Heritage Assessment of the former Rum Jungle Mine site, Northern Territory.

Report prepared for:
Department of Resources, Northern Territory.

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Earth Sea Pty. Ltd.
A heritage assessment of the former Rum Jungle Mine site, Northern Territory.

Department of Resources, Northern Territory.


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At the request of the traditional Aboriginal owners and with permission from the author, sections of this report have been either edited or suppressed by the Department of Resources to protect sites considered culturally significant and/or sensitive.

Front cover photograph:
Main Pit (date unknown). Northern Territory Archives Service, Historical Society of the Northern Territory Collection NTRS 1854, Photographs of the Northern Territory, 1860-1982, Item 1855.
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1.0. INTRODUCTION

The Mining Environmental Compliance Group, Minerals and Energy Division of the Northern Territory Department of Resources (DoR) engaged Earth Sea Pty Ltd to undertake a heritage assessment of the former Rum Jungle Mine lease area, Section 2968 Hundred of Goyder. This report will assist the DoR by documenting heritage matters which will feed into an improved rehabilitation strategy for the site. The report and heritage assessment was carried out by Karen Martin-Stone and Daryl Wesley.

It should be noted that Earth Sea Pty Ltd also carried out an Aboriginal cultural heritage and archaeological survey. At the request of the Aboriginal traditional owners of the site (the Kungarakany and Warai), certain information has been suppressed to protect sites considered culturally significant and/or sensitive. In addition the terms White’s and Cut have been replaced with Main and Pit respectively. These changes have been made because in Aboriginal cultural terms the area of Rum Jungle is concerned (among other things) with human generative processes especially the female aspects. Also, the name White is not used as deceased persons by tradition are not referred to by name.

1.1. Aims of the Consultancy

The aims of the consultancy were to assess and report on the significance and condition of any sites identified as having heritage values within the boundaries of Section 2968 Hundred of Goyder (the former Rum Jungle Mine site) and make appropriate management recommendations. The Department of Resources currently has a number of operating site restrictions (i.e. installation of locked gates and fencing to restrict access to the site) which will be broadened to include further heritage considerations.

The brief for the consultancy was for Earth Sea to:

1. Review any existing information relating to the potential heritage values of the site.
2. Physically inspect the site.
3. Assess and report on the heritage values (both European and Aboriginal), significance and condition of any sites identified within the study area. The significance of any identified sites should be assessed on the basis of:
   a. The criteria for entry in the Commonwealth Heritage List, established under the Environment Protection and Biodiversity Conservation Act 1999, and
4. Make appropriate management recommendations for the sites.
5. Provide a draft report to the Project Manager.
6. Discuss the draft report with the Project Manager, who will review and provide comments. The Consultant will be expected to incorporate any relevant information or
changes into the final report.
7. Submit the final report to the Project Manager electronically along with five (5) hard copies.

1.2. Legislative Provisions

Two statutes protect archaeological and historic sites in the Northern Territory. They are the NT Heritage Conservation Act (1991) (hereafter referred to as ‘the Act’) and the Commonwealth Environment Protection and Biodiversity Conservation Act (1999) (EPBC).

The Heritage Conservation Act (1991) protects two kinds of sites:

1. Sections 29 and 39 of the Act protect prescribed archaeological places and objects. These include all sites and objects pertaining to the past occupation by Aboriginal and Macassan people. An Archaeological Site Register is maintained by the Heritage Branch within the NT Department of Natural Resources, Environment, the Arts and Sport (NRETAS).

2. The Act protects places or objects listed on the Northern Territory Heritage Register, known as declared heritage places or objects. The Act also allows for interim conservation orders to protect proposed heritage places or objects.

Therefore, all Aboriginal archaeological sites are protected from damage or disturbance, including stone artefacts, rock art sites, burials, hearths and stone arrangements. Any possible background scatters of stone artefacts to occur at Rum Jungle would be classified as prescribed places and objects and would therefore be protected under the Act.

NRETAS provides administrative and executive support to the Heritage Advisory Council (HAC). The Office also provides professional advice to Government, non-Government organisations and individuals on heritage matters, maintains the Northern Territory Heritage Register (NTHR), maintains a database of archaeological resources in the Northern Territory, undertakes heritage assessment on places and objects nominated to the NTHR, and administers the Northern Territory Heritage Grants Program (NTHGP).

Members of the public are able to nominate places for inclusion on the NTHR to the HAC. After assessment and recommendation from the HAC, the Minister may enter the place onto the NTHR, to become a Declared Heritage Place. Protective measures for declared heritage places are high with Section 33 of the Act providing that a person shall not, except as prescribed, or in accordance with a Conservation Management Plan, damage, or desecrate a heritage place, carry out work of any sort on a heritage place, remove a
heritage object from a heritage place, or remove a heritage object from the Territory; without the written consent of the Minister.

The EPBC is primarily concerned with the protection and conservation of those aspects of national environmental and heritage significance. On 1st January 2004, a new Commonwealth Heritage regime came into effect following amendments to the EPBC. These amendments included the repeal of the former Australian Heritage Commission Act 1975. Key features of the heritage amendments to the EPBC are:

- The creation of a National Heritage List\(^1\).
- The creation of a Commonwealth Heritage List\(^2\).
- The creation of a new advisory body; the Australian Heritage Council.
- The retention of the Register of the National Estate as a sites database.
- Increased protection for places on the Register of the National Estate.

The legislation outlines heritage significance criterion for assessing National Heritage and Commonwealth heritage places and management principles for National Heritage and Commonwealth Heritage places. The Heritage Division of the Commonwealth Department of Environment and Heritage is the agency responsible for the administration of the EPBC and for providing support to the Australian Heritage Council. The Australian Heritage Council is to be supported by an Indigenous Heritage Committee to advise the Council on sites of Aboriginal significance. The new Commonwealth Heritage regime has created two new heritage lists and is attempting to retain the Register of the National Estate as a database. According to the Department of Environment and Heritage, the Register of the National Estate has been repealed. However, it has still been retained under the Australian Heritage Council Act 2003.

1.3. Heritage Management Principles

Heritage management in Australia emanates from Commonwealth, State and Territory heritage legislation, from local government planning mechanisms and from the ethics and principles established by the Australia International Council on Monuments and Sites (ICOMOS) Charter for the Conservation of Places of Cultural Significance (hereafter referred to as the Burra Charter). Assessment of Indigenous cultural heritage places and objects in the Northern Territory can be guided from a number of sources but not limited to:

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\(^1\) Applies to properties across Australia and abroad, however, as the Commonwealth does not hold land use powers, protections afforded by this list most often emanate from State heritage legislation or by the discretionary use of Commonwealth funding.

\(^2\) Applies to Commonwealth owned properties.
• The NT Heritage Conservation Act 1991 and its Regulations;
• The NT Aboriginal Sacred Sites Act 1989 and its Regulations;
• Ask First: A guide to respecting Indigenous heritage places and values (2002); and
• The Australia ICOMOS Burra Charter.

This report has been compiled following the process outlined in the Australia ICOMOS Burra Charter for the conservation of heritage places. The Burra Charter outlines a logical order for making decisions appropriate for heritage places. The three essential steps outlined by the Burra Charter are:

1. Assess the cultural significance
   1.1 gather evidence
   1.2 analyse evidence
   1.3 decide what is significant
2. Develop conservation policy and strategy
   2.1 gather information
   2.2 decide conservation policy
   2.3 decide conservation strategy
3. Carry out the conservation strategy

The major conservation principle from Article 2 of the Burra Charter states that; “...the aim of conservation is to retain the cultural significance of a place and must include provision for its security, its maintenance and its future" (Maquis-Kyle and Walker 1992:69). Definitions from the Burra Charter are listed below:

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Place</td>
<td>means site, area, building or other work, group of buildings or other associated works together with associated contents and surrounds.</td>
</tr>
<tr>
<td>Cultural Significance</td>
<td>means aesthetic, historic, scientific, or social value for past, present or future generations.</td>
</tr>
<tr>
<td>Fabric</td>
<td>means all the physical material of the place.</td>
</tr>
<tr>
<td>Conservation</td>
<td>means all the processes of looking after a place so as to retain its cultural significance.</td>
</tr>
<tr>
<td>Restoration</td>
<td>means returning the EXISTING fabric of a place to a known earlier state by removing accretions or by reassembling existing components without the introduction of new material.</td>
</tr>
<tr>
<td>Reconstruction</td>
<td>means returning a place as nearly as possible to a known earlier state and is distinguished by the introduction of materials (new or old) into the fabric. This is not to be confused with either recreation or conjectural reconstruction, which are outside the scope of</td>
</tr>
</tbody>
</table>
The principles that are set out in the Burra Charter (Maquis-Kyle and Walker 1992) are those by which the assessment of significance in this report has been constructed and concluded. As stated above, cultural significance must take into account aesthetic, historic, scientific and social values for past, present and future generations. Significance assessments are a helpful tool in the management of cultural heritage resources by allowing managers to make informed decisions especially in land use issues. Definitions of these concepts of significance are listed below (Maquis-Kyle and Walker 1992).

- Aesthetic Value. This includes aspects of sensory perception for which criteria can and should be stated. Such criteria may include consideration of the form, scale, colour, texture and material of the fabric. The smells and sounds associated with the place and its use.

- Historic Value. This encompasses the history of aesthetics, science and society, and therefore to a large extent underlies all of the terms set out here. A place may have historic value because it has been influenced, or has been influenced by, an historic figure, event, phase, or activity.

- Scientific Value. The scientific value or research potential 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.

- Social Value. Social value embraces the qualities for which a place has become a focus of spiritual, political, national, or other cultural sentiment to a majority or minority group.

These values can be applied to the assessment of significance of cultural heritage places. Overall, the recommendations set out in this report follow the principles of heritage place management that are described in the Burra Charter.

1.4. Assessment of Mining Heritage Places

Pearson and McGowan (2000) have prepared both a manual and a framework for the assessment of mining heritage places in Australia. The forward by former AHC Chairman Peter King states;
“Mining has been a major contributor to the development of Australian society and the economy since our first mining boom in the 1840s. There is considerable public interest in our mining heritage, which includes not only mines and associated machinery but also mining landscapes of mullock heaps and miners’ housing.” (Pearson and McGowan 2000:3)

This is a very relevant comment on mining heritage in the Northern Territory. Rum Jungle is part of a mining landscape. Mining heritage places consist of elements that include:

- Primary processing batteries, mills and secondary processing plant such as smelters and refineries;
- Miners’ housing, villages and towns;
- Roads and tramways associated with the movement of mining supplies and mineral;
- Infrastructure to support the mine such as water supply, timber mills, smithies, foundries, brickworks and hydro-electric plant;
- Aspects of settlement stimulated by mining – agriculture and market gardening, closer settlement, port development and railway extension; and
- Landscape modification due to mining such as; deforestation, pollution, induced barren areas, silted dams, open cuts, embankments and mounds, tailings dumps, dredged streams etc (Pearson and McGowan 2000).

Pearson and McGowan (2000) state that there is no ‘cut-off’ date for heritage values. Heritage value is not just about objects or places being ‘old’ but for the range of characteristics that they possess (Pearson and McGowan 2000). To date, Australian heritage mining type profiles have only been developed for coal, copper, alluvial gold, and reef gold (Pearson and McGowan 2000). Type profiles are a tool aiming to provide useful overview material that could help in the assessment of heritage places through comparative assessment of representativeness and rarity. Type profiles are meant to guide initial understanding of:

- The chief characteristics of classes of place;
- The range of variation that exists in the geographical spread of the type; and
- The geographical, temporal and technological variations known to exist (Pearson and McGowan 2000).
Unfortunately, such type profiling has not been undertaken for historic uranium mining and exploration in Australia; most likely because of its more recent beginnings.
2.0. CULTURAL OCCUPATION BACKGROUND

2.1. Indigenous Occupation of the Top End

The arrival of modern humans onto continental Australia has been dated to at least 50,000 years BP (Before Present) (Roberts et al, 1990). These dates were obtained from samples taken from sites in Kakadu National Park, indicating broader occupation of the Top End region. Archaeologists believe that the most likely region of arrival was the Kimberley and Top End coastline. Much lower sea levels at the time, potentially due to periods of glacial maximum, meant that the earliest occupation sites are likely to be underwater.

There are a number of theories that attempt to explain changes in the archaeological record (see Murray 1998; Lourandos 1997). One argues for ongoing cultural development in Australia while the other argues for waves of contact with people arriving from Asia. Most likely it is a combination of both but none-the-less it is clear that the first arrivals on the Australian continent must have made a water crossing. It is also clear that the dingo arrived from Asia and that the most likely explanation for this is that it was deliberately brought here by people.

2.2. Indigenous occupation of the Rum Jungle Mine site area

Indigenous occupation of the Rum Jungle Mine area prior to the arrival of Europeans was consistent with Indigenous occupation of the broader Top End region. The area is rich in resources and has been seasonally exploited in a fisher, hunter and gatherer economy. The richness of food resources enabled large groups of people to gather for ceremonial and other purposes. The seasonal pattern in the Coomalie region was for people to exploit freshwater wetlands and riverine areas during the dry season (a period of annual drought in the wet-dry tropics) while exploiting upland areas during the wet. The relative abundance of fresh water enabled people to hunt game such as fish, kangaroos and goannas for example while also gathering plant resources; often the larger part of the traditional diet and which included cycads, palms, pandanus, long and cheeky yams and bamboo (Guse 1998).

2.2.1. Previous archaeological research

Previous archaeological work has been undertaken in the Coomalie area, though none specifically on the former Rum Jungle Mine site. Guse (1998) conducted a review of all archaeological research in the Coomalie Shire in 1998 for the Heritage Conservation Branch within the then NT Department of Lands, Planning and Environment. This review synthesised the work of Baker (1983), Megirian (1986), Mulvaney (1990), Hiscock (1991),
Hiscock and Mitchell (1991 and 1992), Guse and Gregory (1994), Burns (1996), Guse (1993, 1994, 1996 and 1998) and Mitchell (1997). These surveys were usually clearance surveys done prior to the development of major works in the Top End, such as the new railway, gas pipelines and Telstra optic fibre cables. Guse’s (1998) work analysed all known sites against landform, vegetation, geological and geomorphological units to develop a predictive model of Aboriginal archaeology in the shire.

More recently, Bourke (2001) and Heritage Surveys (2002) have undertaken archaeological surveys near Batchelor and Manton Dam. Additionally, Crassweller (2005, 2006a, 2006b, 2007, 2008a, 2008b, 2008c, 2008d and 2009) has undertaken surveys for the Brown’s Oxide Project (HAR’s) development adjacent to the former Rum Jungle Mine site and other mine sites in the vicinity. All of the archaeological survey results are consistent with expectations of indigenous occupation of the area.

2.2.2. Anthropological research

Extensive anthropological research has been undertaken as part of the Finniss River Land Claim (Toohey 1981). The claimants over Area 4 of the land claim, which covers the former Rum Jungle Mine site, were the Kungarakany and Warai clans. While acknowledging the close ties between the two groups (both as groups and individuals), Justice Toohey (1981) recognised that their presentation as joint claimants “tended to offer a picture of deceptive simplicity.” Independent analysis was required to ascertain land ownership and traditional ownership. Anthropological analysis was undertaken by Professor J.C. Goodale, Dr. R.H. Layton, Dr. P.J. Sutton, Dr. N.M. Williams and Professor B.L. Sansom (Toohey 1981).

Justice Toohey (1981:36) found; “[t]he historical material suggests that once this country was Warai rather than Kungarakany country but … the movement of the Kungarakany from the area around the Wagait Reserve took them east to Adelaide River where over the years they have entered into a company relationship with the Warai. I accept that within Area 4 are places of spiritual significance to both Kungarakany and Warai. … The place mentioned as of the greatest importance was Angurukulpam.”

Angurukulpam is a broad stretch of country that encompasses the former Rum Jungle Mine site and which has specific sacred sites within it (Calma, pers. comm.; Mills, pers. comm.).

Justice Toohey (1981:37) concluded; “I am satisfied that within Area 4 there are sites of importance. The Kungarakany and Warai claimants showed common spiritual affiliations to those sites, placing them under a primary spiritual responsibility for the sites and for the
land.” He made findings of traditional ownership by the Kungarakany and Warai to Area 4 (Toohey 1981). Toohey (1981:49) was; “also satisfied that there is among those Kungarakany and Warai found to be traditional owners a strong traditional attachment, maintained despite the very great pressures of the last one hundred years.”
2.3. History of the Top End

For the past 140 years, the Darwin-Katherine region represents one of the most intensively occupied areas in the Northern Territory. Rum Jungle is centrally located within this region and as such, the development of the Rum Jungle area has been largely influenced by the economic, social and political history of the Darwin-Katherine region. Thus, it is important that the later assessment of heritage significance of the Rum Jungle mining is set against a backdrop of the Northern Territory’s history. The history of the wider region has been well documented by Powell (2000) and Carment (1996). The following summary history of this region is compiled from these references with additional material specific to Batchelor and Rum Jungle being sourced from Barrie (1982).

European settlement in the area began with an expedition to the area by Fred Litchfield from the settlement at Escape Cliffs near the mouth of the Adelaide River (Guse 2006). The party mapped the escarpment country now named as Litchfield National Park and discovered the Finniss River which was named after the less than illustrious leader of the Escape Cliffs settlement, Boyle Travers Finniss. Litchfield also found gold in the Finniss, ensuring that the area would be visited and occupied shortly after permanent settlement.

The period from 1869 to 1890 has been considered as an economic boom period and perhaps the Northern Territory’s most important period up until World War II. During this period, the Overland Telegraph Line (OTL) was established, gold fields and a railway to Pine Creek constructed, plantation agriculture attempted and pastoral country was settled and stocked with some venturing into the Arnhem and Alligator Rivers region (Powell 2000). This same period also saw the provision of a port facility and essential services such as postal, health, judicial and protective services on a peninsula in Darwin Harbour which became an economic and administrative centre for the Northern Territory. Port Darwin was declared a free port and in 1870, the Government Resident was instructed to establish “friendly relations with the natives, procedures for dealing with pastoral lands, the allotment of selections under land orders and the formation of experimental gardens” (Bauer 1964). The opening of the Pine Creek goldfields and the establishment of Katherine proved to be major centers drawing Aboriginal groups from far reaching areas including Arnhem Land.

The development of the mining and pearling industries and the growing domestic economy attracted migrants from China, Japan, the Philippines and the Malay Peninsula from which workers and families settled in Darwin. Also in Darwin, middle class Europeans managed to establish a social hierarchy which in turn segregated the locations that people settled in the township. This led to the demarcation of areas as being the white
administration and residential zones, the establishment of a ‘Chinatown’ and shanty areas where the dispossessed Indigenous community resided.

In 1911, the administration of the Northern Territory was transferred from South Australia to the Commonwealth Government and the Township of Palmerston was renamed Darwin. From 1913, the Commonwealth Government through its Northern Territory administration, applied a policy of ‘control and segregation’ of Aboriginal people. This in particular affected Aboriginal groups close to the Darwin - Katherine region. Aboriginal groups were required to live in close proximity in settlements despite the long standing taboos, alliances or intergroup hostility.

An influx of defence personnel in the 1930’s saw the population of Darwin increase from a few thousand to approximately 15,000 by the outbreak of hostilities in 1942. Additionally, World War II developments from 1939 to 1945 had a significant impact on the development of Darwin and surrounding regions. Major developments included the construction of the Stuart Highway in 1941 and the air force airstrips, the stationing of large numbers of military personnel and use of the Darwin Harbour for naval purposes (Powell 2000).

Batchelor became the base for the Australian, American and Netherlands East Indies forces from 1942 to 1945. The Batchelor Demonstration Farm was commandeered by the Commonwealth Government in July 1941 and the existing airfield was upgraded. During the war, numerous air attacks, reconnaissance and supply drops were launched from the Batchelor airfield. Thousands of troops were stationed in the area and training was conducted locally. Batchelor was subjected to air raids by the Japanese between October 1942 and November 1943, resulting in a small number of wounded personnel (Barrie 1982).

Destruction has also been as significant in the history of Top End as has economic development. Cyclones in 1897 and 1937 caused much damage and rebuilding. World War II was also a period of destruction and rebuilding. Much of the debris left over from WWII was not dealt with until after 1951. This post-war period saw the rebuilding of Darwin resulting in the loss of much of Darwin’s pre-war character (Dewar 2010). Then in December 1974, Cyclone Tracey had a catastrophic impact on the appearance and development of Darwin and associated industry in the following decades.
2.4. The uranium industry in Australia

The timing of uranium as a major world commodity was established with the entry into the nuclear age with the development of atomic weapons in World War II. According to Barter (1991), the uranium industry largely arose in order to satisfy demand created from the defence programs of the United States (US), the United Kingdom (UK), the Soviet Union and France in the Cold War period. Great Britain and the US believed that uranium was in short supply and wanted it not only for their own arsenals, but to deny the source to other competitors (Cawte 1992). Therefore, the UK and the US through the Combined Development Authority (CDA), sought contracts for the future outputs of Australia’s uranium mineral sources (Cawte 1992).

Since World War II, there have been two significant periods of uranium mining in Australia. The first period of uranium exploration and production began in earnest in 1954 with mining undertaken at Radium Hill (SA), Rum Jungle (NT), Mary Kathleen (QLD) and a number of smaller mines in the South Alligator Valley (NT) (Australian Atomic Energy Commission 1962).

It was during this period that amendments were made to the Mining and Aboriginal Ordinances to allow exploration and mining on Aboriginal reserves which was previously excluded (Cawte 1992). Philosophies of protection of Aborigines began to change to assimilation with the promotion that Aboriginal reserves could become economically self sufficient through the development of mining and subsequent royalties (Cawte 1992).

It was not until the 1970s when nuclear power was developed as an alternative energy source that uranium was once again needed in large quantities and exploration and mining of uranium was back on the Australian agenda. The second phase of uranium mining which began in the late 1970s and early 1980s saw uranium mines established at Ranger and Nabarlek in the NT and Roxby Downs in SA.

According to Cawte (1992), over a 15 year period beginning from 1945, Australia sought to be included amongst the nuclear weapon possessing countries of the world. Both the UK and the US did much to deter Australia from developing beyond being a provider of uranium oxide ore (Cawte 1992). Australia did manage however, to secure access to the technology to proceed with the development of the nation’s own nuclear energy program by 1956 through the hosting of tests and sale of uranium (Cawte 1992).

The Australian Commonwealth Government established a tax free reward scheme for the discovery of uranium deposits of economic significance offering up to £25,000 (Barrie
1982). A total of £112,000 was paid during the lifetime of the scheme from 1948 to 1961 to 35 individual prospectors, syndicates and companies (Barter 1995). Over half of this scheme was paid to discoveries in the Northern Territory.

The Commonwealth reward scheme and the significant Rum Jungle discoveries initiated a major prospecting boom in the Northern Territory. During the post-war period, uranium production was driven by demand for weapons systems and accordingly, was granted a level of secrecy. Therefore, production figures were not always reported in public documentation at the time. Barter (1995) estimates the uranium mining value to the Northern Territory varied between £2.03 million in 1954/55 to £7.61 million in 1963/64 adding significantly to the previously underestimated mining production of Northern Territory’s economic statistics. Barter (1995) goes on to state that 43% of the Northern Territory workforce between 1954 and 1964 was engaged in the mining industry and specifically mining uranium.

2.5. History of the Rum Jungle Mine

In the late 1940s, the Commonwealth began offering rewards for the discovery of uranium ores in Australia (Barrie 1982). Uranium had been located and mined in Australia as early as 1906 at Radium Hill in South Australia, however the new market following WWII and the Commonwealth rewards scheme encouraged prospecting in a number of regional centres including Darwin (Australian Atomic Energy Commission 1962). John (Jack) Michael White informed the government of the deposit in 1949, eventually claiming the full reward of £25,000 (Barrie 1982). The Bureau of Mineral Resources undertook further exploration work from 1949 to 1952 (Barrie 1982).

The Rum Jungle uranium deposit was quickly identified as a commercial possibility and work began to develop a mine in 1952. The mine operated from 1953 to 1963 and produced uranium, copper, nickel, zinc and lead. The mine was operated by Territory Enterprises Pty Ltd (TEP), a wholly-owned subsidiary of Consolidated Zinc Pty Ltd, which merged with Rio Tinto Mining Company of Australia Ltd to form Conzinc Riotinto of Australia Ltd (CRA) in 1962. The mine initially comprised Main underground, which was converted to an open pit (see Fig. 1).
Two more open pits were established within the lease area; Dyson’s and Intermediate. Main Pit was mined for all uranium, copper, nickel, zinc and lead ores, while Dyson’s only produced uranium and Intermediate only produced copper (Kraatz and Applegate 1992). The on-site Treatment Plant was also used to process ore from other mines which continued until 1971.

Monitoring of the environmental impact from the mine began in the late 1960s with a more detailed study being conducted in the mid-1970s (Davy 1975). A comprehensive clean-up project took place over four years; from 1982 to 1986 with subsequent monitoring being conducted up until at least 2002 (Taylor et al, 2003). Although at the time of the 1980s works the rehabilitation objectives were deemed to have been achieved, more recent studies have documented the gradual deterioration of the original rehabilitation works (Taylor et al, 2003).
3.0. ARCHAEOLOGICAL SURVEY

3.1. Methodology

The archaeological survey used random stratified and judgment (purposive) sampling methodologies. These methods are in accordance with standard practice for field archaeology (see Burke & Smith 2004, Orton 2000). They allow archaeologists to obtain an accurate impression of the area, without inspecting every square meter of land. The aim of the survey was to assess approximately 10% of the area, to allow for representative coverage of landforms and more detailed coverage of areas deemed more likely to contain archaeological sites.

Pedestrian transects have been completed across the lease area with the aim of avoiding areas of major disturbance including the former Tailings Dam area and the areas between the Intermediate Pit and Main Pit and the areas between the overburden heaps.

Where possible, transects were performed in a parallel manner, giving regular and representative coverage. At other times, transects were varied to account for landscape and vegetation factors and sites of cultural significance according to the Authority Certificate issued to Department of Resources. The mine site is extensively disturbed, particularly in the areas of original operation but also across the northern and eastern sectors of the site where various costeans and borrow pits occur. Visibility decreased significantly over the survey period as vegetation flourished with the onset of the wet season. It is possible that surveys undertaken in conditions of better visibility would identify more sites.

3.2. Indigenous Archaeological Results

This section has been suppressed at the request of the traditional owners of the site in order to protect sites considered culturally significant and/or sensitive.
Figure 2. Historical site locations.
3.3. Historic Heritage Features

The 18 historical features come from three different site occupation eras (see Figure 2 and Table 1). Several World War II era historic features were identified on the mine lease consisting of three gun emplacements and associated dry stone wall; most associated with training rather than operational use (see Figures 3 and 4). The majority of the historical features date from the period of the mine’s operation which include sheds, building foundations, water tank and the abandoned Drilling Rig. Some features post date the mine’s operation and may have been associated with the rehabilitation attempts in the 1970s and 1980s e.g. the Ablutions Block. The probable pet grave most likely post-dates the rehabilitation of the mine and is not considered significant for heritage management purposes.

3.3.1. World War II Features

The Batchelor area was an important base for thousands of troops in WWII. It is unsurprising then that some remnants from this era occur within the Rum Jungle Mine site.
lease area. The three rifle pit emplacements and two dry stone walls occurring on Giant’s Reef Ridge probably form part of a greater network of training and operational sites. It is also possible that further surveys of the ridge in conditions of improved visibility will identify further WWII features.

Figure 4. Site H017. Dry stone wall associated with three gun emplacements (WWII era).

The rifle pit emplacements are each about 1.5 m deep and vary in width from 2 – 4 m. They are made from stone sourced in the immediate vicinity. The small number of associated artefacts (a battery and few expended .303 shells) indicates they were probably used for a short period of time, most likely for training purposes.

3.3.2 Features relating to former mining

The historical features dating from the mine operation era include; three sheds, stone building foundations, Drilling Rig, a concrete water tank and various concrete slabs (See Figures 5 to 8).
Figure 5. View looking north east from the former gate to the mine site. The photo shows building foundations in the foreground with the later Ablutions Block nearby, Fabricating Shop in the background at centre frame and core store at far right.

The three sheds include two workshops and one large shed with later extension. The latter was probably used as a core store in the mining era and was formerly used as a lime storage/feed shed as part of the Water Treatment Plant operations during the 1980’s rehabilitation (Kraatz and Applegate 1992). The modern extension was constructed in the mid-1980’s to house the lime transfer pump (Loveday 1984). The buildings are the main built infrastructure from the mine’s operation era that is still extant. The landscape around the buildings has changed significantly through previous remediation work. Where previously there were laboratories, a Mill Pond, Treatment Plant and a Power Plant; there is now a contoured hill of fill sourced from borrow pits in the broader area. Other forms of mining infrastructure include the Block/Gate House, Drilling Rig, haul bridge footings, a bridge over the East Branch of the Finnis River and several weirs on the water courses. There appears to have been considerable hydrological management that has occurred on the former mining site.

The sheds are in reasonable condition with some damage being done to the corrugated iron at ground level in the workshops as well as damage to the roof of the modern extension to the core store. This damage was probably caused by wet season water
runoff and/or high winds. The sheds should be made safe and left in situ during any proposed site rehabilitation, as there is the potential in future for these buildings to be incorporated into interpretive displays if public access is warranted following rehabilitation. They are an important remnant of a key period in the development of the Northern Territory.

Figure 6. H014. The former lime storage/feed building with modern extension (constructed to house the lime transfer pump)-currently used as a core store.
Figure 7. H006. Fabricating workshop shed. Damage to the corrugated iron can be seen at ground level.

The stone building foundations and the concrete tank on the ridge behind the former Treatment Plant area are also tangible remnants of the mine operation era. The building foundations are so disturbed that the full extent of them could not be ascertained through the initial surface survey. However, they still convey considerable information about the commercial approach to financial efficiencies in the establishment of mine infrastructure. The attractive masonry of the front wall gives way to capped, mortared stone at the side which deteriorates to dry stone capped rubble towards the rear.
Figure 8. H011. Drilling Rig located on the Rum Jungle Mine site.
<table>
<thead>
<tr>
<th>Waypoint No.</th>
<th>Site ID</th>
<th>Site Type / Features</th>
<th>Description</th>
<th>Significance &amp; Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>WP019</td>
<td>H001</td>
<td>Water tank</td>
<td>Square concrete tank with foundations for round tank beside it. Rusted pipes and corrugated iron strewn around. Located on ridge overlooking former treatment plant site.</td>
<td>Moderate significance. Make safe and leave in situ.</td>
</tr>
<tr>
<td>WP022</td>
<td>H002</td>
<td>Small wooden cross with stone cairn</td>
<td>Probable pet grave that postdates the 1970s rehabilitation work. Occurs on earthworks in vicinity of gate house.</td>
<td>Low significance. Nil recommendations.</td>
</tr>
<tr>
<td>WP024</td>
<td>H003</td>
<td>Building foundations</td>
<td>Includes garden edging and a variety of construction types apparently related to the visibility of each wall. Front wall constructed of concrete-capped masonry blocks. The side wall is concrete-capped mortared stone. Mortar is absent at the rear of the wall but rendered in the corner. Drainage is installed in the wall. Could be gate house or office. Rear of building foundations could not be located due to disturbance.</td>
<td>Moderate significance. Recommend to leave in situ for the time being. Possibility of restoration in future following site remediation if public access and visitor interpretation are proposed.</td>
</tr>
<tr>
<td>WP025</td>
<td>H004</td>
<td>Dry stone wall</td>
<td>Corresponds with office building on Lawson's 1974 site plan. Rendered buttressed corner starting 1m from the visible end of WP024. Approximately 60 m long with collapse/disturbance at 25 m (for 6 m), then quite disturbed from 40 m. Poor condition. No corners/returns noted, no capping or mortar and no visible entrances.</td>
<td>Moderate significance. Stabilise and conserve in place.</td>
</tr>
<tr>
<td>WP027</td>
<td>H006</td>
<td>Shed</td>
<td>Fabricating Shop. Corrugated iron construction with metal louvers and painted glass in the windows. Most windows 'boarded up' with flat sheets of galvanised tin. Some damage to corrugated iron at ground level. Damage to door frame at western end, door missing. End capping on roof appears to post-date mine operation. Sliding door missing from eastern end. Building Axis bearing of 81°.</td>
<td>Moderate to High significance. Stabilise, make safe and leave in situ.</td>
</tr>
<tr>
<td>WP029</td>
<td>H008</td>
<td>Concrete pad</td>
<td>Concrete pad in two parts. Does not correspond to anything on 1974 site plan.</td>
<td>Moderate significance. Make safe and leave in situ.</td>
</tr>
<tr>
<td>WP031</td>
<td>H009</td>
<td>Fenced area with small concrete slab</td>
<td>Fenced area approximately 15 m x 12 m. Concrete slab approximately 1.5 m x 1.5 m. Unknown use.</td>
<td>Moderate significance. Make safe and leave in situ.</td>
</tr>
<tr>
<td>WP032</td>
<td>H010</td>
<td>Building foundations</td>
<td>Large concrete slab 46.2 m x 12.5 m - in two parts. Has square concrete pads regularly spaced along edges; two of which support rusted structural remains. Probably CRA store on 1974 plan. Rubbish pile at eastern end.</td>
<td>Moderate significance. Make safe and leave in situ.</td>
</tr>
<tr>
<td>WP033</td>
<td>H011</td>
<td>Drilling Rig</td>
<td>Abandoned Drilling Rig, present on 1977 aerial photo.</td>
<td>Moderate to high significance. Make safe and leave in situ.</td>
</tr>
<tr>
<td>Waypoint No.</td>
<td>Site ID</td>
<td>Site Type / Features</td>
<td>Description</td>
<td>Significance &amp; Recommendations</td>
</tr>
<tr>
<td>-------------</td>
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<td>--------------------------------</td>
</tr>
<tr>
<td>WP034</td>
<td>H012</td>
<td>Concrete slab</td>
<td>Concrete slab 18.9 m x 13.6 m. Slab axis on a bearing of 272°.</td>
<td>Moderate significance. Make safe and leave in situ.</td>
</tr>
<tr>
<td>WP035</td>
<td>H013</td>
<td>Concrete slabs</td>
<td>Two parallel concrete slabs 3.3 m apart. Each 36.7 m x 6.25 m. Correspond with core store on 1974 plan. Slab bearing on an axis of 270°.</td>
<td>Moderate significance. Make safe and leave in situ.</td>
</tr>
<tr>
<td>WP036</td>
<td>H014</td>
<td>Shed / lime storage and mixing building</td>
<td>Shed or lime storage and mixing building which was one of the Water Treatment Plant structures from the original mining era with a later (mid 1980s) extension. Currently used as a core store. Corrugated iron construction with metal louvers and glass windows. Extension constructed of corrugated iron and green polycarbonate corrugated sheeting. Three sliding doors on northern wall with one on south wall. Loading dock along north wall. Veranda over first loading dock door. Entrance damaged- hinged doors on ground. Building on an axis of 231°.</td>
<td>Moderate to High significance. Make safe and leave in situ.</td>
</tr>
<tr>
<td>WP039</td>
<td>H015</td>
<td>Gun emplacement</td>
<td>Probable WWII era rifle pit made from stone sourced in the immediate vicinity: 2 m x 1.5 m.</td>
<td>Moderate significance. Leave in situ and consider management options as part of recommended conservation management plan for Giant’s Reef Ridge.</td>
</tr>
<tr>
<td>WP040</td>
<td>H016</td>
<td>Gun emplacement</td>
<td>Probable WWII era rifle pit made from stone sourced in the immediate vicinity: 4 m x 1.5 m.</td>
<td>Moderate significance. Leave in situ and consider management options as part of recommended conservation management plan for Giant’s Reef Ridge.</td>
</tr>
<tr>
<td>WP041</td>
<td>H017</td>
<td>Gun emplacement</td>
<td>Probable WWII era rifle pit made from stone sourced in the immediate vicinity: 3 m x 1.5 m.</td>
<td>Moderate significance. Leave in situ and consider management options as part of recommended conservation management plan for Giant’s Reef Ridge.</td>
</tr>
<tr>
<td>WP042</td>
<td>H018</td>
<td>Dry stone wall</td>
<td>Probable WWII era associated with rifle pits. Dry stone wall built between two naturally occurring rock walls. Probably used as a shelter: 2.2 m long x 0.9 m high. Artefacts include old battery and several .303 expended shells. A second dry stone wall of similar construction was later located on the last day of fieldwork close to WP038 (quarry and food processing site). Further survey work required in conditions of better visibility.</td>
<td>Moderate significance in accordance. Leave in situ and consider management options as part of recommended conservation management plan for Giant’s Reef Ridge.</td>
</tr>
</tbody>
</table>
4.0. HERITAGE SIGNIFICANCE ASSESSMENT

4.1. Historic Thematic Assessment

The Australian Historic Themes Framework (2001) provides a valuable research tool which can be used at the national, state or local level to assist in the identification, assessment, interpretation and management of heritage places. The adoption and use of these historic themes assists the development of a nationally coordinated approach and encourages consistency in heritage assessment and management across the nation. Table 2 presents the historic themes from the Australian Historic Themes (2001) found to be represented at the former Rum Jungle Mine site.

Table 2. Historic themes that may be applicable to the Rum Jungle uranium mining heritage. (Australian Historic Themes: 2001).

<table>
<thead>
<tr>
<th>Theme Group</th>
<th>Theme</th>
<th>Framework Sub Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Developing Local, Regional and National Economies</td>
<td>3.4 Utilising Natural Resources</td>
<td>3.3.3 Prospecting for precious metals</td>
</tr>
<tr>
<td></td>
<td>3.8 Moving Goods and People</td>
<td>3.4.3 Mining</td>
</tr>
<tr>
<td></td>
<td>3.15 Developing economic links outside Australia</td>
<td>3.8.5 Moving goods and people on land</td>
</tr>
<tr>
<td></td>
<td>3.16 Struggling with remoteness, hardship and failure</td>
<td></td>
</tr>
<tr>
<td>5 Working</td>
<td>5.1 Working in harsh conditions</td>
<td>5.1.2 Coping with dangerous jobs and workplaces</td>
</tr>
<tr>
<td></td>
<td>5.2 Organising workers and work places</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5.8 Working on the land</td>
<td></td>
</tr>
<tr>
<td>8 Developing Australia’s cultural life</td>
<td>8.9 Commemorating significant events</td>
<td>8.9.2 Remembering public spectacles</td>
</tr>
</tbody>
</table>

4.2. Rarity and Representativeness

We know that a diverse range of cultural features associated with mining uranium and other minerals are located within the Rum Jungle Mine site including the remains of waste rock dumps/overburden heaps, dams, roads, tracks, cement slabs, processing areas and building structures. These cultural features are comparable to other historic mine site complexes elsewhere in the Northern Territory. The integrity and diversity of these structures is relatively high compared with other historic mining sites of the same era (i.e. South Alligator Valley).
Archaeological investigations at mining sites such as Arltunga and White Range in Central Australia and Yam Creek in the Pine Creek Region have provided information about a wide range of activities unrecorded or barely mentioned in the historical record. In the same way, the Rum Jungle Mine site has the potential to address issues relating to activities on mid 20th century mining settlements and to shed light on the function of many structures recorded at sites for which there is little or no historical information.

Mitchell (2000) discusses mining in the Northern Territory as a historic theme in his report to the National Trust. Mitchell (2000) conducted a review of historic mining activities in the Northern Territory and the principal mineral fields in Table 3 below.

Table 3. Principal Northern Territory mineral fields and archaeological surveys of historic mining sites (see Mitchell 2000).

<table>
<thead>
<tr>
<th>Location</th>
<th>Principal minerals produced</th>
<th>Principal References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bynoe Harbour – West Arm</td>
<td>Tin, tantalite</td>
<td>Heritage Surveys</td>
</tr>
<tr>
<td>Daly River</td>
<td>Copper</td>
<td>Alford 1990</td>
</tr>
<tr>
<td>Maranboy</td>
<td>Tin</td>
<td>Dermoudy 1989</td>
</tr>
<tr>
<td>Gulf of Carpentaria</td>
<td>Copper, lead, silver</td>
<td>Forrest 1993, Dymock 1991</td>
</tr>
<tr>
<td>Alligator Rivers Region</td>
<td>Uranium</td>
<td>Bell 1983</td>
</tr>
<tr>
<td>Tennant Creek</td>
<td>Gold, copper</td>
<td>Pearce 1983, Pearce 1984</td>
</tr>
<tr>
<td>The Granites</td>
<td>Gold</td>
<td>Service Enterprises 1985</td>
</tr>
<tr>
<td>Hatches Creek</td>
<td>Wolfram</td>
<td>Travers 1988</td>
</tr>
<tr>
<td>Burrundi</td>
<td>Gold</td>
<td>Strong 1992</td>
</tr>
<tr>
<td>Harts Range</td>
<td>Mica</td>
<td>Hugo 1993, Gregory 1999</td>
</tr>
<tr>
<td>Arltunga</td>
<td>Gold</td>
<td>Forrest 1981, Holmes 1990</td>
</tr>
<tr>
<td>Winnecke</td>
<td>Gold</td>
<td>Services Enterprises 1981, Holmes and Allwright 1992</td>
</tr>
</tbody>
</table>

Mitchell (2000) found that the earliest recorded mining dates from the early 1870’s while the greatest frequency of historic mining sites is from the 1900 to 1925 period. A small number
of recorded historic mine sites from the 1950-1975 period reflects the development of large scale uranium and iron ore mining in the Northern Territory. Mitchell (2000) has illustrated that mining heritage from the 1950-1975 period of the Northern Territory history is poorly represented in the historic archaeological record. According to Mitchell (2000), the most common feature found at mineral fields are the physical remains of mine workings with scatters of historic objects also a relatively common occurrence. Mitchell (2000) found that the historic sites are dominated by these classes of material evidence owing to the manner in which the sites were abandoned and stripped of useful materials.

4.3. Criteria for the Northern Territory Heritage Register:

According to Regulation 5 of the *Heritage Conservation Act* 1991, a heritage place must be assessed against a set of criteria for a place to be entered onto the Northern Territory Heritage Register. This assessment and recommendation is made by the Heritage Advisory Council and then a decision is made by the Minister on whether to declare the place to the heritage register. The Northern Territory Heritage Register criteria for a place are any or all of the following:

a) for the evolution of flora, fauna, landscape or climate;

(b) because of the diversity or richness of its flora, fauna, landscapes or cultural features;

(c) because it contains rare, endangered or uncommon flora, fauna, biotic communities, ecosystems, natural landscapes or phenomena;

(d) in demonstrating the principal characteristics of the range of landscapes, environments or ecosystems, the attributes of which identify them as being characteristic of their class;

(e) as wilderness;

(f) for the maintenance of existing natural processes or systems;

(g) because it contributes to a wider understanding of natural history by virtue of its use as a research site, a teaching site, an example of a type of locality or reference area;

(h) by virtue of its association with events, developments or cultural phases in human occupation and evolution;

(j) by providing information contributing to a broader understanding of the history of human occupation;
(k) in demonstrating a way of life, custom, process, land use, function or design no longer practised, in danger of being lost or of exceptional interest;

(m) in demonstrating the principal characteristics of the range of human activities which take or have taken place in the Territory, including ways of life, customs, processes, land uses, functions, designs or techniques;

(n) by virtue of aesthetic characteristics or through technical, creative, design or artistic excellence, innovation or achievement held in high esteem or otherwise valued by a community;

(p) in being highly valued by a community for religious, spiritual, symbolic, cultural, educational or social associations; or

(q) through its close association with individuals whose activities have been significant in the history of the Territory.

4.4. Definitions of significance ranking

This report uses the typical principles of cultural heritage assessment as defined in the Australia ICOMOS Burra Charter to build a risk assessment for assessing the heritage significance of places and objects within the Rum Jungle Mine site area. Using the significance rankings and the Northern Territory Heritage Conservation Act criteria, heritage features have been reviewed. The general ranking of heritage significance is as follows:

1. **Low significance**: These sites are unlikely to be nominated to the Territory Heritage Register as they would not satisfy any of the heritage criteria. In addition, sites in this category often occur in large numbers across the Top End landscape (i.e. isolated objects.) These sites can add to our understanding of past life ways by understanding their spatial and possibly temporal distribution. Some may demonstrate limited information about post-European settlement technologies and use of the land in the Northern Territory.

2. **Moderate significance**: These sites may have characteristics that are assessable under one or more of the heritage assessment criteria for the Territory Heritage Register; however they are unlikely to reach the thresholds necessary for permanent declaration to the list. These sites have the potential to add to our knowledge of past life ways and are still considered to have local and Territory heritage significance.

3. **High significance**: These sites may be nominated to the Territory Heritage Register and may, if assessed as of special significance, potentially be recommended for inclusion on the heritage list. These sites are considered to have significant local, Territory and National heritage value.
4.5. Historic Non-Mining Heritage

4.5.1. WWII era gun emplacements and dry stone walls

The dry stone walls and rifle pits at H015, H016, H017 and H018 have been assessed as having moderate cultural heritage significance.

m) in demonstrating the principal characteristics of the range of human activities which take or have taken place in the Territory, including ways of life, customs, processes, land uses, functions, designs or techniques;

These WWII remnants are important reminders of a relatively short but intense period of the cultural history of the area and the broader region. While rifle pits and dry stone walls may seem to be more mundane relics of the WWII era than crashed airplane wrecks, shipwrecks, munitions depots or base camps, they are significant as they increase our understanding of military strategy and activity across the Top End. Additionally, the site location and spatial relationship with other WWII infrastructure and training sites increases our understanding of the personal experience of war for the thousands of Australian, American and Netherlands East Indies troops stationed in the Batchelor area.

4.6. Historic Uranium Mining Heritage

4.6.1. Heritage Assessment for the Rum Jungle Uranium Mining Complex

(h) by virtue of its association with events, developments or cultural phases in human occupation and evolution;

(j) by providing information contributing to a broader understanding of the history of human occupation;

The Top End and indeed much of the rest of the Northern Territory has been critical to the strategic objectives of (first) the British Empire and more lately the Commonwealth of Australia. The uranium mine sites of Rum Jungle represent a small but significant contribution of Australia to the Cold War against the USSR and China. At the height of the Cold War, Great Britain was determined to be a world power in its own right, trying desperately to retain the vestiges of the Empire. The British government believed they could retain their world position by becoming a nuclear power. Britain developed the ‘Blue Streak’ rocket program as a delivery platform for its own British made nuclear weapons (National Archives UK, undated). As a result of this drive to obtain a northern hemisphere strategic advantage the remnants of the Empire, with the post-war Australian government’s
assistance searched for weapons grade uranium to supply the demands of the Cold War. With a bounty offered by the Australian Government, it was an easy choice for enterprising companies and individuals to search for uranium.

The remaining physical scars on the landscape from previous mining developments have left a permanent reminder of the past European use of the land. The former open pits, overburden heaps and the associated infrastructure will remain a record of the mining techniques used in the 1950s and 1960s. These features are characteristic of the uranium mining activities in the Northern Territory. The built heritage and archaeological features found at Rum Jungle demonstrate past human activity, reflecting a way of life that is no longer in existence.

According to Cawte (1992), the benefits of Australia’s early involvement in the uranium and nuclear industry were “non-existent”; however he cites that the social and environmental costs were high. These costs included the illnesses caused by testing to Aborigines, servicemen, and miners, radioactive and poisoned landscapes at the testing fields and mining regions (Cawte 1992). On the other hand, there are those that would argue that uranium mining was an economic and social boom period for the Northern Territory and without it; the post war reconstruction of Darwin would have taken decades longer.

Although the uranium boom of 1948-1964 was relatively short, it was however of great significance to the Northern Territory (Carment and Harlow 1995; Barter 1995). Factors that proved to be significant from the uranium mining period of 1954-1964 include:

- The development of uranium mining industry in NT both mirrored and contributed to the economic expansion underway in the 1950s and 1960s in Australia.

- It was the first tangible expression of the belief that the NT would eventually repay the costly development of the north.

- The uranium boom underwrote the considerable urban development of Darwin and provided the one million pound upgrade of the Darwin wharf facilities after their destruction in World War II. Darwin in 1954 had a population of 6,000 and by 1961 had grown to 16,000.

- Uranium boom was a catalyst that provided jobs and returns for economic growth and created an interest in the potential of the NT (Carment and Harlow 1995; Barter 1995).
4.6.2. Rum Jungle Mining Features

The major features recorded in this survey that relate to the former Rum Jungle mining activities are all considered to have moderate to high cultural heritage significance. This is discussed below in relation to the criteria from the Heritage Conservation Act:

*m) in demonstrating the principal characteristics of the range of human activities which take or have taken place in the Territory, including ways of life, customs, processes, land uses, functions, designs or techniques;*

These features include:

- H001, H006, H007 and H014 - the three remaining buildings and the foundations associated with the concrete tank
- H004 - the dry stone wall
- H005 - the Ablutions Block
- H011 - Drilling Rig
- H008, H009, H010, H012 and H013 - various concrete slabs
- H003 – the Gate House
- Hydrological management features - Finniss River bridge, bridge footings from former haul road and weirs in water ways

The former Rum Jungle Mine site is indicative of a class of mine typology that is poorly recorded or understood in Australian mining history. There are mine typologies for coal, gold, oil and gas, tin and copper mines, however, a historic mine typology for uranium mining has not yet been developed. The former Rum Jungle Mine site is indicative of open pit mining techniques. Open pit began to be a favoured form of mining in the post World War II era.

These historical features are tangible reminders of the establishment of the uranium mining industry in the NT. The uranium ore mined here was important at a time when there was significant global demand for a tactical and strategic mineral resource. The development of the industry was the first tangible expression of the belief that the NT would eventually repay the costly development of the north, underpinning considerable urban and economic development in Darwin and the NT.

The significance ranking is moderate to high because these workshops, storage sheds and office block foundations are associated with administrative and operational support, reflecting the many different activities required to operate a modern 20th Century mine.
Many would argue that the remaining waste rock dumps and other features would detract from the aesthetic value of the Rum Jungle area. Others may find value in the remaining features of a by-gone era of uranium mining; however significance to the Northern Territory should not lie solely in this characteristic. The traditional owners of the area are generally supportive of the rehabilitation of old mine workings (Dembski, pers comm; R. Mills, pers comm, E. McGregor, pers comm). Such efforts towards removing evidence of the Rum Jungle Uranium Mine would significantly change its visual appearance; however aspects of the former land use will still be visible.

As reported by Barter (1995), new mining districts such as those in frontier localities during the 19th and 20th centuries often managed quite sophisticated and complex social structures and urban amenities and should not necessarily be regarded as primitive. This is particularly the case at Rum Jungle which is associated with many structures at the nearby township of Batchelor. Although the tangible social fabric is at Batchelor some distance from Rum Jungle, it highlights the relationship between the mine and its workforce formed during the 1950s and 1960s phase of operations.
5.0. TRADITIONAL OWNER CONSULTATION

Consultations regarding sites of significance according to Aboriginal tradition, otherwise known as sacred sites, are undertaken in accordance with the NT Sacred Sites Act 1989 by the relevant statutory agency - the Aboriginal Areas Protection Authority (AAPA). The AAPA has a process that provides proponents and landowners with a statutory certificate (Authority Certificate) with regards to undertaking activities on or in the vicinity of sacred sites. Currently, under the current NT Heritage Conservation Act 1991 framework there are no statutory requirements for direct consultation with traditional owners unless archaeological permits are required. The Heritage Advisory Council Archaeological Sub Committee forwards these permit applications to the AAPA for comment.

A copy of DoR’s Authority Certificate was provided to the consultants. The certificate nominated Kathy Mills and Robert Mills as the relevant custodians for the former Rum Jungle Mine site. The Finniss River Land Claim (1981) had identified Kungarakany and Warai traditional ownership of the site.

In accordance with the World Archaeological Congress First Code of Ethics (1990), an attempt was made to consult as widely as possible with Kungarakany and Warai stakeholders. The following traditional owners were involved in the consultation process:

Kungarakany:

Ada Calma
Rhonda Calma
Lenore Dembski
Diane McGregor
Edward McGregor
Jane McGregor
Kathy Mills
Robert Mills

Warai:

David George Yates Senior
David George Yates Junior

George Yates (Snr) strongly expressed the view that other traditional owners who were unable to participate in the current round of consultation, should be informed of the
outcomes and included in all future consultation. He specifically recommended the involvement of David Kenyon and Fabian Hazelbane.

All of the traditional owners consulted on this project welcomed the opportunity to be involved and expressed their wishes to be heavily involved in all future archaeological and conservation works that are conducted on the Rum Jungle Mine site. Employment opportunities are an important tangible outcome for archaeological management works on the site.

The consultation process brought to light the wider indigenous social values associated with the site. These values cover traditional pathways across the landscape for ceremonial and other purposes as well as the traditional uses of plants. While these social values are outside the scope of the archaeological survey, evidence for them was identified in the survey results.

Further consultation has been requested by the traditional owners to be conducted with the AAPA to further document the potential connections between the particular indigenous archaeological sites and the registered sacred sites. This is a specific request that further consultations are undertaken with the Kungarakany women.
6.0. RECOMMENDATIONS

6.1. Conservation Policy

The former Rum Jungle Mine site clearly has heritage significance at a number of levels. While the mining buildings and equipment hold significance in their own right, the largest proportion of the historic values and most of the social values pertain to the impact the mine had on the Northern Territory’s post war economy. In some aspects, a rehabilitation strategy for the former Rum Jungle Mine site has parallels to a conservation plan. This study has also documented Indigenous cultural heritage places that have survived the mining operation and demonstrate the pre-contact Indigenous occupation of the Rum Jungle Mine area.

Mitchell (2000) has illustrated that Northern Territory mining heritage from the 1950-1975 period is poorly represented in the historical archaeological record. Therefore the starting point for this discussion is the conservation of the historic mining site. This report has identified areas in which the former Rum Jungle Mine site has heritage significance to the Northern Territory. Without expanding on the history of the uranium mining in the tenement, it is clear that this place has contributed significantly to the history of the Northern Territory. An important factor in this history is the interaction between government and corporate mining interests, the public and the Aboriginal traditional owners of the region. Demolition and/or removal of the fabric of these historic sites will in essence destroy the tangible link these sites have with this part of the Northern Territory and Australia’s history.

The conservation management strategy for the Rum Jungle Mine site should include:

1. Measures to conserve the Indigenous archaeological sites, World War II and mining features within the existing rehabilitation process.

2. The complex of former Rum Jungle Mine site buildings, structures and Drilling Rig should be nominated to the Northern Territory Heritage Register for assessment by the Heritage Advisory Council.

3. Cultural heritage inductions should be provided to workers accessing the mine site in order to communicate effectively the Indigenous and historic cultural values of the area. Indigenous representation at these inductions should be considered where possible.

4. Ongoing communication regarding the rehabilitation and heritage conservation works will be undertaken with traditional Aboriginal owners.
5. Controlled access by the general public to the mine site area is necessary to prevent trespassing on sacred sites and sites considered culturally significant and/or sensitive, and interference with the historic built heritage.

6.2. Specific Recommendations

6.2.1. WWII historical features associated with Giant’s Reef Ridge

Due to the historical archaeological sensitivity along the ridge known as Giant’s Reef, in the north-eastern sector of the lease area, a conservation zone approximately 200 m wide should be imposed along the length of the ridge. Currently, an access track crosses the ridge. This could still be used for access, but vehicles must not deviate from the established track within the conservation zone.

- It is recommended that an operational management plan should be developed for the entire conservation zone. Further recording and mapping of the archaeological resource is required for effective conservation management planning. This generally consists of mapping (e.g. DGPS, total station) and field recording of artefact assemblages. The plan should include weed control, feral animal and fire management.

- Traditional Owners should be involved in all stages of survey, planning, and implementation of a Conservation Management Plan (CMP).

6.2.2. Other historical features:

- It is recommended that the sheds should be made safe and left in situ.

- It is recommended that the building foundations including concrete slabs and the wall foundations of the office buildings should be left in situ.

- It is recommended that the possible occurrence of asbestos in the Ablutions Block should be determined and removed if necessary.

- It is recommended that the Drilling Rig should be conserved in situ.

- All of the above sites/features are recommended to be nominated on the NTHR for assessment by the HAC.
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