

Australia Pacific LNG Project

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Attachment 36: Indigenous Heritage Technical Report – Gas Fields

Australia Pacific LNG Gas Field

Indigenous heritage

A report to Australia Pacific LNG

by

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1. Introduction

Australia Pacific LNG Pty Limited proposes to develop a project to enable the creation of a world scale, long-term industry, utilising Australia Pacific LNG's substantial coal seam gas resources in Queensland. Australia Pacific LNG holds significant interests in less developed areas across the Walloons Fairway in the Surat Basin, which together with the Talinga coal seam gas field constitutes the Walloons gas field development area.

The Walloons coal seam gas field covers an area of 570,000 ha, and will include up to 10,000 wells built over a 30 year project lifespan. Gas and water gathering systems will be developed for delivery to gas plant facilities and water treatment facilities respectively. Associated infrastructure will include roads, transfer ponds, communication infrastructure and logistics support areas.

1.1 Setting

The coal seam gas field located in Central Queensland is a landscape characterised by undulating downs of the Brigalow Belt. This area was formerly forested with dense brigalow (*Acacia harpophylla*) scrub, with surrounding areas characterised by luxuriant grassland. The brigalow forests are now substantially cleared for agriculture and cattle grazing. Leichhardt commented on the region thus:

The soil is black and yet mild with many concretions of lime; the vegetation is quite different from that of the forest ground of the other side of the coast range; the grasses are more various, but they do not cover almost exclusively the ground. They grow more socially in small communities together, separated by succulent herbs particularly compositae. [Leichhardt 1844 in Bell 2004:47]

The area is drained by numerous permanent and semi-permanent creeks, many of which drain into the Condamine River, located in the southern portion of the gas field. The location of the gas field study area is shown in Figure 1.

1.2 Purpose

Indigenous heritage in the project area has been investigated as part of the overall assessment of development impacts. This investigation provides an historical and archaeological context for assessing the likely Indigenous use of the area, documents the registered heritage places and potentially significant site locations, and proposes measures to mitigate any impacts resulting from the project. In combination with Cultural Heritage Management Plans, being developed with each Indigenous group in the gas field, the purpose of this assessment is to document the process to be undertaken ensuring Indigenous heritage values are preserved to the greatest extent possible.

The aims of the Indigenous heritage assessment are to meet the Terms of Reference for the project and specifically to:

- Provide a context for assessing Indigenous occupation in the Australia Pacific LNG gas field
- Recognise the presence of Registered Indigenous heritage sites in the Australia Pacific LNG gas field through a review of sites on the DERM Indigenous Cultural Heritage Register and Database
- Propose a methodology, whereby Aboriginal heritage values are identified, their significance assessed and appropriate agreements reached, between Australia Pacific LNG and each

Aboriginal Party. These agreements would be in the form of approved Cultural Heritage Management Plans recognised under the Aboriginal Cultural Heritage Act, 2003.

Figure 2, Appendix 1, illustrates the study area with registered Indigenous heritage sites and site provinces.

1.3 Scope of Works

This assessment examines potential construction impacts to Indigenous heritage in the gas field portion of the Project. Separate assessments have been prepared for the Transmission Pipeline and LNG Gas Plant on Curtis Island, the other two main components of this project.

This assessment considers the legislative requirements in relation to Indigenous cultural heritage and reviews known Indigenous heritage and history in the gas field region. In keeping with the wishes of the Traditional Owners, the locations of sites and items of cultural heritage significance are not identified in this, a public document, to ensure these are not exposed to threats posed by unauthorised visitation and disturbance. A list of registered sites within 2km of proposed development impacts is provided, with an evaluation of risks posed by construction, but only general location details are presented.

There are a number of identified Aboriginal Parties with an interest in the land within the Australia Pacific LNG gas field. Aboriginal Parties for this area are the registered Native Title claimants, some with current claims, others with unsuccessful claims, but who are still recognised under Part 4 of the Aboriginal Cultural Heritage Act, 2003 as Aboriginal parties.

Aboriginal parties with an interest in the gas field are identified in Table 1 and the location of their claims is shown in Figure 1, Appendix 1.

Table 1 Aboriginal Parties for the Australia Pacific LNG gas field

Group	Native Title Claim Number	Federal Court Number	Status
Bigambul People	QC01/6	QUD6005/01	Active claim
Barunggam People	QC99/5	QG6005/99	Dismissed 5 June 2008
Mandandanji People	QC08/10-1	QUD366/08	Active claim
Iman People #2	QC97/55	QG6162/98	Active claim
Western Wakka Wakka	QC99/4	QG6004/99	Deregistered

1.4 Legislative framework

Several pieces of Commonwealth and State legislation serve to protect Indigenous heritage sites in Queensland. Each of these is relevant to the protection and management of sites found in the vicinity of the proposed Australia Pacific LNG project.

1.5 Commonwealth Legislation

Australian Heritage Commission Act, 1975

This legislation established the Australian Heritage Commission (AHC) whose responsibilities included the creation and administration of the Register of the National Estate (RNE). The RNE included places assessed as being significant for their natural, historical or Indigenous values. Listing on the RNE imposed no restrictions or responsibilities on the owners of those places, although it did require Commonwealth agencies to seek advice from the AHC concerning the management of listed places. The AHC Act was repealed in 2003 with amendments to the Environmental Protection and Biodiversity Conservation Act, 1999 (EPBC Act). The AHC was replaced by the Australian Heritage Council, which fulfils the same role as its predecessor: providing independent advice to the Commonwealth on heritage matters.

Environmental Protection and Biodiversity Conservation Act, 1999

The main objective of this legislation is to protect the environment, including nationally and internationally significant fauna, flora, ecological communities and heritage places, particularly where these can be considered as Matters of National Environmental Significance. Amendments to the EPBC Act in 2003 led to the inclusion of national heritage places as Matters of National Environmental Significance, and established the Commonwealth and National Heritage Lists.

The EPBC Act works in parallel with the State heritage system, providing another level of protection for sites that might otherwise be threatened by major developments. A determination from the Commonwealth Minister for the Environment, Heritage and the Arts is required when activities occur in areas of National or International significance, such as the Great Barrier Reef World Heritage Area. An Indigenous Advisory Committee was established to advise the Minister on Indigenous matters connected to the EPBC Act.

Australian Heritage Council Act, 2003

This legislation established the Australian Heritage Council to replace the Australian Heritage Commission, as the principal advisory body to the Commonwealth Minister for the Environment, Heritage and the Arts on heritage issues. The Heritage Council is responsible for administering the Commonwealth Heritage List, for nationally significant sites on Commonwealth land and the National Heritage List, for other sites. The Register of the National Estate remains as a statutory register until February 2012, by which time many of its sites will be included on national, state or local government heritage registers.

Aboriginal and Torres Strait Islander Heritage Protection Act, 1984

This is the principal Commonwealth legislation protecting Indigenous heritage in Australia. The Act complements state/territory legislation and is intended to be used only as a 'last resort' where state/territory laws and processes prove to be ineffective. The Commonwealth Minister for the Environment, Heritage and the Arts can make declarations protecting threatened sites. This legislation is being reviewed by the Commonwealth to improve its effectiveness in protecting Indigenous sites of outstanding heritage value.

1.5.1 State legislation

The primary piece of State legislation protecting Aboriginal cultural heritage sites is the Aboriginal Cultural Heritage Act, 2003. Indigenous sites may also be protected by the Queensland Heritage Act, 1992.

The Queensland Government Department responsible for Indigenous heritage protection is the Department of Environment and Resource Management (DERM). It keeps an Aboriginal and Torres Strait Islander Database and Register, and administers Queensland's Aboriginal Cultural Heritage Act, 2003 (ACHA). It also keeps a register of significant heritage places and sites, the Queensland Heritage Register (QHR), and administers the Queensland Heritage Act, 1992 (QHA).

Aboriginal Cultural Heritage Act, 2003

The main objective of Queensland's ACHA is to effectively recognise and protect Aboriginal cultural heritage and to establish a process whereby this can be achieved. It places the onus on anyone whose activities might disturb or destroy an Aboriginal place or site, to observe a 'duty of care'. It places the assessment of significance solely with the Aboriginal Parties involved, to be decided in a manner consistent with tradition, and emphasises that the definition of places and sites goes beyond archaeological sites to include those where there are no physical traces. It requires developers who are obliged through other legislation to develop an Environmental Impact Statement, to also initiate the creation of Cultural Heritage Management Plans with the appropriate Indigenous groups. Major elements of the Act are:

- Blanket protection of areas and objects of traditional, customary, and archaeological significance
- Recognition of the primary role of Traditional Owners in cultural heritage protection and management
- Establishment of a Cultural Heritage Register and Cultural Heritage Database
- The provision of Duty Of Care Guidelines to place site protection responsibilities with developers
- Establishment of a cultural heritage management planning process
- The mandatory requirement to prepare Cultural Heritage Management Plans in situations where an Environmental Impact Statement is necessary for development approval
- Increased penalties for damaging Aboriginal and Torres Strait Islander cultural heritage or breaching the Duty Of Care Guidelines.

Duty of care is the guiding principle in the administration of the Act. Section 23 (1) of the Act states that 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").

Cultural heritage is defined as:

- A significant Aboriginal area or Aboriginal object (significant to Aboriginal people according to tradition or history).
- Evidence, of archaeological or historic significance, of Aboriginal occupation of an area.

The Act requires consultation as the foundation of Aboriginal cultural heritage management. Section 1.16 of the gazetted Duty of Care Guidelines, states "... the views of the Aboriginal Party for an area are key in assessing and managing any activity which is likely to harm Aboriginal cultural heritage".

Australia Pacific LNG is developing Cultural Heritage Management Plans with all Aboriginal Parties whose lands are affected by the Project.

Queensland Heritage Act, 1992

The Queensland Heritage Act, 1992 primarily caters for non-Indigenous heritage places, but also for those with joint Indigenous and non-Indigenous values, namely post-contact sites.

1.5.2 Local Government Legislation

Inclusion on a local heritage register or planning overlay also protects Indigenous heritage. Amendments to the Queensland Heritage Act 1992 required local government agencies to establish their own registers of heritage places, unless they already had satisfactory measures in place to protect sites under existing planning instruments. This includes non-Indigenous sites and sites with joint Indigenous / non-Indigenous values.

A further 2008 amendment provided for the integration of State and local government assessment and approval processes under the Integrated Development Assessment System (IDAS) of the Integrated Planning Act 1997 (section 121). Sites listed on local government heritage schedules are subject to assessment provisions specified under this Act.

Although the requirement for local heritage lists was established under the Queensland Heritage Act and therefore would not apply to sites solely significant to Indigenous people, some local heritage overlays do include Indigenous sites. These sites could therefore be subject to provisions of the Integrated Planning Act 1997. Registered Indigenous heritage sites are however offered greater protection under Queensland's Aboriginal Heritage Act, 2003.

1.6 Cultural heritage significance assessment

Under Queensland's Aboriginal Cultural Heritage Act 2003, assessment of significance is a matter solely for the Aboriginal Parties involved. Unless sites are listed on International or National Heritage Registers because of joint Indigenous/non-Indigenous values, in which case their significance can partially be assessed using principles in the Burra Charter (Marquis-Kyle and Walker 1992), significance is assigned by the Aboriginal group. Significant Indigenous sites and places in the gas field will be assessed and management issues addressed in Cultural Heritage Management Plans negotiated with each Aboriginal Party.

2. Methodology

Assessing and minimising the potential impacts of gas field development on Indigenous heritage values has been a multi-stage process. The initial phase of this study was the collation of site information from the following sources:

- On-line resources, principally for heritage site databases and regional history
- Commonwealth Heritage lists (World Heritage List, National Heritage List, and Register of the National Estate) for sites of international and national significance
- Indigenous Cultural Heritage Register (ICHR) and Database
- The Queensland Heritage Register (QHR)
- Australia Pacific LNG Cultural Heritage Database compiled from studies carried out under existing agreements with Aboriginal Parties in Petroleum Leases in the gas field
- Register of the National Trust of Queensland
- Data in heritage studies previously carried out in nearby areas
- Publicly available books and histories
- Targeted field inspections to test the validity of models of Indigenous site distribution developed from the literature review, conducted in cooperation with representatives of the Aboriginal Parties.

The second stage used these mapped site locations to identify patterns in the data and from these identify zones of high site occurrence and high site potential (Site Provinces) (See Figure 2). These zones guided planning, to minimise potentially adverse impacts to significant cultural landscapes and heritage sites. The third stage of the assessment process will further refine development through field investigations conducted with traditional owner groups, checking the validity of the identified sensitivity zones and identifying further heritage features to be protected from construction impacts.

Cultural Heritage Management Plans will be developed as the final stage of the heritage management process, to specify how heritage values will be protected before, during and after construction. The Cultural Heritage Management Plans will directly address the management of impacts to identified sites and sites located during construction.

This report documents the first three stages of this process; the site mapping and research; the constraints analysis; and the infield facility location refinement phase, and identifies the process that will lead to the formulation of Cultural Heritage Management Plans with the Aboriginal Parties.

The first stage in the assessment process is the examination of the raw site data that provided evidence of patterns in site distribution.

2.1 Site information

Most information on Indigenous cultural heritage has been collected during heritage assessments associated with the preparation of Environmental Impact Statements. These studies have been carried out to fulfill obligations under the operating heritage legislation and results of these studies have in the past been provided to the relevant Government agencies. This information was until recently maintained by the Cultural Heritage Coordination Unit of the former Queensland DNRW under Part 5 of Queensland's Aboriginal Cultural Heritage Act, 2003. It is now maintained by DERM.

Queensland site information comes from three main sources: a site card catalogue, a report catalogue (collectively designated the “Aboriginal and Torres Strait Islander Cultural Heritage Database”) and a compilation of this information in the form of layers in a Geographic Information System (GIS) database.

The site card catalogue contains detailed information on individual sites recorded since the 1960s, with most dating since the mid-1970s when legislation was enacted requiring the preparation of Environmental Impact Statements. The report catalogue contains the reports prepared as part of those assessments and also those produced from archaeological research projects. These are available with written permission of the relevant Indigenous groups. The database is a synthesis of these data and is accessible as layers in a GIS. It is used as a research and management tool, allowing selective retrieval of information based on site type or location.

Information from some of these data sources is available to meet Duty of Care obligations, or to bona fide researchers, although access is controlled and the data can only be disseminated in a form that protects the location of the sites.

Some indigenous site information is also contained in the Queensland Heritage Register (QHR) established under the Queensland Heritage Act, 1992. Although this is primarily a register of non-Indigenous heritage places, some locations also have Indigenous heritage values. The QHR is maintained by the Queensland Heritage Council and administered by the Department of Environment and Resource Management. Many of the details are available through on-line searches. More detailed information on the registered and nominated sites is obtained on application directly from the Department of Environment and Resource Management.

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Some information has been obtained during heritage studies and site clearances undertaken on behalf of particular companies, and kept in their own databases. Other reports are found in libraries, particularly the Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS) in Canberra, public libraries and archives, the libraries of the Traditional Owner groups who conducted or supervised the site clearances, or in the collections of the archaeologists who undertook site clearance or research. These databases are less accessible but often more comprehensive.

2.2 Site mapping

Indigenous site information collated from diverse sources was mapped in the Geographic Information System (GIS) database. With layers for each site type, geological information, native vegetation, water sources and topography, it was possible to observe patterns in site distribution. This was subsequently used in the constraints analysis to highlight site provinces and zones of high heritage sensitivity.

A 5km wide buffer around the project area led to the inclusion of sites well distant from the location of any planned development. This was necessary as many aspects of the project were still being planned at time the site mapping was being undertaken, and importantly, it provided a large sample of sites to investigate site distribution patterns that may apply in areas where no systematic survey had been undertaken.

2.3 Constraints analysis

Patterns of site distribution and heritage site sensitivity were sought from the sites mapped in the GIS. These assisted with the evaluation of factors potentially affecting the selection of sites for gas field facilities.

By examining the environmental setting of each previously located site and comparing this with Indigenous land use patterns from elsewhere in the region, it was possible to develop a model of pre-contact Indigenous settlement in the area to explain site distribution. This allows site patterning to be predicted in areas where no sites had previously been found, based on the distribution of key resources (food, water, raw materials for tool manufacture).

A similar investigation of site distribution in the wider Southeast Queensland Bioregion was undertaken by Rowland and Connelly (2002) using a larger data set. The types of sites and the distribution patterns they detected have direct relevance to the present study.

Rowland and Connolly (2002:57) observed that in inland settings, nearly 50% of sites occur within 200m of water sources and 91.5% within 700m of a water source. In the present study area, an examination of the data, primarily from DNRW, showed a similar pattern, with many sites located within 200m of watercourses and most within 700m of water. As most of the sites and isolated artefacts were located during survey of cross-country utilities, which are planned to avoid watercourses, this has skewed the results in favour of cultural heritage items distant from water. Despite this limitation, the indications were clear, with approximately 70-80% of DNRW recorded sites located within 700m of a watercourse.

Generalised models of site distribution tally with the patterning of sites found in the Australian Pacific LNG gas field, suggesting the models have widespread application. It is possible to identify zones of high archaeological potential, which may impose constraints on the positioning of project infrastructure. It is of course only possible to ascertain whether these impose actual constraints, once detailed field studies of the gas field infrastructure locations has been completed and analysed.

While the DERM and Australia Pacific LNG data from which site distribution models were generated is patchy, it is possible to discern patterns and correlations between sites and landscape types hinting at the potential for site occurrence, even in areas where no sites (or at least very few sites), have previously been detected. In some localities, the presence of favourable landscape conditions (e.g. availability of raw materials suitable for stone tool manufacture, or the presence of concentrated food resources) forecasts the presence of high site densities or highly significant resource exploitation sites, including quarries. These high-sensitivity localities were termed “site provinces”.

One such province of relevance to the gas field area is the Condamine River Site Province (Figure 1). Sites in this zone include stone artefact scatters and scarred trees.

- a) Isolated stone artefacts and stone artefact scatters, comprising tools and tool-making debris, are clearly the main evidence of prior Aboriginal habitation across the Project Area and reflect the durability of this form of evidence. Isolated stone artefacts may represent the discard or loss of maintenance tools during foraging expeditions or may result from incomplete exposure of larger concentrations of artefacts left during more intensive activity. Although important in themselves, these traces may point to the location of other, more substantial archaeological sites, namely, stratified occupation deposits.
- b) There is a strong likelihood that cultural heritage places and sites, particularly isolated stone artefacts and artefact scatters, scarred trees, shell middens and hearths will be identified throughout the gas field. In all instances where previous surveys have occurred, sites and

isolated artefacts have been detected. These heritage places are most commonly found near water.

- c) Site densities decline with distance from water sources. The decrease reflects the concentration of Indigenous domestic activities near water sources. Beyond 200m, sites with stone artefacts are usually smaller (unless they comprise raw material sources), reflecting shorter periods of continuous use.
- d) Where gas field infrastructure is located in site rich landscapes, such as the Condamine River Site Province, or where it is located in the vicinity of previously recorded sites, detailed impact mitigation measures may be required.
- e) Burial sites are most often uncovered from soft sediments (source bordering dunes, friable silts) near water, or as bundle burials or cached secondary interments in sandstone shelters. Avoiding areas with these types of geological profiles minimises the potential for the inadvertent disturbance of burial sites.
- f) While cultural heritage sites and places have been found across the Australia Pacific LNG Project Area, these do not necessarily represent an irredeemable impediment to construction. Isolated stone artefacts and small stone artefact scatters are often seen by Aboriginal parties to be of low to moderate heritage significance, and may be avoided by minor relocation of the proposed development, or through recovery of occupation material using surface collection or controlled excavation. These issues will be dealt with following consultation with the relevant Indigenous heritage bodies and outlined in negotiated and approved Cultural Heritage Management Plans.

Much of the assessment will refer to the Cultural Heritage Management Plans to be developed for the gas field. Confidential results of previous heritage surveys held by the Aboriginal Parties, will be combined with fieldwork results to help inform the Cultural Heritage Management Plan process.

2.4 Limitations

There are limitations in the data collected both for the earlier constraints analysis and for this assessment.

One of the main limitations of the heritage constraint analysis lay in the quality and coverage of the site data obtained from the various heritage registers and reports. Most information came from minor studies, predominantly assessing impacts of small, localised or linear developments, aiming to avoid site-rich landscapes, or in clusters at mines and other facilities, rather than wide-ranging studies attempting to identify sites and the relationship between site distribution patterns and landscape features. There have been some excavations carried out in the Dawson River district (Morwood and Godwin 1987) and in the western portion of the gas field (Lance 2009). Although not regional surveys, such excavations of stratified deposits can yield information applicable across a region.

Site information contained in the various lists and registers, was collected under different legislative regimes since the 1960s. The definition of what constituted Aboriginal heritage was different under these dissimilar pieces of legislation, and influenced the decisions made to register them. Queensland heritage legislation (Aboriginal Relics Preservation Act, 1967-1976 and the Cultural Record (Landscapes Queensland and Queensland Estate Act), 1987 were limited in scope as their main focus was on archaeological sites, at the expense of those sites of special importance to Indigenous people that bore no physical traces (i.e. sacred sites).

The Aboriginal Relics Preservation Act, 1967-1976, was directed towards the protection and preservation of ‘relics’ defined under Section 4 as: “Any Aboriginal remains and any trace, remains or handiwork within the State of Aboriginal culture: The term does not include such handiwork made for the purpose of sale for money.” The legislation reflected the thinking of the time, but viewed the cultural record as being populated exclusively by artefacts and clusters of artefacts, rather than suites of sites or cultural landscapes. This was to some extent redressed with the legislation that replaced it: The Cultural Record (Landscapes Queensland and Queensland Estate Act), 1987. This Act defined cultural heritage as:

“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.

The database of sites resulting from these pieces of legislation was heavily skewed towards archaeological sites and places and contained only places with a physical fabric. Many locations potentially containing non-archaeological sites with heritage significance have not been identified by their inclusion on any register.

The current legislation, the Aboriginal Heritage Act 2003, has a broader definition of Aboriginal cultural heritage, however it has only been operating for a short period and few sites have been added that differ from those recorded previously. Approval for listing comes from the relevant Indigenous group, many of whom are not willing to disclose site information. This is a problem for those wishing to document and interpret heritage sites. Reluctance to reveal sensitive cultural information is understandable, however, given the public availability of much of the information on the Aboriginal and Torres Strait Islander Cultural Heritage Database. It is also a problem for developers as these sites warrant protection, whether they have been listed or not. The mandated procedure of requiring consultation and the development of Cultural Heritage Management Plans for developments where there is a legal requirement to produce an Environmental Impact Statement, goes some way toward addressing this problem.

The accuracy of many of the sites records is questionable as many were recorded before the general availability of Global Positioning System (GPS) receivers (pre-1989), or before the removal of selective availability from the signals transmitted by the satellites forming the GPS network in May 2000. Prior to the advent of GPS, sites were recorded using 1:250 000 mapsheets. These provided considerable scope for inaccuracy. Further errors arose from changes to coordinate systems, first with the change from maps using imperial grid systems to those using a metric grid. More recently, there was a change in the grid system used for mapping (AMG to MGA) which led to the displacement of coordinates by up to 200m since the 1980s. There is still confusion by some archaeologists as to which grid system should be used, some preferring the older system, which allows continued use of older paper topographic maps.

There has been no systematic attempt to check the data contained in the heritage databases and so there are likely to be multiple errors in the accuracy of the site information contained therein. Errors of up to 200m in the accuracy of a site’s location details can have profound implications for the assessment of potential heritage impacts from development. Site locations should be considered only approximate for planning purposes. In the constraints analysis a buffer of up to 250m radius was applied to site locations identified by the various site registers, to accommodate the inaccuracies in past site recording.

3. Existing Environment

Included in this section is an historical and archaeological context for Indigenous activity in the gas field area, and the results of register searches.

3.1 Historical Context

Aspects of the pre-contact period of Indigenous occupation of the gas field study area can be inferred to some degree from archaeological studies (see next section, 3.2) and through oral history transmitted by past Aboriginal people to their descendants according to tradition. Written historical sources in this area provide only a fleeting account of Aboriginal life at the time of European contact, with more extensive accounts of the conflict occurring in the early years of settlement. Despite biases of written history it is a valuable resource and that can set the context in which we evaluate the surviving sites throughout the gas field study area.

The gas field region was first crossed by European explorers when Leichhardt set out from Jimbour Station on his 1844-46 expedition to Port Essington. He and his party travelled through the region, passing near the present towns Chinchilla, Miles and Guluguba. He undertook a second expedition in 1846 tracing a similar route through the region, while his third expedition in 1847, departed from Cecil Plains, heading westward through the region around Roma.

Leichhardt's own account of his 1844-45 expedition (Leichhardt 1847) has little mention of Indigenous people. He was, however, constantly aware of their presence. After his first expedition Leichhardt wrote that along the Condamine:

The well-known tracks of Blackfellows were everywhere visible: such as trees recently stripped of their bark, the swellings of the apple tree cut off to make vessels for carrying water, honey cut out and fresh steps cut in trees to climb for opossums. [Leichhardt 1847:9]

Bunce, who accompanied Leichhardt on his second and third expeditions on the other hand, recorded a number of encounters with Aboriginal people as well as observations providing insights into traditional behaviour.

Not far into the second of Leichhardt's expeditions (the first for Bunce) he came across Aboriginal shell middens:

Heaps of a large kind of mussell shell (Unio) were apparent on the banks of the river and in the scrubs, to which they had been probably carried, cooked, and eaten by the natives, whose tracks were plainly to be seen. [Bunce 1857:94]

A few days later, the party was joined by an Aboriginal man who drew a map in the sand of all the branches of the river. This encounter appeared to impress Bunce greatly, demonstrating as it did, not only the man's helpfulness but also his intimate knowledge of his country:

He drew a rough sketch on the sand, showing the number and bearings of the different water-courses for a distance, as we afterwards discovered, of 150 miles. He represented the Condamine River as being joined a long way down by many more creeks, when it at times formed a vast body of water. This we afterwards, on our Fitzroy Downs expedition, found to be the case, as the river is then called the Ballonne, which in the season of floods, leaves the surrounding country inundated for many miles; we saw water-marks on the large trees, six feet at least above the ground. ... He indicated a place, which we later called Bottle Tree Creek, where you could go northeast into Brigalow and find many wild blackfellows. [Bunce 1857:104-105]

Several days after this account was written, the party encountered a large group of men, women and children travelling along the Condamine River on their way to ceremonial gatherings and feasts in the Bunya Mountains:

The whole of the people were on their way to the Bunya Bunya country, for the purpose of obtaining that very remarkable fruit, the product of the *Araucaria Bidwellii* ... it is only produced in large quantities every third year, when the various tribes meet for many miles around to collect and eat it. The bunya bunya tree is confined to a narrow band of elevated country. [Bunce 1857:112,113]

Conflict with the new settlers began soon after the arrival of the first pastoralists in the district. Native Police were deployed at Callandoon, twelve miles west of Goondawindi, as early as 1849 and found the settlements in a distressed state (Donnelly 2002:18):

Several of the Stations had been abandoned, twelve white men had been murdered, and the loss of cattle and sheep had been immeasurable.

Isaac who had accompanied Leichhardt returned to claim Dulacca Station. He settled the run in 1849 and soon afterwards his flock of 3,000 sheep was scattered by Aboriginal people. With the help of the Native Mounted Police, based on Tchanning Creek, he was able to recover some, but disheartened, he allowed his lease to lapse (Ford et al. 1978:10).

Ferguson wrote of John Ferrett, a squatter who had claimed Dogwood in 1850:

[Aboriginal people] had driven most of the squatters from the lower Condamine with great loss of life, Ferrett only holding his run through his great tenacity. [Ferguson 1960:20]

West of the gas field, the Fitzroy Downs area on the Maranoa near Roma was first reached by Mitchell, in 1846, from the south. Mitchell also avoided conflict with the Indigenous people, but this situation changed with the arrival of pastoralists. McPherson who claimed Mount Abundance, was forced to abandon his run after repeated and well orchestrated raids by combined Aboriginal groups during 1848-1849 (Collins 2002).

On many of the stations the shepherds were targeted by the Aboriginal people and, contingents of Native Police, paid for by the squatters, sets up camp on many of the runs (Fox 1959).

In 1848 conflict occurred in the Chinchilla area and pastoralists sought 'relief' claiming 6,000 sheep and eight settlers had been killed. A year later Goggs, the owner of Chinchilla and Wongongera stations, reported another ten murdered and also his intention to take deadly revenge. It is said that Deadman Gully, Murdering Plain and Cut-Throat Creek (Barakula) are reminders of the conflict. These incidents involved misunderstanding, provocation and retaliation but essentially were a fight for land, and were a relentless part of the frontier encounter.

The situation escalated dramatically with the 1857 massacre of almost an entire family at Hornet Bank station and the large-scale reprisal massacres of Aboriginal groups that followed. Massacres of Aboriginal people, and the rampages by Aboriginal people, following these events were noted as far as the Banana and Wandoan districts. Even in the Port Curtis district, people were appalled at the scale of reprisals undertaken by the aggrieved vigilante settlers (Sinnott 1859).

Aboriginal people were employed as station hands, stockmen, cooks, maids or nurse maids and lived in station camps (Fox 1959:131). By the 1860s many also lived in fringe camps on the outskirts of the towns. The Taroom Aboriginal Settlement was set up in 1910 in response to residents' objection to such a camp and within a few years of setting up the settlement, the government decreed that all Aboriginal people and female 'half-castes', many at fringe camps but including station employees,

should be removed to such settlements (Fox 1959:131). The last of the Barungam, from near Chinchilla, are reported to have been taken to live on the Taroom Aboriginal Settlement in 1912.

A fringe camp of Aboriginal people was also in existence at Warra, just east of the gas field. In the reminiscences of Paul Eckhoff, who moved the region as a prickly pear selector:

I arrived in Warra in February 1907 ... Warra at that time had a population that included about a hundred blacks. [they worked in the hotel laundry, as horsebreakers and wild cattle hunters] ...after the floods of 1908, the black's camp washed away, Bella drowned, and all the blacks removed to Berambah and Taroom [Ferguson 1960:61]

Other historical evidence of pre-contact and post-contact traditional Indigenous activity is historical mention of archaeological sites. These include mentions of 'traces of chippings' (artefact scatters), remains of campsites, and bora grounds.

Ferguson (1960) noted 'traces of chippings' at Ourigilla near Tara. He also mentioned several bora grounds. He photographed one, still in good condition in 1960, at Kia Ora between Kogan and Tara. He mentioned three more where 'little or nothing can now be seen', one of these at Undulla within the gas field (Ferguson 1960:15,17).

Newbery includes a photograph in his 1992 publication of a bora ring 'near Miles', 'still in an excellent state of preservation' and comments that it is one of three sacred sites recorded in the Murilla Shire. He also mentions two 'middens' (mounds). He defines a midden as 'an old ash heap, indicating the spot was an old tribal ground'. One is located on the west bank of the river at Condamine, the other on the banks of the Round Waterhole, 16km north of Dulacca (Newbery 1992:61)

Artefacts and sites mentioned in the accounts of early explorers and settlers are sometimes represented in the archaeological traces found throughout the area. Artefacts dating from the contact period and indications of the conflict can also be found. Traces may include artefacts made from introduced raw materials: glass, iron and ceramic, particularly at the location of fringe settlements.

3.2 Archaeological Context

Recent archaeological studies (Lance 2009) have been carried out in the Yuelba district, in the western portion of the gas field. These studies provide the first radiocarbon dates in the area, demonstrating an Aboriginal presence of at least 6,700 years. Scatters of stone artefacts and stratified occupation deposits are the most commonly represented Indigenous sites in the gas field area. As there are no deep, dated archaeological sequences from the region, we must look to sites in surrounding regions, particularly those from the Central Queensland sandstone belt, for comparative stone tool sequences. These sites: Kenniff Cave, The Tombs, Rainbow Cave, Cathedral Cave, Buckland Bower and Wanderers Cave (Mulvaney and Joyce 1965, Mulvaney and Kamminga 1999, Beaton 1977, 1991a and b, Morwood 1979, 1981, 1984), provide evidence of Aboriginal occupation dating back nearly 20,000 years. The oldest tools in these stratified rockshelter sites are simple retouched flakes, believed by the researchers to have been hand-held tools. From around 4,100 years at Kenniff Cave and 3,500 years ago at The Tombs, a suite of small implements was added to the toolkit. These implements including backed artefacts (points and microliths) and adzes. These were interpreted by the researchers as having been hafted into handles and used as composite tools. After 2,500 years ago, the small, retouched tools were dropped from the tool assemblage and the long, retouched Juan knife was added, although it did not necessarily functionally replace the small tools. The main raw material used for tool manufacture throughout the sequence was quartzite, although within the last 4,000 years volcanic stone was also used.

Sites excavated in the Balonne River sub-catchment area (Lance 2009) contain stone artefact assemblages more similar to those from the Dawson River catchment investigated by Morwood and Godwin than from the Central Queensland sandstone belt sites. In both sets of open sites there is an absence of formal tool types, such as adzes, backed artefacts and extensively retouched flake tools. While there is an overlap in the period these sites were occupied, there appears to be little overlap in the tool industries present. The sites in the Yuleba district were occupied by Aboriginal people using unspecialised flake tool industries with an absence of formal tool types, at the same time as Aboriginal people occupying shelters in the sandstone belt were using specialised tool industries, with large numbers of retouched tools and formal tool types. One possible explanation is that there were cultural differences between those using the sandstone belt sites and those occupying sites in the Bolonne River sub-catchment. As the formal tool types are known from open sites elsewhere in the study region, such an interpretation is unjustified. The discrepancy can better be explained as resulting from differences in activities occurring in rockshelters compared with open sites.

Morwood and Godwin (1987) excavated several open and rockshelter sites along the Dawson River near Nathan Gorge, 70km to the north of the gas field study area. These sites include shell middens and occupation deposits with stone artefact assemblages and date from the last 1,500 years. Tools found in these sites were only partially retouched or had edge damage indicative of use. There were few formal tool types (backed artefacts, adzes, “scrapers”). At Site 3, 21.5% of the 79 pieces bore traces of retouch or use (Morwood and Godwin 1987:103). At Site 5, a hearth associated with shell midden and small numbers of stone artefacts was excavated and recovered charcoal revealed the hearth dated from 300±60bp (Morwood and Godwin 1987:105). Shell midden recovered from the same site gave a date of 610±50bp. The middens were small and discrete, characteristic of the “dinner-time camp” identified in ethno-historical studies carried out in northern Australia (Meehan 1982, 1988).

3.3 Results of Register Searches

A small number of Indigenous cultural heritage sites are listed on Local, State and Federal heritage registers within the gas field study area. All registered sites have been taken into account during project planning, and have been avoided.

Register of the National Estate

- Indigenous Place, Kogan ID: 13810, ceremonial site
- Indigenous Place, Kogan ID: 13812, ceremonial site

National Trust of Queensland – none

Aboriginal Cultural Heritage Database and Register

A total of two hundred and seventy-four sites listed on the Queensland Heritage Database and Register are found within 2km of proposed infrastructure (pipelines, water pipelines, compressor station sites) in the gas field. These include a large number of scarred trees and hatchet head grinding grooves located in the Condamine River Site Province. Numerous sites have been recorded in the northern section of the gas field. These include numerous isolated stone artefacts and clusters of artefacts given the same site number, but separate listing status in the heritage register. Of 274 sites, 199 are found within one kilometre and seven within 100m of planned facilities. These are listed in Table 2.

Table 2 Registered Indigenous heritage sites found in the Australia Pacific LNG gas field

Place ID	Place Type	Location	Aboriginal Party	Proximity to planned infrastructure
JB:A46	Stone artefact scatter	Western Creek State Forest	Bigambul People QC01/6	1.3km
JB:B06	Scarred tree, stone artefact scatter	Dunmore Road	Bigambul People QC01/6	1.7km
JB:B10	Isolated stone artefact	Dunmore Road	Bigambul People QC01/6	1.9km
JB:A86	Stone artefact scatter	Dunmore Road	Bigambul People QC01/6	1.3km
JB:A26	Stone artefact scatter	Steward Road	Bigambul People QC01/6	1.4km
JB:A83	Isolated stone artefact	Cattle Creek	Bigambul People QC01/6	1.1km
JA:A86	Stone artefact scatter	Halliford Road	Bigambul People QC01/6	980m
JB:D84	Scarred tree	Grahams Road	Barunggam People QC99/5	50m
JC:E76	Stone artefact scatter	Kerrs Road	Barunggam People QC99/5	130m
JC:B97	Stone artefact scatter	Tara Kogan Road	Barunggam People QC99/5	930m
JC:B98	Rock shelter	Tara Kogan Road	Barunggam People QC99/5	1.2km
JB:A06	Stone artefact scatter	Tara Kogan Road	Barunggam People QC99/5	1.5km
JC:B96	Stone artefact scatter	Tara Kogan Road	Barunggam People QC99/5	600m
JB:E03	Stone artefact scatter	Tara Kogan Road	Barunggam People QC99/5	1.5km
JB:B23	Stone artefact scatter	Weitzels Road	Barunggam People QC99/5	800m
JC:A27	Hatchet head grinding grooves	Chinchilla Tara Road	Barunggam People QC99/5	1.8km

Place ID	Place Type	Location	Aboriginal Party	Proximity to planned infrastructure
JC:A24	Hatchet head grinding grooves	Condamine River	Barunggam People QC99/5	500m
JC:A25	Hatchet head grinding grooves	Greenswamp Road	Barunggam People QC99/5	900m
JB:D36	Scarred tree	Condamine River	Barunggam People QC99/5	1.7km
JB:C78	Scarred tree	Condamine River	Barunggam People QC99/5	1.7km
JC:A22	Hatchet head grinding grooves	Condamine River	Barunggam People QC99/5	1.3km
JC:E34	Hatchet head grinding grooves	Condamine River	Barunggam People QC99/5	1.3km
JC:A14	Stone artefact scatter, scarred tree	Kogan Condamine Road	Barunggam People QC99/5	600m
JC:E90	Stone artefact scatter	Drilool Road	Barunggam People QC99/5	1.1km – 900m
JB:D96	Hearth, stone artefact scatter	Drilool Road	Barunggam People QC99/5	800m
JC:E91	Stone artefact scatter	Suttons Road	Barunggam People QC99/5	1.4km
JC:E89	Stone artefact scatter	Suttons Road	Barunggam People QC99/5	560m-630m
JC:E86	Scarred tree	Elerslie Lane	Barunggam People QC99/5	400m
JC:E88	Stone artefact scatter	Condamine	Barunggam People QC99/5	1.0km
JC:E87	Stone artefact scatter	Condamine	Barunggam People QC99/5	1.4km
JB:D28	Scarred tree	Condamine River	Barunggam People QC99/5	1.9km
JB:C41	Scarred tree	Condamine River	Barunggam People QC99/5	1.7km
JB:D29	Scarred tree	Condamine River	Barunggam People QC99/5	1.6km
JB:D22	Scarred tree	Condamine River	Barunggam People QC99/5	1.6km

Place ID	Place Type	Location	Aboriginal Party	Proximity to planned infrastructure
JB:C42	Scarred tree	Condamine River	Barunggam People QC99/5	1.4km
JB:C43	Scarred tree	Condamine River	Barunggam People QC99/5	1.3km
JB:C44	Scarred tree	Condamine River	Barunggam People QC99/5	1.1km
JB:C45	Scarred tree	Condamine River	Barunggam People QC99/5	1.0m
JB:C46	Scarred tree	Condamine River	Barunggam People QC99/5	600m
JB:C49	Scarred tree	Condamine River	Barunggam People QC99/5	120m
JB:C50	Scarred tree	Condamine River	Barunggam People QC99/5	120m
JB:C48	Scarred tree	Condamine River	Barunggam People QC99/5	60m
JB:C47	Scarred tree	Condamine River	Barunggam People QC99/5	820m
JB:C51	Scarred tree	Condamine River	Barunggam People QC99/5	1.2km
JB:D31	Scarred tree	Condamine River	Barunggam People QC99/5	1.6km
JB:D30	Scarred tree	Condamine River	Barunggam People QC99/5	1.6km
JB:D52	Scarred tree	Condamine River	Barunggam People QC99/5	1.3km
JB:D53	Scarred tree	Condamine River	Barunggam People QC99/5	1.3km
JB:D32	Scarred tree	Condamine River	Barunggam People QC99/5	920m
JB:D33	Scarred tree	Condamine River	Barunggam People QC99/5	860m
JBC:54	Scarred tree	Condamine River	Barunggam People QC99/5	840m
JB:C55	Scarred tree	Condamine River	Barunggam People QC99/5	870m

Place ID	Place Type	Location	Aboriginal Party	Proximity to planned infrastructure
JB:C56	Scarred tree	Condamine River	Barunggam People QC99/5	710m
JB:C57	Scarred tree	Condamine River	Barunggam People QC99/5	530m
JB:D39	Scarred tree	Condamine River	Barunggam People QC99/5	125m
JB:D40	Scarred tree	Condamine River	Barunggam People QC99/5	280m
JB:D41	Scarred tree	Condamine River	Barunggam People QC99/5	250m
JB:D38	Scarred tree	Condamine River	Barunggam People QC99/5	340m
JB:D37	Scarred tree	Condamine River	Barunggam People QC99/5	520m
JB:C60	Scarred tree	Condamine River	Barunggam People QC99/5	450m
JC:A05	Stone artefact scatter including hatchet head blanks	Condamine River	Barunggam People QC99/5	430m
JB:C59	Scarred tree	Condamine River	Barunggam People QC99/5	450m
JB:C58	Scarred tree	Condamine River	Barunggam People QC99/5	420m
JB:D42	Scarred tree	Condamine River	Barunggam People QC99/5	480m
JB:C63	Scarred tree	Condamine River	Barunggam People QC99/5	840m
JB:C62	Scarred tree	Condamine River	Barunggam People QC99/5	1.0km
JB:C61	Scarred tree	Condamine River	Barunggam People QC99/5	1.3km
JB:D34	Scarred tree	Condamine River	Barunggam People QC99/5	1.4km
JC:C24	Stone artefact scatter	Billabong Road	Barunggam People QC99/5	410m
JC:C42	Scarred tree	Billabong Road	Barunggam People	840m

Place ID	Place Type	Location	Aboriginal Party	Proximity to planned infrastructure
			QC99/5	
HC:A12	Stone artefact scatter	Crossroads Road	Barunggam People QC99/5	810m
HC:A14	Scarred tree	Yuleba	Mandandanji People QC08/10	1.3km
HC:A74	Artefact	Wallumbilla South Road	Mandandanji People QC08/10	900m
HC:A90	Artefact	Stake Yard Road	Mandandanji People QC08/10	260m
HC:A91	Artefact	Stake Yard Road	Mandandanji People QC08/10	240m
HC:A92	Artefact	Stake Yard Road	Mandandanji People QC08/10	50m
HC:A95	Artefact	Stake Yard Road	Mandandanji People QC08/10	780m
HC:A96	Artefact	Raslie Road	Mandandanji People QC08/10	1.9km
HC:B01	Artefact	Raslie Road	Mandandanji People QC08/10	200m
HC:B02	Artefact	Raslie Road	Mandandanji People QC08/10	700m
HC:B03	Artefact	Raslie Road	Mandandanji People QC08/10	1.4km
HC:B04	Shell Midden, Artefact	Raslie Road	Mandandanji People QC08/10	1.4km
HD:C27	Rock Art, Damaged	The Basin Road	Bidjara People QC08/5	500m
HD:D65	Artefact	Durham Downs	Iman People QC97/55	1.3km
HD:D65	Artefact	Durham Downs	Iman People QC97/55	400m
HD:D65	Artefact	Durham Downs	Iman People QC97/55	170m
HD:D65	Artefact	Durham Downs	Iman People QC97/55	1.0km
HD:D65	Artefact	Durham Downs	Iman People QC97/55	190m
HD:D65	Artefact	Durham Downs	Iman People QC97/55	210m
HD:D65	Artefact	Durham Downs	Iman People QC97/55	920m
HD:D65	Artefact	Durham Downs	Iman People QC97/55	220m

Place ID	Place Type	Location	Aboriginal Party	Proximity to planned infrastructure
HD:D65	Artefact	Spring Gully Road	Mandandanji People QC08/10	900m
HD:D65	Artefact	Durham Downs	Iman People QC97/55	1.1km
HD:D65	Artefact	Spring Gully Road	Mandandanji People QC08/10	1.07km
HD:D65	Artefact	Durham Downs	Iman People QC97/55	400m
HD:D76	Artefact	Durham Downs	Iman People QC97/55	1.9km
HD:D76	Artefact	Durham Downs	Iman People QC97/55	1.8km
HD:D76	Artefact	Durham Downs	Iman People QC97/55	2.0km
HD:D76	Artefact	Durham Downs	Iman People QC97/55	1.9km
HD:D76	Artefact	Durham Downs	Iman People QC97/55	1.8km
HD:D76	Artefact	Durham Downs	Iman People QC97/55	1.9km
HD:D76	Artefact	Durham Downs	Iman People QC97/55	1.9km
HD:D76	Artefact	Durham Downs	Iman People QC97/55	1.9km
HD:D76	Artefact	Durham Downs	Iman People QC97/55	1.9km
HD:D76	Artefact	Durham Downs	Iman People QC97/55	1.9km
HD:D76	Artefact	Durham Downs	Iman People QC97/55	1.9km
HD:D76	Artefact	Durham Downs	Iman People QC97/55	1.8km
HD:D76	Artefact	Durham Downs	Iman People QC97/55	1.9km
HD:D80	Scarred Tree, Artefact	Durham Downs	Iman People QC97/55	900m
HD:D80	Scarred Tree, Artefact	Durham Downs	Iman People QC97/55	600m
HD:D80	Scarred Tree, Artefact	Durham Downs	Iman People QC97/55	1.7km
HD:D80	Scarred Tree, Artefact	Durham Downs	Iman People QC97/55	1.6km
HD:D81	Artefact	Durham Downs	Iman People QC97/55	1.7km
HD:D81	Artefact	Durham Downs	Iman People QC97/55	1.7km
HD:D81	Artefact	Durham Downs	Iman People QC97/55	1.6km
HD:D81	Artefact	Durham Downs	Iman People QC97/55	1.7km
HD:D81	Artefact	Durham Downs	Iman People QC97/55	1.6km
HD:D81	Artefact	Durham Downs	Iman People QC97/55	1.7km
HD:D81	Artefact	Durham Downs	Iman People QC97/55	1.7km

Place ID	Place Type	Location	Aboriginal Party	Proximity to planned infrastructure
HD:D81	Artefact	Durham Downs	Iman People QC97/55	1.8km
HD:D81	Artefact	Durham Downs	Iman People QC97/55	2.0km
HD:D81	Artefact	Durham Downs	Iman People QC97/55	1.9km
HD:D81	Artefact	Durham Downs	Iman People QC97/55	1.5km
HD:D81	Artefact	Durham Downs	Iman People QC97/55	1.4km
HD:E20	Artefact	Durham Downs	Iman People QC97/55	300m
HD:E20	Artefact	Durham Downs	Iman People QC97/55	200m
HD:E20	Artefact	Durham Downs	Iman People QC97/55	200m
HD:E20	Artefact	Durham Downs	Iman People QC97/55	300m
HD:E20	Artefact	Durham Downs	Iman People QC97/55	200m
HD:E20	Artefact	Durham Downs	Iman People QC97/55	300m
HD:E20	Artefact	Durham Downs	Iman People QC97/55	300m
HD:E20	Artefact	Durham Downs	Iman People QC97/55	300m
HD:E20	Artefact	Durham Downs	Iman People QC97/55	200m
HD:E23	Artefact	Durham Downs	Iman People QC97/55	100m
HD:E23	Artefact	Durham Downs	Iman People QC97/55	300m
HD:E23	Artefact	Durham Downs	Iman People QC97/55	100m
HD:E23	Artefact	Durham Downs	Iman People QC97/55	200m
HD:E23	Artefact	Durham Downs	Iman People QC97/55	200m
HD:E23	Artefact	Durham Downs	Iman People QC97/55	500m
HD:E23	Artefact	Durham Downs	Iman People QC97/55	500m
HD:E23	Artefact	Durham Downs	Iman People QC97/55	200m
HD:E23	Artefact	Spring Gully	Mandandanji People QC08/10	1.1km
HD:E23	Artefact	Durham Downs	Iman People QC97/55	300m
HD:E23	Artefact	Durham Downs	Iman People QC97/55	300m
HD:E23	Artefact	Durham Downs	Iman People QC97/55	150m
HD:E23	Artefact	Durham Downs	Iman People QC97/55	300m
HD:E23	Artefact	Durham Downs	Iman People QC97/55	500m
HD:E23	Artefact	Durham Downs	Iman People QC97/55	450m

Place ID	Place Type	Location	Aboriginal Party	Proximity to planned infrastructure
HD:E25	Artefact	Durham Downs	Iman People QC97/55	950m
HD:E25	Artefact	Durham Downs	Iman People QC97/55	1.8km
HD:E25	Artefact	Durham Downs	Iman People QC97/55	1.2km
HD:E25	Artefact	Durham Downs	Iman People QC97/55	1.0km
HD:E25	Artefact	Durham Downs	Iman People QC97/55	700m
HD:E25	Artefact	Durham Downs	Iman People QC97/55	800m
HD:E25	Artefact	Durham Downs	Iman People QC97/55	600m
HD:E25	Artefact	Durham Downs	Iman People QC97/55	700m
HD:E25	Artefact	Durham Downs	Iman People QC97/55	1.9km
HD:E25	Artefact	Durham Downs	Iman People QC97/55	1.0km
HD:E29	Artefact	Durham Downs	Iman People QC97/55	300m
HD:E29	Artefact	Durham Downs	Iman People QC97/55	400m
HD:E29	Artefact	Durham Downs	Iman People QC97/55	400m
HD:E29	Artefact	Durham Downs	Iman People QC97/55	450m
HD:E29	Artefact	Durham Downs	Iman People QC97/55	450m
HD:E29	Artefact	Durham Downs	Iman People QC97/55	450m
HD:E29	Artefact	Durham Downs	Iman People QC97/55	450m
HD:E29	Artefact	Durham Downs	Iman People QC97/55	400m
HD:E29	Artefact	Durham Downs	Iman People QC97/55	450m
HD:E29	Artefact	Durham Downs	Iman People QC97/55	350m
HD:E29	Artefact	Durham Downs	Iman People QC97/55	400m
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HD:E29	Artefact	Durham Downs	Iman People QC97/55	400m
HD:E29	Artefact	Durham Downs	Iman People QC97/55	350m
HD:E29	Artefact	Durham Downs	Iman People QC97/55	350m
HD:E29	Artefact	Durham Downs	Iman People QC97/55	350m
HD:E29	Artefact	Durham Downs	Iman People QC97/55	350m

Place ID	Place Type	Location	Aboriginal Party	Proximity to planned infrastructure
HD:E29	Artefact	Durham Downs	Iman People QC97/55	400m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	150m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	200m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	100m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	150m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	600m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	70m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	300m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	950m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	500m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	650m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	650m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	450m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	700m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	270m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	650m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	700m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	700m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	300m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	650m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	350m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	600m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	250m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	150m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	150m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	150m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	150m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	550m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	500m

Place ID	Place Type	Location	Aboriginal Party	Proximity to planned infrastructure
HD:E30	Artefact	Durham Downs	Iman People QC97/55	550m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	350m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	500m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	300m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	70m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	700m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	450m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	1.0km
HD:E30	Artefact	Durham Downs	Iman People QC97/55	550m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	500m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	600m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	700m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	550m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	450m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	450m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	450m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	700m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	450m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	450m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	450m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	700m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	450m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	600m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	450m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	150m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	700m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	600m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	550m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	600m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	450m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	400m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	400m

Place ID	Place Type	Location	Aboriginal Party	Proximity to planned infrastructure
HD:E30	Artefact	Durham Downs	Iman People QC97/55	400m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	450m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	400m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	400m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	350m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	350m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	700m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	250m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	<50m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	100m
HD:E30	Artefact	Durham Downs	Iman People QC97/55	<50m

Australia Pacific LNG Cultural Heritage Database

Sites and isolated artefact occurrences have been recorded during site clearances for Origin Energy Ltd. In accordance with the wishes of the Native Title Claimant groups, who have responsibility for sites in Origin Energy Petroleum Leases, the details of these sites remain confidential. The locations of these recorded sites and heritage locations are taken into account whenever infrastructure is planned in the Origin Energy Petroleum Leases, and are avoided.

Local Heritage Lists and Heritage Overlays

Western Downs Regional Council — none recorded for their Indigenous values

While register searches provide a small catalogue of sites to be considered and avoided during infrastructure planning, the results of these searches cannot be construed as a comprehensive record of the cultural heritage sites in the region. Site registers document unusual or spectacular sites known to the community, or Indigenous sites and places identified during previous intensive cultural heritage clearances. Many parts of the study area have not yet been examined for traces of prior Aboriginal habitation and which will certainly contain sites.

3.4 Localised field surveys

Targeted field surveys were conducted with Traditional Owner representatives to test site distribution models and to examine sensitive landscapes where infrastructure development may occur. These locations showed a clustering of sites containing stone artefacts along even the smallest watercourse. A similar pattern of site distribution was seen in earlier studies carried out through the region (Lance and McNamara 2004, Lance 2001a and b, 2008, 2009).

Site investigations were carried out in the western portion of the gas field, north of Wallumbilla, in the vicinity of Cattle Creek and near Ten Mile Creek. These highlighted patterns of site and isolated artefact distribution that had been revealed during earlier intensive field investigations carried out with

the Mandandanji People (Lance 2008, 2009) which showed the ubiquitous presence of archaeological traces throughout the landscape, both near water sources and in areas distant from water. Sites were found up to 2km distant from water sources, located in areas that may have been located on access routes through the region. All these inspected areas will be subject to detailed recording by the Aboriginal Parties as part of negotiated Cultural Heritage Management Plans.

The field inspection of the Mandandanji portion of the gas field was carried out in June 2009 with Mr. Ron (Sonny) Manns. The majority of sites examined were to the west of the gas field, although considerable concern was shown for contact era sites in the vicinity of Tchanning Creek. These sites are well known to the Mandandanji, who will ensure that these are protected during construction activities that take place in the gas field as part of a Cultural Heritage Management Plan negotiated with the group.

4. Potential Impacts

There is a considerable degree of flexibility in the placement of facilities in the gas field. Wells, access roads, compressor stations and in-field pipelines can generally be sited to avoid locations of Indigenous heritage significance. In instances where they cannot be avoided, measures to mitigate impacts will be agreed with the Aboriginal Parties, in accordance with approved Cultural Heritage Management Plans.

No listed cultural heritage items are likely to be impacted by construction of planned infrastructure in the gas field. This has been achieved through early identification of these locations to avoid listed items of cultural heritage significance. Of the 274 sites on the Queensland Aboriginal Heritage Register and Database, only seven are within 100m of any presently planned infrastructure. These will be avoided and appropriate measures taken to ensure that they are not accidentally damaged during construction.

Items of unrecorded Indigenous cultural heritage may occur near proposed infrastructure developments and without appropriate site management initiatives may be threatened by construction impacts. Unrecorded Indigenous heritage resources in impact areas will be identified during dedicated field surveys conducted by each relevant Aboriginal party. The conduct of the Cultural Heritage study and the implementation of site protection or remediation measures will be specified in approved Cultural Heritage Management Plans either already negotiated, or still to be negotiated with each Aboriginal Party with an interest in lands in the gas field.

Measures to manage impacts to Indigenous cultural heritage items and sites in the gas field are being discussed with each Aboriginal party by the proponent. A number of meetings have already been held, and further meetings are planned. Potential impacts to previously undetected Indigenous heritage sites can be managed through measures specified in each Cultural Heritage Management Plan. Impact mitigation measures that may be required include: avoidance of certain highly sensitive areas; further field investigations including sub-surface testing; recovery of datable occupation material; collection and relocation of cultural heritage items. These measures will be outlined in a Cultural Heritage Management Plan being negotiated between the proponent and each Aboriginal party.

4.1 Cumulative impacts

In addition to impacts that will arise from construction in the gas field, pipeline construction will occur in the northern part of the gas field. Flexibility in placement of these facilities will minimise impacts to Indigenous heritage sites and places, and any potential impacts will be managed through the mechanism of negotiated agreements with the relevant Aboriginal Parties.

In addition, to the effects on Indigenous heritage sites of construction in the gas field, are the potential effects of gas field developments to the east and west by other proponents. These other projects could potentially place other Indigenous heritage sites at risk, however, these proponents are also managing the heritage in a similar manner: aiming to avoid identified sites.

Through avoidance of identified Indigenous heritage sites, management of development impacts in the vicinity of these sites, formulation of procedures to deal with sites detected during construction, detailed archival recording of threatened sites, and recovery of information on Indigenous land use, it will be possible to minimise the cumulative effects of development on Indigenous sites in this region.

4.2 Matters of National Environmental Significance

Several items of national heritage significance have been identified in the gas field study area. These are two stone arrangements on the Register of the National Estate. The location of these features will be rediscovered and all infrastructure associated with well and infield pipeline development will be relocated to avoid these sites. A wide buffer will ensure that the sites and curtilage are avoided. This will be greater than 50m, and the extent will depend on negotiations with the Aboriginal Parties and the Department of Environment and Resource Management. Cultural Heritage Management Plans are being prepared with the Aboriginal parties with an interest in sites and cultural landscapes of the gas field to ensure that Indigenous heritage concerns are addressed.

5. Mitigation and management

Measures to manage impacts to Indigenous cultural heritage items and sites in the gas field are the subject of discussions between each Aboriginal Party and Australia Pacific LNG. A number of meetings have already been held, and further meetings are planned. Potential impacts to previously undetected Indigenous heritage sites can be managed through measures specified in the each Cultural Heritage Management Plan. In general, the principle governing the selection of sites for facilities will be, that wherever possible, known heritage sites will be avoided. This principle has been applied previously in preliminary infrastructure planning, and will continue in light of discoveries made during field investigations carried out by each Aboriginal Party.

Impact mitigation measures that may be required include: avoidance of certain highly sensitive areas; further field investigations including sub-surface testing; recovery of datable occupation material; collection and relocation of cultural heritage items. These measures will be outlined in a Cultural Heritage Management Plan being negotiated between Australia Pacific LNG and each Aboriginal party.

6. Cultural Heritage Management Plans

Site protection in the Australia Pacific LNG gas field will be undertaken through the mechanism of Cultural Heritage Management Plans, recognising the primary role of Indigenous people in the custodianship of their heritage. Aboriginal parties with an affinity to the lands in the gas field, demonstrated through their status as Native Title Claimants, have been notified of development proposals. These recognised Aboriginal Parties, have been invited to participate in the formulation of management plans to ensure site protection.

Notification has been made in accordance with Part 7 of the Aboriginal Cultural Heritage Act, 2003. The Chief Executive of the DERM, landowners in the gas field and relevant Indigenous groups, were notified of the intention to develop Cultural Heritage Management Plans for the gas field.

Negotiations are continuing with the Aboriginal Parties over the formulation of Cultural Heritage Management Plans to direct how items and places with Indigenous cultural heritage values are managed before, during and after construction.

6.1 Consultation/ Negotiation

To date, a number of formal meetings have been held with the Aboriginal Parties with an interest in the protection of sites in the gas field. The status of negotiations between Australia Pacific LNG and each Aboriginal Party is described in Table 3.

Table 3 Consultation with Aboriginal Parties in the Australia Pacific gas field

Aboriginal Party	Meeting Details	Status
Bigambul People	7 meetings	Negotiations have progressed well towards reaching agreement over a Cultural Heritage Management Plan.
Barunggam People	4 meetings	Negotiations over the Cultural Heritage Management Plan have commenced
Mandandanji People	6 meetings	Negotiations have progressed well towards reaching agreement over a Cultural Heritage Management Plan.
Iman People	5 meetings	Negotiations have progressed well towards reaching agreement over a Cultural Heritage Management Plan.
Western Wakka Wakka	No meetings	Initial Cultural Heritage Management Plan meetings being arranged to commence negotiations on heritage management in their portion of the study area

A large portion of the gas field was subject to overlapping claims by the Mandandanji, Barunggam and Western Wakka Wakka People. The Federal Court rejected these claims, however, Australia Pacific LNG is negotiating with the claimant groups as Aboriginal Parties approved under the Aboriginal Cultural Heritage Act 2003.

Although Cultural Heritage Management Plans have not yet been finalised with any of the groups, and when completed, will be subject to confidentiality agreements precluding their public release, the general contents of the Plans can be presented here. The Cultural Heritage Management Plans will address issues relating to the identification and management of cultural heritage in the gas field. They will cover all aspects of Indigenous site identification and protection, before, during and after construction.

Issues to be addressed by the Cultural Heritage Management Plans to be presented for approval under Part 7 of the Aboriginal Cultural Heritage Act, 2003, will include:

Cultural Heritage Ownership

The Cultural Heritage Management Plans will affirm the principles espoused in the Aboriginal Cultural Heritage Act, 2003, that the Traditional Owners are the rightful guardians, keepers and knowledge holders of Aboriginal cultural heritage (Section 1.2). As a consequence, the recognised Aboriginal Parties will retain ownership and control of sensitive site information, providing to Australia Pacific LNG information on site locations in sufficient detail for those sites to be protected from development impacts.

The Cultural Heritage Management Plans will outline the responsibilities of Australia Pacific LNG and the Aboriginal Parties in relation to the discovery and reporting of significant cultural heritage sites. It will specify how sensitive cultural material, particularly human remains will be managed.

Conflict resolution

The Cultural Heritage Management Plans will provide guidelines to resolve disputes, should these arise, between the parties. If no resolution of the conflict can be obtained, mediation will be sought between the parties.

Identifying Cultural Heritage

The Cultural Heritage Management Plans will specify how cultural heritage studies are to be conducted, the expected outcomes of these studies and the timing and format of the information provided by the Aboriginal Parties to Australia Pacific LNG to facilitate redesign of facilities to avoid heritage items. Field studies undertaken by Aboriginal Parties, with assistance from their technical advisors when necessary, will be required at each site of infrastructure development. Results of the studies will include documentation and identification of significant areas, sites and objects and evaluation of their significance.

Managing Cultural Heritage

On the basis of findings of the Cultural Heritage studies, procedures for the management of cultural heritage objects, areas and values will be negotiated. While a major objective of the Australia Pacific LNG Indigenous site strategy is to avoid detrimental impacts to significant cultural heritage places, sites and items, this may not always be possible, given the nature of the proposed development. The Cultural Heritage Management Plan will mandate further negotiations to follow each Cultural Heritage Survey, concerning identified cultural heritage items near each area of planned construction activity and agreement upon appropriate measures to protect their heritage values. Pre-construction measures may include further field investigations, collection of significant objects and/or test pitting and open area excavation to investigate significant heritage sites and recover significant heritage items before construction.

Measures during construction may include:

Construction monitoring

Construction monitoring may be required in sensitive locations (Potential Archaeological Deposits) to recover exposed heritage items. This will be a last resort option as this has proven to be an ineffective management tool. If significant items are present, these are usually destroyed or displaced during construction activities, diminishing their significance. If areas have a very high potential to yield significant heritage items, the preferred option is to have them investigated prior to construction. Before the commencement of construction, located items of considerable significance can be fully assessed and if necessary, project plans can be modified to ensure their survival.

Unexpected finds

Procedures for dealing with unexpected finds will also be specified. These procedures will identify the methodology should cultural heritage items be uncovered during construction. Activities will cease in the vicinity of suspected heritage items but may recommence some distance from the suspected items (the distance will be subject to agreement with the Aboriginal Parties). Cultural heritage items will be reported to the Cultural Heritage Coordination Unit, the approved Aboriginal Party or their designated technical advisor for assessment.

Burials

In the case of burials, procedures to be followed are specified in the Human Remains Guidelines under the Aboriginal Cultural Heritage Act, 2003. Under these guidelines, the Police will first be notified, as will the Cultural Heritage Coordination Unit, the approved Aboriginal Parties and/or their designated technical advisors, in accordance with the Aboriginal Cultural Heritage Act, 2003, the Coroners Act, 2003 and the Criminal Code Act, 1899. Procedures for the management of burials will be clearly outlined in construction documentation. In those areas where burials are thought likely to occur, previous site examinations will have taken place prior to construction.

Induction of workers and contractors

The Cultural Heritage Management Plans will specify that all workers on the construction of the Australia Pacific LNG project will receive cultural awareness training and cultural heritage identification and education on all workers' responsibilities in reporting of cultural heritage items, should they be uncovered during construction.

Post-construction heritage management

Following completion of each component of the gas field development, significant cultural heritage items recovered prior to construction and items identified and salvaged during construction will require management and curation. Issues relating to the storage of significant items of cultural heritage will be agreed upon and specified in the Cultural Heritage Management Plans.

7. Conclusions

Aboriginal people have an acknowledged interest in Indigenous cultural heritage in the gas field region. The process of engaging with Aboriginal Parties concerning their heritage has commenced, in accordance with guidelines specified by the Aboriginal Cultural Heritage Act, 2003, with the view to affording Traditional Owners the rights to exercise control over their heritage. While the ultimate goal of the Cultural Heritage management procedure for the Australia Pacific LNG project is the successful negotiation of Cultural Heritage Management Plans with those recognised Aboriginal Parties, this process has not yet been completed. This document has outlined the measures that have been undertaken to date to achieve this goal. The engagement with the Aboriginal Parties will continue to completion.

The procedures followed as part of the Indigenous Cultural Heritage management for the Australia Pacific LNG project have been designed to minimise any impacts to Indigenous cultural heritage. This has included collation of site data through the project area from a range of sources including the Aboriginal Heritage Register and Database, published and unpublished sources, preliminary site studies undertaken with the Aboriginal Parties in the gas field and modeling of site distribution as part of a constraints analysis. Infrastructure locations have been and will continue to be selected with due consideration of the location of these registered sites to minimise construction impacts. All registered sites in the gas field have been avoided. While this result provides an indication of the desire of Australia Pacific LNG to avoid culturally significant sites, the limitations of the data, expressed in this document, make it clear that inevitably, further unidentified sites will be found in the gas field. Mechanisms for dealing with these unrecorded sites have been anticipated in the preparation of Cultural Heritage Management Plans being negotiated with the approved Aboriginal Parties. Further work will continue to identify these sites and deal with them in a manner consistent with the desires of the Aboriginal Parties to exercise control of their heritage.

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Appendix A Figures

