

Adani Mining Pty Ltd

# **NORTH GALILEE BASIN RAIL PROJECT**

## Environmental Impact Statement

### Chapter 15 Cultural heritage

November 2013

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# 15. Cultural heritage

## 15.1 Purpose of chapter

This chapter documents the cultural heritage assessment of the North Galilee Basin Rail Project (NGBR Project). The scope of the cultural heritage assessment was defined by the following tasks:

- Description of existing cultural heritage, including
  - Indigenous cultural heritage values
  - Indigenous historic land use
  - Native title claims and determinations
  - Non-Indigenous cultural heritage values
  - Non-Indigenous settlement history
- Assessment of the potential impacts of the NGBR Project on existing cultural heritage.

Existing cultural heritage summarised in this chapter is described in detail in Volume 2 Appendix L Cultural heritage. All mitigation and management measures associated with this chapter have been included within Volume 2 Appendix P Environmental management plan framework.

This cultural heritage chapter was prepared in accordance with the Terms of Reference (TOR) for the NGBR Project. A table that cross-references the contents of this chapter and the TOR is included as Volume 2 Appendix A Terms of Reference cross-reference.

All mitigation and management measures identified in this chapter are included within Volume 2 Appendix P Environmental management plan framework.

## 15.2 Methodology

### 15.2.1 Study area

The study area for this cultural heritage assessment was defined by a two kilometre buffer from both sides of the centreline of the final rail corridor, a nominally 100 m wide corridor. The resulting four kilometre wide study area encompasses the NGBR Project final rail corridor footprint and ancillary infrastructure.

### 15.2.2 Data sources

The cultural heritage report relied on the following data sources:

- North Galilee Basin Railway Concept Design Report (Aarvee Associates 2013)
- Publicly available literature, reports and predictive models relevant to the study area (refer to Volume 1 Chapter 23 References)
- Cultural Heritage Management Plans (CHMPs) between Adani and:
  - the Birri People
  - the Jangga People
  - the Juru and Juru People #2
- Archival material including survey plans and photographs
- Publicly available aerial and satellite imagery, such as Google Earth

- Indigenous cultural heritage databases:
  - Aboriginal Cultural Heritage Register
  - Register of the National Estate
  - National Native Title Register
- Non-Indigenous cultural heritage databases:
  - The National and Commonwealth Heritage Lists
  - The Register of the National Estate
  - The Queensland Heritage Register
  - Local heritage lists maintained by relevant councils
  - Places classified by the National Trust
  - Places listed on register maintained by the Australian Institute Architects.

### **15.2.3 Legislation and guidelines**

Legislation and guidelines relevant to this cultural heritage chapter are as follows:

- *Aboriginal Cultural Heritage Act 2003*
- *Queensland Heritage Act 1992*
- *Torres Strait Islander Cultural Heritage Act 2003.*

Further explanation of relevant cultural heritage legislation and necessary approvals for the NGBR Project is provided in Volume 1 Chapter 20 Legislation and approvals.

The Department of Torres Strait Islander and Multicultural Affairs (DATSIMA) website publishes the gazetted cultural heritage duty of care guidelines, which set out reasonable and practical measures for meeting the duty of care under the *Aboriginal Cultural Heritage Act 2003*. In order to meet the duty of care, appropriate consultation must be undertaken with the relevant Traditional Owner groups for the area.

### **15.2.4 Desktop assessment**

A desktop assessment was undertaken to identify and classify the existing Indigenous and non-Indigenous cultural heritage within the study area.

#### **Identification of Indigenous cultural heritage**

A desktop Indigenous cultural heritage assessment was undertaken to identify known cultural heritage values in the study area in accordance with the *Aboriginal Cultural Heritage Act 2003*, associated guidelines and standard industry archaeological practice. The desktop assessment involved a review of the North Galilee Basin Rail Concept Design Report (Aarvee Associates 2013), publicly available literature, reports and predictive models relevant to the study area, and Indigenous cultural heritage databases (refer Section 15.2.2).

#### **Classification of significance of Indigenous cultural heritage**

Classification of significance of Indigenous cultural heritage is a fundamental component of the heritage management process. A process for establishing cultural significance is outlined in the Australia International Council on Monuments and Sites (ICOMOS) Charter for the Conservation of Places of Cultural Significance, otherwise known as The Burra Charter.

In the absence of consultation with Traditional Owner groups, all places identified through a search of Indigenous cultural heritage database (refer Section 15.2.2) were considered to be of potentially high significance. Similarly, the scientific significance of all places was unknown, given the absence of field investigations.

### **Identification of non-Indigenous cultural heritage**

A desktop non-Indigenous cultural heritage assessment was undertaken to identify known cultural heritage values in the study area. The desktop assessment involved a review of the North Galilee Basin Rail Project Concept Design Report (Aarvee Associates 2013), publicly available aerial and satellite imagery, and non-Indigenous cultural heritage databases.

### **Classification of significance of non-Indigenous cultural heritage**

Classification of significance of non-Indigenous cultural heritage was undertaken based on the following criteria derived from the *Queensland Heritage Act 1992*:

- Criterion (a) – Historical significance
- Criterion (b) – Rare, uncommon, endangered
- Criterion (c) – Potential to yield information
- Criterion (d) – Representativeness of a class or place
- Criterion (e) – Aesthetic significance
- Criterion (f) – Creative or technical achievement
- Criterion (g) – Special associations with community or cultural group
- Criterion (h) – Special associations with person, group or organization.

### **Theme groups within the Australian Historic Themes Framework 2001**

The Australian Historic Themes Framework (Australian Heritage Commission 2001) is a research tool that assists in the identification, assessment, interpretation and management of nationally, state or locally significant heritage. The framework comprises nine theme groups which encompass more specific themes and sub-themes. The theme groups include:

- Tracing the Evolution of the Australian Environment
- Peopling Australia
- Developing Local, Regional and National Economies
- Building Settlements, Towns and Cities
- Working
- Educating
- Governing
- Developing Australia's Cultural Life
- Marking the Phases of Life.

### **15.2.5 Stakeholder engagement**

#### **Traditional Owners**

A search of the Indigenous cultural heritage database identified four Native Title (Traditional Owner) groups of relevance to the study area (refer Figure 15–1):

- Birri People
- Jangga People
- Juru People
- Juru People #2.

Consultation with relevant Traditional Owner groups is being undertaken by Adani. This consultation has included negotiation regarding CHMPs with the Aboriginal parties. CHMPs are developed as a management and mitigation measure and are further detailed in Sections 15.4 and 15.5. Details of CHMPs are confidential to the signatories and are not provided within this chapter. It should be noted that a small section in the south of the study area traverses an unclaimed area (with respect to registered Native Title claim determination areas). Potential Indigenous cultural heritage of significance within this unclaimed area has been discussed with the neighbouring Jangga People due to the proximity of the area to that Traditional Owner group's registered Native Title claim determination area.

#### **Non-Indigenous community groups**

In order to produce a list of potential non-Indigenous cultural heritage places, and potential adverse impacts, searches of relevant non-Indigenous cultural heritage databases were supplemented by strategic consultation with the Whitsunday Regional Council (WRC), Isaac Regional Council (IRC) and a number of relevant community groups.

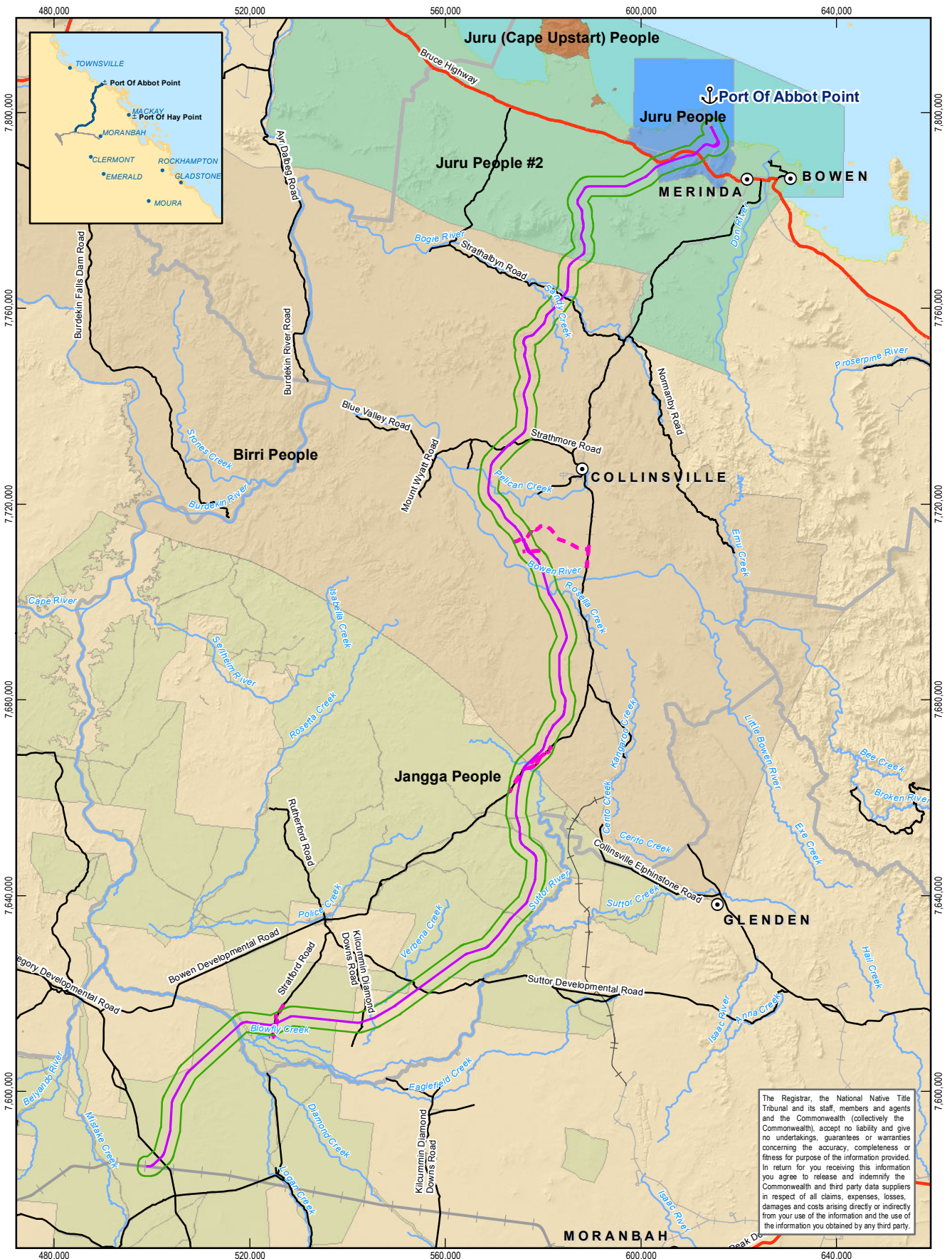
Consultation was undertaken with community groups and historical societies in Bowen and Collinsville, as well as IRC and WRC. Community consultation also assisted in the identification of places of 'social significance' which might not be identified via desktop research.

The extent of these consultations, detailed in Volume 2 Appendix B Public consultation and Volume 2 Appendix L Cultural heritage, were recorded as follows:

- No known heritage impacts
- Consultation deferred to other relevant groups
- Still waiting on a response
- No existing local heritage register.

### **15.2.6 Limitations**

The level of detail of this cultural heritage chapter was limited by the information provided in the North Galilee Basin Rail Concept Design Report (Aarvee Associates 2013), which is outlined in Volume 1 Chapter 2 Project description and publicly available literature for similar projects. This cultural heritage report relied upon a number of data sources, including cultural heritage registers. Cultural heritage registers do not represent an exhaustive list of cultural heritage for a given site. The absence of recorded cultural heritage for a given area may reflect a lack of prior cultural heritage surveys having taken place rather than an actual absence of cultural heritage.



The Registrar, the National Native Title Tribunal and its staff, members and agents and the Commonwealth (collectively the Commonwealth), accept no liability and give no undertakings, guarantees or warranties concerning the accuracy, completeness or fitness for purpose of the information provided. In return for you receiving this information you agree to release and indemnify the Commonwealth and third party data suppliers in respect of all claims, expenses, losses, damages and costs arising directly or indirectly from your use of the information and the use of the information you obtained by a third party.

**LEGEND**

- ⊙ Population Centres
- ⚓ Major Port
- Highway
- Main Road
- Existing/Other Rail Network
- Watercourses (Major)
- Local Government Area
- Native Title Claim
- Jangga People
- Juru (Cape Upstart) People
- Birri People
- Juru People
- Juru People #2
- Carmichael Project (Rail)
- Study Area
- North Galilee Basin
- Rail 100m Corridor
- Proposed Access Road

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Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 55



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North Galilee Basin Rail Project

Job Number 41-26457  
Revision A  
Date 29 Aug 2013

**Native Title claims**

**Figure 15-1**



## 15.3 Existing environment

### 15.3.1 Environmental context

The current and historical environmental context of the study area can indicate potential sites for cultural heritage. The study area is located upon gently undulating lowland plains with incised creek lines, and occasional flat, elevated tablelands with steeply incised creek lines. Coastal dunes, high creek banks and ridges overlooking creeks hold the highest potential to contain archaeological material for both Indigenous and non-Indigenous cultural heritage outside of settled areas and transport routes. The NGBR Project crosses numerous creeks and rivers and is within reasonable proximity to rural homesteads, townships and other longstanding transport corridors, therefore, has high potential for Aboriginal cultural heritage material at those locations. As early settlers and their associated livestock were also highly dependent on water (L'Oste-Brown *et al.* 1998), creeks and rivers are also likely to be sites of non-Indigenous cultural heritage.

According to data obtained from National Mapping Division, Geoscience Australia, the study area falls within the region of the Brigalow Belt biogeographic region, which is generally defined by the distributional limits of open forests and woodland communities dominated by brigalow (*Acacia harpophylla*). An interpretation of pre-1788 native vegetation of the study area suggests low and medium-storey acacia communities, as well as low and medium-storey eucalyptus communities were once present. The pre-1788 mapping was used to guide the assessment of the likely history of Aboriginal land use in the area.

### 15.3.2 Indigenous cultural heritage

#### Indigenous historical land use within the study area

It is generally acknowledged that Aboriginal peoples' occupation of Queensland may extend over thousands of years. This occupation, which would likely have included the wider region surrounding the study area, would likely have been consistent with a nomadic lifestyle with areas inhabited temporarily and on a seasonal basis. The historical European settlement activity within the northern Bowen Basin and Bowen coastal region is a potential source of archaeological materials within the study area. In particular, agriculture and industry have great potential to disturb cultural material, cultural places, and entire cultural landscapes. For these reasons an understanding of the history of land use is a necessary precursor to any attempt to determine the potential for *in situ* archaeological material.

Prior to European occupation of the region, the study area was occupied by several Indigenous people groups (i.e. the Juru, Jangga and Birri peoples) who used this area for a combination of activities; including seasonal habitation, resource procurement and spiritual connection with country. Following the settlement of Europeans in the area, conflict became a regular occurrence between both groups (e.g. Mount Gotthardt Copper Mine, Avon Downs; see also Elder 2003; Loos 1970; Breslin 1992; Wright 1981; Barker 2007). Historical accounts indicate that Aboriginal resistance was considerably strong in the northern Bowen Basin and continued for a longer period than most areas of Queensland (Wright 1981). Sources from the 1880s record semi-traditional Aboriginal camps located at the junction of Suttor Creek and the Bowen River (presumably near Glenden) and at Mount Coolon; areas adjacent to the southern half of the NGBR Project (Wright 1981).

Armed conflict, combined with the introduction of smallpox, influenza and syphilis and the adoption of alcohol and opium use, decimated Indigenous populations by the 1860s (L'Oste-

Brown *et al.* 1998). European peoples' fear of Aboriginal people further exacerbated the situation. As a result, property owners often found it difficult to recruit Europeans for work in the area, which opened the way for Aboriginal employment. For those who had the opportunity, the pastoral life and station work offered Aboriginal workers the possibility to stay on traditional lands, while work provided food and necessities. For others less fortunate, there was little option but to drift from town to town looking for work. With the widespread destruction of traditional food sources, due to land clearance as well as the close cropping and trampling of the vegetation by cattle and sheep, the collection of traditional resources was no longer viable in many areas of the northern Bowen Basin (Reynolds 1981).

In 1897, the *Aboriginals Protection and Restriction of the Sale of Opium Act (1897)* was passed by the Queensland government for the purpose of establishing a series of reserves whereby Aboriginal people could be separated from the destructive elements of European society. The clear intention of the reserve system was 'protection' and, later, assimilation when Queensland's first Aboriginal Reserve was established at Baker's Creek near Mackay.

Accounts of early interactions between settlers and the Aboriginal population reveal the close association Aboriginal people have maintained with their country in spite of imposed stresses. Hence, there remains considerable potential for historical and contemporary Aboriginal cultural heritage places to be identified within the NGBR Project footprint. The potential for *in situ* or largely undisturbed archaeological deposits is low due to extensive clearing, animal grazing, and erosion within the study area.

### **Previous archaeological investigations**

Previous archaeological investigations conducted within the study area and wider region are outlined below.

In 1998 an extensive study on Aboriginal cultural heritage of the Bowen Basin was undertaken (L'Oste-Brown *et al.* 1998). The report summarised known archaeological investigations of the Bowen Basin, including a number of archaeological investigations across the northern Bowen Basin within the catchments of the Isaac, Suttor and Bowen rivers; the latter two, which will be crossed by the NGBR Project, form part of the broader Burdekin River catchment system.

In 1978, archaeological investigations were undertaken of the extensive Newlands Mine site located 75 km south of Collinsville and less than 20 km east of chainage 195 km of the NGBR Project (Hill 1978). During these investigations, a consistent, widespread presence of Aboriginal cultural material across the mining lease was recorded, which was interpreted as 'one vast scatter of lithic artefacts' (Hill 1978). The large artefact scatter was found to be greatly disturbed and therefore of little scientific significance (Hill 1978). In total the following were identified within the mining lease:

- One scarred tree
- One hearth
- Three source sites with associated artefact scatters
- Thirty-six 'camp' sites consisting of nearly 400 artefacts (Hill 1978).

The majority of cultural heritage finds were located in proximity to Cerito Creek or other minor waterways (Hill 1978). Other Aboriginal cultural heritage material was also identified in disturbed areas within the Xstrata-Newlands water pipeline easement and the Newlands rail corridor. These were found to be largely random and, therefore, archaeologically of low significance (Hill 1978).

In 1987 an archaeological survey was undertaken of the proposed Wirralie Gold mine located approximately 50 km west of chainage 185 km of the NGBR Project and 30 km north of Mount Coolon (Alfredson 1987). These investigations identified eight areas containing Aboriginal cultural heritage, consisting of five artefact scatters and three isolated artefacts (Alfredson 1987). All recorded sites were found within 300 m of creek lines, with the largest artefact scatter located on a higher landform overlooking the headwaters of a major creek line (Alfredson 1987). Some hesitation was expressed in the identification of many stone flakes as Aboriginal in origin, and concluded that the limited presence of clear artefact material was related to the general lack of local resources (e.g. fauna, flora, water) (Alfredson 1987).

In 1988 an archaeological survey was undertaken of the proposed Belyando Gold mine property, located on a large quartz outcrop approximately 10 km south east of chainage 280 km on the NGBR Project (Alfredson 1988). The survey revealed only three 'probable Aboriginal stone artefacts', all of which were quartz flakes, a raw material notoriously difficult to attribute to human activity. It was noted that 'positive identification of such material as artefacts is often dubious and, taking into account the extent of ground surface disturbance due to scrub pulling and the installation of the power line, a conservative approach was adopted in this survey' (Alfredson 1988). Hence, the survey findings concluded that the survey area was 'devoid of Aboriginal artefacts' (Alfredson 1988).

Archaeological surveys of a proposed water pipeline easement, connecting the Eungella Dam with Moranbah, were undertaken in 1996 (Hatte 1996). The 120 km easement route, which passes within 30 km of chainage 210 km of the NGBR Project, traversed numerous watercourses and a wide variety of landforms. In total the survey identified 41 areas containing Aboriginal cultural heritage as follows:

- Thirty-one artefact scatters (17 contained more than 100 artefacts)
- Three extraction sites (artefacts associated with the raw material source extraction)
- Four isolated artefacts
- One scarred tree
- One rock art site
- One area containing 'usable plants' (Hatte 1996).

An array of formal artefact types were noted throughout the pipeline route, including anvils, hammerstones, axes and an abundance of grind stones (Hatte 1996). Numerous amorphous flake tools, such as retouched flakes, blades, and the generic 'scraper' class were also recorded. A rockshelter containing an array of white hand and foot stencils was recorded on an elevated landform overlooking a creekline. The majority of cultural heritage sites, including ochre resource areas and a scarred tree, were located on raised landforms associated with permanent watercourses (Hatte 1996).

The outlined previous archaeological surveys in the region demonstrate a pattern of archaeological site distribution influenced by the occurrence of raised terraces associated with rivers and permanent watercourses, where sites are often characterised by diffuse surface scatters or isolated occurrences of stone artefacts. Site frequency and size tends to reduce with distance from permanent fresh water.

### Identified Indigenous heritage values

A search of the Indigenous cultural heritage databases (refer Section 15.2.2), returned the following Indigenous heritage values within the study area:

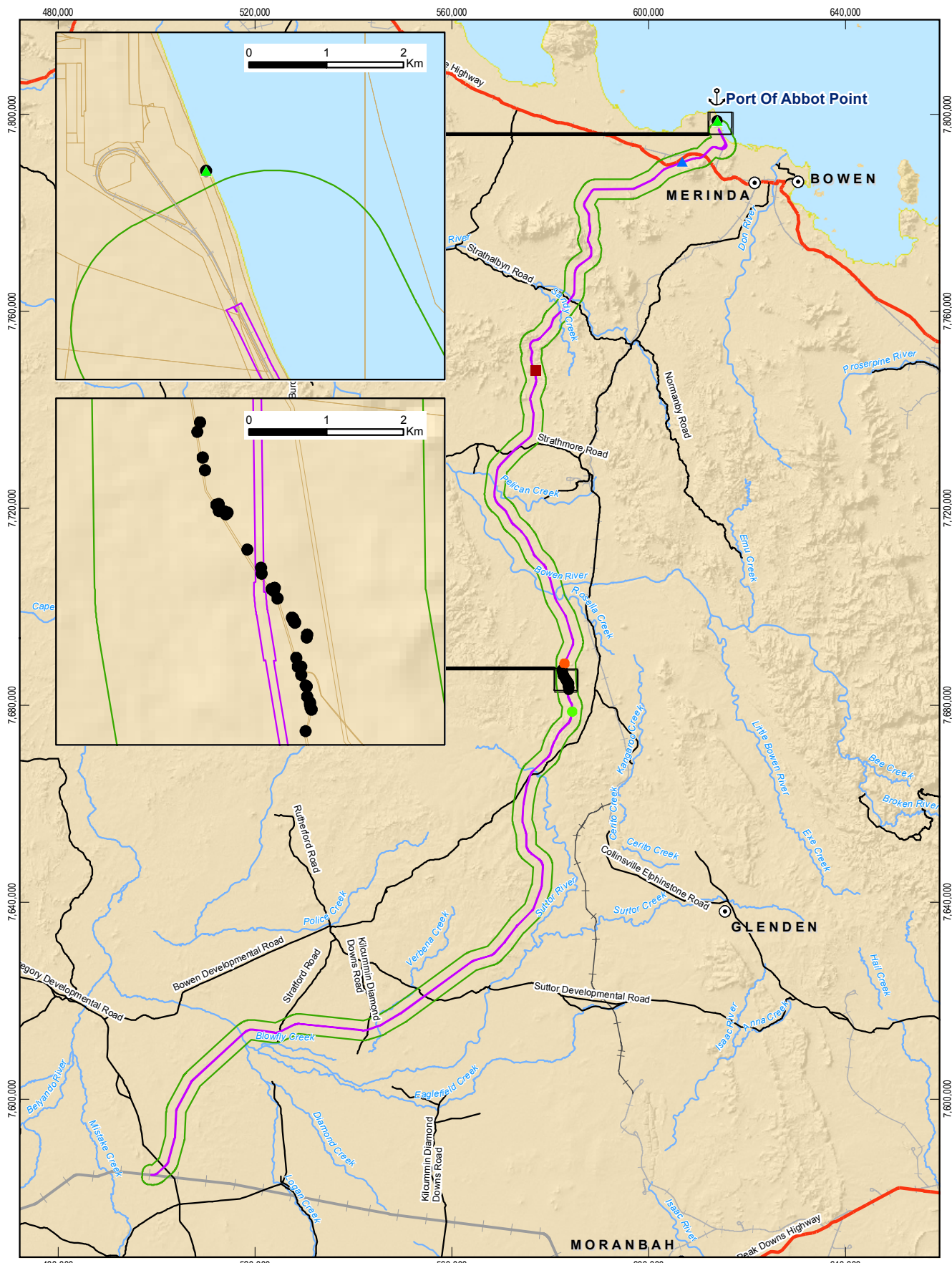
- 16 artefact scatters
- One stone arrangement
- One quarry site with artefacts
- One rock art site with associated shell midden
- One shell midden and one isolated artefact.

Further detail on the above values is provided in Table 15-1. The locations of the identified Indigenous heritage values are depicted in Figure 15–2.

**Table 15-1 Indigenous cultural heritage database search results**

Site ID	Site type	Tradition Owners	Cultural significance	Scientific significance
GJ:A02	Stone Arrangement	Birri	Potentially High	Unknown
GJ:A31	Rock Art, Shell Midden	Juru People	Potentially High	Unknown
GJ:A99	Artefact Scatter, Quarry	Birri	Potentially High	Unknown
GJ:C43	Artefact Scatter	Birri	Potentially High	Unknown
GJ:C44	Artefact Scatter	Birri	Potentially High	Unknown
GJ:C45	Artefact Scatter	Birri	Potentially High	Unknown
GJ:C46	Artefact Scatter	Birri	Potentially High	Unknown
GJ:C47	Artefact Scatter	Birri	Potentially High	Unknown
GJ:C48	Artefact Scatter	Birri	Potentially High	Unknown
GJ:C49	Artefact Scatter	Birri	Potentially High	Unknown
GJ:C50	Artefact Scatter	Birri	Potentially High	Unknown
GJ:C51	Artefact Scatter	Birri	Potentially High	Unknown
GJ:C52	Artefact Scatter	Birri	Potentially High	Unknown
GJ:C53	Artefact Scatter	Birri	Potentially High	Unknown
GJ:C54	Artefact Scatter	Birri	Potentially High	Unknown
GJ:C55	Artefact Scatter	Birri	Potentially High	Unknown
GJ:C56	Artefact Scatter	Birri	Potentially High	Unknown

Site ID	Site type	Tradition Owners	Cultural significance	Scientific significance
GJ:C57	Artefact Scatter	Birri	Potentially High	Unknown
GJ00000134	Isolated Find	Birri	Potentially High	Unknown
GK:A30	Artefact Scatter	Juru People #2	Potentially High	Unknown
GK:A34	Shell Midden	Juru People #2	Potentially High	Unknown



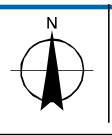
**LEGEND**

- ⊙ Population Centres
- ⚓ Major Port
- Highway
- Main Road
- Existing/Other Rail Network
- Watercourses (Major)
- ▭ Study Area
- Artefact Scatter
- Artefact Scatter, Quarry
- Isolated Find
- ▲ Painting, Shell Midden
- ▲ Shell Midden
- Stone Arrangement
- Carmichael Project (Rail)
- ▭ North Galilee Basin
- ▭ Rail 100m Corridor

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Grid: GDA 1994 MGA Zone 55



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Revision B  
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**Indigenous cultural heritage database search results**

**Figure 15-2**

### 15.3.3 Non-Indigenous cultural heritage

#### Non-Indigenous historical land use within the study area

European settlement and use of extensive areas of the northern Bowen Basin quickly followed the exploration parties by Captain Wickham in 1840 and Dr Leichhardt in 1844-5 (Hatte 1997). Landsborough took up Fort Cooper Station and Oxford Downs in 1857, and by the 1860s pastoralists had begun grazing large runs, with sheep (initially) and beef cattle (later) becoming major industries in the region (Burdekin Project Committee 1977). The heavy reliance of the early settlers and their huge sheep flocks upon permanent water meant well watered areas were favoured over prime downs country with poor access to permanent water (L'Oste-Brown *et al.* 1998). Initially, sheep were preferred to cattle because wool could be stored and was easy to transport; however, sheep ultimately proved unsuitable for the native environment; the harsh vegetation and high rate of predation resulted in a pastoral shift toward cattle.

Bowen was founded in 1861 and quickly became the primary port facility for areas north of Rockhampton to service the ever-expanding network of pastoralists along the coast and within the new outback stations (Barker 2007).

Discoveries of gold at Mount Wyatt in 1867 resulted in a mineral boom in the 1870s giving a major impetus to development across the region (Barker 2007). The influx of population associated with the gold rush provided a local market for beef cattle, which resulted in a sharp increase in cattle numbers, as well as pastoralists. Commercial gold mining continued, although in a reduced capacity, until the 1920s.

Although today the main focus of mining in the region is coal extraction, this was not a significant activity in the 1800s. Even with the expansion of a coal rail network across Queensland in the second half of the nineteenth century, the extensive coal reserves, first identified in the mid-1860s, were only accessed to supply local demand. Gold and copper mining continued at various sites across Central Queensland during the early twentieth century, while coal mining operations in the northern Bowen Basin (e.g. Collinsvale and nearby Scottville) remained relatively small. Coal mining did not begin in earnest until the second half of the twentieth century following explorative drilling by Theiss Bros. Pty Ltd in the Bowen Basin in 1957. Plans for a coal export facility at Bowen in the 1920s was proposed, but did not eventuate until the 1980s, largely because the local railway locomotives accounted for the majority of the Collinsville coal supply; there was little excess coal production available for export.

The coastal area around Bowen and Abbot Point was recognised as ideal for sugar cane farming. Due to favourable climatic factors, suitable soils and the availability of water supplies for irrigation, sugar yields were often among the highest in Australia (Burdekin Project Committee 1977). Other significant agricultural industries along the coastal lowlands are rice, bean seed and horticultural supplies.

The original woodlands within the study area have been cleared and logged for several generations, with fires contributing to current woodland densities. The regime of clearing and fires has resulted in new growth; closely-spaced treed areas supporting mostly Ironbark and Cypress Pines and occasional stands of Eucalyptus. Brigalow, the dominant woodland prior to European clearing practices, is rarely encountered and now endangered. Land clearing has contributed to erosion within the activity area, with evidence of poor water absorption/runoff resulting in silty deposits and/or deep incision in some areas, mostly near creeks.

The ground surface of the NGBR Project footprint has been significantly disturbed through intensive mining and pastoral activities, including vegetation clearing, coal extraction, grazing

and sugar cane production. This kind of ground disturbance reduces the potential for historical archaeology to exist in the study area, although some of these activities actually generate isolated examples of historical heritage including abandoned machinery, forgotten mine shafts and isolated huts.

### **Identified non-Indigenous heritage values**

In order to generate a preliminary list of non-Indigenous heritage places potentially impacted by the NGBR Project, a search of national and state heritage registers was undertaken. The results of which were supplemented by consultation with relevant community groups and local government authorities in the Bowen and Collinsville areas.

The National Heritage List and Commonwealth Heritage List did not contain any non-Indigenous heritage places relevant to the study area. Furthermore, a search of the Queensland Heritage Register did not identify any non-Indigenous heritage places within the NGBR Project footprint. However, the search did identify 10 non-Indigenous heritage sites in the wider region which help characterise the kinds of heritage places typical to the wider area. The majority of these sites are associated with the historic township of Bowen (formerly Port Denison) and with early mining or pastoral activities with low-density human settlements in the northern Bowen Basin. In relatively close proximity to the study area, these activities have produced a range of heritage places including scattered homesteads, informal cemeteries, mine operations and farming infrastructure. Community consultation in the Bowen and Collinsville areas similarly did not identify any non-Indigenous heritage places likely to be impacted by the NGBR Project.

The identified non-Indigenous cultural heritage places, and assessments against the *Queensland Heritage Act 1992* criteria and Australian Historic Themes Framework (Australian Heritage Commission 2001), are detailed in Table 15-2. A list of the Queensland Heritage criteria and Australian Historic Themes is outlined in Section 15.2.4.

The locations of the identified non-Indigenous heritage values are depicted in Figure 15–3.



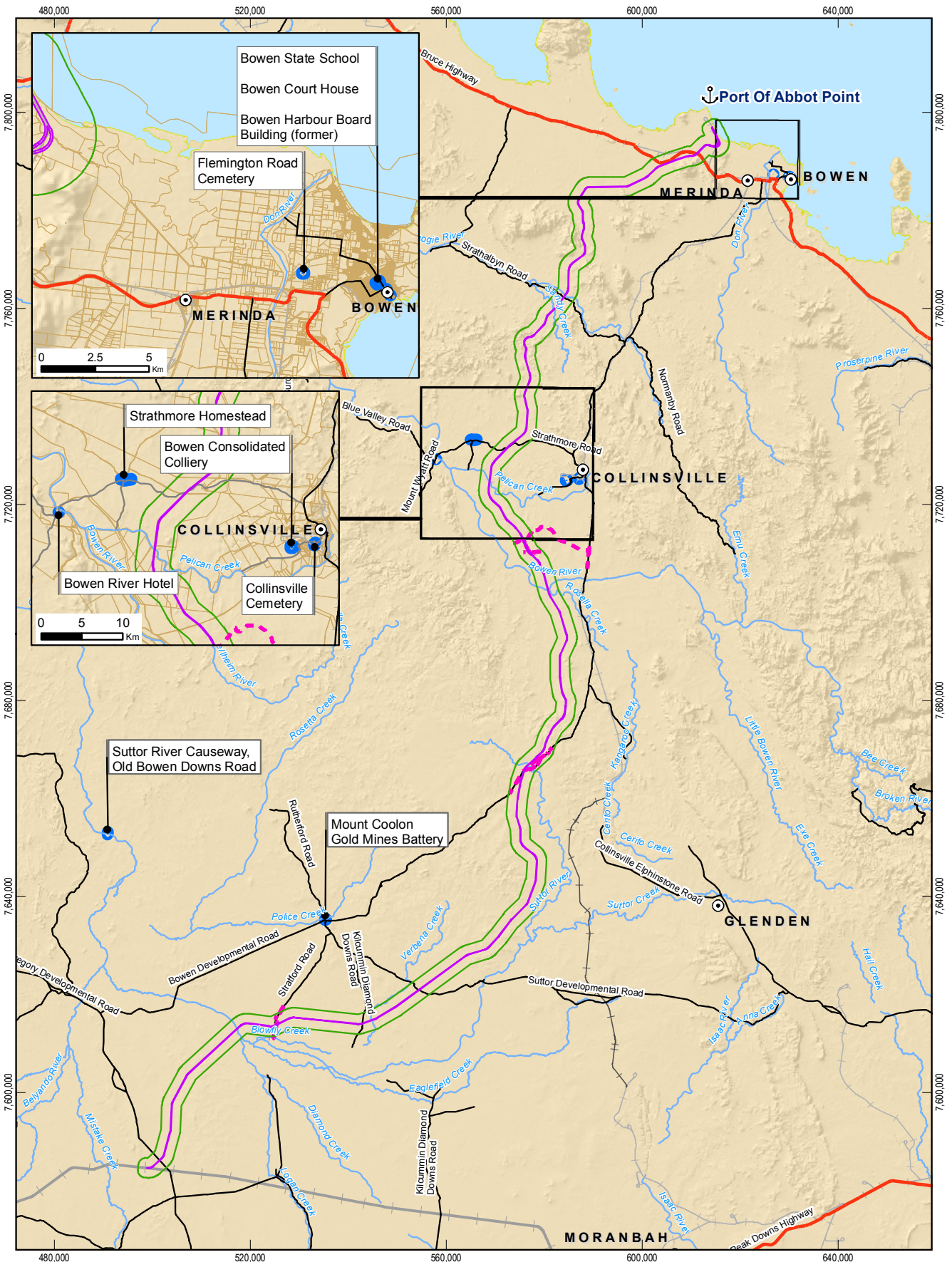
**Table 15-2 Non-Indigenous cultural heritage database search results**

Place	Location	Comment	Queensland Heritage Act 1992 criteria	Australian Historic Themes Framework	Distance to final rail corridor (km)
<b>Queensland Heritage Register</b>					
Bowen River Hotel (former)	Strathbowen-Leichhardt Range Road, Strathbowen (30 km west of Collinsville)	A single storey structure of slabs laid horizontally between upright posts, with surrounding verandah and corrugated iron roof. The building is transitional between the slab house on the ground and the stump-supported house. Restoration is proceeding with local materials and building techniques, as originally employed, being used.	a, b, d, f	3	11.3
Strathmore Homestead	Strathmore Road, Springlands	The complex comprises a homestead, laundry, slab hut (used to accommodate the kitchen and dining room for station personnel), office, stables, meat houses, swimming pool complex, various cottages, homestead gardens, sheds, former school, former zoo, weir and private cemetery.	a, b, d e, h	4	5.5
Collinsville Cemetery	Accessed via a long lane from Collinsville-Scottville Road between the townships of Collinsville and Scottville.	Collinsville Cemetery was gazetted in 1927 and contains a headstone section, a lawn section and a columbarium. There is a small shelter in the grounds. The cemetery is the burial place of at least 23 miners killed between 1928 and 1954.	a, g	2, 8, 9	14.4
Bowen Consolidated Colliery (No 1)	Located on the edge of the township of Scottville, approximately 3.5 km	The large, former colliery covers an area of approximately 5 ha. The major structures include the headframe and gantry, Number	a, b, c, d	3, 4, 5	12.6

Place	Location	Comment	Queensland Heritage Act 1992 criteria	Australian Historic Themes Framework	Distance to final rail corridor (km)
underground mine)	south-west of Collinsville.	One shaft winding house, boiler house, Number Two shaft fan house, powerhouse, bathhouse, mine office, workshop, Garrick Shaft Fan House, sawmill, detonator magazine, lamp shed, water tanks, and single men's quarters. Remains of railway and tramline formations still remain. The remains of other structures include the workshop and stores site, Number Two shaft winding engine, lime store, cement shed, ramps, early bathhouse and fitting shop. Part of the site is surrounded by a recent wire security fence including the headframe, Number One winding house, boiler house and power house. Much of the site is overgrown with grasses, trees and other vegetation.			
Mount Coolon Gold Mine's Battery (Barclay's Battery)	Extends from the northern perimeter of Mount Coolon township, northeast along Police Creek to include weir and former Hammond house.	The mill site includes a square brick chimney, concrete foundations of a 10 head stamp battery, two mortar boxes, gas producer, two-cylinder gas engine (partly demolished), one-cylinder Crossley engine, ball mill and a steel vat. Timber, stone and concrete foundations of the cyanide plant are located south of the mill, closer to the Mount Coolon Hotel.	a, b, g	3, 4, 5	20.4
Bowen State School	29 Kennedy Street, Bowen	Bowen State School is located on the northern perimeter of the central business district in the town of Bowen. The school site is a level, two-	a, d, g	4, 6	15.5

Place	Location	Comment	Queensland Heritage Act 1992 criteria	Australian Historic Themes Framework	Distance to final rail corridor (km)
		hectare block bound by Gregory, Kennedy, Poole and Herbert streets. Centrally located on the site, the school complex comprises a number of high-set, timber-framed buildings, some forming a U shape around a central parade ground.			
Bowen Court House	Corner of Williams and Herbert Street, Bowen	The Bowen Court House is a two storey classical revival building constructed of rendered brick, with a corrugated galvanised iron roof. It is located on the corner of Williams and Herbert Street, the main street of Bowen, and addresses both streets with major facades	a, b, d, e, h	4, 7	16
Bowen Harbour Board Building (former)	6 Herbert Street, Bowen	A two-storeyed masonry building with a hipped corrugated iron roof. A single-storey wing projects from the rear of the building, with gabled roof and brick chimney. There is a timber verandah on the two street sides, which also returns to the rear of the building. At the corner is a hexagonal turret with a pyramid roof.	a, e, h	3, 4, 7	16.3
Flemington Road Cemetery	Flemington Road, Bowen	The cemetery is currently unfenced, although physical evidence on site suggests that several fencing efforts have been previously undertaken to protect particular family plots. The practice of inscribing the names of several deceased family members on a single headstone has resulted in the twenty-two	a, d, g	2, 9	12.4

Place	Location	Comment	Queensland Heritage Act 1992 criteria	Australian Historic Themes Framework	Distance to final rail corridor (km)
		observable headstones actually representing 39 burials. Given the small number of observable graves, a broad range of grave styles is represented. Headstones are predominantly of limestone, with sandstone and concrete also present.			
Suttor River Causeway (St Ann Crossing)	Bowens Downs Road, between Strathmore and Mount Douglas	Evidence of stone pitching over Percy Douglas Creek and an intact stone causeway at St Anne's Station.	a, b, d e	2, 3, 4	47.5
<b>Register of the National Estate (non-statutory)</b>					
Seaward House, Bowen	11 Thomas Street, Bowen	Kitchen wing gone, verandahs on three sides enclosed. Main core of four rooms with central hallway in good condition. Original balustrading pattern still on beach frontage materials enclosing verandahs could be removed.	a	4	16 km



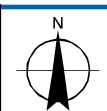
**LEGEND**

- Population Centres
- ⚓ Major Port
- Highway
- Main Road
- Watercourses (Major)
- Existing/Other Rail Network
- State Heritage Register
- Proposed Access Road
- Carmichael Project (Rail)
- North Galilee Basin
- Study Area
- Rail 100m Corridor

Based on or contains data provided by the State of QLD (DNRM) [2013]. In consideration of the State permitting use of this data you acknowledge and agree that the State gives no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for marketing or be used in breach of the privacy laws.

1:1,100,000 Paper Size A4

Kilometres  
Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 55



**Adani Mining Pty Ltd**  
North Galilee Basin Rail Project  
Non-Indigenous cultural  
heritage database search  
results

Job Number	41-26457
Revision	A
Date	29 Aug 2013

**Figure 15-3**

## 15.4 Potential impacts and mitigation measures

Potential impacts to cultural heritage during construction and operation predominantly relate to damage or removal of items of significance. This includes registered and identified items or places, unregistered or unassessed items or places, and unexpected items or places.

### 15.4.1 Construction

#### Damage or removal of items of Indigenous cultural heritage significance

Known items or places of Indigenous cultural heritage significance have been identified within the study area for the NGBR Project. These areas include a stone arrangement, artefact scatters, rock art, shell midden and an isolated find (refer Section 15.3.2, Table 15-1 and Figure 15-2). Mitigation measures will be undertaken in accordance with the relevant Traditional Owner group requirements prior to and during surface construction works planned to occur near or within these areas. In particular where blasting activities are planned to occur within close proximity to known fixed items or places of Indigenous cultural heritage significance, such as the rock art site (refer Figure 15-2), blast design (for a 50 kg MIC) will be adopted where potential vibration has potential to exceed the vibration criteria of 10 mm/s, as defined in *Environmental Protection Act 1994* (refer Volume 1 Chapter 12 Noise and vibration). It is expected that an offset distance of 200 m would be sufficient to comply with this criteria (refer Volume 1 Chapter 12 Noise and vibration). Monitoring will be conducted during test and initial blasts to ensure actual vibration levels are within the criteria.

Creek banks and landforms overlooking watercourses have also been identified as areas with the highest potential to contain archaeological Indigenous cultural heritage material. The NGBR Project footprint crosses numerous creeks and rivers and, therefore, has potential to disturb Indigenous cultural heritage material at those locations. The design of structures in these areas will minimise any changes to flow regimes to avoid erosion of existing watercourse embankments or increasing the duration of inundation within the system. Notwithstanding this, the construction of the crossing features will involve disturbing ground surface and potentially impacting cultural heritage.

All construction activities both temporary and permanent have the potential to disturb or vibrate the ground surface, which may result in impacts to cultural heritage. Typical activities which will need to be effectively managed in relation to identified cultural heritage include blasting, cut and fill activities, land forming earthworks including spoiling excess fill and paving, site preparation including clearing and topsoil stripping and other activities that alter the natural ground profile. Particular construction planning needs to be undertaken when working near the identified cultural heritage sites and areas identified with the potential to contain unidentified cultural heritage.

It is considered that the implementation of mitigation measures incorporated into CHMPs for the NGBR Project will eliminate impacts to identified Indigenous cultural heritage sites (refer Table 15-1). The CHMP will include mitigation measures to be followed where previously unregistered items or places of Indigenous cultural heritage are encountered in accordance with the relevant Traditional Owner group requirements.

#### Damage or removal of items of non-Indigenous cultural heritage significance

The NGBR Project does not cross any identified non-Indigenous cultural heritage sites (refer Table 15-2). Furthermore it is considered that there is low potential for previously unidentified

heritage places to be found. As such, no direct impacts on places of non-Indigenous cultural heritage significance are expected.

A non-Indigenous CHMP will be developed as part of the Environmental Management Plan and include an archaeological survey in accordance with duty of care to protect and manage cultural heritage values under the *Queensland Heritage Act 1992*. It is considered that the non-Indigenous CHMP will adequately prevent direct impacts occurring to previously unregistered items or places of non-Indigenous cultural heritage.

#### **15.4.2 Operation**

It is envisaged that operation activities will be contained within areas already significantly disturbed during construction of the final rail corridor. Operation activities are therefore unlikely to result in the damage or removal of previously unexpected items or places of Indigenous or non-Indigenous cultural heritage significance. Only activities associated with a disaster response that cause surface disturbance outside of those areas disturbed during construction have a potential for direct impacts. For example, this could include removal of debris or other materials from watercourses as a result of significant flooding or derailment. However the likelihood of these activities is very low (refer Volume 1 Chapter 18 Hazard and risk) and therefore operational activities are still unlikely to result in the damage or removal of previously unexpected items or places of Indigenous or non-Indigenous cultural heritage significance. Mitigation contained in the relevant CHMPs would be implemented during these types of events should they ever be required.

#### **15.4.3 Summary of mitigation and management measures**

The mitigation and management measures provided in Table 15-3 will be implemented to minimise and avoid the potential impacts of the NGBR Project on cultural heritage. These mitigation and management measures will be implemented in combination with the measures outlined in other chapters of this Environmental Impact Statement (EIS).

CHMPs have been executed with the relevant Traditional Owner groups for the NGBR Project. Indigenous Land Use Agreements (ILUA) for the NGBR Project are also being prepared by Adani, in consultation with the relevant Traditional Owner groups. This is proceeding in parallel to the EIS process. Procedures contained within the CHMPs will be incorporated within Volume 2 Appendix P Environmental management plan framework; however, specific details regarding the CHMPs will not be made public.

Adani has negotiated, agreed and signed a CHMP and ILUA with the Juru People in respect of the proposed development of the proposed Adani Abbot Point Coal Terminal 0. The ILUA was authorised on 6 May 2013 and is due to be registered by November 2013. The CHMP has identified, addressed and put in place agreed methodologies for identifying and preserving significant cultural heritage sites and areas. Adani has also agreed and signed a CHMP with the Juru and Juru #2 on 9/8/2013. Adani and the Bulganunna Aboriginal Corporation (Jangga People) have signed a CHMP that includes the NGBR Project and have agreed in principle on the terms of an ILUA which is scheduled to be signed by the parties in August 2013. Adani and the Birri People have signed on 28 May 2013 a CHMP and are currently negotiating terms of an ILUA.

### **15.5 Potential impacts and mitigation measures**

The following measures are proposed to mitigate and manage potential impacts of the NGBR Project on cultural heritage.

**Table 15-3 Summary of mitigation and management measures**

Timing	Mitigation and management measures
Pre-construction	<p>Cultural heritage will be managed through a Cultural Heritage Management Plan, in accordance with the <i>Aboriginal Cultural Heritage Act 2013</i> and the DATSIMA guidelines, which includes the following management measures:</p> <ul style="list-style-type: none"> <li>• A process for undertaking cultural heritage surveys within the NGBR Project footprint</li> <li>• A process for including Indigenous people associated with the NGBR Project footprint area in assessment of the Indigenous cultural heritage values of the NGBR Project footprint and the protection and management of Indigenous cultural heritage</li> <li>• Processes for mitigating, managing and protecting identified cultural heritage sites and objects in the NGBR Project footprint, including associated infrastructure developments, during both the construction and operational phases of the NGBR Project</li> <li>• Provisions for managing the accidental discovery of cultural material, including burials</li> <li>• A clear recording process to assist initial management and recording of accidental discoveries</li> <li>• A cultural heritage induction for NGBR Project staff</li> <li>• Developing a cultural heritage awareness program to be incorporated into the contractor/employee manual and induction manual. This is likely to be in the form of a plain language, short document that is easy for contractors and staff 'on the ground' to understand</li> <li>• A conflict resolution process.</li> </ul>
Pre-construction	<p>In accordance with the CHMP, impacts to previously unregistered and unassessed items or places of Indigenous cultural heritage significance will be mitigated by:</p> <ul style="list-style-type: none"> <li>• Undertaking comprehensive cultural heritage surveys with all Native Title and Traditional Owner stakeholders in accordance with duty of care to protect and manage Aboriginal cultural heritage values under the <i>Aboriginal Cultural Heritage Act 2003</i></li> <li>• Generating survey reports to provide detailed assessment and management recommendations</li> <li>• Assessing significance of any cultural heritage.</li> </ul>
Pre-construction	<p>In accordance with the CHMP impacts to previously unregistered and unassessed items or places of non-Indigenous cultural heritage significance will be mitigated by:</p>



Timing	Mitigation and management measures
	<ul style="list-style-type: none"> <li>• Undertaking comprehensive archaeological survey in accordance with duty of care to protect and manage cultural heritage values under the <i>Queensland Cultural Heritage Act 1992</i></li> <li>• Generating survey reports to provide detailed assessment and management recommendations</li> <li>• Assessing significance of any cultural heritage.</li> </ul>
Pre-construction, construction and operation	<p>In accordance with the CHMP impacts to previously registered and identified items or places of Indigenous cultural heritage significance will be managed by:</p> <ul style="list-style-type: none"> <li>• Further assessment including survey and site extent determination, excavations in identified areas where there is a likelihood of further, subsurface, cultural material being present</li> <li>• Assessing significance of any cultural heritage</li> <li>• Avoidance (where the NGBR Project may proceed without any impacts on the identified values)</li> <li>• Recording (the removal, recording and preservation of cultural heritage in areas where project activities may have a direct impact on identified cultural heritage values)</li> <li>• Establishment of buffer zones</li> <li>• Limiting duration of activities with potential to damage cultural heritage</li> <li>• Monitoring (inspections, audits and/or monitoring of project activities to ensure impacts to known cultural heritage are appropriately mitigated).</li> </ul>
Pre-construction, construction and operation	Ongoing consultation will be conducted with Native Title and Traditional Owner stakeholders
Construction	Construction sites will be inspected periodically for potential sources of, and impacts to, cultural heritage. Corrective measures will be implemented as required.
Construction and Operation	<p>In accordance with the CHMP impacts to previously unexpected items or places of Indigenous or non-Indigenous cultural heritage significance will be managed through:</p> <ul style="list-style-type: none"> <li>• Stop work arrangements in the vicinity of suspected finds</li> <li>• Establishment of buffer zones</li> <li>• Notification to the relevant Native Title and Traditional Owner stakeholder</li> <li>• Assessment of the cultural heritage by the relevant Native Title and Traditional Owner stakeholders</li> </ul>

Timing	Mitigation and management measures
	<ul style="list-style-type: none"> <li>• Management of all unexpected human remains finds in accordance with CHMP management provisions, DATSIMA's guidelines, <i>The Discovery, Handling and Management of Human Remains under the Provisions of The Aboriginal Cultural Heritage Act 2003 And Torres Strait Islander Cultural Heritage Act 2003</i></li> <li>• Follow procedures identified in <i>Onsite Procedures for Historical Archaeology</i> (DEHP 2012).</li> </ul>
Construction and operation	All surface disturbance will be contained to areas which have been previously survey for cultural heritage, or where monitoring in accordance with the CHMP has occurred to reduce the potential impacts.
Construction and operation	Construction and operations activities will be undertaken in accordance with the prepared ILUA.
Operation	Where rail operations and maintenance obligations will impact previously unidentified cultural heritage sites, such activities will be mitigated in accordance with the CHMP.

## 15.6 Conclusion

The contextual study of environment, land use, historical data, and archaeological evidence indicates that Indigenous cultural heritage places are likely to occur within the study area, with particularly high concentrations expected upon raised terraces overlooking the many permanent fresh water sources that are traversed by the final rail corridor.

Evidence indicates that there is a low potential for non-Indigenous cultural heritage to occur within the study area. The current NGBR Project footprint is unlikely to encounter any known places of non-Indigenous heritage value and there is a low potential for previously unidentified non-Indigenous heritage places to be found within the final rail corridor.

Adani will minimise impacts to cultural heritage by adhering to mitigation measures outlined in Table 15-3 during the pre-construction, construction and operation phases of the NGBR Project.

The only residual impact with potential to occur is damage to cultural heritage that is unregistered or unexpected. Surveys will be conducted to attempt to identify these sites prior to construction; however, if damage occurs, appropriate measures will be implemented to avoid further damage. All other cultural heritage impacts can be alleviated through the implementation of aforementioned mitigation and management measures. The development of CHMPs is the overarching measure that will assist in the identification of cultural heritage sites, determination of heritage significance, mitigation and management of impacts, and carrying out consultation with Native Title and Traditional Owner stakeholders.