

**Cultural Heritage Impact Assessment
Arrow Bowen Pipeline Environmental Impact Statement,
Central Queensland**

Prepared for

Arrow Bowen Pipeline Pty Ltd

Prepared by

Central Queensland Cultural Heritage Management Pty Ltd (CQCHM)

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Acronyms

Aboriginal Party(ies) native title group or those individuals who, meeting the criteria specified in the ACH Act 2003, are accorded various procedural rights under the terms of the Act.

ABP Arrow Bowen Pipeline

ACH Act the *Aboriginal Cultural Heritage Act 2003*.

CHIMS is Cultural Heritage Information Management System managed by DEM being a list of those places that might be of historical heritage interest throughout Queensland.

CHMP Cultural Heritage Management Plan negotiated between a sponsor and endorsed parties pursuant to provision of Part 7 of the ACH Act.

DERM is the Department of Environment and Resource Management (Qld).

Endorsed Parties are those Aboriginal Parties who have responded in a timely manner to notices issued pursuant to provisions of Part 7 of the ACH Act and have been granted the status of endorsed parties for the purpose of developing a CHMP.

HHMP Historic Heritage Management Plan

ICHR and D is the Indigenous Cultural Heritage Register and Database held by DERM.

ILUA Indigenous Land Use Agreement negotiated between native title claimants and development proponents to secure land access rights for a project under provisions of the Native Title Act 1998.

NHL is National Heritage List.

Project is as described in section 1 of this report.

RNE is the Register of the National Estate.

Registered Place a place that has been entered on to the Queensland Heritage Register created under provisions of the Queensland Heritage Act 1992.

EXECUTIVE SUMMARY

Arrow Bowen Pipeline Pty Ltd (the proponent), proposes to construct a gas transmission pipeline from coal seam gas fields in the Bowen Basin to a proposed LNG facility at Gladstone. The project, known as the Arrow Bowen Pipeline (hereafter referred to as ABP), is a component of the larger Arrow LNG Project.

As a preface to these planned expansions, Arrow is preparing a voluntary Environmental Impact Statement (EIS) that examines the Project. This report constitutes a summary of the Cultural Heritage Impact Assessment Study completed for the ABP Project.

There are two separate, but interlinked, objectives of the Cultural Heritage Impact Assessment Study. Firstly, it is to provide a baseline understanding of the known and potential Aboriginal and historical cultural heritage landscape of the project development area. Secondly, it is to design and set in place a strategy and management regime for cultural heritage that is consistent with the provisions of relevant State legislation and the Terms of Reference for the Project EIS.

The review of a range of cultural heritage information was undertaken. This included State and Commonwealth heritage databases, lists and registers, as well as a range of other documentary information (including impact assessment reports and a range of ethno-historic and archaeological sources at both local and regional levels).

From this it is clear that the project development area contains a rich and varied cultural landscape that is of particular significance to the local Aboriginal communities. The cultural signature of this landscape has expression in two separate but intrinsically linked spheres: that relating to traditional and spiritual association; and that resulting from the everyday use and occupation of that landscape. The project development area has places from both of these spheres known to exist.

The review was able to identify in excess of 350 individual places containing Aboriginal cultural heritage within 1,000m of the centreline. These places are part of a larger cultural landscape for which many more similar places are known to exist beyond those identified within the review. This wider knowledge has also informed an understanding of the nature, form and location of other cultural heritage places that may be expected to be located within the project development area and may be identified and recorded as part of further cultural heritage studies undertaken as part of the Project.

Arrow fully appreciates that the Aboriginal Parties retain a strong interest in ensuring that the cultural heritage areas, objects and values identified throughout the project development area are managed in an appropriate fashion and with their direct input.

Wherever possible, Arrow anticipates that this will be done by conservation of the area or object/s *in situ* and avoidance of impact, consistent with the Avoidance Principle which the ACH Act mandates as a central tenet in the development of management plans. A range of other management strategies, including controlled removal and storage of cultural objects, will also likely be required on a case-by-case basis. In this, it has been anticipated that the Aboriginal Parties will require the implementation of a management process that embodies appropriate mechanisms for the management of their cultural heritage. Arrow is committed to providing the opportunity to achieve this outcome through an agreement-based process that is also compliant with the provisions of the ACH Act.

Arrow can comply with the ACH Act duty of care for the ABP Project either through suitable Native Title agreement/s that do not expressly exclude cultural heritage or through an approved Cultural Heritage Management Plan (CHMP). Arrow recognises that cultural heritage is an element of Native Title and is not opposed to using an Indigenous Land Use Agreement (ILUA) as a vehicle for addressing cultural heritage issues. However, if an ILUA is not completed in accordance with the project timetable or cannot be registered, or if Arrow forms the view that such is unlikely to be achieved, Arrow will be required to comply with Part 7 of the ACH Act in another manner (i.e. development of approved CHMPs).

Recognising the constraints and limitations of the information reviewed and compiled regarding the Aboriginal cultural heritage of the project development area to which it has had access in the preparation of the EIS, Arrow will formally commission and provide resources to each of the Aboriginal / Endorsed Parties to identify major places that they consider might be affected by proposed development activities within the project development area. The terms of reference for these constraints statements will be intentionally broad so as to allow those people who elect to take the greatest opportunity to describe any areas, objects and values about which they have concerns. The resultant data will then be factored into more detailed Project design so as to give effect to the Avoidance Principle.

Arrow fully appreciates that the management of Aboriginal cultural heritage is an issue that will require ongoing management throughout the course of implementing the project. It is expected that most Aboriginal / Endorsed Parties will express a desire to exercise a primary role in the management of this heritage. Arrow is determined to give this desire the greatest expression in its management process, subject only to the willingness of Aboriginal / Endorsed Parties to engage with Arrow in a collaborative approach.

In relation to historical cultural heritage, it is noted that there are no places on the Queensland Heritage Register, in CHIMS, or on any Commonwealth heritage lists, that will be affected by the proposed project. Notwithstanding this, Arrow will commission a comprehensive study of the proposed route to identify any places of historical heritage significance. This will be done in line with a Terms of Reference developed in consultation with DERM. Management plans will be developed for all sites identified, again in consultation with DERM and managed in accordance with these plans for the duration of the project. These arrangements have been captured in a draft Historic Heritage Management Plan that is appended to this report. The preferred management strategy will be the Avoidance Principle.

1 INTRODUCTION AND BACKGROUND

1.1 PROJECT DESCRIPTION

1.1.1 Proponent

Arrow Bowen Pipeline Pty Ltd (the proponent), proposes to construct a gas transmission pipeline from gas fields in the Bowen Basin to a proposed LNG facility at Gladstone. The project, known as the Arrow Bowen Pipeline (hereafter referred to as ABP), is a component of the larger Arrow LNG Project.

The proponent is a subsidiary of Arrow Energy Pty Ltd, which in turn is a subsidiary of Arrow Energy Holdings Pty Ltd which is a joint venture company wholly owned by subsidiaries of Royal Dutch Shell plc and PetroChina Company Limited.

1.1.2 Project description

The location and elements of ABP are depicted in Figure 1. With a mainline and several laterals, the ABP is approximately 580km in length. Commencing about 20km northwest of Glendon, Central Queensland (the Newlands mining area), the mainline runs in a generally southeasterly direction. Traversing southeast to Rockhampton (and running between Gracemere and Kabra) the ABP then runs to an area 9km southeast of Mt Larcom. The main line is almost 490km in length and has been designated as the Rev D main line alignment. From this point, the route travels in a generally easterly direction terminating to the northwest of Gladstone, Central Queensland.

At AB96 of the mainline near Peak Downs Highway, a connection (referred to as the ‘Elphinstone Lateral (EL)’) extends an additional 52km to the north. Further to the south in the Dysart area, are a further two proposed lateral pipelines (referred to as the ‘Saraji Lateral’ (SL) at AB137 and ‘Dysart Lateral’ (DL) at AB173) both extend westerly from the mainline some 13km and 12km respectively.

The project involves the following components. It will consist of a 1070mm nominal diameter pipeline situated on a 30m wide operational easement. The pipe will be laid in a trench with 750mm of cover, but in key locations (notably water crossings and the like) it will have at least 1200mm of cover. In addition to the pipeline there will be a series of main line valves, scraper stations, cathodic protection and a connection to a gas gathering station at the southern end of the pipeline.

1.1.3 Cultural Heritage Impact Assessment Study

Section 4.9 of the Terms of Reference (ToR) issued for the Arrow Bowen Pipeline by the Department of Environment and Resource Management of the State of Queensland (DERM) outline the requirements for the Cultural Heritage Impact Assessment Study.

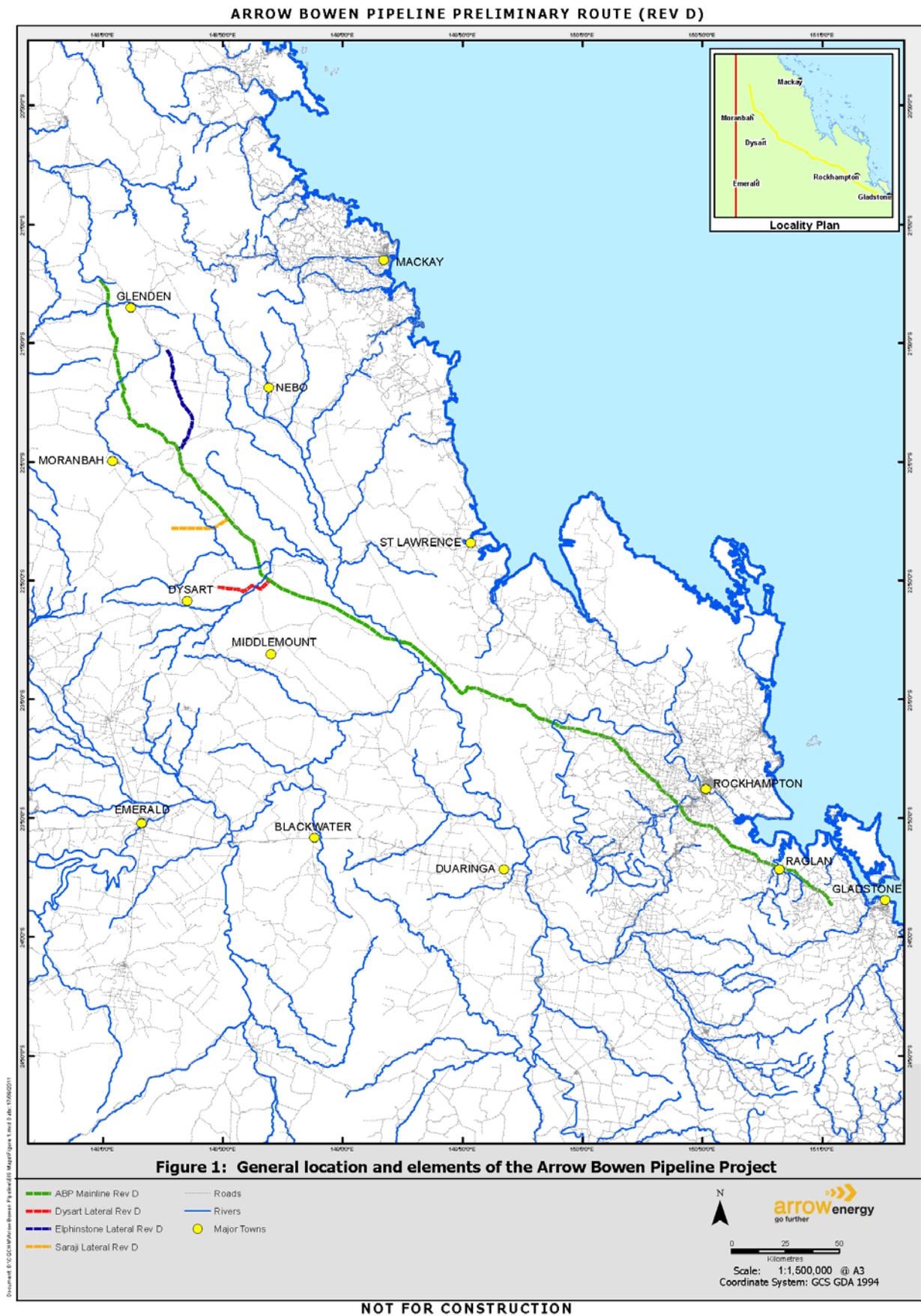


Figure 1 General location and elements of the Arrow Bowen Pipeline – Rev D.

With respect to Aboriginal cultural heritage, the ToR only required that the proponent either obtain an exemption under s86 of the Aboriginal Cultural Heritage Act 2003 (ACH Act) by virtue of use of native title agreement of a form approved by the ACHA or develop a Cultural Heritage Management Plan (CHMP). DERM's EIS coordinator was to be made aware of progress in relation to the above, and any related issues should be addressed in the EIS report. In addition to this task, the following tasks were also undertaken in relation to Aboriginal cultural heritage and are described in this report:

- Review relevant Australian legislation, policy and guidelines regarding Aboriginal cultural heritage and assess its implications for the ABP Project.
- Review existing information (such as previous reports, literature and databases) to identify known areas of Aboriginal archaeological and/or cultural importance in the project development area;
- Assess the results of previous cultural heritage studies conducted within or in reasonable proximity to the project development area;
- Settle a process for consulting with Aboriginal Parties to further identify areas of cultural significance; and management measures that are appropriate in the project development area;
- Identify, assess and map currently known areas of Aboriginal archaeological and/or cultural significance in the project development area;
- Highlight issues to be addressed in CHMP or Native Title agreements;
- Prepare an Aboriginal Cultural Heritage Impact Assessment Study report documenting the work, including background information, methodology, data sources, assessment results, assumptions, potential impacts and issues, proposed impact mitigations, permitting requirements, conclusions and recommendations.

In respect of non-Indigenous cultural heritage (otherwise referred to as historical cultural heritage in the ToR), the following requirements were set:

- At a minimum, a desktop study was to be undertaken documenting the known and potential historical cultural heritage values.
- This study was to be done by reference to the Queensland Heritage Registers, Local Government Authority Registers and the results of previous cultural heritage studies. There was to be consultation with local property owners (although this would obviously not be possible in the context of a desktop study).
- Any archaeological investigation was to record and assess all types of historical places. The discovery and protection of any unidentified places was to comply with Part 9 of the *Queensland Heritage Act 1992* (QH Act).

- An Historical Heritage Management Plan (HHMP) was to be developed for the project. It was to provide a process for the mitigation, management and protection of any places discovered during excavation, construction operations, rehabilitation and decommissioning phases of the project. It was to provide a process for reporting as per section 89 of the QH Act. It was to provide procedures for collection of artefacts discovered during the above. It was also to provide for a process of Historical cultural heritage awareness training for project personnel provided during site induction and which was to outline the HHMP and its procedures, and be accompanied by a plain English manual for project personnel so inducted. The HHMP was to be included in the Project Environmental Management Plan.

2 LEGISLATIVE LANDSCAPE AND SIGNIFICANCE ASSESSMENT

Human use and occupation of Australia extends back in the order of 50,000 years ago. During this time, people created areas, objects and values that make up Australia's cultural heritage record. This record consists mainly of the activities of Aboriginal people, Torres Strait Islanders and Europeans, but also includes other cultural groups such as Macassan fishermen from Indonesia (Northern Australia), Kanaka or South Sea Islander plantation workers from the western Pacific (Queensland) and Chinese gold prospectors (Australian mainland).

The significance of areas, objects and values that comprise the cultural heritage record varies considerably, and can be measured depending primarily upon their historical, scientific, cultural, social, educational, economic and aesthetic values. However, the integrity and significance of cultural heritage areas, objects and values can be jeopardised by natural (e.g., erosion) and human (e.g., development) activities. In the case of human activities, a range of state and Commonwealth legislation exists to promote the preservation and appropriate management of elements of cultural heritage values. The following discussion is provided so that there is a clear understanding of legal issues and assessment processes as they pertain to the areas to be affected by the proposed project.

2.1 Legislation and Legal Responsibilities

A range of Commonwealth and state legislation exists to provide protection for Indigenous and historical cultural heritage. These acts have direct relevance to the proposed project. Within this section, Commonwealth legislation is reviewed first and then attention is turned to relevant State legislation.

2.1.1 Commonwealth Legislation

Environmental Protection and Biodiversity Conservation Act, 1999 (as amended 2003)(EPBC)

Amendments to the EPBC Act in 2003 saw the *Australian Heritage Commission Act* repealed and the Australian Heritage Commission (AHC) disbanded. The Register of the National Estate (RNE) was maintained and, initially continued to operate in substantially the same manner as it did previously. It is now overseen by a new body called the Australian Heritage Council and operates under the cultural and natural heritage management provisions of the EPBC Act.

The principle directive of the EPBC Act is to provide a holistic piece of legislation that facilitates environmental protection and biodiversity conservation generally, and specifically Matters of National Environmental Significance (MNES). These matters have been clearly defined and include:

- World Heritage properties;
- Wetlands of international importance (RAMSAR wetlands);
- Listed threatened species and ecological communities;
- Listed migratory species;
- Protection of the environment from nuclear actions;
- The Marine Environment (principally Commonwealth marine areas); and as from January 2004
- National Heritage places.

In addition to these specified areas, there is also scope to cover and consider any other additional matters deemed to be of National Environmental Significance. These can be prescribed by regulation.

The EPBC Act introduced new national environmental assessment and approvals processes and integrated the management of important natural and cultural places under the act which constitutes a parallel environmental assessment and approval system to state systems.

The EPBC Act regulates proponents directly for MNES that are located within the states. A person must not take an action that has, will have, or is likely to have a significant impact on a MNES, except where certain processes have been followed and/or certain approvals obtained. The same also applies to actions undertaken within Commonwealth areas; or on lands outside Commonwealth areas where a significant impact would result on the Commonwealth area; or on land anywhere in the world where the action is taken by the Commonwealth.

Subsidiary legislation for the EPBC includes the following.

Environment and Heritage Legislation Amendment Act (No. 1) 2003

This amended the EPBC Act to include 'National Heritage' as a new matter of National Environmental Significance and enables the protection of listed places. Such listed places are co-operatively managed with state governments and private owners where appropriate.

Two heritage lists were established under this act: the National Heritage List and the Commonwealth Heritage List. The latter list consists solely of heritage places owned or managed by the Commonwealth, and the National Heritage List records natural, Indigenous and historic places deemed as having 'outstanding' heritage values.

The National Heritage List's nomination and assessment process is an open one with any information provided during the consultation phase having to be brought to the attention of the Minister. The Australian Heritage Council assesses whether or not a nominated place has heritage values against the relevant criteria and makes a recommendation to the Minister on that basis.

In the case of Indigenous heritage places entered on the National Heritage List, the Commonwealth has the power to protect them irrespective of land tenure.

The Indigenous heritage value of a place is defined under the EPBC Act as the 'heritage value of the place that is of significance to Indigenous persons in accordance with their practices, observances, customs, traditions, beliefs or history'. With regard to Native Title, the EPBC Act amendments make clear that its provisions in no way affect s.211 of the *Native Title Act 1993* in that holders of Native Title rights covering certain activities do not need authorisation under the EPBC Act to continue to engage in those activities.

Australian Heritage Council Act 2003

This Act established the Australian Heritage Council, mandated as the **replacement body** for the Australian Heritage Commission as the principle expert advisory body to the Commonwealth Minister for the Environment, Heritage and the Arts on heritage issues.

The RNE continues as a statutory register until February 2012. During this period the Minister for the Sustainability, Environment, Water, Population and Communities (DSEWPaC) is required to continue considering the Register when making some decisions under the EPBC Act. As it currently stands, the Register consists of more than 21,000 Indigenous, natural and historic heritage places around Australia that have been compiled since 1976. In excess of 13,000 of these have been formally registered, some 900 of which are for their Indigenous values.

Australian Heritage Council (Consequential and Transitional Provisions) Act 2003

The last of the three 2003 heritage Acts was the *Australian Heritage Council (Consequential and Transitional Provisions) Act 2003*. This is the act that repealed the Australian Heritage Commission Act and allowed for the transition to the new heritage system under the EPBC Act – see above.

Aboriginal and Torres Strait Islander Heritage Protection Act 1984

The *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (ATSIHP Act) was originally introduced as interim legislation in 1984 and made permanent in 1986. This legislation has for some time been under review and this is still the case. Significant modifications have been included in the

proposed legislation known as the *Aboriginal and Torres Strait Islander Heritage Protection Act 1998* (see below).

As currently enacted, the ATSIHP Act provides Aboriginal people in any state (with certain caveats pertaining to Victoria) with the right to request the Commonwealth Minister for the Environment, Heritage and the Arts to intervene in matters where the traditional cultural heritage interests of these people are considered to be at risk. Only Aboriginal people or their agents can make use of the provisions of this Act. The Minister has discretionary powers as to whether to intervene in any particular case. In any event, processes of negotiation and mediation must be exhausted before the Minister would consider initiating a Long-term Protection Order.

The ATSIHP Act does not seek to define how significance will be determined, except that it is to be in accordance with Indigenous tradition, custom, observances or beliefs. In addition to this, the ATSIHP Act does not limit the type or nature of the place for which a declaration can be sought. It is similarly broad in its definition of what constitutes a significant Aboriginal area describing this as:

“ . . . an area of land in Australia or in or beneath Australian waters . . . being an area of particular significance to Aboriginals in accordance with Aboriginal tradition. . . ”

It also specifies what constitutes injury or desecration of an area or object and is similarly broad in its definition: any use or treatment that is inconsistent with Indigenous tradition constitutes desecration or injury.

The ATSIHP Act seeks to provide Indigenous people with a primacy in making assessments of significance. The Crown is bound by all provisions of the ATSIHP Act.

It is generally acknowledged that the legislation has not been successful and that it is not in accord with contemporary practice. It is at odds with the relationships and protocols that have become the standard between Government agencies, developers and representative Indigenous organisations for the protection of Indigenous cultural heritage.

In August 2009 the Commonwealth released a Discussion Paper (Commonwealth Department of Environment, Water, Heritage and the Arts [DEWHA], 2009) on the ATSIHP Act setting out its perceived shortcomings and the need for reform and calling for submissions from the public. The Discussion Paper (DEWHA 2009:7) sets out a series of proposals:

. . . designed to clarify responsibilities for protecting Indigenous heritage, to set standards of best practice nation-wide, to remove duplication of state and territory decisions that meet the standards, and to improve processes for Australian Government decisions about protection when the standards are not met.

2.1.2 State Legislation

There are two pieces of state cultural heritage legislation: the *Queensland Heritage Act 1992* (QH Act) and the *Aboriginal Cultural Heritage Act 2003* (ACH Act). The QH Act generally covers items from the historic environment. Although containing provisions for the protection of Indigenous cultural heritage, items that derive their significance solely from their association with Aboriginal custom or tradition are excluded from protection under the QH Act. The ACH Act implemented in April 2004, deals with all areas and objects of Aboriginal cultural heritage significance.

Queensland Heritage Act 1992 (QH Act)

The provisions of the QH Act primarily protect places that have been entered onto the Queensland Heritage Register (QHR) from unauthorised development, although this protection can also be extended to ‘archaeological sites’ that are not on the QHR. There are provisions for the authorisation and regulation of development activities on such places. In this the QH Act specifies the measures that must be taken by the state to develop a registered place, as well as the provisions under which an owner, occupier, lessee or trustee may seek an exemption certificate where the work planned is of a complying nature.

The provisions of this Act protect places that have been entered onto the Queensland Heritage Register from unauthorised development. Section 23(1) of this Act states that a place may be entered on the Queensland Heritage Register if it is of cultural heritage significance, and if it satisfies one or more criteria. Cultural significance of a place or an object is defined in this Act to mean ‘its aesthetic, historic, scientific or social significance, or other special value, to the present community and future generations’. Items with cultural significance value must also satisfy one of the following criteria in order to be eligible for placement on the Heritage Register:

Criterion A: the place is important in demonstrating the evolution of pattern of Queensland's history.

Criterion B: the place demonstrates rare, uncommon or endangered aspects of Queensland's cultural heritage.

Criterion C: the place has potential to yield information what will contribute to an understanding of Queensland's history.

Criterion D: the place is important in demonstrating the principle characteristics of a particular class of cultural practice.

Criterion E: the place is important in exhibiting particular aesthetic characteristics valued by the community or a particular cultural group.

Criterion G: the place has a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.

Criterion H: the place has special association with the life or work of a particular person, group or organisation of importance in Queensland's history.

This Act can also extend protection to items that are not on the Queensland Heritage Register. As well as declarations of Protected Relics that can cover submerged features (Division 1, Part 7), protection can be extended to archaeological sites. Such sites can be declared an Area of Archaeological Interest and it is an offence to cause a disturbance in such a declared area without permit (Division 2, Part 7).

There is also provision for emergency protection for items that are neither on the Heritage Register nor declared Protected Relics or Areas of Archaeological Interest. Under s.58 the Minister may make a stop work order to prevent any work or activity which might affect the cultural significance of a place. Contravention of a stop work order carries heavy penalties (s.59). Section 61 of the Act expressly excludes the application of the provisions of the Act to a place that is of cultural heritage significance solely through its association with Aboriginal tradition. This is usually taken to mean that places, such as Aboriginal reserves or missions, could be registered because they potentially meet one or other of the various criteria noted above, but that a sacred site could not be unless it met one or more of those criteria.

Aboriginal Cultural Heritage Act 2003

Under the ACH Act, the definition of Aboriginal cultural heritage items and places has been significantly broadened from the previous Queensland Aboriginal cultural heritage legislation to include areas and objects where there is no physical manifestation of human use, but that are culturally significant to Aboriginal people. It also covers places of archaeological or historical significance as well. Moreover, rather than focusing on a 'site', the general area of cultural sensitivity that might include a 'site' constitutes the Aboriginal cultural place that can be protected under the ACH Act.

Specifically, the ACH Act states that areas and objects covered by its provisions must comply with the following criteria (ss8-12 ACH Act):

“Aboriginal cultural heritage” is anything that is—

- (a) a significant Aboriginal area in Queensland; or
- (b) a significant Aboriginal object; or
- (c) evidence, of archaeological or historic significance, of Aboriginal occupation of an area of Queensland.

9 *Meaning of “significant Aboriginal area”*

A **“significant Aboriginal area”** is an area of particular significance to Aboriginal people because of either or both of the following—

- (a) Aboriginal tradition;
- (b) the history, including contemporary history, of any Aboriginal party for the area.

10 *Meaning of “significant Aboriginal object”*

A **“significant Aboriginal object”** is an object of particular significance to Aboriginal people because of either or both of the following—

- (a) Aboriginal tradition;
- (b) the history, including contemporary history, of an Aboriginal party for an area.

11 *Extension of evidence of occupation to surroundings*

If a particular object or structure is evidence of Aboriginal occupation, the area immediately surrounding the object or structure is also evidence of Aboriginal occupation to the extent the area can not be separated from the object or structure without destroying or diminishing the object or structure’s significance as evidence of Aboriginal occupation.

12 *Identifying significant Aboriginal areas*

(1) This section gives more information about identifying significant Aboriginal areas.

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

(3) For example, the area might be a ceremonial place, a birthing place, a burial place or the site of a massacre.

(4) Also, if significant Aboriginal objects exist in an area and the significance of the objects is intrinsically linked with their location in the area—

(a) the existence of the objects in the area is enough on its own to make the area a significant Aboriginal area; and

(b) if it is reasonably appropriate under this Act, the immediate area and the objects in it may be taken to be, collectively, a significant Aboriginal area.

(5) For identifying a significant Aboriginal area, regard may be had to authoritative anthropological, biogeographical, historical and archaeological information.

As the primary knowledge holders regarding cultural heritage (Section 5(b)), and as Sections 7 and 8 of the ACH Act make clear, the primary determinant of significance of an area or object resides with the Aboriginal Parties, consistent with their tradition. The ACH Act (see Section 12(5)) notes that regard may also be had to various sources of information such as authoritative anthropological, biogeographical, historical and archaeological information in identifying significant areas. This provision must be read in a fashion which is consistent with other clauses of the act in which there is a recognition that Aboriginal people are the primary guardians, keepers and knowledge holders of Aboriginal cultural heritage. It is for this reason that the ACH Act notes that consideration *may* be given to such information.

The ACH Act (Sections 34 and 35) creates a clear hierarchy of who constitute the Aboriginal Party for any particular area wherein an activity is to take place. There are two categories of Aboriginal Party: Native Title Aboriginal Parties and non-Native Title Aboriginal Parties. There are varying methods of notifying these parties dependent on the category of party and the nature of the proposed activity.

Within the category of Native Title Aboriginal Parties, there are three sub-categories. These operate as a descending and exclusive hierarchy:

1. Determined Native Title holders - where such exists they constitute the exclusive Aboriginal Party for an area;
2. Registered Native Title claimants - in the absence of determined Native Title holders, registered claimants [sic] constitute the exclusive Aboriginal Party for an area;
3. Non-registered Native Title claimants - in the absence of the former two categories existing but there having previously been a claim at the time the ACH Act came into operation that is no longer registered and:
 - the claim failed but there are no other registered Native Title claimants; or
 - Native Title was surrendered under the terms of an Indigenous Land Use Agreement (ILUA); or
 - Native Title was compulsorily acquired,

The non-registered claimants represent the exclusive Aboriginal Party for an area until such time as a claim is registered over the area, whereon the non-registered claimants lose their status as Aboriginal Parties to the extent of the registered claim.

Where there are no Native Title Aboriginal Parties, the ACH Act provides for non-claimant Aboriginal Parties under s.35(7). Section 35(7) states:

(7) If there is no Native Title party for an area, a person is an “Aboriginal party” for the area if—

(a) the person is an Aboriginal person with particular knowledge about traditions, observances, customs or beliefs associated with the area; and

(b) the person—

(i) has responsibility under Aboriginal tradition for some or all of the area, or for significant Aboriginal objects located or originating in the area; or

(ii) is a member of a family or clan group that is recognised as having responsibility under Aboriginal tradition for some or all of the area, or for significant Aboriginal objects located or originating in the area.

As the ACH Act is silent on how such matters will be established, or who can decide them, this category is effectively an invitation to any person to self-identify.

The ACH Act specifies how Aboriginal Parties are to be contacted where a project falls under provisions of Part 7: that is, where a project falls within the terms of Sections 87-89 (i.e. where an EIS or other environmental authority is required for a project or where a Cultural Heritage Management Plan (CHMP) is otherwise required under planning legislation). Where a project does not fall within these parameters the ACH Act is silent on means of identifying those individuals who would meet the definition of non-Native Title Aboriginal Parties, and for contacting any category of Aboriginal Party.

Under the ACH Act, harm arises to a cultural area or object not simply from the actual nature of the action or decision, but whether the duty of care has been met in the terms prescribed in Section 23. That is, the degree of impact is relevant in determining harm, but no illegal action has been done, irrespective the nature or scale of an activity and its impact on a cultural heritage area or object, if an individual or company has met the duty of care. This is made explicit by the following sections of the ACH Act.

Section 23(1) states:

*A person who carries out an activity must take all reasonable and practicable measures to ensure the activity does not harm Aboriginal cultural heritage (the “**cultural heritage duty of care**”).*

Section 23 (3) further notes that:

A person who carries out an activity is taken to have complied with the cultural heritage duty of care in relation to Aboriginal cultural heritage if—

(a) the person is acting—

(i) under the authority of another provision of this Act that applies to the Aboriginal cultural heritage; or

(ii) under an approved cultural heritage management plan that applies to the Aboriginal cultural heritage; or

(iii) under a Native Title agreement or another agreement with an Aboriginal party, unless the Aboriginal cultural heritage is expressly excluded from being subject to the agreement; or

(iv) in compliance with cultural heritage duty of care guidelines; or

(v) in compliance with Native Title protection conditions, but only if the cultural heritage is expressly or impliedly the subject of the conditions; or

(b) the person owns the Aboriginal cultural heritage, or is acting with the owner’s agreement; or

(c) the activity is necessary because of an emergency, including for example, a bushfire or other natural disaster.

Section 24(1) then states:

A person must not harm Aboriginal cultural heritage if the person knows or ought reasonably to know that it is Aboriginal cultural heritage.

Under Section 24(2), the ACH Act then goes on to add that:

A person who harms Aboriginal cultural heritage does not commit an offence under subsection (1) if—

(a) the person is acting—

(i) under the authority of another provision of this Act that applies to the Aboriginal cultural heritage; or

- (ii) under an approved cultural heritage management plan that applies to the Aboriginal cultural heritage; or*
- (iii) under a Native Title agreement or another agreement with an Aboriginal party, unless the Aboriginal cultural heritage is expressly excluded from being subject to the agreement; or*
- (iv) in compliance with cultural heritage duty of care guidelines; or*
- (v) in compliance with the cultural heritage duty of care; or*
- (vi) in compliance with Native Title protection conditions, but only if the Aboriginal cultural heritage is expressly or impliedly the subject of the conditions; or*
- (b) the person owns the Aboriginal cultural heritage, or is acting with the owner's agreement; or*
- (c) the harm is the result of doing an act that is necessary because of an emergency, including for example, a bushfire or other natural disaster.*

The ACH Act provides transitional arrangements whereby existing agreements or other cultural heritage arrangements continue to have standing and will constitute compliance with the cultural heritage duty of care (see Sections 164 and 167, in relation to existing arrangements).

Arrow is required to prepare an EIS for the project based on the successful application to DERM to prepare a voluntary EIS pursuant to the *Environmental Protection Act 1994* and is therefore required to meet provisions of Part 7 of the ACH Act. In this case, and subject to qualifications under Section 86 of the ACH Act, the only means by which the duty of care can be satisfied is the preparation of an approved CHMP. Part 7 specifies in some detail the means by which Aboriginal Parties and others must be notified. It also sets timeframes for the completion of various tasks by various parties. Importantly, it explicitly places the responsibility for the development of an approved CHMP on the Sponsor (for our purposes, the development proponent, in this case Arrow). It also requires Aboriginal Parties to seek endorsement within a specified period of time (the notification period), if they wish to assist in the development of the CHMP. There are also provisions for seeking approval of the CHMP where the Sponsor and Endorsed Parties fail to reach agreement on the provisions of the CHMP.

The ACH Act countenances a CHMP being one of two types. It can be developed as an investigation and management process document or alternatively as a cultural place management document (usually developed following the conclusion of cultural heritage investigations). In the case of the former, the major fieldwork component would only be undertaken once the project received sanction and would be initiated in line with the conditions agreed in the CHMP.

Any cultural heritage investigations that may be required in advance of project sanction and settlement of the CHMP could be undertaken on the basis of separate agreements undertaken with the Aboriginal Parties and as such would constitute s.23(3)(a)(iii) 'another agreement' as provided for in the ACH Act.

The requirement to implement the provisions of Part 7 are, however, conditional on provisions of Section 86 of the ACH Act not applying. Section 86 of the ACH Act states that the provisions of Part 7 do not apply if there is either a NT agreement of a type specified in the ACH Act or there is an agreement or arrangement in place that meets the transitional provisions of the ACH Act – notably Section 164 or Section 167 (which, as has been noted, do not pertain). If Section 86 of the ACH Act were to apply, through settlement of an ILUA, it is only necessary that this agreement does not expressly exclude cultural heritage issues for the duty of care to be met through the agreement.

The ACH Act provides for the Minister to issue stop orders (Section 32) where there is a risk of, or actual, harm being done to, Aboriginal cultural heritage. It also provides for Aboriginal people to assert ownership of certain classes of cultural heritage in some limited circumstances.

Access to land for the purposes of conducting any necessary investigations can be effected by reference to Section 153 of the ACH Act. Under this section, where the Sponsor has secured access to the relevant area under provisions of other legislation, those wishing to undertake cultural heritage investigations required for a CHMP may avail themselves of the authority to enter granted by the other legislation.

The ACH Act also makes numerous other provisions. These include, among other things: ownership of certain classes of cultural heritage or of cultural heritage in certain circumstances; requirements to tender information required to implement an approved CHMP; and requirements to advise the Chief Executive of DERM of the discovery of human remains.

2.2 Native Title and Cultural Heritage

Cultural heritage is an integral component of an individual's and a group's Native Title rights. Indeed, it is often a central component of a Native Title claim, with ownership and the right to manage it asserted as part of such claims. Moreover, knowledge of cultural heritage and active management of that heritage often constitute important means of demonstrating the continuity and practice of Native Title. Activities that diminish the cultural values of a cultural heritage area or object could, therefore, directly and deeply impact on a person's Native Title. Those who carried out such activities might be liable to provide compensation for any action that caused such a diminution of Native Title rights (including cultural heritage) unless appropriate provisions have been made, consistent with requirements of the *Native Title Act*.

A fundamental point to note, however, is that cultural heritage concerns are not merely a simple subset of Native Title: they can stand apart from, and separate to, Native Title. Cultural heritage management, and the protection of cultural heritage areas, objects and values, is not predicated on the tenure of the land in question. Thus, while there may have been a series of lawful actions taken which might have diminished, suppressed or extinguished the Native Title rights of a person or group, this will not have necessarily diminished, suppressed or extinguished the cultural values that an area or object possesses and in which people may have a direct interest. The basis for this position lies in various definitions and criteria associated with Commonwealth legislation, notably the ATSIHP Act (Section 2.1), as well as clear statements made in relevant Territory and state legislation. The provisions of these Acts to protect Aboriginal cultural heritage values are in no way predicated on Native Title, and continue despite recent legislative developments in relation to Native Title at both state and Commonwealth levels.

2.3 Significance Assessment

The assessment of the significance of cultural heritage areas, objects and values, both potential and realised, are fundamental to cultural heritage management planning. They can be assigned to particular areas, objects and values, or to a grouping of areas, objects and values within an area. In the case of the latter, the importance of a cultural heritage area or precinct may be greater than the sum of its individual areas, objects and values. Cultural heritage significance is the value of cultural heritage areas, objects and values to our society and us. The determination of significance varies somewhat across legislation, and ultimately is a wholly subjective assessment.

The Burra Charter describes another set of criteria for defining significance. The Burra Charter was developed by Australia ICOMOS and is endorsed by UNESCO for this purpose. The criteria by which the significance of cultural heritage areas, objects and values is assessed under the Burra Charter include

- Cultural and Social;
- Scientific;
- Historical;
- Educational and Economic; and
- Aesthetic.

Some of these significance criteria can be assigned a relative value from low to very high at the regional, state or national level. This process of significance assessment is employed nationally by

heritage consultants and by government agencies at both state and Commonwealth level. These criteria are outlined further below.

Cultural and Social Significance

If an area, object or value has importance for a particular cultural or ethnic group, either a majority or minority group (Lennon 1992:4), for religious, spiritual, or other symbolic reasons, it has social significance (Johnson 1992; Moratto and Kelly 1978:10). Areas, objects or values of social significance are usually important in maintaining a community's integrity and 'sense of place' (Hall and McArthur 1993a:8; Hodges 1993; King *et. al.* 1977:96). Thus, *all* places of traditional, historical or contemporary significance, as well as clearly defined 'archaeological sites' can be of great social significance to Aboriginal people, irrespective of any values, or lack thereof, that others may ascribe to them.

In the case of Aboriginal cultural heritage areas or objects as defined under the ACH Act, it has previously been noted (Section 2.1.2) that the primary determinant of significance resides with the Aboriginal Parties, consistent with their tradition.

Scientific Significance

The scientific significance of areas and objects represents their ability to furnish data on, and insights into, either past cultural activities (social, technological and ecological) and/or past natural/environmental conditions (see Bickford and Sullivan 1984; Moratto and Kelly 1978; Pearson 1984). For example, 'archaeological sites' provide information on human activities, particularly everyday lifeways, which are often not always available in documentary sources. Such insights apply equally to literate and non-literate societies. Similarly, such insights may concern questions of local culture history, span tens or even thousands of years, and reflect more general and theoretical questions relating to the evolution of cultural systems. Archaeological sites can also supply information on past climates and vegetation patterns (e.g., pollen grains) and past fauna (e.g., shell and bone remains). In general, the scientific significance of sites increases as their potential information content increases.

The scientific (in this case archaeological) significance of areas and objects can be determined 'according to *timely and specific research questions* on the one hand, and *representativeness* on the other' (Bowdler 1984:1, original emphasis). In terms of the former, detailed knowledge is required on the current state of play in academic archaeology - both in terms of local culture history and more general substantive, methodological and theoretical issues at the national and even international scale. Representativeness relates to the ability of a sample of areas or objects from a particular area to

represent as accurately as possible the range (and often frequency) of cultural heritage classes/types from a particular area (McMillan *et. al.* 1977:32). As Lipe (1984:30) notes:

A representative sample is designed to represent a large population of items in terms of a small selection of such items with a minimum bias in the selection.

As a general rule, the rarer the area or object is, the greater its significance. It is in this sense that ‘older’ areas and objects have tended to be assigned greater significance given that they tend to be rarer due to the vagaries of time and decay (Coutts and Fullagar 1982:61). However, an area exhibiting numerous similar (read common) places can have considerable significance as it may provide a rare opportunity to investigate past land and resource use patterns. In this instance, the significance of the area is also greater than the sum of its constituent places (see Bowdler 1983:40).

From a different perspective, representativeness also relates to maintaining the diversity of areas and objects for future generations. This notion helps offset the effects of pursuing particular types of cultural heritage areas and objects, and certain research questions, at a particular point in time, preserving things for the future when there may be different emphases and questions to pursue (King *et. al.* 1977:99).

Historical Significance

An area or object has historical significance if it is associated with a significant person(s), event(s) or theme(s). As Kerr (1990:10) notes, the first two

. . . may include incidents relating to exploration, settlement foundation, Aboriginal-European contact, disaster, religious experience, literary fame, technological innovation and notable discovery.

Historical significance may also include the ability of an area or object to be representative of major historical themes or cultural patterns from a particular historical period (Moratto and Kelly 1978:4). As a general rule, it can be taken that the more intact an area or object, including its setting, the greater its significance (Lennon 1992:4).

Educational and Economic Significance

Cultural heritage areas and objects may have important educational significance by providing opportunities for people to visit, examine and better appreciate the nature of these for themselves. Such opportunities not only have important or indeed profound social consequences in terms of maintaining a

community's identity, authenticity and sense of place (Lipe 1984:6), but also can have significant economic consequences in terms of cultural tourism (Hall and McArthur 1993b). From another perspective, the economic significance of areas and objects is increasingly becoming an issue competing with alternative land-use activities (e.g., development).

Aesthetic Significance

The aesthetic qualities of areas and objects relate to the visual appeal, however subjective, of the area or object and its setting (Kerr 1990:10). Despite the poorly defined nature of aesthetic significance, it remains an important criterion for official registration of heritage places in Australia (Schapper 1993).

3 DATA SOURCES AND METHODOLOGY – ABORIGINAL CULTURAL HERITAGE

The following sections of this report have been based upon the review, analysis and synthesis of a variety of information relating to the Aboriginal cultural landscape that includes the Project Area. This landscape has been considered as it relates to Aboriginal cultural heritage areas, objects and values that are known or are likely to be encountered throughout. For the purposes of this study, noting the limited data available for the immediate area of project impacts (see below) as well as wishing to ensure sufficient data were considered to suitably contextualise the project area (those locations where there will be some direct impact through development of the project), searches and analyses were undertaken on a far larger area than the project area.

This section reviews the data sources available for the consideration of the Aboriginal cultural landscape and the methodology for that review. It then makes note of the Geographic Information Systems (GIS) established in support of the study and which has been fundamental to the handling, manipulation, interpretation and display of the various strands of cultural heritage information considered in this Aboriginal Cultural Heritage Impact Assessment Study.

3.1 Cultural Heritage Areas, Objects and Values

The majority of information on the Aboriginal cultural heritage areas, objects and values derives from cultural heritage investigations undertaken as part of the impact assessment process associated with similar development projects. Additional information was also sourced from research projects, although these studies have generally been both few in numbers and highly restricted either geographically or in the class/classes of Aboriginal cultural heritage investigated.

Impact assessment studies have been undertaken within legislative parameters that have largely required the cultural heritage information deriving from them to be maintained and controlled by government agencies. Under Part 5 of the ACH Act this situation has been maintained with such information being controlled by the Cultural Heritage Coordination Unit (CHCU) of the Department of Environmental Resource Management (DERM).

The three principle sources of Aboriginal cultural heritage information maintained by DERM include the report catalogue which contains all cultural heritage studies undertaken under the various pieces of state cultural heritage legislation that have been in operation since the late 1960s (with the vast majority dating from the mid-1970s with the introduction of environmental impact legislation). Associated, but separate from this catalogue, is the 'site card index' which contains the greatest amount of detail regarding individual cultural heritage places recorded (whether as part of the EIS process, resulting

from research projects or otherwise) throughout Queensland (Section 4 provides further discussion regarding the access status of these data sources).

The Indigenous Cultural Heritage Register and Database (ICHR and D), searched as part of this Aboriginal Cultural Heritage Impact Assessment Study, have been compiled as a synthesis of both of these sources (specifically in the case of the Database) as well as the provisions of the ACH Act (under which both are a requirement). In recent years the ICHR and D has been incorporated as a layer in a GIS to provide greater flexibility in both its use and also control of the outputs provided. The resulting layer can be modified to output a variety of levels of information as determined appropriate by departmental staff and policy.

Under the provisions of the ACH Act, and other DERM policy, public access can be made to several of these data sources. Owing to the nature of Aboriginal cultural heritage information and the sensitivities inherent in the complex issues surrounding its existence, form, and cultural protocols, access is subject to various caveats (Section 4).

The Queensland Heritage Register (QHR) established under the QH Act consists of those places that are considered to possess heritage values that meet one or more of the criteria specified in the QH Act. Although these are primarily European historic heritage places, these places may also have or be associated with Aboriginal heritage values. Searches of the QHR are publicly available through the Cultural Heritage Branch within DERM, although if it is considered appropriate, specific information regarding the place or the values for which it has been listed (or is being considered for listing) does not necessarily need to be made publicly available. In addition to this internal search process, searchable web-based systems exist to enable the public to obtain further details regarding the heritage values of individual listed places. These place summaries contain background contextual information regarding the places that can prove useful in obtaining a more complete appreciation of a place's heritage values.

Separate to the QHR, the Cultural Heritage Branch within DERM maintains a further source of information on heritage places that have been reported as being significant. Known as their Cultural Heritage Information Management System (CHIMS), places within this are primarily entered following identification from a great range of documentation, but primarily heritage assessment studies. There is usually little contextual information about places so included and to date there has been no comprehensive process aimed at internal consistency and cross-checking current entries. It is however, generally considered as a place from which further heritage nominations can be initiated from and as such is a useful resource.

There are a number of Commonwealth heritage lists and registers that protect important heritage places throughout Australia. These include the National Heritage List, the Commonwealth Heritage List, the Register of the National Estate and the World Heritage List outlined earlier in the context of the EPBC Act (Section 2.1). These lists are administered by the Commonwealth Department of Sustainability, Environment, Water, Population and Communities (DSEWPC) and searches of these can also be undertaken. Unlike the QHR for example, places inscribed on these lists and registers can be included for a variety of values. These are most commonly broken in to three broad categories, natural, historic or Indigenous, with places usually listed for their outstanding values in one of these categories (although recent listings are tending to note multiple values) even though the place/area may also contain significant other values. The presence of these other values can rarely be ascertained from the search result summaries provided as a result of a standard search of the DSEWPC lists.

Like the QHR, there are also a series of searchable web-based databases that enable the user to locate and cross reference further details regarding a place and the values that are looking to be preserved by their inclusion in these various lists. While the summaries that can be obtained may make reference to a place having significant Aboriginal cultural heritage values, these may not necessarily be expounded in any depth owing to cultural restrictions or sensitivities.

Finally a range of cultural heritage information is, via a number of processes, already in the public domain (notably a great number of cultural heritage assessment reports and research syntheses). This information is housed in numerous places including private and professional collections, libraries and archives, and (more recently) by the Aboriginal Traditional Owner groups who either undertook or oversaw such work on their cultural heritage.

3.2 Information Sources Reviewed

As part of the review of Aboriginal cultural heritage information for this study the following was undertaken:

1. Formal application was made to the Cultural Heritage Coordination Unit within the Queensland Department of Environment and Resource Management for a search of the ICHR and D. As required, a GIS layer containing the ADSA was provided to DERM as part of this request (see also Section 4 below).
2. Request was also made to the Cultural Heritage Branch within the Queensland Department of Environment and Resource Management for a search of places on both the QHR and CHIMS. The necessary GIS layer was provided, as required, in support of this request.
3. Searches were made of the lists and register administered by DSEWPC for information relating to any listed or identified places within the ADSA study area. This included the World Heritage

List, the Commonwealth Heritage List, The National Heritage List and the Register of the National Estate.

4. Investigations and consultation with local government authorities regarding cultural heritage areas, objects and values that have been noted within their current planning schemes and/or development control plans;
5. The results of searches noted above in points 2, 3 and 4 were investigated in further detail using the available web-based heritage databases for other information relating to the presence of Aboriginal cultural heritage values.
6. Finally, a review was undertaken of material held in a range of publicly available archives, collections and publications for other Aboriginal cultural heritage information of relevance.

3.3 Project Geographic Information System

Where it has been possible to do so, the data that has been collated as part of these investigations has been placed in a project specific Geographic Information System (GIS). This GIS is based on ArcGIS / ArcView. A substantial amount of the discussions included in this report derives from the analyses of these datasets within the GIS. One of the primary advantages of GIS is that it allows for the multivariate analysis of a number of data sources and to provide the results of these in a variety of formats (principally tabular and graphical in the case of this report). Additionally, it is relatively easy and timely to expand, undertake new analyses and revise observations and interpretations as new data becomes available.

Similarly, as new cultural heritage information becomes available, it can be incorporated into the GIS and factored into recommendations relating to the impacts of the ABP upon those cultural heritage areas, objects and values. This also relates to any changes in the project, the effects of which can be rapidly assessed and planning modified as required.

The GIS can operate in a number of projections and datum depending upon the nature of the tasks or analyses being performed, but unless otherwise stated all of the mapping within this report is presented in MGA Zone 56 GDA94.

4 CONSTRAINTS AND LIMITATIONS – ABORIGINAL CULTURAL HERITAGE

There are number of constraints and limitations involved in the acquisition and access to many of the various sources of information used in this study and its levels of completeness and accuracy. These directly influence the levels to which it can be used, the questions that can be asked of it, and hence the conclusions that can be drawn.

The analysis, assessment and synthesis of cultural heritage information have been done exclusively on the basis of a desktop review of available information. A major issue resulting from this then becomes one of the sources that are available for a study of this kind (described in Section 3 above), and the limitations that should be borne in mind when attempting to use what can be obtained. Put simply, there is no definitive body of data available on the Aboriginal cultural heritage areas, objects and values. The vast majority of the pipeline route has not been the subject of systematic cultural heritage investigations. Indeed, with limited exceptions to which certain caveats apply, there have been no special studies of the Aboriginal cultural heritage values of the broader region. The major exceptions are studies of particular developments notably coal mines and associated infrastructure in the Bowen Basin and some other more limited mining developments further south, and various infrastructure and industrial developments, notably in the vicinity of Gladstone.

The review undertaken herein has drawn on sources of cultural heritage information that are disparate in nature. As outlined above, these sources include searches of various legislatively mandated state and Commonwealth cultural heritage place databases, registers and lists. Secondly, a range of published, unpublished and multimedia information sources has been reviewed, where data pertinent to the issues under review was included. Thirdly, a range of other privately held reports and databases were reviewed, and assistance sought from others who have undertaken work of relevance to the study area.

All of this data is limited in various ways. For instance, it might be considered that the ICHR and D maintained under the ACH Act would constitute the primary source of information relating to Aboriginal cultural heritage places in Queensland. Unfortunately, this would be a very poor appreciation of the origin of those sources. At the current time, this predominantly derives in the main, from the Aboriginal and Torres Strait Islander Heritage Places database developed by the various state agencies charged with carriage of cultural heritage legislation over the years since 1967. This database had its inception and further development in two pieces of legislation: the *Aboriginal Relics Preservation Act 1967* and the *Cultural Record (Landscapes Queensland and Queensland Estate Act) 1987* (CR Act). These pieces of legislation were flawed in numerous ways, but of particular relevance to the current investigations is the definition of what constitutes the Aboriginal cultural heritage that

was protected under these acts. In both cases, their primary, if not exclusive, focus was on material culture alone. For example, the CR Act framed cultural heritage in the following terms:

“Queensland Estate” means evidence of human occupation of the areas comprising Queensland at any time that is at least 30 years in the past but does not include anything –

- (a) made or constructed as a facsimile; or*
- (b) made or constructed at or after the commencement of this Act for the purpose of sale; or*
- (c) that is not of prehistoric or historic significance.*

“Item of the Queensland Estate” includes, in relation to any structure or object in, on or under land, the surrounds of the structure or object from which it cannot be separate without destroying or diminishing its value or significance.

The emphasis on material culture (objects or things) is of vital importance here as it heavily influenced the nature of the places that were covered by the act, becoming almost exclusively ‘archaeological sites’ such as stone artefacts, scarred trees, shell middens and the like. This directly affected the methodology, location and recording of Aboriginal cultural heritage areas, objects and values undertaken as part of assessments undertaken under the provisions of the legislation (not to mention more generally within Queensland), and thereby included on the resulting database that was created from this information.

It has been suggested that it was not the sole intention of the CR Act to focus on material culture alone. This argument has its foundation in the following definition:

“Landscapes Queensland” means areas or features within Queensland that –

- (a) have been or are being used, altered or affected in some way by humans; and*
 - (b) are of significance to humans for any anthropological, cultural, historic, prehistoric or reason;*
- and includes any item of the Queensland Estate found therein.*

This definition does seem to countenance the entry of places that might not have an exclusively material dimension. The mechanism under the CR Act for the recognition of such places was by having them gazetted as a Designated Landscape Area (DLA). It is worthy of note that there were only ever nine of these places gazetted in the almost 20 years that this act was in operation. In all cases, these DLAs

were gazetted exclusively because of their material dimensions, either being, or containing, rock art sites, stone arrangements or Bora (ceremonial) grounds.

It is true that the ACH Act has replaced that clearly narrow and limited definition of Aboriginal cultural heritage with something that is broader and more inclusive of the totality of areas, objects and values that really constitute Aboriginal cultural heritage. The simple fact is, however, that the ACH Act has not been in operation for long enough to even begin to redress the imbalance in the classes of cultural areas, objects and values within its data sources.

There are, then, significant issues attending to the use of existing databases for planning purposes, and the limitations of these, whether maintained by a state agency or not. In particular, historical factors that have heavily influenced the nature of what has been recorded, as against what actually constitutes the totality of Aboriginal cultural heritage, need to be recognised as having an influence that can have implications for the use of such data even when the legislation under which they were primarily developed has been repealed and replaced with legislation that is apparently more comprehensive in scope.

Nor is there necessarily a willingness on the part of Aboriginal people to disclose any information or knowledge regarding their cultural heritage, particularly sensitive cultural information, to the State given the measures in place to protect such information and the virtually unrestricted access of a range of individuals to it (cf. below). The point remains, however, that at this stage the ICHR and D is heavily weighted towards areas and objects that are material cultural heritage.

Following on from the ability to access the cultural heritage information housed in the ICHR and D under the provisions of the ACH Act, there is a second tier of access regulation and data provision that also exists, under various departmental policies. While a search of the ICHR and D is freely available, the resulting information provided is highly generic, including only limited fields. These include the database identifier for each place (which can be used to cross-reference against the site cards), the type of place under consideration, its locational information, date recorded and a note regarding the relevant Aboriginal Party for each record.

Access can also be sought to the report catalogue and site cards for recorded cultural heritage areas and objects returned within the search request results. Such access is not available without clear written authorisation from an Aboriginal party for the area/s in question that they agree to the release of such information. Engagement and negotiations with the Aboriginal Parties for the ABP at the time of this study being undertaken had substantively commenced. However, it was neither practical nor possible in this situation to obtain authorisations that would satisfy either DERM or indeed be culturally

appropriate within Aboriginal communities. Additionally, information gained from such review can only be disseminated among people specifically listed on the formal request documentation without the written permission of the Director of the CHCU.

Once access to cultural heritage information has been secured and results obtained, a series of other issues must then be considered. In the first instance, this relates to the origin of, and manner in which, the data so included has been collected. These data derive in large measure from either *ad hoc* recordings of varying quality or from EIS or development-related projects that had a geographical focus determined by the location of a piece of development rather than being approached from any cultural parameters. Only a small portion of the available cultural heritage information has been collated as part of any systematic research program of even relatively restricted geographical extent. That is, the imperative for collation of most of the information that exists is not necessarily conducive to that information having been collected in a comprehensive or systematic fashion across much of Queensland, and hence is of limited utility.

Questions of accuracy also then intrude. The introduction and widespread availability of Global Positioning Systems (GPS), now a standard fieldwork tool for cultural heritage assessment, is a relatively recent phenomenon. Prior to this the precision of a recording depended on the accuracy of map reading, and then the subsequent long hand generation of co-ordinates. In such cases an error of only 1 mm (the size of a pencil dot) on a 1:250,000 scale map equates to an on-the-ground error of 250 m. Errors reading maps to calculate a place's coordinates, and inconsistent and incomplete provision of grid references has meant that there are systemic errors throughout the databases, then used to create computer-based datasets. Use of correction factors that converted imperial grid references to metric have only served to compound the problem.

Despite GPS having powerful and highly accurate applications within cultural heritage management (especially since the removal of selective availability), there has been a basic lack of understanding of issues surrounding the datum used in collecting mappable information and projections, and the importance of providing this information as a component of cultural heritage locational data. With differences between the various commonly used projections being in the order of several hundred metres, this further diminishes certainty as to the accuracy of the locational information within cultural heritage databases. To our knowledge, there has not been any concentrated program of review to establish the internal consistency and levels of confidence that exist for information housed within these data sets, or to subsequently ground truth even a sample of cultural heritage areas and objects to validate or correct this locational information.

This is not a situation restricted to the ICHR and D alone, but rather is one that applies generally (although in varying degrees) across all of the current governmental cultural heritage databases that have their antecedents in previous decades and/or have not been subjected to some measure of ground-truthing. By way of example, a recent investigation of a place listed on the QHR within central Queensland found that the place that was the subject of the heritage listing was not located on the lot on plan provided in its listing (it is only very recently that the QHR commenced listing places by areas other than whole cadastral parcels).

Separate to the QHR, the Cultural Heritage Branch within DERM has compiled a substantial range of information regarding a range of other heritage places (albeit in relation to this report they are predominantly but not exclusively historic or 'European') and incorporated this into its CHIMS. At the moment this database is largely for information purposes as a summary of reported places and is intended to be used as a source of heritage information to support both possible future listings and to feed into Local Government Authority (LGA) development control planning schemes. Entries in CHIMS derive from a great variety of sources, but come principally from heritage reports. It has not been the subject of a systematic audit (although this is proposed) and as a result is an incomplete record both of known places and the specific information about the places that have been entered.

It was in some way to counter this particular raft of issues, the area used as the basis of this Aboriginal Cultural Heritage Impact Assessment Study has been based on an expanded, buffered area surrounding the project.

The various Commonwealth heritage lists and registers and the QHR are also subject to other limitations. The most notable is the fact that all of these generally only house cultural heritage areas or objects that have been nominated to, and inscribed in, those lists and registers (although recent modifications have tended to note the destruction or removal of previously listed places). Thus, if no nomination has been made or such nomination has not been successful, then no information will be recorded. Nomination to these lists and registers comes often, but not necessarily, with a variety of criteria for listing. These nominations are assessed by committees, and their reasoning in relation to the criteria is not always transparent. At various times on the majority of these lists and registers there have also been 'trends' or themes pursued, which have seen large numbers of certain classes of cultural heritage entered on them. With a general lack of strategic direction and planning in the identification and conservation across the gamut of cultural heritage areas, objects and values, these lists are generally overrepresented in a few cultural heritage place-types. In light of these considerations, absence of evidence can not necessarily be interpreted to mean evidence of absence.

In the light of the above discussion, it should be realised that this Aboriginal Cultural Heritage Impact Assessment Study cannot be, nor does it purport to be, a definitive statement of the Aboriginal cultural heritage areas, object and values associated with the project area. Rather it represents the collation of a body of data that are subject to various limitations and flaws. From this limited data, some pertinent observations have been drawn, and predictions have been posited. They should not be considered as anything else. Accordingly, all project related development must be conducted with the assumption that additional areas and objects of Aboriginal cultural heritage value, may exist and are yet to be identified, and that further pre-construction surveys will be required.

5 ABORIGINAL CULTURAL HERITAGE LANDSCAPE

One of the requirements for this Indigenous Cultural Heritage Impact Assessment Study is a review of the nature and form of known Aboriginal cultural heritage areas, objects and values. This section is primarily aimed at providing a baseline indication of the Aboriginal cultural heritage areas, objects and values that are known. Secondly, it is also aimed at ascertaining the presence (or clearly documented absence) of any known Aboriginal cultural heritage areas, objects or values that are currently protected by virtue of their inclusion on any one of the Commonwealth, State and Local Government Authority heritage lists, registers and planning schemes.

This section also will turn its attention to a summary and synthesis of results of previous Aboriginal cultural heritage investigations relevant to the project and finally, consideration of the cultural landscape that may be impacted by the project.

The first part of this section deals with the results of searches conducted on a range of Commonwealth, state and local Government Authority state heritage databases, lists, registers and planning schemes.

A review of various published and unpublished material relating to both the project study area and its broader region is then considered with a view to presenting a cultural heritage landscape model for Aboriginal cultural heritage place location. There is no single, comprehensive statement or source on the Aboriginal cultural heritage values. There are only a series of isolated site recordings and/or related reports prepared usually for EIS-related projects that are in the general vicinity of this project. These have been used as a basis for extrapolating (where appropriate) the likelihood of sites being found, and the form of those sites, as well as other management issues.

5.1 Cultural Heritage Database, List and Register Search Results

5.1.1 Commonwealth Register and Database Searches

Searches were conducted of a range of other Commonwealth heritage lists and registers regarding identified and inscribed places that may be located within the ABP search area. These searches included the World Heritage List, the Commonwealth Heritage List, the National Heritage List and the Register of the National Estate. Datasets made available through the Heritage Division of the DSEWPC were used in this analysis. No places within 1,000m of the mainline route or any lateral were identified (see also section 9 of this report for historic heritage).

5.1.2 Indigenous Cultural Heritage Register and Database

The ICHR&D are the principle sources of Indigenous cultural heritage located across Queensland and have been established under provisions of the ACH Act. The search of this returned some 512 individual entries for Aboriginal cultural heritage areas or objects that have previously been recorded within the 5,000m buffer search area. The searches undertaken, analyses and accompanying information presented herein has been presented on the basis of the most current alignment of the Project available at the time of the conduct of the searches.

The results of this search, as provided by DERM, contains only minimal information regarding each of the registered places: listing only the State identification number (ID), the place-type in a broad classificatory sense, date recorded, locational information, and details regarding the Aboriginal Party for each place. Where any other additional information has been available from other sources regarding these places, this has been included within the tables and/or discussed within the text of this section.

A closer examination of the search result data indicated that, particularly in recent years, multiple records are present for the same place (based on the State ID field). In these cases they presumably represent a series of points that describe in some measure the extent of the place. When this is taken into account, the total number of places containing Aboriginal cultural heritage areas or objects present on the ICHR&D within the 5,000m buffer search area is reduced to 345. For the general analysis of place-types provided below (Table 1 – section 1) this reduced list has been utilised, while other proximity analyses based on the 1,000m buffer (e.g. Tables 2, 3 and 4) have utilised the full search results database (i.e. the full 75 places present in this buffer including the 18 repeats) owing to the fact that each of these is technically an Aboriginal area or object for the purposes of the ACH Act.

The distribution of these places is heavily skewed towards those parts of the Project north from the Moranbah area, which accounts for 440 (86%) of the currently entries on the ICHR&D. This area has seen by far the greatest number and scale of development projects including open cut coal mining, potential mining areas, extensive gas fields, and a variety of supporting infrastructure such as roads, rail and power lines. Intensive cultural heritage assessments have been undertaken in association with these projects from which a great range of places have been identified.

A diverse range of Aboriginal place-types have been identified from previous cultural heritage investigations undertaken in proximity to the Project (see Tables 1-4). This includes a number – such as hearths, a well, stone arrangement and shell middens - that can be considered uncommon and/or rare. The general percentages that these comprise of the total numbers, notably the predominance of places

containing stone artefacts and/or relating to stone artefact manufacture, is highly consistent with both region-wide and catchment trends (L'Oste-Brown *et. al.* 1998:360-390).

Eleven of the total 19 place types identified from the full search area are present within 1,000m of the current pipeline centrelines (Table 3). As with the full search, this range speaks of a rich and diverse cultural landscape which contains elements of both the pre- and post-contact periods. The majority of this diversity however lies within the 500-1,000m proximity class, with only four place-types currently identified any closer – a single quarry, eight scarred trees, 21 places containing stone artefact/s and an additional area containing subsurface stone artefacts found as a result of a test pitting / excavation program.

With the inclusion of multiple records for single State IDs, 75 individual entries were found to be located within 1,000m of the Project (Table 3). Unsurprisingly given its length, the vast majority of these places are directly associated with the mainline alignment. Only one place, a scarred tree located some 800m to the north of the current junction of the mainline with the Elphinstone lateral, was noted as being associated with more than one Project element. The Elphinstone lateral contained an additional two cultural heritage places (a quarry and a further scarred tree). No places are currently registered on the ICHR&D for either the Saraji or Dysart laterals. It is viewed that these results reflect more a lack of comprehensive and systematic cultural heritage investigations within these areas, or, if conducted, the lack of the results of such works being provided to DERM for inclusion on the ICHR&D rather than any true statement regarding cultural heritage which may be present in these areas.

Further review of the six places identified as being within the 0-100m proximity buffer observed that of these, four are located within a 50m buffer of the pipeline centrelines as currently proposed (i.e. a 100m wide corridor), and as such would seem to have a high likelihood of being impacted by the Project if it were to proceed as currently conceived. These places include two scarred trees, an area containing a single stone artefact, and an area described as being a quarry. It should be noted, however, that although previously identified and recorded on the ICHR&D, this data source does not contain any information regarding the current status of these places. With the majority of Aboriginal cultural heritage places included on the ICHR&D originating from surveys undertaken as part of development-related projects, it is unclear which, if any, of these places may still be extant. The location of these places (which are labelled) along with all others identified from the results of the ICHR&D search is depicted on Figure 2.

ARROW BOWEN PIPELINE PRELIMINARY ROUTE (REV D)

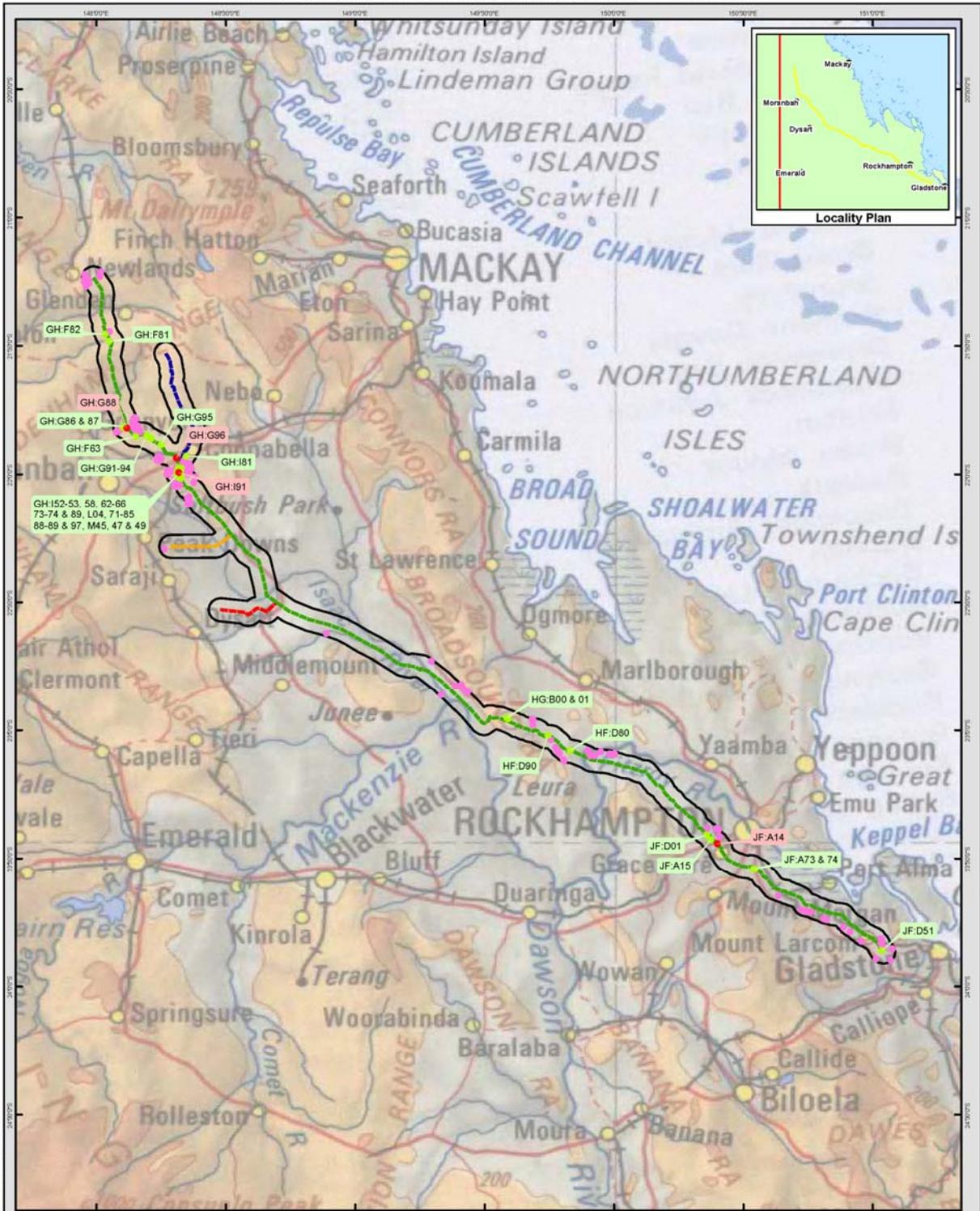


Figure 2: Results of the ICHR&D search identifying those places located within 1km of the pipeline centrelines

- ABP Mainline Rev D
- Dysart Lateral Rev D
- Elphinstone Lateral Rev D
- Saraji Lateral Rev D
- Cultural Heritage Places within 0-50m Proximity
- Cultural Heritage Places within 50-1000m Proximity
- Remainder of Cultural Heritage Places within 5000m Search Area
- 5,000m Buffer Cultural Heritage Place Search Area

go further

N

 Scale: 1:1,500,000 @ A3
 Coordinate System: GCS GDA 1994

NOT FOR CONSTRUCTION

Figure 2 Results of the ICHR&D search identifying those places located within 1,000m of the Project.

Some additional information is available regarding JFA14, the quarry, which is located within 50m of the ABP Mainline to the south of Rockhampton. This was identified and recorded in early 1979 by Jeff Pratt, at that time a Department of Aboriginal and Islander Affairs ranger based in Rockhampton. Pratt noted and recorded this place along with a series of others which he observed were in close proximity to a newly proposed power line. This quarry consisted of an outcrop of what he described as black slate. Slate is generally poor quality for flaking but numerous outcrops of basaltic and andesitic material are common throughout the general area. Also, Pratt makes no comment as to the source actually having been utilised in the production of Aboriginal stone artefacts although his ascription of the area being a quarry seems to point in that direction. The size of the outcrop is also somewhat unclear. Being described as around 40 metres square this could be interpreted as covering either 40m² or 40m by 40m (i.e. 1,600m²). Irrespective, the available grid reference for this quarry (presumably a centre point) places it around 40m to the east of the ABP Mainline alignment meaning that, with either extent, portions of this area would likely be directly impacted by any pipeline corridor through this area (subject of course to the location information being correct).

Additionally, it would appear likely that the single stone artefact previously recorded as GH:G88 would likewise lie within an easement taken for the Project. On this basis, it is also considered that the remaining two remaining places that lie within 50m of the Rev D pipeline centrelines (the scarred trees identified as GH:G96 and GH:I91), would both be outside of any impact area and could therefore be avoided.

Noting that there are outstanding matters with regard these four places (e.g. locational accuracy, actual cultural heritage values present and previous management actions that may have been implemented) they will be re-examined in the context of the comprehensive investigations planned to be conducted along the entirety of the Project with the relevant Aboriginal Parties.

5.1.3 Local Government Authority Planning Schemes

The study area includes a number of Local Government Authorities. With the exception of two of these (Gladstone and Calliope), none maintain separate heritage registers for either Aboriginal or historical cultural heritage.

Review of the current planning schemes for the former Gladstone City Council and Calliope Shire Council (amalgamated in Gladstone Regional Council) were undertaken with respect to the status of and processes for Aboriginal cultural heritage, and with particular reference to any specific Aboriginal cultural heritage registers that may have been compiled. Although generally deferring to the processes

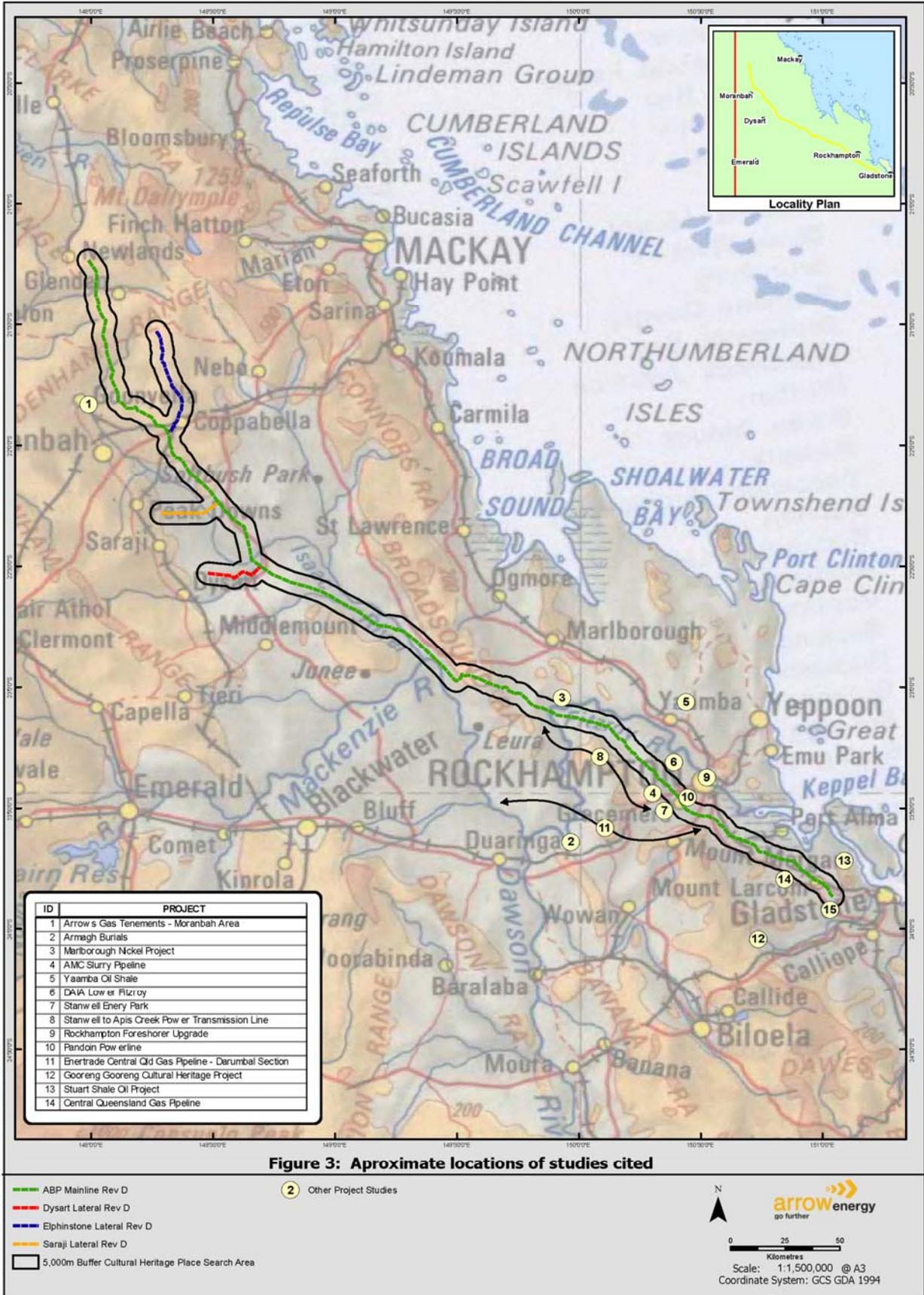
and registers established under both the ACH Act and QH Act, the planning schemes for these two areas contain both an overlay code and specific registers for both Indigenous and European cultural heritage places. A copy of these was obtained and reviewed as part of this study.

The Calliope planning scheme contains a list of places of identified Aboriginal cultural heritage significance (n=12). It is noted that these had been identified on the basis of a Gladstone Port Authority and Queensland Department of Environment and Heritage resource report for the Curtis Coast (Queensland Department of Environment and Heritage 1994) which in turn drew heavily from surveys undertaken by Burke (1993). This list includes Aboriginal areas and objects on Wild Cattle and Curtis Islands, on Telegraph and Connor Creeks and at Ramsay's Crossing. Although no locational information is provided within the planning scheme for these places, all of these appear to have been included within the ICHR and D. None of these places as recorded within the ICHR and D, the Curtis Coast report, or on the basis of their identifying description within the planning scheme fall within the project area and, therefore, will not be impacted by the project.

5.2 Aboriginal Cultural Heritage Investigations of Relevance to the Project

As has been previously noted, there are no large-scale or definitive studies of Aboriginal cultural heritage that exist for the study area. Aboriginal cultural heritage studies conducted as part of the development assessment process are often not publicly available as these studies are undertaken under conditions of considerable commercial confidentiality, or where statutory provisions may also impose limits on access. Consequently, the information within them may be closely controlled by Government agencies and, principally, the CHCU within DERM. Moreover, DERM has, since 2004 and the inception of the ACH Act, applied a policy that prevents any access to primary records held in the ICHR and D and associated archive (including the site cards and report catalogue) without the express permission of relevant Aboriginal Parties. These include the cultural heritage reports prepared for many EIS. Such permission can be withheld or only provided at a later stage of engagement. We have undertaken a comprehensive review of what is available and a range of other data sources which provide additional insights into the Aboriginal cultural heritage landscape of portions of the Project area have been made available to this assessment. While the results cannot be directly applied to the project area, those studies undertaken in areas in close proximity to or running parallel with the project, notably from Marlborough south, offer excellent contextual information. These are described in the following sections, proceeding from north to south. Some very general observations are also made at the end of this section. The approximate locations of each of these studies are shown in Figure 3.

ARROW BOWEN PIPELINE PRELIMINARY ROUTE (REV D)



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Figure 3 Approximate locations of studies cited

5.2.1 Central Bowen Basin

Cultural Heritage Work in Arrow's Gas Tenements – Moranbah Area

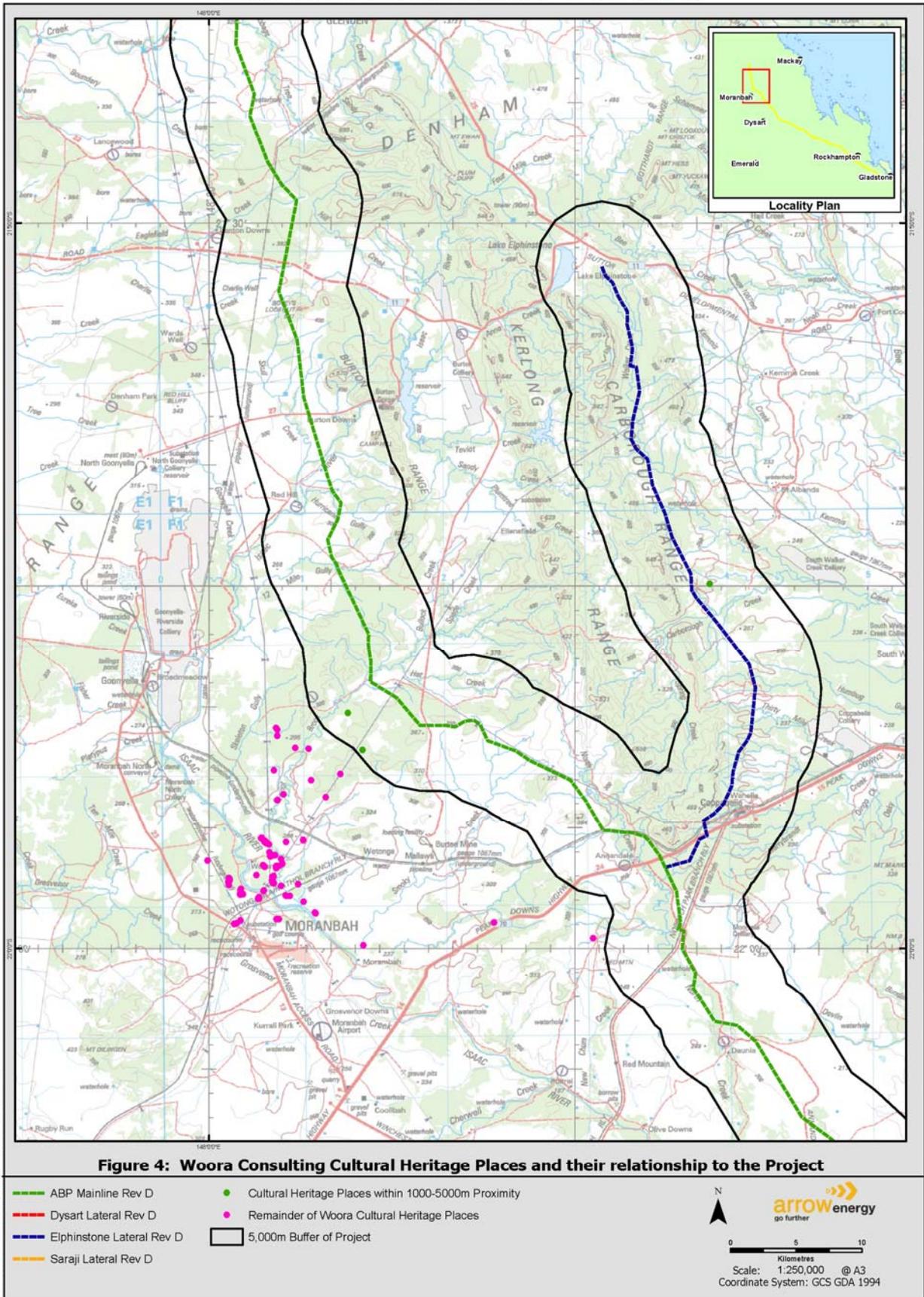
Woorra Consulting Pty Ltd (a company which undertakes cultural heritage work on behalf of the Barada Barna People) has been undertaking cultural heritage investigations across Arrow's gas field tenements in the Moranbah area for a considerable period. In that time they have maintained a database of the results of that work which they have recently provided to Arrow. This has information regarding 192 Aboriginal cultural heritage places (Tables 1 (section 2) and 6). It should be noted that this dataset contains no datum and projection information and the results presented here should be viewed in this light. Despite this however, a review of the data it contains against a range of other baseline datasets (e.g. roads and waterways), along with comments internal to it, have led to the conclusion that it is most likely in MGA Zone 55, GDA94.

Consistent with the results of the ICHR&D presented above, the results of this work is overwhelmingly dominated by places containing stone artefacts accounting for almost 80% of the total. The dominant form of these is as isolated stone artefact/s (generally less than 3 in number) although a considerable number of what have been described as 'low density background scatters' have also been identified. The recording of a number of scarred trees is also highly consistent with the results of previous analyses of Aboriginal cultural heritage data for the region in general, but specifically for areas that are immediately proximal to the project.

Of particular note, however, is the identification of a large number of what are described as 'Natural Features' within the Woorra database. A more detailed review of these indicates that to date these have consisted of examples of large and/or mature trees. Several species are regularly identified in this way and include poplar box, bloodwood, blackbutt, bendee and an example of bauhinia scrub.

The vast majority of this work has been undertaken in areas immediately to the north of Moranbah (Figure 4). As a result, none of these places was determined to be located within the 1km buffer (i.e. a 2km corridor) of the Project. Extending out to the 1,000m – 5,000m proximity buffer, only three cultural heritage places have been identified. These are described as being low density stone artefact scatters with all noted as containing between one and seven artefacts at each.

ARROW BOWEN PIPELINE PRELIMINARY ROUTE (REV D)



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Figure 4 Woora Consulting Cultural Heritage Places and their relationship to the Project.

5.2.2 Greater Rockhampton Region

Armagh Burials 1992

In September, 1992 local Police were alerted to the discovery of human skeletal material on the south bank of the Fitzroy River on Armagh Station, approximately 20km to the north of Westwood, 50kms to the west of Rockhampton. On examination it was determined that the remains were those of Aboriginal people buried in traditional manner, in a complex bundle form, which had been partially exposed. At least three burials were present at this place. More might have been present but as the intention was to avoid any unwarranted disturbance of the site, definitive evidence of this could not be obtained and there was no investigation for evidence of possible pathologies or cause of death. All damage seen was definitely post mortem. The burial was in a sandy, alluvial area less than 100m from the Fitzroy River. The area was a floodway which had presumably been scoured during the massive 1990 flood of the Fitzroy. This, along with cattle disturbance of the area, had resulted in exposure of the burials. The burials were re-covered with sand and a fence erected to keep cattle from disturbing the area while it stabilised through natural revegetation.

Marlborough Nickel Project

In late 1997 and early 1998, representatives of the Darumbal in association with CQCHM, undertook a cultural heritage assessment of areas to be affected by the proposed Marlborough Nickel Mine Project. This study included archaeological, anthropological as well as historic heritage investigations. While this project has not yet been completed, some consideration of the preliminary results of this survey is appropriate.

A field team undertook surveys of four study areas covering some 28km². A total of 89 areas containing cultural material were located: 48 stone artefact scatters, 39 isolated finds, one scarred tree and a rock shelter considered to potentially contain occupation deposits. Although only a relatively restricted range of cultural material was found this was entirely as predicted on the basis of previous survey work undertaken throughout the more general area. In general, cultural material was located in far greater densities in areas containing creek lines and their alluvial flats than in the hilly areas. It was, however, noted that these latter areas had been subjected to substantial impacts through exploration activities and that simple correlations between topography and densities of cultural material are not necessarily clear cut.

Little indication of the chronology associated with the recorded cultural material could be obtained on the basis of the field surveys alone. A number of areas containing surface scatters of stone artefacts were also noted to have the potential to contain in situ deposits of sub-surface cultural material. Some mussel shell associated with one of these areas was noted as providing opportunities for future dating.

Depending on the strength of the association between the shell and cultural material (particularly the in situ material), this was thought to allow for some absolute quantification of this issue in the future. It was thought that the cultural material, at least in one area, was less than 4,500 years old. This assessment was made on the basis of the presence of an axe blank. In general, however, the amorphous nature of the stone artefact assemblages, and the absence of blade technology suggested a more recent age for use of the area.

AMC slurry pipeline, processing plant and gas pipeline

In December, 1998 Darumbal Noolar Murree Corporation for Land and Culture in association with Central Queensland Cultural Heritage Management undertook a survey of the proposed slurry pipeline from the Kunwarara magnesite mine to a proposed processing plant near Stanwell, the site of the processing plant itself, and a proposed gas pipeline from Gracemere to the processing plant.

In the course of this study, a comprehensive examination was made of each element of the proposed project: both pipeline routes were examined in their entirety (80kms on the slurry pipeline and 17.3kms for the gas pipeline), while the processing plant (2kms²) was examined using a series of systematic transects. In the course of examining these areas, which combined totalled 5.14km², the survey team recorded 21 separate occurrences of Aboriginal cultural material. These included 13 isolated finds, 6 stone artefact scatters and 2 scarred trees. When allowance was made for effective coverage it was determined that site density in the areas inspected would have averaged between 20 and 25 per square kilometre.

Yaamba Oil Shale

Oil shale has been identified in the Yaamba area, and in 1982, Hill (1982) undertook a survey of the proposed mining area. Unfortunately, we have not had access to this report. Therefore, we are not able to define the area inspected, its overall size, or obtain data on surface visibility or the like. We do, however, have some limited data on what was found. Hill recorded three scarred trees, and an open artefact scatter. A total of 65 artefacts were collected by Hill from this open site. This data is included within Richardson (1982). This site is likely to have been large because in addition to noting that 65 artefacts were removed, Hill also notes that many were left *in situ*.

DAIA Lower Fitzroy

Richardson was engaged by the then-Archaeology Branch, DAIA, to summarise a wide range of data in the lower Fitzroy catchment. This was incorporated into a short monograph published by DAIA (Richardson, 1982). Richardson summarised what was known from DAIA site records, including Hill's survey (noted above), as well as examining a range of historical documents, including Roth's (1898)

report to the Commissioner of Police about Aborigines in the general Rockhampton area. She also examined collections held at the Queensland Museum.

Richardson notes the existence of a number of site types in the general area (although it is difficult to establish exactly what the parameters of her survey were). These included stone artefact scatters, quarries for material suitable for stone artefact manufacture (including three situated on Gracemere Station), stone arrangements in the Duinga area and on May Downs, and several scarred trees (1982: 46). She noted that the Queensland Museum collections included several items obtained by Roth from the Marlborough-St Lawrence area, including delicate hafted items such as knives and stone 'pounders'. There were also a few items collected by Thomas Illidge. These included hafted graving tools, equipped with quartz tips. She also noted that the collections demonstrated the use of fine-grained volcanics, as well as chert, quartz, silcrete and petrified wood (1982: 45).

Stanwell Energy Park

This is a larger area of land that surrounded the AMC processing plant outlined above. Survey of the study area was undertaken over 10 days from late November to early December 2000, involving the inspection of approximately 9.5 sq km. In all, a total of 60 person days were spent in the field.

During the course of the fieldwork, a total of 72 cultural places were identified and recorded. These included 7 resource places (food, medicine and ceremonial plants), 6 scarred trees (including 2 found during a previous survey), 1 source area for raw material, 8 artefact scatters (including 2 found during a previous survey), 49 isolated finds (individual stone artefacts) and 1 rock shelter that has definite excavation potential but no direct evidence of human occupation in the surface deposits.

The stone artefactual material found in the study area was consistent with raw materials existing in the immediate vicinity of the study area and no doubt related to it. Material used is local in origin and freely available both in pebble form from the creek line and as consolidated conglomerates eroding from the bases of the ridgelines. Quartz and undoubtedly the chert noted in the assemblages were obtained from these sources. Sandstone and mudstone outcrop in the central southern portion of the study area although none were noted to have been utilised as quarries. This is reflected within the assemblages themselves that, although mudstone was observed, show a reliance on other, more durable materials, such as silcrete that is likewise found throughout the study area as natural blocks and pebbles eroding from the ridgelines. Although other materials are freely available and make up some part of the recorded assemblages, silcrete is the dominant raw material chosen for artefact manufacture. In order of abundance, raw materials preferred for use throughout the study area consisted of silcrete, chert, mudstone and quartz.

No diagnostic artefacts, commonly termed 'tools' were located throughout the study area. The dominant artefacts were unmodified flakes, with a small number of cores noted. A couple of small retouched flakes, probably used as scrapers were identified in the course of the survey.

The larger sites were found in close proximity to Neerkol Creek, and its tributaries, while the isolated finds were more generally scattered on the floodplain and low foothills and slopes. It was thought that this reflected, to some extent, real patterns of occupation in the study area: creeks would have been preferred camping locations, offering water and a range of other resources, while the flood plain and the lower slopes were probably seen as areas from which various resources could be obtained in the course of short forays away from the creeks. These resources would have included numerous plants foods and other useful plants, as well as raw material for the manufacture of artefacts.

There may well have been more artefactual material on the flood plains that has been disaggregated by clearing and then lost through ploughing. Experimental work on plough zones elsewhere has shown that field inspections commonly find only 3-5% of what actually existed in an area prior to disturbance in this way. Even so, application of a correction factor on finds on the flood plain to account for the effect of these processes indicates there is still a clear preference for locations close to creek lines.

These surveys also resulted in the location of six scarred trees. They were found both in the northern and southern sections, notably in areas that had not been subject to extensive clearing. One of the trees was of considerable interest. It had the classic form of a tree scarred by Aboriginal people. Interestingly, however, it has then been scarred a second time, with a small section having been cut through the first scar into the hollow of the tree. Apparently, the tree died sometime after the first scarring event, the heart of the tree rotted out and it was inhabited either by bees or a possum. The second scar has resulted from cutting to procure the sugar bar (honey of the native bee) or the possum. This second scar definitely has been cut with a steel axe, indicating it was most likely done post-contact, pointing to cultural continuity. The scarred trees reflect a range of uses for the bark: construction of bark huts for shelter during wet weather; manufacture of coolamons for carry items of food or for the manufacture of shields; scarring resulting from food collection activities.

Portions of the study area had been cleared of most of their natural vegetation cover. In the course of the survey, however, a series of culturally important plants (edible, medicinal, or useful for other purposes) were identified. These included plants in all three categories, and included one plant that was important in ceremonial activities. The identification of these plants also emphasises the point of continuity between the archaeological manifestations of earlier Darumbal occupation of the study area and their contemporary knowledge, and use, of country and the resources it contains.

Stanwell to Apis Creek Power Transmission Line

In 2001, Powerlink proposed to construct a powerline transmission route planned to run from Stanwell to Broadsound. The section between Stanwell and Apis Creek lies within the bounds of the Darumbal country and was duly surveyed by them. The results were unremarkable in the sense that no novel discoveries were made. A series of cultural areas consisting of isolated finds and small artefact scatters were identified as were numerous stands of cultural valued plants. A rock shelter containing occupation deposit was also identified in the Native Cat Range section of the route. Very limited amounts of cultural material (a few isolated finds) were identified on the levee of the Fitzroy River. Darumbal also identified a series of places where no cultural material was identified on the surface but where it was considered there was potential for sub-surface material. A subsequent program of test-pitting resulted in a confirmation rate where in more than 60% of cases it was found that the potential for sub-surface material was confirmed by actual finds. In no cases were there large amounts of material. Material was identified at depths of up to 1m. Unsurprisingly, prime locations were alluvial sediments beside watercourses, irrespective of whether they were permanent or ephemeral in nature. The results were sufficient to substantiate requests for monitoring of those locations during the construction phase of the project.

Rockhampton Foreshore Upgrade

In 2005, the Department of Public Works (Qld) planned to improve conditions along sections of the riverfront in the immediate vicinity of Rockhampton. The Darumbal were engaged to survey the area and prepare a statement on the cultural values of the area. Four places were identified in the course of investigations. They included:

The Fitzroy River, or *Toonooba* as it known to the Darumbal, is a major cultural artery throughout this region. The Fitzroy River basin extends over approximately one third of present-day Queensland and the river and its tributaries have always held great social and cultural value for all Aboriginal groups with traditional connection with the river system. The river system is known to be part of a creation story in which the river was formed by the Rainbow Serpent - 'Moondangutta', which still exists within its waters. The Rainbow Serpent created the landscape in which the Darumbal live and there are numerous traditional stories in which it figures as a central character. The river holds significant cultural heritage values for this and other reasons. The river holds very high environmental values and provides a source of sustenance for much of the surrounding country, including the flora and fauna, the many rich and diverse ecosystems that abound, and many other aspects of the regional environment. The river thus holds significant environmental values for the Darumbal people as well as the broader Indigenous and non-Indigenous communities.

An important fishing place was also recorded. In circumstances where Darumbal people occupied a low position in the socio-economic regional order but also as a continuation of traditional patterns of subsistence, the importance of procuring traditional resources, particularly food, was of great importance in maintaining a self-sufficient lifestyle. Accordingly, continued use of places that are known good fishing locations is unsurprising. The fish caught at this location by Darumbal people, a favoured fishing location that is admittedly now used by non-Aboriginal people as well, are distributed among family and friends and used for food gatherings associated with major events such as weddings, wakes, baptisms and other events. In this way, while the fishing might be seen as a recreational pursuit no different to that of non-Aboriginal people, the produce thereof makes a substantial contribution to reinforcing group cohesion. There are numerous anecdotes about fishing and social interactions that took place at this location. Again, these serve as a social cement of shared events among Darumbal people, and this again reinforces general group and family solidarity for the Darumbal.

A small sandy beach is a recreational area where small groups of Darumbal people went to spend time together fishing, swimming and 'yarning'. This is a quiet section of the river tucked in bushland, away from town and from observation of others. Again, numerous stories of events that took place at this location are frequently recounted among the Darumbal, and recalled with humour and fondness.

In the course of the survey, one plant that was used for medicinal purposes was identified. The identification of this plant also emphasises the point of continuity between the archaeological manifestations of earlier Darumbal occupation of the study area and their contemporary knowledge, and use, of country and the resources it contains. This plant is commonly called *gumbi gumbi* but is otherwise known as cattlebush (*Pittosporum phylliraeoides*). It has been described as a multi-purpose bush medicine in the central Queensland region, and many Aboriginal groups value its broad medicinal qualities. The medicinal values of the plant are heavily stressed in the following example: *Gumbi Gumbi* was the name selected for an Aboriginal alcohol and drug rehabilitation centre now operating in Rockhampton. The plant is now rare because it is eaten avidly by cattle and because the country where it was commonly found has been subject to large scale clearing and development. Isolated individual specimens are highly valued, and their location quickly transmitted in the community so that its leaves can be harvested and used in an infusion created by crushing the leaves in hot water.

Pandoin Powerline

In May 2008, the Darumbal People (Darumbal & CQCHM 2008) undertook a cultural heritage assessment and management program for a powerline between Bouldercombe and Pandoin (to the north of Rockhampton). This included the assessment of a 100m wide corridor along the proposed powerline alignment. A total of 77 Aboriginal cultural heritage places were identified along its 36km length.

These included 76 areas containing stone artefacts and a single scarred tree. Of these places, 40 were identified and recorded alongside a 14km stretch of the ABP Mainline, roughly between KP390 and 404 (Figure 5). All of these lie within the 1km buffer of this section of the Project. All of these were recorded as isolated stone artefact/s and while 15 of these contained single artefacts at each, the remainder contained 13 or less at each location. These were spread across areas up to 30m in diameter. Additional details for these are provided in Table 1 – section 3.

The nearest of these to the Project is a cluster of three places (Pandoin 17-19; see Figure 5 and Table 1 - section 3 for additional details) which, at their closest, are at least 250m south of the ABP Mainline centreline as currently proposed. Five unmodified stone artefacts were recorded.

During the conduct of management activities associated with this project, a series of small shovel pits were also dug to test for the possible existence of sub-surface cultural heritage material. This test pitting program was undertaken in an area that had a notable concentration of cultural heritage material which included 11 (Pandoin 20-29 & 77) of the 40 places identified within this area. It is located some 500m to the northeast of the ABP Mainline centreline (see Figure 5). . A series of seven 50 by 50cm test pits were excavated to between 160 and 300mm below the ground surface. Two artefacts (unmodified chert flakes) were identified during this work, with both being found immediately below the present ground surface.

While all of these cultural heritage places were mitigated and removed from the powerline project area, the results of this work serves as a fair estimation of the types of cultural heritage places that could be expected to be identified during the cultural heritage assessments that will be undertaken as part of the Project.

ARROW BOWEN PIPELINE PRELIMINARY ROUTE (REV D)

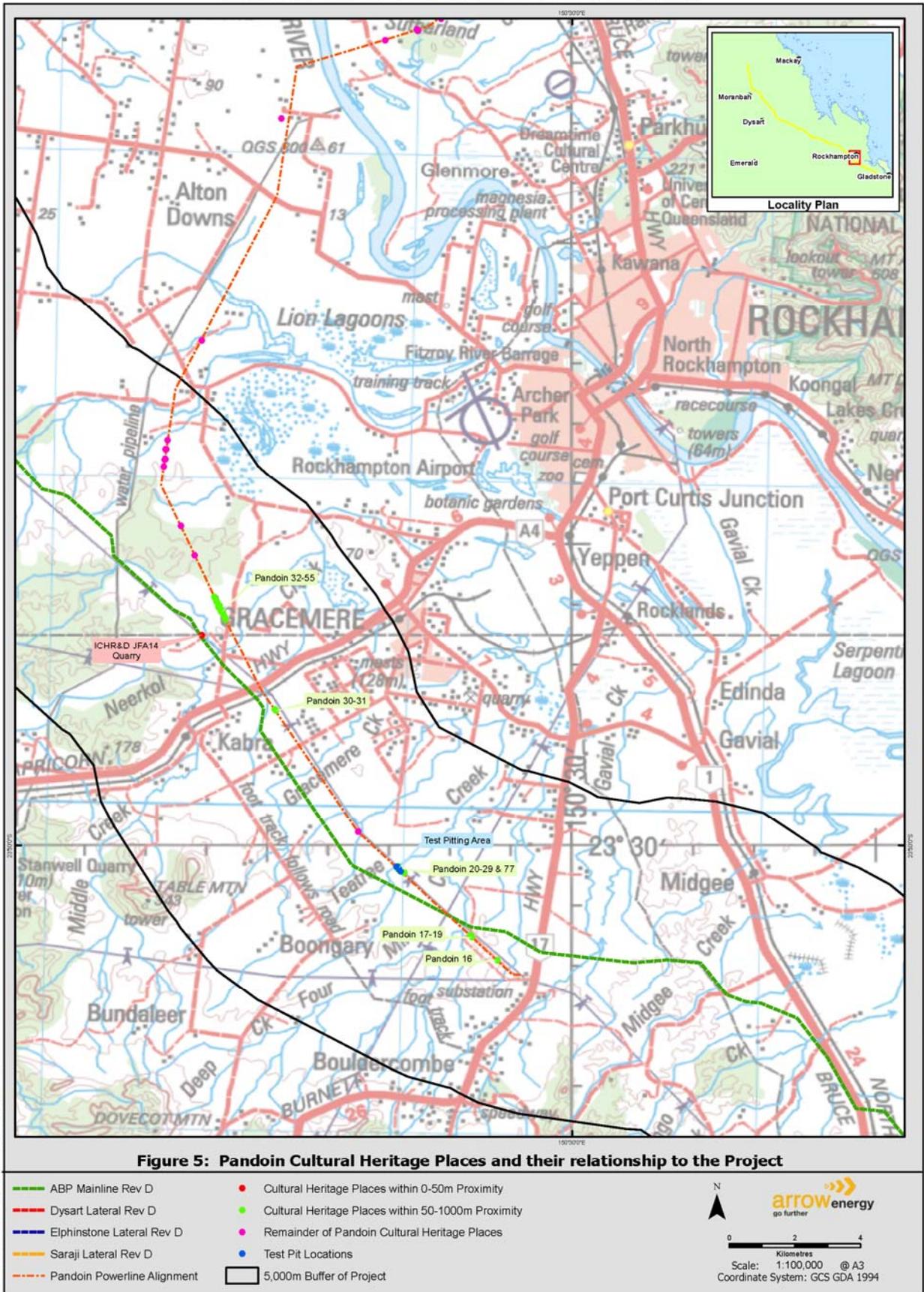


Figure 5 Pandoin Cultural Heritage Places and their relationship to the Project.

Enertrade Moranbah to Gladstone Central Queensland Gas Pipeline – Darumbal Section

The surveys for the Darumbal section of the proposed gas pipeline from Moranbah to Gladstone were conducted in September and November 2005. Along the 112km of the pipeline in Darumbal country 129 locations that were significant areas or that contained significant objects were recorded as ‘Aboriginal’ cultural heritage. Of these: 111 (86%) consisted of isolated stone artefact/s; 16 (12%) were stone artefact scatters; and one was recorded as a resource plant. Finally, and importantly, the proposed project involved the crossing of the Fitzroy River which is high cultural significance to the Darumbal People through its association with the dominant creation story and creator being for this region.

Although in a broad sense Aboriginal cultural heritage places were located throughout the entirety of the survey areas, two observations regarding its general distribution can be highlighted. Firstly, while a majority of the places recorded are associated with creek lines, there are significant sections of the route that are well watered that contain no identifiable cultural places. Secondly, and further to the first, these places tended to be found as clusters along the pipeline route. Although there are some differential impacts from a range of development activities along the route, this does not coincide so significantly as to be attributable as the major reason for this observed distribution. Rather, this would seem in large measure to reflect a culturally-derived footprint of use and occupation of the study area.

As this survey is of a similar nature and covered very similar country to this project (particularly the 60km section between Stanwell and the Raglan Creek area), a detailed synthesis of the cultural places and material found during these surveys will be provided. These are outlined moving east and south along the pipeline alignment.

Melaleuca Ck - Fitzroy River

A total of 9 cultural places were identified along this section of the pipeline route. With one exception which was located on the crest of a hill, all of these places are found in direct association with unnamed creeklines. Three places were found on tributaries of Melaleuca Ck, while the remaining places were located on tributaries of the Fitzroy River. All contained only 1 or 2 artefacts. Both raw materials and artefact types are quite restricted being dominated by unmodified silcrete flakes. A notable exception to this was a preformed but unground basalt axe blank found on the high alluvial terrace of Melaleuca Ck.

The absence of cultural material on the western terraces of the Fitzroy River is unsurprising. Several studies have been undertaken on sections of the Fitzroy River levee. In all cases only small amounts of cultural material have been identified. This probably reflects the intense stripping that takes place during flood events. In this particular case, surface visibility was also limited.

The Fitzroy River itself is a cultural place of significance to the Darumbal. It is associated with the major creator being, the Rainbow Serpent, who made the river and the surrounding landscape, and still resides in the river itself.

Fitzroy River – Black Mountain / Native Cat Creek

Almost one quarter of total number of cultural heritage places recorded during the survey were found within this area. A total of 37 cultural heritage places were recorded: 29 areas containing isolated stone artefact/s; 7 stone artefact scatters (notable in that this is just under half of the total of number of scatters recorded along the entire pipeline and realignment surveys); and a single area containing a particularly significant resource plant. Despite this, and quite unlike the results of the previous section, this material was found in three quite distinct clusters along the route.

The first of these is found on the eastern terraces of the Fitzroy River where an unnamed tributary flows into it from the north east. This area contains four of the seven stone artefact scatters that were located along this section. All of these scatters were recorded in a single area located several hundred metres to the east of the river and immediately to the north of the unnamed tributary. Although recorded as separate scatters they more reflect exposure conditions experienced at the time of the survey work and as such it is considered that the area would likely be a single large, differentially exposed cultural precinct covering some 250m by 250m (just over 6ha in size).

The second cluster covers an extended area (just over 5km in length) and surrounds the headwater tributary system and main channel of Breakfast Creek. Cultural material is generally sparse but regular in the east and consists entirely of areas containing isolated stone artefact/s. Unlike further to the east closer to the river, this area shows differences in stone artefact assemblage composition and raw materials.

Between these places and Native Cat Creek (a distance of 8.5km) only two other cultural heritage places were recorded. These were found in close proximity to one another and adjacent to Fred Creek on its high terraces. Like the previous cluster, this area also lay at the western foothills of an unnamed set of hills and was located roughly mid-way between Black and Sugarloaf mountains.

Black Mountain / Native Cat Creek – Quarry Creek Realignment Area

A total of 23 cultural heritage places were recorded along this section: 18 areas containing isolated stone artefact/s; and 5 stone artefact scatters. Of these, only 5 cultural heritage places were found across the extensive area between Native Cat Creek and the area of Quarry Creek and all of these were found within the easternmost four kilometres. Other than a single flake located beside Native Cat

Creek, the remaining four places were situated in two locations. A single mudstone flake and a stone artefact scatter covering almost 1,000m² were located in close proximity to one another at the confluence of a series of headwater streams that flow into Neerkol Creek just over 1km to the south.

The second location within this area is located adjacent to a set of yards on top of a high knoll that overlooks the Native cat Range to the north and the low-lying floodplains between a series of creeks to the east and south. At the easternmost of these two locations two retouched basalt flakes were recorded.

The majority of cultural heritage places recorded along the remainder of this section of the route were found along the western portion of the narrow valley floor surrounding Quarry Creek and the confluence of Quarry and Centre creeks. These places contained single stone artefacts at each location but varied widely in raw materials (silcrete, argillite, chert and quartz) and also artefact types (2 unmodified flakes, a single platform core and a multi-platform core). All of these were located between the base of a long hill and the creek. A large cluster of cultural heritage places was located around the confluence of the two creeks. Although these are spread out across almost 1,400m of the pipeline route, the vast majority of these (including four stone artefacts scatters and 5 areas containing isolated stone artefact/s) were recorded across a 500m section surrounding the confluence.

Quarry Creek Realignment Area – Bajool Explosive Bunkers

Despite the length of pipeline surveyed through this area and the number and nature of creeks that traverse it, relatively few cultural heritage places were recorded. With the exception of one stone artefact scatter, all of the recorded cultural heritage places throughout this section of the pipeline route contained isolated stone artefact/s at numbers ranging from one to four. With one exception, there are no real clusters of material throughout this section and it is fair to say that cultural material was found only in a small number of restricted areas.

Bajool Explosive Bunkers – Horrigan Creek

This section of the route covered the southernmost portion of the route contained within the Darumbal Native Title Claim area. Within this 20km section of the pipeline route, 36 cultural heritage places were recorded. These consisted of 31 areas containing isolated stone artefact/s and 3 stone artefact scatters.

The distribution of this material is best described as a series of clusters of cultural heritage places in the northern third (which contains 24 of the recorded places along this section), with the larger southern portion containing cultural heritage places distributed throughout and in more isolated contexts.

Within the northern portion of this section, the recorded cultural heritage places were recorded in three distinct clusters around an unnamed tributary of Six Mile Creek; 500m further along the route around the main channel of Six Mile Creek, and finally around Eight Mile Creek. It is notable that these creeks are the only waterways holding water in several large waterholes throughout this portion of the route.

Horrigan Creek – Raglan Creek

This final section of the pipeline route is around 5.5km in length and dominated by moderate to heavily rolling hills and deeply incised valleys. Some of the larger mountains that flank the south of the route in this area include Mounts Erebus, Holly and Despair and are around 280m above sea level. These provide a series of waterways that traverse the pipeline route and include Branch, Five Mile and Spring creeks. Clearing of the native vegetation has caused considerable damage to these areas that has then been exacerbated by erosion across the steep slopes. Despite this, a single cultural heritage place was located at the north western end of this section on a gently sloping valley floor and adjacent to an unnamed tributary of Horrigan Creek (some 800m southeast of the main channel crossing). Two stone artefacts were located over a 300m² area: an edge-ground axe made of Andesite and a single platform core manufactured from green chert. While quite a lot of the green chert was observed as shatter on the cleared slopes at the Horrigan Creek end of this section, almost all other stone observed elsewhere was unsuitable for stone artefact manufacture. The only notable exception to this was the volcanic material that could have been fashioned into artefacts such as the axe located in this area. It is also within this area that the Quarry that is currently registered on the ICHR&D (JF:A14) is also located.

Gooreng Gooreng Cultural Heritage Project, 1993-1997

Throughout the mid-1990s the Gooreng Gooreng Cultural Heritage Project was undertaken, extending along the entirety of what is commonly called the Broken Coast, running from northern Curtis Island to the Town of 1770 in the south. This was an interdisciplinary Aboriginal cultural heritage study of the Curtis-Burnett region between Gladstone and Bundaberg and as far west as the range country near Monto (Lilley and Ulm 1999). Although coastal work was undertaken as part of this project (including the excavation of two shell middens between 50 and 90 km south along the coast from Gladstone), the major focus of this work was a series of ten excavations undertaken within rock shelters and the examination of open sites within Cania Gorge (around 100 km to the south of Gladstone).

The excavations within Cania Gorge have also provided evidence for Pleistocene occupation and use of this highland region (Westcott *et. al.* 1999). In addition to rock art on its walls, Roof Fall cave contained occupation deposits dating back 18,000 years. The major period of use of the area (based on high and sustained rates of stone artefact discard) appears to relate to the period from about 4,000 BP through to the last several hundred years approaching the contact period.

5.2.3 Cultural Heritage Investigations in Proximity to Gladstone

Stuart Oil Shale Project (EIS work), 1997-2006

Ann Wallin and Associates (1999) reported on the conduct of three seasons of archaeological surveys in the Targinie area as part of the preparation of an EIS for the Stuart Oil Shale Project. In total, the study identified and recorded 89 places containing Aboriginal cultural heritage values.

The majority of the places noted during this subsequent work consisted of small scatters of stone artefacts and scarred trees. Three other specific place-types were also identified during this work. The first of these consists of an extensive silcrete quarry which was located at Phillipies Landing. The second was described as being a 'native well'. This area was noted as having been carefully hollowed out and covered with a stone slab. Since the above do not appear in the search results, it is assumed that the results of this work have never been provided to DERM for inclusion on the ICHR and D.

This study brought together a range of ethno-historical and archaeological information to create a tentative seasonal movement map for Port Curtis Aboriginal people north of the Calliope River towards the Darumbal boundaries in the Raglan Creek area. This was described (Bailai People 2006:34) as follows:

The movement saw the presence of Aboriginal people on Curtis Island during the winter and early spring mullet runs along the ocean beaches when mosquitoes might not have been so prevalent. People would move across The Narrows from Curtis [Island] to the mainland, and either follow the coastline down towards Auckland Creek and Barney Point where a major ceremonial area was reported (McDonald 1988) and ceremonies apparently held every month. Alternatively they would follow inland that contained permanent water, such as Munduran Creek, Humpty Creek and Boat Creek, inland to access the huge green chert quarries along the Rundle Range, located during the Enertrade survey . . .

Central Queensland Gas Pipeline, 2006

Archaeo Cultural Heritage Services (2006) undertook a survey of the southern section of the proposed Central Queensland Gas Pipeline between Raglan Creek (40 km to the northwest of Gladstone) and Gladstone itself. Two routes were surveyed: one crossing the Mount Larcom Range, while the second crossed Larcom Creek near the location of the old Mount Larcom Homestead.

A number of small artefact scatters were located along the route but the most significant place identified was described as being an extensive source of lustrous fine-grained greenish chert in the Mount Larcom

Range near Nichols and The Narrows roads. This source consisted of water-rolled cobbles present in the bed of the creek. It was thought that the quality of these cobbles was being tested via the removal of a flake from one end. Following this, the cobble was either discarded or, if considered suitable, would then be further flaked. Thousands of flaked cobbles (cores) and the flakes that have been struck from these were located at, and in proximity to, this area.

Again, with the locations not appearing in the search results of the ICHR and D, it can only be assumed that the results of this work were not submitted to DERM.

Surat Gas Pipeline, 2009 (now referred to as Arrow Surat Pipeline)

Throughout 2009, a series of cultural heritage investigations were undertaken with the Aboriginal parties associated with the alignment of the proposed Surat to Gladstone gas pipeline.

The surveys of this area (i.e. east of the Bruce Highway) identified a total of 28 areas containing Aboriginal cultural heritage. With one exception, these consist of places containing isolated stone artefact/s generally numbering between one and four at each location. Additionally, one of the places identified as being just to the south of the pipeline route is located some 200 m to the west of a similarly described area identified by Strong in 1998 and included on the ICHR and D as place JF:C71. This was noted as having been previously fenced.

One of these stone artefact areas, located in the Boat Creek area, was also found to be in association with fragmented shell material across an area some 10 m in diameter. This is in accordance with previous investigations that have included this portion of Boat Creek.

The management of these sites will be the subject of management arrangements settled with the Aboriginal Party for the Arrow Surat Pipeline. They will not, however, be directly affected by the project.

5.3 Commentary

The above summary of database searches and other studies relevant to the project, make it clear that the project area and areas in close proximity to it contain sites of particular form, notably stone artefacts, some scarred trees and a shell midden. These cultural heritage areas and objects may be of particular significance to the local Aboriginal community. The cultural signature of this landscape has expression in two separate but intrinsically linked spheres: that relating to traditional and spiritual association with

a number of specific places within that overall landscape; and that resulting from the everyday use and occupation of that landscape by Aboriginal people.

These sites form part of the knowledge-base of the Aboriginal community that links them to an area; they are a material manifestation of the ‘old people’ with whom the current and future generations are directly associated. These individual cultural heritage places are part of a larger cultural landscape for which many more similar places are both known to exist and also would be expected to occur. This wider knowledge also informs an understanding of the nature, form and location of other cultural heritage places that may be expected and may be recorded as part of further cultural heritage studies undertaken for the project.

The project area has been substantially impacted, albeit differentially throughout, by a range of land use practices. This has been greatly exacerbated over time as the larger pastoral runs that originally encompassed the bulk of it have been subsequently sub-divided into smaller and smaller lots, with some used for either residential or industrial development. This has been most keenly felt in the eastern and southern portions.

The types and intensity of these activities will have had an effect upon the Aboriginal cultural heritage. The density and distribution of Aboriginal cultural heritage areas and objects so far identified and recorded are largely attributable to the effects of these activities. This process is one that will have affected these places over extended time periods, continually reworking the affected cultural material and thereby redefining the area’s archaeological profile. Despite this, a distinct measure of cultural patterning often is still evident in the types of places that have been identified and this is likely true as well for those as yet unidentified but likely to be present.

Based on the results of a range of cultural heritage fieldwork from the broader central Queensland region, various components of the Aboriginal cultural landscape have been identified in the project area. These include places more commonly referred to as ‘archaeological sites’, include stone artefacts, scarred trees, hearth / ovens, axe-grinding grooves, quarries, wells, shell scatters, burials, rock art and stone arrangements. As outlined above, some of these components have been recorded within the project area or in its close proximity, and more are likely to be identified as and when a comprehensive examination of the areas to be disturbed by this project is undertaken. Some already identified sites are likely to be impacted by the project as currently envisaged and more likely when the comprehensive examination is undertaken.

The most common of these are likely to be stone artefacts found either as isolated examples or as scatters, based on a very large dataset Australia-wide. While sometimes extensive, these scatters are

generally restricted in size and of low density. Both flaked and ground (such as grindstones and axes) artefacts could be expected to be readily identified among the assemblages. Places containing subsurface cultural heritage material have been identified and tend to be associated with alluvial terraces of principal waterways.

Despite their durability in the face of a raft of post-depositional factors that tend to lead to the destruction of other classes of cultural materials, another major reason for the occurrence of flaked stone artefacts is that there is a high diversity of naturally-occurring stone suitable for artefact manufacture. Materials such as such as silcrete, cherts, mudstones, and a range of volcanic materials (the dominant raw materials used), are found in a variety of forms – including most notably as floaters within the clay soils; as water-rolled cobbles within waterways; and as outcropping reefs. Examples of sources of very high quality material, sometimes over extensive areas, have been identified. This has included the Dry Creek ‘greenstone’ source as well as a silcrete quarry identified at Phillipies Landing.

While it is hard to determine the meaning and place of isolated stone artefacts within a cultural landscape, stone artefact scatters have been identified as representing a range of activities; including living sites (both large and small), knapping floors (an identifiable, and usually spatially discrete, flaking event), short-term campsites, and places associated with other specific activities such as hunting and resource procurement and processing.

The vast majority of survey reports that have been reviewed indicate that the presence, frequency and composition of stone artefact scatters is largely determined by proximity to hydrological features such as waterways, billabongs and the permanency of water within. Large campsites, and by extension larger or more dense stone artefact scatters, will also tend to be located close to a range of other resources including food, raw materials, firewood and material for shelter. Noticeably, water plays an important role in many of these.

Scarred trees have also been a relatively regular feature of the results of previous cultural heritage investigations. Trees were an important resource to Aboriginal people as they provide a range of materials and performed a number of functions. The bark and wood were used for a wide range of purposes including everyday items, weapons, shelter and for wrapping the dead. Trees were also a source of firewood and of food. Hollow trees were also used as one method in the disposal of the dead. The removal of bark from trees to produce these items created the scars that are recorded during contemporary field assessments. Because wood often rots away - museums generally have only small collections of Aboriginal wooden artefacts - scarred trees provide valuable insights into the use of otherwise perishable materials by Aboriginal people.

Today, scarred trees are expected to be found along the margins of the watercourses and on the edges of adjacent floodplains, as well as other remnant-wooded areas where other cultural heritage place-types (such as stone artefact scatters) are present. Although this will vary a little depending on specific land use history of a particular block of land, any 'pattern' to this distribution is, most likely, a result of past logging and clearance activities associated with agriculture and grazing. While scarred trees may be found in any areas containing remnant vegetation communities, they have also been noted along road reserves.

Water management infrastructure such as wells and weirs (an example of the former which has been recorded within the ADSA associated with the Stuart Oil Shale studies) again would likely have been commonplace fixtures in the landscape. Being created within the unpredictable bounds of waterways makes the survivability of such features, particularly smaller or more insubstantial / temporary structures, poor.

Fires for cooking and warmth, commonly called hearths, are assumed to have been a common feature throughout the cultural landscape. Fire can be controlled by a range of techniques such as using different types of timber, stones or clay (the latter being used as heat retainers in the fire), with each of these creating a distinctive resulting pattern or hearth type. Although finding intact hearths in areas that may be associated with the project would appear to be low due to high levels of surface disturbance from tree pulling and other activities, they do occur and have been found in the Bowen Basin.

On the basis of the review undertaken as part of this study, human skeletal remains have only been identified on very limited occasions. The closest recording that has been verified is at Armagh. No additional details regarding the remains, or their original location, are known. Some other burials have been recorded on other sections of the Fitzroy River closer to Rockhampton. The possibility of finds being made during this project is well within the realms of possibility.

The previous identification of a range of places associated with traditional ceremonies and as significant story places would indicate that the identification of other such places during cultural heritage investigations cannot be excluded as a possibility. Other currently unrecorded but important places coming to light during the course of further cultural heritage investigations with Aboriginal Parties. These could take a great variety of forms including landscape features.

6 ABORIGINAL CULTURAL HERITAGE SIGNIFICANCE ASSESSMENT AND CUMULATIVE IMPACTS

6.1 Aboriginal Cultural Significance

At the time of undertaking this study, direct engagement with the Aboriginal Parties had not been completed. As a result it has not been possible to explore with them the specific significance of the cultural areas, object and values identified within the above searches, investigations and analyses, although constraints statement have been commissioned from them for larger planning purposes and in which it is expected that such issues would be explored. They have, however, offered various comments (either directly to Arrow, Arrow's consultants or in various reports cited above) regarding the sites described above. They have also made comment in the various studies that have been reviewed above. It has been noted that they attach a particular significance, as that term is understood within the ACH Act, to those areas and objects.

Some other general observations derived from previous similar projects undertaken with this Aboriginal Party, and observations of other groups from elsewhere in Queensland also are pertinent to this point. Godwin and Weiner (2006) have commented that:

Archaeologists themselves are now acknowledging that they work in situations where they must take regard of the social and political dimensions of their interpretive tasks. They are being asked not just to comment on the material properties of artefacts and sites but also on the social and political conditions under which the research is being conducted in the first place. . . . In other words, the organization of the research itself is a social, political and cultural act that frames the archaeological inquiry as such. It is therefore not limited to the accretion of our understanding of the stylistic or categorical features of the artefacts as such. The value that Aboriginal people place on material culture is likely to be very different than that of the archaeologist and this fact more and more must be a part of the survey rather than an adventitious comment upon it. It is noteworthy, however, that few archaeological reports prepared as part of the EIS process have included any significant methodological acknowledgement of this contemporary socio-political act of framing.

Arrow recognises these comments and intends to construct a process that is cogniscent of this issue, and allows Aboriginal people to give expression to their views on such matters whilst affording those views a primacy in the management process.

Over the last fifteen years or so the Aboriginal Party for the majority of the ABP has had opportunity to be intimately involved in a series of substantial cultural heritage investigations in their country, and have taken up that opportunity. This interest in cultural heritage matters is not, however, a recent interest and it could be suggested that the attitude towards these studies and the materials found during them perhaps has a link with traditional processes of custodianship and management of areas and objects of cultural significance.

This involvement in part reflects general changes in attitude in the mid-1990s and the recognition of Native Title wrought a tremendous change in cultural heritage management as well as more recent legislative changes to cultural heritage management in Queensland dating from 2004. It was recognised that there were both moral and legal imperatives to involve Aboriginal people directly in the EIS process, and this had particular force in relation to the cultural heritage component of such investigations. Aboriginal people took this opportunity to assert what they saw as their traditional responsibilities in relation to the management and custodianship of cultural places. Aboriginal people accepted the chance and have sought to maintain that involvement ever since. Secondly, they also sought to reinforce their rights in relation to their cultural heritage areas, objects, values and information by entering into direct contractual relationships to undertake such studies, engage any necessary technical advice, obtain the necessary permits, maintain control of the cultural information deriving from these studies, and to negotiate and control all subsequent management activities. Aboriginal people have generally adopted a measured and graduated response, guided by the results of the studies they have undertaken. They have taken the position that they have an exclusive custodial responsibility for, and right with respect to, the cultural places and values found in a particular area, and the information deriving from the studies. They have effectively and forthrightly protected that exclusivity as needed.

The significance of cultural heritage areas and objects can often be multivalent: it might be a camping site that also was of significance because of the presence of an important creator being, such as the rainbow serpent but many others as well. There are also general locations that were associated with major ceremonial gatherings in the course of which large numbers of people regularly congregated, and where there were designated areas for camping (which resulted in the creation of large concentrations of material culture).

It is also important to note that in Aboriginal society there was no static list of places that were deemed to be culturally important (Godwin and Weiner 2006). It should also be noted that in a sense the entire landscape was a cultural entity in which some locations required a greater level of response but in which people had to be continually aware that the 'old people' or other entities could manifest themselves. People regularly had experiences in the course of the daily round, or dreamed about places

and things, that were then submitted to older, knowledgeable people for their consideration. Dependent on the outcome of that adjudication, areas and events were then added to a corpus of localities that were seen as important, demanding special attention and response from people: that is those places had to be managed.

This process of identification of an area of cultural significance is entirely consistent with processes seen across Aboriginal Australia and is consistent with the actions of Aboriginal people in other cases. Central to deliberations is consideration of the duty of care they owe to the material culture, as a manifestation of their ancestors, spiritual entities resident in particular areas or mythical hero figures, and to the area as a whole, recognising they are being watched by their ancestors, spiritual entities and hero figures. Indeed, as Aboriginal field researchers often note in the course of fieldwork, they are aware they often are being observed by the ‘old people’ when they are in the field.

Arrow is highly sensitive to the fact that contemporary Aboriginal people take extremely seriously the responsibilities they have to their ancestors, spiritual entities and hero figures, and to the management and protection of the cultural heritage areas and objects they have inherited from them.

6.2 Scientific Significance

The sites that have been identified and that will be affected by the project footprint do have some capacity to yield some information regarding Aboriginal occupation of the general locale. Potentially, they might provide information of the following issues, among other things:

- a. Settlement patterns of Aboriginal people: what were the favoured locations, and why were such locations favoured;
- b. The source of stone used in artefact manufacture, and matters such as trade and exchange of material culture and raw materials in this area, noting that the stone artefacts that have been identified so far appear to be made of locally available raw material;
- c. Shell midden deposits and other stratified sites containing organic material such as charcoal deriving from cultural activities can be dated by using radiocarbon techniques to yield data on the antiquity of occupation;
- d. Occupation deposits may also contain other organic remains of plants and animals that were exploited by Aboriginal people, and thus yield insights into subsistence economy, seasonality of occupation and related matters; and
- e. The stone artefacts and any tools made of material such as bone or wood can provide information on aspects of technology.

6.3 Regional Impacts and Cumulative Impacts

The traditional approach to cumulative impact assessment is not appropriate for Indigenous cultural heritage management for the project. The reasons for limited applicability are as follows:

1. There is no simple case to be made to define the existing environment. There is no base data as to just how many cultural sites and of what types there are in any particular region or sub-region against which we can compare the results of a survey of the area to be affected by development so as to make a calculation of loss. Even when focusing solely on archaeological cultural heritage it is safe to say that no region has been the subject of a comprehensive and systematic survey. Datasets and registers are subject to limitations (as discussed in Section 4) and cannot be viewed as comprehensive datasets of what is out there. In this regard, when considered in a regional sense, as is appropriate for cumulative impact assessment, it is impossible to know if impacts to cultural heritage that occur as a result of any one project represent impacts on the totality of the heritage or to a subset of it, and if the latter, just what percentage.
2. It is not easy to determine at what point the critical threshold of losses is crossed. There is no set of quantitative measurements that is available that says that a certain level of loss is acceptable but beyond which level it cannot be contemplated, and if such quantitative measurements were set, there is the question of competing measures and which of those should have primacy in a particular set of circumstances: the archaeological community, the Aboriginal community or statutory bodies? Nor is there a simple qualitative measure – thus, different sites offer different opportunities for scientific analysis and cannot be easily compared one to another in this regard. The issue of losses thus is a qualitative assessment requiring a decision as to where the balance of convenience lies in the matter taking account of the particular circumstances.
3. It is impractical to set an absolute cultural heritage datum against which to measure the impact of a proposed development. Certain elements of the archaeological landscape are no longer coming into being – e.g. people may no longer be using stone artefacts or no longer collecting shellfish in such quantities that massive middens eventuate. However, for Aboriginal people, the cultural landscape is continually coming into being. New phenomena are experienced, new things encountered, and these are then incorporated in the cultural landscape as they see it. If the cultural landscape is continually coming into being, it is not as simple as setting a simplistic quantitative, absolute threshold against which we can measure whether a loss is or is not acceptable.

In addition to the above, and with direct reference to the Project, the nature of much of the project development facilitates a situation where avoidance of disturbance can serve as the most effective management measure. Arrow has committed to the Avoidance Principle: it will endeavour to avoid harm to Aboriginal cultural heritage, but recognises that this may not be possible in all cases and in those cases will act to minimise harm. Other projects may also exercise avoidance strategies to varying degrees, but their effectiveness in this regard may not truly be known until such time as development progresses.

It is only where parties have sought to implement the Avoidance Principle and we have the results of that exercise measured against the totality of what was found that we can measure the impact of those projects to add to any model of cumulative impacts. That is, they cannot be quantified in advance of the particular project proceeding. Such data are not available and may not be made available for various reasons (e.g. s30 of the ACH Act). It is in these circumstances that other protective processes such as CHMP, in which impacts will be managed on a case by case basis, through implementation of the Avoidance Principle, offer the best means of an effective management process, rather than attempting to quantify possible impacts in advance from uncertain data and making judgements on those inadequate data.

7 PROPOSED ABORIGINAL CULTURAL HERITAGE STRATEGY

7.1 Identification of Aboriginal Parties

A range of searches of the register of native title claims maintained by the National Native Title Tribunal (NNTT) have been made for the purposes of identifying Aboriginal Parties. Various forms of data have been used including:

- Digital data of the native title claim boundaries as of April 2004 (the date of implementation of the ACH Act, and the relevant date for determining native title Aboriginal Parties), and, to the extent available, at roughly six monthly intervals thereafter until and including the most recent data set available at the time of preparing this report;
- Hard copy extracts of each native title claim identified for the ABP area from the above analysis;
- Review of published native title claim maps on the National Native Title Tribunal (NNTT) web site and information provided by relevant claim officers in the NNTT to ensure that no new claims have been excluded from the analysis.

This data has been used to determine which groups constitute the Aboriginal Parties for cultural heritage issues associated with the proposed Project and how much of it lies within their claim area. Figure 6 and Table 6 provide the outcomes of this analysis.

On the basis of criteria specified in ss34 and 35 of the ACHA, the following currently registered native title claims (in alphabetic order) have standing as exclusive Aboriginal Parties for that portion of the ABP that falls within their claim boundaries:

- Barada Barna (QC08/11, QUD380/08)
- Birri (QC98/12, QUD6244/98)
- Darumbal People (QC97/21, QUD6131/98)
- Darumbal #2 (QC99/1, QUD6001/99)
- Jangga (QC98/10, QG6230/98)
- Port Curtis Coral Coast (QC01/29, QUD6026/01)
- Wiri People Core Country Claim (QC06/14, QUD372/06)

It should be noted that they hold exclusive status notwithstanding the presence of any unregistered claim, irrespective of whether that claim was registered as of April 2004 or not. This extends over approximately 86% of the main line and laterals.

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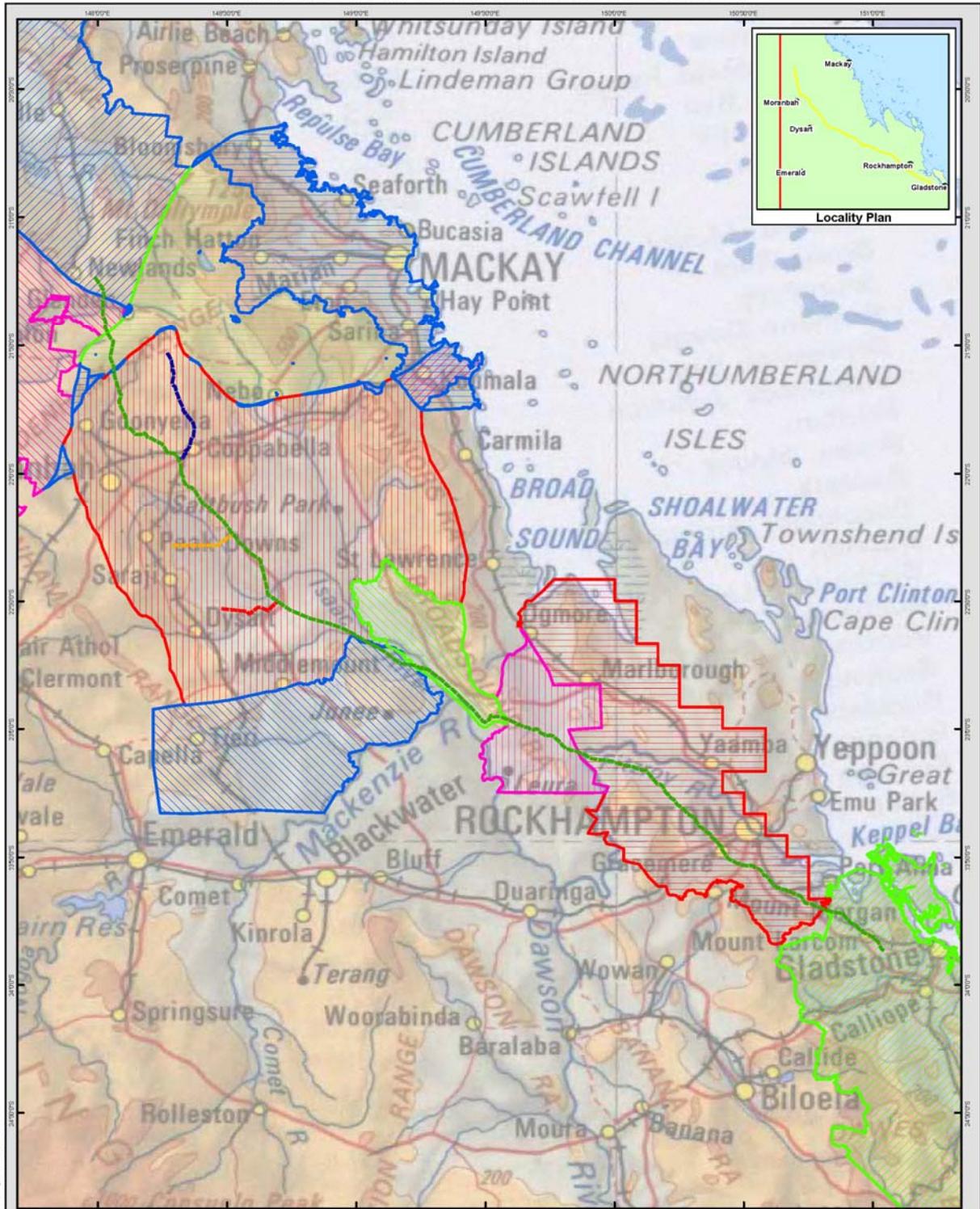


Figure 6: Native Title and asserted interests over the pipeline



arrowenergy
 go further

 Scale: 1:1,500,000 @ A3
 Coordinate System: GCS GDA 1994

NOT FOR CONSTRUCTION

Figure 6 Native Title and asserted interests over the pipeline

The following also have the status of exclusive Aboriginal Parties for that portion of the ABP that lies within their now unregistered claim but which do not overlap with any currently registered claim, with approximately 3% of the route falls into this category of Aboriginal Party:

- Southern Barada and Kabalbara (QC00/4, Q60004/00)
- Wiri #2 (QC98/11, QG6251/98)
- Barada Barna Kabalbara and Yetimarla People (QC01/13, QUD6011/01)

Barada Barna Kabalbara and Yetimarla People claim overlaps with a section of the Wiri #2 claim. The extracts for these claims indicate that the Barada Barna Kabalbara and Yetimarla People's claim was registered as of 12 January 2009 while the Wiri #2 claim was last registered as of 24 May 2007. In accordance with the principle of 'last man standing' the Barada Barna Kabalbara and Yetimarla People appear to constitute the Aboriginal Party for that section of the mainline, being just less than 1km in length. Moreover, an ILUA has been settled for this area, and that ILUA includes procedures to manage cultural heritage, thereby satisfying Part 7 of the ACH Act.

There are three sections of the ABP where no native title claim is or ever has been registered. This extends for a distance of 63km or just over 10% of the proposed route. As regards identification of an Aboriginal Party, these sections technically fall to s.35(7) of the ACH Act. If it is necessary to issue CHMP notices, then these areas would be subject of public advertisement. It is noted, however, that similar areas were subject of the Enertrade Central Queensland Pipeline route. The larger section, to the northeast of the Darumbal claim, of about 62km was split between the Southern Barada Kabalbara and the Jetimarla People. In both instances, there were successful ILUAs authorized and registered by these groups.

The situation in regard to this section has now changed somewhat. Firstly, the Southern Barada and Kabalbara have decided to act separately in relation to this pipeline. Secondly, while the Jetimarla remain active in relation to this project, another grouping that refers to itself as the Yetimarla has also signaled its interests in this project. While the land interests of the Jetimarla and Yetimarla coincide, the Yetimarla assert that they are separate groups and should be so treated in negotiations. Thirdly, in the course of negotiations, Darumbal #1 has advised of its intentions to formally amend its native title claim boundaries subject to successful resolution of this issue through mediation, and in relation to this project Darumbal is willing to allow others to participate in both native title and cultural heritage issues in areas subject to this amendment in advance of any formal amendment being registered. Darumbal has agreed to provide any necessary support to allow these arrangements to be set in place and for any ILUA arising therefrom to be registered. This will reduce the area in which Darumbal asserts an

interest, while at the same time increasing the length of pipeline over which the Jetimarla and Yetimarla would have an interest.

In subsequent meetings, the Kabalbara, Southern Barada, Yetimarla and Jetimarla groups have settled the boundaries of their interests. Arrow has accepted these boundaries, and is engaging with each group on the basis of those boundaries.

The remaining unclaimed section between Darumbal and PCCC has been split between these two groups in the course of several projects. Successful ILUAs have been settled on this basis, and there is no reason to suppose such would not again be the case in this instance.

7.2 Aboriginal Party Expectations and Nature of Agreement

The native title and/or endorsed parties retain a strong interest in ensuring that the cultural heritage areas, objects and values identified throughout the project area are managed in a culturally-appropriate fashion, and with their direct input. Wherever possible, it will be done by conservation of the area or object/s *in situ* and avoidance of impact. Nevertheless, it will also be recognised that the controlled removal and storage of cultural objects in locations acceptable to the native title and/or endorsed parties will be necessary in some or many situations given the constraints that will operate upon the project. It has been anticipated that the native title and/or Aboriginal parties will require the implementation of a management process that embodies culturally appropriate mechanisms for the management of their cultural heritage, along with the conclusion of an ILUA that provides compensation for the suppression of their native title interests.

The ACHA duty of care for the project can be met through either a suitable native title agreement that does not expressly exclude cultural heritage, or an approved Cultural Heritage Management Plan (CHMP). Where the former is decided upon, the proposed cultural heritage strategy could involve concluding a Cultural Heritage Agreement (CHA) negotiated with the relevant Aboriginal Parties, as a schedule in an ILUA to the extent that this is an available option, Arrow were to consider this an appropriate strategy, and if was agreed by the native title and/or Aboriginal parties.

It should be noted, however, that if an ILUA is not completed in accordance with the project timetable or is not registered, Arrow will be required to comply with Part 7 of the ACHA in another manner (i.e., development of a CHMP for approval by DERM). With this in mind, it is proposed to develop a CHMP in parallel with the negotiation of an ILUA to ensure that the project is compliant with the Duty of Care irrespective of outcomes in the sphere of native title.

At the current time, Arrow has settled a series of four ILUAs with the following groups:

- Barada Barna

- Jangga
- Wiri Core Country
- Biri People

It has negotiations on ILUAs that are well advanced with:

- Darumbal People
- Port Curtis Coral Coast

In each of these six cases, covering the vast majority of the project route, the parties have agreed that they will apply section 86 of the ACH Act. That is, they intend to settle ILUAs that not only do not expressly exclude cultural heritage but that will actually expressly provide for the management of cultural heritage by settlement of what are termed Ancillary Cultural Heritage Agreements that will constitute a schedule to the ILUA.

The same strategy will be applied to the remaining sections of the project route that are currently unclaimed. At this stage, it is expected that ILUAs will be settled for the sections between the Barada Barna and the Darumbal native title claims and this will likely be split between four groups: Jetimarla and Yetimarla (covering the same section of the pipeline and Southern Barada and Kabilbara (each covering separate sections of the pipeline). In each case, Arrow will approach negotiations with a view of applying section 86 in the same way it has elsewhere (i.e. use of Ancillary Cultural Heritage Agreements).

Arrow will only move to develop CHMPs under Part 7 where either an ILUA cannot be settled and authorised or where the ILUA subsequently fails registration. At this stage, Arrow has not issued any of the requisite notices for a CHMP, preferring to allow the ILUA process to play its way through before doing so. It is Arrow's view that sufficient time will be available to comply with mandatory timeframes for notice and development of a CHMP and meet requirements arising from section 87 of the ACHA before any actions that may cause harm to Aboriginal cultural heritage will arise.

7.3 Principles of Cultural Heritage Management

7.3.1 Base Management Principle

Arrow's management principles relating to Indigenous cultural heritage fully recognise that the Aboriginal Parties retain a strong interest in ensuring that the cultural heritage areas, objects and values identified along the course of the project route are managed in an appropriate fashion and with the direct input of the Aboriginal Parties. Wherever possible, Arrow anticipates that this will be done by conservation of the area or object/s *in situ* and avoidance of impact, consistent with Avoidance

Principle: wherever possible steps will be taken to avoid harm and only after it has been determined that this is not possible will steps to minimise and otherwise manage harm (including mitigation) will be implemented.

Arrow notes that pipeline construction, with the flexibility available in setting the alignment of the pipeline within certain admitted constraints set by geotechnical issues associated with geology and geomorphology along the route, engineering requirements, as well as issues associated with management of the natural environment (e.g. the need to avoid impact on national parks or areas subject to international obligations) offers real opportunity to practice the avoidance principle. To this end it will commission assessments that examine a corridor with a minimum width of 100m (and possibly wider in certain areas), noting that it only requires an operational easement of 30m. This will allow it to design the alignment within that 100m corridor to avoid the greater majority of sites, commonly referred to as tactical realignment. In other circumstances it may, where a highly significant constraint is identified, look to shift the entire corridor laterally to avoid impact – known as strategic realignment. Arrow has used both approaches in the design of its Arrow Surat Pipeline and sees no reason not to do so in this case. Assessments will be commissioned in a timely fashion to allow for inclusion of the relevant data in final alignment design.

Nevertheless, it also is recognised that the controlled removal and storage of cultural objects in locations acceptable to the Aboriginal Parties will likely be necessary in some or many situations. A range of other management strategies will also likely be required on a case-by-case basis. It is been anticipated that the Aboriginal Parties will require the implementation of a management process that embodies appropriate mechanisms for the management of their cultural heritage. Arrow is committed to providing the opportunity to achieve this outcome.

7.3.2 Agreement-Based Process

The confidentiality provisions in the agreements that have been settled and that are in negotiation preclude the inclusion of precise details in the EIS. Arrow can, however, describe the principles it has adopted in its engagement with relevant Parties. These have been captured in large measure in the Ancillary Cultural Heritage Agreements.

Arrow wishes to meet the cultural heritage duty of care by settlement of agreements with Endorsed Parties. Arrow will agree to situate such agreements within the framework of ILUA's to be negotiated with the Aboriginal Native Title parties but only where this is the formally expressed wish of the relevant Native Title party: where this is not the case it will develop a CHMP.

Arrow also notes, however, that where it concludes that an ILUA will not be registered within the required project timeframe, or other contingencies arise such that Arrow concludes this option is not a feasible means of meeting the duty of care, Arrow reserves the right to pursue any other option available to meet the duty of care. This will involve the development of a CHMP or CHMPs. Arrow's preference in this regard is that these will be agreement-based but, where circumstances militate against this, Arrow may adopt other means provided in the ACH Act to secure a CHMP or CHMPs.

The Cultural Heritage agreement or CHMP consists of five major sections, with four of them being substantive in nature and the fifth consisting of standard commercial conditions. The four substantive sections include:

1. The principles that are to be adopted in relation to cultural heritage. These include ownership of cultural heritage, management of information, responses to cultural issues that might arise (e.g. death and bereavement issues), dispute resolution, general administrative arrangements, etc;
2. The process for undertaking the Initial Cultural Heritage Assessment (ICHA) and the outcomes expected from this. This will relate to the identification of significant areas and objects that exist in the area subject to the agreement or CHMP. This will be covered in the Terms of Reference agreed for the fieldwork;
3. The development of a Cultural Heritage Management Strategy (CHMS) and the implementation of this in the context of construction. This will relate to how the significant areas and objects identified in the ICHA are to be managed. The strategy will have two major elements: pre-construction measures; and construction-related activities. In developing the CHMS, the parties will, to the greatest extent that is technically feasible, give effect to the fundamental principle that site avoidance is the preferred management strategy. Provision for cultural induction processes, subsequent management of cultural material, and other contingencies will also be covered. The CHMS will constitute a formally agreed component;
4. Provision will also be made for development of a Post-Construction Heritage Agreement (PCHA) if this should prove necessary. This will cover those steps that need to be implemented for the management of cultural places on a regular basis or in the context of emergencies associated with general maintenance, other uses (e.g. recreation) of the infrastructure, or expansion of projects as required. The PCHA will also constitute a formally agreed subsidiary agreement.

7.4 Arrow's Management Principles

7.4.1 Core principles

Arrow has committed to adopting a range of principles with respect to cultural heritage management. These will be refined in the course of developing the cultural heritage agreement or CHMP. The following outlines those principles that have been adopted by Arrow.

1. Arrow may act to the strict timelines of the ACH Act with respect to the development of the CHMP where Arrow decides to develop a CHMP. Where it decides to do so, Arrow will inform the Aboriginal Parties of its intention to do so;
2. Arrow will develop and implement the agreement or CHMP through negotiation with the Aboriginal Parties. In relation to implementation this will explicitly involve the Aboriginal Parties in all aspects of management through establishment of a Coordinating Committee/s that has membership of representatives of the Aboriginal Parties, with decisions to be made by consensus between the Parties, and which will make all decisions in relation to the management of cultural heritage;
3. Arrow is conscious that this project may be the catalyst for tensions and stresses within Aboriginal communities. To minimise this, Arrow will not act in a partisan fashion (and avoid the perception of this to the extent it can), will not enter into group or inter-group politics, and will set in place mechanisms designed to lessen adversarial behavior between second parties who may be in conflict with each other;
4. Arrow will use current best practice in the measures implemented as against base compliance and will work with the Aboriginal Parties to develop key performance indicators to ensure that it is best practice;
5. Arrow will seek agreement of Aboriginal Parties on the core and subsidiary principles that influence the design of the process and its implementation;
6. Arrow will initially draft agreements in accordance with the agreed principles, and these will then be negotiated between the parties;
7. Arrow accepts as a base principle underwriting the entire cultural heritage exercise the recognition of the different imperatives and interests of the parties, and their roles in relation to cultural heritage. This can be encapsulated as follows:
 - The core business of Arrow is the supply of energy (gas and associated services) to their customers, with those tasks to be undertaken in a commercially feasible and environmentally responsible fashion.
 - The core business of Aboriginal Parties is to manage their cultural heritage in a culturally appropriate fashion in the context of the proposed developments proceeding.
8. Arrow accepts that the selection of technical advisers to assist in conducting field investigations and preparing reports on same lies with the Aboriginal Parties. A process will be developed that will allow the Aboriginal Parties to nominate technical advisers with their appointment to be subject to Arrow's agreement;

9. Arrow will retain the right to commission expert review of reports, as well as for any proposed management strategy in advance of its implementation with their appointment to be subject to consultation with the Aboriginal Parties;
10. Arrow proposes to adopt, the greatest extent possible, an agreement-based process between the parties for authorization of all project activities where such may harm cultural heritage. This will be given expression such that any ground disturbing activities may require the issue of a formal permit to undertake ground disturbing activities issued within Arrow and that may require independent assessment in advance by the relevant Endorsed Parties. The primary authority for the permit will be the CHMS negotiated after the ICHA has been completed. The permit process will be linked to the project's GIS to allow auditing of the process.
11. Arrow expects cultural heritage data will be integrated into GIS. The GIS will be developed in fashion that recognizes and gives expression, to the extent practical, to the other principles included herein;
12. Arrow accepts that the Aboriginal Parties are the owners of all cultural heritage areas and objects that may exist in the areas to be affected by these developments, and will use all reasonable endeavours to give effect to this, and the implications arising from it, to the extent possible under existing legislation;
13. Arrow accepts that all cultural information generated or collated (other than that which is already in the public domain), and subsidiary documents relating to the cultural heritage program (other than agreements or management strategies) produced in the course of these projects will remain the property of the Aboriginal Parties;
14. Arrow must be guaranteed access to such information and it must be available in a timely fashion. To that it end, Arrow will only agree to data management processes that Arrow considers will guarantee this access in the format Arrow considers necessary and provide it in a timely fashion;
15. Arrow may, where the parties consider it necessary, enter into access and use protocols with the Aboriginal Parties relating to the cultural heritage data generated or collated as part of this project;
16. A dispute resolution processes will constitute a component of the agreement or CHMP and, other than in exceptional circumstances, the steps in this process will be exhausted before any party makes any use of any other legal mechanisms although neither party will be precluded from making use of all avenues available to them;
17. The agreement or CHMP should provide a formal mechanism for investigation of alleged substantive breaches and subsidiary agreements, and should make provision for appropriately graded sanctions for those who breach the agreement or CHMP;
18. Arrow accepts that there is a requirement for a formal cultural heritage induction process that makes reasonable provision for all project personnel to be made aware of the cultural heritage

values associated with the project, and of their responsibilities and that Arrow ensures that, wherever possible, Aboriginal Parties or their nominees will assist in the development, and participate in the presentation, of any cultural heritage induction process and that this will include a component on cultural awareness;

21. Provision will be made in the agreement or CHMP for review or variations if there is variation of any of the existing project components or if additional project elements emerge that were not anticipated in the original project concept; and
22. Provision will be made in the agreement or CHMP to allow parties have a right to review and vary provisions of the agreement or CHMP at regular intervals (probably on an annual basis) for the duration of the agreement or CHMP or if particular issues arise at any time.

7.4.2 Contingency Principles

Arrow reserves the right to terminate the negotiation of the agreement or CHMP or to suspend various provisions relating to the implementation of the agreement or CHMP, subject in the latter case to the provisions of the agreement in this regard. Where it does so, Arrow will meet the duty of care through other means provided for in the ACH Act in relation to compliance with Part 7 of the ACH Act or by contingency provisions of an agreement or CHMP. The circumstances where these contingencies would apply include:

- Where Aboriginal Parties advise that they will not engage with Arrow in negotiation of an agreement or CHMP or otherwise unreasonably attempt to delay the development of an agreement or CHMP – this also covers circumstances where Arrow determines to invoke the 84 day rule for development of a CHMP provided in the ACH Act;
- Where the Aboriginal Parties fail to comply with responsibilities and processes freely agreed in an agreement or CHMP, or the parties fail to reach agreement on the implementation of the same after reasonable attempts; and
- Where project timeframes require adoption of a more timely process to meet the cultural heritage duty of care, and an alternative option in this regard is available to Arrow.

In doing so:

- Arrow will not initiate any other actions provided for in the ACH Act without first advising the Aboriginal Party of its intention to do so;
- Arrow will continue to seek negotiated agreement in the event that Arrow does initiate such actions; and
- Arrow will cease any action provided for under the ACH Act if and when negotiated agreement is reached.

7.5 Subsidiary Management Processes

The following measures, subject to negotiation and refinement in as yet un-concluded agreements, constitute standard elements of the management process.

Notable in its approach, Arrow intends to establish coordinating committees for an agreement or CHMP that it develops. These will include representatives of both the Aboriginal Parties and Arrow. The purpose of the committee, among other things, will be to oversee implementation of an agreement or CHMP, settle and implement specific management programs, deal with disputes between the parties. Decision-making will be on the basis of consensus between the parties.

Otherwise, Arrow anticipates that an agreement or CHMP will cover the following issues and serves to indicate the comprehensive nature of the document, and to show that key issues (such as data management, management of human remains and dispute resolution) will be addressed.

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7.6 Constraints Statements

Arrow recognises that the data and information regarding Aboriginal cultural heritage to which it has access in the preparation of the EIS is by no means comprehensive. Even if complete access had been available to all documentary sources, not all cultural areas, objects and values of significance to Aboriginal people may have been mentioned, nor the full dimensions of their significance to Aboriginal people elicited. Accordingly, Arrow has taken specific measures to address this issue by offering resources to the Aboriginal Parties to identify major places that they consider might be affected by proposed development activities within the project area. Arrow has sought to formally commission them to provide statements outlining what they consider to be major constraints to the project proceeding. The terms offered for these studies were intentionally broad so as to allow those people

who elect to take this opportunity the greatest opportunity to describe any areas, objects and values about which they have concerns. The terms seek to identify:

1. Any area or object of cultural heritage significance to the Aboriginal Party of which they are now aware in the area to be affected by the proposed development or areas to be affected by associated infrastructure;
2. Any particular aesthetic issues associated with the project area that the Aboriginal Party identify as having a related cultural heritage dimension; and
3. Awareness of the impact of the proposed project on any fauna or flora of cultural heritage significance to the Aboriginal Party in the area to be affected.

Special arrangements, in the form of confidentiality agreements, are also available if necessary to ensure that in providing such information the Aboriginal Parties is not breaching any cultural protocols in providing such information and that Arrow would not be in breach of s29 of the ACH Act. The resultant data, if this opportunity is taken up the Aboriginal Parties, will be incorporated in a suitable fashion within the GIS Arrow is building for cultural heritage, and then factored into more detailed project design so as to give effect to the avoidance principle.

8 ABORIGINAL CULTURAL HERITAGE: CONCLUSIONS AND RECOMMENDATIONS

Arrow fully appreciates that the management of Aboriginal cultural heritage is an issue that will require ongoing management throughout the course of implementing the ABP Project. Irrespective of its form and nature, all Aboriginal cultural heritage is accepted as being of particular significance, as that term is defined in the ACH Act, to the relevant Aboriginal Parties. It is expected that most Aboriginal Parties will express a desire to exercise a primary role in the management of this heritage. Arrow is determined to give this desire the greatest expression in its management process, subject only to the willingness of Aboriginal Parties to engage with Arrow in a collaborative approach that will obviate any requirement to adopt other processes sanctioned by the ACH Act where such collaboration is unachievable.

The following can be concluded from the analyses undertaken to this point:

- a. The data and information that have been used in the preceding description of the Aboriginal cultural heritage landscape cannot be construed as definitive, and this point has been made explicit. They certainly are not of an order whereby a firm opinion could be offered as to in what ways proposed development activities should be modified to best give effect to the avoidance principle. This is simply a result of the inherent limitations of these data, something that has been discussed in detail earlier;
- b. There clearly are some Aboriginal significant areas and objects that are either situated within, or in close proximity to, areas that will be disturbed by the project. It is, therefore, a reasonable prospect that additional Aboriginal cultural heritage will be found;
- c. There is considerable flexibility in relation to the relocation of specific elements of the project to give greatest effect to the avoidance principle. In circumstances where there is no opportunity to give effect to this principle, provision needs to be made to mitigate the unavoidable impacts. The cultural heritage process already in negotiation makes express provision for the implementation of the avoidance principle for all other elements of the project;
- d. On current understandings, based on admittedly constrained knowledge of the nature of the Aboriginal cultural heritage in the project footprint, the impact of the project measured against regional cultural heritage values would be rated low risk. Measured against registered sites and those recorded in other literature, the currently identified sites are neither unrepresented elsewhere nor are they of an order that would see them described as outstanding examples of that particular site type such that their loss would be scientifically unacceptable; however
- e. It is stressed, however, that the observation made in (d) does not in any way diminish that these sites, and any others identified in areas that will be disturbed by the project, whatever their form, are of particular significance to the Aboriginal Parties.

Taking note of this, it is recommended that Arrow take the following actions:

1. Continue the ongoing process of engagement to settle formal Cultural Heritage Agreements of the types specified in Part 7 of the ACH Act with the Aboriginal Parties;
2. Move to conduct comprehensive cultural heritage studies (to be known as Initial Cultural Heritage Assessments - ICHA) for all elements of the ABP with these to be undertaken with the direct input of the relevant Aboriginal Parties in a manner that is consistent with the provisions of the Cultural Heritage Agreements;
3. Based on the results of the ICHA, Arrow should, in collaboration with the Aboriginal Parties and/or otherwise in a manner consistent with the Cultural Heritage Agreements, develop a comprehensive program of management of all Aboriginal cultural heritage to be directly affected by the project. This should cover any management actions required in advance of the commencement of construction, measures to be implemented during construction, and measures deemed appropriate once construction has been completed and for the life of the project including decommissioning; and
4. Arrow should also continue its attempts to commission high order constraints papers from Aboriginal Parties to identify places of outstanding Aboriginal cultural heritage significance of which Arrow should be immediately aware so that it can design its operations to give effect to the Avoidance Principle as enunciated in the ACH Act.

9 HISTORICAL CULTURAL HERITAGE – REVIEW RESULTS

9.1 State Cultural Heritage Register and Database Searches

Searches of a series of relevant State cultural heritage registers and databases were undertaken with respect to known Historic heritage areas and objects that may intersect with or be within defined proximity of the Project. Searches of these were again requested using the 5,000m buffer of the Rev D alignments of the Project.

9.1.1 *Queensland Heritage Register*

A formal search was also undertaken for any places that may be included on the QHR that may be present within the vicinity of the Project. Of the three places identified within the 5,000m buffer of the pipeline centrelines (Figure 7), only one fell within the 1,000m buffer of the Project. This is Raglan Homestead (QHR ID: 600389), the closest point of which is located some 160m to the southwest of the ABP Mainline. As such it would not seem likely that this place would be impacted. Additional details for the places returned by this search are provided in Table 1 – section 4.

9.1.2 *Cultural Heritage Information Management System*

Separate to the QHR, DERM has also compiled a substantial range of information regarding historic heritage places and incorporated this into its Cultural Heritage Information Management System (CHIMS). This database has been compiled from a comprehensive review of local histories, a wide range of heritage studies and a series of state-wide thematic studies on issues such mining, communication networks and the like commissioned by DERM. At the moment this database serves various purposes: for information purposes as a summary of reported places; to feed into Local Government Authority development control planning schemes; and importantly, as a source of heritage information to support possible future listings on the QHR. It has not (at this stage although is proposed) been the subject of a systematic audit and as a result is an incomplete record both of known places and the specific information about places that have been entered. However, it is by far the best guide for a wide range of places across Queensland. The central Queensland region has been a significant focus of activity and thus it is an excellent resource for this study.

Analysis of CHIMS identified an additional six places from the 5,000m buffer search (see Figure 6; see Table 1 – section 5). None of these were found to be located within 1,000m of the various project elements. This reflects the fact that the project is a long but very thin, linear project that largely avoids areas of major population aggregation and existing development activity (where possible). As a general point, it should be noted that a number of places within CHIMS do not have any locational attributes that allow for the kind of analysis that has been undertaken within this report. In any case, CHIMS listings have no current statutory management requirements.

ARROW BOWEN PIPELINE PRELIMINARY ROUTE (REV D)

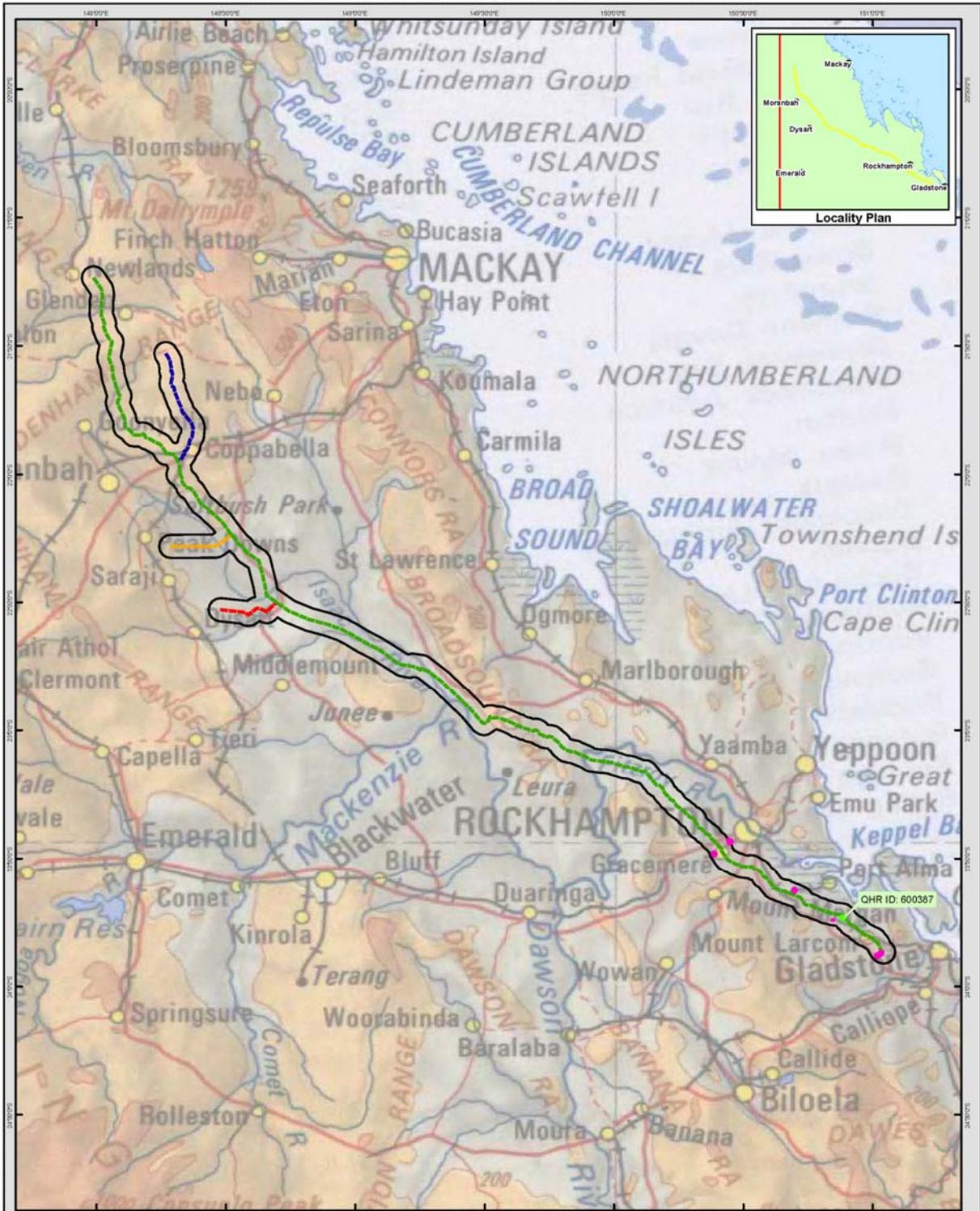


Figure 7: Results of the QHR & CHIMS searches identifying those places located within 1,000m of the Project

- ABP Mainline Rev D
- Dysart Lateral Rev D
- Elphinstone Lateral Rev D
- Saraji Lateral Rev D
- Cultural Heritage Places within 50-1000m Proximity
- Remainder of Cultural Heritage Places within 5000m Search Area
- 5,000m Buffer Cultural Heritage Place Search Area

arrowenergy

 go further

N

 0 25 50

 Kilometres

 Scale: 1:1,500,000 @ A3

 Coordinate System: GCS GDA 1994

NOT FOR CONSTRUCTION

Figure 7 Results of the QHR & CHIMS searches identifying those places located within 1,000m of the Project.

9.2 Local Government Authority Planning Schemes

The study area includes a number of Local Government Authorities. With the exception of two of these (Gladstone and Calliope), none maintain separate heritage registers for either Aboriginal or historical cultural heritage.

Review of the current planning schemes for the former Gladstone City Council and Calliope Shire Council (amalgamated in the Gladstone Regional Council) were undertaken with respect to the status of and processes for Aboriginal cultural heritage, and with particular reference to any specific Aboriginal cultural heritage registers that may have been compiled. Although generally deferring to the processes and registers established under both the ACH Act and QH Act, the planning schemes for these two areas contain both an overlay code and specific registers for both Indigenous and European cultural heritage places. A copy of these was obtained and reviewed as part of this study.

In the list of European historic heritage places all but two of the listed places (n=10) are already included within the QHR and such would have been identified within the search undertaken (see above). The lot on plan details provided for the Glassford Creek Copper Smelters and Norton Goldfield, the only two not included on the QHR, place these well to the south of the project area.

A further 11 localities comprise the Local Heritage List for the purposes of the Gladstone City cultural heritage overlay code. While no information as to their values are provided, a review of their addresses and real property descriptions make it clear that none are within the project area.

9.3 Commonwealth Heritage List and Register Searches

Searches were conducted of a range of other Commonwealth heritage lists and registers regarding identified and inscribed places that may be located either within or in proximity of the Project area. These searches, undertaken using the same 5,000m buffer of the Project, included the World Heritage List, the Commonwealth Heritage List, the National Heritage List and the Register of the National Estate. Datasets made available through the Heritage Division of the Department of Sustainability, Environment, Water, Population and Communities (DSEWPC) were used in this analysis.

In all, only two places were identified from these searches (see Figure 8 and Table 1 – section 6 for further details), from the Register of the National Estate. Neither one is located within 1,000m of the Project.

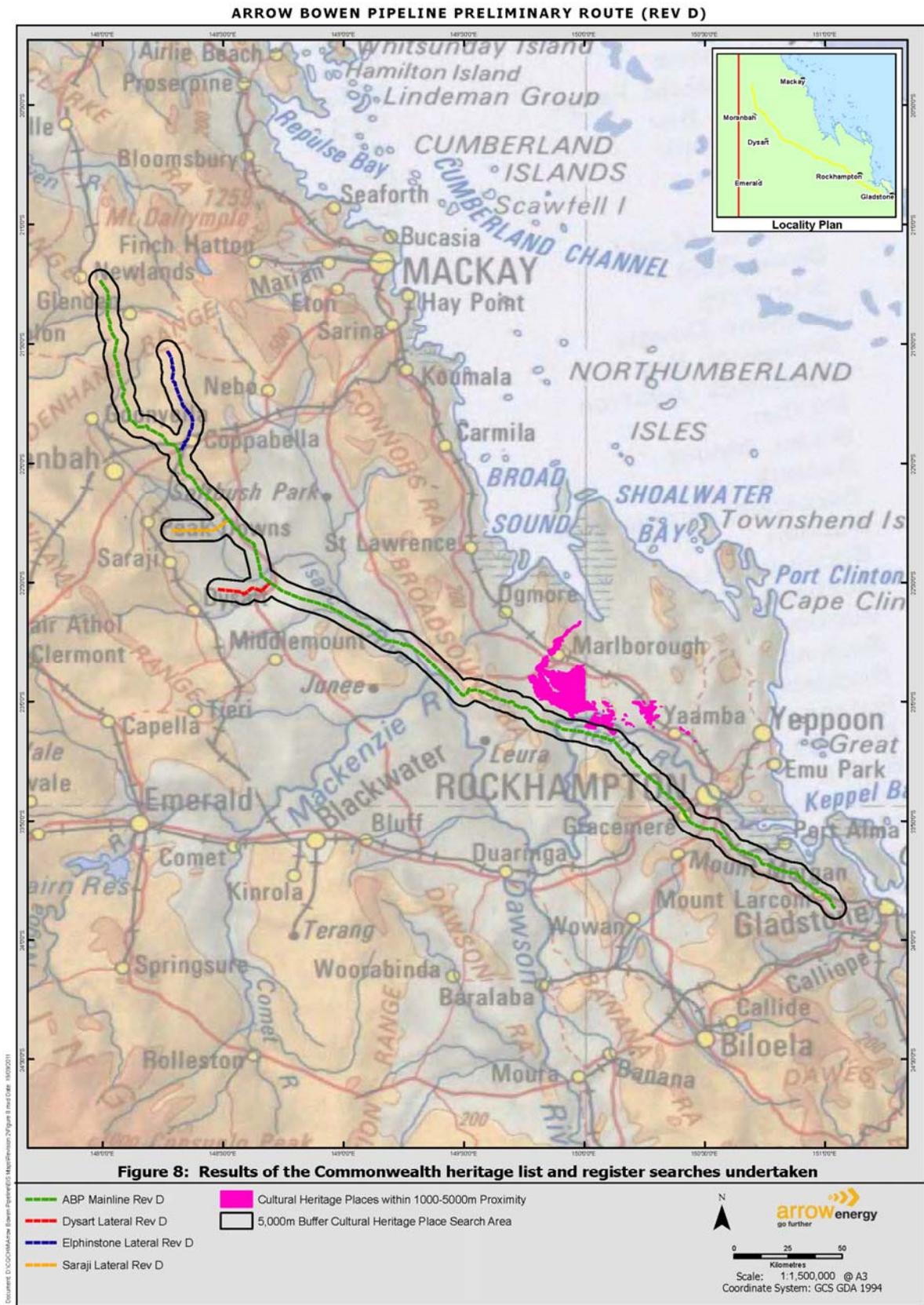


Figure 8 Results of interrogation of Commonwealth heritage registers

9.4 Literature Review

A comprehensive literature review of pertinent historic sources was undertaken. This included authoritative historical accounts of the region, local area histories, and numerous unpublished manuscripts held in the Capricornia Collection at the Central Queensland University.

We attempted to reference any places mentioned in any of these sources against the proposed pipeline route in various ways. However, in light of the generally high degree of uncertainty pertaining to the location of places so identified, it was not often possible to make an accurate assessment of possible association with the pipeline. To the extent they can be compared, none of these places correspond with any place included in Commonwealth or State historic heritage registers. This suggests that they have not been deemed worthy of entry on even the CHIMS level database developed by DERM (see above) let alone warranting formal protection. Old homesteads, possible small scale mining activities, old roads and the like were the primary places identified.

A conservative management approach is adopted towards these data. That is, references have been noted, but rather than seek to make any management decisions based on such poor information, the results of this study will inform any results arising from the comprehensive survey of the route that Arrow is commissioning. Management will then be based on the actual outcomes of this study.

9.5 Previous studies

Two previous studies of direct relevance to this project have been identified. We summarise each here.

9.5.1 Marlborough Nickel – historic heritage

Betty Cosgrove, a local historian, was commissioned to prepare a study of the historical values associated with the Marlborough Nickel Project in 1998. This project lies in close proximity to the ABP and so is useful in providing context of what might be expected.

A comprehensive examination was made of a wide range of historical information including primary and secondary texts pertaining to the study area. This included diaries, correspondence and journals of early settlers and station owners, mining journals, historical maps, newspaper accounts and more recent texts which review the history of the area. This material was located either in the Capricornia Collection, Central Queensland University, the State Library of Queensland or the Queensland State Archives. Oral testimony was also recorded from pastoralists who once lived or are still resident within the Marlborough area. Numerous visits were made to the study area to meet property owners and to examine the areas to be affected by the proposed development.

The study area provides a useful summary of the history of the area. Cosgrove then went on to document the places known in the general area. The following places of historic significance were identified in the vicinity of the study area. They include: property homesteads, camping and water reserves, creek crossings, stock yards (including some associated with the short-lived sheep industry), gate posts of properties, historic roads, and sundry buildings.

Old Marlborough township - not within any of the areas identified for mining or associated infrastructure;

Marlborough cemetery - apparently not within any of the areas identified for mining or associated infrastructure;

Marlborough Station - the homestead includes houses and buildings dating from between 1930 and 1950. The remains of a much older homestead, possibly from last century are located nearby. There are other structures which may also date to this time, as well as some mature trees from early garden plantings. No evidence of a very early bridge across Marlborough Creek remains, probably having been destroyed during construction of the concrete crossing now situated there. The station area is not within any of the areas identified for mining or associated infrastructure;

Windemere - this is the location of a small hut (no longer extant) believed to have existed in the 1870s. No evidence of this early occupation was identified, though more recent material is present;

Plant site - the area currently proposed for the processing plant is situated on a section of Develin Creek which was once a gazetted camping and water reserve, as well as a creek crossing. There are also the remains of an old stock race (marked by four notched posts), and two gate posts with iron hinges. Nearby are the remains of old stockyard. A track would have run from these yards to the homestead;

Uncertain information suggests that an old home, possibly dating from at least 1904, was removed from Develin Creek to the Coorumburra homestead area in 1949;

Junction - there is historical evidence that a hut was built in the area in 1918 but no evidence of it was discovered. Some notched posts and planted fig trees were found on Marlborough Creek about 1km above its junction with the Fitzroy River;

There are also some old roads and tracks throughout the area. These have been developed over the years as property access tracks while the upgraded Coorumburra Road still follows the original route from Marlborough to Rockhampton. Many of these tracks have been further developed in recent years as part of mining exploration activities. Little remains in the way of unmodified work which can be directly attributed to their earliest construction.

Importantly, Cosgrove went on to make the following observation. She noted that while the history of the area is of some interest in terms of the opening up of this region by pastoral interests, the specifics are not of state or national significance. Most of the places appear to be peripheral to areas likely to be directly affected by mining, though those in the vicinity of Develin Creek could be affected by the construction of the processing plant. Construction of associated infrastructure might also have some effect but this can only be ascertained once the location of such infrastructure has been more fully planned. The few vestiges which might be affected by this development are unlikely to meet criteria laid down in the Queensland Heritage Act for inclusion of such places or relics on the Queensland Heritage Register, nor would they be likely to attract attention for inclusion on the Register of the National Estate. Consequently, while all attempts should be made to minimise the development's impact on these places, such as they are, there seem to be no constraints from an historic cultural heritage perspective to the mining project proceeding as planned. There appears to be little need for any further research on the historical cultural heritage of the area.

We concur with this observation noting that none of these locations have been added to CHIMS, and critically, none have been thought worthy of nomination to the Queensland Heritage Register. They are, however, a very useful guide to what might be expected more generally.

9.5.2 Central Queensland Gas Pipeline

In 2005 Enertrade commissioned a study of historical heritage for the Central Queensland Gas Pipeline. Again, while not directly comparable for north-western two thirds of the route, the results are instructive in terms of what might generally be expected, particularly for the section from Rockhampton south to Gladstone, where the route largely parallels this project.

Searches were requested of databases and registers maintained by relevant Commonwealth and State Agencies. In each case, a GIS shape file of the proposed route was provided to the agency. The shape file included a centreline of the route, with a buffer of either side of the centreline. A minimum of 500 metres either side of the centreline was set for the buffer, although the actual easement for the pipeline is only 30 metres (10% of the buffered distance). Additionally, a search beyond this 500m was also requested. These steps were taken to ensure that possible errors in locational information in databases did not render the search pointless: it was thought that a minimum of 500 metres should provide a suitable margin for such errors.

Data received from the EPA relating to the Queensland Heritage Register indicated that there was only one listed place within 500 metres of the proposed pipeline. A second search with a buffer of 1km either side of the centre line did not yield any further places. Two other places that are not currently registered were also identified.

The listed place was Parsons Inn (QHR no 600388). A detailed summary of the description and history of the place was provided. This has already been identified for ABP and will not be affected by the project.

Two additional places were mentioned by the EPA. Neither place was entered on the Queensland Heritage Register but it was noted that they might be of cultural heritage significance, and may have been associated with the pipeline route.

One consisted of a midden of European debitage, being an extensive scatter of bottles of various kinds (beer, whiskey, soda). It lies next to a deep pit resembling a manganese mine shafts found on Mt Miller. On the locational data available it lies near Boat Creek, Gladstone.

The second place was Pyealy Creek Yards. No further information was available on this place other than that it was close to the Calliope Forestry Reserve.

Data received from DEH (Cth) was entirely consistent with that reported above indicating that there were no places included in their registers that lay on the proposed route of the Enertrade pipeline. In fact, there are only a few places, all in the vicinity of Gladstone, that lie within 5kms of the proposed route of Enertrade's pipeline. These were all buildings.

All LGAs through whose administrative area the Enertrade pipeline passed were contacted to determine whether they maintain a register of historic places and, if so, could they provide pertinent details (including location) of those places that might be affected by the pipeline. As no LGAs maintained registers, no pertinent data was forthcoming from that source.

In accordance with the agreed strategy, the field team examining the route from KP384 to 440 (the 60kms running from north-west of Gladstone to Gladstone and undertaking the Indigenous heritage study of this section of the proposed pipeline route also undertook to record the location of any places of potential historic heritage significance identified in the course of their systematic and comprehensive field inspection. This inspection was undertaken over a period of 8 days in August 2005. The technical adviser was Michael Strong, Archaeo Pty Ltd, accompanied by a field team of 5 people representing groups who are jointly claimants under the Port Curtis Coral Coast Native Title claim, and a specialist GPS operator.

No places or objects of historic heritage significance were identified in the course of this inspection. The only noted find was a few shards of pottery found scattered in one location.

In accordance with the agreed strategy, the field team undertaking the Indigenous heritage study of the section from KP275 to 384 of the proposed pipeline route also undertook to record the location of any places of potential historic heritage significance identified in the course of their systematic and comprehensive field inspection. This inspection was undertaken over a period of 13 days in September 2005. The technical advisers were from Central Queensland Cultural Heritage Management (Luke Godwin and Scott L'Oste-Brown), accompanied by a field team of 5 people representing the Darumbal People, and a specialist GPS operator.

Three locations were identified with historic items present:

1. Historic structure consisting of an old shed constructed with a wood frame and clad in corrugated iron. The timber had been cut with a powered saw. Numerous items of farm equipment were scattered around. The shed and equipment would appear to date no older than the 1930s, and possibly more recent than that.
2. Probable well shaft sunk in sandy soils deriving from eroded granite. The shaft was dry when inspected.
3. Historic structure consisting of a windmill (now dysfunctional), tanks made of corrugated iron and water troughs. The troughs were made of wood, and some were manufactured from split tree trunks that had been hollowed out.

The locations of each place were noted by the GPS operator accompanying the field team. These features were to be the subject of more detailed inspection and description as part of the detailed field investigation of historic heritage that forms part of the methodology for this study. But none were such as to warrant action by DERM officers who were alerted to the finds. It is noteworthy they have not been added to CHIMS.

10 MANAGEMENT OF HISTORICAL HERITAGE

10.1 Historical Heritage Survey

The results of the database searches and literature review, while useful in contextualising matters, are not considered to provide a definitive answer as to what will be encountered and how it should be managed. Accordingly, Arrow does not seek to rely on them but rather intends to commission a survey of the entire route, to be undertaken commencing in November 2011. The purpose of this survey will be to identify all possible places of historical heritage value on the route, assess them against relevant literature, make an assessment of their value against the criteria in the QH Act, and otherwise (in consultation with DERM) settle management strategies for the same. A report detailing the results of the survey and recommended management measures will be prepared. As required, the survey will be undertaken by suitably qualified personnel. A Terms of Reference (ToR) for the study will be developed in direct consultation with relevant DERM staff. The ToR will be developed in accordance with the EIS ToR, in which such investigations must take account of all types of historical places. A management plan for each place so identified will be developed and settled in consultation with DERM. The conditions of Part 9 of the QH Act will be met in the design and implementation of the study, and in development of any management strategy.

It should be noted that the same guiding principle informing Aboriginal heritage management will be applied to historical cultural heritage: the avoidance principle. Wherever possible, Arrow will tactically realign (and if needs be consider strategic realignment) to avoid impact. As the historical heritage study will take place at much the same time as the Aboriginal cultural heritage study, and as both data sets can then be included in final route alignment design, this strategy is eminently achievable and will deliver effective outcomes.

10.2 Historical Heritage Management Plan (HHMP)

Arrow has prepared a draft HHMP. It is attached to this assessment as Attachment 1. The HHMP captures the commitments made above regarding conduct of the historical heritage study and the principles that will inform management. It has also captured key requirements of the EIS ToR, namely that all project personnel will receive a suitable induction in relation to the HHMP and associated commitments, that a plain English summary of the HHMP and associated commitments will be provided to all project personnel, and that the HHMP will form part of the Project Environmental Management Plan.

This HHMP will be forwarded to relevant sections within DERM for their review and comment. Any comment received will be addressed in a revised version of the HHMP, which will then be forwarded to DERM for formal endorsement. This endorsed HHMP will then be implemented in full for the project.

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Attachment 1:
Draft Historic Heritage Management Plan

Historic Heritage Management Plan
for the
Arrow Bowen Pipeline Project,
Central Queensland

Prepared by

Arrow Bowen Pipeline Pty Ltd

with the assistance of

Central Queensland Cultural Heritage Management Pty Ltd (CQCHM)

August 2011

1. INTRODUCTION & BACKGROUND

Arrow Bowen Pipeline Pty Ltd (Arrow) is proposing to develop the Arrow Bowen Pipeline (ABP), an underground gas transmission pipeline and associated laterals, some 580km long, linking existing coal seam gas fields in the Bowen Basin to facilities in Gladstone, Central Queensland (the Project). The 1070mm nominal diameter steel pipeline will be instated within a trench with a minimum depth of 750mm cover. The pipeline will be placed within a 30m wide construction easement (the Project area). There will be associated infrastructure constructed along or adjacent to the pipeline.

Arrow has prepared a voluntary Environmental Impact Statement (EIS) for the Project. The Terms of Reference (ToR) for the Project's EIS stated that a non-Indigenous Cultural Heritage Impact Assessment Study (the Study) should be undertaken of the known and potential historical cultural heritage values of the area to be affected by the Project. The primary objective of the Study is to identify and describe the existing non-Indigenous cultural values that may be affected by the Project and set in place appropriate strategies and management regimes consistent with the provisions of the *Queensland Heritage Act 1992* (QH Act).

A component of the Study, comprising a desktop analysis of the area potentially affected by the Project, was completed in line with the requirements of the ToR. Based on the recommendations and commitments made in the report in the EIS, the following sections cover the management actions and strategies to be implemented in the context of affecting the Project. Consistent with the ToR for the EIS, these have been developed and agreed jointly between Arrow and DERM. The National Trust of Queensland, who also expressed an interest in being involved in this process, will be provided an opportunity to review and respond.

This document constitutes the required Historic Heritage Management Plan (HHMP) for the ABP Project.

2. CONDUCT OF A COMPREHENSIVE ASSESSMENT OF PROPOSED ROUTE

Arrow will commission a comprehensive field study of the entire route of the proposed pipeline.

The field study will be the subject of a ToR developed by Arrow but settled with DERM in advance of conduct of the field study.

The field study will be carried out by suitably qualified persons.

The field study is to be scheduled to facilitate inclusion of data from the field study in the final route alignment design such that effect can be given to the avoidance principle.

The field study ToR will be drafted to accord with all conditions of the QH Act pertaining to such archaeological investigations.

A series of management plans (see following) will be developed for all places identified during the field study.

The field study will also attempt to identify places where sub-surface deposits of historical cultural heritage may exist and make provision for their management during the course of construction, rehabilitation and decommissioning.

All management plans of identified sites will be subject to the application of the avoidance principle.

All places will be assessed against criteria in the QH Act.

All management plans of identified sites will be settled with DERM before their application.

On settlement, all management plans shall be included in this HHMP, and implemented in full in accordance with this HHMP.

The HHMP, with management plans, shall then form a part of the Project Environmental Management Plan.

2. MANAGEMENT OF IDENTIFIED PLACES AND VALUES

Any places of identified historic heritage value that have been identified, recorded and reported from the Study (including desktop and field components) and for which management plans have been developed and settled (see above) shall be added to a schedule compiled in the following format.

Place No	Description	Assessed Significance	Agreed Management Actions / Strategies

Table 1: Significance and agreed management actions / strategies for Historic heritage places identified from the Study.

These actions / strategies cover management activities for the pre-construction, construction and post-construction (rehabilitation and decommissioning) periods of the Project.

With respect to the above places, management actions / strategies that will be implemented prior to construction activities taking place in these areas include: implementation of the avoidance principle; installation of protective measures to ensure that Project activities do not impact upon these places; and the conduct of additional detailed recording and archival photography where this has been agreed. Where the later is to be undertaken, such work will be completed ahead of the installation of any physical protective measures.

Where any Project activities are to take place within 50m of places (including their identified extent) and where protective measures have been agreed, this shall take the form of a physical barrier placed such as to be clearly visible. Additionally, barricaded areas will be signed noting that access to the area is restricted. The placement of these barriers may be informed by the results of the additional detailed recordings where this is to be undertaken. Where deemed appropriate, Arrow may also fence the construction easement and any proximate Project activity areas.

For those places located between 50m and 250m of the construction easement and any associated Project activity areas, the boundaries of these Project work areas will likewise be physically barricaded.

All barricading will be temporary in nature and fully removed at the completion of the construction phase of the Project.

Any historic bridges, roads or tracks, whether identified in this HHMP or not, will be subject to a Traffic Management Plan (TMP) for the Project in conjunction with Local Governments, the Department of Transport and Main Roads and the Queensland Police Service. Among other matters, the TMP will consider: the impact of continued use by the project on the heritage value of the bridge, road or track; the suitability of the bridges, roads or tracks (to the extent that they are part of the current traffic network) for use by the range of vehicles associated with the Project; the potential impacts of the Project upon these structures from this use; and, from this, decide upon Project construction access arrangements and conditions. The details of the TMP with respect to these bridges, roads or tracks will be notified to DERM prior to the commencement of the construction phase of the Project. Any additional management actions / strategies considered appropriate on the basis of the TMP (which may include, but will not be limited to, avoidance or limitations on use by particular Project vehicles) are to be discussed and agreed with DERM following the finalization of the TMP.

In circumstances where the original management plan cannot be implemented due to changes in project design at a late stage or during construction then:

1. Arrow will undertake a detailed review of this Place, its physical fabric and any potential but currently unidentified values and their proximity to the construction easement. This will be undertaken by a suitably qualified technical adviser engaged by Arrow. DERM, at its own discretion and cost, may appoint a representative to take part in this on-site assessment of this place.
2. To the greatest extent feasible, Arrow will look to narrow their construction easement to allow for the protection of the identified heritage values.
3. Where this is achievable, Arrow will instate protective measures to avoid any impacts to this place or its values. Such measures will be instated consistent with the principals outlined above;
4. If it becomes apparent from (1) above that the historic heritage values of the place will or may be impacted by the Project, Arrow will hold further discussions with DERM regarding appropriate additional management actions / strategies that may need to be undertaken prior to construction in this area;
5. Irrespective of the outcomes of 1 above and in addition to any additional requirements that may be agreed from 4 above, Arrow will ensure that a suitably qualified technical adviser is on hand to oversee construction activities undertaken in the area of this place when disturbance of the soil structure is being undertaken (e.g. initial clear and grade and trenching activities).

The location of all historic heritage places identified during the Study (including the location and extent of any barricading) will be clearly marked on a range of day-to-day Project documentation and mapping (including project alignment sheets) and made available to all Project personnel. Such information will also form a component in the general induction program that will be required to be completed by all Project personnel.

3. MANAGMENT OF UNIDENTIFIED PLACES AND VALUES

A number of parts of the Project area may be unable to be fully accessed during the Study. The route of the pipeline also may undergo revisions prior to the finalisation of the location of the Project. Additionally, there may be places encountered during the project where there was no surface exposure and where sub-surface presence may not have been predicted.

Any additional historic heritage places or values identified as a result of this work, or which come to the attention of Arrow at any time during the Project, will be recorded and reported (in accordance with s89 of the QH Act), management actions / strategies developed and agreed in consultation with DERM, and implemented prior to Project construction activities being undertaken in such areas.

Initial reporting of any such previously unidentified Historic heritage places, material or values will be notified by the Arrow Construction Manager to the following relevant DERM regional Historic Heritage Manager:

Central Queensland Regional Office: (07) 4936 0577 (currently Mr Carl Porter).

4. OTHER MANAGEMENT ACTIONS / STRATEGIES

Inductions

All personnel involved in the Project will be required to undertake a Project induction prior to the commencement of their activities. Arrow will include, as part of this, a component regarding historic heritage. This will include, but may not be limited to: discussions of the legislative framework for historic heritage in Queensland with particular reference to the Project; the results of the Study; the agreed management actions / strategies implemented for both identified and potential historic heritage places and values throughout the Project area; the particulars of this HHMP as it relates to their activities as well as their responsibilities and obligations under the plan; and the Arrow / DERM communications protocol outlined above.

It will be a requirement of the induction program that all inductees formally acknowledge that they have received such information. A plain English summary of the HHMP and key actions for personnel will be provided to all project personnel.

Audit

Prior to the commencement of construction activities associated with the Project in areas subject to such requirements under this HHMP, at the completion of the Construction Phases of the Project, and thereafter on a bi-annual basis, Arrow will conduct an audit of the Project against the provisions of this HHMP. The results of the audit will be formally reported, with copies provided to DERM. If requested by either DERM or Arrow, the parties will meet to discuss the results of the audit and any management actions arising.

EM Plan

This HHMP will be incorporated within the Project's Environmental Management Plan.

Attachment 2:

Tables 1 -6

Table 1:	Cultural Heritage Place Search Result Details (sections 1-6)
Table 2:	Indigenous cultural heritage place types found within the full 5,000m search buffer of the Project.
Table 3:	Indigenous cultural heritage place types by proximity classes within the 1,000m buffer from the ICHR&D search.
Table 4:	ICHR&D entries within the 1,000m buffer for the various elements of the Project (* has a single place associated with more than one element)
Table 5:	Details of Indigenous cultural heritage places on the ICHR&D within 50m of the Project elements
Table 6:	Summary of Indigenous cultural heritage place types as identified from Woorra's work on Arrow tenements in the Moranbah area

Table 1**Cultural Heritage Place Search Result Details**

Section 1

Queensland Indigenous Cultural Heritage Register and Database (State) - within 1km

Place ID	Place Type	Latitude	Longitude	Proximity Class
GH:F63	Stone Artefact/s	-21.85316	148.15167	750-1,000m
GH:F63	Stone Artefact/s	-21.85317	148.15157	750-1,000m
GH:F81	Stone Artefact/s / Well	-21.48311	148.04853	750-1,000m
GH:F82	Resource Place	-21.45532	148.03278	500-750m
GH:G86	Stone Artefact/s	-21.81908	148.10237	750-1,000m
GH:G87	Stone Artefact/s	-21.81374	148.10723	250-500m
GH:G87	Stone Artefact/s	-21.81426	148.10733	250-500m
GH:G87	Stone Artefact/s	-21.81495	148.10741	250-500m
GH:G87	Stone Artefact/s	-21.81633	148.10578	500-750m
GH:G87	Stone Artefact/s	-21.81328	148.10722	250-500m
GH:G87	Stone Artefact/s	-21.81444	148.10716	250-500m
GH:G87	Stone Artefact/s	-21.81464	148.10700	250-500m
GH:G87	Stone Artefact/s	-21.81603	148.10605	250-500m
GH:G87	Stone Artefact/s	-21.81380	148.10694	250-500m
GH:G87	Stone Artefact/s	-21.81657	148.10507	500-750m
GH:G87	Stone Artefact/s	-21.81381	148.10728	250-500m
GH:G88	Stone Artefact/s	-21.82003	148.11685	0-50m
GH:G91	Stone Artefact/s	-21.84943	148.19394	500-750m
GH:G92	Stone Artefact/s	-21.85513	148.20298	500-750m
GH:G93	Stone Artefact/s	-21.86108	148.20958	250-500m
GH:G94	Stone Artefact/s	-21.86193	148.21142	250-500m
GH:G95	Stone Artefact/s	-21.88365	148.25156	250-500m
GH:G96	Scarred Tree	-21.93744	148.30899	0-50m
GH:I52	Scarred Tree	-21.98395	148.32476	250-500m
GH:I53	Scarred Tree	-21.98353	148.32511	250-500m
GH:I58	Scarred Tree	-21.98401	148.31685	500-750m
GH:I62	Scarred Tree	-21.98942	148.31223	750-1,000m
GH:I63	Stone Artefact/s	-21.98923	148.31359	500-750m
GH:I64	Stone Artefact/s	-21.98879	148.31406	500-750m
GH:I65	Stone Artefact/s	-21.98880	148.31507	250-500m
GH:I66	Stone Artefact/s	-21.98814	148.31201	750-1,000m
GH:I73	Scarred Tree	-21.98035	148.32582	250-500m
GH:I74	Scarred Tree	-21.97645	148.32752	500-750m
GH:I81	Scarred Tree	-21.92899	148.34626	750-1,000m
GH:I82	Quarry	-21.92897	148.34641	750-1,000m
GH:I89	Scarred Tree	-21.99070	148.31600	250-500m
GH:I91	Scarred Tree	-21.99296	148.31799	0-50m
GH:L04	Stone Artefact/s / Hearth	-21.97574	148.31513	500-750m
GH:L71	Stone Artefact/s	-22.00731	148.32354	250-500m
GH:L72	Stone Artefact/s	-22.00750	148.32345	250-500m
GH:L72	Stone Artefact/s	-22.00740	148.32349	250-500m
GH:L72	Stone Artefact/s	-22.00777	148.32309	250-500m
GH:L73	Scarred Tree	-22.00310	148.32728	250-500m

Place ID	Place Type	Latitude	Longitude	Proximity Class
GH:L74	Landscape Feature	-22.00974	148.32093	500-750m
GH:L75	Stone Artefact/s	-22.01068	148.32074	750-1,000m
GH:L76	Stone Artefact/s	-22.01078	148.32076	750-1,000m
GH:L77	Stone Artefact/s	-22.01101	148.32074	750-1,000m
GH:L78	Stone Artefact/s	-22.01107	148.32074	750-1,000m
GH:L79	Stone Artefact/s	-22.01032	148.32051	750-1,000m
GH:L79	Stone Artefact/s	-22.01118	148.32025	750-1,000m
GH:L80	Landscape Feature	-22.01070	148.32037	750-1,000m
GH:L81	Scarred Tree	-22.01016	148.32030	500-750m
GH:L82	Scarred Tree / Landscape Feature	-22.01212	148.31993	750-1,000m
GH:L83	Stone Artefact/s	-22.01164	148.32093	750-1,000m
GH:L83	Stone Artefact/s	-22.01157	148.32088	750-1,000m
GH:L84	Stone Artefact/s	-22.01115	148.32081	750-1,000m
GH:L85	Stone Artefact/s	-22.01177	148.32099	750-1,000m
GH:L85	Stone Artefact/s	-22.01173	148.32072	750-1,000m
GH:L88	Stone Artefact/s	-22.00738	148.31438	750-1,000m
GH:L89	Stone Artefact/s	-22.00802	148.31495	750-1,000m
GH:L97	Stone Artefact/s	-22.00820	148.31235	750-1,000m
GH:M45	Stone Artefact/s	-22.00825	148.31287	750-1,000m
GH:M47	Scarred Tree	-22.00406	148.31162	500-750m
GH:M49	Stone Artefact/s	-22.01555	148.32617	750-1,000m
HF:D80	Stone Artefact/s	-23.07920	149.83022	250-500m
HF:D90	Stone Artefact/s / Excavation	-23.02041	149.74397	500-750m
HF:D90	Stone Artefact/s / Excavation	-23.02097	149.74437	250-500m
HG:B00	Cultural Place	-22.95309	149.58456	750-1,000m
HG:B01	Stone Artefact/s	-22.95543	149.59021	750-1,000m
JF:A14	Quarry	-23.44166	150.39851	0-50m
JF:A15	Stone Artefact/s / Hearth	-23.42770	150.37335	500-750m
JF:A73	Stone Artefact/s	-23.54141	150.53754	250-500m
JF:A74	Stone Artefact/s	-23.54152	150.54439	50-100m
JF:D01	Glass Artefact/s	-23.40815	150.35870	500-750m
JF:D51	Scarred Tree	-23.85974	151.03463	50-100m

Section 2

Woora Consulting Pty Ltd Cultural Heritage Results Database – within 5km

Place ID	Place Type	Cultural Material Recorded	Mitigated	Proximity Class
Wpt 114	Stone Artefact Scatter (Low Density)	1 silcrete scraper	Yes	1,000-2,500m
n/a	Stone Artefact Scatter (Low Density)	3 silcrete scrapers (2 silcrete & 1 petrified wood) & 4 flakes	Unknown	2,500-5,000m
n/a	Stone Artefact Scatter (Low Density)	1 silcrete scraper, 1 sandstone grindstone & 1 fragment of a grindstone	Unknown	2,500-5,000m

Section 3

Pandoin Powerline Aboriginal Cultural Heritage Places – within 1km

Place ID	Place Type	Cultural Material Recorded	Mitigated	Proximity Class
Pandoin 16	Isolated Stone Artefact/s	Single silcrete flake	Yes	750-1,000m
Pandoin 17	Isolated Stone Artefact/s	Single mudstone flake	Yes	250-500m
Pandoin 18	Isolated Stone Artefact/s	Single quartz flake	Yes	250-500m
Pandoin 19	Isolated Stone Artefact/s	3 flakes (2 silcrete & 1 chert)	Yes	100-250m
Pandoin 20	Isolated Stone Artefact/s	1 silcrete blade & 1 multi-platformed core	Yes	250-500m
Pandoin 21	Isolated Stone Artefact/s	3 flakes, 1 chert adze & 3 cores	Yes	250-500m
Pandoin 22	Isolated Stone Artefact/s	10 flakes & 2 cores	Yes	250-500m
Pandoin 23	Isolated Stone Artefact/s	2 flakes (1 silcrete & 1 chert)	Yes	250-500m
Pandoin 24	Isolated Stone Artefact/s	2 flakes (1 silcrete & 1 mudstone) & 1 single platformed core	Yes	250-500m
Pandoin 25	Isolated Stone Artefact/s	1 silcrete flake & 1 single platformed core	Yes	250-500m
Pandoin 26	Isolated Stone Artefact/s	4 flakes (2 chert, 1 basalt & 1 mudstone)	Yes	250-500m
Pandoin 27	Isolated Stone Artefact/s	4 silcrete flakes & 1 single platformed core	Yes	250-500m
Pandoin 28	Isolated Stone Artefact/s	2 silcrete flakes	Yes	250-500m
Pandoin 29	Isolated Stone Artefact/s	10 flakes (9 silcrete & 1 mudstone) & 1 single platformed core	Yes	250-500m
Pandoin 30	Isolated Stone Artefact/s	Single basalt flake	Yes	250-500m
Pandoin 31	Isolated Stone Artefact/s	Single silcrete flake	Yes	250-500m
Pandoin 32	Isolated Stone Artefact/s	4 flakes & 2 cores	Yes	750-1,000m
Pandoin 33	Isolated Stone Artefact/s	Single mudstone flake	Yes	750-1,000m
Pandoin 34	Isolated Stone Artefact/s	2 flakes (1 silcrete & 1 chert)	Yes	750-1,000m
Pandoin 35	Isolated Stone Artefact/s	1 silcrete multi-platformed core	Yes	750-1,000m
Pandoin 36	Isolated Stone Artefact/s	4 flakes & 1 core	Yes	750-1,000m
Pandoin 37	Isolated Stone Artefact/s	5 flakes & 1 core	Yes	750-1,000m
Pandoin 38	Isolated Stone Artefact/s	2 silcrete flakes	Yes	750-1,000m
Pandoin 39	Isolated Stone Artefact/s	1 silcrete multi-platformed core	Yes	750-1,000m
Pandoin 40	Isolated Stone Artefact/s	Single silcrete flake	Yes	750-1,000m
Pandoin 41	Isolated Stone Artefact/s	3 silcrete flakes	Yes	750-1,000m
Pandoin 42	Isolated Stone Artefact/s	1 multi-platformed core	Yes	750-1,000m
Pandoin 43	Isolated Stone Artefact/s	5 silcrete flakes	Yes	750-1,000m
Pandoin 44	Isolated Stone Artefact/s	5 flakes including 2 silcrete ones that had been used	Yes	750-1,000m
Pandoin 45	Isolated Stone Artefact/s	Single silcrete flake	Yes	750-1,000m
Pandoin 46	Isolated Stone Artefact/s	Single silcrete flake	Yes	750-1,000m
Pandoin 47	Isolated Stone Artefact/s	Single silcrete flake	Yes	750-1,000m
Pandoin 48	Isolated Stone Artefact/s	1 silcrete flake & 1 single platformed core	Yes	750-1,000m
Pandoin 49	Isolated Stone Artefact/s	Single mudstone flake	Yes	750-1,000m
Pandoin 50	Isolated Stone Artefact/s	Single silcrete flake	Yes	750-1,000m
Pandoin 51	Isolated Stone Artefact/s	1 flake 7 2 cores	Yes	750-1,000m
Pandoin 53	Isolated Stone Artefact/s	2 silcrete flakes	Yes	750-1,000m
Pandoin 54	Isolated Stone Artefact/s	2 silcrete flakes	Yes	750-1,000m
Pandoin 55	Isolated Stone Artefact/s	2 basalt flakes	Yes	750-1,000m

Place ID	Place Type	Cultural Material Recorded	Mitigated	Proximity Class
Pandoin 77	Isolated Stone Artefact/s	6 silcrete flakes including 1 that has been used	Yes	250-500m

Section 4

Queensland Heritage Register (State) – within 5km

Place ID	Place Name	Area (m2)	Proximity Class
600388	Parson's Inn	174,206	1,000-2,500m
600389	Raglan Homestead	587,492	100-250m
600508	Gracemere Homestead	328,545	2,500-5,000m

Section 5

DERM Cultural Heritage Information & Management System (State) – within 5km

Place ID	Place Name	Latitude	Longitude	Proximity Class
2537	Gracemere Station Buildings	-23.436298	150.449061	2,500-5,000m
2631	Formation, Port Alma	-23.625107	150.697633	1,000-2,500m
24267	Longreach Railway Complex *	-23.482310	150.387010	n/a *
30986	Mount Larcom Yards	-23.880833	151.016944	1,000-2,500m
30987	Fmr Mount Larcom Homestead Site	-23.878611	151.020556	1,000-2,500m
30988	Mount Larcom Station Yards (site of reported milking yards)	-23.871389	151.030833	1,000-2,500m

* The locational information for this place has been entered incorrectly into CHIMS. This complex does not fall within the 5,000m search area.

Section 6

Register of the National Estate (Commonwealth) – within 5km

Place ID	Place Name	Listing Status	Listing Value/s	Proximity Class
8829	Gracemere Homestead	Registered	Historic	2,500-5,000m
102290	Capricornia Serpentinite Landscape	Indicative Place	Natural	1,000-2,500m

Place Type	Total	%
Cultural Place	1	0.3
Glass Artefact/s	1	0.3
Hearth	1	0.3
Landscape Feature	2	0.6
Landscape Feature / Cultural Place	1	0.3
Quarry	4	1.2
Resource Place	1	0.3
Scarred Tree	42	12.2
Scarred Tree / Landscape Feature	1	0.3
Shell Midden	1	0.3
Stone Arrangement	1	0.3
Stone Artefact/s	269	78.0
Stone Artefact/s / Excavation	7	2.0
Stone Artefact/s / Hearth	5	1.4
Stone Artefact/s / Hearth / Campsite	1	0.3
Stone Artefact/s / Quarry	1	0.3
Stone Artefact/s / Scarred Tree	2	0.6
Stone Artefact/s / Shell Midden	3	0.9
Stone Artefact/s / Well	1	0.3
Total	345	

Table 2: Indigenous cultural heritage place types found within the full 5,000m search buffer of the Project.

Place Type	0-100m	%	100-250m	%	250-500m	%	500-1000m	%	Total	%
Cultural Place	-	-	-	-	-	-	1	2.3	1	1.3
Glass Artefact/s	-	-	-	-	-	-	1	2.3	1	1.3
Landscape Feature	-	-	-	-	-	-	2	4.5	2	2.7
Quarry	1	16.7	-	-	-	-	1	2.3	2	2.7
Resource Place	-	-	-	-	-	-	1	2.3	1	1.3
Scarred Tree	3	50	-	-	5	20	6	13.6	14	18.7
Scarred Tree / Landscape Feature	-	-	-	-	-	-	1	2.3	1	1.3
Stone Artefact/s	2	33.3	-	-	19	76	27	61.4	48	64.0
Stone Artefact/s / Excavation	-	-	-	-	1	4	1	2.3	2	2.7
Stone Artefact/s / Hearth	-	-	-	-	-	-	2	4.5	2	2.7
Stone Artefact/s / Well	-	-	-	-	-	-	1	2.3	1	1.3
Total	6		0		25		44		75	

Table 3: Indigenous cultural heritage place types by proximity classes within the 1,000m buffer from the ICHR&D search.

Place Type	Project Element				Total
	ABP Mainline	Elphinstone Lateral	Saraji Lateral	Dysart Lateral	
Cultural Place	1	-	-	-	1
Glass Artefact/s	1	-	-	-	1
Landscape Feature	2	-	-	-	2
Quarry	1	1	-	-	2
Resource Place	1	-	-	-	1
Scarred Tree	13*	2*	-	-	14
Scarred Tree / Landscape Feature	1	-	-	-	1
Stone Artefact/s	48	-	-	-	48
Stone Artefact/s / Excavation	2	-	-	-	2
Stone Artefact/s / Hearth	2	-	-	-	2
Stone Artefact/s / Well	1	-	-	-	1
Total	73*	3*	0	0	75

Table 4: ICHR&D entries within the 1,000m buffer for the various elements of the Project (* has a single place associated with more than one element)

State ID	Place-Type	Project Element (1,000m buffer)	Proximity Details	Date Recorded	Recorder	Place Name as Recorded	Notes
GH:G88	Stone Artefact/s	ABP Mainline	8m northeast of alignment	July 2000	E. Hatte	South Walker Creek 10	Single stone artefact
GH:G96	Scarred Tree	ABP Mainline and Elphinstone Lateral	40m east of alignment	July 2000	E. Hatte	South Walker Creek 18	-
GH:I91	Scarred Tree	ABP Mainline	25m west of alignment	January 2002	P. Pentecost	Moorvale Station M30	-
JF:A14	Quarry	ABP Mainline	40m east of alignment	January 1979	J. Pratt	Tropic of Capricorn	Noted as 40 metres square in area

Table 5: Details of Indigenous cultural heritage places on the ICHR&D within 50m of the Project elements

Place Type	Total	%
Isolated Stone Artefact/s	78	40.6
Knapping Floor	2	1.0
Natural Feature/s	27	14.1
Scarred Tree	12	6.3
Stone Artefact Scatters (Low Density)	72	37.5
Stone Artefact Scatters (Medium Density)	1	0.5
Total	192	

Table 6: Summary of Indigenous cultural heritage place types as identified from Woorá's work on Arrow tenements in the Moranbah area