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Lake Vermont Meadowbrook Project

Non-Indigenous Cultural Heritage Assessment

Prepared for Bowen Basin Coal
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Converge Heritage + Community

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Glossary of Terms

Term	Abbreviation	Definition
Australian Height Datum	AHD	The datum that sets mean sea level as a zero elevation.
Australian Heritage Database	AHDB	National register of significant cultural heritage places.
Burra Charter		A document outlining best cultural heritage practice principles developed by the International Council on Monuments and Sites, Australia.
Circa	c.	Approximate date.
Commonwealth Heritage List	CHL	Register of places significant to the Commonwealth, under the EPBC Act.
Converge Heritage + Community	Converge	Cultural heritage consultants engaged for the heritage assessment – authors of this report.
Department of Environment and Heritage Protection	EHP	State department for the management of environment and heritage now the Department for Environment and Science.
Department of Environment and Science	DES	State department responsible for managing the health of the environment, protecting Queensland’s unique ecosystems and identifying and conserving built heritage.
Environmental Impact Statement	EIS	Statement regarding the environmental impact of a proposed project.
Environmental Management Plan	EMP	Plan for managing the environmental impacts of a development.
Environmental Protection Agency	EPA	State government department – now the Department of Environment and Science.
Environment Protection and Biodiversity Conservation Act 1999	EPBC Act	Federal legislation of the management of environment and heritage.
International Council on Monuments and Sites	ICOMOS	International organisation for cultural heritage.
Project Area		The proposed mine and infrastructure area including offices, storage and processing areas.
Queensland Heritage Register	QHR	The register containing historic (non-Indigenous) places of significance to Queensland.
Register of the National Estate (former)	RNE	Former register of nationally significant heritage places. Now a non-statutory archive.
Term of Reference	ToR	Terms used to guide the development of the Environmental Impact Statement for the Project.
World Heritage List	WHL	Register of places of outstanding universal value.
Project Specific		
Abbot Point Coal Terminal	APCT	Coal loading terminal located at Abbot Point near Bowen on the Queensland coastline.
BHP Mitsubishi Alliance	BMA	A 50% partnership between Mitsubishi and BHP operating coal mining operations in central Queensland.
Conzinc RioTinto of Australia	CRA	Now Rio Tinto Group
Dalrymple Bay Coal Terminal	DBCT	Coal loading terminal located at Hay Point south of Mackay on the Queensland coastline.
Mineral Development Lease	MDL	A mining lease gives the holder the exclusive right to mine for minerals over a specific area .

Term	Abbreviation	Definition
Mining Infrastructure Area	MIA	Area including mine offices; bathhouse; crib rooms; warehouse/stores; workshops; fuel storage; refuelling facilities; wash bay; laydown area; sewage, effluent and liquid waste storage.
Million tonnes per annum	Mtpa	The amount of coal produced or estimated annual production.
RG Tanna Coal Terminal- Gladstone	RGTCT	Coal export terminal within the Port of Gladstone in central Queensland, Australia owned by Gladstone Ports Corporation
Run of Mine	ROM	The coal delivered from the mine to the coal preparation area consisting of coal, rocks, middlings, minerals and contamination.

Archaeological Terms

Term	Abbreviation	Definition
Ground Surface Integrity (GI)	GI	Provides insight into the levels to which the landscape had been modified determined by using a percentage range between 0-100: Zero - 0%; Poor - 1-25%; Moderate - 26-50%; Fair - 51-75%; Good - 76-85%; Excellent - 86-100%.
Ground Surface Visibility	GSV	Provides insight regarding how much of the ground surface could be seen during the assessment by using a percentage range between 0-100: Zero - 0%; Poor - 1-25%; Moderate- 26-50%; Fair - 51-75%; Good - 76-85%; Excellent 86-100%. A GSV of 0% indicates that the ground surface is completely covered, while 100% indicates that the ground surface is completely bare.

1 Introduction

The Lake Vermont Meadowbrook Project (the Project) is being developed by Bowen Basin Coal Pty Ltd (the proponent) and is an extension of the existing Lake Vermont Coal Mine. Bowen Basin Coal Pty Ltd is a private company owned by the Lake Vermont Joint Venture; Jellinbah Resources Pty Ltd (Jellinbah) (through the wholly owned Lake Vermont Resources) manages the operations of the Joint Venture and is leading the development of the Project on behalf of participants.

Converge Heritage + Community (Converge) was commissioned by AARC Environmental Solutions Pty Ltd on behalf of Jellinbah in December 2020 to prepare a Non-Indigenous Cultural Heritage (NICH) technical report for the the Project Environmental Impact Statement (EIS). This report presents the results of the NICH assessment. The Project area is located approximately 30 kilometres (km) northeast of Dysart (an established regional town servicing both mining and pastoral industries) and approximately 180 km southwest of Mackay, within the Bowen Basin of central Queensland (refer to Figure 1). The Local Government Area is the Isaac Regional Council. Refer to Section 5 for more plans and details about the Project development.

1.1 Purpose of the Study

This report presents the results of the NICH assessment and includes:

- A summary of the history and environment of the areas potentially impacted by the Project.
- The results of the NICH field assessment.
- The nature of the NICH significance of places and areas affected by the Project and the potential impacts of the Project in relation to this significance.
- Specific recommendations for the management and protection of NICH sites and areas (where applicable).

1.2 Project Description Summary

The Project involves the construction and operation of an underground multi-seam, longwall coal mine, a supporting smaller open-cut pit, all supporting infrastructure and administration and operational office facilities. Indicative locations for this associated infrastructure have been planned but final locations are subject to ongoing feasibility studies, as part of efforts to minimise environmental impacts identified including through this study.

The Project is required to address the scheduled decline in coal output from the existing Lake Vermont Coal Mine and to maintain existing (approved) production levels across an extended life of mine. The Project would maximise the use of existing Bowen Basin Coal Pty Ltd owned land and infrastructure at the Lake Vermont Coal Mine so as to minimise the environmental impacts from additional infrastructure and provide project efficiencies. When complete the mine life will be extended by an additional 25 years.

Expected output from the project is nine Million tonnes per annum (Mtpa) product coal which would be added to existing output from the Lake Vermont Coal Mine to maintain production at the current approved levels of (up to) 12 Mtpa ROM thereby reducing the scheduled decline in output from the existing mine as it approaches the end of its life.

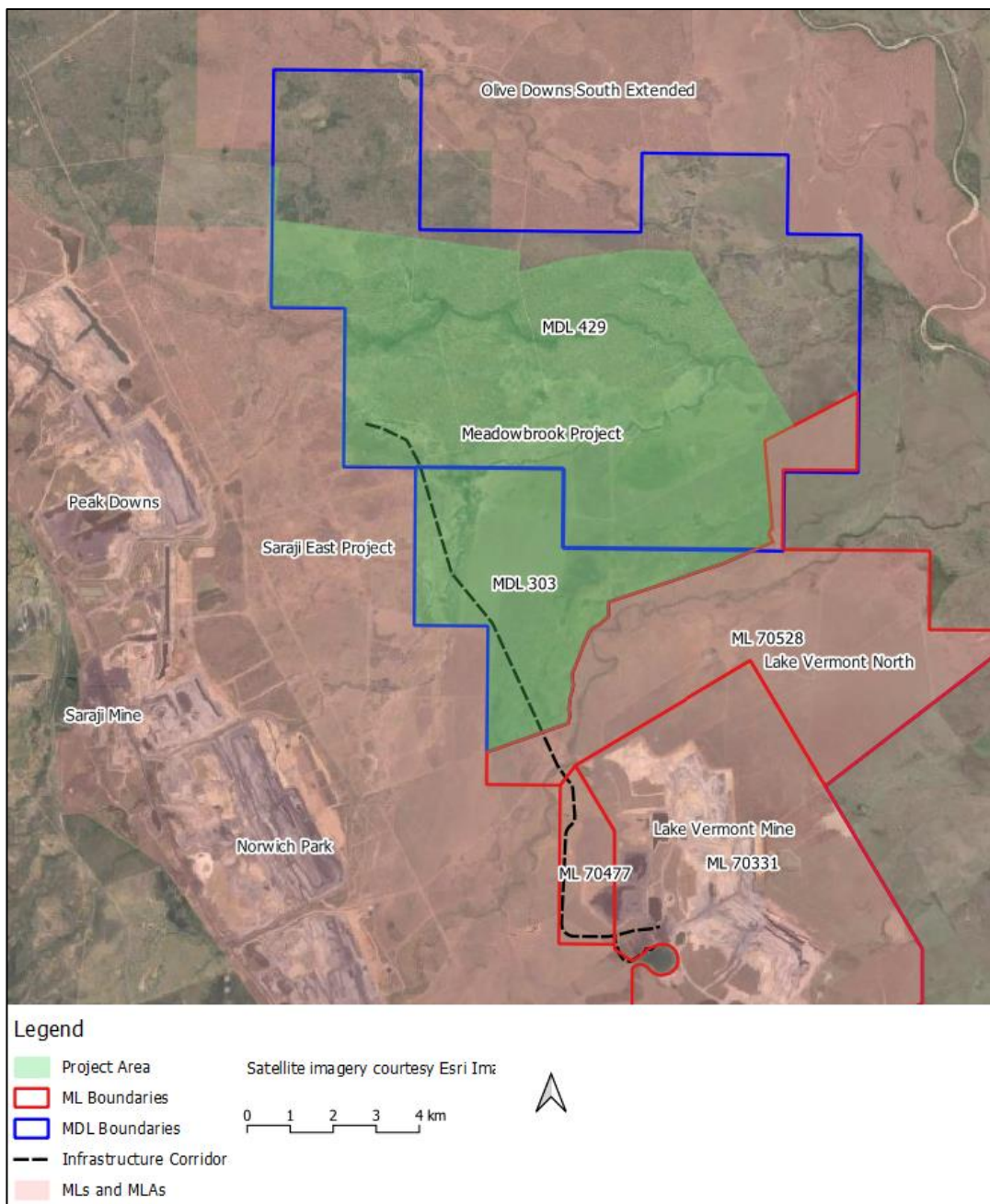
Shipment of product coal from the Project would be railed along the existing Lake Vermont spur line that connects to the Aurizon Goonyella rail system for delivery to Abbot Point Coal Terminal Abbot Point Coal Terminal (APCT) in Bowen, , the RG Tanna Coal Terminal (RGCT) in Gladstone, or the the Dalrymple Bay Coal Terminal DBCT in Mackay (should port capacity be made available). The Project product output (for transport via the rail network) is within Aurizon's existing approval limits.



Figure 1: Regional location of the proposed Lake Vermont Meadowbrook Project. Map courtesy of AARC Environmental Solutions.

1.3 Project Area

The Project area is described in the Lake Vermont Meadowbrook Project Terms of Reference (ToR) and comprises Mineral Development Lease (MDL) 429 and 303 and the existing Lake Vermont Coal Mine on Mining Leases (ML) 70331, 70477 and 70528 (refer to Figure 2). The Project area is located over one freehold land parcel, being Lot 102 SP310393 (formerly Lot 10) on Plan CNS93 (the 'Meadowbrook' property) owned by Bowen Basin Coal. The Project area is defined by the area of land within the northern portion of Mineral Development Lease (MDL) 303 and southern portion of MDL 429 that overlaps with the property named 'Meadowbrook' and the existing Lake Vermont Coal Mine on mining lease (ML) 70528, ML 70477 and ML 70331. The Project area does not include the southern portion of MDL 303 (south of Lake Vermont Coal Mine), nor does it include the northern portion of MDL 429.



Figure

2: Project area and mining tenures. Note: the Infrastructure Corridor forms part of the Project area.

1.4 Non-Indigenous Cultural Heritage Terms of Reference

The matters relating to NICH are detailed in Section 9.11 of the ToR and are outlined below. Note that NICH is listed along with Aboriginal Cultural Heritage and that this report addresses NICH only.

Environmental objective and outcomes

- The construction and operation of the Project should achieve the purposes of the *Aboriginal Cultural Heritage Act 2003* and the *Torres Strait Islander Cultural Heritage Act 2003* with respect to the Project site and ensure that the nature and scale of the Project does not compromise the cultural heritage significance of a heritage place or heritage area.

Impact assessment

- Conduct the impact assessment in accordance with the latest version of the [Department of Environment and Science] Aboriginal and Torres Strait Islander cultural heritage — EIS information guideline (DES 2020) and Non-Indigenous cultural heritage — EIS information guideline (DES 2020).
- For non-Indigenous historical heritage, undertake a study of, and describe, the known and potential historical cultural and landscape heritage values of the area potentially affected by the Project. Any such study should be conducted by an appropriately qualified cultural heritage practitioner. Provide strategies to mitigate and manage any negative impacts of the Project on non-Indigenous cultural heritage values and enhance any positive impacts. Management and mitigation strategies should include provisions for the management of discoveries of potentially significant archaeological artefacts in accordance with section 89 of the Queensland Heritage Act 1992 and include reference to the guidelines for *Archaeological Investigations* (DES, October 2019) and *Assessing cultural heritage significance: Using the cultural heritage criteria* (DES, October 2017).

Matters described in section 9.11 of the ToR for Aboriginal Cultural Heritage are outside the scope of this report.

1.5 Methodology

The following methodology was employed to meet the Project's ToR for NICH (see Section 1.4, above), and the legislative framework (Appendix A). Furthermore, the fieldwork undertaken by Converge was based on widely understood and accepted best practice forms of assessment that occur in a series of clearly defined steps including sampling, surveying, site evaluation, recording, impact assessment, and management recommendations.

1.5.1 Desktop Assessment

A desktop assessment was undertaken to determine the existence, extent and probable levels of significance of any places likely to be located within the Project Area. This assessment comprised searches of statutory and non-statutory registers and databases, and a review of existing published and unpublished reports, surveys and assessments of the Project area and its immediate surroundings. The results of this desktop assessment were used to develop a targeted field survey of the Project area, and informed the assessment provided in this report. Refer to Section 3.

1.5.2 Field Survey

The field survey methodology adopted for the assessments incorporated a vehicle and pedestrian survey undertaken by Converge across the Project area on February 25th 2021.

1.5.3 Field Sampling Strategy

Sampling strategies (where to look) can be 'purposive', where specific areas are targeted, or 'probabilistic', where decisions are made to survey without any prior knowledge or predictive model of what cultural heritage sites might exist in the landscape to be surveyed. Cultural heritage survey strategies generally involve transects across the Project area chosen at random (probabilistic) to avoid possible bias in the results, or transects within areas (purposive) which potentially contain places of historic significance, that are earmarked for development or that contain places identified in previous research or surveys.

The field surveys for this report generally relied on a purposive sampling strategy. Historical and contextual research combined with the results of previous surveys and the knowledge of the Project area provided by Myles Somerset enabled areas known to be of historical interest to be targeted in the field surveys. Transitions between purposive survey locations provided the opportunity to observe the broader landscape and thus allow for the potential identification of unknown NICH sites. Information recorded at each NICH site included location, site integrity, ground surface visibility, condition and relevant comments including type of site and type of artefacts located at the site.

All assessment data including descriptions, photographs and GPS locations were recorded on a Tablet using software that synchronises with the Converge Geographic Information System (GIS). Locations were initially recorded using GDA94 UTM Zone 55 and subsequently converted to GDA20 MGA Zone 55 as requested by the proponent. Georeferenced, photographs of the Project Area's general environment were taken using a hand held GPS which also kept a track log of the assessment. This information was used to create maps identifying the location of sites and features noted during the assessment.

1.5.4 Site Integrity Criteria

An assessment of site integrity provides an indicator of the intactness and integrity of the site. Levels of site integrity were determined using a percentage range between 0-100% where 0% indicates all site integrity 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%.**

1.5.5 Ground Surface Integrity and Ground Surface Visibility Criteria

Ground Surface Integrity (GI) and **Ground Surface Visibility (GSV)** were both recorded across the Study Area to provide insight into the levels to which the landscape had been modified, and how much of the ground surface could be seen during the survey. GSV is commonly inhibited by ground surface vegetation cover and leaf litter, although other factors may include concrete, gravel and bitumen.

GI and GSV levels were both determined using a percentage range between 0-100% i.e. **Zero - 0%; Poor - 1-25%; Moderate- 26-50%; Fair - 51-75%; Good - 76-85%; Excellent 86-100%** (e.g. GSV of 0% indicates that the ground surface is completely covered, while 100% indicates that the ground surface is completely bare; GI of 0% indicates all site intactness/integrity is gone, while 100% indicates excellent preservation of the original context).

1.5.6 Heritage Significance Criteria

Determining the significance of a heritage site (or place as referenced by the Act) requires research to enable an understanding of its value or level of importance. Assessments of heritage significance for this assessment were based on an understanding of the history of the Project area in a landscape context, together with the physical analysis (field survey) and an appreciation of the comparative level of rarity or representativeness that the site possesses. In Queensland, heritage practitioners rely on two key documents to undertake significance assessments: *The Burra Charter of Australia*

International Council on Monuments and Sites (The Burra Charter) (Australia ICOMOS 2013) and the *Queensland Heritage Act 1992* (QHA) which requires all local governments to keep a local heritage register or identify local heritage places in their planning scheme. The Project area falls under the *Isaac Regional Council's Planning Scheme 2021* (Isaac Regional Council 2021).

The QHA outlines the following criteria for assessing the significance of cultural heritage places. Under Section 35 (1) of the QHA, a place may be entered in the register if it 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.

The criteria used for assessing places of local heritage significance under the *Isaac Regional Council Planning Scheme 2021* mirrors the criteria developed under the QHA, except that a site's significance relates to the shire or locality rather than the state and that "development is compatible with the cultural heritage significance of the Local heritage place" (Isaac Regional Council 2021, Part 7-183). The Planning Scheme also states that "any development and works undertaken is consistent with the Burra Charter" (2021, Part 7-183) to ensure that the "development is compatible with the conservation and management of the cultural heritage significance of the Local heritage place" (2021, Part 7-184).. Once a site has been assessed using the above-listed QHA criteria, the following thresholds (Table 1) of relative significance are applied to determine the level (i.e., local, state or national) at which the site or element is considered significant.

Table 1: Relative Significance Criteria (Queensland Heritage Council 2006, see also DES 2013)

Definition	Threshold
Element of outstanding/ exceptional significance or heritage value - embodies national or state heritage significance in its own right and makes an irreplaceable contribution to the significance/heritage value of the place as a whole.	Likely to fulfil national heritage entry criteria.
Element of high significance or heritage value - embodies state heritage significance in its own right and makes an irreplaceable contribution to the significance/heritage value of the place as a whole.	Likely to fulfil state heritage entry criteria.
Element of moderate significance or heritage value - embodies state or local heritage values in its own right and makes an irreplaceable contribution to values of the place as a whole.	Likely to fulfil state and/or local heritage entry criteria
Element of some significance or heritage value - embodies local heritage values in its own right and makes a significant contribution to the significance/heritage value of the place as a whole.	Likely to fulfil local heritage entry criteria
Element is neutral, with little or no heritage value.	Unlikely to fulfil local heritage entry criteria. May contribute to other elements of heritage value.
Intrusive element which detracts, or has the potential to detract, from the significance of the place.	Does not have heritage value. Does not contribute to other elements of heritage value.

Section 4 presents the results of the significance assessment of the Project area. The results from the significance assessment informed the impact assessment (Section 5), recommendations and management strategies for management of identified and potential NICH in the Project area (refer to Section 5).

1.6 Constraints

Constraints to the survey are as follows:

- Only existing tracks were used to traverse the Project area.
- Access to some sections of the Project Area was constrained by recent rainfall and impassable tracks.
- GSV was poor across the Project area.

Notwithstanding these constraints, the survey effort is considered to be sufficient for the purposes of this assessment.

1.7 Personnel

Simon Gall (Director, Senior Archaeologist) and Dr Craig Barrett (Historian) Project managed the NICH assessment and provided strategic advice. Allan Hutchins (Archaeologist) prepared the contextual background of the Project area. Dr James (Jim) Smith (Senior Archaeologist) undertook the field assessment. The report was prepared by Dr James Smith.

2 History and Context

This section provides the NICH database search results and a brief history of the Project area in the context of the broader development of Dysart and the surrounding region. This section is not intended to be a complete history of the project area. It is based on a review of available library and online research of primary and secondary sources and is intended to provide context for the identification and assessment of NICH sites within or near the Project area.

2.1 Results of Heritage Database Searches

Table 2 presents the results of register searches.

Table 2: Results of Heritage Database searches.

Heritage Register or Database	Search Results
World Heritage List (WHL)	No NICH sites on the WHL were identified in the Project area.
National Heritage List (NHL)	No NICH sites on the NHL were identified in the Project area.
Commonwealth Heritage List (CHL)	No NICH sites on the CHL were identified in the Project area.
Register of the National Estate (RNE)	No NICH sites on the (former) RNE were identified in the Project area.
Queensland Heritage Register (QHR)	No NICH sites on the QHR were identified in the Project area.
Queensland National Trust Register (QNT)	No NICH sites on the QNT register were identified in the Project area.
Isaac Council Planning Scheme 2021 Heritage Overlay and Schedule 5	No NICH sites on the Isaac Regional Council Planning Scheme Heritage Overlay or listed in Schedule 5 Local cultural heritage citations were identified in the Project area.
Mackay Historical Society (MHS)	Society staff advised that the Project area is outside the geographic boundaries of interest for the MHS.

The absence of a place on these registers does not eliminate the possibility that there are places of NICH significance in the Project area as the registers are not comprehensive. Sites may include those associated with historical heritage, cultural landscapes (e.g., gardens or parklands) or having archaeological potential. The conclusion of this chapter provides a summary of NICH potential based on the desktop research below.

2.2 Previous Studies

The studies listed in Table 3 were undertaken near the current Project area and were reviewed for the current assessment.

Table 3: Previous studies undertaken in the vicinity of the Lake Vermont Meadowbrook Project.

Consultant	Year	Project Title
ARCHAEO Cultural Heritage Services/ Converge Heritage + Community.	2005	Preliminary Cultural Heritage Assessment Goonyella Riverside Coalmine Expansion Project. No data relevant to the current Project.
	2006a	Cultural Heritage Surveys of the proposed Goonyella Riverside Expansion Project: Portions of EPC 928, MDLA 307 and MDLA 358. No data relevant to the current Project.
	2006b	A Cultural Heritage Assessment of the Moranbah Ammonium Nitrate Project, Central Queensland. No data relevant to the current Project.

Consultant	Year	Project Title
	2007	Cultural Heritage Surveys of the proposed Goonyella Riverside Expansion Project: Portions of ML1763, ML1764, ML1900, EPC928, EPC953, EPC554, MDLA307 and MDLA358. No data relevant to the current Project.
	2008	Cultural Heritage Survey of the Ellensfield Project, Moranbah, Central Queensland. No data relevant to the current Project.
	2012	Historic Cultural Heritage Assessment, Red Hill Project, Moranbah. No data relevant to the current Project.
	2017	Olive Downs Project-Non-Indigenous Cultural Heritage Technical Report. This report identified 15 NICH sites, all of which were related to the pastoral industry. None of the sites were deemed to be of NICH significance.
Resource Strategies	2017	Pembroke Olive Downs Project, Initial Advice Statement. No data relevant to the current Project.
URS	2012	Arrow Energy Bowen Gas Project, Non-Indigenous Cultural Heritage Technical Report. This report identified a potential grave site, and cattle yard and homestead ruins near the Isaac River, north of the current Project area.

2.3 Historical Themes Overview

This history is structured using historical themes as an organisational aid. An historical thematic framework was developed by Thom Blake in conjunction with DES heritage staff (2006), based on the *Australian Historic Theme Framework* developed by the Australian Heritage Commission (2001). These themes are set out in the *Assessing cultural heritage significance: Using the Criteria* (DES 2013: 23). An understanding of historical themes is central to determining whether a place is significant.

The themes listed in Table 4 have been identified as likely to be of relevance to the Project area.

Table 4: Historic Themes identified for the Project area.

Theme	Sub-theme	Description
2	2.0	Exploiting, utilising, and transforming the land
	2.2	Exploiting natural resources
	2.3	Pastoral activities
6	6.0	Building settlements, towns, cities, and dwellings
	6.1	Establishing settlements

2.4 Historic Summary

The initial European exploration of the Bowen Basin was undertaken by Prussian botanist, Ludwig Leichhardt, in 1845 during his 1844-1846 expedition to travel from Moreton Bay to Port Essington. Establishing a rest stop, Leichhardt undertook localised exploration of the western area of the basin around present-day Clermont and the area that he named Peak Downs. With an eye toward pastoral development, Leichhardt described the area as containing luxuriant grassed plains and scrubby sandstone ridges (Leichhardt 1964). 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).

Leichhardt's reports led to the uptake of land in this region, which subsequently became known as the Leichhardt pastoral district, with the earliest holdings developed principally on the lands surrounding the upper tributaries of the McKenzie river.

In 1854, Scottish immigrant William Landsborough established the (then) northern most coastal pastoral holding on the eastern seaboard of Australia around the Kolan River to the north of

Bundaberg. Using this as a base, Landsborough turned part-time explorer when farm duties permitted and pushed further north into the Broadsound area and westward beyond the Connor Range that separates the coastal margin from the inland regions. His 1856 expedition led him to select and take up land at Fort Cooper (present day Nebo) north of Lake Vermont.

Describing the land as magnificent pastoral country he prompted pastoral development of the region as other selectors quickly followed to secure a holding (Welshby: 1935). The Leichhardt district was officially declared and opened for pastoral settlement that same year. Landsborough was so impressed with the area that by 1858 he sold his Kolan River property to fund development of Fort Cooper and Glen Prairie, another selection he made in the Broadsound area north of Marlborough following a subsequent exploration in 1857. The earliest settlement of the region was thus west and north of Lake Vermont and on the coastal fringe east of the Connor range.

2.4.1 Pastoralism and Early Mining

The emphasis of initial exploration in the region was pastoralism and while Leichhardt discovered coal while attempting to sink a waterhole during his 1845 exploration this was not of prime concern, as he sought areas for pastoral use (Murray 1996: 13). While coal mining was not prominent in the early years of European settlement, it became the dominant industry in the region over time. Note: this report has reproduced several historic maps showing the location of the Project area. Georeferencing these maps with a degree of accuracy was problematic due to a lack of reference points and/or their accuracy except for the map provided in Figure 4. Therefore, apart from Figure 4, Figures 3, 5 and 6 only show the general location of the Project area as a rectangle.

Expansion of the pastoral frontier continued after Landsborough's exploration. An 1866 map of Queensland squatting runs (Figure 3) shows the establishment of recognised holdings around the Clermont/ Peak Downs region, but no development encroaching on the areas extending southwards from Fort Cooper which was located some 75km northeast of the Project area in the vicinity of contemporary town of Nebo. Holdings must however have been present, as Native Police barracks were established in Fort Cooper in 1862 (lasting until 1878) to quell the rate of spear attacks on cattle by local Aboriginal people. The expanding frontier resulted in violence, with a spate of massacres of pastoralists by Aboriginal people followed by savage reprisals by the Native Police under the leadership of Acting Sub-Inspector Robert Johnstone (1866-69) and the notorious Lieutenant Fredrick Wheeler (c1870) (Richards 2008, Lack, C., & Stafford, H. 1965).

The 1866 map (Figure 3) shows the area of Lake Vermont devoid of any runs and broadly describes the region Lerel (Laurel) Country. Likewise, the 1878 Leichhardt District map (<https://nla.gov.au/nla.obj-231141445/view>) appears to show the location of several station homesteads in the wider Project Area including Leichhardt Downs and Clotherstone, however, there are no homesteads shown in the Project area. By 1884, Lake Vermont and the other runs comprising the Project area, namely Hugh's Creek and Carfax, are clearly marked on that years survey map. (Figure 4). The 35 ha permanent lake known as Lake Vermont is near the northern boundary of the Lake Vermont Run.

The 1894 map of the Leichhardt region showing consolidated runs appears to indicate that several changes had occurred. Lake Vermont had been consolidated into Cotherstone, Hughes Creek, and that Carfax now forms part of Iffley (Figure 5).

Vermont reappears on a 1920 Queensland station map and while Iffley is still shown it appears to be considerably reduced in area. Likewise, Cotherstone is still in existence although it appears to have been subdivided into several smaller runs including Dysart, Dunsmure and Stephens (Figure 6). Overall this suggests consolidation and renaming of holdings was not uncommon in the area throughout the late 1880s and early 1900s.

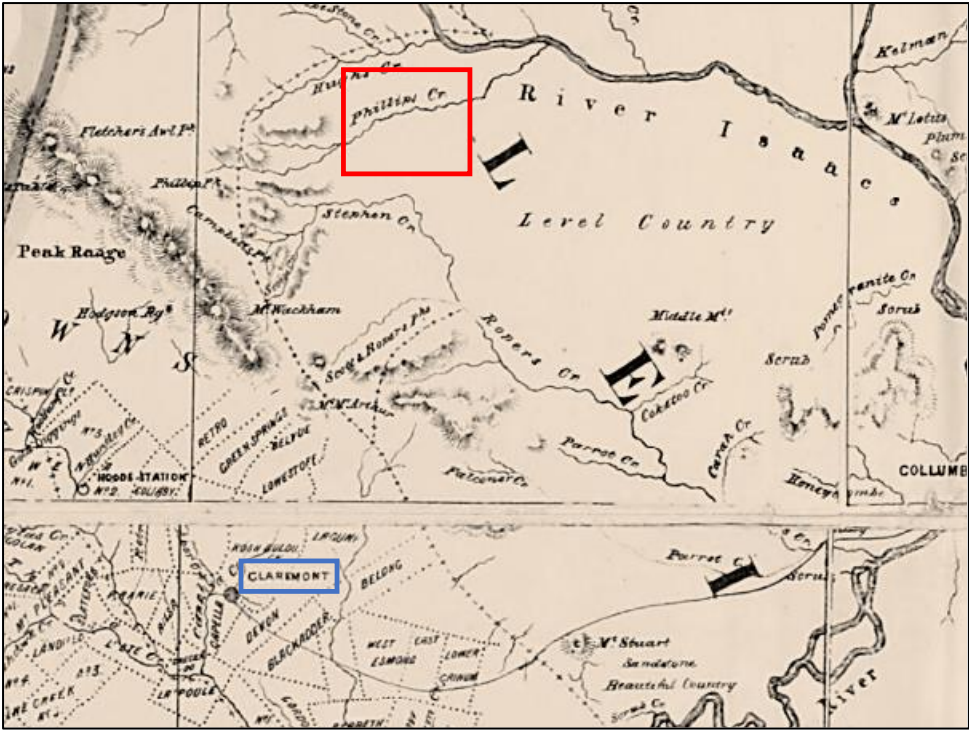


Figure 3: Map of Queensland with squatting runs, 1866, Approximate location of Project Area shown in red and the town of Claremont (sic) outlined in Blue. Owen, W. (William), Melbourne: H. Bolton, Lith., 1869 <https://nla.gov.au/nla.obj-232310944/view>.

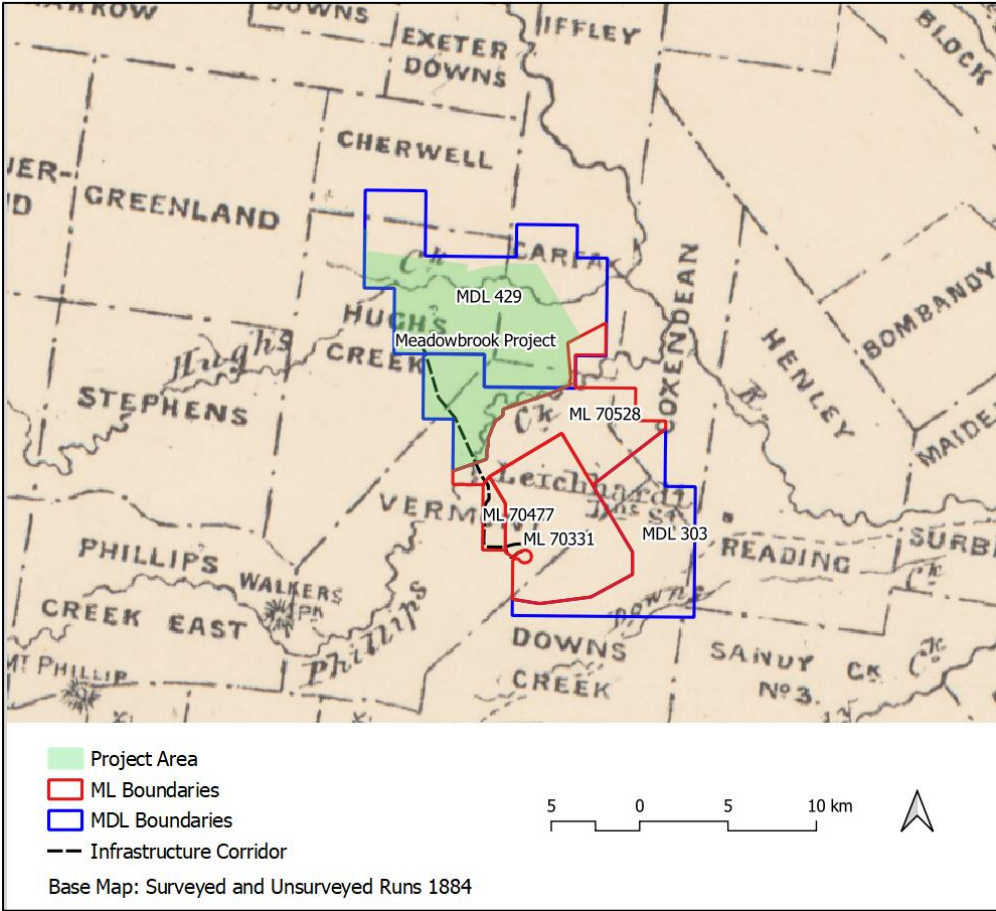


Figure 4: Queensland. Survey Department, Leichhardt: sketch map showing surveyed & unsurveyed runs, 1884 overlaid with the current Project area and associated ML and MDL boundaries, Brisbane: Printed and published at the Survey Department, Oct. 1897, <https://nla.gov.au/nla.obj-231417596/view>.

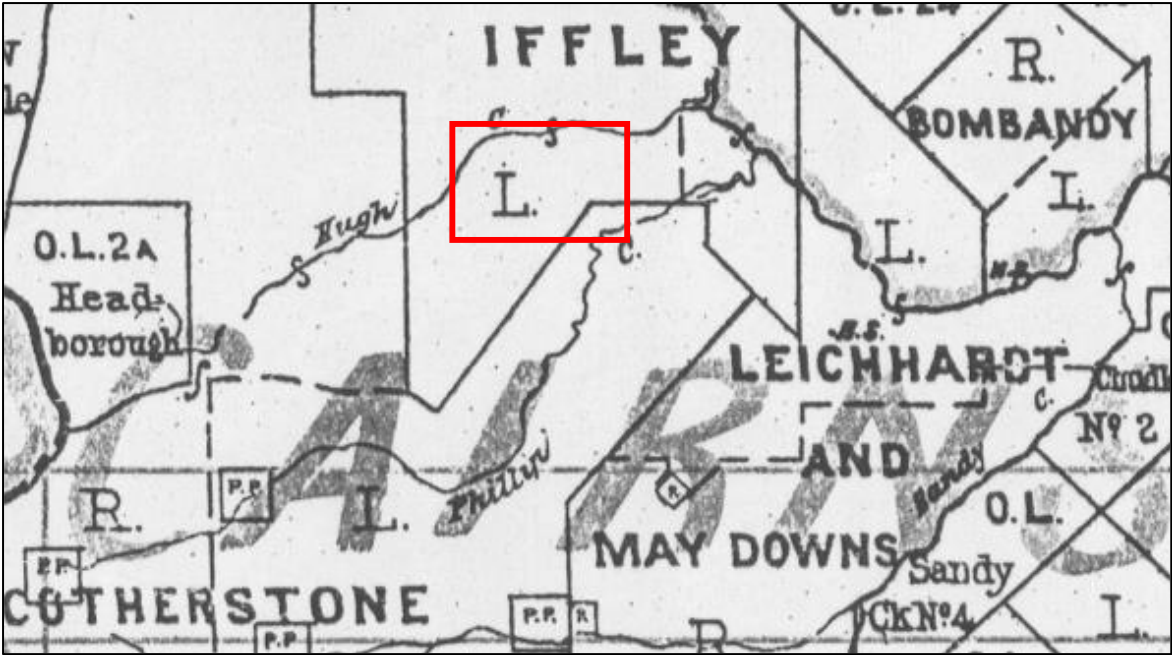


Figure 5: Surveyor General's Office Outline Map of the Leichhardt District Illustrating Pastoral Holdings 1894 extract. Indicates that Lake Vermont may have been consolidated into Cotherstone and that Hughes Creek and Carfax are now part of Iffley. Approximate location of Project Area shown in red (Source: https://gisservices.information.qld.gov.au/arcgis/rest/directories/historicalscans/cad_scans/pre/cad-map-leichhardt-consolidated-runs-1894-20pc.jpg).

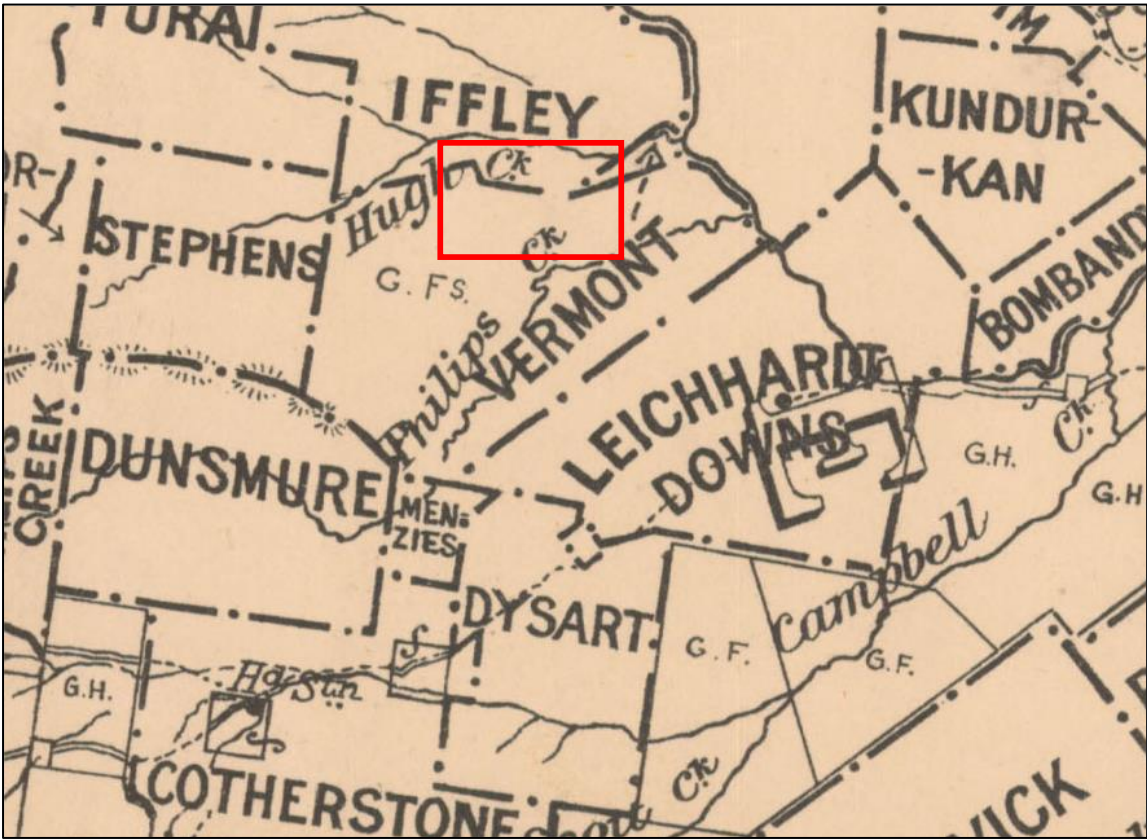


Figure 6: 1920 Queensland Tenure Map, Sheet 6 extract showing stations and the general location of the Project Area shown in red. Department of Public Lands, <https://nla.gov.au/nla.obj-468864908/view>.

Gold and copper were both discovered in 1861 around Clermont, with gold attracting substantial interest (O'Donnell, c1989). Copper was found at Copperfield, near Clermont and Peak Downs, in mid-1861, marking the first major copper discovery in Queensland, and the first outside of South Australia (Blainey 1970:303). Various cycles of boom and bust followed as other finds became known. As the western field of copper around Clermont began to fail other discoveries were made at Mt Flora, between Vermont and Nebo, firstly of copper in 1873(Rockhampton Bulletin, April 15, 1873) and then gold in 1890 (Ball, 1910).

The market for gold and copper contributed to the improvement of one major regional impediment: transport links. As Landsborough and others pushed further north, the coastal town of St Lawrence on the southern portion of the Broadsound region became the region's early port, from which shipments of the minerals from the Bowen Basin fields were despatched for on shipping to Rockhampton.

The Peak Downs Copper Mining Company published a tender for the carriage of supplies and produce between the mines and Rockhampton or Broadsound (Sydney Morning Herald, 23 May 1863:10, cited in Buckler 2017), and the condition of the existing road was immediately questioned by a teamster who reported:

I have just taken a load from Peak Downs to Broad Sound, and have also travelled with my teams on the Rockhampton road. . .I am most decidedly in favour of the latter road. . .the difficulties, both regard to ranges and swamps, will always prevent the other road from being taken by teamsters. . .The Broad Sound route offers no inducement either to carriers or shippers, as compared with the Rockhampton road (Rockhampton Bulletin, 19 November 1863:2, cited in Buckler, 2017).

The St Lawrence grazier, James MacCartnay, petitioned the government for funds for road works from Peak Downs to St Lawrence. The government responded and by the end of 1864 carriers were travelling over the range on an improved road (Brisbane Courier, 7 May 1864).

2.4.2 The Rise of Coal Mining

From the time of Leichhardt's explorations there were 'tantalizing reports of coal' in the region (Whitmore 1991: 318). While the existence of coal was known from the time of Leichhardt's first exploration there was little incentive to extract these reserves as there was limited local demand and as previously mentioned, 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 north west of Clermont began limited production of coal for the central railways (Dunne 1950, Killin 1984: 37). 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).

Up to this point, underground mining had been the dominant technique in the Bowen Basin, but this method proved dangerous, costly, and inefficient. 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 ended suddenly 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 hampered 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).

Blair Athol Coal Pty Ltd was then purchased by a joint venture of Conzinc Riotinto of Australia (CRA) and Clutha in 1968 and this ushered in the era of multi-national companies in the Bowen Basin (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, 290km south-east of current day Moranbah (Martin and Hargraves 1993: 158). These large multinationals brought with them 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 Australia's largest coal producing state (Martin and Hargraves 1993: 163) and by 1997 two thirds of Queensland's \$10 billion production of coal came from the Bowen Basin (Anon 1997: 16). As of June 2019, Queensland retains the position as the largest coal producing state producing 96% of Australia's metallurgical (hard coking) coal and with a market share of almost 50%, is the worlds' largest supplier (Buckley & Nicholas June 2019).

2.4.3 Development of Dysart and the Lake Vermont Area

Dysart is a rural town 240 km north west of Rockhampton and 185 km south west of Mackay. The UDC began construction of Dysart as a dormitory town following the opening of its Saraji Mine 25 km to the north in the late 1960s. The town grew rapidly with initial enrolments in the school increasing from 27 to 150 students in the first twelve months (Queenslandplaces.com 2021) and ever greater growth following the opening of the Norwich Park Mine 15 km south of the town in 1979 (BowenBasin.com 2021).

An economic decision was made to close Norwich Park in 2012 due to low coal prices, high costs, and weaker output due to flooding. The workforce was largely deployed to other regional mines (Sydney Morning Herald, April 11, 2012), primarily Saraji, and by 2020 the entire Norwich Park Mining Lease had been consolidated into the Saraji Lease now owned by BHP Mitsubishi Alliance (BMA) (BowenBasin.com, 2021).

Thiess began construction of mine infrastructure of behalf of mine owners, the Jellinbah Group, at Vermont 30 km north east of Dysart in 2007 and operations commenced at the Lake Vermont Coal Mine in 2008 (Thiess.com 2021). Lake Vermont expanded with increased demands for it coking and pulverised grades of coal entailing output increases from 4.6 Mtpa to an anticipated 10.7 Mtpa (Jellinbah.com.au 2021).

2.5 Summary of Findings

European exploration of the wider Project area began in the 1840s and intensified in the 1850s. The first European industry was pastoralism and the expansion of this pastoral frontier led to conflict with local Aboriginal people who resisted the incursion into their lands. As a result of this conflict, Native Police were established in the region, resulting in internecine violence in the 1850s and 1860s. Mining came to prominence late in the nineteenth century and by the twentieth century coal mining was a major industry in the region, which in turn led to the opening of numerous mines and the establishment of towns, such as Dysart.

The Project area appears to have been largely used for pastoral purposes since European colonisation. There is no easily available evidence to indicate mining occurred in the project area prior to the late twentieth century, although evidence of mining exploration and early mining may nonetheless be present.

While no places of NICH were identified in register searches, the desktop analysis of the previous studies and the contextual history of the region indicate that the following types of sites and features may be present in the project area:

- • Remains of early homesteads, including outbuildings and rubbish dumps.
- • Pastoral infrastructure, such as fences.
- • Early road infrastructure, including creek crossings.
- • Remote grave sites, including evidence of frontier conflict.
- • Possible evidence of early mining (although deemed unlikely).

This summary forms the basis for the physical assessment of the Project area, examined in the next chapter.

3 Assessment Outcomes

3.1 Introduction

This section details the results of the field surveys.

As noted in the Section 1.5.3, the survey was purposive and based on historical and contextual research including the examination of aerial photography and satellite imagery, the results of previous surveys to broadly locate areas of historical interest, and where relevant, information provided by the site manager. The survey included general observation and analysis of the broader landscape to assess its potential for containing NICH sites, including the portion of the Infrastructure Corridor.

Regarding the Infrastructure Corridor, it was crossed in two places by vehicle tracks used to access the main body of the Project area and a considerable portion could be observed from several vantage points which in conjunction with the analysis of aerial photographs and satellite imagery indicated there was an extremely low potential for items of NICH present in the corridor.

3.2 GI and GSV

The potential for significant sites to exist depends on the likelihood for significant material to be present, combined with the GI and GSV of the site (refer to Section 1.3).

Large portions of the Project area have been cleared, including through the use of blade ploughing. The clearing significantly affected the GI of the area, limiting the likelihood for significant material to be present. An example of the mass clearing and thus significant impact on GI is presented in Figure 7

GSV across the Project area was generally poor due to long pasture grasses and in particular Buffel grass, leaf litter and stands of thick scrubby regrowth.

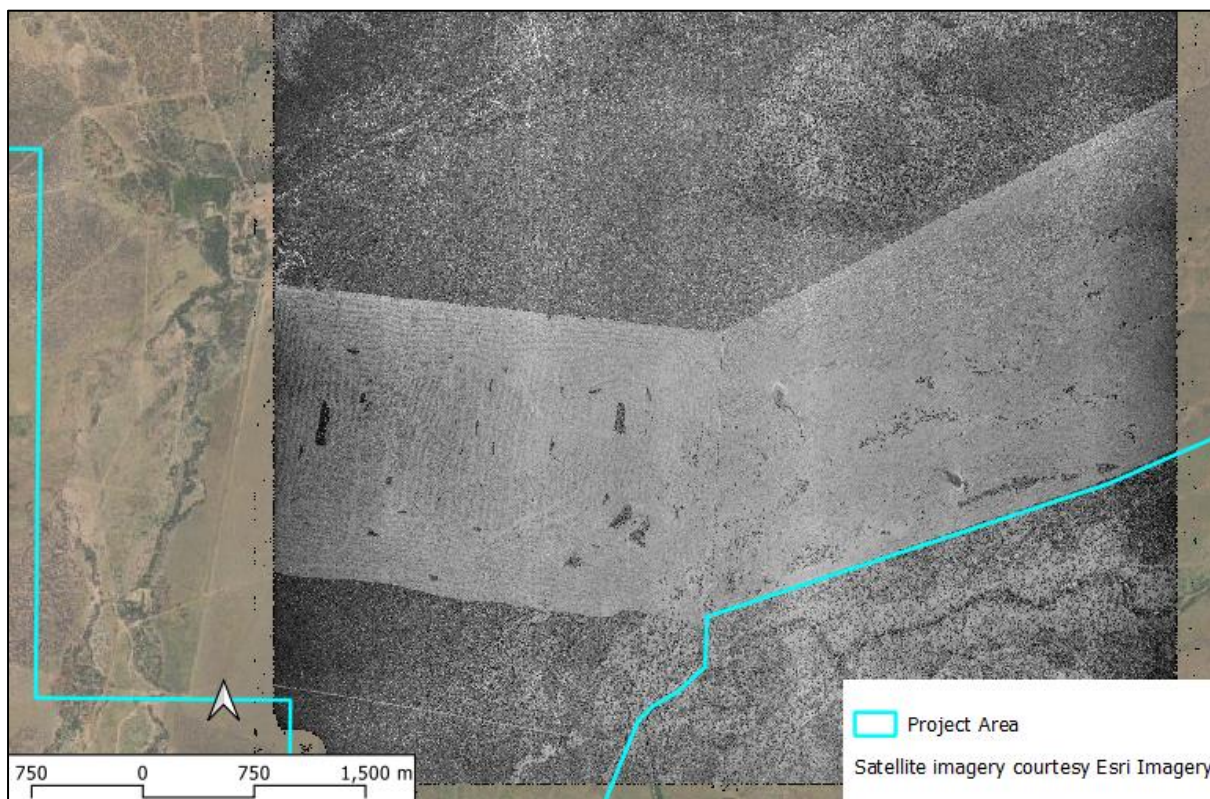


Figure 7: July 15 1977 aerial photography overlaying satellite imagery showing mass land clearing including evidence of blade ploughing. (Source: Queensland Imagery QAP33608439.JPG)

3.3 Main Types of Landscapes in the Project Area

The Project area predominantly comprised cleared grazing land with areas of regrowth (Figure 8 and Figure 9) and some remnant vegetation (Figure 10 to Figure 11). Thick grasses cover much of the Project area largely comprising buffel grass, however invasive species were observed including lantana and parthenium.

Two ephemeral creeks, Boomerang Creek and One Mile Creek run through the Project Area along with some smaller drainage lines. Boomerang Creek runs from west to east. One Mile Creek enters the Project area at the southern boundary prior to turning to the east and eventually joining Boomerang Creek on the eastern side of the Project area prior to entering the Issac River to the west of the Project area. Soils are predominantly black soil/cracking clays and gilgai were present. Several dams are also located in the Project area (Figure 12 to Figure 14).

Table 5 outlines the major landforms and vegetation across the Project area while Figure 15 shows the GPS track log for the assessment.

Table 5: Main landscapes across the Project area.

Local landscape	Indicative Images
Cleared grazing land — pastures	 <p data-bbox="627 1361 1334 1395">Figure 8: Cleared pastures with regrowth scrub (Converge 2021).</p>  <p data-bbox="627 1921 1334 1955">Figure 9: Cleared pasture with scrubby regrowth (Converge 2021).</p>

Remnant vegetation



Figure 10: Remnant vegetation towards the northern end of the Project area (Converge 2021).



Figure 11: Brigalow remnant vegetation with cleared firebreak either side of fence line (Converge 2021).

Hydrology



Figure 12: Typical dam within the Project area (Converge 2021).



Figure 13: Wetland formed behind a dam on One Mile Creek (Converge 2021).



Figure 14: Dam with active pump on One Mile Creek (Converge 2021)

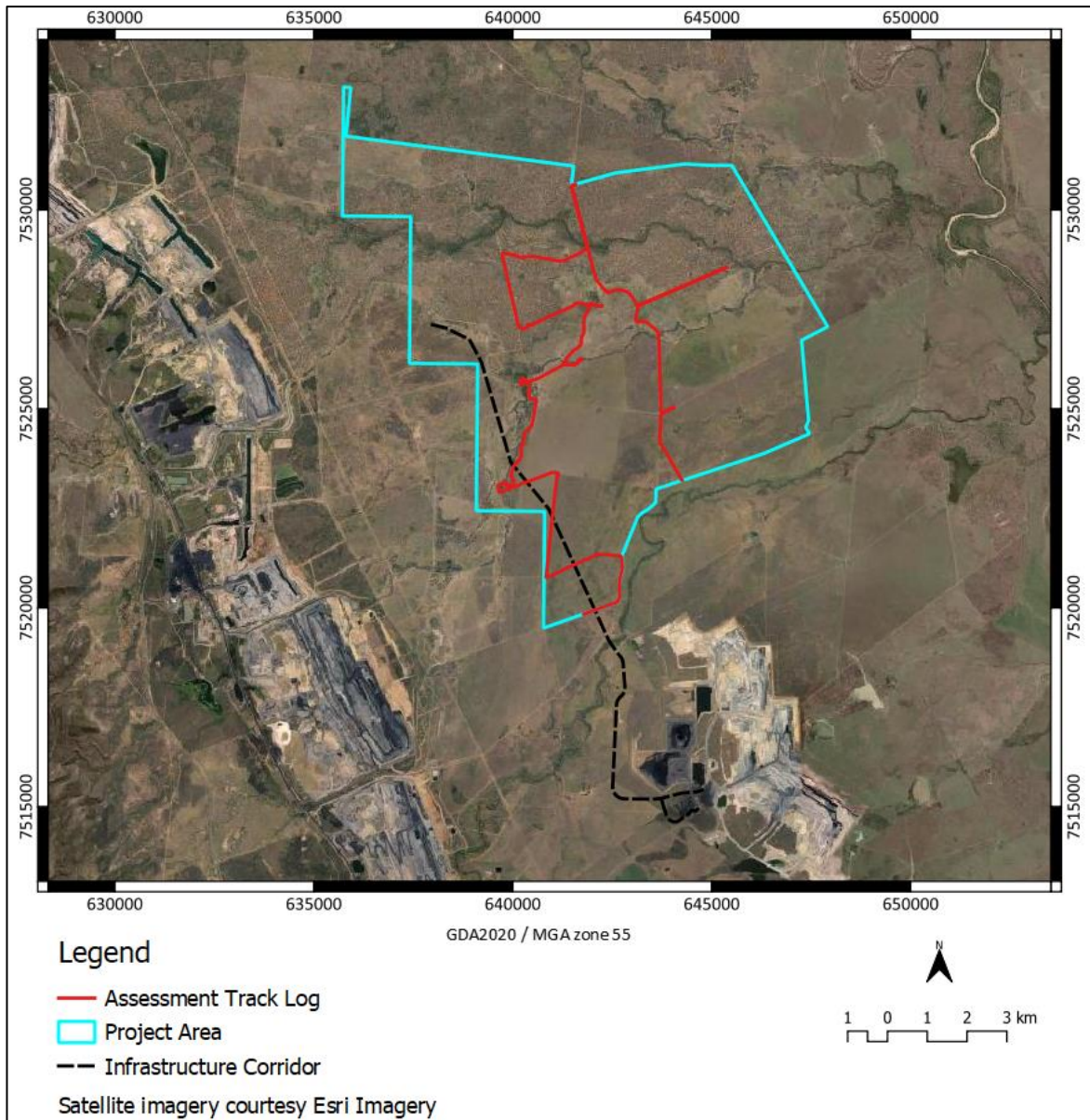


Figure 15: GPS tracklog showing the area assessed. Note: there are no GPS tracks for the Infrastructure Corridor.

3.4 Identified NICH in the Project Area

Eight potential NICH sites were identified during the cultural heritage surveys. The locations of these sites are itemised in Table 6 and identified in Figure 16 . See site cards are provided in Section 3.3.

Table 6: NICH sites identified in the Project Area. Coordinates GDA2020 MGA Zone 55

Site #	Site Name	Coordinates		Brief Description
		Easting	Northing	
1	Cattle Trough	642711	7521311	Remains of a cattle trough comprising wooden posts and a metal framework which was wired to the posts. The concrete trough has been removed. A poly ball float was lying next to the structural remnants. The location is overgrown with grass and a small tree is growing through the metal framework. Estimated to be 20 to 30 years old
2	Bore	641261	7520980	Bore surrounded by a wooden fence with a power pole and galvanised circuit breaker/fuse box. The pump is still in the bore however, the power has been disconnected. The bore originally supplied the trough at Site 1. The area is overgrown with grass.
3	Fence Strainer/Corner	640830	7520765	This is typical of many of the fences observed, comprising rosewood (<i>Acacia rhodoxylon</i>) strainer post and two stays with 4 or 5 strand barbed wire. Rosewood is a hardwood that is available locally and remains a favoured timber for fences given its durability and below ground life expectancy. This and similar fences in the Project Area may date to the 1980s.
4	Concrete Water Tank	641140	7523372	Concrete tank that is still used located in a paddock. The tank is enclosed in a barbed wire fence. The tank is estimated to date to the 1980s or earlier.
5	Spears Trap Yard	640012	7523097	This site comprises a cattle yard/holding paddock around a dam. The yards have 2 one-way gates or spear traps one for the cattle to enter by and the other for them to exit. Spear traps provide an alternate to mustering and the underlying principle is that the cattle are drawn to the water and enter through the entrance gate, the exit gate is blocked off. Once the required work, e.g. drafting had been completed the exit gate would be opened and the cattle could return to the pasture.
6	Molasses Lick	642158	7527601	Remnants of a home-made molasses lick measuring some 85cm square and 70cm high. The lick originally comprised a 44 gallon drum cut in half into which the molasses was placed. A 22 gallon drum was placed inside the 44 gallon drum, it is assumed on an axle or spindle and the cattle would lick the smaller drum and in doing so turn it through the molasses and thus replenish the molasses on that drum. The remnants comprise 4 star pickets driven into the ground and two 90 x 40 mm pieces of timber wired to the star pickets. The remnants of a 44 gallon drum.
7	Blazed Tree	641584	7530657	Blaze cut into a tree by a chainsaw on the northern boundary of the Project Area. While it may be a reference mark for the nearby corner it does not contain the usual bearing distance or arrow associated with such trees.

Site #	Site Name	Coordinates		Brief Description
		Easting	Northing	
8	Cattle Yards	642243	7527623	The remnants of a cattle yard and loading ramp measuring some 70 m north-south and approximately 20 m east west located c. 100 m east of a dam. The ramp is 1 m high and approximately 10 m long. The ramp and yards comprise a mix of materials including unwound drag line cable, wire mesh gates, coal wash plant screens, bulldozer blade cutting edges and galvanised turnbuckles to strain the fence wires and cable. It is possible the pastoralists who built these yards worked at a local mine or had access to discarded mine materials. A concrete tank is located south of the yards

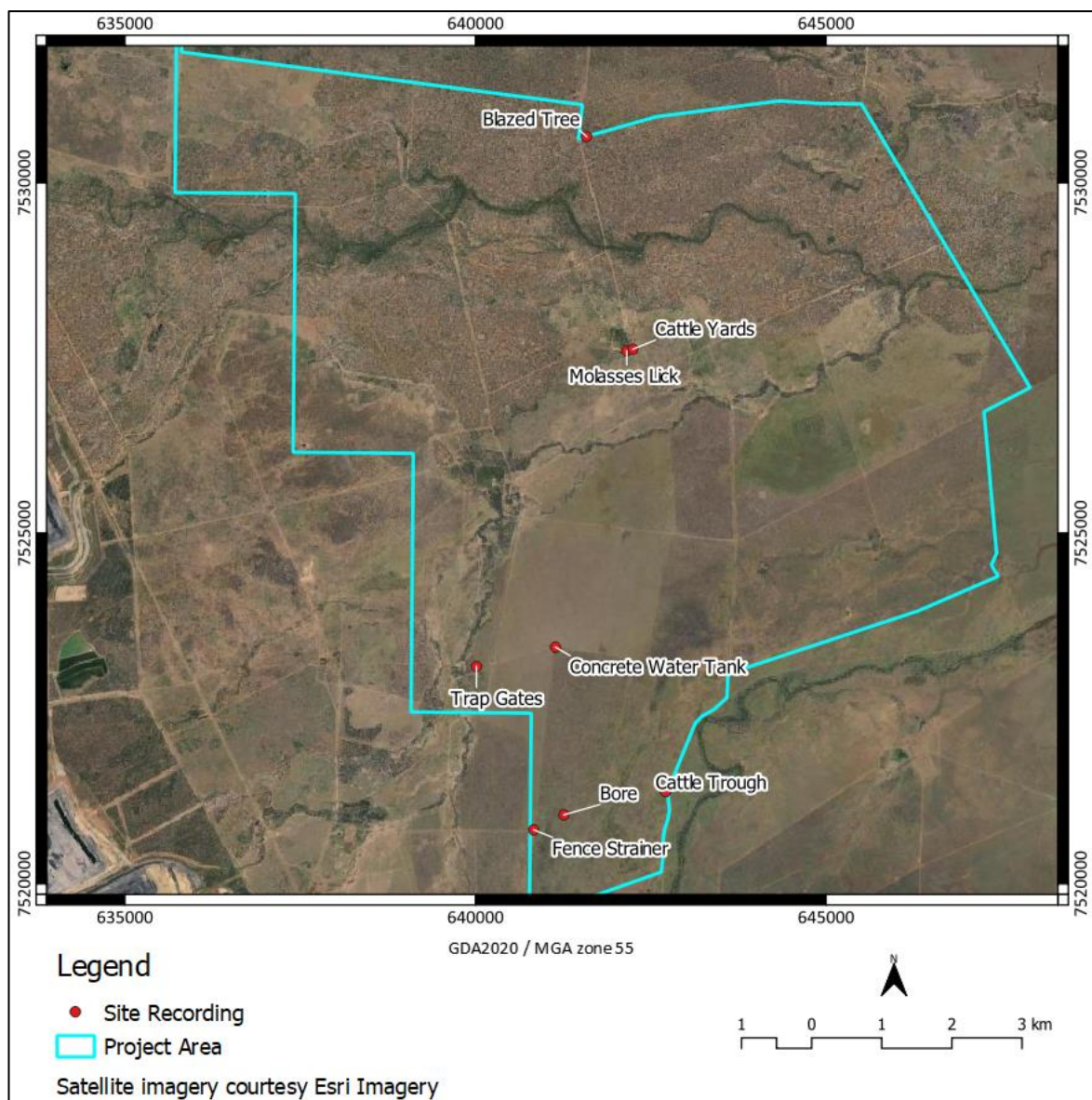


Figure 16: Location of NICH sites recorded during the assessment.

3.5 Site Inventory

Tables 7 – 21 provide information about the eight potential NICH sites that have been identified as being of interest for this assessment. Significance assessments for these sites are provided in Section 4.


Site Card – Site 1: Cattle Trough	
Location	GDA2020 MGA Zone 55: 642711 7521311 (Figure 17)
Site Integrity	Poor
Description	Remains of a cattle trough comprising wooden posts and a metal framework which was wired to the posts. The concrete trough has been removed. A poly ball float with a potential age of 20 to 30 years was lying next to the structural remnants. The location is overgrown with grass and a small tree is growing through the metal framework.
Condition	Poor. Infrastructure largely dismantled and no longer in use.
Images	



Figure 17: Location of Cattle Trough - Site 1

Site Card – Site 2: Bore

Location	GDA2020 MGA Zone 55: 641261 7520980 (Figure 18)
Site Integrity	Poor
Description	An abandoned bore surrounded by a rosewood fence that has been wired together with a power pole and galvanised circuit breaker/fuse box attached. The pump is still in the bore however, the power has been disconnected and the poly pipe cut. The bore originally supplied the trough at Site 1. The area is overgrown with thick grass.
Condition	Poor. Infrastructure partially dismantled, power to the pump disconnected and is no longer in use.



Figure 18: Location of the Bore - Site 2

Site Card – Site 3: Fence Strainer/Corner

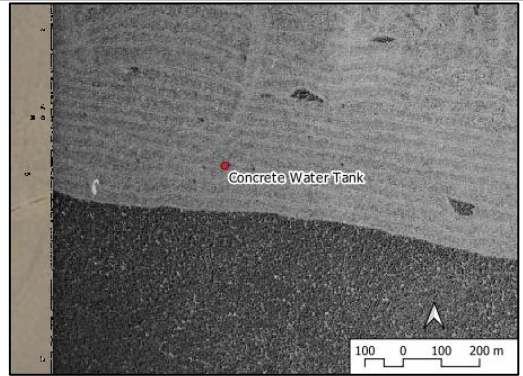
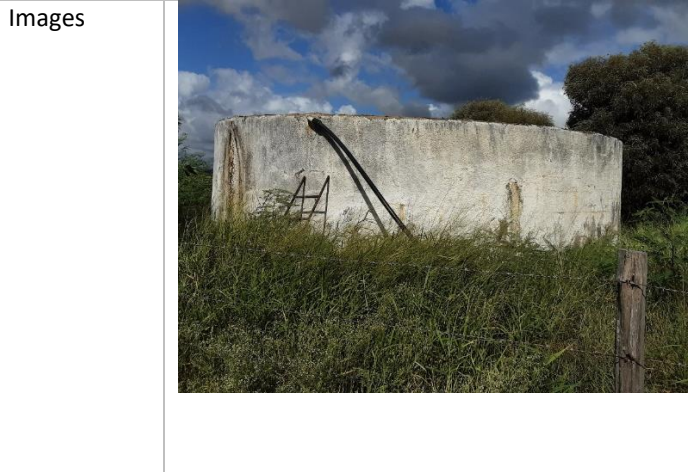
Location	GDA2020 MGA Zone 55: 640830 7520765 (Figure 19)
Site Integrity	Poor
Description	This is typical of some of the fence strainers/corners observed, comprising Rosewood or Spear Wattle (<i>Acacia rhodoxylon</i>) posts with 4 or 5 strand barbed wire. The strainers post and both stays are wired together with holes drilled through them to take the wire. Rosewood is a hardwood that is available locally and remains a favoured timber for fences given its durability in the ground. According to the Queensland government Business web site regarding timber properties notes that Rosewood has an in-ground life expectancy of more than 25 years and an above ground life expectancy in excess of 40 years. (https://www.business.qld.gov.au/industries/farms-fishing-forestry/forests-wood/properties-timbers/spear-wattle). Based on this this strainer and similar fences and strainers in the Project Area could potentially date to the 1980s or thereabouts.
Condition	Poor. While still in use the wires are loose, and the strainer post has developed a lean.



Figure 19: Location of the Strainer/corner - Site 3

Site Card – Site 4: Concrete Water Tank

Location	GDA2020 MGA Zone 55: 641140 7523372 (Figure 20)
Site Integrity	Moderate
Description	A large concrete tank that is still used located in a paddock and enclosed in a barbed wire fence. Based on aerial photography the Tank was installed after 1977 following clearing.
Condition	Fair. While still in use the concrete is not in good condition and there are cracks appearing. The rough finish on the tank also gives the appearance of having been rendered in the past. Based on water marks it appears that the tank does or has in the past leaked.



1977 Aerial Photograph showing Tank location in relation to cleared area (Source: Queensland Imagery QAP33608439.JPG)



Figure 20: Location of the Concrete Water Tank - Site 4

Site Card – Site 5: Spear Trap Gates

Location GDA2020 MGA Zone 55: 640012 7523097 (Figure 21)

Site Integrity Poor

Description This site comprises the remnants of a cattle yard/holding paddock around a dam. The yards and trap are constructed from Rosewood and the various pieces wired together with holes bored through the wooden parts to allow the wire to pass through.

The yards have 2 one-way gates or spear traps; one for the cattle to enter by and the other for them to exit. Spear traps provide an alternate to mustering and the underlying principle is that the cattle are drawn to the water and pass through the entrance gate and can't escape as the exit gate is blocked. Once the required work, e.g., drafting had been completed the exit gate would be opened and the cattle can return to the pasture.

The trap gates are V shaped with the open end of the V providing entry/exit and the spears coming together at the point of the V. The "spears" are pushed aside by the cattle as they enter and close after an individual has passed through. Cattle can not push the spears open once they have passed through.

The fence remnants indicate it was "tight" with the posts closely spaced to prevent the cattle from breaking through the fence.

In this instance the spears on one side are fixed while those on the other are suspended by wire from a top rail. As the cattle push against the spears this single set open and the wire joining them slides along the top rail. It is assumed that gravity rather than anything mechanical allows the spears to close again, or that they closed sufficiently so that any cattle trying to get out would close the trap.

Based on the potential life expectancy of the timber used the traps and yards date may to the 1980s. Spear traps are still used today in the industry with prebuilt steel traps readily available.

Note: attempts were made to determine if the trap gates were visible in aerial photography from 1966 and 1977 to date them more firmly. However, the results were inconclusive due to image resolution.

Condition Poor. The Spear trap is no longer used, and the associated fences are largely devoid of wire.



Site Card – Site 5: Spear Trap Gates



Figure 21: Location of the Spear Trap Gates - Site 5

Site Card – Site 6: Molasses Lick

Location GDA2020 MGA Zone 55: 642158 7527601 (Figure 22)

Site Integrity Poor

Description Remnants of a home-made molasses lick measuring some 85cm square and 70cm high. The lick originally comprised a 44-gallon drum cut in half and bolted to the wooden sections of the frame. The molasses was placed in this drum and a 22-gallon drum was mounted on an axle or spindle placed inside the 44 gallon drum. Cattle licking molasses of the the smaller drum would spin it through the molasses in the 44gallon drum and thus replenish the molasses on the smaller drum.
 The remnants comprise 4-star pickets driven into the ground and two 90 x 40mm pieces of timber wired to the star pickets. The remnants of a 44-gallon drum comprise the highly corroded ends only. This lick is most likely associated with the yards recorded as Site 8.

Condition Poor. No longer in use. The 4-star pickets and timbers that formed the framework are still *in situ* however, the smaller 22 gallon drum is not present and only the highly corroded ends the 44 gallon drum remain.



Site Card – Site 6: Molasses Lick



Figure 22: Location of the molasses lick - Site 6

Site Card – Site 7: Blazed Tree

Location	GDA2020 MGA Zone 55: 641584 7530657 (Figure 23)
Site Integrity	Poor
Description	Blaze cut into a tree by a chainsaw on the northern boundary of the Project Area. While it may be a reference mark for the nearby corner it does not contain the usual bearing, distance or arrow generally carved into the heartwood. The blaze is located 1m above the ground surface and measures 30cm high x 40cm wide. The bark regrowth/roll around the scar is minimal and indicates it has a relatively recent origin.
Condition	Good. The tree is alive



Figure 23: Location of the blazed tree - Site 7

Site Card – Site 8: Cattle Yards and Loading Ramp

Location GDA2020 MGA Zone 55: 642243 7527623 (Figure 24)

Site Integrity Poor

Description The remnants of a cattle yard and loading ramp measuring some 70m north-south and approximately 20m east west located c. 100m east of a dam. The ramp is 1m high and approximately 10m long. The ramp and yards comprise a mix of materials including unwound drag line cable, wire mesh gates, coal wash plant screens, bulldozer blade cutting edges and galvanised turnbuckles to strain the fence wires and cable. It is possible the pastoralists who built these yards worked at a local mine or had access to discarded mine materials. The use of Rosewood and discarded material from a mine suggest the yards may date to the 1980s. Two concrete tanks are located some 25m south of the yards.
 Note: attempts were made to determine if the cattle yards were visible in aerial photography from 1966 and 1977 to date them more firmly. However, the results were inconclusive due to image resolution.

Condition Poor. The yards and ramp are no longer used and thus in an advanced state of disrepair.

Images



Site Card – Site 8: Cattle Yards and Loading Ramp



Figure 24: Location of the yards and loading ramp - Site 8

3.6 Landscape Heritage

Collectively the eight sites recorded demonstrate the pastoral history of the landscape and in particular over the last 40 years.

3.7 Further Potential for NICH in the Project Area

Based on the results of the field work and the desktop assessment, the local knowledge provided by Myles Somerset and the relatively obvious nature of visible heritage evidence, it is unlikely that additional heritage items would be present in the Project area. However, the possibility of further sites being identified can not be stated definitively and the types of sites which may be extant include:

- Evidence of former homestead site/s.
- Additional bores.
- Additional stockyards.
- Dip sites.
- Historic fence lines.
- Evidence of early mining.

Therefore, recommendations have been made if previously unidentified heritage evidence is encountered during the life of the Project.

4 Significance Assessment

This section assesses the NICH significance for individual sites within the Project area.

4.1 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.

Within the Project area, eight sites of interest were assessed for potential NICH significance. Each of these sites have been attributed a cultural heritage significance rating (Table 7) having been assessed against the significance assessment criteria outlined in Section 1.5.6, taking into consideration the contextual historical information available for the Project area, results of register searches and previous heritage studies.

Table 7: NICH significance assessment for individual sites within the Project area.

Site #	Site Name	Significance	Justification
1	Cattle Trough	No significance	The site is determined to be relatively recent and a common element in the pastoral landscape. The site does not satisfy any significance criteria.
2	Bore	No significance	The site is determined to be relatively recent and a common element in the pastoral landscape. The site does not satisfy any significance criteria.
3	Fence Strainer/corner	No Significance	The site is determined to be relatively recent and a common element in the pastoral landscape. The site does not satisfy any significance criteria.
4	Concrete Water Tank	No significance	The site is determined to be relatively recent and a common element in the pastoral landscape. The site does not satisfy any significance criteria.
5	Spear Trap Yard	No significance	The site is determined to be relatively recent and a common element in the pastoral landscape. The site does not satisfy any significance criteria.
6	Molasses Lick	No significance	The site is determined to be relatively recent and a common element in the pastoral landscape. The site does not satisfy any significance criteria.
7	Blazed Tree	No significance	The site is determined to be relatively recent and a common element in the pastoral landscape. The site does not satisfy any significance criteria.
8	Cattle Yards	No significance	The site is determined to be relatively recent and a common element in the pastoral landscape. The site does not satisfy any significance criteria.

4.2 Results of the Significance Assessment

The eight sites identified within the Project area provide evidence of the history of pastoral activity in the Project area. However, they are common for this area and appear to have been constructed relatively recently. The sites do not meet the significance criteria established in section 1.5.6 and therefore do not possess NICH significance.

5 Proposed Development and Recommendations

5.1 Impact on Identified Sites

Eight sites were identified within the Project area. These sites will be impacted by the Project.

5.2 Project Impact on Potential NICH

As demonstrated in the previous chapter, none of the sites have been identified as having NICH significance and therefore the Project will not have a negative impact on NICH.

It is concluded that there is low potential for further historic and archaeological places and/or items to exist within the Project area. Recommendations and mitigation measures to manage unexpected finds are provided below.

5.3 Recommendations

As noted above it has been determined that there is low potential for further places of NICH to be present in the Project area. It is impossible to be categorical about this potential, however, and therefore the Project should have a process in place that accommodates the possibility of new finds and an induction process in place to ensure staff and contractors know what to do in the case that potential NICH is discovered. A recommendation to this effect is provided below.

Assuming the management recommendation below is suitably implemented, this assessment concludes that the nature and level of impact on NICH by the Project is acceptable.

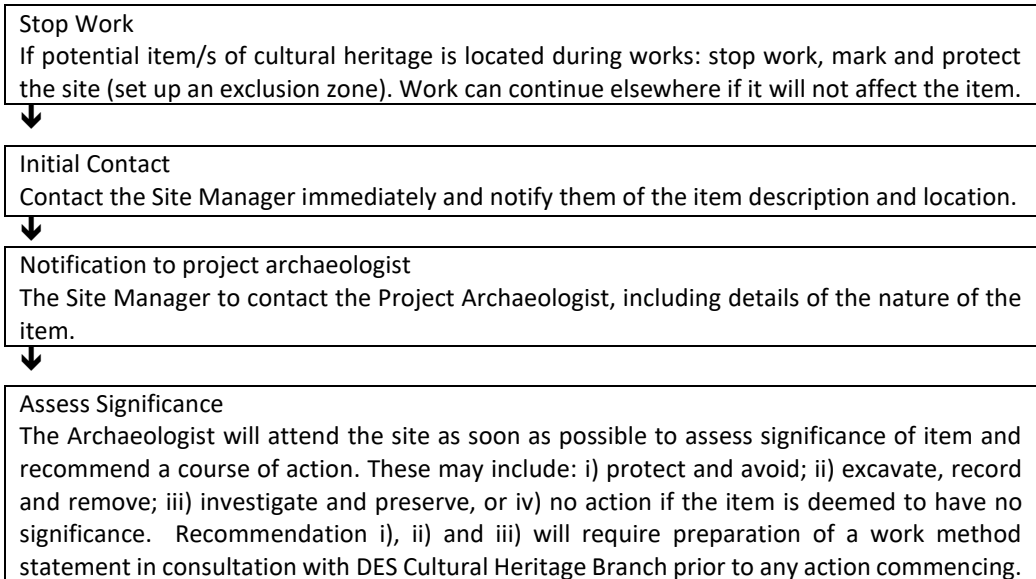
5.3.1 Recommendation - NICH Management across the Project Area

This recommendation should be implemented and incorporated into the Project's environmental management plan (EMP) to mitigate impact on any unidentified NICH material/sites found during the development of the Project. These recommendations should be applied across the entire project area and should provide information and processes to enable identification and protection of NICH sites if discovered.

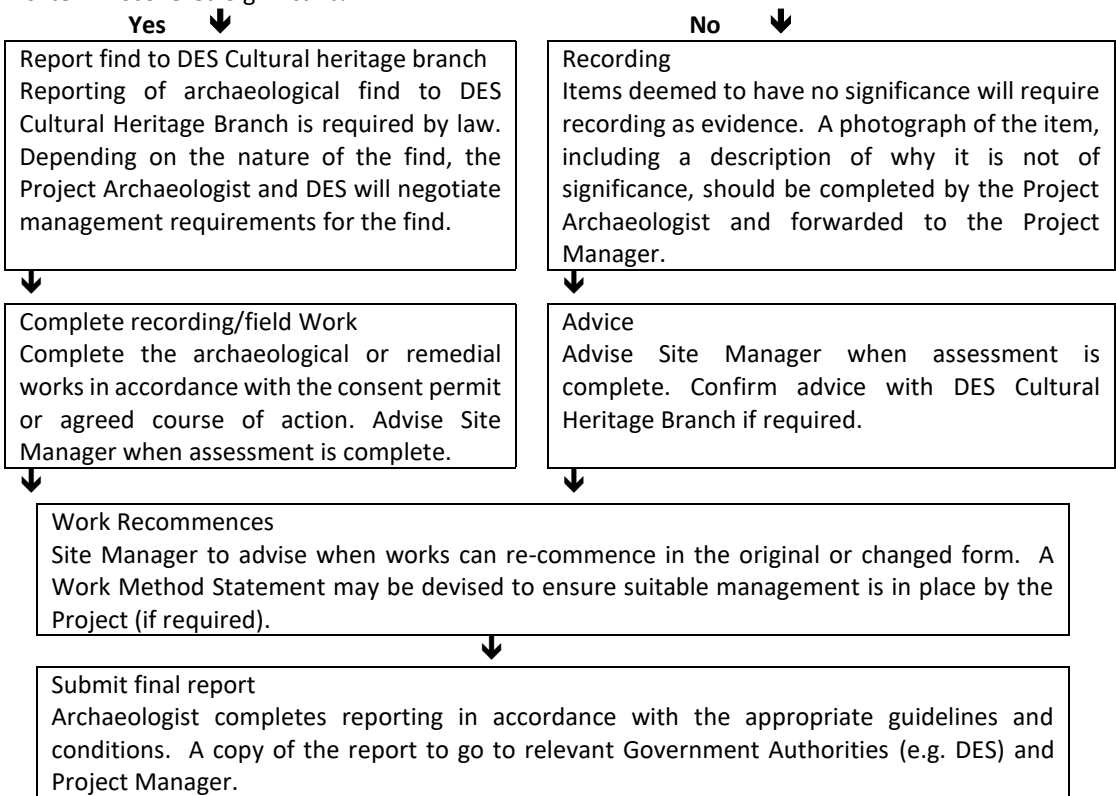
The Project should include procedures to manage the discovery of potential NICH sites in its Environmental Management Plan (EMP). Procedures should include:

- The Incidental Finds Procedure provided below. The procedure sets out the process to be followed in the event that potential NICH is discovered during Project work.
- Appoint a Project Archaeologist who is available to provide assistance to the Project in the event that potential NICH is discovered during Project work. The role of the archaeologist is established in the Incidental Finds Procedure. The archaeologist can provide specific advice in the event of a discovery, including management procedures as required.
- Incorporation of procedures for staff and contractors regarding potential NICH in the General Site Induction. The procedures can take the form of a presentation and printed material that covers the following topics:
 - An overview of NICH and the Project's legislative obligations established in the *Queensland Heritage Act 1992* (especially in relation to the discovery of archaeological material – see Appendix A).
 - The types of NICH that may be found in the Project area, using this assessment as the basis.
 - An explanation of the Incidental Finds Procedure.

Procedure for discovery of an historical item of potential cultural heritage significance



Is Item Discovered Significant?



(Converge 2021)

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Appendix A – Heritage Framework

Several national, state and local Acts and regulations are relevant to this NICH assessment. Knowledge of the heritage framework is essential when assessing sites, places or items of NICH significance. Searches of relevant statutory heritage registers associated with national, state and local legislation were undertaken for this study (refer to Section 2.1 for the results). Places included on these registers possess an established level of significance. However, the absence of a place on these registers does not demonstrate that it is not significant, as the registers are not comprehensive. Values can also change and evolve and places may become significant as a result.

World Heritage List

An on-line search of the World Heritage List (WHL) was conducted to identify places and sites of NICH significance located within the Project area. The WHL is compiled by United Nations Educational, Scientific, and Cultural Organisation (UNESCO) and is an inventory of places considered to have outstanding universal value.

National Legislation

Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the key national heritage legislation and is administered by the Commonwealth Department of Agriculture Water and Environment (DAWE). The EPBC Act provides a number of statutory and legislative controls for heritage places. Places of national heritage value and those owned or managed by the Commonwealth are located on the National Heritage List (NHL) and Commonwealth Heritage List (CHL) respectively.

Australian Heritage Council Act 2003

The *Australian Heritage Council Act 2003* (AHC Act) provides for the establishment of the Australian Heritage Council (AHC), which is the principal advisory group to the Australian Government on heritage issues. The AHC Act is also responsible for the assessment and nomination of places to the NHL and CHL.

Protection of Moveable Cultural Heritage Act 1986

The *Protection of Moveable Cultural Heritage Act 1986* regulates the export of Australia's significant cultural heritage objects. The Act does not restrict normal and legitimate trade in cultural property and does not affect an individual's right to own or sell within Australia.

State Legislation

Places of State heritage significance in Queensland are managed under the QHA. The Act provides for the establishment of the Queensland Heritage Council (QHC) and the Queensland Heritage Register (QHR), which lists places of cultural heritage significance to Queensland and regulates development of registered places. Under the provisions of the QHA, any development of a place listed on the QHR must be carried out in accordance with the Act. A place may be entered in the register if it satisfies one or more of the assessment criteria under Section 35 (1) of this Act.

The Act also applies to potential archaeological places:

- Under Part 9 'Discovery and protection of archaeological artefacts and underwater cultural heritage artefacts'; Section 88 – 90.
- Section 89 requires a person to advise the Chief Executive Officer of the Department of Environment and Science (DES) of an archaeological artefact that is an important source of information about an aspect of Queensland's history. This advice must be given as soon as practicable after the person discovers the item.
- Section 90 stipulates that it is an offence to interfere with an archaeological artefact once notice has been given of the artefact to the Chief Executive Officer.

Local Legislation

Local heritage places are managed under Part 11 of the QHA, local planning schemes and the *Sustainable Planning Act 2009 (SPA)*. It is mandatory for local government to have a Local Heritage Register (LHR). The QHA provides a process for establishing and nominating places to a LHR. Specific criteria must be met to nominate a place to the LHR and these include:

- Enough information to identify the location and boundaries of the place.
- A statement about the cultural heritage significance of the place.

Following nomination to the LHR the Integrated Development Assessment System (IDAS) Code (contained in the *Queensland Heritage Regulation 2003*) and any relevant planning scheme provisions apply. The Project area is located within the local government area of Isaac Regional Council (IRC).

Non-Statutory Framework

There are other sources for heritage places or historic sites other than statutory registers. Places included in these sources are not afforded legislative protection. Nonetheless, places identified during searches of these sources contribute to a better understanding of the Project area and often identify places that have been overlooked for entry on statutory heritage registers. This is particularly important when considering the provisions of the QHA with regard to archaeological places.

Register of the National Estate – Archive

The AHC manages the Register of the National Estate - Archive (RNE). The RNE was frozen in 2007 and from February 2012 ceased to exist as a statutory register. The RNE remains an archive of information for more than 13,000 places across Australia, many of which are of local and state significance, and is therefore considered in this report.

Queensland National Trust

The register of the Queensland National Trust (QNT) was searched for the Project. The QNT is the Queensland branch of the National Trust of Australia, which is a community based, non-government organisation that maintains a non-statutory register of heritage places.

The listing of a place on the *QNT register*, known as ‘classification’, has no legal force; however, it is widely recognised as an authoritative statement of the cultural significance of a place.

Guidelines and Charters

This section provides details of the relevant guidelines and charters that are applicable to heritage practice in Australia. These key documents include *The Burra Charter* (Australia ICOMOS 2013), the Australian Historic Themes Framework and the QHC *Using the criteria: a methodology guidelines*, and are often used to assist practitioners in determining the heritage value of a place.

The Burra Charter

The *Burra Charter* (Australia ICOMOS 2013) is the leading guideline for heritage practitioners and provides guidance for the conservation and management of significant places. It defines cultural significance as “aesthetic, historic, scientific or social value for past, present and future generations” and goes on to state “cultural significance is embodied in the *place* itself, its *fabric, setting, use, associations, meanings, records, related places* and *related objects*” (Australia ICOMOS 2013). It outlines a specific methodology/ process for assessing sites.

Queensland Heritage Council Using the criteria: a methodology guidelines

QHC Heritage Council provides guidelines to assist in assessing which level of cultural heritage significance is applicable to a site (QHC 2006). These guidelines provide the following definitions:

A place is of local cultural heritage significance if its heritage values are of a purely localised nature and do not contribute significantly to our understanding of the wider pattern and evolution of Queensland's history and heritage...

A place is of state cultural heritage significance if its heritage values contribute to our understanding of the wider pattern and evolution of Queensland's history and heritage. This includes places that contribute significantly to our understanding of the regional pattern and development of Queensland.

Archaeological Research Potential

The heritage significance of archaeological sites within the Project Area was considered according to their potential ability to contribute to our understanding of the culture and history of the nation, state and local area, and the site itself. On the whole, more intact deposits and archaeological sites that can be used to address important research questions, or which can reveal information about little known aspects of history, will have the highest heritage significance. This is a matter that has been considered in an influential paper by Bickford and Sullivan (1984). They note that archaeological significance has long been accepted elsewhere in the world as being linked directly to scientific research value:

A site is said to be scientifically significant when its further study may be expected to help answer questions. That is scientific significance is defined as research potential.

This is a concept that has been extended by Bickford and Sullivan (1984) in the context of Australian archaeology and refined to the following three questions which can be used as a guide for assessing the significance of an archaeological site or resource within a relative framework:

- Can the site contribute knowledge which no other resource can?
- Can the site contribute knowledge which no other site can?
- Is this knowledge relevant to general questions about human history or other substantive questions relating to Australian history, or does it contribute to other major research questions?