



O2 — Non-indigenous Cultural Heritage



NON INDIGENOUS CULTURAL HERITAGE SURVEY

OF
Caval Ridge
Central Queensland



BASELINE and IMPACT ASSESSMENT

REPORT TO
URS Corporation

EPA PERMIT - CHST00240207
SEPTEMBER 2008

This assessment was undertaken by ARCHAEO Cultural Heritage Services Pty. Ltd. (ARCHAEO) and is Copyright 2008.

Contact details are:

ARCHAEO Cultural Heritage Services
369 Waterworks Road, Ashgrove, Brisbane
PO Box 333, The Gap, Brisbane, 4061
Tel: 07-3366 8488
Fax: 07-3366 0255
Email: bgall@archaeo.com.au

DOCUMENT VERIFICATION

ARCHAEO Project: Caval Ridge – Historic Cultural Heritage Survey ARCHAEO Project Number: 0841C

Document Title:

File location:

Cultural Heritage Survey – Caval Ridge, Moranbah, Central Queensland (Revised Boundary)

F:\Projects\0841C Moranbah Caval Ridge/Historic Report/X

Verification:

Revision	Date	Nature of revision	Prepared by	Authorised by
0	16/08/2008	Working Draft	DW	SB
1	04/09/2008	Draft for comments	-	BG
2	08/10/2008	Final Review	SB	BG
3	12/05/2009	Final Report for Issue	SB	BG



CONTENTS

EXECUTIVE SUMMARY	vi
A.1 Significance Assessment for the Study Area	vi
A.2 Historic Sites and Places located within the Study Area	vii
A.3 Sites for Nomination onto the Queensland Heritage Register	vii
A.4 Project Impact on Places of Historical Interest (HI)	viii
A.5 Project Impact on Potential Sites and Places of Cultural Heritage Significance	viii
A.6 Conclusions and Recommendations	viii
 1 INTRODUCTION	 1
1.1 Purpose of the Study	3
1.2 Dates and Duration of the Work	3
1.3 Personnel	3
1.4 Nature of the Impact (The Project)	4
1.5 Organisation of the report	6
1.6 Historic Cultural Heritage Legislation	6
1.7 Previous Reports	8
 2 BACKGROUND INFORMATION	 9
2.1 Biogeographical Information	9
2.2 Historical Background	9
2.3 Register Searches	15
 3 CULTURAL HERITAGE INVESTIGATION	 17
3.1 Survey Methodology	17
3.2 Constraints to the Survey	18
3.3 Land Holder Consultation	19
3.4 Survey Outcomes	20



CONTENTS

4	ANALYSIS OF DATA	22
4.1	Locations of Historical Interest (HI)	22
4.2	Conclusion	24
5	SIGNIFICANCE ASSESSMENT	25
5.1	Determining Cultural Heritage Significance	25
5.2	Nature of the significance	27
5.3	Statement of Cultural Heritage Significance	28
5.4	Significance Ratings for the Study Area	29
5.5	Cultural Heritage Potential within the Study Area	29
6	PROPOSED DEVELOPMENT	31
6.1	The Nature of the Proposed Development.....	31
6.2	Types of Potential Impacts	31
6.3	Project Timeframes.....	33
6.4	Project Impact on Places of Historical Interest (HI)	33
6.5	Project Impact on Potential Sites and Places of Cultural Heritage Significance.....	33
7	RECOMMENDATIONS	34
7.1	Recommendation 1 – Management of HI Places.....	34
7.2	Recommendation 2 – Cultural Heritage Management within the EM Plan	35
7.3	Recommendation 3 – Variation to the Project Design	35
8	REFERENCES	36
APPENDIX A		42
APPENDIX B		45



CONTENTS

LIST OF TABLES

Table A	The nature of cultural heritage significance of the Study Area.	vii
Table B	Historic places identified within the Study Area.	vii
Table 1	Properties within the Study Area	4
Table 2	Consultancy studies undertaken in proximity to the Study Area	8
Table 3	Register of the National Estate search results	16
Table 4	Location data for items/places of historical interest	20
Table 5	Summary of cultural heritage significance for the Study Area	29

LIST OF PLATES

Plate 1	The location of the Study Area	1
Plate 2	The Study Area	2
Plate 3	Land tenure affected by the proposed mine expansion	5
Plate 4	Grazed paddocks showing GSV	19
Plate 5	Black soil paddocks showing GSV	19
Plate 6	Location of items/places of Historical Interest.....	21
Plate 7	Telegraph Post at HI-1.....	22
Plate 8	Piles of sawn timber.....	23
Plate 9	Damaged windmill and Dam.....	23
Plate 10	Timber and steel cattle yards and trough	23
Plate 11	The mine footprint and components	32



EXECUTIVE SUMMARY

This report presents the results of a non-Indigenous cultural heritage assessment undertaken to clarify the nature of cultural heritage significance relevant to the Study Area along with the potential impacts and required mitigation as a result of the proposed Caval Ridge Project. The Study Area is located to the north of the existing BMA operation at Peak Downs, south of Moranbah. This assessment includes:

- Historical background for the Study Area;
- Further contextual research as required from the abovementioned review;
- The results of the cultural heritage field survey;
- The nature of cultural heritage significance within the Study Area and the potential impacts of the project in relation to this significance; and
- Specific management recommendations for the protection of potential areas of cultural heritage significance.

A.1 Significance Assessment for the Study Area

The cultural heritage significance of the Study Area (Plates 1 and 2) was evaluated using recognised benchmarks such as *The Burra Charter (ICOMOS Australia 1999)* and *Queensland Heritage Act 1992*. These findings are summarised below in Table A:

Value	Rating	Justification	Legislative Status
Aesthetic	Low	Surviving today as what has remained a relatively rural setting, the Study Area 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 the Local, State or National Heritage Registers (currently unlisted).
Historic	Low	Representing pastoral lease and settlement activities have been 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 the Local, State or National Heritage Registers (currently unlisted).
Scientific	Low	Some elements survive as remnants of the Study Areas pastoral pursuits, which collectively have potential to contribute to an understanding of the local areas history. No elements of the Study Area display any significant level of ingenuity for their time.	Does not satisfy listing on the Local, State or National Heritage Registers (currently unlisted).



Social	Low	Properties in the Study Area have a connection with the families who have lived and worked on them.	Does not satisfy listing on the Local, State or National Heritage Registers (currently unlisted).
--------	-----	---	---

Table A: The nature of cultural heritage significance of the Study Area.

A.2 Historic Sites located within the Study Area

There were no historical sites of cultural heritage significance located within the Study Area, however, places of historical interest were located and are identified below by the prefix HI (Historical Interest). It is important to note that HI places are those which contribute to the broader discussion of historic cultural heritage 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.

Place ID	GPS co-ordinates ¹		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: WGS84. Grid Zone 55K.			

Table B – Historic sites and places identified within the Study Area.

A.3 Sites for Nomination onto the Queensland Heritage Register

No sites or places were located within the Study Area that contain levels of cultural heritage significance important to Queensland under Section 34 of the *Queensland Heritage Act 1992*.

No sites or places are therefore recommended at this point for nomination to the Queensland Heritage Register as a result of this Cultural Heritage Survey.



A.4 Project Impact on Places of Historical Interest (HI)

The field survey has identified five places of Historical Interest (HI) (see Table B). These places are not considered to contain enough heritage value to warrant further assessment or specific mitigation strategies, however, they will be subject to potential direct impact by the Project. A recommendation to these places is provided below and in Section 7.

A.5 Project Impact on Potential Sites and Places of Cultural Heritage Significance

Whilst no sites of cultural heritage significance were located within the Study Area, it is concluded that there is some potential for further historic places/items to exist, as the nature of field survey did not allow for a comprehensive survey of 100% of the Study Area. 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 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.

A.6 Conclusions and Recommendations

The field survey has identified five places of historic interest (HI) (see Table B). These places 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 within the Study Area, this section provides general mitigation recommendations to manage unknown and unexpected historic cultural heritage sites located within the Study Area that may potentially be impacted by the Project. Management recommendations are also provided for the identified HI places listed in Table B.

As outlined in Section 5.5, 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;
- Elements of early roads, telegraph lines and stock routes;
- Remote graves;
- Survey trees; or
- Old Station dumps.



Refer to Appendix B for further examples of historic cultural sites and places.

Assuming the recommendations below are suitably implemented, this report finds the nature and level of impact by the Project is acceptable.

Recommendation 1 – Management of HI Places

Although HI places do not contain suitable levels of cultural heritage significance to warrant specific mitigation strategies, it is recommended that where possible they are retained. In the case of this Project, impact may not always be avoidable. If avoidance is not possible, then the HI places can be cleared and disposed of in a manner suitable to the Project.

Recommendation 2 - Cultural Heritage Management within the Environmental Management Plan (EMP)

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 stage of the Project.

These management strategies should be included in the EM Plan for the entire Study Area to provide the Project team with suitable information to protect sites and places of cultural heritage significance (completed prior to the construction phase of the Project commencing). The cultural heritage discussion within the EM Plan should also provide suitable strategies for the Study Area, including policies and procedures for management of archaeological finds uncovered during the Project and their notification to relevant agencies, including the Queensland Environmental Protection Agency, if required.

Additionally, this study recommends that diligence should be practiced during works conducted within the Study Area, particularly during any clearing or construction phases associated with initial preparation of the Study Area. This diligence should include specifically instructing crews of their obligations to look out for cultural heritage material, and handing out educational leaflets at Workplace Health and Safety meetings. These leaflets should inform the workers what archaeological material may look like, and give them clear instructions on what to do if they find anything.



Recommendation 3 – Variation to the Project Design

This study has assessed the impact of the project within the Study Area. Whilst unlikely, any variation to the project which places mining or infrastructure outside the assessed area would require reassessment to determine the nature of the impact on sites and places of cultural heritage significance.



1 INTRODUCTION

URS commissioned ARCHAEO Cultural Heritage Services Pty Ltd (ARCHAEO) to conduct an assessment of the non-Indigenous cultural heritage potential of an area of land identified by BHP Mitsubishi Alliance (BMA) as the Study Area (Plates 1 and 2). The Study Area is located immediately north of the existing Peak Downs mining operation, south of Moranbah. This report presents the results of a cultural heritage survey and assessment carried out in December 2007, and a further survey and assessment of the expanded Study Area in August 2008. The study is necessary to determine the level of historic cultural heritage significance relevant to the Study Area and make appropriate recommendations about the management of cultural heritage values.

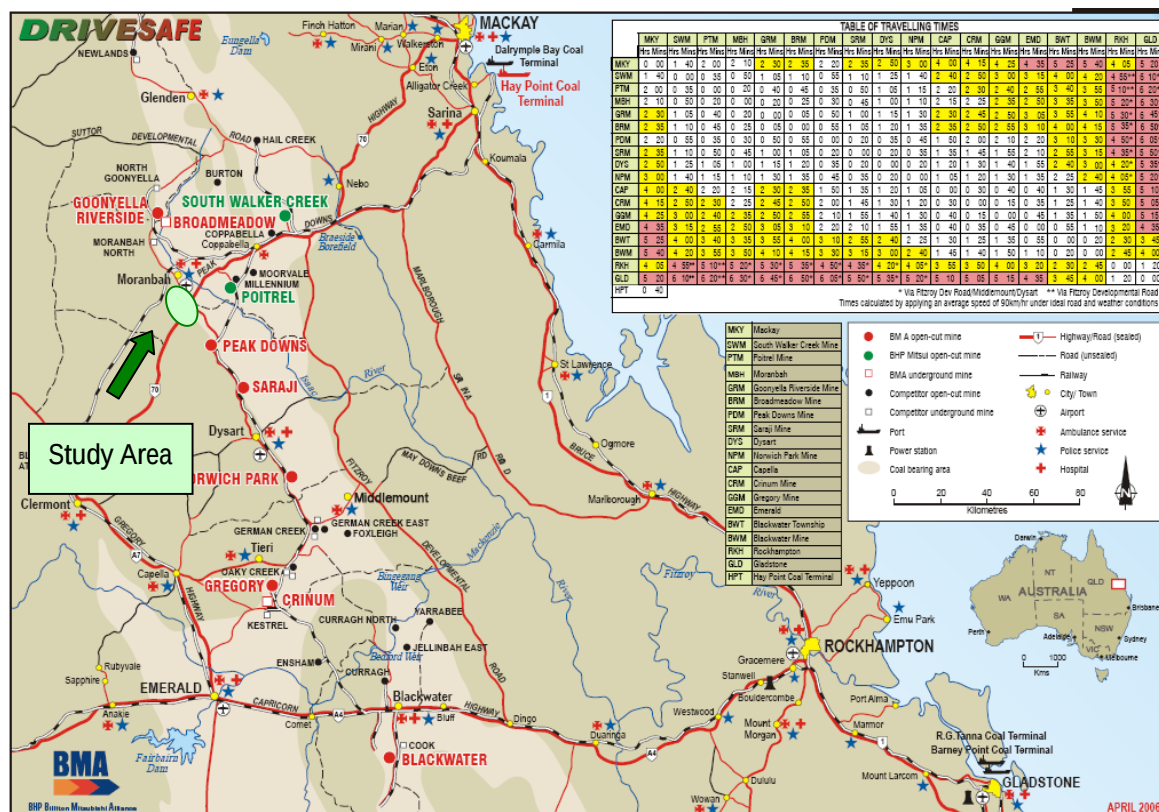
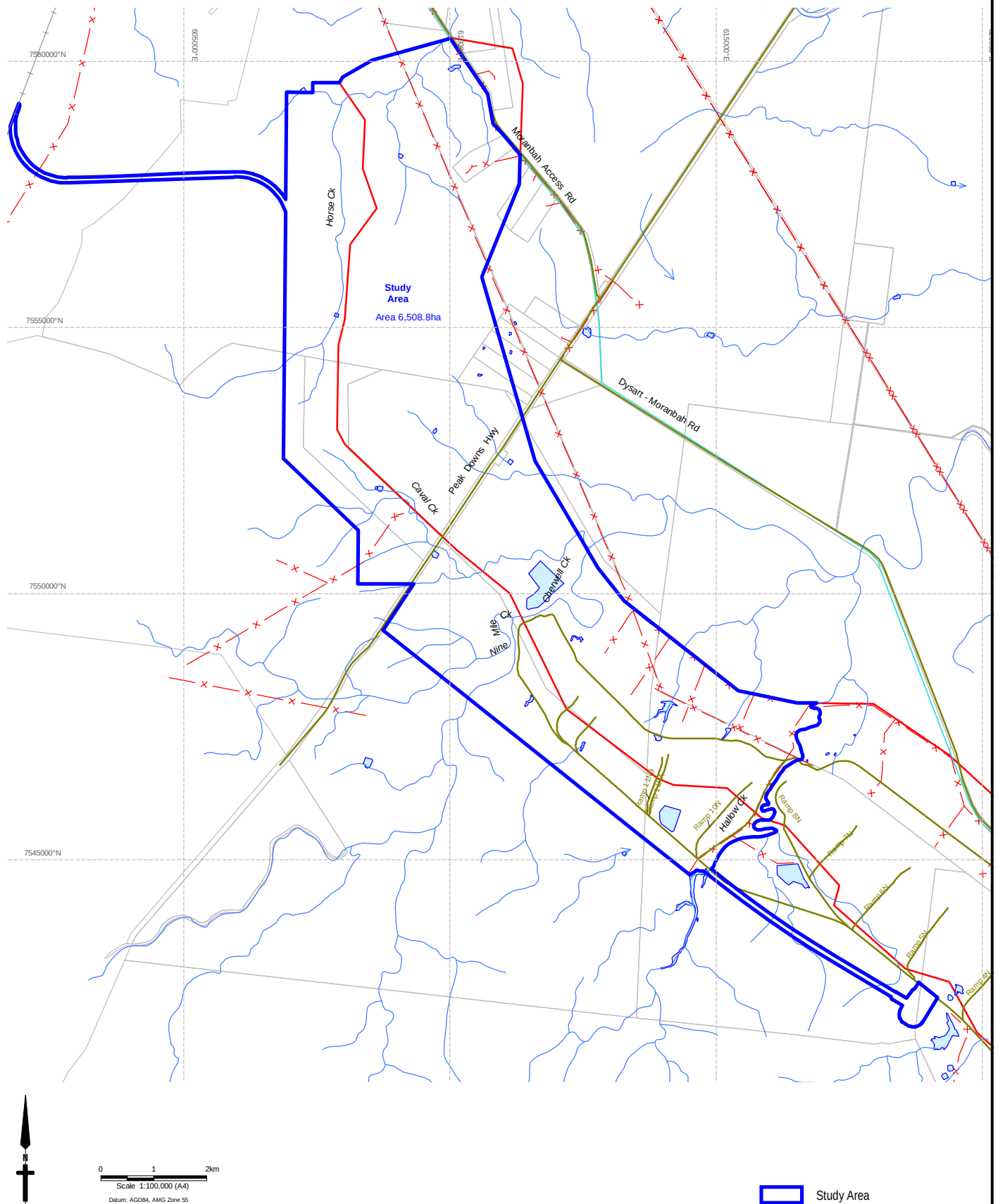


Plate 1 - The location of the Study Area.

This drawing is subject to COPYRIGHT. It remains the property of URS Australia Pty Ltd.



Source: BMA Supplied Data (November 2007)

Note: Prepared by URS on behalf of ARCHAEO Cultural Heritage Services

Client		Project			Title	
		NON INDIGENOUS CULTURAL HERITAGE SURVEY CAVAL RIDGE			THE STUDY AREA	
		Drawn: VH	Approved: BG	Date: 21-10-2008	Plate 2	Rev:C
	Job No: 4262 6158		File No: 42626158-g-109c.wor	A4		

1.1 Purpose of the Study

The purpose of this study is to qualify the level of cultural heritage significance relevant to the area directly affected by the Caval Ridge Project (hereafter referred to as the Project) and recommend the suitable management of these heritage values. Contextual research was undertaken to determine the existence, extent and probable levels of significance of the area prior to the field survey taking place.

This report presents the results of the historical cultural heritage survey, and includes:

- A summary of existing research completed for the history and environment of the Moranbah and north Bowen Basin coal mining area;
- The results of the cultural heritage field survey;
- The nature of cultural heritage significance within the Study Area and the potential impacts of the Project in relation to the Study Area; and
- Specific management recommendations for the protection of potential areas of cultural heritage significance.

The scope of this study acknowledges that the archaeological record is both fragile and non-renewable. Any major disturbance of the environment poses a potential threat to this valuable cultural resource.

1.2 Dates and Duration of the Work

URS commissioned ARCHAEO to complete the Study during November 2007. Research was undertaken and questionnaires were distributed to leaseholders at this point (see Appendix B). The field survey was carried out in December 2007 along with consultation with leaseholders.

The Study Area was initially assessed, in December 2007 and April 2008. Expansion of the Study Area resulted in a further study and assessment in August 2008.

1.3 Personnel

Stefani Blackmore of ARCHAEO undertook the visual inspection of the Study Areas in December 2007 and April 2008, consulted the leaseholders and prepared this report. David Williams conducted a further survey and assessment for the expanded Study Area in August 2008 and assisted in the preparation of this report. Geoff Ginn completed the historical background research. The final report was completed by Benjamin Gall with the abovementioned assistance.



In November 2007, an application was submitted to the Environmental Protection Agency for approval to undertake an historical archaeological study. This work was completed under Permit CHST00240207.

1.4 Nature of the Impact (The Project)

The nature of the current Project is such that BMA require cultural heritage surveys to be carried out within the boundary of following mining tenements:

- ML 1775 – BHP Coal Pty Ltd and Others (C.Q.C.A.) (Status: Granted [expires 31 December 2010]); and
- Future Mining Lease Applications.

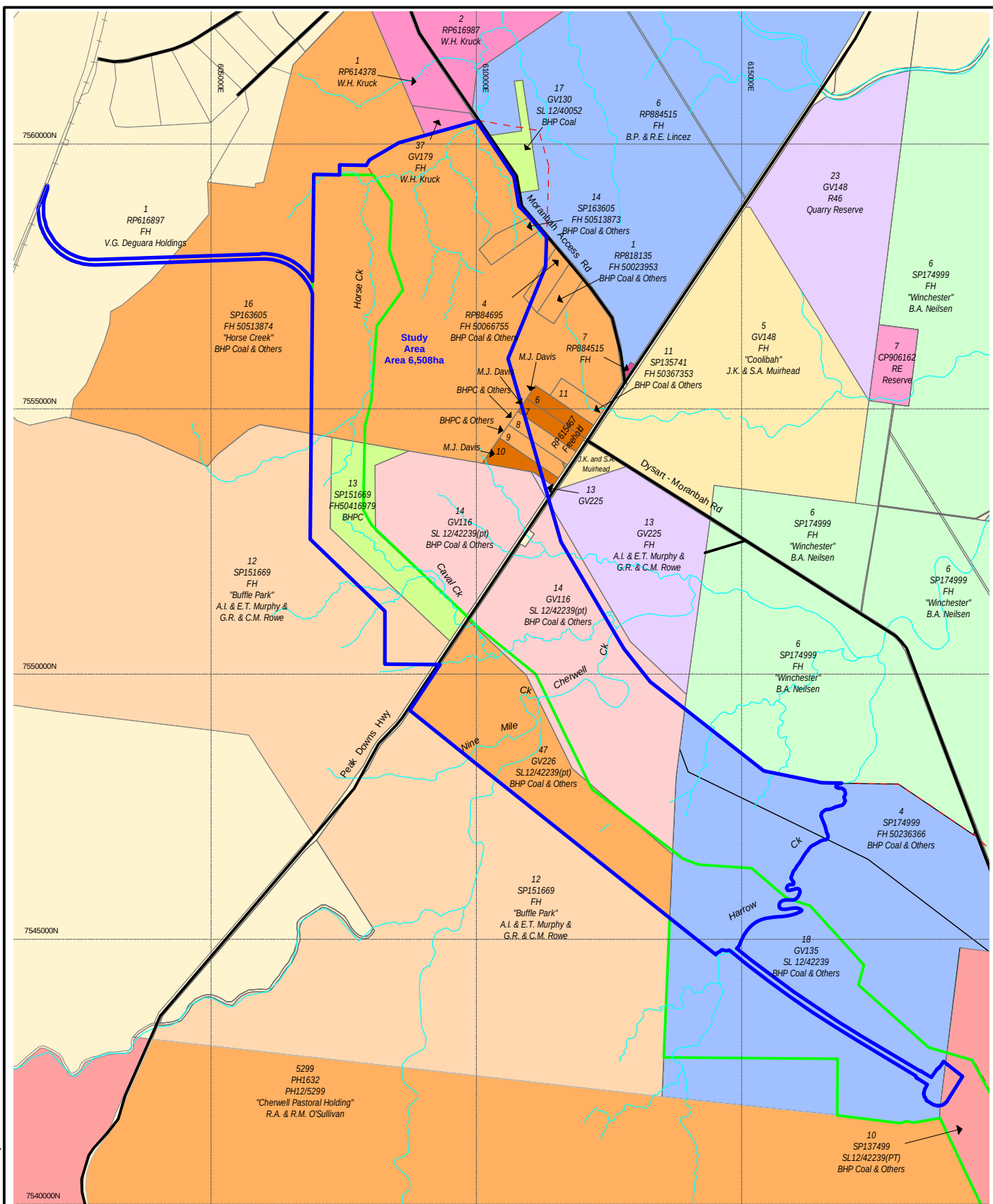
The Project may potentially directly or indirectly impact upon a 6,508 ha area to the north of the current Peak Downs coalmine operation. The properties potentially affected by the Project are listed in Table 1 and shown in Plate 3.

Note: Components of some of these properties are impacted by current mining activities and these areas therefore were not surveyed and are outside the scope of this report.

Potentially Impacted Properties
Lots 14 and 16 on SP163605
Lots 7,8,9 and 10 on RP615467
Lot 14 on GV116
Lot 13 on GV225
Lot 4 on RP884695
Lot 13 on SP151669
Lot 16 on SP163605 (Horse Creek)
Lot 14 on GV116
Lot 13 on SP151669
Lot 47 on GV226
Lot 12 on SP151669 (Buffell Park)

Table 1: Properties within the Study Area.





- Mining Lease
- Mining Lease Application
- Study Area

0 1 2km
Scale 1:100,000 (A4)
Datum: AGD84, AMG Zone 55

Source: BMA Supplied Data (November 2007), & Qld NRW DCDB, 2008
Note: Prepared by URS on behalf of ARCHAEO Cultural Heritage Services.

Client				Project	NON INDIGENOUS CULTURAL HERITAGE SURVEY CAVAL RIDGE			Title	LAND TENURE POTENTIALLY AFFECTED BY THE PROJECT			
	 ARCHAEO CULTURAL HERITAGE SERVICES				Drawn: VH		Approved: BG		Date: 21-10-2008		Plate 3	
				Job No:		File No: 42626158-g-110d.wor						A4

1.5 Organisation of the Report

The report discusses:

- Background information relevant to the Project, including historical research and legislation;
- Cultural heritage investigation, including review of aerial imagery and site survey;
- Levels of significance of and likely impacts on identified cultural heritage; and
- The potential impact of the Project on historical cultural heritage and recommendations and guidelines relating to the management of such impacts.

1.6 Historic Cultural Heritage Legislation

Knowledge of cultural heritage legislation is essential when assessing sites, places or items of cultural heritage significance. The following section discusses both Federal and State Legislation relevant to (specifically) non-Indigenous, land-based cultural heritage.

1.6.1 National

At the national level, the ***Environment Protection and Biodiversity Conservation Act 1999*** is now the key national heritage legislation, and is administered by the Commonwealth Department of the Environment and Water Resources. In addition, the following legislation is relevant to heritage:

The ***Australian Heritage Council Act (AHC) 2003*** provides for the establishment of the Australian Heritage Council, which is the principal advisory group to the Australian Government on heritage issues. The AHC Act also provides for registration of places considered of national significance on the National Heritage Register, the Commonwealth Heritage Register and the administration of Register of the National Estate (RNE) or the Australian Heritage Places Inventory (AHPI).

1.6.2 State (Queensland)

Historical cultural heritage matters are covered in the *Queensland Heritage Act 1992* and subsequent amendments, (which includes the *Queensland Heritage and Other Legislation Amendment Act 2003*). This legislation provides for a listing of places within a Heritage Register. Protection is offered to places that have been entered on the Queensland Heritage Register according to a set of criteria.

The *Queensland Heritage Act 1992* and subsequent amendments does not apply to:

- (c) a place that is of cultural significance solely through its association with Aboriginal tradition or Island custom; or
- (d) a place situated on Aboriginal or Torres Strait Islander land unless the place is of cultural heritage significance because of its association with Aboriginal tradition or



Islander custom and with European or other culture, in which case this Act applies to the place if the trustees of the land consent. (Please note: the Act is now being used sufficiently broadly that old mission sites are being heritage registered).

Recent amendments to the *Queensland Heritage Act* 1992 have strengthened the provisions attached to the discovery and protection of non-indigenous archaeological artefacts in Queensland. The relevant section is Part 9, Division One (88-90):

88 Definition for div 1

In this division-

interfere with includes damage, destroy, disturb, expose or move.

89 Requirement to give notice about discovery of archaeological artefact

(1) A person who discovers a thing the person knows or ought reasonably to know is an archaeological artefact that is an important source of information about an aspect of Queensland's history must give the chief executive a notice under this section.

Maximum penalty—1000 penalty units.

(2) The notice must—

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

90 Offence about interfering with discovery

(1) This section applies to a thing for which a person has, under section 56, given the chief executive a notice.

(2) A person who knows that the notice has been given must not, without the chief executive's written consent or unless the person has a reasonable excuse, interfere with the thing until at least 20 business days after the giving of the notice.

Maximum penalty—1000 penalty units.

1.6.3 Local Government Legislation

As from 1 March 2008, the study area falls within the Isaac Regional Council, following the amalgamation of shire councils. Until March 2009, local government policy will refer to the policies of the previous shire councils and should therefore implement the Belyando Shire Planning Scheme.



It is understood that at the time of amalgamation a local heritage register for Belyando Shire was not completed. Consultation with Council officers revealed that there was no specific information available in relation to the Study Area.

1.7 Previous Reports

The following reports (Historic and Indigenous) provide additional information related to the Study Area and were consulted throughout the course of work.

Cultural Heritage Consultant	Year	Project Title
Alfredson, G	1990	Report on an archaeological survey of the North Goonyella Mining Lease.
Alfredson, G	1992	Report on a preliminary archaeological survey of a proposed dam site and access road for the North Goonyella Mine.
Alfredson, G	1991	Report on an archaeological inspection of the Moranbah North Coal Project Area for AGC Woodward-Clyde.
Alfredson, G	1994a	Moranbah North Coal Mine: A cultural heritage assessment.
Alfredson, G	1994b	A Cultural Heritage assessment of the Burton Coal Project.
Alfredson, G	1995	A cultural heritage assessment of the section of the mine path between Suttor Creek Development Road and the Isaac River, part of the Teviot Dam and sections of the proposed haul road for Burton Coal Project.
ARCHAEO Cultural Heritage Services Pty Ltd	2006	Cultural Heritage Surveys of the proposed Goonyella Riverside Expansion Project: Portions of EPC 928, MDLA 307 and MDLA 358
ARCHAEO Cultural Heritage Services Pty Ltd	2007	Cultural Heritage Survey of Goonyella Riverside Expansion, Central Queensland.
ARCHAEO Cultural Heritage Services Pty Ltd	Forthcoming	Cultural Heritage Survey of Ellensfield Coal Mine Project, Central Queensland.
ARCHAEO Cultural Heritage Services Pty Ltd	Forthcoming	Cultural Heritage Survey of Grosvenor Coal Mine Project, Central Queensland.
ARCHAEO Cultural Heritage Services Pty Ltd	Forthcoming	Cultural Heritage Survey of Eagle Downs Coal Mine Project, Central Queensland.
Brayshaw, H.	1976	Archaeological investigation of underground mining leases at Goonyella, Peak Downs, Norwich park and Blackwater and their environs.
Hatte, E.	1996	An archaeological assessment of the proposed route of a water pipeline, Eungella to Moranbah, Central Queensland.
Hatte, E.	1997	A Cultural Heritage Assessment of the North Bowen Basin Rail Link
Gorecki, P	2006	Cultural Heritage Survey of Horse Creek Project, Peak Downs Coal Mine Moranbah, Central Queensland.

Table 2 – Consultancy Studies undertaken in proximity to the Study Area.



2 BACKGROUND INFORMATION

The following background information is not intended to be a comprehensive report on the area surrounding the Study Area (the north Bowen Basin); rather it provides a suitable platform for discussions regarding cultural heritage significance and management recommendations (in compliance with the *EPA Guidelines for Historical Archaeological Studies*).

Although the Project only affects a small area in the north of the Bowen Basin, it is important to provide background information to guide discussions later in the report.

2.1 Biogeographical Information

The Bowen Basin is an area of coal reserves that covers approximately 60,000km in Central Queensland. This coal rich basin was formed through a combination of volcanic forces, and has been typified by subtropical to tropical climate featuring predominantly grasslands, woodlands, and scrub vegetation types (Gunn, 1967: 13-15). Land use throughout the years has been dominated by pastoral activities, mostly grazing, and mining of gold, copper and most recently coal (Killin, 1984). The Basin is roughly triangular in shape, and extends from the town of Collinsville in the north to Theodore in the south.

The north Bowen Basin biogeographical sub-region (as described by Sattler and Williams 1999), within which the Caval Ridge mining tenements are situated, contains areas of outcrop where sediments were laid down during the Mesozoic period (250-65 million years) and older. However, Cainozoic-aged (or Tertiary Period - 65-1.5my) sedimentary rocks such as silcretes and siliceous sandstones dominate the geology of the province, with sporadic exposures of igneous (basalts) dykes and/or plugs of the same age, also occurring. Exposure of the land surface to the elements during this period in time promoted 'lateralisation', and this involved the leaching away of minerals (other than iron oxides) forming a laterite 'duricrust'. Remnants of this Tertiary land surface now occur as weathered areas of exposed iron oxide gibbers and as small, dissected tablelands and mesas with silcrete caps.

2.2 Historical Background

The following discussion is not intended to be an exhaustive historical treatment of the Study Area. It is based on library and archival research in relevant documents and secondary sources, and is intended to provide an historical overview of the broad areas under consideration. Further research and analysis of specific areas and sites may be required to assist with assessment of particular cultural heritage issues arising in relation to the Study Area.



2.2.1 Early European Pastoralism

German explorer Ludwig Leichhardt was the first European to enter the northern Bowen Basin (Killin 1984: 1). 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: 134). 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: 13).

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: 149).

Encouraged by the reports of Leichhardt and other explorers, various figures took up pastoral leases in the area in the decade that followed. In 1854 Ludwig's friend Jeremiah Rolfe squatted on a run he called 'Belyando Waters' until it later became a part of a legal pastoral division (Killin 1984: 3). Rolfe's unauthorised squatting was by no means unique as 'during the 1850's land acquisitions in inland central Queensland had been a free-for-all' (Murray 1996: 15).

After the Leichhardt District was officially opened for pastoral settlement in 1856, a number of other runs were taken up. The Archer brothers, also acquaintances of Leichhardt's, took up 'Capella', 'Boree', 'Upper Crinum', 'Lower Crinum', and 'Laguna' (O'Donnell c1989: 9). Oscar de Satge gained 'Wolfgang' in 1861 and John Muirhead established a 'massive sheep run at "Banchory"' in May 1860 (O'Donnell c1989: 10). These holdings established a pattern of private pastoral leases that typified the region for the first 100 years of its settlement.

Early development was tempered by a tendency of some settlers to claim land purely for speculation with no intent to improve or make productive use of the land (Murray 1996: 15). This practice was eventually prohibited by Queensland colonial government legislation forcing settlers to 'to occupy and work their properties' (Murray 1996: 15).

The encroachment of these settlers caused significant disruption to the existing patterns of life among the Aboriginal inhabitants of the area, and significant 'racial disharmony' followed (Killin 1984: 14). Contemporary records noted a number of massacres of pastoralists by Aboriginal groups in the region (O'Donnell c1989: 11). Reports of European brutality toward Aboriginal people included a number of incidents associated with the notorious Lieutenant Fredrick Wheeler of the Native Mounted Police in the mid-1870s (Lack & Stafford 1965: 132-136). The unease caused by this racial tension meant that as late as 1895 station managers were choosing to live in 'fort like dwellings ... with slits for fighting blacks' (O'Donnell c1989: 11).



Much of the area around what became the town of Moranbah was thus dedicated to pastoral activity during the 1860s and 1870s. Most land was available in leases of one to two years, but unfortunately records of these early leases remain sparse. Mr Andrew Scott is credited with taking up 'Moranbah' as a pastoral lease prior to 1880 (Belyando Shire Council 2006). After the 1880's, Scott's Moranbah was combined with other local leases to form 'Grosvenor Downs' station (Murray 1996: 16). However 'Moranbah Holding' appears in the official records again in 1920, as grazing homestead for Mr H.R. Hart, and again in 1929 when Mr C.H. Clements acquired the station and renamed it simply 'Moranbah' (Belyando Shire Council 2006).

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).

2.2.2 Early Mining

Gold and copper were the first minerals to be extracted from the Bowen Basin mineral field in large quantities. Although the existence of coal had been known since Leichhardt's first explorations, the absence of reliable transport infrastructure retarded its development as an industry. Since the first discovery of gold in 1861 (Killin 1984: 11) mining has substantially dictated the fortunes of the region alongside the pastoral industry, and many small towns and settlements appeared to capitalise on the mineral deposits.

Following the discovery of gold, the area experienced its first gold rush centred on the town of Clermont in August 1863 (Killin 1984: 11). 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: 28). 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: 24). The first discovery of copper was made by Jack Mollard in 1861 (O'Donnell c1989: 55). 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: 28). Although this was the largest copper mining concern in the area, copper was still largely mined by individuals.



In concert 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, Birimban, 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: 55,61, 89-110).

2.2.3 Coal Mining to 1968

From the time of Leichhardt's explorations there were 'tantalizing reports of coal' in the region (Whitmore 1991: 318). However, there was little incentive to extract these reserves as there was limited local demand and no reliable means of transporting coal to the coastal markets. With the extension of the railways into central Queensland before the end of the nineteenth century the 'impetus for extending coal mining' in the area grew (Whitmore 1985: 281).

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: 37). But the lack of a local market and absence of a rail link made the mine uncompetitive (Whitmore 1985: 284-291). With the extension of the Northern (later Central) railway line to Clermont in 1884, a small market for local coal evolved. Although this development was not enough to generate large-scale production, the Chief Inspector of Mines, C.F.V. Jackson, estimated that there were '44,000,000 tonnes' of coal in the Clermont coal fields (Jackson 1909: 46-49).

To this point underground 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: 381-384). 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: 384).

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: 56). 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: 59).

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: 66). 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: 67).



Despite technological advances, coal from Blair Athol was not competitive on the international market leading to large amounts of stockpiling (Martin & Hargraves 1993: 155).

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: 67). In a move that was to have direct implications for the Belyando Shire the US multinational Utah Development Corporation (UDC) opened their first open-cut coal mine in Blackwater in 1968, 290 kilometres south-east of current day Moranbah (Martin & Hargraves 1993: 158). These large multinationals brought 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 & Hargraves 1993: 163) and by 1997 two thirds of Queensland's \$10 billion production of coal came from the Bowen Basin ("Advances in Mine Site Rehabilitation" 1997: 16).

2.2.4 Development of Moranbah

Located 191 kilometres west of Mackay the township of Moranbah has developed as the major social hub in the vicinity of the Study Area. 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: 16).

Moranbah is built on part of the former pastoral run known as Grosvenor Downs. Grosvenor, Grosvenor North, and Grosvenor East all appeared on the Queensland Surveyor's General Office Run Map for the Leichhardt District (Surveyor General's Office 1882). By 29 April 1885 the registered lessee of Grosvenor Downs was Alexander Boner McDonald ("Grosvenor Downs' Run File: Held by the Queensland State Archives service (File Number: LAN/AF 388)"). McDonald's holding began with the original Grosvenor runs, but he was able to consolidate a number of other runs into an enlarged Grosvenor Downs ('Grosvenor Downs' Run File: Held by the Queensland State Archives service (File Number: LAN/AF 388),"). By the time McDonald's death in 1907 Grosvenor Downs included the Winchester, Teviot Bank, Broadmeadow, Roseylie, Broadlee, Hermitage Forest, and Harrow.

Records show that McDonald run mainly cattle on his property. This was the preferred use for the property throughout the rest of the twentieth century even though it underwent a number of lessee changes. By 27 November 1953 Arthur David, Adrienne Kathleen, and John Mitchell Muirhead had taken up the pastoral lease on the property ('Grosvenor Downs' Run File: held by the Queensland State Archives service [File Number: LAN/AF 388]).

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: i).



American multi-national UDC took up the mining rights to the land and with the forecast for approximately 400 employees, 1100 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: 16). 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).

The town of Moranbah was purpose built as a "supportive town" for the Goonyella and Peak Downs mines (Murray 1996: 3). Ullman and Nolan Consulting Engineers of Mackay were contracted to design a town 30 kilometres south of the proposed mine site (Kingston 1986: 1). The estimated cost of the town, between \$2,142,000 and \$2,242,000, was borne by UDC, with the Belyando Shire Council supplying some infrastructure (Kingston 1986: 1).

Although the town was planned with a 'community focus' (Bertoldi 1978: 57), Moranbah was beset by a number of early difficulties. For the early residents Moranbah was not a welcoming location to live. The town resembled a 'construction site' and many of the employees and their families had to live in one of the two short term caravan parks established as temporary housing (Murray 1996: 42). This housing shortage was a cause of some industrial disputes between UDC and the peak mining unions (Williams 1979: 114).

In addition to the lack of suitable accommodation the isolation of the town meant that most residents were transitory. Many public servants, police officers, and teachers remained in Moranbah for the minimum required period and the Salvation Army reported that a number of miners wives 'ran away' from their husbands due to the hardships of living in an isolated location (Murray 1996: 86).

The Belyando Shire Council and the UDC sought to reverse the trend that saw only 18% of home ownership in Moranbah (Bertoldi 1978: 62). A 'Home Purchasing Scheme' was begun in October 1977 that allowed residents to buy their current rental home at a 20% discount of the market price (Bertoldi 1978: 67-68). This scheme was not an initial success, for as one local put it 'most people never really thought that mining would last' so there was no point in purchasing a house (Murray 1996: 88). Nonetheless, infrastructure and service improvements were made to the town and a number of essential and recreational services were added. By the mid 1970's the town boasted a shopping centre, a Little Athletics club, dentists, air charter service, Aussie rules football club, 14 bed Moranbah Hospital, race track, and golf course (Murray 1996:82). With the growth in mining operations the town continued to develop and by the late 1990's Moranbah was 'a slow and easy going place' with 'a shopping centre, hospital, library, banks, video rental stores, a travel agency, churches, and even a modest zoo' (Murray 1996: ix). By 1996 a small pensioner housing development, increased home ownership, and a high school showed that some residents in the town had come to see Moranbah as home (Murray 1996).



2.2.5 Coal Mining at Peak Downs

Peak Downs Mine is located 30km south of the town of Moranbah and 195km south west of the Hay Point port facilities on the Whitsunday Coast. The Study Area, located immediately north of the current Peak Downs mining operation, is positioned on a portion of one original pastoral run that appear on maps from 1882 onwards; Grosvenor Downs. During the latter half of the 20th century, parts of Grosvenor Downs were sold and the smaller runs of Buffell Park and Horse Creek now exist in the area under study (Caval Ridge).

Peak Downs mine is a large, open cut mining operation, which was developed in the early 1970's by Utah Development Company. The first coal was mined in April 1972. Coal is mined from the Dysart and Harrow Creek sequence of medium volatile hard coking coal seams which average 4m to 5m in thickness.

The town of Moranbah was developed as a supportive town for employees of the Goonyella and Peak Downs coal mining operations (Murray 1996: 3). Many of the men who journeyed to Moranbah to work at Goonyella and Peak Downs mines were experienced men from Queensland's West Moreton coal mine and from New South Wales (Murray 1996: 3). A railway link was constructed in the early 1970s to carry coal from Goonyella and Peak Downs to the port facilities at Hay Point, south of Mackay (Murray 1996: 8).

Utah Development Company became a wholly owned subsidiary of BHP in 1984. BMA was formed in June 2001, as a partnership between BHP Billiton and Mitsubishi Development Pty Ltd, under which the two companies share equal ownership and management of seven Central Queensland coal mines including Peak Downs and the Hay Point coal export terminal near Mackay (BMA 2007).

2.3 Register Searches

2.3.1 Federal

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 Study Area. 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.

Two sites were located on the Register of the National Estate in the vicinity of the Study Area. These sites are of natural heritage significance. The search results are summarised below and provided in Appendix A. **They are not, however, within the Study Area.**



Place ID	Description	Location	Legal Status
8894	Wilandspey Environmental Park – an area of gently undulating lowlands densely timbered with Gidyea scrub and Brigalow and with a wide range of other vegetation types.	About 5,200ha Beenboona via Moranbah Qld. Approx. 200km west of Peak Downs Mine	Registered (21/10/1980)
8886	Peak Range Areas - The range is a chain of prominent and picturesque mountains visible from a considerable distance across the surrounding plains. Sharp peaks are volcanic plugs of various types, plateaux formed by sub-horizontal lava flows also present.	About 4,200ha, 43km north-east of Clermont	Registered (21/10/1980)

Table 3 – Register of the National Estate search results (RNE 2008).

No sites were identified on the National and Commonwealth Heritage List within the Study Area.

2.3.2 State (Queensland)

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 were identified on the EPA register within the Study Area.

2.3.3 Local Government Legislation

Cultural Heritage is discussed briefly in the Belyando Shire Planning Scheme. It is understood that a local heritage register is currently under construction. Consultation with Council officers revealed that there was no specific information available in relation to the Study Area.

No sites were identified at the Local Government planning level within the Study Area.



3 CULTURAL HERITAGE INVESTIGATION

This chapter provides an overview of the methodology, constraints and overall results of the field survey. Fieldwork undertaken by ARCHAEO staff is based on universally understood and accepted forms of assessment that occur in a series of clearly defined steps including sampling, surveying, site evaluation, recording, impact assessment, and management recommendations.

3.1 Survey Methodology

The survey methodology adopted for this study incorporated a vehicle and pedestrian inspection of the Study Area 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 Study Area was traversed.

All survey data was recorded in field notebooks and locations of any items or place of historical cultural heritage significance were captured via a hand held global positioning system (GPS), accurate to ± 4 metres. This information was then utilised to create maps outlining the location of sites and features noted during the survey. Areas of interest were photographed using a digital camera (*Nikon CoolPix 5400*) with 5.1 effective megapixels. All photographs were logged in a field notebook to be downloaded to a laptop computer for initial storage at the end of each day. Upon completion of the report, these photographs are stored on disk (CD) in the ARCHAEO office.

3.1.1 Sampling Strategy

Sampling strategies (where to look) can be either *purposive*, where specific areas are targeted (for whatever reason), as is done with predictive modelling; or *probabilistic*, where decisions are made to survey without any prior knowledge or predictive model of what heritage resources might exist in the landscape to be surveyed. So it is that archaeological survey strategies usually involve transects across the Study Area chosen at random (probabilistic) to avoid possible bias in the results; or transects within areas (purposive) known to be historically significant, or those designated areas specifically earmarked for development.

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.



Noted historic cultural heritage areas were recorded with reference to site title, location, environmental context, levels of previous impact, condition and relevant comments including Project details.

3.2 Constraints to the Survey

3.2.1 Ground Surface Integrity

An assessment of ground integrity (GI) provides an indicator of whether or not the land surface within a landscape under study has been modified or not, and if so, the degree of disturbance encountered. Landscape modification may influence the context (and therefore integrity) of areas of historical cultural heritage interest. Levels of GI were determined using a percentage range between 0-100% where 0% indicates all GI is gone, and 100% represents excellent preservation of the original context. Therefore: **Zero - 0%; Poor - 1-25%; Moderate - 26-50 %; Fair - 51-75 %; Good - 76-85%; Excellent - 86-100%.**

Much of the Study Area demonstrated relatively poor GI, exhibiting clear evidence of long term clearing associated with the pastoral history of the area coupled with severe erosion precipitated by grazing and the affects of the drought. This was particularly noticeable in the general lack of mature vegetation and the predominance of dense grass and regrowth scrub. Vehicular and cattle tracks were common throughout the Study Area. Notable areas of higher integrity included remnant corridors of woodland (predominantly Box, Brigalow, Moreton Bay Ash and various Gums) along creek banks.

3.2.2 Ground Surface Visibility

Assessments of ground surface visibility (GSV) provide an indication of how much of the ground surface can actually be seen. GSV is most commonly inhibited by vegetation but other inhibitors may include concrete, gravel and bitumen. Levels of GSV were determined using a percentage scale in that 0% represents zero visibility and 100% represents maximum visibility (bare ground). Therefore: **Zero - 0%; Poor - 1-25%; Moderate - 26-50 %; Fair - 51-75 %; Good - 76-85%; Excellent - 86-100%.** The better the visibility, the more potential there is for locating historical/archaeological material.

Much of the Study Area demonstrated good GSV primarily as a result of long term clearing and grazing in the area and erosion around dry creeks and channels (See Plate 4 & 5). Areas where GSV was notably lower included areas of dense grass and weed varieties and scrub regrowth





Plate 4: Good GSV. Undulating grazed paddocks. Patches of dense grass and weed varieties.



Plate 5: Good GSV. Black soil paddock with sparse patchy grasses and regrowth vegetation.

3.3 Leaseholder Consultation

Consultation with the following leaseholders was conducted as part of the research for this assessment:

- A discussion was held with George and Yvonne Batchelor, on the 10th December 2007, on their property at East Buffell Park. The Batchelors have leased and lived on the property for 12 years. This property was resumed from the original Grosvenor Downs run during the 1960s. Mr and Mrs Batchelor provided the location details for the remains of a telegraph line that apparently runs alongside the course of the old road and stock route within the Study Area. Surface evidence of this road and stock route no longer exist. The Batchelors' also discussed the potential existence of tailings yards and an old wagon route however these sites were determined to be outside of the Study Area and therefore not investigated.
- A discussion was also held with Mark and Gleda Rowe, on the 10th December 2007, on their property at Buffell Park. Mr Rowe confirmed the location of the telegraph line and stock route mentioned by Mr and Mrs Batchelor. Mr and Mrs Rowe also relayed information concerning the location of old stone bridge abutments located either side of Nine Mile Creek that they believe were built by the Chinese more than 100 years ago. This site however, is located outside of the Study Area.
- A discussion was also held with Mr Percy Hornery of Horse Creek Station, on the 11th December 2007. Mr Hornery purchased the property 17 years ago. Horse Creek was also part of the original Grosvenor Downs run. Mr Hornery could not remember coming across anything in the area of historic interest other than the old road previously mentioned by the Rowes and the Batchelors. Mr Hornery continued by noting that significant historic features were located in the vicinity of the original Grosvenor Downs homestead. This particular homestead is outside of the Study Area.



3.4 Survey Outcomes

An estimated 50% of the Study area was traversed using primarily vehicle transects and occasional pedestrian transects. The location of any materials and/or places of historical archaeological significance and/or interest were noted and grid co-ordinates were captured via GPS. All material found is listed in Table 4 and mapped in Plate 6. There were no historical sites of cultural heritage significance located within the Study Area however items and/or places of historical interest were located and are identified below by the prefix HI (Historical Interest).

It is important to note that HI places are those which contribute to the broader discussion of historic cultural heritage 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.

Place ID	GPS co-ordinates ¹		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: WGS84. Grid Zone 55K.			

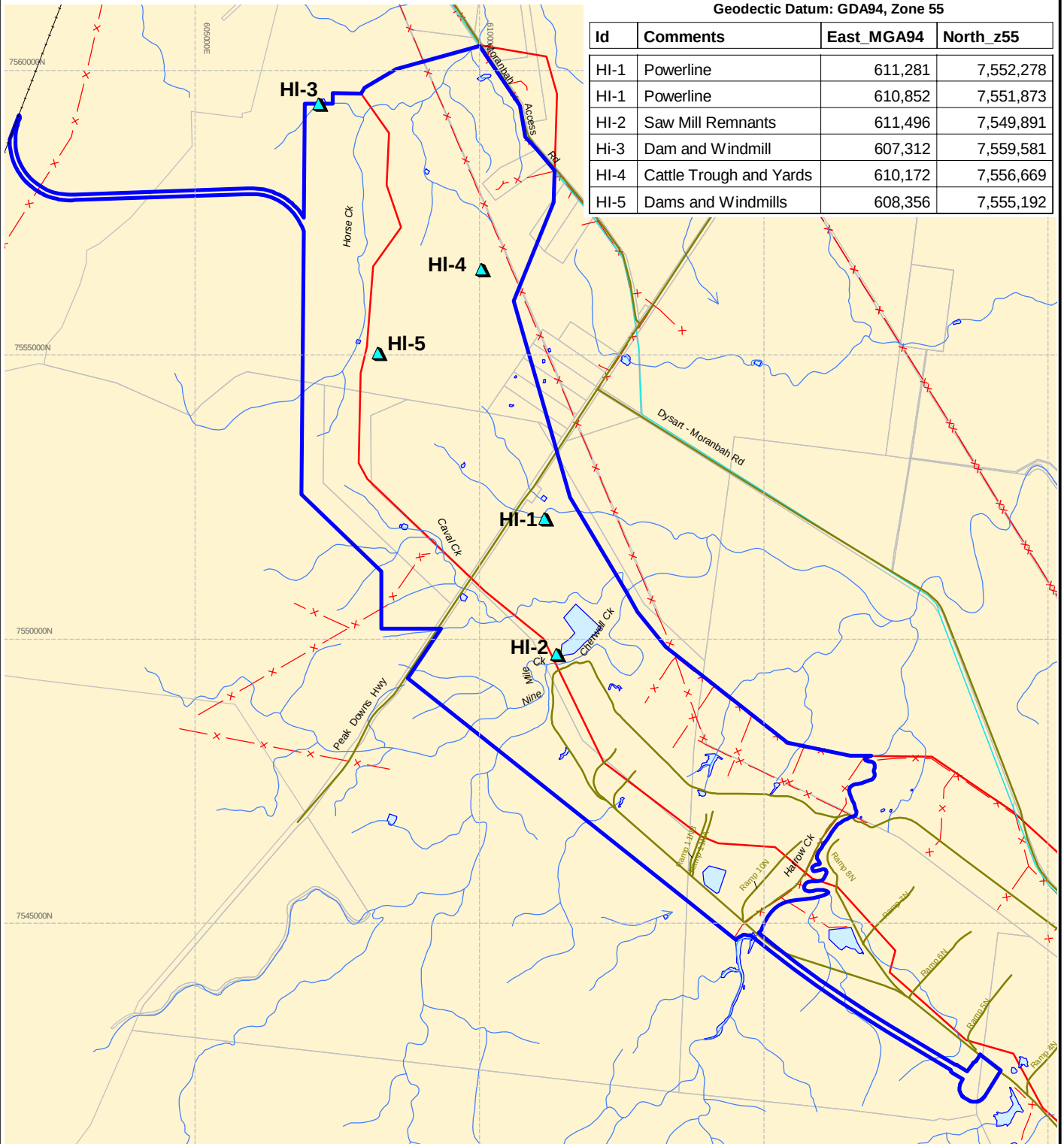
Table 4 - Location data for items and/or places of historical interest.



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

Geodetic Datum: GDA94, Zone 55

Id	Comments	East_MGA94	North_z55
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 2km
Scale 1:100,000 (A4)
Datum: AGD84, AMG Zone 55



Project Site



HI-1 Place of Interest Location

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.

Client  	Project NON INDIGENOUS CULTURAL HERITAGE SURVEY CAVAL RIDGE			Title LOCATION OF ITEMS/PLACES OF HISTORICAL INTEREST	
	Drawn: VH Job No: 4262 6158	Approved: BG File No: 42626158-g-111.wor	Date: 13-11-2008	Plate 6	Rev:D A4

4 ANALYSIS OF DATA

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 Study Area 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 Study Area during this survey.

4.1 Locations of Historical Interest (HI)

Items and places of historical interest (HI) discussed in this report are those which do not provide a suitable level of cultural heritage significance in their own right to justify further assessment or specific mitigation strategies. They are however, included in this section as they contribute (or potentially contribute) to the broader discussion of cultural heritage places within the Study Area. Five (5) places of historic interest were located during this survey and they are briefly described below.

HI – 1 Telegraph Line

Located approximately 500m south of the Peak Downs Hwy, in the southern half of the Study Area, are the remains of a telegraph line (Plate 7). The line of timber posts extends for at least 1.5km in a NE-SW alignment. There are at least 15 thin timber posts, positioned approximately 100m 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.



Plate 7: North View. Telegraph post.

HI – 2 Saw Mill Remnants

Located in the southern part of the Study Area, are three piles of sawn timber (Plate 8); 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.





Plate 8: South east view. Piles of sawn timber.

HI – 3 Dam and Windmill

Located just inside the north west corner of the Study Area are two dams and a water-pumping windmill (Plate 9). 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.



Plate 9: SE View. Damaged windmill and one of 2 nearby dams.

HI – 4 Cattle Trough, Yards and Fence Lines

Timber and steel cattle yards, trough and timber fence lines exist in the central north section of the Study Area (Plate 10). The yards form the centre of this place 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. The condition of the site is good.



Plate 10: S View. Timber and steel cattle yards and trough.

HI – 5 Dams and Windmills

Roughly located in the centre of the Study Area are two water-pumping windmills and two associated dams. The design of the rural windmills is consistent with HI 3; a steel lattice tower and steel rotating blades. The windmills are seemingly intact.



4.2 Conclusion

There were no historical sites of cultural heritage significance which contain suitable value to warrant further assessment located within the Study Area during this survey. Five places of historic interest (HI) were identified within the Study Area for which a management recommendation is provided in Section 7. These places do not provide a suitable level of cultural heritage significance to validate further assessment and for this reason will not be subject to a significance assessment.

It is concluded that there is some potential for further historic places/items to exist within the Study Area and these are likely to be remnant sites relating to pastoral and settlement activities, such as historic survey trees, roads and stock routes, the remains of old mines or early camps, remote graves, old station dumps and remnant boundary fence lines. Subsurface evidence of an early road associated with HI-1, south of the present Peak Downs Hwy, may also exist within the Study Area.



5 SIGNIFICANCE ASSESSMENT

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

Historic sites of cultural heritage significance would ordinarily be attributed an individual significance rating in this chapter however no such sites were located during this survey. Five places of historic interest (HI) were located during the survey however these are not generally assessed for significance as these places do not retain enough value to warrant further assessment or specific mitigation strategies. The places of historic interest do nevertheless provide an insight into the pastoral history of the region and therefore guide the discussions relating to the historic value of the landscape within the Study Area.

5.1 Determining Cultural Heritage Significance

A range of standards and criteria are available to assist with determining cultural heritage significance. The following sections discuss *the Burra Charter (ICOMOS Australia 1999)* and incorporate aspects from the recognised legislative frameworks, such as the *Queensland Heritage Act 1992 (and subsequent amendments)*. This discussion enables an insight into the discussions made in relation to significance levels discussed in the following section.

5.1.1 Historic Heritage Significance

The Burra Charter (Marquis-Kyle and Walker 1999) guides cultural heritage management in Australia. First adopted in 1979 by Australia ICOMOS (International Council on Monuments and Sites), the charter was initially designed for the conservation and management of historic heritage. However, after the addition of further guidelines that defined cultural significance and conservation policy, use of the charter was extended to Indigenous studies.

The charter defines conservation as 'the processes of looking after a place so as to retain its cultural significance' (Article 1.4). A place is considered significant if it possesses aesthetic, historic, scientific or social value for past, present or future generations (Article 1.2). The definition given for each of these values is as follows (Articles 2.2 to 2.5).

Aesthetic value includes aspects of sensory perception for which criteria can and should be stated. Such criteria may include consideration of the form, scale, colour, texture and material of the fabric; the smells and sounds associated with the place and its use.

Historic value encompasses the history of aesthetics, science and society, and therefore to a large extent underlies all of the terms set out in this section. A place may have historic value because it has influenced, or has been influenced by, an historic figure, event, phase or activity. It may also have historic value as the site of an important event. For any given place



the significance will be greater where evidence of the association or event survives in situ, or where the settings are substantially intact, than where it has been changed or evidence does not survive. However, some events or associations may be so important that the place retains significance regardless of subsequent treatment.

Scientific research value of a place will depend upon the importance of the data involved, on its rarity, quality or representativeness, and on the degree to which the place may contribute further substantial information.

Social value embraces the qualities for which a place has become a focus of spiritual, political, national or other cultural sentiment to a majority or minority group.

Article 26 of the Charter notes that other categories of cultural significance may become apparent during the course of assessment of particular sites, places or precincts. A range of cultural significance values may apply.

Every place has a history, aesthetic value or a social meaning to some member of a community. Most places therefore meet some of the criteria prescribed above. It is, however, neither possible nor desirable to conserve every place. Some measures must be applied to these broad criteria in order to determine the degree of significance. The degree to which a place is significant will determine the appropriate forms of conservation management for that place.

Assessing cultural heritage significance against set criteria is a widely recognised method of achieving consistent, rational and unbiased assessments. Various authorities and bodies involved in heritage conservation adopt assessment criteria including the Australian Heritage Council, the National Trust, Australia, ICOMOS, the Queensland Environmental Protection Agency and the Queensland Heritage Council.

5.1.2 Significance Assessment and Relevant Legislation

The *Queensland Heritage Act 1992* sets out specific tests for considering places of State heritage value. Under Section 34(1) of this Act, a place may be entered in the state heritage register if it is of cultural heritage significance in accordance with Section 4 of the Act and satisfies one or more of the following criteria:

- a) If the place is important in demonstrating the evolution or pattern of Queensland's history;
- b) If the place demonstrates rare, uncommon or endangered aspects of Queensland's cultural heritage;
- c) If the place has potential to yield information that will contribute to an understanding of Queensland's history;
- d) If the place is important in demonstrating the principal characteristics of a particular class of cultural places;



- e) If the place is important because of its aesthetic significance;
- f) If the place is important in demonstrating a high degree of creative or technical achievement at a particular period;
- g) If the place has a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- h) If the place has a special association with the life or work of a particular person, group or organisation of importance in Queensland's history.

5.2 Nature of Significance

This section discusses the relevant levels of cultural heritage significance for the Study Area, concluding with a statement of cultural heritage significance. This significance assessment provides the final layer for the management of the relevant historic places within the Study Area in Section 7.

5.2.1 Aesthetic Value

Aesthetic appeal is evident throughout the Study Area, including:

- The rural setting and open landscape including sheds, stock yards, vegetation, fencing and associated elements;
- The numerous creek systems running through the Study Area;
- Native vegetation, most notable surrounding the abovementioned creeks.

Recent travel within the district reveals that these abovementioned values are similarly represented in many parts of the local area. In light of these observations, **this assessment considers the Study Area to have low levels of aesthetic value.**

5.2.2 Historic Value

The Study Area represents settlement and pastoral pursuits relevant to the area from early times, when settlers took up pastoral leases in the vicinity of the Study Area from the 1850s.

The presence of coal in the area was confirmed by early explorers; however it was not mined on a large scale until the 1970s. The nearby town of Moranbah was originally purpose built as a “supportive town” for the Goonyella and Peak Downs Mines, located 30km north and 30km south of Moranbah respectively. Moranbah is now home to many workers and their families from numerous mines in the area. From this time coal mining has clearly overshadowed pastoral activities in the Study Area and the district.

The Study Area is considered by this assessment to have low levels of historic value to the local area.



5.2.3 Scientific Value

A number of places were recorded which have the potential to reveal scientific value related to the local area, including but not limited to:

- Various yards and sheds;
- Associated fences;
- Telegraph line; and
- Dams and windmills.

Although none of these elements display any significant level of technical flare or ingenuity for their time, they do collectively provide a cross section of the cultural record of settlement and pastoral pursuits in the area since settlement.

The Study Area is therefore considered by this assessment to have low levels of scientific value to the local area.

5.2.4 Social value

Research has indicated that some properties within the Study Area have longstanding associations with families within the local community who have resided or worked on them in historic times. Previous assessments in the area however, have revealed similar values within the district, suggesting that these values are well represented in the region. For this reason, **the Study Area displays low levels of social significance to the local community.**

5.3 Statement of Cultural Heritage Significance

The following statement of significance has been provided to reflect the Study Area's cultural heritage significance within the current legislative frameworks.

The Study Area is considered significant because:

- Representing settlement and pastoral pursuits within the district from early times and more recently coal mining activities, the area is to a small degree important in demonstrating the evolution or pattern of the local areas history;
- Containing a number of working pastoral enterprises and their associated remnants, including a series of yards, dams and water-pumping windmills, the place has potential to yield information that will contribute to an understanding of the local areas history;
- Surviving today in a rural setting, including the historic environment associated with pastoral activities and the natural setting alongside various creek lines , the area exhibits a low level of aesthetic value which is sometimes considered important to the local community;



- Properties retain local connections with those families who have lived and worked there. These places have a special association with the life or work of a particular person, group or organisation of importance in the local areas history.

5.4 Significance Ratings for the Study Area

Using the methodology for significance assessment outlined above, the Study Area has been assessed by this report to have the following levels of cultural heritage significance:

Value	Rating	Justification	Legislative Status
Aesthetic	Low	Surviving today as what has remained a relatively rural setting, the Study Area 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 Study Areas pastoral pursuits, which collectively have potential to contribute to an understanding of the local areas history. No elements of the Study Area 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 Study Area 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).

Table 5 – Summary of cultural heritage significance for the Study Area.

5.5 Cultural Heritage Potential within the Study Area

This report suggests that there is some potential for further historic items to exist within the Study Area as ground surface visibility (GSV), along with the nature of the survey did not allow for a complete survey of this area. In particular, potential exists for surface and/or subsurface road remnants along the old telegraph line 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. This is discussed further in the following sections.

Detailed discussion relating to impact on items and potential items of cultural heritage significance by the Project will be discussed in the Section 7 - Recommendations.



6 PROPOSED DEVELOPMENT

6.1 The Nature of the Proposed Development

The development of the Caval Ridge Mine is one element of the BMA Bowin Basin Growth Project which involves the growth of BM Alliance Coal Operations Pty Ltd ("BMA") coal mining operations in the northern section of the Bowen Basin. BMA propose to develop a greenfield site into an open cut mine with related infrastructure to the north and adjacent to the existing BMA operation at Peak Downs, south of Moranbah. Caval Ridge is located in the northern section of the existing ML 1775, with Harrow Creek acting as the southernmost boundary.

Open cut mining operations (using dragline and truck/shovel equipment) are proposed, producing approximately 5.5Mt/a of hard coking coal product primarily for the export coking coal market.

The coal will be processed at an on-site CHPP. An additional 2.5 Mt/a of coal will be produced by the Peak Down Mine and will be processed through the Caval Ridge Mine CHPP, giving the Caval Ridge CHPP an initial product capacity of 8Mt/a. The incremental 2.5Mt/a from Peak Downs Mine does not form part of the Caval Ridge Mine element of the Project as it is within the currently approved capacity of the Peak Downs Mine. Caval Ridge Mine also has the potential to expand by a further 4 Mt/a or more, which will be subsequently assessed, and therefore does not form part of this Project.

A new mining lease to the west of ML 1775 will be required for site infrastructure, temporary landforms and to maximise resource recovery from ML 1775.

6.2 Types of Potential Impacts

Potential direct impact on HI places and potential sites of cultural heritage significance 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.

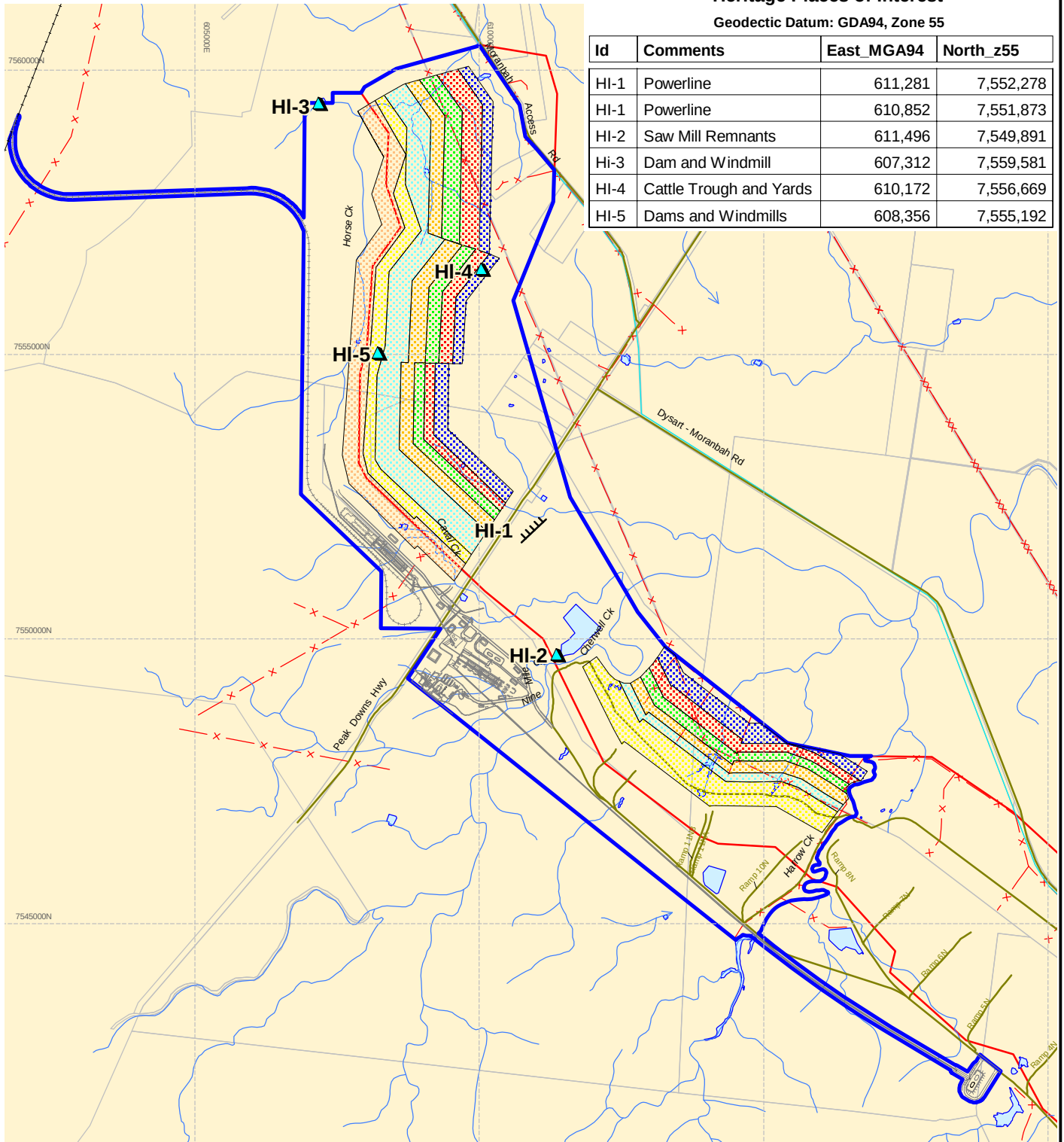
Indirect impacts may occur from the construction of roads and infrastructure associated with mining activities, including the day to day operation of vehicles across the broader site.



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

Geodetic Datum: GDA94, Zone 55

Id	Comments	East_MGA94	North_z55
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 2km
Scale 1:100,000 (A4)
Datum: AGD84, AMG Zone 55

Project Site
Place of Interest Location
Proposed Mine Infrastructure

Boxcut Spoil Area
0-5yrs
5-10yrs
10-15yrs
15-20yrs
20-25yrs
25-30yrs

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.

Client

URS

ARCHAEO

Project

NON INDIGENOUS
CULTURAL HERITAGE SURVEY
CAVAL RIDGE

Title

**CAVAL RIDGE MINE FOOTPRINT
AND
PLACES OF HISTORICAL INTEREST**

Drawn: VH

Approved: BG

Date: 13-11-2008

Job No: 4262 6158

File No: 42626158-g-132.wor

Plate 11

Rev:A

A4

6.3 Project Timeframes

Construction is expected to commence in 2009, with first coal extracted in 2011.

6.4 Project Impact on Places of Historical Interest (HI)

The field survey has identified five places of Historical Interest (HI). These places are not considered to contain enough heritage value to warrant further assessment or specific mitigation strategies, however, they will be subject to potential direct impact by the Project. A recommendation to manage these places is provided in Section 7.

6.5 Project Impact on Potential Sites and Places of Cultural Heritage Significance

It is concluded that there is some potential for further historic places/items to exist within the Study Area as the nature of field survey did not allow for a comprehensive survey of 100% of the Study Area. 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. Recommendations to manage Project impact on unexpected finds are provided in the following section.



7 RECOMMENDATIONS

The field survey has identified five places of historic interest (HI) (see Table 4). These places 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 located within the Study Area, this section provides general mitigation recommendations to manage unknown and unexpected historic cultural heritage sites located within the Study Area that may potentially be impacted by the Project. Management recommendations are also provided for the identified HI places listed in Table 4.

As outlined in Section 5.5, 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; or
- Old Station dumps.

Refer to Appendix B for further examples of historic cultural sites and places.

Assuming the recommendations below are suitably implemented, this report finds the nature and level of impact by the Project is acceptable.

7.1 Recommendation 1 – Management of HI Places

Although HI places do not contain suitable levels of cultural heritage significance to warrant specific mitigation strategies, it is recommended that where possible they are retained. In the case of this Project, impact may not always be avoidable. If avoidance is not possible, then the HI places can be cleared and disposed of in a manner suitable to the Project.



7.2 Recommendation 2 - Cultural Heritage Management within the Environmental Management Plan (EM 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 stage of the Project.

These management strategies should be included in the EM Plan for the entire Study Area to provide the Project team with suitable information to protect sites and places of cultural heritage significance (completed prior to the construction phase of the Project commencing). The cultural heritage discussion within the EM Plan should also provide suitable strategies for the Study Area, including policies and procedures for management of archaeological finds uncovered during the Project and obligations for notification of such finds to relevant agencies, including the Queensland Environmental Protection Agency, if required.

Additionally, this study recommends that diligence should be practiced during works conducted within the Study Area, particularly during any clearing or construction phases associated with initial preparation of the Study Area. This diligence should include specifically instructing crews of their obligations to look out for cultural heritage material, and handing out educational leaflets at Workplace Health and Safety meetings. These leaflets should inform the workers what archaeological material may look like, and give them clear instructions on what to do if they find anything.

7.3 Recommendation 3 – Variation to the Project Design

This study has assessed the impact of the Project within the Study Area. Whilst unlikely, any variation to the Project which places mining or infrastructure outside the assessed area would require reassessment to determine the nature of the impact on sites and places of cultural heritage significance. .



8 REFERENCES

Alfredson, G

- 1990 *Report on an archaeological survey of the North Goonyella Mining Lease.* Unpublished report for Sedgman and Associates.
- 1992 *Report on a preliminary archaeological survey of a proposed dam site and access road for the North Goonyella Mine.* Unpublished report for Ullman and Nolan Pty Ltd.
- 1991 *Report on an archaeological inspection of the Moranbah North Coal Project Area for AGC Woodward-Clyde.* Unpublished report for Shell Australia.
- 1994a *Moranbah North Coal Mine: A cultural heritage assessment.* Unpublished report for Shell Australia.
- 1994b *A Cultural Heritage assessment of the Burton Coal Project.* Unpublished report for Burton Coal Pty Ltd.
- 1995 *A cultural heritage assessment of the section of the mine path between Suttor Creek Development Road and the Isaac River, part of the Teviot Dam and sections of the proposed haul road for Burton Coal Project.* Unpublished report for Burton Coal Pty Ltd.
- Anon.
- 1997 *Advances in Mine Site Rehabilitation. Queensland Government Mining Journal.* 98 (1148):16.
- ARCHAEO Cultural Heritage Services Pty Ltd
- 2005 *Preliminary Cultural Heritage Assessment Goonyella Riverside Coalmine Expansion Project.* Report for URS Australia Pty Ltd.
- 2005 *Cultural Heritage Survey on Goonyella Riverside Coal Mine: mining leases 1763 and 1764, via Moranbah, Belyando Shire, Central Queensland.* Report prepared for Wiri People #3 Aboriginal Corporation and BHP Billiton Mitsubishi Alliance.
- 2006a *Cultural Heritage Surveys of the proposed Goonyella Riverside Mine Extensions. Portions of Lease Area EPC 928, Mining Lease MDLA 307, and Mining Lease MDLA 358, via Moranbah, Belyando Shire, central Queensland.* Report prepared for Wiri People #3 and BHP Billiton Mitsubishi Alliance, Brisbane.
- 2006b *A Cultural Heritage Assessment of the Moranbah Ammonium Nitrate Project, Central Queensland.* Report for GHD Brisbane.



Forthcoming Cultural Heritage Assessment of Ellensfield Coal Mine Project, Central Queensland. Unpublished report prepared for URS

Forthcoming Cultural Heritage Assessment of Grosvenor Coal Mine Project, Central Queensland. Unpublished report prepared for Hanson Bailey

Forthcoming Cultural Heritage Assessment of Eagle Downs Coal Mine Project, Central Queensland. Unpublished report prepared for Hanson Bailey

Australian Broadcasting Corporation (ABC) News
2005 (25 November) *Mayor doesn't want mines too close to Moranbah.*

Australian Heritage Council
2005 The Register of the National Estate. Accessed on 15 November 2007 from www.environment.gov.au/cgi-bin/ahdb/search.pl

Australian Heritage Council
2005 The National Heritage List. Accessed on 15 November 2007 from www.environment.gov.au/heritage/national/index.html

Australian Heritage Council
2005 The Commonwealth Heritage List. Accessed on 15 November 2007 from www.environment.gov.au/heritage/commonwealth/index.html

Australian Railway Historical Society, Queensland Division.
1965 *Queensland Railways, 100 years, 1865-1965.* [Brisbane: s.n.].

Belyando Shire Council
2006 *Moranbah: The New Kid on the Block.* Retrieved 18 January 2006 from <http://www.belyando.qld.gov.au/default.asp?iNavCatID=827&iSubCatID=864>

Bertoldi, L. J.
1978 *Design and Planning for Resource Frontier Communities: a mining town case study: Moranbah.* Unpublished Thesis (B.Arch.) - University of Queensland, 1978, [St. Lucia, Qld].

BHP Billiton Mitsubishi Alliance (BMA)
2007 About BMA. Accessed 16 January 2008 from www.bmacoal.com

Bolton, G.
1963 *A Thousand Miles Away: a history of North Queensland to 1920.* Brisbane: Jacaranda Press in association with the Australian National University.



Brayshaw, H.

- 1976 *Archaeological investigations of underground mining leases at Goonyella, Peak Downs, Norwich Park and Blackwater, and their environs*. Report prepared for James Cook University: Townsville.

Bureau of Mining and Petroleum

- 2005 New Records for Coal Production, Exports and Domestic Sales. *Queensland Government Mining Journal*, 14-17.

Chas. R. Hetherington & Co. Ltd.

- 1964 *Energy Resources of Queensland and their Use*. Report to the Honourable the Premier of Queensland. Brisbane: Govt. Print.

Contract Awarded for Goonyella Project

- 1999 *Queensland Government Mining Journal*. 100(1169): 10.

Corkill, M.

- 2005 *Threat Made over Housing Shortage*. The Courier-Mail (7 November): 4.

Environmental Protection Agency (EPA)

- 2006 The Queensland Heritage Register. Accessed 15 November 2007 from www.epa.qld.gov.au/chims/basicSearch.html

- 2005 Guidelines for Historical Archaeological Studies.

Gorecki, P.

- 2006 *Cultural Heritage Survey of Horse Creek Project, Peak Downs Coal Mine Moranbah, Central Queensland*. For Woorra Consulting Pty Ltd on behalf of BHP Mitsubishi Alliance (BMA).

Gunn, R. H.

- 1967 *Lands of the Nogoa-Belyando Area, Queensland*. Melbourne: C.S.I.R.O.

Hatte, E.

- 1996 *An archaeological assessment of a proposed route of a water pipeline, Eungella to Moranbah, Central Queensland*. Report prepared for Department of Natural Resources.

Hatte, E.

- 1997 *A cultural heritage assessment of the north Bowen Basin Rail Link*. Report prepared for Birri Gubba Gutha Bimbi and Sacred Site Aboriginal Corporation for GHD Pty Ltd.



Jackson, C. F. V.

1909 *Summary of tests of Central Queensland coals: comprising results of admiralty tests and other marine and land boiler tests, suction producer-gas tests, and approximate analyses of coals.* Brisbane: Govt. Printer.

Killin, K.

1984 *Drovers, diggers and draglines: a history of Blair Athol and Clermont.* Published by Pacific Coal Pty. Ltd. for the Blair Athol Coal Joint Venturers.

Kingston, S.

1986 *Moranbah: General and Postal History.* Brisbane: Queensland Historical Section Australia Post.

Lack, C., & Stafford, H.

1965 *The Rifle and the Spear.* Brisbane: Fortitude Press.

Leichhardt, L.

1964 *Journal of an overland expedition in Australia, from Moreton Bay to Port Essington, a distance of upward of 3000 miles, during the years 1844-1845.* Adelaide, S. Aust.: Libraries Board of South Australia.

Marquis-Kyle, P. and M. Walker.

1999 *The Illustrated Burra Charter.* Australian ICOMOS Incorporated: Sydney.

Martin, C. H., & Hargraves, A. J.

1993 *History of coal mining in Australia: the Con Martin memorial volume.* Parkville, Vic.: Australasian Institute of Mining and Metallurgy.

Morey, E.

1888 (4 August) *Annual Report of the Undersecretary for Mines.* The Queenslander. p. 185.

Murray, A.

1996 *Nothing but Scrub.* Moranbah, Qld: Moranbah Silver Jubilee Committee: Belyando Shire Council.

Nebo Shire Council

2005 *Nebo Shire Council: A Brief History.* Retrieved 19 January, 2006, from <http://www.nebo.qld.gov.au/council.html>

Odgers, R.

2005 (25 November) *Coal town land move scuttled.* The Courier-Mail, p. 2.



O'Donnell, D.

c1989 *A History of Clermont and District*. Clermont: Belyando Shire council.

Queensland Coal Board

2003 *Queensland coals: physical and chemical properties, colliery and company information (14th. ed.)*. Brisbane: Queensland Coal Board.

Queensland Department of Mines and Energy

1976 *Annual Report of the Under Secretary for Mines*. Brisbane: Queensland Department of Mines and Energy.

Queensland Department of Mines and Energy

1981 *Annual Report of the Under Secretary for Mines*. Brisbane: Queensland Department of Mines and Energy.

Queensland Department of Mines and Energy

1984 *Annual Report of the Under Secretary for Mines*. Brisbane: Queensland Department of Mines and Energy.

Queensland Department of Mines and Energy

1989 *Annual Report of the Under Secretary for Mines*. Brisbane: Queensland Department of Mines and Energy.

Queensland Railways Journalistic and Photographic Sections

1971 *Commemorating opening of Goonyella line, 5th November, 1971: Queensland Railways*. Brisbane: Queensland Railways.

Richards, J.

2005 *Queensland Cabinet Minutes (1975): A Report for the Queensland State Archives*. Brisbane: Queensland State Archives.

Rogers, P.

1964 The Failure of the Peak Downs Scheme. *Australian Journal of Politics and History* 10(1): 70-82.

Sattler, P. and R. Williams, Eds.

1999 *The Conservation Status of Queensland's Bioregional Ecosystems*. Queensland Environmental Protection Agency: National Parks Association of Queensland Inc.

Thomas, P., & Miners Federation (Australia)

1983 *Miners in the 1970s: a narrative history of the Miners Federation*. Sydney: Miners Federation.



Whitmore, R. L.

1985 *Coal in Queensland: the late nineteenth century 1875 to 1900*. St. Lucia; London; New York: University of Queensland Press.

Whitmore, R. L.

1991 *Coal in Queensland: from federation to the twenties, 1900 to 1925*. St Lucia, Qld: University of Queensland Press.

Williams, C.

1979 *Capitalism, patriarchy and the working class: a sociological study of open cut coal mining in Queensland*. Unpublished Thesis (Ph.D.) - University of Queensland, 1979, [St. Lucia].

Williams, C.

1981 *Open cut: the working class in an Australian mining town*. Sydney; London; Boston: Allen & Unwin..

Run files

Queensland Lands Department. Viewed: 18/01/2006. 'Annandale' Run File: Held by the Queensland State Archives service (File Number: LAN/AF388).

Queensland Lands Department. Viewed 18/01/2006. 'Grosvenor Downs' Run File: Held by the Queensland State Archives service (File Number: LAN/AF 388).

Queensland Lands Department. Viewed: 18/01/2006. 'Lenton Downs' Run File: Held by Queensland State Archives:(File Number: LAN/AF475).

Maps

Queensland State Archives (Cartographer). 1885. South Kennedy Run Map

Surveyor General's Office (Cartographer). 1882. Queensland Run Maps Leichhardt



APPENDIX A

REGISTER OF THE NATIONAL ESTATE SEARCH RESULTS



Australian Heritage Database***Place Details***

[edit search](#) | [new search](#) | [about the Australian Heritage Database](#) | [Heritage home](#) | [Australian Heritage Council home](#)

[Send Feedback](#)

Wilandspey Environmental Park, Beenboona via Moranbah, QLD, Australia

Photographs: None

List: Register of the National Estate

Class: Natural

Legal Status: [Registered](#) (21/10/1980)

Place ID: 8894

Place File No: 4/04/203/0003

Statement of Significance:

Wilandspey Environmental Park is significant for its relatively undisturbed areas of gidyea (ACACIA CAMBAGEI) scrub and other vegetation types which are representative of plant communities in the region which have been subject to widespread clearing. The area abounds in bird life and is important for conserving a variety of habitats for wildlife in the region.

Official Values: Not Available

Description:

An area of gently undulating lowlands densely timbered with gidyea (ACACIA CAMBAGEI) scrub with some brigalow (A HARPOPHYLLA) and with a wide range of other vegetation types.

History: Not Available

Condition and Integrity:

The area has been subject to grazing but the vegetation still retains, to a high degree, its original structure and species composition.

Location:

About 5200ha, Beenboonah via Moranbah, Wilandspey Holding, 60km east of Lake Buchanan, comprising Wilandspey Environment Park, EP 5.

Bibliography: Not Available

Report Produced: Thu Jan 17 12:43:59 2008

http://www.environment.gov.au/cgi-bin/ahdb/search.pl?mode=place_detail;search=state... 17/01/2008



Australian Heritage Database

Place Details

[edit search](#) | [new search](#) | [about the Australian Heritage Database](#) | [Heritage home](#) | [Australian Heritage Council home](#)

[Send Feedback](#)

Peak Range Areas, Peak Downs Hwy, via Clermont, QLD, Australia

Photographs: None

List: Register of the National Estate

Class: Natural

Legal Status: [Registered](#) (21/10/1980)

Place ID: 8886

Place File No: 4/03/209/0001

Statement of Significance:

Interesting example of the evolution of a volcanic province, showing change from eruption of lavas to emplacement of magma in the throats of volcanoes. Many peaks provide good examples of various types of such volcanic plugs. Range is a chain of spectacular peaks of considerable scenic and tourist appeal. With widespread clearing of crop land to west, range provides last major area of natural vegetation and wildlife habitat in the region.

(The Commission is in the process of developing and/or upgrading official statements for places listed prior to 1991. The above data was mainly provided by the nominator and has not yet been revised by the Commission.)

Official Values: Not Available

Description:

Range is a chain of prominent and picturesque mountains visible from a considerable distance across the surrounding plains. Sharp peaks are volcanic plugs of various types, plateaux formed by sub-horizontal lava flows also present. Open eucalypt forest clothes the peaks and foothills, in contrast to cleared crop land to west.

History: Not Available

Condition and Integrity:

Clearing of surrounding crop land is continuing.

Location:

About 4,200ha, 43km north-east of Clermont, in three areas:

Area 1) 1,200ha, Peak Downs Highway, 43km north-north-east of Clermont, comprising the area immediately surrounding Mounts Castor, Pollux, Commissioner, Saddleback and Fletchers Awl;

Area 2) 1,300ha, 43km north-east of Clermont, surrounding Lord's Table Mountain and Anvil Peak;

Area 3) 1,700ha, 27km north-east of Capella, in two sections, the first surrounding Scotts and Ropers Peaks and Malvern Hill, the second surrounding Mount Macarthur.

Bibliography:

1) MAP, 2) EXTRACT FROM 'GEOLOGICAL ELEMENTS OF THE NATIONAL ESTATE IN QLD.' GEOL. SOC. AUSTRALIA (QLD.), 1976.

http://www.environment.gov.au/cgi-bin/ahdb/search.pl?mode=place_detail;search=state... 17/01/2008



APPENDIX B

CULTURAL HERITAGE QUESTIONNAIRE



Places of Non-Indigenous Cultural Heritage Significance



BMA has commissioned cultural heritage consultants to investigate places of non-Indigenous cultural heritage significance in your local area.

A survey relating to historic (non-Indigenous) cultural heritage is planned to take place in and around your local area this month.

Cultural heritage is based on aspects of our past that we want to keep, appreciate and enjoy today and to pass on to future generations. Those aspects of our past might evoke special meaning for us as individuals or as members of a community, and reflect particular customs or beliefs. They also reflect the diversity of our communities, telling us about whom we are and the past that has formed us and the Australian landscape. They are irreplaceable and precious.

We are seeking your help to identify important such places, (some of which may only be known to people with a local knowledge). We would like to hear from you in regards to any cultural heritage sites or places that you consider to be of importance on your property.



Cultural sites or places might be related to:

- An important activity or event that took place;
- Remains from an early settlement activity;
- An important person, community or organisation relevant to the local area or region; or
- A surviving example of a rare, unusual or technical achievement for its time.

Some of the many examples might range from:

- A timber slab hut to a landmark homestead;
- The remains of an old mine or early camp;
- A remote grave;
- A World War II military installation;
- Memorial Trees;
- A landmark building or feature;
- An old station dump; or
- An early marked surveyor's tree.

On the following page is a cultural heritage questionnaire. This is your opportunity to let us know about any of these important site or places. It would be appreciated if you could complete this form and return it at your earliest convenience, alternatively, you can contact **ARCHAEO** Cultural Heritage Services on 07 3366 8488. Please ask for Stefani Blackmore or David Williams.

If you have any further questions, please feel free to contact Shaun Ferris of BMA on 07 3226 0415 or 0419 646 601.



Please fill out the following details in relation to any Cultural Heritage sites or places, outlined on the opposite page, that you feel should be brought to the attention of the cultural heritage consultants during their upcoming field work:

Q. 1 Are there any site or places that you consider important to the history of the area locally?

.....

.....

.....

.....

Q.2 Can you briefly describe the site/s or place/s discussed above (including its location?)

.....

.....

.....

.....

.....

Q.3 Are you happy to be contacted if further information is required? Yes/No
(If yes, please provide any relevant contact details and a preferred method to be contacted)

Your Name

A contact of one of the following:

Phone Number

Email.....

Mobile.....

© ARCHAEO Cultural Heritage Services 2007

