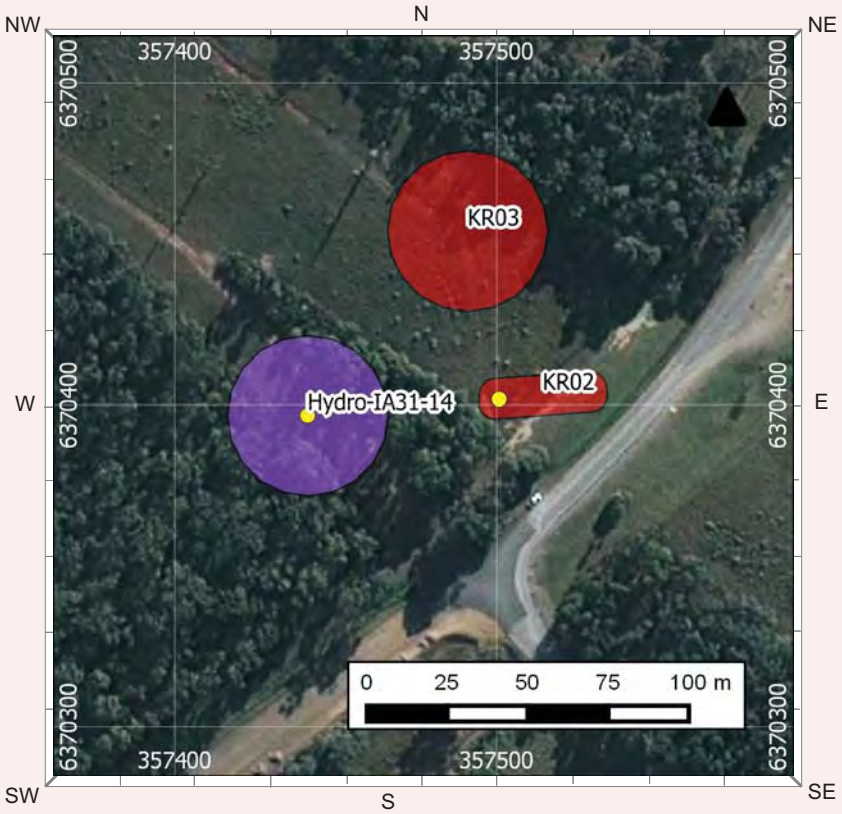
- [ ] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [x] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open Site Dimensions (m)

- [1m] Total length of visible site
- [1m] Average width of visible site
- [1m] Estimated area of visible site
- [1m] Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-IA31-14 consists of a complete silicified tuff flake in a cleared powerline easement on Lot 16 of DP1082775. The landscape position of the site is that of a gently (1-3%) inclined upper slope. Surrounding native vegetation comprises regenerating Broad-leaved Ironbark/Spotted Gum Forest. The flake measures 38.5 (L) x 23.1 (W) x 11.1 (T) mm, has a cortical platform and exhibits 1-50% dorsal cortex. GSV on-site is poor (11-30%). No other artefacts were observed in the vicinity. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-IA31-14

Plate 1 Hydro-IA31-13: silicified tuff flake

Plate 2 View across site Hydro-IA31-14, looking northwest

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___ ___

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-IA32-14

Easting: 357661 Northing: 6370364 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Slope

[ ] degrees

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [ ] Lower slope
- [x] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

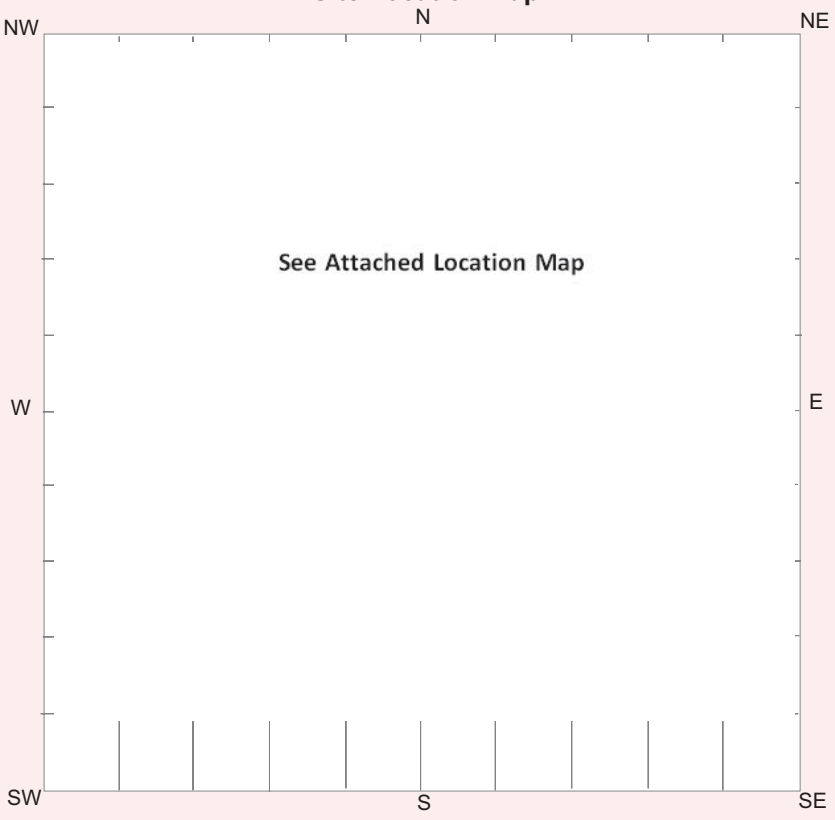
Water

Distance to permanent water source	140 metres
Distance to temporary water source	75 metres
Name of nearest permanent water source	Swamp Ck
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in electricity easement in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report I.D.

I.D. (I.D. Office Use only)

'Hydro Aluminium Smelter Site & Associated Buffer Land - Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

- [ ] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [x] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features

Site Dimensions

Closed Site Dimensions (m)

	Internal length
	Internal width
	Shelter height
	Shelter floor area

Open Site Dimensions (m)

1m	Total length of visible site
1m	Average width of visible site
1m	Estimated area of visible site
1m	Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-IA32-14 consists of a complete silcrete flake on an unsealed access track on Lot 427 of DP755231. The track in question runs along the eastern edge of a cleared powerline easement. The landscape position of the site is that of a gently (1-3%) inclined mid slope overlooking Swamp Creek. The slope steepens significantly towards the creek. Surrounding native vegetation comprises regenerating Lowland Redgum Forest. The flake measures 51.5 (L) x 38.4 (W) x 14.6 (T) mm, has a plain platform and no dorsal cortex. GSV on the track surrounding the artefact is excellent (91-100%). No other artefacts were observed in the vicinity. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-IA32-14

Plate 1 Hydro-IA32-14: silcrete flake

Plate 2 View across site Hydro-IA32-14, looking northwest

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___-___-____

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-IA33-14

Easting: 358630 Northing: 6370333 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [x] Crest
- [ ] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [x] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

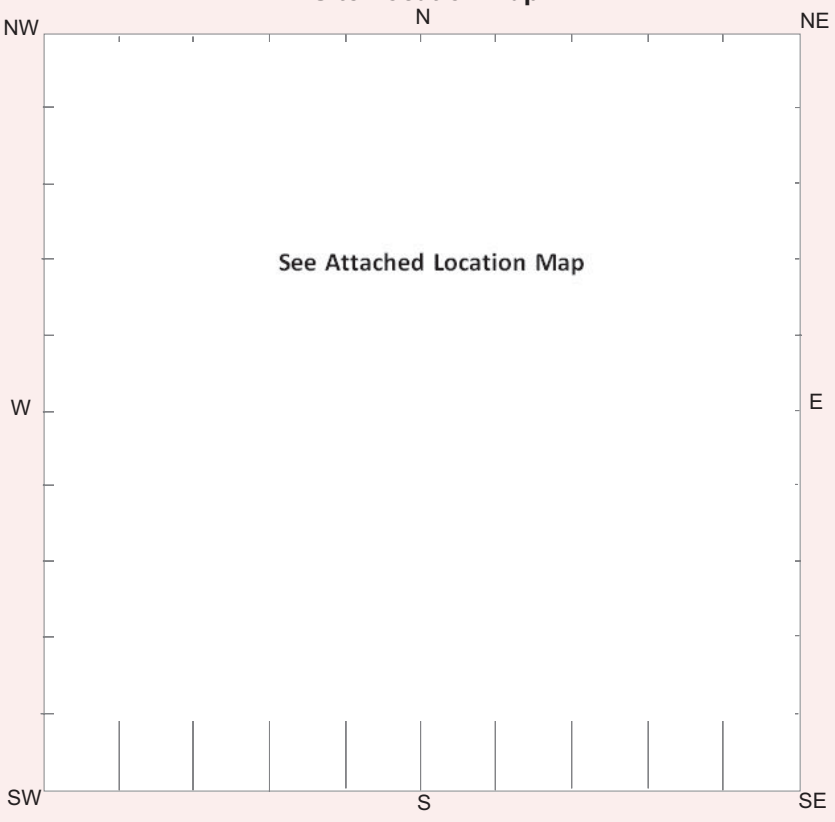
Water

Distance to permanent water source	85 metres
Distance to temporary water source	40 metres
Name of nearest permanent water source	Swamp Ck
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.:

Primary report

I.D. [ ] (I.D. Office Use only)

'Hydro Aluminium Smelter Site & Associated Buffer Land - Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- ☐ Boulder
- ☐ Wind erosion
- ☐ Water erosion
- ☐ Rock collapse

Rock Surface Condition

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Condition of Ceiling

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Shelter Aspect

- ☐ North
- ☐ North East
- ☐ East
- ☐ South East
- ☐ South
- ☐ South West
- ☐ West
- ☐ North West

Open Site

Site Orientation

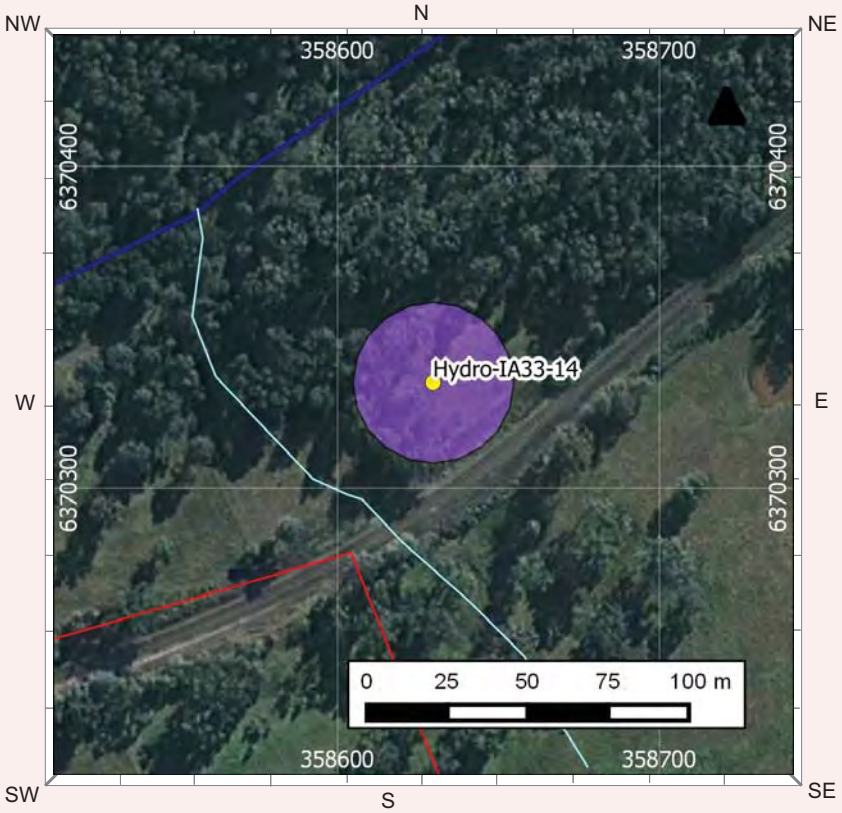
- ☐ N-S
- ☐ NE-SW
- ☐ E-W
- ☐ SE-NW
- ☑ N/A

Features

- ☐ 1. Aboriginal Ceremony & Dreaming
- ☐ 2. Aboriginal Resource & Gathering
- ☐ 3. Art
- ☑ 4. Artefact
- ☐ 5. Burial
- ☐ 6. Ceremonial Ring
- ☐ 7. Conflict
- ☐ 8. Earth Mound
- ☐ 9. Fish Trap
- ☐ 10. Grinding Groove
- ☐ 11. Habitation Structure
- ☐ 12. Hearth
- ☐ 13. Non Human Bone & Organic Material
- ☐ 14. Ochre quarry
- ☐ 15. Potential Archaeological Deposit
- ☐ 16. Stone Quarry
- ☐ 17. Shell
- ☐ 18. Stone Arrangement
- ☐ 19. Modified Tree
- ☐ 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- ☐ Internal length
- ☐ Internal width
- ☐ Shelter height
- ☐ Shelter floor area

Open Site Dimensions (m)

- 1m Total length of visible site
- 1m Average width of visible site
- 1m Estimated area of visible site
- 1m Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-IA33-14 consists of a complete silcrete flake on an unselaed access track on Lot 789 of DP39701. The track in question runs more-or-less parallel to the Abedare Railway, which is located approximately 30 m upslope. Hydro-IA33-14 is located on the western edge of a gently (3-10%) to moderately inclined (10-32%) spur crest leading down to Swamp Creek. Unnamed 1st order drainage depressions border the spur crest to the east and west. Surrounding native vegetation comprises regenerating Broad-leaved Ironbark/Spotted Gum Forest. To the north, along Swamp Creek, a transition to regenerating Lowland Redgum Forest occurs. The flake, which measures 36.5 (L) x 35.2 (W) x 11.9 (T) mm, has a plain platform and exhibits 1-50% dorsal cortex. GSV on-site is fair (31-50%). No other artefacts were observed in the vicinity. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-IA33-14

Plate 1 Hydro-IA33-14: silcrete flake

Plate 2 View across site Hydro-IA33-14, looking southwest

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office of Environment & Heritage

Office Use Only

Site Number ___ ___

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name: Hydro-IA34-14

Easting: 358882 Northing: 6372413 AGD/GDA: GDA

Mapsheet

Zone: 56 Location Method: Differential GPS

Other Registration

Primary Recorder

Title	Surname	First Name	Initials
Dr	McLaren	Andrew	

Organisation: AECOM Australia Pty Ltd

Address: 420 George Street Sydney NSW

Phone number: 89340000 Fax: 893400001

Date recorded: 02/07/2014

Client on system ☐

NPWS Aboriginal Site Recording Form - Site Information

OPEN/CLOSE SITE: Open Site

Site Context

Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [x] Crest
- [ ] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [x] Transport corridor
- [ ] Urban expansion
- [ ] N/A

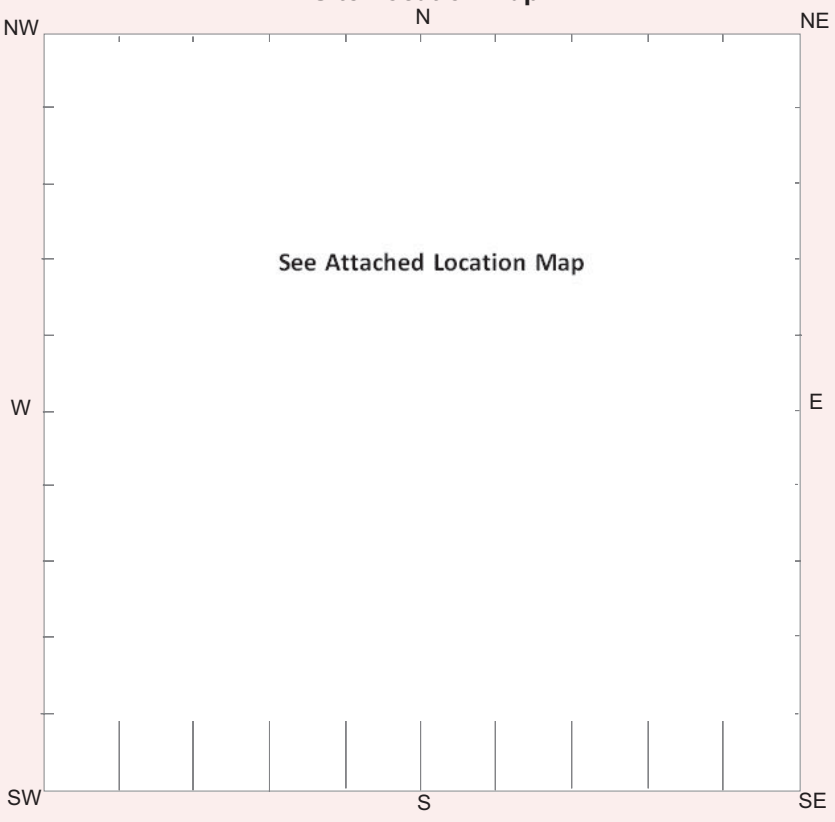
Water

Distance to permanent water source	25 metres
Distance to temporary water source	50 metres
Name of nearest permanent water source	Swamp Ck
Name of nearest temporary water	Unnamed

Directions for Relocation

Site located in Hydro-owned buffer zone (private property). Access via main Hydro smelter complex, Hart Lane, Kurri Kurri. Contact Hydro Buffer Zone Supervisor for access (02 4937 0667). See attached location map.

Site Location Map



Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

Primary report I.D.

(I.D. Office Use only)

'Hydro Aluminium Smelter Site & Associated Buffer Land - Aboriginal Cultural Heritage Assessment' (AECOM Australia Pty Ltd 2014).

NPWS Aboriginal Site Recording Form - Site Information

General Site Information

Closed Site

Shelter/Cave Formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock Surface Condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open Site

Site Orientation

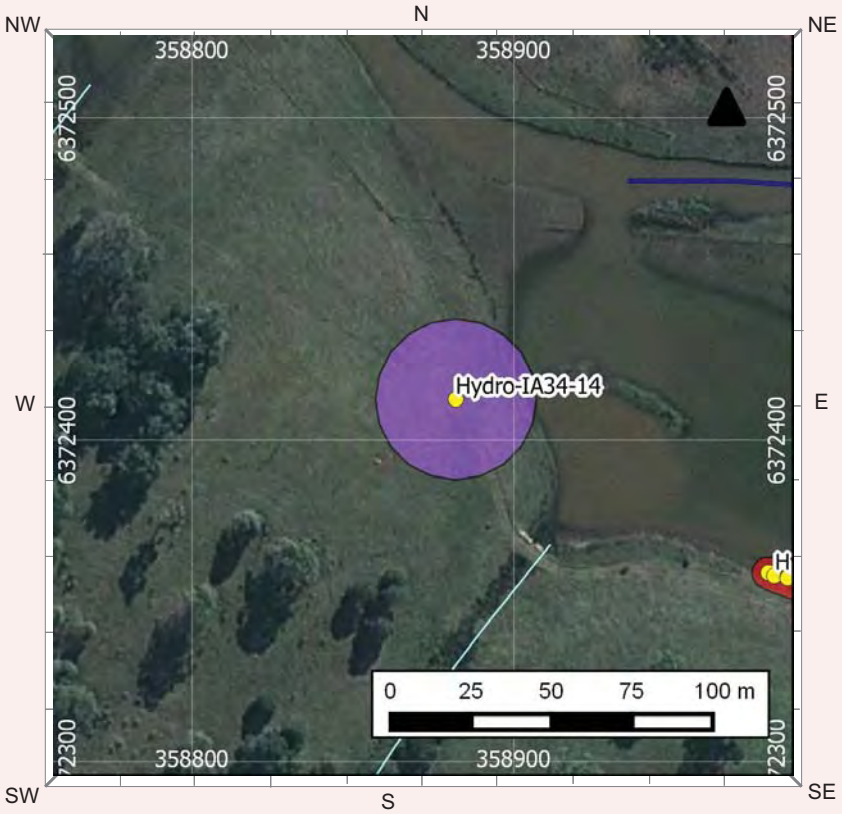
- [ ] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [x] N/A

Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

	Internal length
	Internal width
	Shelter height
	Shelter floor area

Open Site Dimensions (m)

1m	Total length of visible site
1m	Average width of visible site
1m	Estimated area of visible site
1m	Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

Preliminary Site Assessment

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

Hydro-IA34-14 consists of a broken silcrete flake on an unsealed access track on Lot 1 of DP543057. The artefact has eroded out of an adjacent soil profile. The landscape position of the site is that of a gently (3-10%) to moderately (10-32%) inclined spur crest leading down to a billabong associated with Swamp Creek. Surrounding vegetation consists of exotic/native grasses. The flake, which has a maximum linear dimension of 31.1 mm, has a plain platform and exhibits no cortex. Part of the flake's termination is missing from a transverse break, which may have been post-depositional. GSV on-site is fair (31-50%). No other artefacts were observed in the vicinity. Overall site condition can be characterised as poor. Relevant disturbance factors include native vegetation clearance, access track use and erosion.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

Hydro-IA34-14

Plate 1 Hydro-IA34-14: broken silcrete flake

Plate 2 View across site Hydro-IA34-14, looking southeast