

ASSESSMENT REPORT 61

**AIRCRAFT LANDING AREA AT
ANDRANGOO CREEK WEST**

MATILDA MINERALS LTD

**ENVIRONMENTAL ASSESSMENT REPORT
AND
RECOMMENDATIONS**

By the

ENVIRONMENT HERITAGE AND THE ARTS DIVISION

**DEPARTMENT OF NATURAL RESOURCES,
ENVIRONMENT AND THE ARTS**

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Glossary of Acronyms

AAPA	Aboriginal Areas Protection Authority
ALA	Aircraft Landing Area
NTAMS	Northern Territory Aerial Medical Service
Andranangoo	Andranangoo Creek West
BOM	Bureau of Meteorology
BPT	Best Practice Technology
CASA	Civil Aviation Safety Authority
CDEP	Community Development Employment Project
DEW	Department of Environment and Water Resources
DEWR	Department of Employment and Workplace Relations
DPI	NT Department of Planning and Infrastructure
DPIFM	NT Department of Primary Industry, Fisheries and Mines
ECNT	Environment Centre of the Northern Territory
EHA Division	Environment Heritage and the Arts Division
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EPA Program	Environment Protection Agency Program (now known as Environment Heritage and the Arts Division, NT Department of Natural Resources Environment and the Arts)
EPBC Act	Environment Protection and Biodiversity Conservation Act
HCS	Heritage Conservation Services (NT Department of Natural Resources Environment and the Arts)
Matilda	Matilda Minerals Limited
Minister	NT Minister for Natural Resources, Environment and Heritage
MMP	Mining Management Plan
NPI	National Pollutant Inventory
NRETA	NT Department of Natural Resources, Environment and the Arts
NT	Northern Territory
PER	Public Environmental Report
RMCP	Rehabilitation and Mine Closure Plan
TLC	Tiwi Land Council
TILG	Tiwi Island Local Government
TPWC	NT Territory Parks and Wildlife Conservation
URS	URS Australia Pty Ltd

Executive Summary

This report assesses the environmental impact of a proposal by Matilda Minerals Ltd (Matilda) to construct an Aircraft Landing Area (ALA) adjacent to their existing mineral sands mining operation, at Andranangoo Creek West (Andranangoo), Melville Island, Tiwi Islands, Northern Territory (NT). It is proposed that the ALA will be used for charter aircraft from Darwin, and will be suitable for nine-seater aircraft or smaller for the emergency and routine transport of personnel, visitors and supplies directly to the mine site, typically three to five times per week.

The ALA will require complete clearing of nine hectares of woodland vegetation for the runway, and partial clearing of an estimated further 7.4 hectares for the Approach and Take-off Areas on a slope for the ends of the Runway.

This Assessment Report is based on the information provided in the Public Environmental Report (PER). Information, comments and advice provided by the Northern Territory Government agencies have also been used in the preparation of this report.

Environmental assessment is the process of defining those elements of the environment, which may be affected by a development proposal and of determining the significance, risk and consequences of the potential impacts of the proposal. Recommendations arising from the assessment address methods to mitigate these impacts.

Matilda Minerals Ltd Minerals Sands Mining Project

In April 2005 Matilda notified the Northern Territory Minister for Mines and Energy of the proposal to mine mineral sands from Andranangoo Creek West and Lethbridge Bay West, Melville Island, Tiwi Islands, Northern Territory. This project was subsequently referred to the Minister for Natural Resources, Environment and Heritage. The Minister determined that the assessment for the proposed mineral sands mining project would be at the level of an Environmental Impact Statement (EIS). Assessment Report 53 was issued in May 2006 for the sand mining proposal.

The current sand mining site is located approximately 300 metres down-gradient of the proposed ALA and is being progressively mined and rehabilitated.

The EHA Division notes the previous work undertaken as part of the EIS for the mineral sand mining project where it has been referenced in the PER for the ALA.

Project Justification

Matilda currently transport mine personnel, contractors and visitors from Darwin to the Andranangoo mine site via charter aircraft to the existing ALA's (primarily Pickertaramoor) and then by road in 4WD vehicles. The one-way trip from Pickertaramoor to Andranangoo is 60 km and takes between one and three hours one way depending on the weather conditions. The trip from Milikapiti is 130 km and takes between two and four hours one way.

Matilda proposes to construct an ALA adjacent to the Andranangoo mine site to satisfy the objective of managing and reducing the mine's health, safety and environmental risks. It is argued that this would result in the following benefits:

- Improved safety by allowing rapid evacuation of personnel and visitors in the event of a cyclone or medical emergency;
- Reduced likelihood of health and safety risks (worker fatigue) by decreased travel time to the site for staff and visitors;

-
- Reduced environmental, health and safety risks by reducing the need to travel by road during the Wet season when water levels are high and road conditions are unsuitable for driving; and
 - Reduced risk of spreading weeds by eliminating the need to drive through weed-infested areas near Pickertaramoor (the primary airstrip being used).

Following closure of the mine site, it is proposed that the ALA would be managed and operated by the Tiwi Land Council (TLC). The TLC, Tiwi Island Local Government (TILG) and community are supportive of the ALA project, as documented in the PER – Stakeholder Consultation. If, upon mine closure, the Tiwi people do not wish to accept responsibility for the ALA then Matilda will rehabilitate the area as per the mining site.

Major Issues

The major issues associated with this proposal are:

- Loss of biodiversity from land clearing and weed introductions;
- Opening up an ALA to remote undeveloped areas of Melville Island and clearing land, thus encouraging human settlement and development into previously isolated areas; and
- Future use and management of the area as a landing site has not been confirmed upon closure of the Matilda Minerals Mineral sands operation at Andranangoo Creek.

Conclusions

The Environment Heritage and the Arts (EHA) Division considers that the environmental issues associated with the proposed project have been adequately identified.

The EHA Division acknowledges the comprehensiveness of the PER, including sections addressing; stakeholder consultation, assessment of alternative transport arrangements and assessment of greenhouse gas emissions for the ALA.

Based on its review of the PER, the EHA Division considers that the project can be managed without unacceptable environmental impacts. This is provided that the environmental commitments and recommendations detailed in the PER, this Assessment Report and in the final environmental management plans are implemented and managed under the environmental management system for the project and are subject to regular reporting and compliance auditing.

1 Introduction and Background

Matilda is planning to construct an ALA adjacent to their existing mineral sands mining operation at Andranangoo, Melville Island, Tiwi Islands, NT, 60 km north of Darwin. The main objective of the proposed facility is the transportation of personnel, visitors and supplies to the mine site and for emergency access and evacuations.

Following closure of the mine site, anticipated to be in 2010, it is proposed that the ALA would be managed and operated by the TLC. If, upon mine closure, the Tiwi people do not wish to accept responsibility for the ALA then Matilda will rehabilitate the area as per the rehabilitation methods for the sand mining areas.

The Andranangoo mining lease is located on the northern coast of Melville Island (Figure 1).

The land on which the mine site and the proposed ALA are located is Aboriginal land, traditionally owned by the Yimpinari group. The ALA is located partly on mining lease MLA 24510, and partly on exploration lease EL 23862, both of which are held by Matilda.

This Report assesses the environmental impact/risk of the ALA project, which would consist of a cleared and partially cleared open area.

This Environmental Assessment Report is based on a review of the PER and comments from the Northern Territory Government agencies on the PER.

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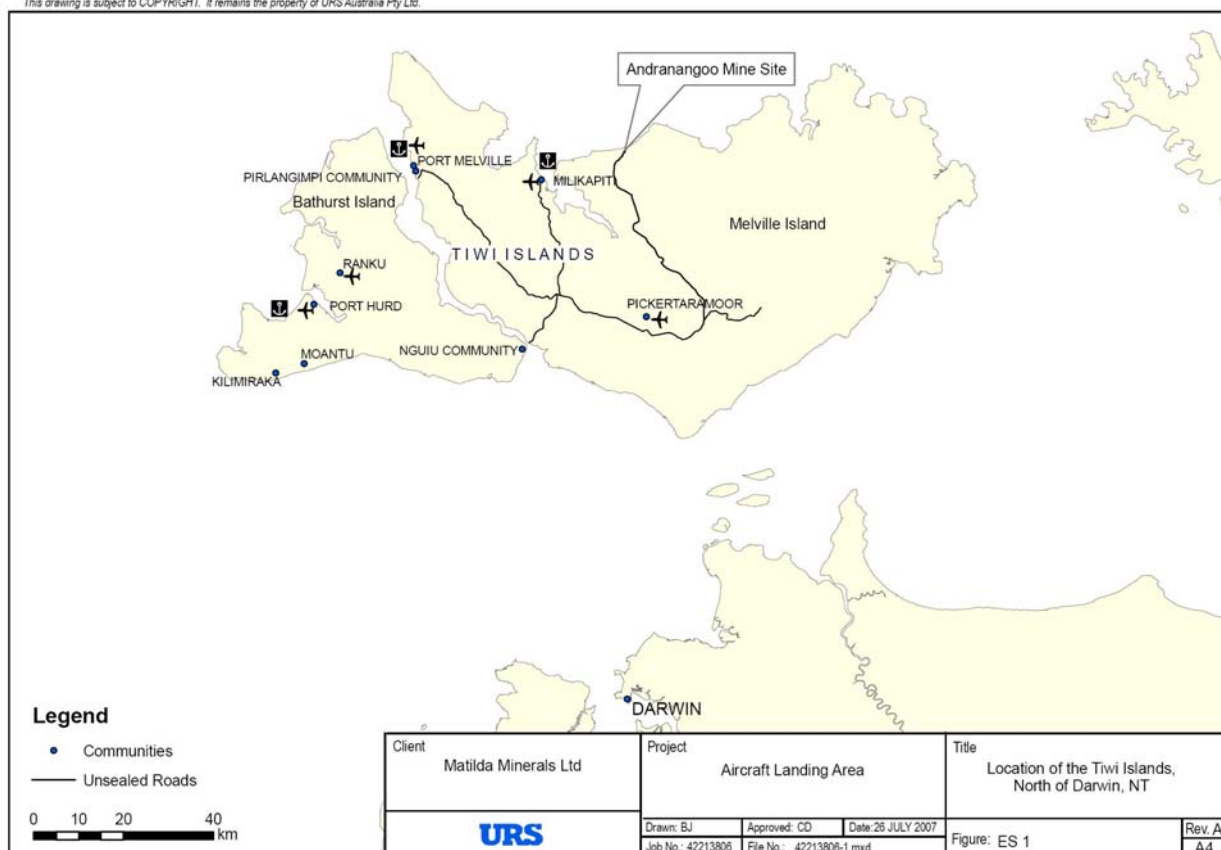


Figure 1 – Location of the Tiwi Islands and Andranangoo Mine Site (PER 2007)

1.1 Environmental Impact Assessment Process

Environmental impact assessment is based on adequately defining those elements of the environment that may be affected by a proposed development, and on evaluating the significance, risks and consequences of the potential impacts of the proposal at both local and regional levels.

This Assessment Report describes the adequacy of the Public Environmental Report (PER) submitted by Matilda in achieving these objectives. The report also evaluates the adequacy of the commitments and environmental safeguards proposed by the proponent in order to avoid or mitigate potential impacts in the assessment process.

The safeguards may be implemented at various levels within the planning framework of a project and include (among other approaches):

- Management of construction activities;
- Management after Andranangoo mine closure;
- Rehabilitation methods; and
- Monitoring and evaluation.

A list of commitments made by the proponent in the PER is provided in Appendix 1.

The contents of this Assessment Report form the basis of advice to the NT Minister for Natural Resources, Environment and Heritage.

1.2 Environmental Impact Assessment History

In December 2006, an Attachment to Mine Management Plan Authorisation Number 0245-04 for the ALA at Andranangoo Creek West proposal was submitted by URS Australia Pty Ltd, on behalf of the proponent Matilda, to the Department of Primary, Industry Fisheries and Mines (DPIFM). DPIFM then forwarded the proposal to the Environment, Heritage and the Arts (EHA) Division [formally the Environment Protection Agency (EPA) Program], NT Department of Natural Resources, Environment and the Arts (NRETA) for determination under the *Environmental Assessment Act* 1982.

In March 2007, the NT Minister for Natural Resources, Environment and Heritage determined that the proposal would be assessed at the level of a PER.

Draft guidelines covering issues to be addressed in the PER were subject to a 14-day public review period, which concluded on 22 June 2007. The NT Minister for Natural Resources, Environment and Heritage then directed the proponent to prepare the PER addressing the matters set out in the final guidelines.

The PER was submitted on 11 October 2007 and placed on public review for 28 days from 15 October 2007 to 12 November 2007. During the public exhibition period, the PER was also circulated to NT Government advisory bodies for review and comment. Two submissions, including NT Government agencies were received within the review period.

The PER and comments from the NT Government agencies have been taken into account in the preparation of this Assessment Report.

1.3 Regulatory Framework

The proposed ALA at Andranangoo is wholly within the land borders of the NT. The NT Government has jurisdiction over environmental and other legislation relating to the siting, construction and operation of the proposal. Environmental assessment for this project is being undertaken in accordance with the requirements of the NT *Environmental Assessment Act* 1982.

2 Project Description

2.1 ALA Alternatives

There are a number of alternative transport arrangements available to Matilda to address personnel and supply transport and emergency evacuations at the Andranangoo mine site. Research into the transport options available in the Darwin and Tiwi Island regions was conducted by consultants on Matilda's behalf as part of the PER process.

Matilda currently has a contract with a commercial aircraft company based in Darwin as their primary provider of transport services to the Andranangoo mine site. The company utilises the Pickertaramoor, Milikapiti or Garden Point (Pirlangimpi) air craft landing areas. The contract company does not have the capacity for medical evacuations. In the case of an emergency at the Matilda operations, Matilda will be required to contact one of the Darwin based commercial aircraft services, providing emergency evacuation services.

The following alternative transport arrangements for the Andranangoo mining operation were considered in terms of routine and emergency travel:

- Fixed wing aircraft direct to Andranangoo ALA (current proposal);
- Fixed wing aircraft direct to current ALA's and road travel to Andranangoo (current arrangement 'do nothing');
- Helicopter direct to Andranangoo;
- Boat direct to Andranangoo; and
- Sea Plane direct to Andranangoo.

2.1.1 Assessment of alternatives – Best Practice Technology

A best practice technology assessment of the various alternatives for transport to Andranangoo was completed as part of this PER to account for the following criteria:

- Environmental best practice – the level of environmental protection, and the environmental costs or benefits incurred;
- Cost-effectiveness – the costs of implementation, when compared with the level of environmental protection achieved by that option;
- Practicality and effectiveness – how that option contributes to efficiencies in the associated business;
- Maintenance and liability – the age of any equipment or facility employed may affect its integrity and contribute to a higher environmental risk; and
- Social factors – consideration of the views of the regional community. For example, a technology that improves the level of environmental protection may also have negative social consequences, in terms of employment or access to recreation by the local community.

Each option was assessed against the five criteria, and a performance ranking was applied where a score of 1 is "poor"; 2 is "fair"; and 3 is "good". By adding the scores from all five criteria, a total performance ranking was derived and a "preferred" option was obtained.

The best practice technology assessment for the transport options to the Andranangoo mine site is briefly summarised in Table 1. It is noted that on the basis of this assessment, construction of the proposed ALA and retention of the ALA after mining is the preferred option. This is closely followed by construction of the ALA and rehabilitation, and then direct

helicopter transport to the mine site. The existing situation (existing ALA's plus road transport), boat transport and sea plane transport were the lower rated of the six options.

(Scoring: 1 = poor, 2 = fair, 3 = good)

Environmental Best Practice	Cost	Practicality and Effectiveness	Maintenance and Liability	Social Factors	Total Ranking (/15)
Construction of Andranangoo ALA for mine transport, and handover to Tiwi people after mining					
2	3	3	2	3	13
Construction of Andranangoo ALA for mine transport, and rehabilitation after mining					
3	2	2	3	2	12
Flight to existing ALA's, road transport to Andranangoo					
2	1	1	2	2	8
Helicopter transport direct to Andranangoo					
3	1	2	3	2	11
Boat transport direct to Andranangoo					
1	1	1	1	1	5
Seaplane transport direct to Andranangoo					
1	1	1	1	2	6

Table 1: Best Practice Technology assessment for transport options to Andranangoo mine site

2.2 Project Location

The Andranangoo mining lease is located on the northern coast of Melville Island (Figure 1). The proposed ALA is to be constructed parallel to the existing access road to the mine site (Figure 2).

The site for the proposed ALA is on laterite escarpment, approximately 1 kilometre from the beach and 900 metres west of Andranangoo swamp. The existing vegetation is eucalypt woodland, which is common throughout Melville Island.

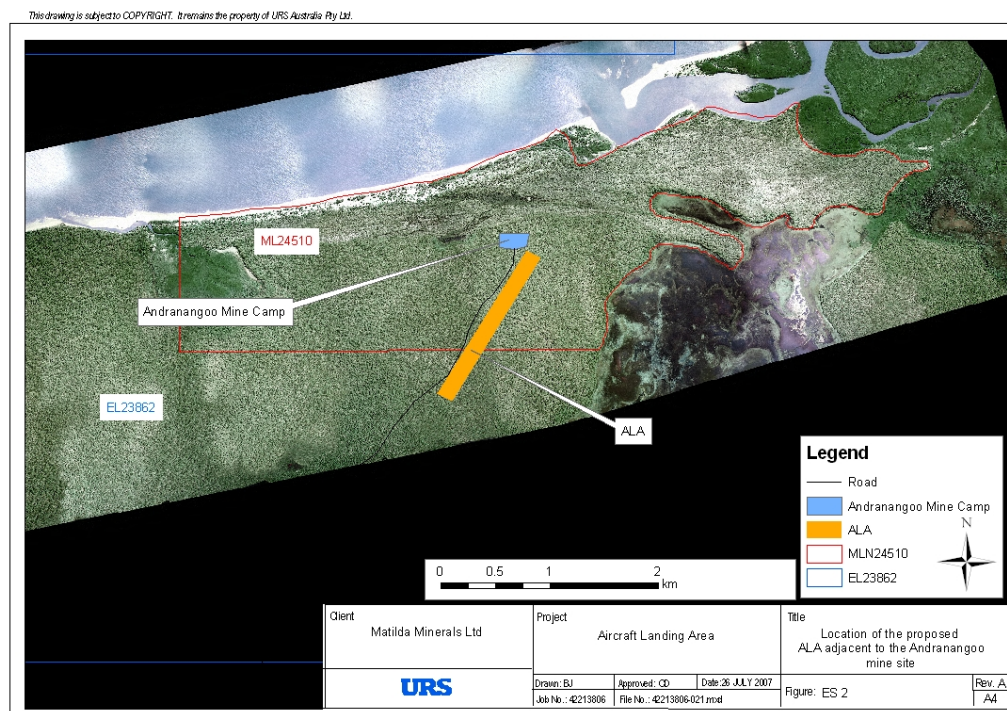


Figure 2: Footprint of the proposed project (PER 2007)

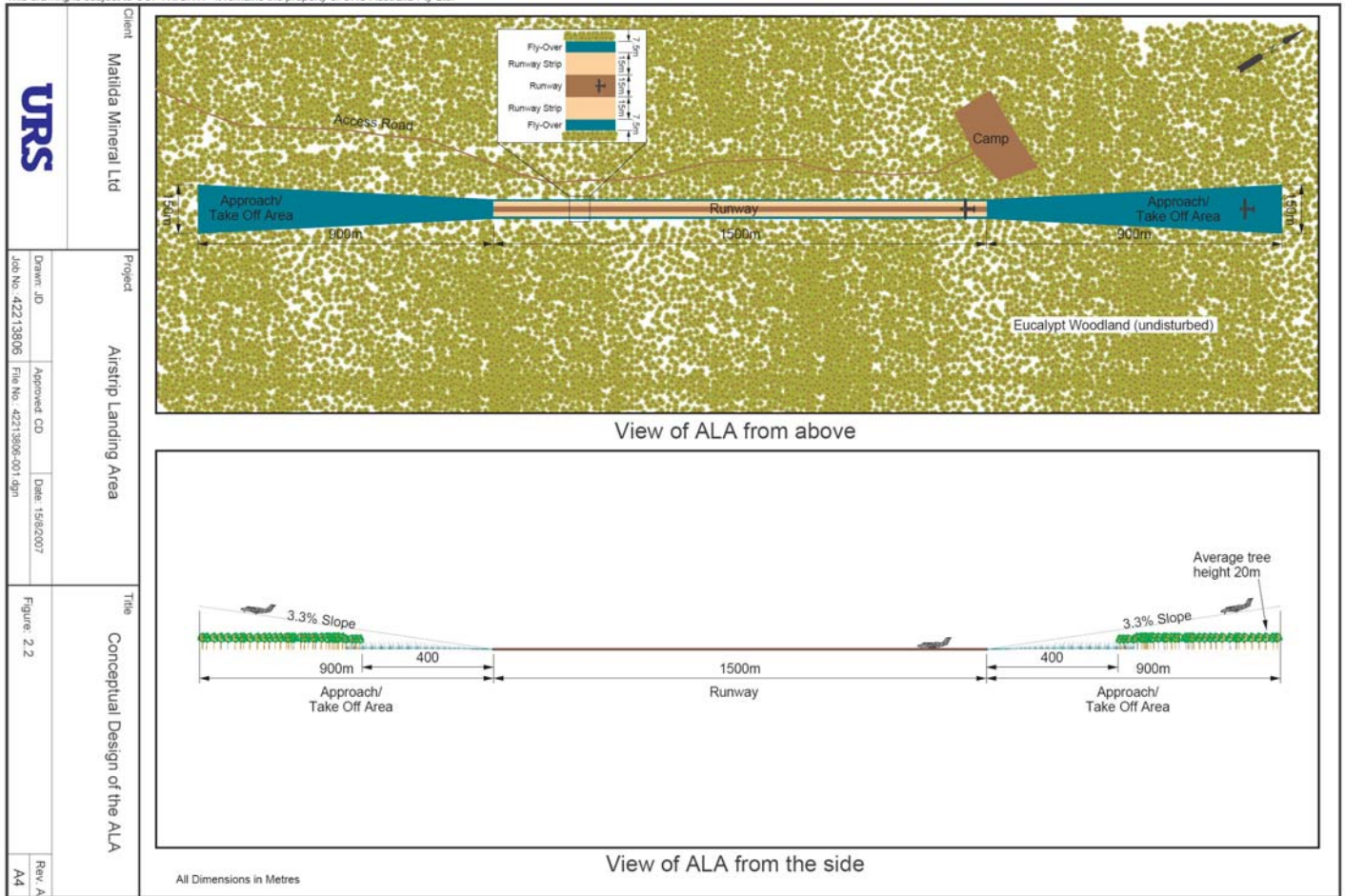


Figure 3: Conceptual view of the Aircraft Landing Area (PER 2007)

2.3 Construction Details

2.3.1 ALA design

The ALA has been designed according to the dimensions and requirements specified in the Civil Aviation Advisory Publication (CAAP) No 92-1(1) as recommended by the Civil Aviation Safety Authority (CASA) (Figure 3).

The main Runway is 15 metres wide, bordered by a Runway Strip (15 metre width) and a Fly-Over area (7.5 metre wide) along each side; a total of nine hectares. The areas would be cleared of all vegetation and surfaced with compacted gravel. Given the nature of the location of the proposed ALA and Matilda's experience with road maintenance, additional gravel is not anticipated to be required (PER 2007).

At each end of the Runway, an Approach and Take-Off Area would be maintained to provide aircraft with safe access to the Runway while flying low over the surrounding forest. Tall vegetation would be pruned in these areas, on a slope of 3.3 % from the ends of the Runway.

The total disturbance area for the ALA is proposed to be nine hectares of land clearing, and 7.4 hectares of partial clearing, for a total of 16.4 hectares (PER 2007).

No further infrastructure sheds or fences would be constructed at the site.

2.3.2 Site Preparation

The ALA site is proposed to be cleared of vegetation using bulldozers and earthmoving machinery that is currently in use at Matilda's mine site. Tree trunks and debris would be piled in two or three designated areas and burnt. However, if rehabilitation of the ALA is preferred, as identified in the consultation and process, the cleared vegetation would remain stockpiled for re-spreading during rehabilitation.

There are a number of cycads (*Cycas armstrongii*) in the area of vegetation to be cleared and Matilda has been issued with a *Permit to Take Wildlife for Commercial Purposes* to remove this species, from NT Parks and Wildlife, NRETA. Proposed cycads to be removed would be tagged, documented and provided to the local Tiwi community, for sale to collectors and nurseries, generating an income for the TLC.

It would not be necessary to construct hydrocarbon storage facilities because aircraft refueling would be conducted in Darwin prior to arriving at the site. No other hazardous goods would be stored at the ALA

It is not necessary to construct access roads as the proposed ALA runs parallel to the current road that services the mine site. The proposed ALA is within walking distance to the camp and plant.

2.3.3 Construction

The runway would be leveled using a grader. The natural surface would be windrowed, moistened, respread and compacted with a heavy roller. Excavation and compaction would be minimised so as to provide for easier rehabilitation of the site, if required either by Matilda after closure of the mine, or by the TLC at a later date.

Surface water drains would be formed by a grader along the edges of the Runway Strips to collect stormwater runoff, which would be directed at non-scouring velocities, using turn-outs, into the surrounding vegetation.

Water required for the project is proposed to be sourced from the existing water supply bore next to the Andranangoo haul road, and transferred to the ALA site using a water cart already on site.

Shrubs and small trees in the Fly Over areas would be pruned down to the required height using a dozer with a blade above the ground. Large trees would be pushed over and left on the ground.

2.4 Project schedule and contracting

Matilda proposes to construct the ALA as soon as possible, so as to secure access to the mine site over the wet season of 2007-08. Government approvals pending, construction is planned to begin in November 2007.

It is anticipated that construction of the ALA would take up to four weeks.

Staff employed to complete site preparation and construction of the ALA would be housed at the existing mining camp. Domestic waste, anticipated to be minimal due to the short construction time, is proposed to be disposed of at the existing facilities.

2.5 Operation and maintenance

It is proposed that the ALA would be used for charter aircraft from Darwin, and would be suitable for nine-seater aircraft or smaller for the emergency and routine transport of personnel, visitors and supplies directly to the mine site. Typically this would be three to five times per week.

During operations, activities required to maintain the ALA would mainly relate to the condition of the surface particularly following heavy rains and prompt removal of regrowth vegetation. Matilda would use existing machinery and personnel from the mine site or contract TILG to complete maintenance work.

Matilda anticipates completing mining operations at Andranangoo in 2010. Upon mine closure, Matilda proposes to leave the ALA in an operational state at the request of the local community. The TLC would then be responsible for maintenance and operation of the ALA, and could utilise the facility to provide access to the Andranangoo area for business opportunities such as fishing charters.

2.6 Post – Mining Operation of the ALA

Following completion of mining the traditional owners will have the option to retain the mining camp at Andranangoo, as discussed in the EIS (PER 2007). Matilda proposes that in addition, the traditional owners also have the option to retain the ALA for use by the local community.

The TLC and traditional owners have expressed support for the proposed ALA project and the desire to retain the ALA post-mining. They state that the Andranangoo mine camp and ALA could represent a significant asset for the Tiwi people, with potential development of a new business venture such as a tourist fishing camp. The ALA would provide easy access to the area, reducing the need for tourists to stay overnight on the islands, and has the potential to provide the environmental, health and safety benefits.

If, upon completion of mining activities, the Tiwi people do not wish to retain the operations and maintenance of the ALA, Matilda will deep rip, seed and rehabilitate the area, similar to the mining camp.

Both post-mining management options are detailed briefly below.

2.6.1 Retention of the ALA

The Tiwi people have indicated their desire to retain the ALA after completion of mining at Andranangoo. It is proposed that the TILG would provide maintenance for the facility.

Ongoing management of the ALA may consist of:

- Maintenance of gravel surface and compaction when required;
- Weed management;
- Prompt removal of seedlings and saplings that germinate on the Runway surface; and
- Maintenance of surface water drains.

The TILG and TLC state they have extensive experience in managing the ongoing operation and maintenance of other Aircraft Landing Area's on the Tiwi Islands and can absorb the ongoing costs of maintaining the Andranangoo ALA.

Matilda has estimated the cost of ALA maintenance for duration of 5 years at \$28,000 (\$5,600 per year).

2.6.2 Rehabilitation of the ALA

If, following cessation of mine operations at Andranangoo, the Tiwi people do not wish to retain the proposed ALA, Matilda would deep rip, seed and rehabilitate the area in accordance with the rehabilitation practices in place for the Andranangoo mine site. Key rehabilitation measures are summarised below:

- Cleared vegetation would remain stockpiled for re-spreading during rehabilitation;

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- Topsoil to a depth of 50 millimetres would be piled into a separate stockpile, for later spreading and use as a brush cover and seed bank in rehabilitation;
 - When the ALA is decommissioned, the compacted area would be deep ripped and seeded;
 - Flora monitoring data would be undertaken on rehabilitated areas to identify any species deficiencies. If required, revegetation with seedling stock would be carried out using species identified during baseline surveys. Seed would be collected from the surrounding area to ensure that flora provenance is preserved. Matilda has obtained a permit through NRETA for seed collection;
 - Old logs stockpiled during clearing would be returned to rehabilitated areas to facilitate recolonisation by local flora and fauna (including birds), and to provide additional protection from wind and water erosion; and
 - Areas susceptible to erosion would be covered with brush and seeded.

Overall the rehabilitation program would focus on returning native vegetation endemic to the area wherever possible. Key flora species would be identified and targeted for recolonisation where appropriate. Completion criteria would be established for percentage plant cover, based on baseline data.

2.6.2.1 Rehabilitation and Mine Closure Plan

A Rehabilitation and Mine Closure Plan (RMCP) has not yet been formalised for the Andranangoo mine site, and will be developed in consultation with the TLC, traditional owners and DPIFM over the next twelve months. If required, the ALA will be incorporated into this RMCP.

The RMCP will include rehabilitation objectives, completion criteria, and reference to specific rehabilitation, closure and relinquishment procedures. The RMCP will also include provisions and procedures for on-going monitoring and maintenance, as well as contingency requirements in the event of rehabilitation failure. The RMCP will reference the Tiwi Islands Regional Natural Resource Management Strategy, with regard to ongoing management of fire, weeds, feral animals and erosion that may potentially occur as a result of Matilda's mining activities.

3 Regional Setting

3.1 Land Tenure

The land on which the mine site and the proposed ALA are located is Aboriginal land, traditionally owned by the Yimpinari group. The Yimpinari are one of eight traditional owner groups on the Tiwi Islands, and hold the largest area of land (PER 2007).

The ALA is located partly on mining lease MLA 24510, and partly on exploration lease EL 23862, both of which are held by Matilda.

The traditional owners have confirmed that there are no Aboriginal sacred sites located within the proposed ALA, which has been granted a clearance certificate from the Aboriginal Protection Areas Authority (AAPA). There is no additional land tenure permits required for construction of the proposed ALA.

3.2 Climate

Average climatic conditions based on data obtained from the Bureau of Meteorology (BOM) weather station at Milikapiti, approximately 25 kilometres west of the proposed ALA site show a regional annual rainfall of around 1,580 millimetres between 1959 and 1997 (PER 2007).

Matilda has also collected daily rainfall data at the Andranangoo mine site, from January 2006 to July 2007.

The Tiwi Islands have a tropical climate, influenced by the north-west monsoon and two distinct seasons; Wet season and Dry season (PER 2007). There are large spatial and temporal variations in rainfall across the island; flooding can occur in various locations at vastly different stages throughout the Wet season, and for varying lengths of time.

The wet season is characterised by high rainfall periods with around 90% of the annual rain falling between November and April, when monsoons are typical and there is a chance of tropical cyclones. There is an average of 0.4 cyclones per year in the project area, the main impacts of which are wind damage, storm surge and flooding as a result of heavy rain.

Rainfall during the Dry season is minimal, although it exhibits greater variability compared to Wet season falls.

Temperatures are generally high throughout the year, with average maximum temperatures from 31°C to 34°C, and minimums in the range of 18°C to 24°C (PER 2007).

3.3 Landform features

The Andranangoo mine site is located on the northern coast of Melville Island. The proposed ALA is located on the laterite escarpment south of the dune system. This area is characterised by *Eucalyptus*-dominated woodland, which is typical of extensive areas of upland terrain throughout Melville and Bathurst Islands (PER 2007). There are no drainage features traversing the site and gradient is flat.

The ALA construction area is located completely within one “land unit”. This land unit is described as sand plain with zero to one per cent slope, and *Eucalyptus* open forest or woodland with tussock grassland under storey; this is representative of the landscape and vegetation throughout the Tiwi Islands.

3.4 Surface Water

The proposed ALA site is located inside the Andranangoo Creek catchment, which is an undeveloped tropical rural catchment with a total area of 55,400 hectares (554 km²). The area of disturbance required for the ALA represents less than 0.5% of the catchment area.

Andranangoo Creek extends upstream approximately 45 kilometres south of the adjoining Matilda's mine site and the proposed ALA. The downstream end of the creek, where there are freshwater and estuarine areas that discharge into the Timor Sea, is less than one kilometre, to the east of Matilda's mining area. A distance of approximately 900 metres separates an extensive brackish swamp from the proposed ALA site.

Stream flows in Andranangoo Creek are greatest during the monsoonal Wet season, when rainfall is greatest. Many springs dry up by the end of the Dry season on the southern side of Melville Island.

Near the Andranangoo mining area, a freshwater spring discharges from the base of the escarpment into the sand dune system. This spring is approximately 600 metres west of the northern end of the ALA.

The proposed ALA site is on relatively flat ground with no internal drainage features on the escarpment up-gradient of the mining area. Appropriate stormwater drainage design will be incorporated into ALA construction.

3.5 Groundwater

For the region surrounding the proposed ALA site, groundwater occurs within unconfined aquifers in the saturated Van Diemen Sandstone. Regionally, the Van Diemen Sandstone is present on most of Melville and Bathurst Islands, where the maximum known thickness is approximately 70 metres. The aquifer typically contains a 10 to 30 metre unsaturated zone.

Regional groundwater quality is generally fresh, although bores constructed close to the coast can have brackish to saline groundwater, where a saltwater interface with the ocean is present (PER 2007).

In the vicinity of the proposed ALA, depth to groundwater is approximately 4.5 to 5.5 metres below the ground surface, based on data from nearby monitoring wells.

3.6 Vegetation

Two flora surveys have been completed for the proposed ALA site as part of the PER. The first in late Dry season conditions (October 2006) and a second during late Wet season conditions (May 2007). Survey results focus on threatened species listed under the NT *Territory Parks and Wildlife Conservation* (TPWC) Act and the Commonwealth *Environment Protection and Biodiversity Conservation* (EPBC) Act.

A total of 82 plant species were recorded within the survey area. Thirty four were recorded in the October 2006 surveys, with an additional 48 species recorded during May 2007, most of which were ground cover species.

The vegetation community documented within the project area is characteristic of extensive areas of upland terrain on Melville and Bathurst Island. In the upper vegetation stratum *Eucalyptus tetradonta* (Darwin stringybark) (8%), *E. miniata* (Darwin woollybutt) (8%) and *Corymbia nesophila* (9%) occur as dominant to co-dominant species in stands 18 to 20 m high. The sand palm *Livistona humilis* is the dominant mid-stratum species (3%), with *Acacia leptocarpa* (1%) and juvenile *E. tetradonta* (1%). The southern tip of the ALA has cycads (*Cycas armstrongii*) in the mid and ground stratum.

This vegetation type is continuous throughout both the Runway area to be completely cleared and the Approach/Take-Off areas that will be partially cleared.

Significant flora species

Cycads (*Cycas armstrongii*) were common in the area to be cleared for the ALA, and are listed as Vulnerable under the TPWC Act. A quantitative assessment of cycad density at the ALA was conducted during flora surveys, with a resulting mean density of 808 (\pm 234) cycads per hectare. The distribution of cycads was patchy however, varying from zero to 24 plants per 0.01 hectare plot (PER 2007).

Cycas armstrongii is endemic to the NT and is restricted to the eastern Top End and the Tiwi Islands. Populations of this species are predicted to decline due to land clearing and fire damage, largely from increased fuel loads generated by introduced grasses. A management program has been established by the NT Government in which a permit system is required for the removal or wilful destruction of any cycads in the NT (PER 2007). Matilda has been issued with a Permit to Take Wildlife for Commercial Purposes to remove this species.

Other than *Cycas armstrongii*, no plant species of conservation significance were detected within the proposed ALA.

Likewise, no vegetation communities of high conservation value or ecological significance occur within the ALA, which comprises only *Eucalyptus*-dominated tall woodland.

3.7 Weeds

No weed species were observed within the ALA during flora surveys in October 2006 or May 2007.

3.8 Fauna

A total of 46 species were recorded during the fauna survey conducted in September 2006. Six of these were mammals, including five native marsupials, and ten reptiles were identified, including five skinks. Thirty of the species identified were birds, including the northern rosella, the blue-winged kookaburra and the tawny frogmouth (PER 2007). This section focuses on threatened species listed under NT TPWC Act and EPBC Act.

Significant fauna species

Of the species that were recorded during the survey, two were listed under the TPWC Act; the brush-tailed rabbit-rat is listed as Vulnerable and the masked owl is classified as Endangered. The masked owl is also classified as Endangered under the EPBC Act.

The leaden flycatcher and rainbow bee-eater were two other significant species that were recorded during the survey, listed under international agreements. The leaden flycatcher is listed under the Bonn Convention, while the rainbow bee-eater is listed under the JAMBA Agreement.

The general conclusion is that the clearing will not significantly affect the conservation status of species recorded at the site.

3.9 Archaeology and heritage

An archaeological survey of the ALA site was completed in November 2006. No Aboriginal archaeological sites or objects were identified during the survey. The proposed ALA site is a weathered and lateralised plain and there are no features in the area such as creeks or higher ground that could have been the focus of resource use in the past. Therefore, the findings of the survey indicated that the possibility of archaeological material on the proposed ALA is low.

The TLC undertook consultations with the traditional owners on behalf of AAPA during the EIS process for Matilda's mining operations in 2005 and again in 2007 for the proposed ALA. An AAPA certificate has been received for the proposed ALA.

3.10 Socio – economic

There are three main communities on the Tiwi Islands:

- Milikapiti (Melville Island);
- Pirlangimpi (Melville Island); and
- Nguuu (Bathurst Island).

The estimated residential population on the Tiwi Islands in 2006 was 2,512 people, of which 92.4% were indigenous. The average age on the Tiwi Islands is 26. There are very few non-indigenous children or young adults (less than 25 years of age) on the Tiwi Islands (PER 2007).

3.10.1 Regional Economy

Business enterprises on the Tiwi Islands include forestry, fishing charters, tourism, transport, and arts and crafts. In recent years there have been additional forestry projects proposed, and mineral sands mining and exploration by Matilda.

Matilda acknowledges that the proposed ALA construction project is short in duration, relatively small in scale, and is unlikely to create significant new employment opportunities.

The value of the Tiwi economy has been estimated at \$25M per year. This comprised \$11.5M in commercial fishing operations generated by non-Tiwi interests, \$9.5M from the 'welfare economy' generated by Tiwi people, and \$4M in enterprise and non-welfare payments accruing to the Tiwi Islands' organisations and business sector (PER 2007).

3.10.2 Employment and income

The unemployment rate on the Tiwi Islands is three times the NT average, and has risen during recent years.

The majority of the unemployed population are indigenous people. The national Community Development Employment Projects program (CDEP) employs about 68% of the employed indigenous population and about 18% of the employed non-indigenous population on the Tiwi Islands (PER 2007).

The unemployment rate on the Tiwi Islands is much higher for males (16.1%) than for females (8.9%), for both indigenous and non-indigenous persons. 2001 Census respondent records show the following employment patterns:

- 36% Government or defence;
- 14 % health and community services;
- 13% education; and
- 4.5 % agriculture, forestry and fisheries.

3.10.3 Local impacts of the project

Construction of the ALA is anticipated to last four to six weeks, engaging mainly equipment and personnel from the existing mining operation. Where possible the TILG road maintenance crew will be utilised (e.g. grading and compacting of the runway surface). Ongoing maintenance of the ALA will engage current mine site resources or TILG. Tiwi

employment opportunities associated with construction of the ALA are only temporary and are of a local scale. Construction of the proposed ALA is not anticipated to have a significant impact on the NT economy in terms of employment, income and production.

4 Environmental Impact Assessment

4.1 Introduction

The main purpose of this Assessment Report is to evaluate the environmental protection measures of the project proposal and to determine whether the proposal can proceed without unacceptable environmental impacts. This is achieved by identifying any potential environmental impacts associated with the project and evaluating the corresponding safeguards or prevention measures suggested by the proponent. Where the proposed safeguards are considered insufficient, or where a safeguard is significantly important, recommendations are made in this Report to add to or emphasise those commitments made by the proponent.

The environmental acceptability of this project is based on consideration of the following from the PER:

- Adequacy of information outlining the proposal (particularly which structures or activities are likely to impact the environment);
- Adequacy of information on the existing environment (particularly environmental sensitivities);
- Adequacy and information on the range and extent of potential impacts; and
- Adequacy of the proposed safeguards to avoid or mitigate potential impacts.

The main findings of the Environment Heritage and the Arts (EHA) Division relating to the Public Environmental Report are that the environmental issues associated with the proposal have been adequately identified. Based on the information provided in the PER and the assumptions made by the proponent, the EHA Division considers that the environmental issues associated with the proposal have been adequately identified and the proposal can be managed in a manner that avoids unacceptable environmental impacts. This is provided that the environmental commitments, safeguards and recommendations detailed in this Assessment Report and in the Environmental Management Plans are implemented, with regular reporting, compliance auditing, monitoring and evaluation, and appropriate responses and adaptations to any issues identified through monitoring.

The EHA Division also commends the continuous stakeholder consultation Matilda has undertaken for the proposed ALA.

Each recommendation (in **bold**) is preceded by text that identifies concerns, suggestions and undertakings associated with the project. For this reason, the recommendations should **not** be considered in isolation.

Subject to decisions that authorise/permit the project to proceed, the primary recommendations of this assessment are:

Recommendation 1

The proponent shall ensure that the proposal is implemented in accordance with the environmental commitments and safeguards:

- **Identified in the Aircraft Landing Area Andranangoo Creek West Public Environmental Report;**
- **Recommended in this Assessment Report (No. 61).**

All safeguards and mitigation measures outlined in the Public Environmental Report are considered commitments by Matilda and are to be included in their Environmental Management Plans for the project.

Recommendation 2

The proponent shall advise the Minister of any changes to the proposal in accordance with clause 14A of the Administrative Procedures of the *Environmental Assessment Act*, for determination of whether or not further assessment is required.

4.2 Summary of Issues

The principal environmental issues associated with the proposed Aircraft Landing Area have been identified as:

- Site access;
- Land clearing;
- Threats to biodiversity; and
- Future land use.

The information presented below discusses these issues (identified in *italics*) and the commitments of the proponent to address these issues through environmental management provided within the PER and the associated Mining Management Plan.

4.2.1 Site Access

The original mining proposal already assessed by the EHA Division [the then Environment Protection Agency (EPA) Program] was approved with viable transport options to service the mine, using specially constructed haul roads and a helipad for emergency access.

Initial business planning for the Andranangoo mine site by Matilda, under-estimated the effects of the climatic extremes on road conditions.

During the 2006-07 Wet season road conditions between the Andranangoo mine site and existing airstrips on Melville Island deteriorated quickly under high intensity rainfall events. Roads were completely impassable by light vehicles for one month and impassable by heavy vehicles for three months. Poor road conditions sometimes increased the driving time for a one-way trip to Pickertaramoor from one hour to three hours. During this time personnel and supplies were transported to site via helicopter.

Extreme rainfall also rendered the Pickertaramoor airstrip unsuitable for landing light aircraft, as poor road access to the airstrip limited maintenance for the runway surface. Matilda was therefore required to utilise sealed airstrips located at greater distances, and travel times, from Andranangoo.

Matilda has now committed not to operate haul trucks during the Wet season. Ore would be stockpiled during the Wet season and transported off site only in the dry season.

Additionally, during initial business planning for the mineral sands operation, Matilda was advised that the NT Aerial Medical Service (AMS) had access to a dedicated medivac helicopter. However, while planning emergency response during the first year of mine operations, it was confirmed that NT AMS do not have dedicated access to helicopters and cannot guarantee being able to charter one if required.

During the PER process, Matilda engaged a consultant to undertake research into transport options available in the Darwin and Tiwi Islands region. Details of alternative transport arrangements for the Andranangoo mining operations have been discussed and summarised in section 3.11 of this Assessment Report.

The results of the research showed that the preferred option based on environmental best practice, cost, practicality and effectiveness, maintenance and liability and social factors for transport to the Andranangoo mine site is: construction of the proposed ALA and retention of

the ALA after mining. This is closely followed by construction of the proposed ALA and rehabilitation of the site following cessation of operations at the sand mining operation. The third most preferred option is direct helicopter transport to the mine site.

4.2.2 Land Clearing

The proposed ALA represents a permanent, significant 44 hectare footprint of land clearing and habitat loss on the Andranangoo Creek West mining lease, increasing the area impacted at Andranangoo by more than 90%, with out formal assessment or public scrutiny;

Initial information provided by Matilda, in the proposal document stated that the runway, runway strip and flyover areas 60m x 1500m (9 hectares) was proposed to be cleared of all vegetation and the surface compacted with gravel. It was also proposed that the approach and take-off areas at each end of the runway 150m x 900m (27 hectares) will be cleared of tall vegetation only to allow clearance above slopes of 5%. This represented a maximum of 36 hectares disturbed.

The initial estimate of 27 hectares partial clearing was based on the Civil Aviation Safety Authority recommended dimensions for the Approach/Take-off areas at either end of the runway, where trees and taller vegetation would be cleared on a slope of 3.3% back from the runway edge.

Information provided in the PER from the site flora survey indicates that the total amount of cleared vegetation, is proposed to be a total of 16.4 hectares – comprising nine hectares of woodland vegetation for the runway and partial clearing of an estimated further 7.4 hectares for the Approach and Take-off Areas.

Flora surveys undertaken at the site indicated that the tallest trees are approximately 20 metres high; therefore proposed partial clearing on a 3.3% angle would only affect a small portion of the Approach/Take-Off areas. Further out from the Runway, the trees will be below the 3.3% slope line and will not have to be partially cleared.

Therefore the area of disturbed vegetation is proposed to be reduced from 36 hectares to 16.4 hectares.

4.2.3 Biodiversity

The proposal area represents a region of high biodiversity and wilderness values to both Melville Island and future generations;

Matilda has proposed to reduce the disturbed vegetation area for the ALA from 36 hectares to 16.4 hectares.

The EHA Division notes the Matilda commitments to the following environmental management measures during the construction of the ALA:

- The existing Flora EMP and the vegetation conservation issues identified for the ALA have been integrated into the Flora Environmental Management Plan for the ALA. This includes an ALA Construction EMP, to describe the proposed management of the short-term environmental risks that are only associated with ALA development activities;
- Specific flora and fauna management commitments as outlined in Attachment 1 of this Assessment Report;
- use of a hand-held GPS to accurately identify vegetation clearing boundaries;
- Cleared vegetation to remain stockpiled for re-spreading if rehabilitation is required;
- Acquisition of a *Permit to Take Wildlife for Commercial Purposes* for the purposes of clearing cycads; and

-
- Weed management in line with Matilda's existing weed management program.

Matilda has undertaken two flora surveys for the proposed ALA site; one in October 2006 in the late Dry season and a second in May 2007 during the late Wet season. A fauna survey of the proposed site was conducted in September 2006. The results of the surveys as included in the PER, focus on threatened species listed under the NT *Territory Parks and Wildlife Conversation (TPWC) Act* and the Commonwealth *Environment Protection and Biodiversity Conservation (EPBC) Act*.

The PER states that the vegetation community within the ALA does not have special conservation significance and the main impact on flora will be clearing of upland eucalypt forest and woodland habitat associated with the ALA construction. It is also believed that the proposed ALA will impact fauna at the local scale only, given that the type of vegetation community disturbed is widespread throughout the Tiwi Islands, and is surrounded by relatively vast areas of undisturbed similar vegetation.

The general conclusion is that the clearing will not significantly affect the conservation status of species recorded at the site. The probability of a direct significant impact on the biodiversity of the site is not considered to be high. The primary threat to vegetation communities through the construction of the ALA is the potential for the spread of weeds from the mining camp into the ALA area (PER, 2007).

Impacts that may be relevant are those of a cumulative nature and include the clearing of native vegetation associated with other developments occurring on the Tiwi Islands.

4.2.4 Future Land Use

Future use of the area as a landing site appears to represent limited value at a significant cost to traditional owners, in terms of ongoing weed and erosion control, runway maintenance and loss of habitat.

The PER was determined based on information contained in the initial Attachment to Mine Management Plan Authorisation Number 0245-04 document referred to the EHA Division by the Department of Primary Industry Fisheries and Mines (DPIFM). This document stated that consultation had been undertaken with the traditional owners by Matilda, who provided their unequivocal support for the ALA. Matilda also stated that the ALA will be available for use by the traditional owners following decommissioning of the adjacent minesite by Matilda.

During the consultation process, Matilda has stated that if the Tiwi people do not wish to retain the proposed ALA, Matilda will deep rip seed and rehabilitate the area in accordance with the rehabilitation practices in place for the adjacent Andranangoo mine site.

Matilda anticipates completing mining operations at Andranangoo by 2010. Two post-mining operation alternatives for the ALA are proposed by Matilda:

Retention of the ALA

Through the consultation process, the Tiwi people have indicated their desire to manage and operate the ALA after completion of mining at Andranangoo. The TLC proposes to provide long term management of the ALA through the services of the Tiwi Island Local Government.

The capacity of the TILG to provide maintenance for the facility includes the current management of four airstrips on Melville and Bathurst Island as well as an extensive road network. All maintenance is conducted by the TILG, who have experienced personnel and operating procedures, and sufficient capacity to manage the Andranangoo ALA when it is proposed to be handed over to the Tiwi people after mine closure.

As discussed in the PER, extreme rainfall also rendered the Pickertaramoor airstrip unsuitable for landing light aircraft, as poor road access to the airstrip limited maintenance for the

runway surface. Other roads in the area, including the haul road from the mine were also completely impassable to vehicles at this time for between one and three months.

In addition, the findings of the flora survey identified the primary threat to vegetation communities; through the construction of the ALA is the potential for the spread of weeds from the mining camp to the ALA area. Weed spread is most likely to occur during the Wet season, which is the main growing time for flora.

On the basis of this information, the EHA Division is concerned that the required maintenance of the ALA may not be possible during Wet season conditions following mine closure and management of the ALA by the TILG.

The PER briefly discusses the impact of the recent cessation of the Community Development Employment Program (CDEP) and its impact on provision of TILG road crew services. Both the TLC and TILG hope that projects such as Matilda's mine operation will provide permanent jobs for Tiwi people. It is also noted that under the proposed local government reforms, road maintenance will be the responsibility of the new shires. Additional information provided by Matilda during the PER process indicates that ongoing maintenance of infrastructure on the Tiwi Islands is not solely reliant on CDEP resources. The TILG has been the contractor in the past and may remain so in the future, however the TLC can engage contractors from any source.

Additionally a Tiwi owned contracting company with its own equipment has recently been formed. This company, called Tiwi Enterprise Pty Ltd, will become a major contractor on the Tiwi Islands for all contracting work. No CDEP funds are sourced by this company.

Rehabilitation of the ALA

If, following the cessation of operations at the Andranangoo sand mine, the Tiwi people do not wish to retain the proposed ALA, Matilda will deep rip seed and rehabilitate the area in accordance with the rehabilitation practices in place for the mine site.

Key rehabilitation measures for the site include the following:

- Cleared vegetation will remain stockpiled for re-spreading during rehabilitation;
- Topsoil to a depth of 50 millimetres will be piled into a separate stockpile, for later spreading and use as a brush cover and seed bank in rehabilitation;
- Compacted areas will be deep ripped and seeded;
- Flora monitoring activities will be undertaken on rehabilitated areas to identify any species deficiencies. If required, revegetation with seedling stock will be carried out using species identified during baseline surveys. Seed would be collected from the surrounding area to ensure that flora provenance is preserved;
- Old logs stockpiled during clearing will be returned to rehabilitated areas to facilitate recolonisation by local flora and fauna (including birds) and to provide additional protection from wind and water erosion; and
- Areas susceptible to erosion will be covered with brush and seeded.

It should be noted that the long-term storage of topsoil can degrade its value substantially and can become a source of weeds.

The EHA Division notes that Matilda's overall rehabilitation program will focus on returning native vegetation endemic to the area wherever possible.

A Rehabilitation and Mine Closure Plan (RMCP) has not yet been formalised for the Andranangoo mine site, and will be developed in consultation with the TLC, traditional owners and DPIFM, over the next twelve months. If required, the ALA will be incorporated into this RMCP.

Recommendation 3

If the Tiwi Land Council agree to manage and operate the ALA following closure of the mine site, they are required to provide a letter of commitment to the Environment Heritage and Arts Division of NRETA and the Department of Primary Industry, Fisheries and Mines. The letter should provide details addressing their capability and management objectives for operation of the ALA. The letter should also include details of how ALA maintenance will be undertaken during the wet season.

Recommendation 4

The Mine Management Plan should provide stabilisation details for the stockpiles, to prevent the topsoil degrading in quality and becoming a source of weeds. Details should include stabilisation techniques (ie: vegetation use) to control erosion and weeds.

Recommendation 5

Matilda is required, at its earliest convenience to formally notify the EHA Division of the final post mining operation arrangements of the ALA.

Recommendation 6

If rehabilitation is the chosen option, close-out criteria, contained in the Rehabilitation and Mine Closure Plan are to contain provision for sufficient resources to be made available to maintain ALA rehabilitation and monitoring works in the longer term, for up to five years, to allow for setbacks (eg: cyclones) and slower than expected rehabilitation progress.

Conclusion

Based on the information provided in the PER and the assumptions made by the proponent, the EHA Division considers that the environmental issues associated with the proposal have been adequately identified and the proposal can be managed in a manner that avoids unacceptable environmental impacts. This is provided that the environmental commitments, safeguards and recommendations detailed in this Assessment Report and in the Environmental Management Plans are implemented, with regular reporting, compliance auditing, monitoring and evaluation, and appropriate responses and adaptations to any issues identified through monitoring.

List of Recommendations

Recommendation 1

The proponent shall ensure that the proposal is implemented in accordance with the environmental commitments and safeguards:

- Identified in the Aircraft Landing Area Andranangoo Creek West Public Environmental Report;
- Recommended in this Assessment Report (No. 61).

All safeguards and mitigation measures outlined in the Public Environmental Report are considered commitments by Matilda and are to be included in their Environmental Management Plans for the project.

Recommendation 2

The proponent shall advise the Minister of any changes to the proposal in accordance with clause 14A of the Administrative Procedures of the *Environmental Assessment Act*, for determination of whether or not further assessment is required.

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If the Tiwi Land Council agree to manage and operate the ALA following closure of the mine site, they are required to provide a letter of commitment to the Environment Heritage and Arts Division of NRETA and the Department of Primary Industry, Fisheries and Mines. The letter should provide details addressing their capability and management objectives for operation of the ALA. The letter should also include details of how ALA maintenance will be undertaken during the wet season.

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Appendix 1

Commitments by Matilda Minerals Ltd for the ALA at Andranangoo Creek West

Landform, Soils and Hydrology

Matilda commits to installing stormwater drains and turn-outs along each edge of the Runway at the ALA.

Matilda commits to expanding the existing soil erosion monitoring program to include the ALA.

Matilda commits to implementing existing EMP's for surface water quality, groundwater quality, and hydrocarbons and hazardous substances.

Matilda commits to the storage and handling of hazardous substances in accordance with Australian Standard 1940, and with the Hydrocarbons and Hazardous Substances EMP.

If rehabilitation of the ALA is preferred at the time of mine closure, Matilda commits to reinstating the natural ground surface, removing surface water drains and other features, and deep ripping and seeding

Flora

Matilda commits to using hand-held GPS units to identify clearing boundaries during construction of the ALA, to avoid accidental over-clearing.

Matilda commits to collecting cleared vegetation during ALA construction into designated areas, to minimise the impact of dumping on the surrounding vegetation. This material would be burnt when dry, or if the ALA is to be rehabilitated after mine closure, the material would remain stockpiled for respreading during rehabilitation.

Matilda commits to including the ALA in the existing vegetation monitoring program, to allow for early detection of weeds in the area. Where weeds are identified, Matilda commits to applying appropriate weed control measures throughout the ALA, camp and mine site, to minimise weed spread and eradicate weeds where possible.

Matilda commits to developing weed identification and awareness training for mine personnel.

Matilda commits to participating in the island-wide weed management program in cooperation with TLC and Great Southern Plantations.

Fauna

Matilda commits to collecting cleared vegetation during ALA construction into designated heaps, to minimise the impact of dumping on the surrounding vegetation.

Matilda commits to installing and monitoring cane toad traps around the perimeter of the ALA.

Matilda commits to including the ALA in the existing feral ant monitoring program.

Archaeology and Heritage

Matilda commit to communicating the possibility of grave sites in the area to mine staff, through the site induction process.

Matilda commits to instructing mine personnel to cease work and contact the Matilda HSEC Officer if a suspected grave site or any archaeological material is observed. The HSEC Officer will contact NRETA Heritage Conservation Services or the TLC for advice, before giving approval for works to proceed.

Air Quality and Noise

Matilda commits to conducting ALA construction during daylight hours only.

Matilda commits to incorporating the ALA into the existing Fire Management Plan, to minimise the risk of large wildfires that could cause intense smoke.

Traffic and Transport

Matilda will impose existing traffic management procedures, such as avoidance of weed infested areas, during ALA construction.

Waste and Hazardous Substances

Matilda commits to applying the management actions included in the existing Waste EMP and Hydrocarbons and Hazardous Waste EMP to the construction and operation of the ALA.

Matilda will not store any fuel or oil at the ALA site, and only small volumes of fuels or oils required for aircraft for emergency or special circumstances will be stored at the existing bunded facility at the mine site.

Matilda commits to piling vegetation debris and topsoil removed during ALA construction into heaps to minimise impacts to the surrounding vegetation. These heaps would either be burnt or retained for later rehabilitation of the ALA, should the decision be made during the PER process to remove the ALA after completion of mining.

Greenhouse Gases

Matilda commits to using hand-held GPS units to identify clearing boundaries during construction of the ALA, to avoid accidental over-clearing.

Matilda commits to coordinating flight schedules as efficiently as possible to minimise the number of flights per week, and to utilise larger planes that are more efficient in “per passenger” fuel use.

Matilda has joined the Greenhouse Challenge and commits to continuing to reduce greenhouse emissions where possible.

Biting Insects

Matilda commits to constructing the ALA in accordance with the DHCS Guidelines for Preventing Mosquito Breeding Sites Associated with Mining Sites.

Matilda commits to continuing to provide advice on biting insect risks and personal protective equipment (such as insect repellent) to all mine personnel and visitors.

Socio-Economic

Matilda commits to continuing a close working relationship with the TLC, to identify opportunities to contribute positively to the Tiwi Islands’ economy and society.

Matilda commits to leaving the ALA in sound operational conditions at the end of mining, should it be confirmed as a result of this PER process that the ALA should remain as a future asset to the Tiwi Islands community.

Stakeholder Consultation

Matilda commits to continuing stakeholder consultation throughout the PER public review period for the ALA project.

Matilda commits to maintaining open and regular communication with the TLC and relevant land-owning groups throughout the construction, operation and rehabilitation phase of the ALA and the Andranangoo mining project.

Risk Assessment

Matilda will continue to systematically evaluate the HSEC risks associated with the proposed ALA through the construction, operation and maintenance phases of the project. These will be documented in the site HSEC Aspects and Impacts Register.

Matilda will implement management actions for the ALA as detailed in Table 15.4, including EMP's and other procedures.