

EL28/1988
Mount Zeehan

Annual Report 2022-23

E Haley



Tenement Holder: Allegiance Mining Pty Ltd (Administrators Appointed, Receivers and Managers Appointed)

Tenement Operator: Avebury (Operating) Pty Ltd (Administrators Appointed, Receivers and Managers Appointed)

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Datum for all listed coordinates: GDA94

Date Published: 01/12/2023

EXECUTIVE SUMMARY

In the tenement year, a three hole, 685m drilling program was completed at the Denali Prospect, near Trial Harbour. Avebury (Operating) Pty Ltd (Avebury) was awarded a \$50,000 grant under the Tasmanian Government's Exploration Drilling Grant Initiative (EDGI) Round 7, to undertake this program.

While summarized below, the particulars of the Denali Drill program are contained in the *Final Drilling Project Report for Denali EDGI Holes* submitted to MRT in July 2023. This report will be available open source from January 2024.

The proposed project was for three diamond drill holes, totalling 600m (approximately 200m each). After extensive stakeholder negotiation and site preparation, drilling of the three holes (TH008, TH009 and TH010) was undertaken between April and June 2023.

Samples from all three holes were sent for assay, with results for TH009 pending. All three holes were analysed at MRT using the Hylogger, and these results, as well as selected LA-ICP-MS samples, are being further investigated by Avebury's sponsored CODES PhD candidate José Luis Barillas Díaz (Characterisation of the Avebury nickel deposits, Zeehan, Western Tasmania) as part of the Environmentally Sustainable Production of Critical Minerals Project, funded by the Australian Government's Regional Research Collaboration Program (Critical Metals Collaboration).

All three holes are cased with PVC for the option of future downhole geophysical surveys however going forward, Avebury plans to focus on targets closer to the mine.

In the next tenement year, Avebury plans to explore drill ready targets near the border of 4M/2022. These targets were identified and ranked during detailed analysis of the 2022 Mitre Geophysics processing of the 2011 VTEM survey. Once the company is out of receivership and under the management of a new owner, it is expected that a long-term exploration strategy including commitment to large scale geophysics projects will be developed.

The total expenditure for the year (excluding the \$50,000 grant) was \$234,675.

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FILE LISTING

Exploration Work Type	Filename	File format
Report	EL281988_202312_01_Report.pdf	<i>pdf</i>
Drilling	EL281988_202312_02_DG_1.xls	xls
	EL281988_202312_03_QAQC_1.xls	xls
	EL281988_202312_04_DG_1.xls	xls
	EL281988_202312_05_QAQC_1.xls	xls
File Verification Listing (this file)	EL281988_202212_06_FileListing.xls	xls

INTRODUCTION

EL28/1988 is a Category 1 Exploration License, held by Allegiance Mining Pty Ltd, which since the previous reporting period has been acquired by Mallee Resources, owner of the Avebury Nickel Mine. Mallee Resources is currently under Receivership, and at time of publishing, the sale process from the Mine and associated tenements is underway.

The lease covers 25 square kilometres and is located approximately 9 kilometres southwest of Zeehan. The main body of the lease (including the Denali Prospect) is southwest of Avebury, but a narrow strip also exists to the north of the Avebury mine lease (figure 1). The Avebury Mine leases (now 4M/2022) were excised from EL28/1988 and adjacent Allegiance exploration licences in 2003 and 2007, with the surrounding licences (EL22/1997 and EL37/2003) amalgamated into EL28/1988 in 2013.

The tenement is predominantly Future Potential Production Forest (Crown), with a belt of Regional Reserve along the coastline. The area is prospective for Avebury style nickel mineralization, which is the focus of the company. However, it also contains known tin deposits. Figure 1 shows the location of the tenement in Tasmania, in relation to the Avebury Mine Lease.

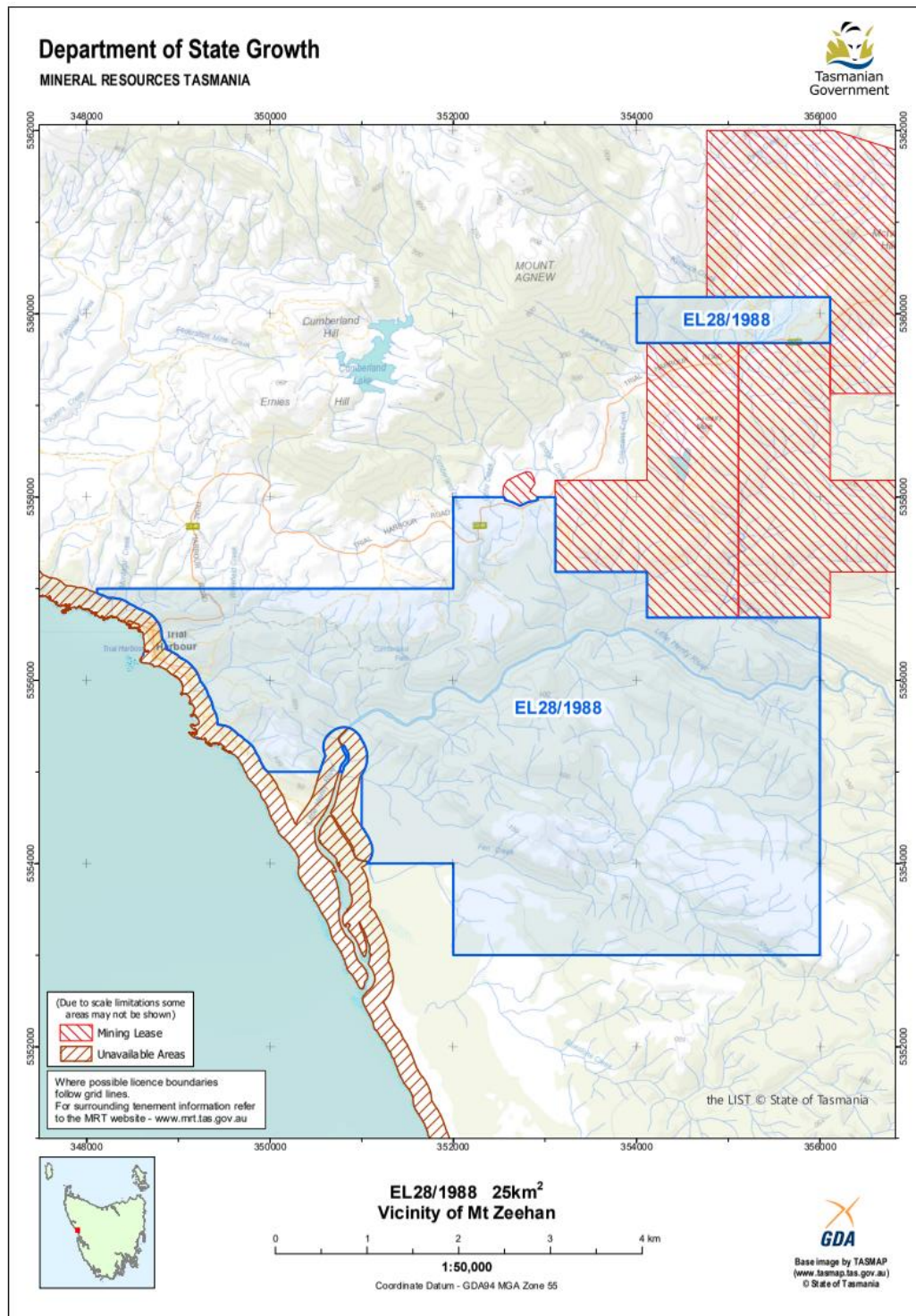


Figure 1. Locality Map of EL28/1988 with the Avebury Mine Lease to the northeast.

REVIEW OF PREVIOUS WORK

Complete examinations and summaries of historic work carried out on the tenement area have been outlined in previous Company annual reports.

A comprehensive report on the Denali Drill Program was submitted to MRT in July 2023 as part of the EDGI requirements.

During the tenement year, Avebury exploration staff undertook further review and ranking of the 2011 VTEM anomalies highlighted in the 2022 Mitre Geophysics report. This will be discussed in the following section.

EXPLORATION COMPLETED DURING THE REPORTING PERIOD

In the tenement year, three diamond drill holes totalling 685m were completed. Further detailed review and target ranking of 2011 VTEM anomalies identified in Mitre Geophysics 2022 report was undertaken, with near-drill ready targets identified in the northwest area of EL28/1988, near the southern edge of 4M/2022.

Denali Drilling

A comprehensive report detailing the methods, results and conclusions of the Denali Drill Program undertaken in 2023 on EL28/1988 is entitled *Final Drilling Project Report for Denali EDGI Holes*, and was submitted to MRT in July 2023. Downhole logs (collar locations, downhole survey, lithology and structure are included as appendices in the July report. The following summary is taken from the July report:

“The first hole, TH008 was drilled on an azimuth of 018° true north (T), through highly deformed serpentised ultramafics, and terminated at 254.7m in hornfelsed volcanoclastics.

The rig was then turned eastward to drill TH009 from the same pad as TH008 on an azimuth of 104T°. The hole was drilled into serpentised ultramafics, through hornfelsed volcanoclastics, and terminated at a target depth of 200.5m in clastic sediments. Numerous faults were encountered at various intervals.

The third hole, TH010 was drilled 50m to the north of TH009 and TH008, into hornfelsed volcanics with numerous small zones of serpentinised ultramafic and small igneous dykes. It was terminated at 230.3m in clastic sediments. Although not highly prospective for nickel, TH010 contains various other base metals and valuable data in regard to the

genesis and modelling of the Avebury Deposit (5 km to the northwest) and will continue to be interrogated by Avebury's PhD student as part of the Australian Centre for Ore Deposit and Earth Sciences (CODES) critical metals research collaboration."

Figure 2 below shows the location of the completed three holes.



Figure 2. Collar location and traces of the Denali drill holes, with surface lithology.

Denali Assays and Hyperspectral Data

As part of the Denali drilling program, 95 samples were selected for assay. Some of the results for these assays were recently received and will be sent to MRT for as an addendum to the appendices for the *Final Drilling Project Report for Denali EDGI Holes* (July 2023) once all results are received. However, as no results were available at the time of finalizing the EDGI report, they are instead discussed herein.

51 samples from TH008 were sent to SGS Perth for sample preparation and analysis by a selective suite of ICP-OES. The hole was intensely sampled, with continuous samples taken at 1m intervals from 203m to end of hole at 254m. Assay results returned between 18 and 50% Fe for most of the hole, with Fe dipping to 6% at around 230m, in the least altered Oonah sediments. This was coincident with low Mg and increasing Ca.

Very little Ni was detected in throughout TH008. A very low-grade intercept of 4m @ 0.44 % was encountered from 205m to 209m, peaking at 0.48% from 206 – 207m. This was coincident with Co of 208ppm and Cr of 1919ppm.

22 samples from TH010 were selected for full suite ICP-MS assay including fire assay for Au+PGEs, as a collaboration between Avebury and CODES critical minerals study. These samples were sent to ALS in Burnie, and results interrogated by CODES PhD candidate José Luis Barillas Díaz.

22 samples from TH009 were prepared at SGS Avebury (dried, crushed and pulverised) and have been sent to SGS Perth for analysis by a selective suite of ICP-OES. Results for TH009 had not been received at time of writing this report.

As part of the EDGI requirements, the core from TH008, TH009 and TH010 was surrendered to MRT. This core has been scanned with MRT's Hylogger. As part of his PhD, Díaz will analyse some of the Hylogger data from the holes. Preliminary results indicate that some of the garnet zonation in TH008 is of interest to the genesis of the Avebury deposit.

Detailed VTEM review and Target Ranking

Through the work on the IP and DHEM on EL28/1988 in 2022, Mitre Geophysics was prompted to reassess the VTEM survey that was conducted by MMG in 2011 (Callaghan, 2011; McGilvray and Denwer, 2011). Investigation revealed that the data was originally only assessed to a superficial level: Five of around 30 anomalies were addressed, with only one of them successfully tested. The data was therefore reassessed, and all conductors were modelled as 3D plates. This resulted in 46 anomalies, 18 of which were ranked as well to moderately well constrained targets. Some of the anomalies required up to 6 plates for modelling. Several anomalies related to cultural features (e.g., Avebury Mine infrastructure) or seawater were identified, and plates were provided for these regardless. Figures 3 and 4 show an overview of all the VTEM anomalies.

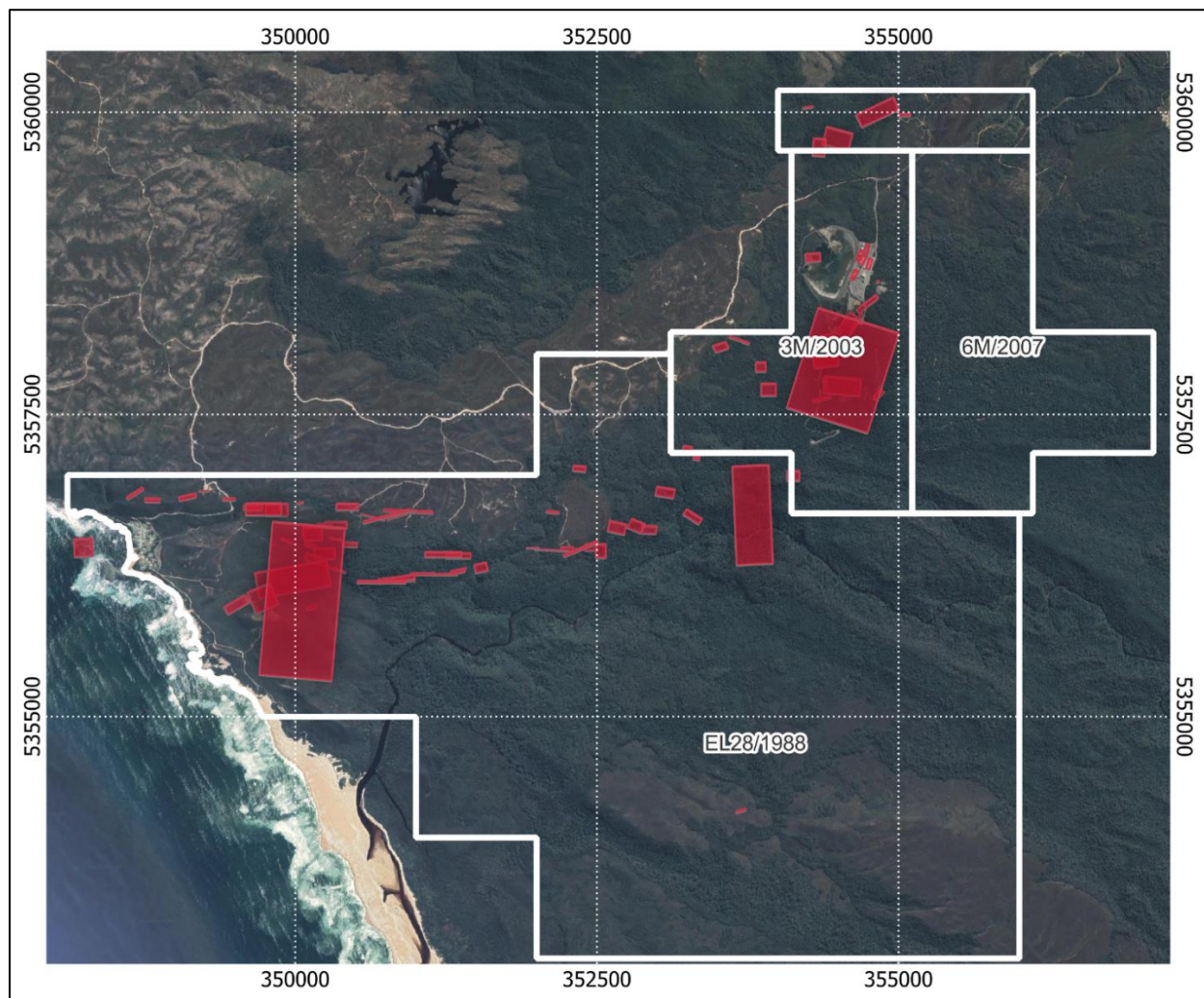


Figure 3. VTEM plates as modelled by Mitre Geophysics.

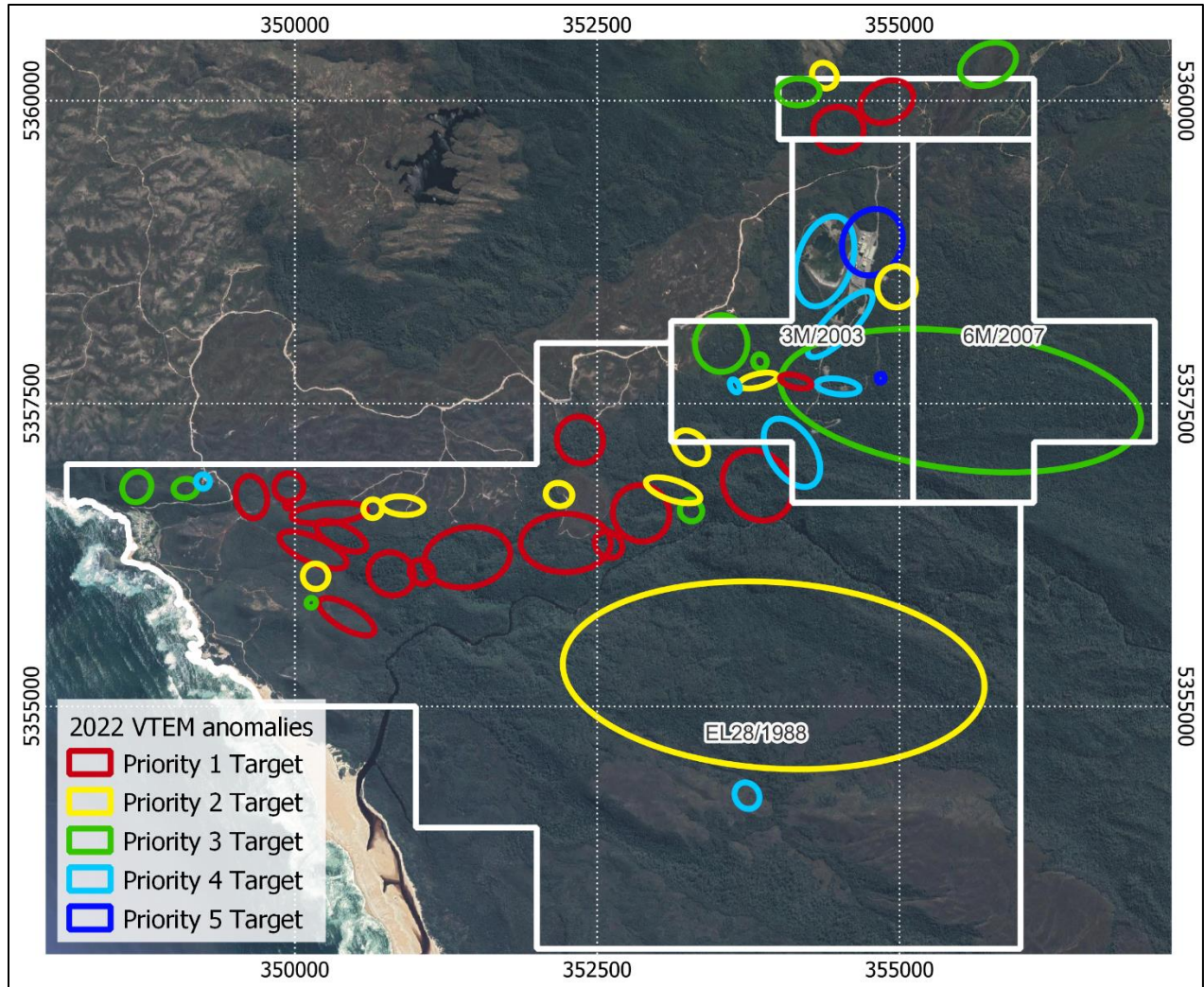


Figure 4. Identified VTEM anomalies ranked by Mitre Geophysics for confidence and prospectivity, overlain on Google Maps satellite image.

During the 2022 – 2023 tenement year, the numerous VTEM anomalies were summarised and prioritized by Avebury for follow up, focusing on an association with a magnetic high and proximity to known serpentinite from mapping or drilling. The anomalies were further interrogated and ranked in order of priority for drilling. Factors such as proximity to current mining operations, and ease of access factored into this ranking. Appendix A contains a summary of the anomalies and their rankings, and highlights the targets that are considered drill ready.

Figure 5 shows the highest ranked (near mine) VTEM targets on EL28/1988 in detail. These targets are considered drill ready, or near drill ready. Physical and virtual drilling methods are being considered, and the method and timing of drilling will be discussed with the new owners in the new tenement year.

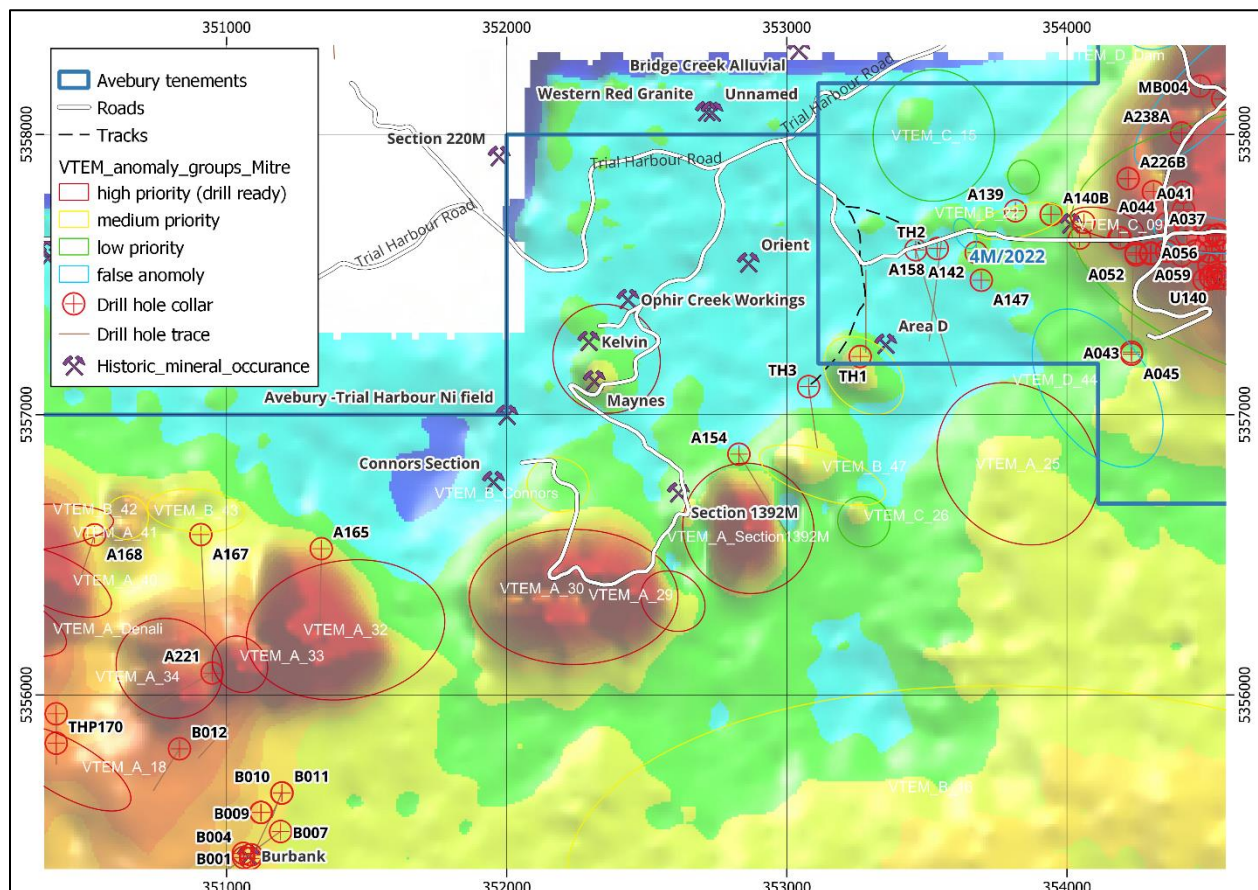


Figure 5. Detailed view of drill ready priority VTEM targets, with road access and existing drill holes shown.

The full results of the VTEM remodelling, including the comprehensive report by Mitre Geophysics can be found in the 2022 Annual Report.

CONCLUSIONS AND RECOMMENDATIONS

During the 2022 – 2023 tenement year, a three hole, 685m drilling program was completed at the Denali Prospect, near Trial Harbour. Avebury was awarded a \$50,000 grant under the Tasmanian Government's Exploration Drilling Grant Initiative (EDGI) Round 7, to undertake this program, and thus the core was surrendered to MRT at the conclusion of the program, with submission and reporting to EDGI guidelines.

The three Denali holes are cased with 50mm PVC casing for potential downhole geophysics in the future. Due to the high magnetite content of the entire TH008 and TH009 holes and surrounding area, DHEM may not yield useful results for these holes and is not a priority. DHEM for TH010 may provide valuable additional data and targeting to the north, and this option will be considered with future programs.

The core from the Denali program will continue to be analysed by CODES PhD student José Luis Barillas Díaz, with the results feeding into his work on the Characterisation of the Avebury nickel deposits, Zeehan, Western Tasmania, as part of the Environmentally Sustainable Production of Critical Minerals Project, funded by the Australian Government's Regional Research Collaboration Program (Critical Metals Collaboration). Díaz intends to conduct analysis of silica content and hydration to plot fluid flows in TH010, and conduct LA-ICP-MS on selected samples.

When assay results from the final Denali hole (TH009) are received, all three holes will be assessed together and will add to detailed interpretation of the Avebury Belt. From here, it is recommended that exploration be focused more towards the northeastern extents of the belt, with drilling to be undertaken nearer to the Avebury mine. Future drilling should also be based on the detailed analysis and target ranking of the remodelling of 2011 VTEM targets by Mitre Geophysics completed in late 2022.

It is strongly hoped that a planned detailed airborne gravity gradiometry survey can be undertaken for all Avebury's tenements in the 2024 – 2025 Tenement year. This survey would further refine the VTEM targets. Additionally, the high-resolution data would be acquired over the southern, more inaccessible areas of the Tenement (such as the Burbank prospect) which will lead to definitive answers on the viability of maintaining this part of the tenement.

PROPOSED EXPLORATION FOR FOLLOWING YEAR

The currently proposed exploration activities for the following year include:

- Detailed airborne gravity survey (including all Avebury tenements)
- Plan drillholes based on VTEM, AGG, and existing geological data
- Consider “Virtual Drilling” of targets.

At the time of writing this report, Avebury Mine and all Tenements, including EL28/1988 were in the process of sale. The above proposed exploration is therefore indicative only. The direction that the new owners wish to take for all Avebury tenements, including EL28/1988 is expected to be known by the end of first quarter 2024. This will be communicated with MRT via follow up communications and exploration work permits.

ENVIRONMENTAL MANAGEMENT

The three Denali drill pads were rehabilitated as per MECoP guidelines and have been periodically checked for vandalism and weeds. The three collars have been capped below the surface and are not visually marked (buried at 200mm depth). They have been surveyed by DGPS to within 2 cm, to be easily located should we wish to do DHEM or other down hole geophysics at any time during the life of the license. The rehabilitated southern pad (TH009) is shown in figure 6, below.



Figure 6. Rehabilitated Denali drill pad with ground levelled and collars buried.

EXPENDITURE

A total of \$229,675 was spent on EL28/1988 during the 2022 – 2023 tenement year, with \$186,277 of this spent as direct drilling costs on the Denali Program, and \$50,000 received in grants. The work commitments for the tenement year included the 600m Denali drill program, with assay and structural interpretation, and detailed review of the 2022 geophysical (VTEM) report with target ranking.

Expenditure for 2022 – 2023 blew out to almost double that which was forecast (and committed) for following reasons:

- Lengthy stakeholder negotiations added to time and wages spent preparing for drilling, and delayed drilling.
- Extensive track conditioning and maintenance was required.
- Delays in drilling resulted in the project running significantly over time, increasing fixed costs such as monthly hire of equipment.
- The time needed for detailed logging and reporting and daily travel to the drill site was greater than anticipated and resulted in significantly more wages being spent on the project.

EL28/1988 2022 - 2023 Expenditure	
Geology	
drill rig supervision, core collection, and on-site logging	\$10,632
core mark up, lithological and structural logging, specific gravity	\$29,075
modelling, cross sections, data analysis, interpretation and reporting	\$12,713
Geochemistry	
full suite assay of 22 samples	\$3,795
Drilling and Gridding	
drilling of TH008, TH009 and TH010	\$186,277
Less EDGI round 7 grant	-\$50,000
core trays, core blocks, sump barricading	\$927
Land Access	
stakeholder negotiation and community engagement	\$1,440
Rehabilitation	
rehabilitation of drill sites	\$1,030
Other	
track works	\$9,700
surveying of drillholes	\$2,239
rental fees	\$969
Administration	\$20,879
Total (Ex. GST)	\$229,675

Avebury proposes an expenditure of \$100,000 for the 2023 – 2024 Tenement year.

REFERENCES

Callaghan, T. 2011. Field investigation, unexplained VTEM anomalies, Avebury District, 2011. Prepared for MMG.

Denholm, J., 2022, EL28/1988 Mount Zeehan, Annual Report 2021-22. Avebury Nickel Mine.

Haley, E., and Denholm, J., 2023, EL28/1988 Mount Zeehan, Final Drilling Project Report for Denali EDGI Holes. Avebury Nickel Mine.

McGilvray, T., Denwer, K. 2011. Annual Report for the period ending December 2011. Prepared for MMG.

APPENDICES

Appendix 1. Summary and ranking of 2022 Mitre VTEM targets