

Titleholder & Operator	MZI Resources Ltd
Tenement Manager/Agent	Austwide Mining Title Management Pty Ltd
Titles/Tenements	ML24511
Mine/Project Name	Lethbridge Bay West
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Personal author(s)	Steve Harrison
Corporate author(s)	MZI Resources Ltd
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250 000 K map sheet	Melville Island
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Contact details Postal address	PO Box 3011 East Perth WA 6892
Fax	08 9328 9911
Phone	08 9328 9800
Email for further technical details	Stephen.harrison@mzi.com.au
Email for expenditure	Stephen.harrison@mzi.com.au

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ABSTRACT

This annual report covers ML24511 (local area Lethbridge Bay West) located on the north coast of Melville Island in the Northern Territory. During the reporting period no mineral sand exploration work was completed on the tenement because it is considered to be exhausted following the completion of mining in October 2010. No further exploration is required to define mineralised zones.

This report summarises the location, title history, access to the area, physiography and geology. Work in on the tenement during the period 5 December 2015 to 4 December 2016 was focussed on rehabilitation monitoring. A study was undertaken to assess erosion and dieback of the area late in the reporting detail, with no expenditure or technical information being available at the time of reporting.

Results and expenditure from the study will be available in the upcoming reporting period.

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1. LOCATION, TITLE HISTORY AND ACCESS

The tenement is located on the north coast of Melville Island in the area defined as the Tiwi Islands, approximately 50km north of Darwin as shown in figure 1. The islands are wholly within the Tiwi Island Aboriginal Land Trust administered by the Tiwi Land Council ("TLC"). Matilda Minerals signed an agreement with the TLC on 19 December 2003 which set conditions for the exploration and mining development activity and MZI has worked under the agreement since it acquired the tenement.

The first tenement owner Matilda Minerals Ltd ("Matilda") was admitted to the Australian Stock Exchange on 15 September 2004. Matilda's objective was to explore and mine small to medium sized heavy mineral deposits which are rich in zircon and rutile, have low clay content, little or no overburden, a small environmental footprint and require low capital expenditure to develop. The potential deposits on the Tiwi Islands met these criteria.

During September 2008 the previous tenement holder Matilda Minerals Ltd was placed into administration due to cash flow problems coupled with a collapsed wharf at Garden Point. In July 2009, Stirling Zircon Pty Ltd purchased the Tiwi Island assets from the administrators of Matilda Minerals and then on sold the assets to Olympia Resources Ltd (now renamed to MZI Resources Limited).

The tenement was awarded on the 5th December 2005. Based on a minable reserve of 190,250 tonnes at 7.5% heavy mineral concentrate containing approximately 52% zircon, 34% rutile and minor leucoxene and ilmenite heavy minerals the project was expected to have a mine life of approximately 6 months. Mining and processing operations commenced at the ML 24511 "Lethbridge Bay West" in July 2010 and were completed in October 2010. Total production by MZI was 11,094 tonnes of concentrate from 118,329 tonnes processed. The economic mineralisation within ML 24511 has been mined with only mineralisation within environmental buffers remaining.

Since completion of mining in October 2010 MZI has rehabilitated the tenement and continued with weed control and regrowth monitoring. In 2013 an infill tree planting program was conducted by personnel from the Milikapiti Nursery and followed up with an inspection mid-year which resulted in the observation the infill planting was successful.

Environmental investigation has determined groundwater has not been negatively impacted by mining as reported previously.

2. TENURE

This report covers ML24511:

Tenement number	Date granted	Date expiry	Area	Report due
ML24511	05/12/2005	04/12/2030	909.4 ha	2 February

(See figures 1 and 2)

3. PHYSIOGRAPHY

The climate of the Tiwi Islands is tropical monsoonal, with warm dry winters and hot wet summers. The annual average rainfall is 1200mm – 1400mm in the eastern part of Melville Island to 1800mm – 2000mm in the north-west of Melville Island and north of Bathurst Island. The majority of the rain falls between December and April under the influence of the northwest monsoons. Temperatures range from a mean of 35°C to 21°C in summer, and 26°C to 18°C in winter.

The topography of the islands is characterised by relatively low relief, dominated by partially dissected plateau rising to 100m above sea level, interspersed with broad valleys, riverine lagoons and estuarine tidal flats. The coastline varies from more exposed low cliffs and beaches to large estuaries and extensive tidal flats.

The vegetation is consistent with a tropical savannah regime, dominated by dense eucalypt and acacia woodland in the hinterland and more prominent coastal fringe, while melaleuca (paperbark) forests predominate along the watercourses. Mangroves proliferate around tidal flats, while casuarina trees and pandanus palms fringe the coastline.

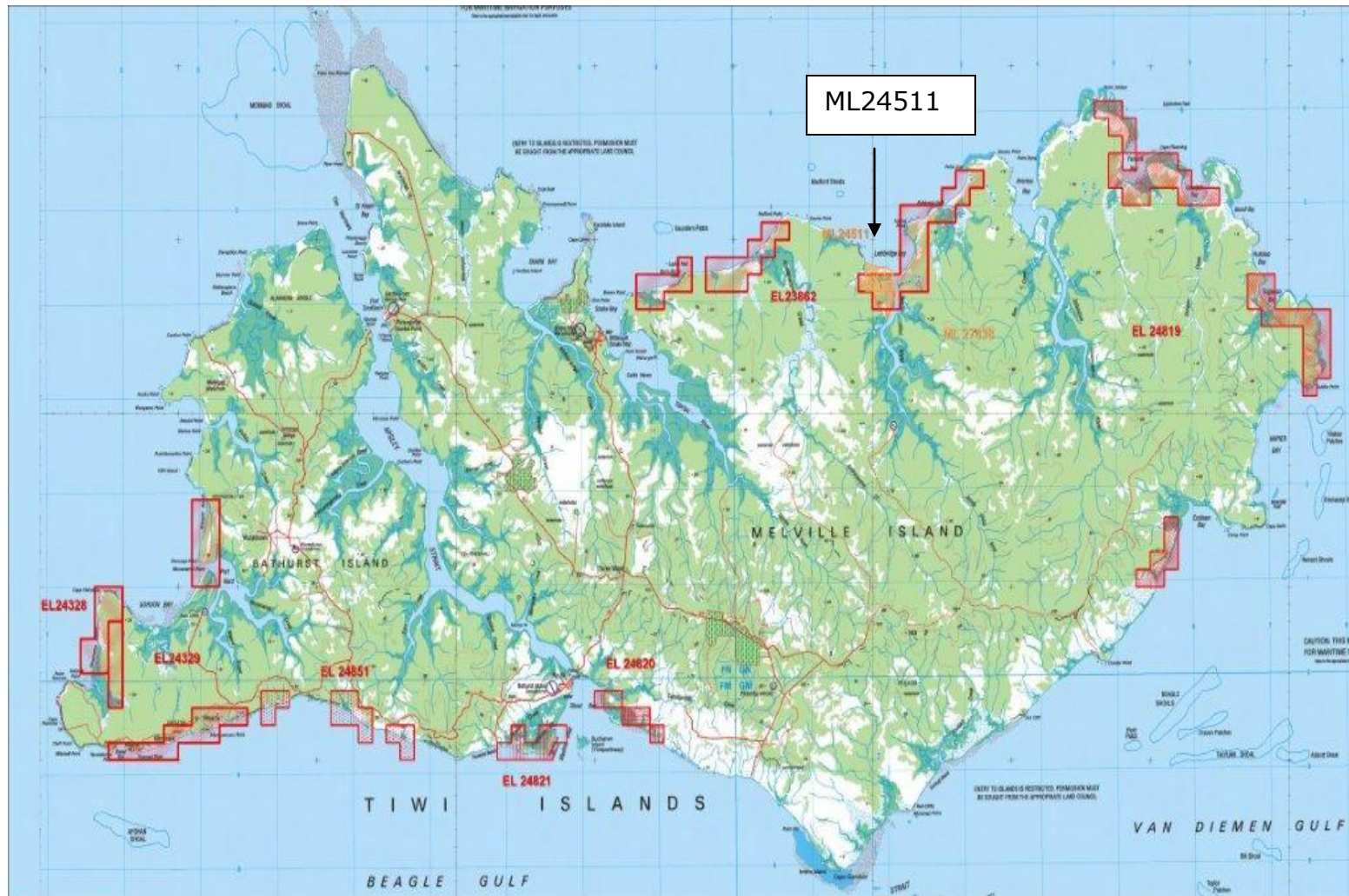
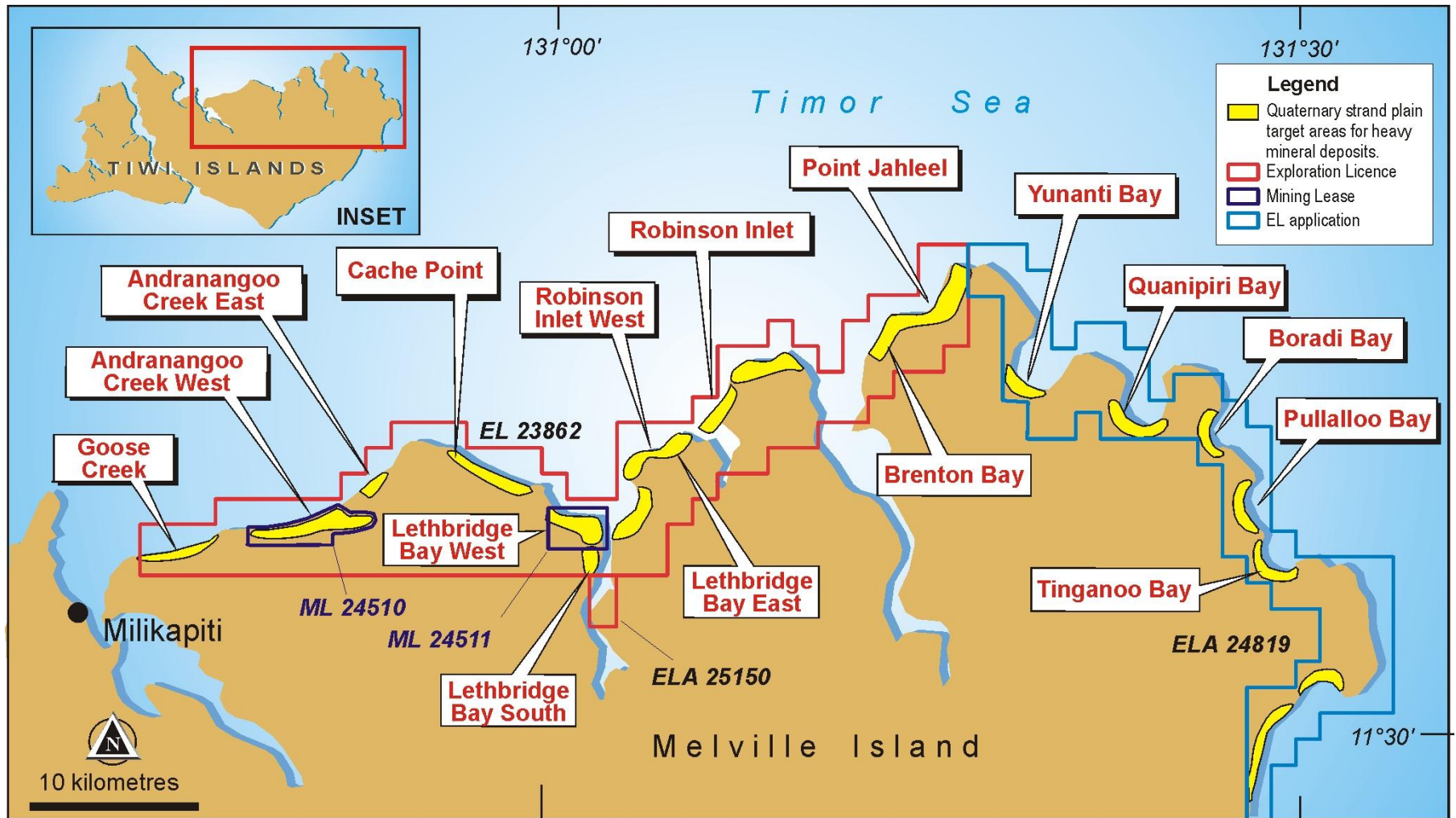


Figure 1 ML 24511 (Lethbridge Bay West) location Tiwi Islands



Tiwi Islands Project, Melville Island North East Tenements and Prospect Locations

Figure 2 ML 24511 (Lethbridge Bay West) Location Melville Island

4. GEOLOGY & GEOMORPHOLOGY

The following discussion of the geology and geomorphology has been extracted from Coxhill and Baxter 2009 'Tiwi Island Review' an unpublished report. The oldest rocks exposed on Bathurst and Melville Islands are represented by the Upper Cretaceous Moonkina Member. This formation consists of fine to very fine sub-labile sandstone, along with interbedded claystone, grey carbonaceous mudstone and siltstone, of shallow marine to deltaic derivation. The Moonkina Member is exposed at the base of coastal cliffs, particularly along the southern coastline of Bathurst and Melville Islands, and in lower lying portions of the hinterland.

The Moonkina Member is unconformably overlain by the Tertiary Van Diemen Sandstone, which dominates the geology of the Tiwi Islands. This formation comprises a friable, white to yellow, medium to coarse-grained quartzose sandstone with subordinate intercalations of grey carbonaceous mudstone and siltstone of fluvial to paralic derivation. The Van Diemen Sandstone broadly dips very gently to the north, becoming thicker in the process, with the unit exposed over a 60m vertical interval at Cape Van Diemen at the extreme north-western tip of Melville Island.

Both the Moonkina Member and Van Diemen Sandstone are disconformably to unconformably overlain by unconsolidated Quaternary fluvial, paralic, deltaic and littoral deposits. The most economically significant of these are the Pleistocene age littoral quartzose sands associated with the paleo-shoreline. Holocene (recent) littoral deposits have accumulated along the present coastline, variously abutting or transgressing the Cretaceous, Tertiary and Pleistocene deposits.

The Van Diemen Sandstone dominates the geomorphology of both Bathurst and Melville Island, forming low partially dissected and lateritised plateau, which are frequently capped by ferruginous to bauxitic pisolitic laterite accumulations. Low red cliffs, nick-points and platforms of Van Diemen Sandstone are developed along or adjacent to the more exposed portions of the coastline. In many instances the Tertiary sea cliffs are preserved from further erosion by accumulations of Pleistocene and/or Holocene littoral deposits. The Pleistocene sands are distinguishable from their Holocene counterparts by a mild orange, pink or red discoloration, and are invariably developed as one or more low amplitude, but strike persistent strandlines, with a wavelength characteristically in tens, rather than hundreds, of metres.

The Holocene deposits generally appear to be cleaner and marginally finer grained than their Pleistocene equivalents, incorporating a more significant proportion of coquina and coralline debris. Recent dating of the underlying shelly coquina at the Lethbridge deposit on Melville Island has recorded a carbon date of 2000 years old.

Along the north coast of the islands the present day beaches appear to have accumulated as strandlines directly against the Tertiary escarpment or as a composite strand plain successively comprising both the Holocene and Pleistocene deposits. Holocene dune deposits transgress the older strandlines on several beaches that are more exposed to the prevailing north-westerly monsoonal winds.

Heavy mineral ("HM") sand accumulations are present within both the Pleistocene and Holocene strands. The immediate provenance of the HM is the Van Diemen Sandstone itself, which contains thin laminae of HM identical in composition to the mineral sands. The Pleistocene and Holocene deposits have therefore been subjected to two cycles of erosion and deposition, being originally derived from the Lower Proterozoic igneous and metamorphic complexes of the Pine Creek Geosyncline on the mainland to the south.

Heavy mineral accumulations, be they Pleistocene or Holocene, appear to be best developed immediately adjacent to the Tertiary Van Diemen Sandstone escarpment, with successive strandlines being considerably and progressively more depleted in HM away from the scarp. This preferential accumulation of HM immediately adjacent to the Van Diemen Sandstone headland or scarp can be readily witnessed in the present day environment near Cape Fourcroy, located at the extreme south-western tip of Bathurst Island. Here, although limited in extent, HM species represent the only sand on a wave-cut platform at the base of an extensive cliff of Van Diemen Sandstone.

In summary, the geology of the area is dominated by a lateritic cap rock formed on the Van Diemen Sandstone sequence. Gentle folding has resulted in a coastal landscape of low cliffs (anticlines) and flooded beach synclines. In the synclines rivers have carried silt and sand forming flood plains and relatively short beaches near the river mouths with sand dunes stretching back from the existing high tide level approximately 300-600 metres. Mineral Lease 24511 is focussed on a sand spit located between the laterite scarp and the modern beach and takes in the whole of the coastal plain on this section of the coastline. Exploration in previous years has tested the complete area of coastal plain and there are no exploration targets remaining to be tested.

5. EXPLORATION

Rehabilitation monitoring was undertaken in May 2016 (see Appendix 1). An update to the MRCP was drafted in April 2016 based on monitoring from previous periods, with report finalisation in August 2016 (see Appendix 2). A site visit for inspection for EPBC compliance was undertaken with the Department of Environment in October 2016 (see Appendix 3). This work was not specific to ML24511 but also included ML24510 (Andranangoo) and ML27438 (Lethbridge South)

6. PLANNED EXPLORATION - 2016/2017

Ongoing rehabilitation monitoring is planned.

7. EXPENDITURE

During the reporting year it is estimated \$37,965 was spent on rehabilitation activities for Mineral Lease ML24511.

8. RESOURCE REVIEW LETHBRIDGE BAY WEST

No economic resource is remaining following mining in 2010.

9. CONCLUSION

Rehabilitation monitoring, an EPBC compliance inspection and an update to the MRCP were completed during the reporting period.

10. REFERENCES

Coxhill,S. and Baxter,J. Tiwi Island Review unpublished report October 2009