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Dyno Nobel Asia Pacific Limited

Moranbah Ammonium Nitrate Project

Cultural Heritage Assessment

August 2006

INFRASTRUCTURE | MINING & INDUSTRY | DEFENCE | PROPERTY & BUILDINGS | ENVIRONMENT

A CULTURAL HERITAGE ASSESSMENT OF THE MORANBAH AMMONIUM NITRATE PROJECT, CENTRAL QUEENSLAND

prepared by

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1. INTRODUCTION

Dyno Nobel Asia Pacific Limited (DN) which currently supplies explosives for many of the mining operations in Central Queensland is seeking to construct and operate a new Ammonium Nitrate Plant and an Emulsion Manufacturing Plant in Moranbah, Central Queensland (the project). This report presents the results of a cultural heritage survey of the proposed site of this project which is situated on part of Lot 10 SP175258 on the south western side of the Moranbah-Goonyella road approximately 4km from Moranbah township (see Figure 1). This cultural heritage study was commissioned by project managers GHD, which are undertaking an Environmental Impact Statement on behalf of DN.

The study area lies towards the northern end of a registered Native Title Claim for the Barna/Barada/Kabelbara/Yetimarala Traditional Owners (BBKY#4, National Native Title Tribunal No. QC01/25; Federal Court No. QG6230/98).

The proposal is located on the 1:100 000 topographic mapsheets of Wyena (Ed. 2), No. 8454 and Harrybrandt (Ed. 1) No. 8554. It is part of Picardy pastoral holding within the Belyando Shire. The land is currently held under a Grazing Homestead Perpetual Lease, with current planning scheme zoning of Rural A.

Elizabeth Hatte of Northern Archaeology Consultancies Pty Ltd was commissioned as project archaeologist to undertake the cultural heritage assessment in association with representative of BBKY. The cultural heritage fieldwork was undertaken over two days (in early June and late July 2006) by the project archaeologist and four BBKY representatives (see Appendix 2 for list of field personnel). The first day was dedicated to the initial 200 hectare lot, while the second day, in July, was spent surveying an additional 70 hectares on the north western end plus an area of about 25 hectares proposed for an accommodation camp (see Figure 2). This second day was also spent reviewing and discussing the more significant finds made in the initial survey (see Methodology Section 5).

This cultural heritage inspection has been undertaken under the provisions of *The Aboriginal Cultural Heritage Act 2003 and the Queensland Cultural Heritage Act 1992.*

1.1 Project Description

Much of the following information on the proposed project has been supplied by GHD.

The current proposal is to construct a nominal 250,000 tonnes per annum (tpa) plant expandable to 350,000 (tpa) making AN prill (solid) and AN emulsion (viscous liquid). The total site area is 270 hectares, 60 of which are required for the plant's footprint. These 60 hectares include the ammonium nitrate plant, emulsion plant, evaporation pond, clean water dam, and the access road on and off the site (see Figure 1).

At present the initial area of 200 hectares is covered in mature native forest. The open forest on the north-western side of the site was poisoned several decades ago. This section is now covered in medium to high regrowth open forest. The Isaac River, the main watercourse in the region is approximately 2 km to the north-east and Grosvenor Creek, a major tributary of the Isaac River, is about 1.8km to the south and east. The site is currently used for beef cattle grazing.

The Enertrade underground gas pipeline easement runs along the front (the Goonyella road side) of the property and the Sunwater pipeline easement runs to the east of the Enertrade one, in the road reserve. Transfield's proposed 'Moranbah and Nebo Power Stations Project' site is adjacent to this site on the south eastern boundary. Beside the Enertrade Compressor Station.

1.2 Terms of Reference

This cultural heritage study had the following objectives:-

- A review of ethnographic, archaeological and historic information relevant to the study area;
- A field survey of the study area by the project archaeologist and representatives of the BBKY people as the registered Native Title claimants for this area;
- an assessment of the nature and significance of any Aboriginal cultural heritage items, sites and values identified within the study area;
- identification and assessment of the potential impacts of the proposed development on identified and potential Aboriginal cultural heritage items, sites and values;

- recommendations formulated in consultation with the BBKY Traditional Owners and in accordance with the relevant cultural heritage legislation designed to mitigate the impact of the proposed activities on Aboriginal cultural items, sites and values within the study area;
- the preparation of a report incorporating all of the above.

2. CULTURAL HERITAGE LEGISLATION

2.1 Definition of Cultural Heritage

All legislation protecting cultural heritage in the states and territories of Australia is derived from principles originally laid down in *The ICOMOS Charter for the Conservation of Places of Cultural Significance (The Burra Charter) 1977.* The Burra Charter defines 'Cultural Heritage', very broadly, as all places, items and values of archaeological, traditional, historical or contemporary significance within Australian Territory. This broad definition refers to places, items and values of both Indigenous and non-indigenous origin. It also includes components of the natural landscape which are regarded by Aboriginal Traditional Owners as living parts of their cultural heritage (also see Ross 1996).

Under *The Queensland Aboriginal Cultural Heritage Act* (*2003*), Aboriginal Cultural Heritage is defined as 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 (Section 8).

This definition includes:-

- places that are archaeological sites (such as shell middens, stone arrangements and scarred trees);
- places that have traditional stories or traditional knowledge associated with them;
- places that are historically important (such as old camps); and,
- places that are important today (such as food-getting places or places used for recreational purposes).

2.2 Cultural Heritage Legislation

The Aboriginal Cultural Heritage Act 2003 came into force on 16th April 2004. The Queensland Department of Natural Resources and Mines (DNR & M) is the administering authority of this Act.

Under this legislation major changes have been made to the manner in which Aboriginal Cultural heritage is recognised, protected and managed in Queensland. The following principles are fundamental to the operation of the Act:

(a) the recognition, protection and conservation of Aboriginal cultural heritage should be based on respect for Aboriginal, cultural and traditional practices;
(b) Aboriginal people should be recognised as the primary guardians, keepers and knowledge holders of Aboriginal cultural heritage;
(c) it is important to respect, preserve and maintain knowledge, innovations and practices of Aboriginal communities and to promote understanding of Aboriginal cultural heritage;
(d) activities involved in recognition, protection and conservation of Aboriginal cultural heritage are important because they allow Aboriginal people to reaffirm their obligations to "law and country";
(e) there is a need to establish timely and efficient processes for the management of activities that may harm Aboriginal cultural heritage.

This understanding of Aboriginal cultural heritage is more comprehensive than under previous legislation and it is thus considered to better reflect Aboriginal peoples' own perceptions of their cultural heritage (see Section 2.1).

Unlike the previous Aboriginal Cultural Heritage Act where the focus was on the protection of 'items of the Queensland Estate', the accent of the present legislation is on the protection of areas of cultural significance whether or not they actually contain physical evidence of the past.

A significant Aboriginal area or object must be significant 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 (Sections 9, 10).

Section 11 of the Act stipulates that *if a particular object or structure is evidence of Aboriginal occupation, the area immediately surrounding that object etc is also evidence of Aboriginal occupation…the object or structure cannot be separated from its context without destroying or diminishing the object or structure's significance as evidence of Aboriginal occupation.*

Section 12 (2) to (4) of The Act provide more specific information about identifying significant Aboriginal areas*. It is not necessary for an area to contain markings or other physical evidence indicating Aboriginal occupation or otherwise denoting the area's significance. For example, the area might be a ceremonial site, a birthing place, a burial place or the site of a massacre. If significant Aboriginal objects exist in an area and the significance of the objects is intrinsically linked with their location in the area, the existence of the objects in the area is enough on its own to make the area a significant Aboriginal area.*

The Aboriginal Cultural Heritage Act 2003 exerts blanket protection over all cultural heritage and it is supported by a general Duty of Care to take all reasonable and practical steps to be aware of, and to avoid harming, Aboriginal cultural heritage (Section 23(1). This is a pivotal part of the new legislation. Section 23(1) of the Act requires that a person must exercise due diligence and reasonable precaution (the 'cultural duty of care') before undertaking an activity which may harm Aboriginal heritage. Duty of Care Guidelines set out key indicators of compliance with the requirements of the Act. Proof of consultation, cultural heritage studies, searches of cultural heritage information (of the cultural heritage register and database) and a CHMP (or other agreement with the registered native title applicants) are the main, but not the only, indicators that Duty of Care has been addressed by a proponent.

The new Act provides for substantial penalties (up to $75,000 for an individual and $750,000 for a corporation) as a deterrent to failure to safeguard the cultural heritage values of Queensland. Injunctions can be issued by the Land and Resources Tribunal. The Minister can also issue stop orders for an activity that is harming or is likely to harm Aboriginal cultural heritage or its cultural heritage value.

This legislation ensures the validity of cultural heritage agreements and arrangements entered into before commencement of the legislation on 16th April 2004, as well as approvals obtained after the commencement of the legislation where cultural heritage issues were addressed in order to obtain the approval, such as through an Environmental Impact Statement process. A cultural heritage study is mandatory in relation to those activities (ie. high impact activities) that require Environmental Impact Statements.

The legislation allows for the development of Cultural Heritage Management Plans (CHMPs) on a voluntary basis as a measure to encourage industry to adopt best practice in circumstances where the legislation does not automatically require a

mandatory cultural heritage management plan. Any activity undertaken in accordance with a cultural heritage management plan approved under the legislation satisfies the duty of care requirement.

As noted by the national heritage system (see Department of the Environment and Heritage 2004) the management plan is a key tool in the process of heritage management. Management plans describe the heritage significance of a place and the policies required to retain these values.

Under *the Act* a register of Aboriginal Cultural Heritage is maintained within the Cultural Heritage Unit, DNR&M. This register contains information that has been collated by the Environmental Protection Agency between the 1930s and the commencement of the Act in early 2004. This information will be provided on an 'as needs' basis. A database of Aboriginal Cultural Heritage consisting of information collected since the Aboriginal Cultural Heritage Act commenced is also being maintained within this Unit.

The Queensland Heritage Act 1992 provides for the conservation and protection of places and items of historical and/or non-indigenous cultural heritage, i.e. all places that derive from the post-European contact history of Queensland. Under this Act, places and items must be entered into a Queensland Heritage Register in order to be protected. Substantial penalties may apply for damage to a place or items that has been entered on the Register.

From 2005 the Queensland Heritage Council has adopted the revised Burra Charter (Walker and Marquis-Kyle 2004) as a guideline for making decisions under the Queensland Heritage Act 1992.

In order for a place to be entered onto the Queensland Heritage Register (Section 23 [1]) it must satisfy at least one of the following criteria:

- important in demonstrating the evolution or pattern of Queensland's history;
- important in demonstrating rare, uncommon or endangered aspects of Queensland's heritage;
- has potential to yield information that will contribute to an understanding of Queensland's history;

- important in demonstrating the principal characteristics of a particular class of cultural places;
- important in exhibiting particular aesthetic characteristics valued by the community or a particular cultural group;
- important in demonstrating a high degree of creative or technical achievement at a particular period;
- has a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- the place has a special association with the life or work of a particular person, group or community of importance in Queensland's history.

3. ENVIRONMENTAL BACKGROUND

Traditional Aboriginal life was intimately associated with the environment, thus a summary of regional and local factors such as climate, rainfall, geomorphology, geology, and vegetation provides relevant background information for this excavation project.

The study area is located on the 1:100 000 Topographic Mapsheets of Wyena (Ed. 2) No. 8454 and Harrybrandt (Ed. 1) No. 8554. The area lies between 22° 02′ and 22° 01'S, and between 147°58' and 148°01'E, between 240 and 260 metres asl., The greater region experiences a tropical to sub-tropical, sub-humid to semi-arid climate with temperatures ranging from a summer mean of 25^0 -38^oC, to a winter one of 13^o -16^oC. Temperatures well in excess of 32^oC are common in summer, while winter frosts occur relatively frequently (Queensland Resources Atlas 1980: 24). The region receives an annual rainfall average between 630 mm and 760 mm, of which over 50% falls in the summer months of December to February. The usual pattern of rainfall consists of thunderstorms of high intensity and often short duration from September to December followed by a general wet. The intensity of these summer storms is sometimes such that they may exceed the capacity of clay soils to absorb the water. The result is significant runoff which tends to encourage erosion and reduce the usefulness of the moisture for plant growth. The region experiences dramatic fluctuations in rainfall from year to year and droughts are common. In these periods moisture loss through evaporation significantly exceeds moisture gained through rainfall.

The main watercourse in the region, the Isaac River, flows approximately two kilometres to the east. The Isaac is a major river in the Fitzroy Basin and it is fed by numerous ephemeral streams, creeks and drainage lines. Many of these watercourses are filled with deep sandy sediments, as is the Isaac River itself. Where there has been land clearing there is also extensive evidence of erosion of the creek banks, gullies and adjacent alluvial terraces.

Soils within the study area consist of sandy clay, the cracking brown clay soils associated with brigalow dominated communities, and hard setting, sodic duplex soils. The clay soils have pronounced swelling and shrinking properties.

The geology of the wider region has been described by Malone (1969). The study area is situated on Quaternary deposits of undifferentiated alluvial sand, soils and

lateritic gravels, bordering on Tertiary deposits of alluvium quartz, sandstone, and silicified and sandy claystone of the Suttor formation. The range of raw stone material available in the immediate vicinity to Aboriginal people for the manufacture of stone implements is varied. Though surface stone over the study area is sparse, vast surface scatters of silcrete cobbles and petrified wood have been found in previous surveys on the slopes and terraces of the Isaac River. Sandstone also occurs plentifully as blocks in the sides of eroding slopes and creek banks in the region.

The study area lies in the Northern Bowen Basin province of the Brigalow Belt Bioregion. This province is '…predominantly undulating with *Acacia harpophylla* (brigalow), a species of silvery wattle with a canopy about 10-15 in height, and *Euc. cambageana* (Dawson gum of Blackbutt) dominant on clay soils, while *E. crebra* (narrow leaved ironbark) and *Euc. populnea* (Poplar box) dominate on the shallower, texture-contrast soil (Sattler and Williams 1999:11/6; 11/78-79). The natural vegetation of the Brigalow Belt is actually a mosaic of open forest and woodland communities (Department of Environment and Heritage 2004:1) containing a variety of different species. Most of these species were probably used by Aboriginal people in the past, for food, medicine and a variety of tools and objects for everyday use as well as having particular symbolic significance to individual people.

4. ETHNOGRAPHIC AND HISTORICAL BACKGROUND

There are both primary and secondary documentary sources of ethnographic and historical information on this area. It includes the following:-

- ethnographic, linguistic or cultural information on the traditional Aboriginal people in the region (eg. Curr 1887; Tindale 1974);
- journals and diaries of early explorers and settlers in the region (eg. Leichhardt 1847; Murray 1860, 1863; Gregory 1884; de Satge 1901; Fetherstonhaugh 1917);
- academic archaeological and historical works relevant to this area (eg. Brayshaw 1977, 1990; Breslin 1992; Wright 1984).

Tindale's detailed interpretation of traditional tribal estates and boundaries in particular has long been used as an important source of information. Since the introduction of Native Title legislation this information has been subject to a deal of scrutiny, criticism and re-interpretation but it still remains the primary source of information. Tindale recorded the study area as being in the vicinity of the northern boundaries of the Barna and Barada people. He described these territories as the '…*headwaters of the Isaac River, west to the Denham Range; south to Cotherstone at Grosvenor Downs…*' (Tindale 1974:165).

Leichhardt's expedition was the first of several early exploratory parties to pass through this region in the middle of the 19th century. Departing from the Darling Downs in October 1844 in search of an overland route to Port Essington on the north coast of Australia, Leichhardt travelled north-west across the Dawson and Mackenzie River valleys and upstream along a river he named after one F. Isaacs of the Darling Downs. Leichhardt's journal (1847) provides a valuable record of the physical and cultural landscape along the course of this river for some 70 miles, passing to within 2km of here. Various entries from February 15 to early March 1845 describe the landforms, geology, soils, flora and fauna as well as numerous encounters with Aboriginal people and/or observations of their material culture in the immediate region.

Leichhardt referred to a visit he made to a camp in the bed of the Isaac river somewhere near the junction with Cherwell Creek, to the south of present day Moranbah, when the party came suddenly upon a group of people who fled at their approach:-

> *24th Feb.-… Towards sunset we heard the noisy jabbering of natives, which promised the neighbourhood of water. I dismounted and cooeed; they answered; but when they saw me , they took such of their things as they could and crossed to the opposite side of the river ion great hurry and confusion….they were unwilling to approach us. Their camp was in the bed of the river amongst some small Casuarinas. Their numerous tracks… soon led me to two wells, surrounded by high reeds, where we quenched our thirst. After filling our calabash, we returned to the camp of the natives, and examined the things they left behind; we found a shield, four calabashes, of which I took two, leaving in their place a bright penny, for payment; there were also, a small water-tight basket containing acacia gum; some unravelled fibrous bark, used for straining honey; a fire-stick, neatly tied up in tea tree bark; a kangaroo net; and two tomahawks, one of stone, and a smaller one of iron, made apparently of the head of a hammer: a proof they had some communication with the sea coast…*
>
> (Leichhardt 1847:162-3).

On 27th February while Leichhardt was absent some members of the party were visited in their camp by the same Aboriginal people:-

> *Feb 27th.-…the natives had, in my absence, visited my companions, and behaved very quietly, making them presents of emu feathers, boomerangs, and waddies. Mr Phillips gave them a medal of her majesty Queen Victoria, which they seemed to prize very highly. They were fine, stout, well made people and most of them were young; but a few old women with white circles painted on their faces, kept in the back ground. They were much struck by the white shin of my companions, and repeatedly patted them in admiration. Their replies to inquiries respecting water were not understood*; but they seemed very anxious to induce us to go down the river…' Leichhardt 1847:166).

Leichhardt was reconnoitring along the Isaac River just to the south of the present Goonyella Riverside mine when he came upon a human skull at a creek which he named 'Skull Creek' (now Skeleton Creek), on the eastern side of the Isaac River (Leichhardt 1847: 165):-

> *…another deep scrub creek was found, full of water. Its bed was overgrown with reeds, and full of pebbles of concretions of limestone, and curious fossil trunks of trees, and on its bank a loose sandstone cropped out. Here we found a skull of a native, the first time that we had seen the remains of a human body during our journey. Near the scrub, and probably in old camping places of the natives, we frequently saw the bones of kangaroos and emus.*

Charlie, one of the two Aboriginal members of the team was also approached when he was alone, by people who:-

> *'…made him several presents, among which were two fine calabashes which they had cleaned and used for carrying water; the larger one was pear shaped, about a foot in length, and nine inches in diameter in the broadest part and held about three pints. The natives patted his head, and hair, and clothing…'* (Leichhardt 1847:159).

Leichhardt undertook this trip in the middle of a severe drought and he often mentioned in his journal that the party sometimes suffered badly from thirst. It is recorded that one of the dogs died of thirst. It is interesting to note, therefore, that there were still deep pools of water in several creeks in the region and that the Aboriginal people had fenced waterholes and dug wells in the bed of the Isaac River.

Leichhardt's glowing reports of this area resulted in land being tendered for and runs first leased about 1854. Prior to the creation of Queensland as a state, the *New South Wales Land Act* allowed hundreds of square miles to be taken up on a single tender and left unoccupied and unstocked. This Act operated in Queensland until April 1863 when the new Queensland Government made it compulsory for anyone taking up land to stock and occupy it. Following a pattern of settlement throughout Queensland, pastoralists sought out the most fertile areas with permanent water where Aboriginal settlement was also most intensive. As in other newly settled districts, units of Native Mounted Police were installed in strategic locations to 'protect' white settlement by 'dispersing' (shooting) Aborigines who resisted the invasion. In this region biased versions of the conflict were documented by new settlers De Satge (1901) in the Clermont/Peak Downs/Moranbah region; Fetherstonhaugh (1907) in the Moranbah/Suttor River area; Andrew Murray (1860, 1863) in the Moranbah/Mt Coolon area. More recent studies of this frontier period have also been documented by Evans (1971) and Wright (1981).

Aboriginal resistance in the general region peaked dramatically with massacres of white settlers at Hornet Bank (1957) and Cullin-la-Ringo (1861). These acts resulted in police and settlers undertaking massive retaliation against Aborigines. For example, after the Cullin –la Ringo murders, Mary Brown recorded how 'all the settlers in the district repaired to Wills' run to wipe out the blacks; many blacks were killed and those who got away to the desert died of thirst and starvation' (Fitzgerald 1981:142)refs.

In 1860 Andrew Murray was one of the aspiring squatters who journeyed from New South Wales in search of pastoral land. Near the Isaacs River his journey was hampered by thick brigalow and fear of Aboriginal attack. As with Leichhardt in the 1840s, Murray observed much evidence of Aboriginal subsistence activities around the creeks and streams ('blacks fires still burning near the bank of the creek, harvested yams and lily tubers, kangaroo net, old camps with 'numerous' mussel shells). At one point Murray refs (2/6/1860) noted the land management practice of firing the grass: 'The blacks set fire to the grass in different places in a line from the

ridges. I think they may have been trying to burn patches for game, or they may have been trying to burn us out!'

Murray's diary of his second journey to the area in 1863 in search of land to farm sheep indicates that fierce conflict between Aborigines and new settlers had not abated in the region. Hatte (2003) notes that Native Mounted Police units had been installed by the mid-1860s at Fort Cooper; at some stage there was a police camp at North Creek. Andrew Murray recorded that in retaliation for the murder of a cook on Conway station, Fred Murray (of the Native mounted Police) tracked down and 'shot eight of them (Aborigines)' (A. Murray 1863 11). When Andrew Murray's camp was raided by Aborigines 'Fred Murray (of the Native Mounted Police) came up and lessened their number quite a bit'. As a general comment Murray (1863:12) recalled that 'a good few of them (Aborigines) were shot when seen'.

The methods can be seen also in Oscar De Satge's description of a reprisal following the murder in 1863 of a shepherd on Peak Downs Station, allegedly by a group of Aborigines who had been allowed by a manager to 'come in' to the station: 'The police waited until sundown for their attack, which did not result in the expected slaughter, owing to the dense scrub and small attacking force'. At the 'blacks camp' De Satge found 'a couple of big blacks shot in the act of running, and partly supported by the dense scrub, gave ghastly evidence of the disturbed feast' (De Satge 1901:172).

The general attitude adopted by land holders towards Aboriginal people in the first ten years of arrival tended with some notable exceptions to the hard line policy of exclusion, partly as a result of the terror inspired by two massacres of Europeans by Aborigines further south:- the Fraser family at Hornet Bank station near Taroom in 1857 and the Wills party at Cullin-la-Ringo station near Springsure in late 1861. The attitude of exclusion is exemplified in a statement by Oscar de Satge, the manager, then owner, of a number of properties in the Peak Downs/Clermont area:-

> *...I carried away this lesson of Will's massacre with me, and vowed I would never have the blacks in on any station I managed, and I kept to this rule for over ten years, until the Peak Downs blacks were absolutely civilised, so that during my fifteen years there I never lost but one shepherd by them, and that by a neighbour's folly and not ours...* (de Satge 1901:155).

Several primary and secondary sources (Fetherstonthaugh, Murray, Wright [1984:140; Mcdonald 1995:187]) refer to close links between the first European owner of Picardy Station, Billy Fraser, and a massacre at Hornet Bank Station, Taroom in

south eastern Queensland. He was the eldest son of a family that was massacred as retaliation for various atrocities committed by the Yeeman people. Both Picardy and the neighbouring station "Broadlee" were taken up in 1860, Fraser at Picardy and Andrew Scott, a previous owner of Hornet Bank station at 'Broadlee'. It is recorded that Will (Billy) who had been absent at the time of the massacre subsequently spent some time in the Native Police in this area, with a virtual 'licence to kill' (McDonald 1995:187). Elder (1999:135) indicates that Billy Fraser became a legendary character at the time and "…*a symbol for all the misguided frontier animosity which whites felt towards Aboriginal people".* The legend included the killing of at least one hundred almost certainly innocent Aboriginal men, women and children. Elder concluded that Billy Fraser was probably *'…the largest mass murderer in Australian history*…'(1999:135).

Unfortunately, descriptions by Leichhardt and other nineteenth century European visitors to the region fail to express the complex nature of cultural organisation which no doubt existed in the region, as is typical of Australian Aboriginal societies. Clans would probably have comprised the fundamental land owning units with their own distinctive languages, rights and responsibilities. The land would have been organised in named countries or clan estates which were owned and used according to complex systems of law and spiritual associations (cf. Rigsby 1980; Chase 1980). Aboriginal people moved within these lands in regulated and customary ways, following hunter-gatherer-fisher economies which entailed seasonal cycles of economic, social and ceremonial activities.

A review of the available historical literature has found no direct evidence at this stage that significant European historical heritage sites are located in the vicinity of the study area. Physical evidence which might be encountered in the study area would be limited to pastoral activities and might include old structures, fences, camps and tracks.

5. ARCHAEOLOGICAL BACKGROUND

The literature review presented in this section provides a summary overview of previous archaeological research in the region. In so doing it provides a predictive framework for the current investigation by providing an indication of the type, density and distribution of known and expected archaeological resources in the local region.

The archaeological information presented in this background review is derived from two main sources:-

- previous academic archaeological research. Some academic archaeological research has been undertaken in this and adjacent regions (eg. Brayshaw 1977, Foster 1990, Hatte 1984) but it still remains comparatively unstudied from an archaeological perspective.

- cultural heritage assessment reports for coal and gold mining projects and infrastructure such as roads, pipelines and powerlines.

5.1 Academic Research

Most of the academic cultural heritage research in the Bowen Basin has been undertaken in the southern Central Queensland Highlands (to the south of the study area) where an extensive system of sandstone rock shelters and rock art has provided an important focus for research on the complex stencilled art and on the deposits in the floors of several large rockshelters (e.g. see Beaton 1977; Quinnell 1979; Morwood 1981; Morwood and Godwin 1984). In the early 1960s, excavations at Kenniff Cave on Mt. Moffatt Station revealed a stratified sequence of Aboriginal occupation extending back some19,000 years (Mulvaney and Joyce 1965). Within the cultural sequence two broad phases of stone artefact use were identified. In the later phase, from 5000 years ago, a variety of new stone artefacts appeared, many of which would have been hafted e.g. backed blades, points, adzes and axes. Morwood (1981) identified similar artefacts and patterns in his excavations. Beaton (1977) identified large scale consumption of cycad nuts from around 5,000 years ago. The preparation of the nuts for consumption involved labour intensive activities and large scale ceremonial gatherings.

These dates are the oldest in this region. C^{14} dates which provide a time depth of Aboriginal occupation are limited to a very few so they will be mentioned here. The closest dates to the north are from the Hughenden area to the north west (approximately 350-400 km from the study area), where Morwood and Godwin (1982) conducted excavations at Mickey Springs 31, 33 and 34 on the upper Flinders River revealing a number of calibrated basal dates of around 10,000 years BP (with a maximum basal date 12,350±120 BP) for the Aboriginal occupation of the area, all dates derived from charcoal (Morwood 1990). Research in the Whitsunday region on the coast east of here (Rowland 1986; Barker 1989, 1991, 1992) has investigated prehistoric island use by Aboriginal people. Barker's research indicated a relatively uninterrupted occupation depth of some 8,500 years BP (before present, approximated to 1950), through to the recent past period. The archaeological data provided evidence that this site was occupied well before the sea levels rose to form the Whitsunday Islands. In spite of the flooding of the landscape, there is clear evidence for uninterrupted Aboriginal occupation here until the arrival of Europeans.

Other research in the area is sparse and has focused on the archaeological resources of the Lake Elphinstone area north of Nebo (Foster 1990) and on the archaeology of rock art in the Peak Range to the south of here (Hatte 1984). Sites recorded and researched during these projects included open artefact scatters, stencilled rock art, stone wells, ochre caches, axe grinding grooves and artefact knapping floors.

The Suttor catchment area on the northern limit of the present study area was the southern limit of PhD research by Brayshaw in the mid-1970s. This research remains the only major academic research to be undertaken so far in the general region (Brayshaw 1977, 1990). Part of her research included the collation of available documented information from historical, ethnographic, archaeological and other sources on site types, material cultural items, collection and hunting methods which have been seen in the region. The result is an extensive data base which was presented as a series of Appendices in the 1990 publication of her thesis (Appendices 3A to 6A:211-248). The greater portion of the available evidence of what Aboriginal cultural heritage evidence might be expected to still survive in this region derives from Leichhardt's observations which have been presented above. Brayshaw summarises:-

> *When Leichhardt traversed the (area) in 1845 he recorded numerous heaps of fresh water 'muscle' shell. Today there is ample evidence of past Aboriginal people's activities...in the form of small stone extraction sites, (trees) with holes*

chopped in them perhaps in the search for honey or possums, and some campsites where stone artefacts, a few showing signs of utilisation, are scattered. The heaps of mussel shell are nowhere to be found. This probably results from the Aborigines habit, remarked on by Leichhardt, of often camping in the river beds during the dry season, while in the wet season they tended to range widely and camp away from the rivers (Brayshaw 1990:155).

5.2 Information from EIS related studies

Much of the archaeological information relating to the local region (defined here as within 50km of the study area) can be found in consultancy reports undertaken for Environmental Impact Studies relating to the development of coal and gold mines and associated infrastructure (e.g. roads, powerlines, water and gas pipelines, and optic fibre cables). From 2004, cultural heritage consultancy reports conducted under the provisions of the *Cultural Record (Landscapes Queensland and Queensland Estate) Act 1987* have been held by the Queensland Department of Natural Resources and Mines. Access to this DNRM data base is restricted. Specific information relating to Indigenous cultural sites (such as site location details) can be accessed only by written permission of the relevant Traditional Owners.

The Isaac catchment section of the Fitzroy River system has seen the greatest number of environmental impact assessment studies in all the catchments of the Bowen Basin as the majority of mines operating in the Bowen Basin are found in this catchment. Archaeological reports produced as part of EIS studies extend back about 30 years and include extensive early work by Brayshaw (1976a and b, 1977) and Hill (1978 and 1982) and more recent work by Alfredson (1990, 1991, 1992, 1994, 1995) and Hatte (1994 to 2005). These studies also tend to reflect the changing approaches which have been adopted in dealing with cultural heritage in this period. In the last decade Native Title legislation has had a significant impact on the way in which cultural heritage studies are undertaken.

Being project specific, EIS studies are necessarily restricted to a specific time and place, but they have the potential, collectively, to contribute valuable archaeological background data. A number of regional and more local patterns have been identified and it is possible from this data to make some general statements about traditional Aboriginal settlement patterns and behaviour (eg. usage of natural resources, seasonal patterns of settlement) and relatively well informed predictive statements on the archaeological potential of particular landscape types.

The open stone artefact scatter is the most common type of Aboriginal cultural site recorded in the region. Artefact scatters may represent the remains of campsites or working areas and they range in size from several artefacts representing a short term 'dinner camp' to many thousands of artefacts extending up to several kilometres. This latter type is usually very complex and would be expected to contain evidence of discrete activity areas. Typically such sites are found on the banks of streams and eroding gullies, but are not limited to such areas. A particular range of vegetation appears to be commonly associated with the open artefact scatters and the presence of such vegetation is often an indicator of a past campsite even though there may no longer be any other surface evidence of such.

The range of raw materials identified in artefact scatters mainly reflects the availability of local stone but may also contain occasional examples of fine stone that has been traded in from further afield. The most frequently occurring stone material in the archaeological record of the area is silcrete. However, other materials commonly include silicified wood, chert, sandstone, basalt, mudstone, siltstone and ashstone, crystalline and milky quartz. This area may also contain rare examples of prized stone that may have been traded from further afield (eg. fine rhyolite from Bletchington Park quarry near Charters Towers).

Less frequently occurring site types include scarred (culturally modified) trees, artefact scatters in association with quarries or source material or with hearths, or axe grinding grooves in the sandstone beds of creeks. Rare site types in the region are rock shelters with art or cultural deposits and ceremonial or dance grounds. Rock art is usually confined to sandstone mesas where the clifflines contain eroded shelters. Though ceremonial grounds are considered to be the rarest site type, several have been identified in the wider region in the past few years as a result of intensive field surveys. These grounds were originally situated in relatively rugged landscapes in within dense scrub.

There are a number of possible explanations for the patterns of site distribution identified in archaeological surveys. The recorded patterns may reflect the actual distribution of cultural materials, or they may result from taphonomic changes to the landscape and to the sites over time, as the study area has been impacted by human activities as well as by natural weathering processes.

Although ethno-historic records make note of wooden and fibre artefacts, stone tools, marked trees, wells etc., it is unlikely that organic materials (fibre, wood, skin, fur and feathers) would survive after prolonged exposure in open situations. Untended native

wells are unlikely to have survived the impact of floods and erosion. Other material is likely to have been covered or moved as a result of various natural processes (floods, wind etc). It is likely that scarred trees in particular have fallen victim to the widespread land clearing undertaken in the Central Highlands in the last few decades.

It has been particularly noted in many previous studies that the clearing of the native forests has most likely destroyed valuable archaeological data on past patterns of Aboriginal land use in the area. Observations suggest that where the area has been cleared of natural vegetation the ground is more likely to have been severely disturbed. There is evidence of erosion of soils, creek and gully features and sheet erosion on terraces and slopes. Various studies confirm that forest clearing which has been a feature of regional land management has contributed to this type of erosion. Beds of watercourses tend to become filled with sediments, and adjacent flat areas indicate the effects of soil deposition from flooding as well as erosion.

It is also possible that archaeological patterns may reflect trends in archaeological survey which in this area has largely been determined by the location of mining development. Site types in association with more rugged topography and less developed locations may be under recorded.

6. FIELD SURVEY METHODOLOGY

6.1 Methodology

A field survey of the study area was conducted over two days, in early June and late July 2006, by the project archaeologist and four representatives of the BBKY Native Title Applicants (see Appendix 1). The June survey covered the initial 200 hectare study area. The July survey undertook a further 70 hectares and the area proposed for an accommodation camp (approximately 25 hectares) on the northwestern end of the study area.

Grid References of the corner points of the study areas were supplied by Project Managers GHD and recorded into a hand held Garmin 72 (Datum WGS84). These points provided the limits of the survey area on both occasions. An initial vehicle reconnaissance was made to ascertain the physical attributes of the study area (environmental details, access tracks, disturbance, archaeological potential and hence particular areas to target, etc.).

The prediction of cultural heritage potential was based on a number of factors:- topography, geology and vegetation, site locational data derived from previous studies and the traditional knowledge of the Traditional Owners. The following areas were specifically targeted:-

- areas of greater ground surface visibility;
- outcrops of stone (for evidence of Aboriginal quarrying);
- large old trees (for evidence of Aboriginal scarring),
- drainage and breakaway gullies.

A number of foot transects were made across the site, beginning along the Goonyella Road with the field team spread out at regular intervals, generally between 20 and 50 metres depending on the terrain and predicted potential, walking to the western boundary, then returning.

A hand held Garmin 72 GPS was used to record the location of cultural features. When these were discovered they were recorded in conjunction with the Traditional Owner representatives using the criteria list in DNR site recording cards:- type of place, dimensions, attributes, existing and expected impacts. For artefact scatters, individual artefact types, raw stone material, size range and density were recorded.

All cultural finds are usually numbered sequentially in the order of location. Vegetation species in the vicinity of the cultural find, and vegetation of cultural significance, were also recorded as various types of vegetation are at times integral in defining the traditional usage of a place.

Large mature trees were inspected for Aboriginal scarring. In the study area these trees consisted mainly of *Eucalyptus Populnea* (Poplar Box). Scars on a number of old trees were inspected but rejected by the team as being of doubtful origin. There were several reasons for this rejection:-

- poor preservation from the impacts of fire and insects which often results in the loss of features such as the original shape;
- uneven regrowth of the bark round the scar;
- total growth by the bark over a scar, disguising its features;
- scars thought to be the results of natural processes such as the tearing of limbs and branches, natural shedding of bark, natural splitting of the bark, the impacts of animals, fire, or insects.

6.2 Survey Constraints

Previous surveys in the area have identified types of constraints which might impact upon the methodology of the field survey. These constraints were relevant also to the surveys undertaken for this site.

6.2.1 Archaeological (ground surface) visibility

This term refers to the degree to which past human activity can be seen from observable archaeological remains and, in the course of surface surveys this in turn relies on the extent to which the ground surface is able to be seen. The latter is most often expressed in terms of the percentage of clear ground which is visible in a given area. Lack of ground surface visibility is a major constraint to the identification of archaeological remains. Conversely, the erosion of topsoil along watercourses and drainage lines, from slopes and the tops of rises has resulted in high visibility, but also possibly in the disruption or disappearance of the archaeological record.

6.2.2 *Existing Disturbance*

A series of tracks and drill pads had been cleared for various exploratory activities to do with this project. The clearing had been monitored by BBKY representatives.

7. CULTURAL HERITAGE RESULTS AND DISCUSSION

Cultural heritage surveys of the proposed ammonium nitrate plant located a total of eighteen cultural heritage sites, items or features. They comprised five scarred trees, a number of stone artefacts and a large bare, approximately circular area of compacted gravel among Lancewood trees that has been determined to be a 'corroboree' ground with associated clearings and cultural items.

The study area was divided loosely into four units, mainly on the basis of vegetation:

Unit 1. The open *Eucalyptus populnea* (Poplar Box) forest, sandy clay soil;
Unit 2. The Acacia (*Acacia harpophylla* [Brigalow] and *Acacia Shirleyi* [Lancewood]) forests and scrubs. Soils are mainly brown clay and red gravelly clay;
Unit 3. The *Melaleuca sp*. growth towards the western and lower side of the study area;
Unit 4. The area of dead and regrowth forest on mainly sandy clay, northern end of survey area.

All finds were made in Units 1 and 2. No cultural heritage items or sites were found in Units 3 and 4.

7.1 Scarred Trees (AN1, AN2, AN3, AN4, AN14)

Five mature *Eucalyptus populnea* (Poplar Box) trees with scars of likely Aboriginal cultural origin were located within Unit 1 of the study area. All but one of these trees are concentrated towards the northwesterly end of the site and all but one are still living. Three of the trees have multiple scars. AN2 has a very large scar of a type that would usually be interpreted as a small canoe, but the distance of this site from water would indicate an alternative usage, possibly bark for a shelter. This tree was revisited in the July study and the small scar in the fork of the trunk was identified by Elders as a possum hole. AN3 has three small scars and AN4 two scars.

There are number of problems in positively identifying scarred trees of Aboriginal origin. Poor preservation from the impacts of fire and insects often results in the loss of features such as the original shape. Bark sometimes tends to grow back unevenly and sometimes the bark regrowth can actually hide the scar. Scars can result from natural processes such as the tearing of limbs and branches, natural shedding of bark, natural splitting of the bark, the impacts of animals, fire, or insects. Though scars of Aboriginal cultural origin tend to be uniform and symmetrical in shape (often

consistent with the size and shape of wooden artefacts such as shields, canoes or carriers), it is possible that shapes which also appear to be somewhat symmetrical can be produced naturally and they therefore require closer scrutiny in their identification.

Regionally, trees with scars of traditional Aboriginal origin are a fast diminishing cultural resource and it is therefore a matter of priority that especially well preserved ones on healthy, living trees be protected from all impacts.

7.2 Stone Artefacts (AN5-AN9, AN14-AN17)

Ten stone artefacts were identified in this study, six during the June visit and an additional four in July. All of these artefacts were found at the south eastern end of the study area and seven of the ten lie within a $30m^2$ area at the southern end of the circular clearing. Three of the seven are utilised steep edge scrapers of petrified wood, hence some possibility of a similar use to which all three may have been put. Another utilised steep scraper of silcrete together with two other brown silcrete flakes was found beside a small eroding drainage line on the eastern side of the clearings, again among lancewood.

The sparse distribution of the artefacts across the site stands in stark contrast to the extremely large and complex artefact scatters, some over a kilometre long, that lie closer to the Isaac River and its larger tributaries such as Grosvenor and Skull Creeks and Cleanskin Gully. These latter sites are supported by Leichhardt's observations of people living along the Isaac River. It is suggested that these present artefacts are all related to the clearings and activities that would have been carried out there.

7.3 Circular Clearing (AN11-13)

This site was found at the southern extremity of the study area. It lies among *Acacia shirleyi* (Lancewood) forest on red lateritic clays. Prior to coal mining this area would have been isolated and hidden by the thick scrub but now it lies less than 300 metres from the Goonyella/Moranbah road and near several industrial installations.

The site actually comprises several clearings. When the team first saw these clearings it was thought that the area may have been used for gravel extraction (another gravel extraction area lies near the Enertrade compressor station). This was eliminated as a possibility as there are no signs of any workings nor of any

previous human disturbance of any kind. This observation was corroborated during the second visit in July when several Elders independently made similar observations. The site identified as a corroboree ground is different from the others. It is roughly circular, approximately 40 metres in diameter and the surface is composed of compacted gravel (see Plate below). It can be seen in the following photographs of the site and its surrounds that the ground surfaces of the adjacent clearings are looser and less compacted.

Circular area from the south

Facing circular area from south east

View of circular area in the background.

7.4 Natural features with cultural significance

The table below provides a brief summary of the types of vegetation with cultural uses that were recorded in the study area. This vegetation is culturally significant as it was widely used traditionally for food, medicine and for various types of implements.

Botanical name	Local name	Traditional use/s
Acacia harpophylla	Brigalow	Implements, fire, medicine
Acacia salicina	Black wattle	Food, implements
Archidendropsis basaltica	Dead finish	implements
Alphitonia excelsa	White myrtle, soap tree	soap
Bauhinia spp.	Bauhinia	implements
Brachychiton populneus	Kurrajong	food, water, implements, string
Capparis cansecens	Wild orange	food
Capparis lasiantha	Split Jack, wait a while	food
Carissa ovata	Native currant bush or burrum	food
Cassia brewsteri	Leichhardt bean	medicine
Cymbidium canaliculatum	Black orchid or wild arrowroot	food, medicine
Eremocitrus glauca	Native limebush	food, medicine
Eremophila mitchelii	False sandalwood	fuel, medicine, ceremonial
Erythroxylum australe	Native cherry	Food, medicine
Erythrophleum sp.	Ironwood	implements
Eucalyptus populnea	Poplar box	implements
Corymbia sp.	Bloodwood	Implements, medicine
Geijera parviflora	Wilga	implements
Grewia retusifolia	Emu berries, dog balls	food
Owenia acidula	Emu apple	food, implements
Petalostigma pubescens	Quinine	Medicine, implements
Santalum lanceolatum (true sandalwood)	True or commercial sandalwood	Medicine
Terminalia oblongata	Yellowwood	implements
Unknown	possumberry	food
Enchylaena tomentosa	Ruby saltbush	food
Heteropogon sp.	White spear grass	food

Table 1. List of vegetation species recorded with Traditional uses.

As well as the wealth of vegetation depicted above, this general area is home to a range of native animals that would have provided a significant proportion of the local traditional diet. This range includes goanna and porcupine, rock python, eastern grey and red kangaroo, swamp wallaby, rock wallaby and wallaroo, scrub turkey, bustard or plain turkey, black and wood ducks, freshwater crayfish, turtle, blue tongue and other edible lizards, doves, pigeons (bronze wing and squatter) and other birds.

Animals and birds also played important symbolic roles in traditional life. A complex system of relationships existed between humans and animals, and descent lines determined that a particular animal would become a person's 'euri' (or totem). This relationship had both physical and spiritual attributes and entailed a series of binding responsibilities on a person.

Following the field survey a map was compiled by GHD delineating the areas that the team had inspected the locations of artefacts and recommended buffer zones around them (see also Recommendation No.1 and Figure 3).

8. ASSESSMENT OF SIGNIFICANCE

The assessment of significance forms an integral part of cultural heritage studies. According to Bowdler (1984:1) "…an assessment of the significance of a place or a site is necessary to decide what should be done with it, and if some form of conservation or protection is indicated, a clear statement of significance should indicate how that preservation should be carried out".

The identification and assessment of the significance of cultural heritage values is a necessary step in the process of management and conservation of cultural heritage values. All legislation protecting cultural heritage in Australia is derived from *The ICOMOS Charter for the Conservation of Places of Cultural Significance (The Burra Charter) 1977.* This Charter defines 'significance' as 'aesthetic, historic, scientific or social value for past, present or future generations' (Guidelines to *The Burra Charter* Section 2.1). It is important to note that the concept of significance is multi-faceted, and any one cultural heritage site may have different kinds of significance at different times and to different interest groups.

In making an assessment of significance it is necessary to understand the nature of the 'fabric' or all the physical material of the place (*Burra charter 1999: Definitions, Article 1*). It is almost always necessary to make a close, systematic examination of the fabric to understand its significance and this examination should ideally be supplemented by other information about the place.

This preliminary assessment relies on the consideration of the two core elements of Scientific (archaeological) and Social (Cultural) significance which are discussed below.

8.1 Scientific (Archaeological) Significance

Scientific or archaeological significance refers to the ability of a place or an item to provide information on past human activities or on past environmental conditions that may not be available in other sources. The Burra Charter (1999) defines scientific significance as follows:-

> The scientific or research value of a place will depend upon the importance of the data involved, on its rarity, quality or representativeness, and on the degree to which the place may contribute further substantial information…
>
> The Burra Charter: Guidelines to the Burra Charter: Section 2.3).

The determination of a site's uniqueness, and/or its representativeness, helps to determine at a practical level its scientific significance. The rarer a site, the greater its significance. Older sites, those that contain attributes, or a mixture thereof, not found elsewhere or those in which the archaeological material is unusually well preserved would potentially fall within the category of unique. 'Representativeness' generally refers to the ability of one site or a sample of sites to represent as accurately as possible the range and frequency of site types in a particular area. The notion of representativeness is also related to the maintenance of site diversity.

The scientific significance of a site generally increases as its potential to provide information increases. For any given place the significance will be greater where evidence of its association or the event that created it survives *in situ* than where it has been changed or evidence of context does not survive.

8.2 Aboriginal Cultural Significance

The criteria used by Aboriginal people to assess cultural significance is generally quite different from those used to make assessments of scientific significance. Significance assessments by Aboriginal people may be based on traditional, historical, contemporary and other cultural values. Criteria such as rarity, uniqueness and representativeness are often not relevant in this type of assessment. Places that contain no archaeological material may also be significant because of a past event, because of association with a story or because of an inherent spiritual quality associated with the place. This view is supported by *The Aboriginal Cultural Heritage Act 2003*. Section 12 of the Act notes:-

> *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[1]s significance.*

Scientific significance assessment is not necessarily consistent with Aboriginal people's cultural evaluations, but the Aboriginal cultural values of a site or place may override other forms of significance assessment. The assessment of Aboriginal cultural heritage significance of the items recorded in this study can be made only by the Traditional Owners.

8.3 Statement of Significance

The ceremonial ground and the cleared areas possibly associated with it are an extremely rare and important site type and protection is an absolute priority. Though the stone artefacts found in this study are relatively common types their significance is heightened by their proximity to the ceremonial ground and the associated clearings. The same applies to the scarred trees recorded in this survey.

Consultation with Senior BBKY representatives has provided a clear indication that this is a landscape with highly significant cultural attributes. The finding of a corroboree ground is a very rare event and only several are known of in the entire region. The potential of this find to fill in the knowledge gaps about traditional life in this region is therefore very rich.

The variety and extent of the cultural and natural resources, traditionally utilised by Aboriginal people, that have been recorded in the study area reflect patterns of Aboriginal life documented by European explorers and overlanders in the Isaac River region in the mid-nineteenth century, prior to the sustained impacts of pastoral settlement. The former (and existing) scrubs were the homelands of Aboriginal hunter gatherer people who managed the lands and values of the *Acacia* and *Eucalyptus* country using a range of strategies.

On-site and post-survey discussions with senior BBKY traditional Owners have indicated that the cultural heritage items and natural attributes recorded in this study are significant as definite and tangible links to BBKY traditional heritage and should be protected from impacts as far as possible. Where places or items of cultural significance may potentially be impacted, appropriate protection and management strategies should be agreed between DN and the BBKY Traditional Owners and implemented.

9. CONCLUSIONS AND RECOMMENDATIONS

The following recommendations are made as a result of this study. It should be noted that several of the items listed as recommendations below have already been discussed with GHD and several changes have been made to the project plans in order to avoid some of the sites.

1. It is BBKY's intention to enter the site identified as a corroboree ground, together with the associated attributes and clearings, in the Database and Register of significant sites held by the Aboriginal Cultural Heritage Coordination Unit, Dept of Natural Resources and Mines. It is therefore recommended that a suitable buffer zone be determined with senior members of BBKY on the site itself.

2. It is also noted that the southern extremity of this site lies on the boundary between this land and the adjacent land owned by Transfield. It is therefore further recommended that discussions be undertaken between representatives of BBKY, DN and Transfield in order to facilitate adequate protection round the entire site.

3. The scarred trees identified during this study should be fenced by BBKY and thus protected from potential impacts from construction and subsequent activities within the ammonium nitrate plant.

4. Monitors appointed by BBKY should monitor all initial earthworks associate with the construction of the ammonium nitrate plant.

5. The necessity for, and scope of, any additional follow up cultural heritage work other than that referred to above should be agreed between the BBKY Traditional Owners and DN.

While the survey coverage was considered satisfactory there is always a possibility that additional unrecorded surface and subsurface cultural items or sites might be located in this area. The following recommendations are therefore included in this report as safeguards in the event of such finds.

6. In the event that unrecorded cultural heritage sites or materials are discovered in surface or sub-surface deposits during monitoring or other operations, it is recommended that all work at that location should cease, pending further advice

from the Traditional Owners. Depending on the cultural heritage significance of the finds, further management/mitigation options may need to be considered and implemented. It is noted that all items of cultural heritage in Queensland are protected under the provisions of *The Aboriginal Cultural Heritage Act 2003* and *The Queensland Heritage Act 1992.*

7. In the unlikely event that skeletal material suspected of being of indigenous human origin is discovered during work on the prospect it is recommended that all operations within 100 metres of the skeletal material cease immediately upon its discovery. The Queensland Police, BBKY Elders and the Cultural Heritage Unit, DNR&M should be contacted immediately. All three parties have established policies and procedures to ensure that confirmed indigenous burials are treated in a manner consistent with Aboriginal traditions/practices. Minimal disturbance to the remains should be a priority at all times, and ways of dealing with the burial in a culturally appropriate and sensitive manner should be sought from Aboriginal Elders (see Appendix 3, DNR&M Draft Burial Policy).

8. As per the provision of the Aboriginal Cultural Heritage Act 2003, the above recommendations should be incorporated into a formal Cultural Heritage Management Plan between the proponent and the BBKY Traditional Owners for the proposed project

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APPENDIX 1.
LIST OF FIELD PERSONNEL

Frank Budby	Elder, Project Coordinator
Les Budby	Field Officer
Rebecca Budby	Field OFficer
Michael Budby	Field Officer
Leslie Budby	Field Officer
Jeffrey Budby	Field Officer
Colin McLennan	Guest Elder
Elizabeth Hatte	Project Archaeologist
Emma Oliver	Assisting Archaeologist

APPENDIX 2

Glossary of Archaeological terms

(see Bahn 1992; Bourke and Smith 2004; McCarthy 1976)

Blade: a long, flat and narrow flake with parallel sides struck from a prepared core (measures at least twice as long as wide). A backed blade has had one side reworked to a steep angle to provide one non-cutting edge.

Core: piece of stone from which flakes have been removed

Edge ground axe: axe shaped piece of stone which has been knapped and ground to produce sharp edges

Flake: a piece of stone which is removed (knapped) from a core; the flake may be a planned artefact or a waste by-product which is discarded

Grinding: manual abrasion

Grindstone: a stone artefact, with relatively flat surfaces used as a base to grind seeds, roots or tubers and/or ochre; a rounded stone (muller) was used as a pestle to grind the material; grindstones are made from coarse-grained abrasive material such as sandstone

Knapping (flaking): the process of hitting one stone (a hammerstone) on another (a core) to produce s flaked stone artefact

Nodule: a natural concretion

Ochre: soft varieties of iron oxide materials such as haematite (red ochre), goethite and limonite which are used as pigments for painting and personal decoration

Pebble: stone worn and rounded by natural forces such as water

Petrified wood: wood which has undergone the process of fossilisation to produce a stone-like substance

Primary flake: one of the first pieces to be struck off a block of stone; retains the cortex (the original outside surface) of the core

Retouch (secondary flaking): the working of a primary flake to make a tool

Scraper: retouched flake with a thick working edge; probably used to scrape skins or for woodworking

Secondary flake: struck off a core early in the flaking process, but retains some cortex and some flake scars

Taphonomy: the study of the processes that have acted on an archaeological site to make it as it appears today

Tertiary flake: product of the last stages of the knapping process; no cortex remains

Tula or tula adze: hafted chisel with a semi-circular working edge made from a thick flake; used to work hardwoods

APPENDIX 3

DNR&M DRAFT BURIAL POLICY

Human Remains Policy1st Draft

DRAFT POLICY.

THE DISCOVERY, HANDLING AND MANAGEMENT OF HUMAN REMAINS UNDER THE PROVISIONS OF THE *ABORIGINAL CULTURAL HERITAGE ACT 2003* AND *TORRES STRAIT ISLANDER CULTURAL HERITAGE ACT 2003*

1 General Guiding Principles

Death in all human societies is a significant event. It occurs on a regular, but unpredictable basis, removing individuals from family, close relations and friends. Death is often associated with complex rituals. This was and is still the case with Aboriginal and Torres Strait Islander people. Disturbance to burials and human remains is therefore of major concern to them, as it is for all members of society.

Aboriginal and Torres Strait Islander people have been in Australia for more than 40,000 years. In that time they have buried hundreds of thousands of their ancestors in a variety of ways. In some cases people were cremated, in others their bones were placed in hollowed-out logs or trees or wrapped in bark cylinders and placed in rock shelters. Many were also buried in the ground with grave goods. Burials commonly occurred in sand dunes and alluvial deposits, which were easy to dig. However, wind and water easily erode such locations and frequently these natural processes expose remains. Other common burial locations are rock shelters, rocky overhangs and hollow trees. All are vulnerable to human disturbance. The close proximity of scarred or carved trees and stone arrangements and the remains of fireplaces, stone artefacts and food refuse may be suggestive of an Aboriginal and Torres Strait Islander burial.

In view of possible natural or human disturbance to Aboriginal and Torres Strait Islander places the Queensland Government has in place a legislative framework that will ensure such burials are treated in a manner consistent with legal requirements and Aboriginal and Torres Strait Islander traditions.

There is also provision for Aboriginal and Torres Strait Islander people who have traditional or familial links with human remains to seek ownership of these remains regardless of who claimed previous ownership.

2. Desired Outcomes

This policy has a number of general desired outcomes: -.

- While natural or human processes can inadvertently expose Aboriginal and Torres Strait human remains all attempts will be made to limit further disturbance.

- If further investigation and disturbance is required procedures are in place for the proper handling of such remains.

- Any such procedures are sensitive to the wishes of the Aboriginal and Torres Strait Islander owners of the remains.

- That Aboriginal and Torres Strait Islanders who have traditional or familial links with human remains are able to claim ownership of those remains.

Legislative Framework

Criminal Code Act 1899

All persons **must** be aware that under the ***Criminal Code Act 1899*** (s236) it is an offence to improperly or indecently interfere with a human body or human remains, whether buried or not. An offence under this provision can result in imprisonment for up to two years.

Coroners Act 2003

Provisions of the **Coroners Act 2003** *provide that when unidentified human remains are located it is the duty of the person finding the remains to report the findings to a police officer or Coroner (Part 2 s7 and 8). (**NB** Part 4, Division 4 Section 82 (1) defines every magistrate as a Coroner (a "local Coroner")*

The Coroner starts having control of human remains when the Coroner starts investigating the deceased person's death. The Coroner must stop investigating a death if the Coroner's investigation shows that the body is Aboriginal or Torres Strait Islander burial remains (Part 3 s12(2)(a). In this case the remains are released to the Minister responsible for administering the *Aboriginal Cultural Heritage Act 2003* and *Torres Strait Islander Heritage Act 2003*. (See Form 12 version 1- Order for release of Traditional remains pubd gaz 21 November 2003 p955-6).

To ensure best practice in the coronial system, the State Coroner must develop guidelines in respect to certain matters, including, those dealing with investigations of deaths involving human remains found in a suspected traditional burial site, and in particular, must provide for the early notification and involvement of the Aboriginal or Torres Strait Islander community having a connection with the burial site ((Part 3 s14 (3) (b).

The basic intent of the *Aboriginal Cultural Heritage Act 2003* **and** *Torres Strait Islander Cultural Heritage Act 2003* **('the Acts') is that Aboriginal and Torres Strait cultural heritage should be protected.**

It is also the intent of the Acts (as far as practicable) that Aboriginal and Torres Strait cultural heritage should be owned and protected by Aboriginal and Torres Strait Islander people with traditional or familial links to the cultural heritage if it is comprised of any of the following-

(a) Aboriginal human remains;
(b) secret or sacred objects
(c) Aboriginal heritage lawfully taken away from an area.

It is a further intent of the Acts that Aboriginal and Torres Strait Islander cultural heritage, that is in the custody of the State, including the Queensland Museum, should continue to be protected by the State until it can be transferred into the protection of its Aboriginal or Torres Strait Islander owners (Part 2 Division 1 s14 (1-4).

Under the Acts Aboriginal or Torres Strait Islander people who have a traditional or familial link with Aboriginal human remains are the owners of those remains regardless of who may have owned the Aboriginal or Torres Strait Islander human remains before commencement of the Act (Part 2 Division 2 s15 (1-2).

An Aboriginal or Torres Strait Islander person who owns human remains may at any time ask the State (or an entity that represents the State) who holds custody of the remains to continue to be the custodian of the human remains or return the human remains to them (Part 2 Division 2 s16 (1-4).

If a person, other than the State has in their possession Aboriginal or Torres Strait human remains to which they do not have traditional or familial links then the person must take all reasonable steps to ensure that the human remains are taken into the custody of the chief executive as soon as practicable. Penalties apply if a person fails to do this (Part 2 Division2 s17 (1-2).

If a person knows of the existence and location of Aboriginal human remains and is not the owner of those remains, or knows or ought reasonably to know the human remains are Aboriginal or Torres Strait Islander human remains or knows or suspects the chief executive does not know of the remains the person must as soon as practicable (and after advising the Police or Coroner) advise the chief executive of the extent of the human remains and provide all the details about the nature and location of the human remains the chief executive reasonably requires. Penalties apply if a person fails to do this (Part 2 Division 2 s18).

4 Procedures for dealing with Aboriginal and Torres Strait Islander human remains

In all cases when human remains are located it is important to remember that:

- **The discovery of any human remains must as soon as possible be reported to the police**.

- **It is an offence to interfere with human remains, whether buried or not**.

The Police or Coroner should be advised of the presence of any human remains. An appropriate officer or officers will then establish the area of discovery as a potential crime scene and are responsible for preserving and securing the area.

If a determination is made that satisfies the Coroner that the remains are not a crime scene and that the remains could constitute an Aboriginal or Torres Strait Islander burial site, Police will contact the Cultural Heritage Coordination Unit of the Department of Natural Resources Mines and Energy. Officers (or their representatives) of the Cultural Heritage Coordination Unit may attend the scene and along with the Police scientific officers collect appropriate data on ethnicity, antiquity and evidence of criminal activity or otherwise for submission to the Coroner. Further advice might be sought from forensic osteologists/pathologists or physical anthropologists.

If the remains are thought to be neither Aboriginal nor Torres Strait Islander, related to criminal activity or are of doubtful determination, Officers (or their representatives) of the Department of Natural Resources Mines and Energy may assist the Police in further determinations. This may require controlled removal and analysis. In all cases of possible criminal activity the requirements of the Police and Coroner for data collection and site security will have priority. If the remains are determined, to the satisfaction of the Police and Coroner, to be Aboriginal or Torres Strait Islander, Officers of the Department of Natural Resources Mines and Energy will then take responsibility for liaison and reburial with the appropriate Aboriginal or Torres Strait Islander community.

At all stages minimal disturbance to the remains will be a priority and they will be dealt with in a sensitive and caring manner. Advice and guidance from Aboriginal or Torres Strait Islander elders will be taken as soon as the possibility of criminal activity is dismissed.

Explanation of procedures

(1) Designated Police Officers maintain authority and responsibility for a potential crime scene at all times.

(2) Cultural Heritage Coordination Unit Officers (or their representatives) may attend the scene and provide advice as required by Police or Crime scene officers.

(3) Police will nominate a person to provide a second opinion. Such opinion may be available on-site if a Forensic Osteologist/Pathologist or physical anthropologist is available. All data required for first and second opinion is to be collected on site.

(4) Final decision on this rests with Police, on advice from the Coroner.

(5) Officers of the Cultural Heritage Coordination Unit will, on request, assist Police in technical aspects of evidence retrieval.

(6) Advice on handling may be sought from appropriate sources where this does not compromise integrity of crime scene or quality of evidence.

Additional procedures and information

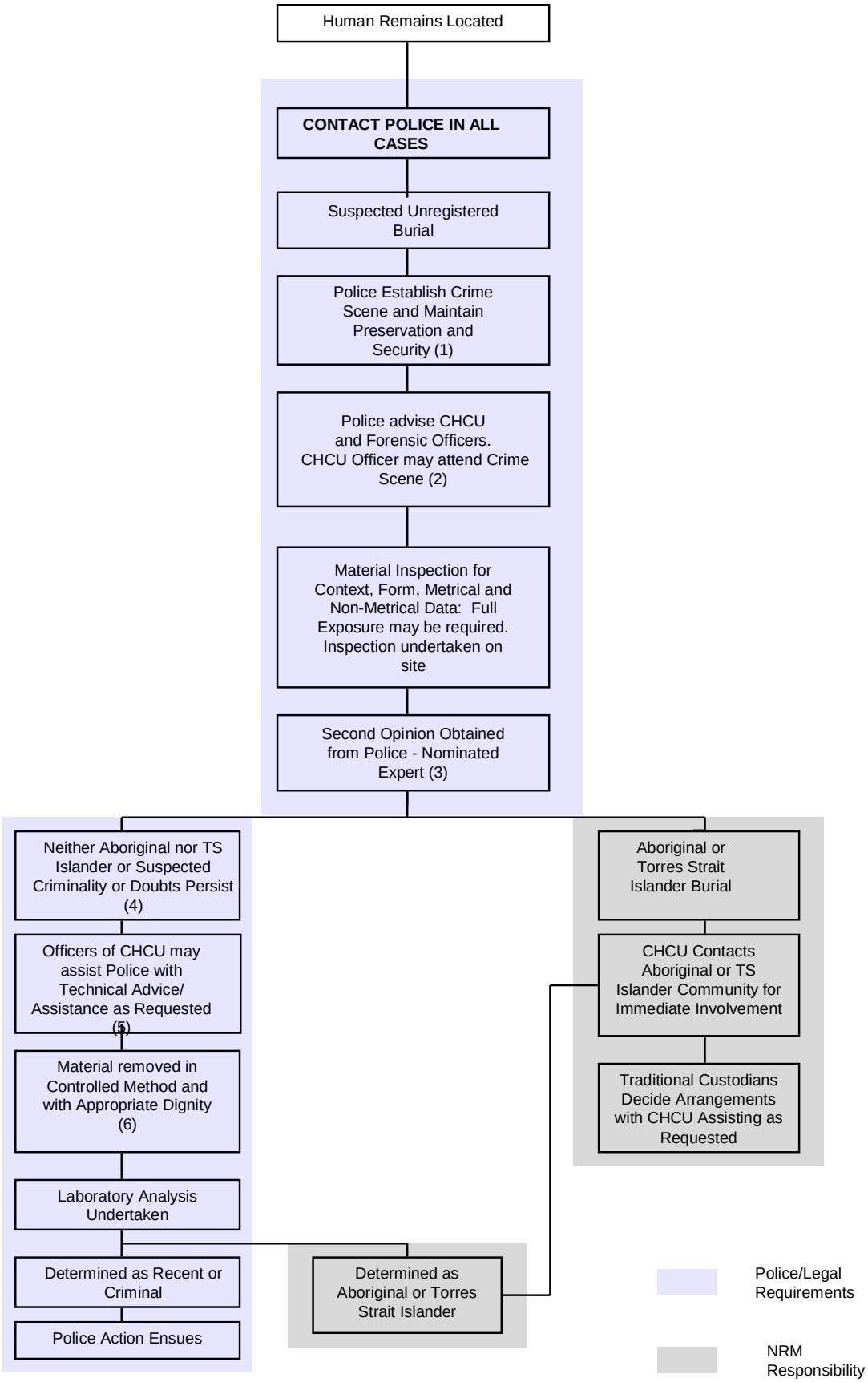
Where the remains are determined to be Aboriginal or Torres Strait Islander the Coroner will complete form 12 Order for the Release of Traditional Remains. This provides for the release of the remains to the Minister responsible for administering the *Aboriginal Cultural Heritage Act 2003* and the *Torres Strait Islander Heritage Act 2003*.

Should any Police Officer or Officer (or their representative) be in any doubt as to the requirements of the relevant Coroner for their region, then it is essential that the Coroner be directly consulted. Alternatively, as the State Coroner is responsible for all Coroners any perceived difficulties in implementing the policy/procedure should be referred to him/her.

The excavation of human burial remains for whatever reason is not encouraged. However this may occur if requested by an Aboriginal or Torres Strait Body.

If a researcher acting under an authority or agreement from the Cultural Heritage Coordination Unit discovers burial remains in the process of excavating a site, they should immediately stop excavation, cover the remains and contact an Officer of the Cultural Heritage Coordination Unit, who will then follow the procedures set out in this document.

The Queensland Museum acquired skeletal remains from the 1880's to 1972 including some legally recovered under the *Aboriginal Relics Preservation Act 1967*. However, by 1972 it was no longer considered appropriate to deposit skeletal material with the Queensland Museum except in exceptional circumstances and with the permission of the relevant Aboriginal or Torres Strait Islander community. The Museum has now developed a repatriation policy for skeletal remains still in its collection (see *Some Information for Aboriginal People Concerning Human Remains held in the Queensland Museum* - obtainable from the Queensland Museum).


Human Remains Located
CONTACT POLICE IN ALL CASES
Suspected Unregistered Burial
Police Establish Crime Scene and Maintain Preservation and Security (1)
Police advise CHCU and Forensic Officers. CHCU Officer may attend Crime Scene (2)
Material Inspection for Context, Form, Metrical and Non-Metrical Data: Full Exposure may be required. Inspection undertaken on site
Second Opinion Obtained from Police - Nominated Expert (3)
Neither Aboriginal nor TS Islander or Suspected Criminality or Doubts Persist (4)
Officers of CHCU may assist Police with Technical Advice/ Assistance as Requested (5)
Material removed in Controlled Method and with Appropriate Dignity (6)
Laboratory Analysis Undertaken
Determined as Recent or Criminal
Police Action Ensues
Determined as Aboriginal or Torres Strait Islander
Aboriginal or Torres Strait Islander Burial
CHCU Contacts Aboriginal or TS Islander Community for Immediate Involvement
Traditional Custodians Decide Arrangements with CHCU Assisting as Requested
Police/Legal Requirements
NRM Responsibility