# BULLI SEAM OPERATIONS APPENDIX G ABORIGINAL CULTURAL HERITAGE ASSESSMENT







# Bulli Seam Operations Aboriginal Cultural Heritage Assessment

Report for

**BHP Billiton Illawarra Coal** 

June 2009



#### Ballarat:

449 Doveton Street North Ballarat 3350 Ph: (03) 5331 7000 Fax: (03) 5331 7033 email: <u>ballarat@biosisresearch.com.au</u>

#### Melbourne:

38 Bertie Street Port Melbourne 3207
Ph: (03) 9646 9499 Fax: (03) 9646 9242
email: melbourne@biosisresearch.com.au

#### Queanbeyan:

55 Lorn Road Queanbeyan 2620 Ph: (02) 6284 4633 Fax: (02) 6284 4699 email: <u>queanbeyan@biosisresearch.com.au</u>

#### Sydney:

18-20 Mandible Street, Alexandria, 2015 Ph: (02) 9690 2777 Fax: (02) 9690 2577 email: <u>sydney@biosisresearch.com.au</u>

#### Wollongong:

8 Tate St Wollongong 2500 Ph: (02) 4229 5222 Fax: (02) 4229 5500 email: wollongong@biosisresearch.com.au

Project no: s4660

#### Authors:

Jamie Reeves, Jenni Lennox and Melanie Thomson

#### Reviewers:

Melanie Thomson

# Mapping:

Rob Suansri

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# 1.0 INTRODUCTION

Biosis Research Pty. Ltd. ('Biosis Research') was commissioned by Illawarra Coal Holdings Pty Ltd ('ICHPL') to conduct an Aboriginal Cultural Heritage Assessment of the proposed Bulli Seam Operations ('the Project').

ICHPL owns and operates three underground mining operations in the southern coalfield of New South Wales ('NSW'), including the Appin Mine and West Cliff Colliery located approximately 25 kilometres ('km') north west of Wollongong. ICHPL is seeking approval under Part 3A of the NSW *Environmental Planning and Assessment Act 1979* ('EP&A Act') for the continuation and further development of the Appin Mine and West Cliff Colliery. The Project would (if approved) extend the current life of the Appin Mine and West Cliff Colliery by 30 years.

The NSW Department of Environment and Climate Change ('DECC') defines Aboriginal cultural heritage as consisting of places and items that are of significance to Aboriginal people because of their traditions, observances, customs, beliefs and history (DECC 2005). This cultural heritage is evidence of the lives of Aboriginal people right up to the present. Cultural heritage may comprise physical (tangible) or non-physical (intangible) elements. The evidence and important cultural meanings relating to Aboriginal culture are present throughout the landscape, as well as in documents and in the memories, stories and associations of Aboriginal people. Therefore, activities that impact the landscape may affect Aboriginal cultural heritage.

# 1.1 The Study Area

The Project is located in the vicinity of the townships of Appin, Wilton, Douglas Park, Picton and Menangle (Figure 1), in the Local Government Areas of Wollondilly Shire Council, Campbelltown City Council and Wollongong City Council.

Areas the subject of study by this assessment are shown on Figure 2 and comprise:

- o Proposed ongoing longwall mining operation (subject to potential subsidence effects) with an approximate 600 metre (**'m'**) buffer.
- o Proposed West Cliff Stage 4 Coal Wash Emplacement and surrounds.
- O Historical mining areas (coal extraction complete) subject to ongoing operational activities, monitoring and rehabilitation activities.

The proposed ongoing longwall mining operations and West Cliff Stage 4 Coal Wash Emplacement (described further in Section 1.2) have not previously been the subject of an Aboriginal cultural heritage assessment and are therefore the focus of this assessment.

Where this report describes the: consultation undertaken (Section 2); field activities undertaken (Section 5); results of field activities (Section 6); outcomes of the archaeological and cultural significance assessment (Section 7); potential impacts from subsidence and coal wash emplacement (Sections 8.2 and 8.3.2); and/or proposed subsidence and coal wash emplacement related mitigation and management measures (Sections 9.2 and 9.4); "study area" refers to the area labelled as "Study Area – Proposed Mining Areas and Coal Wash Emplacement" on the figures.

Activities associated with the historical mining areas have previously been assessed and approved and as such are not the focus of this assessment. These areas however are subject to ongoing surface activities (described further in Section 1.2), some of which are also directly relevant to the proposed ongoing longwall mining areas.

Where this report describes: previous archaeological studies undertaken (Section 4.4); potential impacts from surface activities (Section 8.3.1); and/or proposed surface development mitigation and management measures (Section 9.3); "study area" refers to both the area labelled as "Study Area – Proposed Mining Areas and Coal Wash Emplacement" and the area labelled "Study Area – Historical Mining Areas" on the figures.

The eastern parts of the study area are generally forested sandstone gorge country, with the western regions generally being rural cleared rolling hills and plains. Land use and ownership includes: private freehold semi-urban and rural landscapes; Dharawal State Conservation Area; the Metropolitan Special Catchment Area; and Holsworthy Military Reserve.

The Project would utilise existing infrastructure and develop new infrastructure within the study area. To assist with reference of a particular area or discussion about the context of a particular Aboriginal cultural heritage site (herein referred to as a site) or area, the proposed ongoing longwall mining study area has been divided into and is discussed with regard to four domains, namely (Figures 2 to 8):

- West Cliff Area 5 and Appin Area 7 (north domain contiguous with the current operations) (Figure 3);
- o North Cliff (east domain) (Figures 4, 5 and 6);
- o Appin West (Area 9) and Appin Area 8 (west domain) (Figure 7); and
- o Appin Areas 2 and 3 Extended (south domain) (Figure 8).

# 1.2 The Proposal

ICHPL is seeking approval under Part 3A of the EP&A Act for the Project. The Project is described in detail in the Main Report of Project Environmental Assessment ('EA') and includes:

- o continued development of underground mining operations within existing coal leases and new mining leases to facilitate a total run-of-mine ('ROM') coal production rate of up to 10.5 million tonnes per annum ('Mtpa');
- o ongoing exploration activities within existing exploration tenements;
- o upgrade of the existing West Cliff Washery to support the increased ROM coal production;
- o continued mine gas drainage and capture for beneficial utilisation at the West Cliff Ventilation Air Methane Project and Appin-Tower Power Project;
- o continued use of electricity generated by the existing Appin-Tower Power Project (owned and operated by Energy Developments Limited power stations) utilising coal bed methane drained from the Bulli Seam;
- o upgrade of existing surface facilities and supporting infrastructure (e.g. service boreholes, ventilation shafts, gas drainage equipment, waste water treatment and waste water disposal);
- o continued and expanded placement of coal wash at the West Cliff Coal Wash Emplacement;
- continued road transport of ROM coal from the Appin East pit top to the West Cliff Washery;
- o continued road transport of ROM coal from Appin East pit top and West Cliff pit top via the public road network to the Dendrobium Washery at Port Kembla;
- continued road transport of product coal from the West Cliff Washery via the public road network to BlueScope Steelworks, Port Kembla Coal Terminal, Corrimal and Coalcliff Coke Works and other customers:
- o ongoing surface monitoring and rehabilitation (including rehabilitation of mine related infrastructure areas that are no longer required) and remediation of subsidence effects; and
- o other associated minor infrastructure, plant, equipment and activities.

The main activities associated with the development of the Project are described in detail in Sections 1 and 2 in the Main Report of the EA.

# 1.3 Objectives

The following is a summary of the major objectives of this Aboriginal Cultural Heritage Assessment:

- O Conduct searches of the relevant heritage registers to identify previously recorded sites within the study area. In this case these registers are the Aboriginal Heritage Information Management System ('AHIMS'), the National Heritage List, Commonwealth Heritage List, and the Register of the National Estate.
- Conduct appropriate background research in order to recognise any identifiable trends in site distribution and location, and to accurately quantify the cultural heritage resources present.
- o Consult with identified Aboriginal stakeholders in the area regarding the cultural values of the study area.
- Conduct site inspections of previously recorded sites, focusing on sites determined to be of high and moderate significance, to collect baseline information and gauge the veracity of site records and the condition of the sites present.
- Provide representatives of the contemporary Aboriginal community the opportunity to inspect the study area and any Aboriginal sites of particular cultural significance or interest.
- o Conduct surveys to locate and record sites in areas deemed to be archaeologically sensitive but which have been previously subject to less intensive survey.
- Identify and assess all sites identified or relocated during the survey in compliance with the guidelines issues by DECC.
- o Conduct an archaeological significance assessment for all sites within the study area.
- O Present the Aboriginal communities views in regard to cultural significance of the area and Aboriginal sites/places.
- o Describe potential impacts to all identified Aboriginal sites within the study area.
- O Make recommendations to minimise, mitigate and/or manage potential impacts to cultural heritage values within the study area.
- Provide ICHPL with an Aboriginal Cultural Heritage Assessment suitable for inclusion in an EA in support of a Project Application under Part 3A of the EP&A Act.

# 2.0 CONSULTATION WITH THE ABORIGINAL COMMUNITY

The DECC Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation (DECC 2005) identifies that guidance for Aboriginal community consultation for projects being assessed under Part 3A of the EP&A Act can be found in DECC's Part 6 Approvals – Interim Community Consultation Requirements for Applicants (DECC 2004) ('Interim Requirements'). Together these guidelines provide the structure and mechanisms for current best practice consultation with the Aboriginal community.

#### 2.1 Consultation Process

#### 2.1.1 Notification to Interested Parties

In accordance with the *Interim Requirements*, ICHPL notified the following bodies regarding the Project:

- Campbelltown City Council;
- o DECC:
- o Illawarra Local Aboriginal Land Council;
- o NSW Native Title Services;
- o Registrar of Aboriginal Owners;
- Tharawal Local Aboriginal Land Council;
- o Wollondilly Shire Council; and
- Wollongong City Council.

The above listed bodies were provided with a copy of the Public Notice (described below) and requested to advise ICHPL of any person or group who would like to be involved in the consultation process.

In addition to the above notifications prescribed by the *Interim Requirements* ICHPL also identified Aboriginal stakeholders with which ICHPL had previously consulted in regard to the study area or part thereof. These stakeholders were notified and invited to participate in the Aboriginal Cultural Heritage Assessment. These additional notifications were sent to:

- o Cubbitch Barta Native Title Claimants Aboriginal Corporation;
- o Gary Caines;
- o Korewal Elouera Jerrungarugh Tribal Elders Aboriginal Corporation;
- o Ngunawal Heritage Aboriginal Corporation;
- Peter Falk;
- Wadi Wadi Coomaditchie Aboriginal Corporation (c/- Northern Illawarra Aboriginal Collective);

- Wargon and Burra Aboriginal centre Inc. (c/- Biami Pty Ltd);
- o Woronora Plateau Gundungara (c/- Northern Illawarra Aboriginal Collective); and
- o Wulungulu Elders Council (c/- Northern Illawarra Aboriginal Collective).

In accordance with the *Interim Requirements*, Public Notices were made in July 2008, with advertisements in the following newspapers:

- o Macarthur Chronicle (29 July 2008);
- o Wollondilly Advertiser (29 July 2008);
- o *Macarthur Advertiser* (30 July 2008);
- o Camden Advertiser (30 July 2008); and
- o The Illawarra Mercury (2 August 2008).

The advertisements invited Aboriginal persons or groups who wished to be consulted in relation to the Aboriginal Cultural Heritage Assessment process to contact ICHPL. A copy of the Public Notice is reproduced in Appendix 1.

#### 2.1.2 Registration of Interested Parties

A register for interested parties was opened on 29 July 2008 and offers for registrations were open until 18 August 2008. Registrations of interest to the notifications and Public Notices were received from the following stakeholders:

- Campbelltown City Council;
- Cubbitch Barta Native Title Claimants Aboriginal Corporation;
- o Gary Caines;
- o Illawarra Local Aboriginal Land Council;
- o Korewal Elouera Jerrungarugh Tribal Elders Aboriginal Corporation;
- o Kullila Welfare and Housing Aboriginal Corporation;
- o Ngunawal Heritage Aboriginal Corporation;
- Peter Falk:
- Tharawal Local Aboriginal Land Council;
- Wargon and Burra Aboriginal Centre Inc; and
- Wollondilly Shire Council.

All those Aboriginal parties who registered were invited to participate in the cultural heritage assessment project.

In addition to the above, DECC identified the following parties as having a potential interest in the Aboriginal Cultural Heritage Assessment:

- o Coomaditchie United Aboriginal Corporation;
- Illawarra Aboriginal Corporation<sup>1</sup>;
- o Wadi Wadi Coomaditchie Aboriginal Corporation;
- Wodi Wodi Elders Corporation;
- o Woronora Plateau Gundungara; and
- o Wulungulu Elders Council.

The above Aboriginal stakeholders not previously contact by ICHPL (i.e. Coomaditchie United Aboriginal Corporation, Illawarra Aboriginal Corporation and Wodi Wodi Elders Corporation) were notified and invited to participate in the Aboriginal Cultural Heritage Assessment.

Subsequent to the above, the following parties/groups registered their interest in being involved in the consultation process:

- o Campbelltown City Council;
- o Coomaditchie United Aboriginal Corporation;
- o Cubbitch Barta Native Title Claimants Aboriginal Corporation;
- o Gary Caines;
- o Illawarra Local Aboriginal Land Council;
- o Korewal Elouera Jerrungarugh Tribal Elders Aboriginal Corporation;
- Kullila Welfare and Housing Aboriginal Corporation;
- o Ngunawal Heritage Aboriginal Corporation;
- o Peter Falk;
- o Tharawal Local Aboriginal Land Council;
- Wadi Wadi Coomaditchie Aboriginal Corporation;
- o Wargon and Burra Aboriginal Centre Inc;
- Wodi Wodi Elders Corporation;
- Wollondilly Shire Council;
- o Woronora Plateau Gundungara; and
- Wulungulu Elders Council.

The Illawarra Aboriginal Corporation was contacted and they advised that they chose not to be involved as long as the Illawarra Local Aboriginal Land Council was involved. They also indicated their support for any views and/or comments provided by the Illawarra Local Aboriginal Land Council.

#### 2.1.3 Review of Proposed Methodology for the Aboriginal Cultural Heritage Assessment

In accordance with the *Interim Requirements*, registered stakeholders were provided with a copy of the proposed methodology for the Aboriginal Cultural Heritage Assessment on 21 September 2008. The accompanying letter invited feedback in regard to the proposed methodology.

No response was received in relation to the proposed methodology.

#### 2.1.4 Provision of Project and Aboriginal Site Information

As supporting information for the proposed methodology (Section 2.1.3), information packs containing the following information were distributed to all registered Aboriginal stakeholders prior to each of the two field surveys/inspection periods (i.e. information packs were provided on 16 October 2008 and 19 January 2009):

- Detailed maps showing the project boundaries and location of all registered sites within the study area.
- o A list of sites present within the study area.
- o Identification of sites proposed to be inspected.
- o AHIMS record information for individual sites (where available).

The above detailed information was compiled from the previous archaeological investigations of the study area and surrounds (Section 4.4) and from the relevant heritage database searches (Section 4.3).

The registered stakeholders were invited to review the information provided and identify any sites or areas of particular interest. An offer to incorporate any sites of particular interest into the field work program was also extended.

No response was received in relation to the 16 October 2008 information pack.

The Ngunawal Heritage Aboriginal Corporation provided the following request in regard to the 19 January 2009 information pack:

Ngunawal Heritage Aboriginal Corporation wish to advise that there are specific Aboriginal Heritage Sites that we would like to survey / inspect.

The following site codes:

# 351, # 566, # 793, # 813, # 854, # 945, # 946, # 1210, # 1212, # 52-3-0524 are referenced as to the areas we would like to survey / inspect.

Based on the above request, the listed Aboriginal sites were included in the fieldwork program.

#### 2.1.5 Fieldwork

An invitation to participate in the Aboriginal Cultural Heritage Assessment fieldwork program was extended to all registered Aboriginal stakeholders. A commitment to inform the registered Local Government stakeholders (i.e. Wollondilly Shire Council and Campbelltown City Council) of the results of the Aboriginal Cultural Heritage Assessment was made.

Representatives from the following registered stakeholder parties/groups participated in the fieldwork, conducted between 27 October 2008 – 28 November 2008 and 27 January 2009 – 29 January 2009:

- o Cubbitch Barta Native Title Claimants Aboriginal Corporation<sup>2</sup>;
- o Coomaditchie United Aboriginal Corporation;
- o Gary Caines;
- o Illawarra Local Aboriginal Land Council;
- o Korewal Elouera Jerrungarugh Tribal Elders Aboriginal Corporation;
- o Kullila Welfare and Housing Aboriginal Corporation;
- o Ngunawal Heritage Aboriginal Corporation;
- o Peter Falk;
- o Tharawal Local Aboriginal Land Council;
- o Wargon and Burra Aboriginal Centre Inc.; and
- Wodi Wodi Elders Corporation.

Representatives from the following stakeholder parties/groups chose not to be associated with the fieldwork:

- o Wadi Wadi Coomaditchie Aboriginal Corporation;
- Woronora Plateau Gundungara; and
- o Wulungulu Elders Council.

The following registered stakeholders considered the presence of the Illawarra Local Aboriginal Land Council during the fieldwork provided sufficient representation:

Illawarra Aboriginal Corporation.

A record of survey attendance by Aboriginal stakeholders is provided in Appendix 2.

<sup>&</sup>lt;sup>2</sup> Cubbitch Barta Native Title Claimants Aboriginal Corporation was involved in fieldwork undertaken subsequent to the above in April 2009.

#### 2.1.6 Draft Report

A draft version of this report was sent to the registered stakeholders on 25 March 2009. The report was accompanied by a request for comments to be provided to ICHPL by 20 April 2009.

The deadline for comments was subsequently extended to 6 May 2009, and the registered stakeholders were advised of this extension via telephone. An offer to receive comments over the phone was made during this process, however no comments were provided via the telephone calls. Where registered stakeholders could not be contacted, detailed telephone messages were left (indicating the extended deadline for comments and offering for comments to be provided via telephone) and continued attempts at contact were made.

Written comments were received from the following registered stakeholders:

- o Cubbitch Barta Native Title Claimants Aboriginal Corporation;
- o Illawarra Local Aboriginal Land Council;
- o Ngunawal Heritage Aboriginal Corporation;
- o Cubbitch Barta Native Title Claimants Aboriginal Corporation;
- Peter Falk<sup>3</sup>;
- o Tharawal Local Aboriginal Land Council;
- Wadi Wadi Coomaditchie Aboriginal Corporation<sup>4</sup>;
- Woronora Plateau Gundungara<sup>4</sup>; and
- Wulungulu Elders Council<sup>4</sup>.

The comments are reproduced in full Appendix 3 and relevant comments (i.e. those relating to the draft Aboriginal Cultural Heritage Assessment) are considered in the following Section 2.2.

One set of written comments was received from Peter Falk within the timeframe provided. Consideration of these comments is provided in Section 2.2. Additional written comments were received from Peter Falk after the revised deadline for provision of comments. While these comments were unable to be considered in the report they are reproduced in full in Appendix 3 for completeness.

Comments were received from the Northern Illawarra Aboriginal Collective Inc. on behalf of these groups.

#### 2.2 Consultation Results

This section of the report documents the comments received from the Aboriginal stakeholders in response to the draft report, and demonstrates how the comments have been considered and/or incorporated in the cultural heritage assessment.

### 2.2.1 Identification of Cultural Values Within the Study Area

Comments regarding the cultural significance of sites and the study area were recorded during the fieldwork phase of the project, and these are documented in Section 7.2.1. This section records cultural values identified in written responses to the draft report. Comments are provided in alphabetical order according to the relevant Aboriginal stakeholder groups.

The Cubbitch Barta Native Title Claimants Aboriginal Corporation provided the following comments regarding cultural significance:

This allowed an insight into the significance of some sites, and what I saw was extremely significant, as I am sure there are many more.

The Illawarra Local Aboriginal Land Council provided the following comments regarding cultural significance:

It is important to recognise that all the sites identified tell a story and are a vital link, to Aboriginal culture. The sites **must not** be damaged, but preserved for future generations.

...all sites are of high Significance to Aboriginal People.

Peter Falk provided the following comments regarding cultural significance:

To date, with the finds within the study area, it can be said that the Aboriginal Objects and Sites are of higher significance to the cultural identity and cultural practices of past Aboriginal communities in the region.

The identified Aboriginal Objects and Sites are of State and Aboriginal archaeological significance to the Aboriginal Communities of the area.

Any and all sites found as in a Rock shelter with or without Art or objects is still of high significance to the Aboriginal Communities in the area and must be protected as such.

The Tharawal Local Aboriginal Land Council provided the following comment regarding cultural significance, describing participation in the survey and inspections as:

 $... an \ important \ culturally \ significant \ experience.$ 

There are two main heritage values noted in the written correspondence received from the registered stakeholders that can be summarised as follows:

All archaeological and cultural heritage sites have high value to the Aboriginal community.

Sites should be preserved for future generations.

As summarised above, some Aboriginal representatives expressed their wish that all sites be preserved. In addition, during Aboriginal heritage surveys, representatives from Korewal Elouera Jerrungah Tribal Elders Corporation, Wodi Wodi Elders Corporation, Kullila Housing and Welfare Aboriginal Corporation and Wargon and Burra Aboriginal Centre Inc identified site 52-2-0695 as being of particular cultural significance, and expressed concern about the possibility of the site being affected by mining (Section 7.2.1).

The cultural values associated with individual sites and the study area in general are described and assessed in more detail in Section 7.2.1 to Section 7.2.3.

#### 2.2.2 Consideration of General Comments

The following general comments were received regarding the draft version of this report. Comments are presented and considered (where required) in alphabetical order according to the relevant Aboriginal stakeholder group.

# The Cubbitch Barta Native Title Claimants Aboriginal Corporation made the following comments:

#### Comment

I note that included in the recommendations, No. 4. mentions Stage 4 emplacement, and I do not believe that this can be included in the same AHP, as the Bulli Seam Operations. The stage 3 emplacement area, was a huge project, and I believe that Stage 4 should not get lost within the larger operational project for the mining of the Bulli Seam.

#### Consideration of the above Comment

The proposed Aboriginal Heritage Plan ('AHP') will contain specific direction for the management of sites within and near the proposed emplacement area. There is no limitation on the scale of the management measures or works proposed under them from the AHP process itself, and rather than getting lost within the wider project, the management of the proposed Stage 4 Coal Wash Emplacement area will be a stand alone component of the AHP.

#### Comment

Also I think that what can be included in updating site records, would be to ascertain which sites have been mined under previously, and the results of the monitoring that would have taken place during that time, to be included in a report.

#### Consideration of the above Comment

As part of updating any site record, a description of any change to the site (e.g. weathering, cracking, etc.) since the previous site recording, would be included in the report and a statement of whether the site had previously been subject to subsidence. In addition, any changes observed during monitoring programs will be recorded on updated site records.

#### Comment

I agree with the other recommendations that have been made on Pages 131 and 132, except for the two mentioned in the previous paragraph [see comment above], and No 5 that talks about the costs that may be incurred, preventing any pre-mining measures. The cost should never be a consideration in the possibility of preventing damage to sites.

#### Consideration of the above comment

A consideration of cost is feasible and reasonable when considering the implementation of pre-mining mitigation measures. This includes an assessment of what is a fair and appropriate cost for the protection of a site or the salvage of information from a site, and how effective the measures will be in preserving the heritage values of a site or place (Pearson and Sullivan 1999: 274). Cost is only one of several considerations provided in Recommendation 5 and based on the above comment has been listed as the last consideration.

#### Comment

I would have liked to have seen a much more detailed listing of site cards with new photographs, so that I could assess with some confidence the significance of some sites, with photographic evidence.

#### Consideration of the above comment

As described in Section 2.1.4, all available information (e.g. photos, site cards, maps, co-ordinates) on sites recorded prior to the survey was provided to the Aboriginal stakeholders. In addition, one of the aims of the fieldwork was to provide an opportunity to inspect a selection of sites (including any sites specified by the registered stakeholders) across the study area to undertake an assessment of significance.

#### The Illawarra Local Aboriginal Land Council made the following comment:

#### Comment

The ILALC welcomes the opportunity to work in partnership with the relevant organisations to develop an Aboriginal Heritage Plan (AHP) as recommended in this report, to protect and preserve all Aboriginal Sites within the study area.

I agree with the recommendations outlining the process in the development of the AHP, but recommend that all sites be included in the monitoring program, as all sites are of high Significance to Aboriginal People.

#### Consideration of the above comment

Recommendation 6 notes that "the monitoring program should include all sites of high and moderate archaeological significance and particular cultural significance". We recognise the Illawarra Local Aboriginal Land Council's advice that all sites have cultural significance to Aboriginal People, and the suggestion of the Illawarra Local Aboriginal Land Council to include all sites in the monitoring program is noted, and can be further discussed for implementation throughout the development of the AHP and in particular during each Subsidence Management Plan ('SMP') application.

#### The Ngunawal Heritage Aboriginal Corporation made the following comments:

We agree with the recommendations in the report. The draft report is very thorough and accurate and the recommendations are well thought out and considerate of the significant heritage of the site.

We look forward to assisting in the development of the protocols and programs referred to in the recommendations.

#### Peter Falk provided the following general comments:

#### Comments

...due to the high Aboriginal significance of the study area, further studies and investigations should be carried out. As a majority of the Sites can be classified as having State and regional Archaeological significance, the further studies are warranted.

Because of past regional studies and investigations, the knowledge of Aboriginal Objects within the study area is high and further investigations must be carried out to pass on the knowledge to the Aboriginal Communities.

#### Consideration of the above comments

Recommendation 3 and Recommendation 6 describe further work to be undertaken in the study area. Recommendation 1 notes that the AHP includes "a protocol for the involvement of the Aboriginal community in all works conducted under the AHP".

#### Comment

The identified Aboriginal Sites and Objects are of such density and of such diversity, and cannot be readily accessed, due to terrain and property location. The integrity of all the sites must be protected for future generations.

#### Consideration of the above comment

The aim of the recommendations made within this report, is to minimise potential impacts of all aspects of the Project on Aboriginal cultural heritage sites. ICHPL is not and cannot be responsible for the actions of persons who undertake activities across the study not related to the carrying out of the Project.

#### Comment

...an Aboriginal Heritage Plan is developed to protect ALL sites through the life of the project. This will allow Intergenerational Equity for future generations of Aboriginal Peoples.

#### Consideration of the above comment

The AHP will be instigated for the life of the Project. As described in Section 9.0 and Section 10.0, the AHP will focus on site protection, recording and where considered appropriate (determined in consultation with the Aboriginal community), mitigation measures.

#### Comment

All other recommendations as outlined in your draft report be implemented and to include all interested Aboriginal Stakeholders for all consultations in the protection of all sites located and any further sites to be located.

#### Consideration of the above comment

Recommendation 1 notes that the AHP includes "a protocol for the involvement of the Aboriginal community in all works conducted under the AHP".

#### The Tharawal Local Aboriginal Land Council made the following comments:

#### **Comments**

I have also taken note on your recommendations (page 131 point 10.0) and I feel these measures are acceptable. All of the sites that I attended have been recorded in your report and are true and accurate.

There were quite a large number of sites that were not re-located. Whether it was from the incorrect GPS recording or previously mapped incorrectly.

#### Consideration of the above comment

Recommendation 3 describes a program for the verification of site data in the project area.

The Wadi Wadi Coomaditchie Aboriginal Corporation, Woronora Plateau Gundungara and the Wulungulu Elders Council made the following comment via the Northern Illawarra Aboriginal Collective.

#### Comment

Errors keep creeping into reports, for example the comment on Page 9, <u>Representatives of the following stakeholders decided not to participate in the fieldwork:...</u>, is interesting. NIAC member groups are happy to participate in spiritually and culturally beneficial and socially acceptable projects or scientific surveys.

#### Consideration of the above comment

Following further consultation with the Northern Illawarra Aboriginal Collective via telephone, the text provided in Section 2.1.5 "chose not to participate in the fieldwork" was edited to "chose not to be associated with the fieldwork".

#### Comment

We request that adequate funding be provided to pay for independent inquiry of general issues of importance to culture and the community, engineering and structural integrity issues, environmental and archaeological assessments in relation to longwall mining, etc, using consultancy firms of our own choosing.

#### Consideration of the above comment

Biosis Research was commissioned to undertake an Aboriginal cultural heritage assessment for the Project. The request is reproduced here, and has been forwarded to ICHPL for consideration.

The Illawarra Local Aboriginal Land Council, Peter Falk and Tharawal Local Aboriginal Land Council made the following similar comments:

#### **Comments**

#### Illawarra Local Aboriginal Land Council

These sites must not be damaged, but preserved for future generations.

It is not just a case of monitoring damage to sites, we must work in partnership to find alternatives to minimise the impact, compromise where possible to avoid destroying heritage places.

#### Peter Falk

...consideration of a high conservation program be instituted to protect **ALL** sites from further destruction or damage, which will be caused by any long wall mining through the study area.

As BHP Billiton cannot guarantee that any destruction or disturbance of any of the significant sites within their boundaries, there must be a mechanism put in place that can be used to protect all Sites.

The integrity of all the sites must be protected for future generations.

# Tharawal Local Aboriginal Land Council

All known and recorded Aboriginal sites should be firstly and mostly avoided at all costs.

#### Consideration of the above comments

As described in Section 8.0 and Section 9.0, it is not possible to completely remove the risk of damage to sites from subsidence movements associated with longwall mining. As noted in Section 8.0 and Section 9.0, a low proportion of sites are likely to be impacted by the Project. Recommendation 5 allows for the consideration of pre-mining engineering measures where appropriate. The proposed Stage 4 Coal Wash Emplacement area footprint has been specifically designed to minimise impact to sites through site avoidance. In Section 9.3 a commitment has also been given to, wherever possible, mitigate the potential impact of 'flexible' works (things that can that can be relocated such as roads and boreholes) through site avoidance.

Recommendation 1 of this report notes that the AHP includes "a protocol for the involvement of the Aboriginal community in all works conducted under the AHP".

Recommendation 7 of this report allows for a protocol for site protection and impact mitigation to be put in place.

The Wadi Wadi Coomaditchie Aboriginal Corporation, Woronora Plateau Gundungara and the Wulungulu Elders Council, via the Northern Illawarra Aboriginal Collective and the Illawarra Local Aboriginal Land Council, made the following similar comments:

We don't wish to be used by Biosis, BHP Billiton to obtain S 87's or S 90's. We object to this and don't wish to be blamed for Biosis, BHP Billiton operations or reports.

The Illawarra Local Aboriginal Land Council objects to Section 90, Rights to Damage or Destroy being granted as longwall mining continues to impact on our waterways and damage Aboriginal sites.

#### Consideration of the above comments

Approvals under Part 6 of the NSW *National Parks and Wildlife Act 1974* will not be sought for the Project, as it is being assessed under Part 3A of the EP&A Act. As stipulated in Recommendation 1 of the report, an AHP will be developed in consultation with the Aboriginal community, and this will include a protocol for the involvement of the Aboriginal community.

# 3.0 ENVIRONMENTAL CONTEXT

A description of the environmental background to the study area is provided in order to give context to the cultural heritage assessment. The environmental conditions of the study area may have influenced the land use by people in the past, and conditions would also determine the processes by which sites are preserved. Environmental values of an area can also contribute to the cultural significance and attachments people have to a place.

The following is a brief summary of environmental information relevant to the assessment of the cultural values of the study area.

# 3.1 Geology, Soils and Landforms

The geology of the study area is dominated by Hawkesbury Sandstone in the east and Wianamatta Shale in the west. The Hawkesbury Sandstone has been exposed where the overlying Wianamatta Formation has been dissected and eroded by major watercourses such as the Woronora, Georges and Nepean River systems (Branagan and Packham 2000:59). However, within the study area, the Wianamatta Formation outcrops generally north-west of the Nepean River and Georges River and ranges in thickness from less than a metre (where the Hawkesbury Sandstone is exposed) to greater than 150 m across the Razorback Range. The Middle Triassic Hawkesbury Sandstone consists of overlapping beds of quartz-rich sandstone. The more recent Middle Triassic Wianamatta Group comprises primarily of shales. These formations are underlain by deep Permian Coal Measures that consist of shale sandstone, conglomerates, tuff, chert and coal (Branagan and Packham 2000).

There are no known Aboriginal stone quarries within the study area, reflecting the lack of large quantities of artefact making raw materials in the general geology of the landscape. However, silcrete is particularly abundant in the northern Cumberland Plain area (e.g. Appin Areas 8 and 9 [Figure 2]), as both outcrops and cobble beds, and it is likely this material would have made its way into the study area through day to day trade between the local Aboriginal communities. Artefact making raw materials do occur within the study area, although only in small quantities and in unreliable sources (McDonald 2007). Quartz cobbles and pebbles large enough to manufacture artefacts occur within the Hawkesbury Sandstone, and where exposed these would have been used opportunistically to manufacture artefacts. Within the Illawarra Coal Measures tuff and chert can occur, suggesting these may be available in cobble riverbeds, whilst igneous intrusions in the region may have provided small local sources of fine grained igneous rock. Overall, however, the study area has a relative dearth of large, reliable lithic resources (McDonald 2007).

The study area occurs across two physiographic regions: the Cumberland Lowlands in the western half; and the Woronora Plateau in the eastern half. The Cumberland Lowlands are generally rolling hills and river plains on shale soils, with most of the area being cleared for agriculture and small rural holdings.

The major drainage feature of the Cumberland Lowlands is the Nepean River, which is deeply incised and characterised by high sandstone cliffs in some sections. Short tributaries drain east and west across the plain into the Nepean River. Topography of the Woronora Plateau comprises incised sandstone, forming broad ridges and steep sided valleys which are mostly forested, and regulated either by the Sydney Catchment Authority or DECC, or owned by the Commonwealth (associated with the Holsworthy Military Area) within the study area. The major drainage features in this part of the Woronora Plateau are the Woronora River, Stokes Creek, O'Hares Creek, Cataract River, Georges River and their tributaries.

There are nine physiographic soil landscapes that have been defined as occurring in the study area (Hazelton and Tille 1990). Each soil landscape has distinct morphological and topological characteristics. This results in each landscape having different archaeological potential. Because 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 percentage<sup>5</sup> of AHIMS register recorded sites occurring on each landscape is also summarised in the descriptions below. Soil landscapes and known Aboriginal sites are provided on Figure 9. The soil landscape descriptions provided below are based on Hazelton and Tille (1990).

The **Hawkesbury** soil landscape is characterised by rugged sandstone escarpment and ridges, with moderate to steep slopes and narrow, deeply incised valleys of the Woronora Plateau (Hazelton and Tille 1990). Sandstone rock outcrops are common, and occur as boulders, benches and large blocks, often forming scarps up to 10 m high. It is confined to the margins of the major rivers and larger tributaries and is a dominant landscape of the North Cliff area in the east domain. The soils in this landscape are shallow, discontinuous and generally sandy. More than half – 55% - of the Aboriginal sites returned in the AHIMS search were located on this landscape. The Hawkesbury soil landscape is archaeologically rich as the blocks and weathered scarps provide overhangs with a suitable environment for pictogram rock art and in some cases the accumulation of cultural deposits. In addition, sandstone platforms provide the potential for grinding grooves and petroglyph art sites.

The percentage provided is the number of sites occurring on each landscape as a percentage of the total number of sites that were returned from the 20 km by 30 km AHIMS search that encompassed the study area and wider surrounds.

The **Lucas Heights** soil landscape has gently undulating crests, ridges and plateau surfaces, with local relief between 10 m to 50 m and slopes of low gradient. The soils are lateritic and rock outcrop is absent. Within the study area this soil type is confined to the ridge tops and gentle slopes, occurring predominantly in the eastern domains, although also occurring to a lesser degree in the western domain (Hazelton and Tille 1990) (Figure 9). The AHIMS search results indicated that 18% of the sites were located on this landscape, making it the landscape with the second most number of known sites after the Hawkesbury soil landscape. This landscape is considered to be of good Aboriginal archaeological potential, however the site types likely to be present are small stone artefact sites and possibly scarred trees.

The **Picton** soil landscape is dominated by mass movement processes and is made up of narrow hills with steep to very steep side slopes with highly erodible shaly soils. The local relief within the landscape is 90 m to 300 m, and the steep hills have concave upper slopes and irregular lower slopes. This soil landscape occurs in the western domains of the study area, and is characterised by the Razorback Range (Hazelton and Tille 1990). Only two sites (<1%) have been recorded previously on this soil landscape. This landscape is considered to be of some Aboriginal archaeological potential, with the site types likely to be present consisting of small stone artefact sites and possibly scarred trees.

The **Gymea** soil landscape is a landscape of outcropping sandstone low benches and undulating to rolling rises and low hills, with moderate slopes and local relief between 20 m to 80 m. This landscape has much in common with the Hawkesbury soil landscape, but is dominated by side slopes and broad crests rather than deeply incised valleys. Soils are generally sandy and shallow. This is not a particularly extensive landscape in this part of the Woronora Plateau, with a small area occurring in the east domain (Hazelton and Tille 1990). Although only 1% of the known sites occur on this landscape, it is nevertheless archaeologically rich considering its limited area. It has the potential to contain pictogram and petroglyph art sites, occupation sites and grinding grooves.

The **Luddenham** soil landscape has undulating to low rolling hills on shale soils, with low to moderate slope gradients and narrow hill crests. The local relief is between 50 m to 80 m and the area has been extensively cleared for grazing. This soil landscape occurs as a few small area isolated patches in the west domain (Hazelton and Tille 1990). Approximately 1% of the known sites occur on this landscape. This landscape has some archaeological sensitivity, as occupation sites containing stone artefacts may be present, especially on the hill crests.

The **Blacktown** soil landscape consists of gently undulating rises on shale soils. Local relief is up to 30 m and slopes are very low to flat. There is no rock outcrop, moderate to deep fertile soils and the landscape has been almost entirely cleared of the forests and woodland it would have once supported. Covering an extensive area in the western domains, this soil landscape is most often associated with the Cumberland Plain (Hazelton and Tille 1990). Approximately 5% of the recorded sites occur on this landscape, which is partly an indication of the area it covers. The Blacktown soil landscape has good archaeological potential, as it is likely to contain the sub-surface remains of campsites, especially in well drained and slightly elevated areas associated with drainage features. Often these areas may be associated with the transition to other landscapes.

The **Monkey Creek** soil landscape is made up of floodplains, valley flats and depressions associated with creeks draining the Cumberland Plain, and within the study area, is associated with the Razorback Range. The local relief is less than 5 m and slopes are gradients of 1 or 2 in 100. Mostly cleared of trees, this landscape covers a small portion of the study area and occurs in the far western domain (Hazelton and Tille 1990). This soil landscape covers a small area within the study area, and less than 1% of the known Aboriginal sites are located within this landscape. This landscape is considered to be of some Aboriginal archaeological potential, with the possibility of stone artefacts being present where there are slightly elevated areas next to high potential resource areas, such as swampy depressions.

The **Bundeena** soil landscape has very low undulating rises on exposed Hawkesbury Sandstone plateaux. The landscape has very broad ridges and crests, flat to moderate slopes and local relief is up to 80 m. A large area of the land surface of this landscape has rock outcrop, and small swamps and seepage areas are common. Sandy shallow soil occurs in areas where it can accumulate. The Bundeena soil landscape accounts for a large portion of the surface of the east domain (Hazelton and Tille 1990). This landscape is the third most populous with Aboriginal sites within the study area, with 14% of known sites occurring here. This landscape is deemed to be archaeologically rich, with the sandstone outcrop and swamps indicating a high potential for grinding groove sites and pictogram art sites.

The **Maddens Plain** soil landscape consists of moderate to gently undulating rises on Hawkesbury Sandstone plateaux surfaces. Local relief is up to 40 m and slopes are generally low. Broad, waterlogged drainage depressions (dells) with scattered rock outcrop are characteristic of this sedge and heath land landscape. Small areas of this landscape occur in the southern and eastern domains (Hazelton and Tille 1990). Around 3% of the known sites occur on this landscape. This landscape has archaeological potential because the scattered sandstone outcrops and swamps occurring together present an increased potential for grinding groove sites and possibly pictogram art sites.

Overall, the study area presents two distinct physiographic and archaeological landscapes: the Woronora Plateau that encompasses the eastern and southern domains (Plate 1); and the Cumberland Lowlands encompassing the northern and western domains (Plate 2).



Plate 1. Typical landscape of the Woronora Plateau – eastern and southern domains



Plate 2. Typical landscape of the Cumberland Lowlands – northern and western domains

The Cumberland Lowlands are situated on the margin of the Cumberland Plain and the Woronora Plateau, on what is the transitional zone between these two physiographic regions. It is situated on primarily Wianamatta Group shale (Hazelton and Tille 1990). The shale overlies Hawkesbury Sandstone, and the sandstone is present at the surface where it has been exposed by the larger rivers and creeks, usually as steep, blocky scarps flanking the drainage lines. Further west, moderate rolling hills and ridges dissected by minor feeder creeks and tributaries that flow into the steep sandstone cliff lines along the incised Nepean and Cataract Rivers. The feeder streams include Navigation, Foot Onslow, Allens, Clements, Rocky Ponds and Myrtle Creeks and Sandy and Back Gullies within the study area.

The surface geology of the Woronora Plateau is characterised by shales of the Wianamatta Group and sandstones of the Hawkesbury Sandstone. Below this lie the sedimentary units of the Narrabeen Group, and the Illawarra Coal Measures which include the Bulli and Wongawilli coal seams (Branagan and Packham 2000: 56-8). The Woronora Plateau encompasses much of the Woronora, Cordeaux, Cataract, Avon and Hacking River catchment areas. It also includes O'Hares and Stokes Creeks, as well as sections of the Nepean River within the study area. These incised watercourses have formed steep blocky valleys and cliff lines that contain sandstone overhangs. Along ridge tops and plateau caps, open sections of exposed sandstone occur.

Archaeologically this results in sites within the eastern and southern domains being dominated by sandstone shelter and platform sites, and sites within the northern and western domains dominated by open stone artefact sites.

#### 3.2 Climate

The climate within the study area is warm temperate. However, there are notable climatic variations across the area with the eastern portion being coastally mild, and the western areas, lacking the coastal influence, being slightly cooler on average, with a wider temperature range. The average diurnal temperatures on the Woronora Plateau and Illawarra Escarpment are 21.5 degrees Celsius ('°C') in January and 12.5°C in July (Hazelton and Tille 1990: 4). At Picton, further inland on the Cumberland Plain, the average temperatures are 27.3°C in December and 16.9°C in July (Hazelton and Tille 1990: 4). Precipitation in the area is typical for a temperate area, with annual average rainfall of 1,600 millimetres ('mm') on the escarpment and plateau (Hazelton and Tille 1990: 4). Overall, the climatic conditions in the study area can be characterised as very mild and suitable for year-round hunter-gatherer occupation of all parts of the study area.

#### 3.3 Flora and Fauna

Vegetation communities and flora and fauna species present within the study area would have provided a range of resources for Aboriginal people. Food, tools, shelter and ceremonial items were derived from floral resources, with the locations of many campsites predicated on the seasonal availability of resources.

Vegetation communities across the study area supported a range of faunal resources that would have been historically utilised by Aboriginal peoples. Terrestrial, aquatic and avian resources were not only used for food, but also provided a significant contribution to the social and ceremonial aspects of Aboriginal life through their use as ritual implements or even simply through fashioning as personal adornments.

#### 3.4 Resource Statement

Based on the background information provided from various sources, it is possible to speculate what resources would have been available for traditional Aboriginal use.

Water would have been present all year round in the many large perennial rivers and creeks that dissect the study area, and in many of the swamps associated with these features. At certain times of year water would have been particularly abundant, and presumably these occasions would have resulted in increased faunal resources such as aquatic vertebrates and birds.

Quartz is the main stone raw-material type suitable for Aboriginal tool manufacture that would be likely to occur in the vicinity of the study area in any abundance. This would be in the form of pebbles derived from the Hawkesbury Sandstone (Smith 1989a, 1989b). Elsewhere on the Woronora Plateau and Cumberland Lowlands the potential raw materials for stone artefact making include silcrete, chert, tuff, mudstone, quartz, quartzite and basalt (Smith 1989a, 1989b)

Initial studies of the geochemistry of pigment sampled from rock art suggest that some pigments may be derived from discrete clay sources, although the exact location of these sources remains unknown (Ford 2005: 100). Deposits of clays and ochres suitable for use as art pigments are likely to be available in the vicinity of the study area. There are no ochre or clay quarries registered on the AHIMS in the study area, or in the vicinity of the study area (see also Sefton 1998a: 32). However, previous archaeological investigation has identified potential sources of ochre and clay on the Woronora Plateau (Ford 2005, Sefton 1998a: 33). Ford has shown that samples of clay collected from rock art sites on the Woronora Plateau have mineralogical and chemical consistency with clay sources that were commercially exploited in the Illawarra region during the 1960s and 1970s (Ford 2005: 87). Several of these sources are present in very close proximity to the study area at Appin, Darkes Forest and Helensburgh (Ford 2005: 20).

At Brennans Creek, located next to the Stage 4 Coal Wash Emplacement part of the study area, Sefton considered the possibility of individual shelters containing ochre sources that could be used for art. Possible sources included red and yellow coloured sandstone exposed by weathering in shelter walls and roofs, and iron rich ooze (forming stalactites) in some shelters (Sefton 1998a). Sourcing ochre from the sandstone would result in a particularly sandy pigment, which is not ideal for art, and which would require sand grains to be separated from the pigment prior to use (Sefton 1998a: 36). In conclusion Sefton observed that 'the Woronora Plateau has virtually unlimited supplies of red, yellow, orange and brown ochre particularly if sandy material was acceptable but these sources would not be archaeologically visible' (Sefton 1998a: 36-37).

Both the Cumberland Lowlands and the Woronora Plateau would have provided a wide diversity of resources for the Aboriginal hunter-gatherer population. This diversity is even greater when it is considered how close the coastal resource areas are to the rugged plateau.

Many of the plants found within the area were important to both Aboriginal people and early Europeans inhabiting the area and could be used for numerous purposes (Robinson 1991, Stewart and Percival 1997).

Table 1 summarises how these plants may have be utilised by Aboriginal people in the past. The list is not exhaustive, and is provided as an example of the cultural values associated with plants in the past, and the present.

Table 1. Traditional Aboriginal plant resources and use within the study area

SPECIES	TRADITIONAL USE
Ridge Top Woodland	
Banksia serrata (Old Man Banksia) Banksia spinulosa (Hair-pin Banksia)	The nectar of the flowers was sucked or soaked to make a sweet beverage. The cones were used for retaining fire as they will remain alight for a considerable period.
Corymbia gummifera (Red Bloodwood)	The nectar from flowers was sucked. The resinous sap was used to stop fibre fishing lines from fraying. The red resinous sap was also used to attract Cryptococcus insects which form sweet tasting galls. The exudate was also used internally and applied externally in powdered form to treat sores.
Eucalyptus agglomerate (Blue-leaved Stringybark)	The bark from these trees was made for making canoes. Also used the bark for making twine by rolling the fibres of soaked bark against their thighs.
Eucalyptus sieberi (Silver Top Ash)	A fine grained hard wood used for tool handles, such as axes and oars.
<i>Leptiospermum trinervium</i> (Paperbark Tea-tree)	The leaves are pungent and crushed for medicinal purposes.
Gahnia sieberiana (Saw Sedge)	The seeds were pounded to produce flour and the bases of the leaves are edible.
Persoonia levis (Broad Leaf Geebung)	The fruits were eaten, although difficult to collect ripe as birds eat the unripened fruit. The bark of the Geebung was used to make a solution in which fishing lines were soaked for strength.
Lomandra cylindrica (Mat Rush)	Both the flowers and the bases of the leaves (pea like flavour) were edible.
Xanthorrhoea media (Forest Grass Tree)	The flower stems produce nectar which can be eaten or placed in water to sweeten drinks. The stalks were used for spear shafts and the resin as glue for tools and weapons. The resin was collected as a powder by beating the leaf bases. The resin could also be collected in the trunks of old, dead, burnt stumps.
Gully Forest	
Acianthus spp. (Orchids)	The tubers of this plant were eaten and were an important source of nourishment.
Corymbia gummifera (Red Bloodwood)	The nectar from flowers was sucked. The resinous sap was used to stop fibre fishing lines from fraying. The red resinous sap was also used to attract Cryptococcus insects which form sweet tasting galls. The exudate was also used internally and applied externally in powdered form to treat sores.
Eucalyptus agglomerate (Blue-leaved Stringybark)	The bark from these trees was made for making canoes.
Dendrobium speciosum (Rock Orchid)	The starchy stems are roasted and eaten, and also chewed and rubbed into sores, burns and wounds.
Dianella species (Blue Flax Lilies)	The fruits were eaten raw. The roots were also eaten after pounding and roasting. The strong leaf fibres were made into string.
Persoonia levis (Broad Leaf Geebung) Persoonia pinifolia (Pine-leaf Geebung)	The fruits were eaten, although difficult to collect ripe as birds eat the unripened fruit. The bark of the Geebung was used to make a solution in which fishing lines were soaked for strength.
Upland Swamps	
Acacia rubida (Red-stemmed Wattle)	Seeds were ground for flour.
Banksia paludosa (Swamp Banksia) Banksia robur (Large-leaved Banksia)	The nectar of the flowers was sucked or soaked to make a sweet beverage. The cones were used for retaining fire as they remained alight for a considerable period.
Banksia ericifolia (Heath Banksia)	The flowers were sourced for their sweet nectar and either sucked or soaked.
Dodonaea triquetra (Common Hop Bush)	The leaves were chewed for toothache and used as a poultice for stonefish and stingray wounds. The liquid made from soaking the roots was used for open cuts and sores.
Lomandra longifolia (Spiny headed Mat Rush)	The seeds were ground for flour. The flowers and the base of the leaves are edible. The tough leaves were also used to make baskets.
Pteridium esculentum (Common Bracken Fern)	The rhizome of this plant was a staple food source – roasted first to destroy the toxins before being chewed/eaten.
Gahnia sieberiana (Saw Sedge)	The seeds were pounded to produce flour and the bases of the leaves are edible.
Warm Temperate Forest	
Acacia melanoxylan (Blackwood)	The seeds were collected and eaten.
Amema smithii (Lilypilly)	The fruit was edible.

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SPECIES	TRADITIONAL USE
Livistona australis (Cabbage Tree Palm)	The tip of this palm is edible. The leaves were used as roof thatch and for weaving baskets. The bark was used for making fishing lines.
Lomandra longifolia (Spiny headed Mat Rush)	The seeds were ground for flour. The flowers and the base of the leaves are edible. The tough leaves were also used to make baskets.

Sources: Robinson 1991; Stewart and Percival 1997.

The various fauna species present within the study area would have provided a range of resources for the Aboriginal people. Terrestrial and avian resources were not only used for food, but also provided a significant contribution to the social and ceremonial aspects of Aboriginal life (Attenbrow 2002). Mammals such as kangaroos and wallabies and arboreal mammals such as possums were used as a food source and also for tool making. For example, tail sinews are known to have been used as a fastening cord, whilst 'bone points' (which would have functioned as awls or piercers) are an often abundant part of the archaeological record. Ethnographic observations of early European settlers coming in contact with Aboriginal people noted the use of a variety of animal parts; claws, talons, bone, skin, teeth, shell, fur and feathers were all used for a variety of tools and non-utilitarian functions (Attenbrow 2002). Aquatic species such as freshwater crayfish would have been easily accessible in larger waterways (Rosen 1995). Aquatic vertebrates such as fish and eels would also have been present in the larger creeks and waterways.

# 4.0 ARCHAEOLOGICAL AND CULTURAL CONTEXT

# 4.1 Ethnohistory

Our knowledge of Aboriginal people and their land-use patterns and lifestyles prior to European contact is mainly reliant on documents written by non-Aboriginal people. 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 settlers and disease. These records can, however, be used in conjunction with archaeological information and surviving oral histories from members of the Aboriginal community in order to gain a picture of Aboriginal life in the region.

There is considerable ongoing debate about the nature, territory and range of pre-contact Aboriginal language groups in the greater Sydney region. Regardless of conflicting views between historical sources of the exact boundaries of tribal groups in the region, the linguistic evidence does identify distinct language groups at the time of European contact. A variety of studies of the language groupings that made up the greater Sydney region have been summarised by Attenbrow (2002), suggesting four main language groupings for the region (i.e. Darug (coastal and hinterland dialects), Gundungarra and Dharawal).

In the vicinity of the Cumberland Lowlands area there were two languages spoken, including a hinterland Darug dialect and Gundungurra. It is suggested the hinterland Darug dialect covered the Cumberland Plain from Appin to the Hawkesbury River to the west of the Georges River, Parramatta, the Lane Cove River and Berowra Creek, while the Gundungurra language covered the area west of the Georges River on the southern rim of the Cumberland Plain, as well as the southern Blue Mountains (Attenbrow 2002: 34).

The area around the Georges River and its tributaries were occupied by the Tharawal (Tindale 1974). The Tharawal are considered to consist of two main groups. The Saltwater Tharawal inhabited the area near the coast, below the Illawarra Escarpment, while the Freshwater Tharawal inhabited the area around the highland rivers (Wollondilly Shire Council, n.d.). The Gandangarra were known to have inhabited much of the Wollondilly area in the 18<sup>th</sup> and 19<sup>th</sup> century according to early non-indigenous records (ERM 2002). The interface of these two groups seems to have been around Appin.

Ethnographic evidence considered by Sefton (1988: 22-29) indicates population mobility on the Woronora Plateau with frequent contact with the neighbouring Gandangarra, Cobrakall (Liverpool and Cabramatta) and Wodi Wodi (Illawarra). The traditional Wodi Wodi land extended from around Stanwell Park to the Shoalhaven River, and as far in land as Picton, Moss Vale and Marulan. The Wodi Wodi spoke the Dharawal language, however Dharawal (Tharawal) was not a word they had heard of or used themselves (Tindale 1974, Navin Officer Heritage Consultants 2000: 20). Many of the town and place names of the Illawarra are derived from the Dharawal language.

The areas inhabited by each of the groups are considered to be indicative only, and would have changed through time, and possibly also changed depending on circumstances (i.e. availability and distribution of resources).

Interactions between different types of social groupings would have varied with seasons and resource availability. It has been noted that interactions between the groups inhabiting the many resource zones of the Sydney Basin (coastal and inland) would have varied but were continuous. This is reflected in the relatively homogenous observable cultural features such as art motifs, technology and resource use (McDonald 1992). Traditional Aboriginal social organisation consisted of clans and bands. It was through clans that associations with lands and sites were dictated. Marriage was between clans, and groups that included individuals who had married into the group are referred to as bands. In day to day life bands ranged over economic areas that included lands of more than a single clan. Attenbrow (2002) sums up the situation succinctly by saying "whilst the relationship of clan to country was principally religious in character, that of band to range was economic."

The arrival of European colonists in early 1788 wrought swift and catastrophic change to the Aboriginal people of the Illawarra region. Europeans began appearing in the area before the end of the eighteenth century, and by the first couple decades of the nineteenth century forestry had begun in the region, and the land was broken up for pastoral and dairy enterprises throughout that century. Conflict, disease and dispossession took a terrible toll on the Wodi Wodi and Tharawal people. In 1820 approximately 3,000 Aboriginal people were living in the Illawarra, but by 1899 their numbers had declined to only 33 people of non-mixed descent. In the Appin/Airds region, conflict began following the murder of an Aboriginal woman and her children, which resulted in violent clashes between several Aboriginal men and European settlers between 1814 and 1816 (Liston 1988: 50). The violence continued to escalate, culminating in the 'Appin Massacre' of April 1816 when a government military party, sent to apprehend Aboriginal 'trouble makers' in the Campbelltown and Camden areas, startled an encampment of 19 Aboriginal men, women and children at Broughton's Farm near Appin. In the ensuing melee 14 Aboriginal people were shot or driven over the steep cliffs of the Nepean River to their deaths (Liston 1988: 50-55).

Liston describes the Appin Massacre as being "traditionally regarded as the annihilation of the Aboriginal people of Campbelltown and Camden", with Tharawal people thereafter remaining south of the Nepean River in the Cowpastures area (Liston 1988: 54-55). With access to traditional lands and foods restricted, the Aboriginal people of the area began to participate in the transplanted European economy, taking casual employment on farms for example. Nevertheless, aspects of tribal life continued in the region until the mid nineteenth century, with Corroborees recorded up to the 1850s (Liston 1988: 56-57).

Peter Falk provided a summary of the Ethnohistory of the area in their comments on the draft version of this report, as follows:

Aboriginal boundaries of the South Eastern part of Australia are, as described in Tindale's book (1974) quote "a dogs breakfast" and as such is very difficult to define...

The accepted mob who is recognised for the area is the Saltwater and Sweetwater clans of the D'harrawal.

With the arrival of English invaders in 1788, the destruction of the Aboriginal Peoples by War, Disease, Massacre, removal and relocation caused great upheaval to traditional Aboriginal boundaries, Culture and Heritage. Also the removal of native vegetation for feral animals and houses also created dislocation of Aboriginal People.

# 4.2 Regional Overview

It is generally accepted that people have inhabited the Australian landmass for at least 50,000 years (Allen and O'Connell 2003). Dates of the earliest occupation of the continent by Aboriginal people are subject to continued revision as more research is undertaken. The timing for the human occupation of the Sydney Basin is still uncertain. Whilst there is some possible evidence for occupation of the region around 40,000 years ago, the earliest undisputed radiocarbon date from the region comes from a rock shelter site north of Penrith on the Nepean River, known as Shaws Creek K2, which has been dated to 14,700 +/- 250 Before Present ('BP') (Attenbrow 1987, 2002: 20). The assessment of the deposits concurred that the people living in the shelter exploited the food and resources from the nearby creeks and rivers, as well as the surrounding countryside. East of Campbelltown, a sandstone rock shelter site (known as Bull Cave) was excavated and yielded a basal date of  $1820 \pm 90$  BP (Koettig 1985, 1990). On the Woronora Plateau, the oldest recorded date for Aboriginal occupation so far is 2,200 +/- 70 BP at Mill Creek 11 (Sefton 1998a). Such a 'young' date is more likely a reflection of conditions of site preservation and sporadic archaeological excavation, than actual evidence of the presence or absence of an Aboriginal hunter-gatherer population prior to this time.

In general, the majority of both open and rock shelter sites in the Sydney region date to within the last 3,000 to 5,000 years. Dibden (2003a) attributes the increase in apparent occupation intensity to sea level stabilisation after the last ice age at around 5,000 years ago. Dibden (2003a: 27) states that:

'Following the stabilisation of sea levels, the development of coastal estuaries, mangrove flats and sand barriers would have increased the resource diversity, predictability, and the potential productivity of coastal environments for Aborigines.'

Archaeological evidence of Aboriginal occupation of the Cumberland Plain indicates that the area was intensively occupied from approximately 4,000 years BP (JMCHM 2007a; 2007b, 2007c).

A relative chronology for art within the Woronora Plateau has been developed by Dibden (2002a, 2003a, 2003b, 2003c) and is presented in Ford 2005. The following is adapted from Ford 2005 and summarises this chronology:

- Woronora Plateau Rock Art Phase 1: Petroglyphs of animal tracks >4000 years BP;
- Woronora Plateau Rock Art Phase 2: Red ochre paintings and stencilling; some white stencilling. Restricted in range of motifs and style. Consist of anthropomorphic, zoomorphic and abstract motifs - <4000 to >1600 years BP;
- o Woronora Plateau Rock Art Phase 3: Charcoal drawings; white stencils. Greater variety of colour. Continuation of older motifs and styles with some addition in diversity. Some evidence of retouch >1600 1000 years BP to European contact.

# 4.3 The Archaeological and Cultural Resource

### 4.3.1 Archaeological and Cultural Heritage Sites

A search of the AHIMS database was conducted in June 2008. The search took in an area of approximately 30 km x 20 km that encompassed the study area. The search returned 1140 recorded archaeological and cultural sites, with 611<sup>6</sup> of these located within the study area.

It should be noted that the AHIMS database reflects Aboriginal sites that have been officially recorded and included on the list; hence AHIMS listings may reflect previous survey patterns, and should not always be considered a complete list of Aboriginal sites within a given area.

The Aboriginal heritage survey and site inspection recorded 44 new sites across the study area. In total, 632 known sites have been recorded within the study area. These sites are grouped and summarised by site type in Table 2. Detailed site information is provided in Appendix 4 and Appendix 5.

Note that several of these sites were subsequently identified as duplicates.

Table 2. Known archaeological and cultural heritage sites within the study area

Site Type	Number of Sites (n)	As % of Total
Potential Archaeological Deposit	78	12%
Sandstone Platform with Grinding Groove / Engraving	173	28%
Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	240	38%
Sandstone Shelter with Deposit only	33	5%
Scarred Tree	8	1%
Stone Artefact(s)	100	16%
Total	632	100%

## **Aboriginal Site Descriptions**

Due to the large number of previously recorded sites and inconsistent nature of the recordings, the sites have been grouped into the following categories.

#### Potential Archaeological Deposit ('PAD')

PADs generally comprise stable deposits or landforms that are highly likely to contain intact sub-surface archaeological evidence of use or occupation. These sites can be in either a closed or open context, and have no archaeological evidence visible at the site. PAD areas generally have minimal impact (natural and historic), comprise a stable landform, consist of predictable occupation locations and may contain *in situ* archaeological material.

#### Sandstone Platform with Grinding Groove / Engraving

Grinding grooves are often found on large open and relatively flat areas of sandstone shelving and outcrops, usually with water available as flow or in pot holes. Individual grooves are elongated, narrow depressions often found in sedimentary rock, such as sandstone, in association with water sources, including creeks and swamps. Most grinding grooves would have been used to shape and sharpen stone axes, with water being essential to aid the process. Grinding grooves generally occur where suitable horizontal sandstone rock outcrops occur. Engraved channels, often used to divert the run of water to a grinding area, are a feature often associated with grinding grooves.

Petroglyphs (sometimes referred to as engravings) are motifs engraved or pecked into a rock surface. These sites can include outlined or filled motifs of animals, human figures, pathways or dreaming/ceremonial symbols. Such sites are situated where open areas of suitable sandstone are present.

### Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit

These closed context sites are sandstone shelters or overhangs that contain at least one of these features, although some may have a combination of any of the features. Sandstone shelters (sometimes called overhangs) may contain pictograms, stone artefacts (described individually below) or midden deposits and may also be associated with grinding grooves. Some rare examples also contain abraded or scratched petroglyphs. Sandstone shelter sites generally occur on, or next to, moderate to steeply sloping ground as characterised by the cliff lines and sandstone outcrops situated along rivers, creeks and their associated tributaries. The sites will only occur where suitable sandstone exposures or overhangs possessing sufficient sheltered space exist.

Art within rock shelters in the study area usually consists of pictograms using pigment, which can be applied either wet or dry, and is available in a variety of colours. Previous studies have identified that charcoal art is predominant within the study area, although there are a number of sites with various coloured clays and ochres present also. The majority of stencilling uses red ochre, and to a lesser extent white clay. Black media dominates motif drawings, and it is assumed that this is charcoal applied either dry or as a paint. Other art identified within shelters in the study area included scratching or abraded petroglyphs, although this method is relatively rare within the study area.

Middens consist of predominantly shell material accumulated in one area, either in an open or closed context. They are often located within close proximity to watercourses and coastal regions, and sometimes the term midden is used to describe archaeological deposits in general. Middens can also contain accumulations of stone and bone artefacts, charcoal and also faunal remains.

## Sandstone Shelter with Deposit only

These closed context sites are sandstone shelters that contain a soil deposit with artefacts on the shelter floor or in the dripline. Based on the presence of these surface and / or dripline artefacts it is assumed an archaeological deposit (buried artefacts) is also present. These sites contain no other archaeological features and are distinguished from PADs, which by definition do not have any visible artefacts present.

### **Scarred Tree**

Aboriginal scars or carvings are generally found on mature trees (>150 years old) and usually in woodland or semi-open areas. Scars include marks left from activities such as bark removal for canoes, shields or containers and holes for resource extraction, either foot holes to climb or holes to access insects or animals living within the tree. Carved trees have bark removed and a geometric pattern or motif carved into the wood.

#### Stone Artefact(s)

Stone artefact sites are also referred to as open campsites, artefact scatter sites or isolated finds. These sites are usually found in an open context and consist of one or more stone artefacts. Stone artefacts are identified by human modification such as flaking, grinding and percussion (see McCarthy 1976, Holdaway & Stern 2004, Burke & Smith 2004).

#### **Summary**

Previously recorded sites within the study area consist of:

- o PADs (13%);
- o sandstone platforms with grinding grooves / engravings (28%);
- o sandstone shelters with art / grinding grooves/ engraving / deposit (38%);
- o sandstone shelters with deposit only (5%);
- o scarred trees (1%); and
- o stone artefacts (15%).

The location of these sites within the landscape depends on the site type. PADs are located in landforms with minimal disturbance, often close to watercourses. Platforms with grinding grooves or engravings were often located within close proximity to water or in areas of sandstone outcropping. Shelters were located on ridgelines with sandstone outcrops. Scarred trees are located in areas where minimal historic clearing had taken place. Stone artefacts are located in areas of exposure, such as fire trails or within cleared paddocks.

As described above the majority of sites are sandstone shelter sites and sandstone platform sites, as noted to occur on the Hawkesbury soil landscape. These sites occur most frequently in the eastern and southern domains of the study area. Stone artefact sites are also relatively well represented, and the majority of these occur on the Blacktown soil landscape in the northern and western domains (Figures 9 and 10).

#### 4.3.2 Federal Heritage Lists

The National Heritage Database was searched and a listing on the Commonwealth Heritage List and the Register of the National Estate was noted to overlap with the study area. Both the Commonwealth Heritage List and Register of the National Estate list the same heritage item: Cubbitch Barta National Estate Area. The Cubbitch Barta National Estate Area is located within the bounds of the Holsworthy Military Area and covers an area of 18,000 hectares ('ha') of bushland, with Heathcote National Park bordering it on the south east, and Dharawal State Conservation Area to the south. The area contains parts of the Woronora River and O'Hares Creek catchment areas.

In both cases the Cubbitch Barta National Estate Area is listed as an indigenous site, describing a diversity of Aboriginal occupation and art sites and their relationship to the natural environment as some of the principal sources of significance. However, the criteria discussions on the listings also refer extensively to ecological values, geological values, and non-indigenous historical values.

The indigenous heritage values identified in these listings are commensurate with those values that are captured by the AHIMS data and the site inspections and survey conducted for the Project Aboriginal Cultural Heritage Assessment. Hence, the significance described on the Commonwealth Heritage List and the Register of the National Estate is considered within this assessment.

#### 4.3.3 Local Heritage Schedules

The Heritage Schedules of the draft Wollongong Local Environment Plan 2009, the Wollondilly Local Environment Plan 1991 and the Campbelltown Local Environment Plan 1995 were reviewed. There were no Aboriginal sites recorded in the schedules within the study area.

## 4.4 Local Archaeological and Cultural Heritage Studies

Results of archaeological work completed in the northern, central and southern Cumberland Plain region have clearly identified that the predominant recorded sites on the Cumberland Plain are open camp sites (Kohen 1986, Smith 1989b, Haglund 1989, McDonald 1992, JMCHM 2007a, 2007b, 2007c; Dibden 2003d). Towards the peripheries of the plain on Hawkesbury Sandstone, shelters with art and/or deposit and grinding grooves have been recorded. Most recent archaeological studies have been impact driven assessments in response to increasing development activity in the region and changing legislation requirements. On the Woronora Plateau, the most extensive archaeological studies have been undertaken by the Illawarra Prehistory Group, resulting in the identification of thousands of sites (1988-2008). Recently, archaeological work has been in the form of environmental impact assessment in response to mining activities in the Illawarra (Sefton 1990a, 1990b, 1994, Navin Officer Heritage Consultants 2000, Biosis Research 2004, 2005a, 2005b, 2007a, 2007b, 2008a, 2008b).

The following section provides a summary of previous reports relevant to this assessment. These reports are relevant as they have been undertaken either within or immediately adjacent to the study area and therefore provide a background archaeological and/or cultural context of the study area.

**Australian Museum Business Services Consulting 1996.** The Australian Museum Business Services ('AMBS') was commissioned by BHP to undertake an archaeological survey of an area predicted to be impacted by subsidence following mining. One possible scarred tree was identified during the survey. The area was heavily cleared and ploughed in the past. The study area was located within the historical mining areas south-east of Douglas Park.

**Biosis Research 2004.** This report was commissioned by ICHPL as a pre-mining assessment of the area which would be undermined by the Appin Area 7 mine (Longwall 701-704). The survey of the area revealed ten previously recorded sites which fell within the potential impact area. The dominant site type recorded during the survey was rock shelters with art and/or deposit, followed by open artefact scatters and scarred tree sites.

**Biosis Research 2005a.** Biosis Research was commissioned by ICHPL to assess the impacts of the extraction of Longwalls 301A, 301 and 302 (Appin Area 3) on Aboriginal and historic sites. The survey located eight previously recorded Aboriginal sites and recorded nine new Aboriginal sites, including one grinding groove site, two artefact sites, three art sites and three PADs.

**Biosis Research 2005b.** Biosis Research was commissioned by ICHPL to assess the impacts of the extraction of Longwalls 31-33 (West Cliff Area 5) on Aboriginal and historic sites. The survey inspected two previously recorded Aboriginal sites.

**Biosis Research 2006a.** This report was commissioned by ICHPL to investigate the impacts of subsidence on Aboriginal and heritage archaeological and cultural heritage sites, prior to the extension of underground mining operations at the Douglas mine (e.g. Appin Area 7 – Longwalls 701-704). The survey identified two previously recorded shelter sites, and four new stone artefact sites were recorded.

**Biosis Research 2006b.** This report was commissioned by ICHPL to investigate the impacts of the extraction of Longwall 409 (Appin Mine) on Aboriginal and historical sites. The survey identified three previously recorded Aboriginal sites (i.e. two rock shelters with art and one shelter with deposit and grinding grooves). No new Aboriginal sites were recorded during the survey.

**Biosis Research 2007a.** Biosis Research was commissioned by ICHPL to undertake an archaeological and cultural heritage assessment of the West Cliff Stage 3 Coal Wash Emplacement area. The study aimed to investigate, record and assess the Aboriginal and historic archaeological evidence in the area. The survey recorded eight Aboriginal sites and two areas of potential archaeological deposit. Four sites were identified as being in the impact area and a further four Aboriginal sites were identified as being at risk of indirect impacted due to their close proximity.

**Biosis Research 2007b.** ICHPL commissioned Biosis Research to undertake a revised archaeological and cultural heritage assessment of Area 3 of the Dendrobium Longwall Mine. The Dendrobium Area 3 longwalls were proposed over an extensive area between Cordeaux and Avon Dams to the south of the Project study area. The archaeological survey methods included systematic landform survey of sandstone outcrops and sample transect survey of areas of exposure within the Dendrobium Area 3 mine surface footprint.

A total of 44 previously recorded Aboriginal sites were re-assessed, including: shelter with art; shelter with deposit; shelter with art and deposit; stone artefact scatter or isolated occurrences; and, a stone arrangement. All of these sites were originally recorded by the Illawarra Prehistory Group (1997, 1998, 2000) and Navin Officer Heritage Consultants (2000). A total of 13 previously unrecorded Aboriginal sites were identified.

**Biosis Research 2008a.** ICHPL commissioned Biosis Research to undertake an archaeological and cultural heritage survey prior to the extension of underground mining operations at Appin Area 7, for proposed Longwalls 705 - 710. This survey was a targeted survey in which previously identified sites were revisited and their current condition recorded, as well as investigating landforms which fit the predictive model for the area to identify any unrecorded sites. Nineteen sites were identified in the study area.

**Biosis Research 2008b.** Biosis Research conducted the End of Panel Assessment of Aboriginal sites with potential to be impacted by Longwall 32 at West Cliff Area 5. All nine Aboriginal sites were observed to be in the same condition recorded prior to the extraction of coal from Longwall 32. No sites were impacted following the extraction of coal from Longwall 32. This project was located within the Project study area.

**Demkiw, R. 1985.** This report was produced by Demkiw whilst a student at the University of New England, and aimed to explore whether the gathering and analysis of material in the field, as well as the use of ethnohistoric information, could reveal evidence of Aboriginal occupation in a specific area. This report provides information relating to ethnographic sources for the Menangle and Douglas Park regions. This project was located to the south of the Project study area.

**Dibden, J. 2002b.** Sydney Gas Operations Pty Ltd engaged Julie Dibden to undertake an archaeological and heritage assessment of a proposed pipeline to link existing gas wells near Cawdor, NSW. Two previously unrecorded Aboriginal sites were located during the survey. This project was located within the western domains of the Project study area.

**Dibden, J. 2002c.** This addendum was produced in addition to the first report (2002b), in response to changes in the concept plan for the pipeline route. The proposed route was changed in response to the sites identified in the previous archaeological survey. No sites were identified during the survey, and archaeological potential was considered low for that area. This project was located within the western domains of the Project study area.

**Dibden, J. 2003b.** Julie Dibden was commissioned by Sydney Gas Operations to undertake an archaeological and heritage assessment of a proposed extension of the Camden Coal Bed Methane Project, in Glenlee, Menangle Park and Menangle, NSW. The survey was to inspect ground surface disturbances only, as no disturbance to potential subsurface deposits was predicted. Twenty-two previously registered sites were located in the study area and surrounds, with three of these located within the impact area. Twenty additional sites were recorded during the survey. The project is located north of the Project study area.

**ERM 2002.** ERM completed an indigenous and historic heritage assessment of a section of Appin Road for a proposed road widening project, approximately 3 km north of Appin. The survey focussed only on the western side of Appin Road. Despite reasonable areas of ground surface visibility along much of the proposed widening route, no Aboriginal archaeological sites were identified, and the area was considered to have a low archaeological potential. The project and township of Appin is located in the historical mining area in the centre of the Project study area.

**Kayandel Archaeological Services 2008.** Helensburgh Coal commissioned Kayandel Archaeological Services to undertake an Aboriginal Cultural Heritage Assessment as part of an Environmental Assessment for the Metropolitan Coal Project (located immediately east of the North Cliff mining area). One hundred and eighty-eight Aboriginal sites were recorded by the study and consisted of 142 sandstone overhangs and 46 open sites. Archaeological and cultural significance assessments undertaken for this assessment reported that of the 188 sites, nine were of high archaeological significance, 23 were of moderate significance and 17 were of particular cultural significance.

**Navin Officer Heritage Consultants 2000.** Navin Officer Heritage Consultants prepared a heritage study for ICHPL prior to the commencement of the Dendrobium Coal Project (located south of the Project study area). The study included a field survey, consultation with members of the Aboriginal community and a literature search. Nineteen sites were previously recorded in the study area, with eleven further sites identified during the survey.

**Navin Officer Heritage Consultants 2003.** Navin Officer Heritage Consultants were engaged by Bradcorp to undertake an Aboriginal cultural heritage assessment of an area of a proposed residential development, near Wilton (within the Project study area). There were six previously recorded sites located in the study area, and following the survey, an additional fourteen sites were identified, as were several areas of potential archaeological deposit.

**Sefton, C. 1988.** Caryll Sefton's 1988 thesis analyses the nature and distribution patterns of artefacts and other sites located within the Woronora Plateau during surveys undertaken by the Illawarra Prehistory Group. The thesis revealed a relationship between shelters, their attributes (such as aspect, size, etc.), the drainage basin on the Woronora Plateau and the location of the shelter with respect to inland or coastal association. Sefton also provides information relating to the types of artefacts and archaeological objects located within the Woronora Plateau. The Woronora Plateau covers the eastern and southern portions of the Project study area.

**Sefton, C. 1995.** Caryll Sefton was engaged by Collieries Division, BHP Steel, to undertake an archaeological survey of Longwall 27 and future mining extensions prior to the commencement of longwall mining, at Appin Mine. The survey recorded seven sites within the study area, consisting of two grinding groove sites and five shelters with art and / or deposit. Appin Longwall 27 is within the Project study area.

**Sefton, C. 1996.** Collieries Division, BHP Australia Coal commissioned Caryll Sefton to undertake an archaeological investigation of Appin Area 4 (located within the Project study area) prior to the extraction of coal via longwall mining. Six sites were identified during the survey, consisting of shelter sites.

**Sefton, C. 1998b.** Caryll Sefton was engaged by Collieries Division, BHP Coal, to monitor sandstone overhangs containing Aboriginal rock art following mining at West Cliff Colliery, near Wedderburn. Changes were observed in five of the 23 overhangs monitored, although none were assessed to be likely to collapse. Changes had been observed in shelters which were not mined beneath. Sefton concluded that some overhangs may be adversely affected by mining subsidence. This project was located within the Project study area.

**Sefton, C. 1998a.** Caryll Sefton was contracted by Collieries Division, BHP Australia Coal to conduct a reassessment of two sites (Brennans Creek 3 (52-2-1369) and Brennans Creek 4 (52-2-1370)) for which BHP Collieries wished to obtain Consent to Destroy within the Stage 2 Coal Wash Emplacement at West Cliff pit top. The aim of the reassessment was to produce an archaeological report which included the Aboriginal history of the area, an assessment of animal and plant species present within the area and a description of Aboriginal ochre usage in the region. This project is located within the Project study area.

**Sefton, C. 2000a.** Caryll Sefton was engaged to undertake a program of monitoring of sandstone overhangs within the Woronora Plateau (which forms the eastern and southern portions of the study area) to assess the effect of undermining, predominantly on the art surface but also on the structural integrity of the overhang itself. Changes attributed to mining subsidence were observed in five of the 52 overhangs monitored. No overhang was observed to have collapsed.

**Sefton, C. 2002a.** This report was commissioned by ICHPL to investigate proposed Longwalls 406 to 408 at Appin Mine. This report was a continuation of a previously prepared report, and aimed to identify previously recorded sites, and to comment on their significance, as well as to provide management recommendations for these sites. Four sites were located within the study area, consisting of sandstone overhangs with art (2), grinding grooves (1) and deposit (1). This project was located within the Project study area.

**Strata Control Technology (SCT) Operations 2005.** ICHPL contracted SCT Operations to complete an assessment of the potential effects of subsidence on three Aboriginal sites (a grinding groove site and two shelters) and a cliff formation, prior to the expansion of mining activities in Appin Area 3 (within the Project study area). The report found that the sites were unlikely to be impacted by mining subsidence, although the cliff formations were considered to be marginally unstable.

### 4.5 Discussion and Predictive Model

An archaeological predictive model has been formulated based on the results of the location and type of Aboriginal sites that were recorded within the regional area, the results of the AHIMS database search and information obtained from previous archaeological work. This information has been broken down into patterns that have been compared to the character of the study area to allow for an understanding of Aboriginal archaeological potential.

Most of the sites described in Table 2were identified as a result of surveys undertaken either in response to development proposals, large-scale voluntary surveys or academic research.

Based on this information, the following predictive models for the study area have been developed, indicating the site types most likely to occur within the Cumberland Lowlands and on the Woronora Plateau, the two major landscape divisions described above. A summary of the sites most likely to occur on each of these landscapes is presented in Table 3 below.

Table 3. Summary of sites most likely to be found on the Woronora Plateau and the Cumberland Lowland land forms within the study area

Land Form	Land System	Landform Unit	Likeliest site type
Woronora Incised	Steep rocky drainage lines and	Sandstone Shelters with Art and/or Deposit.	
Plateau	Hawkesbury Sandstone	ridges. Steep and precipitous sandstone outcrops, detached	Grinding Grooves.
	blocks and cliffs o	blocks and cliffs or gorges. Well incised steep drainage line, often	Engravings.
		with drop-offs.	Open artefact scatters or isolated artefact occurrences.
			occurrences.
Cumberland Lowlands	owlands Group shales are dissected by feeder creeks and		Open artefact scatters or isolated artefact occurrences.
	drainage features that flow into the steep rivers that border the	Scarred Trees.	
		WoronoraPlateau.	Sandstone Shelters with Art and/or Deposit.
			Grinding Grooves.

Where site types have been previously recorded within the study area these descriptions are within the site description sections (Section 4.3). Where sites have not been previously recorded and have no available description, but appear in the predictive statements, a brief description is provided below.

#### Open Campsites, Artefact Scatters, Isolated Finds

Paddock grasses and open woodland vegetation occur across the Cumberland Lowlands and are likely to obscure stone artefact scatters or isolated occurrences. However, the relatively frequent occurrence of these sites indicates that where ground exposure does occur, there is a moderate likelihood of finding stone artefacts. Stone artefact sites that have been previously recorded in the region have been located on upper hill slopes and ridgelines, and in close proximity to water sources, including swamps and water lines.

The general predictive model for the Cumberland Plain region indicates that the frequency, density and complexity of stone artefact sites varies depending on the permanence of the water course or the 'stream order' (Haglund 1989, McDonald & Mitchell 1994, JMCHM 2007a, 2007b, 2007c) in the following way:

- o at the headwaters of upper tributaries (first order creeks) archaeological evidence will be sparse and will comprise little more than background scatters of stone artefacts;
- o at the middle reaches of minor tributaries (second order creeks) archaeological evidence will be sparse but indicate focused activity;
- o at the lower reaches of tributary creeks (third order creeks) archaeological evidence will indicate more frequent occupation and evidence of repeated, more concentrated activities:
- o on major creek lines and rivers (fourth order creeks and above) archaeological evidence will indicate more permanent occupation which is of greater complexity;
- o creek junctions and swamps may provide a focus for site activity; and
- o ridge top locations between drainage lines will usually contain limited archaeological evidence.

Proximity to resources such as stone outcrops suitable for tool making (i.e. silcrete), or key environmental features (i.e. swamps, permanent water sources, important plant and animal resources) may also influence the location of such sites. Low density artefact scatters and isolated artefact occurrences are likely to be the most commonly occurring site types within this part of the study area.

Thick woodland vegetation across the Woronora Plateau is also likely to obscure stone artefact scatters or isolated occurrences that occur in an open context. Stone artefact sites that have been previously recorded have been located along ridgelines, on the plateau, and in association with drainage lines in areas of disturbance allowing ground surface visibility. Thus, there is a low likelihood of identifying such sites where ground surface visibility is high, such as existing fire tracks and cleared seismic lines.

#### Potential Archaeological Deposits

A number of PAD areas have been previously identified on the Cumberland Lowlands around the Menangle and Cawdor region, and are situated adjacent to watercourses in depositional soil landscapes or on high points within the region. It is likely that within the study area such landforms will occur, particularly close to watercourses and on ridgelines where previous disturbance has been minimal.

On the Woronora Plateau, PAD areas may be associated primarily with sandstone overhangs with suitable and sizable living floor areas. On the plateau, limited deposits may occur along water features, swamps and ridgelines.

#### Rock Shelters with Art and/or Deposit

Based on previous archaeological work completed across the Cumberland Lowlands, there is some potential for topographical features suitable for the formation of rock shelters or overhangs to occur along some Nepean, Cataract and Georges River feeder creeks within the study area.

Suitable sandstone features, including overhangs and platforms, dominate the topography of the Woronora Plateau. The AHIMS database search revealed that rock shelters with art and/or deposit are the most frequently recorded site types within the study area and surrounding region. Thus, rock shelters with art and/or deposit are considered to be the most likely site types to be encountered. Petroglyphs are not unknown from rock shelters in the region, however the vast majority of recorded art in rock shelters within the region is pictograms. Where sediment deposits are suitable, a number of sandstone overhangs usually contain evidence of occupation or contain PAD.

#### **Grinding Grooves**

On the Cumberland Lowlands, previous archaeological work has identified grinding grooves along the Nepean, Cataract and Georges Rivers and their tributaries where suitable sandstone platforms occur. Therefore there is a low to moderate potential for grinding grooves to be identified within the study area.

In the Woronora Plateau region, grinding grooves are the second most common site type recorded. However, as such sites have not been maintained since European settlement; they can be difficult to locate beneath vegetation and debris. As there are a large number of rivers, creeks and tributaries within the study area, there is a moderate likelihood that grinding grooves will occur in association with these.

### Petroglyphs/Rock Engravings

Due to the rarity of suitable sandstone platforms on the Cumberland Lowlands, it is considered that engraving sites will be uncommon.

Few of these sites have been previously recorded throughout the Woronora Plateau region surrounding the study area, despite there being numerous exposures of sandstone. This can be attributed to cultural differences between groups within the Sydney Basin. Most rock engraving sites are situated in the eastern part of the study area. It is considered that there is a low potential for these sites to occur within the study area.

#### Stone Arrangements

Stone arrangements can include circles, mounds, lines and various other patterns, most commonly associated with ceremonial sites, mythological or sacred sites, such as bora grounds or rings. The vast majority of these sites are situated on ridgelines or higher elevations within the landscape where surface stone is available.

Very few stone arrangement sites have been previously recorded within the study area. Again, this can be attributed to cultural differences between Aboriginal groups within the Sydney Basin. It is highly unlikely that such suitable sandstone platforms, and therefore stone arrangements, will occur across the Cumberland Lowlands. Large expanses of sandstone shelving that are suitable for stone arrangements do occur across the Woronora Plateau; therefore, there is some potential for stone arrangements to occur. There is some potential for bora grounds to occur; however, land use activities reduce the likelihood of finding these.

#### Stone Quarries/Pigment Sources

Stone quarry sites will only be located where exposures of suitable raw stone material occur, for use in stone artefact manufacture. Stone sources located on the Cumberland Plain might include silcrete and quartzite outcrops. Along the coastal strip, east of the Woronora Plateau, flint and chert are likely to be found. Throughout the sandstone country, sources of raw material might include pebbles and cobbles (usually quartz) that have gradually weathered out of the sandstone over time.

No known raw material outcrops suitable for quarrying have been recorded within study area across the Cumberland Lowlands, however raw materials suitable for tool manufacture have been identified from the St Mary's Formation and Rickabys Creek Gravels to the west of Sydney (Bannerman and Hazelton 1990: 3). The geology of the study area would not provide suitable rock types for the manufacture of stone artefacts, and therefore any artefacts recorded within the study area will be made from imported, regionally available material. Whilst there may have been opportunistic use of pebbles eroding from sandstone on the Woronora Plateau, there is not likely to be stone quarries in the immediate region.

Pigment sources will only be available in areas where the geology dictates and the required processes have exposed such sources. Potential pigment sources may occur on the Woronora Plateau, in shelters or exposed sandstone, however demonstrating that occurrences of iron rich sandstone are actual pigment sources is difficult. There are no known ochre quarries within the study area, and the likelihood of identifying this site type is low.

#### **Scarred Trees**

A small number of scarred trees have previously been recorded across the Cumberland Lowlands region. The closest recorded scarred trees occur east of Picton (within the Project study area). Some of the earliest reported carved trees were located near Narellan and Picton. Because of ongoing clearing for agriculture and the continued expansion of semi-urban development there is a low likelihood for culturally modified trees to be present within the study area on the Cumberland Lowlands.

On the Woronora Plateau, there has been very little tree clearing. However, frequent high intensity fires have occurred and are assumed to have rendered any scarred trees that have survived and are present unidentifiable (Sefton 1998a: 22). The likelihood of scarred trees occurring on the Woronora Plateau portion of the Project study area is considered to be low, although if present they are more likely to occur in tall open forests where larger trees, which are more suitable for cultural uses, are present.

#### **Burials**

Aboriginal burial sites are generally situated within deep, soft sediments, caves or hollow trees. The locations of burials can be indicated by carved trees, or exposed in eroding or shifting sand or soft sediment deposits. Such sites hold great value for Aboriginal people and the disturbance of burials or burial places is a culturally sensitive issue.

No burial sites have been identified in or within close proximity to the study area. Within the region there are limited or no suitable soft sediments in which burials are associated, as the study area comprises incised sandstone on the Woronora Plateau, or harder silts and clays on the Cumberland Lowlands, neither preferable for burials. The likelihood of burials within the study area is therefore considered to be very low.

#### **Aboriginal Ceremony and Dreaming Sites**

Such sites are often intangible places and features and may be identified through oral histories, ethnohistoric data, or Aboriginal informants. Often there will be no physical evidence of previous use of the place. Such places include natural landscape features, ceremonial locations, men's/women's places, creation stories and tracks, and birth, marriage and burial places (Brown 2005 quoted in Guilfoyle 2006: 76).

A *Bunan* site and associated ceremony was recorded by R. H. Mathews (1896) in the county of Camden, immediately northwest of the Project study area. The *Bunan* ceremony is recorded as occurring throughout the southeast coast of NSW, from the Victorian border to Bulli (Mathews 1896). It is considered unlikely that ceremony and dreaming sites will be identified in the study area.

#### **Post-Contact Sites**

These are sites relating to the shared history of Aboriginal and non-Aboriginal people of an area. Many of these sites can hold special cultural significance for Aboriginal people and may include places such as missions, massacre sites, post-contact camp sites and buildings associated with post-contact Aboriginal use. This site type is usually known from historical records or knowledge preserved within the local community.

#### **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. Often these places are culturally important in the living memory of a community. There are currently no known Aboriginal places within the study area. The likelihood of locating such places within the study area is low. There are often difficulties in obtaining such information due to displacement of traditional Aboriginal communities in the region.

#### Aboriginal Resource and Gathering Sites

Aboriginal resource and gathering sites are sites where there is ethnographic, oral, or other evidence that suggest that natural resources have been collected and utilised by Aboriginal people. These natural resources have a cultural significance and connection for the Aboriginal community, such as ochre outcrops that were used for art or ceremonial purposes. These sites are still considered important places today. There are no such known sites within the study area.

## 5.0 SITE INSPECTION AND SURVEY METHODS

As detailed in Section 4.4, the majority of the study area and surrounds has been previously subject to systematic survey and assessment by (although not limited to) Sefton (1988, 1990a, 1990b, 1994, 1995, 1996, 1997, 1998a, 1998b, 1998c, 1999, 2000b, 2002a, 2002b), AMBS (1996), Navin Officer Heritage Consultants (2000, 2003), ERM (2002), Dibden (2002b, 2002c, 2003d), Kayandel Archaeological Services (2008) and Biosis Research (2004, 2006a, 2006b, 2007a, 2007b, 2008a).

The work undertaken for this study uses the results of these past surveys, and builds on them by providing an opportunity to inspect known sites and to survey areas for new sites. The survey and site inspection work of the current study is also aimed at providing the Aboriginal community with the opportunity to inspect a diverse range of sites and the study area in general.

# 5.1 Initial Planning

Prior to the commencement of the field survey a search of the AHIMS database was completed to identify registered Aboriginal sites within the study area. Sites registered on the AHIMS database within the study area were reviewed to identify duplicates. An archaeological significance assessment was undertaken for each site to assist in the selection of sites for inspection and focus the inspections on sites of higher archaeological significance. The archaeological significance assessment was conducted using the methodology described below in Section 7.1 and Section 7.3. Results of the archaeological significance assessments were cross-referenced with those of previous reports to affirm that the archaeological significance assessments were generally consistent.

As well as targeting those areas of known or predicted higher archaeological potential, the surveys, where applicable, also sampled areas with lower archaeological potential to assist with characterising the archaeological resource across the landscape of the study area.

All sites with high and moderate archaeological significance were targeted for site inspection, along with a selection of sites assessed as possessing low archaeological significance<sup>7</sup>. Approximately 30% of the sites assessed as having low archaeological significance were targeted for inspection, and were selected based on:

- Site type (numbers of each site type to be inspected aimed at being representative of the proportion of recorded site types).
- o Proximity to sites of high and moderate archaeological significance.

For the purpose of planning, sites with limited information available for determining archaeological significance and PADs (refer Table 5) were included with sites of low archaeological significance in regard to site inspection selection.

 Achieving spatial coverage of the study area, including areas where no sites of high or moderate archaeological significance have previously been recorded.

# 5.2 Site Inspections and Survey

## 5.2.1 Proposed Mining Domains

Project survey methods for Aboriginal sites were designed in consultation with the local Aboriginal community. They were designed to inspect known sites within the study area and identify previously unknown sites within the study area using the following information:

- o Previously recorded sites within the study area.
- o Archaeological significance of previously recorded sites.
- o Areas of higher and lower archaeological potential as identified by the background research (i.e. regional site patterns).
- o Known areas of higher archaeological potential within the study area (including sandstone cliff lines, and creeks and tributaries, as well as areas identified during the slope analysis as being most likely to contain previously unrecorded sites).

The survey methods involved the following approaches:

- 1) targeted location and inspection of known sites of moderate and high archaeological significance;
- 2) representative survey of landforms considered to contain a greater potential for archaeological material in between and around the previously recorded sites; and
- 3) incidental survey of landforms of lower archaeological potential during travel between inspection sites.

The inspections of known sites within the study area were designed to obtain more detailed information on the sites of moderate and high archaeological significance within the study area and also to provide the registered Aboriginal stakeholders participating in the surveys the opportunity to inspect the range of sites, landscapes and cultural contexts across the study area. In regard to the Aboriginal stakeholders, the inspections also aimed to better inform any comments provided in regard to cultural significance or context across the study area.

The landforms associated with the majority of Aboriginal sites within the study area are those occurring with the Hawkesbury soil landscape, as described in Section 3.1. These landforms comprise drainage features which produce deeply incised, rocky gullies and valleys suitable for the formation of sandstone overhangs and shelters. Most of these recorded sites were identified by previous surveys which focused on landforms more likely to contain archaeological material by undertaking targeted contour and drainage surveys, or by employing opportunistic surveys that focused on areas of previous disturbance (vehicle tracks for example) or potential impact areas (seismic lines for example).

Previously recorded sites were identified using hand-held GPS units. While walking to these previously recorded sites, the area being traversed was also inspected for exposures, sandstone overhangs and platforms which could have potential for sites to be present. Any such features noted were surveyed for previously unrecorded sites.

The Project also presented the opportunity to conduct surveys on several areas of the western domain which had not previously been subject to archaeological investigation. These areas consisted of the rolling pastured hills of the Cumberland Plain and in some cases deeply incised drainage lines where sandstone features were present. In these cases survey focusing on areas of potential as described in the predictive model, and areas of exposure and visibility opportunistically identified in the field was conducted.

### 5.2.2 Proposed West Cliff Stage 4 Coal Wash Emplacement Area

Biosis Research (2007a) employed a block survey strategy during their assessment of the West Cliff Stage 3 Coal Wash Emplacement area. The block survey strategy aimed to achieve as near to possible complete coverage of the proposed emplacement area. This strategy meant that any conspicuous sites within the area—in particular sandstone shelters and platforms—would be identified. In keeping with this previous work, a block survey strategy was employed for the proposed West Cliff Stage 4 Coal Wash Emplacement area and immediate surrounds, with a large survey team walking parallel transects across the entire area with 5 m to 10 m spacing between each survey team member.

## 5.2.3 Identification and Recording of Archaeological Sites

All newly discovered Aboriginal sites within the study area were recorded. Information collected was in accordance with the DECC requirements.

New co-ordinates for each previously recorded and inspected site were taken, along with photographs and updated information about each site's condition.

### 5.2.4 Identification and Recording of Traditional Resources

During the archaeological surveys, the identification and recording of any traditional resources (such as the Kurrajong tree located at site 52-2-3579) within the study area was conducted in close consultation with the relevant Aboriginal stakeholders.

# 5.3 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 how detectable archaeological sites were in the study area were visibility and exposure (see below). In rugged situations such as those within the eastern part of the survey area, occupational health and safety interests can also constrain the archaeological survey. A brief discussion of these factors is presented below.

### 5.3.1 Visibility

In most archaeological reports and guidelines visibility refers to *ground surface visibility*, 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 (NSW National Parks and Wildlife Service ['NPWS'] 1997a: Appendix 4). Within the study area the major contributing factor that restricts visibility is vegetation cover, especially in the eastern part of the study area. The majority of the eastern part of the study area is covered by dense vegetation, obscuring much of the ground surface, and providing poor surface visibility. Despite recent drought conditions, ground surface visibility generally remained low, apart from those areas that have been subject to recent ground disturbance works (see discussion on *exposure* below). The majority of the western part of the study area consists of pasture land with some areas of exposure (e.g. eroding hill slopes, drainage lines and farm tracks), although surface visibility is generally still poor due to the grasses present in these areas.

Notwithstanding the above, Navin Officer Heritage Consultants (2000: 49-50) provide a good discussion on considerations of visibility and site obtrusiveness on the Woronora Plateau and Illawarra Escarpment. The obtrusiveness of sandstone rock shelter and overhang sites, even in heavily vegetated areas is always high, so these sites are likely to be detected during survey irrelevant of vegetation cover. In comparison, the obtrusiveness of surface sites, such as grinding grooves, engraved channels and motifs on sandstone platforms, or stone artefact scatters, which occur virtually anywhere, is low to very low because of the limited ground surface visibility described above. Within the study area it was noted that some sandstone shelves suitable for grinding grooves and channels were covered in leaf litter from bushes that grow on trapped sediment. The concept of visibility is also applicable to the surface of shelter sites when considering archaeological potential or looking for artefacts exposed in driplines (Navin Officer Heritage Consultants 2000: 49).

#### 5.3.2 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 and Smith 2004: 79, NPWS 1997a: Appendix 4). Factors that affect archaeological exposure include the natural geomorphic process acting on a landscape—whether it is aggrading, stable or eroding—and the level of previous disturbance which can expose or potentially bury sites.

The majority of the study area is a colluvial landscape (sandstone gorge country and the Razorback Range), with the remainder being a residual landscape (sandstone plateaus and Cumberland Plain). Neither of these landscapes is particularly likely to reveal buried artefacts, although residual landscapes are likely to accumulate archaeological material over long periods. Disturbance in the study area is associated with natural and human influences. Natural influences 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 scalding. Disturbance associated with recent human action is prevalent in the study area, and covers large sections of the land surface. The main human influence in the study area include agricultural and pastoral development in the north and west domains, maintained vehicle tracks for catchment and State Conservation Area management and power line easements. Overall, the study area has been subject to some disturbance in the east and south domains, and high disturbance in the north and west domains; however areas of better ground surface visibility are limited.

## 5.3.3 Safety

In general, the weather conditions did not hinder the survey effort. Heavy rains resulted in precautionary measures where wet or slippery surfaces might be encountered. There are many high cliffs and scarps in the study area, and the edges of these were not approached closer than 2 m by the survey team in accordance with ICHPL Occupational Health and Safety ('OH&S') requirements. In some areas, though not common, the vegetation is impenetrably thick, posing a risk of eye injury, falls and cuts or abrasions. Appropriate safety measures were implemented for the survey team, including the wearing of safety glasses, long sleeves and long pants. Hiking boots were also a necessity. Where possible, thick vegetation was avoided, but if avoidance was not possible every care was taken whilst travelling though the thick vegetation. These measures are not considered to have placed a limitation on the site inspection and survey effectiveness.

# 5.4 Survey Team Summary

Biosis Research staff participated in the fieldwork, with a minimum of three staff every day. The following is a list of those who participated:

- o Jamie Reeves;
- Melanie Thomson;
- o Renée Regal;
- Jenni Lennox;
- Dominic Brady;
- Jessica Herring; and
- Matthew Richardson.

Representatives from the following organisations participated in the fieldwork, conducted between 27 October 2008 – 28 November 2008 and 27 January 2009 – 29 January 2009:

- o Coomaditchie United Aboriginal Corporation;
- o Gary Caines;
- o Illawarra Local Aboriginal Land Council;
- o Korewal Elouera Jerrungarugh Tribal Elders Aboriginal Corporation;
- o Kullila Welfare and Housing Aboriginal Corporation;
- o Ngunawal Heritage Aboriginal Corporation;
- Peter Falk;
- o Tharawal Local Aboriginal Land Council;
- o Wargon and Burra Aboriginal Centre Inc; and
- o Wodi Wodi Elders Corporation.

A full record of Aboriginal community participation is presented in Appendix 2.

The Aboriginal cultural heritage field surveys conducted during October and November 2008, and January 2009 resulted in a total survey effort of approximately 291 person days. The weather conditions for the survey were generally mild to hot, with some overcast days and some occasional showers, during the survey period.

## 6.0 SITE INSPECTION AND SURVEY RESULTS

## 6.1 Aboriginal Participation

As described in Section 2.1.5 and Section 5.4, registered Aboriginal stakeholders participated and provided input into the site inspections and survey. The representatives have contributed input into the survey methods used, and have been asked to provide comment on the cultural significance of the locality and any archaeological objects or areas that were recorded during this survey. A full description of the Aboriginal consultation and general involvement in the Aboriginal Cultural Heritage Assessment is provided in Section 2.0, a table summarising the participation of registered Aboriginal stakeholders is presented in Appendix 2, and advice received from registered Aboriginal stakeholders in response to the draft version of this report is reproduced in Appendix 3.

# 6.2 Condition of the Study Area

Observations during the survey confirmed that much of the study area is undisturbed, due to reservation as catchment areas (thus having restricted access for over 100 years) and state conservation area. This has allowed many Aboriginal sites to remain relatively undisturbed. The study area is dissected by the Woronora, Georges and Nepean Rivers and their smaller tributaries, resulting in features that contain overhangs suitable for habitation. The steep gorges of the eastern part of the study area also provide areas of sandstone outcrop which are suitable for overhangs and grinding groove and engravings. Generally disturbance in the eastern part of the study area is limited to impacts in discrete locations (dams and associated infrastructure; previous mine shafts; former quarries/extraction pits) and linear development (roads, electricity easements).

The western part of the study area is more disturbed as it predominately comprises pastureland, dissected by smaller watercourses. Sites in this area consist mostly of PADs, stone artefact sites and occasional sandstone shelters along drainage lines. Two scarred trees were also present in this area. During the survey it was noted that agricultural use of parts of the study area has resulted in the removal of vegetation that has subsequently caused high levels of erosion on some hill slopes and along creek lines and drainage features.

# 6.3 Sites within the Study Area

A total of 632 sites have been recorded within the study area, including 44 new sites located during the Project surveys undertaken as part of the fieldwork program in October and November 2008 and January 2009. Sites within the study area include:

- o 173 sandstone platforms with grinding grooves/engravings (28% of all sites);
- o 240 sandstone shelters with art/grinding grooves/engraving/deposit (38% of all sites);
- o 33 sandstone shelters with deposit only (5% of all sites);
- o 100 artefact sites (16% of all sites);
- o 8 scarred tree sites (1% of all sites); and
- o 78 PADs (including shelters with PAD only) (12% of all sites).

The 44 new sites identified include 11 sandstone platforms with grinding grooves/engravings, 19 sandstone shelters with art/grinding grooves/engraving/deposit, two sandstone shelters with deposit only and 12 artefact sites (Table 4).

Table 4. Results of Survey - New Sites

Site Type	Number	Site Type %
PAD	0	0
Sandstone Platform with Grinding Groove/Engraving	11	25
Sandstone Shelter with Art/Grinding Groove/Engraving/Deposit	19	43
Sandstone Shelter with Deposit only	2	5
Scarred Tree	0	0
Stone Artefact(s)	12	27
Total	44	100

Detailed review and analysis of the AHIMS data combined with field observations has identified numerous sites that have multiple separate AHIMS entries and variations on co-ordinates. Where possible, these duplicates have been corrected with multiple records of single sites combined in Table 5 and the locations on Figures 3 to 11 updated to reflect the most accurate and recent co-ordinate data.

Table 5 summarises the 632 known sites located within the study area.

Table 5. Aboriginal sites located within the study area

Site Code (refer to Figures 3 to 11)	AHIMS Site ID	Site Type	Archaeological Significance	Sites Inspected
48-2-0005	48-2-0005	Sandstone Shelter with Deposit only	Low	Yes
48-2-0006	48-2-0006	Sandstone Shelter with Deposit only	Low	No
48-2-0007; 3589	48-2-0007; 52-2-3589	Sandstone Shelter with Deposit only	Low	Yes
48-2-0008	48-2-0008	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
48-2-0009	48-2-0009	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
48-2-0010	48-2-0010	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
48-2-0011	48-2-0011	Stone Artefact(s)	Moderate	No
11	52-2-0011	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Yes
12	52-2-0012	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
14	52-2-0014	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
21	52-2-0021	Stone Artefact(s)	Low	Attempted
62; 796	52-2-0062; 52-2-0796	Sandstone Platform with Grinding Groove / Engraving	High	Yes
102	52-2-0102	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
228	52-2-0228	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
238	52-2-0238	Sandstone Platform with Grinding Groove / Engraving	Low	No
239; 334; 365	52-2-0239; 52-2-0334; 52-2-0365	Sandstone Platform with Grinding Groove / Engraving	Moderate	Yes <sup>1</sup>
242	52-2-0242	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
243	52-2-0243	Sandstone Platform with Grinding Groove / Engraving	Low	Attempted
244	52-2-0244	Sandstone Platform with Grinding Groove / Engraving	Low	No
267	52-2-0267	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Attempted
270	52-2-0270	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
278	52-2-0278	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
279	52-2-0279	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Attempted
280	52-2-0280	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	High	Yes
281	52-2-0281	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Yes
282; 982	52-2-0282; 52-2-0982	Sandstone Platform with Grinding Groove / Engraving	High	Yes
287	52-2-0287	Stone Artefact(s)	Low	Attempted
288	52-2-0288	Stone Artefact(s)	Low	Attempted
289	52-2-0289	Stone Artefact(s)	Low	Attempted
290	52-2-0290	Sandstone Platform with Grinding Groove / Engraving	Low	Attempted
293	52-2-0293	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
294	52-2-0294	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Attempted
295	52-2-0295	Sandstone Shelter with Deposit only	Low	Attempted
296	52-2-0296	Sandstone Platform with Grinding Groove / Engraving	Low	No
299	52-2-0299	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Attempted
300	52-2-0300	Sandstone Platform with Grinding Groove / Engraving	Moderate	Attempted
301	52-2-0301	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
303	52-2-0303	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
304	52-2-0304	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
311	52-2-0311	Sandstone Platform with Grinding Groove / Engraving	Low	No
312; 784	52-2-0312; 52-2-0784	Sandstone Platform with Grinding Groove / Engraving	High	Yes
313; 790	52-2-0313; 52-2-0790	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Attempted
314; 785	52-2-0314; 52-2-785	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	High	Attempted
316; 788	52-2-0316; 52-2-0788	Sandstone Platform with Grinding Groove / Engraving	Low	Attempted
318	52-2-0318	Sandstone Platform with Grinding Groove / Engraving	Low	Attempted
331	52-2-0331	Sandstone Platform with Grinding Groove / Engraving	Moderate	No

Site Code (refer to Figures 3 to 11)	AHIMS Site ID	Site Type	Archaeological Significance	Sites Inspected
348	52-2-0348	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
349	52-2-0349	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
351; 794	52-2-0351; 52-2-0794	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Yes
358	52-2-0358	Stone Artefact(s)	Low	No
359	52-2-0359	Sandstone Platform with Grinding Groove / Engraving	Low	No
360	52-2-0360	Stone Artefact(s)	Low	No
361	52-2-0361	Sandstone Shelter with Deposit only	Low	No
362; 567	52-2-0362; 52-2-0567	Sandstone Platform with Grinding Groove / Engraving	High	Attempted
364	52-2-0364	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
390	52-2-0390	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
410	52-2-0410	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
411	52-2-0411	Sandstone Shelter with Deposit only	Low	Yes
417	52-2-0417	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	N/A*	No
419	52-2-0419	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
426	52-2-0426	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
429	52-2-0429	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	N/A*	No
431	52-2-0431	Sandstone Platform with Grinding Groove / Engraving	Low	No
432	52-2-0432	Sandstone Platform with Grinding Groove / Engraving	Low	No
433	52-2-0433	Sandstone Platform with Grinding Groove / Engraving	Low	No
434	52-2-0434	Sandstone Platform with Grinding Groove / Engraving	Low	Attempted
435	52-2-0435	Sandstone Platform with Grinding Groove / Engraving	Low	No
436	52-2-0436	Stone Artefact(s)	Low	Attempted
437	52-2-0437	Stone Artefact(s)	Low	No
438	52-2-0438	Stone Artefact(s)	Moderate	Yes
439	52-2-0439	Sandstone Platform with Grinding Groove / Engraving	Low	No
440	52-2-0440	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
441; 1382	52-2-0441; 52-2-1382	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
442	52-2-0442	Sandstone Platform with Grinding Groove / Engraving	Low	Attempted
443	52-2-0443	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
444	52-2-0444	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
445	52-2-0445	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
446	52-2-0446	Sandstone Platform with Grinding Groove / Engraving	Low	Attempted
447	52-2-0447	Sandstone Platform with Grinding Groove / Engraving	Moderate	Attempted
448	52-2-0448	Sandstone Platform with Grinding Groove / Engraving	Low	No
449	52-2-0449	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Attempted
467	52-2-0467	Sandstone Shelter with Deposit only	N/A*	No
468	52-2-0468	Stone Artefact(s)	N/A*	No
469	52-2-0469	Sandstone Platform with Grinding Groove / Engraving	N/A*	No
479	52-2-0479	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Yes
494	52-2-0494	Sandstone Platform with Grinding Groove / Engraving	Moderate	Yes
495	52-2-0495	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
496	52-2-0496	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
502	52-2-0502	Sandstone Platform with Grinding Groove / Engraving	Low	No
503	52-2-0503	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
504	52-2-0504	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
505	52-2-0505	Sandstone Shelter with Deposit only	Low	No
506	52-2-0506	Sandstone Platform with Grinding Groove / Engraving	Low	No
507	52-2-0507	Sandstone Platform with Grinding Groove / Engraving	Low	No

Site Code (refer to Figures 3 to 11)	AHIMS Site ID	Site Type	Archaeological Significance	Sites Inspected
508	52-2-0508	Stone Artefact(s)	Low	No
555	52-2-0555	Sandstone Platform with Grinding Groove / Engraving	Low	No
556	52-2-0556	Sandstone Platform with Grinding Groove / Engraving	Low	No
557	52-2-0557	Sandstone Platform with Grinding Groove / Engraving	Low	No
558	52-2-0558	Sandstone Shelter with Deposit only	Low	No
559	52-2-0559	Sandstone Platform with Grinding Groove / Engraving	Low	No
560	52-2-0560	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
561	52-2-0561	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Attempted
562	52-2-0562	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
563	52-2-0563	Sandstone Platform with Grinding Groove / Engraving	Low	No
564	52-2-0564	Sandstone platform with Grinding Groove / Engraving	High	Yes <sup>1</sup>
565	52-2-0565	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
566	52-2-0566	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
568	52-2-0568	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
569	52-2-0569	Sandstone Platform with Grinding Groove / Engraving	Moderate	Yes
571	52-2-0571	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
572	52-2-0572	Sandstone Platform with Grinding Groove / Engraving	Low	Attempted
573	52-2-0573	Sandstone Platform with Grinding Groove / Engraving	Low	Attempted
576; 743	52-2-0576; 52-2-0743	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Yes
578	52-2-0578	Sandstone Platform with Grinding Groove / Engraving	Low	No
579	52-2-0579	Sandstone Platform with Grinding Groove / Engraving	Low	No
580	52-2-0580	Sandstone Platform with Grinding Groove / Engraving	Low	Attempted
581	52-2-0581	Sandstone Platform with Grinding Groove / Engraving	Low	No
582	52-2-0582	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
583	52-2-0583	Sandstone Platform with Grinding Groove / Engraving	Moderate	Yes
584	52-2-0584	Sandstone Platform with Grinding Groove / Engraving	Low	No
586	52-2-0586	Sandstone Platform with Grinding Groove / Engraving	Low	No
591	52-2-0591	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
592	52-2-0592	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
593	52-2-0593	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
594	52-2-0594	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
595	52-2-0595	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
596	52-2-0596	Sandstone Platform with Grinding Groove / Engraving	Low	No
597	52-2-0597	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
598	52-2-0598	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Attempted
599	52-2-0599	Sandstone Platform with Grinding Groove / Engraving	Low	No
600	52-2-0600	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Attempted
601	52-2-0601	Stone Artefact(s)	Low	Attempted
602	52-2-0602	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Attempted
604	52-2-0604	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
605	52-2-0605	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Attempted
606	52-2-0606	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
607	52-2-0607	Sandstone Shelter with Deposit only	Low	Attempted
608	52-2-0608	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Attempted
609	52-2-0609	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
610	52-2-0610	Sandstone Platform with Grinding Groove / Engraving	Low	Attempted
652	52-2-0652	Sandstone Platform with Grinding Groove / Engraving	Moderate	No
661	52-2-0661	Sandstone Platform with Grinding Groove / Engraving	Low	No

Site Code (refer to Figures 3 to 11)	AHIMS Site ID	Site Type	Archaeological Significance	Sites Inspected
662	52-2-0662	Sandstone Platform with Grinding Groove / Engraving	Low	No
663	52-2-0663	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
664	52-2-0664	Sandstone Platform with Grinding Groove / Engraving	Low	No
666	52-2-0666	Sandstone Platform with Grinding Groove / Engraving	Low	Attempted
667	52-2-0667	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
668	52-2-0668	Sandstone Shelter with Deposit only	Low	Yes
669	52-2-0669	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
670	52-2-0670	Sandstone Platform with Grinding Groove / Engraving	Moderate	Yes
671	52-2-0671	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
672	52-2-0672	Sandstone Platform with Grinding Groove / Engraving	Moderate	Attempted
673	52-2-0673	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
693	52-2-0693	Sandstone Platform with Grinding Groove / Engraving	Low	Attempted
694	52-2-0694	Sandstone Platform with Grinding Groove / Engraving	Low	Attempted
695	52-2-0695	Sandstone Platform with Grinding Groove / Engraving	Moderate	Yes
696	52-2-0696	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
697	52-2-0697	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
698	52-2-0698	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
699	52-2-0699	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
700	52-2-0700	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
701	52-2-0701	Sandstone Platform with Grinding Groove / Engraving	Low	No
702	52-2-0702	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
703	52-2-0703	Sandstone Platform with Grinding Groove / Engraving	Low	No
704	52-2-0704	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
705	52-2-0705	Sandstone Platform with Grinding Groove / Engraving	Low	No
706	52-2-0706	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
707	52-2-0707	Sandstone Platform with Grinding Groove / Engraving	High	Yes
708	52-2-0708	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
709	52-2-0709	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
710	52-2-0710	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
711	52-2-0711	Sandstone Platform with Grinding Groove / Engraving	Low	No
712	52-2-0712	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Attempted
713	52-2-0713	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
714	52-2-0714	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
715	52-2-0715	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Attempted
716	52-2-0716	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
717	52-2-0717	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
718	52-2-0718	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Yes
719	52-2-0719	Sandstone Platform with Grinding Groove / Engraving	Low	No
720	52-2-0720	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
748	52-2-0748	Sandstone Platform with Grinding Groove / Engraving	Low	No
759	52-2-0759	Sandstone Platform with Grinding Groove / Engraving	Low	No
761	52-2-0761	Sandstone Platform with Grinding Groove / Engraving	Low	No
762	52-2-0762	Sandstone Shelter with Deposit only	Low	No
763	52-2-0763	Sandstone Platform with Grinding Groove / Engraving	Low	No
765	52-2-0765	Sandstone Platform with Grinding Groove / Engraving	N/A*	No
767	52-2-0767	Stone Artefact(s)	N/A*	No
768	52-2-0768	Stone Artefact(s)	N/A*	No
769	52-2-0769	Stone Artefact(s)	N/A*	No

Site Code (refer to Figures 3 to 11)	AHIMS Site ID	Site Type	Archaeological Significance	Sites Inspected
779	52-2-0779	Sandstone Platform with Grinding Groove / Engraving	N/A*	Yes
780	52-2-0780	Sandstone Platform with Grinding Groove / Engraving	Moderate	Yes
781	52-2-0781	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
782	52-2-0782	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
783	52-2-0783	Sandstone Platform with Grinding Groove / Engraving	Low	No
786	52-2-0786	Sandstone Platform with Grinding Groove / Engraving	Low	No
787	52-2-0787	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Attempted
789	52-2-0789	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
791	52-2-0791	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
793	52-2-0793	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Attempted
795	52-2-0795	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
797	52-2-0797	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
798	52-2-0798	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
799	52-2-0799	Sandstone Platform with Grinding Groove / Engraving	Low	No
808	52-2-0808	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
809	52-2-0809	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
810	52-2-0810	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
811	52-2-0811	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
812	52-2-0812	Sandstone Platform with Grinding Groove / Engraving	High	Yes
813	52-2-0813	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Yes
814	52-2-0814	Sandstone Platform with Grinding Groove / Engraving	Low	No
815	52-2-0815	Sandstone Platform with Grinding Groove / Engraving	Low	No
816	52-2-0816	Sandstone Platform with Grinding Groove / Engraving	Low	No
817	52-2-0817	Sandstone Platform with Grinding Groove / Engraving	Low	No
818	52-2-0818	Sandstone Platform with Grinding Groove / Engraving	Low	No
819	52-2-0819	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
845	52-2-0845	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
846	52-2-0846	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
849	52-2-0849	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
854	52-2-0854	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	High	Attempted
884	52-2-0884	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
907	52-2-0907	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
908	52-2-0908	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Attempted
920	52-2-0920	Sandstone Platform with Grinding Groove / Engraving	Low	No
921	52-2-0921	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
922	52-2-0922	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
923	52-2-0923	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
924	52-2-0924	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Yes
925	52-2-0925	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
929	52-2-0929	Sandstone Shelter with Deposit only	Low	Yes
930	52-2-0930	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
931	52-2-0931	Sandstone Platform with Grinding Groove / Engraving	Moderate	Yes
932	52-2-0932	Sandstone Platform with Grinding Groove / Engraving	Low	No
936	52-2-0936	Sandstone Platform with Grinding Groove / Engraving	Low	No
940	52-2-0940	Sandstone Platform with Grinding Groove / Engraving	Low	Attempted
941	52-2-0941	Sandstone Platform with Grinding Groove / Engraving	Low	Attempted
942	52-2-0942	Sandstone Platform with Grinding Groove / Engraving	Low	Attempted
943	52-2-0943	Sandstone Platform with Grinding Groove / Engraving	Low	No

Site Code (refer to Figures 3 to 11)	AHIMS Site ID	Site Type	Archaeological Significance	Sites Inspected
945	52-2-0945	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Attempted
946	52-2-0946	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Attempted
949	52-2-0949	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
950	52-2-0950	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
951	52-2-0951	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
952	52-2-0952	Sandstone Platform with Grinding Groove / Engraving	Low	No
953	52-2-0953	Sandstone Platform with Grinding Groove / Engraving	Low	No
967	52-2-0967	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
969	52-2-0969	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
970	52-2-0970	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
971	52-2-0971	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
972	52-2-0972	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
973	52-2-0973	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Yes
977	52-2-0977	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
978	52-2-0978	Sandstone Platform with Grinding Groove / Engraving	Low	Attempted
979	52-2-0979	Sandstone Platform with Grinding Groove / Engraving	Low	No
980	52-2-0980	Sandstone Platform with Grinding Groove / Engraving	Low	No
981	52-2-0981	Sandstone Platform with Grinding Groove / Engraving	Low	No
989	52-2-0989	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
990	52-2-0990	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
993	52-2-0993	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
995	52-2-0995	Sandstone Platform with Grinding Groove / Engraving	Low	Attempted
996	52-2-0996	Sandstone Platform with Grinding Groove / Engraving	Low	No
997	52-2-0997	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
998	52-2-0998	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1000	52-2-1000	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1001	52-2-1001	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1002	52-2-1002	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
1003	52-2-1003	Sandstone Platform with Grinding Groove / Engraving	Low	Attempted
1006	52-2-1006	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	High	Yes
1007	52-2-1007	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1063	52-2-1063	Sandstone Shelter with Deposit only	Low	Yes
1065	52-2-1065	Sandstone Platform with Grinding Groove / Engraving	Low	Attempted
1072	52-2-1072	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1073	52-2-1073	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1074	52-2-1074	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1075	52-2-1075	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1106	52-2-1106	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1109	52-2-1109	Sandstone Platform with Grinding Groove / Engraving	Low	No
1110	52-2-1110	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1122; 1129	52-2-1122; 52-2-1129	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
1124	52-2-1124	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1125	52-2-1125	Sandstone Platform with Grinding Groove / Engraving	Low	No
1126	52-2-1126	Sandstone Platform with Grinding Groove / Engraving	Low	No
1130	52-2-1130	Sandstone Platform with Grinding Groove / Engraving	Low	No
1148	52-2-1148	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1165	52-2-1165	Sandstone Platform with Grinding Groove / Engraving	Moderate	Attempted
1173	52-2-1173	Sandstone Platform with Grinding Groove / Engraving	Moderate	Yes <sup>1</sup>

Site Code (refer to Figures 3 to 11)	AHIMS Site ID	Site Type	Archaeological Significance	Sites Inspected
1174	52-2-1174	Sandstone Platform with Grinding Groove / Engraving	Low	No
1175	52-2-1175	Sandstone Platform with Grinding Groove / Engraving	Low	No
1176	52-2-1176	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
1177	52-2-1177	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
1185	52-2-1185	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Yes
1190	52-2-1190	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1193	52-2-1193	Sandstone Platform with Grinding Groove / Engraving	Low	No
1194	52-2-1194	Sandstone Platform with Grinding Groove / Engraving	Low	No
1199	52-2-1199	Sandstone Shelter with Deposit only	Low	No
1202	52-2-1202	Sandstone Platform with Grinding Groove / Engraving	Low	No
1209	52-2-1209	Sandstone Platform with Grinding Groove / Engraving	Low	No
1210	52-2-1210	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1211	52-2-1211	Sandstone Platform with Grinding Groove / Engraving	Low	No
1212	52-2-1212	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1213	52-2-1213	Sandstone Platform with Grinding Groove / Engraving	Low	No
1214	52-2-1214	Stone Artefact(s)	Low	No
1220	52-2-1220	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1227	52-2-1227	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1228	52-2-1228	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1229	52-2-1229	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1230	52-2-1230	Sandstone Shelter with Deposit only	Moderate	Yes
1231	52-2-1231	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1232	52-2-1232	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1233	52-2-1233	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1234	52-2-1234	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1235	52-2-1235	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1237	52-2-1237	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1243	52-2-1243	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1244	52-2-1244	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1246	52-2-1246	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1260	52-2-1260	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1261	52-2-1261	Sandstone Platform with Grinding Groove / Engraving	Low	No
1270	52-2-1270	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1272	52-2-1272	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
1273	52-2-1273	Sandstone Platform with Grinding Groove / Engraving	Moderate	Yes
1274	52-2-1274	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
1275	52-2-1275	Sandstone Shelter with Deposit only	High	Yes
1281	52-2-1281	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
1282	52-2-1282	Sandstone Shelter with Deposit only	High	Yes
1284	52-2-1284	Sandstone Shelter with Deposit only	Low	No
1311; 3588	52-2-1311; 52-2-3588	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
1312	52-2-1312	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
1313	52-2-1313	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1314	52-2-1314	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
1315	52-2-1315	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Yes
1317	52-2-1317	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1318	52-2-1318	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1319	52-2-1319	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No

Site Code (refer to Figures 3 to 11)	AHIMS Site ID	Site Type	Archaeological Significance	Sites Inspected
1365	52-2-1365	Stone Artefact(s)	Low	Yes
1366	52-2-1366	Sandstone Platform with Grinding Groove / Engraving	Low	No
1373	52-2-1373	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Yes
1379	52-2-1379	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1381	52-2-1381	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1384	52-2-1384	Sandstone Platform with Grinding Groove / Engraving	Low	Attempted
1385	52-2-1385	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
1386	52-2-1386	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
1387	52-2-1387	Sandstone Platform with Grinding Groove / Engraving	Low	Attempted
1389	52-2-1389	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1491	52-2-1491	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1497	52-2-1497	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	N/A*	No
1498	52-2-1498	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1516	52-2-1516	Sandstone Platform with Grinding Groove / Engraving	Low	Attempted
1517	52-2-1517	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1518	52-2-1518	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1519	52-2-1519	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1594	52-2-1594	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
1595	52-2-1595	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
1597	52-2-1597	Stone Artefact(s)	Low	No
1607	52-2-1607	Stone Artefact(s)	Low	No
1654	52-2-1654	Sandstone Platform with Grinding Groove / Engraving	Low	No
1655	52-2-1655	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1657	52-2-1657	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1658	52-2-1658	Sandstone Platform with Grinding Groove / Engraving	Moderate	Yes
1659	52-2-1659	Stone Artefact(s)	Low	No
1660	52-2-1660	Stone Artefact(s)	Low	No
1661	52-2-1661	Stone Artefact(s)	Low	No
1662	52-2-1662	Stone Artefact(s)	Low	Yes
1663	52-2-1663	Stone Artefact(s)	Low	Yes
1664	52-2-1664	Stone Artefact(s)	Low	No
1680	52-2-1680	Scarred Tree	N/A*	No
1681	52-2-1681	Stone Artefact(s)	Low	No
1682	52-2-1682	Sandstone Shelter with Deposit only	N/A*	No
1798	52-2-1798	Stone Artefact(s)	Low	No
1876	52-2-1876	Sandstone Shelter with Deposit only	Moderate	Yes
1878	52-2-1878	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1921	52-2-1921	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1922	52-2-1922	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
1924	52-2-1924	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
2034	52-2-2034	Sandstone Platform with Grinding Groove / Engraving	Low	No
2036	52-2-2036	Sandstone Platform with Grinding Groove / Engraving	Low	No
2041	52-2-2041	Sandstone Platform with Grinding Groove / Engraving	Low	No
2052	52-2-2052	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Yes <sup>1</sup>
2061; 2102	52-2-2061; 52-2-2102	Sandstone Shelter with Deposit Only	Low	Yes <sup>1</sup>
2062; 2104	52-2-2062; 52-2-2104	Sandstone Shelter with Deposit Only	Low	Yes <sup>1</sup>
2063; 2105	52-2-2063; 52-5-2105	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Yes <sup>1</sup>
2064	52-2-2064	Sandstone Platform with Grinding Groove / Engraving	Low	No

Site Code (refer to Figures 3 to 11)	AHIMS Site ID	Site Type	Archaeological Significance	Sites Inspected
2065; 2106	52-2-2065; 52-2-2106	Sandstone Platform with Grinding Groove / Engraving	Moderate	Yes <sup>1</sup>
2066; 2113	52-2-2066; 52-2-2113	Sandstone Shelter with Deposit only	Low	Yes <sup>1</sup>
2074; 2075; 2092	52-2-2074; 52-2-2075; 52-2-2092	Sandstone Shelter with Deposit only	Moderate	Yes
2094	52-2-2094	Sandstone Shelter with Deposit only	Low	No
2095	52-2-2095	Sandstone Shelter with Deposit only	Low	No
2096	52-2-2096	Scarred Tree	Moderate	Yes1
2097	52-2-2097	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
2098	52-2-2098	Sandstone Shelter with Deposit only	Low	No
2099	52-2-2099	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Yes
2110	52-2-2110	Stone Artefact(s)	Moderate	Yes
2228; 3617	52-2-2228; 52-2-3617	Sandstone Shelter with Deposit only	Low	Yes
2234	52-2-2234	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
2235	52-2-2235	Stone Artefact(s)	Low	No
2236	52-2-2236	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
2237	52-2-2237	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
2238	52-2-2238	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
2239	52-2-2239	Stone Artefact(s)	Low	No
2240	52-2-2240	Stone Artefact(s)	Moderate	Yes <sup>1</sup>
2241	52-2-2241	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
2242	52-2-2242	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
2243	52-2-2243	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
2244	52-2-2244	Stone Artefact(s)	Low	No
2250	52-2-2250	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
2264	52-2-2264	Stone Artefact(s)	Low	No
2265	52-2-2265	Stone Artefact(s)	Low	Attempted
2266	52-2-2266	Stone Artefact(s)	Low	No
2267	52-2-2267	Stone Artefact(s)	Low	No
2268	52-2-2268	Stone Artefact(s)	Low	No
2292	52-2-2292	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
2294	52-2-2294	Stone Artefact(s)	Low	Yes
2299	52-2-2299	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
2300	52-2-2300	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
2321	52-2-2321	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
2325	52-2-2325	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
2326	52-2-2326	Potential Archaeological Deposit	PAD	No
2330	52-2-2330	Potential Archaeological Deposit	PAD	No
2409	52-2-2409	Potential Archaeological Deposit	PAD	No
2410	52-2-2410	Potential Archaeological Deposit	PAD	No
2411	52-2-2411	Potential Archaeological Deposit	PAD	No
2413	52-2-2413	Potential Archaeological Deposit	PAD	No
2414	52-2-2414	Potential Archaeological Deposit	PAD	No
2415	52-2-2415	Potential Archaeological Deposit	PAD	No
2432	52-2-2432	Potential Archaeological Deposit	PAD	No
2433	52-2-2433	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
2435	52-2-2435	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
2458	52-2-2458	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
2459	52-2-2459	Sandstone Platform with Grinding Groove / Engraving	Moderate	Yes

Site Code (refer to Figures 3 to 11)	AHIMS Site ID	Site Type	Archaeological Significance	Sites Inspected
2460	52-2-2460	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
2462	52-2-2462	Potential Archaeological Deposit	PAD	No
2463	52-2-2463	Stone Artefact(s)	Low	No
2464	52-2-2464	Potential Archaeological Deposit	PAD	No
2490	52-2-2490	Stone Artefact(s)	Low	No
2500	52-2-2500	Potential Archaeological Deposit	PAD	No
2503	52-2-2503	Potential Archaeological Deposit	PAD	No
2602	52-2-2602	Stone Artefact(s)	Low	No
2615	52-2-2615	Potential Archaeological Deposit	PAD	No
2616	52-2-2616	Potential Archaeological Deposit	PAD	No
2617	52-2-2617	Potential Archaeological Deposit	PAD	No
2618	52-2-2618	Potential Archaeological Deposit	PAD	No
2619	52-2-2619	Potential Archaeological Deposit	PAD	No
2620	52-2-2620	Potential Archaeological Deposit	PAD	No
2621	52-2-2621	Potential Archaeological Deposit	PAD	No
2670	52-2-2670	Stone Artefact(s)	Low	No
2682	52-2-2682	Sandstone Platform with Grinding Groove / Engraving	Low	No
2684	52-2-2684	Potential Archaeological Deposit	PAD	No
2687	52-2-2687	Potential Archaeological Deposit	PAD	No
2699	52-2-2699	Potential Archaeological Deposit	PAD	No
2700	52-2-2700	Potential Archaeological Deposit	PAD	No
2716	52-2-2716	Sandstone Platform with Grinding Groove / Engraving	N/A*	No
2721	52-2-2721	Potential Archaeological Deposit	PAD	No
2722	52-2-2722	Potential Archaeological Deposit	PAD	No
2724	52-2-2724	Potential Archaeological Deposit	PAD	No
2767	52-2-2767	Potential Archaeological Deposit	PAD	No
2770	52-2-2770	Potential Archaeological Deposit	PAD	No
2773	52-2-2773	Potential Archaeological Deposit	PAD	No
2775	52-2-2775	Potential Archaeological Deposit	PAD	No
2778	52-2-2778	Sandstone Platform with Grinding Groove / Engraving	N/A*	No
2780	52-2-2780	Potential Archaeological Deposit	PAD	No
2781	52-2-2781	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	N/A*	No
2782	52-2-2782	Potential Archaeological Deposit	PAD	No
2786	52-2-2786	Scarred Tree	N/A*	No
2789	52-2-2789	Potential Archaeological Deposit	PAD	No
2797	52-2-2797	Scarred Tree	N/A*	No
2800	52-2-2800	Potential Archaeological Deposit	PAD	No
2819	52-2-2819	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
2820	52-2-2820	Potential Archaeological Deposit	PAD	No
2821	52-2-2821	Potential Archaeological Deposit	PAD	No
2822	52-2-2822	Potential Archaeological Deposit	PAD	No
2823	52-2-2823	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
2827	52-2-2827	Potential Archaeological Deposit	PAD	No
2830	52-2-2830	Potential Archaeological Deposit	PAD	No
2831	52-2-2831	Potential Archaeological Deposit	PAD	No
2832	52-2-2832	Potential Archaeological Deposit	PAD	No
2833	52-2-2833	Potential Archaeological Deposit	PAD	No
2834	52-2-2834	Potential Archaeological Deposit	PAD	No

Site Code (refer to Figures 3 to 11)	AHIMS Site ID	Site Type	Archaeological Significance	Sites Inspected
2835	52-2-2835	Potential Archaeological Deposit	PAD	No
2836	52-2-2836	Potential Archaeological Deposit	PAD	No
2837	52-2-2837	Potential Archaeological Deposit	PAD	No
2838	52-2-2838	Potential Archaeological Deposit	PAD	No
2839	52-2-2839	Potential Archaeological Deposit	PAD	No
2840	52-2-2840	Potential Archaeological Deposit	PAD	No
2841	52-2-2841	Potential Archaeological Deposit	PAD	No
2842	52-2-2842	Potential Archaeological Deposit	PAD	No
2843	52-2-2843	Potential Archaeological Deposit	PAD	No
2844	52-2-2844	Potential Archaeological Deposit	PAD	No
2845	52-2-2845	Potential Archaeological Deposit	PAD	No
2846	52-2-2846	Sandstone Shelter with Deposit only	Low	No
2847	52-2-2847	Potential Archaeological Deposit	PAD	No
2848	52-2-2848	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
2849	52-2-2849	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
2850	52-2-2850	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
2852	52-2-2852	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
2857	52-2-2857	Potential Archaeological Deposit	PAD	No
2859	52-2-2859	Potential Archaeological Deposit	PAD	No
2863	52-2-2863	Potential Archaeological Deposit	PAD	No
2865	52-2-2865	Potential Archaeological Deposit	PAD	No
2900	52-2-2900	Potential Archaeological Deposit	PAD	No
2902	52-2-2902	Potential Archaeological Deposit	PAD	No
2904	52-2-2904	Potential Archaeological Deposit	PAD	No
2951	52-2-2951	Potential Archaeological Deposit	PAD	No
2952	52-2-2952	Potential Archaeological Deposit	PAD	No
2953	52-2-2953	Potential Archaeological Deposit	PAD	No
2954	52-2-2954	Potential Archaeological Deposit	PAD	No
2974	52-2-2974	Potential Archaeological Deposit	PAD	No
3021	52-2-3021	Potential Archaeological Deposit	PAD	No
3022	52-2-3022	Potential Archaeological Deposit	PAD	No
3023	52-2-3023	Stone Artefact(s)	Low	No
3026	52-2-3026	Stone Artefact(s)	Low	Yes
3027	52-2-3027	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Yes
3028	52-2-3028	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	N/A*	No
3029	52-2-3029	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	N/A*	No
3030	52-2-3030	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	N/A*	No
3031	52-2-3031	Stone Artefact(s)	N/A*	No
3032	52-2-3032	Stone Artefact(s)	Low	Yes
3033	52-2-3033	Stone Artefact(s)	Low	Yes
3034	52-2-3034	Stone Artefact(s)	Low	Yes
3035	52-2-3035	Stone Artefact(s)	Moderate	Attempted
3036	52-2-3036	Stone Artefact(s)	Moderate	Attempted
3037	52-2-3037	Stone Artefact(s)	N/A*	No
3038	52-2-3038	Potential Archaeological Deposit	PAD	No
3039	52-2-3039	Potential Archaeological Deposit	PAD	No
3053	52-2-3053	Stone Artefact(s)	N/A*	No
3054	52-2-3054	Potential Archaeological Deposit	PAD	No

Site Code (refer to Figures 3 to 11)	AHIMS Site ID	Site Type	Archaeological Significance	Sites Inspected
3056	52-2-3056	Stone Artefact(s)	Low	No
3070	52-2-3070	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Attempted
3071	52-2-3071	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
3072	52-2-3072	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
3073	52-2-3073	Sandstone Platform with Grinding Groove / Engraving	Low	No
3094	52-2-3094	Sandstone Platform with Grinding Groove / Engraving	Low	Attempted
3136	52-2-3136	Sandstone Platform with Grinding Groove / Engraving	Low	Attempted
3190	52-2-3190	Stone Artefact(s)	Low	No
3191	52-2-3191	Stone Artefact(s)	Low	No
3192	52-2-3192	Stone Artefact(s)	Low	No
3193	52-2-3193	Stone Artefact(s)	Low	No
3194	52-2-3194	Stone Artefact(s)	Low	No
3195	52-2-3195	Stone Artefact(s)	Low	No
3212	52-2-3212	Stone Artefact(s)	Low	Yes
3213	52-2-3213	Stone Artefact(s)	Low	Attempted
3214	52-2-3214	Stone Artefact(s)	Low	Yes
3215	52-2-3215	Stone Artefact(s)	Low	No
3216	52-2-3216	Stone Artefact(s)	Low	Yes
3217	52-2-3217	Stone Artefact(s)	Low	Yes
3218	52-2-3218	Stone Artefact(s)	Low	Yes
3219	52-2-3219	Scarred Tree	Moderate	Yes
3220	52-2-3220	Potential Archaeological Deposit	PAD	Yes
3224	52-2-3224	Stone Artefact(s)	Low	No
3226	52-2-3226	Stone Artefact(s)	Low	No
3227	52-2-3227	Stone Artefact(s)	Low	No
3228	52-2-3228	Stone Artefact(s)	Low	No
3229	52-2-3229	Stone Artefact(s)	Low	No
3230	52-2-3230	Stone Artefact(s)	Low	No
3231	52-2-3231	Stone Artefact(s)	Low	No
3232	52-2-3232	Stone Artefact(s)	Low	No
3234	52-2-3234	Stone Artefact(s)	Moderate	Attempted
3235	52-2-3235	Stone Artefact(s)	Low	No
3236	52-2-3236	Stone Artefact(s)	Low	No
3242	52-2-3242	Scarred Tree	Moderate	Yes
3251	52-2-3251	Stone Artefact(s)	Moderate	Attempted
3269	52-2-3269	Potential Archaeological Deposit	PAD	No
3302	52-2-3302	Stone Artefact(s)	N/A*	No
3468	52-2-3468	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
3470	52-2-3470	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
3474	52-2-3474	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	No
3504	52-2-3504	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Yes
3505	52-2-3505	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	High	Yes
3506	52-2-3506	Potential Archaeological Deposit	PAD	Yes
3508	52-2-3508	Stone Artefact(s)	Low	Yes
3525	52-2-3525	Stone Artefact(s)	N/A*	No
3533; 3616	52-2-3533; 52-2-3616	Sandstone Shelter with Deposit only	Moderate	Yes
3571	52-2-3571	Potential Archaeological Deposit	PAD	No
3572	52-2-3572	Scarred Tree	Low <sup>2</sup>	Yes <sup>1</sup>

Site Code (refer to Figures 3 to 11)	AHIMS Site ID	Site Type	Archaeological Significance	Sites Inspected
3573	52-2-3573	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
3574	52-2-3574	Stone Artefact(s)	Low	Yes
3578	52-2-3578	Stone Artefact(s)	Low	No
3579	52-2-3579	Scarred Tree	Moderate	Yes
3580	52-2-3580	Sandstone Platform with Grinding Groove / Engraving	Low	No
3581	52-2-3581	Sandstone Platform with Grinding Groove / Engraving	Low	No
3582	52-2-3582	Stone Artefact(s)	Low	No
3583	52-2-3583	Sandstone Platform with Grinding Groove / Engraving	Low	No
3584	52-2-3584	Stone Artefact(s)	Low	No
3585	52-2-3585	Stone Artefact(s)	Low	No
3586	52-2-3586	Potential Archaeological Deposit	PAD	No
3587	52-2-3587	Stone Artefact(s)	Low	No
52-3-0291	52-3-0291	Sandstone Platform with Grinding Groove / Engraving	Low	No
52-3-0293	52-3-0293	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	N/A*	No
52-3-0524	52-3-0524	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Yes <sup>1</sup>
BS 1	BS 1	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
BS 2	BS 2	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
BS 3	BS 3	Stone Artefact(s)	Low	Yes
BS 4	BS 4	Stone Artefact(s)	Low	Yes
BS 5	BS 5	Stone Artefact(s)	Low	Yes
BS 6	BS 6	Stone Artefact(s)	Low	Yes
BS 7	BS 7	Stone Artefact(s)	Low	Yes
BS 8	BS 8	Stone Artefact(s)	Low	Yes
BS 9	BS 9	Stone Artefact(s)	Low	Yes
BS 10	BS 10	Stone Artefact(s)	Low	Yes
BS 11	BS 11	Stone Artefact(s)	Low	Yes
BS 12	BS 12	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
BS 13	BS 13	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
BS 14	BS 14	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
BS 15	BS 15	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
BS 16	BS 16	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
BS 17	BS 17	Stone Artefact(s)	Low	Yes
BS 18	BS 18	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
BS 19	BS 19	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
BS 20	BS 20	Sandstone Shelter with Deposit only	Low	Yes
BS 21	BS 21	Stone Artefact(s)	Low	Yes
BS 22	BS 22	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
BS 23	BS 23	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
BS 24	BS 24	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
BS 25	BS 25	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
BS 26 BS 27	BS 26 BS 27	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit  Stone Artefact(s)	Low	Yes Yes
			Low	
BS 28	BS 28	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
BS 29	BS 29	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
BS 30	BS 30	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
BS 31	BS 31	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
BS 32	BS 32	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
BS 33	BS 33	Sandstone Shelter with Deposit only	Low	Yes

Site Code (refer to Figures 3 to 11)	AHIMS Site ID	Site Type	Archaeological Significance	Sites Inspected
BS 34	BS 34	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Yes
BS 35	BS 35	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
BS 36	BS 36	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Yes
BS 37	BS 37	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
BS 38	BS 38	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
BS 39	BS 39	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
BS 40	BS 40	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Yes
BS 41	BS 41	Sandstone Platform with Grinding Groove / Engraving	Low	Yes
BS 42	BS 42	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
BS 43	BS 43	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes
BS 44	BS 44	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Yes

Yes<sup>1</sup> These Aboriginal sites were inspected as part of the West Cliff Area 5 Longwall 32 End of Panel assessment (Biosis Research 2008b).

Attempted – An attempt to inspect these sites was made, however the sites could not be found.

The location of the sites within the landscape is reflected by the site type. Platforms with grinding grooves or engravings were often located in close proximity to water or in areas of sandstone outcrop. Shelters were located on ridgelines with sandstone outcrops. Scarred trees were located in areas where minimal historic clearing had taken place. Stone artefacts were located in areas of exposure, such as fire trails or within cleared paddocks. PADs were located in landforms with minimal disturbance, often close to watercourses.

This site, although registered on the AHIMS database as a scarred tree, is considered not to be of Aboriginal origin as a surveyor's mark is clearly visible in the centre of the blaze, this site has been assigned a low archaeological significance.

<sup>\*</sup> Limited information was available to allow archaeological significance assessment of those sites marked N/A. Specific recommendations have been proposed for these sites to obtain more information (Section 10.0).

## 6.3.1 Representative Site Descriptions

The following section provides a description of representative examples of different site types present within the study area, based on the specific categories defined in Section 4.3.1. The photographs of these representative sites have been included to provide context, and an appreciation of the sites and archaeological features located within the study area. All the sites presented below were inspected during the Project. A description of all sites inspected during the survey is provided in Appendix 4.

## Sandstone Platform with Grinding Groove / Engraving

#### 52-2-0282; 52-2-0982 - Stokes Creek 3

The site consists of an engraving and a moderately large number of grinding grooves (Plates 3 and 4). It is located on an expansive sandstone platform above Stokes Creek where the swamp flows over the platform into Stokes Creek. The site is 38 m in length and 50 m in width. The site consists of 26 broad grinding grooves, and a petroglyph of a macropod. The macropod is readily recognisable, although the surface of the sandstone platform is pitted and exfoliating in places. The motif measures approximately 2 m from nose to tail and is approximately 1.5 m tall.



Plate 3: General shot of site 52-2-0282/52-2-0982, showing large sandstone platform containing a large macropod motif and grinding grooves



Plate 4: Looking over the macropod motif (in foreground) at site 52-2-0282/52-2-0982

#### 52-2-0780 - West Woronora site 2A

This grinding groove site (Plates 5 and 6) is located on a tributary of the Woronora River, within an upland swamp on an exposed sandstone outcrop. The sandstone platform is 29 m in length and 12.5 m in width. 36 grooves were identified with 34 in eight clusters, and two isolated grooves. A heavy tracked vehicle, possibly a bulldozer, has driven over the platform and left several gouges in the sandstone.





Plate 5: A cluster of grooves at 52-2-0780

Plate 6: Broader grooves at 52-2-0780

#### 52-2-0569 - East Woronora 9

The site consists of grinding grooves located on the top ridgeline within an upland swamp in a large open series of sandstone platforms (Plates 7 and 8). The site contains eight grinding grooves, of which three are very narrow and deep, and are interpreted to be spear grinding grooves, or perhaps grinding grooves for very small axes. These three grinding grooves are narrow and very deep (approximately 1 centimetre ['cm']), and elongated. Some sections of the sandstone platform are starting to exfoliate.







Plate 8: Narrow and deep grinding grooves at 52-2-0569

# Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit

#### 52-2-1006 - Appin 1:25k O'Hares Ck Wedderburn

The site consists of a shelter with art and deposit (Plates 9 and 10). It is located within Holsworthy Military Range below the top cliff line above O'Hares Creek. The top cliff line is continuous and approximately 10 m to 20 m high. The site is 35 m in length and 7.5 m to 9 m in height, and has a north-easterly aspect. Older deposit is probably present under the roof fall at the shelter. The art at the site consists of a large number of charcoal outline and infill drawings, including macropods, human / ancestral figures and possible bush tucker motifs, in good condition.





Plate 9: Possible bush tucker image at 52-2-1006

Plate 10: Charcoal macropod at 52-2-1006

# 52-2-1315 - Allens Creek

The site consists of a shelter with art and deposit, and is located at the base of an outcrop of sandstone that forms a cliff (Plates 11 and 12). The shelter is approximately 10 m from Allens Creek. The shelter is 21 m long by 5 m wide by 3 m high, and faces north east to Allens Creek. Art at the shelter consists of red and white ochre hand stencils, as well as charcoal indeterminate motifs. The stencils are in good condition. Approximately 25 artefacts were located along the dripline, and these consisted of quartz and chert pieces.



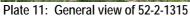




Plate 12: Hand stencils at 52-2-1315

#### 52-2-0566 - East Woronora 7

The site consists of a shelter with art and deposit (Plates 13 and 14). The shelter is 16 m in length, 1.3 m wide, 1 m in height and faces west. Three artefacts were located within the shelter and these were two quartz flakes and one silcrete flake. The art at the shelter consists of approximately 10 indeterminate motifs on the back wall of the shelter. The art is in poor condition due to chemical exfoliation. A scratched petroglyph is located on the back wall.



Plate 13: Indeterminate motifs at 52-2-0566

Plate 14: Scratched petroglyph at 52-2-0566

#### Sandstone Shelter with Deposit only

## 52-2-2074; 52-2-2075; 52-2-2092 – Appin Falls 15

The site consists of a shelter with deposit and is located under the lowest level up from the creek at the conjunction of the main creek and the tributary (Plates 15 and 16). The shelter is 10 m in length, 1.8 m in width and 1.3 m in height. Fifty artefacts were originally recorded within the shelter. Approximately 40 artefacts made from fossilized wood, silcrete, chert, quartzite and quartz were observed when the site was inspected.



Plate 15: General shot of 52-2-2074/52-2-2075/ 52-2-2092



Plate 16: Artefacts located at 52-2-2074/52-2-2075/52-2-2092

# Stone Artefacts

# 52-2-3035 - BC 11, Wilton Park 11

This open site was previously recorded as containing 10 artefacts. The site location was revisited; however no artefacts were observed due to long grass causing a lack of archaeological visibility (Plates 17 and 18). The location and nature of this site is typical of open stone artefact sites in the western part of the study area.





Plate 17: Exposure noted at 52-2-3035

Plate 18: Another angle showing conditions at 52-2-3035

#### Scarred Tree

#### 52-2-3219 - AMP ST1

The site consists of a scarred tree located within former pasture land (Plate 19). The scar is a large, elongated scar with some regrowth. There are no tool marks present within the scar. This is one of only eight scarred trees in the Project study area.



Plate 19: Scarred tree at 52-2-3219

#### 6.3.2 Discussion

The study area has 632 sites (588 previously recorded sites and an additional 44 sites recorded during the Project surveys). Of the 588 previously recorded sites, 216 were inspected or attempted to be inspected. In total, including newly recorded sites, 260 sites were inspected or attempted to be inspected. The results presented above confirm the predictive model, with more rock shelters and grinding groove sites located in the eastern and southern domains, while the northern and western domains contained more open artefact scatter sites.

Prior to the survey, Ngunawal Heritage Aboriginal Corporation advised that they wished to inspect a number of Aboriginal sites of interest (i.e. 52-2-0351 [duplicate with 52-2-794], 52-2-0566, 52-2-0793, 52-2-0813, 52-2-0854, 52-2-0945, 52-2-0946, 52-2-1210, 52-2-1212 and 52-3-0524). The inclusion of these sites into the survey program was discussed with the Ngunawal Heritage Aboriginal Corporation, and as a result four sites (52-2-0351/794, 52-2-0566, 52-2-0813 and 52-3-0524) were inspected, and four sites (52-2-0793, 52-2-0854, 52-2-0945 and 52-2-0946) were attempted to be inspected but were unable to be found.

# 7.0 CULTURAL AND ARCHAEOLOGICAL SIGNIFICANCE ASSESSMENT

# 7.1 Introduction to the Assessment Process

Heritage assessment criteria in NSW fall broadly within the significance values outlined in the Australia International Council on Monuments and Sites ('ICOMOS') Burra Charter (Australia ICOMOS 1999). This approach to heritage has been adopted by cultural heritage managers and government agencies as the set of guidelines for best practice heritage management in Australia. These values are provided as background and include:

- O **Historical** significance (evolution and association) refers to historic values and encompasses the history of aesthetics, science and society, and therefore to a large extent underlies all of the terms set out in this section. A place may have historic value because it has influenced, or has been influenced by, an historic figure, event, phase or activity. It may also have historic value as the site of an important event. For any given place the significance will be greater where evidence of the association or event survives *in situ*, or where the settings are substantially intact, than where it has been changed or evidence does not survive. However, some events or associations may be so important that the place retains significance regardless of subsequent treatment.
- O Aesthetic significance (Scenic/architectural qualities, creative accomplishment) refers to the sensory, scenic, architectural and creative aspects of the place. It is often closely linked with social values and may include consideration of form, scale, colour, texture, and material of the fabric or landscape, and the smell and sounds associated with the place and its use.
- Social significance (contemporary community esteem) refers to the spiritual, traditional, historical or contemporary associations and attachment that the place or area has for the present-day community. Places of social significance have associations with contemporary community identity. These places can have associations with tragic or warmly remembered experiences, periods or events. Communities can experience a sense of loss should a place of social significance be damaged or destroyed. These aspects of heritage significance can only be determined through consultative processes with local communities.
- Scientific significance (Archaeological, industrial, educational, research potential and scientific significance values) refers to the importance of a landscape, area, place or object because of its archaeological and/or other technical aspects. Assessment of scientific value is often based on the likely research potential of the area, place or object and will consider the importance of the data involved, its rarity, quality or representativeness, and the degree to which it may contribute further substantial information.

The cultural and archaeological significance of Aboriginal and historic sites and places is assessed on the basis of the significance values outlined above. As well as the ICOMOS Burra Charter significance values guidelines, various government agencies have developed formal criteria and guidelines that have application when assessing the significance of heritage places within NSW. Of primary interest are guidelines prepared by the Commonwealth Department of the Environment, Water, Heritage and the Arts ('DEWHA'), the DECC and the Heritage Branch, NSW Department of Planning. The relevant sections of these guidelines are presented below.

These guidelines state that an area may contain evidence and associations which demonstrate one or any combination of the ICOMOS Burra Charter significance values outlined above in reference to Aboriginal heritage. Reference to each of the values should be made when evaluating archaeological and cultural significance for Aboriginal sites and places.

In addition to the previously outlined heritage values, the *DECC Guidelines* (DECC 2006) also specify the importance of considering cultural landscapes when determining and assessing Aboriginal heritage values. The principle behind a cultural landscape is that 'the significance of individual features is derived from their inter-relatedness within the cultural landscape'. This means that sites or places cannot be 'assessed in isolation' but must be considered as parts of the wider cultural landscape. Hence the site or place will possibly have values derived from its association with other sites and places. By investigating the associations between sites, places, and (for example) natural resources in the cultural landscape the stories behind the features can be told. The context of the cultural landscape can unlock 'better understanding of the cultural meaning and importance' of sites and places.

Although other values may be considered – such as educational or tourism values – the two principal values that are likely to be addressed in a consideration of Aboriginal sites and places are the cultural/social significance to Aboriginal people and their archaeological or scientific significance to archaeologists. The former is discussed in greater depth below, as it is more comprehensively addressed in the Guidelines for Aboriginal Impact Assessment. However we note here that it is best practice for archaeologists when undertaking significance assessments to keep in mind that scientific assessments are part of a larger picture.

The determinations of archaeological and cultural significance for sites and places should then be expressed as *statements of significance* that preface a concise discussion of the contributing factors to Aboriginal cultural heritage significance.

# 7.2 Aboriginal Community or Cultural Significance

The DECC recognises that 'Aboriginal community are the primary determinants of the significance of their heritage' (DECC 2004). Biosis Research recognises that our role in the cultural heritage assessment process is to provide specialist skills, particularly in regard to archaeological and heritage management expertise. These specialist skills can be articulated and enhanced through consultation with the Aboriginal community, with the aim of providing a comprehensive assessment of cultural heritage significance.

The heritage assessment criteria outlined in Section 7.1 above that relate to community or cultural significance include social, historic and aesthetic value. Social and aesthetic values are often closely related. Social value refers to the spiritual, traditional, historical or contemporary associations and attachment that the place or area has for the present-day Aboriginal community. Aesthetic values related to Aboriginal sites and places that may contain particular sensory, scenic, architectural and creative values and meaning to Aboriginal people. Historic value refers to the associations of a place with a person, event, phase or activity of importance to the history of an Aboriginal community.

These aspects of heritage significance can only be determined through consultative processes with one or more Aboriginal communities. In terms of Aboriginal communities, heritage places – including those that are otherwise defined as 'archaeological sites' – generally always attract differing values. These may include custodianship obligations, education, family or ancestral links, identity, and symbolic representation. History and traditions are important: this generation has an obligation to future generations to retain certain things as they are currently seen and understood. This includes retaining alternative understandings to those that come through scientific assessments. Cultural significance is often more complex than is identified through the scientific determination of value. Cultural and social values can be complex and rich - the past is a vital component of cultural identity. Feelings of belonging and identity are reinforced by knowledge of the existence of a past, and this is further reinforced and maintained in the protection of cultural heritage.

# 7.2.1 Cultural Significance

This section of the report presents a summary of statements or comments of cultural significance made by registered Aboriginal stakeholders during the Project field surveys both in regard to individual sites and in general.

# **Cultural Significance of Individual Sites**

# AHIMS # 52-2-0281

Representatives from Tharawal Local Aboriginal Land Council, Peter Falk, Gary Caines, Coomaditchie United Aboriginal Corporation, Ngunawal Heritage Aboriginal Corporation and the Cubbitch Barta Native Title Claimants Aboriginal Corporation who were present at this site indicated that the site was important from a cultural point of view.

The site has two distinct and separate areas: art in one area depicts macropods; art in the other area depicts human and ancestral figures, and what was interpreted by the Aboriginal representatives as a woman giving birth. A large pool is located in the creek in front of the shelter. It was suggested that the site be subject to archival recording as soon as possible. The site was further discussed later in the day and all other registered Aboriginal stakeholders present agreed that the site was of particular cultural significance.

#### AHIMS # 52-2-0924

Whilst inspecting this site a representative from the Wodi Wodi Elders Corporation described feeling uncomfortable at the site, and thought this may be an indication the site was a men's site, or site used for business that the particular representative should not be involved in.

#### AHIMS # 52-2-0496

This is an art site, including the hand stencil of a small child. Representatives from the Wodi Wodi Elders Corporation and Tharawal Local Aboriginal Land Council reported feeling uncomfortable and ill at the site, and a feeling of sadness or bereavement associated with the child's hand stencil.

#### AHIMS # 52-2-0973

This site contains a large quantity of poorly preserved art, including a partial charcoal anthropomorphic figure with large circular eyes filled with red ochre. Although hard to see, when apparent, the figure was considered by some Aboriginal stakeholders to be quite striking. Representatives from the Ngunawal Heritage Aboriginal Corporation indicated the site had particular cultural significance.

#### AHIMS #52-2-3505

This site contains one of the most westerly fish motifs in the region (Biosis Research 2007a). At this site a representative from the Korewal Elouera Jerrungah Tribal Elders Aboriginal Corporation explained that a totem of the saltwater people was a blue wrasse—the blue devil fish—and the land totem of the same was the brush tail possum. The representative explained that wrasse are common at Bass Point, near Shellharbour and have a relatively small tail such as the fish depicted in the motif at this site. The representative felt that the motif may be some kind of landscape marker or boundary, possibly delineating the Salt Water and Sweet Water Tharawal.

#### AHIMS # 52-2-1006

Representatives from Tharawal Local Aboriginal Land Council, Wargon and Burra Aboriginal Centre Inc and Ngunawal Heritage Aboriginal Corporation who inspected this site all indicated that the site was important from a cultural point of view given the depiction of anthropomorphic figures, macropods and traditional foods. All representatives recommended that archival recording be undertaken as soon as possible.

#### AHIMS # 52-2-0695

This site is a large rock platform with approximately 90 grinding grooves. Representatives from Korewal Elouera Jerrungah Tribal Elders Corporation, Wodi Wodi Elders Corporation, Kullila Housing and Welfare Aboriginal Corporation and Wargon and Burra Aboriginal Centre Inc identified this site as being of particular cultural significance, and expressed concern about the possibility of the site being affected by mining. An assessment of potential impacts on this site and all other sites as a result of the Project is provided in Section 8.0.

## AHIMS #52-2-0282 / duplicate 52-2-0982

This site is a rock platform with many grinding grooves and a large engraved macropod motif. The site is situated in an aesthetically striking location at the base of a swamp, overlooking Stokes Creek, with a vista north-west along the valley. Representatives from the Ngunawal Heritage Aboriginal Corporation, Coomaditchie United Aboriginal Corporation and Gary Caines all indicated that the site was of particular cultural significance owing to its features and impressive location.

#### AHIMS #52-2-0011

This site is situated approximately 50 m from registered site 52-2-0576 / duplicate 52-2-0743, and was recorded by Sim (1964). The site contains some charcoal motifs that are clearly Aboriginal in origin and stone artefacts at the south end of the shelter. The shelter walls and ceiling have been badly damaged by graffiti, and some of this has been purposefully removed (Lambert 1994: 96). The art described by Sim consists of unusual motifs which collectively are an unusual assemblage for the region. The site has been interpreted as being post-contact in origin (Lambert 1994: 96). Several anthropomorphic and macropod motifs present are atypical with the known Aboriginal art of the region. Representatives from the Korewal Elouera Jerrungah Tribal Elders Corporation, Wodi Wodi Elders Corporation, Kullila Welfare and Housing Aboriginal Corporation and Wargon and Burra Aboriginal Centre Inc all indicated that the art described by Sim (1964) appeared to be elaborate graffiti. A representative from the Cubbitch Barta Native Title Claimants Association regards the majority of the art as genuinely significant Aboriginal art. Generally the art appears to be a mixture of genuine pre-contact and post-contact motifs (many of which have been redrawn / traced very recently) and graffiti. The poor preservation conditions - direct sunlight and leaching of a white mineral - make it very difficult to determine the origin of much of the art present here.

#### Bulli Site 40

This site is a shelter with hand stencil art near the Nepean River. Representatives from the Ngunawal Heritage Aboriginal Corporation described the site as having particular cultural significance due its position in the landscape and good preservation.

## **Cultural Significance – General Comments**

A representative from the Wodi Wodi Elders Corporation commented that regardless of the condition of sites or artwork all sites were important for cultural knowledge.

The observations above show that the Woronora Plateau is a culturally important location for the Aboriginal communities of the region. The values associated with the plateau include strong natural heritage values given the relatively undeveloped nature of most of the area; and cultural heritage values that provide strong links to the numerous sites present within the natural environment.

Many of the art sites inspected in areas closer to populated centres have suffered and continue to suffer heavy damage from graffiti. Sites impacted by graffiti are particularly common near Wilton, and where it occurs the graffiti in this area is the dominant feature of the shelters rather than the Aboriginal art. Representatives from all of the registered Aboriginal stakeholder parties/groups involved in the site inspections and survey indicated their unhappiness with the prevalence and scale of graffiti at the sites. Wherever present, and whatever age (the observed graffiti included dates from the 1930s through to the present) the presence of the graffiti was considered a source of cultural harm by all representatives.

## 7.2.2 Aboriginal Sites – Cultural Significance Summary

Observations made during the site inspections and survey (see above) and comments received in response to the draft report (2.2.1) show that the sites are an important cultural resource for the Aboriginal community. The sites provide access points to the Aboriginal past and heritage of the region, particularly in the eastern part of the study area in a bushland environment.

The art sites—be they immediately obvious works such as hand stencils, or enigmatic motifs such as ancestors or creator beings—are capable of provoking powerful emotional and spiritual responses in observers, at once reinforcing their inheritability and their value.

The importance of all sites as a record of the presence and activities of Aboriginal ancestors in the landscape was often acknowledged, whilst the strong feelings expressed when the sites are disturbed—by graffiti or development—show the value with which the sites are held by the Aboriginal community.

Table 6 lists the sites deemed to be of particular cultural significance identified through statements or comments made by registered Aboriginal stakeholders during the Project field surveys, and summarises the identified values that contribute to the sites' cultural significance. Table 6 lists sites which representatives indicated (either verbally in the field or in writing as part of comments provided regarding the draft version of this report) had particular cultural significance or importance. Section 7.2.1 above provides a summary of all specific comments made.

A risk impact assessment of all sites identified as having particular cultural significance in Table 6 was conducted, and the results of this assessment are provided in Section 8.0 (Table 9 and Table 10).

Table 6. Sites of particular cultural significance

Site Code refer to Figures 3 to 11)	AHIMS No.	Site Type	Contributing values
281	52-2-0281	Sandstone Shelter with Art/Grinding Groove/Engraving/Deposit	Motifs identified as having high value. Strong sense of place.
496	52-2-0496	Sandstone Shelter with Art/Grinding Groove/Engraving/Deposit	Children's hand stencils identified as having high value. Strong emotional response to stencils.
973	52-2-0973	Sandstone Shelter with Art/Grinding Groove/Engraving/Deposit	Motifs identified as having high value. Provoke strong sensory response.
3505	52-2-3505	Sandstone Shelter with Art/Grinding Groove/Engraving/Deposit	Motifs identified as having high value. Direct link to totem of saltwater people.
1006	52-2-1006	Sandstone Shelter with Art/Grinding Groove/Engraving/Deposit	Motifs identified as having high value, high diversity of motifs. Provoke strong sensory response.
695	52-2-0695	Sandstone Platform with Grinding Groove/Engraving	Petroglyph, grinding grooves on a expansive platform. Strong sense of place.
282; 982	52-2-0282 (duplicate with 52-2-0982	Sandstone Platform with Grinding Groove/Engraving	Grinding grooves on a expansive platform. Strong sense of place.
BS 40	Bulli Site 40	Sandstone Shelter with Art/Grinding Groove/Engraving/Deposit	Hand stencil art in eastern part of study area identified as having high value due to location.

#### 7.2.3 Cultural Landscape Values / Significance

The principle behind a cultural landscape is that 'the significance of individual features is derived from their inter-relatedness within the cultural landscape' (DECC n.d.: 5-6). This means that sites or places cannot be 'assessed in isolation' but must be considered as parts of a wider context of features with cultural and social value. Hence the site or place may possibly have values derived from its association with other sites and places, and its context within the physical landscape. By investigating the associations between sites, places, and (for example) natural resources in the cultural landscape the stories behind the features can be told. The context of the cultural landscape can unlock 'better understanding of the cultural meaning and importance' of sites and places (DECC n.d.: 5).

We firstly approach the assessment of cultural landscape values by considering the value of the assemblage of sites within the study area as just that – an assemblage of sites in a wider context of other sites: in the eastern and southern domains the sites exist in the context of a well preserved bushland environment; in the northern and western domains the sites exist in the context of a rural and semi-urban landscape. It is important to note that the value of the cultural landscape as a social phenomenon does not have to rely on robust archaeological interpretation; but rather is a contemporary expression of value to the Aboriginal community, archaeologists, and the community at large. We believe this is in-line with current approaches and policy directions for the DECC (DECC n.d.; Byrne *et. al.* 2001).

The study area is situated across the Cumberland Plain and the Woronora Plateau. The Woronora Plateau is an area that has been subjected to relatively minimal environmental disturbance because of reservation of large areas such as Catchment Areas, State Conservation Area and Holsworthy Military Area. The Cumberland Plain has been progressively developed for agriculture, semi-urban and urban development, and in the study area presents as a typical semi-rural landscape of small and large private land holdings, which for the most part have been cleared and improved. As a landscape the study area has value because it contains a relatively high number and diversity of sites across both a relatively undisturbed environment and an environment that has been subject to a high level of disturbance typical of semi-rural areas.

In the eastern and southern domains on the Woronora Plateau the majority of the sites are sandstone shelters with art and sandstone platforms with grinding grooves and occasionally petroglyphs. The juxtaposition of these sites with the often dramatic bushland setting creates a strong sense of place.

In the western and northern domains on the Cumberland Plain the majority of the sites are stone artefact sites in an open context, with occasional sandstone shelter sites associated with the larger drainage lines. These sites are typically found in disturbed contexts where they are exposed, hence in most cases the record of the past appears in an obviously contemporary context.

Taken as a whole the site types present—sandstone shelters and platforms, open stone artefacts sites, grinding groove sites, scarred tree sites—combine with the landscapes of the Woronora Plateau and Cumberland Plain to provide a detailed record of Aboriginal use of the study area prior to European arrival in the region. In addition, the presence of many sites on the Cumberland Plain and Woronora Plateau is well known amongst local Aboriginal communities. This gives the landscape value as a well known and highly visible cultural resource for the local Aboriginal communities. The rugged sandstone bushland of the Woronora Plateau and its numerous sites are in many ways a touchstone of identity for Aboriginal people of the Illawarra, whilst the rolling hills of the Cumberland Plain preserve an important history of occupation of the plains prior to their current development. For the reasons described above the study area must be considered to have high value as a cultural landscape.

# 7.3 Archaeological (or Scientific) Values

Archaeological significance (also called scientific significance, as per the ICOMOS Burra Charter) refers to the value of archaeological objects or sites as they relate to research questions that are of importance to the archaeological community, including indigenous communities, heritage managers and academic archaeologists. Generally the value of this type of significance is determined on the basis of the potential for sites and objects to provide information regarding the past life-ways of people (Burke and Smith 2004: 249, NPWS 1997b). For this reason, the NPWS (part of DECC) summarises the situation as 'while various criteria for archaeological significance assessment have been advanced over the years, most of them fall under the heading of archaeological research potential' (NPWS 1997b: 26). The NPWS criteria for archaeological significance assessment are based largely on the ICOMOS Burra Charter, and under the heading of 'research potential' include the following aspects and definitions (NPWS 1997b):

# General site considerations, including factors such as:

- O Site intactness or integrity: This includes the state of preservation of archaeological objects, as well as the stratigraphic integrity of the site, the taphonomic processes acting on the site, the impact of past artefact collections made at the site.
- O The connectedness of the site to other sites when considered as part of a larger assemblage or landscape the site may have greater research potential than if it was simply considered in isolation.
- Chronological potential refers to the potential of a site to provide a dateable framework extending back into the past. The potential antiquity of a site is also an important consideration, as older sites are relatively less common than younger sites. In many cases stratified, dateable artefact bearing deposits are sufficiently rare to be a very valuable resource.

#### Representativeness

Representativeness refers to the ability of a site or object to serve as a representative example of sites in the same class. This aspect of value is only meaningful when considered in conjunction with a conservation goal, and must be determined against the archaeological record at various scales of consideration - local, regional and continental for example. It takes into account site and object variability, connectedness and a consideration of what is already, and likely to be, conserved. Burke and Smith (2004: 247) define representativeness as 'an assessment of whether or not a place is a good example of its type, illustrating clearly the attributes of its significance.'

#### Rarity

Rarity is, of course, closely related to representativeness (if a site is rare, it is likely to have high representative value), includes consideration of those issues discussed under general site considerations. In many ways, the determination of rarity is a summation of exceptional research potential, or a representative of a small class of sites or objects. Burke and Smith (2004: 247) further describe rarity as 'an assessment of whether the place represents a rare, endangered or unusual aspect of our history or cultural environment that has few parallels elsewhere.'

In addition to the research potential related value factors, the NPWS (1997: 32) also discuss *Educational Potential* and *Aesthetic Significance*, as items that may be included in scientific significance. The NPWS general advice is that archaeologists should give careful consideration prior to attempting to determine educational and aesthetic values (NPWS 1997: 32). We make no attempt to determine educational potential of sites under scientific assessment, but do consider educational value as a contributing factor that may be included in an assessment of social significance by the Aboriginal community.

#### Aesthetic Values

There is a diverse yet accessible literature regarding identifying aesthetic values and determining aesthetic significance (Burke and Smith 2004: 248-9, Kerr 1996: 15-16, Pearson and Sullivan 1999: 134-8). It is generally agreed that aesthetic values are an important part of cultural heritage significance, however they are dependent on an individual's sensory response, which means determining aesthetic value is fraught with difficulty, and should be applied on a case-by-case basis as it is not always a value applicable to archaeological sites (Burke and Smith 2004: 248). However, when dealing with shelter and rock art sites aesthetic values and landscape context are an important consideration. The question 'does the place have a relationship between its parts and the setting which reinforces the quality of both', while originally proposed in an architectural context (Kerr 1996: 15), is relevant also for rock art and shelter sites in a bushland setting where there is often an important relationship between the cultural site and natural environment.

# 7.3.1 Statements of Archaeological Significance

The following Aboriginal significance assessment is based on Part 1 of the *DECC Guidelines* for Aboriginal Heritage Impact Assessment (DECC 2006). Nomination of the level of value—high, moderate, low or not applicable is presented in Table 7.

Table 7. Summary of archaeological significance for all sites

Archaeological Significance	Number	Percentage of Total Number Sites
High	14	2%
Moderate	65	10%
Low	448	71%
N/A - Limited information available*	27	4%
PAD	78	13%
Total	632	100 %

<sup>\*</sup> Limited information was available to allow archaeological significance assessment for these sites (refer Appendix 5). Specific recommendations have been proposed for these sites to obtain more information (Section 10.0).

Statements of archaeological significance for all sites within the study area are provided in Appendix 6.

# 7.3.2 Aboriginal Sites – Archaeological Significance Summary

Table 7 summarises the number of sites by archaeological significance within the study area.

Aboriginal sites of high archaeological significance include: 52-2-0062/0796, 52-2-0280, 52-2-0282/0982, 52-2-0312/0784, 52-2-0314/785, 52-2-0362/0567, 52-2-0564, 52-2-0707, 52-2-0812, 52-2-0854, 52-2-1006, 52-2-1275, 52-2-1282, and 52-2-3505.

Sites of high and moderate archaeological significance account for approximately 13% of the sites within the study area. As a comparison, these proportions are approximately the same as those independently assessed for the Metropolitan Coal Project Environmental Assessment (prepared under Part 3A of the EP&A Act) immediately to the east of the study area (Kayandel 2008: 111).

# 8.0 IMPACT ASSESSMENT

# 8.1 Proposed Development

Section 1.2 describes the activities that would be undertaken as part of the Project development and operation. The main activities associated with the development of the Project that have the potential to impact on Aboriginal cultural heritage values include:

- o continued development of underground mining operations;
- o continued and expanded placement of coal wash at the West Cliff Coal Wash Emplacement; and
- o ongoing surface activities including exploration, monitoring and rehabilitation.

The activities described above present potential impacts that fall into two categories:

- o potential impacts on the surface from mine subsidence; and
- o potential impacts due to development of surface infrastructure and emplacement of coal wash.

There is an important difference between the type of impact that may be expected from subsidence and the type of impact associated with surface development works. Based on previous experience and monitoring, mine subsidence does not impact every site within a subsidence area, but rather (as expanded below) a small percentage of sites within the subsidence area, and often the impact is minor or partial.

Disturbance from the development of surface infrastructure presents a different case where impact is predictable, readily quantified and generally extensive. However, a range of mitigation options are available, such as relocation of spot developments (e.g. moving boreholes) or linear developments (e.g. re-aligning roadways).

In recognition of this distinction this report assesses subsidence impacts and surface infrastructure impacts separately (Section 8.2 and 8.3, respectively) with different mitigation / management options presented in Section 9.0.

# 8.2 Potential Impacts from Mine Subsidence

During and for a short period after the extraction of coal via longwall mining methods overlying rock strata are subject to varying degrees of movement, stresses and strains that can cause the strata to buckle, dilate and break (Mine Subsidence Engineering Consultants ['MSEC'] 2009). The deformation of rock strata can affect the land surface by causing slumping of soils or poorly consolidated landform elements such as talus slopes and cracking of rigid areas such as sandstone platforms, ledges and cliffs. These ground surface changes can potentially impact Aboriginal cultural heritage sites. The main mechanisms that are used to describe these movements, stresses and strains are discussed below (MSEC 2009).

#### **Subsidence**

Subsidence refers to vertical and associated horizontal displacement of a point. In the case of this study it refers to subsidence resulting from the extraction of coal using longwall methods. The amplitude of subsidence is usually expressed in millimetres (MSEC 2009).

#### Tilt

Tilt is calculated as the change in subsidence between two points divided by the distance between those points (i.e. how much any given area is expected to lean or tip). Tilt is usually expressed in millimetres per metre ('mm/m') (MSEC 2009).

#### Strain

Strain is the change in horizontal distance between two points on the ground, divided by the original horizontal distance between them. Strain is dimensionless and is typically expressed in units of mm/m:

- Tensile Strains occur where the distance between two points increases (i.e. stretching).
- o Compressive Strains occur where the distance between two points decreases (i.e. squashing).

As described in further detail in Section 2 in Main Report of the EA, the mine layout within the study area may change and vary over the life of the project as it progressively takes account of: localised geology, mine economics, market demands; detailed design requirements and adaptive management. With this in mind, the below potential impacts from subsidence are based on the maximum predicted subsidence movements (as determined by MSEC 2009) that would be expected across the mining domains. While the impact assessment is based on the maximum predicted subsidence movements occurring at every site, this is not predicted to happen and therefore the impact assessment is considered to be highly conservative.

## 8.2.1 Subsidence Movements and Aboriginal Sites

Longwall mining subsidence effects to the sandstone environments around the Sydney Basin have been documented for some time (Sefton 2000a: 12-13). In the Southern Coalfield, Caryll Sefton conducted a long-term monitoring program, and reviewed the effects of longwall mining on sandstone overhang Aboriginal sites over a 10 year period producing a major review in 2000 (Sefton 2000a).

Since this work, archaeological monitoring programs have continued in the Southern Coalfield at various underground mine sites. Monitoring programs have been conducted at Tahmoor, Appin, Tower, West Cliff, Metropolitan, Elouera, Cordeaux and Dendrobium Collieries incorporating all of the different landscape types within the study area.

The discussion below describes the findings from Sefton (2000a) and then describes the findings from other subsequent monitoring programs.

At the time of the Sefton (2000a) major review, 52 sandstone overhang sites had been monitored by Sefton prior to, during and after longwall mining (Sefton 2000a: 15). Of the 52 sites monitored only five showed evidence of impact from longwall mining (Sefton 2000a: 17-18). These impacts can be grouped into four categories: 1) cracking; 2) movement along existing joints / bedding planes; 3) block fall; and 4) change of water seepage.

Of the 52 sites monitored by Sefton, no art panels were directly impacted by subsidence effects.

As part of the major review, Sefton conducted a Principal Components Analysis using 16 variables recorded for all the sites, including the subsidence parameters (2000a: 30). Sefton found that the components most associated with observed changes were the overhang size (particularly length); presence of moisture seepage; location in relation to the valley bottom; location in relation to the goaf; and presence of existing weathering processes (especially block-fall). High estimated strain values were also associated with observed changes (Sefton 2000a: 31). Sefton concludes that "the over-riding factor which appears to be significant is overhang size where large overhangs are at greater risk" (2000a: 38). In particular, no monitored overhang less than 50 cubic metres ('m³¹) has suffered subsidence impacts, regardless of other risk components although this does not mean that all sites larger than 50 m³ would be impacted or that sites of less than 50 m³ would not be impacted in some cases.

Sefton has described the task of predicting subsidence impacts to individual sites as 'difficult and complex' (2000a). However, at a wider level our ability to confidently predict subsidence effects to the landscape is constantly improving. Sefton's systematic monitoring documents both natural changes in overhangs and changes that can be confidently attributed to longwall mining. The changes that are attributable to mining are due to overhang destabilisation. These include block fall, exfoliation, cracking and associated changes in water seepage. However these changes also occur naturally in the absence of mining, as a result of weathering (Sefton 2000a). Sefton recommended that shelters smaller than 50 m<sup>3</sup> need not be monitored because no shelters in this size class had been impacted in her sample and that shelters with archaeological deposit or PAD need not be monitored because changes or impacts from subsidence could not be demonstrated to this site type (Sefton 2000a).

To date 103 Aboriginal sites subject to mining-induced subsidence effects have been subject to systematic monitoring and reporting (Kayandel 2008, Sefton 2000a, records held by Biosis Research).

As noted above, the sites take in a range of landscape types present within the study areafrom the forested catchment areas in the north and west to the rolling hills and farmland in the
south and east. The monitored and reported sites have been subject to a range of predicted
subsidence parameters and also represent a range of site types including open sites (such as
engravings and grinding grooves), and closed sites (such as shelters with art).

Of the 103 sites that have been monitored, 11 (11% of monitored sites) had recorded effects at the same time as being subject to mining induced subsidence and as such the effects are attributed to mining. Only one of these 11 sites has exhibited an impact to the archaeological features present, being the fracturing of an art panel (Kayandel 2008).

It is important to note that the majority of monitoring programs do not include *all* sites situated within a particular mine area. Monitoring programs generally only include those sites identified as being at higher risk of potential impact, and in some cases geotechnical assessment. Therefore, the actual number of sites associated with historical and current mining areas is much greater than 103. Anecdotally, there is no evidence of impact to sites not subject to ongoing systematic monitoring. When non-monitored sites are considered, the percentage of sites likely to be damaged by subsidence is considerably lower than 11%.

Table 8 summarises the 11 sites considered to have been subject to impacts from mining induced subsidence.

Table 8. Changes to sites observed during archaeological monitoring programs

Site Code	Site Type	Observed changes / impacts	Reference
FRC 4	Sandstone Shelter with Art	Opening of existing open bedding plane at roof/rear wall and minor roof fall	Kayandel 2008
FRC 10	Sandstone Shelter with Art	Cracks in rear wall, potential for altered seepage to impact art mitigated with artificial drip-line	Kayandel 2008
FRC 11	Sandstone Shelter with Art	Exfoliation and block fall at rear wall	Kayandel 2008
FRC 49	Sandstone Shelter with Art	Minor block fall from rear wall and ceiling	Kayandel 2008
FRC 57	Sandstone platform with engraving and grinding grooves	Crack in sandstone platform	Kayandel 2008
FRC 152	Sandstone Shelter with Art	Cracking and minor block fall at rear wall	Sefton 2000a, Kayandel 2008
BR 4	Sandstone Shelter with Art	Cracking and block fall at rear wall	Sefton 2000a
P 3	Sandstone Shelter with PAD	Minor block fall from rear wall	Sefton 2000a
WR 1	Sandstone Shelter with Art	Cracking and minor block fall at rear wall	Sefton 2000a
WR 2	Sandstone Shelter with Art	Cracking in floor and rear wall	Sefton 2000a
D 4	Sandstone Shelter with Art	Opening of crack in back wall	Biosis Research 2008b

Further to the above, monitoring programs and site inspections (undertaken prior to subsidence effects) have documented natural deterioration of shelter sites including minor and large roof-falls, fading of art, exfoliation of case hardened surfaces and total site collapse (Sefton 2000a, Kayandel 2008, Biosis Research 2007b).

As described in Appendix 4, site 52-2-0718 (O'Hares Creek 62) inspected as part of the Project surveys and site inspections has collapsed since its original recording. This site is located in Dharawal State Conservation Area more than 1.5 km away from previous mining areas and as such its collapse is not attributed to mining effects.

In Appin Area 2 an overhang located approximately 550 m from the nearest longwall collapsed following a large rainfall event. This collapse was investigated by SCT Operations who determined that the collapse was not mining related (Biosis Research 2008a, SCT Operations 2005).

The likelihood of the collapse of a sandstone shelter from mining induced subsidence is very low, even when sites that satisfy multiple risk criteria are directly mined beneath. Of the 103 sites that have been monitored in the Southern Coalfield over the last 20 years none have collapsed as a result of mine subsidence.

At Metropolitan Colliery, two overhangs (one being an Aboriginal site) located above previous longwalls have reportedly collapsed although these sites were not subject to systematic monitoring and the timing of collapse in relation to mining is unknown (Sefton 2004 in Kayandel 2008).

In the 1980s, a large shelter site (52-2-0018/52-3-0754) situated south of the study area, known as 'Whale Cave' (McCarthy 1961; McDonald 1994), suffered a failure resulting in the collapse of the lower roof at the back of the shelter. The site itself was a very large, cavernously weathered overhang in a very advanced stage of natural deterioration, meaning it was inherently unstable, and hence especially susceptible to fall with or without subsidence related movements. The lower roof collapse was also partly associated with pre-existing cracks caused by tree roots (Lambert 1994: 20). Coal beneath Whale Cave had been extracted prior to or around the time of collapse of the site.

Block fall, differential movement and cracking have the most likely potential to impact rock art at the sites, either through direct damage (art or art panel cracked, block fell, or exfoliated) or indirect damage (residual tilt or cracking alters moisture flow onto art panels or art).

Cracking, differential movements, exfoliation and block fall are all natural processes that occur at sandstone shelter sites. Often the effect of subsidence movements is to hasten these processes (e.g. dislodging semi-detached blocks and expediting block fall for example). In these cases the monitoring programs have shown that once the impacts have occurred they generally stabilise and there is no further impact (Sefton 2000a, Biosis Research 2008b).

In the west and north domains, large sections of pasture and hills with relatively deep soils occur. These areas are both comparatively less archaeologically rich (compared with the eastern and southern domains) and less sensitive to subsidence movements because the soil is unconsolidated material with higher tolerance limits to subsidence effects (MSEC 2009). Whilst subsidence can potentially result in mass movement effects in steep landscapes (soil slumping for example) the most likely effect on the more gently sloped rolling plains of the study area is soil cracking. However, soil cracking at mining depths greater than 400 m is rare and, as with sites in sandstone dominated environments, the cracking must occur in exactly the same location as a site for there to be an impact. Indeed, for open stone artefact sites, be they buried or on the ground surface, there is a very low risk of impact from mine subsidence and in practical terms the observation of impacts in this environment would be very difficult. Whilst slopes in these areas are at greater risk of impact due to mass movement, these areas contain only very few sites, as shown in the landscape and predictive models and survey results (Sections 4.5 and 6.0).

#### 8.2.2 Risk of Impact

Previous studies have identified the following factors as important determinates in the potential and likelihood of a shelter site being impacted by mine subsidence (Sefton 2000a, Biosis Research 2007b):

- o overhang size (particularly volume);
- o presence of existing water seepage;
- o topographic location in relation to a valley bottom;
- location above the goaf; and
- o block-fall weathering the main shelter formation process.

MSEC (2009) report that differential subsidence movement may be dissipated through existing fractures and joints (either within a site or in the landscape surrounding a site), rather than through cracking or other damage caused by tensile and compressive strains.

MSEC (2009) also report that the depth of cover at any potential surface location is one of the factors that contributes to the scale of subsidence movements (including subsidence, tilts and strains) experienced at that location. Generally, the greater the depth of cover, the less the subsidence movements (MSEC 2009). As the longwall design is subject to change, we have used the maximum predicted subsidence movements and so the depth of cover has been used as an indicative additional factor in the risk assessment. MSEC (2009) indicate that a depth of cover of greater than 400 m is considered high and that the risk of impact would be reduced for sites with depths greater than 400 m. The depth of cover at Aboriginal sites above the Project extent of longwall mining area ranges from 300 m to 850 m with approximately 90% of sites above 400 m depth of cover.

The method described by Biosis Research (2007b) simply considers risk factors as being present or not, and 'sums' these to produce an overall risk category (described above). The more risk factors exhibited by a site then the greater the determined risk category. In particular the following reasoning has been used to formulate the risk assessments for the sites of high and moderate archaeological significance, where sites are considered to be at risk if:

- o the shelter size is  $>50 \text{ m}^3$ ;
- o the shelter has existing water seepage;
- o the site is located near the valley bottom; or
- o the shelter is a block-fall type shelter.

The highest category used for risk of impact is *moderate*: this recognises the difficulty in making precise statements of impact, and to incorporate the results of previous monitoring programs—described in detail above—that show generally impacts to sites are rare (occurring in approximately 11% of monitored cases which have focused on sites with higher risk of impact) and that when impacts have been recorded they have been relatively minor (rarely impacting art surfaces for example). Hence the category *moderate* means impacts are possible, but likely to occur in less than 10% of cases.

The other categories used to describe risk include sites whose features, size and landscape position place them in a class that has not previously shown to be impacted from subsidence in formal monitoring programs and therefore are considered to be even less likely to be affected by subsidence. These categories are: *low* (impacts are unlikely); *very low* (impacts are highly unlikely); and *negligible* (impacts are highly unlikely, and would likely be indistinguishable from the natural background environment and natural deterioration processes).

Open stone artefact sites and scarred trees in all cases are highly unlikely to be impacted by mine subsidence, and hence they are attributed a negligible risk assessment. For open sites that occur on rock platforms whether or not the rock platform is situated in the valley bottom is the primary risk factor considered in the risk assessment.

Based on the above, Table 9 assesses the risk of impact from subsidence to sites of high and moderate archaeological significance within the study area. The impact assessments are described in terms of risk of impact, and the method is based on that developed previously by Biosis Research (2007b), as summarised below.

Table 9. Risk Impact Assessment for sites of High and Moderate archaeological significance and particular cultural significance from potential subsidence effects

Site Number	Site Name	Site Type	Archaeological Significance	Risk of Impact
48-2-0011	BC 7	Stone Artefact(s)	Moderate	Negligible
52-2-0011	Wilton	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Moderate
52-2-0062/0796	West Woronora 1	Sandstone Platform with Grinding Groove / Engraving	High	Very Low
52-2-0239/0334/ 0365	Flat Rock Creek 139	Sandstone Platform with Grinding Groove / Engraving	Moderate	Very Low
52-2-0280	O'Hares Creek / Cobbong Creek	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	High	Very Low
52-2-0281	Stokes Creek 1	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Moderate
52-2-0282/0982	Stokes Creek 3	Sandstone Platform with Grinding Groove / Engraving	High	Very Low
52-2-0300	Dahlia Creek 2	Sandstone Platform with Grinding Groove / Engraving	Moderate	Negligible
52-2-0312/0784	West Woronora 6	Sandstone Platform with Grinding Groove / Engraving	High	Very Low
52-2-0313/0790	West Woronora 12	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Very Low
52-2-0314/0785	West Woronora 7	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	High	Very Low*
52-2-0331	-	Sandstone Platform with Grinding Groove / Engraving	Moderate	Very Low
52-2-0351/0794	WW 16	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Very Low
52-2-0362/0567	EW 14	Sandstone Platform with Grinding Groove / Engraving	High	Negligible
52-2-0438	Stokes Creek 28	Stone Artefact(s)	Moderate	Negligible
52-2-0447	Stokes Creek 20	Sandstone Platform with Grinding Groove / Engraving	Moderate	Very Low
52-2-0479	Bulli Mine Shaft 16	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Very Low
52-2-0494	Upper Georges River 1	Sandstone Platform with Grinding Groove / Engraving	Moderate	Negligible
52-2-0496	-	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Low	Low
52-2-0564	East Woronora 17	Sandstone Platform with Grinding Groove / Engraving	High	Negligible*
52-2-0569	East Woronora 9	Sandstone Platform with Grinding Groove / Engraving	Moderate	Very Low
52-2-0576/0743	Douglas Park	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Moderate
52-2-0583	O'Hares Creek 6	Sandstone Platform with Grinding Groove / Engraving	Moderate	Very Low
52-2-0602	Dahlia Creek 21	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Negligible*
52-2-0608	Dahlia Creek 12	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Low*
52-2-0652	Northern Trail 52	Sandstone Platform with Grinding Groove / Engraving	Moderate	Very Low*
52-2-0670	Dahlia Creek 32	Sandstone Platform with Grinding Groove / Engraving	Moderate	Very Low
52-2-0672	Dahlia Creek 4	Sandstone Platform with Grinding Groove / Engraving	Moderate	Very Low *
52-2-0695	O'Hares Creek 39	Sandstone Platform with Grinding Groove / Engraving	Moderate	Very Low
52-2-0707	O'Hares Creek 51	Sandstone Platform with Grinding Groove / Engraving	High	Negligible
52-2-0715	O'Hares Creek 59	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Very Low*
52-2-0718	O'Hares Creek 62 <sup>1</sup>	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Negligible

Site Number	Site Name	Site Type	Archaeological Significance	Risk of Impact
52-2-0780	West Woronora 2A	Sandstone Platform with Grinding Groove / Engraving	Moderate	Very Low
52-2-0787	West Woronora 9	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Very Low
52-2-0793	West Woronora 15	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Very Low
52-2-0812	Stokes Creek 46	Sandstone Platform with Grinding Groove / Engraving	High	Very Low
52-2-0813	Stokes Creek 47	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Low
52-2-0854	East Woronora 5	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	High	Very Low
52-2-0908	Dahlia Creek 22	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Very Low*
52-2-0924	East Woronora 18	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Moderate
52-2-0931	Loddon Site 17	Sandstone Platform with Grinding Groove / Engraving	Moderate	Negligible
52-2-0946	Loddon Site 8	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Low
52-2-0973	O'Hares Creek (HB) 5	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Moderate
52-2-1006	O'Hares Ck Wedderburn	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	High	Very Low
52-2-1165	Stokes Creek 62	Sandstone Platform with Grinding Groove / Engraving	Moderate	Very Low
52-2-1173	O'Hares Creek 83	Sandstone Platform with Grinding Groove / Engraving	Moderate	Negligible
52-2-1185	Lizard Creek 20	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Low
52-2-1230	Lizard Creek 24	Sandstone Shelter with Deposit only	Moderate	Very Low
52-2-1273	Appin Falls 1	Sandstone Platform with Grinding Groove / Engraving	Moderate	Negligible
52-2-1275	Appin Falls 3	Sandstone Shelter with Deposit only	High	Low
52-2-1282	Wallandoola 35	Sandstone Shelter with Deposit only	High	Low
52-2-1315	Allens Creek	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Very Low
52-2-2074/ 2075/2092	Appin Falls 15	Sandstone Shelter with Deposit Only	Moderate	Low
52-2-1658	Dahlia Creek 36	Sandstone Platform with Grinding Groove / Engraving	Moderate	Negligible
52-2-1876	Brooks Point 1	Sandstone Shelter with Deposit only	Moderate	Moderate
52-2-2052	Nepean River 2	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Low
52-2-2063/2105	Sawpit Gully 10	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Moderate
52-2-2065/2106	Sawpit Gully 8	Sandstone Platform with Grinding Groove / Engraving	Moderate	Negligible
52-2-2096	Nepean River 7	Scarred Tree	Moderate	Negligible
52-2-2099	Brooks Point 9	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Very Low
52-2-2110	Cataract River 1	Stone Artefact(s)	Moderate	Negligible
52-2-2240	Georges River 7	Stone Artefact(s)	Moderate	Negligible
52-2-2459	H 494	Sandstone Platform with Grinding Groove / Engraving	Moderate	Negligible
52-2-3027	BC 3	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Very Low
52-2-3035	BC 11	Stone Artefact(s)	Moderate	Negligible

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Site Number	Site Name	Site Type	Archaeological Significance	Risk of Impact
52-2-3036	BC 12	Stone Artefact(s)	Moderate	Negligible
52-2-3070	BC 14	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Low
52-2-3219	AMP ST1	Scarred Tree	Moderate	Negligible
52-2-3234	CP-IF-1	Stone Artefact(s)	Moderate	Negligible
52-2-3242	CP-ST-16	Scarred Tree	Moderate	Negligible
52-2-3251	CP-OS-4	Stone Artefact(s)	Moderate	Negligible
52-2-3579	WA 5	Scarred Tree	Moderate	Negligible
52-3-0524	-	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Negligible*
BS 34	Bulli Site 34	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Low
BS 36	Bulli Site 36	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Low
BS 40	Bulli Site 40	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Very Low

<sup>\*</sup> The risk assessment is based on limited information (for example: sparse records; sites not inspected for this study; sites obscured to some degree by vegetation). Specific recommendations have been proposed for these sites to obtain more information (Section 10.0).

Table 9 shows that of the 76 sites of moderate or high archaeological significance and/or particular cultural significance, 26 (34%) sites have a Negligible risk, 31 (41%) have a Very Low risk, 12 (16%) sites have a Low risk and 7 (9%) sites have a Moderate risk. This is in line with what has been previously observed within the Southern Coalfield during monitoring programs. Although considered highly unlikely, the complete collapse of a shelter of high archaeological significance or particular cultural significance could be considered as a significant impact. The evidence at hand suggests that Project related subsidence does not pose a significant risk of impact to the Aboriginal heritage significance of the study area.

# 8.3 Potential Surface Infrastructure Impacts

#### 8.3.1 General Surface Activities

As described in Section 1.2 and in further detail in Section 2 in the Main Report of the EA, a range of activities that directly impact the ground surface would be undertaken as part of the Project, including but not limited to:

- o exploration works;
- installation of surface infrastructure (e.g. service boreholes, ventilation shafts, gas drainage equipment, waste water treatment and waste water disposal);
- construction and/or management of access tracks required for the installation/maintenance of surface infrastructure;

<sup>&</sup>lt;sup>1</sup> This site has collapsed since its original recording. It is located in the Dharawal State Conservation Area more than 1.5 km away from previous mining areas and as such the collapse is not considered to be related to mining effects.

- o undertaking subsidence monitoring;
- o undertaking subsidence remediation works; and
- o undertaking surface rehabilitation works.

The direct ground surface disturbance impacts are unlikely to pose a significant risk of impact to the shelter sites in the east and south domains because of the ruggedness of this country and the general location of sites. Biosis Research (2007b: 68) have shown that in the Cordeaux Dam area of the Woronora Plateau the majority of sites—which are shelter sites—occur on slopes with a greater than 20° incline. These areas of higher slope gradient are generally associated with creeks and drainage lines and are too steep for seismic or drilling activities to be practical. This provides a 'natural' protection from disturbance for the sites located in these areas. Further, it is anticipated that in these areas existing infrastructure such as roads would be utilised wherever practical. When boreholes or exploration lines are required, access tracks and the spot infrastructure they service are by necessity located away from the cliffs scarps where most shelter sites occur and generally away from drainage lines where the majority of sandstone platform sites occur.

Potential impacts from direct ground surface disturbance in the west and north domains are not likely to interfere with shelter sites, as these are generally restricted to the steep, often cliff sided watercourses of this area which are generally unsuitable for the above described activities.

The issue requiring management in the west and north domains is the presence of stone artefact sites, which often occur as buried or sub-surface deposits. Stone artefacts can occur anywhere within the landscape (Biosis Research 2006a, Navin Officer Heritage Consultants 2003). However their frequency and density is often related to landscape variables influencing the deposition of artefacts (favourable places for the traditional Aboriginal population to camp or undertake other activities) and preservation of artefacts and sites (suitable aggrading landforms). The predictive model presented in Section 4.5 suggests that the size and density of the open sites is related to their proximity to watercourses, and generally they are found on well drained ground with low slope gradients. Other than these concentrations of artefacts, isolated stone artefacts occur in a low density throughout the study area, including on the ridge-tops of the Razorback Range and associated hills. Activities such as seismic lines and drilling locations have the potential to impact open Aboriginal sites, although these activities are often conducted in areas of low slope gradient and favourable deposition and preservation conditions, where larger Aboriginal sites may be present.

The surface development activities would be ongoing throughout the life of the Project and their planning would be subject to ongoing considerations for their placement and exact nature. This being the case, specific assessment of the potential impacts on individual sites cannot be made. Nevertheless, given the anticipated small scale of the surface works across the entire study area, the flexibility of precise locations for these works and the considerations above, the surface works do not pose the risk of a significant impact to the cultural heritage of the study area.

Proposed works at existing infrastructure localities such as pit tops and shafts is anticipated to have no impact on the Aboriginal cultural heritage values of the study area, as these areas are already highly modified and developed areas.

# 8.3.2 West Cliff Stage 4 Coal Wash Emplacement

The proposed Stage 4 Coal Wash Emplacement Area has the potential to impact sites either through burial of the sites under the Coal Wash Emplacement, through direct impact by associated works supporting the Stage 4 Coal Wash Emplacement area (such as channel diversion drains, settling dams and haul roads) or through secondary impacts (such as dust settling on the art panels).

The design of the Stage 4 Coal Wash Emplacement has resulted in avoidance of the primary impact of burial by the emplacement to three sites, including the only highly significant (both culturally and archaeologically) site (52-2-3505, West Cliff 2) identified in the area.

Table 10 summarises the risk impact for the sites from the Stage 4 Coal Wash Emplacement.

Table 10. Risk impact assessment for sites near the proposed West Cliff Stage 4 Coal Wash Emplacement

Site Number	Site Name	Site Type	Archaeological Significance	Impact
52-2-1373	Brennans Creek 7	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Likely (burial)
52-2-2228/3617	D10	Sandstone Shelter with Deposit only	Low	Likely (burial)
52-2-3504	West Cliff 1	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	Moderate	Possible (dust)
52-2-3505	West Cliff 2	Sandstone Shelter with Art / Grinding Groove / Engraving / Deposit	High	Possible (dust)
52-2-3506	West Cliff 3	Potential Archaeological Deposit	PAD	Likely (burial)
52-2-3508	West Cliff 5	Stone Artefact(s)	Low	Possible (existing road)
52-2-3533/3616	D11	Sandstone Shelter with Deposit Only	Moderate	Likely (burial)

# 9.0 MANAGEMENT AND MITIGATION MEASURES

Ideally, heritage management involves conservation of sites through the preservation and conservation of fabric and context within a framework of "doing as much as necessary, as little as possible" (Marquis-Kyle and Walker 1994: 13). In cases where conservation is not practical, several options for management are available. For sites, management often involves the salvage of features or artefacts, retrieval of information through excavation or collection (especially where impact cannot be avoided) and interpretation. The impact assessment presented in Section 8.0 indicates that, taking into consideration what we know from previous monitoring programs associated with longwall mines and the expected scale and extent of surface development, overall there is a low risk of significant impact to Aboriginal cultural heritage values from the Project.

The following sections discuss management and mitigation measures that have been developed with respect of the potential impacts of the Project on Aboriginal cultural heritage. Section 9.1 presents a management document framework that could be used to guide the implementation of the measures presented in the following sections, which present management and mitigation measures with regard to: mine subsidence (Section 9.2); impact from surface development (Section 9.3); and direct impact from coal wash emplacement (Section 9.4).

# 9.1 Aboriginal Heritage Plan

An AHP should be developed for the Project. The AHP would provide an over arching framework to guide Aboriginal cultural heritage management for the life of the Project.

Should the Project be approved, the AHP should be developed in consultation with the Aboriginal community and the DECC and should include the key components described in the sub-sections below and summarised in Section 10.0.

# 9.2 Subsidence Management and Mitigation

The expected low level of impacts to sites and cultural heritage in the study area present a situation where management responses to the potential impacts need to be carefully considered and measured so as to be commensurate with the level of risk of impact. For example, excavation of archaeological deposits or invasive sampling or recording of rock art is a form of impact and in some cases destruction of a site, so this is not necessarily an appropriate management response in cases where there is only a low risk of impact. Similarly, management measures that directly or indirectly alter the sites' nature or context constitute an impact which may be unnecessary when the risk of impact is low (see Article 8 of the Burra Charter, Marquis-Kyle and Walker 1994: 39). In such cases the archaeological management actions are themselves an impact.

For longwall mining in the Southern Coalfield, management measures of archaeological sites have focused primarily on monitoring of sites to detect impacts when they occur, and to implement management approaches at an appropriate scale in response to subsidence impacts, if they are observed (Biosis Research 2006a; 2007b; 2008b; Kayandel 2008; Sefton 2000a).

While there will always be an element of unpredictability when dealing with subsidence impacts, the data collected during monitoring programs provides a framework within which we can more confidently make assessments. Based on monitoring results (Sefton 2000a; Kayandel 2008; records held by Biosis Research) we can estimate that less than 10% of the sites that are mined beneath or are located very near to longwalls would be impacted by subsidence related movements at the ground surface. However not all sites, even those identified in the higher risk categories, would necessarily be impacted. Based on the above, the following management and mitigation discussions focus on sites of moderate or high archaeological significance and those sites of particular cultural significance.

## 9.2.1 Monitoring Program

A monitoring program should be implemented for key sites. The monitoring program should:

- o Be developed in consultation with the Aboriginal community.
- o Include all sites of high and moderate archaeological significance and sites of particular cultural significance (Section 7.0).
- O Progressively collect (throughout the life of the Project) detailed baseline and archival recording of rock art sites prior to any subsidence effects in the relevant proposed mining areas.
- o Identify effects associated with subsidence movements through detailed observation of the surrounding landscape context of sites; structural features and, if present, rock art and art panels at the sites.
- o For consistency, include recording of principal components used in previous Aboriginal heritage subsidence impact monitoring programs.
- Include a series of triggers for consideration of appropriate management responses if impacts are recognised and documented.

#### 9.2.2 Mitigation Measures

This section presents mitigation measures that have been informed by a database of measured and monitored mining movements and impacts to sites collected over the past 20 years in the Southern Coalfield (Kayandel 2008, Sefton 2000a, data held by Biosis Research). These mitigation measures include components that can be considered prior to mining occurring, and measures that can be considered in the event that impacts are observed.

#### **Sandstone Shelter Sites**

The types of impact that have been observed at sandstone shelter sites (described in Section 8) generally include: block fall; movement along existing joints/planes; cracking; and exfoliation.

As described in Section 8 and based on the results of the 103 previously monitored sites, these effects are rare and relatively minor in scale, especially when compared to the engineering techniques (installing roof or wall props for example) that could have been implemented to reduce (to some degree only) the risk of impact. In the majority of observed cases where impacts from subsidence effects were recorded, the implementation of invasive remediation (grouting cracks for example) or archaeological salvage may constitute a greater impact than the recorded subsidence related impacts themselves. Article 3 of the Burra Charter (Marquis-Kyle and Walker 1994: 26) provides the most appropriate guidance in these cases: Conservation is based on respect for the existing fabric and should involve the least possible physical intervention. It follows that any invasive remediation should only be done where absolutely necessary for conservation purposes, and only in conjunction with a conservation plan prepared by a suitably qualified specialist (Lambert 1994, Marquis-Kyle and Walker 1994: 60). The plan should consider not only the physical intervention, but also the potential effects of the intervention on the sites overall conservation outcomes.

Changes to moisture flow at sites can result from subsidence related impacts, including altered or additional driplines and increased surface moisture within sandstone overhang sites. Should such effects be observed, the installation of artificial driplines or diversion barriers for surface water in the site's immediate surrounding environment could be considered to direct (where practicable) moisture away from art panels. In some cases changes in the moisture flow may result in mineral or micro-organism efflorescence having the potential to impact art panels. In these cases cleaning and stabilisation of the panels may be an appropriate management and conservation measures. Again, any such work should only be done in under the guidance of a Conservation Plan in consultation with the Aboriginal community and the DECC.

#### Sandstone Platform Sites

Sandstone platforms also have the potential to be impacted by subsidence movements. The type of potential impact at sandstone platform sites (albeit a low likelihood) is cracking of the platform due to compressive or tensile strains caused by subsidence or upsidence.

Engineering strategies currently available that may reduce the risk and severity of potential strains and therefore cracking impacts from subsidence or upsidence include:

- o the installation of a stress relief slot; or
- o the installation of a stress focus notch.

Both of these strategies aim to relieve stress over a certain area proximal to the archaeological attributes of a sandstone platform for example by increasing or focusing stress in another area.

Generally stress relief slots are deeper than stress focus notches although both techniques essentially work in the same way. Both techniques involve cutting into the rock platform to concentrate stress at the base of the cut and at the ends of the cut (Kayandel 2008). The deeper and longer the cut, the greater the area of stress relief adjacent to the slot and the greater the amount of stress concentration at the ends and base of the slot (Helensburgh Coal Pty Ltd 2008 in Kayandel 2008).

ICHPL has successfully used this technology in the past (at Marnhyes Hole on the Georges River) to reduce the risk of impact to a sandstone structure.

However, intrusive engineering works (such as stress relief and focusing works) can constitute a major works undertaking and while the works have the potential to reduce the risk or severity of impact, they also have the potential to cause damage to the site and/or its setting. Such impacts could potentially include:

- o disturbance of the site itself due to the deployment of machinery and in undertaking the works;
- o disturbance to surrounding PAD or archaeological deposit;
- vegetation clearance associated with obtaining access to the site and/or clearing sufficient space for the safe operation of machinery;
- o indirect vibration effects to sandstone features and archaeological features from machinery access and operation;
- o disturbance to the sites' cultural significance/setting; and
- o other direct and indirect impacts that may occur, depending on the technology implemented.

Prior to deployment of such mitigation, careful consideration would need to be given to the impact the works could have on the heritage values of the site and surrounding area, and other considerations such as the site accessibility, nature of the predicted subsidence movements, the risk of damage from subsidence in comparison to the level of likely damage associated with installing the measures, the size and geological structure of the area in question and a consideration of the appropriateness of the costs involved (Pearson and Sullivan 1999: 274).

It is anticipated that any such works would be designed, assessed and if appropriate, conducted in consultation with the Aboriginal community, under the guidance of a conservation plan as part of the AHP process.

# 9.3 Surface Development Management and Mitigation

Section 8.3 discussed the potential for impacts to different site types in the study area from surface infrastructure developments.

The principal management strategy in the case of the surface developments would be to conduct appropriate pre-clearance surveys prior to the surface development (if the proposed disturbance area has not been subject to a detailed survey previously) on an ongoing basis throughout the life of the Project. Avoidance of impact to archaeological and cultural heritage sites through design of the development is the primary management strategy, and should be implemented where practicable.

In determining whether a pre-clearance survey is required and in siting new surface infrastructure, the following would be key considerations:

- o presence of existing known sites (as mapped in this report, and added to throughout the Project life) in the proposed development area;
- o known sites should be avoided wherever practicable; and
- o location in the landscape and assessment against the predictive model presented in Section 4.5.

Appropriate pre-clearance surveys are recommended for all surface developments outside of existing developed areas (e.g. existing pit tops and vent shafts) to identify appropriate locations for surface development activities and to minimise potential impacts on identified Aboriginal sites, where practicable.

# 9.4 Stage 4 Coal Wash Emplacement Management and Mitigation

In the first instance, mitigation through avoidance has been incorporated into the design of the proposed Stage 4 Coal Wash Emplacement. The design of the proposed Stage 4 Coal Wash Emplacement area considered the location of Aboriginal sites and where practical the footprint of the Stage 4 Coal Wash Emplacement has been designed to avoid impact to known sites, including the only highly significant (both archaeologically and culturally) site in the area.

It would not be practical to avoid all sites associated with the Stage 4 Coal Wash Emplacement area. Impacts associated with the emplacement area include burial under the coal wash emplacement and disturbance from supporting coal wash emplacement developments (haul roads, channel diversions, settling dam works); and potential dust impacts.

For sites located within the boundaries of the proposed Stage 4 Coal Wash Emplacement area, the proposed management approach is to conduct detailed recording and where appropriate archaeological salvage of a sample of occupation deposit. This strategy is consistent with that successfully employed for the Stage 3 Coal Wash Emplacement area.

For sites avoided by the emplacement footprint, but located in close proximity, proposed management includes conducting detailed recording of the site prior to works in the vicinity, and demarcation of the site to minimise the potential for accidental impacts from mobile machinery working in the area.

Detail and scheduling of these management strategies should be developed in consultation with the Aboriginal community through the AHP process.

# 9.5 Management and Mitigation Summary

When considered with the Aboriginal cultural heritage values of the study area and the likelihood and scale of potential impacts of the Project on Aboriginal cultural heritage, the proposed management and mitigation measures would effectively minimise the potential impacts of the Project.

# 10.0 RECOMMENDATIONS

Based on the considerations of the Aboriginal cultural heritage significance of the study area (archaeological and cultural), the potential Project impacts and the proposed management and mitigation measures presented above, the following recommendations are made.

An AHP should be developed for the Project that details and schedules for the life of the project the mitigation and management measures presented in this report. The AHP should be developed in consultation with the Aboriginal community.

The AHP should include the following:

- A protocol for the involvement of the Aboriginal community in all Aboriginal cultural heritage related works conducted under the AHP.
- A program for regularly updating site information for the study area, including regular searches of the DECC AHIMS. Such a program could be incorporated into the pre-clearance survey and subsidence impact monitoring program activities.
- A program setting out the requirements for pre-clearance surveys (on a progressive basis) for new Project surface developments that are outside of the existing pit tops, existing ventilation shafts and the Stage 3 and Stage 4 Coal Wash Emplacement area.
- 4 A program for the verification of Aboriginal site data in the study area including accurately relocating sites for which GPS co-ordinates are not available, updating condition assessments and collection of baseline monitoring data for sites deemed to be of high or moderate archaeological significance or particular cultural significance.
  - 4.1 Updating the site recordings for sites of particular cultural significance should be prioritised where specifically requested by the Aboriginal community (Sites 52-2-0281 and 52-2-1006 for example).
  - 4.2 Obtaining more detailed information for sites with limited information (Appendix 5) should also be prioritised.
- A program describing the requirements for management and representative salvage works for sites that would be impacted by the Stage 4 Coal Wash Emplacement. In these cases the management measures should seek to be of a scale commensurate with the sites' archaeological and cultural significance.
- A protocol for the development of site specific Conservation Plans where pre-mining mitigation works are proposed, or where post mining mitigation and conservation works are required and agreed to by the Aboriginal community.

- A protocol for the consideration of whether pre-mining engineering measures (e.g. stress relief slots) for sandstone platforms containing sites of high archaeological significance or particular cultural significance could be implemented, if strongly advocated by the Aboriginal community. Prior to any deployment of this type of mitigation, careful consideration would need to be given to the impact the works could have on the heritage values of the site and surrounding area, site accessibility, the level of potential damage associated with installing the measures and a consideration the appropriateness of the costs involved (Pearson and Sullivan 1999: 274).
- A subsidence impact monitoring program to be implemented progressively for the study area as part of future SMP applications. The monitoring program should include all sites of moderate or high archaeological significance and/or sites of particular cultural significance. It should seek to include (where practicable) a selection of other sites with features that could assist to inform and further refine the impact assessment models currently used. The monitoring program should include the following:
  - 8.1 A schedule for undertaking the monitoring.
  - 8.2 A protocol for determining Aboriginal stakeholder involvement.
  - 8.3 Appropriately detailed baseline and archival site recordings directed by a suitably experienced rock art recorder including high resolution digital photographic coverage of shelters. The detailed recording should include the following:
    - 8.3.1 Scale plans and sections of each shelter.
    - 8.3.2 On site sketch interpretations of motifs or petroglyphs.
    - 8.3.3 Metrical and qualitative descriptions of art panels and any motifs or petroglyphs.
    - 8.3.4 Varied distance and aspect context photographs of the shelter and art panels.
    - 8.3.5 Single frame coverage of each panel and if required, set distance scale photography for montage of the panel with IFRAO scales.
    - 8.3.6 Single frame coverage of individual motifs and if required, set distance scale photography for montage of individual motifs with IFRAO scales.
    - 8.3.7 Varied distance and angle photography of informative features of the rock art and panels as required (e.g. superimposition of motifs or media) and its context (e.g. joints, cracks, seepage, mineral or organic accretions) with IFRAO scales.

- 8.3.8 Spherical photographic coverage of selected sites using high resolution digital photography and appropriate image stitching techniques.
- 8.3.9 Elevation plans of shelter walls recording structural and surface features including but not limited to art, graffiti, joints, bedding planes, exfoliation scars, cracks, mineral and micro-organism growth, dripline and water seepage locations.
- 8.3.10 The identification and recording through digital photography of specific monitoring points, informed by previous work undertaken by Sefton, Kayandel and Biosis Research, generally being pre-existing cracks, joints, areas of seepage located on or adjacent to art panels, or in other parts of the shelter.
- A protocol for determining whether proposed management actions are appropriate (e.g. installation of an artificial dripline) in the event of an observed subsidence related impact to a monitored site. The protocol should seek advice from the Aboriginal community and DECC and be cognisant of the potential impacts that can be caused to the site by implementing invasive techniques.
- 10 A protocol for the management and reporting of unknown Aboriginal sites that may be identified during the life of the Project, including, in particular, Aboriginal ancestral remains.
- 11 A review process to retain flexibility throughout the Project's life to incorporate learnings from all aspects of work conducted under the AHP.

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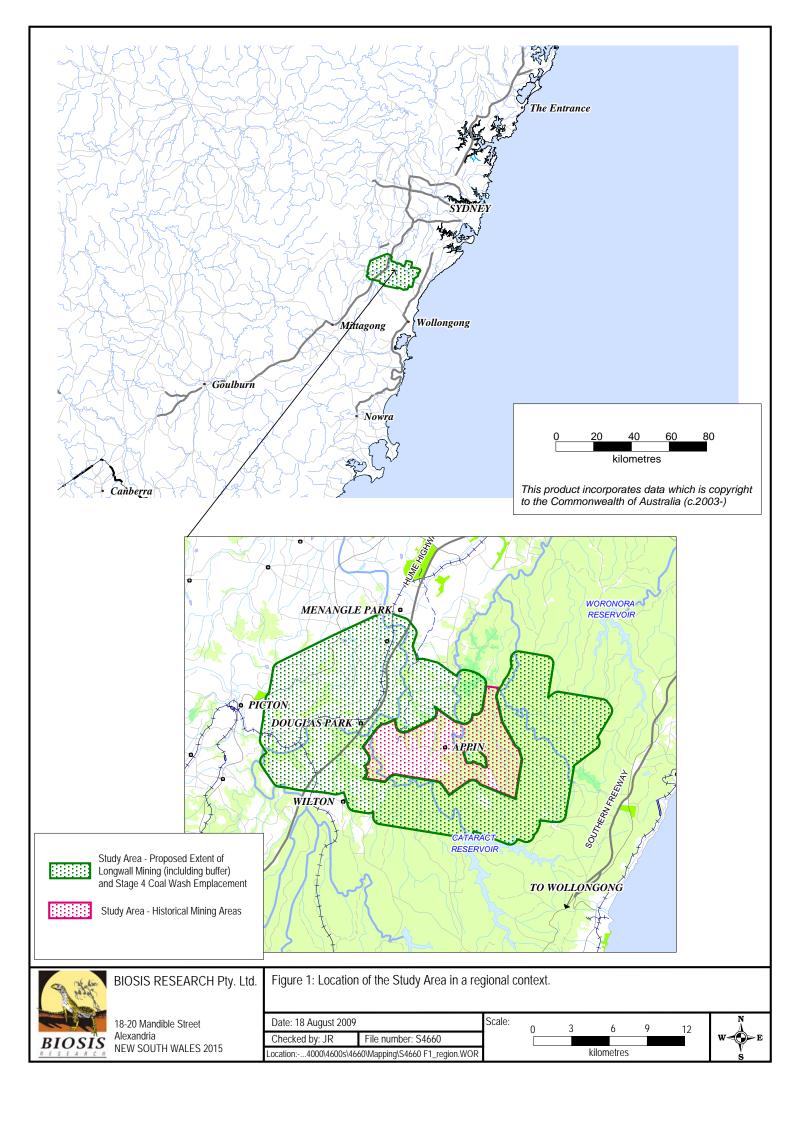
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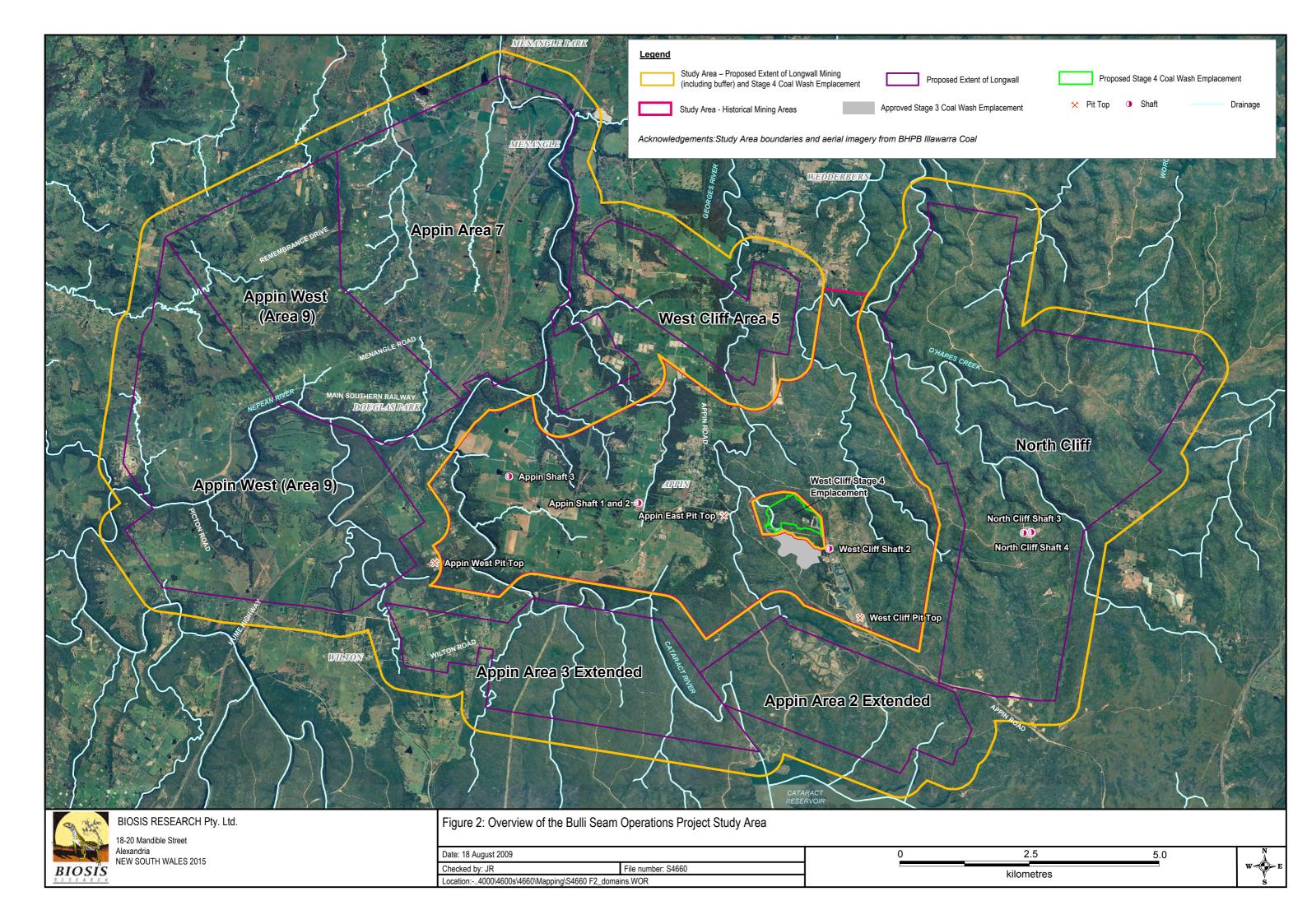
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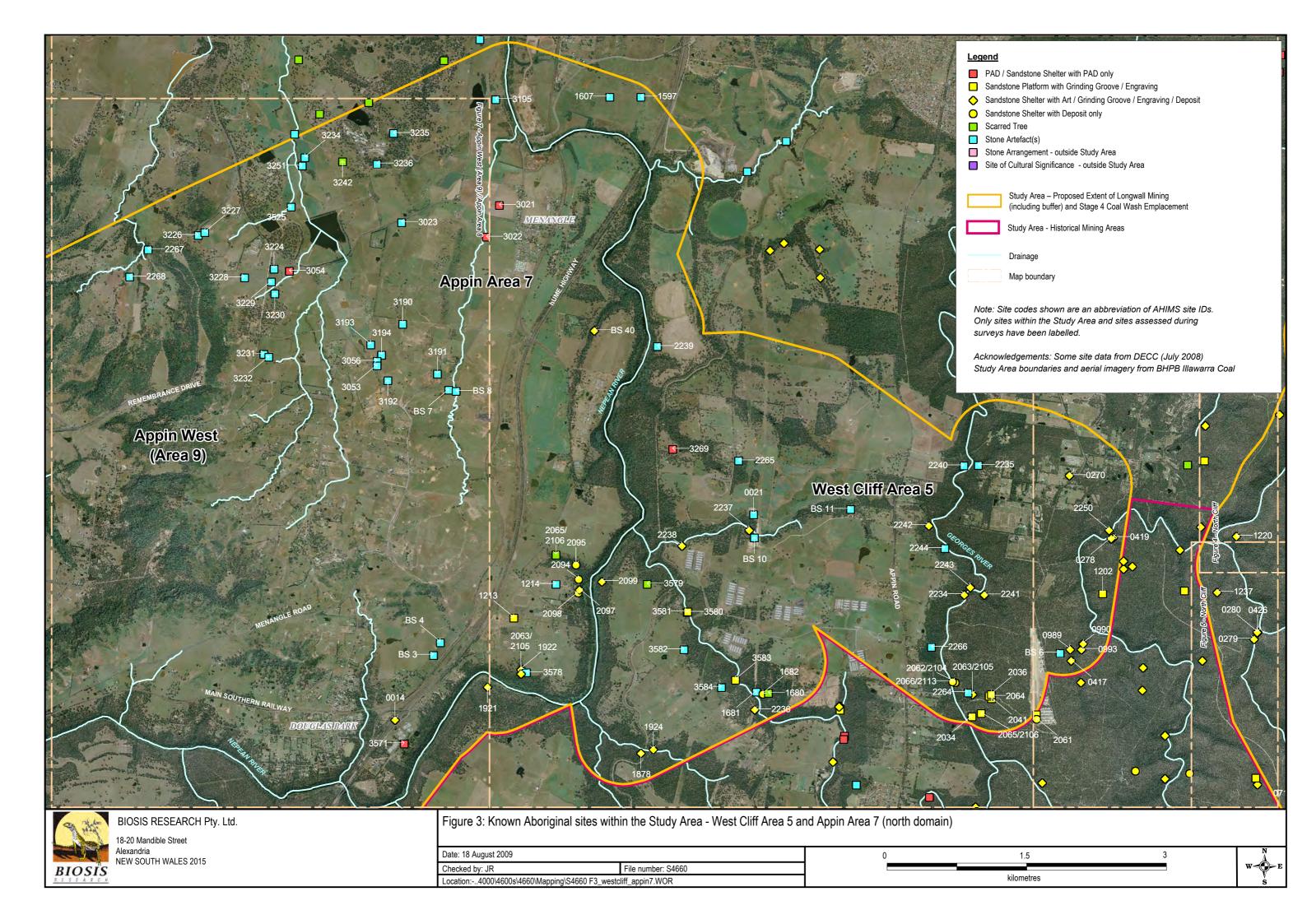
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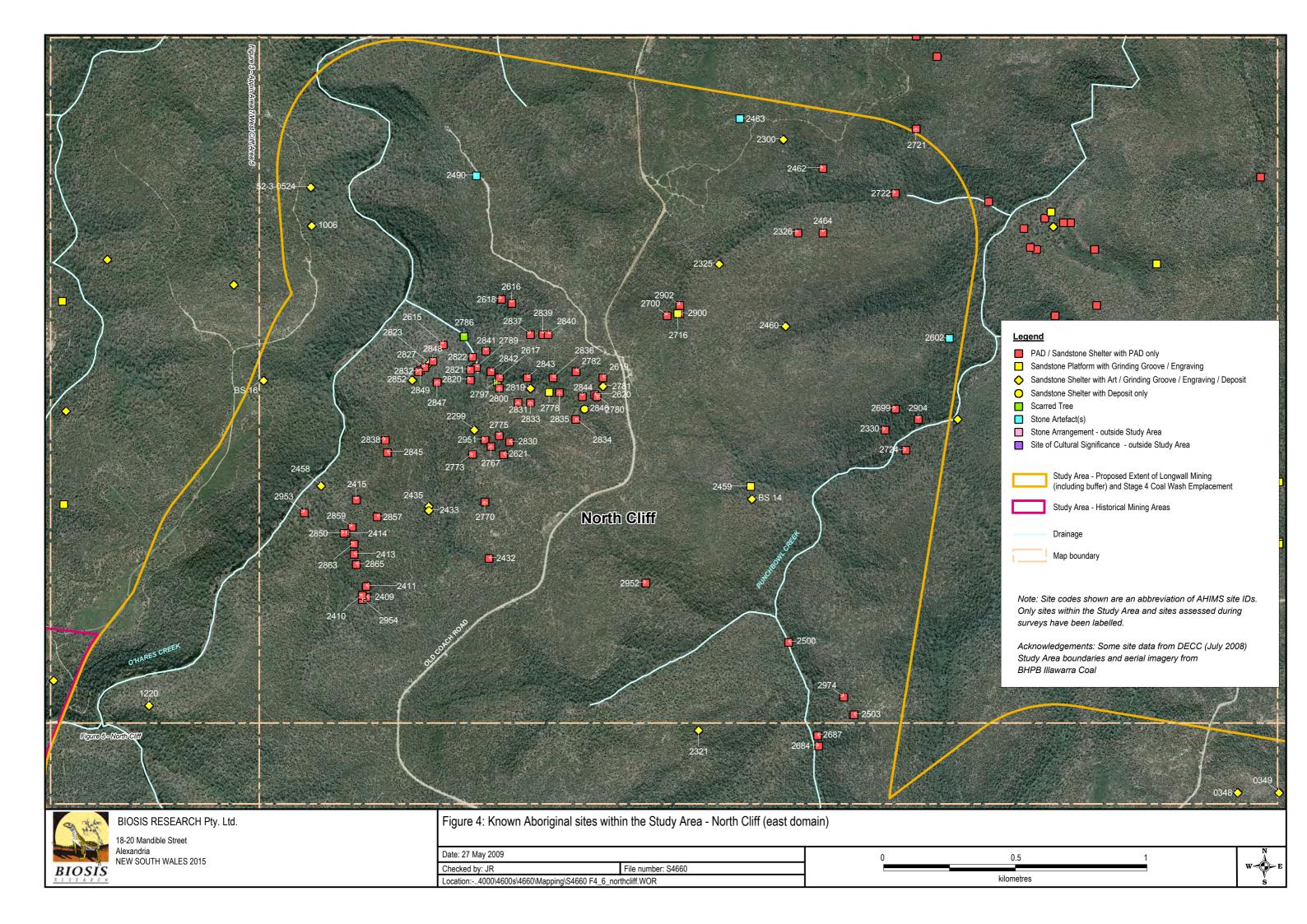
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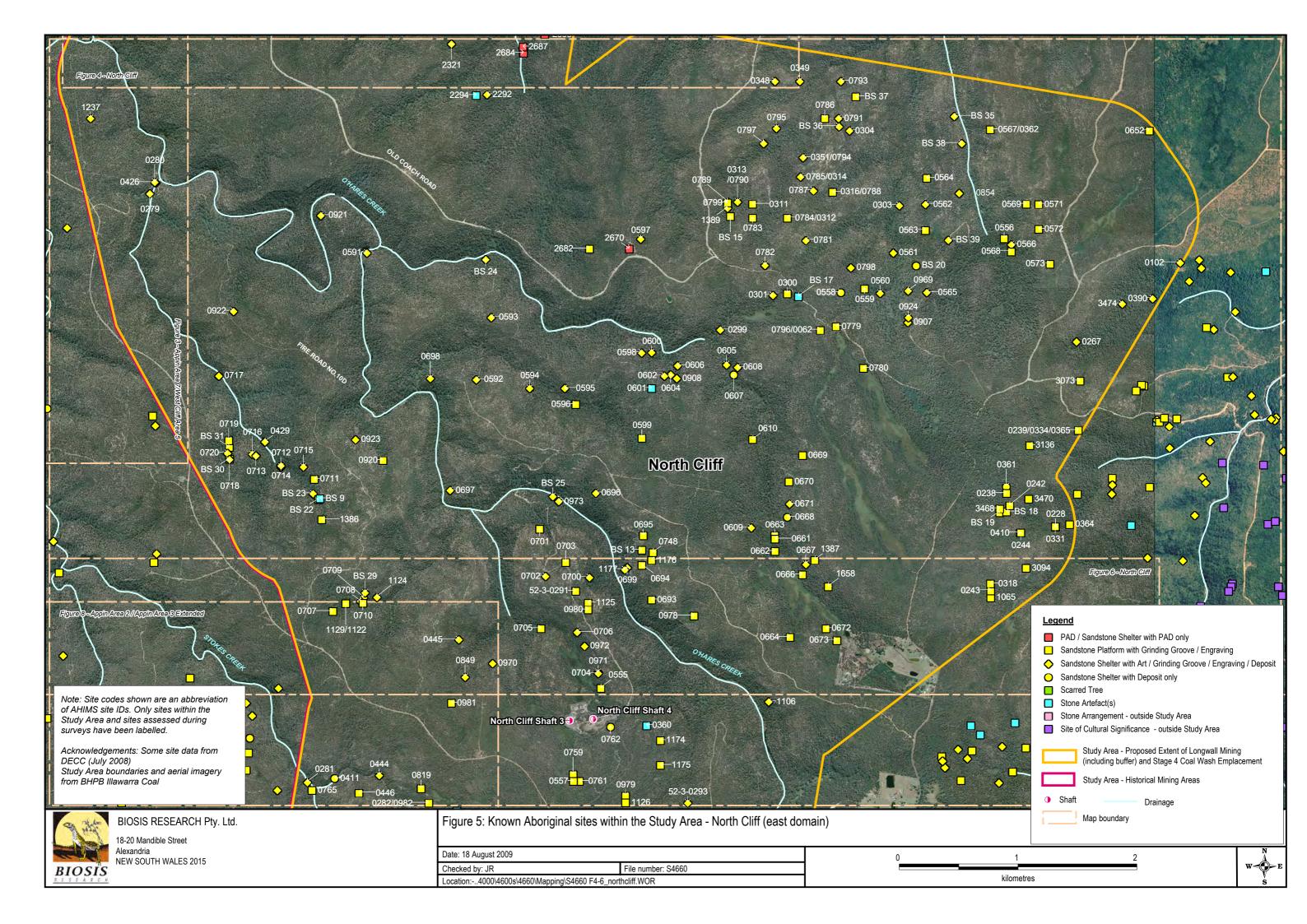
**FIGURES** 

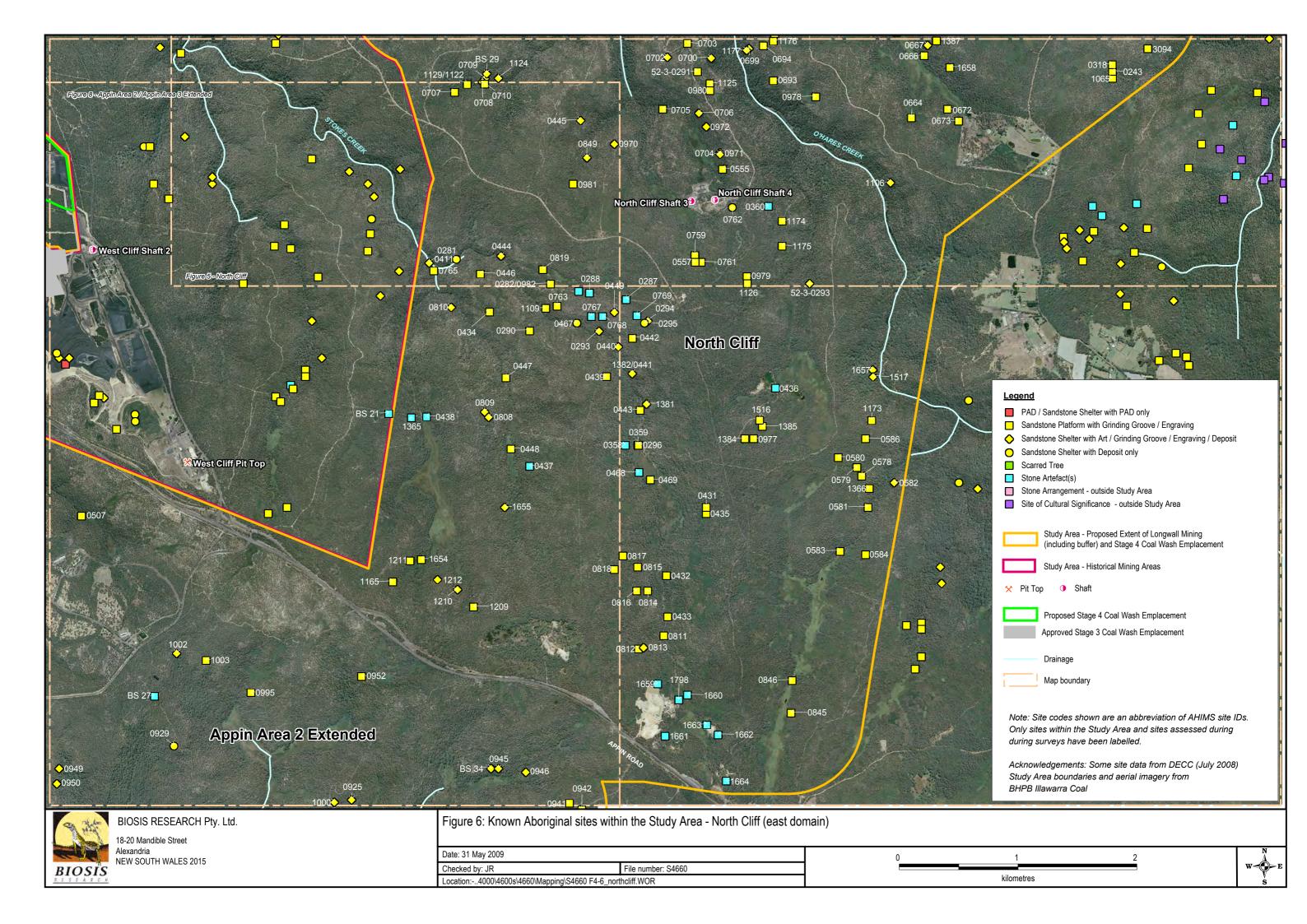


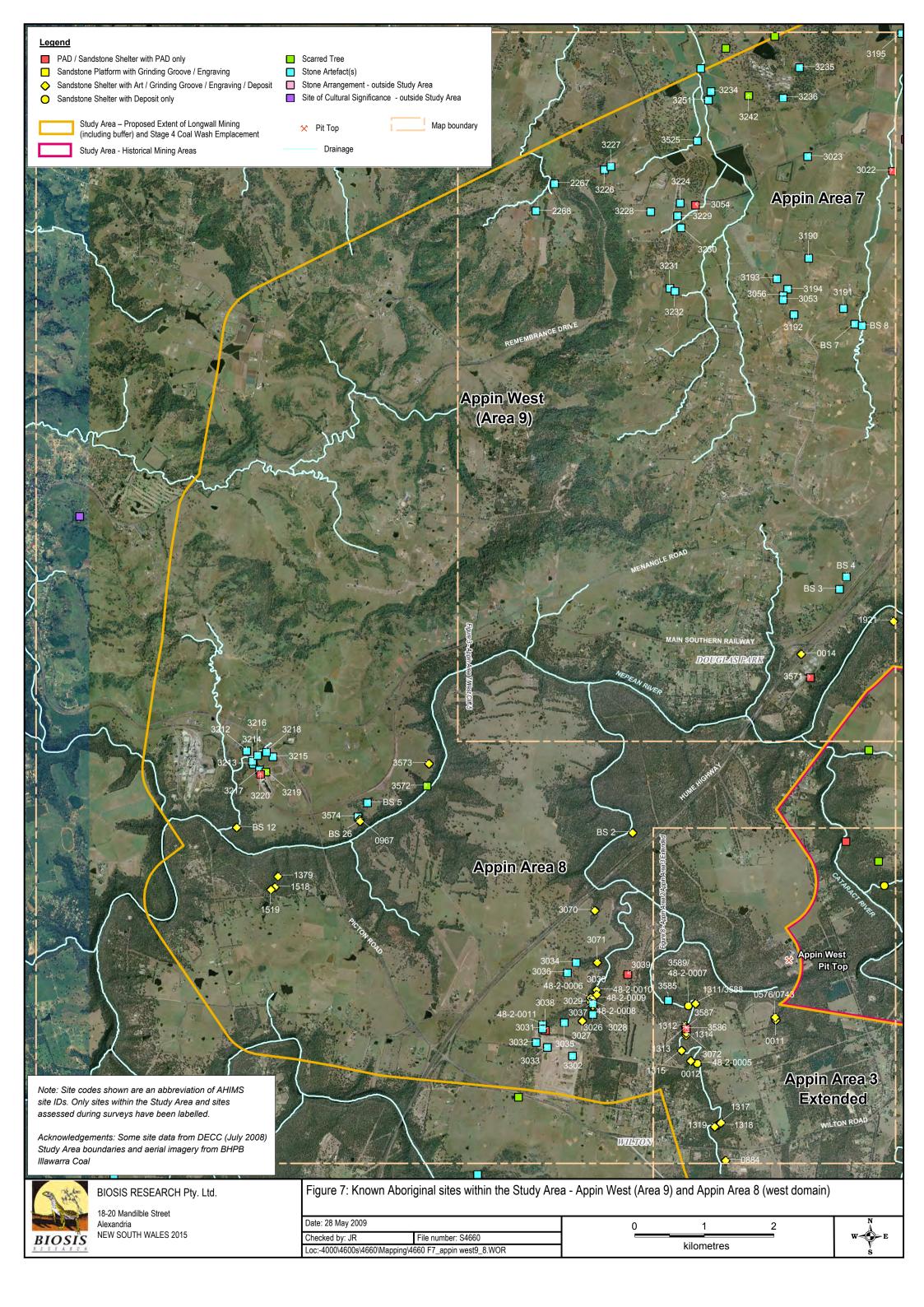


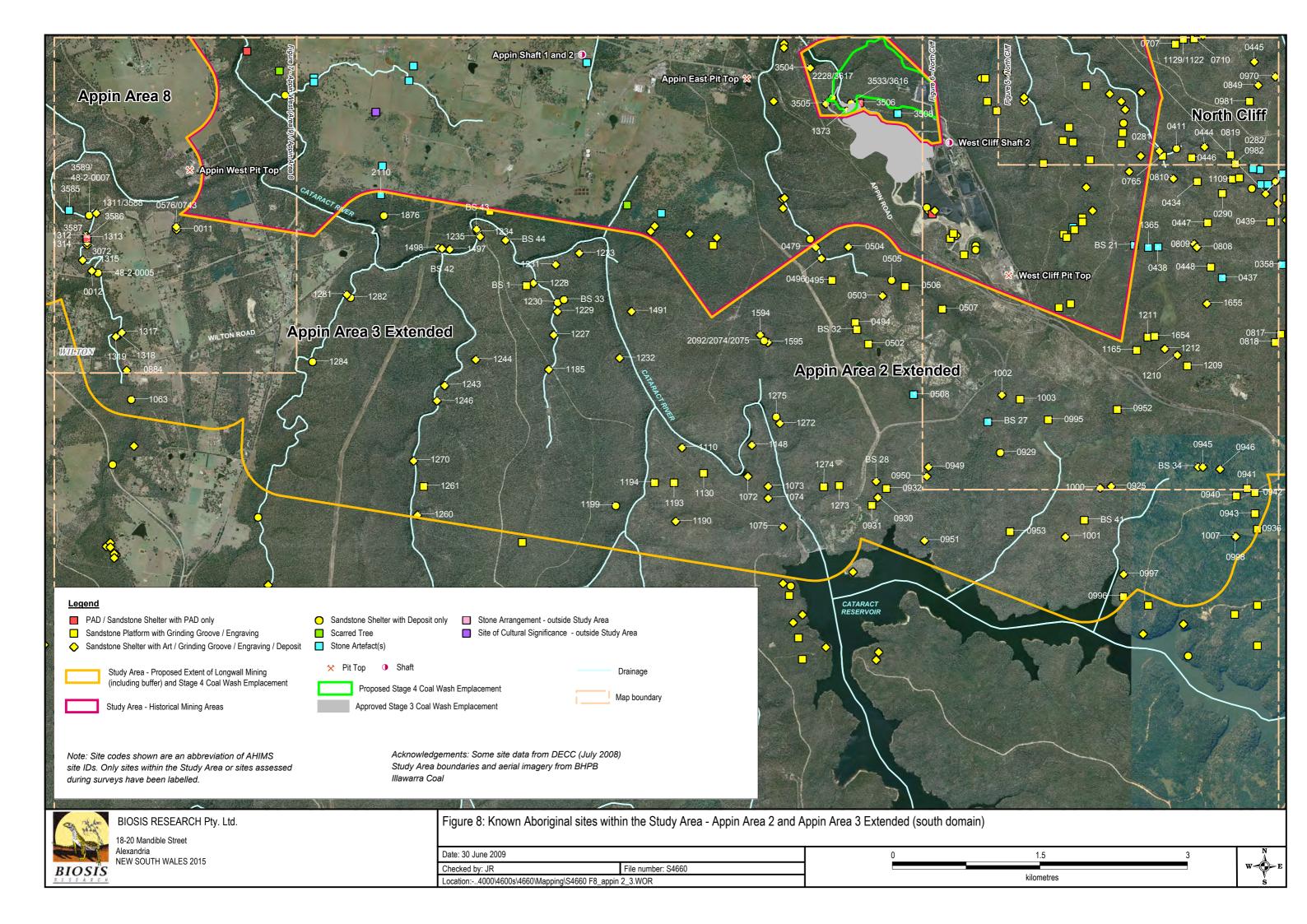


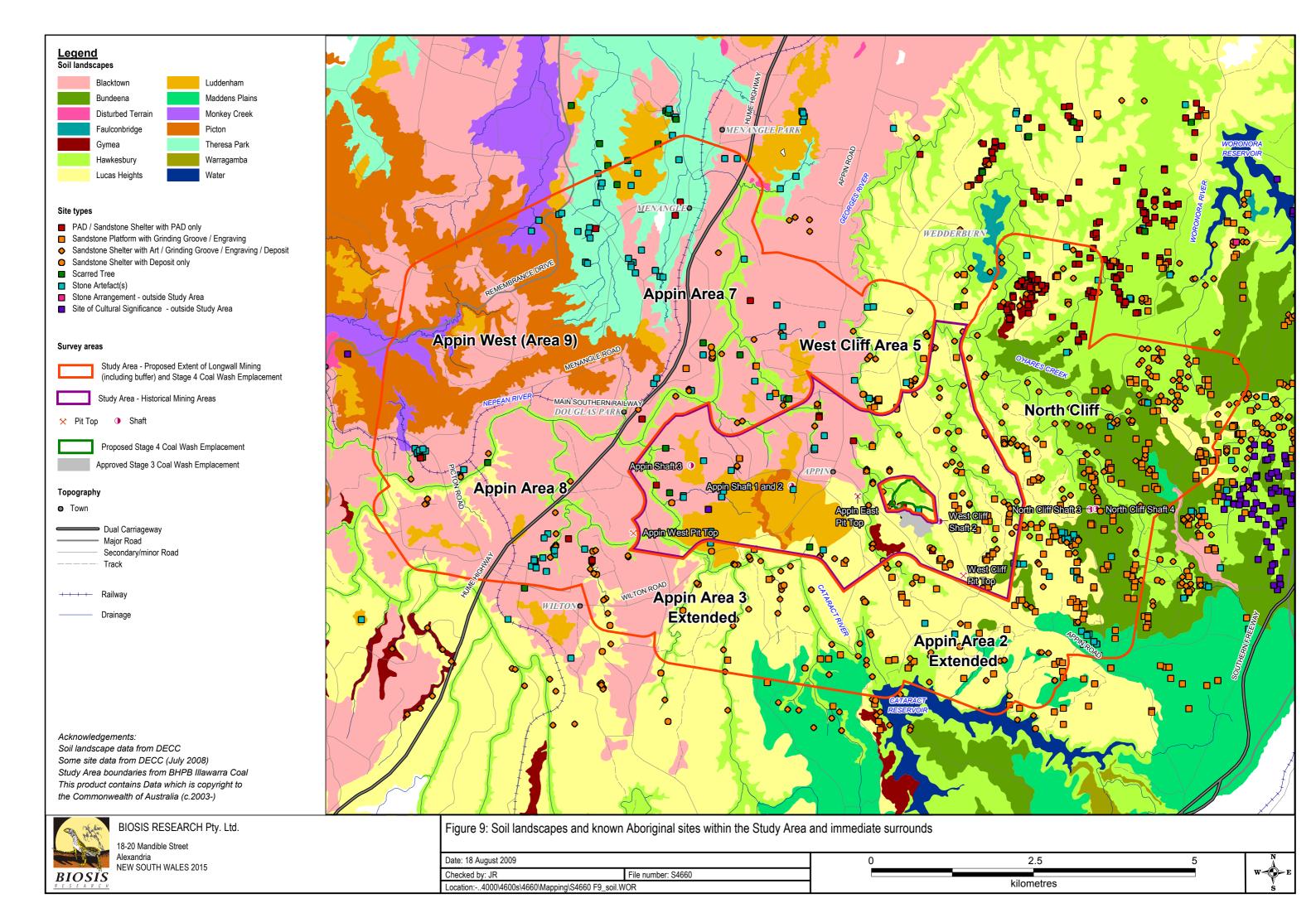


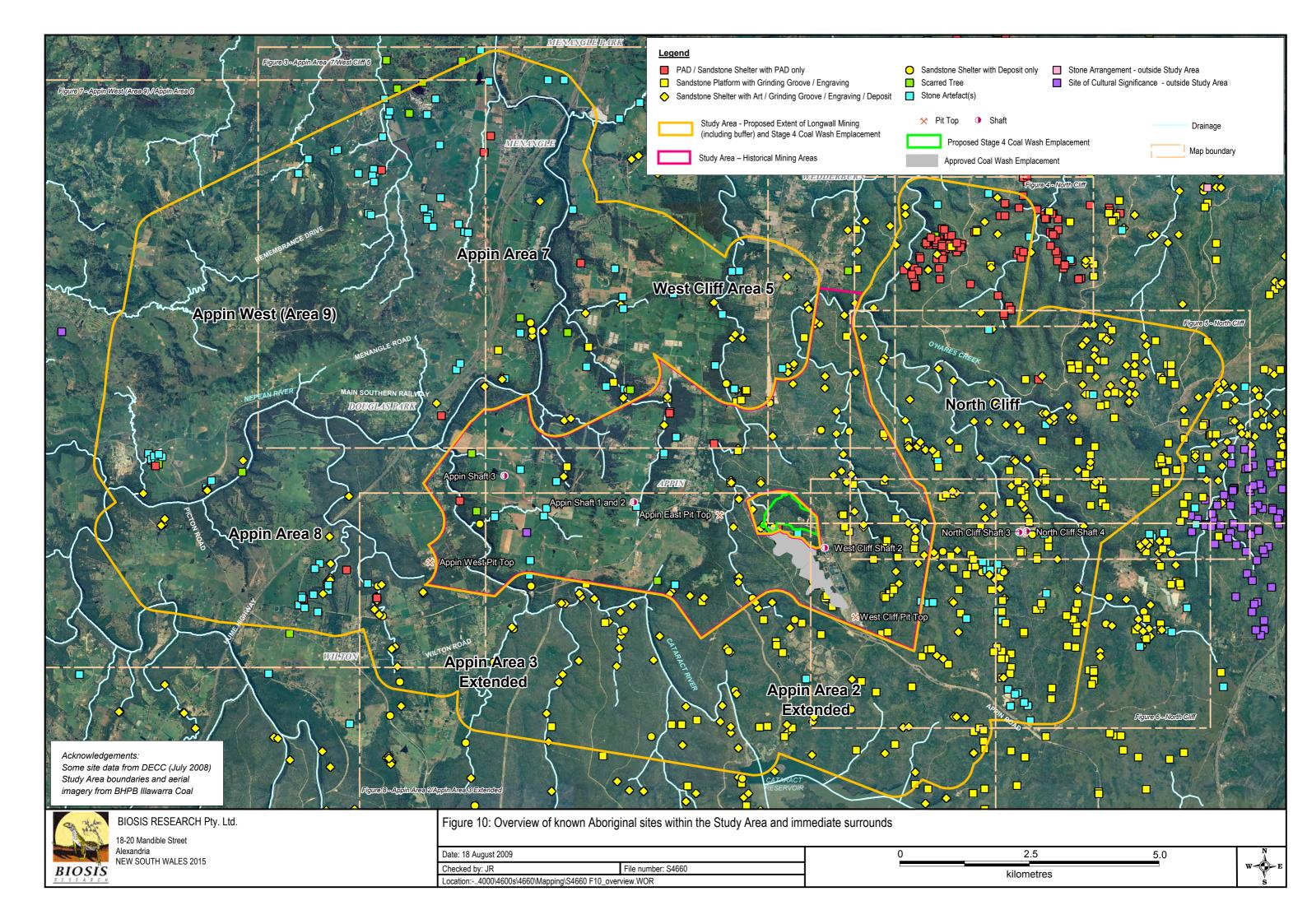


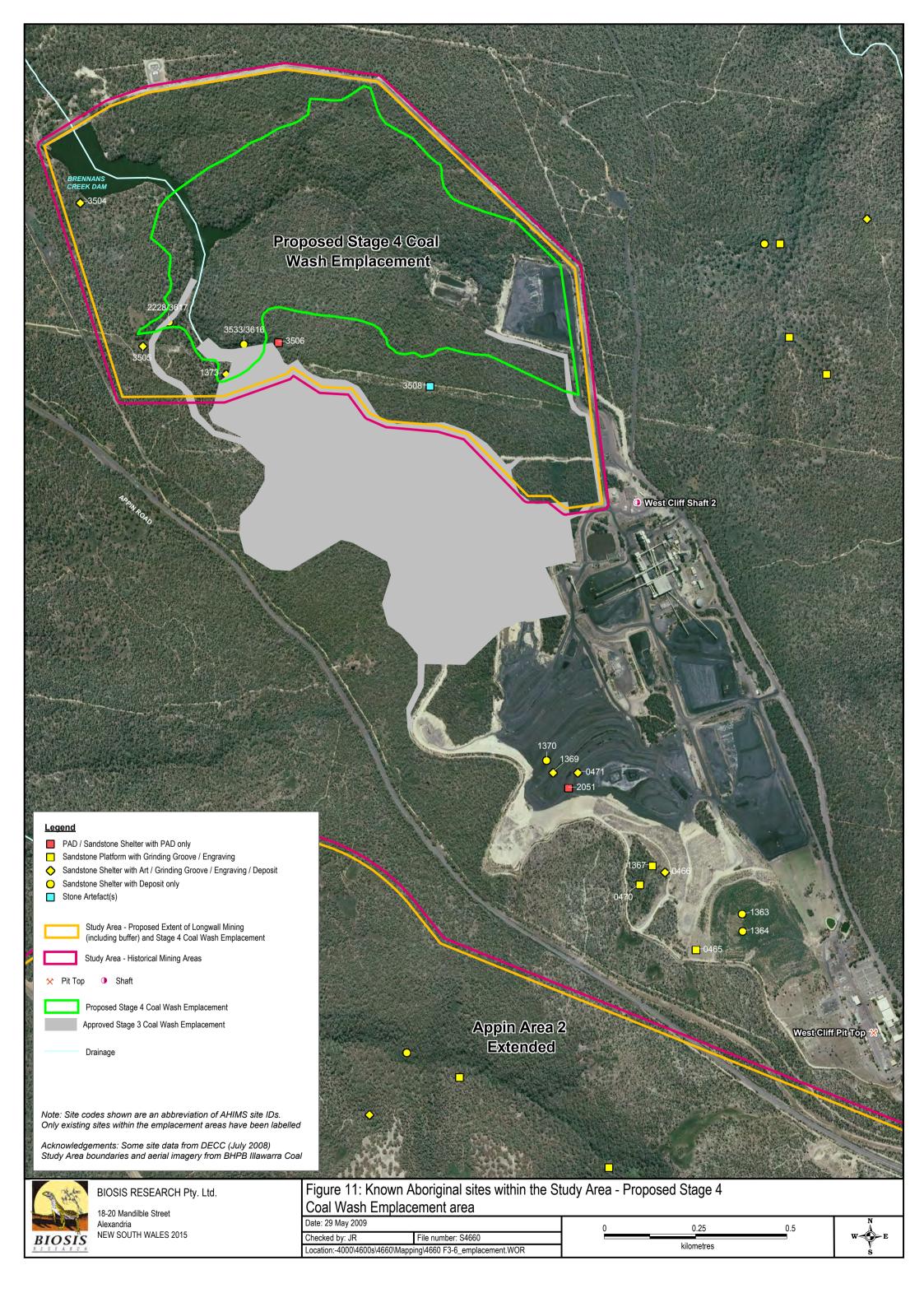












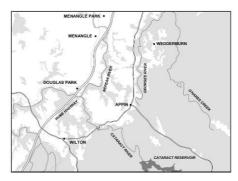
# **APPENDICES**

#### **APPENDIX 1: PUBLIC NOTICE**

#### PUBLIC NOTICE BULLI SEAM OPERATIONS ABORIGINAL CULTURAL HERITAGE ASSESSMENT

BHP Billiton Illawarra Coal owns and operates three underground mining operations in the southern coalfields region of NSW, including the Appin and West Cliff Collieries located approximately 25 km north west of Wollongong. Illawarra Coal proposes to seek approval under Part 3A of the Environmental Planning and Assessment Act 1979 (NSW) for further development of the Appin and West Cliff Collieries. The Bulli Seam Operations Project, includes:

- extracting up to 10.5 million tonnes of run-of-mine coal a year from the Bulli coal seam for a period of 30 years using longwall mining methods:
- augmenting and upgrading the existing infrastructure at the Appin and West Cliff Collieries to process, handle and store this coal;
   upgrading existing surface facilities and development of supporting
- upgrading existing surface facilities and development of supporting infrastructure (e.g. service boreholes, ventilation shafts, goaf gas and mine gas drainage equipment and waste water treatment and disposal):
- transporting run-of-mine coal to the West Cliff Colliery and Dendrobium Coal Preparation Plants and product coal to domestic markets and the Port Kembla Coal Terminal by road;
- continued gas drainage, capture and utilisation at the Appin and Tower Power Projects and West Cliff Ventilation Air Methane Project.
- disposing of coal wash and development of a pit top and associated supporting infrastructure; and
- ongoing exploration activities and surface rehabilitation.



As part of the Part 3A application process, Illawarra Coal will be preparing an Aboriginal Cultural Heritage Impact Assessment in respect of the area provided on the map above.

Illawarra Coal invites Aboriginal persons or groups who wish to be consulted in relation to the above process to register their interest in writing before 5.00pm 18 August 2008 via the below contact details.

Gary Brassington Project Manager – Bulli Seam Operations PO Box 514, UNANDERRA, NSW 2526 Ph: (02) 4255-3318 Fax: (02) 4255 3204

Email: Gary.M.Brassington@BHPBilliton.com

REGISTRATIONS MUST BE RECEIVED BEFORE 5.00pm, 18 August 2008

#### This Public Notice appeared in:

- o The Illawarra Mercury (2 August 2008)
- o Macarthur Chronicle (29 July 2008)
- o Wollondilly Advertiser (29 July 2008)
- o Macarthur Advertiser (30 July 2008)
- o Camden Advertiser (30 July 2008)

# **APPENDIX 2: SITE INSPECTION AND SURVEY ATTENDANCE RECORDS**

Date of Field Work	Biosis Research	Coomaditchie United Aboriginal Corporation	Peter Falk	Gary Caines	Illawarra LALC	Korewal Elouera Jerrungarugh Tribal Elders Aboriginal Corporation	Kullila Welfare and Housing Aboriginal Corporation	Ngunawal Heritage Aboriginal Corporation	Tharawal LALC	Wargon and Burra Aboriginal Centre Inc.	Wodi Wodi Elders Corporation
27/10/08	Jamie Reeves, Jenni Lennox; Melanie Thomson							Graeme Dobson; Pete Delponte	Donna Whillock	Scott Franks; Danny Franks	Roseina Davis; Sheree Bell
28/10/08	Melanie Thomson; Jenni Lennox; Jamie Reeves	Justin Thomas; Sam Thomas		Darryl Caines; Gary Caines		Bart Brown		Graeme Dobson; Pete Delponte	Donna Whillock	Scott Franks; Danny Franks	Roseina Davis; Sheree Bell
29/10/08	Renée Regal; Jenni Lennox; Jamie Reeves	Justin Thomas; Sam Thomas	Alecx Falk; Peter Falk	Darryl Caines		Bart Brown	Maria Maher; Ali Maher	Graeme Dobson; Pete Delponte	Donna Whillock	Scott Franks; Danny Franks	Roseina Davis; Sheree Bell
30/10/08	Renée Regal; Matt Richardson; Jenni Lennox; Jamie Reeves	Kristy Thomas; Robert Moylan		Darryl Caines		Bart Brown	Ali Maher; Maria Maher	Graeme Dobson; Pete Delponte	Donna Whillock	Scott Franks	Sheree Bell; Roseina Davis
31/10/08	Renée Regal; Jenni Lennox; Jamie Reeves; Matt Richardson	Kristy Thomas; Robert Moylan	Alecx Falk	Darryl Caines		Bart Brown		Pete Delponte; Graeme Dobson	Kelli Whillock	Danny Franks	Roseina Davis; Sheree Bell
03/11/08	Renée Regal; Jenni Lennox; Jamie Reeves	George Parsons	Alecx Falk	Darryl Caines		Bart Brown	Ali Maher	Pete Delopnte; Graeme Dobson	Cliff Foley	Danny Franks	Sheree Bell; Roseina Davis
04/11/08	Renée Regal, Dom Brady; Jenni Lennox	George Parsons		Darryl Caines		Bart Brown	Maria Maher	Graeme Dobson; Pete Delponte	Donna Whillock	Scott Franks	
05/11/08	Jamie Reeves; Dom Brady; Jessica Herring	Les Bloomfield; Ben Hughes	Alecx Falk	Darryl Caines		Bart Brown	Ali Maher	Graeme Dobson; Pete Delponte	Donna Whillock	Danny Franks	Sheree Bell
06/11/08	Jamie Reeves; Matt Richardson; Dom Brady	Ben Hughes; Les Bloomfield	Alecx Falk			Bart Brown		Graeme Dobson; Pete Delponte	Donna Whillock	Danny Franks	Sheree Bell
07/11/08	Renée Regal; Jenni Lennox; Jamie Reeves	Les Bloomfield; Ben Hughes	Alecx Falk	Darryl Caines		Bart Brown	Ali Maher	Pete Delponte; Graeme Dobson		Danny Franks	

10/11/08	Jamie Reeves; Renée Regal; Jenni Lennox; Melanie Thomson; Dom Brady	Ben Hughes; George Parsons		Darryl Caines	Michael Darcy; Steven Marsden	Bart Brown	Ali Maher	Karma Holmes; Dean Delponte	Donna Whillock	Danny Franks	Sheree Bell
11/11/08	Jamie Reeves; Renée Regal; Dom Brady; Jenni Lennox	Robert Moylan; Sam Thomas				Bart Brown	Ali Maher	Dean Delponte	Donna Whillock	Danny Franks	Roseina Davis
12/11/08	Renée Regal; Melanie Thomson; Jenni Lennox		Alecx Falk			Bart Brown	Ali Maher	Dean Delponte; Karma Holmes	Donna Whillock	Danny Franks	Roseina Davis
13/11/08	Jenni Lennox; Melanie Thomson; Renée Regal; Jamie Reeves	Sam Thomas; Les Bloomfield				Bart Brown	Maria Maher; Ali Maher	Dean Delponte	Donna Whillock	Scott Franks	Roseina Davis
14/11/08	Renée Regal; Jenni Lennox; Melanie Thomson; Jamie Reeves	Les Bloomfield; Ben Hughes		Darryl Caines		Bart Brown		Dean Delponte	Donna Whillock	Scott Franks; Danny Franks	Roseina Davis
18/11/08	Renée Regal; Dom Brady; Jenni Lennox; Jamie Reeves					Bart Brown	Paul Charles; Ali Maher	Dean Delponte	Donna Whillock		Sheree Bell
19/11/08	Jamie Reeves; Renée Regal; Melanie Thomson; Dom Brady					Bart Brown	Paul Charles	Dean Delponte; Karma Holmes	Kelli Whillock		Sheree Bell
20/11/08	Renée Regal; Dom Brady; Jamie Reeves					Bart Brown	Paul Charles	Karma Holmes; Dean Delponte	Kelli Whillock		
21/11/08	Jamie Reeves; Melanie Thomson, Renée Regal		Alecx Falk	Gary Caines		Bart Brown	Ali Maher; Paul Charles	Karma Holmes; Dean Delponte	Kelli Whillock	Heath Woodcroft	
24/11/08	Renée Regal; Melanie Thomson; Dom Brady			Gary Caines		Bart Brown	Paul Charles; Ali Maher	Pete Delponte	Kelli Whillock	Heath Woodcroft	Sheree Bell; Roseina Davis
25/11/08	Renée Regal; Dom Brady; Melanie Thomson; Jamie Reeves					Bart Brown	Paul Charles	Pete Delponte	Kelli Whillock	Heath Woodcroft	Roseina Davis; Sheree Bell

26/11/08	Jamie Reeves; Dom Brady				Bart Brown	Ali Maher	Graeme Dobson	Kelli Whillock	Heath Woodcroft	Roseina Davis; Sheree Bell
27/11/08	Renée Regal; Melanie Thomson; Jamie Reeves; Dom Brady				Bart Brown	Ali Maher	Pete Delponte	Donna Whillock	Heath Woodcroft	Sheree Bell
28/11/08	Jamie Reeves; Dom Brady; Melanie Thomson; Renée Regal		Gary Caines		Bart Brown	Paul Charles	Dean Delponte	Donna Whillock		Sheree Bell
27/01/09	Jenni Lennox; Jamie Reeves; Melanie Thomson, Renée Regal	Les Bloomfield; Sam Thomas					Dean Delponte; Rex Phillips	Donna Whillock		Sheree Bell
28/01/09	Renée Regal; Jenni Lennox; Melanie Thomson	Ben Hughes; Robert Moylan		Steven Marsden; Neville Maher	Bart Brown	Maria Maher	Pete Delponte	Donna Whillock		Sheree Bell
29/01/09	Jenni Lennox; Renée Regal; Jessica Herring; Jamie Reeves	Les Bloomfield; Ben Hughes		Neville Maher; Steve Marsden	Bart Brown	Ali Maher	Graeme Dobson; Daniel Phillips		Heath Woodcroft	Sheree Bell

NB - THIS TABLE IS BASED ON THE DAILY SIGN-IN SHEETS. IT IS POSSIBLE THAT SOME PARTICIPANTS DID NOT SIGN IN ON OCCASIONAL DAYS

# APPENDIX 3: ABORIGINAL COMMUNITY COMMENTS ON THE DRAFT REPORT

## Peter Falk Aboriginal Cultural Landscape profiler PO Box 1018 Mittagong 2575 0401938060

BIOSIS Research 18-20 Mandible Street, Alexandria NSW 2015

Attn: Jamie Reeves

Subject: Draft Aboriginal Cultural Heritage Assessment- BHP Bulli Seam Operations

Dear Jamie,

Pease find attached my response to your draft report for the BHP Billiton Bulli Seam Operation. If you require any further information please do not hesitate to contact me.

Yours truly,

Peter Falk

cc. Ms. Margrit Koettiff DECC Parramatta

#### Peter Falk Consultancy Aboriginal Cultural Landscape Profiler PO Box 1018 Mittagong 2575 0401938060

April 08, 2009

# Subject: Draft Aboriginal Cultural Heritage Assessment – BHP Bulli Seam Operations

There have been regional studies and investigations of the BHP Bulli area over the past 30-50 years and not including the current study, but due to the high Aboriginal significance of the study area, further studies and investigations should be carried out. As a majority of the Sites can be classified as having State and regional Archaeological significance, the further studies are warranted.

As BHP Billiton cannot guarantee that any destruction or disturbance of any of the significant sites within their boundaries, there must be a mechanism put in place that can be used to protect all Sites.

Any and all Sites found as in a Rock shelter with or with out Art or objects is still of high significance to the Aboriginal Communities in the area and must be protected as such. The same criteria used for Colonial Heritage items should apply to Aboriginal Cultural Heritage Sites and Objects at all times.

#### **Ethno history**

Aboriginal boundaries of the South Eastern part of Australia are, as described in Tindale's book (1974) quote "a dogs breakfast" and as such is very difficult to define. For example, as quoted in, *Australian Aborigines- History and Culture, Research Project:* **CONTESTED TERRITORY** written by Geoff Moore, December 2000

"English language translations of the word wadi or wodi include club, stick, tree and tomahawk. It is therefore highly unlikely that there was a tribe or sub-tribe named wadiwadi or wodi-wodi".

The accepted mob who is recognised for the area is the Saltwater and Sweetwater clans of the D'harrawal.

With the arrival of English invaders in 1788, the destruction of Aboriginal Peoples by War, Disease, Massacre, removal and relocation caused great upheaval to traditional Aboriginal boundaries, Culture and Heritage. Also the removal of native vegetation for feral animals and houses also created dislocation of Aboriginal People.

## 1. Knowledge of Aboriginal objects in the Landscape

Because of past regional studies and investigations, the knowledge of Aboriginal Objects within the study area is high and further investigations must be carried out to pass on the knowledge to the Aboriginal Communities.

#### 2. Cultural Significance

To date, with the finds within the study area, it can be said that the Aboriginal Objects and Sites are of higher significance to the cultural identity and cultural practices of past Aboriginal communities in the region.

#### 3. Archaeological Significance

The identified Aboriginal Objects and Sites are of State and Aboriginal archaeological significance to the Aboriginal Communities of the area.

#### 4. Extent of existing Disturbance

With all Sites found on the study area, they are intact within undisturbed areas, but if BHP Billiton proceeds with the proposed long wall mining, the company cannot and will not guarantee that damage or destruction to any site.

#### 5. Intergenerational Equity

The identified Aboriginal Sites and Objects are of such density and of such diversity, and cannot be readily accessed, due to terrain and property location. The integrity of all the sites must be protected for future generations.

#### Recommendations

Due to the fact that the area covered by the Bulli Seams Operations Project and the high significance of the Aboriginal Cultural Heritage of the study area, consideration of a high conservation program be instituted to protect **ALL** sites from further destruction or damage, which will be caused by any long wall mining through the study area.

In conjunction with the above, an Aboriginal Heritage Plan is developed to protect ALL sites through the life of the project. This will allow Intergenerational Equity for future generations of Aboriginal Peoples.

All other recommendations as outlined in your draft report be implemented and to include all interested Aboriginal Stakeholders for all consultations in the protection of all sites located and any further sites to be located.

Peter Falk

cc. Ms. Margrit Koettiff DECC Parramatta

# N.I.A.C. ABN 80475697297

# Northern Illawarra Aboriginal Collective Inc.

representing Wulungulu, Gundungara, Wadi-Wadi and Korewal traditional owner groups

2/3 Birch Crescent, East Corrimal, NSW 2518. ph/fax (02) 42833009

26 October 2008

Attention:

Garry Brassington Project Manager via Fax 4255 3204

Cc: Josh Peters Resource Strategies via Fax 07 3871 3166

Subject:

Bulli Seam Operation Aboriginal Cultural Heritage Survey and Assessment

Dear Mr Brassington,

You have many times made it perfectly clear that you will not allow volunteers (ie, at no cost to BHP) or volunteer technical assistants with cameras and GPS locators to accompany elders from NIAC member groups onto any site. When we arrive ready to do a survey we have been locked out and told to go home. According to Biosis this is at the instruction of their client, ie, you Mr Brassington – BHP Billiton. Biosis then erroneously report that we did not wish to participate. This is false and Biosis haven't corrected errors of fact in their reports.

Biosis use NIAC's name in their reports, although NIAC was not consulted, and not allowed to participate in surveys. Please stop using NIAC in your reports without our written consent. If there is anything to say we will say it for ourselves. Phoning and verballing people on mobile phones while they are driving is not a consultation. You have been told to stop doing this.

Biosis have generously been given materials which they then ignore. They have failed to cite site people for discoveries, such as those at Sandy Creek for example, as is customary. Biosis are culturally inappropriate.

Your letter gives the impression of union busting ways. You give little notice of this proposed survey, even though you could have done so months ago. The terms and conditions are not negotiable. We agree safety talks and drug and alcohol checks are important, but coupling safety talks to acceptance of other terms and conditions, raises concerns. You state that attending the safety induction is mandatory but attendance is then taken to be agreement of the terms and conditions. You give little time to think about the implications.

If taking the consideration (ie, money) offered by BHP Billiton means that we have to agree to applications for blanket s 90 consents to destroy Aboriginal Heritage, rivers, and landscapes (which are also Traditional Cultural materials) then we will have to decline your money. There are higher things and purposes. What will be lost is precious and irreplaceable and we will not take the blame for it.

We must insist on the 1km (one kilometre) buffer either side of major rivers and dams as suggested by NSW Scientific Committee for longwall mines much smaller than the ones you are proposing. Cracks travel for over a kilometre for smaller longwalls. How far will these new cracks travel? 3km guesstimate is not unreasonable. We must also insist on forthright, proper, full, and open public consultation in a timely manner. The damage caused by BHP Billiton to bridges, roads, buildings, rivers and landscapes, etc, has been well observed and commented on. How is this damage to be repaired? Who is going to pay for it? Will it be repaired? Can it be repaired?

We have declined your "consideration", and you have strenuously insisted volunteers be locked out of sites using various feeble excuses. We also have concerns for the safety of our volunteers.

When you use culturally appropriate personnel, give reasonable notice and time to think about the social implications, agree to the 1 km buffer (which is modest) as well as putting to rights all damage caused by BHP Billiton, past, present, and future then we will be happy to participate in field surveys.

Please do not hesitate to contact NIAC should you have any queries.

Yours faithfully

Daniela Reverberi (NIAC technical officer)

# NOTE 20 April 2009

We don't wish to be used by Biosis, BHP Billiton to obtain S 87's or S 90's. We object to this and don't wish to be blamed for Biosis, BHP Billiton operations or reports. We again ask that proper open community consultations be conducted.

Errors keep creeping into reports, for example the comment on page 9, "Representatives of the following stakeholders decided not to participate in the fieldwork: ......", is interesting. NIAC member groups are happy to participate in spiritually and culturally beneficial and socially acceptable projects or scientific surveys.

# Also NOTE 20 April 2009

We request that adequate funding be provided to pay for independent inquiry of general issues of importance to culture and the community, engineering and structural integrity issues, environmental and archaeological assessments in relation to longwall mining, etc, using consultancy firms of our own choosing.

Please print this and the preceding letter in your report.

# Additional NOTE 23 April 2009

The statement on page 9, "The following registered stakeholder[singular] considered the presence of the Illawarra Local Aboriginal Land Council provided sufficient representation: ....." is revealing and raises the question of why it was raised as an issue in (or by) Biosis, BHP Billiton report. The views of Traditional Bloodline owners which would be contrary to this view were not sought or included. This kind of subtle political innuendo has no place in a supposedly scientific document. Traditional Bloodline Owners have a right to respect and have suffered enough loss, dispossession, and exclusion.

You may print this and the preceding letter in your report.

Cubbitch Barta Native Title Claimants Aboriginal Corporation, 55 Nightingale Road, 27th April, 2009.

Biosis Research Pty Ltd. 8 Tate Street, WOLLONGONG, N.S.W. 2500.

Dear Jamie.

# RE; BULLI SEAM ABORIGINAL CULTURAL HERITAGE ASSESSMENT.

As you are aware, Cubbitch Barta Native Title Claimants Aboriginal Corporation did not take part in the field work for the proposed Bulli Seam Operations, for reasons that have been previously explained, however I would like to comment on the Draft Report dated March 2009.

I would have liked to have seen a much more detailed listing of site cards with new photographs, so that I could assess with some confidence the significance of some sites, with photographic evidence.

In regards to Cultural significance, and the statements that have been made on pages 104-106, from other Aboriginal groups, I find it very disturbing that some of those that talk about the cultural significance of a site, do not come from this country, and should be making no comments at all in regards to other peoples country. How can a Corporation whose objectives are housing, become involved in Culture & Heritage, and being able to actually comment. I guess this comes about when someone is given the perception that they have these rights, when I am sure if I tried it in their country, I would be more than likely speared or worse. They really do not understand cultural protocols.

I note that included in the recommendations, No 4. Mentions Stage 4 emplacement, and I do not believe that this can be included in the same AHP, as the Bulli Seam Operations. The stage 3 emplacement area, was a huge project, and I believe that Stage 4 should not get lost within the larger operational project for the mining of the Bulli Seam. Also I think what can be included in updating site records, would be to ascertain which sites have been mined under previously, and the results of the monitoring that would have taken place during that time, to be included in a report.

I agree with the other recommendations that have been made on Pages 131 and 132, except for the two mentioned in the previous paragraph, and No 5 that talks about the costs that may be incurred, preventing any pre-mining engineering measures. The cost should never be a consideration in the possibility of preventing damage to sites.

I would like to take this opportunity, to say thank you for being able to inspect a small selection of the sites within the Bulli Seam project over two days. This allowed an insight into the significance of some of the sites, and what I saw was extremely significant, as I am sure there are many more.

However, all the sites are important, and the knowledge that most of the sites are within locations that are affected by very little by human impact make them safer than others close to urban areas. Unfortunately one of the sites, closer to urban areas has been defaced by an enormous amount of graffiti over many years, even down to trying to copy the Aboriginal drawings in a shelter nearby. Hopefully the impacts of mine subsidence will be negligible, and that mining can take place in a way for many years to come with little or no damage to these special places.

Hopefully that the appropriate stakeholders will continue to be involved in this process, and being able to work alongside the mining industry amicably.

Yours faithfully,

Glenda Chalker

G. Chalbas

Hon. Chairperson

02 46841129 0427218425



Lot 114 Ash Road Prestons NSW 2170 Ph: 0412 176 081 Fx: 07 5630 8597

nhac@arindainternet.com.au

ICN 4755

28 April 2009

Gary Brassington Project Manager – Bulli Seam Operations Approvals Illawarra Coal Holdings Pty Ltd PO Box 514 UNANDERRA NSW 2526

#### **BULLI SEAMS DRAFT REPORT**

Dear Gary

I refer to your letter dated 25 March 2009 regarding the draft Aboriginal Cultural Heritage Assessment for the Bulli Seams Operations project.

We agree with the recommendations in the report. The draft report is very thorough and accurate and the recommendations are well thought out and considerate of the significant heritage of the site.

We look forward to assisting in the development of the protocols and programs referred to in the recommendations.

Kind regards

Melinda Tubolec

**Public Officer** 

Ph: 42263338 Fax: 42263360

3 Ellen Street WOLLONGONG NSW 2500

1 May 2009

Josh Peters
Environmental Project Manager
Resource Strategies Pty Ltd
PO Box 1842
MILTON QLD 4064

Dear Josh

# Re: Comments on Draft Cultural Heritage Assessment- Bulli Seam Operations

As the CEO of the Illawarra Local Aboriginal Land Council (ILALC) I would like to thank you for forwarding a copy of the draft Aboriginal Cultural Heritage Assessment-Bulli Seam operations.

I have read through the draft report and wish to make the following comments:

It is important to recognise that all the sites identified tell a story and are a vital link, to Aboriginal culture. These sites **must not** be damaged, but preserved for future generations.

It is not just a case of monitoring damage to sites, we must work in partnership to find alternatives to minimise the impact, compromise where possible to avoid destroying heritage places.

The Illawarra Local Aboriginal Land Council objects to Section 90, Rights to Damage or Destroy being granted as longwall mining continues to impact on our waterways and damage Aboriginal sites.

The ILALC welcomes the opportunity to work in partnership with the relevant organisations to develop an Aboriginal Heritage Plan (AHP) as recommended in this report, to protect and preserve all Aboriginal Sites within the study area.

I agree with the recommendations outlining the process in the development of the AHP, but recommend that all sites be included in the monitoring program, as all sites are of high Significance to Aboriginal People.

If you require any further information, please don't hesitate to contact me on the number listed below.

Yours in Unity

5 Ros-

Sharralyn Robinson

CEO

PH: 42 26 3338 FAX: 42 26 3360 M: 0410 125 463



# THARAWAL LOCAL ABORIGINAL LAND COUNCIL

Biosis research **Attn: Jamie Reeves**15-17 Henreietta Street
CHIPPENDALE NSW 2008

14<sup>th</sup> of May 2009

Dear Jamie,

Re: Draft Aboriginal Cultural Heritage Assessment – Bulli Seam Operations.

I have read the report on the Re: Draft Aboriginal Cultural Heritage Assessment – Bulli Seam Operations.

As you are aware this was quite a large walkover survey and not all sites were visited by all Aboriginal Representatives, as the time frame would not allow this. There for the groups were divided and delegated sites to visit on each day.

There were quite a large number of sites that were not re-located. Whether it was from the incorrect GPS recording or previously mapped incorrectly.

All known and recorded Aboriginal sites should be firstly and mostly avoided at all costs.

I have also taken note on your recommendations (page 131 point10.0) and I feel that these measures are acceptable. All of the sites that I attended have been recorded in your report and are true and correct.

Thank you for your invitation to attend this survey and it was a shame that a few unruly people can spoil such an important culturally significant experience. Otherwise I enjoyed my time out on this survey and I look forward to working with you in the future.

Yours in Indigenous Unity,

# Donna Whillock

Cultural and Heritage Representative Tharawal Local Aboriginal Land Council

#### **Peter Falk Consultancy**

#### PO Box 1018 Mittagong 2575

#### 0401938060

**BIOSIS** Research

18-20 Mandible Street

Alexandria, NSW 2015

Attn: Jamie Reeves

Subject: Draft Aboriginal Cultural Heritage Assessment-BHP Bulli Seams Operations

Further to my first report the following must be added to that report:

# Declaration on the Rights of Indigenous Peoples

#### Article 11

- Indigenous peoples have the right to practice and revitalise their cultural traditions and customs. This includes the right to maintain, protect and develop the past, present and future manifestations of their cultures, such as archaeological and historical sites, artefacts, designs, ceremonies, technologies and visual and performing arts and literature.
- 2. States shall provide redress through effective mechanisms, which may include restitution, developed in conjunction with indigenous peoples, with respect to their cultural, intellectual, religious and spiritual property taken without their free, prior and informed consent or in violation of their laws, traditions and customs.

#### Article 12

- Indigenous peoples have the right to manifest, practice, develop and teach their spiritual and religious traditions, customs and ceremonies; the right to maintain, protect, and have access in privacy to their religious and cultural sites; the right to the use and control of their ceremonial objects; and the right to the repatriation of their human remains.
- 2. States shall seek to enable the access and/or repatriation of ceremonial objects and human remains in their possession through fair, transparent and effective mechanisms developed in conjunction with indigenous peoples concerned.

The above articles are part of the **United Nations Declaration on the rights of Indigenous Peoples** which has been endorsed by the Australian Federal Government.

Taking this endorsement in consideration the following must be considered over the entire site of the BHP Bulli Seams Operation.

#### 1. The Study Area

BHP will take into consideration that the sites, Wether Rock Shelters with/without Art or artefacts and grooving sites must be protected from any damage caused by **potential subsidence** as this will contravene the above Declaration and also the new NSW State laws governing the destruction either knowingly or unknowingly of sites or objects, (fines up to \$1,100000) for corporations.

# 2. Objectives

The objectives of the Aboriginal Heritage assessment, where to relocate sites found over the past 25 years using only map references. This was achieved with some difficulty given the terrain. Also some new sites where found and recorded.

Due to the terrain and difficulties traversing the finding of more sites was not obtainable. A further detailed study of the whole site should be carried out to investigate and study all sites.

#### 3.1 Geology, Soils and Landforms

Aboriginal stone Quarries are found in the landscape and not necessarily within the region, as found at the Renwick Boys home in Mittagong, where it was found that stone tools in the area came from as far away as Newcastle Dubbo and Canberra. These stone tools or raw material could have been brought in on the trade routes of which are commonly known throughout NSW. The Coolac Opal stone tool has also been found on the Marulan CEMEX site.

The AHIMS register as we know it has listed only about 10% of what sites or artefacts are on the ground, the rest of the sites are being withheld or not found to date.

The potential for Aboriginal sites to be found on the various landscapes is only inhibited by the farming and clearing practices of past and present landholders.

#### 3.4 Resource Statement

Due to the past practices of Governments and landholders of displacing Aboriginal peoples by force, the resources were destroyed by burning and allowing stock to graze without concern for riparian zones waterways or native wildlife corridors Also the introduction of feral animals like the fox and rabbit which has contributed to the loss of native animals.

# 4.0 Archaeological and Cultural Context

## 4.1 Ethno history

If white history of Aboriginal Australia is the only source available to the author, Why is it that he has not bothered to sit down with recognised Aboriginal Communities and discuss knowledge and culture to get a better understanding of the area to be surveyed.

#### For example;

In 1813 there was a shortage of food in the Gundungurra area, which is west of the Wollindilly River to the mountains and valleys. The D'harrawal People allowed the Gundungurra into D'harrawal land to gather food, but in 1816 the Gundungurra People misplaced this trust and started the war with the white colonial land grabbers and were told by the D'harrawal People to go back across the river.

The northern boundaries of D'harrawal is at the Georges-and Cox Rivers and goes south from the Wollindilly River to the coast to just south of Nowra the south-east to the northern side of Lake George. The D'harrawal people of the highlands are known as the Sweet water people and on the coast as the Bitter water people.

The Wodi Wodi people are made up of people who came into the area, or where forced to move, these people can show claim to being from the Whardie Whardie people in Ecuhra on the now NSW/Victoria Border. The language that the Wodi Wodi people spoke was D'harrawal because they settled in D'harrawal Land and had to be able to converse with the locals.

The massacres of Aboriginal people in the area were carried out by the 47 Regiment of the Government of the day; these massacres were not only in Appin but also Picton, Bungonia and the Southern Highlands. This does not take into account the small massacres carried out by the farm holders of the area.

#### 4.5 Discussion and Predictive Model

# **Cultural Modification of Trees (scarred and Carved Trees)**

I have been advised that in the area of **BS28** there is approximately 6 scarred trees within a very small area, these have not been found in your report. Further study should be carried out to locate and record these trees.

#### **Aboriginal Ceremony and Dreaming Sites**

Wherever Aboriginal living sites are located there will be Culturally Significant sites the locations of such sites are normally retained as being too sensitive to be shown to anybody. Locations can be identified but it will only be in an approximate 50 metre circle or more. Further information on sensitive sites can be available but it will have to be on a restricted basis.

# **Aboriginal Places**

Aboriginal places within the study area, such as Bora Rings, Women's sites, Men's business sites etc. are there, but again, you would need culturally appropriate Aboriginal People to help locate such Aboriginal significant sites.

# Table 5: Aboriginal heritage sites located within the study area

The tables show only Archaeological Significance but all and any sites are of high Significance to Aboriginal People and must be noted as such.

# 8.3 Potential Surface Infrastructure Impacts

#### 8.3.1 General surface activities

When any further surface activities impact upon Aboriginal Sites or Objects, a Sec 87 to remove and relocate objects should be instigated through a Aboriginal Heritage Management Committee, this would ensure the protection from any surface activities.

#### Recommendations

The major recommendations are as follows:

# 1. Aboriginal Heritage Management Committee

This committee would be recommended by the Aboriginal Stakeholders and would be on a 3 year rotational basis to monitor surface activities and to instigate any Sec87/90 for the relocation of Aboriginal Objects and to ensure that any access roads do not impact on Aboriginal sites or objects.

# 2. Subsidence

BHP Billiton will ensure that no damage will occur to any Aboriginal Sites (shelters, grooving sites, Art work etc.) when any long wall mining occurs under any known sites.

# **Peter Falk Consultancy**

# PO Box 1018 Mittagong 2575

#### 0401938060

Biosis Research

18-20 Mandible Street

Alexandria NSW 2015

22 May 2009

**Attn: Jamie Reeves** 

Subject: BHP Bulli seams Aboriginal Cultural Heritage Assessment

Jamie,

As per our conversation of May 21, 2009, the use of the title of D'harawal Knowledge Holders is only out of respect for the D'harawal Knowledge Holders. They are a group of Elders who have no letterhead or formal organisation but are Aboriginal People who I defer to on Cultural Knowledge.

For my group of 1 I use my registered name of Peter Falk Consultancy for any business dealings with proponents and archaeologists.

I hope this clears up any confusion on your part created by this.

Yours truly

Original signed by

Peter Falk

ps. the extra report that you requested is attached. P

# **APPENDIX 4: SITE DESCRIPTIONS**

#### 48-2-0005 - PAD 1 Wilton Park

The site consists of a shelter with deposit and is located at the base of the lowest outcrop, approximately 8m east of the creek. The shelter is 17m in length, 3m in depth and 2.5m in height, and faces south west. Two artefacts were located, consisting of a broken basalt flake and a chert flake with a feather termination. The shelter has been disturbed by wombats and humans, and contains litter.

#### 48-2-0007; 52-2-3589 - Wilton 5

Duplicate AHIMS records exist for this site. This shelter with PAD is located on the lower cliff line of Allens Creek and is approximately 2m above water level. The shelter is 14.3m in length, 2.5m in width and 2.5m in height. The shelter faces east. The deposit at the shelter is greater than 1m in depth.

#### 52-2-0011 - Wilton

This site consists of a shelter with two sections containing art and deposit. The shelter is approximately 20m in length, 7m in width and 1.5m in height. The shelter has approximately 5m x5m of living area, and faces north east. The shelter is located on the western side of Clements Creek and is approximately 50m south of site 576/743. Art at the shelter consists of charcoal indeterminate motifs which are overprinted with graffiti, as well as atypical macropod, animal and anthropomorphic figures. Artefacts are present in the shelter and consist of one chert distal flake approximately 30 mm in length, and one broken silcrete flake approximately 25 mm in length. Deposit at the shelter is approximately 0.5m in depth and comprises loose grey and yellow silty sand. Some large blockfall has occurred at this site. The art has been previously interpreted as being post-contact in age.

#### 52-2-0012 - Allens Creek

This site consists of a shelter with art and deposit. The shelter is located on a sandstone cliff formation. The site is located approximately 20m from Allens Creek. The shelter is 30m in length, 2.1m in width and 2.8m in height, and the shelter faces south east towards Allens Creek. More than 30 artefacts were located within the shelter and consisted of chert, quartz and silcrete pieces. Two broken clay smoking pipes and some broken glass were also found within the shelter, suggesting historic (late 19<sup>th</sup> – early 20<sup>th</sup> century) camping or visitation of the shelter. Art at the site consists of charcoal anthropomorphs, a possible charcoal bovine and charcoal indeterminates. All the art is in poor condition.

# 52-2-0062; 52-2-0796 - West Woronora Site 1

Duplicate AHIMS records exist for this site, which consists of rock engravings located on two adjacent sandstone outcrops on a flat area near tributaries of the Woronora River and associated swampland. The original co-ordinates provided for 52-2-0062 are inaccurate. The engravings consist of six human figures, one macropod and three footprints on one platform, and two human figures on the other. The engravings on the first platform contain graffiti and damage, and since the original recording further graffiti has taken place, consisting of a human figure which is stylistically different to the original engravings. The two human figures on the second platform have not been subject to graffiti.

#### 52-2-0228 - Flat Rock Creek 59

This grinding groove site is located on the creek bed, at the base of a swamp, near a small waterfall. The sandstone platform is 7m by 7m. Seven grooves in total were identified, with 6 clustered around a pothole and a single groove further south of the pothole. The largest groove is 30cm by 8cm by 2cm while the smallest is 18cm by 7cm by 8cm. The grooves are only slightly weathered. A single quartz artefact was also identified at the site. The artefact was not mentioned on the original site card.

#### 52-2-0242 - Flat Rock Creek Site 202

The site consists of grinding grooves. It is located in the bed of a creek just off Fire Road 9B. The site is 6m in length, 4m in width and has a north-easterly aspect. The grooves are in 2 clusters of 3 grooves and are narrow, and flat. The eastern cluster is in very good condition and the western cluster is in poor condition. The site is impacted by weathering, water, lichens, and leaf litter.

#### 52-2-0278 SC 85 ("Dingo")

This record actually refers to two separate shelters in the immediate vicinity of each other. One shelter is located on the first cliff line up from Stokes Creek and contains a charcoal outline drawing of a dog or dingo, and the other shelter is immediately above this, on the second level up from the creek, approximately 20m south of 52-2-0419. This shelter is 46m in length, 8m in width and 5.1m in height, and faces south west. Art in this shelter consists of one charcoal outline anthropomorph, and two charcoal indeterminates. Artefacts were also located within this shelter and consisted of two chert fragments, one quartzite broken flake and one bipolar silcrete core. The shelter is actively weathering.

# 52-2-0280 - O'Hares Creek/Cobbong Creek

The site consists of a shelter with art and deposit. It is located across the creek on the western side adjacent to the 10B fire trail, 20m from O'Hares Creek. The shelter is 15m in length, 3m in width and 2m in height and faces east. The artefacts found at the site consist of surface stone artefacts at the back of the shelter. The art found at the site is in good condition, and consists of indeterminates as well as some well defined macropods and anthropomorphic figures. There is evidence of impacts by small animals, insects, fire, graffiti, sunlight, water seepage, salt deterioration and exfoliation.

#### 52-2-0281 - Stokes Creek 1

The site consists of a shelter with art. It is located in Dharawal State Conservation Area on the first cliff above Stokes Creek on the western side and has a large pool in front of the site. The shelter is 30m in length, 3.5m in width and 4.5m in height and faces north-east. A large pool is located in the creek in front of the shelter. The site has two distinct and separate areas: art in one area depicts macropods; art in the other area depicts human and ancestral figures, and what was interpreted by Aboriginal representatives as a woman giving birth. The art features some unusual motifs. The condition of the art is good, but this condition has deteriorated since the original recording of the site. Impacts include sunlight, water, lichen, mineral accretions, and exfoliation.

#### 52-2-0293 - Stokes Creek 9

The site consists of a shelter with art. It is located on the second step up from Stokes Creek under a large overhang feature. The site is 5m in length, 3m in width and 2m in height and faces south. The artwork found at the site features an indeterminate shape in ochre. The site is in poor condition and has deteriorated since the original record. It is impacted by moss, mineral accretion, and exfoliation.

# 52-2-0301 - Dahlia Creek 3

This shelter with art is located on the upper slopes of a valley, 100m west of a swamp. The shelter is 7m long, 3m wide and 2.2m high, and faces south east. Art in the shelter consists of indeterminate charcoal drawings. Graffiti is present and dates from 1950. Both the art and graffiti have deteriorated since their original recording, and the art is in poor condition.

#### 52-2-0312; 52-2-0784 - West Woronora 6

Duplicate AHIMS records exist for this site, which consists of a rock engraving and is located on a large, irregular surfaced and north sloping platform, overlooking the edge of a gully. The engraving is situated in a depression in the sandstone, which was full of drift sand on the day of the survey. The left leg of the north west figure was clearly visible.

#### 52-2-0351; 52-2-0794 - WW16

Duplicate AHIMS records exist for this site, which is a shelter with art and deposit. It is located on a drainage line that flows down a steep incline on west side into the Woronora. The site is below a cliff approximately 2m to3m high. The site is 20m in length, 3m in width and 2m in height and faces west. The shelter deposit is at approximately 0.5m in depth at a dripline and is a dark, yellow, silty sand. One surface stone artefact was found. The art found at the site includes indeterminate shapes, lizards and macropods and consists of infills and outlines drawn in black or white. The art is in good condition, although some impacts from animals, water, salt deterioration and exfoliation exist.

#### 52-2-0364 - Flat Rock Creek 109

This grinding groove site is located at the top of a waterfall, right on the edge. The site is located 90 m east of 52-2-0228, down the creek. The site faces north east and contains one groove. The groove is in poor condition, and the surface of the sandstone platform is just starting to exfoliate.

#### 52-2-0410 - FRC 133

The site consists of grinding grooves. It is located by a tributary of Woronora River, west of main 9 fire trail. The site is 7m in length and 7m in width and is an open site. The grinding grooves are broad and there are seven grooves in two clusters. The smallest groove is 28cm in length, 6cm in width, and 1cm in height, and the largest groove is 50cm in length, 10cm wide and 2 cm deep. The site is in good condition.

#### 52-2-0411 - SC15

The site consists of a shelter with deposit. It is located in Dharawal State Conservation Area on the top ledge above Stokes Creek, north-east of the waterfall and is a large shelter. The site is 35m in length, 4.5m in width and 5m in height and faces south-east. No artefacts were relocated during the survey, although originally black chert artefacts were recorded within the shelter. It is possible that onion skin laterite was mistaken for artefacts during the original survey. The deposit is 10cm deep and is shallow, silty, yellow sand. The site is impacted by animals, insects, algae, lichen and moss, mineral accretions, and exfoliation.

#### 52-2-0419 - Stokes Ck 86

The site was originally recorded as a shelter with deposit, containing a single quartz bipolar artefact. The shelter is located on the second level up from Stokes Creek and on the eastern side of the creek, and is approximately 20m north of 52-2-0278. The shelter is approximately 30m from the creek, and is 6m long, 3m wide and 2.2m high. No artefacts were located within the shelter when it was inspected, and no deposit was present, rather the floor is rocky and covered in loose yellow sand.

#### 52-2-0426 - O'Hares Creek Site 72

The site consists of a shelter with art and deposit. It is located 5m from O'Hares Creek, east around the ridge line from 52-2-0280. The site is 30m in length, 4.5m in width and 2m in height and faces south-east. The deposit is approximately 20cm deep and consists of yellow, sandy loam. The art found at the site consists of 2 panels of line drawings in black of macropods, indeterminate lines, and figures. The site is in poor condition and is impacted by animals, insects, fire, graffiti, seepage from the roof, lichen in the wall/ceiling, mineral accretions, salt deterioration, and exfoliation on the ceiling and back wall.

#### 52-2-0438 - SC 28

This artefact site consists of a small number of artefacts and is located on a road by the edge of a swamp. Originally 12 artefacts were recorded. During this inspection only two were relocated, consisting of a quartz bipolar core and a grey chert flaked piece. Some small pieces of quartz were also noted although their artefactual status was not determined in the field. The area has been disturbed by vehicle travel along the fire trail. The site has also been disturbed by runnels and gully erosion.

#### 52-2-0440 - Stokes Creek

The site comprises a shelter with art. The shelter is located on the lower slopes of a valley and is approximately 30m from Stokes Creek, on the eastern side. The shelter is 12m long, 2.1m wide and 1.6m high, and faces west. Art at the shelter consists of a charcoal outline macropod on the ceiling and charcoal indeterminates on the rear wall of the shelter. The art has deteriorated since originally recorded and much of the art on the original site card is no longer visible.

#### 52-2-0441; 52-2-1382 - Stokes Creek 25

Duplicate AHIMS records exist for this site, which consists of a shelter with art, located on the lower slopes of a valley. The shelter is approximately 60m from Stokes Creek. The shelter is 22.5m in length, 7m in width and 4.5m in height, and faces south west. The lighting conditions at the time the shelter was relocated resulted in the art not being identified, although graffiti at the site was discernable.

#### 52-2-0443 - Stokes Creek 24

The site consists of grinding grooves and engraved channels. The site is located in the centre of a creek on a rock bar, with large pools above a waterfall. The sandstone platform is 50m in length and 20m in width. There are 7 grooves in a cluster and 3 ground channels, linking the main pool to a pothole, and then to a small, deep pothole. The largest groove is 37cm by 9cm by 4cm and the smallest is 30cm by 6cm by 2cm, while the engraved channels are all 15mm deep and are 15cm, 15cm and 10cm in length respectively. The original recording mentioned 15 grinding grooves but only seven were located.

#### 52-2-0479 - Bulli Mine Shaft 16

This is a sandstone shelter with art, stone artefacts and archaeological deposit. The shelter is 7m long, 1.5m wide and 1.2m high and the sandy, light yellow deposit is estimated to be 0.25m deep. The art consists of 2 charcoal macropods, and is very faded. It was estimated that more than 100 stone artefacts were present in the dripline and on the surface of the shelter floor. The artefact raw materials included quartz, petrified wood, chert and quartzite.

# 52-2-0494 - Upper George's River 1

The site consists of grinding grooves and engraved groove channels. It is located approximately 100m downstream from the bottom of the swamp. The site is 15m in length and 11m in width. The artefacts found at the site consist of 18 grinding grooves in several clusters and an engraved groove channel. The grooves are broad. The site is in very good condition, however the site is impacted by water wash, lichens, and vegetation.

#### 52-2-0495 - Upper George's River 2

The site consists of grinding grooves. It is located above a small waterfall on the creek. The site is 10m long and 6m wide. The two grinding grooves were found at the site. The grooves are narrow and pointed. The site is impacted by lichen.

#### 52-2-0496 - Upper George's River 3

The site consists of a shelter with art, including the hand stencil of a small child. It is located downstream of where a swamp leads into a small drain, under a high shelf that the drain spills over. The site is 10m in length, 2.7m in width, and 7m in height. The art found at the site consists of two panels, one with a red ochre hand stencil, the other panel with 4 indeterminate shapes drawn in black. Panel 1 is in good condition and Panel 2 is in poor condition. The site is impacted by spider webs, sunlight, lichen, and ceiling exfoliation.

#### 52-2-0504 - Appin/Georges River

This shelter with art is located under the top cliff line on the western side of a small drainage which flows into the Georges River, and is approximately 120m from the Georges River. The shelter is 11m in length, 3m in width and 6m in height, and faces east. Art at the shelter consists of three indeterminate charcoal infill and outline drawings.

# 52-2-0565 - East Woronora 4

The site consists of a shelter with art. The location described by the map co-ordinates provided on the site card was visited but the site was not present. A search of the surrounding area was conducted, however the site was not found. It is determined that the map co-ordinates registered on AHIMS are incorrect, and the site's exact location is currently unknown.

#### 52-2-0568 - East Woronora 8

The site consists of grinding grooves. The location described by the map co-ordinates provided on the site card was visited but the site was not present. A search of the surrounding area was conducted, however the site was not found. It is determined that the map co-ordinates registered on AHIMS are incorrect, and the site's exact location is currently unknown.

#### 52-2-0571 - East Woronora 11

The site consists of grinding grooves. The location described by the map co-ordinates provided on the site card was visited but the site was not present. A search of the surrounding area was conducted, however the site was not found. It is determined that the map co-ordinates registered on AHIMS are incorrect, and the site's exact location is currently unknown.

#### 52-2-0576; 52-2-0743 - Douglas Park

Duplicate AHIMS records exist for this site, which consisting of a shelter with art, and is a large shelter just above the base of Clements Creek. The shelter is 40m long, 10m wide and is 12m high, and faces east. Art in the shelter consists of red ochre hand stencils and a patch of red ochre. There is extensive graffiti at the site, covering the stencil areas. One clear piece of graffiti reads "Bro. Novices 19-4-64".

#### 52-2-0583 - O'Hares Creek 6

The site consists of grinding grooves. It is located on a large sandstone platform at the base of a swamp where the creek drops over a waterfall. The site is 70m in length and 20m in width. The grinding grooves found at the site are broad and 24 of 37 were found in 7 clusters. The site is impacted by microflora, but is in good condition. However, it has deteriorated in condition since the original record.

# 52-2-0604 - Dahlia Creek 23

The site consists of a shelter with art. It is located about 25m from a small creek on the second ledge down from the top of the ridge. The site is 9m in length, 3m in width, and 2.25m in height and faces north-east. The art found at the site consists of two panels with drawings in red and black of indeterminate shapes. The drawings are in good condition, although they are impacted by animals, fruit flies and spider webs, fire, lichen, salt deterioration on the left hand side, and exfoliation of the ceiling and lower wall.

#### 52-2-0606 - Dahlia Creek 24

The site consists of a shelter with art and deposit. It is located 50m from a temporary drainage line. The site is 9m in length, 3m in width, and 2.25m in height and faces west. The artefacts found at the site consist of quartz chert located on the floor of the shelter and at a dripline. The art found at the site consists of one panel containing drawings of snakes, a macropod, and other indeterminate shapes. The drawings are outlines in black and are in good condition, although they have been damaged by animals, wasp nests, black lichen on the back wall, salt deterioration on the left side of the left panel towards the ceiling, and exfoliation on the back wall ceiling.

#### 52-2-0663 - Dahlia Creek 7

The site consists of grinding grooves. It is located at the base of a swamp immediately on the west bank of Dahlia Creek. The site is 50m in length and 10m in width. The grinding grooves found at the site are broad. One of five grooves was found, and it was 35cm in length, 8cm in width, and 1cm in depth. Other grooves may be concealed by moss and other vegetation. The site is in poor condition.

#### 52-2-0667 - Dahlia Creek 7

The site consists of a shelter with art and deposit. It is located on top of the cliff above Dahlia Creek between two small tributaries that drain into Dahlia Creek. The cliff lines in this area are low and discontinuous. The site is 6m in length, 2.7m in width and 2.2m in height and faces south-west. The deposit found at the site is less than 1m deep and consists of slightly damp, orange loam. The art found at the site consists of 1 panel with outlines drawn in black of indeterminate shapes. The site is in poor condition and has deteriorated since the original record. The site is impacted by a wombat digging, water wash/seepage, microflora, mineral accretions and salt deterioration.

# 52-2-0668 - Dahlia Creek 9

The site consists of a shelter with art and deposit and a shelter with deposit. It is located on the top ledge of Dahlia Creek, the first ledge below the plateau, about 400m south-east of 52-2-671. The site is 9m in length, 2m in width, and 1.2m in height and faces west. The deposit found at the site is yellow-buff sand and 25cm deep. The art found at the site consists of one panel with a line drawing of an indeterminate shape in black. The site is in poor condition and is impacted by wombats, microflora, mineral accretions, and exfoliation.

#### 52-2-0669 - Dahlia Creek 31

The site consists of grinding grooves. It is located on a steeply sloping platform sloping towards Dahlia Creek at the base of a swamp. The site is 20m in length, 10m in width, and faces west. The grinding grooves found at the site are broad. Twelve of 16 were recorded in 3 clusters. The site is in very good condition.

#### 52-2-0670 - Dahlia Creek

The site consists of grinding grooves. It is located on a large, sandstone shelf below a narrow swamp. The platform drops east into Dahlia Creek valley. The site is 46m in length and 10m in width and faces west. There are 41 grinding grooves at the site and they are broad. They are in good condition.

# 52-2-0671 - Dahlia Creek 33

The site consists of a shelter with art and deposit. It is located on the first small cliff above Dahlia Creek about 100m from the west side of the track just before the track descends into Dahlia Creek. It is 10m in length, 3.5m in width, and 2m in height and faces west. The deposit found on the site is 50cm deep and consists of grey-yellow sand. At least 20 surface stone artefacts were found on the floor inside the shelter. The art found at the site consists of one panel with outlines drawn in black, red or white of indeterminate shapes and a stencil in white. The site is in poor condition and is impacted by microflora, mineral accretions, and exfoliation.

#### 52-2-0673 - O'Hares Creek; Dahlia Creek 28B

The site consists of grinding grooves. It is located in a drainage line with a swamp about 50m west of area cleared around sandpits, and is located on raised rock surrounded by thick swamp shrub. The site is 7m in length and 4.5m in width, and consists of 3 grinding grooves found in 2 clusters. They are broad and the smallest is 30cm long, 8cm wide, and 2cm deep. The largest is 48cm in length, 8cm in width, and 2cm deep. They are in good condition.

#### 52-2-0695 - O'Hares Creek 39

The site consists of grinding grooves. It is located on a huge, sandstone platform at the bottom of a swamp above O'Hares Creek, about 50m above the creek and 300m away from it. The site is 200m in length and 50m in width and faces south-east. Thirty two grinding grooves were located at the site, with 50 originally recorded. The grooves were broad.

#### 52-2-0699 - O'Hares Creek 43

This shelter with art is located on the right side of fire trail 10C and is located on the second ridgeline down from the top. The shelter is 200m from O'Hares Creek. The shelter is 3m long by 3m wide and 2m high, and faces south. Art in the shelter consists of three charcoal macropods and an indeterminate charcoal drawing. The art is in good condition.

#### 52-2-0702 - O'Hares Creek 46

This site consists of a shelter with art and deposit and is located 12m east of 10C fire trail. The shelter is 6m long, 2.5m in width and 1.2m in height, and faces west. Art at the shelter consists of one charcoal indeterminate. Artefacts were located on the dripline.

#### 52-2-0707 - O'Hares Creek 51

The site comprises grinding grooves and an engraved groove channel, situated within a swamp, at the head of a small creek on the right side of 10D fire trail. The grooves are located within an area of sandstone. The original recording notes 60 grinding grooves in total over the two platforms, although during this survey only 15 grooves were located. The grooves were narrow. The grooves were located around two waterpans with an engraved channel between the two.

#### 52-2-0708 - O'Hares Creek 52

The site consists of a shelter with art and is located on the first ledge up from the creek. The shelter is 30m from the water and is 10m above it. The shelter is 7m in length, 3m in width and 4m in height, and faces east. Art at the shelter consists of two charcoal outline macropods and a charcoal indeterminate. The art is in poor condition and the shelter surface is exfoliating.

#### 52-2-0709 - O'Hares Creek 53

This site consists of a shelter with art and deposit and is located on the upper slopes of a ridgeline. The shelter is 30m east of the creek and is 2m above the water level, on the northern side of the creek. The shelter is 17m in length, 2.5m wide and 3.5 high. Artefacts within the shelter include approximately 35 quartz, volcanic, silcrete and petrified wood pieces, and were located at the rear of the shelter below the art. Art at the shelter consisted of one charcoal indeterminate.

#### 52-2-0710 - O'Hares Creek 54

This grinding groove site is located within the creek bed on an area of sandstone 11m by 6m, and is above a small waterfall, west of 52-2-0708. The grooves are clustered around the bottom edge of a pothole. Nine grooves were present at the site, although only 5 were originally recorded. The grooves are broad, and are in good condition.

#### 52-2-0714 - O'Hares Creek 58

This shelter with art is located opposite to the junction of a tributary and Cobbong Creek and 30m further upstream, on the northern bank of the creek. The shelter is 8m in length, 3m in width and 3m in height and faces south. Art at the shelter consists of 5 charcoal indeterminates in poor condition, which has deteriorated since the original recording. The shelter has had some blockfall and chemical weathering, resulting in a quite deep deposit – up to 1m deep – and the art is almost covered with the deposit.

#### 52-2-0718 - O'Hares Creek 62

The site consists of a shelter with art. It is located on the first ridge up from the creek. The site appears to have collapsed since its recording. It is located in Dharawal State Conservation Area, more than 1.5km away from previous mining areas and as such its collapse is not attributed to mining effects.

#### 52-2-0779 - West Woronora 2B

This grinding groove site is located on exposed sandstone along a rivulet. Thirty grooves were counted in five clusters and two isolated grooves on a sandstone platform 20m by 12.5m. The grooves are quite deep, with the smallest being 20cm by 6cm by 1.2cm and the largest being 37cm by 7cm by 1.2cm. Algae are present in the area and it is possible that more grooves are covered by the algae.

#### 52-2-0781 - West Woronora 3

The site consists of a shelter with art. It is located approximately 300m off Old Illawarra Rd, high on a ridge top on the north-west side of the gully. The site is 6m in length and faces south-east. The art found at the site consists of two panels with outline and outline and infill drawings of a macropod and indeterminate shapes in black, ochre or red. One panel is  $2m \times 1.5m$  and the other panel is  $1m \times 0.6m$ . The art is in poor condition, damaged by mineral accretions, salt deterioration and exfoliation.

#### 52-2-0808 - Stokes Creek 42

The site consists of a shelter with art and deposit, and is located on a ridgeline at the midslope, 200m from Stokes Creek, and 20m west of an unnamed track which crosses fire trail 10G. Artefacts at the shelter are abundant and at least 150 were present, including one piece of flaked glass, and chert, quartz, quartzite, jasper/chert, rhyolite and fragments of cobble cortex. The artefacts were located on the track to the east of the site. Art at the shelter consisted of two charcoal indeterminates in poor condition.

#### 52-2-0809 - Stokes Creek 43

The site comprises a shelter with art, and is a low overhang in a shallow valley above Stokes Creek, on the only ridge which runs next to the track that intersects fire trail 10G. Art at the site consists of charcoal indeterminates in poor condition.

#### 52-2-0811 - Stokes Creek 45

This grinding groove site is located on the bed of Stokes Creek, on the upper reaches of the creek and at the bottom of a small swamp. The sandstone platform is 25m long and 12m wide. Four grooves were relocated, although one of those is very faint and barely discernable. The original recording listed 6 grooves in total. The relocated grooves are broad, hollow and flat, and the largest is 38cm long, 7cm wide and 4cm deep, and the smallest is 17cm long, 6cm wide and 2cm deep. A pecked groove channel is also present at the site, leading into a pothole. This channel is 13cm long, 1.5cm wide and 2.5cm deep.

#### 52-2-0812 - Stokes Creek 46

This site comprises grinding grooves, located in a swamp above and west of Stokes Creek. The site is directly above 52-2-0813, and approximately 20-30m slightly to the north. The grooves are located on discontinuous sandstone platforms which are obscured by vegetation. The original recording contained 110 grooves; however the current survey located 60. The grooves are broad, and are found ranging from isolated instances per platform, up to 18 grooves on a platform.

#### 52-2-0813 - Stokes Creek 47

This shelter with art and deposit is located under a ledge on the edge of a swamp, west of the main channel of Stokes Creek. The shelter is 18m in length, 2.7m in width and 1.5m in height, and faces north east. The shelter has been disturbed by historic use and rubbish is present in the shelter, consisting of bottles and tins. Art at the shelter consists mainly of charcoal indeterminates although some discernable motifs include charcoal outline and infill macropods. The art is mostly in poor condition and has deteriorated since the original recording. Artefacts located within the shelter include 15 quartz and silcrete flakes. A large boulder is present outside the shelter and has ten grinding grooves located on it, which was not included in the original recording.

#### 52-2-0819 - Stokes Creek 52

The site consists of grinding grooves located 200m south east of 52-2-0282/52-2-0982. The grooves are located on an area of sandstone 50m by 20m, which has been impacted by machinery tracks leaving grooves in the surface of the sandstone. Two grooves were located. The original site card recorded 4 grinding grooves.

#### 52-2-0845 - O'Hares No. 65

The site consists of grinding grooves and is located on the eastern side of Iluka Creek in an area of sandstone 8m by 3m. Eight grinding grooves were originally recorded. The area described in the site card was relocated, although no grooves were identified. It is presumed that the grooves have been overgrown by vegetation.

#### 52-2-0846 - O'Hares No.66

The site consists of five grinding grooves located on sandstone in the bed of Iluka Creek, in an area of sandstone 40m by 5m. The grooves are broad, and are in a cluster of 5. The largest groove is 36cm long, 9cm wide and 1cm deep, and the smallest is 20cm long, 7cm wide and 1cm deep.

#### 52-2-0907 - Woronora East 19

The site consists of a shelter with art. It is located midslope on a cliff line above the Woronora, west of Fire Road 9B. The site is 8.8m in width, 2.5m in width, and 2.5m in height and faces west. The shelter deposit found at the site is less then 5cm deep and consists of loose, pale sand. The art found at the site consists of 2 panels with infill and outlines drawn in black of an indeterminate shape and a macropod. The art is in good condition, but the first panel has deteriorated since the original record. The site is impacted by microflora and exfoliation.

#### 52-2-0924 - East Woronora Site 18

The site comprises a shelter with art and deposit. A total of 11 grinding grooves are also located in the immediate vicinity of the shelter. The shelter is located on the upper slopes of a valley, overlooking a tributary of the Woronora River. The shelter is 14m in length, 3m in width, 2.2m in height and faces west. Two grinding grooves are located immediately north of the shelter, while a further nine grooves are located under a dripline north of the art in the shelter. The art is quite abundant at the site but is in poor condition, and mostly consists of indeterminates, although anthropomorphs and macropods are discernable. The shelter also contains red ochre and white pigment hand stencils and areas of scratchings. Artefacts at the site include chert, basalt, quarts and other volcanic rock artefacts under the dripline.

#### 52-2-0929 - Loddon Site 16A

This shelter with deposit is located beneath the top steep cliffline at the top of a ridge and faces south west. The shelter is 7m in length, 2m in width and 1.8m in height. Artefacts in the shelter comprise a silcrete core and flake, two chert flakes and three quartz flakes. The shelter has a limited living area within the shelter, although it is good in front of the shelter. The shelter has a double dripline and artefacts were located within both of these.

#### 52-2-0931 - Loddon Site 17

The site is a grinding groove site located on a small drainage line at the point at which it crosses the first ledge, in the middle of a swamp. The site slopes to the east. Fourteen of 26 grooves were relocated, and are around a 1m diameter pothole. The grooves are broad. There is vegetation cover at the site that may be covering more grooves.

#### 52-2-0969 - Woronora East 20

The site consists of a shelter with art. It is located midslope of the ridge through a large amount of scrub. The site is 10m in length and 4m in width and faces west. The art found at the site consists of three panels of line drawings in black of macropods and indeterminate shapes. The site is in poor condition with impacts from animals, insects, water seepage, microflora, salt deterioration on the back wall, and exfoliation on the ceiling and the back wall.

# 52-2-0973 - O'Hares Creek HB 5

The site consists of a shelter with art. It is located midslope on a cliff line about 25m to 30m above O'Hares Creek, on the south side of the creek. The site is 13m in length, 2m in width, and 2m in height and faces north-east. The deposit found at the site is about 25cm deep and is gray, sandy loam. The art found at the site consists of two panels with infill and outline drawings and paintings of indeterminate shapes, anthropomorphs, an eel, and a lizard in black and red. The site is in poor condition.

#### 52-2-0977 - Fire Road 10B

The site consists of grinding grooves. The location described by the map co-ordinates provided on the site card was visited but the site was not present. A search of the surrounding area was conducted, however the site was not found. It is determined that the map co-ordinates registered on AHIMS are incorrect, and the site's exact location is currently unknown.

#### 52-2-0989 - Wedderburn Site 1

The site consists of a shelter with art and is located near the top of a gully containing a tributary that runs into a tributary of Stokes Creek. It is on the northern side of the small tributary, under the only large overhang or cliff formation at the top of the tributary, and is approximately 100m from the tributary of Stokes Creek. The shelter is 8m long, 3m wide and 2m high, and faces south. Art at the shelter consists of a charcoal outline drawn anthropomorph, a charcoal outline with ochre infill indeterminate and other indeterminates. The shelter has greatly deteriorated since original record and is in poor condition. The surface of the shelter is cracked and flaking. The record is a duplicate of 52-2-0270 and possibly 52-2-0417.

#### 52-2-0990 - Wedderburn Road 2

The site comprises a shelter with art and deposit, and is located on the lowest and large cliff line, above a tributary of Stokes Creek and approximately 150m from 52-2-0989. The shelter is 50m in length, 9m in width and 6m in height, and faces south east. Artefacts at the site include jasper, silcrete and chert. Art at the shelter consists of approximately 30 drawings, including charcoal anthropomorphic figures and macropods. Most of the art is in good condition although some is in poor condition. Extensive graffiti was noted in the northern chamber of the shelter.

#### 52-2-0993 - Wedderburn Site 4

This site consists of a shelter with art, and is located at the top of a low cliff on the eastern side of a tributary of Stokes Creek. The shelter is 100m south and upstream of 52-2-0990. The shelter is 35m long, 2.5m wide and 1.5m high, and faces north west. The art originally recorded could not be identified. The shelter is wet with active seepage on the back wall, and mineral and fungal growth. The surface appears to be only marginally suitable for art.

#### 52-2-1002 - Loddon Site 34

This shelter with deposit is located on a separate sandstone outcrop on the north side of a small drainage that flows from an Upland Swamp into another swamp. The shelter is 2.3m in length, 2.2m in width and 1.5m in height, and faces west. Art was originally recorded at the site but could not be identified during this survey, possibly due to fungal growth as mentioned on the original site card, or due to weathering as the shelter is quite open.

#### 52-2-1063 - Wilton Allens Ck Bridge

The site comprises a shelter with deposit and is situated on a mid cliff line at a 90° bend in the creek. The shelter is 15m in length, 4.2m in width and 3.5m high, and faces south east. Five artefacts were located within the shelter and consist of chert, silcrete and quartz pieces.

# 52-2-1122; 52-2-1129 - O'Hares Creek

The site consists of grinding grooves located within a swamp, at the fork junction of tributaries to O'Hares Creek. Seventy one grinding grooves in total were located, around potholes and one potential engraved groove channel. The original site card appears to have been duplicated when registered in AHIMS. Most of the grooves are in good condition, although some are in very poor condition due to weathering.

#### 52-2-1176 - O'Hares Creek Site 79

The site consists of grinding grooves. It is located on a drainage line in a gap between two rocks off Fire road 10H. The site is approximately 2m in length and 1m in width. The site consists of 6 grooves in one cluster that are narrow and pointed. The smallest is 170mm long, 500mm wide, and 50mm deep and the largest is 360mm long, 70mm wide, and 1mm deep. They are in good condition, although the site is impacted by vegetation.

#### 52-2-1177 - O'Hares Creek 78

The site consists of a shelter with art. It is located on a cliff line on the upper slopes of a valley through O'Hares Creek flows, east of Fire road 10H. The site is 5m in length, 2.5m in width, and 2.2m in height and faces west. The art found on the site consists of one panel with outlines drawn in black of a macropod and indeterminate shape. The site is in poor condition and has deteriorated since the original record. The site is impacted by exfoliation.

#### 52-2-1185 - Lizard Creek 20

This shelter with art is a moderated sandstone overhang on the lowest cliffline directly above the creek. The shelter is located on the western side of the creek. The shelter is 16m in length, 5.4m in width and 3m in height, and faces east. The shelter is 150m from Cataract River, and 5m to 10m from an unnamed tributary. Art at the shelter consists of a charcoal and infill anthropomorph, and a charcoal outline and infill indeterminate. Both are in poor condition.

# 52-2-1230 - Lizard Creek 24

The site consists of a shelter with art and is located at the junction of two unnamed drainage liens. The shelter is on a corner, and faces northwest. The shelter is 4.6m in length, 3m in width and 1.8m in height. Seven artefacts were originally recorded at the site; however, although the shelter was found, the artefacts were not.

# 52-2-1272 - Appin Falls 4

This shelter with art is located under a high cliff on the second shelf up from the Cataract River, and is approximately 220m from the Cataract River. The shelter is 33m in length, 2.9m in width and 3.3m in height. Art at the shelter includes 25 charcoal infilled rings, one charcoal infilled wombat and charcoal indeterminates. The art is in very good condition and has not changed since the original recording. Water seepage is a major factor in the shelter, which could lead to impacts to the art.

#### 52-2-1273 - Appin Falls 1

This site consists of grinding grooves and is located in a steep creek that is a steep tributary to the main drainage. The sandstone platforms have between a 1.5 to 5m drop on them. Twenty six grooves were relocated of 32 originally recorded. The sandstone platform is covered with leaf litter and moss which could be obscuring other grooves. The grooves are clustered around potholes.

#### 52-2-1274 - Appin Falls 2

The site consists of grinding grooves located on a small tributary two levels above a major drop off. The site is located 400m west of the top Cataract Dam picnic area. The sandstone area on which the grooves are located is 8m by 6m, and 20m from the drop off into the main gully. Two grooves were relocated. Originally four grooves were recorded. The grooves are broad, and in good condition.

# 52-2-1275 - Appin Falls 3

This shelter with art and deposit is located under a high cliff on the second shelf up from the Cataract River, and is approximately 220m from the Cataract River. The shelter is 16m in length, 3.5m in width and 3.5m in height. Artefacts were originally recorded at the site but were not relocated during this survey. Art at the shelter included a large number of charcoal macropods, several human figures and charcoal indeterminates. Approximately 45 motifs are present in the shelter, and the art is in poor condition.

# 52-2-1281 - Wallandoola 36

The site consists of a shelter with art and deposit and is located low in the creek in a major overhang formation in a large cliff. The shelter is easy to sight, and is on the western bank of the creek, although the site card puts it on the north east bank. The shelter is 20m from Cascade Creek and can be accessed from an SCA vehicle track. This shelter is 14m in length, 3.8m in width and ranges from 5.4m to 1.5m in different places. Art in the shelter consists of four charcoal infilled indeterminates. Artefacts were located within the shelter and consisted of one broken chert flake and one complete chert flake with a feather termination. These artefacts were not recorded on the original site card.

#### 52-2-1282 - Wallandoola 35

This site consists of a shelter with art, and is located at the top of a cliff line, on the eastern side of the creek. The shelter is 50m north and opposite 52-2-1281. The shelter is 15.5m in length, 6.1m in width and 3m in height at its maximum. The majority of the art is located in a large concavity at the southern end of the shelter, and is poorly preserved, although most motifs are recognizable. Macropods comprise all discernable motifs, while others are indeterminates. Approximately 20 individual motifs are present in the shelter.

#### 52-2-1311; 52-2-3588 - Allens Creek

Duplicate AHIMS records exist for this site. This shelter with art and deposit is located on the lowest set of overhangs below the cliffline, on sharp 90° bend in Allens Creek. The shelter is 10m from Allens Creek on the eastern side, and is 50m long, 4m wide, 4m high, and faces west. The shelter is on the same cliffline as 52-2-3588 and is continuous between that shelter and this. Twelve artefacts were located within the shelter and include a Bondi point. Art in the shelter consists of a charcoal outline and infill lizard, a charcoal anthropomorph and indeterminate and red ochre hand stencils. The art is in poor condition.

#### 52-2-1312 - Allens Creek

The site comprises a shelter with art and deposit, and is a large overhang located immediately at the base of a cliff adjacent to Allens Creek, on the eastern bank, and is approximately 50m north and opposite 52-2-1314. The shelter is 50m in length, 6m in width and 4m in height, and faces west. Art at the shelter consists of a profile anthropomorph in charcoal outline and a charcoal indeterminate. Both motifs are in good condition. The shelter is covered in graffiti. One small chert core was located in the dripline of the shelter.

#### 52-2-1314 - Allens Creek

This shelter with art is located on a high cliff immediately above Allens Creek, approximately 30m south of 52-2-3072, and is on a slight bend in the creek. The shelter is 17m long, 4m wide and 12m high, and faces east. Art at the shelter consists of varied motifs, such as a charcoal and infill eel on the ceiling, outline charcoal macropods, a charcoal outline and infill lizard and charcoal indeterminates. The art is in poor condition and has deteriorated since the original recording.

#### 52-2-1365 - Stokes Creek 84

This open site consists of artefacts located on a track between two swamps, near the head of Stokes Creek. The original site card noted 11 artefacts were present, however only four were identified during the inspection. The artefacts consisted of a quartzite bifacial core, two quartzite flakes and a chert core. The site has been impacted by vehicles.

#### 52-2-1373 - BC 7

This shelter with art is situated on a large sandstone overhang, located on the south-eastern face of a prominent spur, at a major bend on Brennans Creek. The floor of the shelter ends abruptly with a steep 7 m drop off that ends at the creek bed below. This sandstone overhang is approximately 17.0 x 8.2 x 2.3 m in size, with a large, open, flat sandstone surface. The shelter overlooks the creek line to the south-east.

The art recorded in the shelter comprises charcoal outline and infill motifs, including one infill frontal human figure, one charcoal outline, one infill kangaroo and one charcoal outline and infill indeterminate. Although no deposit was originally recorded, a single volcanic broken flake was identified.

#### 52-2-1385 - O'Hares Creek 89

This grinding groove site is located within an Upland Swamp 500m north east of the junction of 10B fire road and 10B-10R connecting road. The sandstone platform is 4.5m by 3m. Two grooves were located on the platform, although the original recording only mentioned one. The grooves were broad, and are in poor condition.

#### 52-2-1386 - O'Hares Creek 90

The site consists of grinding grooves. It is located at an outcrop in the bottom of the swamp on the main drainage line on the eastern branch at Cobbeng Creek, 300m from 10D fire trail. The site is approximately 15m in length and 3m in width. The artefacts found on the site consist of 4 grooves in one cluster that are broad. They are in good condition, although the site is impacted by animals, water, microflora, vegetation, and exfoliation.

# 52-2-1594 - Appin Falls 6

This shelter with art is located on the second minor small continuous cliff line up from a minor creek, and is between two drainage features. The shelter is 11m in length, 2m in width and 0.8m in height. The shelter faces south west. Art at the shelter consists of a charcoal outline and infill frontal human figure and an outline and infill charcoal indeterminate. The art is in good condition and is unchanged since its original recording.

# 52-2-1595 - Appin Falls 5

The site consists of a shelter with art, and is located on the northern side of a small side creek under the lowest cliffline. Art at the shelter consists of indeterminate charcoal drawings. Graffiti is present in the shelter. The art is in good condition and has a silica skin.

#### 52-2-1658 - Dahlia Creek 36

The site consists of grinding grooves. It is located in Dharawal State Recreation Area on a ledge below camp, about 100m south of the top of the cliff line of the ridge above Dahlia Swamp. The site is approximately 14m in length and 15m in width. The artefacts found on the site consist of 26 grooves in five clusters that are broad. The smallest is 25cm long, 4.5cm wide, and 0.5cmm deep and the largest is 38cm long, 7cm wide, and 2cm deep They are in very good condition.

# 52-2-1662 - Stokes Quarry 4

The site consists of an open site and is located near the old quarry. The original recording noted ten artefacts; however, during the current survey only one was noted. This artefact was a grey silcrete core on a tabular-like piece. The record for this site and that for 52-2-1663 appear to refer to two parts of the same site.

#### 52-2-1663 - Stokes Quarry 5

This open site is located near the old quarry. The original recording noted eight artefacts. During the current survey no artefacts were located. The record for this site and that for 52-2-1662 appear to refer to two parts of the same site.

#### 52-2-1876 - Brooks Point 1

This site comprises a shelter with deposit and is located in the upper reaches of a short tributary that drops steeply into the Cataract River. The tributary is the second one west of the Appin-Wilton Road near Broughton Pass, and the shelter is on the western side of the creek. The shelter is 10m long, 5m wide and 3.3m high. Artefacts were located within the shelter, and consisted of one hornfels flake with a feather termination, one silcrete core fragment and eight quartz flakes. This is fewer artefacts than originally recorded in the shelter.

#### 52-2-2099 - Brooks Point 9

The site consists of a shelter with art and deposit, and is located on the upper slopes of the valley of the Nepean River. The shelter is on the first ridgeline from the top, and on the eastern side of the river. The shelter is 10m long, 4.8m wide and 1.6m high, and faces west. Art within the shelter consists of a charcoal fish, and charcoal indeterminates. The art is in poor condition. The artefacts originally recorded were not relocated.

#### 52-2-2110 - Cataract River 1

The site consists of an open artefact scatter located adjacent to access tracks within pasture. Artefacts included Aboriginal artefacts and historic relics. The site was identified based on the site card description, although no artefacts were noted at the site.

#### 52-2-2228; 52-2-3617 - Dendrobium 10

This is a sandstone shelter with stone artefacts and archaeological deposit. The shelter is relatively small and quite low, measuring 10.5 m in long, 2.6 m wide and 1.0 m high. The floor of the shelter consists of grey loamy sand that is no deeper than 0.1 m. A single quartzite flake was present on the surface of the shelter floor.

#### 52-2-2237 - Ousedale Ck 3

The site consists of a shelter with art and deposit, and is located in Mallaty Creek, approximately 100m west of the gas pipeline. There is a single cliff on either side of the creek, and the shelter is located on the south bank. Numerous artefacts were located within the shelter and the dripline. Art at the shelter consists of charcoal anthropomorphs, and charcoal indeterminates. Graffiti is also present at the site.

#### 52-2-2250 - SC 95

The site consists of a shelter with art and deposit, and is located on the western side of Stokes Creek, opposite and between two small creeks. The shelter is up under the first main cliff line up from the creek. The shelter is 13m long, 4.8m wide and 1.5m high, and faces east. Art in the shelter consists of a charcoal bird, a charcoal anthropomorph, a charcoal macropod (possibly a dog) and three charcoal indeterminates. Artefacts at the shelter consist of silcrete flakes. Quartz flakes were originally recorded but were not relocated.

#### 52-2-2292 - H 59

The site consists of a shelter with art and deposit. It is located at Holsworthy Military Range on the upper-most slope above a creek within an extremely large shelter near the top of the ridge in an area of discontinuous cliff lines. The site is 28m in length, 7m in width and 10m in height. The shelter deposit is on the floor of the shelter less than 0.5m deep and is loose, yellow sand. Surface stone artefacts are present. The art found on the site consists 5 panels of indeterminate lines and macropods drawn with outline and outline and infill in black. The panels range from 0.5m x 0.5m in size to 3m x 1.5m and are in poor condition.

#### 52-2-2294 - H 60

The site consists of a shelter with art and deposit. It is located at Holsworthy Military Range on the upper-most sandstone prominence above a steep slope running west to a creek line. The site is 35m in length, 4.5m in width and 4m in height. The art found on the site consists of 10 panels of rock art depicting macropods and anthropomorphs and some indeterminate lines, some drawn in outlines only and some with outline and infill. The panels ranged in size from 0.4m x 0.8m to 2m x 0.9m. The art is in good condition, although there is some water damage at the north end and some salt deterioration and exfoliation.

#### 52-2-2459 -H 494

The site consists of an grinding groove. It is located at Holsworthy Military Area south and upstream of a junction of two creeks on the southern of the two creeks and faces north. The site is 5m in length and 10m in width. The artefact is a single grinding groove 30cm long, 8cm wide and less than 1cm deep and is broad. Other grooves have been previously recorded but could not be found.

#### 52-2-3026 - BC 2, Wilton Park 2

The site consists of a shelter with deposit and PAD. The site is situated on Stringy Bark Creek, about 20m south of the junction of two tributaries. The shelter is 17m long, 5m wide and 2.5m high, and faces west. Twenty eight artefacts were located within the shelter and consisted of silcrete, chert, tuff, quartz and other fine grained silicious pieces. Cores and blades were among the forms present in the shelter.

#### 52-2-3027 - BC 3, Wilton Park 3

The site consists of a shelter with art, located on the western side of Stringy Bark Creek and approximately 50m north of the junction of two tributaries. The shelter is 17m in length, 5m in width and 4m in height, and faces east. The shelter is 5m from the creek, and 2m above water level. The shelter contains a variety of motifs, mostly in poor condition, although a few are in better condition. Most of the art consists of charcoal indeterminates, although there are a few partial macropods and anthropomorphs whose form is still discernable. There is also a large charcoal and infill lyre bird in good condition, and a possible piece of "imitation" Aboriginal art, consisting of a dingo or dog head within a drawn circle. This piece is a completely different style to the other motifs within the shelter.

#### 52-2-3032 - BC 8, Wilton Park

This open site was previously recorded as containing approximately 5 artefacts and possibly more. The site was located based on the site card description but the originally recorded artefacts were not present. While still at the site it was confirmed that the site had been salvaged prior to the construction of a new road bridge adjacent to the site. However, one silcrete core was located at the site.

## 52-2-3033 - BC 9, Wilton Park 9

This open site was previously recorded as a river pebble hatchet head. The site was visited but the hatchet head was not present. While at the site it was confirmed that a previous survey at the beginning of 2008 had not identified the hatchet head.

### 52-2-3034 - BC 10, Wilton Park 10

This open site was previously recorded to consist of 2 artefacts. The site was visited according to the site description but no artefacts were present at that point. It is possible that vegetation cover concealed the artefacts.

### 52-2-3072 - BC1 Bradcorp

This site consists of a shelter with art and deposit. The shelter is located at the base of an outcrop of sandstone that forms a cliff, and is approximately 10m from Allens Creek. The shelter is 30m in length, 4m in depth and 4m in height, and faces north east towards Allens Creek. Two artefacts were found within the shelter consisting of one quartz and one chert piece. Art at the shelter consists of a charcoal indeterminate on the wall and one charcoal indeterminate on the ceiling. The art is in poor condition.

### 52-2-3212 - AMP IF 1

This isolated find was recorded as being located on the northern bank of a main reservoir, under a gum tree. The area was visited but due to overgrown vegetation the artefact was not found.

### 52-2-3214 - AMP IF 3

This isolated find was recorded as being located adjacent to the creek confluence between the railway and the reservoir, where earth bunds have been constructed. The originally recorded artefact was not identified; however, a quartzite distal flake fragment was found within the exposure. It was noted during the survey that the exposure was slightly overgrown.

#### 52-2-3216 - AMP IF 5

This isolated site was recorded as being located on the southern bank of a tributary which has been dammed. The area according to the description on the site card was visited but no artefacts were found at the site.

### 52-2-3217 - AMP OCS 1

This open site was recorded as being located on the banks of an eroding dam. However, this dam has been filled in with soil and landscaped as part of the construction of the Allied Mills Flour Mill.

### 52-2-3218 - AMP OS 2

This open site is located on sandstone exposures adjacent to a tributary which has been dammed, on the southern banks. The originally recorded artefacts were not found; however, two additional artefacts were noted, consisting of a red silcrete flake and a tuff distal fragment.

### 52-2-3220 - AMP PAD 1

This site is registered as a PAD adjacent to Picton Road and the Main Southern Railway line. The site was originally assessed for the proposed Allied Mills Flour Mill, which has since been constructed at the location of the PAD.

### 52-2-3242 - CP - ST - 16

This open site consist of a scarred tree located in open paddocks, on the mid-slope. The scar is 2.07 m in length and 15 cm in width. The tree is a Grey Box, and is healthy and in good condition. The tree is located overlooking Navigation Creek, and is on the north-eastern side of the tree.

#### 52-2-3468 - Flat Rock Creek 338

This site consists of a single grinding groove located on an open area at the end of a swamp. The sandstone platform is 8m by 7m. The platform as described on the site card was located; however, the groove was not identified.

### 52-2-3470 - Flat Rock Creek 339

The site consists of two grinding grooves on a platform within a swamp, next to a woodland. The platform was 10m x 2m. The platform was found according to the description on the site card, but the groove was not identified.

### 52-2-3504 - West Cliff 1

This is a sandstone shelter with art, stone artefacts and archaeological deposit. The site is situated on the south-western bank of Brennans Creek Dam. The shelter measures 16 m long, 4 m wide and 1.5 m high. The art comprises three indeterminate charcoal outline motifs, which are obscured by dust. The deposit is a very dark grey-brown powdery silt estimated to be 0.15 m deep. Stone artefacts were present on the surface of the shelter floor.

### 52-2-3505 - West Cliff 2

This shelter with art and PAD is situated on a small drainage line. It is located beneath a large sandstone platform at the head of the drainage line beneath the existing overhead electricity power line. Water flow and weathering has created an overhang on this platform, and following recent rainfall, a large amount of water was running over the lip into the drainage. The overhang is long and narrow measuring 24 x 1.5-2 x 3m. The height and depth of the shelter are similar along the length of the narrow shelter. Along the central and north western sections of the shelter contains undisturbed, medium yellow grey sandy deposit, estimated to a depth of between 5-15cm. Brennan's Creek is not visible from the shelter however the shelter is clearly visible from the creek valley. No cultural material could be identified on the floor of the shelter.

### 52-2-3506 - West Cliff 3

This shelter with PAD is located on the upper valley slope, on the second cliff line from the top of the steep gorge overlooking Brennan's Creek. It is situated at the top of a small drainage line that allows access into the gorge from the eastern side. The sandstone shelter is quite large measuring 12 x 2.8 x 3.2m. At the time of the survey shelter conditions were dry, however water was seeping over the north western lip due to recent rainfall.

Evidence of this was clearly visible at the western end by water staining and associated micro-organism growth across the surface of the sandstone. In the centre of the shelter, lichen growth was present obscuring the sandstone surface, resulting in the unlikelihood of art being present.

#### 52-2-3508 - West Cliff 5

This small open artefact scatter site was identified on the access track beneath the 66KV transmission line that runs east west across West Cliff Colliery. At this point, the access track is situated on the upper slopes of the plateau, with large open sections of sandstone exposed to the north and south of the track. The track is well used providing excellent visibility, which was also increased by run off from the adjacent sandstone platforms and down the slope of the track. The artefacts were sitting on the surface of coarse sandy gravel. Originally recorded on the site were two stone artefacts including one banded silcrete flake with edge damage measuring 36 x 18 x 12 mm, and one brown silcrete broken flake measuring 26 x 17 x 8mm. These artefacts were not refound during the survey.

### 52-2-3533; 52-2-3616 - D 11

Duplicate AHIMS records exist for this site, which is a large sandstone overhang, situated on the upper ledge of a large sandstone outcrop on a spur of Brennans Creek. The overhang has a large shelter and floor area with well developed, undisturbed loamy-sand deposit. A relatively high number of artefacts were present on the surface of the shelter floor, suggesting there is archaeological deposit of good potential. There is some historical graffiti at the site, dating to the 1950s.

#### 52-2-3572 - Maldon 01

This site was originally recorded as a scarred tree. Further examination of the photographs on the site card identified the tree as a historical blazed tree. A surveyors' mark is clearly visible in the centre of the blaze. As this site is not considered to be of Aboriginal origin, the site was not inspected during this survey.

#### 52-2-3573 - Maldon 02

This site consists of a shelter with art and deposit and is located on a tributary behind a waterfall which is dry unless there is high rain fall. The shelter is 18m in length and 5m in width. Art at the shelter consists of a single red ochre hand stencil on the ceiling, and a single artefact was located within the shelter, consisting of a single silcrete core. There is evidence of red staining on the back walls which may be weathered stencils which are no longer discernable.

#### 52-2-3574 - Maldon 03

This open site is situated in a paddock, approximately 300m from a small creekline draining into the Nepean River. The originally recorded chert and quartz flakes were not located; however, additional artefacts were located on an area of sandstone outcrop. These consisted of a chert core, a silcrete flake and three chert flakes.

### 52-2-3579 - WA 05

This site consists of a Kurrajong tree, which is located on a grassy plateau next to a gum tree. The tree is in good condition and is approximately 10m tall. No other Kurrajongs were visible in the vicinity of this tree.

The following are newly recorded sites within the study area.

### BS 1 - Bulli Site One

A new grinding groove site was located along a creek situated above a gorge area, 240m away from the river. The site consists of two grinding grooves located next to a small watering hole. One of the grooves is 30cm in length and the other is 24cm.

### BS 2 - Bulli Site Two

This newly recorded site comprises a shelter with art. The shelter is approximately 6m in length, 3m in width and 3m in height, and faces west. The shelter is located approximately 100-200m north of the highway on the upper slopes of the valley. It is on the fourth ridgeline up and west of the creek. Art at the site consists of 2 charcoal indeterminates. The shelter is in poor condition.

### BS 3 - Bulli Site Three

This newly recorded site consists of an isolated artefact located on top of a hill in Douglas Park, and is located approximately 70m from the railway which is on top of the hill. The artefact is located on the eastern side of an exposure. The area has been used for farming for a long period of time. The artefact is silcrete and is approximately 21mm in length, 15mm in width and 9mm thick.

#### BS 4 - Bulli Site Four

This newly recorded site comprises an isolated artefact located approximately 70m from a railway on top of a hill in Douglas Park. The artefact is located on the eastern side of an exposure. The area has been used for farming over a long period of time. The artefact is a chert fragment, approximately 27mm by 15mm by 8mm. A fragment of glass that appears to be retouched was also located at this site; however it is unclear as to whether this is artefactual.

#### BS 5 - Bulli Site Five

This newly recorded site consists of an open scatter comprising five artefacts. The site is located approximately 200m from the Nepean River. The area has been subject to farming over a long period of time. The artefacts were located on a sandstone outcropping. The artefacts consisted of two broken silcrete flakes, one chert flake, one quartzite flake and one quartz flake. The quartzite flake was the smallest, being approximately 6mm by 5mm by 2mm, while one of the silcrete flakes was the biggest, being 52mm by 26mm by 14mm.

### BS 6 - Bulli Site Six

This newly recorded site consists of two quartz flakes, and is located within a mountain bike track approximately 250m from Stokes Creek. The bicycle track passes near the head of a tributary of Stokes Creek and is parallel to Wedderburn Road. The larger flake is bipolar with a crushed terminal and platform, and is 35mm long, 28mm wide and 10mm thick, while the smaller flake is 11mm long, 8mm wide and 2mm thick, with a feather termination.

### BS 7 - Bulli Site Seven

This newly recorded site consists of an isolated artefact. The artefact is located on an exposure adjacent to a dam in a paddock, between Foot Onslow Creek and Menangle Road. The area is highly disturbed, being located on the edge of a dam utilised by livestock in the paddock.

### BS 8 - Bulli Site Eight

This newly recorded site consists of an isolated artefact. The artefact is located on an exposure north of Foot Onslow Road. The area is highly disturbed and is located in a paddock utilised by livestock.

#### BS 9 - Bulli Site Nine

This newly recorded site consists of an isolated artefact. The artefact consists of a single clear quartz artefact with approximately 4 scars.

### BS 10 - Bulli Site Ten

This newly recorded site consists of two single artefacts approximately 15m apart. The site is located within approximately 20m of Mallaty Creek. One artefact is adjacent to the fenceline near the gas pipeline, while the other is located near a tree on the edge of a drainage feature. One of the artefacts is a broken red silcrete flake, while the other is a black chert flake. The silcrete flake is 18mm by 17mm by 7mm while the chert flake is 33mm by 8.2mm by 5mm.

### BS 11 - Bulli Site 11

This newly recorded site consists of an isolated artefact. The site is approximately 30m from Mallaty Creek, and is located in a paddock within an exposure from a digger's scrape. The artefact is a broken quartz flake and is 12mm by 10mm by 4mm.

## BS 12 - Bulli Site 12

This newly recorded site consists of a shelter with art. The shelter is located in the middle cliff of the tributary behind the mill. It is a large shelter, with a flat, rocky floor and a flat roof. There is a drop off in front of the shelter and it is located less than 50m west of a waterfall. It is 10m above the water level of the tributary, on the east bank. The art at the shelter consists of four red ochre stencils and one indeterminate patch of red ochre.

### BS 13 - Bulli Site 13

This newly recorded site consists of grinding grooves and an engraved channel on a sandstone platform. The platform is approximately 30m in length and 20m in width, and is about 300m from O'Hares Creek, and 20m from an unnamed tributary. The site contains a single grinding groove and a deeply incised channel. There is also a sharpening groove and another groove which may be associated with the channel, or a separate groove, as well as one deeper and shorter channel leading into a waterpan.

#### BS 14 - Bulli Site 14

This newly recorded site consists of a shelter with art. The shelter is located near the top of a ridgeline, at the top of a very steep slope, between two drainage lines. It is on the second ledge down from the top of only major cliff, which is discontinuous. The shelter is 5m in length, 0.5m in width and 1.8m in height. The living area is 0.7m by 2m, and faces north. Art at the shelter consists of a partial macropod drawn in charcoal, and is in poor condition.

### BS 15 - Bulli Site 15

This newly recorded site consists of grinding grooves, which are located in the middle of a creek bed at what looks to be the first drop off into the main gorge of a tributary of the Woronora. It is approximately 750m from this main tributary. The sandstone platform is 2m in length by 2m in width, and contains two grinding grooves in a cluster. The grooves are 30cm long and 8cm wide, and 1cm deep. The grooves appear to be heavily weathered.

### BS 16 - Bulli Site 16

This newly recorded site consists of a shelter with art, and is located in a small overhang on the mid-upper south western slopes of a small drainage feature that flows into O'Hares Creek. The shelter is 8m long, 2m wide and 1.5m high, and faces east into the drainage, towards O'Hares Creek. The shelter is 550m from O'Hares Creek and 60m from an unnamed tributary. The art present in the shelter consists of a charcoal anthropomorph and indeterminate charcoal lines. The art is in fairly poor condition.

### **BS 17 - Bulli Site 17**

This newly recorded site consists of an isolated artefact, located on the fire road that continues into the SCA catchment from Darkes Forest Road. The artefact appears to have been exposed during construction of the fire road. The artefact is a broken white chert flake, 17mm by 11mm by 6mm.

### BS 18 - Bulli Site 18

This newly recorded site consists of an grinding groove. The groove is located on a plateau on exposed sandstone, which is approximately 25m by 10m, and is within thick forest. The groove is 30cm by 4.5cm and 0.5cm deep.

### BS 19 - Bulli Site 19

This newly recorded site consists of an grinding groove located on a plateau on an exposed sandstone platform within thick forest. The sandstone platform is 8m by 6.5m, and the groove is 20cm by 3cm and is about 3-4mm deep.

### BS 20 - Bulli Site 20

This newly recorded site consists of a shelter with deposit, located above the Woronora River, on the eastern side, under the first major ridgeline. The shelter is 5m long, 2.6m deep and 2.5m high, and has 2m<sup>2</sup> of living area. The shelter faces north west. Artefacts located within the shelter, and consist of a grey chert flake, and a quartz flake.

#### BS 21 - Bulli Site 21

This newly recorded site consists of an isolated artefact. The artefact is located at the base of a tree in a paddock, near a drainage line. The site is approximately 1km from the Nepean River, and the paddock is located off Moreton Park Road. The artefact is a silcrete flake and is 33mm long, 32mm wide and 7mm thick, and has some edge damage.

#### BS 22 - Bulli Site 22

This newly recorded site consists of grinding grooves, located in a swamp 10m from Cobbong Creek. The site is north of site 52-2-1386, off fire trail 10B in the Dharawal State Conservation Area.

### BS 23 - Bulli Site 23

This newly recorded site consists of a shelter with art. The shelter is located on the upper slopes of a ridgeline, and is 10-20m from Cobbong Creek. The living area is uneven and contains lots of block fall and sandy loam deposit from weathering of the shelter. The art at the shelter consists of indeterminate charcoal drawings, and one possible eye or canoe charcoal drawing. The art is located low in the shelter, close to floor level, and some is located within concavities in the shelter wall. The ground in front of the shelter is quite steep, leading down to the creek.

### BS 24 - Bulli Site 24

This newly recorded site consists of a shelter with art, and is located 20m to 25m above Cobbong Creek. The shelter is 15m in length, 3m in width and 3m in height, and faces south west. Art at the site consists of 6 charcoal indeterminates, in very poor condition, and are located on the back walls and ceiling. The art on the ceiling is in a much better condition than that on the walls.

### BS 25 - Bulli Site 25

This newly recorded site consists of a shelter with art. It is a small angular shelter on the south bank of O'Hares Creek, about 20m south of the creek and about 10m above water level. There is a large rock platform with an irregular surface between the site and the creek. The shelter is 6m long, 1.5m wide and 2.5m high, and faces north. Art at the shelter consists of a charcoal indeterminate in poor condition, and has been affected by water wash.

#### BS 26 - Bulli Site 26

This site consists of a shelter with art. The shelter is at the top of a cliffline, off a small boulder on its own – the shelter has no surrounding rock formations, and is near the second tributary north of Picton Road. The shelter is approximately 80m to 100m from the Nepean River. Art in the shelter consists of two indeterminate red ochre drawings, one of which is possibly an eel, and another charcoal indeterminate. The art is on the ceiling at the southern end of the shelter. The ochre drawings are in good condition, although their subject is unclear, while the charcoal is in poor condition.

#### BS 27 - Bulli Site 27

This newly recorded site consists of an isolated artefact, located within an open cleared area. The artefact is a black volcanic tool with uneven retouch and edge damage, and is 25mm by 14mm by 5mm.

### BS 28 - Bulli Site 28

This shelter with art is located under the first ridgeline from the top of the ridge. The shelter is 12m in length, 1.5m in width and between 1.8 and 2.5m in height, and faces east. Art at the shelter consists of charcoal anthropomorphic figures.

#### BS 29 - Bulli Site 29

This newly recorded site consists of a shelter with art, and is located on an upper ridge, further around from site 52-2-0709. The shelter is 30m long, 3m wide at its widest point, and 1.8m high, and faces north. The shelter has had some block fall occur and any deposit on the floor is obscured by the block fall. Art at the shelter consists of a charcoal outline and infill snake or eel. There are strange striations in a boulder within the shelter, almost like grinding grooves or water wash; however do not appear to be culturally modified.

## BS 30 - Bulli Site 30

This newly recorded site consists of an isolated grinding groove and an engraved channel. The groove is located on a creek bed, west of site 52-2-0710, and is found on a large sandstone outcrop 3m from the edge of a small waterfall. The channel leads into a small pothole.

### BS 31 - Bulli Site 31

This newly recorded site consists of grinding grooves and a possible engraved channel, located on the creek bed off fire trail 10B. The site faces west and is 150m from site 52-2-0718. The site consists of four single grinding grooves and a potential channel. Water washes over the site and the grooves are weathered but still clearly visible.

### BS 32 - Bulli Site 32

This newly recorded site consists of an isolated grinding groove. The groove is located within a creek and is in close proximity to site 52-2-494. The platform on which the groove is located is 1m by 0.5m.

#### BS 33 - Bulli Site 33

This newly recorded site consists of a shelter with deposit, and is situated beneath a small waterfall in the centre of a side drainage that flows west into the Cataract River. The site is 100m east of site 52-2-1230. The shelter is 25m in length, 4.5m in width and 1.6m in height, and has 2m by 3m of living area at the western end.

The living area is limited if the drainage is flowing, although when dry the area for occupation is quite large. A single artefact is present in the shelter, and consists of a mudstone distal fragment with a feather termination.

### BS 34 - Bulli Site 34

This newly recorded site consists of a shelter with art and PAD. The shelter is located on the top ridgeline from the swamp and has a well hidden opening of approximately 50cm high. The shelter is 4m in length, and faces south south east. The shelter is almost completely enclosed and therefore the art present is in very good condition. The art consists of two kangaroos, one wombat and an indeterminate which could be a lizard or frog, or some other reptile. There is some exfoliation of the wall surface.

### BS 35 - Bulli Site 35

This newly recorded site is located on the main tributary of the Woronora, east of fire train 9B. It is situated on the first ledge up above the tributary, about 100m from the water, with a fairly steep slope at the front of the shelter. The site consists of a shelter with art, and is 4.2m in length, 1.5m in width and 1.4m in height. The shelter faces north east. Art at the shelter consists of 5 indeterminate charcoal drawings. The shelter is exfoliating and the art is in poor condition.

### BS 36 - Bulli Site 36

This newly recorded site is situated at the northern end of a large rocky outcrop above the southern tributaries of the Woronora River. The site consists of a shelter with art, which is 8m long, 2m wide and 1,8m high, and faces north east. The living area in this shelter is rocky and unsuitable for occupation. Art at the shelter consists of extensive red ochre hand stencils, from adults, children and a baby. There are also patches of indeterminate red ochre. The shelter is exfoliating. Some of the art is located within patches of exfoliation, while in other places exfoliation has impacted the stencils directly. The stencils are in poor condition.

### BS 37 - Bulli Site 37

This newly recorded site consists of grinding grooves and is located on the upper slopes of a ridge on a relatively flat open sandstone platform, 150m north of the top of a prominent rocky ridge. The site is approximately 200m from the Woronora River. The sandstone platform is 18m by 7m and is oriented north. The surface of the sandstone exhibits some surface cracking and other weathering. The grinding grooves are broad, and the largest groove is 27cm in length, 7cm in width and 0.5cm in depth, while the smallest is 16cm in length, 5cm in width and 0.2cm in depth.

#### BS 38 - Bulli Site 38

This newly recorded site is located under the first ledge up from the major tributary of the Woronora, approximately 100m to the river/creek and on the western side. This is a discontinuous 2m to 3m high cliff. The shelter is 9.6m in length, 2.6m in width and .8m in height, and faces east. Art at the shelter consists of two partial charcoal outline anthropomorphs, and charcoal indeterminate lines.

### BS 39 - Bulli Site 39

This newly recorded site was located off fire trail 9B approximately 20m to the east, and consists of a shelter with art. The roof of the shelter has collapsed, leaving the walls exposed. The roof section is in front of the wall with art. The shelter is 3.1m in length, 0.3m in width and 2m in height, and faces west. Art in the shelter consists of a charcoal and infill indeterminate, a scratched indeterminate and a scratched drawing of a kangaroo head, shoulders and arms. The kangaroo scratching is in good condition while the other indeterminates are in poor condition.

### BS 40 - Bulli Site 40

This newly recorded site consists of a shelter with art. The shelter is located on the upper slope of a ridgeline and is 20m from an unnamed tributary. The shelter is 14m in length and 3.5m in width. Art is present on the ceiling and at the northern end. The art on the ceiling consists of five small hand stencils and one indeterminate, all in red ochre, while the art at the northern end comprises an indeterminate patch of red ochre.

### BS 41 - Bulli Site 41

This newly recorded site consists of grinding grooves located within a swamp. The site is located on an old seismic line, approximately 2km from Appin Road. The seismic line has been used as a bike track. The platform is in a large opening in the swamp. The sandstone platform is 8m by 6m and has a westerly aspect. Seven grooves are present on the platform in two clusters. The grooves are broad, with the smallest being 20cm in length, 5cm in width and 4mm in depth, while the largest being 28cm long, 6cm wide and 3mm deep. The grooves are in very good condition.

#### BS 42 - Bulli Site 42

The site is located between two previously recorded art sites, 52-2-1497 and 52-2-1498. The shelter is 5m long, however the depth and height of the shelter varies from 1m to 2.5m deep, and 1m to 2m in height. The floor of the shelter is mostly exposed benched sandstone with a shallow deposit consisting of exfoliated sandstone. The art is located in the deeper section of the shelter, on the back panel of the shelter and is a singular charcoal infill 'egg' shaped image.

### BS 43 - Bulli Site 43

This site is located within a large sandstone overhang, 16m by 3m. The shelter has a small sloping floor; the overhang has an internal lower ceiling approximately 1m in height from the floor, at which point the back panel of the shelter begins. The art is located at the point where the smaller internal ceiling meets with the beginning of the back panel on the underside. The art consists of two indeterminate charcoal outlines, both located slightly east of centre.

#### BS 44 - Bulli Site 44

This rock art site is located 20m to the east of a previously recorded art site, 52-2-1234. The site is located on the first sandstone ledge below the top of the gorge and is approximately 30m from the Cataract River. The shelter is 15m long with an end roof height of 6m. There is limited floor to the shelter and effectively no living space as the floor is a sharp slope down, running out past the shelter's dripline. There is a large block fall section located at the western end of the shelter. The art is positioned on the first back panel above the floor. The art is an indeterminate charcoal figure. The art consists of a series of lines running vertically next to each other.

## **APPENDIX 5: DETAILED ABORIGINAL SITE INFORMATION**

This information includes culturally sensitive material. The information is reserved for use by:

- o The Aboriginal Stakeholders.
- The Proponent and their agents.
- O Determining and advising Government Agencies and their agents.
- Other parties as approved by the above.

# APPENDIX 6: ARCHAEOLOGICAL SIGNIFICANCE ASSESSMENTS

SITE	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY	ARCHAEOLOGICAL
NUMBER		PROJECT SURVEYS	SIGNIFICANCE*
48-2-0005	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
48-2-0006	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
48-2-0007; 52-2-3589	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
48-2-0008	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
48-2-0009	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
48-2-0010	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
48-2-0011	General: Features at this site have low value under the general criteria.	No	Moderate
	Representativeness: The site is highly representative of this class of site.		
	Rarity: Hatchet heads are rare in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0011	General: Features at this site have some value under the general criteria.	Yes	Moderate
	Representativeness: The site has some representative value of this class of site.		
	Rarity: This type of site is common in this area, however motifs contained within the art assemblage are atypical, affording rarity value.		
	Aesthetic: Given the large number and variety of motifs, this site has some aesthetic value. The macropod and large anthropomorphic motifs are particularly striking.		
52-2-0012	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0014	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0021	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0062; 52-2-0796	General: This is an engraving site in good condition. The site is intact, affording good value under this criterion.	Yes	High
02 2 0770	Representativeness: The site has high representativeness of this class of site.		
	Rarity: Engraving sites are rare in this area.		
	Aesthetic: The engraving consists of multiple human figures. Engraved on an open area of sandstone, this site has high aesthetic values.		
52-2-0102	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0228	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0238	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0239; 52-2-0334;	General: The site consists of a large number of grinding grooves in good condition, affording this site good value under this criterion.	Yes <sup>1</sup>	Moderate
52-2-0365	Representativeness: This site is highly representative of this class of site.		
	Rarity: Grinding groove sites with large numbers of grinding grooves are rare in this area.		
	Aesthetic: The site is located within dense woodland/swamp and has limited aesthetic value.		
52-2-0242	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0243	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0244	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0267	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0270	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0278	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0279	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0280	General. This site consists of a shelter with art and deposit with a wide variety and abundance of intact motifs, affording high value under the general criteria.	Yes	High
	Representativeness: The site has high representative value of shelters with art in good condition.		
	Rarity: Shelters with art and deposit are not rare, although shelters with well preserved abundant art are uncommon.		
	Aesthetic: The range and diversity of motifs at the site provide high value under this criterion.		
52-2-0281	General. This site contains a shelter with art. The art consists of motifs which are mostly intact, affording the site moderate value under the general criteria.	Yes	Moderate
	Representativeness: The site has good representative value of a shelter with unusual motifs.		
	Rarity: Shelters with art are common, although the depictions in this shelter are unusual for this area.		
	Aesthetic: The range and diversity of motifs at the site provide moderate value under this criterion.		
52-2-0282; 52-2-0982	General: The site consists of grinding grooves and an engraving site. The site is intact and in very good condition, affording this site high general value.	Yes	High
	Representativeness: This site is highly representative of this class of site		
	Rarity: Grinding groove sites are not rare; however engraving sites are. The two combined is an especially rare site type for this area.		
	Aesthetic: Situated on a large open area of sandstone overlooking a gorge, this site has high aesthetic values. The engraving of a kangaroo is also visually appealing and enhances the aesthetic appeal of the site.		
52-2-0287	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0288	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0289	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0290	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0293	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0294	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0295	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0296	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0299	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0300	General: This site is a grinding groove site with a moderate number of grooves, providing moderate general value.	Attempted	Moderate
	Representativeness: This site has moderate representative value.		
	Rarity: Grinding groove sites are not rare, although sites with moderate numbers of grooves are uncommon.		
	Aesthetic: This site has low aesthetic value, as the grooves are located within a creek bed.		
52-2-0301	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0303	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0304	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0311	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0312; 52-2-0784	<i>General:</i> This is an engraving site in good condition. The site is intact, affording good value under this criterion.	Yes	High
	Representativeness: The site has high representativeness.		
	Rarity: Engraving sites are rare in this area.		
	Aesthetic: The engraving consists of two figures which appear to be running or dancing. Engraved on an open area of sandstone, this site has high aesthetic values.		
52-2-0313; 52-2-0790	General: The site contains a moderate variety of motifs and media, which are mostly intact, affording good general value.	Attempted	Moderate
0220770	Representativeness: This site has moderate representative value.		
	Rarity: Shelters with art are not rare, although the some of the motifs in this shelter are unusual.		
	Aesthetic: A shelter with a variety of motifs and media has some aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0314; 52-2-0785	General: The site is a shelter with a large amount of art present, as well as artefacts. Most of the art is intact.	Attempted	High
02 2 0700	Representativeness: The shelter has high representative value of shelters with art and deposit.		
	Rarity: Shelters with art and deposit are not rare, although shelters with this amount of art are uncommon.		
	Aesthetic: The abundance and variety of motifs within the shelter affords this site high aesthetic value.		
52-2-0316; 52-2-0788	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0318	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0331	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Moderate
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0348	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0349	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0351; 52-2-0794	General: This shelter contains a large amount of art in a relatively intact state, providing some value under the general criteria.	Yes	Moderate
52 2 01 /7	Representativeness: This site is highly representative of this class of site.		
	Rarity: Shelters with abundant art are unusual.		
	Aesthetic: The shelter has high aesthetic significance due to the abundance of motifs present.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0358	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0359	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0360	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0361	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0362;	General: The site consists of several rock engravings in good condition.	Attempted	High
52-2-0567	Representativeness: This site is somewhat represent of this class of site.		
	Rarity: Engraving sites are rare in this area, and sites depicting animal footprints are even more so.		
	Aesthetic: Several animal footprints engraved on a sandstone platform affords some value under this criterion.		
52-2-0364	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0390	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0410	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0411	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0417	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	N/A*
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0419	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0426	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0429	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	N/A*
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0431	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0432	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0433	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0434	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0435	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0436	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0437	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0438	General: The site has a moderate number of artefacts located near a creek, affording the site some connection with the general environment.	Yes	Moderate
	Representativeness: The site is representative of this class of site.		
	Rarity: Stone artefact sites are not rare, although sites with moderate numbers of artefacts are uncommon.		
	Aesthetic: There is no aesthetic value for a site located on a vehicle track.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0439	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0440	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0441; 52-2-1382	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0442	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0443	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0444	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0445	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0446	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0447	General: The site is a grinding groove site with a moderate number of grinding grooves with a water channel present. The grinding grooves are in good condition affording the site moderate values under the general criteria.	Attempted	Moderate
	Representativeness: The site is representative of this class of site.		
	Rarity: Grinding groove sites are not rare, although sites with moderately high numbers of grooves are uncommon.		
	Aesthetic: Located on a creek bed, the site has low aesthetic significance.		
52-2-0448	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0449	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0467	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	N/A*
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0468	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	N/A*
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0469	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	N/A*
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0479	General: The site is a shelter with art and a moderately large deposit.	Yes	Moderate
	Representativeness: The shelter is representative of this class of site.		
	Rarity: Shelters with art and deposit are not rare, although shelters with moderately large deposits are uncommon.		
	Aesthetic: The shelter is located on the upper ridgeline within woodland, and has limited aesthetic values.		
52-2-0494	General: This site contains a moderately high number of grinding grooves and an engraved channel. The grooves are in good condition.	Yes	Moderate
	Representativeness: This site is very representative of sites with grinding grooves and engraved channels.		
	Rarity: Grinding groove sites are common. Sites with relatively high numbers of grooves and engraved channels are rarer.		
	Aesthetic: Situated on a creek bed, the site has low aesthetic significance.		
52-2-0495	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0496	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0502	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0503	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0504	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0505	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0506	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0507	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0508	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0555	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0556	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0557	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0558	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0559	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0560	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0561	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0562	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0563	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0564	General: The site consists of an engraving of a kangaroo in relatively good condition, providing some value under this criterion.	Yes <sup>1</sup>	High
	Representativeness: This site is highly representative of engraving sites.		
	Rarity: Engraving sites are rare in this area.		
	Aesthetic: A large engraving of a kangaroo on a relatively open area of sandstone has aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0565	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0566	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0568	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0569	General: The site consists of grinding grooves and a possible engraving in good condition.	Yes	Moderate
	Representativeness: This site is representative of grinding groove and engraving sites.		
	Rarity: Sites with both grinding grooves and engravings are rare.		
	Aesthetic: Located on a large sandstone platform overlooking a gully, the site has some aesthetic values.		
52-2-0571	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0572	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0573	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0576; 52-2-0743	General: The site is a very large shelter with art, and suitable for occupation, providing a connection between the site and other sites in the area.	Yes	Moderate
	Representativeness: The site is representative of shelters with art.		
	Rarity: Shelters with art are not rare, although shelters of this size are uncommon and the art confirms usage of this shelter.		
	Aesthetic: Situated in a small gully, the site has limited aesthetic values.		
52-2-0578	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0579	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0580	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0581	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0582	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0583	General: The site consists of grinding grooves. The site is in good condition and is fairly intact, affording this site good general value.	Yes	Moderate
	Representativeness: This site is representative of this class of site.		
	Rarity: Grinding groove sites are common, although sites with this number of grinding grooves are somewhat unusual.		
	Aesthetic: Located on the creek bed and surrounded by bushland, this site has some value under this criterion.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0584	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0586	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0591	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0592	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0593	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0594	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0595	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0596	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0597	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0598	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0599	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0600	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0601	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0602	General: The site consists of a shelter with art. The motifs are varied and there are a moderately large number of motifs present, in good condition, providing moderate value under the general criteria.	Attempted	Moderate
	Representativeness: This site is highly representative of this class of site.		
	Rarity: Shelters with art are not rare. The motifs present in this shelter are unusual and therefore uncommon.		
	Aesthetic: A shelter with a frieze of small human figures has some value under this criterion.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0604	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0605	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0606	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0607	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0608	General: This shelter with art contains a variety of motifs including unusual depictions. The site is intact, affording the site moderate value under the general criteria.	Attempted	Moderate
	Representativeness: This shelter is representative of this class of site.		
	Rarity: Although shelters with art are not rare, shelters with unusual motifs are uncommon.		
	Aesthetic: A shelter with a moderately large number of motifs has some aesthetic appeal.		
52-2-0609	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0610	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0652	General: This grinding groove site consists of a moderately large number of grinding grooves and is in good condition, affording this site good general value.	No	Moderate
	Representativeness: This site is highly representative of this class of site.		
	Rarity: Sites with large numbers of grinding grooves and engraved channels are uncommon.		
	Aesthetic: Located on a tiered creek bed near a waterfall, this site has some aesthetic value.		
52-2-0661	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0662	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0663	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0664	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0666	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0667	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY	ARCHAEOLOGICAL
NUMBER		SURVEYS	SIGNIFICANCE*
52-2-0668	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0669	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0670	General: The site consists of a large number of grinding grooves. The grooves are in good condition and the site is intact, providing moderate value under the general criteria.	Yes	Moderate
	Representativeness: This site is highly representative of grinding groove sites with a large number of grooves.		
	Rarity: Grinding groove sites are not rare, although sites with large numbers of grooves are uncommon in this area.		
	Aesthetic: Situated on a sandstone platform below a swamp, this site has limited aesthetic value.		
52-2-0671	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0672	General: The site consists of a moderately large number of grinding grooves located on a sandstone platform around potholes. The grooves are in good condition and the site is intact, providing moderate value under the general criteria.	Attempted	Moderate
	Representativeness: This site is representative of grinding groove sites.		
	Rarity: Grinding groove sites are common. Sites with large numbers of grooves are less common.		
	Aesthetic: Situated on a sandstone platform above a creek, this site has limited aesthetic value.		
52-2-0673	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0693	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0694	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0695	General: This is a grinding groove site with a high number of grooves, which is unusual for this area.	Yes	Moderate
	Representativeness: The site has moderate representative value of this class of site.		
	Rarity: Grinding groove sites are not rare, although sites with such high numbers of grooves are uncommon.		
	Aesthetic: Located on an open sandstone platform overlooking a creek and surrounded by dense scrub, the site has moderate aesthetic values. There is some visually appealing weathering of the sandstone which also adds to the aesthetic appeal of the site.		
52-2-0696	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0697	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0698	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0699	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0700	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0701	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0702	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0703	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0704	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0705	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0706	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0707	General: A grinding groove site, the large number of grooves in excellent condition affords this site excellent value under the general criteria.	Yes	High
	Representativeness: This site is highly representative of grinding groove sites.		
	Rarity: Although griniding groove sites are not rare, sites with large numbers of grooves are rare.		
	Aesthetic: Located on an area of sandstone in close proximity to the fire trail, this site has low aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0708	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0709	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0710	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0711	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0712	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0713	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0714	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0715	General: This shelter with art contains unusual motifs. The shelter and its art are undisturbed, providing moderate value under the general criteria.	Attempted	Moderate
	Representativeness: This site is highly representative of this class of site.		
	Rarity: The motifs found in this shelter are unusual for this area and therefore rare.		
	Aesthetic: A shelter with multiple distinct motifs has moderate representative value.		
52-2-0716	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0717	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0718	An archaeological significance assessment for this site could not be completed due to the apparent collapse of the shelter.	Yes	Moderate
52-2-0719	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0720	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0748	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0759	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0761	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0762	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0763	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0765	Limited information is available for this site and therefore an archaeological assessment cannot be completed.	No	N/A
52-2-0767	Limited information is available for this site and therefore an archaeological assessment cannot be completed.	No	N/A
52-2-0768	Limited information is available for this site and therefore an archaeological assessment cannot be completed.	No	N/A
52-2-0769	Limited information is available for this site and therefore an archaeological assessment cannot be completed.	No	N/A
52-2-0779	Limited information is available for this site and therefore an archaeological assessment cannot be completed.	Yes	N/A
52-2-0780	General: This site consists of a moderate number of grinding grooves. The site is in good condition, providing good general value.	Yes	Moderate
	Representativeness: This site has representative value of this class of site.		
	Rarity: Grinding groove sites are common. Sites with moderate numbers of grooves are less common.		
	Aesthetic: The site is located within a swamp, and has limited aesthetic values.		
52-2-0781	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0782	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0783	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0786	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0787	General: This shelter contains a large number and variety of motifs, including human figures, showing a connection with the environment and thus affording good general values.	Attempted	Moderate
	Representativeness: The site is representative of shelters with art.		
	Rarity: Although shelters with art are not rare, the abundance and variety of motifs found within this shelter are uncommon for this area.		
	Aesthetic: The high number of motifs depicted affords this site good aesthetic significance.		
52-2-0789	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0791	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0793	General: This shelter contains a large amount of art in excellent condition, providing good value under the general criteria.	Attempted	Moderate
	Representativeness: This site is highly representative of this class of site.		
	Rarity: Shelters with abundant art in good condition are unusual.		
	Aesthetic: The shelter has high aesthetic significance due to the abundance of motifs present.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0795	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0797	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0798	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0799	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0808	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0809	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0810	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0811	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0812	General: This site contains a large number of grinding grooves. The site is located over a number of sandstone platforms and is still intact, providing some value under this criterion.	Yes	High
	Representativeness: This site is highly representative of this class of site, specifically as the grooves are located over a number of platforms.		
	Rarity: This type of site is rare in this area, especially given the location of a number of grooves spread over a number of platforms.		
	Aesthetic: Located within a swamp, the site has limited value under the aesthetic criteria.		
52-2-0813	General: This shelter contains a moderately high number of motifs.	Yes	Moderate
	Representativeness: This site is representative of this class of site.		
	Rarity: Shelters with abundant art are unusual.		
	Aesthetic: The shelter has some aesthetic significance due to the abundance of motifs present.		
52-2-0814	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0815	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0816	<i>General:</i> Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0817	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0818	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0819	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0845	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0846	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0849	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0854	General: This shelter contains a large amount of art in a relatively intact state, providing high value under the general criteria.	Attempted	High
	Representativeness: This site is highly representative of this class of site.		
	Rarity: Shelters with abundant art are unusual. Shelters with stencils of implements are very rare in this area.		
	Aesthetic: The shelter has high aesthetic significance due to the abundance and variety of motifs present.		
52-2-0884	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0907	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0908	General: The site consists of a shelter with a moderately high number of motifs in fairly good condition, and executed in different types of media. The site has good general value under this criterion.	Attempted	Moderate
	Representativeness: This site has high representativeness.		
	Rarity: Although shelters with art are not rare, the abundance of motifs found within this shelter, as well as the use of multiple types of media, are uncommon for this area.		
	Aesthetic: The high number of motifs and use of different media depicted affords this site good aesthetic significance.		
52-2-0920	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0921	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0922	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0923	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

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SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0924	General: This is a shelter with art, deposit and grinding grooves. The combination of different site types, as well as the abundance of art within the shelter (albeit in poor condition) affords this site good general value.	Yes	Moderate
	Representativeness: This site is highly representative of this class of site.		
	Rarity: Sites with art, deposit and grinding grooves are rare for this area.		
	Aesthetic: The site is situated high on a ridgeline overlooking a tributary of the Woronora River. The combination of the location and the art present within this shelter gives this site moderate significance under this criterion.		
52-2-0925	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0929	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0930	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0931	General: The site contains a moderately high number of grinding grooves. The site is intact, providing some value under this criterion.	Yes	Moderate
	Representativeness: This site is representative of this class of site.		
	Rarity: Sites with moderately high numbers of grinding grooves are uncommon.		
	Aesthetic: The site is located on a sandstone platform within a swamp and as such, has low value under the aesthetic criteria.		
52-2-0932	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0936	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0940	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0941	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0942	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0943	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0945	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0946	General: This shelter contains a large amount of art in an intact state, providing good value under the general criteria.	Attempted	Moderate
	Representativeness: This site is highly representative of this class of site, as are shelters with multiple media.		
	Rarity: Shelters with abundant art are unusual, as are shelters with multiple media.		
	Aesthetic: The shelter has high aesthetic significance due to the abundance of motifs and different coloured media present.		
52-2-0949	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0950	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0951	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0952	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0953	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0967	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0969	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0970	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0971	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0972	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0973	General: The site consists of a shelter with art with a variety of motifs and media. The site is fairly intact, affording this site good general value.	Yes	Moderate
	Representativeness: This site is highly representative of this class of site.		
	Rarity: Shelters with art executed in multiple media are uncommon in this area.		
	Aesthetic: The art at the shelter consists of multiple motifs in different types of media, affording this site good value under the aesthetic criteria.		
52-2-0977	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0978	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0979	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0980	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0981	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0989	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0990	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0993	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0995	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0996	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-0997	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-0998	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1000	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1001	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1002	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1003	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1006	General: This is a shelter with art and deposit, with a number of motifs which are unusual for this area.	Yes	High
	Representativeness: The site has high representative value of this class of site.		
	Rarity: The motifs are quite rare for this area.		
	Aesthetic: The shelter is located above a major creek line, and the art is in a highly preserved state. The aesthetic values of this site are high.		
52-2-1007	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-1063	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1065	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1072	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1073	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1074	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1075	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1106	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-1109	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1110	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1122; 52-2-1129	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1124	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1125	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1126	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1130	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-1148	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1165	General: The site consists of a large number of grinding grooves in very good condition, affording this site good value under this criterion.	Attempted	Moderate
	Representativeness: This site is highly representative of this class of site.		
	Rarity: Grinding groove sites with large numbers of grinding grooves are rare in this area.		
	Aesthetic: The site is located within dense woodland/swamp and has limited aesthetic value.		
52-2-1173	General: This is a shelter with art, deposit and grinding grooves in a relatively undisturbed context. The different site types found within the shelter, as well as the integrity of the deposit, afford this site good general value.	Yes <sup>1</sup>	Moderate
	Representativeness: This site is highly representative of this class of site.		
	Rarity: Sites with art, deposit and grinding grooves are rare for this area.		
	Aesthetic: The site is located on a small drainage and has limited significance under this criterion.		
52-2-1174	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1175	<i>General:</i> Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1176	<i>General:</i> Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1177	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-1185	General: This shelter with art and grinding grooves has a combination of different site types affording this site good general value.	Yes	Moderate
	Representativeness: This site is representative of this class of site.		
	Rarity: Shelters with art and grinding grooves are rare for this area, as are the motifs within the shelter.		
	Aesthetic: The art is in poor condition and the shelter is located directly above a creek, providing limited values under the aesthetic criteria.		
52-2-1190	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1193	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1194	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1199	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1202	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1209	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-1210	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1211	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1212	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1213	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1214	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1220	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1227	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-1228	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1229	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1230	General: This site consists of a shelter with a moderate deposit. The shelter has low value under the general criteria.	Yes	Moderate
	Representativeness: The site has representative value under this criterion.		
	Rarity: Shelters with moderate deposits are uncommon.		
	Aesthetic: The site has limited aesthetic value.		
52-2-1231	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1232	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1233	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1234	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-1235	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1237	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1243	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1244	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1246	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1260	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1261	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-1270	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1272	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1273	General: The site contains a moderately large number of grinding grooves which are in excellent condition, affording moderate value under this criterion.	Yes	Moderate
	Representativeness: This site is highly representative of this class of site.		
	Rarity: Grinding groove sites are not rare, although sites with moderately large numbers of grooves are uncommon.		
	Aesthetic: Located above a steep drop into a creek, the site has some aesthetic value.		
52-2-1274	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1275	General: The site consists of an undisturbed shelter with art and deposit, affording this site good general value.	Yes	High
	Representativeness: This site is representative of this class of site.		
	Rarity: Shelters with art and deposit are not rare, although shelters with abundant art and deposit are uncommon.		
	Aesthetic: A shelter with abundant art has some aesthetic value.		
52-2-1281	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1282	General: This shelter contains a large amount of art in a relatively intact state, providing some value under the general criteria.	Yes	High
	Representativeness: This site is highly representative of this class of site.		
	Rarity: Shelters with abundant art are unusual.		
	Aesthetic: The shelter has high aesthetic significance due to the abundance of motifs present.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-1284	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1311; 52-2-3588	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1312	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1313	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1314	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1315	General: This shelter with art is in very good condition, affording this site moderate value under the general criteria.	Yes	Moderate
	Representativeness: The shelter is representative of shelters with art and deposit.		
	Rarity: Although shelters with art and deposit are not rare, art in multiple media is uncommon in this area.		
	Aesthetic: The aesthetic values of this shelter are low, due to the location of the shelter at the bottom of a valley.		
52-2-1317	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-1318	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1319	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1365	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1366	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1373	General: This site consists of a shelter with art and deposit in a disturbed context.	Yes	Moderate
	Representativeness: The site is a good, representative example of a shelter with art and deposit.		
	Rarity: This type of site quite common in this area, and is not rare.		
	Aesthetic: The positioning of this shelter in a striking visual catchment gives it a strong sense of place and aesthetic cultural value, although this value is lessened somewhat by the graffiti and historical disturbance that has impacted the shelter.		
52-2-1379	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1381	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT	ARCHAEOLOGICAL SIGNIFICANCE*
		SURVEYS	
52-2-1384	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1385	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1386	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1387	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1389	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1491	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1497	Limited information is available for this site and therefore an archaeological assessment cannot be completed.	No	N/A
52-2-1498	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-1516	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1517	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1518	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1519	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1594	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1595	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1597	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-1607	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1654	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1655	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1657	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1658	General: The site consists of a moderately large number of grinding grooves in very good condition, affording this site good value under this criterion.	Yes	Moderate
	Representativeness: This site is highly representative of this class of site.		
	$\textit{Rarity:} \ \ \text{Grinding groove sites with moderately large numbers of grinding grooves are uncommon in this area.}$		
	Aesthetic: The site is located within a very dense swamp and has limited aesthetic value.		
52-2-1659	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1660	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-1661	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1662	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1663	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1664	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1680	Limited information is available for this site and therefore an archaeological assessment cannot be completed.	No	N/A
52-2-1681	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1682	Limited information is available for this site and therefore an archaeological assessment cannot be completed.	No	N/A
52-2-1798	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-1876	General: The site consists of a shelter with a moderately large undisturbed deposit, providing some value under this criterion.	Yes	Moderate
	Representativeness: This site is representative of shelters with deposit.		
	Rarity: Shelters with intact deposit are rare.		
	Aesthetic: This is a large shelter overlooking the Cataract River, and therefore has some aesthetic value.		
52-2-1878	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1921	<i>General:</i> Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1922	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-1924	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2034	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2036	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-2041	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2052	General: This shelter contains a moderately large amount of art in a relatively intact state, providing some value under the general criteria.	Yes <sup>1</sup>	Moderate
	Representativeness: This site is representative of this class of site.		
	Rarity: Shelters with abundant art are unusual.		
	Aesthetic: The shelter has some aesthetic significance due to the variety of motifs present.		
52-2-2061; 52-2-2102	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes <sup>1</sup>	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2062; 52-2-2104	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes <sup>1</sup>	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2063;	General: The shelter contains a moderate amount of both art and deposit.	Yes <sup>1</sup>	Moderate
52-2-2105	Representativeness: This shelter is representative of this class of site.		
	Rarity: Shelters with moderate amounts of art and deposit are unusual in this area.		
	Aesthetic: A shelter with a moderate variety and amount of motifs has some aesthetic value.		
52-2-2064	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.	_	
52-2-2065; 52-2-2106	General: The site consists of a moderately large number of grinding grooves in a fairly good condition, affording this site some value under this criterion.	Yes <sup>1</sup>	Moderate
	Representativeness: This site is representative of grinding groove sites with moderately large numbers of grooves.		
	Rarity: Grinding groove sites with large numbers of grinding grooves are rare in this area.		
	Aesthetic: The site is located within dense woodland/swamp and has limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-2066; 52-2-2113	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes <sup>1</sup>	Low
02 2 2	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2074; 52-2-2075;	General: The site consists of a shelter with a moderately large undisturbed deposit, providing some value under this criterion.	Yes	Moderate
52-2-2092	Representativeness: This site is representative of shelters with deposit.		
	Rarity: Shelters with intact deposit are rare.		
	Aesthetic: This small shelter is located within dense bush and therefore has limited aesthetic value.		
52-2-2094	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2095	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2096	General: This site consists of a scarred tree, which reveals utilitarian activities not usually represented by other site types providing some value under this criterion.	Yes <sup>1</sup>	Moderate
	Representativeness: The site is somewhat representative of this class of site.		
	Rarity: Scarred trees are uncommon for this area.		
	Aesthetic: Located within quite dense bush, the site has little aesthetic value.		
52-2-2097	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2098	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-2099	General: This shelter contains art and deposit. The art includes a drawing of a fish, showing a connection with the surrounding environment and therefore some value under the general criteria.	Yes	Moderate
	Representativeness: This shelter is representative of this class of site.		
	Rarity: Shelters with art and deposit are not rare.		
	Aesthetic: The shelter is located on the top ridgeline above the Nepean River, affording this site some value under this criterion.		
52-2-2110	General: The site consists of an open artefact scatter with a moderately large number of artefacts.	Yes	Moderate
	Representativeness: This site is representative of this class of site.		
	Rarity: This site could be a contact site, as there are European 19 <sup>th</sup> century relics present. These sites are very rare.		
	Aesthetic: Located within a paddock, adjacent to vehicle access tracks, the site has limited aesthetic value.		
52-2-2228; 52-2-3617	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2234	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2235	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2236	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2237	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-2238	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2239	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2240	General: This shelter contains a moderately large amount of art in a relatively intact state, providing some value under the general criteria.	Yes <sup>1</sup>	Moderate
	Representativeness: This site is representative of this class of site.		
	Rarity: Shelters with a variety of motifs and multiple media are rare in this area.		
	Aesthetic: The shelter has some aesthetic significance due to the variety of motifs present. Some of the motifs are quite large and easily discernable.		
52-2-2241	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2242	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2243	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2244	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-2250	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2264	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2265	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2266	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2267	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2268	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2292	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-2294	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2299	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2300	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2321	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2325	<i>General:</i> Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2433	General: Features at this site are unremarkable and have low value under the general criteria. The site is considered to have some archaeological potential.	No	Low
	Representativeness: The site and its associated art and artefact assemblage have low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2435	General: The art at this site is typical and has low value under the general criteria. The deposit at the site has possible archaeological potential.	No	Low
	Representativeness: The site and its associated art assemblage have low representative value of this class of site.		
	Rarity: This type of site and features is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-2458	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2459	General: This site consists of axe and spear grinding grooves. Spear grinding grooves are quite unusual for this area, providing some value under this criterion.	Yes	Moderate
	Representativeness: The site has good representative value, especially as it contains both spear and grinding grooves.		
	Rarity: Grinding grooves are not rare, although spear grinding grooves are.		
	Aesthetic: Located on a creek, in an undisturbed area, the site has some aesthetic value.		
52-2-2460	General: The art at this site is a poorly preserved example of common type. It has low value under the general criteria. The site is considered to have some archaeological potential.	No	Low
	Representativeness: The site and its associated art and artefact assemblage have low representative value of this class of site.		
	Rarity: This type of site is very common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2463	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2490	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2602	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2682	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-2716	Limited information is available for this site and therefore an archaeological assessment cannot be completed.	No	N/A
52-2-2778	Limited information is available for this site and therefore an archaeological assessment cannot be completed.	No	N/A
52-2-2781	Limited information is available for this site and therefore an archaeological assessment cannot be completed.	No	N/A
52-2-2786	Limited information is available for this site and therefore an archaeological assessment cannot be completed.	No	N/A
52-2-2797	Limited information is available for this site and therefore an archaeological assessment cannot be completed.	No	N/A
52-2-2819	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2823	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-2852	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3023	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3026	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY	ARCHAEOLOGICAL
NUMBER		PROJECT	SIGNIFICANCE*
		SURVEYS	
52-2-3027	General: This shelter with art is in very good condition, affording the site moderate value under the general criteria.	Yes	Moderate
	Representativeness: This shelter is highly representative of shelters with art.		
	Rarity: Shelters with art are not rare, although shelters with art in good condition are uncommon.		
	Aesthetic: The shelter is located adjacent to a creek, and contains an abundance of art in good condition. These two factors afford this site good aesthetic value.		
52-2-3028	Limited information is available for this site and therefore an archaeological assessment cannot be completed.	No	N/A
52-2-3029	Limited information is available for this site and therefore an archaeological assessment cannot be completed.	No	N/A
52-2-3030	Limited information is available for this site and therefore an archaeological assessment cannot be completed.	No	N/A
52-2-3031	Limited information is available for this site and therefore an archaeological assessment cannot be completed.	No	N/A
52-2-3032	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3033	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3034	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3035	General: The site consists of an open artefact scatter with a moderately large number of artefacts.	Attempted	Moderate
	Representativeness: This site is representative of this class of site.		
	Rarity: Artefact scatters are not rare, although moderately large collections are unusual.		
	Aesthetic: Located on sandstone exposures within a paddock, this site is unremarkable and has limited aesthetic value.		
52-2-3036	General: The site consists of an open artefact scatter with a moderately large number of artefacts.	Attempted	Moderate
	Representativeness: This site is representative of this class of site.		
	Rarity: Artefact scatters are not rare, although moderately large collections are unusual.		
	Aesthetic: Located on sandstone exposures within a paddock, this site is unremarkable and has limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-3037	Limited information is available for this site and therefore an archaeological assessment cannot be completed.	No	N/A
52-2-3053	Limited information is available for this site and therefore an archaeological assessment cannot be completed.	No	N/A
52-2-3056	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3070	General: The site consists of a shelter with art in good condition, affording this site some general value.	Attempted	Moderate
	Representativeness: This site is highly representative of shelters with art executed in multiple media.		
	Rarity: Shelters with art performed in several different media are rare. The motifs depicted within the shelter are also rare.		
	Aesthetic: A shelter with different coloured art has moderate aesthetic significance.		
52-2-3071	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3072	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3073	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3094	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-3136	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3190	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3191	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3192	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3193	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3194	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3195	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-3212	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3213	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Attempted	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3214	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3215	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3216	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3217	An archaeological significance assessment for this site could not be completed as the site has been destroyed/disturbed by development.	Yes	Low
52-2-3218	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3219	General: This site consists of a scarred tree, which reveals utilitarian activities not usually represented by other site types providing some value under this criterion.	Yes	Moderate
	Representativeness: The site is somewhat representative of this class of site.		
	Rarity: Scarred trees are uncommon for this area.		
	Aesthetic: Located within a paddock the site has limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-3224	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3226	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3227	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3228	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3229	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3230	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3231	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-3232	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3234	General: The site consists of a single glass artefact, showing a connection with other contact sites within the area and affording some general value.	Attempted	Moderate
	Representativeness: This site is highly representative of this class of site.		
	Rarity: Glass artefacts are very rare in this area.		
	Aesthetic: Located within a paddock, this site has limited aesthetic value.		
52-2-3235	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3236	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3242	General: This site consists of a scarred tree, which reveals utilitarian activities not usually represented by other site types providing some value under this criterion.	Yes	Moderate
	Representativeness: The site is representative of this class of site.		
	Rarity: Scarred trees are uncommon for this area.		
	Aesthetic: Located on a gentle slope above a creek, the site has some aesthetic value.		
52-2-3251	General: The site consists of an open scatter, including a glass artefact, which shows some connection to the environment. This provides some value under this criterion.	Attempted	Moderate
	Representativeness: This site is somewhat representative of this class of site.		
	Rarity: Glass artefacts are very rare in this area, although artefacts scatters are common.		
	Aesthetic: Located within a paddock, this site has limited aesthetic value.		
52-2-3302	Limited information is available for this site and therefore an archaeological assessment cannot be completed.	No	N/A
52-2-3468	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-3470	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3474	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3504	General: This is a shelter with art. The art is in poor condition, providing little value under this criterion.	Yes	Moderate
	Representativeness: The site is representative of this class of site.		
	Rarity: The site comprises artefacts from different raw materials. Shelters with art and varied deposit are uncommon in this area.		
	Aesthetic: The site has limited aesthetic value.		
52-2-3505	General: This is a shelter with art. The art is in poor condition. The motifs are unusual for this area, as is the presence of two types of media, providing some value under this criterion.	Yes	High
	Representativeness: The site is highly representative examples of profile anthropomorphic charcoal figures, and of this class of site.		
	Rarity: Shelters with art are not rare.		
	Aesthetic: Located above a creek, in an undisturbed area, the site has some aesthetic value.		
52-2-3508	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3525	Limited information is available for this site and therefore an archaeological assessment cannot be completed.	No	N/A
52-2-3533; 52-2-3616	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Moderate
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3572	This site was originally recorded as a scarred tree. Further examination of the photographs on the site card identified the tree as an historic blazed tree. A surveyors' mark is clearly visible in the centre of the blaze.	Yes <sup>1</sup>	Low

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
52-2-3573	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3574	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3578	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3579	General: This site consists of a Kurrajong tree, which shows usage of, and connection to, the environment. This provides some value under this criterion.	Yes	Moderate
	Representativeness: The site is representative of this class of site.		
	Rarity: Resource trees are uncommon for this area.		
	Aesthetic: Located within a paddock, this site has limited aesthetic value.		
52-2-3580	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3581	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3582	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT	ARCHAEOLOGICAL SIGNIFICANCE*
		SURVEYS	
52-2-3583	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3584	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3585	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-2-3587	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-3-0291	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	No	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
52-3-0293	Limited information is available for this site and therefore an archaeological assessment cannot be completed.	No	N/A
52-3-0524	General: The art at this site is in excellent condition, providing value under the general criteria.	Yes <sup>1</sup>	Moderate
	Representativeness: The site is highly representative of this class of site.		
	Rarity: Shelters with art in excellent condition are unusual in this area. The motifs at this site are also very uncommon for this area.		
	Aesthetic: The site is set high on a ridgeline and overlooks O'Hares Creek, affording the site aesthetic value. The motifs depicted at the site also provide aesthetic value given their excellent condition.		
Bulli Site	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

SITE NUMBER	DISCUSSION OF CONTRIBUTING FEATURES AND ASPECTS	INSPECTED BY PROJECT SURVEYS	ARCHAEOLOGICAL SIGNIFICANCE*
Bulli Site 2	<i>General:</i> Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
Bulli Site	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
Bulli Site	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
Bulli Site	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
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30	Representativeness: The site has low representative value of this class of site.		
	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
Bulli Site	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
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	Representativeness: The site has low representative value of this class of site.		
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Bulli Site	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
Bulli Site	General: The art at this site is in excellent condition, providing value under this criterion.	Yes	Moderate
34	Representativeness: This shelter is highly representative of shelters with art.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The art in this shelter has some aesthetic value due to its excellent condition.		
Bulli Site	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
Bulli Site	General: This art site is in poor condition, providing little value under the general criteria.	Yes	Moderate
36	Representativeness: This site is representative of shelters with hand stencils.		
	Rarity: Hand stencil sites are uncommon in this area, especially with this number of stencils.		
	Aesthetic: Located within dense bush vegetation, this shelter has low aesthetic value.		

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	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
Bulli Site	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
	Rarity: This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
Bulli Site	General: This shelter with art includes a kangaroo engraving on the shelter wall in poor condition. The site is considered to have low potential under this criterion.	Yes	Low
	Representativeness: The site is representative of shelters with scratching and art.		
	Rarity: Engravings in shelters are uncommon in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		
Bulli Site	General: This art site is in very good condition, providing some value under the general criteria.	Yes	Moderate
40	Representativeness: This site is highly representative of shelters with hand stencils.		
	Rarity: Hand stencil sites are uncommon in this area.		
	Aesthetic: Located on the creek bed, this shelter has low aesthetic value.		
Bulli Site	General: Features at this site have low value under the general criteria. The site is considered to have little archaeological potential.	Yes	Low
	Representativeness: The site has low representative value of this class of site.		
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	Rarity. This type of site is common in this area.		
	Aesthetic: The location of this site affords the site limited aesthetic value.		

<sup>\*</sup> Limited information was available to allow archaeological significance assessment for those sites marked N/A. Specific recommendations have been proposed for these sites to obtain more information (Section 10.0 of the main report).

Attempted - An attempt to inspect these sites was made, however the sites could not be found.

BIOSIS RESEARCH

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These Aboriginal sites were inspected as part of the West Cliff Area 5 Longwall 32 End of Panel assessment (Biosis, Research 2008).