1.1 The proposal

Matilda Minerals Limited (Matilda) proposes to develop mineral sands mining operations at Andranangoo Creek West (Andranangoo) and Lethbridge Bay West (Lethbridge), Melville Island, Tiwi Islands, Northern Territory. The proposed operation will extract high-grade heavy minerals (HM), specifically zircon and rutile, for export to China. It is estimated that a total of 107,000 t of zircon and rutile will be exported during the anticipated sand mining operation over three and a half to four years.

The principal objective of this Draft Environmental Impact Statement (EIS) is to identify and assess the environmental and related impacts that could potentially occur as a result of the construction and operation of the proposed mining project, and to develop and describe management strategies that will be employed to manage and mitigate those impacts.

Assessed impacts of operations encompass the natural, social, and economic environment. Wherever possible, Matilda has structured this Draft EIS such that issues and impacts are discussed in context in order to accurately assess their significance.

The EIS also includes a framework for an Environmental Management System (EMS), and draft Environmental Management Plans (EMPs) to demonstrate how Matilda intends to manage its operations on an on-going basis.

Matilda is cognisant that without the support of the local community it is highly unlikely that such a proposal would be successful. Matilda therefore consulted with the Tiwi Land Council (TLC) and local Traditional Landowners prior to commencing exploration on the Tiwi Islands. These consultation and subsequent consultations undertaken as the project has progressed have indicated overwhelming support for the project. Details of the consultation program undertaken by Matilda to date, as well as consultations specifically undertaken as part of the development of the EIS are also included in this Draft EIS.

1.2 Proponent details

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1.3 Project name and location

Project Name: **Proposed Mineral Sands Mining Operation, Andranangoo Creek West and Lethbridge Bay West Prospects**

Project Location: **Melville Island, Tiwi Islands, Northern Territory**

The Tiwi Islands are located 60 km north of Darwin, Northern Territory, Australia (Figure 1.1). The islands cover 7,900 km^2 and have a permanent population of approximately 2,100 people. The mining leases are located on the northern side of Melville Island (Figure 1.2) and are described below.

Figure 1.1: Location of Tiwi Islands

1.4 Overview of the proposed project

1.4.1 Scale and type of operations

Exploration undertaken by Matilda has revealed high-grade mineral sands occur at Andranangoo and Lethbridge. The proposed areas to be disturbed to extract these high grade minerals are relatively small in terms of the spatial and temporal disturbance of the Tiwi Islands. The dimensions of the proposed areas of disturbance are described below.

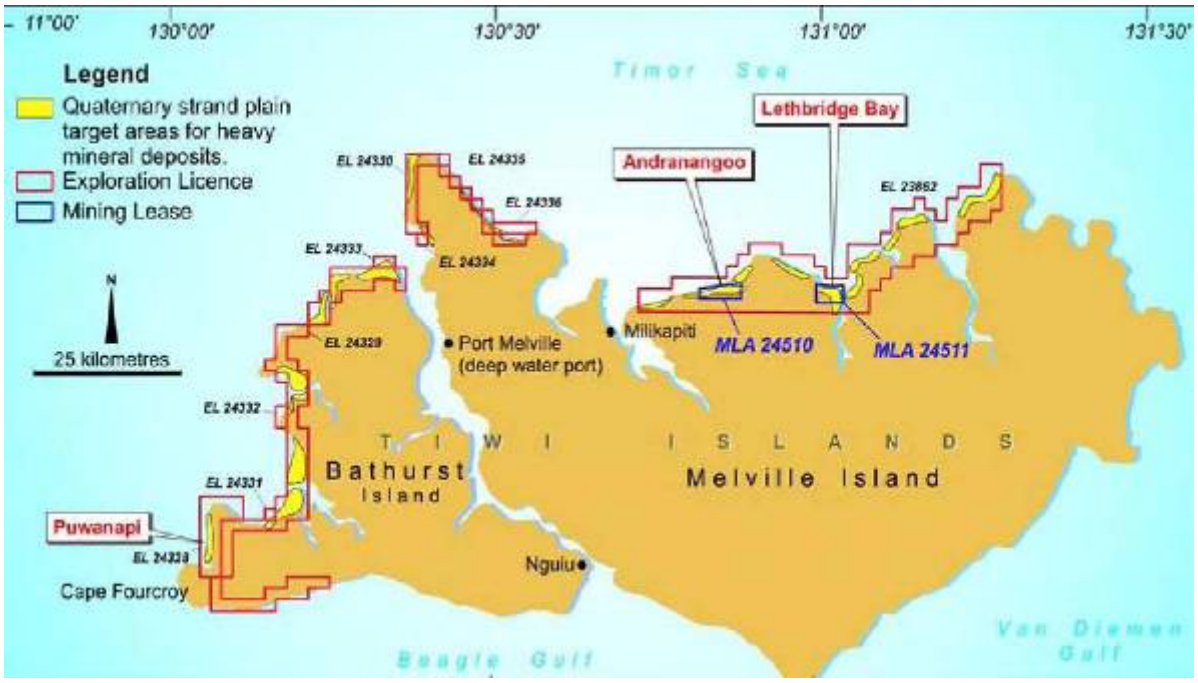


Figure 1.2: Tenement Locations

Andranangoo Creek West Deposit

The Andranangoo Creek West deposit is shown in Figure 1.3.

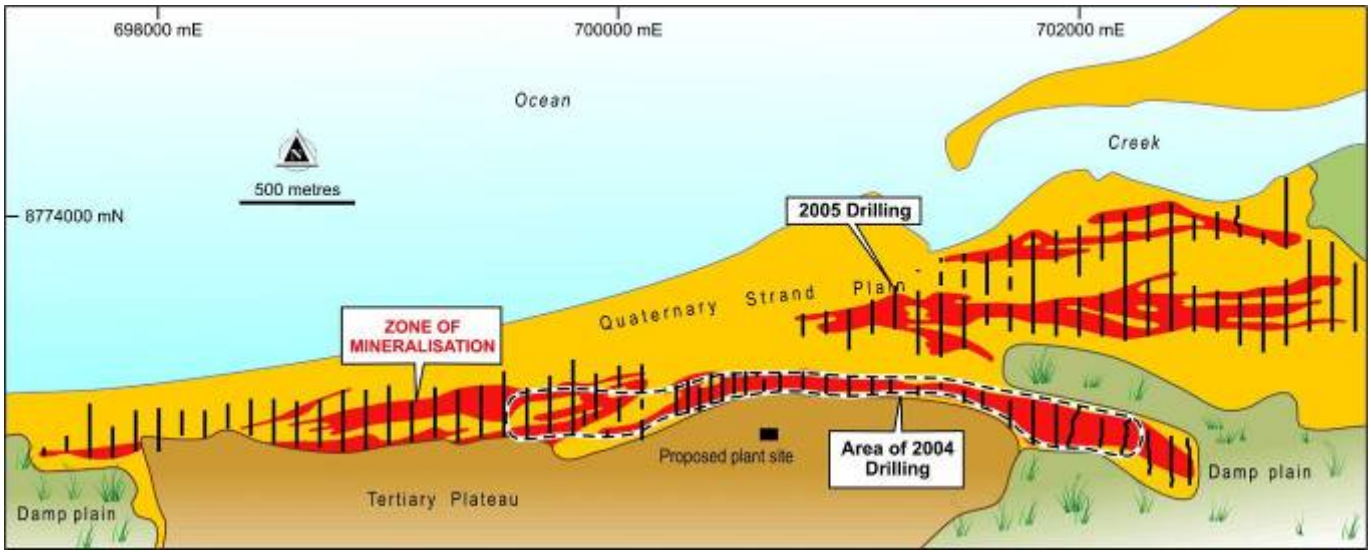


Figure 1.3: Andranangoo Creek West Deposit

A summary of the area of disturbance is as follows:

- 0.45 km^2 (45 ha); (this is approximately 0.006% of the total land area of the Tiwi Islands). Total area of the Tiwi Islands is estimated at 7345 km^2 derived from Woinarski *et al.* (2003a)
- The habitats to be disturbed are predominately *Melaleuca* woodland, with approximately 2 ha in *Eucalyptus* open woodland for the camp.
- The estimated life-of-mine at Andranangoo Creek is approximately three to three and a half years.

Lethbridge Bay West

The Lethbridge Bay West deposit is shown in Figure 1.4.

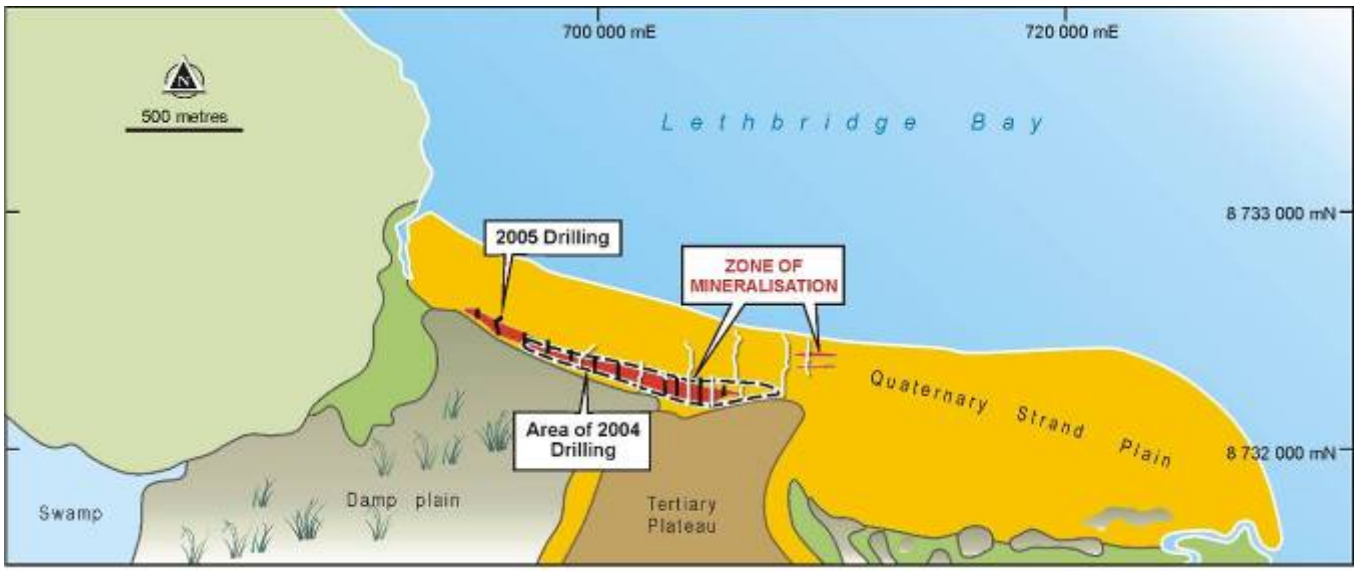


Figure 1.4: Lethbridge Bay West Deposit

A summary of the area of disturbance is as follows:

- 0.20 km^2 (20 ha); (this is approximately 0.003% of the total land area of the Tiwi Islands).
- The habitats to be disturbed for the mining operations are predominantly *Melaleuca* woodland with minor areas of coastal vine thicket (Metcalfe 2005a) and strand communities on coastal dunes. For the camp, approximately 2 ha of *Eucalyptus* open woodland will be disturbed.
- The estimated life-of-mine at Lethbridge Bay West is approximately six months, subject to subsequent exploration.

1.4.2 Ore reserves and production

Andranangoo Creek West Deposit

Andranangoo Creek West (Andranangoo) is a new discovery and the first priority for Matilda. The heavy mineral (HM) content of the Andranangoo prospect is 3.6% up to a depth of 2 m and is associated with alternating littoral (shore), fluvial (river) and estuarine deposits. It is estimated that approximately 2,700,000 t of sand will be extracted and processed at the Andranangoo deposit, which will contain approximately 88,000 t of HM.

Lethbridge Bay West

Mineral sands mining will commence at Lethbridge Bay West (Lethbridge) after operations are complete at Andranangoo; therefore exploration undertaken to date at the Lethbridge lease, has been less intensive. The HM content of the Lethbridge prospect is 5.1%. It is estimated that approximately 410,000 t of sand will be extracted and processed at the Lethbridge deposit, which will contain 19,000 t of HM.

1.4.3 Exploration access

The upgrading of the existing track to Andranangoo from the existing road across Melville Island from Pirlangimpi to the east (Figure 1.1) commenced with the approval of the TLC. The track was upgraded to enable access to the area for exploration purposes and also to provide improved access for the landowners, as a gesture of goodwill.

The road upgrade construction work was undertaken by the Tiwi Islands Local Government (TILG) in accordance with specifications outlined in a contract established by Matilda in consultation with the Tiwi Islands Local Government Office. The construction methodology incorporated recommendations made by the TLC to minimise environmental disturbance. These recommendations included diverting the road from areas that were recognised as being environmentally sensitive, to minimise the impact associated with the widening of the existing track. Flora and fauna surveys were undertaken as part of the road widening project.

Design specifications for the road included a 6 m crowned pavement, 0.5 m shoulders, and 1.5 m table drains. Shoulder and table drain batters were designed at a 4:1 ratio. A minimum of five lateral drains were provided per kilometre. The majority of the road was constructed from local natural surface material won from excavation of the table drains. The road surface will be sheeted prior to mining activities commencing at Andranangoo.

At Lethbridge, the only work undertaken to date has been grading of the existing access track from the existing road across Melville Island from Pirlangimpi to the east. This access track would be upgraded to the same standard as above prior to mining activities being undertaken on site (approximately 2009).

1.4.4 Project construction and operational timeframe

Construction works will include:

- sheeting and maintenance work as required of the Andranangoo access road from the existing road across Melville Island from Pirlangimpi via Pickertaramoor to the east, and upgrading of the access road to Lethbridge Bay West (described in Section 1.4.3);
- upgrading and clearing of project access tracks and roads within the Andranangoo Creek West and Lethbridge Bay West Mineral Leases;
- progressive clearing of areas to be mined;
- expansion of the existing exploration camp and installation or expansion of associated service facilities, such as water supply, fuel storage, power generation and septic systems;
- construction of a demountable storage shed for the mineral sands concentrate, and a helipad for emergency evacuation;
- assembly of the processing plant, which is transportable and may be re-located as the project proceeds; and
- placement of the sand feeder hopper next to the mining area (which is used to transport sand slurry to the processing plant) and installation of pipelines to the processing plant and power to the feeder.

The current exploration camp at Andranangoo has a cleared area of approximately 60 m x 40 m, to accommodate camp facilities. A further area of approximately 60 m x 40 m has also been cleared for a helicopter landing pad. The current facilities will be used for operations, and additional clearing will be minimal. The processing plant, which is in four sections, has been transported to the island and is currently stored at Pickertaramour. This plant will be transported in sections to the mine site when operations begin, and assembled on site. Assembly of the processing plant takes about one day.

Plant construction, including assembly, placement of fuel tanks and generators and power hook-up, and placement of sand slurry feeder and pipelines will take approximately a week after commencement of operations. Preliminary works including vegetation clearing and stockpiling for rehabilitation will also take approximately a week, and can be conducted concurrently with plant construction.

The water supply to the plant is proposed to comprise two production bores at each of the Andranangoo and Lethbridge sites, located away from the mining areas, and in areas of minimal impact to environmentally sensitive areas. The actual number of production bores required will be determined following bore yield tests. A separate bore well away from the mining and camp areas would be provided at each site for the potable water requirements of the camp.

The power supply will comprise mobile generators for the processing plant and camp, for the mining area, and for borewater pumping. The total generating capacity would be about 820 kW.

The Andranangoo prospect will be the first priority for Matilda and it is expected that mining activities will last about three to three and half years at this site. The mineral sands mining operations will then move to Lethbridge for approximately six months. In total Matilda plans to have finished mining activities including closure at both the prospects within five years.

1.4.5 Existing infrastructure and facilities

The mining operation will utilise existing infrastructure already present on Melville Island as much as practical, and may upgrade the infrastructure where necessary. In particular:

- The airstrip at Pickertaramour will be used for crew change;
- Port Melville will be used to ship the concentrate from the Island. The area to be used for storing the concentrate is an existing cleared area, upon which Matilda will construct a storage shed;
- Port Melville is partly connected to the mining areas by the existing road across Melville Island from Pirlangimpi to the east (Figure 1.1), much of which has been upgraded to an all-weather haul road by Sylvatech Limited; and
- Sylvatech facilities will also be utilised for refuelling and waste oil disposal. These facilities are currently contracted to Australia Fuel Distributors (AFD) and under this agreement waste oil products are collected and removed to the Australian mainland.

1.5 Extent of previous exploration or mining activities

HM were first recorded on the Tiwi Islands in 1955 by the Bureau of Mineral Resources (now Geosciences Australia) on behalf of Central Uranium NL (Matilda, 2004a).

In 1966 United Uranium NL identified deposits containing 9,053 long tons and 24,878 long tons of concentrate at Brace Point and Gordon Bay respectively. The percentage rutile was considered too low and the deposits were not considered viable at that time (Matilda, 2004a).

In the late 1960s, exploration by Placer Prospecting (Australia) Pty Ltd and Nevsham Mining Co. Pty Ltd, similarly returned disappointing results (Matilda, 2004a).

The Bureau of Mineral Resources geologically mapped the Tiwi Islands between 1976 and 1978. Several HM accumulations were identified along the north of Melville Island and the west coast of Bathurst Island (Matilda, 2004a).

No further exploration was undertaken on the Tiwi Islands until 1992 when RGC Exploration Pty Ltd explored for economic accumulations of HM. Exploration consisted of air photograph interpretation, reconnaissance sampling and mapping, hand auger drilling and reconnaissance aircore drilling. RGC concluded that HM concentrations identified at Puwanapi and Lethbridge Bay were not of sufficient size

to be of immediate interest to the company, and the licences were subsequently relinquished (Matilda, 2004a).

Only limited exploration was undertaken on the younger Quaternary coastal plains with the primary focus on the Tertiary sandstone in the quest for world-class deposits (Matilda, 2004a).

In 2003 Matilda began evaluating the potential of Bathurst and Melville Islands for high-value zircon and rutile-rich deposits. Preliminary studies identified the existing resources and a number of high priority targets suitable for exploration using magnetic mapping techniques (Matilda, 2004a).

As stated earlier recent exploration by Matidla has estimated HM deposits on Melville Island at Andranangoo and Lethbridge at approximately 107,000 t of high grade zircon and rutile. This amount is considered economically viable and mining operations will generate potentially large economic benefits to the local and Northern Territory communities.

1.6 Project benefits and justification

1.6.1 Benefits

Past and on-going consultation with the TLC has indicated their recognition of the benefits and support of Matilda's proposed mineral sands mining project for a number of reasons including:

- Potential to generate income for the local community as of royalties;
- Potential for employment and training for local people to work on the project or indirectly through the provision of goods and services to Matilda (some of which has already been carried out during the exploration phase);
- Provision of long-term infrastructure such as roads and cleared camp areas that will remain long after the mineral sands mining project is complete. Local communities use areas near Lethbridge and Andranangoo for recreational purposes, and the presence of better access may enable establishment of recreational fishing charters in the area;
- Potential sponsorship of community and training programs. Matilda plans to set up a plant nursery on the Tiwi Islands for rehabilitation requirements and to introduce a training program to employ the local people to collect seeds. The TLC is supportive and has suggested that they would like to conduct this program in conjunction with a proposed land-based Ranger project;
- Provision of water bores in country customarily used by Tiwi people; and
- Significant additional business for the Tiwi-owned international port, Port Melville, including creation of employment and training opportunities.

1.6.2 Justification

In addition to these recognised benefits to the local community, Matilda's proposed mineral sands mining project will also provide benefits to the community as a whole, beyond the immediate local area.

- The project will provide royalties to the NT Government (in addition to the royalties to be paid to the TLC) and result in spin-off effects for the NT economy, through employment and the provision of goods and services;
- The project locations are in remote areas of Melville Island, and there will be very limited impact on surrounding flora, fauna and human occupied communities;
- The temporal and spatial scale of the project is small, therefore impact will be limited to the local area which simplifies the identification and management of issues;
- The extensive flora and fauna surveys conducted of the proposed mining areas have added valuable information to the knowledge database of the Tiwi Islands, in particular Melville Island. Matilda has already made what information it has gathered readily available to the Tiwi Land Council and NT Government agencies. The results of baseline surveys are also included in this report which will also ensure its distribution into the public domain;
- With Matilda's continued commitment to the environment and through continual monitoring of the areas in which Matilda propose to operate, further information will be gained to add to this knowledge database; and
- During this process of information dissemination, the knowledge of sustainable development and the natural environment of the Tiwi Islands within the wider community is also likely to increase. Conversely, knowledge of other industries and access to additional opportunities will also be provided to the people of the Tiwi Islands, through Matilda's presence.

1.7 Project alternatives

1.7.1 Consequences of not proceeding

The consequences of not proceeding with the project would include the loss of the following benefits:

- Generation of income for the local community via royalties to the TLC;
- Generation of potential employment for the local community;
- Provision of long-term infrastructure, including upgraded roads and bores in remote areas, and better access for local fishing and hunting, and for tourism activities;

- Potential for community sponsored programs – establishment of small herbarium and nursery for rehabilitation purposes;
- Provision of royalties to the NT Government (in addition to those to the TLC); and
- Addition to the existing environmental knowledge database of the Tiwi Islands.

1.7.2 Alternative mining methodologies and locations

Matilda has considered a range of project options in relation to methodologies and locations of aspects of the project. These are described briefly below.

Alternative mining methodologies

The mineral sands mining and separation methodology chosen is considered to pose the least impact on the local environment. Alternative technologies are available, but have much greater potential impacts. The chosen methodology largely confines the potential impact to the mineralised area.

One option is the use of a floating barge with equipment such as a cutter-suction dredge to extract and process the minerals. This would require construction of a short canal from the mining area to the sea or river to enable the barge to gain access to the areas of the deposits. The area of disturbance and potential impacts would be much greater using this methodology, and would include sensitive areas that can be readily avoided using the proposed methodology.

An alternative conventional mining method is the use of a front-end loader to feed 24 hours per day directly to a feeder which would slurry the sand and pump it up to 2 km to the processing plant. This method would require adequate dewatering of the area being mined, to enable the loader to operate at or below the static water level which coincides with the base of mineralisation.

This method was considered and discounted after a preliminary review of the impacts summary. In particular, there was uncertainty in the level of dewatering required and the potential localised impacts of dewatering. In addition, the requirements for lighting the operating area at night could have the potential to impact nesting turtles.

The chosen mining method avoids potential issues associated with dewatering, and for light affecting turtles at night.

Alternative locations of aspects of the project

Alternative means were also considered for bringing in the plant and camp facilities and supplies, and for the shipping out of concentrate, by use of barges to and from Darwin, to the coastal area adjacent to the deposits. This would have required the construction of barge loading facilities on the shore at each of the deposits.

The proposed methodology makes use of existing port facilities and roads on the Tiwi Islands, and was the preferred methodology by the TLC, on the basis that Matilda would provide improved transport infrastructure to the more remote parts of the Tiwi Islands where existing access is poor. These aspects are discussed further in Section 1.7.3.

1.7.3 Alternative operations and management

It is noted that over the last 12 to 18 months, Matilda has proposed, analysed and accessed many different operational scenarios and alternative options for the chosen mining methodology, based upon research, baseline surveys, recommendations of experts in the field, and consultations with NT Government and Commonwealth agencies.

Some of the considerations taken into account are summarised below. These include:

- Options to reduce impacts on sea turtle populations;
- Revisions of mining methods to protect groundwater resources;
- Relocation of haul roads to avoid environmentally sensitive areas;
- Location of water bores and the HM Concentrate Separator;
- Practices to reduce the spread of weeds;
- Consideration of barging and haulage options; and
- Location of fuel storage areas.

The alternative measures adopted to reduce the environmental impact or improve the environmental management of Matilda's mineral sands mining operations are discussed below.

Turtle populations

A 200 m vegetative buffer will be established between operational areas and the Spring High Water Mark to ensure turtle populations are not impacted upon by mining activities. The 200 m vegetative buffer zone recommended by Guinea (2005) has been supported by flora assessments of the deposit areas with the aim of ensuring that light produced from the mining operations will be sufficiently blocked or screened, so that it does not disrupt the nesting activities of the turtles.

To further reduce the risk of light spillage from mine lighting to the beach, the initial proposal for 24-hr operations has been revised. The extraction of sand will now only be conducted during daylight hours, rather than on a 24-hr basis. Processing will still take place on a 24-hr basis as the processing plant is located further inland, on the escarpment away from the coastal areas. The process plant is also enclosed to reduce the amount of light spill. It is believed that this will further reduce the potential for adverse

lighting effects on the turtle populations. These controls will be supported by a turtle monitoring program.

Mining method

During the consultation process it was identified that dewatering of the mining areas in order to mine HM below the watertable could potentially have adverse effects. These include lowering of the surrounding watertable, with consequent potential oxidation of acid sulphate soils, and potential adverse impacts upon the local flora and fauna, including local aquatic flora and fauna. It was also identified that there may be a risk of saltwater intrusion into the watertable if the mining area is dewatered.

The decision to change the mining method so that dewatering is not required was taken to minimise the impact on surrounding flora and fauna communities, including aquatic communities, and to minimise the risk of seawater intrusion increasing the salinity of the local watertable.

Water supply

Water supply bores for the HM concentrate separator were relocated in areas that are environmentally less sensitive to the drawdown of the watertable. The actual number of production bores required to make up the supply will be determined following aquifer tests. Separate potable water supply bores for the camps were located upgradient from the mining camps to establish adequate wellhead protection areas.

At Andranangoo, water supply bores were located away from wetlands that are of potential ecological significance to minimise groundwater level changes associated with borefield operation.

HM concentrate separator

Originally it was proposed that the HM Concentrator would be located adjacent to the mining area. In order to better manage the potential impact of noise and light, this has been revised. It is now proposed that the HM Concentrator would be located to a semi-permanent position in the upland *Eucalyptus* forest. This would reduce the potential for noise and light impacts on sea turtles, as well as provide greater protection for the plant in storm surge events.

Haul roads

Flora and fauna surveys along the haul roads have identified areas that are potentially significant or identified as being environmentally vulnerable. The last 4 km of the access road into Andranangoo was realigned to the east so it would not pass through a seasonal wetland habitat including *Lophostemon* woodland and *Melaleuca* (Paperbark) communities. It is recognised that the potential for environmental degradation from erosion, changes in drainage, pollution and weed introduction, is higher in wetland areas and therefore these areas should be avoided (Metcalfe 2005b).

Brady and Firth (2005) have identified an area along the Lethbridge Haul Road that may be a significant habitat for the *Sminthopsis butleri* (Butler's dunnart), which is listed as vulnerable under the *Environment, Protection and Biodiversity Conservation (EPBC) Act 1999.* If further studies indicate that the haul road traverses an area that is considered a significant site for the Butler's dunnart, the Lethbridge Haul Road will be aligned as much as is practicable so as not to disturb the population.

Barging and hauling

During the initial project planning it was proposed that access to the leases would be achieved via barges. Under this scenario, all supplies, materials, chemicals and other hazardous substances, vehicles and machinery for the mine operation would be barged to site from Darwin, and the HM concentrate would be barged from the minesite to the Australian mainland for export. This option would have required the construction of barge loading facilities on the shore at each of the deposits.

This initial plan was later dismissed for environmental reasons. It was believed that barging material to and from site in this manner would potentially have greater impact upon turtle breeding areas. Barging was also considered to have potentially adverse effects on the marine environments which are considered key areas in the conservation of Dugong and seagrass habitats in the Northern Territory (Parks and Wildlife Service 2003).

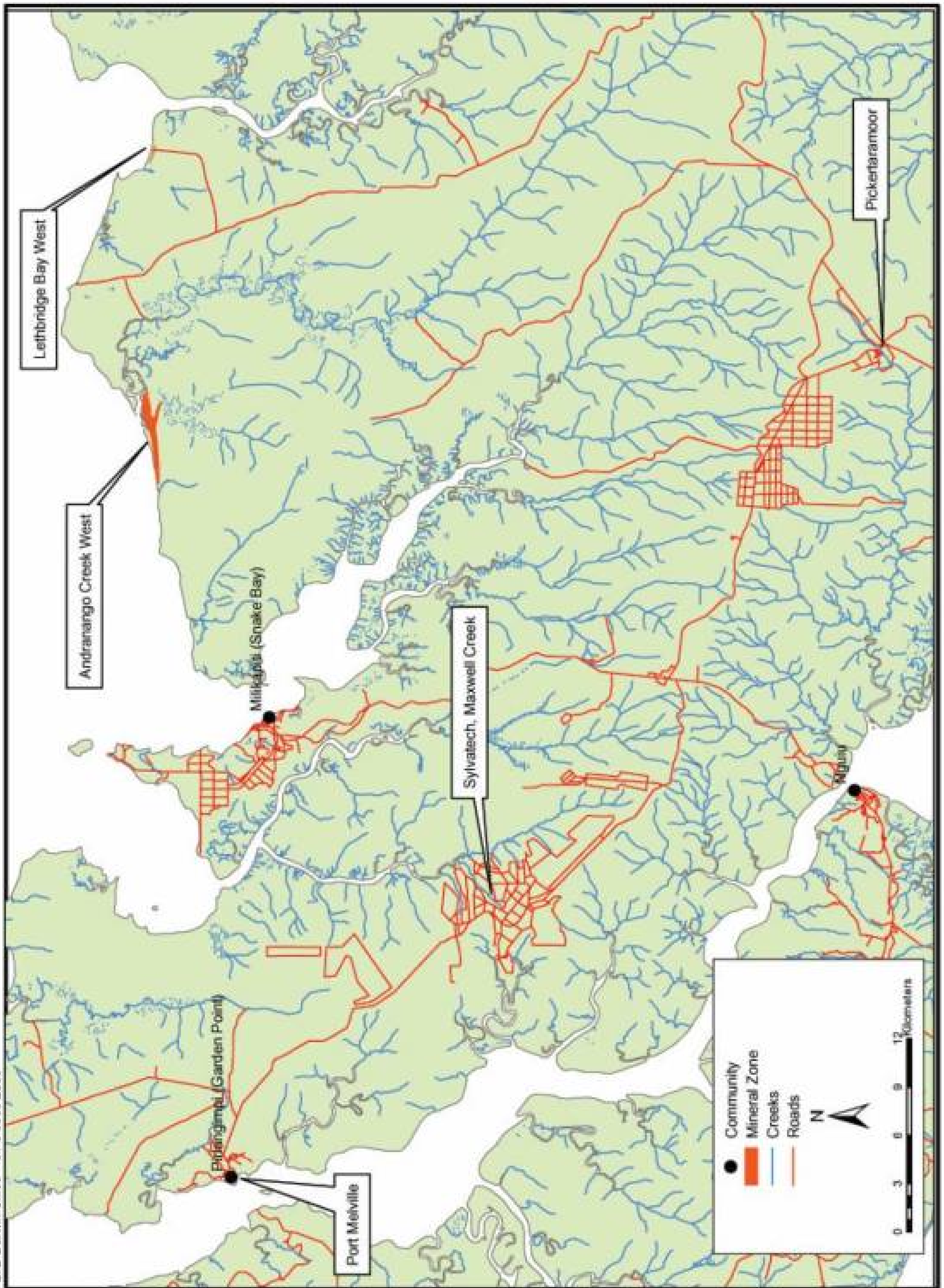
There would be increased construction work and vehicle activity, and associated possibility of erosion, particularly in the front coastal dunes which are important to the local geomorphology. There would also be the increased risk of contamination of chemicals and other hazardous substances to the marine waters which would impact the marine flora and fauna.

The alternative adopted was to upgrade the existing 4WD tracks to Andranangoo and Lethbridge to haul roads suitable for 60 t road train haulage from the mining areas. The haul roads would be utilised for all transport including the trucking of supplies, materials, chemicals and other hazardous substances, vehicles and machinery for the mine operations and for transport of HM to the port. All mine workers will also access the mine site via the haul road, either from other parts of the Tiwi Islands or for offshore staff, by utilising the airport at Pickertaramoor.

Fuelling areas

It was initially proposed that fuel for plant machinery and haulage road trains was to be located primarily at the mine sites at Andranangoo and Lethbridge. It is now proposed that fuel will primarily be stored at the fuel storage areas at Port Melville and Maxwell Creek (Figure 1.5), which are managed by AFD. This will significantly reduce the frequency and quantity of fuel that needs to be transported from the Port to the minesites.

Using the refuelling facilities already constructed at Port Melville will avoid the need to construct new facilities, and provide for greater control and management of hydrocarbons.



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Job	42213693		Matilda Minerals	Figure 1.5
Prep. By	JD	19 Oct 05	MINERAL SANDS PROJECT - DRAFT EIS	URS
Chk.d By	JM	19 Oct 05	**LOCATION OF FUEL DEPOT, PORT MELVILLE AND MAXWELL CREEK**	
Revision No.		0		

1.8 Environmental assessment process

1.8.1 Northern Territory

This Draft EIS has been prepared in accordance with the requirements of the *Northern Territory Environmental Assessment Act 1982* and the Environmental Assessment Administrative Procedures under which the Act is implemented.

There are eight key phases in the NT environmental approval process:

1. **Notice of Intent (NOI).** An NOI for the project was submitted to the Northern Territory's Environmental Protection Agency (EPA) on 4 April 2005. The NOI outlined the scope of the proposed mineral sands mining operations and enabled the Minister to determine which level of assessment was required. The information within the NOI, and consultation with relevant agencies, also assisted the preparation of EIS Guidelines concerning matters to be addressed during the environmental assessment process.

2. **Determination of Level of Assessment**. There are two levels of formal assessment defined under the NT assessment process. A Public Environmental Report (PER) may be required to assist in assessing environmental impacts that are considered significant but limited in extent. An Environmental Impact Statement (EIS) may be required to assist in assessing environmental impacts that are considered significant, either in terms of site specific issues, off-site issues and conservation values, and/or the nature of the proposal. On 19 July 2005 it was determined by the Minister for Natural Resources, the Environment and Heritage that the level of assessment for the proposed mineral sands mining project would be an EIS.

3. **Public Review of Guidelines.** Draft guidelines covering issues to be addressed in the EIS were released for public comment on August 1 to August 15 for a 14 day public comment period. In September 2005, final guidelines were issued taking into account comments received from the community and Government agencies. The Draft EIS Guidelines are contained in Appendix A.

4. **Preparation of the Draft EIS.** Work began on the preparation of the Draft EIS in August 2005 in accordance with the EIS guidelines. This Draft EIS contains data already gathered by Matilda during the NOI and Draft EIS preparation and subsequent data gathering to fulfil the requirements of the Guidelines issued by the Minister.

5. **Submission of the Draft EIS and Public Review.** The Draft EIS has now been released for review to enable the public and government agencies to comment on the project. Notification of the display centres, submission procedures, and purchasing details have been advertised in local newspapers. The public and government agencies have not less than 28 days from the date of submission of the Draft EIS to submit comments to the EPA.

6. **Preparation of EIS Supplement.** Any comments received by the close of the public review period will be addressed in an EIS Supplement which will be prepared by Matilda and submitted to the EPA. The Draft EIS together with the Supplement will be reviewed by the EPA.

7. **Government Review and Decision.** Following review of the Supplement, the EPA will prepare an Environmental Assessment Report and Recommendations on the project's acceptability for the Minister's consideration. Following this, the Minister for Natural Resources, the Environment and Heritage will make a recommendation to the Minister for Primary Industries and Mines regarding the project's environmental acceptability and its compliance with the requirements of the *Environmental Assessment Act 1982*.

8. **Mining Approval**. As the project is a mining activity, approval will be given by the Minister for Primary Industries, Fisheries and Mines under the *Mining Management Act 2001*, once an approved Mine Management Plan is developed and appropriate securities have been put in place.

1.8.2 Commonwealth

In addition to the EIS procedures of the Northern Territory Government, under the Commonwealth Government's *EPBC Act 1999*, developments require assessment if they have the potential to affect one or more of seven Matters of National Environmental Significance (MNES), namely:

- World Heritage properties;
- National heritage places;
- Ramsar wetlands of international significance;
- Threatened species and ecological communities;
- Migratory species;
- Commonwealth marine area; and
- Nuclear actions (including uranium mining).

Actions that may have a significant impact on Commonwealth land, even if taken outside Commonwealth land, and actions taken on Commonwealth land that may have a significant impact on the environment generally, are also covered by the *EPBC Act 1999*.

A referral under the *EPBC Act 1999* was submitted to the Commonwealth Department of the Environment and Heritage (DEH) in relation to Matilda's Sand Mining Project on 25 May 2005. A decision was made on June 29, 2005 that the proposed development constituted a Controlled Action under the following sections of the Act:

- Sections 18 and 18A (listed threatened species and communities); and
- Sections 20 and 20A (listed migratory species).

Controlled Actions under the *EPBC Act 1999* are subject to final approval by the Commonwealth.

In July 2005 notification was received from the DEH that the project would be assessed through accreditation of the NT assessment process under the terms of the Bilateral Agreement between the Commonwealth and Northern Territory Governments.

1.8.3 Bilateral Agreement

Under the Bilateral Agreement between the Commonwealth and the NT Government, the terms of assessment are considered on a case-by-case basis. In this case the Commonwealth requested that it have input into the development of the Draft EIS Guidelines.

Once assessment is completed to the satisfaction of the NT Minister for Natural Resources, the Environment and Heritage, EPA will report its findings to DEH, who will then advise of their final decision within 30 business days of submission of EPA's recommendations.

However, it is noted that EPA will liaise with DEH through the approval process to ensure that both agencies are satisfied that all matters are being satisfactorily addressed throughout the process. Table 1.1 summarises the activities and timetable for the environmental impact assessment process under the *Northern Territory Environmental Assessment Act 1982,, EPBC Act 1999* and the Bilateral Agreement between the NT Government and the Commonwealth.

Table 1.1: Generic Activities and Timetable for the Assessment of an EIS under the Bilateral Agreement

NORTHERN TERRITORY ACTION	TIMING	AUSTRALIAN GOVERNMENT ACTION	TIMING
1. Proponent notifies the responsible Minister of a proposal including details (NOI).	OPEN	1. Proponent submits Referral.	OPEN
2. Responsible Minister notifies Minister for Natural Resources, the Environment and Heritage (the Minister) of the proposal.	OPEN	2. Determination on proposal being controlled action and notification to proponent and NT.	Within 20 business days.
3. Minister may require further information from proponent to assist in determining level of environmental significance.	Within 14 days.	3. Notification to NT Government on proposal being controlled action.	Within 10 business days of the decision on controlled action.
4. Minister determines the level of assessment and notifies responsible Minister and proponent that an EIS is necessary.	OPEN	4. Notification received from NT Government that proposal can be assessed under the bilateral agreement.	Within 10 business days of receiving notice of decision as controlled action.
5. Draft Guidelines for an EIS are prepared.	OPEN	5. Commonwealth provides input to Draft Guidelines.	OPEN
6. Draft Guidelines available for public comment and referred to advisory bodies.	Minimum 14 days.		
7. Minister finalises draft Guidelines, issues Guidelines to the proponent and directs the preparation of a Draft EIS.	Within 14 days of close of exhibition period.		
8. Draft EIS provided to EPA for review, prior to any approval to exhibit for public comment.	Minimum 2 weeks.*	8. Draft EIS provided to DEH for review, prior to any approval to exhibit for public comment.	15 business days.*
9. Proponent lodges Draft EIS with the Minister (Minister can determine a date for submission).	OPEN		
10. Draft EIS advertised for public comment and circulated for government advisory body comment.	Not less than 28 days	10. A minimum of 20 business days to meet Commonwealth public consultation requirements.	Minimum 20 business days.

NORTHERN TERRITORY ACTION	TIMING	AUSTRALIAN GOVERNMENT ACTION	TIMING
11. Public and government advisory body comments forwarded to proponent.	As soon as possible		As soon as possible
12. Proponent prepares Supplement to Draft EIS and submits Supplement to Minister, (date can be determined, usually open.)	As soon as possible		
13. Supplement to Draft EIS circulated to advisory bodies for comment.	Within 14 days.	13. Comment on Supplement provided to NT Government.	
14. Minister can request further information.	Within 21 days of supplement lodgement.	14. DEH can request further information.	Within 21 days of supplement lodgement.
15. Preparation of assessment report and recommendations based on draft EIS, Supplement and comments received. (Minister can extend period after consultation with the proponent.)	Within 35 days of supplement delivery.	15. NT Government sends draft assessment report and recommendations to DEH for review regarding whether Commonwealth concerns are adequately addressed.	Allow 10 business days.*
16. Minister forwards assessment report and recommendations to the Australian Government for final determination.	Within 10 days of acceptance of the assessment report by the Minister.		
		17. Commonwealth Minister for the Environment and Heritage determines whether or not to approve the proposed action under the EPBC Act and, if approved, any associated conditions. This process is likely to involve some further discussions with the proponent.	Within 30 business days of receipt of NT assessment report.
		18. Commonwealth Government notifies proponent and NT Government of determination on approval of the action.	

Notes

* not a statutory timeframe.

NB Public holidays do not count as business days.

1.9 Relevant Government legislation and policies

1.9.1 Legislation

Beyond the *Northern Territory Environmental Assessment Act 1982* and the *EPBC* Act *1999* there are a number of other pieces of Northern Territory legislation that may be relevant to the proposed sand mining project:

Northern Territory Legislation

- *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*
- *Aboriginal Land Rights (Northern Territory) Act 1976*
- *Bushfires Act 1980*
- *Dangerous Goods Act 1981*
- *Environmental Assessment Act 1982*
- *Fire and Emergency Act 2004*
- *Heritage Conservation Act 1991*
- *Litter Act 1972*
- *Local Government Act 1993*
- *Mining Act 1980*
- *Mining Management Act 2001*
- *Motor Vehicles Act 1949*
- *Motor Vehicles (Standards) Regulations - Australian Vehicle Standards Rules*
- *Northern Territory Aboriginal Sacred Sites Act 1989*
- *Parks And Wildlife Commission Act 2004*
- *Planning Act 2003*
- *Public Health Act 1952*
- *Radiation (Safety Control) Act 1999*
- *Radioactive Ores and Concentrates (Packaging and Transport) Act (2002)*
- *Soil Conservation and Land Utilisation Act 1980*
- *Territory Parks and Wildlife Conservation Act 2001*
- *Traffic Act 1949*
- *Waste Management and Pollution Control Act 1998*
- *Water Act 1991*

- *Water Supply and Sewerage Act 1988*
- *Weeds Management Act 2001*
- *Work Health Act 1986*
- *Plant Diseases Control Act 1979*
- *Biological Control Act 1986*

Commonwealth Legislation

- *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*
- *Aboriginal Land Rights (NT) Act 1976*
- *Assessment of Site Contamination NEPM 1999*
- *Environment Protection and Biodiversity Act 2000*
- *Industrial Chemicals (Notification and Assessment) Act 1989*
- *Motor Vehicle Standards Act 1989*
- *National Strategy for the Conservation of Australia's Biological Diversity 1996*
- *Native Title Act 1993*
- *Ozone Protection and Synthetic Greenhouse Gas Management Act 1989*
- *Parks and Wildlife Conservation Act 2005*
- *National Strategy for the Conservation of Australian Species and Communities Threatened with Extinction 1996*

1.9.2 Matilda Minerals Environmental Policy

Matilda Minerals Ltd. has an Environmental Policy in place that includes a broad policy statement, and a number of objectives. The purpose of the policy is to provide direction to all employees, contractors and external stakeholders associated with Matilda's operations.

A copy of the signed environmental policy is included below.

MATILDA MINERALS LTD.

DRAFT REVISED ENVIRONMENTAL POLICY

Policy

The prime objective of Matilda Minerals Ltd. is to develop the culture, protocols and procedures to ensure the integrity of the environment for all employees, contractors and external stakeholders associated with our operations.

Objectives

- To be committed to continual improvement of environmental management throughout all facets of Matilda's operations
- To act with cognisance to regulatory and ethical standards as would be expected with economically and ecologically sustainable development
- To encourage workforce awareness of environmental management and promote positive personal environmental attitude in the workplace
- To be responsive and responsible with regard to establishing environmental credibility with external stakeholders and regulatory bodies
- To encourage and propose internal and external research to reduce environmental impacts and improve long term rehabilitation and reclamation success within the realms of economically and ecologically sustainable development

Bruce Maluish

Managing Director

1.9.3 Other codes of management

Exploration Management Plans

The Department of Primary Industries, Fisheries and Mines (DPIFM) regulates Matilda's exploration activities through conditions on mining tenements and licences. In order to adhere to these requirements, Matilda implements appropriate environmental management measures in conformance with the Environmental Policy presented above, through an Exploration Mine Management Plan (Exploration MMP) and corresponding EMP.

The purpose of the EMP is to identify the key environmental aspects and outline corresponding management requirements. The programs describe how the environmental aspects of the project are to be managed in order to achieve Matilda's policy and output requirements.

The EMP includes a description of the pre-existing biophysical and social environments, and provides a baseline record of environmental conditions against which any changes arising from the activities of the project can subsequently be compared. It also serves to identify and separate any existing environmental condition or degradation from any future impacts that may result from Matilda's operations. The areas covered by the EMP are:

- Exploration activity;
- Weeds management;
- Feral animals management;
- Fire management; and
- Rehabilitation.

1.10 EIS structure

This EIS has been submitted for public review in a structure that both addresses the Draft EIS Guidelines prepared by OEH (Appendix A) and allows for easy interpretation of the issues and impacts that have been identified for the Matilda Tiwi Islands Mineral Sands Project. The EIS is set out as follows:

Executive summary

The Executive Summary provides a brief overview of the project, its potential environmental and social effects, and the proposed mitigation strategies.

Introduction

This section provides a general introduction to the report outlining the proponent, background, proposed project and associated benefits and justifications. It also includes a description of the alternatives and

options considered during the project planning phases, and a description of the EIS process and bilateral agreement under which the proposal will be assessed. This section also contains relevant legislation and policies including Matilda's Environmental Policy and the existing Exploration MMP and EMP.

Project description

This section provides a detailed description of the Project, including all aspects of the mine construction, operations and processes, use of materials, development of infrastructure, as well as workforce, management, maintenance and administrative requirements.

Description of existing environment and potential impacts

These sections provide in-depth descriptions of the existing environment in which the project will be located. The existing environment is described with reference to climate, land systems, air and noise, soils, flora, fauna, surface water and groundwater, etc. These sections also identify the potential environmental impacts and management measures associated with each environmental value or issue described. Both the positive and negative impacts have been analysed.

Risk assessment

This section provides a Preliminary Environmental Risk Assessment of the proposed construction, operation, decommissioning and closure activities. It addresses the environmental issues in context to ensure they are considered based upon their significance and priority. The risk assessment methodology used is based on the requirements of the Australian Standards AS/NZS 4360:2004 and AS/NZS 4360:1999 for Risk Management.

The outputs of the risk assessment are presented in tabular form and will be incorporated into the mine Environmental Management System (EMS) and associated Environmental Management Plans (EMPs).

Environmental management systems and plans

This section outlines how the EMS will be developed, from a strategic perspective.

The EMS will be developed based on the AS/NZ ISO14001 Environmental Management System standard. It will include a series EMPs to address issues assessed as being significant during the impact and risk assessment process. For the purposes of this EMS, draft EMPs have been developed to demonstrate the strategies and safeguards Matilda intends to put in place to manage its environmental impacts and how these will be monitored and reviewed overtime. These EMPs will be further developed over time to include requirements that are identified during the EIS and assessment process and the results of monitoring programs to be implemented during the proposed operations.