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NON-INDIGENOUS CULTURAL HERITAGE

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This chapter is a summary of non-Indigenous cultural heritage values within the Project area and an assessment of the potential for these values to be affected by direct and indirect impacts associated with the construction, operation and decommissioning phases of the Project. Proposed measures to mitigate and manage adverse impacts, as well as cultural heritage protection objectives, are also presented. A detailed assessment is provided in the Non-Indigenous Cultural Heritage Technical Report (Appendix X) of this EIS.

A cross reference to the locations where each of the requirements of the ToR has been addressed is given in Appendix B which references both the study chapters (Sections 1 through 34) and/or the Appendices (A through EE).

26.1 Legislative Context

The following legislation is relevant for identifying values of, and mitigating and managing impacts to, non-Indigenous cultural heritage during construction, operation and decommissioning of the Project:

Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) (Commonwealth). This Act protects natural, historic and Indigenous places on the World Heritage List, Commonwealth Heritage List and National Heritage List.

Australian Heritage Council Act 2003 (Commonwealth). This Act appoints the Australian Heritage Council as the principle advisory body to the Australian Government on heritage matters, particularly those listed under the EPBC Act. The Australian Heritage Council nominates places for inclusion on the National Heritage List and Commonwealth Heritage List.

Queensland Heritage Act 1992 (Qld). This Act principally provides protection for significant non-Indigenous cultural heritage sites. The Queensland Heritage Council, assisted by resources within the EHP, is responsible for non-Indigenous cultural heritage protection under this Act. The Queensland Heritage Register, established under this act is a record of state heritage places and protected areas. Development or disturbance of a place listed on this register can proceed only with approval of the chief executive. If artefacts are found during development activities, the chief executive must also be advised.

National Trust of Queensland Act 1963 (Qld). This Act establishes the Queensland National Trust to protect non-Indigenous cultural heritage in Queensland. Listing on the Register of the Queensland National Trust represents a major indication of a community's feeling about the value of buildings, precincts, places of natural environment and culturally significant artefacts. The aim of the Trust is to promote the preservation, maintenance, access and enjoyment of places of non-Indigenous cultural heritage. However, listing on the Register of the Queensland National Trust provides no legal protection for places or buildings or obligations on owners to conserve these properties.

Sustainable Planning Act 2009 (Qld). This Act provides provisions for local government to develop an approved list of locally significant places for protection. The places form part of heritage overlays, which are used during the approval process under the Act. The regional councils within the Project area (Isaac and Central Highlands) have not yet fully developed lists or processes for accessing non-Indigenous cultural heritage places.

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All of the above legislation has been influenced by the Burra Charter, developed by the Australian International Council on Monuments and Sites (ICOMOS), which is an independent organisation of heritage professionals. The Charter provides guidance on criteria for assessment of the significance of cultural heritage areas and places, objects and values in terms of cultural and social, scientific, historical, educational, economic and aesthetic significance. The principles and processes of the Charter have been widely adopted.

26.2 Assessment Methods

The non-Indigenous cultural heritage assessment comprised archival research, a desktop study and consultation. This study method and impact assessment method is summarised below.

26.2.1 Desktop Study

The desktop study involved a literature review, research and investigation of international, national and state heritage registers, including the following:

- Research from primary (Queensland State Archives) and secondary sources as listed in the bibliography;
- Verification and utilisation of information from previous environmental impact studies undertaken by Northern Archaeology Consultancies Pty Ltd;
- Australian Heritage Places Inventory, including places listed on the National Heritage List and World Heritage List (Commonwealth government);
- The Queensland Heritage Register (Queensland government);
- Relevant planning scheme heritage overlays (local government);
- National Trust of Queensland Register and database (non-government); and
- Local historical societies and archives, e.g., local historians, museum resources, libraries, family history societies and interested residents via consultation.

26.2.2 Field Survey

Given the extent of the Project area and that location of key Project infrastructure is yet to be determined, this study has adopted the risk based impact assessment approach (refer to the Impact Assessment chapter (Section 6) of this EIS). Based on this approach and given the information gathered during the desktop survey it was determined that a field survey would not be required to be undertaken at this stage of the Project.

The historical research program nevertheless has yielded positive results in an area where in the past there has been only very limited systematic site recording. These results are supported by predictive modelling on the types of places that may be found in or near watercourses, roads and stock routes, early mining ventures and pastoral properties.

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26.2.3 Cultural Heritage Significance Assessment

The eligibility criteria for inclusion of a place in the Queensland Heritage Register are defined in the Queensland Heritage Act and include:

- *Evolution or Pattern of Queensland History.* Assessed in terms of historical or scientific values (places where the setting remains largely unaltered and intact display high levels of significance);
- *Rare, Uncommon or Endangered Aspects of Queensland's Cultural Heritage.* Sites and/or places that document customs, functions, processes, activities, life ways and designs that are no longer common or were never recognised;
- *Understanding of Queensland History.* Places that provide information on aspects of Queensland history that have not previously been investigated, need further investigation or can be used to provide further understanding of existing sites and places;
- *Demonstrating Characteristics of a Particular Class of Cultural Places.* Places with architectural or historical significance which are important in documenting Queensland history;
- *Aesthetic Significance.* Places listed under this heritage criterion include those that are widely acknowledged for their elegance, beauty, visual merit or interest;
- *Degree of Creative or Technical Achievement at a Particular Period.* Sites and places that are recognised as having artistic, technological or architectural values;
- *Associations with a Particular Community or Cultural Group for Social, Cultural or Spiritual Reasons.* This criterion addresses the social significance of heritage places associated with their importance as a landmark, meeting or gathering place, connection with events that have an influence on a particular community or ethnic group, importance in connection with ceremonial or ritual activities or through their place in meeting a community need; and
- *Association with a Person, Group or Organisation Important in Queensland History.* These are places with historical significance that is demonstrated by connections to people, groups or organisations, which have contributed to the evolution or development of Queensland's physical environment or society.

The above criteria are common in content in all heritage legislation. However, thresholds have been developed as indicators to measure the degree to which each of these eligibility criteria are met and help to determine whether a place should be listed as having local, state or national significance.

26.2.4 Impact Assessment

Qualitative risk assessment was used to assess the likelihood of harm to cultural heritage sites from construction, operation and decommissioning activities, and the consequence of those impacts on these values.

26.3 Existing Environment and Cultural Values

This section provides a description of non-Indigenous cultural heritage within the Project area. The existing environment and associated values are informed by the desktop study, historic context and consultation.

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The region in which the Project area is located has experienced non-Indigenous visitation dating from the mid-nineteenth century with the arrival of the earliest explorers, soon followed by pastoralists venturing out into newly-declared pastoral districts.

Many of the known heritage places within the Project area are associated with early settlement and include early pastoral stations and associated services such as, roads and stock routes, towns, railway infrastructure and contact places. There are also remnants of a number of early mining ventures in the Project area; they are significant as the precursors to later major mines. Major broad scale clearing for pastoralism (and more recently agriculture in the southern half of the Project area) is also a feature of the region and this has resulted in a high level of ground disturbance in these areas.

Themes illustrating Queensland's history have been identified by the Queensland Heritage Council to assist in the assessment of places for the Queensland Heritage Register. They categorise a range of activities that occurred in the State's social and economic development.

The themes below have been used to categorise places identified during the present study. More than one theme may apply to some places.

- Peopling the land;
- Exploiting and/or utilising the land;
- Developing secondary or tertiary industries;
- Movement of goods, people and information;
- Building settlements and dwellings;
- Maintaining order;
- Creating cultural or social institutions;
- Educating Queenslanders; and
- Providing health and welfare.

26.3.1 International, National and State-Listed Sites

No sites of national significance or of world heritage significance were identified as part of the assessment.

There are 14 places included in the Queensland Heritage Register in the Isaac and Central Highlands Regional Councils. None of these places is located within the Project area.

National Trust of Queensland database includes 29 places in the two regional council areas. Of these, 15 places are registered and the remainder reported (i.e. not researched or assessed). One of these places is located within the Project area – Bedford Weir, river crossing and historic murder site (BBGP_H10 0688000/7413700) (see Figure 26–1).

26.3.2 Regionally Known Sites

Twenty one places, including several of potential regional or state significance, were identified during the course of background research and consultation (see the Non-Indigenous Cultural Heritage Technical Report (Appendix X) of this EIS for full details).

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Some of these sites had been recorded or noted in previous cultural heritage studies for different projects in the Project area and only one is included in any other local or regional heritage list. Most are locally significant, although several possess attributes that may identify them as having wider (regional or State) significance, and this may warrant their inclusion on the Queensland Heritage Register.

The identified sites are summarised in Table 26-1 below, and depicted in Figure 26-1.

Table 26-1 Sites Identified by Research

Site Number	Location (55K GDA94)	Description
BBGP_H1	0635263/7553175	Historic grave on Olive Downs station, now Daunia mine lease
BBGP_H2	604235/7552970	Historic camp ruins and dam, Olive Downs station
BBGP_H3	0641004/7548278 0641004/7548231 0640970/7548307 0640986/7548231	Cattle yard ruins, Olive Downs station
BBGP_H4	628450/N.7555700	Old Poitrel station homestead remains, partly in ruins
BBGP_H5	676769/7457441	Historic grave
BBGP_H6	620480/7581800 621200/7582630	Old Broadlea homestead complex and yards
BBGP_H7	635000/7625000 +3 km radius Mt. Gotthardt Range	Ruins of old copper and coal mines and documented massacre site of 14 miners
BBGP_H8	596400/7668720	Historic grave at Byerwen Station
BBGP_H9	620300/N/7619600 +300 m	Site of original homestead, Burton Downs
BBGP_H10	0688000/7413700	Bedford Weir, river crossing and historic murder site
BBGP_H11	0688000/7413700	Historic gravestone
BBGP_H12	0688350/7413710	Remains of telephone party line
BBGP_H13	588100/N.7630500 +500 m	Remains of old Talwood homestead
BBGP_H14	595000/7663800 +300 m	Fourteen Mile Camp (old drovers' camp)
BBGP_H15	591000/N.7661300 +300 m	Old ringers' and drovers' camp
BBGP_H16	585500/N.7643000 +300 m	Old ringers' and drovers' camp
BBGP_H17	E.584500/N.7631900 +300 m	Pear camp
BBGP_H18	Leichhardt Downs Station (near homestead)	Possible cemetery (or several ones) containing at least 11 burials of Europeans and non-Europeans
BBGP_H19	23°02.60S/148°52.86E on Old Barwon Park Station	Historic grave
BBGP_H20	22°26.82S/148°37.75E, Old Bombandy Station	Two historic graves
BBGP_H21	22°40.59S/148°28.45E on Norwich Park Mine	Historic grave

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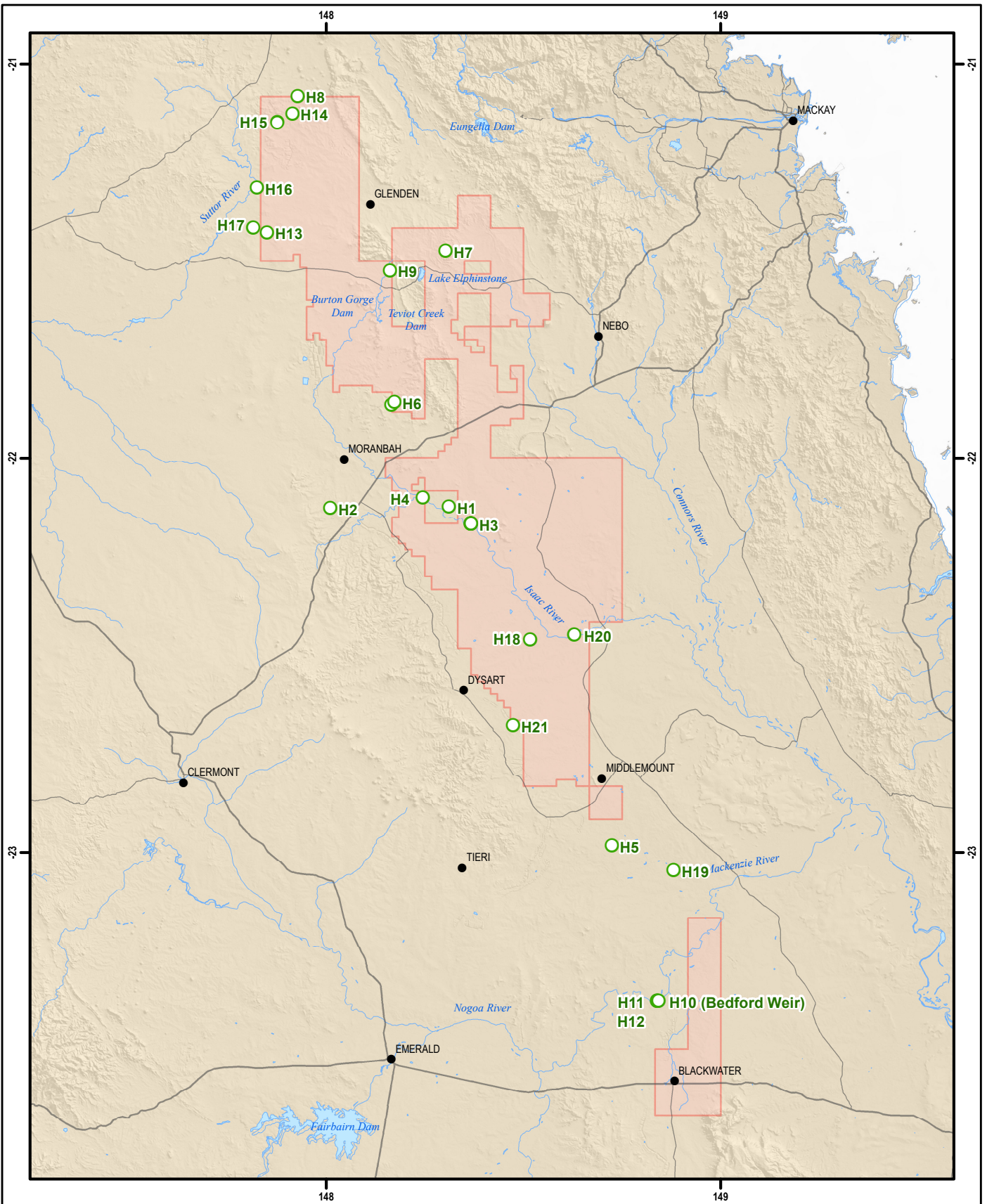
Seven graves, whose exact locations are unknown, are listed in early burial records and noted by the Dysart family history group (Table 26–2). Only general details on their locations are available. Should Arrow propose to place infrastructure on the identified properties, specific surveys will be undertaken to identify these grave sites.

Table 26-2 General Details on Grave Locations

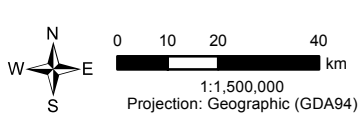
Name (+ Burial Year)	Property	Specific Location
Eleanor Berridge (1864)	Mackenzie River	Unknown
'Brody' (1918?)	Barwon Park	Unknown
Jack Carlson (1938)	Girrah Station	Unknown
Clara Dean (1881)	May Downs	Unknown
Dick (1869)	May Downs	Unknown
John Healey (1866)	Mackenzie Crossing	Unknown
Murdoc McLennan (1917)	Bombandy	Unknown

A reported World War II internment camp on Redhill station has been reported by Mrs Anne Oaks, curator of the Nebo Museum, from information based on oral reports. The exact location of this camp is presently unknown.

All known sites originate either in the mining or the pastoral industries. Collectively they provide physical evidence of a range of human activities that were carried out in the region within the past 160 years that document the region's history and complement the historical records that describe the events that occurred in this region.



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- Bowen Gas Project Tenements
- Heritage Site
- Drainage Basin Boundary
- River Catchment Boundary
- Major Drainage

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BOWEN GAS PROJECT EIS

LOCATIONS OF NON-INDIGENOUS CULTURAL HERITAGE SITES IN THE PROJECT DEVELOPMENT AREA

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26.3.3 Unknown Potential Sites

Predictive modelling is a valid methodology in both Indigenous and non-Indigenous cultural heritage assessment. Apart from consultation, the basis of such work is research that places an emphasis on early maps, place names, infrastructure such as roads and railways as well as the historic and geographic context. The following examples are relevant to this area:

- **Early roads or stock routes and railways** – potential sites may include, but not be limited to, evidence of camps near waterholes, graves, marked trees and survey marks, drains, cuttings, embankments or stone pitching, wheel ruts and jump-ups. There may be evidence of early railway camps used during the construction period, or early infrastructure at sidings and former railway stations;
- **Historic places and structures on pastoral properties** – such places include homestead complexes, yards, wells, dips, camp sites, windmills and other water-control mechanisms such as small dams on creeks;
- **Police and Native Police camps** – these may have been numerous because of the significant troubles in the district;
- **Communications** are also of historic importance in the development of the region, and no detailed research has been undertaken currently of the Project to identify early telegraph lines; and
- **Mining** commenced in the nineteenth century and has been on-going. There may be remnants of early wooden infrastructure, even in ruins. Shafts and spoil heaps may also be evident.

26.4 Issues and Potential Impacts

Project development will potentially impact upon non-Indigenous cultural heritage sites through direct ground disturbance activities and indirect disturbance through encroachment on sites during construction, operations and decommissioning.

The potential direct and indirect impacts of the Project on environmental values have been assessed using one of three impact assessment methods: significance assessment, risk assessment and compliance assessment; this study has used risk assessment. For further details see the Impact Assessment Method chapter (Section 6) of this EIS.

26.4.1 Known Non-Indigenous Sites

There are no known formally registered national, state or regional heritage places in the Project area. There is therefore no related high risk or major legislative consequence in regard to non-Indigenous heritage values.

Research and consultation has identified 21 places with inherent community value, and in the absence of formal assessment, are designated to have local significance. These are presented in Table 26-1. The consequence of disturbance to cultural values of these identified places would be major should the Project have a direct impact on any of these sites. The likelihood and consequence criteria, and risk matrix used is outlined in Table 26-3.

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Table 26-3 Risk Assessment Matrix

		Likelihood of Impact				
		Rare or practically impossible	Unlikely or uncommon	Possible, has occurred in the past, but not common	Likely, has occurred in recent history	Almost certain or common
Consequence		Rare	Unlikely	Possible	Likely	Almost certain
Widespread serious long-term effect	Severe	Medium	High	High	Very High	Very High
Wider spread moderate to long-term effect	Major	Medium	Medium	High	High	Very High
Localised short-term to moderate effect	Moderate	Low	Medium	Medium	Medium	High
Localised short-term effect	Minor	Very Low	Low	Low	Medium	Medium
No impact or lasting effect	Negligible	Very Low	Very Low	Low	Low	Medium

26.4.2 Unknown Non-Indigenous Sites

Potential impacts to non-Indigenous places could occur through chance-find discoveries of previously unknown sites that are uncovered during construction activities.

It is possible that the proposed construction activities may result in disturbance to unknown sites and places of high or moderate significance (either on the surface or beneath the surface). If this were the case impacts may potentially be long term, with disturbance or degradation to sites being difficult to restore or return to original condition.

26.5 Avoidance, Mitigation and Management Measures

The conservation objective for non-Indigenous cultural heritage is to avoid or minimise disturbance from Project related activities to non-Indigenous cultural heritage sites and places.

Avoidance, mitigation and management measures will reduce the potential for adverse impacts on non-Indigenous cultural heritage sites (both known and unknown). The following measures will be implemented:

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- Avoid known cultural heritage sites, where practicable, through site selection [B560];
- Develop a cultural heritage management plan (CHMP) in consultation with the Queensland Heritage Office prior to commencement of ground disturbance works that will mitigate and manage potential impacts on non-Indigenous cultural heritage sites. This plan will include detail on legislative reporting requirements of the *Queensland Heritage Act 1992* [B561];
- Conduct pre-construction clearance surveys of sites to identify the presence of heritage sites [B562];
- Notify the Queensland Heritage Office if any cultural heritage sites or items of significance are uncovered during construction [B563];
- Take particular care to ensure buffers are adequately delineated when working in areas where significant heritage places are located within 500 m of proposed wells, pipelines or other infrastructure [B564];
- Develop a 'chance-find' procedure for the discovery of unknown heritage places during construction as part of the CHMP [B565]. This will include:
 - a stop work requirement on initial discovery;
 - appropriate reporting and recording;
 - archaeological assessment by a qualified heritage practitioner; and
 - avoidance or salvage;
- Consult with the local community regarding the management of threatened historic sites and places [B566];
- Incorporate cultural heritage awareness into site induction procedures, including information on heritage values of the region, legal obligations and implementation of the 'chance-find' procedure [B567]; and
- Maintain a database of all sites where non-Indigenous cultural heritage is known or found during the course of investigations and works [B568].

26.6 Residual Impacts

The avoidance, mitigation and management measures outlined above will avoid adverse impacts to, or reduce the severity of impacts on, non-Indigenous cultural heritage values. Residual impacts associated with Project activities are described below.

26.6.1 Known Non-Indigenous Sites

Where location details of known sites non-Indigenous cultural heritage value are available, these will be incorporated into Arrow's GIS and EIS Constraints Mapping database (Appendix BB of this EIS) for planning purposes. Known non-Indigenous sites will be avoided, where practicable, through the application of site-selection procedures. Where development occurs in the vicinity of known cultural heritage sites, mitigation measures, such as flagging of agreed buffer zones around sites will be implemented to ensure that accidental destruction, damage or disturbance of sites or artefacts does not occur.

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Where it is not physically possible to avoid sites or artefacts of cultural heritage, any disturbance that is necessary will be conducted in accordance with the relevant legislation.

Given the application of mitigation measures, it is considered unlikely that Project activities will adversely affect the value of the state listed sites. If sites are disturbed or destroyed (in an uncontrolled manner), the impact would be major.

This produces a medium residual impact. For those sites of local significance, it is unlikely that the Project activities will adversely affect the value of the sites through the application of the proposed mitigation and management measures. If sites are disturbed or destroyed (in an uncontrolled manner), the consequence would be minor. This produces a low residual impact.

26.6.2 Unknown Non-Indigenous Sites

Due to the levels of disturbance within the Project area, and the fact that a large portion of the land has been cleared for pastoral or agricultural purposes, it is unlikely that sites of national or state significance will be uncovered.

As initial cultural heritage assessments will be undertaken only on the surface, there is potential for Project activities to impact upon artefacts buried beneath the surface. However, these finds are expected to be unlikely. The extent of impact will depend on whether the cultural heritage site is identified before coming into contact with machinery. In the event that this does occur, Arrow's actions will be in accordance with the cultural heritage arrangements under the relevant legislation. Based on compliance with these arrangements, the consequence of discovering a site or artefact of national or state significance and implementing the chance-finds strategy to manage the find would be major due to a reduction in the value of the artefact, resulting in the overall residual impact being medium. For those sites of local significance, it is unlikely that the Project activities will adversely affect the value of the sites through the application of the proposed mitigation and management measures. If sites are disturbed or destroyed (in an uncontrolled manner), the consequence would be minor. This produces a low residual impact. Table 26-4 below provides a summary of the non-Indigenous cultural heritage impact assessment.

26.7 Inspection and Monitoring

Inspect known non-Indigenous sites identified as having the potential for being impacted by the Project and subsequently acknowledged for avoidance, in accordance with the relevant approval and permit conditions, including the CHMP [B569].

Table 26-4 Summary of Non-Indigenous Cultural Heritage Impact Assessment

Potential Impacts	Cultural Heritage Values	Pre-mitigated Impact			Proposed Mitigation Measures	Residual Impact		
		Likelihood	Consequence	Risk of Impact		Likelihood	Consequence	Risk of Impact
Accidental Disturbance of Known non-Indigenous Cultural Heritage Sites and Artefacts								
<u>Construction:</u> <ul style="list-style-type: none"> Clearing and earthworks for development of Project facilities cause accidental disturbance, damage or destruction of culturally significant artefacts or sites. Project infrastructure and facilities are located so that they encroach upon or disturb places of cultural significance. <u>Operations / Decommissioning:</u> <ul style="list-style-type: none"> Project workforce and operations / decommissioning equipment encroach on culturally significant locations during routine operations and decommissioning. 	No artefacts or sites included in national state or regional heritage registers or databases.	None	None	None	Arrow will implement a CHMP that will address all aspects of avoidance, mitigation and management of potential impacts to non-Indigenous cultural heritage values in the Project area [B557].	None	None	None
	Artefacts and sites of local significance.	Possible	Major	Medium		Unlikely	Minor	Low

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Potential Impacts	Cultural Heritage Values	Pre-mitigated Impact			Proposed Mitigation Measures	Residual Impact		
		Likelihood	Consequence	Risk of Impact		Likelihood	Consequence	Risk of Impact
Accidental Disturbance of Unknown non-Indigenous Cultural Heritage Artefacts and Sites								
<p><u>Construction:</u></p> <ul style="list-style-type: none"> Clearing and earthworks for development of Project facilities cause accidental disturbance, damage or destruction of culturally significant artefacts or sites. Project infrastructure and facilities are located so that they encroach upon or disturb places of cultural significance. 	No artefacts or sites included in national state or regional heritage registers or databases.	Unlikely	Severe	High	As part of the Arrow CHMP, a 'chance finds' procedure will be implemented for the discovery of unknown sites during construction [B565]. This will include a stop work requirement upon initial discovery, appropriate reporting and recording, and management measures such as avoidance, salvage or destruction [B565].	Unlikely	Major	Medium
	Artefacts and sites of local significance.	Possible	Major	Medium		Unlikely	Minor	Low