



Cultural Heritage

15

## 15 Cultural Heritage

### 15.1 Introduction

Non-indigenous and Indigenous cultural heritage places and values were recorded as part of cultural heritage investigations. This section presents a description of the process for identification and management of non-indigenous and Indigenous cultural heritage associated with the project.

### 15.2 Indigenous Cultural Heritage

This section addresses Indigenous cultural heritage issues in relation to the project. An Indigenous cultural heritage study was undertaken (Appendix O). The study was conducted in accordance with relevant provisions of the Aboriginal Cultural Heritage Act 2003 (for pre-contact Indigenous cultural heritage) and the Queensland Cultural Heritage Act 1992 (for post-contact Indigenous cultural heritage), and comprised a literature review and a field survey.

Historical sources consulted during the study for this region included:

- Ethnographic and linguistic sources on the Traditional Aboriginal people in the region (eg. Curr 1887; Tindale 1974)
- Journals and diaries of European explorers and settlers in the region (eg. De Satge, O. (1901). Fetherstonhaugh, C. 1917. Leichhardt 1847; Murray 1860, 1863; Ling Roth 1908; Johnstone 1903-1905)
- Historical studies relevant to this area (e.g. Brayshaw 1977; 1990; Breslin 1992; Elder 1999; O'Donnell 1989, MacLean 1988, Mayes 1991, Wright 1984)
- Data collected by and on behalf of the BBKY people in the course of their Native Title research.

The cultural heritage fieldwork was undertaken over several fieldwork sessions between July and November 2008 by the project archaeologist and an average of four BBKY representatives. This cultural heritage study was undertaken under the provisions of The Aboriginal Cultural Heritage Act 2003 (for pre-contact Indigenous cultural heritage) and The Queensland Cultural Heritage Act 1992 (for non-indigenous and post-contact Indigenous cultural heritage).

#### 15.2.1 Historical Background

Leichhardt's expedition was the first of several early exploratory parties to pass through the region of the project site in the middle of the 19th century. Departing from the Darling Downs in October 1844 in search of an overland route to Port Essington on the north coast of Australia, Leichhardt travelled north-west across the Dawson and Mackenzie River valleys and upstream along a river he named after one F. Isaacs of the Darling Downs. Various entries in Leichhardt's journal (1847) from February 15 to early March 1845 describe numerous encounters with Aboriginal people and/or observations of their material culture. Some of his entries are relevant to the project site (NAC, 2009).



Leichhardt provided glowing reports of the pastoral possibilities for the area, which resulted in land being tendered for, and runs first leased, in about 1854. 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. The New South Wales Land Act operated in Queensland until April 1863 when the new Queensland Government made it compulsory for anyone taking up land to stock and occupy it. In the intervening period several individual land speculators who had taken up vast tracts of country in this region proceeded to sell them.

As was customary in newly settled districts, units of Native Mounted Police were installed in strategic locations to protect white settlement by dispersing (shooting) Aborigines who resisted this encroachment. Native police troopers were brought into the area in June 1862, and by mid 1860s a police barracks had been established at Fort Cooper station north of Nebo as a protective force for Europeans, at North Creek and according to oral accounts, on the Isaac River within the present Goonyella/Riverside mine lease. It is recorded that in four months in mid-1865 there were nine separate clashes between Native Troopers and Aboriginal people and dispersals of the latter.

The attrition rate in these years is not documented but some evidence was supplied by George Bridgeman, manager of Fort Cooper Station from the early 1860s. He reported to Curr (1887) that during the first 10 years of white occupation in the greater Nebo area alone '...about one half of the Aboriginal population was either shot down or perished from loathsome diseases... the black troopers, however, being the chief destroyers...' (Evans 1971). Other local squatters also wrote of massacres, mass poisonings and dispersals in which they had participated. Bridgeman is recorded as incurring the displeasure of the squatters by protecting Aboriginal people on Fort Cooper station in the 1860s. A report in the Mackay Mercury in 1869 stated that Bridgeman had allowed 90 Aborigines to shelter on Fort Cooper and had '...engaged 40 males, mostly boys, to clear the scrub, ringbark and cut wood in return for an occasional sheep, a plug of tobacco or some other trifling article' (Evans 1971).

The policy of dispersal was strongly opposed by social reformers, squatters who had cultivated and maintained good relations with Aboriginal groups, and those who wanted to employ Aboriginal people on the stations. By 1867 several enquiries had been held to investigate the activities of the Native Police, and as the frontier moved north the Native Police were relocated. Aboriginal people who remained in their traditional lands tended to be employed on the stations or occupied fringe camps on the outskirts of towns.

The Aborigines Protection and Restriction of the Sales of Opium Act of 1897 resulted in a policy of forcible removals of many Aboriginal people into Reserves and strict regulation of employment. Subsequent removals continued until the late 1960s, and many people were removed to Taroom, Cherbourg, Woorabinda and Palm Island Aboriginal Reserves, causing a dislocation of people from their country. In this area, however, a number of Aboriginal people remained working on properties within the traditional lands. There are examples also of people under the Act returning from the Reserves to work in their traditional



lands, thus retaining their ties with their traditional lands. Many Aboriginal people were recorded as having worked on the stations in this area until very recently.

## **15.2.2 Environmental Values**

### **15.2.2.1 Assessment of Significance**

The Indigenous cultural heritage found at the project site (refer section 15.2.2.2) was assessed for its significance as provided for in the Queensland Aboriginal Cultural Heritage Act 2003 (ACH Act) and The ICOMOS Charter for the Conservation of Places of Cultural Significance (The Burra Charter) 1977.

The Burra Charter defines significance as aesthetic, historic, scientific or social value for past, present or future generations (Guidelines to The Burra Charter Section 2.1). The concept of significance is multi-faceted, and any one cultural heritage site may have different kinds of significance at different times and to different interest groups. This act acknowledges that the Australian Aboriginal cultural record can generally be divided into:

- Physically identifiable objects (archaeological sites).
- Objects/places that are not physically identifiable (sites sacred or significant to Aboriginal people which can be unmodified features of the landscape).

#### ***Scientific (Archaeological) Significance Assessment***

The scientific significance of a place is assessed according to its research potential and representativeness. Archaeological research potential refers to a site's ability to provide unique information on past human activities particularly everyday life, which more often than not is not available in documentary sources (Bickford and Sullivan 1984). Specifically, archaeological sites can supplement other information on local histories by identifying physical relics of human activities, past climates and vegetation patterns by analysis of pollen grains, and past diets and resources by the identification and analysis of plant, shell and bone remains. Such information may relate to questions of local culture history spanning tens or even thousands of years or to even more general questions relating to the evolution of cultures.

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; the rarer a site, the greater its significance. In areas not well represented by physical, archaeological remains, all sites must be considered significant until proven otherwise. Older sites, those that contain particular attributes, or a mixture thereof, that are not found elsewhere, or those in which the archaeological material is unusually well preserved would potentially fall within the category of unique.



The scientific significance of a site generally increases as its potential to provide information increases. For any given place the significance will be greater where evidence of its association or the event that created it survives in situ than where it has been changed or evidence of context does not survive.

### ***Sites/Places of Significance to Traditional Owners***

Under the ACH Act, places may be significant because of a past event, because of association with a story, or because of an inherent spiritual quality associated with the place. Such places may not exhibit any visible indicator of their significance. As stated in Section 12 of the ACH Act:

For an area to be a significant Aboriginal area, it is not necessary for the area to contain markings or other physical evidence indicating Aboriginal occupation or otherwise denoting the area's significance.

Significant cultural places are not restricted to the period prior to contact with Europeans and may comprise events from the contact period and the more recent past. If these events relate to a specific place in the landscape, then that place (i.e. the site) may become sacred or highly significant to the local Aboriginal communities. Scientific significance assessment is not necessarily consistent with Aboriginal people's cultural evaluations, but the Aboriginal cultural values of a site or place may, under The Aboriginal Cultural Heritage Act, override other forms of significance assessment.

#### **15.2.2.2 Findings**

Indigenous cultural heritage surveys of the project site undertaken between July and November 2008, resulted in the identification of numerous cultural heritage sites, items and significant natural features of Indigenous origin (NAC 2008), including:

- More than 1,200 surface stone artefacts of various types and raw materials (in disturbed and/or deflated low to high density concentrations and isolated finds) occurring mainly in association with creek and river terraces, gullies and drainage lines (Table 15.1).
- 13 scarred trees with a total of 14 scars of likely cultural origin
- Aboriginal fireplaces
- Artefact knapping floors
- A silcrete extraction site
- A cultural stone feature
- Natural features with cultural significance
- A possible historic feature.

Illustrations of items found are provided in Appendix O.



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**Table 15.1 Classification of Site Types (after Hatte 2004)**

Isolated Find	Low Density Artefact Scatter	Medium/high Density Artefact Scatter
One or two artefacts lying 10 m or more from their nearest neighbours	<p>A concentration of 3-30 artefacts</p> <p>Site area usually less than 50 m<sup>2</sup></p> <p>Maximum density usually 2 or &lt; 2/m<sup>2</sup></p>	<p>Concentration of &gt;30 artefacts</p> <p>Site area usually &gt; 50 m<sup>2</sup></p> <p>Maximum artefact density &gt;2/m<sup>2</sup></p> <p>May contain discrete activity areas such as knapping floors, hearth features, native wells etc.</p>

Cultural materials were identified in association with the following natural landforms and features:-

- Banks and alluvial terraces associated with Cherwell, Harrow, Nine Mile, Horse and Grosvenor Creeks and associated gullies and drainage lines, either in alluvium or on older ground surfaces that have been exposed by sheet or gully erosion.
- The existing and cleared *Acacia* and *Eucalyptus* dominant forests.

Certain natural resources that supported the economic and cultural systems of Aboriginal people who lived in the area of the project were identified as follows:

- A variety of native plants with documented or orally reported Aboriginal uses (Table 15.2).
- Documented and orally reported lists of native animals that either provided food or were intimately linked with Aboriginal people in other ways.
- Local supplies of silcrete, chert, sandstone, basalt and petrified wood and less commonly occurring raw materials such as rhyolite, chalcedony and quartz.

The distribution of artefacts across the project site was not random, with a clear concentration of occupation along the creeks. Some of the creeks appeared to have been more attractive for living than others. High density artefact scatters were found in erosion round the creeks just north of the Peak Downs Highway, although they did not appear to contain the same concentrations as found at Cherwell and Horse Creeks, though surface visibility was very similar. In spite of intensive surveys of the hillier country west of Horse Creek and the lengthy narrow strip west of the Peak Downs Mine, very little cultural material was found.



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**Table 15.2 List of Vegetation Species in the Project Site with known Traditional Uses**

<b>Botanical Name</b>	<b>Local Name</b>	<b>Traditional Use/s</b>
<i>Acacia cambageana</i>	Bendee	Implements, fire
<i>Acacia harpophylla</i>	Brigalow	Implements, fire, medicine
<i>Acacia rhodoxylon</i>	Rosewood	Implements, medicine
<i>Acacia salicina</i>	Black wattle	Food, implements
<i>Acacia shirleyi</i>	Lancewood	Implements
<i>Archidendropsis basaltica</i>	Dead finish	Implements
<i>Alphitonia excelsa</i>	White myrtle, soap tree	Soap
<i>Bauhinia spp.</i>	Bauhinia	Implements
<i>Brachychiton populneus</i>	kurrajong	Food, water, implements, string
<i>Capparis cansecens</i>	Wild orange	Food
<i>Capparis lasiantha</i>	Split Jack, wait a while	Food
<i>Carissa ovata</i>	Native currant bush or burrum	Food
<i>Cassia brewsteri</i>	Leichhardt bean	Medicine
<i>Cymbidium canaliculatum</i>	Black orchid or wild arrowroot	Food, medicine
<i>Eremocitrus glauca</i>	Native limebush	Food, medicine
<i>Eremophila mitchelii</i>	False sandalwood	Fuel, medicine, ceremonial
<i>Erythroxylum australe</i>	Native cherry	food, medicine
<i>Erythrophleum sp.</i>	Ironwood	Implements
<i>Eucalyptus populnea</i>	Poplar box	Implements
<i>Corymbia sp.</i>	Bloodwood	Implements, medicine
<i>Geijera parviflora</i>	Wilga	Implements
<i>Grewia retusifolia</i>	Emu berries, dog balls	Food
<i>Owenia acidula</i>	Emu apple	Food, implements
<i>Petalostigma pubescens</i>	Quinine	Medicine, implements
<i>Santalum lanceolatum (true sandalwood)</i>	True or commercial sandalwood	Medicine
<i>Terminalia oblongata</i>	Yellowwood	Implements
<i>Unknown</i>	Possumberry	Food
<i>Enchylaena tomentosa</i>	Ruby saltbush	Food
<i>Zehneria cunninghamii</i>	Native cucumber	Food
<i>Heteropogon sp.</i>	White spear grass	Food

### ***Stone Artefacts***

The range of artefact types identified varied across the project site and consisted of cores, flakes (at primary, secondary and tertiary stages of reduction), broken and intact grindstones and mullers, blades, utilised scrapers of various kinds (including steep edge and tulas) and hammerstones. The greatest concentrations were found in erosion and mine-related exposures along the high banks and terraces of Cherwell Creek, Harrow Creek and Horse Creek where artefact densities at times exceeded 10 per square metre and were virtually continuous wherever there was erosion.

The area surrounding the existing Cherwell Creek diversion, a large dry dam north of the creek, and diggings on the north-eastern end of Heyford pit were also extremely rich in artefacts. It is likely that the disturbance had brought the material to the surface. Although a widespread salvage of artefacts had already been undertaken, artefacts were still appearing and will probably continue to do so in the future.

Although the concentrations of artefacts were disturbed to varying degrees, specific activity areas were identified within the more extensive sites. Fifty-three broken and intact grindstones and mullers were identified within 2 km along Horse Creek, suggesting an intensive local food grinding industry. There was evidence of some artefacts having been damaged recently and therefore larger artefacts found intact were removed from site and placed into the custody of the BBKY Traditional Owners. Further erosion will likely continue to expose more artefacts. The concentration of grindstones and mullers found in this survey parallels similar finds on the other side of, and further up, Horse Creek (Gorecki 2006). Evidence of similar activities has also been observed along certain creeks to the east on the mining leases of Peak Downs, Millennium, Carborough, Burton and Broadlea. The finds at the project site broaden the extent of this potential regional industry.

Along with the grinding implements along Horse Creek, 45 cores of mainly silcrete, but also petrified wood, basalt and quartz, were identified. These were identified within a particular concentration distance of 200 m. Approximately 70% of all artefacts found consisted of silcrete. Petrified wood (approximately 150) and chert (approximately 80) were also relatively common materials for flaked artefacts, while the least common materials were rhyolite (5 artefacts including a fragment of a finely ground axe) and crystal quartz (13 artefacts). Twelve basalt artefacts were found distributed very sparsely throughout the project site but their use as mullers, anvils and hammerstones was confined to the northern section along Horse Creek, closer to the source of natural basalt. Almost 20% of flaked artefacts exhibit some kind of wear.

### ***Knapping (Flaking) Floors***

Within artefact scatters were several features identified as stone tool knapping floors, consisting of very small pieces of stone debitage or rejected fragments in the process of knapping flakes from a core. These features are generally difficult to identify because of small size of the debitage (mainly <2 cm). A concentration of debitage fragments indicates the presence of a knapping floor. In an undisturbed state they may still contain the core and the hammerstone that was used to strike the core. The sites along Horse



Creek contained large numbers of cores and hammerstones, but knapping floors that would once have been there could not be specifically identified due to the disturbance by cattle.

### ***Scarred Trees***

Scarred trees are trees of species suitable for bark removal, where the bark has historically been levered off in sufficiently large quantities to be used for various purposes. Thirteen trees with 14 scars of cultural origin were found throughout the project site. Two situated in the south-eastern corner of the project site were recorded in earlier fieldwork (Woorra 2005). Twelve of the trees were poplar box with only 4 of these living. The thirteenth tree was a dead coolabah tree. Most scars were subject to visible deterioration from the elements, insect activity or fire. The varied shapes of the scars recorded in the project site suggested that bark was removed to make shelters, canoes, shields and/or coolamons (containers). Some small scars in hollow trees suggested the removal of bark to gain access to possums or honey. Ten of the scars in the were between 1 and 2 m long suggesting a range of uses for the bark, while the three scars that were 2 m or more in length would most likely have been used as canoes due to the shape of the scar. Assemblages of scarred trees close to major rivers usually include a greater percentage of large scars, bark from which would have been used as canoes. The absence of very small scars indicates that cutting trees to extract honey or possums was uncommon. Extensive clearing has resulted in large old scarred trees being an increasingly rare cultural resource. Living scarred trees are even more rare, and are a direct, living link with the post-European contact past and traditional people. As well as being of high cultural significance to the Traditional Owners, their archaeological (scientific) significance is also increasing due to the scarcity.



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**Table 15.3 Scarred trees in the Project Site**

No.	Dimensions (cm)	Tree Type	Description and Condition
5	132x9x12	Dead standing box	Scar faces SW, hollow, base to ground 62; ht >15 m. Wood subject to deterioration
34	50x25x11 34x11x8	Dead standing box	Faces E, base to ground 65; (2) faces W, base to ground 103 (Diam 68 cm, Height of tree 10 m
38	103x 32x11	Living box	Faces W, Base to ground 56 cm, Diam 76cm, Height of tree 10 m
51	107x28x17	Living box	New growth: Diam. 73 cm; Base to ground – 7 cm; Ht 15 m; Cond'n - scar wood partly intact, top rotted half way to base.
62	186x35x6	Dead standing box	Diam.61 cm; Base to ground 28 cm; Height 10-15 m. Condition. Scar wood intact, tree starting to deteriorate.
87	114x18x21	Living box	Diam.59 cm; Base to ground 37cm; Ht 10 m; Faces N. Cond'n: hollow, trunk dead from drought, regrowing 2nd trunk from branch.
89	179x26x14	Dead standing box	Diam. 62 cm; ht. 8 m; Facing East. Condition: Top split, base of scar wood rotting, Inner wood detached, held together by ant nest. A 2nd scar is natural.
90	80x13x10	Living box	Living trunk (one of two). Base to ground 18 cm; Diam. 42.5 cm; trunk height 6m. 2nd trunk 10 m. Cond'n: scar wood starting to rot.
107	150x30x29	Dead standing box	Base to ground 89 cm; Tree ht 8-10 m; diam 70 cm; cond'n: entire back of tree gone, scar wood intact but split, tree split from top of scar
230	115x37x15	Dead Coolabah stump on ground	Scar base on ground; Ht of stump 250 cm. Condition: stump broken, wood deteriorating, prob. pushed by dozer during clearing, some minor burning
18.7.05	61x24x9	Dead standing box	Base to ground: 110 cm, Height: 6-8 m, Scar Faces: SE. Cond'n: hollow. Inner wood appears to be struck with an axe.
18.7.05	119x29x13c	Dead standing box	Diam: 62 cm, Scar Facing: NE, Height of Tree: 6-8 m.
18.7.05	150x15x20	Dead Box on ground	Diam: 70 cm, Height: 6 m. Cond'n hollow, deteriorating

Note: Location details of the scarred trees can be made available with permission of the Traditional Owners.

### **Stone Extraction Site (Quarry)**

A large open area with an exposure of grey silcrete nodules was recorded on a gentle slope near a small gully about 600 to 700 m west of Horse Creek. Many of the artefacts identified at this site were found in a pre-form (i.e. in a natural state before refinement). These would have likely been taken to be finished at a later stage or place.

### ***Fireplaces***

Ten suspected Aboriginal fireplaces were found in the project site, and eight of these (all less than 50 cm in diameter) were concentrated in one short section of Horse Creek. Some of these fireplaces contained burnt artefacts such as mullers and flakes. According to oral information from the Traditional Owners, these types of fireplaces were for ritual purposes rather than for heating or cooking and may be of significance. They have the potential to contain datable organic material (charcoal, burnt seeds, etc) which may assist in determining the age of these campsites.

### ***Historic Feature***

In the cleared northern section of the project site, a low basalt outcrop with an exposure of about 50 m by 10 m was identified. Loose, naturally occurring basalt stones were piled up on the eastern side to form a base filled with sand to a height of about 50 cm. The recent age of this feature was gauged when a concrete besserblock and a piece of polythene water pipe were also identified. It was determined that this feature was probably a base for a tank, and of relatively recent origin.

### ***Existing Impacts to Indigenous Cultural Heritage***

Known Indigenous cultural heritage is currently being adversely impacted on by erosion caused by the Cherwell Creek diversion and clearing of the riparian zone of Horse Creek, and physical damage caused by cattle. Considering the archaeological evidence that has been recorded in various studies along both watercourses, unrecorded cultural heritage in the area may be currently being impacted also.

### ***Landscape Significance***

The survey identified that the spatial distribution and density of artefacts were directly proportional to the degree of disturbance in the environment. High densities of artefacts were identified in eroded sections of the creek environments, while little surface material was identified in similar and adjacent undisturbed locations along the same creeks. While few artefacts were identified in these adjacent areas, the undisturbed, intact banks and terraces of the watercourses within the project site retain high cultural value for their intact subsurface content. A rich cultural zone existed along all of the larger creeks in the project area. The sections between the creeks would have been exploitation zones where people may have camped for short periods when resources and water were available. The Traditional Owners of the area have identified the project site as a landscape with highly significant cultural attributes and values.

### **15.2.3 Potential Impacts**

There is significant potential for the cultural values associated with the watercourses to be degraded due to erosion and sedimentation resulting from construction, diversion and operational activities. Measures to mitigate and manage adverse impacts on Indigenous cultural heritage are identified in Section 15.2.4 within the context of the ACH Act and associated Duty of Care Guidelines. Section 11 of the ACH notes:-If a particular object or structure is evidence of Aboriginal occupation, the area immediately surrounding that



object or structure is also evidence of Aboriginal occupation to the extent the area cannot be separated from the object or structure without destroying or diminishing the object or structure's significance as evidence of Aboriginal occupation. Section 12 notes:-For an area to be a significant Aboriginal area, it is not necessary for the area to contain markings or other physical evidence indicating Aboriginal occupation or otherwise denoting the area's significance. Protection of the area surrounding artefacts is consistent with provisions of the ACH Act, and is preferable to salvaging individual objects that are then removed from their contexts and lose much of their cultural and scientific value.

#### **15.2.4 Mitigation Measures**

This section details measures to be adopted by the project to mitigate and manage potential impacts to Indigenous cultural heritage across the project site.

##### **15.2.4.1 Specific Areas**

Procedures will be implemented early in the planning stages of the project to manage and/or mitigate impact on areas containing cultural heritage in the project site from mining related activities. Specifically:

- Disturbance within 100 m of a major creek will be monitored by traditional owner representatives.
- Where it is proposed that creeks be diverted to allow for a mine pit, long term planning will consider the effect of the diversion on the cultural, as well as the physical and ecological, effects on the banks.
- Identified isolated artefacts and low density scatters, apart from those within specifically defined or protected zones, will be salvaged by Traditional Owner representatives prior to any development works.
- Livestock will be managed on leased properties, with no-go areas established at least 100 m along both banks of the major creeks. An experienced BBKY field team will be commissioned to plot the width and length of the corridor containing cultural heritage significance to better establish appropriate no-go areas.
- Disturbance to the 13 scarred trees will be avoided where possible. Scar trees to be avoided will be marked and fenced as no-go areas. However, if disturbance is unavoidable, procedures established by traditional owners for dealing with scarred trees will be adopted.
- The fireplaces identified at the project site have the potential to provide valuable insights into past Aboriginal cultural practices by radiocarbon (C14) dating of burnt organic remains such as charcoal, wood and seeds. Further recording and research will be undertaken by traditional owner representatives at these and other sites outside protected areas where disturbance is to take place from mine related activities. Such research could include archaeological excavations of any fireplaces if they will be directly impacted by mining or associated activity.
- Impact in the vicinity of the large area of Brigalow and Native Orange trees near the proposed rail extension and the Bower Bird nest will be minimised.



- Topsoil stripping for the rail extension will be monitored, by Traditional Owner representatives, between the junction with the existing rail line to the eastern side of the gully.

In the event that unrecorded cultural heritage sites or materials are discovered in surface or sub-surface deposits during future operations, work at that particular location will cease and be cordoned off as a no-go area until Traditional Owners are contacted to provide advice on significance of the finds, and management/mitigation options. A program of cultural heritage inductions will be implemented at the project as presented by BBKY representatives for personnel and contractors involved in the construction and the subsequent day to day working of the mine.

Should skeletal material suspected of being of Indigenous human origin be discovered, all operations within 100 m of the skeletal material will cease immediately upon its discovery, and procedures outlined in relevant legislation and the project's Human Remains Draft Burial Policy (NAC 2008) will be followed.

#### **15.2.4.2 Cultural Heritage Management Plan**

Section 87 of the Aboriginal Cultural Heritage Act 2003 outlines when a Cultural Heritage Management Plan (CHMP) is required to be completed. Specifically, a CHMP is needed if an EIS is required for the project. Pursuant to Section 87(2) of the ACH Act, approval of leases, licences, permits or overall project approval can be given subject to conditions to ensure that no excavation, construction or other activity that may cause harm to Aboriginal cultural heritage takes place for the project without the development and approval of a CHMP for the project. It should be noted that ML1775 is currently the subject of a CHMP between BMA and BBKY, and negotiations with BBKY are currently underway to utilise that CHMP as a basis for a new CHMP specific to the Caval Ridge project.

When the Traditional Owners and BMA are negotiating a CHMP, the following items will be taken into account:

- Arrangements for the ongoing management and protection of cultural heritage after the mine is decommissioned.
- Assignment of responsibility for management measures and corrective action, to ensure that cultural values are included in the rehabilitation of creeks via plants and cultural items.
- Associated with the above, a consideration of long term arrangements for the artefacts that will be salvaged from various areas and stored in preparation for their eventual return to the land. Consideration will be given in particular for their return to the approximate areas (ie. Grid Reference locations) from which they were collected (though the rehabilitated area may be dramatically altered in appearance).
- In the absence of a CHMP specific to this project, the agreement between BBKY and BMA for the adjacent Peak Downs Mine is being used as a framework for cultural heritage surveys and clearances to activities such as geotechnical investigations and ongoing exploration activities.

### **15.3 Non Indigenous Cultural Heritage**

This section addresses non-indigenous cultural heritage issues in relation to the project and is summarised from the Non-Indigenous Cultural Heritage Survey of Caval Ridge, Central Queensland (Archaeo 2008). The non-indigenous cultural heritage survey was conducted under permitting arrangements with the EPA (EPA permit number CHST00240207).

#### **15.3.1 Historical Background**

An historical overview of the broad areas under consideration is provided below and presents a platform for discussions regarding non-indigenous cultural heritage significance and management recommendations. A detailed assessment of the historical background is provided in the Appendix O2.

##### **15.3.1.1 Early European Pastoralism**

German explorer Ludwig Leichhardt was the first European to enter the northern Bowen Basin (Killin 1984). Ludwig spent January and February 1845 camped in and exploring the region that he later named Peak Downs and noted that it contained a number of both well grassed and luxuriant plains and scrubby sandstone ridges (Leichhardt 1964). Ludwig also noted the presence of coal after his party attempted to sink a waterhole, but this was not of prime concern as he sought areas for pastoral use (Murray 1996).

While passing through the area of modern Moranbah in February 1845, Leichhardt encountered a river that he named Isaac in honour of his friend and supporter F. Isaacs from the Darling Downs (Leichhardt 1964). Encouraged by the reports of Leichhardt and other explorers, various people took up pastoral leases in the area in the decade that followed.

Although there was some early optimism about farming in the Moranbah district, sustainable agriculture proved difficult to establish. The Queensland State Farm at Gindie that ran from 1897-1932 failed to encourage widespread agriculture in the district (Killin 1984). Another state-sponsored venture after the Second World War, The Queensland British Food Corporation, failed due to adverse weather conditions (Rogers 1964). Nonetheless, a number of individuals saw the possibility to succeed on smaller plots. This smaller scale grazing was somewhat successful, but during the 1960's the area remained sparsely populated and underdeveloped in terms of infrastructure (Murray 1996).

##### **15.3.1.2 Early Mining**

Gold and copper were the first minerals to be extracted from the Bowen Basin in large quantities. Although the existence of coal had been known since Leichhardt's first explorations, the absence of reliable transport infrastructure was a barrier to its development as an industry. Following the discovery of gold, the area experienced its first gold rush centred on the town of Clermont in August 1863 (Killin 1984). Commensurate with the perception of quickly earned fortunes the town became renowned as an enterprising little township remarkable only for its debauchery and bad language (Bolton 1963). The gold deposits were soon



exhausted and by 1887 Queensland Mining Warden Edmund Morey concluded that the area was no more than a poor man's field where washing-up and fossicking were the only remaining activities (Morey 1888).

Copper soon replaced gold as the life-blood of the Bowen Basin (O'Donnell c1989). The first discovery of copper was made by Jack Mollard in 1861 (O'Donnell c1989). Reflecting the future trend in mining operations in the region, Sydney entrepreneur John Manton formed the Peak Downs Copper Mining Company with £100,000 capital in 1862 (Killin 1984). Although this was the largest copper mining concern in the area, copper was still largely mined by individuals.

In connection with the discovery of copper and gold there was a boom and bust cycle in many of the Bowen Basin settlements. Small towns situated at or close to gold and copper fields relied heavily on minerals for their well-being. Often when the deposits were exhausted the town ended too. Copperfield, Birimgan, Blackridge, Douglas Creek, McDonald's Flat and Theresa Creek were all mining towns that once were large enough to have schools and other basic services, but which eventually were deserted (O'Donnell c1989).

Following the exhaustion of the gold fields, the town of Blair Athol began to produce coal in a limited capacity for the central railways (Killin 1984). But the lack of a local market and absence of a rail link made the mine uncompetitive (Whitmore 1985). With the extension of the Northern (later Central) railway line to Clermont in 1884, a small market for local coal evolved.

Underground coal mining had been the dominant technique in the Bowen Basin, but this method proved dangerous, costly, and inefficient. In order to competitively extract coal, John William Hetherington committed his Blair Athol Coal and Timber Company to experiment with open cut mining methods in 1921 (Whitmore 1991). Beset by a variety of technological, weather, and transportation problems and coupled with a low world demand for coal this experiment in open cut mining was suddenly ended in 1923 (Whitmore 1991).

It was not until Blair Athol Opencut Collieries Limited that the open cut method was successfully applied to the coal seams of the northern Bowen Basin. Assisted by technological developments Blair Athol Opencut Collieries began open cut mining in 1937 (Killin 1984). This decision was rewarded with increased demand caused by improved world markets and World War II. Following 1945 Blair Athol Coal and Timber also reverted to open cut mining at their mines with some success (Killin 1984).

However, the economic viability of coal from the region was beset by the same problems; distance from large markets and lack of reliable transportation. These traditional problems were exacerbated when Queensland Rail changed to diesel locomotives in 1952 (Killin 1984). These developments forced Blair Athol Opencut Collieries and the Blair Athol Coal and Timber Company to merge and form Blair Athol Coal Pty.Ltd in 1965 (Killin 1984). Despite technological advances, coal from Blair Athol was not competitive on the international market leading to large amounts of stockpiling (Martin and Hargraves 1993).

With the purchase of Blair Athol Coal by a joint venture of Conzinc Riotinto of Australia (CRA) and Clutha in 1968, the era of multi-national companies in the Bowen Basin began (Killin 1984). The US multinational



Utah Development Corporation (UDC) opened their first open cut coal mine in Blackwater in 1968, 290 km south-east of current day Moranbah (Martin and Hargraves 1993). These large multinationals bought the necessary capital to modernise mining, ready access to large domestic and international markets, and enough political influence to ensure the necessary infrastructure developments.

By 1990 Queensland had taken the mantle of Australian largest coal producing state (Martin and Hargraves 1993) and by 1997 two thirds of Queensland's \$10 billion production of coal came from the Bowen Basin ("Advances in Mine Site Rehabilitation" 1997).

### **15.3.1.3 Development of Moranbah**

Located 160 km west of Mackay the township of Moranbah has developed as the major social, transport and economic hub in the vicinity of the project site. The origin of the word Moranbah remains somewhat unclear. The earliest record use of the term was to describe Andrew Scott's run prior to the 1880's. By the 1920's the designation had changed to Moranbah, but when the town name was gazetted in 1969 the original Moranbah had returned (Murray 1996).

Although there were reports of high grade coal in vast quantities in central Queensland (Chas. R. Hetherington & Co. Ltd. 1964), it was not until the discovery of a large seam of coal at Goonyella near the Isaac River that the town of Moranbah was built (Williams 1979). American multi-national UDC took up the mining rights to the land and with the forecast for approximately 400 employees, 1,100 acres the Moranbah lease was purchased and became crown land (Belyando Shire Council 2006). On 4 October 1969 the Queensland Government Gazette announced notification of intention to assign a place name, Moranbah, in the Parish of Moranbah, County of Grosvenor, in the shire of Belyando (Murray 1996). This action was complete on 22 January 1970 when the land for both Moranbah and Goonyella was transferred from the Nebo Shire Council to the Belyando Shire council (Nebo Shire Council 2005).

### **15.3.2 Environmental Values**

It is understood that the Isaac Regional Council is in the process of developing a heritage register, consultation with Council officers revealed that there was no specific information available in relation to the project site. A search of the Queensland Heritage Register was carried out in an attempt to locate any non-Indigenous sites that had already been identified as possessing a level of significance. No sites within the project site were identified on the EPA register.

On-line searches of the National and Commonwealth Heritage Register, Register of the National Estate and the Queensland Heritage Register web sites were conducted to identify places and sites of cultural heritage significance located within the project site. The National and Commonwealth Heritage Registers, along with the Register of the National Estate is compiled by the Australian Heritage Commission and is an inventory of Australia's natural and cultural heritage places that are worth conserving for the future. The Wilandspey Environmental Park and the Peak Range Areas were identified on the Register of the National Estate.



These sites are of natural heritage significance. These sites are not within the project site and will not be impacted by the project.

### 15.3.3 Field Survey

The field survey methodology adopted for this project incorporated a vehicle and pedestrian inspection of the project site and analysis of aerial photography. Landmark areas were targeted, for example property boundaries, easements, and known locations of homesteads, dams and holding yards. It is estimated that approximately 50% of the project site was traversed. For this particular survey, a purposive sampling strategy was employed. Historical and contextual research, including the review of aerial imagery and consultation with leaseholders, enabled a comprehensive survey of areas known to be of historical interest whilst remaining inside the survey timeframes. Field surveys were conducted in December 2007 and August 2008.

### 15.3.4 Historic Sites and Places located within the Project Site

Historical sites of cultural heritage significance are those sites which contain suitable value to warrant a significance and impact assessment. These sites are considered to contain suitable significance and value to the project site as a result of contextual research conducted prior to the field survey, consultation with relevant stakeholders and other best practice cultural heritage assessment techniques. There were no historical sites of cultural heritage significance located within the project site during these surveys.

Places of historical interest are those which contribute to the broader discussion of historic cultural heritage sites and places, they do not, however, provide a suitable level of cultural heritage significance in their own right to justify further assessment or specific mitigation strategies. Five places of historic interest were located and are identified by the prefix HI. The location of these sites is provided in Table 15.4 and shown on Figure 15.1. A description of these sites and the likely impact the project will have on these sites is also provided below.

**Table 15.4 Places of historic interest identified within the Project Site**

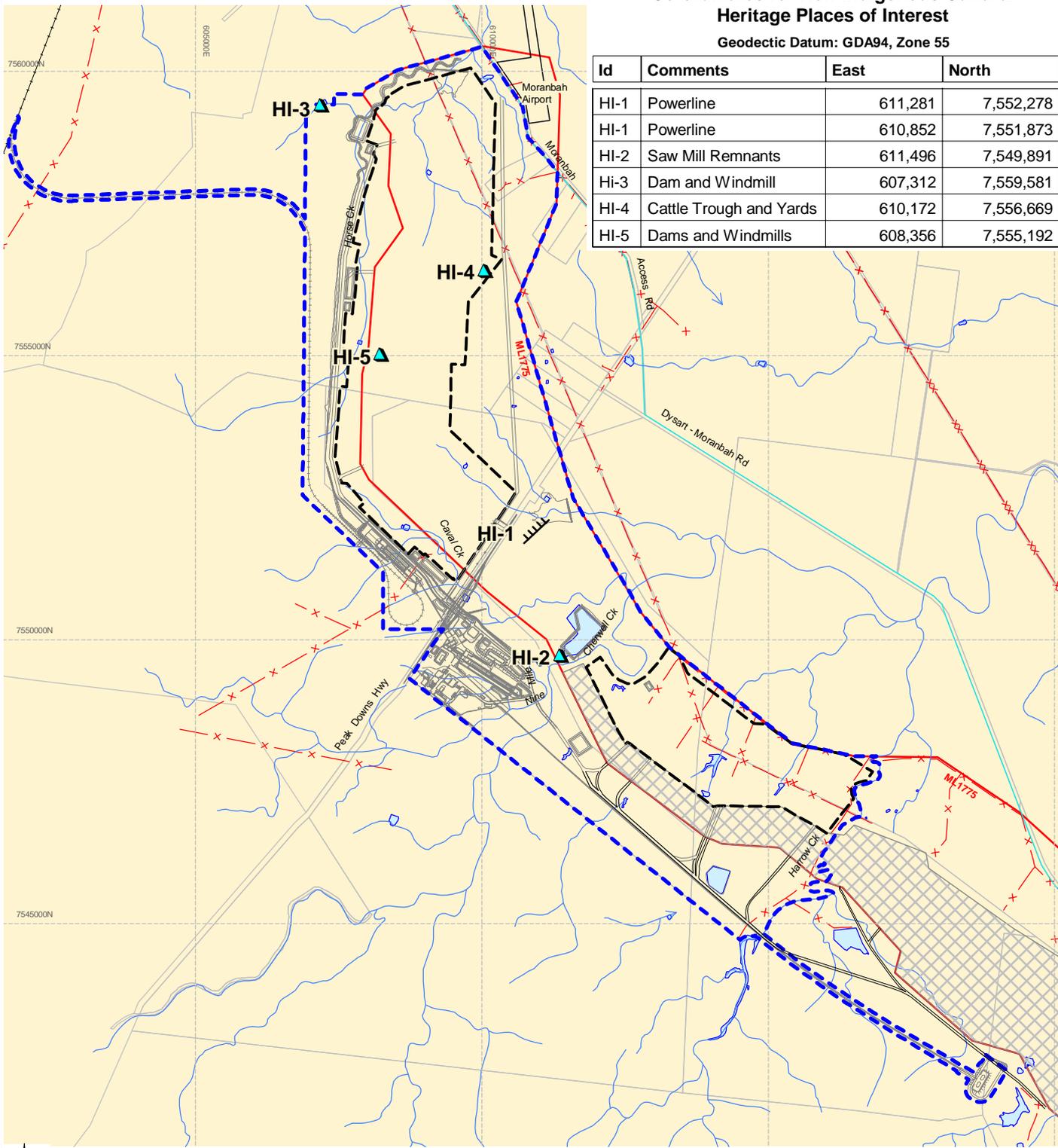
Place ID	GPS Coordinates <sup>1</sup>		Comments
	Eastings	Northings	
HI-1	611281 610741	7552278 7551695	Telegraph line
HI-2	611496	7549891	Saw Mill Remnants
HI-3	607312	7559678	Dam and Windmill
HI-4	610172	7556669	Cattle Trough and Yards
HI-5	608356	7555192	Dams and Windmills

1. Geodetic Datum: WGS94. Grid Zone 55K.

### Co-ordinates for Non-Indigenous Cultural Heritage Places of Interest

Geodectic Datum: GDA94, Zone 55

Id	Comments	East	North
HI-1	Powerline	611,281	7,552,278
HI-1	Powerline	610,852	7,551,873
HI-2	Saw Mill Remnants	611,496	7,549,891
HI-3	Dam and Windmill	607,312	7,559,581
HI-4	Cattle Trough and Yards	610,172	7,556,669
HI-5	Dams and Windmills	608,356	7,555,192



0 1.25 2.5km  
Scale 1:100,000 (A4)  
Datum: AGD84, AMG Zone 55

-  Project Site
-  Place of Interest Location
-  Proposed Mine Infrastructure
-  Current Powerlines
-  Mining Lease
-  Mine Pit Outline
-  Existing Mined Area

Source: BMA Supplied Data (November 2007)  
Note: Prepared by URS on behalf of ARCHAEO Cultural Heritage Services.  
Coordinates of "Points of Interest" were provided by ARCHAEO.

<p>Client</p> 	<p>Project</p> <p>CAVAL RIDGE PROJECT ENVIRONMENTAL IMPACT STATEMENT</p>	<p>Title</p> <p>CAVAL RIDGE MINE FOOTPRINT AND PLACES OF HISTORICAL INTEREST</p>
	<p>Drawn: VH    Approved: RS    Date: 08-05-2009</p> <p>Job No: 4262 6158    File No: 42626158-g-576b.wor</p>	<p>Figure: 15.1</p> <p>Rev: B A4</p>

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#### **15.3.4.1 HI – 1 Telegraph Line**

An old telegraph line is located approximately 500 m south of the Peak Downs Highway, in the centre of the project site (Figure 15.1). The remains of the telegraph line are shown in Figure 15.2. The line of timber posts extends for at least 1.5 km in a north-east to south-west alignment. There are at least 15 thin timber posts, positioned approximately 100 m apart, each with a ceramic conductor attached. Most of the posts are on a fairly steep inclination (approximately 45°) with some having completely collapsed. Otherwise, all are in relatively good condition. Original telegraph wire was only sited on one telegraph post.

The telegraph line is located outside the projects area of disturbance and will not be impacted by the project.



**Figure 15.2 North View - Telegraph post**

#### **15.3.4.2 HI – 2 Saw Mill Remnants**

Saw mill remnants consisting of three piles of sawn timber are located in the central / southern section of the project site (Figure 15.1), the remains of the saw mill are shown in Figure 15.3. These are the only remnants of a saw mill that apparently once existed in the area. Leaseholder consultation indicates this small mill was built during the 1970s by a local landowner in response to the large amount of timber being cleared in preparation for the Peak Downs mining operation. Immediately east of the piles of sawn timber are stock piles of lumber.

The saw mill remnants are located outside the project's area of disturbance will not be impacted by the project. If required, back access roads will be aligned so that they do not disturb the site.



**Figure 15.3 South east view - Piles of sawn timber.**

#### **15.3.4.3 HI – 3 Dam and Windmill**

Two dams and a water pumping windmill are located on the north western boundary of the project (Figure 15.1), the remains of the dams and windmill are shown in Figure 15.4. The windmill is damaged with the rotating blades lying on the ground at the base of the steel lattice tower. Evidence of the water pipeline used to feed the water from the dam can be seen emerging from one of the dam walls.

The two dams and a water pumping windmill are located outside the project's area of disturbance and will not be impacted by the project.



**Figure 15.4 South-east view - Damaged windmill and one of two nearby dams.**

#### **15.3.4.4 HI – 4 Cattle Trough, Yards and Fence Lines**

Timber and steel cattle yards, trough and timber fence lines are located in the northern section of the project site (Figure 15.1). The site is shown in Figure 15.5. The yards are the central structure at this location with a number of timber fence lines extending out from the yards. With gates in working order and cattle in and around this site, it is apparent the yards are still in use. This site is in good condition.

The cattle trough, yards and fence lines are within the Horse Pit area of disturbance, this site will be removed during the clearing activities. This site does not contain suitable levels of cultural heritage significance to warrant specific mitigation strategies and should be decommissioned in the same manner as similar sites within the project site.



**Figure 15.5 Southern view - Timber and steel cattle yards and trough.**

#### **15.3.4.5 HI – 5 Dams and Windmills**

Two water-pumping windmills and two associated dams are located in the northern section of the project site (Figure 15.1). The design of the rural windmills is consistent with HI 3 (Figure 15.4); a steel lattice tower and steel rotating blades. The windmills are seemingly intact.

The dams and windmills are within the Horse Pit area of disturbance and this site will be removed during the clearing activities. This site does not contain suitable levels of cultural heritage significance to warrant specific mitigation strategies and should be decommissioned in the same manner as similar sites within the project site.

#### **Significance Assessment**

Cultural heritage significance relates to peoples perspective of place and sense of value, within the context of history, environment, aesthetics and social organisation.

A range of standards and criteria are available to assist with determining cultural heritage significance. The cultural heritage significance of the project site was evaluated using recognised benchmarks such as The Burra Charter (Marquis-Kyle and Walker 1999) and Queensland Heritage Act 1992. These findings are summarised below in Table 15.5.



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**Table 15.5 The nature of cultural heritage significance for the Project Site**

Value	Rating	Justification	Legislative Status
Aesthetic	Low	Surviving today as what has remained a relatively rural setting, the project site presents a basic level of aesthetic qualities related to natural and historic nature of the site (relevant to the local community).	Does not satisfy listing on Local, State or National Heritage Registers (currently unlisted).
Historic	Low	Representing pastoral lease and settlement activities commonplace to the area from the 1850s, including the many challenges and activities associated with pastoral pursuits from this time. Evidence of mining pursuits are more recently overtaking these earlier pursuits.	Does not satisfy listing on Local, State or National Heritage Registers (currently unlisted).
Scientific	Low	Some elements survive as remnants of the project sites pastoral pursuits, which collectively have potential to contribute to an understanding of the local areas history. No elements of the project site display any significant level of technical flare or ingenuity for their time.	Does not satisfy listing on Local, State or National Heritage Registers (currently unlisted).
Social	Low	Properties in the project boundary have a connection with the families who have lived and worked on them.	Does not satisfy listing on Local, State or National Heritage Registers (currently unlisted).

### 15.3.5 Potential Impacts and Mitigation Measures

The field survey identified no sites of cultural heritage significance and five places of historical interest within the project site which are outlined in Figure 15.1.

There is some potential for further historic items to exist within the project site as ground surface visibility, along with the nature of the survey did not allow for a complete survey of the area. In particular, potential exists for surface and/or subsurface road remnants along the old telegraph line (HI – 1) where an old road potentially passed through. Elements associated with older roads and stock routes from times past may also exist in this area. Other potential sites and places may include mile markers, survey trees, historic camp remnants and associated exotic vegetation, remote graves, old station dumps and remains of early mining activities.



From a cultural heritage perspective, it is concluded that the project site is likely to contain low levels of local cultural heritage significance. There were no sites or places located within the project site that contain levels of cultural significance important to Queensland under Section 35 of the Queensland Heritage Act 1992.

#### **15.3.5.1 Project Impact on Places of Historical Interest**

The identified places of historical interest are not considered to contain enough heritage value to warrant further assessment or specific mitigation strategies, however, some will be subject to potential direct impact by the project. Potential direct impact by the project will generally be in the nature of surface and sub-surface disturbance and pre-stripping activities related to the mine's development and the construction of associated infrastructure.

Indirect impacts may occur from the construction of roads and infrastructure associated with mining activities, including the day to day operation of vehicles across the broader site.

#### **15.3.5.2 Project Impact on Potential Sites and Places of Cultural Heritage Significance**

There is some potential for further historic places/items to exist within the project site as the nature of field survey did not allow for a complete survey of the project site. These are likely to be remnant sites relating to pastoral and settlement activities, such as historic survey trees, roads and stock routes, remnant boundary fence lines, old station dumps and the remains of early mining activities. Historic sites and places such as mile markers, remote graves and historic camp remnants and associated exotic vegetation, may also potentially be impacted by the project.

#### **15.3.5.3 Impact Mitigation and Recommendations**

The places of historic interest are not considered to contain enough cultural heritage value to warrant further assessment or specific mitigation strategies. No sites of cultural heritage significance were located during the field survey.

As there were no sites of cultural heritage significance identified, this section provides general mitigation recommendations to manage unknown and unexpected historic cultural heritage sites located within the project site that may potentially be impacted by the project.

As outlined above, unknown historic cultural sites or places may include or be related to:

- An important historic event that took place
- Remains from early settlement activities
- Remains of old mines or early camps
- Remnants from stock routes and early roads
- Remote graves
- Survey trees



- Old Station dumps.

### ***Management of Historic Interest Places***

Although historic interest places do not contain suitable levels of cultural heritage significance to warrant specific mitigation strategies, where possible BMA will retain these sites. Historic interest places HI-5 and HI-4 will be removed during the clearing activities for Horse Pit. These sites do not contain suitable levels of cultural heritage significance to warrant specific mitigation strategies and should be decommissioned in the same manner as similar sites within the project site.

### ***Cultural Heritage Management within the Environmental Management Plan***

A variety of management strategies are required in order to mitigate impact and potential impact to unexpected cultural heritage material or sites found during the construction and pre-clearing activities during operations of the project. Management strategies include:

- Provide all new employees with suitable training to provide them with the skills to identify cultural heritage sites or objects and report the find to the Site Environmental Advisor.
- Inform all employees of their obligations to notify the, Site Environmental Advisor of any cultural heritage finds.
- Implement a procedure that requires a permit before any relevant employees able to undertake any clearing or excavations activities.
- Development of a cultural heritage policy for management of existing cultural heritage sites or finds.
- Inform the Site Environmental Advisors of their obligations to notify the DERM of any relevant finds.
- Undertake regular cultural heritage educational sessions and distribute educational material. This material should inform the employees of what cultural heritage material may look like, and give them clear instructions on what to do if they find anything.

BMA will include these strategies, where appropriate, in the contractors' construction environmental management plan and the site environmental management plan.