

Mount Penang Infrastructure Works Aboriginal Due Diligence Assessment

Prepared for Gyde Consulting 15 June 2022



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Glossary

AHIMS	Aboriginal Heritage Information Management System		
Biosis	Biosis Pty Ltd		
Due diligence code	Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales		
EP&A Act	Environmental Planning and Assessment Act 1979		
GSV	Ground Surface Visibility		
Heritage NSW	Heritage NSW, Department of Planning and Environment		
ICOMOS	International Council on Monuments and Sites		
LEP	Local Environment Plan		
LGA	Local Government Area		
NPW Act	National Parks and Wildlife Act 1974		
NSW	New South Wales		
PAD	Potential Archaeological Deposit		
Study area	Area of proposed works in Lot 10, DP 1149050 within Mount Penang Parklands, Kariong, NSW 2250		
The Code	The Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW		



Summary

Biosis Pty Ltd (Biosis) was commissioned by Gyde Consulting (the client) to undertake an Aboriginal Due Diligence Assessment (ADDA) for Lots/DPs 1021/1268228, 1022/1268228, 101/1256044, 521/1017539 and 11/790470 at Mount Penang Parklands, Kariong, New South Wales (NSW) (the project). The study area is divided into three sub-areas: Stage 1 (Parklands Road); Stage 2 (McCabe Road, The Avenue and Carinya Street); and the ancillary areas (Figure 1, Figure 2). This assessment covers all three of these sub-areas. This assessment has been prepared in accordance with the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (the Due Diligence Code) (DECCW 2010a) and *The Code of Practice of Archaeological Investigation of Aboriginal Objects in NSW* (the Code) (DECCW 2010b).

Section 8 of the Due Diligence Code outlines the steps required to be undertaken in order to determine if the proposed works will impact on Aboriginal heritage values. This includes a review of the following in order to determine if Aboriginal cultural values are likely to be present in the study area:

- Aboriginal Heritage Information Management Systems (AHIMS).
- Previous studies, reports, surveys, or excavations conducted in the region.
- A review of landscape features.

A detailed background review of the above resources has been undertaken as part of this ADDA. This information has been synthesised to develop Aboriginal site predictive statements for the study area in order to identify Aboriginal sites and/or places in the study area.

There are 117 Aboriginal cultural heritage sites within a 1.7 kilometre vicinity registered with the Aboriginal Heritage Information Management System (AHIMS). The coordinates for one of these sites locates it within the study area: AHIMS 45-3-37/Old Gosford Rd Piles creek. However, further investigation based on information provided in the site card confirmed that AHIMS 45-3-0037/ Old Gosford Rd Piles creek is not located within the study area (see Section 2.7.1).. A review of the soil landscape and landforms indicate the study area is located within the Somersby soil landscape. There are several first-order watercourses within the vicinity of the study area. One first order tributary of Piles Creek runs north-south across a small portion of the western part of the study area, and also runs adjacent to the study area; this watercourse has been dammed in two places.

An archaeological investigation of the study area was undertaken on 4 March, 15 March and 25 May 2022. No new sites were identified during the archaeological survey. It was observed that the study area and surrounding site of Mt Penang Parklands had been heavily disturbed by recent human actions, including tree clearance, subsurface development, development of a child disciplinary and educational facilities and more recently as a recreational centre. The absence of Aboriginal objects identified during the survey is likely attributable to the limited exposure noted during the survey, rather than the absence of Aboriginal occupation of the area.

Based on the results of the archaeological survey and background review, it is likely Aboriginal people utilised the study area for both occupation and resource gathering. During the archaeological survey it was observed that the study area had undergone significant disturbance. This suggests that there is low potential for intact archaeological deposits to be present within the study area. The proximity of these areas to a second order drainage line and a range of high order streams in the vicinity suggest that Aboriginal people would have had access to a number of water sources close by, increasing the potential for Aboriginal artefacts to exist in the subsurface deposits. Areas containing extensive levels of development contain a high likelihood for Aboriginal



artefacts to have been removed during earthworks and as a result of erosional factors, therefore the potential for intact Aboriginal deposits is low throughout the study area.

Based on the background review and archaeological survey, the study area is assessed as having low potential and the following recommendations made:

Recommendation 1: No further archaeological assessment is required

No further archaeological work is required in the study area due to the entire study area assessed as having low archaeological potential.

Recommendation 2: Update site card for AHIMS 45-3-37/Old Gosford Rd Piles creek

The current coordinates for AHIMS 45-3-37/Old Gosford Rd Piles creek place this AHIMS site within the study area. Biosis has confirmed that this site is located adjacent to Gindurra Road approximately 882 metres north of the study area. A new site card, AHIMS 45-3-4505/Kariong SIE 26 has been registered for this site following investigations by Biosis (2019) with registered Aboriginal parties (RAPs) as part of another project.

The site card for AHIMS 45-3-37/Old Gosford Rd Piles creek should be updated in the AHIMS to reflect it's known location, as per AHIMS 45-3-4505/Kariong SIE 26.

Recommendation 3: Heritage Induction

It is recommended that a heritage interpretation plan is conducted due to the study area being located within a wider highly significant cultural landscape. Furthermore, it is recommended that a heritage induction and an unexpected finds procedure is in place for the development works. It is recommended that representatives from the Aboriginal community are involved during this process.

Recommendation 4: Heritage interpretation

Comments received from representatives of Darkinjung Local Aboriginal Land Council (LALC) and Awabakal & Guringai Pty Ltd (Awabakal & Guringai) emphasised the high cultural significance of the wider landscape in which the study area is located. It is recommended that a Heritage Interpretation Plan is developed which incorporates Aboriginal cultural heritage, with heritage interpretation devices and context is developed in consultation with the Aboriginal community.

Recommendation 5: Replacement of Scribbly Gum plantings if avoidance of removal is not possible

Darkinjung LALC and Awabakal & Guringai noted that the Scribbly Gums located within the northern portion of the study area were not used for ceremonial practices and would have been utilised as a standard tree for resource gathering. These trees may be remnant native vegetation. If the removal of any Scribbly Gums cannot be avoided as part of the proposed works, Darkinjung LALC and Awabakal & Guringai requested that new Scribbly Gums or other native plantings be included in the works to offset the loss of any existing trees that are to be removed.

Recommendation 6: Landscape protection measures

In order to ensure that the paddock proposed for the northern ancillary area can be reinstated to its current condition once the works are completed, protection measures should be implemented as part of site establishment and management of this area for the period of use. This may include laying down of geofabric and landscape materials wherever there will be material stockpiled or movement of vehicles and plant. This will reduce the risk of the paddock landscape being modified as part of the works.



Recommendation 7: Discovery of Unanticipated Aboriginal Objects

All Aboriginal objects and Places are protected under the *National Parks and Wildlife Act 1974* (NPW Act). It is an offence to knowingly disturb an Aboriginal site without a consent permit issued by the Heritage NSW, Department of Planning and Environment (Heritage NSW). Should any Aboriginal objects be encountered during works associated with this proposal, works must cease in the vicinity and the find should not be moved until assessed by a qualified archaeologist. If the find is determined to be an Aboriginal object the archaeologist will provide further recommendations. These may include notifying the Heritage NSW and Aboriginal stakeholders.

Recommendation 8: Discovery of Aboriginal Ancestral Remains

Aboriginal ancestral remains may be found in a variety of landscapes in NSW, including middens and sandy or soft sedimentary soils. If any suspected human remains are discovered during any activity you must:

- 1. Immediately cease all work at that location and not further move or disturb the remains.
- 2. Notify the NSW Police and Heritage NSW' Environmental Line on 131 555 as soon as practicable and provide details of the remains and their location.
- 3. Not recommence work at that location unless authorised in writing by Heritage NSW.



1 Introduction

1.1 Project background

Biosis has been commissioned by Gyde Consulting (client) to undertake an ADDA for the proposed development at Mount Penang Parklands, Kariong, NSW (the project). The project involves essential infrastructure works including; widening of roads, new pedestrian paths, the extension of Parklands Road and, upgrades to roundabouts.

An assessment in accordance with the Due Diligence Code (DECCW 2010a) has been undertaken for the study area in order to inform responsibilities with regards to Aboriginal cultural heritage in the area. In addition to the basic tasks required for a due diligence assessment, an extended background review, as well as an archaeological survey in accordance with the Code (DECCW 2010b) was conducted in order adequately map areas of high, moderate and low archaeological sensitivity.

1.2 Location of the study area

The study area is located within the Central Coast Local Government Area (LGA) (formerly the Gosford LGA), Parish of Gosford, County of Northumberland (Figure 1). The study area is located within Lot 10 DP 1149050 and is largely focused on existing roads (Figure 2).

1.3 Planning approvals

The proposed development will be assessed under Part 5 of the *Environmental Planning and Assessment Act 1979* NSW (EP&A Act). Other relevant legislation and planning instruments that will inform the assessment include:

- NPW Act.
- National Parks and Wildlife Amendment Act 2010.
- Gosford Local Environmental Plan 2014 (LEP).
- Gosford Development Control Plan 2013 (DCP).

1.4 Scope of the assessment

The following is a summary of the major objectives of the assessment:

- Conduct background research in order to recognise any identifiable trends in site distribution and location, including a search of the AHIMS.
- Undertake archaeological survey as per Requirement 5 of the Code, with particular focus on landforms with high potential for heritage places within the study area, as identified through background research.
- Record and assess sites identified during the survey in compliance with the guidelines endorsed by Heritage NSW.
- Determine levels of archaeological and cultural significance of the study area.



• Make recommendations to mitigate and manage any cultural heritage values identified within the study area.

1.5 Aboriginal consultation

Consultation is not a formal requirement of the due diligence process, therefore Aboriginal community consultation in accordance with consultation requirements has not been completed.

Tracey Howie, Trudy Robley-Smith and Tyler Howie of Awabakal & Guringai and Corrine Quinlan of Darkinjung LALC were invited and attended the archaeological survey of the study area on 4 March, 15 March and 25 May 2022. This was to provide preliminary comments on the cultural values associated with the study area. Detail of responses and comments from Awabakal & Guringai and Darkinjung LALC can be found in Section 3.7.1.







2 Desktop assessment

A brief desktop assessment has been undertaken to review existing archaeological studies for the study area and surrounding region. This information has been synthesised to develop Aboriginal predictive statements for the study area and identify known Aboriginal sites and/or places recorded in the study area. This desktop assessment has been prepared in accordance with Requirements 1 to 4 of the Code.

2.1 Landscape context

It is important to consider the local environment of the study area in any heritage assessment. The local environmental characteristics can influence human occupation and associated land use and consequently the distribution and character of cultural material. Environmental characteristics and geomorphological processes can affect the preservation of cultural heritage materials to varying degrees or even destroy them completely. Lastly, landscape features can contribute to the cultural significance that places can have for people.

2.2 Geology, soils and landforms

The study area is located within the Hawkesbury Sandstone geological unit which overlies the Narrabeen group of the Sydney Basin (Figure 3). The Hawkesbury Sandstone geological unit consists of medium to coarse-grained quartz sandstone with minor shale and laminate lenses with a maximum thickness of 290 metres. This dominant pure quartzose sandstone produces sandy soils, particularly upon flat ridgelines. The Hawkesbury Sandstone unit was formed by alluvial to deltaic processes which are evident from current bedding. Red-brown concentric bands present within the sandstone unit is highly resistant to erosion, and have been produced by weathering. The Hawkesbury Sandstone unit is highly resistant to erosion, and vertical cliff formations within this geological unit are formed from vertical joint fractures where sandstone breaks off along softer thin horizontal layer of shales within the sandstone formation (Geoscience Australia 2019). Aboriginal grinding groove sites and rock shelter/rock art sites are common across the Hawkesbury Sandstone formation.

Stream order is recognised as a factor which assists the development of predictive modelling in Sydney Basin Aboriginal archaeology, and has seen extensive use in the Sydney region, most notably by Jo McDonald Cultural Heritage Management (JMCHM 2000, JMCHM 2005a, JMCHM 2005b, JMCHM 2008). Predictive models which have been developed for the region have a tendency to favour high order streams as the locations of campsites as they would have been more likely to provide a stable source of water and by extension other resources which would have been used by Aboriginal groups.

The stream order system used for this assessment was originally developed by Strahler (1952). It functions by adding two streams of equal order at their confluence to form a higher order stream, as shown in Photo 1. As stream order increases, so does the likelihood that the stream would be a perennial source of water.





Photo 1 Diagram showing Strahler stream order (Source: Ritter, Kochel, & Miller 1995, pp. 151)

There are several watercourses within the vicinity of the study area (Figure 4). A first order tributary of Piles Creek runs south-north across a small portion of the study area and runs adjacent to the study area; this watercourse has also been dammed in two places adjacent to the study area. A first order tributary of Coorumbine Creek is located 472 metres south-east of the study area. A further first order tributary of an unnamed creek is located 176 metres to the east of the study area. The numerous water sources, whether perennial or non-perennial, would have provided both a source of fresh water for Aboriginal people in the local area, as well as encouraged the growth and presence of floral and faunal resources in this location.

Soil landscapes have distinct morphological and topological characteristics that result in specific archaeological potential. They are defined by a combination of soils, topography, vegetation and weathering conditions. Soil landscapes are essentially terrain units that provide a useful way to summarise archaeological potential and exposure.

The study area is contained within the Somersby soil landscape (Figure 5). The Somersby soil landscape is residual characterised by a gently undulating to rolling rises topography with broad, convex crests and long slopes lying on deeply weathered Hawkesbury Sandstone plateau. Local relief is to 40 metres with slopes <15%. This landscape features moderately deep to deep (100 centimetres to 300 centimetres) yellow earths and earthy sands on crests and slopes, grey earths in poorly drained areas and leached and siliceous sands along drainage lines (Table 1, Photo 2)(Department of Planning, Industry and Environment 2020).

Table 1Somersby soil landscape characteristics (Department of Planning, Industry and
Environment 2020)

Soil material	Description
Somersby 1 <i>(so1)</i>	This is a dark brown loamy sand or sandy loam with apedal single-grained structure and porous sandy fabric. Occasionally weak sub-angular blocky structure is present with rough ped fabric. The colour is usually brown (10YR 3/3) or brownish black (7.5YR 3/2 –7.5YR 3/3) and often becomes lighter with depth. The pH ranges between strongly acid (pH 4.5) and slightly acid (pH 6.5). Small rounded ironstone nodules are rare, while charcoal and roots are common.
Somersby 2 <i>(so2)</i>	This is a bright brown clayey sand to sandy clay loam with apedal massive structure and porous earthy fabric. Texture often increases gradually from clayey sand to light sandy clay loam or sandy clay loam with depth. The surface condition is hardsetting when exposed. Colours are bright and are commonly yellowish brown (10YR 6/8, 2.5YR 6/6, 2.5YR 6/7, 2.5YR 6/8) and brown (7.5YR 5/8).



Soil material	Description
	The pH ranges from moderately acid (pH 5.0) to slightly acid (pH 6.0). Rounded, gravel-sized ironstone nodules are often abundant. These are either concretionary nodules or small iron oxide coated stones. Charcoal fragments and roots are rare. Faunal casts and channels are widespread and common in the upper zone of this material. These channels have often been infilled with so1 topsoil material.
Somersby 3 <i>(so3)</i>	This is a pallid grey sandy clay loam to light clay with apedal massive structure and earthy porous fabric. This generally occurs as deep subsoil and is commonly found overlying bedrock. Colour ranges from light grey (10YR 8/1, 10YR 8/2, 7.5YR 8/2, 2.5Y 8/1) to dull yellow orange (10YR 7/2, 2.5Y 7/2) or greyish yellow (10YR 7/3). Red and orange mottles may be present and become larger and less abundant with increasing depth. The pH ranges from strongly acid (pH 4.5) to slightly acid (pH 6.0). Hard iron indurated nodules are often present. Roots are rare and unbranching.
Somersby 4 <i>(so4)</i>	This is a strongly weathered sandstone with a distinct sugary appearance. It occurs as deeply weathered parent material. Texture is commonly clayey sand which often becomes sandier with depth. Structure is apedal and massive, and fabric is usually sandy or occasionally earthy. Colour varies from light grey (10YR 8/1) to dull yellow orange (10YR 7/2). It is readily disrupted by a moderate force. Disrupted particles have a feel and appearance similar to sugar crystals. The pH ranges from extremely acid (pH 3.5) to moderately acid (pH 5.0). Strongly weathered fragments of sandstone are commonly found at depth, and roots are few with minimal branching except where bedrock is approached. Rusty coloured piped mottles often follow root traces.
Somersby 5 <i>(so5)</i>	This is a pallid loamy sand to sandy loam to sandy clay loam with apedal massive structure and earthy porous fabric. It occurs as subsoil in wet areas. Surface condition is loose. This material is characterised by pallid soil colours such as greyish yellow brown (10YR 6/2) and dull yellowish brown (10YR 5/4). Rusty coloured piped mottles are present around root channels. The pH ranges from strongly acid (pH 4.0) to moderately acid (pH 5.5). Stone fragments and charcoal fragments are rare, and roots are few to common.





Photo 2 Cross section of the Somersby soil landscape (Source: Department of Planning, Industry and Environment 2020)









2.3 Flora and fauna

The wider region includes distinct ecological zones, including open forest and open woodland, with riparian vegetation extending along many of the watercourses. Each ecological zone hosts a different array of floral and faunal species, many of which would have been utilised according to seasonal availability. Aboriginal inhabitants of the region would have had access to a wide range of avian, terrestrial and aquatic fauna and repeated firing of the vegetation would have opened up the foliage allowing ease of access through and between different resource zones.

Plant resources were used in a variety of ways. Fibres were twisted into string, which was used for many purposes, including the weaving of nets, baskets and fishing lines. String was also used for personal adornment. Bark was used in the provision of shelter; a large sheet of bark being propped against a stick to form a gunyah (Attenbrow 2002).

While the low eucalypt open-woodland and scrub that would have originally been present within the study area has been extensively cleared, the landscape would have generally provided a number of resources used by Aboriginal inhabitants. Common native species would have included the Scribbly Gum *Eucalyptus haemastoma*, Brown Stringybark *E. capitellata*, Red Bloodwood *E. gummifera*, Smooth-barked Apple *Angophora costata*, Blackbutt *E. pilularis*, Sydney Peppermint *E. piperita* and Old Man Banksia *Banksia serrata*. Understorey species include Flaky-barked Teatree *Leptospermum attenuatum*, Hairpin Banksia *Banksia spinulosa var. spinulosa*, Grey Spider Flower *Grevillea spp.*, Geebung *Persoonia spp.*, Gymea Lily *Doryanthus excelsa*, Native Heath *Epacris spp.*, Beardheath *Leucopogon spp.* and Waratah *Telopea speciosissima*. Poorly drained areas support scrubland of Heath Banksia *Banksia ericifolia* and Dagger Hakea *Hakea teretifolia*. (Murphy 1993).

As well as being important food sources, animal products were also used for tool making and fashioning a myriad of utilitarian and ceremonial items. For example, tail sinews are known to have been used to make fastening cord, while 'bone points', which would have functioned as awls or piercers, are often an abundant part of the archaeological record. Animals such as Brush-tailed Possums were highly prized for their fur, with possum skin cloaks worn fastened over one shoulder and under the other. Kangaroo teeth were incorporated into decorative items, such as head bands (Attenbrow 2002).

Animal species that may have inhabited the study area include mammals such as the Common Ringtail Possum *Pseudocheirus peregrinus*, Common Brushtail Possum *Trichosurus vulpecula*, Swamp Wallaby *Wallabia bicolor*, Short-beaked Echidna *Tachyglossus aculeatus*, Dingo *Canis familiaris*, Northern Brown Bandicoot *Isoodon macrourus*, Koala *Phascolarctos cinereus*, Eastern Grey Kangaroo *Macropus giganteus* and Common Wombat *Vombatus ursinus*. Bird species that may have been present include the Rainbow Lorikeet *Trichoglossus haematodus*, Australian Magpie *Gymnorhina tibicen*, Kookaburra *Dacelo (Dacelo) novaeguineae*, Little Wattlebird *Anthochaera (Anellobia) chrysoptera*, Sulphur-crested Cockatoo *Cacatua (Cacatua) galerita*, Superb Fairy-wren *Malurus (Malurus) cyaneus*, Eastern Rosella *Platycercus (Violania) eximius*, Maned Duck *Chenonetta jubata*, Galah *Eolophus roseicapilla*, Crested Pigeon *Ocyphaps lophotes* and Grey Butcherbird *Cracticus torquatus* (Atlas of Living Australia, 2022.)

Reptiles including Eastern Blue-tongue *Tiliqua scincoides*, Red-bellied Black Snake *Pseudechis porphyriacus* and Eastern Brown Snake *Pseudonaja textilis* may have inhabited the study area, as well as a variety of frogs. This includes the Common Froglet *Crinia signifera*, Brown-striped Frog *Limnodynastes peronei*, Red-crowned Toadlet *Pseudophryne australis*, Giant Burrowing Frog *Heleioporus australiacus*, Peron's Tree Frog *Litoria peronei* and Eastern Dwarf Tree Frog *Litoria fallax*. (*Atlas of Living Australia, 2022*.).

The variety of flora and fauna within the study area and vicinity would have made this location a resource rich open woodland, attracting Aboriginal people here to take advantage of these. Their presence is likely to have left traces of their lives behind here.



2.4 Land use history

The first European exploration within the Central Coast region took place in 1770, when Captain James Cook and the *Endeavour* sailed into Broken Bay in 1770. These expeditions were to confirm the occupation status of NSW (Karskens 2009, pp. 34, Strom 1982, pp. 6). It wasn't until the arrival of the First Fleet in 1788 that any further journeys were made, with Governor Arthur Phillip setting out with a small party from Sydney Cove several weeks after coming ashore. The group spent eight days investigating the inlets of Broken Bay for good soils for growing crops, including what was later called Brisbane Water, which Governor Phillip noted as swampy on the accessible areas of land in the upper part of the branch. The following year, Governor Phillip led another expedition in June, exploring the Broadwater at Kincumber, and sailing as far as the current site of Gosford, before moving further up the Hawkesbury River to Mullet and Mooney Creeks further inland (Karskens 2009, pp. 49–50, 106, Strom 1982, pp. 6).

The land around Broken Bay did not hold the fertile soils the colonial settlers were seeking, and the densely timbered areas of useable land and landforms ill-suited to agriculture deterred the early exploitation and settlement within the region. Furthermore, the lands north of the Hawkesbury River were restricted by the authorities in order to separate the penal colony at Newcastle from those places south of the river. However, once the convicts were relocated to Port Macquarie, settlers began moving north towards the Hunter River (Biosis Pty Ltd 2022).

The land containing the study area was subject to considerable development from 1911 when it was acquired by the State government for the use of the Gosford Farm Home for Boys, established as reformatory schools for destitute or troublesome children. From 1912 onwards, tree clearing, quarrying, earthworks and construction of buildings, roads and dams have resulted in considerable modification to the natural landscape (Biosis Pty Ltd 2022).





Historical aerial imagery allows for modern developments and land use to be identified within the study area. Aerial imagery dating from 1965 (

Photo 3) shows extensive vegetation clearance for the parkland grounds and surrounding vicinity. By 1976 (Photo 4) there appears to be minimal change except for the construction of a dam to the west of the study area. In the 1984 aerial (Photo 5) it appears that a second dam to the west of Parklands Road has been constructed adjacent to the previous dam from the decade prior. In the 1990s, (Photo 6) major infrastructure developments occurred with residential dwellings seen to the south and industrial development to the north. However, minimal change can be seen to the study area itself. Lastly, in the 2006 aerial (Photo 7), development of the Penang Parklands can be seen to the south of the dam seen in the 1984 aerial. This is likely the development of the Waterfall Café and the surrounding gardens.

This use of the study area and vicinity by non-Aboriginal people throughout the 20th and 21st centuries has resulted in disturbance and modification of the natural environment which the Darkinjung and Guringai would have managed for thousands of years. These actions would also likely have removed or disturbed traces left by past Aboriginal people.





Photo 3 1965 aerial photograph, with the study area outlined in orange (Source: NSW Spatial Services)





Photo 4 1976 aerial photograph, with the study area outlined in orange (Source: NSW Spatial Services)





Photo 5 1984 aerial photograph, with the study area outlined in orange (Source: NSW Spatial Services)





Photo 6 1994 aerial photograph, with the study area outlined in orange (Source: NSW Spatial Services)





Photo 7 2006 aerial photograph, with the study area outlined in orange (Source: NSW Spatial Services)Aboriginal context



2.5 Ethnohistory and contact history

It is generally accepted that Aboriginal peoples have inhabited Australia for at least 65,000 years and possessed a distinctive stone tool assemblage (Clarkson et al. 2015). Dates of the earliest occupation of the continent by Indigenous people are subject to continued revision as more research is undertaken. The timing for the human occupation of the Sydney Basin is still uncertain. The earliest undisputed radiocarbon date from the region comes from Mangrove Creek, approximately 15 kilometres north-west of the present study area. Of the excavated shelters, thirty-one shelters yielded dates, with the oldest date being 11,050 years before present (BP) at Loggers Shelter (Attenbrow 1981). However, the majority of excavated shelter and open sites in the region yield much younger dates of around 3,000 years BP (Attenbrow 1987, Koettig 1985, McDonald 1985).

Our knowledge of Indigenous people and their land-use patterns and lifestyles prior to European contact is mainly reliant on documents written by non-Indigenous people post invasion. The inherent bias of the class and cultures of these authors necessarily affect such documents. They were also often describing a culture that they did not fully understand – a culture that was in a heightened state of disruption given the arrival of European settlers and disease. Early written records can, however, be used in conjunction with archaeological information and surviving oral histories from members of the Indigenous community in order to gain a picture of Indigenous life in the region. According to Tindale the study area was traditionally inhabited by the Darkinjung, bordered closely by the Kuringai tribe who inhabited the land between them and the coastline (Tindale 1974). These two groups were on friendly terms, unlike the Awabakal groups that inhabited the region to the north. The Darkinjung lands roughly extended from the Hawkesbury River northwards to Wollombi and the southern drainage of the Hunter River (Tindale 1974). Vinnecombe places the Darkinjung people as living between the Hawkesbury and Hunter Rivers (Vinnecombe 1980).

Information gathered by R.H Matthews provides a valuable insight into the lives of the Darkinjung people, although this information was recorded within the context of an already disjointed, decimated and displaced population. He stated that all members of the Darkinjung community were segregated into two moieties, Dilbi and Kuparthin, and each moiety was further divided into two sections (Mathews 1897). On the basis of these moieties and sections, totemic affiliation and marriage relations were determined. Totems consisted of animals or inanimate objects, such as plants, heavenly bodies, the elements or seasons.

It has been suggested that the Darkinjung would move to the coast, within Kuringai territory during summer months, to exploit the abundant coastal resources, and the reverse was true for the Kuringai who moved inland during winter months to participate in ritual kangaroo hunts (Vinnecombe 1980). These two groups had a cordial relationship, with reciprocal visits and regular trading of resources.

2.6 Regional context

A number of Aboriginal cultural heritage investigations have been conducted for the Gosford region. Models for predicting the location and type of Aboriginal sites with a general applicability to the Gosford region and thus relevant to the study area have also been formulated, some as a part of these investigations and others from cultural heritage investigations for relatively large developments.

Vinnecombe (1980) completed an archaeological survey of the Gosford/Wyong region, to collect sufficient site records and site type information to determine patterns of site distribution. The survey area was divided into three environmental zones, including coastal estuarine areas of the Brisbane Water/Bouddi Peninsular, marginal estuarine areas of lower Mangrove Creek and inland freshwater areas of Mangrove Creek. The initial large scale assessment involved systematic survey of 10 kilometre square locations; however this initial work did not consider a number of environments and landforms, thus further areas of the open coast, Tuggerah



Lake/Central Coast Lagoons were surveyed. This survey work resulted in the recording of a number of middens, engravings and rock shelters.

The assessment identified regional patterns for site types within the various environmental zones. Site predictions indicated that the most frequently occurring site types were rock shelters with art and/or deposit, followed by axe grinding grooves, and engravings. Vinnicombe's analysis of the survey findings, ethnohistorical information and environmental context, indicated that resources were exploited seasonally along the coast during the summer months and throughout the hinterland during the winter months.

Attenbrow (1981) undertook a study of the Mangrove Creek Dam catchment, which included an inundation area of 1,215 hectares. The aim of the investigation was to assess the relationship between chronological and spatial site patterns within the Upper Mangrove Creek catchment, with demographic and human behavioural patterns within the area. This work involved the excavation of a number of Indigenous shelter sites, resulting in basal occupation dates at Mussel Shelter of 8,460+120 before present (BP) (SUA-1560) and Loggers Shelter of 11,050+136 BP (SUA-931). These results indicated the continual and extensive occupation of the Mangrove Creek catchment and that the 'coastal hinterland' was inhabited and exploited for longer and more intensively than first thought. Attenbrow compared the results from the excavated material at Mangrove Creek with sites in the MacDonald River Valley and Brisbane Waters region. This analysis identified variations within artefact types and available stone and faunal resources suggesting that site usage patterns varied within and between similar landscape units.

Mcdonald (2008) undertook a large scale study of engravings and rock shelter with art sites within the Sydney Basin. The survey area included the Hawkesbury catchment between MacDonald River and Broken Bay. The study focused on defining the nature and extent of art sites in the Sydney Basin. At the time of the study, over 5,000 previously recorded Aboriginal archaeological sites had been recorded. A total of 1,370 of these were rock shelter sites with associated art, and 1,450 were engraving sites. Based on information on the registered site records of engraving sites, 55.9% of engraving sites were located upon ridgelines, 41% on hillsides, and few sites were located in valley bottoms. Almost 70% of rock shelters with art sites were located on hillsides, 31.7% occurred on the tops of ridgelines and 16.7% occurred at the bottom of valleys.

2.7 Local context

A number of Aboriginal cultural heritage investigations have been conducted within the local area (within approximately 10 kilometres of the study area). Most of these investigations were undertaken as part of development applications and included surface and sub-surface investigations. These investigations are summarised below.

Dallas (1981) completed an archaeological survey of a proposed area to undergo development at Kariong for Douglas Sanger Pty Ltd, on behalf of the Land Commission of NSW. The dominant site types within the area were rock engravings or grinding grooves, although occupation site with deposits and rock paintings were also present. Middens have also been recorded along the shores of Brisbane Waters. The field survey focussed on areas of disturbance and exposure, and the rocky creek beds and open exposed areas of sandstone. Any sandstone overhangs along the drainage lines or Piles Creek that were over 1 metre high were inspected during the survey effort. A natural spring was also identified and it was predicted that its presence would suggest a high quantity of sites within the area. Three sites had been previously recorded in the area, but were not relocated during the survey effort. A total of 14 unrecorded Aboriginal sites were identified within the survey area. This included three potential occupation shelters which were excavated, however, the deposits were found to be sterile. From the results of the survey two distinct groups or 'clusters' of site complexes were deduced. Dallas concluded that these sites provide a "spatially dense and varied record of art and occupation activities that should remain undisturbed, and a buffer zone be developed" (Dallas 1981).



Keotigg & McDonald (1983) were commissioned by Lester Firth Associates Pty Ltd to complete a survey of archaeological sites in the Mount Penang Area, Somersby, where rural residential development was proposed. The area surveyed was approximately 175 hectares and targeted every rock surface in the area, all of which were inspected. In total, eight sites were previously recorded within the area. Of these eight sites, three were not located. A further six unrecorded sites were identified during the survey effort. Keotigg and McDonald summarised that the predominant sites types within the plateau/escarpment are of Gosford/Somersby region were rock engravings, shelter sites, potential archaeological deposit (PAD) and grinding grooves.

Du Cros & Rich (1986) undertook an archaeological survey of behalf of the Department of Lands of Crown Land that was proposed for future industrial development near Mount Penang, NSW. Two Aboriginal engraving sites had been recorded within the vicinity of the area to be surveyed (AHIMS 45-3-29 and 45-3-30). AHIMS 45-3-29 was located during the survey effort and it was recommended that the site location be properly recorded by a surveyor. AHIMS 45-3-30 was not located and it was suggested by du Cros and Rich that the site may have been destroyed or was not correctly plotted and may be present outside of the area surveyed. It was recommended that AHIMS 45-3-29 be protected, and if future developments were to propose harm to the site further archaeological assessment would be required and consent to destroy would need to be obtained.

McDonald (1997) was commissioned by The Department of Public Works & Service to undertake an assessment of the Mount Penang Juvenile Justice Centre. Redevelopment was proposed for a section of land that was at the time being used for farming and agricultural purposes. No Aboriginal sites had been previously recorded within the vicinity of the Juvenile Justice Centre, and no new Aboriginal sites were located during the survey. The unsuccessful attempt to identify the presence of Aboriginal sites within the area were attributed to the high level of existing disturbance within the area, as well as the absence of appropriate sandstone surfaces suitable for engravings.

Biosis (2008) completed an archaeological assessment for Arup Sustainability on behalf of the NSW Roads and Traffic Authority that assessed the potential impacts to heritage items and places where the proposed road connection works between Kangoo Road and Langford Drive at Kariong were proposed. A survey of the proposed road alignment was undertaken and focused on the relocation of AHIMS sites that had been previously located within vicinity of the alignment. During the survey effort previously recorded sites within the area were revisited and reassessed. None of these sites were located within the alignment. No new Aboriginal Archaeological sites were identified during the survey.

Biosis (2018) completed an Aboriginal archaeological assessment and an ACHA (2020) for 90 Gindurra Road, Somersby, approximately 262 metres north of the study area. This assessment included background research, field investigation, and Aboriginal community consultation. The study area was observed to be highly disturbed by human activity within the study area. Poor levels of ground surface visibility and the lack of appropriate sandstone exposures and overhangs suitable for rock engravings, shelters and grinding grooves also contributed to the low potential for the study area. No new Aboriginal sites were identified during the survey.

Lantern Heritage (2019, 2021) completed a preliminary Aboriginal archaeological assessment for 168 Somersby Falls Road, Somersby, located approximately 2.3 kilometres north-west of the study area to identify potential constraints and inform the proposed development footprint. The assessment included representatives of the Darkinjung Local Aboriginal Land Council (LALC) and resulted in the identification of three known Aboriginal sites located in the south-eastern portion of the property. However, not all the sites could be found again during the site visit due to vegetation overgrowth. These sites included:

• SIE 1 – snake engraving



- SIE 2 four fish engravings associated with a grinding groove
- SIE 4 fish engraving

Another series of rock engravings occur approximately 20 metres outside the southern property boundary and the rock platforms associated with this site extend into the property. Whilst no further evidence of modification was identified on these rock exposures within the property, Darkinjung LALC indicated the platforms should be avoided. The preliminary report recommended that further assessment be undertaken.

Eco Logical Australia (2019) prepared an Aboriginal archaeological assessment as part of the Conservation Management Plan developed for Mount Penang Parklands in 2020. A predictive model was developed for the assessment based on desktop research. This model predicted that there was moderate likelihood for grinding groove and rock shelters with art/PAD/grinding grooves to occur within the site. There was considered a moderate to low likelihood for PAD to be present, and low likelihood for open camp sites/stone artefact scatters/isolated finds and culturally modified trees. A survey was undertaken to confirm the presence of Aboriginal sites and objects, assess the archaeological potential of the landforms within the study site and to relocate and assess previously recorded AHIMS sites. High levels of disturbance were objected across the majority of the Mount Penang Parklands, such as terracing, landscaping and construction of car parks, dams, sports fields and the Mount Penang Gardens and Event Park. A large spoil pile was also noted, and was assumed to be associated with landscape works for the site. Part of the eastern Bushland Precinct of the site was inspected. This area had been subject to fewer disturbances, and featured multiple first and second order water courses and many sandstone outcrops. Only one AHIMS site, a scarred tree (AHIMS 45-3-4044) was relocated during the survey; this tree was later considered not to have been subjected to cultural modification. It was determined that areas outside of the Bushland Precinct in the east that there was low archaeological potential for Aboriginal heritage to occur.

Biosis (2019) undertook an ACHA for a proposed extension of the Kariong Sand and Soils Supplies site at 90 Gindurra Road, Somersby, approximately 800 metres north of the study area. The predictive statements developed for the project anticipated there to be moderate potential for flaked stone artefact scatters and isolated artefacts, PAD, grinding grooves, rock shelters with art and/or deposit. No previously unidentified sites were located during field investigation. The northern section of the development area was determined to be significantly disturbed by the previous and current use of the study area as a sand and soil recycling centre. This would have significantly impacted soil deposits and resulted in the disturbance and destruction of potential sites. The southern section of the development area was heavily vegetated and could not be accessed during the field investigation due to this vegetation. Observations of the vegetation in this area consisted of shrubs and small trees, with occasional mature scribbly gums showing evidence of burning present. RAPs provided information during the supplementary field investigation, namely Aboriginal objects were not present based on regular visits across the development area in the 1960s and 1970s. However, it was noted that the property to the west and north of the development area was known to contain Aboriginal objects as well as Aboriginal engravings. An engraving site featuring three macropods (kangaroos or wallabies) was also known to be located west of the development site but its location is not recorded in AHIMS. Originally recorded by J. C. Lough & Associates (1981), the site called S.I.E.-26 (SIE 26) was reported by Australian Museum Business Services (AMBS) (2002) as part of a plan of management for the Somersby Industrial Park. AMBS could not relocate SIE 26 as part of their assessment, so it remained unregistered. Attempts were made during the field investigation to relocate SIE 26 based on information from the AMBS (2002) report and knowledge from RAPs. While Biosis could also not relocate SIE 26 due to overgrown vegetation and soil accumulation, RAPs with knowledge of its location requested that the area known to hold SIE 26 be registered as a site on AHIMS.



2.7.1 Identified Aboriginal archaeological sites

An extensive search of the AHIMS database was conducted on 24 February 2022 (Client service ID: 662317). The search identified 117 Aboriginal archaeological sites within a 1.7 kilometre search area, centred on the proposed study area (Table 2). Two of these registered sites are located in close vicinity of study area, while the coordinates for one registered site is located within the study area (Figure 6). The mapping coordinates recorded for these sites were checked for consistency with their descriptions and location on maps from Aboriginal heritage reports where available. These descriptions and maps were relied where notable discrepancies occurred.

It should be noted that the AHIMS database reflects Aboriginal sites that have been officially recorded and included on the list. Large areas of NSW have not been subject to systematic, archaeological survey; hence AHIMS listings may reflect previous survey patterns and should not be considered a complete list of Aboriginal sites within a given area. Some recorded sites consist of more than one element, for example artefacts and a modified tree, however for the purposes of this breakdown and the predictive modelling, all individual site types will be studied and compared. This is why there are 155 results presented here compared to the 117 sites identified in AHIMS.

Site type	Occurrences	Frequency (%)
Art (pigment and engraved)	85	54.8
Grinding Groove	46	29.6
Artefact	10	6.4
Shell	4	2.5
Modified trees (carved or scared)	3	1.9
Water hole	3	1.9
Potential archaeological deposit	2	1.2
Aboriginal ceremony and dreaming	1	0.6
Stone arrangement	1	0.6
Total	155	100%

Table 2 AHIMS sites within the study area

A simple analysis of the Aboriginal cultural heritage sites registered within 1.7 kilometres of the study area indicates that the dominant site type is art, representing 54.8% (n=85), with grinding groove representing 29.6%% (n=46). Artefact sites represented 4.4% (n=10) and shell sites represented 2.5% (n=4). Modified trees (carved or scared) and water hole sites represented 1.9% (n=3). PAD sites represented 1.2% (n=2). The least represented was Aboriginal ceremony and dreaming and stone arrangement sites at 0.6% (n=1) each. All sites were located within close proximity to the reliable sources of water, were either exposed by the land clearing works (artefact scatters), in the areas with remnant native vegetation (scarred trees) or within areas of relevant sandstone outcrops for grinding grooves and overhang development (shelters with art/deposit).

Descriptions from the three closest AHIMS sites are presented below.



AHIMS 45-3-0037/ Old Gosford Rd Piles creek

AHIMS 45-3-37/Old Gosford Rd Piles creek is an engraving site featuring three wallaby or kangaroo figures measuring approximately 0.8 metres long, located in close proximity to Gindurra Road according to the scale drawing provided in the site card. The indicated location adjacent to Gindurra Road suggests that there is an error in the translation of the coordinates recorded for the site, which places this AHIMS site away from the study area. The drawing recording the three kangaroo / wallaby figures in the site card for AHIMS 45-3-0037/ Old Gosford Rd Piles creek also features a note stating "This site is also identified as S.I.E.-26". The site called S.I.E.-26 (SIE 26) was reported by Australian Museum Business Services (AMBS) (2002) as part of a plan of management for the Somersby Industrial Park, having previously been recorded by J. C. Lough & Associates (1981) but not registered in AHIMS. AMBS could not relocate SIE 26 as part of assessment, so its location could not be submitted to AHIMS at that time. SIE 26 was investigated by Biosis (2019) for an ACHA on Gindurra Road. While Biosis could also not relocate SIE 26 due to overgrown vegetation and soil accumulation, RAPs with knowledge of its location requested that the area known to hold SIE 26 be registered as a site on AHIMS. This was undertaken and SIE 26 is registered as AHIMS 45-3-4505/Kariong SIE 26, with its recorded location recorded south of Gindurra Road near the Pacific Motorway, 882 metres north of the study area (see Figure 6).

AHIMS 45-3-0037/ Old Gosford Rd Piles creek is equivalent to AHIMS 45-3-4505/Kariong SIE 26, which is not located within the study area.

AHIKMS 45-3-3311/K-SS-1

AHIKMS 45-3-3311/K-SS-1 is shell site adjacent to the Central Coast Highway. The site card notes it is possible that shell from a midden site located elsewhere has been introduced to this location as fill or base material for road works. This means that the shell was not discarded here by Aboriginal people. It is possible that this site is associated with the tributary of Piles Creek (50 metres from the site location), but the site area was noted to have been subject to high levels of disturbance.

AHIMS 45-3-4296/HN MP A01

AHIMS 45-3-4296/HN MP A01 is an artefact site consisting of a broken tuff flake in a disturbed and modified context associated with the wall of one of the dams adjacent to the current study area. The two pieces of the artefact were located 10 metres apart. The artefact featured a cortical platform and a feather termination, with dimensions of 59 millimetres long, 21 millimetres wide and 8 millimetres thick.





Figure 6 AHIMS within the vicinity of the study area

Gosfor

SFERD

Legend

Study area

★ AHIMS



Matter: 36159, Date: 31 May 2022, Drawn by: JET, Checked by: CA, Last edited by: jtownsend Location: P:\36100s\36159Mapping\ 36159_ADDA_MtPenang, Layout: 36159_ADDA_F6_AHIMS



2.7.2 Predictive statements

A series of statements been formulated to broadly predict the type and character of Aboriginal cultural heritage sites likely to exist throughout the study area and where they are more likely to be located.

This model is based on:

- Local and regional site distribution in relation to landform features identified within the study area.
- Consideration of site type, raw material types and site densities likely to be present within the study area.
- Findings of the ethnohistorical research on the potential for material traces to present within the study area.
- Potential Aboriginal use of natural resources present or once present within the study area.
- Consideration of the temporal and spatial relationships of sites within the study area and surrounding region.

Based on this information, a predictive model has been developed, indicating the site types most likely to be encountered during the survey and subsequent sub-surface investigations across the present study area (Table 3). The definition of each site type is described firstly, followed by the predicted likelihood of this site type occurring within the study area.

Site type	Site description	Potential
Rock art / engraving	Rock art includes paintings and drawings that generally occur in rock overhangs, caves and shelters. Engravings commonly occur on open, flat surfaces of rock such as on sandstone outcrops, although some are found on vertical rock faces and in rock shelters.	Moderate: Suitable horizontal sandstone rock outcrops could occur along drainage lines and/or ridge lines which are associated with the Somersby landscape in the study area. There are AHIMS engraving sites in close proximity to the study area and in the wider cultural landscape.
Grinding grooves	Grooves created in stone platforms through ground stone tool manufacture.	Moderate: Suitable horizontal sandstone rock outcrops could occur along drainage lines.
Flaked stone artefact scatters and isolated artefacts	Artefact scatter sites can range from high- density concentrations of flaked stone and ground stone artefacts to sparse, low- density 'background' scatters and isolated finds.	Moderate: Stone artefact sites have been previously recorded in the region on level, well-drained topographies in close proximity to reliable sources of fresh water. Due to the distance from permanent fresh water resources, the potential for artefacts to be present within the study area is assessed as moderate.
Potential Archaeological Deposits (PADs)	Potential sub surface deposits of cultural material.	Moderate: PADs have been previously recorded in the region across a wide range of landforms. PADs are likely to be present within areas adjacent to water courses or on high points in undisturbed landforms.

Table 3 Aboriginal site prediction statements


Site type	Site description	Potential
Modified trees	Trees with cultural modifications	Moderate to low: There is a scarred tree in close proximity to the study area. Due to extensive vegetation clearance only a small number of mature native trees have survived in the vicinity of the study area.
Shell middens	Deposits of shells accumulated over either singular large resource gathering events or over longer periods of time.	Low: Shell midden sites have not been recorded within the vicinity of the study area. There is a very low potential for shell middens to be located in the study area as the first order drainage line is not permanent water source.
Waterhole	Water holes were used for sharpening tools and possibly as a source of fresh drinking water. The natural hollows sometimes enlarged or linked to other hoes with carved grooves using axes heads or similar tools.	Low: There are currently no recorded waterholes within the study area. Due to the distance from permanent fresh water resources, the potential for waterholes to be located within the study area is low.
Aboriginal Ceremony and Dreaming sites	Such sites are often intangible places and features and are identified through oral histories, ethnohistoric data, or Aboriginal informants.	Low: There are currently no recorded mythological stories for the study area.
Stone Arrangement	Places where Aboriginal people have positioned stones deliberately to form shapes or patterns.	Low: There are currently no recorded stone arrangements within the study area.
Quarries	Raw stone material procurement sites.	Low: There is no record of any quarries being within or surrounding the study area.
Burials	Aboriginal burial sites.	Low: Aboriginal burial sites are generally situated within deep, soft sediments, caves or hollow trees. Areas of deep sandy deposits will have the potential for Aboriginal burials. The soil profiles associated with the study area are not commonly associated with burials.
Rock shelters with art and / or deposit	Rock shelter sites include rock overhangs, shelters or caves, and generally occur on, or next to, moderate to steeply sloping ground characterised by cliff lines and escarpments. These naturally formed features may contain rock art, stone artefacts or midden deposits and may also be associated with grinding grooves.	Low: The sites will only occur where suitable sandstone exposures or overhangs possessing sufficient sheltered space exist, which are present only at one small part in the east of the study area, within Hawkesbury Sandstone Soil Landscape.



Site type	Site description	Potential
Post-contact sites	These are sites relating to the shared history of Aboriginal and non-Aboriginal people of an area and may include places such as missions, massacre sites, post-contact camp sites and buildings associated with post- contact Aboriginal use.	Low: There are no post-contact sites previously recorded in the study area and historical sources do not identify one.
Aboriginal places	Aboriginal places may not contain any 'archaeological' indicators of a site, but are nonetheless important to Aboriginal people. They may be places of cultural, spiritual or historic significance. Often they are places tied to community history and may include natural features (such as swimming and fishing holes), places where Aboriginal political events commenced or particular buildings.	Low: There are currently no recorded Aboriginal historical associations for the study area.



3 Archaeological investigation

An archaeological investigation of the study area was undertaken on 4 March, 15 March and 25 May 2022. The survey sampling strategy, methodology and a discussion of results are provided below.

3.1 Archaeological survey aims

The principle aims of the survey were to:

- Undertake a systematic survey of the study area targeting areas with the potential for Aboriginal heritage.
- Identify and record Aboriginal archaeological sites visible on the ground surface.
- Identify and record areas of Aboriginal archaeological and cultural sensitivity.

3.2 Survey methods

The survey was conducted on foot. Recording during the survey followed the archaeological survey requirements of the code and industry best practice methodology. Information that recorded during the survey included:

- Aboriginal objects or sites present in the study area during the survey.
- Survey coverage.
- Any resources that may have potentially have been exploited by Aboriginal people.
- Landform elements, distinguishable areas of land approximately 40m across or with a 20m radius (CSIRO 2009).
- Photographs of the site indicating landform.
- Ground surface visibility (GSV) and areas of exposure.
- Observable past or present disturbances to the landscape from human or animal activities.
- Aboriginal artefacts, culturally modified trees or any other Aboriginal sites.

Where possible, the identification of natural soil deposits within the study area was undertaken. Photographs and recording techniques were incorporated into the survey including representative photographs of survey units, landform, vegetation coverage, GSV and the recording of soil information for each survey unit were possible. Any potential Aboriginal objects observed during the survey were documented and photographed. The location of Aboriginal cultural heritage and points marking the boundary of the landform elements were recorded using a hand-held Global Positioning System and the Map Grid of Australia (94) coordinate system.

3.3 Constraints to the survey

With any archaeological survey there are several factors that influence the effectiveness (the likelihood of finding sites) of the survey. The factors that contributed most to the effectiveness of the survey within the study area were lack of visibility of the natural ground surface and disturbance caused by buildings, roads and paved pathways.



3.4 Visibility

In most archaeological reports and guidelines visibility refers to GSV, and is usually a percentage estimate of the ground surface that is visible and allowing for the detection of (usually stone) artefacts that may be present on the ground surface (DECCW 2010b). Overall, visibility within the majority of the study area was low (10-20%). Parklands Road was covered by established roads and pathways (Photo 8, Photo 9, Photo 10, Photo 11 and Photo 12), whereas The Avenue (Photo 13, Photo 14 and Photo 15) was covered by various historical building and established roadways. In some locations such as the edge of roads, and drainage channels, soils were visible. Other areas, such as the paddock in the northern portion of the study and the small areas extending off Parklands Road, were covered by dense grasses with some instances of visible ground surface due to recent erosion and scouring from heavy rainfall and vehicle tracks (Photo 18, Photo 19).



Photo 8 View of Parklands Road facing north, at entry to the car park

- Photo 9 View from the southern portion of Parklands Road, facing north





Photo 10 View of Parklands Road, facing north

Photo 11 View of Scribbly Gums to the east of Parklands Road, facing south-west

Photo 12 View of McCabe Road, facing west



Photo 13 View of The Avenue, facing north





Photo 15 View of Carinya Street, facing east





Photo 16 View of paddock for proposed new road alignment, located to the north of Parklands Road

Photo 17 View of paddock for proposed new road alignment, located to the north of Parklands Road



- Photo 18 View to the north-west from the eastern end of the paddock for the northern ancillary area





Photo 19 View of area proposed for electrical trenching on the eastern side of Parklands Road, featuring some ground visibility due to vehicle tracks in waterlogged soil, facing east

3.5 Exposure

Exposure refers to the geomorphic conditions of the local landform being surveyed, and attempts to describe the relationship between those conditions and the likelihood the prevailing conditions provide for the exposure of (buried) archaeological materials. Whilst also usually expressed as a percentage estimate, exposure is different to visibility in that it is in part a summation of geomorphic processes, rather than a simple observation of the ground surface (Burke & Smith 2004, pp. 79, DECCW 2010b).

Overall, the study area displayed areas of low exposure (5-10%) around Parklands Road and in the northern paddock (Photo 20, Photo 21, Photo 22, Photo 23, Photo 24, Photo 25, Photo 26) and low to moderate exposure to the north of Parklands Road (5-20%) (Photo 27, Photo 28, Photo 29, Photo 30). Areas of exposure are increased around fence lines and in some areas around animal and ground disturbances.



Photo 20 Area of exposure located beside Parklands Road



Photo 21 Areas of exposure to the west of Parklands Road Photo 22 Area of exposure to the west of Parklands Road due to disturbance from vehicles Photo 23 Areas of exposure to the east of Parklands Road due to tree roots





Photo 24 Area of exposure near Parklands Road at the base of a tree

Photo 25 Area of exposure to the east of Parklands Road

Photo 26 Area of exposure near an animal water /feed trough in the central portion of the paddock proposed for the northern ancillary area, facing north-west





Photo 27 Area of exposure in the northern portion of the study area located to the north of Parklands Road

Photo 28 Area of exposure in the northern portion of the study area located to the north of Parklands Road

Photo 29 Area of exposure in the northern portion of the study area located to the north of Parklands Road due to ground disturbance from vehicles





Photo 30 Area of exposure in the northern portion of the study area located to the north of Parklands Road

3.6 Disturbances

Disturbance in the study area is associated with natural and human agents. Natural agents generally affect small areas and include the burrowing and scratching in soil by animals, such as wombats, foxes, rabbits and wallabies, and sometimes exposure from slumping or scouring. Disturbances associated with recent human action are prevalent in the study area and cover large sections of the land surface. The agents include residential development such as landscaping and construction of residential and education buildings; farming practices, such as initial vegetation clearance for creation of paddocks, fencing and stock grazing; agricultural practices such as fruit orchards; light industrial practices such as nursery and creation of artificial dams throughout the entire study area.

The study area as a whole has been subject to disturbance by human activity. Historic and recent aerials show that the study area has been subject to tree clearing, the development of a boys school in the early 1900s and associated modern subsurface infrastructure and landscaping over the past 60 years. These disturbances were noted during the archaeological survey and are shown in Photo 31, Photo 32, Photo 33, Photo 34, Photo 35, Photo 36 and Photo 37.



Photo 31 Parklands Road, facing south





Photo 32 View of the dormitory buildings, facing southeast

Photo 33 View of the dormitory buildings, facing south



- Photo 34 View of historic paving's associated with the historic boys school, facing east









3.7 Discussion

The archaeological investigation consisted of a series of meandering transects were walked across the entire study area over three separate site visits (Figure 7). Attendance for these site visits was as follows:

- 4 March 2022: Claire Nunez (Technical Director), Charlotte Allen (Project Archaeologist) and Molly Crissell (Archaeologist) with Tracey Howie (Awabakal & Guringai).
- 15 March 2022: Charlotte Allen (Project Archaeologist), Tracey Howie and Trudy Robley-Smith (Awabakal & Guringai) and Corrine Quinlan (Darkinjung LALC).
- 25 May 2022: Charlotte Allen (Project Archaeologist), Tracey Howie and Tyler Howie (Awabakal & Guringai). Corrine Quinlan (Darkinjung LALC) was unavailable for this date but confirmed that she would defer to Tracey Howie (Awabakal & Guringai) regarding Aboriginal consultation on this occasion.

No Aboriginal sites or PADs were identified within the study area during the survey. However, the lack of surface material does not indicate that there is an absence of archaeological deposits. This is instead likely attributable to the limited exposure and areas of disturbance seen during the survey, rather than an absence of Aboriginal occupation of the area.

Background research indicated that the study area is located in within the Hawkesbury Sandstone geological unit which overlies the Narrabeen group of the Sydney Basin. The Hawkesbury Sandstone geological unit consists of medium to coarse-grained quartz sandstone with minor shale and laminate lenses with a maximum thickness of 290 metres. The study area is also underlain by the residual Somersby soil landscape characterised by a gently undulating to rolling rises topography with broad, convex crests and long slopes lying on deeply weathered Hawkesbury Sandstone plateau. Due to being a residual soil landscape, this means it is slowly accumulating with the potential to preserve archaeological sites if found undisturbed.

A search of the AHIMS database and a review of relevant reports was also undertaken. The AHIMS search identified 117 Aboriginal sites within a 1.7 kilometre radius of the study area. The coordinates for one of these sites locates it within the study area: AHIMS 45-3-37/Old Gosford Rd Piles creek. However, further investigation based on information provided in the site card confirmed that AHIMS 45-3-0037/ Old Gosford Rd Piles creek is not located within the study area. The drawing recording the three kangaroo / wallaby figures in the site card for AHIMS 45-3-0037/ Old Gosford Rd Piles creek also features a note stating "This site is also identified as S.I.E.-26". SIE 26 was recorded by J. C. Lough & Associates (1981) but not registered in AHIMS at the time. Later, AMBS (2002) reported on SIE 26 as part of a plan of management for the Somersby Industrial Park but could not relocate the site as part of their assessment; as a result its location could not be submitted to AHIMS. SIE 26 was then investigated by Biosis (2019) for an ACHA on Gindurra Road. While Biosis could also not relocate SIE 26 due to overgrown vegetation and soil accumulation, RAPs with knowledge of its location requested that the area known to hold SIE 26 be registered as a site on AHIMS. This was undertaken and SIE 26 is registered as AHIMS 45-3-4505/Kariong SIE 26, with its recorded location recorded south of Gindurra Road near the Pacific Motorway, 882 metres north of the study area (see Figure 6).

Predictive models which have been developed for the regional and local area have a tendency to favour permanent water courses as the locations of complex sites have been continuously occupied. This is due to these areas having stable sources of water and by extension other resources which would have been used by Aboriginal groups.

The survey was hampered by low GSV (10-20%) throughout the majority of the study area. This was due to the presence of structures, and areas covered by roads and vegetation. Where instances of exposed soils were present, these displayed sandy loam characteristics consistent with the Somersby soil landscape



description. The study area has been disturbed throughout by various activities including terracing and levelling, construction of historical buildings in regards to the Boys School that once occupied the area.

When reviewing the historical land use of the study area, it is clear that the site has been subject to increasing levels of disturbance since the early 1900s with modern development evident in the historical aerials from the 1960's. The 1965 historical aerial photograph (



Photo 3) depicts tree clearances within the site Mount Penang site and the established pre-existing roads and buildings related to the history of the previous occupation of the study area. By 1984, (Photo 5), a dam had been construction of to the west of Parklands Road. In the 1990s and mid 2000s (Photo 6 and Photo 7) extensive residential and industrial developments had occurred surrounding the Parklands Precinct and the Café, and gardens located to the west of Parklands Road were established. Although the study area was completely cleared of vegetation, significant disturbance had occurred surrounding the established roads within Mount Penang Parklands, including landscaping, development of the boys' school and subsurface infrastructure.

An area which had been subject to lower levels of development in the northern part of the study area proposed for the extension of Parklands Road North and the northern ancillary area was targeted as part of the survey. Despite the use of this area as a paddock, disturbance associated with tree clearing, soil movement down the slope landscape, a drainage channel and further disturbance from historical development has affected the archaeological integrity of this portion of the study area. Evidence of kangaroos



was also observed by representatives of Awabakal & Guringai during the survey throughout the northern paddock indicated by the presence of flattened grasses.

Based on the above discussion, the entire study area has been identified as having low archaeological potential (Figure 7).

3.7.1 Consultation with representatives of the Aboriginal community

Darkinjung LALC and Awabakal & Guringai agreed that the entire study area is of low archaeological potential. No sites were identified during the survey of the study area. An area which has been subject to lower levels of development which is proposed for the extension of Parklands Road (Parklands Road North) was also agreed to hold low archaeological potential. This is due to disturbances from tree clearing, soil movement down the slope, the drainage channel and other historical development throughout the area. Any artefacts in this portion of the study area are likely to have been washed closer to the creek which runs adjacent to the study area due to the tree clearances and soil movement. While there are no physical sites identified, the study area is located within a wider highly significant cultural landscape which is evident through other sites located in the vicinity of the study area. Such sites include engravings and scarred trees.

Darkinjung LALC and Awabakal & Guringai noted that the Scribbly Gums located within the northern portion of the study area were not used for ceremonial practices and would have been utilised as a standard tree for resource gathering. These trees may be remnant native vegetation (Photo 11). If the removal of any Scribbly Gums cannot be avoided as part of the proposed works, Darkinjung LALC and Awabakal & Guringai requested that new Scribbly Gums or other native plantings be included in the works to offset the loss of any existing trees that are to be removed.

Both Tracey Howie and Corrine Quinlan were in agreement that there would be no constraints with proceeding with the development of the study area. However, they agreed that heritage interpretation should be established to emphasise the wider cultural landscape the study area sits within, and implementation of a heritage induction, unexpected finds procedure and site protection measures for the northern ancillary area to ensure the paddock is reinstated to its previous condition. It is also suggested that representatives from the Aboriginal community are involved for the heritage induction.



4 Conclusions and recommendations

4.1 Conclusions

The results of this assessment indicated that the study area has been identified has having low potential. No Aboriginal objects or sites were identified during the archaeological survey. The proximity of these areas to a second order drainage line and a range of streams in the vicinity suggest that Aboriginal people would have had access to a number of water sources close by. However, historical disturbances which have taken place since the early 1900s have likely removed or caused the displacement of any archaeological deposits which may have been located within the study area. Further archaeological investigation is not required within the areas of low potential. (Figure 8).

4.2 Recommendations

The following management recommendations have been developed relevant to the study area and influenced by:

- Predicted impacts to Aboriginal cultural heritage.
- The planning approvals framework.
- Current best conservation practise, widely considered to include:
 - Ethos of the Australia ICOMOS Burra Charter (2013).
 - The code.

Prior to any impacts occurring within the study area, the following is recommended:

Recommendation 1: No further archaeological assessment is required

No further archaeological work is required in the study area due to the entire study area assessed as having low archaeological potential.

Recommendation 2: Update site card for AHIMS 45-3-37/Old Gosford Rd Piles creek

The current coordinates for AHIMS 45-3-37/Old Gosford Rd Piles creek place this AHIMS site within the study area. Biosis has confirmed that this site is located adjacent to Gindurra Road approximately 882 metres north of the study area. A new site card, AHIMS 45-3-4505/Kariong SIE 26 has been registered for this site following investigations by Biosis (2019) with registered Aboriginal parties (RAPs) as part of another project.

The site card for AHIMS 45-3-37/Old Gosford Rd Piles creek should be updated in the AHIMS to reflect it's known location, as per AHIMS 45-3-4505/Kariong SIE 26.

Recommendation 3: Heritage Induction

It is recommended that a heritage interpretation plan is conducted due to the study area being located within a wider highly significant cultural landscape. Furthermore, it is recommended that a heritage induction and an unexpected finds procedure is in place for the development works. We suggest that representatives from the Aboriginal community are involved during this process.



Recommendation 4: Heritage interpretation

Comments received from representatives of Darkinjung Local Aboriginal Land Council (LALC) and Awabakal & Guringai Pty Ltd emphasised the high cultural significance of the wider landscape in which the study area is located. It is recommended that a Heritage Interpretation Plan is developed which incorporates Aboriginal cultural heritage, with heritage interpretation devices and context is developed in consultation with the Aboriginal community.

Recommendation 5: Replacement of Scribbly Gum plantings if avoidance or removal is not possible

Darkinjung LALC and Awabakal & Guringai noted that the Scribbly Gums located within the northern portion of the study area were not used for ceremonial practices and would have been utilised as a standard tree for resource gathering. These trees may be remnant native vegetation. If the removal of any Scribbly Gums cannot be avoided as part of the proposed works, Darkinjung LALC and Awabakal & Guringai requested that new Scribbly Gums or other native plantings be included in the works to offset the loss of any existing trees that are to be removed.

Recommendation 6: Landscape protection measures

In order to ensure that the paddock proposed for the northern ancillary area can be reinstated to its current condition once the works are completed, protection measures should be implemented as part of site establishment and management of this area for the period of use. This may include laying down of geofabric and landscape materials wherever there will be material stockpiled or movement of vehicles and plant. This will reduce the risk of the paddock landscape being modified as part of the works.

Recommendation 7: Discovery of Unanticipated Aboriginal Objects

All Aboriginal objects and Places are protected under the NPW Act. It is an offence to knowingly disturb an Aboriginal site without a consent permit issued by the Heritage NSW. Should any Aboriginal objects be encountered during works associated with this proposal, works must cease in the vicinity and the find should not be moved until assessed by a qualified archaeologist. If the find is determined to be an Aboriginal object the archaeologist will provide further recommendations. These may include notifying the Heritage NSW and Aboriginal stakeholders.

Recommendation 8: Discovery of Aboriginal Ancestral Remains

Aboriginal ancestral remains may be found in a variety of landscapes in NSW, including middens and sandy or soft sedimentary soils. If any suspected human remains are discovered during any activity you must:

- 1. Immediately cease all work at that location and not further move or disturb the remains.
- 2. Notify the NSW Police and Heritage NSW' Environmental Line on 131 555 as soon as practicable and provide details of the remains and their location.
- 3. Not recommence work at that location unless authorised in writing by Heritage NSW.

Due Diligence Process



5. Further investigation and impact assessment required.

Proceed with caution. If any Aboriginal objects are found, stop work and notify OEH. If Human remains are found, stop work and notify NSW Police and OEH.



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Appendices



Appendix 1 AHIMS search results

This Appendix is not to be made public.



Extensive search - Site list report

Client Service ID : 662317

<u>SiteID</u>	SiteName	<u>Datum</u>	<u>Zone</u>	Easting	<u>Northing</u>	<u>Context</u>	Site Status **	<u>SiteFeatures</u>	<u>SiteTypes</u>	<u>Reports</u>
45-3-1439	Melinga;Ca-K-29;	AGD	56	340000	6300260	Open site	Valid	Art (Pigment or Engraved) : -	Rock Engraving	
	Contact	Recorders	ASR	SYS				<u>Permits</u>		
45-3-0442	Flood Creek;	AGD	56 B A 1	340094	6300985	Closed site	Valid	Grinding Groove : -, Shell : -, Artefact : -	Axe Grinding Groove,Shelter with Midden	
45-2-0021	<u>Contact</u> Piles Creek (Cosford)	ACD	5.A	2/2207	6200115	Opon site	Valid	Art (Digmont or	Middon Pock	402
43-3-0031		AGD	50	342397	0300113	Open site	vanu	Engraved) : -, Shell : -, Artefact : -	Engraving	492
45 0 0000		Recorders	ASR	SYS	(200040		** 1.1	Permits		
45-3-3303	KG PAD 2	AGD	56	342600	6299840	closed site	Valid	Archaeological Deposit (PAD) : -		
	<u>Contact</u> T Russell	Recorders	Jo M	cDonald Cult	ural Heritage N	Management see GMI		Permits		
45-3-3364	KA 3A	GDA	56	340775	6300001	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Mr.J	akub Czastka				<u>Permits</u>		
45-3-3367	KA1	GDA	56	340945	6299759	Open site	Valid	Art (Pigment or Engraved) : -		
	<u>Contact</u>	<u>Recorders</u>	Mr.J	akub Czastka				<u>Permits</u>		
45-3-1291	Gosford (Whale Shelter 2)	GDA	56	341016	6299688	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	1100
	Contact	<u>Recorders</u>	ASR	SYS,Ms.Collet	te Douchkov			<u>Permits</u>		
45-3-0620	Old Gosford Road;	AGD	56	342012	6301113	Open site	Valid	Art (Pigment or Engraved) : -	Rock Engraving	
	Contact	Recorders	ASR	SYS	(000=0)	o 1		Permits	P 1	
45-3-0535	Point Clare; SIM GROUP 169; EELS ENG	GDA	56	342276	6298736	Open site	Valid	Artefact : -, Art (Pigment or Engraved) : -	Rock Engraving,Shelter with Deposit	
	Contact	<u>Recorders</u>	I.M S	Sim,Ms.Collet	te Douchkov			<u>Permits</u>		
45-3-0510	Point Clare; TWO EELS ENG	GDA	56	342276	6298736	Open site	Valid	Art (Pigment or Engraved) : -	Rock Engraving	
	<u>Contact</u>	<u>Recorders</u>	Web	b,Ms.Collette	Douchkov			<u>Permits</u>		
45-3-4385	PILES CK INDETERMINATE ROCK ENG	GDA	56	340419	6298748	Open site	Valid	Art (Pigment or Engraved) : -		
	<u>Contact</u>	<u>Recorders</u>	Ms.C	Collette Doucl	ıkov			<u>Permits</u>		
45-3-3311	K - SS - 1	AGD	56	341190	6299550	Open site	Valid	Grinding Groove : 1		
	Contact T Russell	Recorders	Mrs.	Robynne Mil	ls			Permits		
45-3-4417	GINDURRA RD S ENG	GDA	56	341773	6301368	Open site	Valid	Art (Pigment or Engraved) : -		
	<u>Contact</u>	<u>Recorders</u>	Ms.0	Collette Doucl	ıkov			<u>Permits</u>		

Report generated by AHIMS Web Service on 24/02/2022 for Samantha Keats for the following area at Datum :GDA, Zone : 56, Eastings : 339977.576 - 343377.576, Northings : 6298392.689 - 6301792.689 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 117



Extensive search - Site list report

Client Service ID : 662317

<u>SiteID</u>	<u>SiteName</u>	<u>Datum</u>	<u>Zone</u>	Easting	<u>Northing</u>	<u>Context</u>	Site Status **	<u>SiteFeatures</u>	<u>SiteTypes</u>	<u>Reports</u>
45-3-0619	Old Gosford Road;	AGD	56	342474	6300848	Open site	Valid	Art (Pigment or Engraved) : -, Stone Arrangement : -	Rock Engraving,Stone Arrangement	
		Recorders	ASRS	5YS	(20000 .	a .	** 1.1	Permits		
45-6-1598	DEBENHAM RD KENDALL GLEN AGGS	GDA	56	342724	6300335	Open site	Valid	Art (Pigment or Engraved) : -, Grinding Groove : -	Rock Engraving	
	<u>Contact</u>	<u>Recorders</u>	Jenn	y Hanrahan,	Ms.Collette Do	uchkov		<u>Permits</u>		
45-3-1314	Mt Penang; AGGS AT DAM	GDA	56	342876	6301706	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	98683
	<u>Contact</u>	<u>Recorders</u>	Unkr	nown Author	,Ms.Collette D	ouchkov		<u>Permits</u>		
45-3-1287	Gosford;Squatters Shelter;	GDA	56	340823	6299920	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	
	<u>Contact</u>	<u>Recorders</u>	ASRS	SYS,Ms.Colle	tte Douchkov			<u>Permits</u>		
45-3-1288	Piles Creek Grooves (Kariong)	GDA	56	340841	6299929	Open site	Valid	Grinding Groove : -, Art (Pigment or Engraved) : -	Axe Grinding Groove,Rock Engraving	101093
	Contact	<u>Recorders</u>	ASRS	SYS,Ms.Collet	tte Douchkov			Permits		
45-3-0307	KG 4 (Kariong)	AGD	56	342940	6299920	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	757
	<u>Contact</u>	<u>Recorders</u>	Doct	or.Jo McDon	ald,Laura-Jane	Smith		Permits		
45-3-4384	PENANG RED STENCILS SWA	GDA	56	342188	6299672	Closed site	Valid	Art (Pigment or Engraved) : -		
	<u>Contact</u>	<u>Recorders</u>	Ms.C	ollette Douc	hkov			<u>Permits</u>		
45-3-2387	Brisbane Water N.P.; MAN AT MOSAIC ROCK ENG	GDA	56	342296	6298567	Open site	Valid	Art (Pigment or Engraved) : -	Rock Engraving	1333
	Contact	<u>Recorders</u>	Warı	en Bluff,Ms.	Collette Douch	kov		<u>Permits</u>		
45-3-4388	COORUMBINE CK KARIONG SHIELD ENG	GDA	56	342303	6298696	Open site	Valid	Art (Pigment or Engraved) : -		
	<u>Contact</u>	<u>Recorders</u>	Ms.C	ollette Douc	hkov			<u>Permits</u>		
45-3-1495	Narara Creek;site 243;	AGD	56	342250	6300010	Open site	Valid	Art (Pigment or Engraved) : -	Rock Engraving	
	<u>Contact</u>	<u>Recorders</u>	J.C Lo	ough				<u>Permits</u>		
45-3-1363	Piles Creek;MtW-K-26;	AGD	56	340290	6298570	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	
45 (0700	Londact	ACD	ASKS	240577	(200(22	Ou an ait	17-1: J	Aut (Digmout au	De els Frances	
45-6-0789	siackwaii;	AGD	56	340577	6299622	Upen site	Valid	Art (Pigment or Engraved) : -	KOCK Engraving	
	<u>Contact</u>	<u>Recorders</u>	ASRS	SYS				Permits		

Report generated by AHIMS Web Service on 24/02/2022 for Samantha Keats for the following area at Datum :GDA, Zone : 56, Eastings : 339977.576 - 343377.576, Northings : 6298392.689 - 6301792.689 with a Buffer of 0 meters. Number of Aboriginal sites and Aboriginal objects found is 117



Extensive search - Site list report

<u>SiteID</u>	SiteName	<u>Datum</u>	<u>Zone</u>	Easting	<u>Northing</u>	<u>Context</u>	Site Status **	<u>SiteFeatures</u>	<u>SiteTypes</u>	<u>Reports</u>
45-3-3302	KG PAD 1	AGD	56	342350	6299430	Closed site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact T Russell	Recorders	Jo M	cDonald Cult	ural Heritage I	Management see GMI		<u>Permits</u>		
45-3-4382	FAGANS BAY NARI AVE SWA	GDA Becondone	56	342988	6298981	Closed site	Valid	Art (Pigment or Engraved) : -		
45 2 4220	CONTACT	CDA	MS.C		(200502	Omen eite	Valid	Ant (Digmont on		
45-5-4559	POINT CLARE DIRDMEN FISH ENGS	GDA	50 Ma (342931	0290392	open site	vanu	Engraved) : -		
45 2 1217	<u>CONTACT</u>	<u>Recorders</u>	MS.C	242005	nkov	On an aite	17-1: -1	Art (Digmont or	Da ala Europania a	
45-3-1317	Mt Penang; 1 WO FISH ENG	GDA	56	342905	6300640	Open site	valid	Engraved) : -	KOCK Engraving	
	<u>Contact</u>	<u>Recorders</u>	ASRS	SYS,Ms.Collet	te Douchkov			Permits		
45-3-2435	Kangoo Rd.; RESERVOIR TRAIL ENGS	GDA	56	342929	6300446	Open site	Valid	Art (Pigment or Engraved) : -	Rock Engraving	
	<u>Contact</u>	<u>Recorders</u>	Brad	Welsh,Ms.Co	ollette Douchk	ov		<u>Permits</u>		
45-3-0028	Piles Creek; LOUGH CA-K-7	GDA	56	340772	6300630	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	100932,10099 9
	<u>Contact</u>	<u>Recorders</u>	ASRS	SYS,Ms.Collet	te Douchkov			<u>Permits</u>		
45-3-0058	Piles Creek; SIM 3/1 ENG AGGS	GDA	56	340841	6299929	Open site	Valid	Art (Pigment or Engraved) : -, Grinding Groove : -	Axe Grinding Groove,Rock Engraving,Shelter with Art	
	<u>Contact</u>	Recorders	ASRS	SYS,Ms.Collet	te Douchkov			<u>Permits</u>		
45-3-3162	PT.Clare Cemetery	AGD	56	343000	6299050	Open site	Valid	Shell : -, Artefact : -	Midden	1333
	Contact	Recorders	Wari	ren Bluff				<u>Permits</u>		
45-3-2935	B.W.N.P.; COORUMBINE CK ENGS	GDA	56	342234	6299115	Open site	Valid	Grinding Groove : -, Art (Pigment or Engraved) : -	Axe Grinding Groove,Rock Engraving	1333
	<u>Contact</u>	Recorders	Warı	ren Bluff,Ms.	Collette Douch	kov		<u>Permits</u>		
45-3-0043	Old Gosford Road;Piles Creek;	AGD	56	342112	6300658	Open site	Valid	Art (Pigment or Engraved) : -	Rock Engraving	102848
	Contact	<u>Recorders</u>	I.M S	lim				<u>Permits</u>		
45-3-2390	B.W.N.P.; COORUMBINE AGGS	GDA	56	342273	6298755	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	1333
	<u>Contact</u>	<u>Recorders</u>	Warı	ren Bluff,Ms.	Collette Douch	kov		<u>Permits</u>		
45-3-3248	B.W.N.P13 SIM GROUP 169	GDA	56	342276	6298736	Open site	Valid	Art (Pigment or Engraved) : 2		
	Contact T Russell	<u>Recorders</u>	Wari	ren Bluff,Ms.	Collette Douch	kov		<u>Permits</u>		
45-3-1436	Melinga;Ca-K-20;	AGD	56	340120	6300380	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	
	Contact	Recorders	J.C Lo	ough				Permits		

Report generated by AHIMS Web Service on 24/02/2022 for Samantha Keats for the following area at Datum :GDA, Zone : 56, Eastings : 339977.576 - 343377.576, Northings : 6298392.689 - 6301792.689 with a Buffer of 0 meters. Number of Aboriginal sites and Aboriginal objects found is 117



Extensive search - Site list report

<u>SiteID</u>	<u>SiteName</u>	<u>Datum</u>	<u>Zone</u>	Easting	<u>Northing</u>	<u>Context</u>	Site Status **	<u>SiteFeatures</u>	<u>SiteTypes</u>	<u>Reports</u>
45-3-1442	Melinga;Ca-K-33;	AGD	56	340210	6300330	Open site	Valid	Grinding Groove : -	Axe Grinding	287,1159
		_							Groove	
	Contact	<u>Recorders</u>	ASRS	SYS				<u>Permits</u>		
45-3-1422	Piles Creek;	AGD	56	340330	6298530	Open site	Valid	Grinding Groove : -,	Axe Grinding	
								Art (Pigment or	Groove,Rock	
	Contract	Deservedence		,				Engraved) : -	Engraving	
45 2 0511		<u>Recorders</u>	J.C. Li	ougn	(20027)	Cl 1 1	37 1.1	<u>Permits</u>		
45-3-0511	Point Clare; AGGS	AGD	56	342339	6298376	closed site	Valid	Art (Pigment or	Axe Grinding	
								Crinding Croove :-	Groove, Rock	
								Grinning Groove	with Art	
	Contact	Recorders	Web	b.Ms.Collette	Douchkov			Permits	with hit	
45-3-0539	Point Clare; SIM MANKIND GROUP 168 EELS ENG	GDA	56	342557	6298828	Open site	Valid	Art (Pigment or	Rock Engraving	
	, ,							Engraved) : -	0 0	
	Contact	<u>Recorders</u>	I.M S	im,Ms.Collet	te Douchkov			Permits		
45-3-3242	B.W.N.P-7; EELS AND FISH ENG	GDA	56	342557	6298828	Open site	Valid	Art (Pigment or		
								Engraved) : 4		
	Contact T Russell	<u>Recorders</u>	War	ren Bluff,Ms.	Collette Douch	kov		<u>Permits</u>		
45-3-0611	Old Gosford Road;	AGD	56	342845	6300580	Open site	Valid	Art (Pigment or	Rock Engraving	
								Engraved) : -		
	<u>Contact</u>	<u>Recorders</u>	МсК	enzie		- ·		<u>Permits</u>		
45-3-4416	KOWARA RD AGGS	GDA	56	342740	6301260	Open site	Valid	Grinding Groove : -		
	<u>Contact</u>	<u>Recorders</u>	Ms.C	ollette Douc	nkov			<u>Permits</u>		
45-3-3366	KA4; AGGS SITE	GDA	56	340841	6299929	Open site	Valid	Grinding Groove : -		
	<u>Contact</u>	<u>Recorders</u>	Mr.Ja	akub Czastka	,Ms.Collette Do	ouchkov		<u>Permits</u>		
45-3-0246	Kariong Public School Langford Drive;Kariong;	AGD	56	340900	6298300	Open site	Valid	Art (Pigment or	Rock Engraving	
								Engraved) : -		
	Contact	<u>Recorders</u>	Brad	Welsh				<u>Permits</u>		
45-3-2436	Debenham Rd.; SWD	GDA	56	343263	6300492	Closed site	Valid	Artefact : -, Art	Shelter with	
								(Pigment or	Deposit	
	Contact	Decordore	Durad	Malah Ma C	-llette Develde			Engravea) : -		
45 2 0405	Contact	<u>Recorders</u>	Бгао	242102		ov On an aita	17-1: -1	Crinding Creases	Ave Crinding	
45-3-0495	Point clare; SIM GROUP 171 ENGS	GDA	56	342103	6299486	Open site	Valid	Art (Pigmont or	Axe Grinning Groove Peek	
								Fngraved) · -	Fngraving	
	Contact	Recorders	LMS	im.Ms.Collet	te Douchkov			Permits	ngraving	
45-3-3659	 ES9	GDA	56	342153	6301568	Open site	Valid	Art (Pigment or		
			50					Engraved) : -		
	Contact	Recorders	Mr.L	ance Syme				Permits		
45-3-0514	Point Clare; MOSAIC ENGRAVINGS AGGS	GDA	56	342226	6298565	Open site	Valid	Grinding Groove : -,	Axe Grinding	
								Art (Pigment or	Groove,Rock	
								Engraved) : -	Engraving	

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Extensive search - Site list report

<u>SiteID</u>	<u>SiteName</u>	<u>Datum</u>	<u>Zone</u>	<u>Easting</u>	<u>Northing</u>	<u>Context</u>	Site Status **	<u>SiteFeatures</u>	<u>SiteTypes</u>	<u>Reports</u>
	<u>Contact</u>	<u>Recorders</u>	Web	b,Ms.Collette	e Douchkov			<u>Permits</u>		
45-3-0059	Point Clare;Tascott; ANIMAL ENG	GDA	56	342226	6298565	Open site	Valid	Art (Pigment or Engraved) : -	Rock Engraving	
	<u>Contact</u>	<u>Recorders</u>	I.M S	im,Ms.Collet	te Douchkov			Permits		
45-3-0509	Point Clare; EEL ART SHELTER	GDA	56	342274	6298751	Closed site	Valid	Art (Pigment or Engraved) : -, Grinding Groove : -	Axe Grinding Groove,Rock Engraving,Shelter with Art	
	<u>Contact</u>	Recorders	Web	b,Ms.Collette	Douchkov			Permits		
45-3-0513	Point Clare; MAN AT MOSAIC ROCK, ENG	GDA	56	342296	6298567	Open site	Valid	Art (Pigment or Engraved) : -	Rock Engraving	
45 0 4404		Recorders	Web	b,Ms.Collette	Douchkov	0 11	TT 1: 1	<u>Permits</u>		
45-3-4431	SIE 10; FORMER SITE 45-5-0015 SITE SOMERSBY	GDA	56	340650	6301750	Open site	Valid	Grinding Groove : -		
	Contact	<u>Recorders</u>	Ms.C	ollette Douc	hkov			<u>Permits</u>		
45-3-3349	SIE 11	GDA	56	340464	6301637	Open site	Valid	Artefact : -, Art (Pigment or Engraved) : -, Grinding Groove : -		
	<u>Contact</u>	<u>Recorders</u>	Gavi	n Martin,Ms.	Collette Douch	kov		Permits		
45-3-0037	Old Gosford Road;Piles Crk/Ca-K-11;	AGD	56	341650	6300121	Open site	Valid	Art (Pigment or Engraved) : -	Rock Engraving	
	Contact	<u>Recorders</u>	Fred	McCarthy				<u>Permits</u>		
45-3-3234	Brisbane Water NP; HONEYCOMB SWD	GDA	56	342504	6298842	Closed site	Valid	Art (Pigment or Engraved) : 1		
	<u>Contact</u> T Russell	<u>Recorders</u>	War	ren Bluff,Ms.	Collette Douch	kov		<u>Permits</u>		
45-3-1319	Mt Penang; KOWARA RD JUNCTION ENGS	GDA	56	342545	6300940	Open site	Valid	Art (Pigment or Engraved) : -	Rock Engraving	
	Contact	<u>Recorders</u>	Unkı	nown Author	,Ms.Collette De	ouchkov		<u>Permits</u>		
45-3-0306	KG 3 (Kariong)	AGD	56	342670	6299960	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	757
	Contact	<u>Recorders</u>	Doct	or.Jo McDon	ald,Laura-Jane	Smith		Permits		
45-3-1441	Piles Creek;Ca-K-31;	AGD	56	340720	6300380	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	
	Contact	Recorders	ASRS	SYS				<u>Permits</u>		
45-3-2198	Piles Creek; AGGS AND TALL FIGURE ENG	GDA	56	340841	6299929	Open site	Valid	Art (Pigment or Engraved) : -, Grinding Groove : -	Axe Grinding Groove,Rock Engraving	1333
	<u>Contact</u>	<u>Recorders</u>	War	ren Bluff,Ms.	Collette Douch	kov		Permits		
45-3-0030	Piles Creek. KANGOO RD WALLABY SIM SITE 2/27	GDA	56	340876	6300200	Open site	Valid	Art (Pigment or Engraved) : -	Rock Engraving	492
	Contact	<u>Recorders</u>	ASRS	SYS,Ms.Collet	te Douchkov			<u>Permits</u>		

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Extensive search - Site list report

<u>SiteID</u>	<u>SiteName</u>	<u>Datum</u>	<u>Zone</u>	<u>Easting</u>	<u>Northing</u>	<u>Context</u>	Site Status **	<u>SiteFeatures</u>	<u>SiteTypes</u>	<u>Reports</u>
45-3-1289	Kariong (Head-dress Figure)	GDA	56	340882	6299943	Open site	Valid	Grinding Groove : -, Art (Pigment or Engraved) : -	Axe Grinding Groove,Rock Engraving	1100
	<u>Contact</u>	<u>Recorders</u>	ASR	SYS,Ms.Collet	te Douchkov			<u>Permits</u>		
45-3-0461	Piles Creek. LOUGH CA-K-26	GDA	56	340937	6299757	Open site	Valid	Art (Pigment or Engraved) : -, Grinding Groove : -	Axe Grinding Groove,Rock Engraving	1100
		Recorders	1.M S	im,Ms.Collet	te Douchkov	a b	** 1.1	Permits		4400
45-3-1294	Karlong; KARIONG PUBLIC SCHOOL MACROPOD ENG	GDA	56	341004	6298490	Open site	Valid	Art (Pigment or Engraved) : -	Rock Engraving	1100
45 2 2200		<u>Recorders</u>	ASK	SYS,MS.Collet	COOLE CO	0 "	X7 1·1	<u>Permits</u>	Arra Cuin din a	1000
45-3-2389	Brisbane water N.P.; MUSAIC AGGS	GDA	56	342215	6298569	Open site	valid	Grinding Groove : -	Groove	1333
	Contact	<u>Recorders</u>	War	ren Bluff,Ms.	Collette Douch	kov		<u>Permits</u>		
45-3-3658	ES7	GDA	56	342204	6301638	Open site	Valid	Art (Pigment or Engraved) : -		
		Recorders	Mr.L	ance Syme	(004 (00	a 1.		Permits		
45-3-3655	ES6	GDA	56	342222	6301623	Open site	Valid	Art (Pigment or Engraved) : -		
	Contact	<u>Recorders</u>	Mr.L	ance Syme				<u>Permits</u>		
45-3-3657	ES8	GDA	56	342249	6301687	Open site	Valid	Art (Pigment or Engraved) : -		
	<u>Contact</u>	<u>Recorders</u>	Mr.L	ance Syme				<u>Permits</u>		
45-3-3656	ES5	GDA	56	342368	6301481	Open site	Valid	Grinding Groove : -, Water Hole : -		
	<u>Contact</u>	<u>Recorders</u>	Mr.L	ance Syme,N	ls.Collette Dou	chkov		<u>Permits</u>		
45-3-0305	KG 2 (Kariong)	AGD	56	342310	6299500	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	757
	Contact	Recorders	Doct	or.Jo McDon	ald,Laura-Jane	Smith		Permits		
45-3-4386	KARIONG WEST ENGRAVING GROUP	GDA	56	340427	6298717	Open site	Valid	Art (Pigment or Engraved) : -		
	Contact	Recorders	Ms.C	ollette Douc	hkov			<u>Permits</u>		
45-3-4383	PILES CK ONE MAN, ONE ROO ENG	GDA	56 Mc (340482	6298855	Open site	Valid	Art (Pigment or Engraved) : -, Grinding Groove : - Pormits		
45-2-0020	Old Cosford Pd. Pilos Crook: K.O. 34	CDA	E6	241640	6201644	Open site	Valid	Art (Pigment or	Ave Crinding	
45-3-0038	Ulu Goslol û Kû; Piles Creek; K-U-34	GDA	56	341060	0301644	open site	vallu	Engraved) : -, Grinding Groove : -	Groove,Rock Engraving	
	<u>Contact</u>	<u>Recorders</u>	I.M S	Sim,OzArk En	vironmental a	nd Heritage Manage	ment - Dubbo,OzAr	k Environm Permits		

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Extensive search - Site list report

<u>SiteID</u>	<u>SiteName</u>	<u>Datum</u>	<u>Zone</u>	Easting	<u>Northing</u>	<u>Context</u>	<u>Site Status **</u>	<u>SiteFeatures</u>	<u>SiteTypes</u>	<u>Reports</u>
45-3-0035	Piles Creek	AGD	56	342397	6300115	Open site	Valid	Art (Pigment or Engraved) : -	Rock Engraving	492
	Contact	Recorders	I.M S	im				<u>Permits</u>		
45-3-4418	DEBENHAM RD SOUTH AGGS	GDA	56	342872	6301140	Open site	Valid	Grinding Groove : -		
	Contact	Recorders	Ms.C	ollette Douc	hkov			<u>Permits</u>		
45-3-2437	Kangoo Rd; FISH ENG	GDA	56	342918	6300351	Open site	Valid	Art (Pigment or Engraved) : -	Rock Engraving	
	Contact	<u>Recorders</u>	Brad	Welsh,Ms.C	ollette Douchk	ov		<u>Permits</u>		
45-6-1599	DEBENHAM RD SOUTH ENGS	GDA	56	342929	6300446	Open site	Valid	Art (Pigment or Engraved) : -	Rock Engraving	
	Contact	<u>Recorders</u>	J.C Lo	ough,Ms.Coll	ette Douchkov			<u>Permits</u>		
45-3-2199	Piles Creek; STENCIL GROUP SWA	GDA	56	340911	6299757	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	1333
	Contact	<u>Recorders</u>	Warı	en Bluff,Ms.	Collette Douch	kov		Permits		
45-3-2113	Koerconing; ENG SITE	GDA	56	340937	6299757	Open site	Valid	Art (Pigment or Engraved) : -	Rock Engraving	1333
	Contact	<u>Recorders</u>	Warı	en Bluff,Ms.	Collette Douch	kov		<u>Permits</u>		
45-3-3368	KA2	GDA	56	341000	6299696	Closed site	Valid	Art (Pigment or Engraved) : -, Artefact : -		
	<u>Contact</u>	Recorders	Mr.Ja	ıkub Czastka				<u>Permits</u>		
45-3-4391	DEBENHAM RD AGGS	GDA	56	343233	6300329	Open site	Valid	Grinding Groove : -		
	<u>Contact</u>	Recorders	Ms.C	ollette Douc	hkov			<u>Permits</u>		
45-3-3625	SIE MCH1	GDA	56	342163	6300816	Open site	Valid	Art (Pigment or Engraved) : 1, Water Hole : 1		102848
	<u>Contact</u>	Recorders	Mr.Je	effrey Hill,RP	'S East Australi	a Pty Ltd - Echuca V	ictoria	<u>Permits</u>		
45-3-0527	Point Clare; SIM MANKIND GROUP 170 ENGS	GDA	56	342234	6299115	Open site	Valid	Grinding Groove : -, Art (Pigment or Engraved) : -	Axe Grinding Groove,Rock Engraving	
	<u>Contact</u>	<u>Recorders</u>	I.M S	im,Ms.Collet	te Douchkov			<u>Permits</u>		
45-3-3219	PN-EN-1	AGD	56	342230	6300100	Closed site	Valid	Art (Pigment or Engraved) : -		
	Contact	<u>Recorders</u>	Rebe	cca Simon		- ·		Permits		
45-3-3668	SIE 35	GDA	56	340177	6301079	Open site	Valid	Aboriginal Ceremony and Dreaming : -, Art (Pigment or Engraved) : -		
	Contact	<u>Recorders</u>	Ms.S	haron Hodge	etts			<u>Permits</u>		
45-3-0016	Floods Falls.	AGD	56	341182	6301463	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	1424
	<u>Contact</u>	Recorders	I.M S	im				Permits		

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Extensive search - Site list report

<u>SiteID</u>	<u>SiteName</u>	<u>Datum</u>	<u>Zone</u>	Easting	Northing	<u>Context</u>	Site Status **	<u>SiteFeatures</u>	<u>SiteTypes</u>	<u>Reports</u>
45-3-4296	HN MP A01	GDA	56	341344	6299847	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Mrs.	Tessa Boer-N	/lah,Heritage N	ow - Belmont		<u>Permits</u>	4614	
45-3-4044	MPP MT1	GDA	56	341567	6299450	Open site	Valid	Modified Tree (Carved or Scarred) : 1		
	<u>Contact</u>	<u>Recorders</u>	Exte	nt Heritage F	Pty Ltd - Pyrmo	ont - Individual users	,Mr.Paul Irish,Coas	st History & F Permits		
45-3-4413	DEBENHAM RD BIRDMAN ENG	GDA	56	341652	6301747	Open site	Valid	Art (Pigment or Engraved) : -		
	<u>Contact</u>	<u>Recorders</u>	Ms.C	ollette Douc	hkov			<u>Permits</u>		
45-3-4410	K-0-38/SIE25	GDA	56	341778	6301572	Open site	Valid	Grinding Groove : -		
	<u>Contact</u>	<u>Recorders</u>	0zAı	rk Environm	ental and Herit	age Management - D	ubbo,Mr.Kirwan W	Villiams <u>Permits</u>		
45-3-1316	Mt Penang; SHELTER WITH SHELL	GDA	56	342945	6300570	Closed site	Valid	Shell : -, Artefact : -, Grinding Groove : -	Axe Grinding Groove,Shelter with Midden	98683
	<u>Contact</u>	<u>Recorders</u>	Unkı	10wn Author	,Ms.Collette Do	ouchkov		<u>Permits</u>		
45-3-0032	Old Gosford Road;Kendall's Rock; DEBENHAM RD ENGS	GDA	56	342895	6300729	Open site	Valid	Art (Pigment or Engraved) : -	Rock Engraving	98683
45 6 4 6 9 9		Recorders	ASRS	SYS,Ms.Collet	te Douchkov	0 1	** 1.1	Permits		
45-6-1600	Un-named; DEBENHAM RD SOUTH ENGRAVINGS	GDA	56	342929	6300446	Open site	Valid	Art (Pigment or Engraved) : -	Rock Engraving	
45 2 0020	Lontact	ACD	J.C L	ough,Ms.Coll	ette Douchkov	Onon site	Valid	Art (Digmont or	Do als Engraving	1014
45-5-0029	Contact	Recorders	50 Eliza	540090	0300130	open site	vanu	Engraved) : -	KOCK Engraving	1014
45-3-1321	Mt Penang: CRINDING CROOVE PLATEORM	CDA	56	343011	6300828	Open site	Valid	Crinding Croove : -	Ave Grinding	98683
45-5-1521		Docordors	10	SYS Mc Collor	to Doughkow	open site	vanu	Dormits	Groove	70003
45-3-2402	B W N P · SINCI F ACC	GDA	56	342245	6298738	Onen site	Valid	Grinding Groove : -	Axe Grinding	1333
15 5 2 102		Deservision	30				vanu	Derrecte	Groove	1555
45 2 4200	LONGCE KADIONE COMEDENC	<u>Recorders</u>	War	ren Bluff,Che	ryl Szpak,Ms.C	ollette Douchkov	X7 1·1	Permits		
45-3-4389	KARIONG CRUDELY FORMED ENG	GDA	56	342411	6298640	Open site	vand	Art (Pigment or Engraved) : -		
	Contact	Recorders	Ms.C	ollette Douc	hkov	a		Permits		
45-3-3661	Sims 2/46	GDA	56	342382	6301584	Open site	Valid	Art (Pigment or Engraved) : -, Water Hole : -		
	Contact	Recorders	Mr.L	ance Syme	(000555		** 1. 1	Permits		
45-3-4381	PILES CK FALL STENCIL SWA	GDA	56	340322	6298887	Closed site	Valid	Art (Pigment or Engraved) : -		
15 0 0 1 1 1	<u>Contact</u>	<u>Recorders</u>	Ms.C	ollette Douc	hkov	0	** 1.1	Permits		
45-3-0446	Piles Creek;	AGD	56	340569	6300079	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	

Report generated by AHIMS Web Service on 24/02/2022 for Samantha Keats for the following area at Datum :GDA, Zone : 56, Eastings : 339977.576 - 343377.576, Northings : 6298392.689 - 6301792.689 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 117



Extensive search - Site list report

<u>SiteID</u>	<u>SiteName</u>	<u>Datum</u>	<u>Zone</u>	Easting	<u>Northing</u>	<u>Context</u>	<u>Site Status **</u>	<u>SiteFeatures</u>	<u>SiteTypes</u>	<u>Reports</u>
	<u>Contact</u>	<u>Recorders</u>	Web	b				<u>Permits</u>		
45-3-1362	Piles Creek;MtW-K-25; AGGS	GDA	56	340433	6298719	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	
	<u>Contact</u>	<u>Recorders</u>	ASRS	YS,Ms.Colle	tte Douchkov			<u>Permits</u>		
45-3-0017	SIE11 THREE FIGURES ENGS AND AGGS	GDA	56	340464	6301637	Open site	Valid	Grinding Groove : -, Art (Pigment or Engraved) : -	Axe Grinding Groove,Rock Engraving	1424
	<u>Contact</u>	<u>Recorders</u>	Mr.N	eville Baker	,I.M Sim,Sydne	y Water-Parramatta,	Ms.Collette Douch	kov <u>Permits</u>		
45-3-4505	Kariong SIE 26	GDA	56	341763	6301389	Open site	Not a Site	Art (Pigment or Engraved) : -		
	<u>Contact</u>	<u>Recorders</u>	Biosi	s Pty Ltd - V	Vollongong,Mrs	s.Samantha Keats		<u>Permits</u>		
45-3-0304	KG 1(Kariong) EEL AND SHIELD ENG	GDA	56	342425	6299399	Open site	Valid	Art (Pigment or Engraved) : -	Rock Engraving	757
	<u>Contact</u>	<u>Recorders</u>	Doct	or.Jo McDon	ald,Laura-Jane	Smith,Ms.Collette Do	ouchkov	<u>Permits</u>		
45-3-1313	Mt Penang;	AGD	56	342370	6301486	Open site	Valid	Grinding Groove : -, Art (Pigment or Engraved) : -	Axe Grinding Groove,Rock Engraving	
	<u>Contact</u>	<u>Recorders</u>	ASRS	SYS				<u>Permits</u>		
45-3-4387	COORUMBINE CK OCHRE CAVE SWA	GDA	56	342631	6298847	Closed site	Valid	Art (Pigment or Engraved) : -		
	<u>Contact</u>	<u>Recorders</u>	Ms.C	ollette Douc	hkov			<u>Permits</u>		
45-3-1318	Mt Penang; DEBENHAM RD SOUTH ENGS	GDA	56	342895	6300729	Open site	Valid	Art (Pigment or Engraved) : -	Rock Engraving	98683
	Contact	<u>Recorders</u>	ASRS	YS,Ms.Colle	tte Douchkov			<u>Permits</u>		
45-3-4396	KENDALL GLEN PENANG WHALE ENG	GDA	56	342929	6300427	Open site	Valid	Art (Pigment or Engraved) : -		
	Contact	<u>Recorders</u>	Ms.C	ollette Douc	hkov			<u>Permits</u>		
45-3-2197	Piles Creek; NORTHEAST SWA	GDA	56	340823	6299920	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	1333
	<u>Contact</u>	<u>Recorders</u>	Warı	en Bluff,Ms.	Collette Douch	kov		<u>Permits</u>		
45-3-3365	KA 5A	GDA	56	340896	6299834	Open site	Valid	Art (Pigment or Engraved) : -		
	<u>Contact</u>	<u>Recorders</u>	Mr.Ja	ikub Czastka	1			<u>Permits</u>		
45-3-1290	Kariong (Whale Shelter 1)	GDA	56	340908	6299745	Closed site	Valid	Artefact : -, Art (Pigment or Engraved) : -	Shelter with Art,Shelter with Deposit	1100
	Contact	<u>Recorders</u>	Ms.M	lary Dallas,N	Is.Collette Dou	chkov		<u>Permits</u>		
45-3-0034	Piles Creek; SIM SITE 2/31 ENGS	GDA	56	343033	6301008	Open site	Valid	Art (Pigment or Engraved) : -, Grinding Groove : -	Axe Grinding Groove,Rock Engraving	
	Contact	Recorders	ASRS	YS,Ms.Colle	tte Douchkov			Permits		

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Extensive search - Site list report

<u>SiteID</u>	<u>SiteName</u>	<u>Datum</u>	<u>Zone</u>	Easting	<u>Northing</u>	<u>Context</u>	Site Status **	<u>SiteFeatures</u>	<u>SiteTypes</u>	<u>Reports</u>
45-3-0033	Old Gosford Road;Gosford 10;	GDA	56	343051	6300912	Open site	Valid	Art (Pigment or Engraved) : -,	Axe Grinding Groove,Rock	
								Grinding Groove : -	Engraving	
	<u>Contact</u>	Recorders	I.M S	im,Ms.Collet	te Douchkov			Permits		
45-3-3660	ES10	GDA	56	342353	6301623	Open site	Valid	Grinding Groove : -		
	<u>Contact</u>	<u>Recorders</u>	Mr.L	ance Syme				Permits		
45-3-0042	Old Gosford Road; Piles Creek; SIM SITE 2/45 ENGS	GDA	56	342384	6301590	Open site	Valid	Art (Pigment or	Axe Grinding	
								Engraved) : -,	Groove,Rock	
								Grinding Groove : -	Engraving	
	<u>Contact</u>	Recorders	Marg	grit Koettig,M	ls.Collette Dou	chkov		Permits		

** Site Status

Valid - The site has been recorded and accepted onto the system as valid

Destroyed - The site has been completely impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There is nothing left of the site on the ground but proponents should proceed with caution. Partially Destroyed - The site has been only partially impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There might be parts or sections of the original site still present on the ground Not a site - The site has been originally entered and accepted onto AHIMS as a valid site but after further investigations it was decided it is NOT an aboriginal site. Impact of this type of site does not require permit but Heritage NSW should be notified

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