

Appendix 28

Indigenous Cultural Heritage,
Birri Native Title Area

**BYERWEN PROJECT DESK TOP REPORT,
INDIGENOUS CULTURAL HERITAGE,
BIRRI NATIVE TITLE AREA**

by

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1. INTRODUCTION

This report presents the results of background cultural heritage research and analysis of the Birri portion of the Byerwen Coal Project area, Central Queensland (Figure 1). The area of focus for this report lies in the northern portion of the Queensland Central Highlands on the 100 000:1 Topographic Map of Byerwen 8455 (Ed. 1). The area of focus consists of 22,697 hectares of land held within Mining Lease Applications (MLA) 10355, 10356 and 10357 and Exploration Permits for Coal (EPC) 614 and 739.

The Byerwen Coal Project consists of MLA 10355, 10354 and 10353 and is situated immediately to the west of Newlands mine and to the north of Suttor Creek and Wollombi mines held by Xstrata. The project area is within both the Isaac Regional and Whitsunday Regional Councils. It lies over two registered Native Title claims, Birri (QC98/12-QUD6244/98) in the northern half and Jangga (QC98/10 - QUD6230/98) in the southern half. All of the Birri portion of the project area is within the Whitsunday Regional Council.

The total area of focus for this report covers portions of Byerwen, Weetalabah, Fig tree, Suttor Creek, Suttor North, Wollombi Lancewood, Newlands, Wards Well and Talwood pastoral holdings. The Birri section covers only the Byerwen, Weetalabah and Fig Tree portions.

A report on the Jangga portion of the Byerwen project has already been finalised (Hatte 2011). That report contained a great deal of background information that is also relevant to the Birri portion of this project and it will be reproduced here to ensure that each is a stand alone report.

1.1 Terms of Reference

The goal of the report is to provide detailed background information relating to existing knowledge of:

1. types of Cultural heritage finds and significance of such finds on areas surrounding the Byerwen Project, and
2. known areas of Cultural Heritage Significance within or around the area of the Byerwen Project;

The report aims to provide information to allow the Birri People and Byerwen Coal to focus survey and clearance activities on areas within the Byerwen Project area that have a higher probability of Cultural Heritage finds and to identify areas within the Byerwen Project Area that have a high, medium and low likelihood of subsurface finds.

The report will form the basis of a broader cultural heritage chapter to be prepared for the Byerwen Coal Project Environmental Impact Statement (EIS) and will inform the current discussions regarding the Byerwen Project CHMP including cultural heritage surveys.

This study has engaged in the following tasks:-

1. Searches of:

- cultural heritage information contained in the cultural heritage register and database held by the Cultural Heritage Coordination Unit within DERM;
- existing Cultural Heritage survey work performed in areas immediately surrounding the Byerwen Coal Project; and,
- any other information relevant to meet the goals of the report.

2. Assessment and analysis of data derived from the searches above;

3. The production of a report that describes the existing indigenous cultural heritage values that may be affected by the Byerwen Project based on all of the above.

4. The production of a map delineating:-

- known areas of Cultural Heritage Significance within and around the area of the Byerwen Project;
- The assessed likelihood of subsurface finds (high, medium or low) in the area of the project based on experience at surrounding mine sites in Birri Country.

The report will also provide information relating to the most probable locations for finds (eg. soil types, geographic features (drainage lines) based on experience during cultural heritage surveys on area surrounding the Byerwen Coal Project.

1.2 Description of Project Area

The Birri portion of the project area consists of the following areas:-

ML10355 (area 5411 hectares) extends west from near the Byerwen homestead towards the Leichhardt Range. The eastern and southern sections have been mainly cleared for cattle grazing but the central and northern portions are less cleared and more rugged, consisting of mesas and Acacia forest.

ML 10356 adjoining the northern end of ML70434 along the eastern side of the Leichhardt Range and comprising mesas and valleys (area 2203 hectares), The Collinsville Elphinstone Road crosses the southern edge of this parcel.

ML10357 adjoining the northern end of ML70436 is a long thin parcel approximately 2km (E/W) by an average of 9km (N/S), a total area of 1,898 hectares. It cuts a north/south transect through the Leichhardt Range along the western edge of ML10355 and ML10356.

It is also a fairly rugged area of mesas and hills.

In addition the area of focus for this report has also included Birri country located within the wider area of **EPC 739**. EPC739 (the northern section) lies along the northern end of ML10355 and ML10357. The north western extent of this area lies to the north of the Bowen Development Road.

1.3. Climate, Topography and Geology

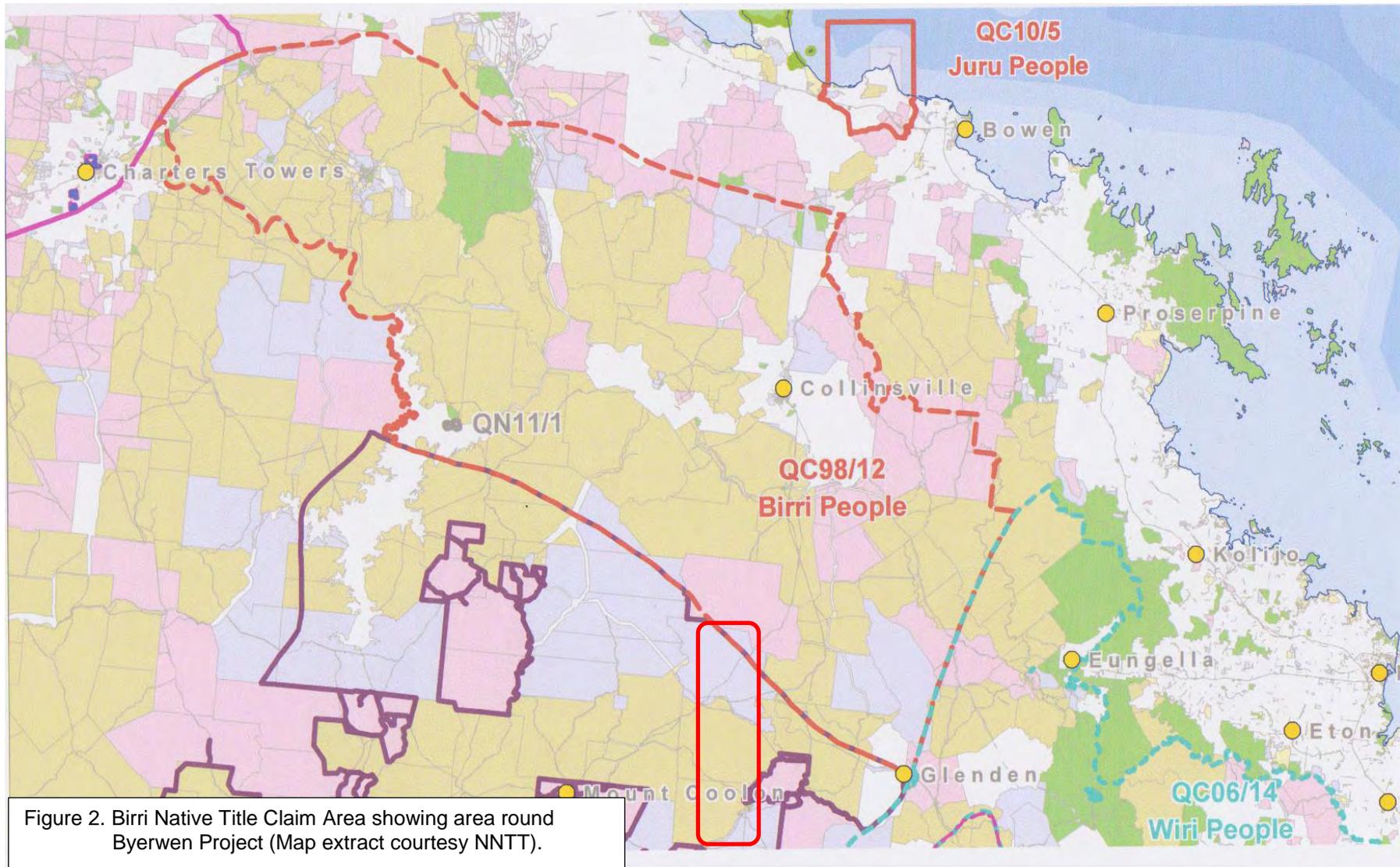
This region is characterised by a hot, dry climate for most of the year with rainfall generally occurring in the summer months from November to March. This region is drought prone and has suffered several severe and prolonged droughts throughout its settlement history (O'Donnell 1989). Temperatures well in excess of 32°C are common in summer, while winter frosts occur relatively frequently (Queensland Resources Atlas 1980: 24).

The northern end of the study area lies west of Newlands Coal Mine and within the Leichhardt Range. The southern end lies near the Denham Range. The study area passes through land with elevations between 350 metres ASL near the Leichhardt Range at the northern end and 200 metres ASL towards the south eastern end.

The Leichhardt Range is the watershed for waters which are part of the vast Burdekin River system. The Denham Range is the watershed for waters flowing easterly into the Isaac River (part of the Fitzroy system) and westerly into the Suttor River (part of the Burdekin system) and it also delineates the approximate boundaries of the registered Native Title claims in the region.

The general geology of the area has been described by Malone (1969). The northern (Birri) sector of the area adjacent to the Leichhardt Range lies within the Tertiary Suttor formation which consists mainly of quartz sandstone and sandy and silicified clay stone. The topography of the Suttor Formation appears as tablelands, mesas and rubble covered rises covered in *Acacia* forests. Province 5 (The Wyarra Hills) of the Queensland Brigalow Belt contains the Leichhardt Range and surrounding region (Sattler and Williams 1999:11/79). The predominant vegetation consists of old *Acacia Shirleyi* (Lancewood) and *Acacia catenulata* (Bendee) forests, and open Eucalypt woodland. The two *Acacia* species occupy the same environmental niche (sandy soils on eroded tertiary landforms and weathered sandstone outcrops). The wood of both was used traditionally to manufacture implements and weapons (Sattler and Williams 1999:11/6).

Clearing of the old *Acacia* forests for pasture has been responsible for considerable modification to portions of the natural environment of the study area and regrowth is evident over much of these areas.



2. CULTURAL HERITAGE LEGISLATION

2.1 Burra Charter

Indigenous Cultural Heritage in Queensland is protected by *The Aboriginal Cultural Heritage Act (2003)*. Non-Indigenous and post-contact Indigenous Cultural Heritage is protected by the *Queensland Heritage Act (1992)*. Like all Australian states and territories, Queensland legislation derives its philosophical principles from *The ICOMOS Charter for the Conservation of Places of Cultural Significance (The Burra Charter) 1977*. The following definitions are Central to the Charter:

- ‘Conservation’ means all the processes of looking after a place so as to retain its *cultural significance*’ (Article 1.4).
- Cultural significance is defined as meaning ‘*aesthetic, historic, scientific or social value for past, present or future generations*’ (Article 1.2).

The Burra Charter has not always been found appropriate for places of significance to Aboriginal people so it has been adapted in the ‘*Guidelines for the Protection, Management and Use of Aboriginal and Torres Strait Islander Cultural Heritage Places*’ drafted by the Australian Cultural Development Office. It lists seven principles that should ideally guide the process of Aboriginal cultural heritage investigation and management:-

1. Aboriginal...people have the right to be involved in decisions affecting their cultural heritage, and in the on-going management of their sites and heritage places. (Their) involvement in management should be continuous.
2. Decisions about cultural heritage places should be made as a result of a conscious and logical planning process which is guided by and maintains the cultural significance, taking into account all the management issues affecting the place and identifying the objectives for the management of the place.
3. Identifying which Aboriginal...people have rights to speak for the place, and/or have interests in the place must be done at the beginning of the decision-making process.
4. The concerns of all interest groups must be taken into account, and the interests of the relevant Aboriginal ...group are paramount.
5. Decisions should be taken at the local level. Planning should be directed by the relevant Aboriginal community and all main interest groups and organisations should be fully involved. This should be supported by competent technical planning and effective negotiation processes.

6. Actions affecting places should be considered only after the cultural significance of the place has been established and agreed to by its relevant indigenous community or owners, and a Statement of Objectives has been agreed upon.
7. Records of places, decisions made about them and about what is done at heritage places should be kept unless it is not culturally appropriate. Storage of and access to information must be determined by the decision-making group.

2.2 Queensland State Legislation

2.2.1 *The Aboriginal Cultural Heritage Act 2003 (Queensland)*

Under this Act 'Cultural Heritage' is defined as anything that is:-

- (a) a significant Aboriginal area in Queensland; or
- (b) a significant Aboriginal object; or
- (c) evidence, of archaeological or historic significance, of Aboriginal occupation of an area of Queensland (Section 8).

Aboriginal Cultural Heritage includes:-

- archaeological sites (such as artefact scatters, hearths, stone tool knapping areas, scarred trees and stone arrangements);
- places that have traditional stories or traditional knowledge associated with them;
- historically important places (such as old built dwellings, stockmen's' camps or tracks);
- places that are important for other reasons including contemporary ones (eg. food or ochre-getting places or places used for recreational purposes).

The Queensland Department of Environment and Resource Management (DERM) is the administering and compliance authority of *The Aboriginal Cultural Heritage Act 2003*. The following principles are fundamental to its operation under the Act:

- recognition, protection and conservation of Aboriginal cultural heritage should be based on respect for Aboriginal, cultural and traditional practices;
- Aboriginal people should be recognised as the primary guardians, keepers and knowledge holders of Aboriginal cultural heritage;
- it is important to respect, preserve and maintain knowledge, innovations and practices of Aboriginal communities and to promote understanding of Aboriginal cultural heritage;
- activities involved in recognition, protection and conservation of Aboriginal cultural heritage are important because they allow Aboriginal people to reaffirm their obligations to "law and country";

- there is a need to establish timely and efficient processes for the management of activities that may harm Aboriginal cultural heritage.

Under The Act, a significant Aboriginal area or object must be significant to Aboriginal people because of either or both of the following:

- (a) Aboriginal tradition;
- (b) the history, including contemporary history, of any Aboriginal party for the area (Sections 9, 10).

Section 11 of the Act stipulates that *if a particular object or structure is evidence of Aboriginal occupation, the area immediately surrounding that object etc is also evidence of Aboriginal occupation...the object or structure cannot be separated from its context without destroying or diminishing the object or structure's significance as evidence of Aboriginal occupation.* The accent of this legislation is thus on the protection of areas of cultural significance rather than just the significant objects or items themselves.

Section 12 of the Act provides information about identifying significant Aboriginal areas:-

- It is *not necessary for an area to contain markings or other physical evidence indicating Aboriginal occupation or otherwise, eg. the area might be a ceremonial place, a birthing place, a burial place or the site of a massacre.*
- *If significant objects exist in the area and their significance is intrinsically linked to the location, then the objects themselves make the place significant and if appropriate both the area and objects become significant.*
- *In identifying a significant area, authoritative information may be had from anthropological, biogeographical, historical and archaeological sources.*

2.2.1.1 Extent of Protection

The Act exerts blanket protection over all Indigenous cultural heritage in Queensland regardless of the Native Title status of that land. Cultural Heritage items and place of significance to Aboriginal people may exist in areas where Native Title has been extinguished eg. freehold land.

2.2.1.2 Duty of Care Guidelines

The Act contains a general Duty of Care to take all reasonable and practical steps to be aware of, and to avoid harming, Aboriginal cultural heritage. Section 23(1) requires that a person must exercise due diligence and reasonable precaution before undertaking an activity that may harm Aboriginal heritage. Everyone has a responsibility to exercise Duty of

Care. Duty of Care Guidelines attached to The Act set out key indicators of compliance which include, but are not limited to, the following:-

- proof of consultation with the registered native title applicants,
- cultural heritage studies undertaken in association with the registered native title applicants,
- searches of cultural heritage information contained in the cultural heritage register and database held by the Cultural Heritage Coordination Unit within DERM,
- a Cultural Heritage Management Plan (CHMP) or other agreement with the registered native title applicants.

2.2.1.3 Penalties

There are substantial penalties for failing to safeguard the Aboriginal cultural heritage values of Queensland. These penalties consist of:

Monetary penalties:

- \$75,000 for an individual
- \$750,000 for a corporation;

Injunctions, issued by the Land and Resources Tribunal;

Stop orders, issued by The Minister, for an activity that is harming or is likely to harm Aboriginal cultural heritage objects or values.

2.2.1.4 Cultural Heritage Management Plan

The CHMP is a key tool in the process of heritage management. Management plans describe the heritage significance of a place and the policies, agreed by all parties, required to retain these values.

Wherever an Environmental Impact Statement (EIS) is undertaken, a cultural heritage management plan is mandatory if the project requires some form of permit, approval or licence. This means that high-impact developments will be able to go ahead only when an effective CHMP has been agreed between the proponent and Native Title Party/ies, and the CHMP is registered with the State Authority.

Where the legislation does not automatically require a mandatory cultural heritage management plan, the legislation allows for the development of voluntary CHMPs as a measure to encourage industry to adopt best practice. Any activity undertaken in accordance

with a cultural heritage management plan approved under the legislation satisfies the Duty of Care requirement.

2.2.1.5 The Register and Site Database

A register of Aboriginal Cultural Heritage is maintained within the Cultural Heritage Unit, Department of Environment and Resource Management (DERM). This register contains information that has been collected by the Environmental Protection Agency between the 1930s and the commencement of the Act in early 2004. This information is confidential and basic details will be provided to authorised persons on an 'as needs' basis. A database of Aboriginal Cultural Heritage consisting of information collected since the *Aboriginal Cultural Heritage Act 2003* commenced is also maintained within the Unit.

2.2.2 The Queensland Heritage Act 1992

This Act provides for the conservation and protection of all places that derive from the post-European contact history of Queensland, including Indigenous places (eg. stockmen's camps, buildings constructed for Aboriginal people, post-contact Aboriginal graves etc). Under this Act, places and items must be entered into a Queensland Heritage Register in order to be protected. Substantial penalties may apply for damage to a place or items that has been entered on the Register.

As from 2005 the Queensland Heritage Council adopted the revised Burra Charter (1999) as a guideline for making decisions under the Queensland Heritage Act 1992.

In order for a place to be entered onto the Queensland Heritage Register (Section 23 [1]) it must satisfy at least one of the following significance criteria:

- important in demonstrating the evolution or pattern of Queensland's history;
- important in demonstrating rare, uncommon or endangered aspects of Queensland's heritage;
- potential to yield information that will contribute to an understanding of Queensland's history;
- important in demonstrating the principal characteristics of a particular class of cultural places;
- important in exhibiting particular aesthetic characteristics valued by the community or a particular cultural group;

- important in demonstrating a high degree of creative or technical achievement at a particular period;
- a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- a special association with the life or work of a particular person, group or community of importance in Queensland's history.

Under Section 89, Part 9 of the *Queensland Heritage Act 1992*, a person who discovers a thing the person knows, or ought reasonably to know, is an archaeological artefact that is an important source of information about an aspect of Queensland's history must give the Chief Executive a notice under this section. The notice must:-

- (a) be given to the Chief Executive as soon as practicable after the person discovers the thing; and
- (b) state where the thing was discovered; and
- (c) include a description or photographs of the thing.

Penalties for not doing so may be high (100 penalty points).

2.3 Federal Legislation

Two pieces of federal legislation relevant to Queensland Indigenous Cultural Heritage are *The Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)* and the *Aboriginal and Torres Strait Islander Heritage Protection Act 1986*. These Acts is summarised below.

2.3.1 *Environment Protection and Biodiversity Conservation (EPBC) Act 1999*

A new Federal heritage system came into effect on 1 January 2004 to protect Australia's national heritage places. Nationally important heritage values now have legal protection under The Environment Protection and Biodiversity Conservation (EPBC) Act 1999, administered by the Federal Department of Sustainability, Environment, Water, Population and Communities (SEWPAC).

Under this system, national heritage joins six other matters of national environmental significance (NES matters) already specifically protected under the EPBC Act. By law, no one can take any action that has, will have, or is likely to have, a significant impact on any of these matters without approval from the Australian Government Minister for the Environment

and Heritage. There are severe penalties for those who do. An action includes a project, development, undertaking, an activity, or series of activities.

The main elements of the heritage system include:-

- the creation of an advisory body, the Australian Heritage Council;
- the creation of a National Heritage List that records places with outstanding natural and cultural heritage values that contribute to Australia's national identity.
- the creation of a Commonwealth Heritage List that comprises natural, Indigenous and historic heritage places owned or managed by the Australian Government.
- retention of the existing Register of the National Estate.

The laws also established the Australian Heritage Council, which replaced the Australian Heritage Commission as the Australian Government's independent expert advisory panel on heritage matters. The Australian Heritage Council consists of a Chair and six members, including two Indigenous people with appropriate heritage experience or expertise.

If the Minister decides that the action is likely to have a significant impact on a matter of national environmental significance, then the action requires approval under the EPBC Act, and vice versa. If the Minister's decision is that an action does not require approval, a person will not contravene the Act if the action is taken in accordance with that decision. If the Minister's decision is that an action requires approval, then an environmental assessment of the action must be carried out. The Minister decides whether to approve the action, and what conditions (if any) to impose, after considering the environmental assessment.

When a place that may have Indigenous heritage values is nominated to the National or Commonwealth Heritage Lists, the Australian Heritage Council must seek the views of Indigenous people with rights or interests in the place as part of its assessment. The Council must present these Indigenous views to the Minister so he/she can take these into account when making decisions as to the listing of the place.

Under the EPBC Act, there are penalties for anyone who takes an action that results, or will result in, a significant impact on the national heritage values, to the extent they are Indigenous heritage values, of a place. The laws also enable Indigenous people to seek Federal Court injunctions against any activities that have a significant impact on the national Indigenous heritage values of a listed place.

Indigenous people will be involved in developing management plans for places with Indigenous heritage significance on the National or Commonwealth Heritage List. National heritage places on Indigenous land will be managed through conservation agreements, which will operate in the same way as Indigenous Protected Areas.

2.3.2 *Aboriginal and Torres Strait Islander (ATSI) Heritage Protection Act 1986*

The purpose of the Aboriginal and Torres Strait Islander (ATSI) Heritage Protection Act 1986 is to preserve and protect areas and objects of particular significance to Aboriginal Australians from injury or desecration. This legislation can provide particular protection for sacred sites. Any steps necessary for the protection of a threatened place are outlined in a gazetted Ministerial Declaration (Sections 9 and 10), and this can include the prevention of development. As well as providing protection to areas, it can also protect objects by Declaration, and in particular Aboriginal skeletal remains (Section 12). Heavy penalties may be levied in the case of contravention of provisions of a Declaration (Section 22). Although this is a Federal Act, it can be invoked if a State is unwilling or unable to provide protection for such sites or objects.

3 CULTURAL SIGNIFICANCE ASSESSMENT

The assessment of cultural significance and a statement of cultural significance are essential prerequisites in making decisions about the future management of a place (Burra Charter 1999: Guidelines Section 1.3). In making an assessment of significance it is necessary to understand the nature of the 'fabric' or all the physical material of the place by close, systematic examination, preferably supplemented by other information, for example documentary (including archival) or oral (*Burra Charter 1999: Definitions, Article 1*). It is also recognised that 'significance' may reside in the place itself, its setting, use, associations, meanings, records, related places and objects (Burra Charter 1999: Notes on the 1999 revisions to the Burra Charter: Note 1). Article 5 states that '*Conservation of a place should take into consideration all aspects of its cultural significance without unwarranted emphasis on any one aspect at the expense of others*'. This examination should ideally be supplemented by other information about the place, eg., from Indigenous people who are the primary source of information on the value of Indigenous heritage places and how they are best conserved.

3.1 Criteria for Significance Assessment

Thematic criteria are applied in making an assessment of types of significance. Comparative criteria are applied in order to assess the degree of significance. Following is a short description of each type.

3.1.1 Thematic Criteria

Scientific (archaeological) significance

The scientific significance of a place is assessed according to its research potential. Research potential refers to the potential of an object, a site or an area to enhance our understanding of past human activities or on past environmental conditions that may not be available in documentary sources (eg. previous research or oral histories). Archaeological sites can supplement other information on local histories by identifying physical relics of human activities, past climates and vegetation patterns, or past diets and resources by the identification and analysis of plant, shell and bone remains. Such information may be used to answer specific questions or more general and theoretical ones.

Historical significance

An object or area may be significant for its associations with important people, an historical event or historical processes. The historical significance of archaeological objects and areas relates to the importance of particular periods of occupation of an area and includes the historical links of an object or area. It may also be important in providing tangible evidence of a particular phase in the Aboriginal /European contact period in Queensland.

Aesthetic significance

An area or object may be significant for its particular style, craftsmanship, quality, design or beauty. Aesthetic significance may not always be relevant to the cultural heritage significance of archaeological remains but it may be relevant for archaeological objects and areas that may also feature above ground remains, or other associated structures. This type of significance may consider how an object or area is situated within the wider landscape.

Technological significance

Sites and artefacts may yield information on the use of particular technologies, providing evidence of technological achievement at a particular period by consideration of particular features or attributes.

Social (cultural) significance

This type of significance relates to the importance of an object or area to the community. To Aboriginal people all places that contain Aboriginal archaeological material may be culturally significant as this material within its context provides direct tangible links with the past and it is likely to inspire strong feelings of identification with the object or area. A place that has no archaeological component may be significant because it is a story place or for some past event for some inherent spiritual quality.

The criteria used by Aboriginal people to assess cultural significance may be quite different from criteria that address other types of significance. Aboriginal people may base significance on traditional, historical, contemporary and other cultural values, but comparative criteria such as rarity, uniqueness and representativeness are often not relevant in their significance assessments, and the Aboriginal cultural values of a site or place may override other forms of significance assessment. The assessment of Aboriginal cultural heritage significance of the items recorded in this study can be made only by the Traditional Owners.

3.1.2 Comparative criteria

Representativeness

Representativeness refers to the ability of one site or a sample of sites to represent as accurately as possible the range and frequency of site types in a particular area. The notion of representativeness is also related to the maintenance of site diversity.

Rarity

An object or area may be significant through the presence of rare, unusual or particularly good examples of a specific type of object or feature. Usually the rarer a site, the greater is its significance. In areas where physical, archaeological remains are rare, all sites must be considered significant until proven otherwise. The following would also fall into this category:-

- older sites,
- those that contain attributes not found elsewhere,
- those in which the archaeological material is unusually well preserved.

Intactness, Condition, Integrity

The intactness, condition, or integrity of objects or an area may influence levels of significance. For any given place significance will be greater where evidence of its association, or the event that created it, survives *in situ* rather than where it has been changed or evidence of context does not survive.

Archaeological Potential

Objects or areas may have the potential to yield additional information through archaeological investigation which would not be readily available through other research techniques. The scientific significance of a site generally increases as its potential to provide information increases. The significance of *in situ* remains may be enhanced through their capacity to demonstrate a particular function, event, way of life, or use. Areas with undisturbed, *in situ* objects or remains do have a higher interpretive potential than those that have undergone disturbance.

4. CULTURAL HERITAGE BACKGROUND

4.1 Ethno-history and post-contact Aboriginal History

The following primary and secondary ethno-historical, anthropological and historical sources have been used in the compilation of this report:-

- Curr (1886-7), Tindale (1974) and Terrill (1993) for anthropological/linguistic and cultural information on traditional Aboriginal people in the region;
- Leichhardt (1847), Wills (1892) and Murray (1860, 1863) for journals and diaries describing people at contact in the region;
- Brayshaw (1977 and 1990), Loos (1982), and Breslin (1992) for Aboriginal historical research on this region.

Tindale's map of tribal boundaries delineates the northern part of the study area as lying within the traditional territory of the Birri people (Alt. names Biri, Birigaba, Biriaba, Breeaba, Perenbba, Perembba). These lands are described by Tindale as extending from '*...the Bowen River north to junction with Burdekin River, east to Clarke Range, west to Leichhardt Range, south to Netherdale, an area of 4,200 sq. m (10,900sq. km.) (Tindale 1974: 166).* Research undertaken for native title has more recently resulted in amendments to Tindale's boundaries but his work still remains a valuable primary source of information. Hodgkinson and Scott in Curr (1886) recorded vocabulary, customs, marriage rituals and stories of clan groups within the area. Terrill (1993) undertook a description, analysis and reconstruction of the language defined as 'Biri' which she said covered a number of Tindale tribes (Yilba, Biri, Jangga, Wiri, Yambina, Gangalu and Garingbal) within an area extending from the Burdekin, west to Natal downs, south to Springsure and Rolleston east to Duaringa, Mackay and Collinsville. Of these she indicated, on the basis of shared vocabulary (90% of known words), that the two were traditionally very closely related. This close relationship is borne out in the fact that some families claim shared Birri and Jangga descent and are parties to both Native Title claims (Terrill 1993: 115).

Leichhardt's expedition was the first of several early exploratory parties to pass through this region in the middle of the 19th century. His route took the party northwards near the western edge of the Birri traditional lands (see Figure 3). Departing from the Darling Downs in October 1844 in search of an overland route to Port Essington on the north coast of Australia,

Leichhardt and John Gilbert (a member of his party), recorded the first European impressions of landforms, geology, soils, flora and fauna in this region in March 1845.

The party had a number of encounters with people along the Suttor River, on 14th, 17th, 22nd, 23rd and 25th March 1845. In the first encounter, a man and his pregnant wife hailed Charley, one of the Aboriginal members of the party, but on seeing Mr. Roper, they climbed adjacent trees.

'...As Mr Roper moved around the base of the tree, in order to look the Blackfellow in the face, and to speak with him, the latter studiously avoided looking at Mr Roper, by shifting round and round the trunk like an iguana. At last he answered the enquiry for water, by pointing to the W.N.W. and averted their faces.'

Further down the river, a group of people who were camped at a waterhole fled at their approach:-

...the men driving the shrieking women and children before them. Upon Mr Roper galloping after them, one athletic fellow turned round and threatened to throw his boomerang; at this sign of hostility Mr. Roper prudently retired. Kangaroo and other nets made of some plant and not of bark, koolimans, boomerangs, waddies, and a fine opossum cloak were found at the camp, but were left untouched by our companions.
(Leichhardt 1847:179-180).

The party passed in the vicinity of the project area between mid-March 1845 (see Figure 3).

An entry on 17th March describes coming on:-

a three mile long, broad sheet of water in a dense Bauhinia and Brigalow (Bricklow) scrub, probably in the main channel of the Suttor River, which was host to swarms of ducks, pelicans, land-turtles and shags
(Leichhardt 1847:185).

The party followed a well-beaten path along its banks and noted numerous heaps of mussel shells. Leichhardt called the region of this lagoon 'the lake of the Suttor'. In the same entry he observed that:-

...the natives were very numerous in these parts, and their tracks were everywhere visible. They had even followed the tracks of Mr Gilbert's and Mr. Brown's horses of the preceding day'
(Leichhardt 1847:183).

On March 20th, as they continued down the river they found waterholes 'along the low ridges', then a section where:-

the creek divided into channels, forming large islands of a mile and a mile and a-half in length, covered with scrub, over which freshes had swept...'

then three large waterholes several miles apart. Beside each one they found:-

'recent camps of the natives...and a beaten path from one to the other. One of these holes was crossed by a weir made of sticks for catching fish. Bones of large fish, turtle shells, and heaps of 'muscles', were strewed round the fireplaces...A little later they surprised two women cooking mussels who fled leaving their meal, leaving their dinners to their unwelcome visitors, who quickly dispatched the agreeable repast;. Farther on they saw four men, who were too shy to approach. Charley also, whilst bringing in the horses on the

morning of the 22nd, passed a '...numerous camp, who quietly rose and gazed at him, but did not utter a single word' (Leichhardt 1847:187-188).



Figure 3. Extract of map from Leichhardt's journal showing the party's route through the region and approximate area of Birri (Leichhardt 1847).

From this date until their arrival at the Cape River the party had two more encounters in which they surprised Aboriginal people (1847: 190 and 193-194).

The next recorded visit to the region occurred two years later, in October and early November 1856, when the Gregory brothers' surveying party followed the Suttor River from

its junction with the Burdekin River upstream to the Belyando River (Gregory 1884). The party had two encounters with Aboriginal people. The first was described when they:-

...encamped on a fine grassy flat a quarter of a mile from the Suttor River. Mt. McConnel bearing north 172^o. About 10am we heard some blacks calling in our rear, and soon after came in sight, but would not allow any of the party to approach them, till one of the horsemen cantering up quickly, some of the blacks climbed into trees, where, after making signs to them that it was desirable that they should pursue an opposite route to ours, we left them to descend at leisure... (Gregory 1884:188).

The second occurred five days later further south along the Suttor River, when the party surprised:-

'...some blacks, who decamped into the (brigalow) scrub...' (Gregory 1884:189).

The favourable reports of Leichhardt, Gregory and others resulted in land being tendered for and runs first leased in the early 1860s. Prior to the creation of Queensland as a state, the *New South Wales Land Act* allowed hundreds of square miles to be taken up on a single tender and left unoccupied and unstocked. In 1863 the new Queensland Government made it compulsory for anyone taking up land to stock and occupy it. Following a pattern of settlement throughout Queensland, pastoralists sought out the most fertile areas with permanent water where Aboriginal settlement was also most intensive. As in other newly settled districts, units of Native Mounted Police were installed in strategic locations to 'protect' white settlement by 'dispersing' (shooting) Aborigines who resisted the invasion. Pastoralism arrived into this area in the early 1860s from several directions, overland from the south and by sea via the newly established the most northerly Queensland settlement of Port Denison, now the township of Bowen (1861), established by the explorer and land speculator, George Elphinstone Dalrymple. Bruce Breslin has identified that:-

Dalrymple had no intention of avoiding bloodshed and establishing good communications with the Aborigines. What he said and what he did were often two very different things...[and]...historians did not bother to distinguish his rhetoric from reality. Dalrymple showed from the very beginning that he would arm and alarm the frontier

(Breslin 1992:55)

Loos confirmed the rapidity of white expansion in the area between Bowen and west of present Collinsville region as:-

...within six weeks of Dalrymple's arrival, runs had been taken up in an unbroken 350 miles (560 kilometres) inland [from Port Denison/Bowen] despite the fact that there was intense Aboriginal resistance by the third week of settlement. By the middle of 1862, 454 runs and 31,504 square miles [83,190 square kilometres] had been applied for and; by 1863, almost the whole of the Kennedy District had been settled [by whites].
(1982:29).

Teamsters established routes from Bowen to the inland stations:- to the south-west via Eatonvale to St. Ann's to Bowen Downs (over 450 kilometres, 'as the crow flies'); and to the west/northwest, crossing the Burdekin and then further west, following up the river at the back of the coastal ranges. They were following the tracks of those who had set out to establish runs on Birri and neighbouring lands, who in their turn had followed the ancient pathways established by the local Aboriginal inhabitants. Unfortunately most settlers came expecting trouble. This attitude was probably encouraged, if not created, by Dalrymple, which, as Breslin has identified, became a self-fulfilling prophecy. Both pioneers and historians have unswervingly insisted that the Aborigines at Port Denison demonstrated hostility towards the white invaders from the moment of contact. Close analysis tends to reveal the contrary (Bottoms, T. 2011. Pers. comm.).

Within days of establishing Bowen (Port Denison), Dalrymple was reporting an attack within twenty kilometres of the settlement. A small party of white men who had been exploring Abbot Bay approximately eighty kilometres north west of Bowen reported that a force of 120 Aborigines had shown signs of 'hostile intentions'. As a result of Lieutenant Walter Powell of the Native Mounted Police having four of his troopers desert, Dalrymple reported that 'a number of gentlemen residing here accompanied him as volunteers', contrary to regulations. Needless to say Dalrymple was one of the volunteers and recorded that '*...Within two miles of the settlement I met a party of armed natives and at once dispersed them...*'. Numbers are not mentioned.

In early October the following year (1863), on the banks of the Bogie River, some twenty kilometres upstream from its junction with the Burdekin, nearly a hundred Birri warriors gathered near J G MacDonald's *Strathbogie* station (100 kilometres from Port Denison). The occupants of the station, P Armstrong and a Brisbane Aboriginal employee of the station, Charley, had been forewarned of the attack, but nevertheless had to retreat to their huts amid a hail of spears and missiles. At least two of the Birri warriors were shot dead and several wounded. The Brisbane *Courier* noted:-

'The fight lasted two hours. The defenders were armed with Terry's breech-loading rifles, and they were able to keep up the fire with little intermission.' However, the next day the mob was tracked by a party of people from the neighboring stations, and they got another lesson that will probably deter them from attacking a station again in a hurry. It has been estimated that about twenty-five were killed, and amongst them two runaways or discharged men from the Native Police Force.

Andrew Murray was one of the pastoralists who came up to this region on an exploratory trip in 1860 after he had travelled with John McKay's party and staked out a run near what is now Mackay township. He returned in late 1863/early 1864 with his wife and family to claim land. First settling west of Burton Downs, he received advice from 'the native police that there was some good country some distance away' so he travelled northwest and was the first one to record the vast floodplains of the Suttor River and its tributaries, and Aboriginal people living off the land in the region:-

After following down for about five miles we got out of ridges on to flat, wide open timbered, white-box country, well grassed. On the wide flat, timber grew in varied distances from the creek, back about a mile. It was Brigalow scrub. The scrub had nice patches of salt-bush in it. For miles we travelled on down through good grazing country. The strange part of it was there was not another creek or gully coming into the main creek which was gradually getting smaller in the channel and fewer waterholes. Surely in a country where such phenomenal heavy rains occurred, one wondered where the flood waters go. The only answer was "all over the country for miles on either side". Where the ridges were high, the course of the creek, and the waterholes were large, where the back country was flat the channel of the creek was small. After travelling until about 4:30pm, we came on the first creek coming in from the north east. The water was muddy so called it "Black Creek", crossed it and going down a short distance along the bank of the main creek I saw the first 'nigger' in a shallow lagoon, I told the others and we watched him. He was quite naked and looking intently at the water. He did not see us, but every now and again he would pick up something and slip it into his left hand held against his stomach. We moved quietly on, but he heard and saw us and made off to a big flood-box tree. He dropped what he had been picking up and climbed the tree like a monkey. Looking to see what he had dropped, I noticed a small heap of water crabs crawling about, also two dingo pups about two months old and a small fire in a trench about six inches wide, four or five inches deep and fifteen inches long, a sort of oven he was heating to cook the crabs. The pups ran away. We tried to get information from him about the country, but he was shaking and laughing with fright. A strongly built man. I got McKay's black boy to speak to him. They gabbered away for a while, the language seemed the same, but our boy said he did not understand a word.

He took up land that became two runs, 'Police Creek' and 'Rosetta Creek' (named after the creeks), next to Conway station not far to the west of present Birri land, and in the next two years reported several violent incidents on and near the stations.

When Murray and his family were returning from Bowen after their first delivery of wool in 1865, as they passed through Conway they were told that the cook and a boy collecting rams had been speared. Retribution was swift when the native police under Fred Murray tracked eight Aboriginal men 70 miles to the Cape River and shot them. They found on arrival back at their station that their humpy had been robbed. Next day Aborigines tried to spear one of the employees but were repelled. Another raid occurred in March 1866 when a tarpaulin and some ironwork were stolen:-

They came one bright moonlight night and stole a tarpaulin and some iron work. I knew they were about, I could smell them plainly and the dogs were making a row. I went out with a double barrel gun in each hand. I thought they were taking the sheep out of the yard. I walked up to the shed and round the yard and saw nothing. Had I thought to look, I might have seen their tracks in the dust. We were busy with a March lambing at the time. I was putting out small lots of ewes and lambs in one direction and Adam in another, when about sunrise, I thought about the noise the dogs had made and the smell of the blacks and went out to the shed, before getting there I came on their tracks. They had been behind the trees when I went up and might easily have been speared. But I was not to be killed there. Going on I saw the cloth on which we had been drying some locks was gone and the wool scattered all the way towards the scrub, and our good tarpaulin was gone. As soon as we got the sheep all out we got our horses and Adam and I tracked them to where they had ripped the cloth up and from thence, we followed their tracks for miles... Fred Murray came up and lessened their number a bit so we had no more trouble with them. I went out once after that with the police and we got one and some fragments of wool packs and pieces of tarpaulin.

(Murray, A. Diary 1864).

Andrew Murray probably used metaphorical language when describing the killing and violence that went on in the frontier in the first decade of contact. At the opposite end of the spectrum are the personal, horrifying, reminiscences from a man who became the Mayor of Bowen in the 1860s. Korah Halcomb Wills describes how he had arrived as a 21-year-old in Adelaide on 15 April 1849, moved onto the Victorian goldfields at the age of 34 with his family, and moved from Brisbane to Bowen in 1862. He became the mayor of Bowen in 1867 and the mayor of Mackay in 1876–77. He retired in 1882 and returned to England. His profession was described as a ‘pork butcher’. Wills wrote in his diary later in life that:-

there is very little of the dispersing going on now in the colonies but what there is must be done very much on the quiet or you may hap get into trouble, but in my time they were dispersed by hundreds if not thousands ... [on] one of my dispersing expeditions I was in company of a few squatters and their friends ... When the Blacks had been playing up. And killing a shepherd and robbing his Hut ... we turned out and run them to earth where they got on the top of a big mound and defied us and smacked their buttocks at us (a traditional sign of derision) and hurled large stones down on us. And hid themselves behind large trees and huge rocks but some of them paid dearly for their bravado. They had no idea that we could reach them to a dead certainty of a mile by our little patent breach loading ‘Terry’s’.

Wills then tells us that he kidnapped a little Aboriginal girl who rode on the front of his saddle the 80 miles to Bowen, with her crying nearly all the way

. out of these mobs ... I selected a little girl with the intention of civilizing, and one of my friends thought he would select a boy for the same purpose and in the selection of the same I stood a very narrow chance of being flattened out by a “Nulla Nulla” (wielded by her mother)...my Friend who has since held the high

office of Chief [sic] Emigration Commissioner and protector of the Blacks who in my time was a kidnapper to the hilt. I don't know if his conscience ever pricked him on the subject as I never had the chance of seeing him since... (K.H. Wills 1896).

If this was not enough, he then, incredibly, described in vivid detail what he then did:-

I took it in my head to get a few specimens of certain limbs and head of a Black fellow ... I first found the subject that I intended to anatomize, when my friends were looking on, and I commenced operations dissecting. I went to work business like to take off the head first, and then the arms, and then the legs, and gathered them together and put them into my Pack saddle. and one of my friends who I am sure had dispersed more than any other Man in the Colony made the remark that if he was offered a fortune he could not do what I had done. his name was Peter Armstrong a well known pioneer in the North Queensland and pluck enough to face a 100 blacks single handed any day as long as he had his revolver with him and his Rifle (Wills 1985:114).

Using his butchering skills he later stripped the flesh off the limbs in a lagoon and carried them back to Bowen where he exhibited them to raise funds for the Bowen hospital. The most terrible thing about this tale is that he was not an aberration (though many were reported to have been shocked by his actions). He was the part of the land owning Queensland establishment as described by Evans (the mayor of both Bowen and Mackay and owner of a string of hotels) (Evans 2009?:19).

By the end of the century the remnants of the Birri people had generally been absorbed into the pastoral industry. This is generally described as the 'pastoral' period during which they became closely connected, as stockmen and workers, with the 'old' stations such as Byerwen, Newlands, and Havilah, thus maintaining their connection with their traditional land. Some of the Birri people trace various ancestors to these older cattle properties.



Figure 4. Historic map (circa. 1887) of the region showing old pastoral holdings in Birri lands.

4.2 Archaeological Background

This section contains a review of archaeological information relevant to the project area, derived from two main sources:-

- previous academic archaeological research. Some academic archaeological research has been undertaken in this and adjacent regions (eg. Brayshaw 1977; Knight 1990 and 1993) but this region remains comparatively unstudied from an academic/scientific archaeological perspective.

- unpublished cultural heritage reports on mining and infrastructure projects in the local region. Some of these projects are within the boundaries of the Byerwen project area.

4.2.1 *Academic/scientific Research*

Brayshaw's pioneering research work in the Herbert/Burdekin region (1977 and 1990) recorded a variety of archaeological sites such as freshwater shell middens, stone arrangements, scarred trees, fish traps, native wells, stone quarries and a number of rock shelters containing Aboriginal artwork in the region west of Bowen and round Collinsville. Brayshaw's work is still the only major academic archaeological research to be done in this region. Part of her research included the collection of all available documentary historical, ethnographic and archaeological information on Aboriginal site types, material culture and methods of gathering and hunting throughout the Upper Burdekin region. This information has resulted in an extensive data base of written material and material culture which is presented as a series of Appendices in her 1990 publication (Appendices 3A to 6A:211-248).
on

Brayshaw (1990) recorded a number of rock art sites in the wider Collinsville region, and especially in the vicinity of the Bowen River. Some of the dominant motifs in the rock paintings are hand stencils. She notes *"the sites south of the Cape River and the Collinsville area are distinct from the art found elsewhere in the Herbert/Burdekin in that stencils predominate or are the only motif"* (Brayshaw 1990:134). At a rock shelter at Parada, to the east of Collinsville, there is a series of *'oval shaped grids'* painted in red and white ochre (1990:132). Similar grid-like motifs are found as decorations on wooden shields in Birri homelands to the south of the Burdekin River.

"In the Strathmore collection there are two shields from this area, each with the same grid pattern on the front, in white. Incisions on shields from the area are also usually in this grid pattern" (Brayshaw 1990:132).

Other archaeological sites recorded by Brayshaw in the Collinsville area include scarred trees and stone arrangements. A stone arrangement consisting of a circle of stones has been recorded on Rockingham Creek, south of Collinsville. She notes that scarred trees are common around Collinsville, especially small shield or container-sized scars.

"In the Bowen Basin.....trees with shield/container sized excisions appear to be more common. In this region the bark of various species was utilized, including Eucalyptus sp., Erythrina sp. and Brachychiton sp." (Brayshaw 1990:163)

Brayshaw (1990:83) noted that the Strathmore Ethnographic Collection (held at Strathmore Station near Collinsville) contains a large number of pronged and barbed wooden spears from the Collinsville area. As noted, this collection also contains several shields with intricate designs similar to that depicted in some of the local rock art (Brayshaw 1977).

The depth of known Aboriginal occupation in the region is generally defined by C¹⁴ dates from these areas. The closest dates to this area are from Suttor Creek near Glenden where several small Aboriginal fireplaces have been dated to between 200 and 800 years (Hatte and Oliver in prep.). The very first Pleistocene date (>10,000 years) for Aboriginal occupation of Australia (in excess of 16,000 BP) was obtained from the central Queensland sandstone belt west of Springsure (Mulvaney and Joyce 1965). The Whitsunday region has also revealed a long occupation depth of some 8,500 years (Barker 1989, 1990, 1991), while the Hughenden area has yielded a number of calibrated basal dates of around 10,000 years (Morwood 1990). A recent date of 5240±40 BP from fireplace charcoal at a depth of 7cm on Poitrel coal mine near Coppabella is the second oldest date for an open site in Queensland (Hatte and Oliver in prep.). More recently, several fireplaces on an eroded gully on Burton Coal mine (approximately 30km east of the project area) have yielded dates of 8290±40BP and 8260±40BP, making them the oldest open sites in Queensland (Hatte and Oliver in prep.).

4.2.2 Cultural Heritage Reports

The majority of cultural heritage reports concern areas in the Birri claim area (eg. Newlands coal mine and associated infrastructure [1978, 2002, 2004], water and gas pipelines such as the North Queensland (Enertrade) gas pipeline [2003] and the SunWater pipeline [2006]; roads and rail lines, eg., the Cerito-Elphinstone road [2004], the Missing Link Rail line [2006, 2008] and the Hancock rail line project [2010], and exploration projects for gold and coal

4.2.2.1 Newlands Coal Mine Studies (1978, 2002-2004)

The initial archaeological study for the Newlands coal mine which lies near the boundary of Birri and Jangga included the rail corridor to Collinsville, the proposed Glenden township, the water pipeline from the Bowen River and two open cut mining areas on Eastern Creek

station. Field studies for this development were undertaken by Major Hill in 1978. This survey took 31 days during which time Hill undertook an estimated 627.3 kilometres in foot transects. Hill noted that the mine site areas ranged from flat, cleared country with occasional stands of woodlands and dense brigalow scrub, to deeply folded contours with steep sided razor backed ridges and deep gullies. The rocky ridges were dominated by brigalow associated with bendee, lancewood and rosewood. The western portion of the lease was dominated by black, cracking clay soils while the eastern portion featured red, sandier soils which were littered with a heavy deposit of pebbles, cobbles and some boulders, the majority being silcrete (Hill 1978:5). Covering as it did a range of areas in the district adjacent to the Byerwen project area, this study would be expected to supply a relatively accurate prediction of the finds that might be expected in this project.

It was stated in this report that '*...the mining areas comprised one vast artefact scatter... and that '...it was hardly possible to walk more than 50 m without sighting artefacts...' (Hill 1978:9), but he did indicate that there was a clear decrease in densities of artefacts from south to north (Hill 1978:16). The recorded size of artefact scatters ranged from 20m diameter up to 800 x 200m (Hill 1978:20). Cerito Creek appeared to be the major focus for the densest artefact scatters. Both the site of Glenden town ship and the 260 metre contour at Grid Ref. 929/588 contained outcropping reefs with stone extraction areas and artefact scatters. Another minor quarry from an outcropping reef was also identified in the area. One scarred coolabah tree was also found on a proposed powerline easement. There was ".....a light scatter of artefacts throughout the Eastern Creek area...much sparser than the neighbouring western area". Hill also noted that the vast majority of the archaeological sites were located adjacent to waterways, including small ephemeral streams. A number of artefacts, presumably formal tool types, were collected by Hill and sent to the Queensland Museum.*

Several recent archaeological investigations have been carried out for proposed infrastructure works associated with the (now established) Newlands Mine. In 2003 a cultural survey was conducted for a proposed realignment of the Collinsville-Elphinstone Road (Eastern Creek Road) to the east of the mine (Hatte 2003). The cultural team identified numerous isolated stone artefacts and several dense artefact scatters along the proposed development corridor. The highest concentrations of artefacts were found between two sandstone-bedded creeks. Artefacts were made primarily from silcrete with lesser numbers of sandstone, rhyolite and petrified wood artefacts. A number of formal tool types were identified including points, blades, edge-ground axes and a grindstone.

Artefact densities reached a maximum of 10/m² in some of the highest density scatters (see also Hatte 2002). A salvage was subsequently undertaken of artefacts along the easement and finds were relocated close by.

4.2.2.2 *North Queensland (Enertrade) Gas Pipeline Project (2003)*

The Enertrade gas pipeline runs N/S along the western edge of EPC736 and ML70435, and up through ML70436 on the Leichhardt Range where it enters the Birri claim area. It continues northwards, crossing to the west of Collinsville and through Strathmore station to the Burdekin River and thence to Townsville.

Hughes and Madden carried out archaeological investigations for this corridor, some 180 km in length. Numerous cultural heritage sites were recorded including five stone artefact scatters, ten 'background scatters' and twenty two isolated finds. The largest archaeological sites were recorded on creek lines. Sizeable campsites (with high density artefact scatters) were recorded at Plum Creek and Table Mountain Creek.

The latter site was estimated to contain approximately 600-700 artefacts. It was noted that this site contained a diverse artefact assemblage in terms of the range of artefact types and raw materials. Some forty two flaked and retouched artefacts were identified as well as a number of stone axes, axe blanks, grinding stones and worked river cobbles. Several possible hearths were also recorded. It was suggested (2003:21) that the alluvial plain immediately adjacent to the creek bank was used as a major campsite, possibly a base camp. Nearly 60% of the artefacts at this site were made from volcanic and igneous rock types, with silcrete, chert, sandstone and quartz represented in lesser quantities in the assemblage.

They also described a number of 'background scatters', some associated with concentrations of silcrete cobbles. The majority of these lower density artefact scatters lay along the banks of creeks and rivers, indicating that proximity to these watercourses was most likely a determining factor in site selection. Artefact scatters at Cockatoo Creek and the Bowen River contained predominantly silcrete artefacts. At Pelican Creek, the scatters contained volcanic rock types, and at Expedition Pass Creek they contained chert cores and flakes. The relative densities of material at these sites indicate preferences for the exploitation of locally available stone. Several distinctive isolated artefacts were recorded during the Enertrade surveys, including sandstone grindstone fragments, an edge-ground axe, several stone axe blanks and hammerstones/anvils.

4.2.2.3 *Cerito-Elphinstone Road*

A study was undertaken for the Cerito-Elphinstone Road in 2005 by a joint Birri-Jangga team of traditional owner representatives as the claim boundary divided the project area in half. The Cerito-Elphinstone Road runs from the Bowen Development Road in EPC739 (Birri), crosses the through ML 70436 (in Jangga) then swings to the east towards Glenden township.

The cultural heritage finds of Aboriginal origin consisted of isolated silcrete and petrified wood artefacts found at various points along the easement, on the Leichhardt range and on the flat valley on the eastern foothills of the range. It was also noted that this valley area is likely to have subsurface archaeological potential.

4.2.2.4 *The Missing Link Project (2005)*

The Missing Link rail line, presently under construction in Birri lands, runs northerly through EPC739 and ML 10356. It provides a cross section of landscape types and cultural heritage that might be expected in a these landscapes. The initial cultural heritage study of the proposed Northern Missing Link alignment corridor was undertaken in 2005 (Bird 2005). Twenty three Aboriginal cultural sites were identified during this survey:-

- thirteen stone artefact scatters,
- seven isolated artefacts (a bifacial stone axe, several cores, flakes and debitage),
- four locations with culturally significant vegetation.

Most of the stone artefact scatters contained a relatively low density of artefactual material, maximum densities reaching 10 artefacts/m². The majority of the scatters contained fewer than twenty artefacts and a high proportion of flaked artefacts and debitage. Formal tool types included three bifacial stone axe blanks (one with a ground-edge) and several fragments of sandstone grindstone. A small number of backed blades, scrapers and cores were also identified. The most common raw material in the artefact assemblage was silcrete which accounted for most of the flaked artefacts and debitage. This was not unexpected as silcrete cobbles occur naturally in the area and it is clear that Aboriginal people were exploiting this locally abundant raw material (Bird 2005b). Other artefact raw materials included chert, basalt, quartzite, petrified wood and jasper.

The results of the Missing Link surveys were consistent with the results of earlier archaeological research in the Newlands/Glenden region (cf. Hill 1978b; Hatte 2003,

2004). The most common Aboriginal cultural sites in this area are stone artefact scatters, with a high proportion of siliceous stone artefacts. These sites are commonly located on watercourses, even minor ephemeral streams. Whilst the majority of sites tend to be located on small creek lines and gullies, a small number of sites are also found on black soil plains and the open grazing plains. In some cases, and not unexpectedly, cattle trampling has adversely impacted the preservation of cultural sites in this latter context.

4.2.2.5 *SunWater pipeline (Burdekin River to Moranbah) (2005)*

In 2005 detailed cultural surveys were undertaken for the northern (Birri) sector of the SunWater Burdekin Basin Pipeline Project (Bird 2005d), originating at Gorge Weir on the Burdekin River.

A total of ninety eight Aboriginal cultural sites was recorded, including thirty five isolated artefacts, forty three stone artefact scatters, five extraction quarries/high density artefact scatters, sixteen scarred trees and two landscape features (culturally significant vegetation). The survey results indicated that an average of one cultural heritage site was recorded per kilometre of the proposed easement. Generally, cultural site distribution was clearly skewed to watercourses, both large streams and small, ephemeral drainage lines and gullies (eg. Cockatoo Creek, Ten Mile Creek and Sandy Creek).

By far the most common Aboriginal cultural sites were isolated artefact finds and low-density stone artefact scatters. These two site types made up over 75% of the total number of identified cultural sites (Bird 2005d). The majority of the isolated artefact finds were flakes and flake fragments, cores and core fragments and debitage. However, a number of formal tools such as blades, points, grinding stones, stone axes, axe-blanks and hammerstones, were also identified. The most common stone artefact raw materials were basalt and silcrete, with lesser numbers of chert, rhyolite and quartzite artefacts.

4.2.2.6 *Hancock Rail link (2010)*

A field survey of the easement for this rail link was undertaken in late 2010. A section of the proposed easement runs roughly parallel on the western side to the Enertrade, Sunwater and Missing Link easements. This survey located the following:-

- 33 isolated artefacts,
- 17 stone artefact scatters,
- 4 scarred trees (including possible scarred trees),
- 5 locations with culturally significant vegetation,

- 3 culturally sensitive watercourses/riparian areas.

An average of about 1.8 cultural sites/features were recorded per kilometre of the proposed corridor. As was predicted, the majority of Aboriginal cultural sites are located in the near vicinity of watercourses. The survey has revealed that major watercourses, and even several small, intermittent streams along the development corridor were certainly targeted areas for Aboriginal occupation. The clear pattern in the cultural survey results is that the cultural sites are generally clustered to the following watercourses:- Plum Creek and tributaries of Kangaroo Creek, Rosella Creek, Twelve Mile Gully, Pelican Creek and Table Mountain Creek. Generally, the cultural sites are located on elevated banks or terraces of these watercourses, above the reach of regular flood levels. Many of the sites are also located on exposed and eroded terrain (washouts, gullies and scarps) where the ground surface visibility is excellent and cultural material easily detectable.

No major stone artefact scatters or other substantial remains of Aboriginal occupation were recorded at the proposed crossing of the Bowen River. This result presents something of an anomaly in the local archaeological record, as cultural surveys both east and west of the location of the HPPL rail crossing have located large numbers of cultural sites. Surveys to the east and south for other projects have located extensive cultural sites on both the northern and southern banks of the Bowen River (cf. Bird 2004c, 2005a, 2007d, 2009a).

The apparent lack of cultural sites where the HPPL rail line crosses the Bowen River is probably related to the local topography and geomorphology. At this location, the southern bank of the Bowen is relatively low and subject to periodic (and quite recent) inundation. Previous flood levels were indicated by flood debris high in trees on the lower banks. Regular flooding of the lower banks is not conducive to cultural site preservation.

Whilst the northern bank is more elevated and appears to be above the reach of flood levels, the bank is composed mainly of deep sandy alluvial deposits. Extensive cultural sites have along the Bowen River tend to be located on hard-packed, reddish (and eroding) clay soils. Areas of deep sandy soils appear to be largely archaeologically sterile (at least at the surface level). The pattern we see in the archaeological record today is most probably a result of the history of geomorphological processes along the Bowen River, and more specifically, to considerable soil deposition over time (archaeological sites and material may therefore be buried in subsurface deposits). The observed pattern in the archaeological record is probably less likely to be a factor of Aboriginal subsistence patterns, as there appears to be no obvious reason why this area of the Bowen River

(banks) would be any less attractive for establishment of camp sites, or any less productive for food collection and procurement of a range of resources.

By far the most cultural sites recorded along the Birri sector of the rail corridor are isolated stone artefacts. Combined, these two site types make up over 80% of the total number of identified cultural sites. Isolated artefacts included flakes and flake fragments, cores and core fragments and debitage as well as formal tool types such as several bifacial stone axes and/or axe blanks, blades, scrapers and grinding stones. The most common stone artefact raw materials are silcrete and fine-grained basalt, with far lesser numbers of chert. Most of the recorded stone axes and axe blanks are bifacial, some retaining cortex. All of the recorded stone axes are hand-axes, rather than hafted axes. Very few showed evidence of a ground-edge and several were broken fragments only.

The majority of the stone artefact scatters were low-density scatters, containing fewer than ten artefacts. Sites with the greatest densities were recorded at Rosella Creek, Twelve Mile Gully (tributaries), Table Mountain Creek and at a small, unnamed creek. The site at Twelve Mile Gully was possibly the remains of a substantial base camp. In addition to a relatively high density of artefacts, there was clear evidence for a range of intra-site subsistence/living activities, including stone artefact manufacture, cooking and food preparation (indicated by the hearth and grindstones). There was also some evidence for ceremonial activities at this site.

Visibility at several of the others was impeded by lack of ground surface visibility and/or advanced erosion of the ground surface. However, at one of them there was evidence of silcrete extraction and working

As with the isolated finds, the majority of those above were flake fragments, cores, debitage and other fragments. Formal tool types included a bifacial stones axes and axe blanks, blades, scrapers, hammerstones, grindstones and stone axe rejuvenation flakes. Stone artefact raw materials include silcrete, basalt, chert, milky quartz, sandstone (for grindstones) and river cobbles (for hammerstones and grindstones). At one site a small, flaked fragment of thick bottle base glass was recorded, suggesting site occupation in post-contact times (late 1860's).

Overall, the recent cultural surveys on behalf of HPPL confirmed that the range of stone artefact types and raw materials recorded along the Birri sector of the proposed rail corridor, as well as the distribution of these cultural sites, is entirely consistent with the

results of other nearby cultural heritage investigations and the regional cultural heritage record for Collinsville and within Birri homelands.

4.2.2.7 *Ross-Strathmore Power Line (2000)*

In 2000 Hatte undertook a cultural heritage survey of the Powerlink Queensland Ross-Strathmore transmission line corridor between the Haughton River and Collinsville, a distance of some 130 km (Hatte 2000). Twenty-one cultural heritage sites were recorded including fourteen isolated artefacts and seven low-density stone artefact scatters.

Archaeological site density along the proposed easement averaged only one site/6km. All of the recorded cultural sites were relatively minor and contained low artefact densities or single finds. The majority of sites were located in the hilly area south of the Burdekin River. In this area the majority of finds were isolated artefacts manufactured from a diversity of raw materials (basalt, chert, silcrete, quartz and sandstone) (Hatte 2000).

4.2.2.8 *Strathmore Substation (2000)*

Bird and Hatte (2000) carried out archaeological surveys for a proposed 275 kV Powerlink Qld substation and microwave repeater station near Collinsville. Cultural surveys of a 30-hectare parcel of land on Strathmore Station to the north of Collinsville, recorded a paucity of cultural sites. Two isolated artefacts and a scarred tree (the latter likely to be of historical origin) were located on a small drainage line. Neither of the stone artefacts appeared to be *in situ* as a result of ongoing erosion. The apparent paucity of cultural material was attributed to the high level of past disturbance over the development land (previous clearing, cattle grazing and earthworks).

4.2.2.9 *Cockool Passing Loop (2010)*

In late 2010 a cultural heritage study was undertaken for the proposed Queensland Rail Cockool Passing Loop (Bird 2010b). This is one of a series of new sections of coal rail infrastructure upgrades on the Newlands rail system to facilitate the increase in rail tonnages to Abbot Point.

This survey located three low-density stone artefacts scatters in the proposed development corridor adjacent to the existing Newlands rail line. Ten stone artefacts were recorded, including waste flakes and debitage. Two grinding stones (with use-wear)

were also noted. All the recorded cultural finds were collected and relocated out of the Cockool Passing Loop development corridor at the time of the survey.

4.2.3.0 *Drake Mining Lease (2010)*

The first phase of cultural surveys for the Drake Mining Lease on behalf of Drake Coal were carried out in April 2010 (Bird 2010). This mining lease lies on Birralee Station. Fifty six Aboriginal cultural heritage sites were recorded. As predicted, the most common Aboriginal cultural finds are stone artefact scatters and isolated artefacts. A total of thirty nine artefact scatters, fifteen isolated finds and two stone quarry (extraction sites) were recorded. The former consisted of flakes, cores, core fragments and debitage and a number of formal tool types, including numerous ground-edge stone axes (commonly these are bifacial), axe blanks, blades, scrapers, points, hammerstones and grinding stones. By far, the most common artefact raw material is fine-grained basalt, which is locally available in the wider Bowen River region. There are fewer numbers of silcrete, chert, sandstone and quartz artefacts. The two stone quarries or small extraction sites identified during the cultural survey are natural outcrops of siliceous cobbles that have been reduced to large cores, pre-cores and flaked pieces. The artefact types and raw materials recorded in the Drake project area are entirely consistent with the archaeological record for neighbouring project areas and of the wider Collinsville region.

The cultural surveys also confirmed that the Bowen River and other drainage lines retain high cultural heritage potential. The cultural surveys at Drake as well as neighbouring project areas have confirmed the Bowen River as a landform feature of cultural significance to the Birri People.

4.2.3.1 *Sonoma Mine (2004-2010)*

Sonoma Mine is located some 10 km south of Collinsville (on Sonoma and Belmore Stations) via the Bowen Developmental Road. Two phases of cultural heritage surveys were carried out in 2004 on behalf of QCoal. During the first phase of field surveys a total of 21 Aboriginal cultural sites was recorded, including 12 stone artefact scatters and 9 isolated artefacts (Bird 2004a). The vast majority of the cultural sites were found on the elevated banks of watercourses, including Coral Creek, Belmore Gully and Two Mile Creek. The largest watercourse, Coral Creek, was a focus for Aboriginal occupation. Fifteen of the identified cultural sites (over 70%) were found along the banks of Coral Creek. The cultural survey found that the archaeological potential of the open black soil plains was very low, few cultural sites being located in the black soil.

Some of the identified cultural sites at Sonoma contained very high densities of stone artefacts (one site contained more than 500 artefacts in an area of approximately 60 m²). Several contained distinct 'activity areas', eg. ant-bed cooking hearths, artefact knapping floors, and grinding stones for food preparation. While many sites contained a high proportion of flaked artefacts and debitage, formal tool types were also well represented. Several bifacial basalt stone axes and axe blanks, a small number of grindstones, hammerstones and anvils, in addition to blades, scrapers and adzes were recorded. The most common raw material was basalt, followed by chert and silcrete and very rarely milky quartz.

The Phase 2 surveys in November 2004 located an additional twenty seven sites including six stone artefact scatters and twenty one isolated artefact finds. The highest densities of cultural materials (stone artefacts) were recorded at Two Mile Creek in the southwest (Belmore Station) sector of the Sonoma project area. The cultural sites in phase 2 tended to be more scattered across the project area, rather than confined to the elevated banks of major watercourses. Unlike phase 1, a large number of cultural sites were found on the black soil plains and the majority of these sites were isolated artefacts. Taphonomic factors were likely to have played a major role in this distribution.

4.2.3.2 *Sarum Mining Lease (2007)*

Cultural surveys of the Sarum (Xstrata) mining lease located more than seventy cultural heritage sites including:-

- 57 stone artefact scatters,
- 13 isolated finds,
- 2 scarred trees,
- 1 old growth culturally significant tree,
- a non-indigenous, historic grave site (Bird 2007d).

The vast majority of the Aboriginal cultural finds in this project area were low-density stone artefact scatters located mainly in the vicinity of Jack Creek and other small, eroded drainage channels. A range of stone artefact types and raw materials was recorded, including numerous bifacial stone axes and axe blanks, scrapers, blades, grindstones and an anvil. The most common artefacts were flakes and debitage. A number of cores were also noted. The most common artefact raw materials were basalt and silcrete. Some of the stone artefact scatters were extensive, covering several hundred metres.

The largest sites (with the highest densities of artefacts and discrete intra-site activity areas) were located along the elevated banks of the Bowen River and its tributaries, especially the southern section of Jack Creek where it intersects with the Bowen River (Bird 2007d).

4.2.3.3 *Jax and Cows Mining Leases (2009)*

The Jax mining lease is an area of 1900 hectares about 15km south of Collinsville on the Bowen Developmental Road. The Cows mining lease is a much smaller area of some 200 hectares along the southern boundary of Sonoma Mine on the western side of the Bowen Developmental Road.

Cultural surveys of the Jax lease located sixty one Aboriginal cultural sites, features and values:-

- 24 isolated stone artefacts,
- 36 stone artefact scatters
- 1 scarred tree (Bird 2009a).

The vast majority of the identified sites are located in the near vicinity of the only major watercourse in the project area, Jack Creek. This result corresponds with the results of cultural surveys at Jack Creek on the neighbouring Sarum lease area (see Bird 2007d). The artefact types and raw materials recorded at Jax are completely consistent with those in surrounding areas. Whilst many of the low-density artefact scatters and isolated finds are likely to represent sites of ephemeral occupation, some of the larger, more extensive scatters represent sizeable base camps.

Within the Cows lease area, eleven Aboriginal cultural sites were recorded (5 low density artefact scatters and 6 isolated artefacts). Most sites were recorded along a tributary of Twelve Mile Gully in the western section of the Cows lease. The raw materials and artefact types recorded at Cows are consistent with those recorded at Jax and neighbouring projects. The Cows lease area was previously used as a public road and is now a heavily grazed area. Few of the identified stone artefacts appeared to be *in situ*, as a result of extensive cattle trampling and ongoing erosion along the series of low gullies and drainage lines.

4.2.3.4 *Mt Carlton Mining Project (2004 and 2009)*

Cultural surveys of the Mount Carlton Mine site at Strathbogie Station were originally carried out in 2004 by Madden (2004) who recorded the following:-

- 3 scarred trees,
- 2 andesitic boulders with axe-grinding grooves,
- 52 isolated artefacts,
- 36 low-density artefact scatters.

The axe-grinding grooves were described as a highly significant Aboriginal cultural site (Madden 2004:6). They were located on a sizeable outcrop of andesitic rock (15m x 8m) on the western side of a drainage gully off the southern slope of Mt Carlton. *“One large rock (3m x 1 m) is entirely inscribed, from the centre to all the margins, with grooves”* (Madden 2004:4). According to Madden, the grooves average around 250mm long, 100mm wide and 25mm deep. Madden (2004:5) noted that nine stone axes or axe blanks were recorded during the 2004 cultural surveys. Three of these artefacts showed signs of having been edge-ground while several others exhibited knapping scars indicative of preparation for manufacturing a stone axe. One small edge-ground hand axe (measuring some 40mm across) was also recorded.

In 2009, some additional cultural surveys were carried out for the Mount Carlton Mine project, including a proposed power line corridor from the (existing) Ergon Energy King Creek Substation to the Mount Carlton Mine. Other ancillary development areas included a proposed access road from the Strathalbyn Road turn-off to the mine, and a proposed village (accommodation and other facilities) (Bird 2009b).

The 2009 cultural surveys identified an additional nine Aboriginal cultural heritage sites in the wider Mount Carlton project area, including:-

- isolated artefact finds,
- 1 possible scarred tree,
- 1 habitat tree
- 1 rock shelter with Aboriginal paintings.

The isolated stone artefacts included a basalt stone axe blank, a silcrete flake, chert scraper, silcrete core fragment, siliceous core and a granitic grindstone. The artefact finds were assessed as being generally typical of the types of stone artefacts and raw

materials recorded in the 2004 cultural surveys at Mount Carlton (cf. Madden 2004), as well as throughout the wider Collinsville district.

A small rock shelter with Aboriginal paintings was recorded on the foothills of a steep hillside near Herbert Creek. The shelter is located within a large boulder composed of Mt Wickham rhyolite. There are several Aboriginal paintings in red ochre at the entrance to the rock shelter, including one distinct anthropomorphic figure and several indistinct and very faded paintings. The overall preservation of the paintings is poor and they are suffering the effects of ongoing exfoliation of the rock walls, algal growth, water run-off (causing mineral staining) and mud wasps.

4.2.3.5 *Belmore Mine (1999)*

Hughes (1999) carried out archaeological surveys over an area of approximately 115 hectares on the eastern side of the Bowen Developmental Road for the Belmore Mine which is now closed. Ten cultural heritage sites were recorded, including four surface scatters of stone artefacts and six isolated stone artefacts. In total, some 49 stone artefacts were identified and described.

Hughes noted that the stone artefact scatters generally contained a low-density of artefactual material (between five and twenty one artefacts) manufactured from igneous rock, chert, silcrete and quartz. Hughes noted *...“artefact occurrences were located preferentially near the largest (but still small) ephemeral creek lines across the survey area”* (Hughes and Madden 2003:6). With the exception of two sandstone manuports, all of the artefacts were situated on well-drained land surfaces consisting of sandy soils on raised to gently sloping terrain. Hughes noted *...“no flaked artefacts were found on the low lying black soil plains”* (Hughes and Madden 2003:6-7). Importantly, Hughes concluded *...“although the amounts of archaeological material were small, their distributions show that even very small, ephemeral creek lines acted as a foci for past Aboriginal occupation and use of the landscape”*.

4.2.3.6 *Gattonvale Offstream Storage (2005)*

Two phases of cultural heritage surveys were carried out at Gattonvale Station for the SunWater Gattonvale offstream storage area (located south of the Bowen River) in 2004 and 2005. The first phase of field surveys located three Aboriginal cultural sites including two possible cultural scar on old Euc. Populnea (poplar box) trees and a stone artefact scatter (Bird 2004c).

The stone artefact scatter was recorded on the southern bank of the Bowen River on exposed sandy soils on an elevated and eroding section of the river bank. Artefacts extended some 200m along the bank, reaching a maximum artefact density of 5 artefacts/m². Approximately fifty artefacts were recorded consisting of a range of artefact types and raw materials (a high proportion of flaked artefacts and cores, formal tool types such as unifacial stone axe blanks, a sandstone grindstone and one retouched flake). The majority of the artefacts were basalt, although chert, silcrete and diorite were also represented in the archaeological record (Bird 2004c).

The size and shape of the scars indicated that they might be associated with the removal of bark for manufacturing wooden artefacts, eg. shields or large wooden dishes. However, their poor state of preservation made it impossible to determine with any degree of certainty if the scars were of Aboriginal origin or the result of natural processes (shedding of bark, splitting of the tree trunk, tearing of tree limbs and branches, or the impacts of termites, fire, etc).

In 2005 further surveys at Gattonvale were undertaken for two proposed extraction (quarry) sites for sand and hard rock (Bird 2005a). It was found that the proposed hard rock quarry development site contained a medium to high-density scatter of Aboriginal stone artefacts. The artefacts were located on lower terraces and on a plateau adjacent to a creek and small (ephemeral) waterfall. This site was quite well preserved and the majority of the artefacts appeared to be *in situ*. Several small artefact knapping floors of fine-grained basalt were recorded (probably stone axe knapping floors). Artefact types included several stone axe blanks of basalt, stone axe rejuvenation flakes, primary, secondary and tertiary flakes, cores, blades, scrapers, fragments of sandstone grindstone and debitage.

Birri representatives noted that the waterfall feature, creek and rock pools associated with the stone artefact scatter are a significant feature of the cultural landscape. They assessed the site as having a high level of Aboriginal cultural value. On that basis, SunWater relocated the proposed hard rock quarry to another location, as a means to preserve and protect this significant cultural site (Bird 2005a).

4.2.3.7 *Briaba Bank Deviation (2005)*

A cultural survey was undertaken for Queensland Rail's Briaba Bank deviation project on the outskirts of Collinsville (Bird 2005c). A total of fourteen Aboriginal cultural sites were located in this study, including two rock art sites, two scarred trees and other features identified by Birri people as having cultural heritage value (riparian vegetation, watercourses and old growth vegetation).

The two Aboriginal rock paintings were found in small shelters on two adjacent large granite boulders. The first contained one faded red ochre painting of an anthropomorphic or stick figure that has been adversely impacted by water wash and algal growth. The second rock shelter contained a small panel of paintings in red ochre, including several distinct and indistinct lines, an arc shape and a small circle. Mud-wasp nests have impacted the visibility and preservation of these paintings.

Two large, elongated symmetrical scars were recorded on the trunks of sizeable, old growth paperbarks. Both scars were relatively well preserved with minimal impacts from insects or fire. The size and shape of both scars (up to 1.5 m in length and 50 cm in width) suggests that the bark was removed by Aboriginal people for the manufacture of artefacts such as large shields or carrying dishes.

4.2.3.8 *Collinsville/Scottville Coal Fields (CCP)*

A cultural heritage report was prepared on the above, on behalf of MIM Holdings Ltd, of the Abbot Point Coal Terminal and Collinsville proposed mining areas (Hill 1978a: 11). Judging from the broad-scale topographic maps in his cultural report, Hill's survey areas appear to have included some of the current working pits and mining operations at CCP. He noted that *"throughout the general area there is a very light, insignificant scatter of lithic artefacts. This scatter probably represents material dropped in transit"* (1978a:12). Two Aboriginal *"camp sites"* were located on small, eroded watercourses. Stone artefacts at these sites were described as *"scrapers, knife flakes, knife blades, hammerstones and flaked and edge-ground axes"* (Hill 1978a:13). Preservation at these two sites was extremely poor and he noted that they were very likely to be washed away in ensuing wet seasons. Hill reported that he collected the artefacts and handed them to the Bowen Historical Museum for safekeeping. His report concluded:-

"With the exception of the two camp sites described above, no significant archaeological relics were encountered. There is a very light scatter of lithic implements throughout the area, but these are few and far between. In the

light of the foregoing, there would appear to be no archaeological objection to mining or other operations in the area” (Hill 1978a:14).

4.3 Summary of sites types and Predictions

4.3.1 Artefact Scatters

All of the cultural heritage studies discussed above have identified the open stone artefact scatter and isolated artefacts as the most common types of Aboriginal cultural site recorded in the region. The largest and most complex artefact scatters are found on the alluvial terraces of rivers, streams and eroding gullies where they may extend for many hundreds of metres and contain a range of distinct activity areas. They are by no means, however, limited to such areas.

The larger ones are also frequently found in association with such features as scarred trees, hearths or fireplaces, artefact knapping areas, outcrops of stone and ceremonial areas. The range of raw stone materials identified in artefact scatters is often a reflection of the availability of local stone. As already indicated, there is a rich variety of natural stone in the Birri region. Though the most frequently occurring stone material in the archaeological record in this area is silcrete, basalt comes a close second, especially where it outcrops. Fossil (petrified) wood was also found to occur naturally and was extensively used. Chert, sandstone and other fine volcanics were also found in sites.

4.3.2 Scarred trees

Archaeologically, the classic shape of a cultural scar on an old tree is oval and symmetrical. The ends are rounded and the base of the scar lies above the ground. They may show stone or old steel axe marks or other evidence of human activity. The tree would have to be of an age that could have accommodated a scar prior to European arrival in the district (ca. 1860) or up to several decades afterwards. It should also be one of the tree species that is suitable for bark removal, where the bark can be levered off in sufficiently large quantities to be useful for the intended purpose (eg. container, shield, canoe, shelter, or for carrying or wrapping the deceased in burial ceremonies). It is often difficult to establish whether a scar on an old tree is of natural or of cultural origin because the tree has continued to grow after the original scarring event. This may have had the effect of closing a scar or altering its shape. The traditional owners have a wealth of cultural knowledge about other reasons to account for why Aboriginal people utilised bark in the past and this requires a broadening of expectations

of what a cultural scar should look like, rather than the classic shape, eg. people may have cut around three sides of the required bark shape then ripped it to the ground for use as a sleeping mat or a shelter (cf. Roth 1984:55-66).

An important feature of very old *Euc. Populnea* (and possibly hollow coolabah) trees was their traditional use as burial places. Traditional tree burial is still common knowledge among some contemporary traditional owners. These trees were commonly used as the final resting places for human remains. The bones of the deceased, or the entire body, were placed into holes that were either natural or cut into the tree for this specific purpose. Roth (1907) indicated that the required apertures for the secondary burial of the bones were “from twelve to twenty two inches long by five to seven inches wide” (pp. 396-398). Roth described a variety of burial practices throughout Queensland including several different ones. Roth indicated that at the time he gathered this information, traditional burial practices were rapidly dying out with closer European settlement, if not already extinct. Thus it is possible that the more detailed or complex aspects of local burial practices had been forgotten even at that stage.

4.3.3 Fireplaces/hearths

Fireplaces/hearths were used traditionally for cooking, heating and working of materials such as resin, wood, ochre and stone. They have become buried over time or were originally buried features that have become visible when the ground surface around them has eroded, leaving them exposed. Three main stages have been noted in the gradual process of deflation of the heating/working small fireplaces:-

- Initial exposure as small compacted mounds;
- Deflation of the mounds and the appearance of burnt material such as burnt stone or clay fragments;
- Dispersal of the burnt stone and clay as a result of erosion and/or animal disturbance.

Fireplaces are often difficult to recognise, and once recognised they are well on the way to destruction. The best and only protection for them is protection and stabilisation of the surrounding environment.

4.3.4 Rock Art Sites and Grinding Grooves

A number of rock art sites are known of in the Birri homelands. Rock art sites may have been used for ceremonial purposes, in which case they may be located in small rockshelters or overhangs associated with the place. Several have been located as a result of the studies discussed above. Other rock art sites may hold records in pictorial form (eg. hand stencils of group members, maps of the area or routes to other places). Rock art sites are located only where there are suitable rock surfaces to hold the painted image.

One set of axe grinding grooves has been recorded in the Birri area, in the Mt Carlton area. Axe grinding grooves are extremely rare in the entire region and they have the highest archaeological significance on that basis. Culturally the traditionally owners have ascribed an extremely high cultural significance to both rock art sites and grinding grooves

4.3.5 Natural features

Together with the material culture there are numerous aspects of the natural environment which are also protected under the provisions of *The Aboriginal Cultural Heritage Act 2003* (see Section 2). For the Birri people many trees are important, even today, for both secular and spiritual reasons. The bark of poplar box, coolabah and other trees was removed for dishes, canoes, sleeping mats, possum and honey holes etc.

Ochre sources are also particularly important to Aboriginal people. Many rocky hill slopes contain large outcrops of ochre.

Other natural features in the landscape may have a high degree of significance as story places. These types of features may include small hills, cliff lines, particular outcrops of soil or stone. Some senior Birri people have some knowledge of these places but they may not wish to share the details. They will, however, assert that particular places are highly significant and are off limits to developments. These places may not have any associated archaeological material or sites. The place may have been so important that people went there only at very specific times for specific purposes.

4.4 Summary and Predictive Table

From the information provided in this report of cultural heritage that has been recorded and/or is known of, it is possible to develop a table linking landscape types with potential cultural

heritage sites/places/objects together with potential archaeological or cultural significance.

Two points are stressed:-

- As the project area is fairly extensive, this study has been done on a fairly gross level. It has described the most relevant studies that have been undertaken in the Birri region;
- this information is **not** prescriptive or definitive. It should not be used as a reason not to address Duty of Care in places whose potential significance is not predicted to be high or medium.

Id. No.	Landscape type or feature	Potential site types	Potential Archaeological significance	Potential Cultural significance
1	Blade ploughed or cultivated land	Very disturbed context, may be <i>in situ</i> artefacts below plough depth	Low	low
2	Cleared <i>Acacia</i> forest (brigalow, bendee, rosewood lancewood)	Artefacts or artefact scatters (camp sites)	Low to medium, especially near gilgai or sandy clay flats (depends on number, preservation, dimensions and site integrity)	Low to medium
3	Cleared eucalypt forest	Artefacts or artefact scatters (grindstones may indicate seed grinding places.	Low to medium (depends on number, preservation, dimensions and site integrity)	Low to medium
4	Uncleared brigalow	Artefacts or artefact scatters (camp sites)	Medium to high especially near gilgai or sandy clay flats (depends on number, preservation, dimensions and site integrity)	High
5	Uncleared Eucalypt forest	Scarred trees, burial trees, old fruit trees, traditional walking tracks, artefacts and artefact scatters (mainly near watercourses and lagoons)	Medium to high	High
6	volcanic stone outcrops, fossil wood and silcrete cobble exposures	Extraction sites for artefactual stone, artefact scatters, fireplaces, possible story places	Medium to High (depends on number, preservation, dimensions and site integrity)	High
7	Mesas and old land surfaces	Extensive complex camp sites, (artefacts, knapping floors, fireplaces, ochre deposits, other working areas), ceremonial sites, scarred trees, story places, art sites, traditional walking tracks	High	High
8	Watercourse banks and terraces, slopes, alluvial flats	Artefacts or artefact scatters (camp sites), fireplaces, scarred trees, knapping floors and other working areas, culturally significant vegetation	High	High
9	Boulders, rock shelters, stone platforms on creek beds	Rock art sites, grinding grooves	Very high	Very high

Table 1. Prediction of archaeological and cultural potential in different landscape types.

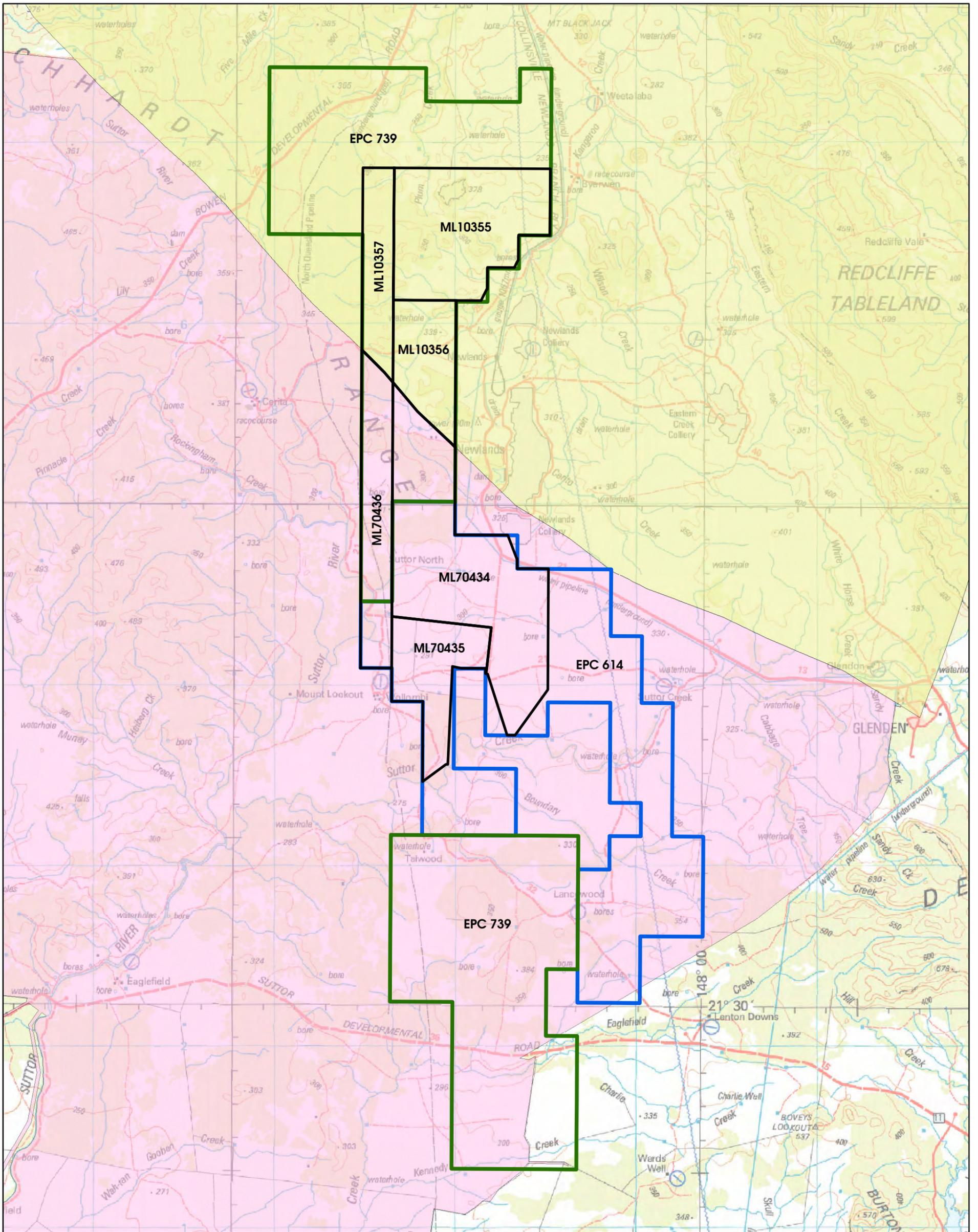
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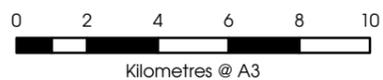
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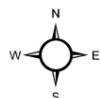
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QCOAL PTY LTD



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 Datum: GDA 1994

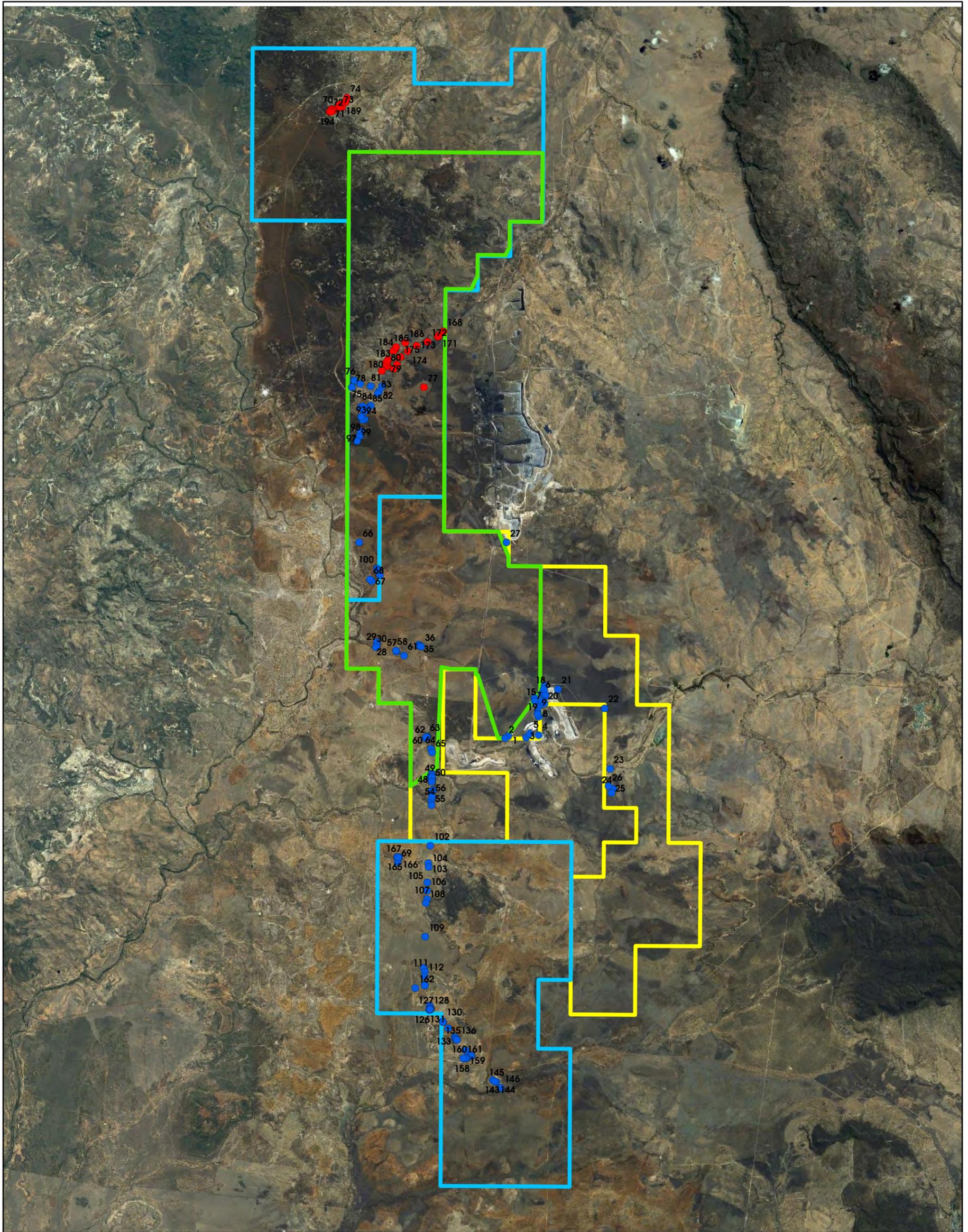


Legend

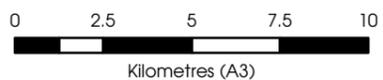
- Birri Claim Area
- Jangga Claim Area
- EPC 614
- EPC 739
- Byerwen Mining Leases

**BYERWEN PROJECT AREA
 SHOWING
 BIRRI-JANGGA BOUNDARY**

Date: 4 OCTOBER 2011
 Drawn By: JB
 Project Code: BYERWEN
 Data Source/s: DERM, DEEDI &
 GEOSCIENCE AUSTRALIA



QCOAL PTY LTD



Scale: 1:200,000 (A3)
 Projection: UTM Zone 55
 Datum: GDA 1994



Legend

- Registered Cultural Heritage Site (Birri)
- Registered Cultural Heritage Site (Jangga)
- EPC 614
- EPC 739
- Byerwen Coal Project

REGISTERED CULTURAL HERITAGE SITES (BIRRI)

Date: 29 September 2011
 Drawn By: JB
 Project Code: Byerwen
 Data Source/s: Google Pro and DEEDI

APPENDIX 1

**List showing search data set in Byerwen Project Area
Birri Portion (cf. Fig 5)**

Site_ID	Latitude	Longitude	Recdate	Attribute	Aboriginal Party	Group Label	Site Label
GH:B23	-21.364	147.9015	19971001	ARTEFACT	Jangga Operations	Jangga	1
GH:B24	-21.3651	147.9	19971001	ARTEFACT	Jangga Operations	Jangga	2
GH:B44	-21.3646	147.9107	19971001	ARTEFACT	Jangga Operations	Jangga	3
GH:B45	-21.3635	147.9172	19971001	ARTEFACT	Jangga Operations	Jangga	4
GH:B46	-21.3628	147.9126	19971001	ARTEFACT	Jangga Operations	Jangga	5
GH:B55	-21.3434	147.9187	19971001	ARTEFACT	Jangga Operations	Jangga	6
GH:B56	-21.3487	147.9173	19971001	ARTEFACT	Jangga Operations	Jangga	7
GH:B57	-21.3495	147.9172	19971001	ARTEFACT	Jangga Operations	Jangga	8
GH:B58	-21.3519	147.9166	19971001	ARTEFACT	Jangga Operations	Jangga	9
GH:B59	-21.3531	147.9165	19971001	ARTEFACT	Jangga Operations	Jangga	10
GH:B60	-21.3546	147.9171	19971001	ARTEFACT	Jangga Operations	Jangga	11
GH:B64	-21.3447	147.9205	19971001	ARTEFACT	Jangga Operations	Jangga	12
GH:B65	-21.3439	147.9207	19971001	ARTEFACT	Jangga Operations	Jangga	13
GH:B66	-21.3456	147.915	19971001	ARTEFACT	Jangga Operations	Jangga	14
GH:B67	-21.3469	147.9151	19971001	ARTEFACT	Jangga Operations	Jangga	15
GH:B68	-21.3534	147.9166	19971001	ARTEFACT	Jangga Operations	Jangga	16
GH:B70	-21.3395	147.9201	19971001	ARTEFACT	Jangga Operations	Jangga	17
GH:B72	-21.3412	147.9197	19971001	ARTEFACT	Jangga Operations	Jangga	18
GH:B73	-21.3469	147.9185	19971001	ARTEFACT	Jangga Operations	Jangga	19
GH:B76	-21.3482	147.92	19971001	ARTEFACT	Jangga Operations	Jangga	20
GH:B79	-21.3412	147.927	19971001	ARTEFACT	Jangga Operations	Jangga	21
GH:C37	-21.3503	147.9512	19971001	ARTEFACT	Jangga Operations	Jangga	22
GH:C39	-21.3795	147.9541	19971001	ARTEFACT	Jangga Operations	Jangga	23
GH:C57	-21.3893	147.9559	19971001	ARTEFACT	Jangga Operations	Jangga	24
GH:C58	-21.3912	147.9549	19971001	QUARRY, ARTEFACT	Jangga Operations	Jangga	25
GH:C59	-21.388	147.9534	19971001	ARTEFACT	Jangga Operations	Jangga	26
GH:I11	-21.2702	147.9	19780905	HEARTH, ARTEFACT, Campsite	Jangga Operations	Jangga	27
GH:J25	-21.3189	147.8334	20030414	ARTEFACT	Jangga Operations	Jangga	28
GH:J25	-21.3206	147.8334	20030414	ARTEFACT	Jangga Operations	Jangga	29
GH:J26	-21.3215	147.8329	20030414	TREE	Jangga Operations	Jangga	30
GH:K09	-21.2864	147.8348	20050630	ARTEFACT	Jangga Operations	Jangga	31
GH:K12	-21.3201	147.855	20050630	ARTEFACT, RESOURCE	Jangga Operations	Jangga	32

GH:K12	-21.3205	147.8553	20050630	ARTEFACT, RESOURCE	Jangga Operations	Jangga	33
GH:K12	-21.3206	147.8555	20050630	ARTEFACT, RESOURCE	Jangga Operations	Jangga	34
GH:K12	-21.3207	147.8557	20050630	ARTEFACT, RESOURCE	Jangga Operations	Jangga	35
GH:K12	-21.321	147.8563	20050630	ARTEFACT, RESOURCE	Jangga Operations	Jangga	36
GH:K13	-21.383	147.8619	20050630	ARTEFACT	Jangga Operations	Jangga	37
GH:K13	-21.3828	147.8619	20050630	ARTEFACT	Jangga Operations	Jangga	38
GH:K13	-21.3824	147.8621	20050630	ARTEFACT	Jangga Operations	Jangga	39
GH:K13	-21.3835	147.8617	20050630	ARTEFACT	Jangga Operations	Jangga	40
GH:K14	-21.3829	147.8619	20050630	TREE	Jangga Operations	Jangga	41
GH:K15	-21.3851	147.8623	20050630	ARTEFACT	Jangga Operations	Jangga	42
GH:K15	-21.384	147.8616	20050630	ARTEFACT	Jangga Operations	Jangga	43
GH:K15	-21.384	147.8617	20050630	ARTEFACT	Jangga Operations	Jangga	44
GH:K15	-21.3846	147.8618	20050630	ARTEFACT	Jangga Operations	Jangga	45
GH:K15	-21.384	147.8618	20050630	ARTEFACT	Jangga Operations	Jangga	46
GH:K15	-21.3843	147.8619	20050630	ARTEFACT	Jangga Operations	Jangga	47
GH:K15	-21.3845	147.8621	20050630	ARTEFACT	Jangga Operations	Jangga	48
GH:K15	-21.3841	147.8622	20050630	ARTEFACT	Jangga Operations	Jangga	49
GH:K16	-21.3863	147.8621	20050630	TREE	Jangga Operations	Jangga	50
GH:K17	-21.3902	147.8626	20050630	TREE	Jangga Operations	Jangga	51
GH:K18	-21.3904	147.8627	20050630	TREE	Jangga Operations	Jangga	52
GH:K19	-21.391	147.862	20050630	TREE	Jangga Operations	Jangga	53
GH:K20	-21.3953	147.8619	20050630	ARTEFACT	Jangga Operations	Jangga	54
GH:K21	-21.3977	147.862	20050630	ARTEFACT	Jangga Operations	Jangga	55
GH:K23	-21.3936	147.8622	20050630	LANDFEAT	Jangga Operations	Jangga	56
GH:K63	-21.3234	147.8435	20050630	ARTEFACT	Jangga Operations	Jangga	57
GH:K63	-21.323	147.8432	20050630	ARTEFACT	Jangga Operations	Jangga	58
GH:K64	-21.3645	147.8596	20050630	ARTEFACT	Jangga Operations	Jangga	59
GH:K64	-21.3646	147.8592	20050630	ARTEFACT	Jangga Operations	Jangga	60
GH:K65	-21.3254	147.8474	20050630	TREE	Jangga Operations	Jangga	61
GH:K66	-21.3653	147.8588	20050630	ARTEFACT	Jangga Operations	Jangga	62
GH:K67	-21.3646	147.8591	20050630	ARTEFACT	Jangga Operations	Jangga	63
GH:K68	-21.3704	147.8615	20050630	ARTEFACT	Jangga Operations	Jangga	64
GH:K69	-21.3721	147.8621	20050630	TREE	Jangga Operations	Jangga	65

GH:J22	-21.2707	147.824	20030414	Grinding Dish	Jangga Operations	Jangga	66
GH:J23	-21.2894	147.8306	20030414	ARTEFACT	Jangga Operations	Jangga	67
GH:J24	-21.2886	147.8297	20030414	ARTEFACT	Jangga Operations	Jangga	68
GH:J33	-21.4253	147.8448	20030414	Grindstone	Jangga Operations	Jangga	69
GH:J34	-21.061	147.8088	20030414	ARTEFACT	QC98/12	Birri	70
GH:J34	-21.0613	147.8084	20030414	ARTEFACT	QC98/12	Birri	71
GH:J87	-21.0624	147.8077	20021129	ARTEFACT	QC98/12	Birri	72
GH:J88	-21.0588	147.8129	20021129	ARTEFACT	QC98/12	Birri	73
GH:J89	-21.0555	147.8164	20021129	ARTEFACT	QC98/12	Birri	74
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GH:J93	-21.1954	147.8569	20031030	ARTEFACT	QC98/12	Birri	77
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GH:K03	-21.2114	147.8255	20050630	ARTEFACT	Jangga Operations	Jangga	94
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GH:K05	-21.2172	147.8247	20050630	ARTEFACT	Jangga Operations	Jangga	96
GH:K06	-21.2174	147.8244	20050630	ARTEFACT	Jangga Operations	Jangga	97
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GH:K08	-21.2216	147.8227	20050630	LANDFEAT	Jangga Operations	Jangga	99
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GH:K39	-21.4964	147.8618	20050630	ARTEFACT, RESOURCE	Jangga Operations	Jangga	122
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GH:K46	-21.5107	147.8751	20050630	CULTURAL	Jangga Operations	Jangga	134
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GH:K49	-21.5179	147.882	20050630	ARTEFACT	Jangga Operations	Jangga	138
GH:K50	-21.5185	147.8829	20050630	ARTEFACT	Jangga Operations	Jangga	139
GH:K50	-21.519	147.8834	20050630	ARTEFACT	Jangga Operations	Jangga	140
GH:K50	-21.5188	147.8833	20050630	ARTEFACT	Jangga Operations	Jangga	141
GH:K50	-21.5188	147.8833	20050630	ARTEFACT	Jangga Operations	Jangga	142
GH:K51	-21.5305	147.8946	20050630	ARTEFACT	Jangga Operations	Jangga	143
GH:K52	-21.5313	147.8962	20050630	ARTEFACT	Jangga Operations	Jangga	144
GH:K53	-21.5312	147.8955	20050630	ARTEFACT	Jangga Operations	Jangga	145
GH:K54	-21.5342	147.8987	20050630	ARTEFACT	Jangga Operations	Jangga	146
GH:K57	-21.185	147.8378	20050630	TREE	QC98/12	Birri	147
GH:K58	-21.1876	147.8352	20050630	TREE	QC98/12	Birri	148
GH:K59	-21.1951	147.8296	20050630	CULTURAL	Jangga Operations	Jangga	149
GH:K60	-21.2053	147.8246	20050630	HEARTH, ARTEFACT	Jangga Operations	Jangga	150
GH:K60	-21.2053	147.8246	20050630	HEARTH, ARTEFACT	Jangga Operations	Jangga	151
GH:K60	-21.2055	147.8245	20050630	HEARTH, ARTEFACT	Jangga Operations	Jangga	152
GH:K60	-21.2053	147.8245	20050630	HEARTH, ARTEFACT	Jangga Operations	Jangga	153
GH:K60	-21.2049	147.8255	20050630	HEARTH, ARTEFACT	Jangga Operations	Jangga	154
GH:K61	-21.2062	147.8253	20050630	ARTEFACT	Jangga Operations	Jangga	155
GH:K62	-21.2098	147.8247	20050630	ARTEFACT	Jangga Operations	Jangga	156
GH:K97	-21.52	147.8809	20050601	HEARTH, ARTEFACT	Jangga Operations	Jangga	157
GH:K97	-21.5201	147.8797	20050601	HEARTH, ARTEFACT	Jangga Operations	Jangga	158
GH:K97	-21.52	147.8805	20050601	HEARTH, ARTEFACT	Jangga Operations	Jangga	159
GH:K97	-21.5201	147.8806	20050601	HEARTH, ARTEFACT	Jangga Operations	Jangga	160
GH:K97	-21.5201	147.8792	20050601	HEARTH, ARTEFACT	Jangga Operations	Jangga	161
GH:K98	-21.4862	147.8541	20050601	ARTEFACT	Jangga Operations	Jangga	162
GH:K99	-21.423	147.8449	20050601	HEARTH, ARTEFACT	Jangga Operations	Jangga	163
GH:K99	-21.4229	147.8445	20050601	HEARTH, ARTEFACT	Jangga Operations	Jangga	164

GH:K99	-21.4227	147.8445	20050601	HEARTH, ARTEFACT	Jangga Operations	Jangga	165
GH:K99	-21.4229	147.8453	20050601	HEARTH, ARTEFACT	Jangga Operations	Jangga	166
GH:K99	-21.4231	147.8449	20050601	HEARTH, ARTEFACT	Jangga Operations	Jangga	167
GH:L32	-21.1683	147.8668	20050623	ARTEFACT	QC98/12	Birri	168
GH:L33	-21.171	147.864	20050623	ARTEFACT	QC98/12	Birri	169
GH:L33	-21.1703	147.8645	20050623	ARTEFACT	QC98/12	Birri	170
GH:L33	-21.1709	147.8642	20050623	ARTEFACT	QC98/12	Birri	171
GH:L34	-21.1734	147.8587	20050623	ARTEFACT	QC98/12	Birri	172
GH:L34	-21.1753	147.8531	20050623	ARTEFACT	QC98/12	Birri	173
GH:L34	-21.1782	147.8486	20050623	ARTEFACT	QC98/12	Birri	174
GH:L35	-21.1809	147.8448	20050623	ARTEFACT	QC98/12	Birri	175
GH:L36	-21.1846	147.843	20050623	ARTEFACT	QC98/12	Birri	176
GH:L37	-21.1865	147.8414	20050623	ARTEFACT, LANDFEAT	QC98/12	Birri	177
GH:L38	-21.1841	147.8369	20050623	ARTEFACT	QC98/12	Birri	178
GH:L39	-21.1821	147.8384	20050623	ARTEFACT	QC98/12	Birri	179
GH:L39	-21.1829	147.8379	20050623	ARTEFACT	QC98/12	Birri	180
GH:L40	-21.1768	147.8421	20050623	LANDFEAT	QC98/12	Birri	181
GH:L40	-21.1771	147.8419	20050623	LANDFEAT	QC98/12	Birri	182
GH:L40	-21.1775	147.8416	20050623	LANDFEAT	QC98/12	Birri	183
GH:L40	-21.1781	147.841	20050623	LANDFEAT	QC98/12	Birri	184
GH:L40	-21.1762	147.8425	20050623	LANDFEAT	QC98/12	Birri	185
GH:L41	-21.1741	147.8472	20050623	LANDFEAT	QC98/12	Birri	186
GH:M50	-21.0577	147.8159	20050413	ARTEFACT	QC98/12	Birri	187
GH:M51	-21.06	147.8135	20050413	ARTEFACT	QC98/12	Birri	188
GH:M51	-21.06	147.814	20050413	ARTEFACT	QC98/12	Birri	189
GH:M52	-21.0612	147.8109	20050413	LANDFEAT	QC98/12	Birri	190
GH:M52	-21.0602	147.8129	20050413	LANDFEAT	QC98/12	Birri	191
GH:M52	-21.0618	147.8095	20050413	LANDFEAT	QC98/12	Birri	192
GH:M52	-21.0622	147.809	20050413	LANDFEAT	QC98/12	Birri	193
GH:M52	-21.0625	147.8084	20050413	LANDFEAT	QC98/12	Birri	194