



Annual and Final Technical Report

Exploration Licence 32434

1 April 2023 – 4 April 2024

Title Holder	Enigma Mining Limited
Project Operator	Enigma Mining Limited
Title	EL32434
Title Name	Moonlight East
Project Name	Moonlight
Report Author	Tivan Limited
Tenement Manager/Agent	AMETS
Date of Report	30 May 2024
Target Commodity or Commodities	Vanadium
Datum/Zone	GDA94/Zone 53
1:250 000 Map Sheet	Daly Waters SE5301
1:100 000 Map Sheet	Middle Creek 5465 Hidden Valley 5464
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- ☐ Tivan Limited

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Australian Mining & Exploration Title Services

1 Abstract

This is the Final Surrender Report for EL32434. It presents a summary of previously-reported exploration over the life of the title since grant on 1 April 2021, and a description of work conducted during the reporting period from 1 April 2023 to cessation of title on 4 April 2024. EL32434, along with EL32433, comprised the Moonlight Project, approximately 85 km west of Daly Waters. EL32434 was intended to have been the subject of a focused program of exploration to assess the potential of the vanadium-rich lateritic duricrust. Exploration over the life of the title included desktop studies, including detailed assessment of previous exploration. During the most recent reporting period five soil samples, two stream sediment samples and five rock chip samples were collected and analysed, and aerial imagery was purchased. In 2023 the Company announced that it was now recognising its Speewah (WA) Project as Tivan's flagship project, and was prioritising its development planning as the core mission of the Company. Given the priority focus on Speewah, the Company made the decision to relinquish EL32434. Enigma Mining Limited surrendered all rights and interest in EL32434 on 27 March 2024; cessation of the title occurred on 4 April 2024.

2 Copyright

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3 Introduction

This is the Final Surrender Report for Exploration Licence (EL) 32434 (the title). It presents a summary of previously-reported exploration over the life of the title since grant on 1 April 2021, and a description of work conducted during the reporting period from 1 April 2023 to cessation of title on 4 April 2024. The title was held and operated by Enigma Mining Limited, a wholly-owned subsidiary of Tivan Limited (Tivan, or the Company).

Up until 31 March 2023 EL32434 was reported on in Group Report (GR) 575, along with EL32433, comprising the Moonlight Project (the Project).

3.1 Physiography and Access

EL32434 was located approximately 85 km west of Daly Waters and 200 km south of Katherine, Northern Territory (see Figure 1), and covered an area of 238 blocks, or 783.99 km². Access to the title from Daly Waters was via the Stuart and Buchanan Highways, then via a series of dirt roads and farm tracks (see Figure 2). The title area is relatively flat-lying, and lies between approximately 230 and 300 m AHD. EL32434 was transected by a number of creeks (see Figure 2).

3.2 Tenure

Title details are shown in Table 1.

Table 1: EL32434 Title Details

Tenement ID	Holders	Grant Date	Cessation Date	Area
EL32434	Enigma Mining Limited	01/04/2021	04/04/2024	238 blocks 783.99 km ²

The title overlay parts of NT Portion 2724, a Perpetual Pastoral Lease (PPL) privately owned as Hidden Valley Station.

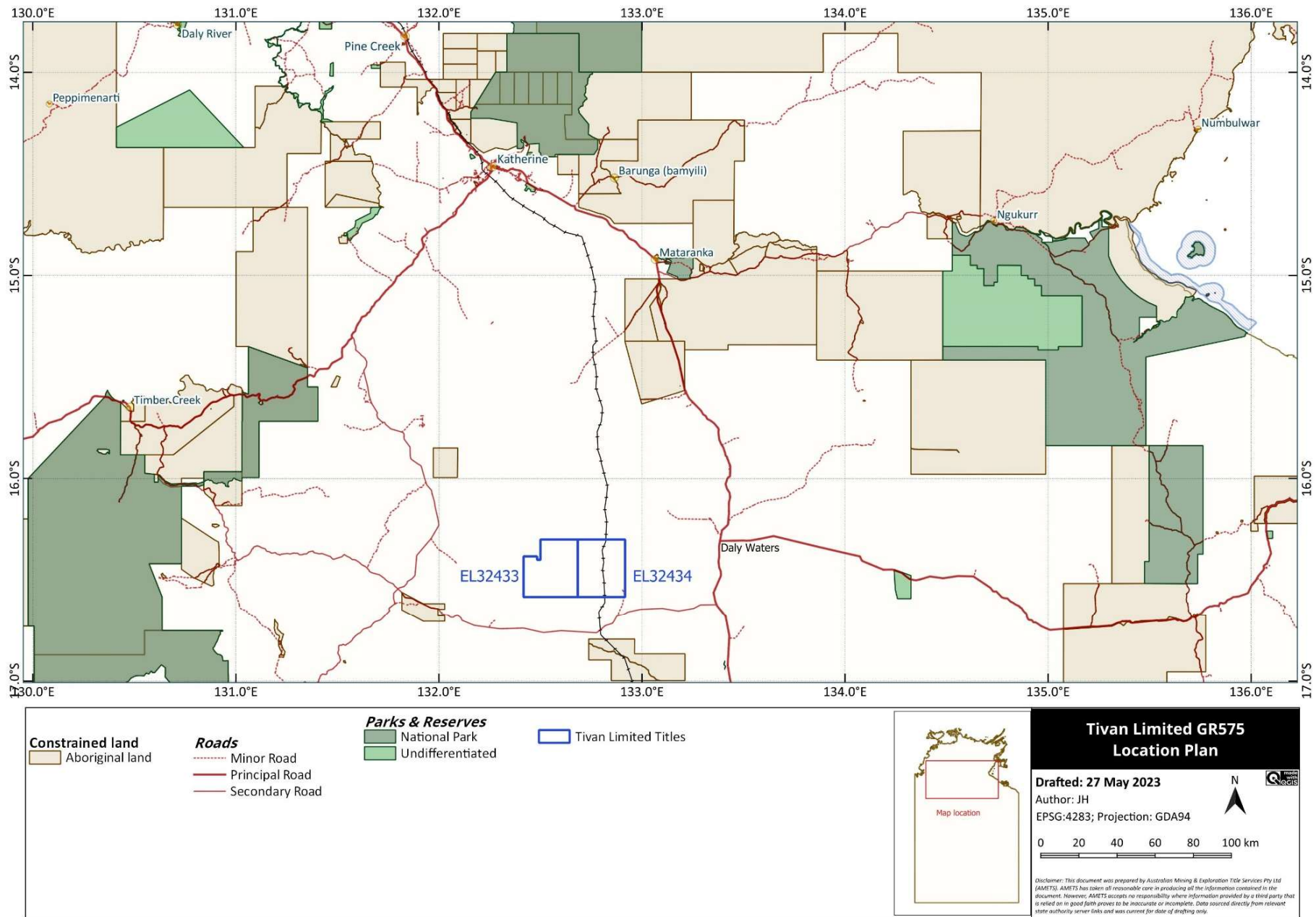


Figure 1: EL32434 title location

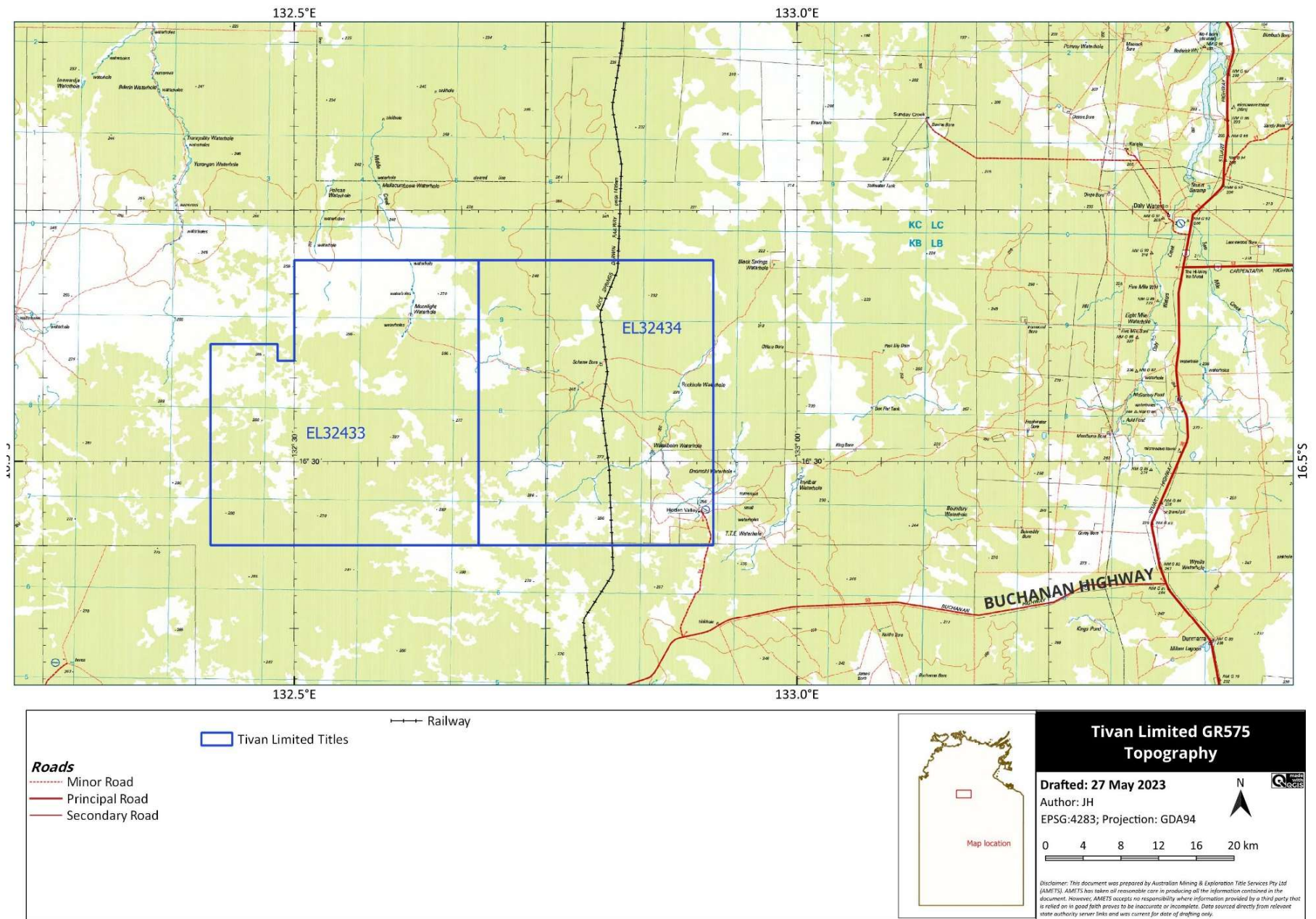


Figure 2: EL32434 topography

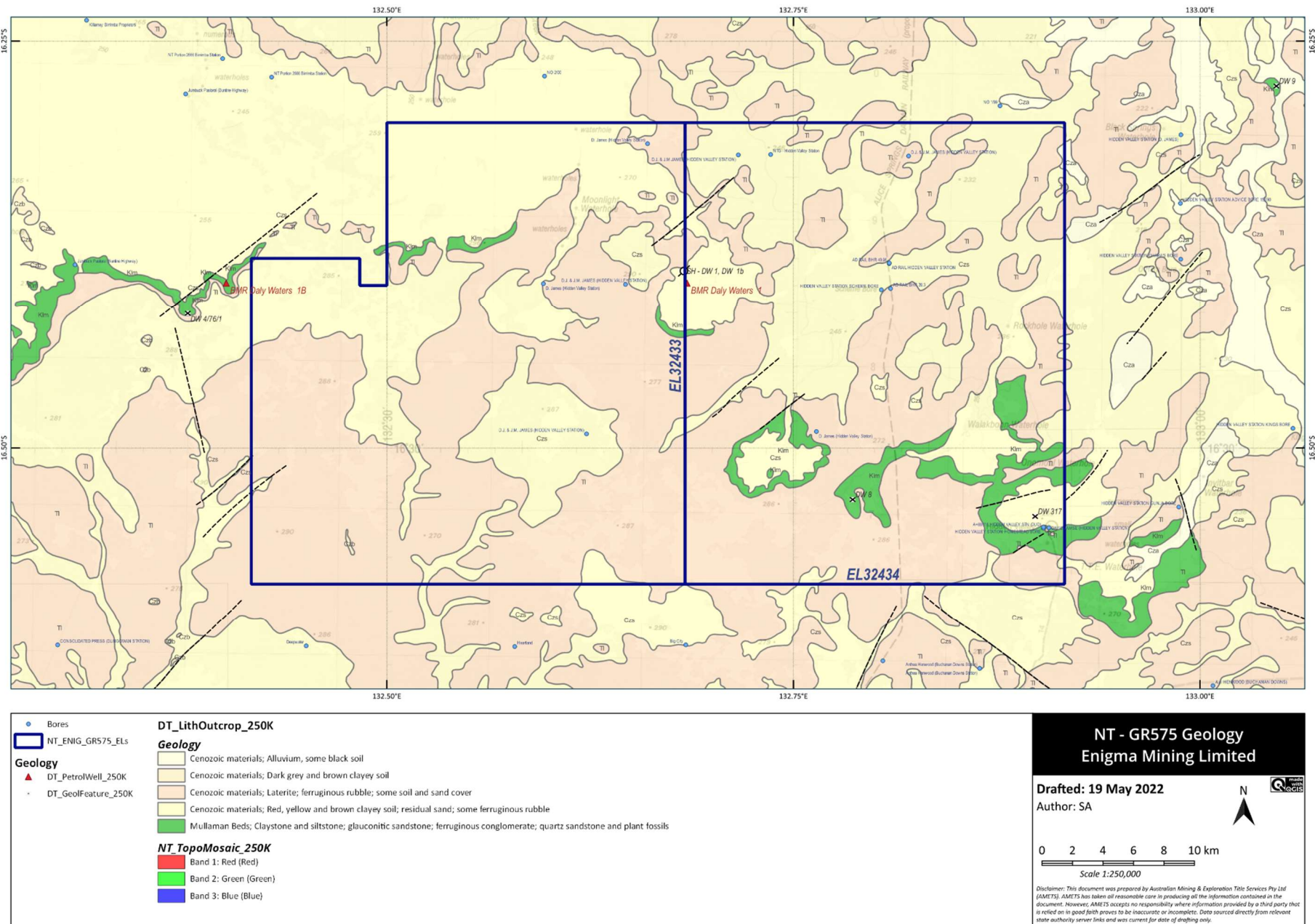


Figure 3: EL32434 geology

4 Geological Setting and Exploration Rationale

EL32434 was intended to have been the subject of a focused program of exploration, to assess the potential of the vanadium-rich lateritic duricrust.

The area formerly covered by the title lies within the western Carpentaria Basin, and contains widespread flat-lying and deeply weathered Lower Cretaceous siltstones (Mullaman Beds, Unit C) (see Figure 3). Being at the western end of the Barkly Tablelands, the topography is subdued, but low breakaways expose saprolitic siltstone on the flanks with the strongly ferruginous lateritic duricrust outcrop on the crests and immediate backslopes. There are large areas where thin (1-10 m) aeolian sand obscures a full weathering profile, with duricrust at shallow depth. This ferruginous zone was the exploration target, as it scavenges and concentrates the vanadium content from the sedimentary Cretaceous bedrock and weathering profile.

Historical exploration work (CR1971-0064) indicates that the fresh bedrock siltstones have a vanadium content of 0.03 to 0.05% V_2O_5 , which is upgraded 5 to 15 x in strongly ferruginous ironstones (to 0.3 to +0.6% V_2O_5). These grades, given sufficient tonnage, may be economic if a processing route to extract the vanadium from the ferruginous material can be discovered.

With more than 500 km² of exposed or thinly covered laterite within the Moonlight titles, and far more within the western Carpentaria Basin, even at a few metres thick the duricrust is likely to have potential for many tens of millions of tonnes. Effectively the Moonlight Project is analogous to the bauxite operations around Gove in the NT, and Weipa in Far North QLD, which mine a thin (2-5 m thick) aluminium-rich portion of the upper saprolitic weathering profile on Cretaceous sedimentary bedrock. At Moonlight, the iron-rich duricrust was to be targeted for its vanadium content.

The key to this speculative play is the ability to identify and economically extract any vanadium resource discovered. Tivan Limited owns a novel processing technology, the TIVAN® Process, which was developed to process titanomagnetite ore to extract vanadium, titanium dioxide and iron ore fines, and is in the process of planning a TIVAN Processing Plant in Darwin. While the Moonlight ironstones are haematite and not magnetite, it was considered that if a vanadium resource could be identified at the Project, the (potentially modified) TIVAN process could potentially process Moonlight material.

5 Exploration History

Parts of EL25712 overlaid parts of the central area of the Moonlight titles. EL25712 was held by Imperial Granite and Minerals Pty Ltd (Imperial) between 2007 and 2008, to explore for vanadium and gold. Imperial collected 14 rock chip samples, with a best result of 0.235% V_2O_5 , iron up to 41.7%, and titanium up to 0.535%. Imperial considered that its results suggested a possible underlying titanium/magnetite/vanadium mafic intrusive, but decided that the area was of no further interest, and surrendered the title.

Part of EL28027 covered part of the western end of the Moonlight titles. EL28027 was held by a variety of companies between 2010 and 2014; seven rock chip samples were collected. Elevated vanadium grades were identified within the iron-rich rises which occur in the area, however there was no direct correlation between vanadium grade and iron content of the samples. Nonetheless, the vanadium enrichment appears to be related to surficial weathering processes, where the vanadium is

concentrated by chemical mobilisation and then precipitated. There was no evidence that vanadium-bearing rocks such as basic intrusives were present in EL28027. The mode of occurrence of the vanadium-bearing material indicated that it is not a viable economic source of the metal.

6 Exploration Over Life of Title

Due to effects of the Covid-19 pandemic, during 2021-22 exploration over the title was limited to desktop studies, including detailed assessment of previous exploration.

During the 2022-23 reporting period a change in the Board of Directors occurred at Tivan Limited (parent company of Enigma Mining Limited, the title holder). Exploration was impacted as the new Board and management team reviewed the Company's strategy for the Moonlight titles to inform future planning.

Aerial photography and mapping were conducted on a regional basis.

7 Exploration Conducted during the Reporting Period

7.1 Surface Sampling

During the reporting period from 1 April 2023 to cessation of title on 4 April 2024, exploration activities over the title comprised:

- Rock chip sampling;
- Soil sampling; and
- Stream sediment sampling.

A field trip was undertaken during November 2023 to assess the title's potential for lateritic vanadium and rare earth elements (REE). Samples were collected from points of interest. Station roads were in good order, so the majority of the title was easily accessible.

Stream sediment samples were taken from creeks with visible evidence of disturbance from the previous wet season, and where transported sediments were visible.

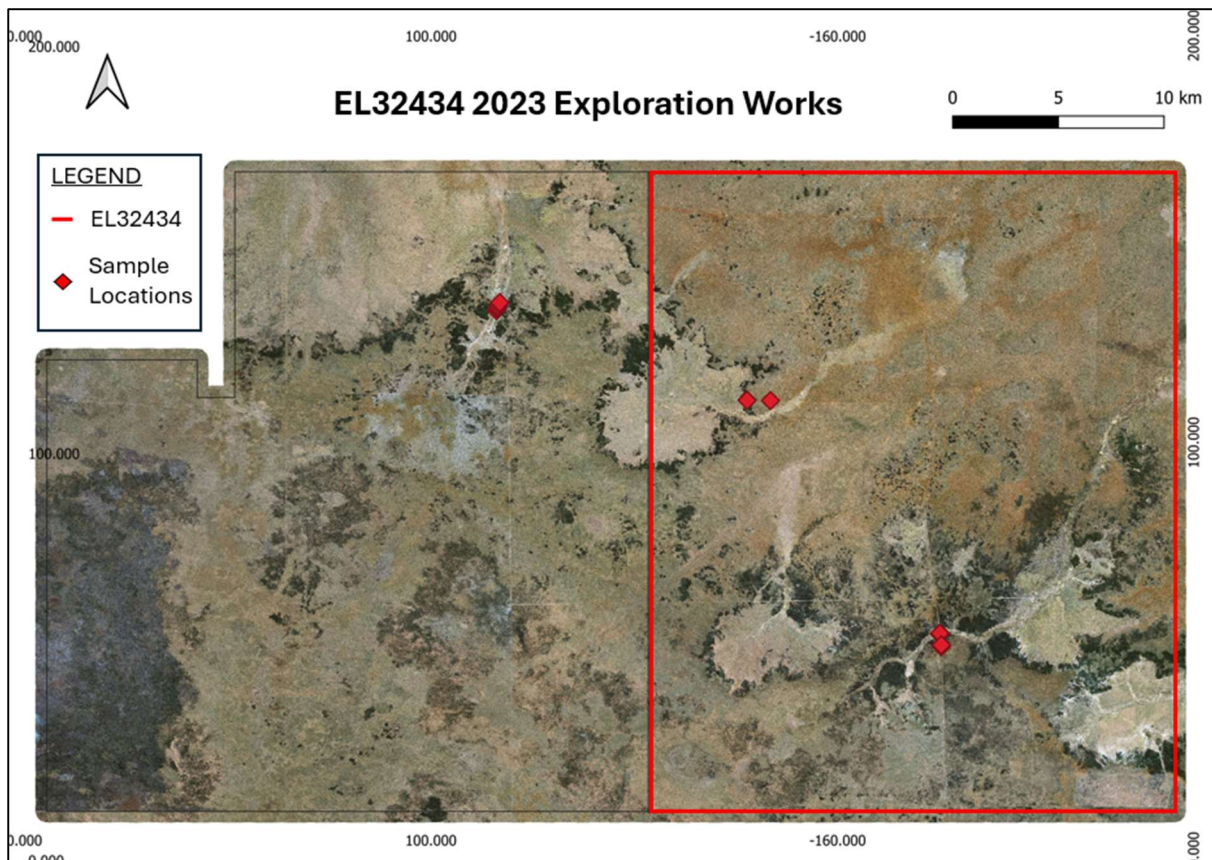
Soil sampling was conducted using a shovel to excavate a hole approximately 20 cm square. The upper 10 cm of surface soil was set aside, while the sample was collected from the hole down to a depth of 20 cm. Samples were unable to be sieved in the field, and were dried at the laboratory prior to analysis. Samples MS23002 and MS23003 were taken in the Ghan Railway cutting where the regolith profile was visible, and returned vanadium at grade

Sample locations are shown in Table 2 and Figure 4.

REE results are summarised in Table 3. Full results are attached. Laboratory reports are attached in Appendix 1.

Table 2: EL32434 Surface Samples

Sample ID	Type	X	Y	Latitude	Longitude	Zone
MSD23001	Stream Sediment	266517.9775	8173995.845	-16.50446298	132.8126282	53K
MSD23002	Stream Sediment	266528.8582	8173993.158	-16.50448832	132.8127298	53K
MS23001	Soil	266847.6209	8165580.377	-16.58051506	132.8148587	53K
MS23002	Soil	266595.3845	8173348.996	-16.51031379	132.8132873	53K
MS23003	Soil	266595.3095	8173349.311	-16.51031094	132.8132866	53K
MS23004	Soil	266484.588	8173973.767	-16.50465915	132.8123133	53K
MS23011	Soil	258366.5144	8185319.911	-16.40136049	132.7374902	53K
MRC23001	Rock Chip	266851.9667	8165585.031	-16.58047345	132.8148999	53K
MRC23002	Rock Chip	266856.3049	8165586.4	-16.58046152	132.8149407	53K
MRC23003	Rock Chip	257259.8295	8185323.237	-16.40121866	132.7271341	53K
MRC23004	Rock Chip	266546.5083	8173970.292	-16.50469661	132.8128927	53K
MRC23005	Rock Chip	266520.3645	8173995.234	-16.50446874	132.8126505	53K


Figure 4: Surface Sample Locations
Table 3: EL32434 Surface Sample REE Results

Sample ID	TREO (ppm)	TREO (%)	TREO-Ce (ppm)	LREO (ppm)	HREO (ppm)	CREO (%)	MREO (%)
MS23001	91.87	0.009	55.881	73.574	18.299	31%	28%
MS23002	253.80	0.025	97.182	234.789	19.014	14%	14%
MS23003	219.20	0.022	96.852	193.154	26.046	19%	17%
MS23004	237.20	0.024	127.383	217.854	19.348	19%	21%
MS23011	59.03	0.006	34.894	48.893	10.140	28%	26%
MSD23001	196.50	0.020	105.348	171.865	24.631	22%	22%
MSD23002	165.83	0.017	88.932	141.973	23.857	24%	22%

7.2 Aerial Imagery

Aerial imagery was purchased from Geoimage, a geospatial company specialising in high-resolution satellite imagery. The imagery purchased covers the area encompassing EL32433 and EL32434 at a 1.5 m resolution.

The imagery was utilised to assist with general reconnaissance of the title area, and to identify specific locations for sampling. This advanced method enabled the identification of multiple areas of interest, which were planned to be targeted in future exploration campaigns. The imagery was also used to identify access tracks and various other features such as streams and drainage basins.

Aerial images are attached in Appendix 2.

8 Rationale for Surrender

In 2023 the Company announced that it was now recognising its Speewah (WA) Project as Tivan's flagship project, and was prioritising its development planning as the core mission of the Company. Given the priority focus on Speewah, the Company made the decision to relinquish EL32434. Speewah hosts a world class vanadium resource, which results in Tivan having no further aspirations to conduct exploration for Vanadium. Enigma Mining Limited surrendered all rights and interest in EL32434 on 27 March 2024; cessation of the title occurred on 4 April 2024.

9 References

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