BIG ISLAND MINING PTY LTD

ABN 12 112 787 470

Dargues Reef Gold Project

ABORIGINAL HERITAGE Assessment

Prepared by

Archaeological Surveys & Reports Pty Ltd

SEPTEMBER 2010

Specialist Consultant Studies Compendium
Volume 2, Part 5a

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ABN 12 112 787 470

ABORIGINAL HERITAGE Assessment

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1. INTRODUCTION

1.1 BACKGROUND

This investigation was performed for R.W. Corkery and Co. Pty Limited (RWC) on behalf of Big Island Mining Pty Ltd ("the Proponent"). The Proponent engaged RWC to prepare an *Environmental Assessment* to support an application for Part 3A "Major Project" approval for the proposed Dargues Reef Gold Project ("the Project") on property owned by the Proponent and hereafter referred to as the "Project Site".

The Dargues Reef Gold Project would comprise an underground gold mine, a processing plant, a temporary waste rock emplacement and a tailings storage facility, as well as ancillary activities and associated infrastructure.

RWC engaged Archaeological Surveys and Reports Pty Ltd (ASR) to undertake the archaeological investigation of the Project Site to identify any archaeological sites of Indigenous cultural significance that may be adversely impacted by the Project.

1.2 SCOPE, OBJECTIVES AND REPORT FORMAT

1.2.1 Scope

The scope of works was for ASR to:

- identify the Aboriginal stakeholders with an interest in the Project Site;
- to consult with the registered Aboriginal stakeholders;
- to inform them of the Project; and
- to undertake an archaeological investigation of the Project Site with the nominated representatives of the Aboriginal stakeholder organisations, to identify any Aboriginal sites and relics that may be present.

The consultation was to comply with "Aboriginal Cultural Heritage Consultation requirements for Proponents" published by the Department of Environment, Climate Change and Water (DECCW) in April 2010, and "Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW" (Revised Consultation Draft dated 25 February 2010 published by DECCW).

The results of the investigation were to be presented in a report, which was to:

- record the names and organisations of those registered Aboriginal stakeholders who responded to the published advertisement of the Project, or who had responded to a letter informing them of the Project;
- to record the consultation process;
- to record which representatives had participated in the field investigation;
- to record the results of the field investigation;

- to provide an assessment of the significance of any cultural relics or places identified;
- to appraise the options and opportunities arising from the discoveries; and
- to provide clear recommendations for the management of identified cultural resources.

1.2.2 Report Objectives

The objectives of this report are:

- to record and describe the consultation process;
- to record all of the Aboriginal stakeholders with an interest in the Project Site:;
- to describe the investigative strategy;
- to record any archaeological relics and sites identified; to present a discussion of the options open to management to resolve any issues arising from the concerns of the Indigenous stakeholders; and
- to provide a recommendation for the further management of any Aboriginal sites that have been identified as occurring within the Project Site.

Further, the report documents the participation of the Aboriginal stakeholders in the consultation process, the field survey, and their recommendations as to the future management of any sites identified during the investigation. In addition, the report includes a discussion of the results of the investigation in the context of other known sites in the area.

1.2.3 Report Format

The report is presented in the following format:

1. Introduction.
2. Consultation and Native Title.
3. The Environmental Context.
4. The Archaeological Record.
5. Models for Site Location.
6. Survey Methodology.
7. Discussion.
8. Significance Assessment.
9. Recommendations.
10. General Glossary.
11. Bibliography

1.3 PROJECT SITE AND PROJECT OVERVIEW

1.3.1 Project Site

The Project Site is located approximately 13km to the south of Braidwood in the mountainous area of the upper tributaries of the Shoalhaven River. Immediately to the south of the Project Site is the small community of Majors Creek.

The Project Site comprises an area of approximately 403ha made up of Lots 102 and 210 DP755934, Lot 104 DP1100849, Lots 1, 2, 3, 4 and 5 DP986483 and Lot 1021 DP1127185, in the Parish of Munro, in the Palerang Council local government area. It is bounded by Majors Creek to the south and by shared property boundaries elsewhere. The Project Site is wholly owned by the Proponent. The survey area for the Aboriginal Heritage Assessment comprised the entire Project Site.

Figures on the following pages present the local setting of the Project Site. **Figure 1** places the Project Site in its regional context; **Figure 2** shows the Project Site in greater detail; **Figure 3** shows an aerial photograph of the Project Site and **Figure 4** presents the proposed Project Site layout.

1.3.2 Project Overview

The Project would comprise the following components (**Figure 4**).

- Extraction of waste rock and ore material from the Dargues Reef deposit using underground sublevel open stope mining methods with a suitable crown pillar to prevent surface subsidence.
- Construction and use of surface infrastructure required for the underground mine, including a box cut, portal and decline, magazines, fuel store, ventilation rise and power and water supply.
- Construction and use of a processing plant and office area which would include an integrated Run-of-Mine (ROM) pad/temporary waste rock emplacement, crushing and grinding, gravity separation and floatation circuits, Proponent and mining contractor site offices, workshop, laydown area, ablutions facilities, stores, car parking, and associated infrastructure.
- Construction and use of a tailings storage facility.
- Construction and use of a water management system, including construction and use of eight dams and associated water reticulation system, to enable the harvesting and supply of water for mining-related operations. It is noted that the proposed water harvesting operations would be consistent with the Proponent's harvestable right.
- Construction and use of a site access road and intersection to allow site access from Majors Creek Road.
- Transportation of sulphide concentrate from the Project Site to the Proponent's customers via public roads surrounding the Project Site using covered semi-trailers.

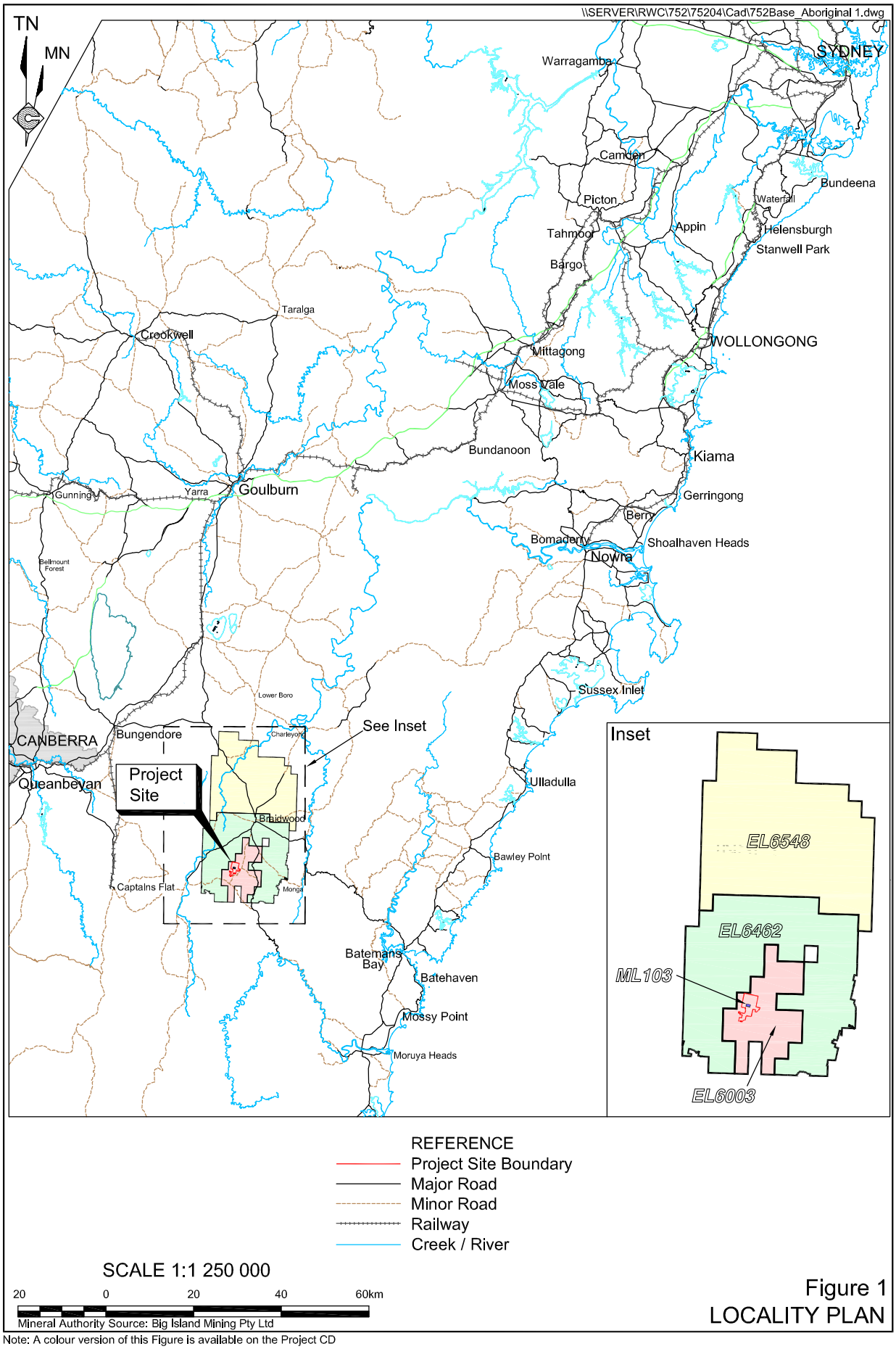

Figure 1
LOCALITY PLAN

Note: A colour version of this Figure is available on the Project CD

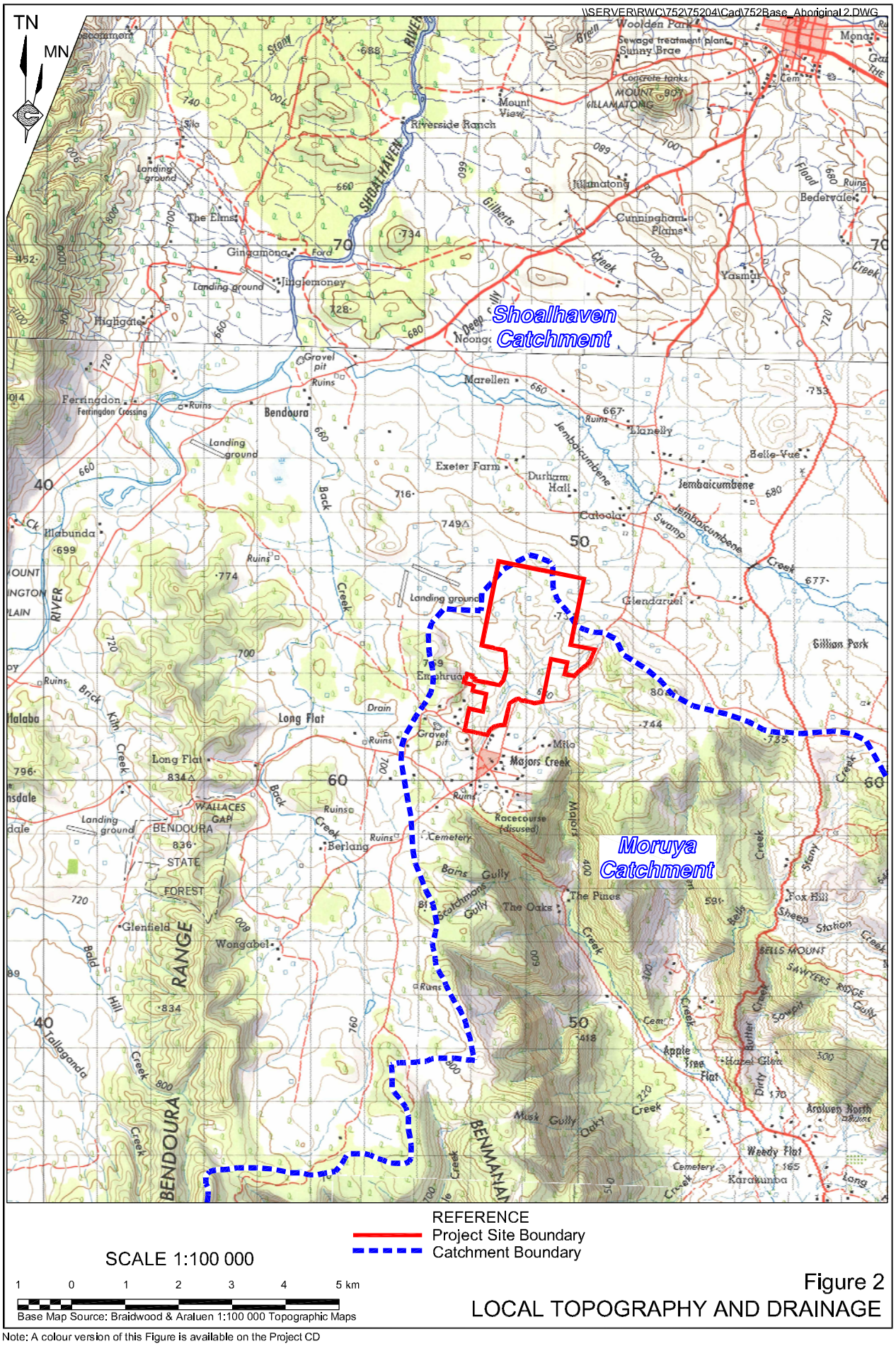

Figure 2
LOCAL TOPOGRAPHY AND DRAINAGE

Note: A colour version of this Figure is available on the Project CD

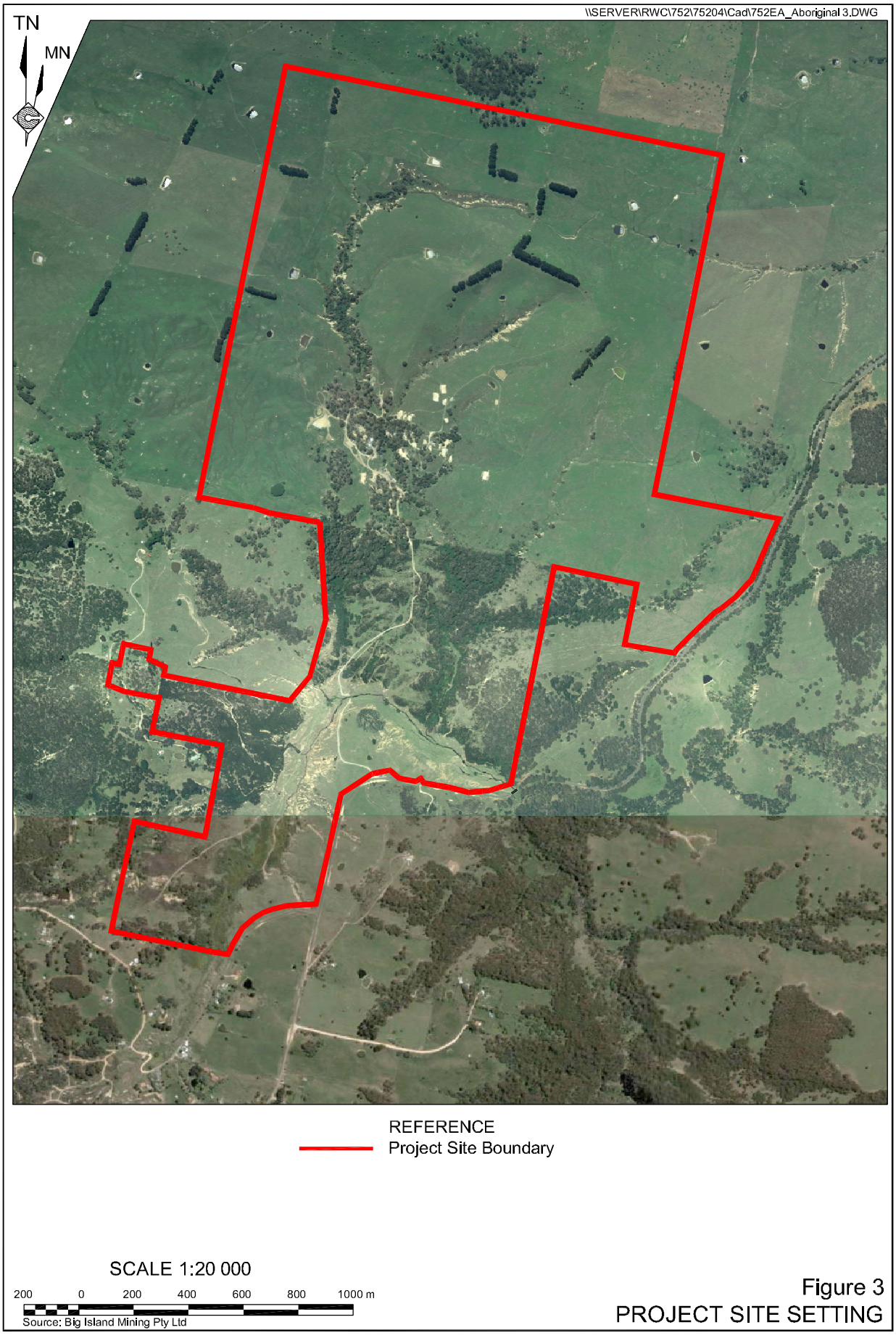

Figure 3
PROJECT SITE SETTING

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TN
MN

See Detail Right
See Figure 2.7
Site Access Road
Tailings Storage Facility
Tailings Storage Facility Access Road
Ventilation Rise
Spring Creek
Existing Site Access Track (to be decommissioned)
Majors Creek Road

Detail
Proponent & Mining Contractor Offices
Concentrate Storage
Gold Room
Floatation Tanks
Raw Water
Reagent & Other Storage
Concentrator
Crushing & Grinding Circuit
Processing Plant Office Area
+ 692
Water Supply Tanks
ROM Pad
+ 705
Sub-station
Settling Dam
Temporary Waste Rock Emplacement
Fuel Bay
Core Yard
Lay Down Yard
Workshop
Box Cut

SCALE 1:4 000
50 0 50 100 150 200 m

See Detail Left

REFERENCE
- Project Site Boundary
- Contour (m AHD)(Interval = 5m)
- Contour (m AHD)(Interval = 10m)
- + 692 Spot height (m AHD)
- Creek / Drainage Line
- Sealed Road
- Unsealed Road
- Existing Dam/Water Storage
- Proposed Settling Dam
- Proposed Harvestable Rights Dam (Indicative Location)
- Catchment Boundary
- Existing Transmission Line
- Proposed Transmission Line
- Proposed Pipeline (Indicative)
- Proposed Road/Track (Sealed/Unsealed)
- Fence (note: fences not co-incident with cadastral boundaries)

SCALE 1:8 000
100 0 100 200 300 400 m

Base Map Source: Geo-spectrum (Australia) Pty Ltd

Figure 4
PROJECT SITE LAYOUT

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- Construction and use of ancillary infrastructure, including soil stockpiles, core yards, internal roads and tracks and surface water management structures.
- Construction and rehabilitation of a final landform that would be geotechnically stable and suitable for a final land use of nature conservation and/or agriculture.

It is noted that during the life of the Project the Proponent proposes to undertake additional exploration drilling to further define identified mineralisation and identify additional mineralisation. Extraction of those resources does not form a part of this application. As a result, a subsequent application for approval to extract any identified resources may be prepared once sufficient information is available to adequately identify the proposed activities.

1.4 POTENTIAL PROJECT-RELATED IMPACTS

During construction and operation of the Project there is a potential for any archaeological contexts occurring in previously undisturbed sections of the Project Site to be destroyed.

This archaeological investigation was an opportunity to observe and record any sites that might be present, and to propose a strategy for the avoidance of the sites where possible, and where it is not possible, the procedure to salvage the artefactual material.

2. CONSULTATION AND NATIVE TITLE

2.1 ABORIGINAL CONSULTATION

2.1.1 Pre-Site Inspection

In accordance with the document "Guidelines for Aboriginal Cultural Heritage Impact and Community Consultation" published by DECCW in 2005, letters were sent on 10th February 2010 to:

- the Office of the Registrar (*Aboriginal Land Rights Act 1983*);
- the Aboriginal Heritage Planning Officer, DECCW (Dubbo);
- Palerang Council, and
- NSW Native Title Services

requesting that they provide lists of Registered Aboriginal Stakeholders.

Appendix i is a copy of the letter sent to Palerang Council (the other letters were the same all but for the addresses), and **Appendix ii** is the response from DECCW; **Appendix iii** is the response from Palerang Council; **Appendix iv** is the response from the Office of the Registrar. No response was received from NSW Native Title Services.

Also, on 28th January 2010 advertisements were placed in the *Tallaganda News* (published 3rd Feb.), the *Queanbeyan Age* (published 5th Feb) and the *Canberra Times* (published 30th Jan.), inviting all Aboriginal stakeholders with an interest in the Project to register their interest. A copy of the text of the advertisement is included as **Appendix v.** Those people who responded to the newspaper advertisement are listed below.

- Wally Bell, Chairperson, Buru Ngunawal Aboriginal Corporation.
- Arnold Williams, Ngunnawal Elders Corporation.
- Kings Browns Tribal Group Pty Ltd

As a consequence of the advertising and the lists of registered stakeholders provided by the three government departments to which letters had been sent, the following 11 stakeholders/groups were identified (see **Appendix vi**).

- Ngunnawal Elders Corporation.
- Ngunnawal Heritage Aboriginal Corporation.
- Buru Ngunawal Aboriginal Corporation Traditional Carer Group.
- Konanggo Aboriginal Cultural Heritage Services.
- Yurwang Gundana Consultancy Cultural Heritage Services.
- King Browns Tribal Group Pty Ltd.
- Bega Traditional Elders Council (formerly Yulembruk Merung Ngarigo Consultancy Pty Ltd).
- Walbunja Aboriginal Corporation.
- Batemans Bay LALC.
- Ngambri LALC.
- Little Gudgenby River Tribal.

It was clear from some of the communications between ASR and various stakeholders that there were "some differences of opinion" between some of the stakeholders and that holding a meeting to discuss the Project would only lead to even greater animosity. As a result ASR elected to provide the information that would otherwise have been presented at a stakeholder meeting by mail.

A letter was sent to each of the stakeholders on 22nd March 2010 (see **Appendix vii)** providing some background to the Project, identifying the survey methodology and setting out the OH&S issues arising in such a potentially hazardous survey area. As a result, one of the listed stakeholders, Mr Col Williams of the Ngambri Local Aboriginal Land Council (LALC), stated that the Project Site was outside the land council's area and withdrew from the consultation process. Ten stakeholder groups responded that they wished to be included in the field survey. The problems then arose that some people could only attend on particular days, and some people refused to be rostered on the same day as other stakeholders.

As a consequence and to ensure that each of the nine stakeholders were given equal time on site, each stakeholder was allocated one day each, with two surveyors rostered on each day over five days. A copy of the agreed roster is included as **Appendix ix.**

2.1.2 During the Site Inspection

The site inspection was undertaken over 6 days between 4th May 2010 and 11th May 2010. It is noted that of the ten stakeholders rostered to assist with the survey, not all arrived as agreed. In each case of a non-arrival of a rostered stakeholder, Mr John Appleton of ASR waited at the agreed meeting place until 9.50am before commencing the survey. The agreed meeting time was 9:00am.

Unfortunately, not every stakeholder turned up as they had agreed to. Both rostered stakeholders turned up on time on Tuesday 4th May, but only one stakeholder turned up on Wednesday 5th. After waiting at the agreed meeting place until 9.50am without success we decided to proceed with the survey. Both stakeholders turned up on Thursday 6th May, but only one turned up on Friday 7th May.

After having to spend the weekend at Araluen in order that the survey could continue early on Monday 10th May, Appleton arrived at the agreed meeting place and waited until 9.50am (to be consistent and fair) but neither stakeholder turned up. Again on Tuesday 11th May Appleton waited until 9.50am but neither stakeholder turned up (see **Appendix vi**). No communications were received from any of the absentees.

To ensure that each of the stakeholders was made aware of what had transpired on previous days, each of the stakeholders was shown the sites that had been recorded by the other stakeholders on previous days at the start of each day's survey.

On the completion of their day on site, each stakeholder was asked to provide a brief report of their participation and recommendations for inclusion in the archaeological report. Most of the stakeholders said that they would prefer to see a draft copy of the investigation before responding with their recommendations. Subsequently reports were received from Konanggo Aboriginal Cultural Heritage Services, Ngunawal Heritage Aboriginal Corporation and Buru Ngunawal Aboriginal Corporation, copies of which are included as **Appendix xiii**.

2.1.3 Following the Site Inspection

A draft copy of the Aboriginal Heritage Assessment report was provided to each of the registered stakeholders on 2 August, with a request to review the report and provide feedback by close of business 1 September. As of 3 September, responses had been received from the following organisations and individuals.

- Buru Ngunawal Aboriginal Corporation.
- Ngunawal Heritage Aboriginal Corporation.
- Batemans Bay Local Aboriginal land Corporation.

Copies of all correspondence is presented in **Appendix xiii** and feedback and recommendations included in that correspondence have been considered during finalisation of this document.

2.2 NATIVE TITLE CLAIMS

There are no Native Title Claims over the Project Site (Office of the Registrar ALRA 1983).

3. THE ENVIRONMENTAL CONTEXT

3.1 INTRODUCTION

Any discussion of the likely presence of Aboriginal cultural remains or of the basis why such remains might be discovered must be within the context of the environment and the resources that would have been available to any Aboriginal occupants of the area. This section provides a brief overview of the geology, topography, vegetation, and water and stone resources within and surrounding the Project Site. In addition previous impacts are briefly described.

3.2 GEOLOGY AND TOPOGRAPHY

The Project Site is located in the most easterly section of the Lachlan Fold Belt, entirely within the Devonian Braidwood Granodiorite of the Southern Tablelands. The granodiorite intrudes the Early Devonian Long Flat Volcanics to the west and Ordovician sediments to the east (Cortona Resources Limited, 2009).

The Project Site straddles the upper catchment areas of Spring Creek and a lesser unnamed tributary which once united, flow into Majors Creek at the southern end of the Project Site.

It was observed during the field investigation that a shallow loamy deposit overlays a highly weathered granitic material becoming clayey with depth see **Plates 15** and **16**.

Elevations within the Project Site vary from 730m AHD along the ridge at the northern end of the Project Site and on the north-eastern boundary, to 620m AHD in the southeastern section of the Project Site where Majors Creek egresses the site: a drop of approximately 110m over a distance of approximately 2400m.

3.3 VEGETATION

As **Figure 3** shows most of the northern half of the Project Site has been cleared for pasture, the remnant natural vegetation being primarily in the creek lines, the only other trees being wind-breaks planted along the higher ground to the northern end of the Project Site.

The mid-section of the Project site appears in **Figure 3** to be densely wooded, however the lighter green areas are primarily broom and blackberry briars (see **Plates 9, 10, 11** and **12**). The darker areas are dry eucalypt woodland, most of which is regrowth, the old growth having been used in the mines and for firewood.

3.4 WATER RESOURCES

There are two main drainage lines, namely Majors and Spring Creeks, that after heavy rain might have been a source of potable water to the Aboriginal inhabitants of the area, as well as the minor tributary of Spring Creek. Spring Creek and Majors Creek, while having been extensively disturbed by mining in the early 20th Century, probably retained some water after rains as there is evidence of bedrock in the creek bed. The bedrock would have formed a natural dam and there may have been waterholes upstream of the dams – see **Plate 8.**

3.5 STONE RESOURCES

As referred to in **Section 3.2,** the Project Site occurs on weathered granodiorite, and granite is seldom used for tools or weapons, although mullers or grindstones are sometimes manufactured from granite. Granites frequently contain quartz seams. However, unless the quartz seam is large enough to form a reef it is seldom fault-free and so it is typically unsuitable for use as a source of material suitable for knapping into tools or weapons.

3.6 PREVIOUS IMPACTS

The Project Site has been subjected to a number of impacts. The first would have been the clearing of woodland to create pasture, which would have entailed cutting down the trees, then chain-dragging the stumps and roots out with bullock teams, followed by use of horse-drawn rake to remove the felling waste, followed by either the harrow and/or the plough.

The second impact came from gold mining. Initially the impact would have been minor and most of the impact would have been from panning the creek bed alluvium, but as mining intensified and more prospectors worked the field more water was needed and water races were dug around the lower slopes to direct the run-off to where it was needed to be used in Long Toms and sluicing. Then came the hydraulic sluices using water from the dams constructed in the creek beds, the water being directed by hosepipe directly onto the face of the creek bank, and as result the creek banks were sometimes randomly and sometimes methodically destroyed.

Meanwhile, more men meant more feet travelling back forth between their tents and the workings, and so trails became tracks. Mullock heaps and puddling depressions began to appear, and more dams were constructed along the creek beds. A poppet head was constructed at Dargues Reef, and later a "desalination plant."[1] A railway was built connecting Dargues Reef with Majors Creek where the stamp-batteries crushed the ore. A second stamp-battery was built further east along Majors Creek. At least one dredge reshaped the bed of Majors Creek leaving its tell-tale tailings dumps. The creeks were no longer creeks but wide gashes in the landscape. Once mining was complete, broom and blackberry took over to form an impregnable mass of weed.

[1] McGowan (2000) refers to this plant as a "desalination plant". However, as this technology only became commercially viable in the late 20th Century, it is likely that McGowan (2000) was referring to the Chlorination Plant in Majors Creek of which records exist.

More recently, as **Figure 3** shows, numerous tracks, most of which were originally directly associated with gold mining and/or agricultural operations, have been reopened or upgraded. In addition, mineral exploration has resulted the construction of drilling-pads, vehicle parking areas, re-graded tracks, storage sheds, an amenities block, and sample lay-down areas.

There are numerous dams on the upper slopes in the northern section of the Project Site. Some of these dams are associated with races that connect them to the creeks and were presumably constructed by the early miners. In addition, some have been constructed since to water stock.

Yet another impact has been the planting of windbreaks mostly along the ridges, but some in less exposed areas.

Finally, active natural erosion has eroded creek banks to create advancing deep gullies in the banks of Majors Creek and its tributaries, with only a very shallow rooted grass cover to repel their advance – see **Plates 15** and **16**.

4. THE ARCHAEOLOGICAL RECORD

A search was made of the Aboriginal Heritage Information Management System (AHIMS) Site Register maintained by the Culture and Heritage Division of DECCW, for all sites within the coordinates Eastings 746 000 and 751 000, Northings 6 059 000 and 6 065 000. The search area was an area of 6km by 6km centred on the Project Site. **Appendix x** presents the response from DECCW. Details of the recorded sites are not shown on instruction from the Culture and Heritage Division in the interest of site security.

The search resulted in a listing of only one site, an open camp site (probably an artefact scatter – a camp site would suggest there was a fireplace but it is unlikely that one would have survived), which the listed map reference places beside one of the tributaries of Majors Creek to the west of Red Hill on the edge of Long Flat Reserve – outside the Project Site.

It should be noted that site distribution tends to be in discrete groupings. This may be for one or more reasons. For example, sites are usually only found when there are archaeological investigations for development, and so the distribution represents areas that have been investigated. Also, artefacts are usually only found where there is good archaeological visibility at the time of the survey. Land use and the extent to which the surface deposits have been altered might also affect whether or not artefacts are observable. Not all archaeological investigations are of areas, but might be of strips of land for roads, communication cables, powerlines, gas pipelines, etc. In addition, the technological changes that have occurred since 1974 (when the *National Parks and Wildlife Act 1974* was enacted) have been seen in more detailed mapping; the introduction of the GPS; more accurate site recording and increased skills of archaeological consultants.

It should also be pointed out that the Aboriginal Sites Register has been transposed to different computer programmes three times in the last 20 years and many transposition errors have occurred, with the result that many site map references are now erroneous and place the sites in locations many kilometres from where they were actually recorded.

5. MODELS FOR SITE LOCATION

5.1 SITE TYPES AND LOCATION

In order to design an investigative strategy, it is firstly necessary to develop a predictive model for site location. This is not to determine where the investigation should be conducted, but to establish a theoretical model for the distribution of archaeological material against which the effectiveness and subsequent analysis of the survey results can be tested, compared and reasoned. The basis upon which the predictive model is derived must, however, be one of consideration of which archaeological material might realistically be expected to not only be present, but also detectable.

The first objective of any archaeological investigation must be to observe and record sufficient of the archaeological record that is present to be able to propose that it is representative of the record as a whole. The investigative strategy is therefore directed and designed to detect that which is representative of the record in the particular study area, and naturally, as different study areas will comprise variations in environment, vegetation, topography, etc., so the investigative strategy must be designed to best suit the circumstances. The objective must be to detect material evidence, and so it is necessary to consider the extent to which artefactual material may be present, and the degree to which it is visible or might be discovered.

There are several factors, which are likely to affect the distribution of items of Aboriginal heritage significance; firstly, where Aboriginal people are most likely to have been, secondly, where they have left evidence of their activities, and thirdly, the degree to which that evidence is observable in the present record.

People visited places mainly to obtain resources, and in general places that were richest in resources were more likely to have been visited by people than those places with fewer resources. Important resources were permanent water, ephemeral water, food resources, stone raw material sources, shelter (from sun, wind, and rain), and perhaps suitable surfaces for rock art, and proximity to mythological natural features. Those resources may have been a factor in the suitability of a location for particular ceremonial activities but cultural boundaries also influenced the choice of ceremonial grounds. Alternatively, sites frequently occurred along preferred access routes and particularly where that route coincided with a watercourse.

However, the attractions of such an environment frequently resulted in the archaeological record becoming discontinuous or significantly disturbed, as stock and vehicles impacted upon it in the post-European contact phase.

Frequency of visits and use of particular locations was also determined by the ‘accessibility’ or freedom from environmental constraints in the area. For example, whether there were alternative, preferred or easier ways to travel around or over natural barriers, be they geological, geographical, cultural, or imposed by fauna or flora, or whether they were only seasonally accessible, such as mounds on flood terraces, or the availability of water during periods of drought, or whether or not floods, fire or snow hindered access.

Few past Aboriginal activities are represented by surviving material evidence. This in part is because many activities did not leave material evidence (eg. tools were reused), but it is also because very little cultural material survived. An exception to this was shellfish, which are very durable.

The survival of material that is durable was also affected by recent European land use. Cultivation has destroyed many archaeological sites. However, cultivation can also help expose sites that might otherwise be covered. This brings us to the other important point about site distribution, which is that to a great extent site distribution recorded by archaeologists reflects the distribution of places where the ground surface is sufficiently eroded to expose artefactual material.

By far, the majority of recorded sites have been stone artefact scatters or isolated stone artefacts, and in the vast majority of sites they were found in one or more of the following contexts:

i) On or adjacent to deposits containing quartz, quartzite, jasper, silcrete, chert, chalcedony, metamorphosed greywacke, and other indurated or siliceous sedimentary rocks, or redeposited fine-grained volcanics, or
ii) On river banks or adjacent to river banks where the watercourse contains river pebbles of quartz, quartzite, jasper, silcrete, chert, fine-grained volcanics, basalts, etc., and particularly at the junctions of watercourses, or
iii) On ridges and spurs overlooking watercourses or on high vantage points affording uninterrupted views of swamps, water holes, saddles, passes, and any other likely access path into the observer's area, or
iv) In the vicinity of outcrops of suitable raw material such as basalt, silcrete, chert, or other highly silicified sedimentary rock.

Other site types do occur and perhaps because of their lower and less predictable profile, are present in far greater numbers than we are aware of. People die but there are few recorded burials. One reason may be that in many instances the soils are too acid for the preservation of bone, but a far more likely reason is simply that burial frequently entailed subsurface internment, and a surface survey will only discover a burial where there has been erosion of significant disturbance to the surface deposits. As a consequence many burials have only been discovered when exposed by erosion of a sand body or river terrace.

Other site types such as carved trees, scarred trees, stone arrangements, Bora rings, etc., may once have been present, but are unlikely to have survived in easily accessible country due to the attention of non-indigenous people. Thus, much of what might have existed is now lost or destroyed, and the archaeological record has become biased by the post-contact utilisation of resources, and by the selective exploitation and preservation of particular environments.

Other factors which affect the degree to which sites are recorded during an investigation include the time of year at which the fieldwork is performed (the seasonality of some vegetation growth) and the conditions under which the survey is performed – (wet, dry, cold, windy, poor light, etc.).

A brief description of site types such as isolated artefacts, open scatters, camp sites, knapping floors, quarries, middens, mounds, hearths, carved trees, scarred trees, stone arrangements, Bora rings, burials, engravings, paintings, grinding grooves, occupation deposits (and Potential Archaeological Deposits (PADs)), and ceremonial and mythological sites is included as **Appendix xi**.

5.2 A PREDICTIVE MODEL FOR THE PROJECT SITE

It is noted that the Project Site contained no *reliable* water source, no exposures of sandstone bedrock, and no rock overhangs and, in the absence of both water and shelter, there were unlikely to be any places where PADs were likely to occur.

In addition, the Surface Water Assessment undertaken by SEEC and presented as Part 4 of the *Specialist Consultant Studies Compendium* concluded that because of the convex nature of the landforms (ie. the lower sloped are steeper than the upper slopes) in the northern section of the Project Site, that that section of the Project Site is a naturally erosive environment. As a result, significant buried archaeological sites are unlikely to have been preserved.

Based on all of the above, the following model for site distribution was proposed for the Dargues Reef Project Site.

- Isolated artefacts may be present and visible in erosion features on ridges, spur tops or along creek banks.
- Low-density artefact scatters may be present and visible in erosion features on ridges, spur tops or along creek banks, but it is unlikely that any debitage will be visible.
- There is a potential for trees more than 150 years old to exhibit scarred surfaces.
- There is a potential for any trees more than 150 years old to exhibit carved surfaces.
- There will be no engravings, and/or grinding grooves.
- There are unlikely to be any PADs.
- In the absence of shelters or overhangs there is no potential for shelters to exist and therefore no potential for art sites, and therefore no potential for undisturbed occupation deposits.
- There will be no stone quarries.
- There will be no shell middens.
- There will be no visible evidence of burials.
- There will be no surviving Bora rings.
- There will be no stone arrangements.
- There are no known cultural associations with the survey area.

6. SURVEY METHODOLOGY

6.1 SURVEY STRATEGY

As a consequence of so many Aboriginal stakeholders wanting to participate in the survey there was no pressure to cover as much ground as possible in a short time as five days had been set aside to complete the survey which would allow each of the nine stakeholders a day in the field. However, as described previously, not all participants turned up for their allotted survey day.

Once on site we discussed where we would be surveying that day and what types of sites we might see. We then set out on foot to survey some of the many vehicle tracks, dams and stock pads there were throughout the survey area. The strategy was to look for any erosion features or soil exposures and to be watchful for any mature trees that might be scarred or exhibit a carved surface. Areas of nil or highly limited visibility were not surveyed.

6.2 DETAILS OF THE SURVEY

On arrival at the Project Site, the Aboriginal representatives were inducted by a representative of the Proponent, who also checked that they were suitably dressed to comply with the Proponent's OH&S requirements.

Each day the survey group would comprise of no more than two Aboriginal representatives and the archaeologist. A list of stakeholder groups who participated in the fieldwork is included as **Appendix ix**.

The survey was made in generally dry, sunny conditions, in light ideal for observing any artefactual material present. The survey would begin each day after site induction of the new arrivals had been completed; and would end at approximately 3.30pm each day when the fading autumn light began to make it difficult to see artefacts on the shadowy ground surface.

6.3 SITE RECORDING

All relevant observations as to the topography, vegetation cover, and conditions, were recorded with a Panasonic Lumix DM C-T27 Digital Camera. The details of the archaeological sites, and the dimensions (measured with a rule with millimetre intervals) and features of the artefacts were recorded in a field log. The site locations were recorded using a hand-held Garmin GPS 72 (global positioning system) in GDA 94 datum

6.4 EFFECTIVENESS OF THE SURVEY TECHNIQUE

The survey was fully effective with regard to the presence or absence of scarred or carved trees, as it was soon realised that most of the old growth trees had been destroyed by the non-Aboriginal activity in the late 19th century and those trees presently forming the woodland were regrowth trees of less than 100 years old.

Table 1 is divided into units delimited by observed topographical features, environments, and/or land use, briefly described in terms of 'horizontal' or map area, soil, and archaeological visibility, and the percentage of the area actually surveyed. Because of the extent to which there has been significant disturbance to the Project site the numbers for the areas of the various units are approximations only.

The photographic record that follows provides a visual reference for the survey conditions and various aspects of the survey area.

6.5 SURVEY RESULTS

Five indigenous sites were recorded during the survey. The descriptions of the sites and their contents are as follows. These descriptions are as they will be recorded on Site Recording Forms that will be lodged with DECCW to get them listed on the AHIMS Site Register. The location of each site is identified on **Figure 5** and **Table 2** presents a summary of the identified sites. A detailed description of the identified sites is included as **Appendix xii**.

- Site name: **"GT OS1"**
  - Location: GDA94 55H E.0749234 N.6063113 ±5m
  - Map: Bendoura 8826-4N, 1: 25,000 scale Topographic maps
  - Site type: Open scatter
  - Contents: Three artefacts < 50m apart.
  - Land use: Grazing.
  - Distance from water: Within 100m of Spring Creek.
  - Aspect: Artefacts are on upper slope of the toe of a spur facing south.
  - Site description: Artefacts were observed in the spoil heaps at the edge of drill pads. The site is on the crest of the head of a spur with 270º aspect.

Artefact 1

- Silcrete flake. 25 x 12 x 3mm.
- Broad platform 8 x 1mm.
- Feather termination.
- 0% cortex.

Artefact 2

- Silcrete (same material) core 33 x 30 x 2mm.
- Minor retouch to one margin or damage – may have been a core or a scraper.
- 0% cortex

Table 1
Effective Survey Coverage

Description	Survey area (403 ha) (approximate)	Rock/soil	Vegetation	Average surface visibility	Exposures	Approx area surveyed on foot	Average arch. visibility of exposures	Archaeology
Majors Creek including banks 30m to either side	170,000 sqm (1,700 x 100 m)	Weathered granitic soils, sands and clays	Eucalypt regrowth (broom and blackberry, see below)	15%	Stock wear, wombat scratchings and burrows, eroding creek banks, active gullying, and minor slope wash areas. Extensive sluiced and panned areas, (dredging?) scars and tailings, and vehicle tracks	90%	95%	Isolated artefact
Spring Creek, including tributaries T1, T2 and T3, & Shingle House Creek tributary	308,000 sqm (Spring Creek 2,400 x 70m; Spring Creek T1, 700 x 40m; Spring Creek T2, 900 x 40m; Spring Creek T3 900 x 40m; Shingle House Creek [Tributary. only] 1,000 x 40m).	Weathered granitic soils, sands and clays	Eucalypt regrowth in lower sections (broom and blackberry, see below)	< 5%	Minor stock wear, actively eroding creek banks, slope wash, wombat scratchings, rabbit pads and driplines	90%	75%	"GT OS2" scatter of 2 artefacts on dam face; "GT ISO1" isolated artefact on creek bank; "GT OS4" scatter of 3 artefacts on creek bank; "GT ISO5" isolated artefact on creek bank.
Pasture: comprising middle slopes, upper slopes and ridges	782,000 sqm (balance of area)	Weathered granitic soils, sands and clays	Cleared. Pine wind breaks on upper slopes and ridges.	< 1%	Dam walls and stock wear, particularly around wind-breaks and gateways	20%	95% on dam walls, 75% elsewhere	"GT OS1" scatter of three artefacts exposed in drill pad spoil heap

Table 1 (Cont'd)
Effective Survey Coverage

Description	Survey area (406 ha) (approximate)	Rock/soil	Vegetation	Average surface visibility	Exposures	Approx area surveyed on foot	Average arch. visibility of exposures	Archaeology
Woodland around Dargues Creek Mine and on the hill summits and upper slopes to the south	244,000 sqm (Spring Creek, 400 x 500m; Spring Creek T3, 300 x 80m; Shingle House Creek tributary 500 x 40m)	Weathered granitic soils, sands and clays	Regrowth eucalypt open woodland with minor understorey	10%	Driplines, stock wear, poorly grassed puddling tailings, and minor slope wash areas	50%	50%	Nil
Areas concealed by broom and blackberry predominantly in mine workings in the creeks and on slopes cleared of trees	60,000 sqm (Majors Creek 1,000 x 40m; Spring Creek 500 x 40m)	Weathered granitic soils, sands and clays	Dense broom and blackberry in lower sections of creeks (not including Major's Creek), and on the northern banks of Major's Creek, in predominantly highly disturbed cleared "soils".	0	Minor rabbit and wombat pads and on old vehicle tracks, and shallow gullying of northern slopes above Majors Creek	10%	60%	Nil

Table 2
Identified Sites

Site Identifier	Site Classification	Description
GT OS1	Open Scatter	Three artefacts within 50m of each other comprising a silcrete flake and core and a metasedimentary flake.
GT OS2	Open Scatter	Two artefacts comprising silicified metasedimentary proximal fragment of a flake and a metasedimentary core/scraper.
GT OS3	Isolated artefact	Single artefact comprising a quartz proximal fragment of a flake.
GT OS4	Open Scatter	Three artefacts comprising a black chert flake, a quarts flaked piece and a silcrete flake
GT OS5	Isolated artefact	Single artefact comprising a silcrete flake

Artefact 3

- <50m to east
- Metasedimentary flake 25 x 16 x 4mm
- Dorsal ridge?

Comments:

May not be an artefact. The platform and bulb were not clearly defined. Other similar material seen elsewhere in the survey appears to show similar characteristics but was not artefactual. In addition one of the geologists on site identified similar material occurring elsewhere as natural flaking.

- Site name: **"GT OS2"**
  - Location: GDA94 55H E.0748937 N.6063149 ±5m
  - Map: Bendoura 8826-4N, 1: 25,000 scale Topographic maps
  - Site type: Open scatter
  - Contents: Two artefacts.
  - Land use: Crest of a dam in Spring Creek.
  - Distance from water: 0
  - Aspect: N/A.
  - Site description: Artefacts were observed on a stock track across a dam associated with Dargues Reef in the late 18th and early 19th Centuries.

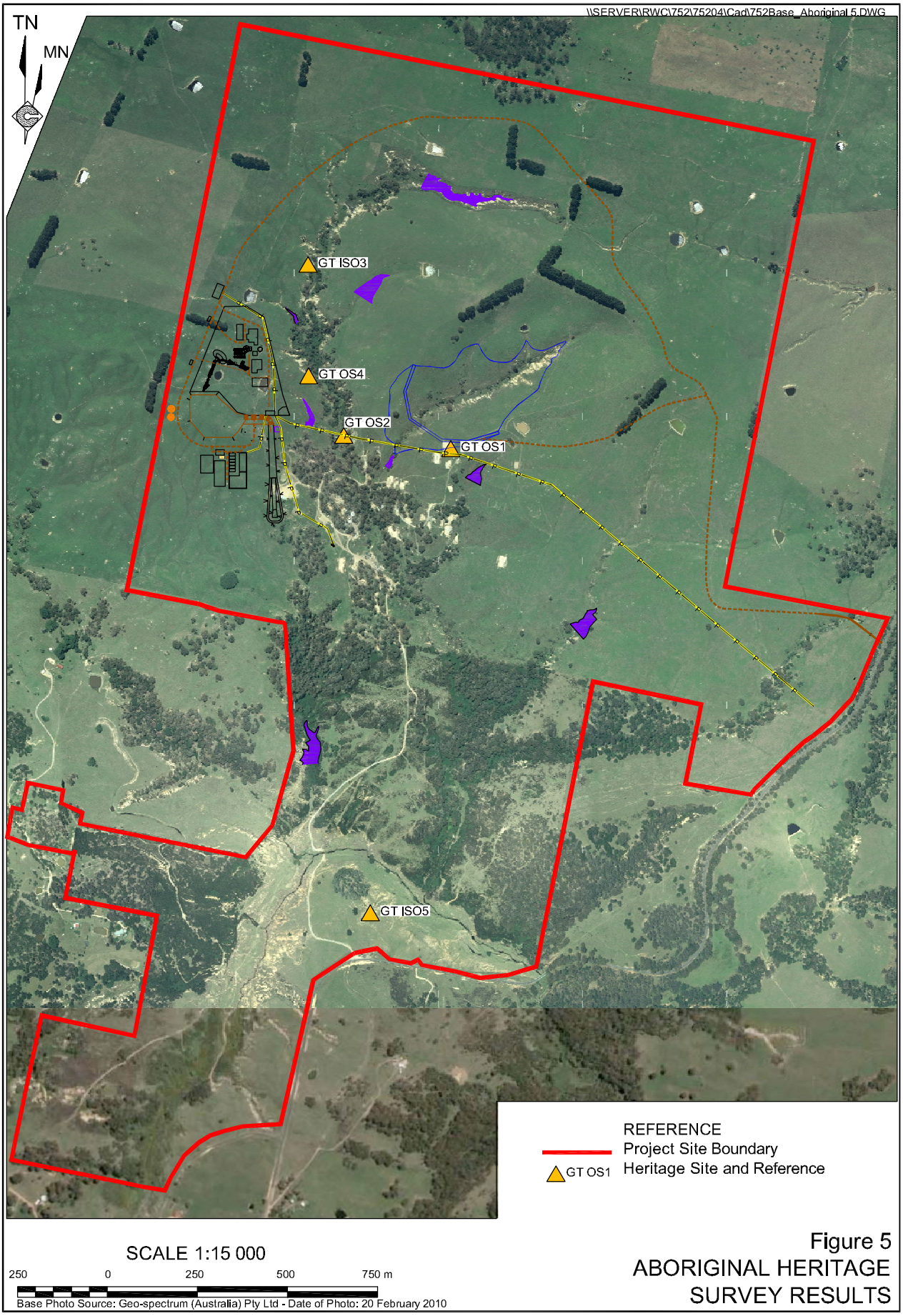

Figure 5
ABORIGINAL HERITAGE
SURVEY RESULTS

Plate 1 The head of Spring Creek. Note the water race on the slope on the right hand side

Plate 2 The upper reaches of Spring Creek

Plate 3 Looking upstream from the middle reaches of Spring Creek

Plate 4 Looking downstream from the middle reaches of Spring Creek to Dargues Reef dam, visible left of centre

Plate 5 Head of Tributary 1

Plate 6 Upper reaches of Tributary 1. Note the bedrock in the creek at centre.

Plate 7 Middle reaches of Tributary 1

Plate 8 Lower middle reaches of Tributary 1

Plate 9 Lower reaches of Spring Creek upslope of its junction with a tributary

Plate 10 Further down Tributary 1 towards its junction with Spring Creek

Plate 11 **Looking over broom-infested slopes towards Majors Creek**

Plate 12 **Looking northwards up a sluiced gully from Majors Creek**

Plate 13 **Looking eastwards along Majors Creek. Note the broom on the distant slopes and the two dredged platforms in the creek bed**

Plate 14 **Looking westwards along Majors Creek from east of centre of the survey area**

Plate 15 **Soil profile in the supper section of Spring Creek**

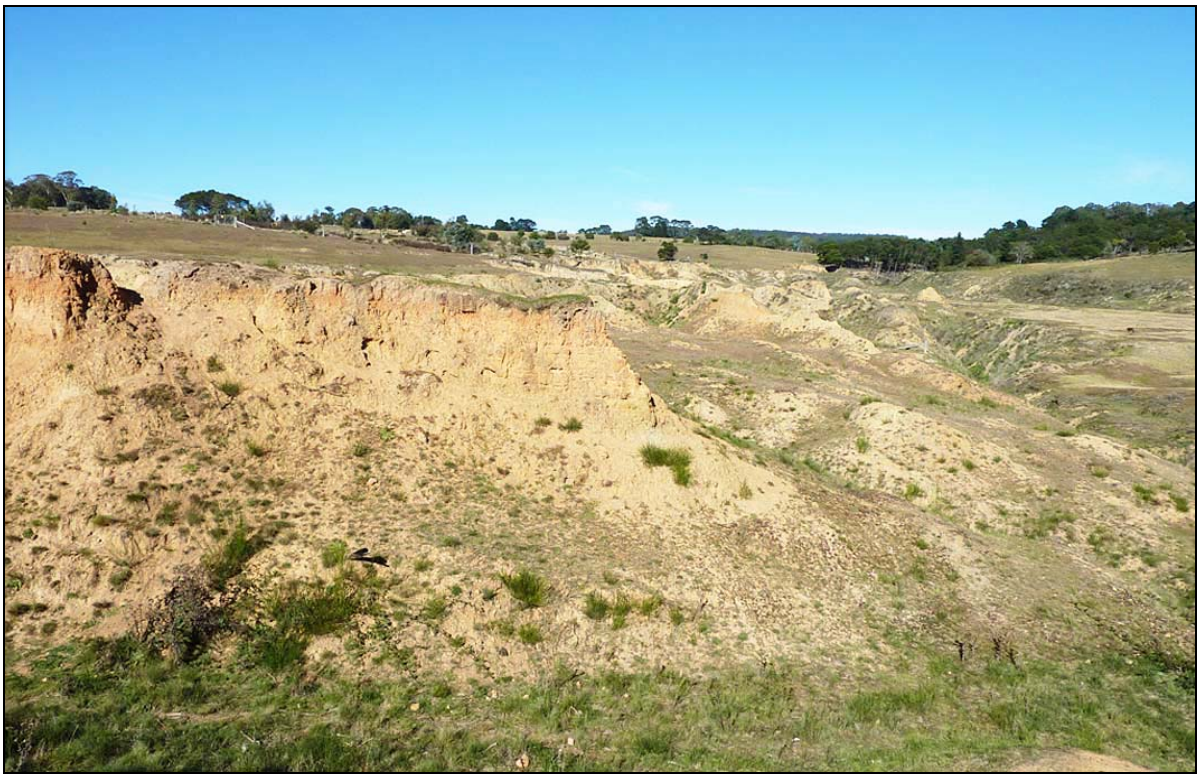

Plate 16 **Soil profile of the southern bank of Majors Creek**

Plate 17 **"GT OS1", first two artefacts were found on the mound of earth at centre. Spring Creek runs between the two hills**

Plate 18 **"GT OS1", the third artefact was found where the backpack is placed**

Plate 19 **"GT OS2", the stakeholders are immediately above where the artefacts were found**

Plate 20 **"GT ISO3", the backpack marks the location**

Plate 21 **"GT OS4", the artefacts were found on the orange soils below the packpack**

Plate 22 **"GT OS5", the backpack marks the location of the artefact. Note the puddling pits on the bank to the left**

Artefact 1

- Silicified metasedimentary proximal fragment of a flake 22 x 20 x 4mm
- Broad platform 6 x 2mm.
- Overhang removal.
- Dorsal ridge

0% cortex.Artefact 2

- Metasedimentary core/scraper 45 x 35 x 13mm
- 0% Cortex.

- Site name: **"GT ISO3"**
  - Location: GDA94 55H E.0748838 N.6063624 ±5m
  - Map: Bendoura 8826-4N, 1: 25,000 scale Topographic maps
  - Site type: Isolated artefact
  - Contents: Single artefact.
  - Land use: Grazing.
  - Distance from water: On rim of western bank of Spring Creek – the original bank pre-mining was probably at least 10m closer to the centre line of the creek.
  - Aspect: Artefact was on a deflating surface. The aspect is unknown.
  - Site description: The creek bank was subjected to hydraulic sluicing and the artefact was on the sloping edge of the actively eroding rim of the bank.

Artefact 1

- Quartz proximal fragment of a flake. 5 x 15 x 3mmmm.
- Facetted platform 8 x 2mm.
- Dorsal ridge.
- 0% cortex.

- Site name: **"GT OS4"**
  - Location: GDA94 55H E.0748840 N.6063315 ±5m
  - Map: Bendoura 8826-4N, 1: 25,000 scale Topographic maps
  - Site type: Artefact scatter
  - Contents: Three artefacts.
  - Land use: Grazing.

- Distance from water: On rim of western bank of Spring Creek – the original bank pre-mining was probably at least 10m closer to the centre line of the creek.
- Aspect: Artefacts were on the sloping but nearly vertical face of the bank on a deflating surface. The aspect is unknown.
- Site description: The creek bank was subjected to hydraulic sluicing and the artefacts were on the sloping face of the bank downslope of the rim of the bank.

Artefact 1

- Black chert flake. 13 x 25 x 6mmmm.
- Broad platform 13 x 4mm.
- Eraillure
- Potlid
- Dorsal ridge.
- Step termination
- 0% cortex.

Artefact 2

- Quartz flaked piece 20 x 9 x 4mm
- 0% cortex.

Artefact 3

- Silcrete flake 12 x 18 x 3mm
- Facetted platform 8 x 2mm
- Feather termination
- 0% cortex.

- Site name: **"GT ISO5"**
  - Location: GDA94 55H E.0749011 N.6061824 ±5m
  - Map: Bendoura 8826-4N, 1: 25,000 scale Topographic maps
  - Site type: Isolated artefact
  - Contents: Single artefact.
  - Land use: Grazing.
  - Distance from water: Presently about 50m, but prior to mining it may have been nearer to the true creek course.

- Aspect: Facing north.
- Site description: Majors Creek was subjected to massive alteration and the artefact was seen on an eroding bank face, but it may have been some distance back from the original creek line.

Artefact 1

- Silcrete flake. 28 x 28 x 5mm.
- Facetted platform 13 x 4mm.
- Overhang removal
- Dorsal ridge.
- Snap termination
- 0% cortex.

7. DISCUSSION

The finding of five sites in such an altered landscape was surprising and would suggest that there were many more sites before mining activities disturbed the creek banks. Majors Creek would have been along a main route for Aboriginal people travelling between the coast near present day Moruya, and the highlands for ceremonies. The route would have followed and used the valleys of the Deua River, Oulla Creek, Araluen Creek, Majors Creek and Spring Creek in an almost continuous line north-westwards to cross the saddle at the northern end of the survey area, and crossing into the valley of the Shoalhaven River. While there is no proof for this hypothesis it would explain why there were sites along Spring Creek.

Spring Creek was essentially an ephemeral creek and was an unreliable source of water and so it is unlikely that it was ever an environment where people camped for any length of time, particularly as Majors Creek would have been a far more reliable source of water, and the creek banks far more suitable for camp sites. Spring Creek was therefore more likely to have been along a route between the coast and the high country, as was Majors Creek, where people rested briefly on their long climb up to the saddle and beyond.

As previous mining activity has extensively disturbed the creek banks of Majors Creek and Araluen Creek and so we will never know how many Aboriginal sites existed prior to the arrival of non-Aboriginal people. However, it is noted that further downstream there has been only very limited development along the river valleys and so the river and creek banks are yet to be investigated.

It is noted that a search of the AHIMS database identified one registered site, an “open camp site” or artefact scatter within the search area (see Section 4). This survey identified three artefact scatters and two isolated finds. As a result, the sites identified in this survey may be considered to be representative of previously recorded sites.

While in the 1970s sites were enthusiastically recorded by DEC archaeologists with the enactment of the National Parks and Wildlife Act 1974; the current imposts of insurance and compliance with OH&S standards, and the high costs associated with the requirement to directly involve Aboriginal stakeholders in any field studies, deters academic investigation, and the vast majority of archaeological investigations are undertaken by consultant archaeologists as a requirement for development approval.

Following the field survey, the Proponent was advised of the location of all sites. The proposed site layout at that time would not have impacted on any of the identified sites. However, one site, namely GT OS1, was located in close proximity to the outer toe of the Tailings Storage Facility embankment. Under the terms of Part 3A approval proponents are not required to avoid impacting Aboriginal sites as the legislation for Part 3A overrides the protection of resources afforded by the *National Parkes and Wildlife Act 1974*. However, the Proponent, in recognising the need to preserve as much of the cultural record as possible and to endeavour to avoid or mitigate the damage to sites wherever and whenever it is possible elected to amend the design of the Tailings Storage Facility to ensure a 20m buffer between the proposed site and the outer toe of the embankment

8. SIGNIFICANCE ASSESSMENT

8.1 INTRODUCTION

DECCW, in order to safeguard all sites, Aboriginal places, and archaeological material of significance wherever possible, requires that some means of assessing the significance of the sites is necessary. This is not only for the purpose of determining where development can proceed as proposed, but also to provide Cultural Resource Managers with the information for future management of the area.

Significance assessment is considered in two ways, Aboriginal cultural significance (cultural significance, and archaeological (scientific or research) potential.

8.2 CULTURAL SIGNIFICANCE

The Aboriginal or cultural significance of Aboriginal relics and sites can only be assessed by the Aboriginal community, and in particular, the Elders. It is the responsibility of the archaeologist to ensure that the Elders or elected representatives of the Aboriginal community are advised of the survey results, and are consulted as to their knowledge and opinion of the significance of the area, and to transcribe and present those expressions in report form.

In this instance the stakeholders asked to read a copy of the draft of this report before making their recommendations. Responses received are included as **Appendices xiii**. The following presents a summary of their responses.

- Each of the three organisations that responded identified that the cultural significance of any sites identified within the Project Site should be assessed prior to disturbance. The Proponent concurs with this assessment and notes that as none of the identified sites of Aboriginal heritage significance would be disturbed, no further assessment is required. However, should additional sites be identified then the relevant stakeholders would be consulted prior to any ground disturbing activities.
- The Buru Ngunawal Aboriginal Corporation requested that subsurface testing should be undertaken at sites to be disturbed. As none of the identified sites will be disturbed, there is no requirement for subsurface test work.
- The Buru Ngunawal Aboriginal Corporation requested that sites officers be present during or prior to any ground disturbing activities. Given the density of sites identified, this is not considered to be justified.

8.3 RESEARCH POTENTIAL

None of the five sites contained any artefactual material of research potential. While it is useful information to know that the artefacts were of material not available in the survey area, the artefacts themselves were unremarkable. The only information they add to the archaeological record is that they partly fill a gap in the story of how Aboriginal people used the land, the rivers and the natural resources in the Araluen/Braidwood/Majors Creek area. The sites and artefacts, however, have no potential to add any further information from that already provided in the results section above.

Therefore neither the sites nor the artefacts are considered to have any research potential.

As identified in Section 5.2, potential for buried archaeological deposits in the northern section of the Project Site or PADs anywhere within the Project Site is considered to be minimal. In addition, the section of the Project Site most likely to have preserved buried sites of archaeological significance, namely adjacent to Majors Creek, has been largely disturbed by previous mining activities and would not be further disturbed by the present Project. As a result, the potential for the Project to disturb PADs or buried archaeological deposits is considered negligible.

9. RECOMMENDATIONS

The Proponent is advised that they are legally obliged to comply with the provisions of the *National Parks and Wildlife Act 1974*, which are summarised as follows.

> The owners, and their employees, earthmoving contractors, subcontractors, machine operators and their representatives, whether working in the survey area or elsewhere, should be instructed that in the event of any bone or stone artefacts, or discrete distributions of shell, or any objects of cultural association, being unearthed during earthmoving, work should cease immediately in the area of the find.
>
> In the event that any bone cannot be clearly identified by a qualified archaeologist as being of animal remains the police are to be informed of its discovery, and the registered Aboriginal stakeholders, and the Archaeologist, DECCW (Dubbo) advised that the bone is subject to police investigation.
>
> Work should not recommence in the area of the find, until both the police (if bone has been found) and those officials or representatives have given their permission to do so. Those failing to report a discovery and those responsible for the damage or destruction occasioned by unauthorised removal or alteration to a site or to archaeological material may be prosecuted under the *National Parks and Wildlife Act 1974*.

10. GENERAL GLOSSARY:

The definitions that follow are for terms used in this and other reports written by the author, and do not necessarily apply to their use in different contexts.

ADZE : A modified flake with at least one steeply-retouched working edge. While all adzes are generally considered to be wood-working tools it is probable that some also served as cores and others as scrapers. Adzes with a uniform butt were frequently hafted to make a chisel-like tool, but the intended use of the adze determined the size of the adze and whether it was hafted (Flenniken and White, 1985).

AHD: Australian Height Datum

ARCHAEOLOGICAL DEPOSIT:

Sediments which contain evidence of past Aboriginal use of the place, such as artefacts, hearths, burials etc.

ARTEFACT:

Any object that has attributes as a consequence of human activity (Dunnell, 1971). In this report 'artefacts' has been used generally to describe pieces of stone that have been modified to produce flakes, flaked pieces, cores, hammerstones, or axes.

BACKED BLADE:

A stone tool manufactured from a flake on which one margin has been modified by the removal of small flakes to blunt the edge or margin opposite the cutting edge.

BORA GROUND:

A ceremonial site comprising of one or two connected circles composed of compacted or mounded earth, or defined by an arrangement of stones, of 2 to 30m diameter, generally used in male initiation rites.

CAMPSITE:

A place at which the density of artefacts and the variety of material indicates that people ‘frequently’ used the place as a stopping or resting place. Such places are also likely to contain or be close to water resources, food resources, or stone material resources. In this report a campsite is used to describe artefact scatters that are associated with hearths or fireplaces, as distinct from scatters that are not associated with hearths or fireplaces, which are described as Open Scatters.

CHALCEDONY:

A form of silica (partially translucent), which occurs as linings in cavities in rocks. When banded it is known as AGATE (Department of Mines, 1973). Chalcedony is uniformly coloured and agate has curved bands or zones of varying colour (Cook and Kirk, 1991).

CHERT: Another name for sedimentary chalcedony. It occurs most frequently in limestones, or in marine sedimentary rock, or as pebbles in sedimentary rock. In its depositional context it is often concentrated in bedding planes. Chert found in deep-water limestones is formed from radiolaria and diatoms (siliceous planktonic micro-organisms) (Cook and Kirk, 1991).

Chert is a form of amorphous or extremely fine-grained silica, partially hydrous, found in concertions and beds. It is classified as a chemical sedimentary rock although it may be precipitated both organically and inorganically (Department of Mineral Resources, n.d.).

CONGLOMERATE:

Naturally cemented gravel. Conglomerate is a coarse-grained clastic sedimentary rock composed of generally rounded fragments of other rock types larger than 2 mm in diameter, set in a fine-grained matrix of sand, silt, or any of the common natural cementing materials (Department of Mineral Resources, n.d.).

CORE: A piece of stone from which flakes have been removed, that cannot otherwise be described as a retouched or modified artefact.

CORTEX: The naturally altered surface of stone – eg. the water-worn surface of river pebbles.

DEBITAGE:

The small waste material observed in knapping floors. Generally, waste material is described as all those fragments having a maximum dimension of less than 10mm

FLAKE: A fragment of stone exhibiting features indicating that it has been deliberately removed from a core piece. These features are evident as:

i) Platform: Plane or point at which a blow was delivered to remove the flake.

ii) Bulb of Percussion: Convex surface that occurs on the face or ventral surface of a flake, radiating from the point of impact, produced as a consequence of the force pattern.

iii) Eraillure: see below.

Other terms:

i) Dorsal: The back or outer face of a flake as it would have been prior to removal from a core. Frequently either ridged or exhibiting negative flake scars when removed in secondary flaking, with a natural weathered cortex when removed in primary flaking.

ii) Ventral: The 'chest' or inner face of a flake as it would have been prior to removal from the core. The surface upon which the Bulb of Percussion occurs.

iii) Platform Preparation: The removal of flakes from a surface to produce a level platform. May be evidenced by retouch scars to the platform.

iv) Retouch: The removal of small flakes from an edge or margin of an artefact to modify its shape or resharpen its edge.

v) Proximal: The end of a flake closest to the striking platform.

vi) Distal: The end of a flake furthest from the striking platform.

vii) Margin: The edge of an artefact.

viii) Eraillure: A small circular to elliptical negative flake scar occurring on the surface of the bulb of percussion on flakes of very fine-grained or highly silicified material. It occurs 'naturally' as a consequence of internal forces generated at the time of flake removal.

ix) Split Cone: Occurs when the flake splits down its axis frequently removing part of the striking platform. Generally believed to be produced by faulty knapping technique, but is also probably a consequence of flawed material.

x) Transverse Snap: Occurs when a flake snaps across its axis. Generally believed to be caused by post-depositional impacts such as human or stock treadage, or vehicular traffic.

FLAKED PIECE:

A fragment of stone exhibiting flake scars indicating that it is an artefact, but not displaying diagnostic features, such as a Bulb of Percussion, Striking Platform, or an Eraillure.

GREYWACKE:

A type of sandstone, grey or greenish-grey in colour, tough and well indurated and typically poorly sorted (Clark and Cook, 1986).

A generally poorly sorted, dark sandstone containing feldspar and sand-sized rock fragments of metamorphic or volcanic rocks (Department of Mineral Resources, n.d.).

Usually a dark and coarse-grained rock compared to mudstones and siltstones that are much finer-grained and better sorted.

HOLOCENE PERIOD:

The period from 10,000 years ago to the present.

IGNEOUS ROCK:

Rock formed by the cooling and solidification of magma on or below the earth's surface (Geography Dictionary, 1985).

IN SITU: In its original place – as deposited.

ISOLATED ARTEFACT:

A solitary stone artefact, at least 50m from its nearest neighbour. This is based on NPWS policy that two artefacts within 50m of each other constitute a site.

KNAPPING FLOOR:

A discrete scatter of artefacts in which at least two artefacts are recognisably of the same material, and derive from the same piece of stone. Also described as a stone tool manufacturing site or floor.

LOCATION:

The place at which an artefact is found, or a place identified as having either archaeological or Aboriginal significance.

MEASUREMENT:

I) Flake:
   i) Length: Measured along the percussion axis at right angles to the platform.
   ii) Width: The greatest width measured at right angles to the percussion axis.
   iii) Thickness: The greatest thickness measured at right angles to the percussion axis.

II) Flaked piece:
   i) Length: The longest dimension
   ii) Width: The greatest width measured perpendicular to the length.
   iii) Thickness: The greatest thickness measured perpendicular to the length.

III) Core:
   i) Length: The longest dimension.
   ii) Width: The greatest width measured perpendicular to the length.

iii) Thickness: The greatest thickness measured perpendicular to the length.

MIDDEN: A refuse heap or stratum of food remains, such as mollusc shells, and other occupational debris (Dortch, 1984 – see also Meehan, 1982).

MUDSTONE:

A fine-grained detrital rock, usually quite massive and well consolidated. May be black through grey to off-white, browns, reds and dark blues/greens. Frequently found in association with sandstones (Cook and Kirk, 1991).

Identification is often aided by colour variations in layering. A source for stone material tool manufacturing material found as river pebbles in creek beds, and artefacts often display a water-worn cortex.

NEGATIVE FLAKE SCAR:

A concave surface resulting from the removal of a flake, occurring on the surface of the rock from which a flake has been removed.

PLEISTOCENE PERIOD:

The period from about 10,000 years ago to 2 million years ago.

POTENTIAL ARCHAEOLOGICAL DEPOSIT (PAD):

Synonymous with Potentially Archaeologically Sensitive: Having the potential to contain archaeological material although none is visible.

QUARTZITE:

Quartzites are formed by the regional or contact metamorphism of quartz arenites, siltstones, and flints (cherts). They are composed essentially of quartz, and usually have a fine-grained granoblastic (grains are roughly the same size) texture. Generally massive, but may sometimes show sedimentary structures (Cook and Kirk, 1991).

ROTATION:

The removal of flakes from a core by blows directed at different angles, to different platforms. May be evident on the dorsal surface of a flake as negative flake scars, which do not follow the same direction as the percussion axis of the flake. This may be confused with scars produced during core preparation.

SCAT: The solid waste material produced by an animal – dung, droppings, manure (Triggs, 1985).

SCATTER: Two or more artefacts occurring within 50 metres. Scatter may also be used in the context of ‘background scatter’, meaning the general distribution of artefacts across the landscape that cannot be recognised as discrete concentrations.

SILCRETE: A near surface or surface siliceous induration (Desen and Peterson, 1992).

A conglomerate consisting of surficial sand and gravel cemented into a hard mass by silica.

A siliceous duricrust (Bates and Jackson, 1980).

Crusts may form as a result of low, infrequent rainfall, on reasonably flat surfaces. These are known as duricrusts – those cemented by silica are known as silcretes (Clark and Cook, 1986), sometimes referred to locally as 'billy' (Gentilli, 1968), or 'grey billy'.

Silcrete on the northern tablelands of NSW forms at the surface contact between sediments of the Sandon Beds and the Armidale Beds with overlying basalt, where groundwater (more rich in silica than surficial water) interacts with surficial water and precipitates new quartz as the matrix to the sediments (N.D.J. Cook, Dept. of Geophysics, UNE, pers. Comm.).

In softer formations of quartz sands, groundwater has apparently been responsible for the formation of concretionary layers of silcrete. Under altered climatic conditions, the less competent beds erode away leaving concretions. Since they are often the size of old-fashioned woolsacks and are greyish and white, they are popularly known as gray billy (slang for billy goat) (Fairbridge, 1968).

SITE: A discrete area or concentration of artefactual material, place of past Aboriginal activity, or place of significance to Aboriginal people.

SOIL SCIENCE TERMS (taken from Banks, 1995, and others as referenced).

BEDROCK:

Outcrop of *in situ* rock material below the soil profile.

BENCH: A strip of relatively level earth or rock breaking the continuity of a slope.

BLOWOUT:

A closed depression formed in the land surface by wind eroding sands and depositing them on adjacent land.

CHERT: A very fine-grained amorphous silicate sedimentary rock, commonly a layer of chemical precipitate or micro-organism skeletal remains (Milford 1999).

CLAY: Soil material composed of very fine particles less than 0.002 mm size. When used to describe a soil texture group, such a material contains more than 35% clay (Milford 1999).

CLAYPAN:

A depression caused by the aeolian deflation of sediments, or by the presence of a prior lake.

CONGLOMERATE:

A poorly-sorted detrital sedimentary rock composed of rounded gravels, stones or cobbles in a matrix of much finer material (Milford 1999).

DUNE: A ridge built up by wind action composed of sands, silts, or sand-sized aggregates of clay.

FLOODPLAIN:

A large flat area, adjacent to a watercourse, characterised by frequent active erosion and aggradation by channelled and overbank stream flow.

GIBBER: A level surface covered by a thick deposit of gravel or broken siliceous pebbles, occurring in the more arid parts of the continent, thought to have been formed from the break-up of a siliceous (silcrete) surface crust, and termed gibber plains (Whittow, 1984) – see also silcrete.

GILGAI: Surface microrelief associated with soils containing shrink-swell clays. Gilgai consists of mounds and depressions, or irregularly distributed small mounds and subcircular depressions varying in size and spacing. Vertical interval usually <0.3m; horizontal interval usually 3-10m, and surface almost level.

Sometimes called ‘crab-hole’ soils.

GREYWACKE:

A tough, well-indurated type of sandstone distinguished by detrital quartz crystals and rock fragments set in a finer-grained matrix (Milford 1999).

GULLY: An open incised channel in the landscape generally greater than 30cm deep and characterised by moderately to very gently inclined floors and steep walls (Milford 1999).

HUMMOCK:

A small raised feature above the general ground surface.

LANDFORM ELEMENTS:

Crest : Landform element standing above all points in the adjacent terrain.

Flat : Neither a crest or a depression <3% slope.

Upper slope : Adjacent to and below a crest or flat but not a depression.

Midslope : Not adjacent to a crest, a flat or a depression.

Lower slope : Adjacent to and above a flat or a depression but not a crest.

LITHOSOLS:

Shallow soils showing minimal profile development and dominated by the presence of weathering rock and rock fragments.

METAMORPHIC:

Rocks whose composition, texture and/or structure have been altered through tectonic pressure and/or heat (Milford 1999).

METASEDIMENTARY:

Partially-metamorphosed sedimentary rock (Milford 1999).

MUDSTONE:

A fine-grained dark-coloured sedimentary rock, formed from lithified mud; similar to shale but more massive (Milford 1999).

pH A measure of the acidity or alkalinity of a soil. A pH of 7.0 denotes neutrality, higher values indicate alkalinity, and lower values indicate acidity. The pH scale is logarithmic, i.e., a pH of 4.0 is ten times as acid as a pH of 5.0, and one hundred times as acid as a pH of 6.0. (DLWC 1999).

RILL : A small channel cut by concentrated runoff through which water flows during and immediately after rain.

A small ephemeral channel, generally no more than 30 cm deep, created by concentrated runoff (Milford 1999).

RUNOFF: That portion of precipitation not immediately absorbed into or detained upon the soil and which thus becomes surface flow.

SCARP/CLIFF:

A steep slope terminating a plateau or any level upland surface.

SCRUB: vegetation structure consisting of shrubs 2-8m tall.

SHEET EROSION:

The removal of the upper layers of soil by raindrop splash and/or runoff.

SOIL PROFILE:

"A HORIZON": The top layer of mineral soil. This may consist of two parts:

A_1 HORIZON: Surface soil and generally referred to as the topsoil.

A_2 HORIZON: similar in texture, but paler in colour, poorer in structure, and less fertile.

"B HORIZON": The layer below the A Horizon. This consists of 2 parts:

B_1 HORIZON: A transitional horizon dominated by properties characteristic of the underlying B_2 horizon.

B_2 HORIZON: typically contains concentrations of silicate clay and/or iron, and/or aluminium and/or translocated organic material.

"C HORIZON": The parent rock. Recognised by its lack of pedological development, and by the presence of remnants of geologic organization.

"R HORIZON": Hard rock that is continuous (Charman and Murphy, 1993; 350-1).

SPUR: A ridge which Projects downwards from the crest of a mountain as a water-parting (Whittow, 1984).

SUBSOIL: Sub-surface material comprising the B and C Horizons of soil with distinct profiles; often having brighter colours and higher clay contrasts.

SURFACE CONDITION:

Gravelly: Over 60% of the surface consists of gravel (2-69mm).

Hardsetting: Soil is compact and hard.

Loose: Soil that is not cohesive.

Friable: Easily crumbled or cultivated.

Self-mulching: A loose surface mulch of very small peds forms when the soil dries out.

SWALE: A linear level-floored open depression excavated by wind or formed by the build-up of two adjacent ridges.

SWAMP: Watertable at or above the ground surface for most of the year.

TOPSOIL: The surficial layers of the soil profile, typically the A Horizon, which is usually darker, more fertile, better structured and contains more organic matter than underlying soil materials (Milford 1999).

TERRACE: A flat or gently inclined surface bounded by a steeper ascending slope on its inner margin and a steeper descending slope on its outer margin (Whittow, 1984).

TOPSOIL: A part of the soil profile, typically the A_1 horizon, containing material that is usually darker, more fertile and better structured than the underlying layers.

UNDERSTOREY:

A layer of vegetation below the main canopy layer.

WEATHERING:

The physical and chemical disintegration, alteration and decomposition of rocks and minerals at or near the earth's surface by atmospheric and biologic agents (Milford 1999).

GOLD MINING TERMS

The following definitions are taken from various sources as indicated below:

ADIT: An essentially horizontal access into a mine by means of a tunnel driven in to the hillside (Woodland 2001)

ALLUVIAL: Of or pertaining to gold-bearing alluvium, a sedimentary deposit of earth, sand etc., found on flood plains and in river beds (Moore 2000).

ALLUVIAL MINING:

Pan and cradle – the most basic form of alluvial mining - also known as "shallow surfacing" (McGowan 2000).

AURIFEROUS:

Gold-bearing (Woodland 2001).

BATTERY: A set of stamps used for crushing quartz (Moore 2000).

BUDDLE: A shallow inclined vat in which ore is washed in both alluvial and quartz mining (Moore 2000).

CALIFORNIAN PUMP:

A pump used to drain water from a claim, or to channel water from its source to a device such as a puddling machine (Moore 2000).

CHILEAN MILL:

A mill for crushing quartz (Moore 2000).

CHINESE: Of a total of 24,732 Chinese in Victoria in 1861, 24,544 were on the gold fields. Of a total of 12,988 Chinese in NSW in the same year, 11,838 were on the goldfields (Moore 2000).

CHINESE PUMP:

A wooden pump consisting of buckets on a continuous belt , used to remove water from a mine (Moore 2000).

CRADLE: A box-like apparatus mounted on rockers, and agitated by hand, to separate the gold from sand, gravel etc. A "gold-washing machine" (Moore 2000).

CYANIDE PLANT:

The crushed ore that had already passed over the amalgamating and concentration tables, and to assist in the collection of very fine gold, often unseen to the eye. The tailings were placed in large vats and treated with solutions of Potassium or Sodium Cyanide of varying strengths. Came into use in Australia in the late 1890s. Used at Majors Creek (McGowan 2000).

DIRT: The alluvial soil or gravel from which gold is being separated by washing (Moore 2000).

DREDGING:

Was performed by bucket and centrifugal dredges, and involved the removal of wash from rivers and stream beds, with the aim of exploiting those lower stream gravels which could not be extracted by any other means. A very capital intensive process. Pontoons were built on site using imported timber and would take several months to build. Most dredge ponds are broadly rectangular in shape and are usually surrounded on either side by tailing mounds deposited by the elevators (McGowan 2000).

Centrifugal dredging was used at Majors Creek. It involved the use of hydraulic sluicing to break down the eart, which was then hosed into a sump hole and pumped by suction pumps into vertical pipes to sluice boxes mounted on scaffolding above the dredge (McGowan 2000).

HEADFRAME:

Timber structure ove a shaft to allow men, ore and materials to be raised or lowered (Woodland 2001).

HYDRAULIC SLUICING:

Used when the drift and overburden were too deep and often too poor to be worked by any other method. Water conveyed under pressure to a hose, which would then be turned against the face of the workings, with the aim of washing the drift down to bedrock, and thence into sluice boxes (McGowan 2000).

MULLOCK: Mining refuse (Moore 2000). Waste rock raised from a mine (Woodland 2001).

ORE: Rock containing mineral(s) that can be mined and treated at a profit (Woodland 2001).

OREBODY:

A well defined mass of ore that can be profitably mined (Woodland 2001).

PADDOCK:

In mining – an area marked out and systematically excavate for wash dirt – especially associated with the Chinese who worked in gangs (Moore 2000). Paddocks were rectangular and open at one end (McGowan 2000).

PAN: A circular dish , often made of tin, in which gold is separated from gravel, crushed quartz, etc, by agitation and washing (Moore 2000).

PUDDLE: To work gold-bearing material with water in a tub so as to separate out the gold from the other material (Moore 2000).

(*The Chinese used to puddle for gold by excavating a pit of 5-10m diameter, which they filled with water, and then used a shovel to agitate the material, which they then panned for gold*).

PUDDLERS:

Used to wash dirt that was heavily impregnated with clay. Large circular holes about 15m to 20m in circumference into which the dirt and water were mixed with perhaps a small race conveying water into the puddler (McGowan 2000).

PUDDLING:

Breaking down clayey material with water to release its contained gold (Woodland 2001).

QUARTZ MILL:

Also called a quartz-crusher. Arranged in batteries of four, five, six and ten heads, driven by steam, the stamps being lifted by means of discs on a cam, so arranged as to make the stamps revolve (Moore 2000).

RACE: An artificial channel constructed to divert water from a river or creek for mining processes (Moore 2000). (*Also to divert slope-wash and to direct water from a dam to where it was used to wash or sluice the dirt)*. Sometimes lined with sawn planks and boards and sometimes paved with stones or wooden blocks (McGowan 2000).

ROCKER: Another name for a cradle (Moore 2000).

SLUICE: An artificial channel, usually consisting of a long sloping trough, or series of troughs, fitted with riffles, or grooves into which a current of water is directed to separate the particles of gold from the gold-bearing earth. A “Long Tom” (Moore 2000).

SLUICE BOX:

One of the long troughs of which a gold-washing sluice is composed (Moore 2000).

STAMP BATTERY:

Machine for crushing ore by dropping a series of heavy metal-shod shafts or ‘stamps’ (Woodland 2001).

STAMPER:

Each of several pestles forming the battery of a stamping mill (Moore 2000).

STOPE: A step-like working in the side of an excavation (Moore 2000). An underground excavation formed by the extraction of ore (Woodland 2001).

TAILINGS: Residue left after the economic minerals have been extracted from the ore (Woodland 2001).

TAILINGS MOUNDS:

Frequently placed to dam water of direct water.

WHIM: A machine used for raising ore or water from a mine (Moore 2000).

WHIP: A simple kind of tackle or pulley for hoisting material from a mine (Moore 2000). A contrivance consisting essentially of a rope and pulley for hoisting wash-dirt or refuse from a mine (Baldwin and Boyd-Davis 2001).

WINDLASS:

A mechanical contrivance consisting of a roller or beam, resting on supports, round which a rope or chain is wound, used for raising material from a shaft (Moore 2000).

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Appendices

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Appendix i

Correspondence to Palerang Council

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Archaeological Surveys & Reports Pty Ltd

John Appleton
A.C.I.S., A.C.I.M., B.A. (Hons)

16 Curtis Street, Armidale, NSW 2350
Tel. 02 6772 6512 Fax 02 6772 4567 Mob. 0428 651 789
Email japples@northnet.com.au

ABN 67 075 625 722

General Manager
Palerang Council
PO Box 348
Bungendore 2621

10th February 2010

Dear Sir/Madam

Re: Archaeological investigation:
Dargues Reef Gold Project

This is to advise that R.W. Corkery & Co. Pty Limited has been engaged by Cortona Resources Limited to prepare an application for development for the proposed Dargues Reef Gold Project as a Part 3A "Major Project", under Part 3A of the *Environment Planning and Assessment Act 1979*.

The project site occurs in Lot 120 DP 755934, north of Majors Creek near Braidwood in the Palerang local government area (Bungendore).

Archaeological Surveys & Reports Pty Ltd (ASR) has been engaged to complete a Cultural Heritage Assessment of the proposed Project Site.

In compliance with the requirements of the "*Guidelines For Aboriginal Cultural Heritage Impact Assessment and Community Consultation*" (DECC 2005), advertisements were placed in *The Canberra Times*, *The Queanbeyan Age* and *The Braidwood Times* inviting all Indigenous stakeholders with an interest in the Project Site to register their interest.

We are now seeking information on any Aboriginal groups, stakeholders or traditional knowledge holders with an interest in the management of Indigenous heritage matters in the Majors Creek area.

Would you please provide contact details for any known Aboriginal groups with a cultural interest in this area. The nominated groups can then be included in the consultation process with regard to Indigenous heritage issues.

Regards

2

Appendix ii

Response from DECCW

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Our reference : DOC10/6608
Contact : Stephen Free (02) 6229 7087

Mr John Appleton
Archaeological Surveys & Reports Pty Ltd
16 Curtis Street
ARMIDALE NSW 2350

FAXED
10am

Dear Mr Appleton,

WRITTEN NOTIFICATION OF PROPOSAL AS REQUIRED UNDER DECC INTERIM COMMUNITY CONSULTATION REQUIREMENTS FOR APPLICANTS RE: PROPOSED DARGUES REEF GOLD PROJECT, MAJORS CREEK, NSW – CULTURAL HERITAGE ASSESSMENT

I refer to your letter dated 10 February 2010 to the Department of Environment and Climate Change (DECC) regarding the above matter.

Attached is a list of known Aboriginal parties that DECC feels is likely to have an interest in the development. Please note this list is not necessarily an exhaustive list of all interested Aboriginal parties and receipt of this list does not remove the requirement of a proponent/ consultant to advertise in local print media and contact other bodies seeking interested Aboriginal parties, in accordance with the Interim Requirements.

If you wish to discuss any of the above matters further please contact me on (02) 6229 7087.

Yours sincerely

STEPHEN FREE
Senior Aboriginal Heritage Officer/Archaeologist,
Aboriginal Heritage Regulation Unit
Environmental Protection and Regulation Group South
// **March 2010**

PO Box 733, Queanbeyan, NSW 2620
6 Rutledge Street, Queanbeyan, NSW 2620
Tel: (02)6299 2929 Fax: (02) 6299 4281
ABN 30 841 387 271
www.environment.nsw.gov.au

Department of **Environment & Climate Change** NSW

Organisation/Individual Name	Address	Contact Details
Mr Arnold Williams CEO *Ngunnawal Elders Corportion*	13 Fitzgibbon Place, QUEANBEYAN NSW 2620	0431 600 987
Mrs Dorothy Carroll *Ngunnawal Heritage Aboriginal Corporation*	Lot 114, Ash Road, PRESTONS NSW 2170	0412 176 081 fax. 07 5630 8597
Buru Ngunawal Aboriginal Corporation. Contact Person: Wally Bell	Address:PO Box 6900 Charnwood ACT 2615	Mob: 0419 425 347; email: walbell@bigpond.net.au
Konanggo Aboriginal Cultural Heritage Services - Mr Robert Young	4 Cunningham Place, South Windsor NSW 2756	Ph. 0450 497 270 & 02 4577 8401 konanggo_consultancy@hotmail.com
Dean Bell Yurwang Gundana Consultancy Cultural Heritage Services	PO Box 5628 South Windsor NSW 2756	0403 744 008 Fax. 02 4577 8707 Email.yurwang_gundana@bigpond.com
Carl and Tina Brown	17 Cassia Crescent, Queanbeyan NSW 260	
Yukembruk Merung Ngarigo Consultancy Pty Ltd	PO Box 413 BEGA NSW 2550	Mob: 0488749193 ngarigo@y7mail.com
Colleen Dixon	Unit 2 49 East Street BEGA NSW 2550	02 6492 4740
Mr Shane Newton Carriage, Chairperson. Walbunja Aboriginal Corporation	5 Herarde Street, BATEMANS BAY NSW 2536	Ph. 02 4472 7916 Mobile. 0410 744 564 Email. walbunja@gmail.com

Appendix iii

Response from Palerang Council

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PALERANG COUNCIL

Enquiries: Customer Service

22 February 2010

Archaeological Surveys & Reports
16 Curtis Street
ARMIDALE NSW 2360

Dear Sir/Madam

Contact Information for Archaeological Investigation
Dargues Reef Gold Projects

Council has received a request from Archaeological Surveys & Reports to pass along contact details of the relevant person/s associated with any Aboriginal groups, stakeholders or traditional knowledge holders with an interest in the management of Indigenous heritage matters in the Majors Creek area. Contact details are as follows;

Batemans Bay Aboriginal Land Council
PO Box 542
BATEMANS BAY NSW 2536

PH: 02 4472 7390
Fax: 02 4472 8622
Email: bblalc@bigpond.com

Council forwards you this information in the hope that you will contact them at your earliest convenience.

Yours faithfully

Customer Service
Palerang Council

ABN 70605876877
All Mail to: PO Box 348 Bungendore NSW 2621 Email: records@palerang.nsw.gov.au

Braidwood Office: 144 Wallace Street Braidwood Tel: 1300 735 025 Fax: 02 4842 2669
Bungendore Office: 10 Majara Street Bungendore Tel: 1300 735 025 Fax: 02 6238 1290

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Appendix iv

Response from the Office of the Registrar: ALRA

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

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

John Appleton
Archaeological Surveys & Reports Pty Ltd
16 Curtis Street
Armidale NSW 2350

Dear John

Re: Request - Search for Registered Aboriginal Owners

I refer to your letter dated 10 February 2010 regarding a Cultural Heritage Assessment under Part 3A of the *Environment Planning and Assessment Act 1979* at the Dargues Reef Gold Project in the Braidwood area in NSW.

I have searched the Register of Aboriginal Owners and the subject land does not appear to have Registered Aboriginal Owners pursuant to Division 3 of the *Aboriginal Land Rights Act 1983*.

I trust you are in contact with the Batemans Bay Local Aboriginal Land Council. The land council may able be to assist you with information and contact details for other interested groups.

Regards,

Megan Mebberson
Senior Project Officer
Office of the Registrar, *Aboriginal Land Rights Act 1983*

23 February 2010

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Appendix v

Copy of the advertisement placed in the *Tallaganda News*, the *Queenbeyan Age* and the *Canberra Times*

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PUBLIC NOTICE

ARCHAEOLOGICAL INVESTIGATION

Application is to be made for Part 3A Approval for the Dargues Reef Gold Project, Lot 120, DP 755934, Majors Creek in the Southern Highlands.

In order to meet the requirements for Part 3A Approval it is proposed that an archaeological investigation of the subject area will be undertaken for sites of Indigenous cultural significance.

In accordance with "Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation" (DECC 2005), Part 6 Approvals of the National Parks & Wildlife Act 1974 (as amended) Aboriginal stakeholders with an interest in the project are invited to register their interest within 14 days, with John Appleton, Archaeological Consultant, Tel. 02 6772 6512, Fax. 02 6772 4567, Mob. 0428 651 789.

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Appendix vi

List of registered Aboriginal stakeholders

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LIST OF ABORIGINAL STAKEHOLDERS WHO RESPONDED TO THE INVITATION TO REGISTER THEIR INTEREST IN THE PROJECT

ORGANISATION	CONTACT	WHERE	IN	MAY
Ngunnawal Elders Corporation	Arnold Williams CEO	13 Fitzgibbon Place, Queanbeyan 2620. Mob.0431 600 987	YES	Fri 7th
Ngunnawal Heritage Aboriginal Corporation	Melinda Tubolec	Lot 114 Ash Road, Prestons 2170 Mob.0412 176 081 Fax. 07 5630 8597 E.arinda@arinda.com.au	YES	Tues 4th
Buru Ngunawal Aboriginal Corporation Traditional Carer Group	Wally Bell	PO Box 6900 Charnwood, ACT 2615. Mob.0419 425 347, E.walbell@bigpond.net.au	YES	Tues 4th
Konanggo Aboriginal Cultural Heritage Services	Robert Young	4 Cunningham Place, South Windsor 2756. Mob.0450 497 270. T.02 4577 8401 E.konanggo_consultancy@hotmail.com	YES	Wed 5th
Yurwang Gundana Consultancy Cultural Heritage Services	Dean Bell	PO Box 5628 South Windsor 2756. Mob.0403 744 008. F.02 4577 8707. E. yurwang_gundana@bigpond..com		Not connect
King Browns Tribal Group Pty Ltd	Carl & Tina Brown	73 South Bar Road, Queanbeyan 2620 Mob.0450 520 057 E.tina.kingbrown@gmail.com	YES	Mon 10th
Bega Traditional Elders Council (formerly Yulembruk Merung Ngarigo Consultancy Pty Ltd)	John Dixon	PO Box 413, Bega 2550. Mob.0488 749 193. E.ngarigo@y7mail.com	YES	Thurs 6th
	Colin Dixon	Unit 1, 51 East Street, Bega 2550. T.02 6492 4740	YES	Fri 7th
Walbunja Aboriginal Corporation	Shane Carriage	65 Surfbeach Ave, Batemans Bay 2536. T.04 1655 0076, Mob.0410 744 564. E.walbunja@gmail.com	YES	Wed 5th
Batemans Bay LALC	Mal McCallum	PO Box 542, Batemans Bay 2536. T.02 4472 7390, F.02 4472 8622. E.bblalc@bigpond.com	YES	Thurs 6th
Ngambri LALC	Col Williams	T.02 6297 4152. Mob.0402 623 097	NO	Wrong area
Little Gudgenby River Tribal	Crystal House	E.munjuwal@bigpond.com	YES	Mon 10th

KEY:

IN — Those Stakeholders who wished to participate in the fieldwork

MAY — The day and date that they agreed to do the fieldwork

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Appendix vii

Letter sent to registered Aboriginal stakeholders

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Archaeological Surveys & Reports Pty Ltd

John Appleton
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16 Curtis Street, Armidale, NSW 2350
Tel. 02 6772 6512 Fax 02 6772 4567 Mob. 0428 651 789
Email japples@northnet.com.au

ABN 67 075 625 722

22nd March 2010

Dear Sir/Madam

Re: Archaeological investigation:
Lots 101, 102 and 103 in DP755934, and Lots 1, 2, 3, 4 and 5 in DP986483,
MAJORS CREEK
Information and Management Plan.

This is to advise that Archaeological Surveys & Reports Pty Ltd has been engaged by R.W. Corkery & Co. Pty Limited, acting on behalf of Big Island Mining Pty Ltd, to undertake an investigation for Indigenous sites in Lots 101, 102 and 103 in DP755934, and Lots 1, 2, 3, 4 and 5 in DP986483, Majors Creek, for the purposes of lodging an application for a Part 3A "Major Project" development.

In accordance with "Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation" DECC 2005), an advertisement was placed in the *The Braidwood Times, The Queanbeyan Age* and *The Canberra Times* on 28th January 2010 inviting interested Aboriginal stakeholders to register their interest. In addition letters were sent to DECCW, Office of the Registrar ALRA, Palerang Council, and Native Title Services requesting that they provide a list of registered Aboriginal stakeholders. As a consequence 11 Aboriginal stakeholders were identified. Your organisation was one of those identified.

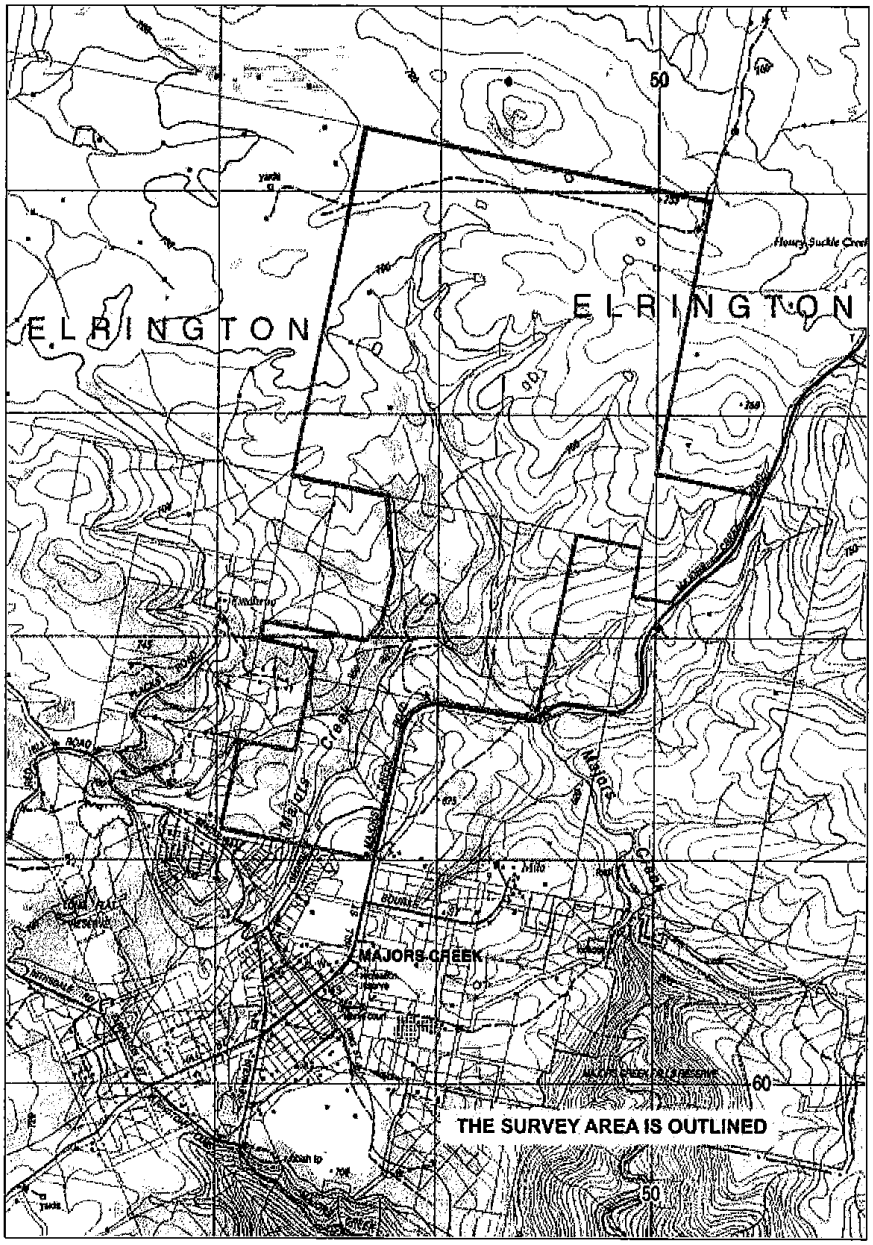
Proposed operations

Much of the survey area has been previously mined for gold resulting in many dangerous open shafts in what is steep and rugged country. Much of the gold recovery was from sluicing and panning the creek beds and banks, and so it is highly likely that those places which in normal circumstances might have been where Aboriginal sites could have been expected to occur have been destroyed by mining activity. However my brief is to investigate the project site for the purpose of finding and recording any Aboriginal sites that might still be there.

The project site occurs in a steep, hilly area which will have to be inspected on foot. I suggest that your representative should be fit and healthy. The survey area comprises extremely rugged country with steep climbs and dangerous gullies and abandoned shafts. You are advised that if you have any physical disabilities or have difficulty in climbing slopes or suffer from a condition that could be triggered by extreme physical exertion that you do not participate as you will be placing others at risk if they have to assist you in any way.

I have attached a map to show you the terrain that has to be surveyed. You will note there are one or two tracks but they are mostly on ridges or in valley bottoms and while they provide a means of getting into the survey area there are many places where there is no obvious access.

We will be using our own vehicles to get into the project site as far as the tracks will allow, but all survey work will be done on foot. This is not a place where you want to be if you are neither fit nor healthy, or recovering from a sickness or injury. Your representative will be carrying a back-pack with their food and water and a light rain jacket and any other personal requirements. They will be working an eight-hour day with a 30 minute lunch break. It may also be necessary to take a few recovery breaks. This will not be a pleasant survey and there is no guarantee that we will find any sites, but it will be our job to find them if they are there.


ELRINGTON
ELRINGTON
MAJORS CREEK
THE SURVEY AREA IS OUTLINED
50
60
50

3

Work load

Because there are eleven organisations that wish to participate and because under the guidelines only two Aboriginal representatives are entitled to payment it is proposed that the eleven organisations (or how many wish to take part) will be rostered so that each organisation puts in the same number of hours as the next and receives payment equal to the others. It is therefore important for you to confirm that you wish to take part so that the roster can be worked out. Other representatives may participate on days they are not rostered but they will not be entitled to payment. Days for which an organisation is rostered but does not attend cannot be transferred to another organisation, simply because it would mean that one organisation receives more payment than the others. On any one day there will be two Aboriginal representatives and myself and in the field.

Equipment

You will have to provide your own transport to Majors Creek.
I will be carrying a hand-held GPS.
I will also be carrying a small first aid box.
I will provide fluorescent vests if required.
All participants are to be properly attired – see below.
Participants may wish to bring a camera and a log book, but I will be making my own record and all participating organisations will receive a copy of my final report.
I do not expect there to be any mobile phone service except for perhaps on the ridges.

OH&S Issues for participants

- All participants must be covered by a current insurance policy for Public Risk and Workers Compensation. I will need to either see a photocopy of a current insurance policy or be given the name of the insurer and the Insurance Policy Number before your representative is allowed to participate.
- All participants must be given a briefing of the do's and don'ts of being on the property before they are allowed on site.
- All participants are required to wear steel toe-capped boots, long trousers and long–sleeved shirts, fluorescent vests, a hat and sun glasses. Anyone not properly attired will not be permitted on the Project Site (I can provide the fluorescent vests if required).

- Working hours will be from 8.30am to 4pm with a 30 minute break for lunch. Anyone not ready to leave the assembly point at 8.45am will be left behind and will not be paid for the day. Time will be lost every morning in reaching the day's starting point and it is therefore essential that we do not waste time waiting for late arrivals.
- All participants are required to provide their own food and drink.
- No alcohol is allowed on the property.
- All participants must stay within sight of the others while in the field. This is dangerous country and we don't want anyone to get hurt or lost.

Site management.

Any sites found during the survey are to be recorded in detail. Details and descriptions will be made of the site and its contents. A GPS map reference will be made of the location and a photographic record made of both the site and the environmental context. No artefactual material can be removed from the site until such time as the proponents receive Part 3A approval for the proposed operations. At that time the artefacts will be salvaged. As Part 3A Approval negates the provisions of the National Parks and Wildlife Act 1974 (as amended) neither a Section 87 Permit nor Section 90 Consent are required – but the Part 3A provisions do not come into effect until such time as the Part 3A Application is approved.

Next step

The tentative dates for the survey are 26th-30th April. Please advise the suitability of these dates when responding to this letter. In order that I can roster each organisation fairly I need your written (hand written or typed or faxed or emailed) commitment to participating in the fieldwork and a Certificate of Currency of your insurances or provide details of the policy numbers and the renewal date.

Would you please respond to this letter within 21 calendar days from the date of this letter advising me of whether you wish to participate in the fieldwork. If I receive no response within 21 calendar days of this letter (by 16th April), I will assume that your group does not wish to participate in the survey and a representative of your group will not be rostered for the survey. I will need the name of the person who will represent your organisation and an assurance that they will be properly attired and will bring their own

food and water. Anyone who turns up not wearing the proper attire will not be allowed to participate. In such potentially dangerous terrain risks must be minimised for the safety of everyone.

I have now undertaken over 500 investigations over a twenty-year period and this is one of the potentially most dangerous of all the investigations I have done. I cannot over-emphasise the potential dangers and risks of this particular investigation and it is better that you do not participate if you have any doubts. All registered stakeholders will receive a copy of the results and be consulted as to the future management of any sites that are recorded, and so you do not have to participate in the fieldwork to find out what is found and how it will be managed.

Survey Methodology

I have also attached with this letter the proposed survey methodology to be used. Please review this methodology and provide any feedback within 21 days of the date of this letter (by 16th April 2010).

Regards.

Appendix viii

Field Survey Roster

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LIST OF ABORIGINAL STAKEHOLDERS
WHO RESPONDED TO THE INVITATION TO REGISTER THEIR INTEREST IN THE PROJECT

ORGANISATION	CONTACT	WHERE	IN	MAY
Ngunnawal Elders Corporation	Arnold Williams CEO	13 Fitzgibbon Place, Queanbeyan 2620. Mob.0431 600 987	YES	Fri 7th
Ngunnawal Heritage Aboriginal Corporation	Melinda Tubolec	Lot 114 Ash Road, Prestons 2170 Mob.0412 176 081 Fax. 07 5630 8597 E.arinda@arinda.com.au	YES	Tues 4th
Buru Ngunawal Aboriginal Corporation Traditional Carer Group	Wally Bell	PO Box 6900 Charnwood, ACT 2615. Mob.0419 425 347, E.walbell@bigpond.net.au	YES	Tues 4th
Konanggo Aboriginal Cultural Heritage Services	Robert Young	4 Cunningham Place, South Windsor 2756. Mob.0450 497 270. T.02 4577 8401 E.konanggo_consultancy@hotmail.com	YES	Wed 5th
Yurwang Gundana Consultancy Cultural Heritage Services	Dean Bell	PO Box 5628 South Windsor 2756. Mob.0403 744 008. F.02 4577 8707. E. yurwang_gundana@bigpond..com		Not connect
King Browns Tribal Group Pty Ltd	Carl & Tina Brown	73 South Bar Road, Queanbeyan 2620 Mob.0450 520 057 E.tina.kingbrown@gmail.com	YES	Mon 10th
Yukembruk Merung Ngarigo Consultancy Pty Ltd	John Dixon	PO Box 413, Bega 2550. Mob.0488 749 193. E.ngarigo@y7mail.com	YES	Thurs 6th
	Colin Dixon	Unit 1, 51 East Street, Bega 2550. T.02 6492 4740	YES	Fri 7th
Walbunja Aboriginal Corporation	Shane Carriage	65 Surfbeach Ave, Batemans Bay 2536. T.04 1655 0076, Mob.0410 744 564. E.walbunja@gmail.com	YES	Wed 5th
Batemans Bay LALC	Mal McCallum	PO Box 542, Batemans Bay 2536. T.02 4472 7390, F.02 4472 8622. E.bblalc@bigpond.com	YES	Thurs 6th
Ngambri LALC	Col Williams	T.02 6297 4152. Mob.0402 623 097	NO	Wrong area
Little Gudgenby River Tribal	Crystal House	E.munjuwal@bigpond.com	YES	Mon 10th

KEY:

IN — Those Stakeholders who wished to participate in the fieldwork

MAY — The day and date that they agreed to do the fieldwork

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Appendix ix

Stakeholder Group Participation in the Fieldwork

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STAKEHOLDER GROUP PARTICIPATION IN THE FIELDWORK FOR DARGUES REEF GOLD MINE

Day/Date	REGISTERED STAKEHOLDER GROUP
Tues 4th May	Ngunnawal Heritage Aboriginal Corporation
Tues 4th May	Buru Ngunawal Aboriginal Corporation Traditional Carer Group
Wed 5th May	Konanggo Aboriginal Cultural Heritage Services
Wed 5th May	Stakeholder absent
Thurs 6th May	Batemans Bay Local Aboriginal Land Council
Thurs 6th May	Yulembruk Merung Ngarigo Consultancy Pty Ltd
Fri 7th May	Stakeholder absent
Fri 7th May	Stakeholder absent
WEEKEND	
Mon 10th May	Stakeholder absent
Mon 10th May	Stakeholder absent

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Appendix x

Result of the AHIMS Search

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Aboriginal Heritage Information Unit
43 Bridge Street Hurstville NSW
PO Box 1967, Hurstville NSW 2220
Tel: (02) 95856345 Fax: (02) 95856094
ABN 30 841 387 271
www.environment.nsw.gov.au

Your reference : Bendoura/Monga
Our reference : AHIMS #29512

Archaeological Surveys and Reports
16 Curtis Street
Armidale NSW 2350

Friday, 09 April 2010

Attention: John Appleton

Dear Sir or Madam:

Re: AHIMS Search for the following area at Bendoura / Monga;E:746000-751000;N:6059000-6065000

I am writing in response to your recent inquiry in respect to Aboriginal objects and Aboriginal places registered with the NSW Department of Environment, Climate Change and Water (DECCW) at the above location.

A search of the DECCW Aboriginal Heritage Information Management System (AHIMS) has shown that *1* Aboriginal objects and Aboriginal places are recorded in or near the above location. Please refer to the attached report for details.

The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not to be made available to the public.

The following qualifications apply to an AHIMS search:

- AHIMS only includes information on Aboriginal objects and Aboriginal places that have been provided to DECCW;
- Large areas of New South Wales have not been the subject of systematic survey or recording of Aboriginal history. These areas may contain Aboriginal objects and other heritage values which are not recorded on AHIMS;
- Recordings are provided from a variety of sources and may be variable in their accuracy. When an AHIMS search identifies Aboriginal objects in or near the area it is recommended that the exact location of the Aboriginal object be determined by re-location on the ground; and
- The criteria used to search AHIMS are derived from the information provided by the client and DECCW assumes that this information is accurate.

All Aboriginal places and Aboriginal objects are protected under the *National Parks and Wildlife Act 1974* (NPW Act) and it is an offence to destroy, damage or deface them without the prior consent of the DECCW Director-General. An Aboriginal object is considered to be known if:

- It is registered on AHIMS;
- It is known to the Aboriginal community; or
- It is located during an investigation of the area conducted for a development application.

If you considering undertaking a development activity in the area subject to the AHIMS search, DECCW would recommend that an Aboriginal Heritage Assessment be undertaken. You should consult with the relevant consent authority to determine the necessary assessment to accompany your development application.

Yours Sincerely

Freeburn, Sharlene
Administrator
Aboriginal Heritage Information Unit
Information Systems and Assessment Section
Aboriginal Heritage Operation Branch
Culture and Heritage Division
Department and Environment, Climate Change and Water (DECCW)
Phone: (02) 9585 6471
Fax: (02) 9585 6094

Appendix xi

Site Types

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Site types associated with Indigenous activities and culture

The definitions that follow are for terms used in this report, and do not necessarily apply to their use in different contexts.

Art sites are defined as places where any medium has been applied to a rock surface either as symbols, characters, drawings, paintings, or any other rendition, recognisable as not being a natural discolouration or feature. They also include markings to a rock surface, either by engraving, abrading, or pecking, and which cannot be identified as being a natural feature.

Bora rings are circles of 2-30 metres diameter of compressed earth (from repeated treading or dancing), or stone arrangements, at which men performed initiation ceremonies, and are the most frequently recorded ceremonial sites. Sometimes they occur as two rings joined by a central track in a barbel configuration. They usually occur on level or low-lying country, which is usually the first topographical unit to be cultivated, or utilised for highways and roads, but they may also occur as circular stone arrangements on elevated rock platforms and hilltops. If they are or were present then they are usually either already known and have been recorded, or they have long since been destroyed.

Carved trees are readily recognised by even the untrained observer. The carving is incised either into the outer bark, or more commonly, into the living wood after removal of a section of the bark. The designs frequently consist of 'diamond cross-cuts', but may also consist of stylised animal motifs. Previously unrecorded carved trees are still discovered in relatively remote or inaccessible areas. Carved trees frequently occur near burial sites and/or Bora rings, but in some regions they may have been tribal boundary markers.

Fish traps may occur either in rivers or on seashores. They are recognisable as unnaturally formed stone arrangements that were constructed to trap fish (or eels or turtles) carried into the enclosure in deep water, and which are left stranded within the enclosure as the water level drops. The fish were then caught by nets, hand, or by spear.

Grinding grooves are usually observed on the surfaces of large sedimentary boulders or exposed shelves and outcrops of sedimentary rock along creek banks and beds, or near water. They have been produced by Aborigines using the rock surface to shape and sharpen the edges of stone to produce ground-edged axes, or to sharpen wooden spears (the latter tend to be narrow and deep). Water was used to lubricate the surface of the rock. The grooves frequently occur as linear abraded depressions in the rock, and may each be between 10 and 50 centimetres long, up to 15 centimetres wide, and 2 to 5 centimetres deep. Some sedimentary rock surfaces may exhibit shallow ground depressions of roughly round or elliptical shape, and these are more likely to be associated with seed grinding, root crushing, or other food preparation.

Middens may be identified variously as beach, lagoon, lacustrine, or estuarine, and are most likely to be observed at or above the water line where erosion, topsoil removal, or mining has exposed the shell. The size of the midden can vary enormously, with the smallest comprising a 'one off', "dinner-time camp" (Meehan. 1982), with as few as two or three shells, or a shallow lens of only a few centimetres. The largest middens may extend for many kilometres and may comprise of a number of lenses and layers of shell and ash up to several metres deep. These large middens may be evidence of continuous exploitation of the resource over many thousands of years. Middens of fresh water mussel shell may be found in eroding creek banks or in eroding terraces, particularly near both existing and defunct water holes.

Isolated shell or fragments may occur on any surface and in any situation. A single shell may have been discarded by a bird, but the presence of use-wear would indicate Aboriginal use of the shell as a tool, which was discarded after use. Such occurrence is likely to be where there is no immediate source of stone material suitable for tool manufacture.

Natural Mythological sites are places of significance to Aborigines, either because they are described in mythological stories or songlines, or because they were used in religious ceremonies. They may occur anywhere and while some are more predictable than others – as for example, permanent water holes, waterfalls, rock promontories, etc., others may have no particularly remarkable features. Seldom is there any recognisable artefactual evidence or anything to distinguish it from similar features in the vicinity. These sites must of necessity be identified by Aboriginal people with an association with the place.

Open sites, campsites, knapping floors, scatters, and isolated artefacts, are most likely to occur on eroded and exposed creek banks, particularly where slope wash or stock trails has removed the humic layer, or on eroded ridges and spurs, particularly near the junctions in watercourses.

Open sites are most likely to be present in greatest numbers near a source of either raw stone material, or potential food resources, or in a natural corridor between two differentially preferred environmental zones, or at the contact between two environmental zones containing different resources.

Artefacts in open scatters are likely to be manufactured from the dominant raw material available; i.e. Greywacke on greywacke-sourced soils, quartz on granite-sourced soils, silcrete and chert on relict sedimentary soils.

Artefact assemblages in open scatters are likely to consist predominantly of discard material, i.e., cores, flakes, flaked pieces, and debitage.

Artefacts exhibiting retouch scars and backing are most likely to occur in sites where secondary activity took place peripheral to the central camp site, although this is a generality and can only be observed where there is sufficient surface visibility to identify peripheral sites. Fragments of flakes with retouch or backing may occur on knapping floors indicating breakage occurring during manufacture, or maintenance areas in which damaged tools have been replaced and discarded.

Isolated artefacts are likely to be most frequently observed where the groundcover obscures all but the larger artefacts, such as cores, and large flakes, or where there is little contrast between the texture of artefactual material and the surface upon which it lies. Artefacts of materials contrasting with the matrix may be visible regardless of size; e.g. quartz artefacts may be far more visible than much larger basalt artefacts against a background of dark humic terrace soils.

PADs or Potential Archaeological Deposits are deposits, usually in shelters (but they may also be identified where there are intact deposits in open areas), which although not containing any visible archaeological material, are considered likely to contain archaeological material below the surface. These 'sites' are not recorded as sites on the Aboriginal Site Register, but are identified as places that require subsurface testing to establish whether a site exists or not.

Rock shelters with art or occupation deposits, are most likely to occur where the character of the parent rock is sufficiently massive or consolidated for it to retain a structure that weathers differentially to form shelters and overhangs.

Scarred trees are perhaps the most difficult site type to determine as having been caused by deliberate removal of the bark by humans and not as a consequence of natural events; such as abrasion from falling trees or branches, natural branch attrition, fire damage, or contact from vehicles or stock. They may occur in places wherever there are tree species that produce bark suitable for tool and implement manufacture. While some scars are clearly the consequence of deliberate bark removal by Aborigines (either evidenced by stone axe marks, or identified by Knowledge Holders), some scars were made by settlers, and stockmen, and surveyors who frequently blazed trails and property boundaries by scarring the trees, and by timber men who removed a strip of bark to test the suitability of a tree for logging.

Other site types such as hearths, burials, etc., are less easily predicted, although burials are frequently associated with carved trees, and Bora rings, and hearths with campsites, shelters, and shell middens.

Appendix xii

Identified Aboriginal Heritage Artefacts

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DARGUES REEF

Easting	Northing	Name	Type	Art.	Material	L	W	T	Platform	L	W	O/H	Cortex	Retouch	Dorsal	Erailure	Term.	Other
749234	6063113	GT OS1	OPEN SCATTER	F	SIL.	25	12	3	FLAKED	8	1		0				FEATHER	
				C	SIL (same)	33	30	20					35					
				F?	MET.SED.	25	16	4					80		R			
748937	6063149	GT OS2	OPEN SCATTER	C	MET.SED.	45	35	13					0	SCRAPER?				
				P.F	MET.SED.	22	20	4	FLAKED	6	2	X	O		R			
748838	6063624	GT ISO3	ISOLATED	P.F	QUARTZ	5	15	3	FLAKED	8	2		0		R			
748840	6063315	GT OS4	OPEN SCATTER	F	CHERT	13	25	6	FLAKED	13	4		0		R	X	STEP	POTLID
				FP	QUARTZ	20	9	4					0					
				F	SIL	12	18	3	FACETTED	8	2		0				FEATHER	
749011	6061824	GT ISO5	ISOLATED	F	SIL	28	28	5	FACETTED	13	4	X	0		R		SNAP	

KEY								
SIL.	Silcrete	F	Flake	L	Length	O/H	Overhang removal
MET.SED.	Meta-sedimentary	FP	Flaked piece	W	Width	R	Ridge
ART.	Artefact type	C	Core	TH	Thickness	TERM.	Flake termination
		P.F	Flake: proximal fragment				

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Appendix xiii

Correspondence received from Registered Stakeholders

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KONANGGO ABORIGINAL CULTURAL HERITAGE SERVICES

ABN 21143115147

ROBERT YOUNG
Principal Consultant
773 Princess Highway
TEMPE NSW 2044

Mobile: 0450 497 270
Home: 02 95595870
Email: konanggo_consultancy@hotmail.com

RE: Archaeological Investigations- Majors Creek

On the 5/5/10 Wednesday , I Robert Young representing Konaggo Aboriginal Cultural Heritage Services participated in a Aboriginal Cultural Heritage Investigation at Cortona Mining Lease at Majors Creek N.S.W with Archaeological Surveys & Reports Pty Ltd and John Appleton the Archaeologist.

If Approval is given for a Part 3a Approval , any artifacts that have been identified in the Investigation that occur within the footprint of any mining activity should be salvaged.

On the day I investigated I only found one (1) artifact other than the two artifacts found at Spring Creek on the Cortona Mining Lease.

Konanggo Aboriginal Cultural Heritage Services would like a draft copy of the Cortona Mine Report and like to be included in any future Investigations for the Cortona Mine.

I would like to add that I enjoyed the day with John Appleton and hope to do a lot more Aboriginal Culture Heritage investigations with Archaeological Surveys & Reports Pty Ltd.

Yours Truly

RYg.

Robert Young

Principal Consultant

10/5/10

Ngunawal Heritage
Aboriginal Corporation

Lot 114 Ash Road
PRESTONS NSW 2170
Ph: 0412 176 081
Fx: 07 5630 8597
nhac@arindainternet.com.au
ICN 4755
ABN 31494344309

12/06/10

John Appleton
Director
Archaeological Surveys & Reports PTY LTD
16 Curtis Street
Armidale, NSW 2350

Majors Creek Archaeological Investigation

Dear John

The Ngunawal Heritage Aboriginal Corporation was included in the consultation process for the Majors Creek archaeological investigations and also participated in a survey of Lots 101, 102 ard 103 in DP755934, and Lots 1,2,3,4,and 5 in DP986483 on the 04/05/10.
Present on the survey was Tyrone Bell from Buru Ngunawal Aboriginal Corporation, John Appleton from Archaeological Surveys & Reports and myself.

Of the areas that we surveyed we found 3 Aboriginal sites. They consisted of 1 open artefact scatter and 2 isolated artefact sites.The sites were called GTOS 1, GTIS 2 and GTIS 3. The materials found at these sites were silcrete flakes, a silcrete core and a quartz flake.

If approval goes ahead under part 3A "Major Project" and there is to be more drilling at the mentioned sites, then the Aboriginal stakeholders should be able to go back and retrieve the artefacts.

Kind Regards

Graeme Dobson

NHAC Director

BURU NGUNAWAL
ABORIGINAL CORPORATION

ABN : 24 059 704 833

25 May 2010

Cortona Resources Limited
c/o R.W.Corkery & Co. Pty Limited
Project Manager Dargues Reef
Suite 15/256 Anson Street
Orange NSW 2800

CULTURAL HERITAGE INVESTIGATION

Thank you for the opportunity to undertake an Aboriginal Cultural Heritage investigation program at the Majors Creek for evidence of Aboriginal occupation by the local Ngunawal people, who are the Traditional Owners. As you may appreciate any planned work to be undertaken in the area that lies within our tribal boundaries will impact on our cultural heritage. We therefore appreciate that the proper protocol of advising and consulting with us has occurred.

As the Traditional Carers for the area known as Ngunawal we wish to acknowledge the assistance of the other groups with an interest in Cultural Heritage issues here on Ngunawal Country and wish to advise that the Ngunawal Traditional Owners alone reserve the right to provide advice on the cultural heritage management for all sites and artefacts that come under our jurisdiction as the Ngunawal people.

On the 4th of May 2010 the inspection was carried out by our representatives, accompanied by John Appleton, Archaeological Consultant. Results of this inspection will be provided by the consultant archaeologists that will include comment by us.

Please find attached our invoice for payment of services rendered. If you have any queries in relation to this matter please contact me.

Yours faithfully

Wally Bell (Ngunawal TC)
Chair

PO Box 6900, CHARNWOOD ACT 2615 Ph: 02 62591672 Fax: 02 6258 1264 Email: walbell@bigpond.net.au

BURU NGUNAWAL ABORIGINAL CORPORATION

ABN : 24 059 704 833

31 August 2010

Archaeological Surveys & Reports Pty Ltd
16 Curtis Street
ARMIDALE NSW 2350

Attention: Mr John Appleton

Dargues Reef Gold Project
Aboriginal Cultural Heritage Assessment

Thank you for providing documentation in relation to the proposed Dargues Reef Gold Project. We welcome the opportunity to provide comment for the proposed works prior to any commitment being made as to the management requirements by Buru Ngunawal Aboriginal Corporation (BNAC) as the Traditional Owners. As we continually state, any planned work to be undertaken in the area that lies within our tribal boundaries will impact on our cultural heritage. We, therefore, appreciate that the proper protocol of advising and consulting with us has occurred.

As the Traditional Carers for the area known as Ngunawal, we wish to acknowledge the assistance of the other groups with an interest in Cultural Heritage issues on Ngunawal Country and wish to advise that the Ngunawal Traditional Owners alone reserve the right to provide advice on the cultural heritage management for all sites and artefacts that come under our jurisdiction as the Ngunawal people.

Having read the draft documentation, BNAC wish to add the following comments to the recommendations for works that will impact Aboriginal sites.

A copy of those recommendations as follows states:

The Proponent is advised that they are legally obliged to comply with the provisions of the National Parks and Wildlife Act 1974, which are summarised as follows.

> *The owners, and their employees, earthmoving contractors, subcontractors, machine operators and their representatives, whether working in the survey area or elsewhere, should be instructed that in the event of any bone or stone artefacts, or discrete distributions of shell, or any objects of cultural association, being unearthed during earthmoving, work should cease immediately in the area of the find.*

PO Box 6900, CHARNWOOD ACT 2615 Ph: 02 62591672 Fax: 02 6258 1264 Email: walbell@bigpond.net.au

In the event that any bone cannot be clearly identified by a qualified archaeologist as being of animal remains the police are to be informed of its discovery, and the registered Aboriginal stakeholders, and the Archaeologist, DECCW (Dubbo) advised that the bone is subject to police investigation.

Work should not recommence in the area of the find, until both the police (if the bone has been found) and those officials or representatives have given their permission to do so. Those failing to report a discovery and those responsible for the damage or destruction occasioned by unauthorised removal or alteration to a site or to archaeological material may be prosecuted under the National Parks and Wildlife Act 1974.

BNAC will agree with the proposed actions to be conducted only if the following additional requirements are considered and incorporated:

1. *That the cultural significance of the site is taken into consideration as the Ngunawal people would have had exchanges with the Yuin people over time. These activities include ceremonial, tool manufacture (trading) and payback killings, therefore, Big Island Mining Pty Ltd must have the Ngunawal Traditional Owners present at all times during any salvage and subsurface programs;*

2. *That earthmoving contractors, subcontractors and machine operators do not have the experience or expertise in Aboriginal culture heritage to determine stone artefacts etc. Monitoring should be conducted on PADs and new access roads*

Where feasible, impact to all Aboriginal sites and PADs should be avoided by the Dargues Reef Gold Project.

Where impact is unavoidable:

a) *An archaeological salvage program (artefact collection) should be conducted at Aboriginal sites GT OS1, GTOS2, GT0S3, GTOS4 and GTOS5 prior to commencement of construction activities. A s87/90 Aboriginal Heritage Impact Permit (AHIP) is required from the NSW Department of Environment, Climate Change and Water (DECCW) to undertake the salvage program;*

b) *An archaeological subsurface testing program should be conducted within the affected sections of the PADS associated with sites GTOS1, GTOS2 and at GTOS4.*

   This program should aim to:

   - *Determine the extent and nature of the deposits to be disturbed by construction of the gold mine;*

   - *Characterise the nature of any archaeological deposits encountered (within the limitations of the sampling and processing methodology);*

- *Identify the need for any further archaeological work, such as salvage excavation; and*

- *Provide, if necessary, any appropriate management and mitigation recommendations.*

A s87 Aboriginal Heritage Impact Permit (AHIP) is required from the NSW Department of Environment, Climate Change and Water (DECCW) to undertake the subsurface testing program.

Agreement to the Aboriginal Cultural Heritage Assessment is based on the understanding that these additional requirements are accepted, otherwise alternative arrangements will need to be negotiated.

On 4 May 2010, the survey of lots 101,102, and 103 in DP755934 and lots 1,2,3,4, and 5 in DP986483 was carried out by BNAC's representative, Tyronne Bell, with fellow consultants Mr John Appleton of Archaeological Surveys and Reports Pty Ltd and Mr Graeme Dobson of Ngunawal Heritage Aboriginal Corporation.

BNAC would have preferred the opportunity to investigate the entire survey area of 403ha. However, due to the field survey roster, BNAC can only provide comment on the lots mentioned above which were investigated by our representiative.

Thank you again for the opportunity to provide comment. We look forward to working with you collaboratively on this project.

Yours faithfully

Tyronne Bell
Director/Senior Sites Officer

Cc Mr Mitchell Bland
R. W. Corkery & Co.

DECCW

Ngunawal Heritage
Aboriginal Corporation

Lot 114 Ash Road
PRESTONS NSW 2170
Ph: 0412 176 081
Fx: 07 5630 8597
ngunawalhac@gmail.com
ICN 4755
ABN 31494344309

30 August 2010

John Appleton
Archaeological Surveys & Reports Pty Ltd
16 Curtis Street
Armidale NSW 2350

Dargues Reef Gold Project – Aboriginal Heritage Assessment

Dear John,

Thank you for forwarding the Ngunawal Heritage Aboriginal Corporation a copy of the Aboriginal Heritage Assessment draft report.

We agree with the recommendations in the Archaeological Investigations and confirm that 5 sites were located within the study area consisting of three open artefact scatters and two isolated finds.

Any identified Aboriginal artefacts (such as stone artefacts) by way of a Care Agreement should be collected to allow them to be managed as per the wishes of the Aboriginal groups.

The artefacts should be relocated in an undisturbed area in the vicinity of the completed development – the specific location to be determined by the registered Aboriginal stakeholders.

It is well documented that many Aboriginal pathways existed between Coastal and Mountainous regions of the project area.

NHAC believes that a heritage strategy consistent with current guidelines, requirements and the wishes of the Aboriginal stakeholders to ensure duty of care to all Aboriginal Heritage will provide a positive outcome for all parties involved.

If you require any further information please do not hesitate to contact me.

Kind Regards

Dean Delponte
Director

Avoidance of any Aboriginal Heritage Sites will always provide the best outcome

Batemans Bay Local Aboriginal Land Council
PO Box 542
BATEMANS BAY NSW 2536
Phone: (02) 4472 7390
Fax: (02) 4472 8622
Email: bblalc@bigpond.com
ABN: 38 653 930 983

***"The objects of BBLALC are to
Improve, protect and foster the best interests
Of all Aboriginal persons within the Council's area"***

Mr. John Appleton
16 Curtis St
Armidale, NSW 2350
20 August 2010

Dear John

Re Dargues Reef Gold Project, Protection of Aboriginal Culture and Heritage,

I write in reply to the opportunity provided to Batemans Bay Local Aboriginal Land Council (BBLALC) to accompany you on the Archaeological Investigation of Lots 101, 102 and 103 in DP 755934, and Lots 1234 and 5 in DP 986483, Majors Creek.

Our sites worker Casey Smith has provided a report attached below

Given the discovery of more artefacts BBLALC believes that site monitoring is appropriate for any ground disturbance to a depth of four meters on site if the project is to proceed. I ask that you contact BBLALC to organize a sites officer. Our rates are $66 an hour with a minimum call out of three hours plus travel time to Majors Creek from BBLALC which is an hour each way.

I enclose our invoice for the sites work and report writing.

I have emailed this copy and will fax a signed copy for your records, report.

Yours sincerely,

Mal MacCallum
CEO

Batemans Bay Local Aboriginal Land Council
PO Box 542
BATEMANS BAY NSW 2536
Phone: (02) 4472 7390
Fax: (02) 4472 8622
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Mr. John Appleton
16 Curtis St
Armidale, NSW 2350
20 August 2010

Dear Mr. Appleton,

RE: Dargues Reef Gold Project

As a representative of the Batemans Bay Local Aboriginal Land Council and a Traditional owner of Walbunja country, I was invited to Majors Creek archaeological investigations and participated in surveys of major creek Dargues Reef Gold Project on Thursday 6th May 2010.

On the day I met with you and a representative from Bega and we surveyed the required areas. I found two artefacts on one site, GPS. N, 6061824 E, 0749711.

It is my opinion as a sites officer for the Batemans Bay LALC and traditional owner of the Walbunja country that any additional Aboriginal artefact site found should be assessed by the traditional owners of the area within the boundaries as provided by the NSW ALC and Native Title Services of the traditional owners, Walbunja people. In saying that I believe Majors Creek is within Walbunja country in turn within Batemans Bay LALC jurisdiction, and so any Aboriginal artefact found on site should be assessed by the traditional owners of those boundaries.

BBLALC is the appropriate peak Aboriginal organization to advise you in that context. Salvage opportunity of additional artifacts in the path of any ground disturbance would be recommended and greatly appreciated.

Thank you

Casey Smith
Sites Worker BBLALC
20/8/10

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Appendix xiv

Director Generals Requirements

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Table xiv.3
Director-General's Requirements
(Department of Planning – 23 April 2010)

Paraphrased Requirement	Relevant Section(s)
HERITAGE	
Both Aboriginal and non-Aboriginal;	Entire Document

Table xiv.4
Coverage of Environmental Issues

Government Agency	Paraphrased Requirement	Relevant Section(s)
ABORIGINAL HERITAGE		
Department of Environment, Climate Change & Water (01/04/10)	The EA for the project should address and document the information requirements set out in the *"Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation"*.	Entire Document
Council (06/04/10)	The assessment and consultation should identify the nature and extent of impacts on Aboriginal cultural heritage values across the study area; the extent and significance of each Aboriginal site and value located; formulate actions to mitigate impacts on Aboriginal cultural heritage values in association with the Aboriginal communities; and develop long term management recommendations for the Aboriginal cultural values located in the study area. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented.	6 to 8
	Adequate heritage impact assessment of the site, due to existing mining relics being present and potential pre-European occupation, and identify measures to protect any significant sites, structures and artefacts should be identified in the EIS.	N/A

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