

EL10/2019
RATTLER HILL, TASMANIA
SECOND ANNUAL REPORT
FOR THE YEAR ENDED
29 JUNE 2022

LICENSEE:
HALONA HOLDINGS PTY LTD

Prepared by:
S.J. Westbrook
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EXECUTIVE SUMMARY

This report is the Second Annual Report for EL10/2019, located approximately 5 km northeast of Ringarooma in eastern Tasmania (Figure 1). EL10/2019 covers 32 square kilometers of ground that is considered prospective for greisen-hosted tin mineralisation. Halona Holdings is targeting greisen-hosted Sn-Cu-Ag mineralisation associated with late, highly fractionated alkali granite phases of the Blue Tier Batholith (Mt Paris pluton) within the tenement. This report documents exploration activities completed over the 12 months ending 29th June 2022 (the Reporting Period).

With the tenement being under acquisition negotiations, exploration activity was limited to site field visits, but no new exploration data was generated during the reporting period. These negotiations are nearing completion, and it is expected that work programs will commence in earnest by the new owners subject a tenement transfer has been approved.

Total exploration expenditure for the tenement Year 2 was \$6,405. Expenditure over the first two years of tenure totalled \$17,960, meeting the minimum expenditure commitment of \$16,000.

Results from historical data review, target generation and first-pass reconnaissance work over within EL10/2019 in Year 1 are considered very encouraging. Tin mineralisation is widespread throughout the tenement and four priority exploration target areas have been generated to date.

Further reconnaissance and detailed mapping/sampling field work is recommended with priority target areas being the Bells Hill, Rattler Hill, Mammoth and Star of Peace prospects (and general area inclusive of these prospects). Focus of the work should be to investigate controls to mineralisation, extensions to known mineralisation and the potential for continuity of mineralisation between these zones.

Recommendations for ongoing exploration work in Year 3 of the licence include:

- Continued data compilation and review.
- Review and re-log any available drillcore held at MRT (Mt Paris, Bells Hill, Bald Hill / Rattler prospects).
- Geological mapping and sampling.
- Gridding over selected target areas to allow geochemical and geophysical surveys.

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LIST OF APPENDICIES

N/A

FILE LISTING

Exploration Work Type	Filename	File format
Report	EL102019_202206_01_Report	pdf
Drilling	N/A	
Surface sampling	N/A	
Other (Resource Modelling)	N/A	
File Verification Listing (<i>this file</i>)	EL102019_202206_02_File Listing	xls

1 INTRODUCTION

This report is the second Annual Report for EL10/2019, located approximately 5 km northeast of Ringarooma in eastern Tasmania (Figure 1). EL10/2019 covers 32 square kilometers of ground that is considered prospective for greisen-hosted tin mineralisation. This report documents exploration activities completed over the 12 months ending 29th June 2022 (the Reporting Period).

All maps and location coordinates contained within this report are presented in GDA94 datum format unless otherwise noted.

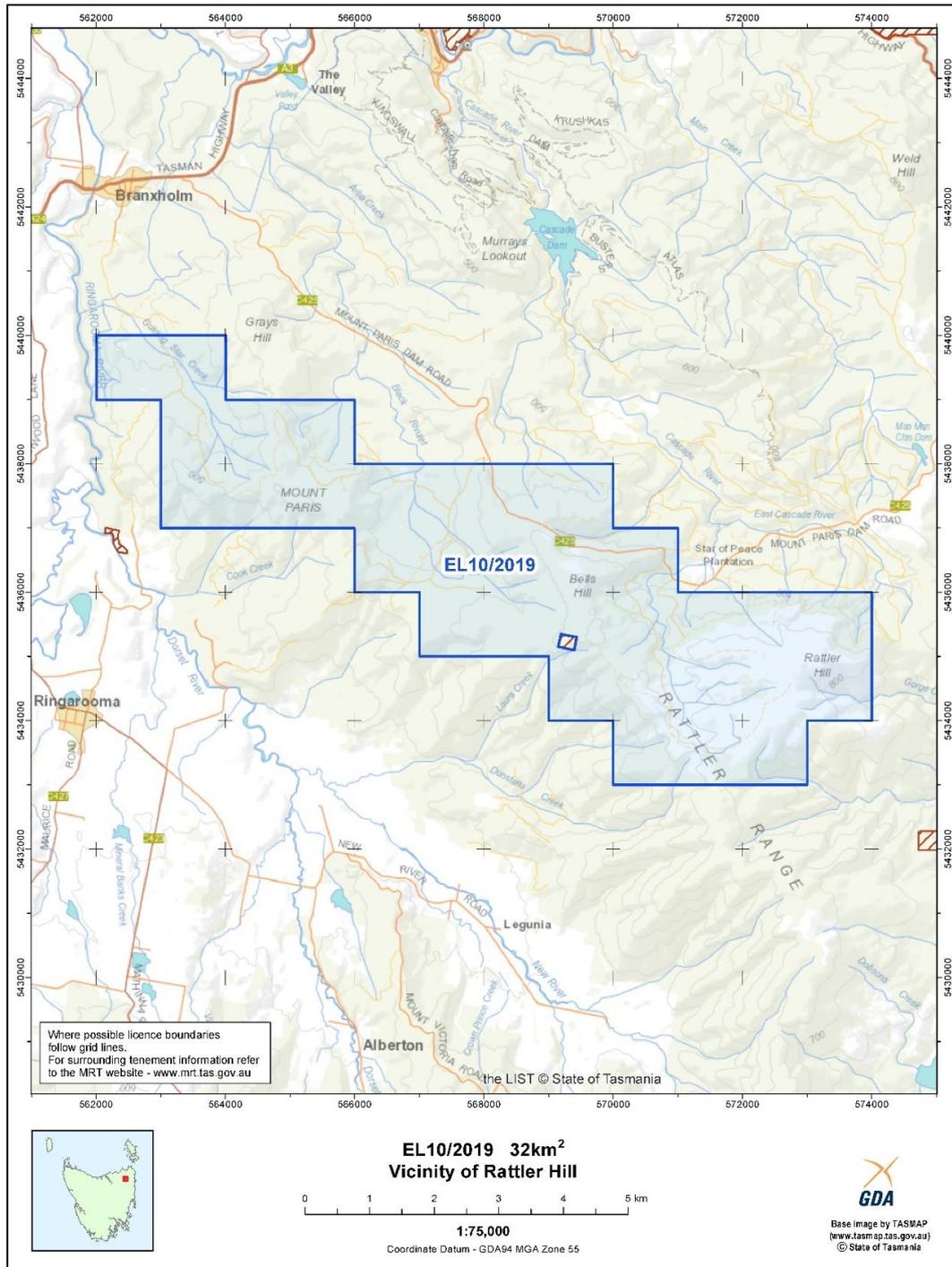


Figure 1. Location plan showing the EL10/2019 tenement area.

1.1 EXPLORATION RATIONALE

Halona Holdings is targeting greisen-hosted Sn-Cu-Ag mineralisation associated with late, highly fractionated alkali granite phases of the Blue Tier Batholith (Mt Paris pluton) in northeast Tasmania. The Blue Tier and Mt Paris region is well known for its historical tin mining fields. Despite considerable exploration potential, the Mt Paris area covered by EL10/2019 remains poorly explored in modern times.

1.2 GEOLOGICAL SETTING

The regional geology of NE Tasmania is dominated by an extensive basement of granitoid batholiths that were intruded into Ordovician-Lower Devonian aged marine sedimentary sequences of the Mathinna Supergroup (commonly known as the “Mathinna beds”) during Devonian times (between 395 and 368 Ma). The granitoids post-date regional folding of the Mathinna beds, which is correlated with the Tabberabberan deformation of eastern Australia. Emplacement was at a high level, with narrow metamorphic aureoles around the granites. The granitoids fall into four main types: granodiorite, biotite adamellite, biotite-garnet adamellite, and alkali-feldspar-(biotite-muscovite) granite. The last type, colloquially known as the “tin granite”, is strongly fractionated and commonly hosts tin (cassiterite) mineralisation. Field relations indicate that, generally, the granodiorite plutons are the oldest and the alkali-feldspar granite plutons the youngest.

The granitoid and Mathinna bed basement is unconformably overlain by flat-lying Permo-Triassic rocks of the Parmeener Supergroup. Exhumation and weathering during the Tertiary period resulted in widespread cover of Tertiary sand, gravel and clay deposits, accompanied by local basaltic volcanism. Sills of dolerite locally intruded the older rocks during the Jurassic.

The Blue Tier Batholith is the largest (40 x 70 km) of four major batholiths in Northeast Tasmania. It is dominated by I-type hornblende+biotite granodiorite and biotite adamellite-granite, with smaller plutons and sheetlike bodies of stanniferous S-type alkali-feldspar granite at Mount Paris, Lottah, Little Mt Horror and Mt Cameron.

The alkali-feldspar granites associated with tin mineralization are the youngest granitoid intrusive phases, dated at ~375-380 Ma by U-Pb isotopic ratios in zircon (McClenaghan, 2006). They are highly crystal fractionated S-type granites existing in the upper levels of the Blue Tier Batholith, and occupy about 10% of its area (Purvis, 1988). They are typically pale pink to cream coloured, equigranular to K-feldspar-porphyritic textured granites, composed of quartz, K-feldspar, albite and Ferich biotite, with accessory apatite, zircon and monazite, secondary muscovite, and rare topaz, fluorite, cassiterite and tourmaline.

According to the Geological Survey of Tasmania’s 1:25,000 scale maps, the Mount Paris pluton is composed of a fairly intricate complex of variably textured biotite+muscovite alkali feldspar granites/syenogranites. Mapping in the north-western quarter of the Mount Paris pluton delineated separate fine to coarse grained equigranular (Dgafe) and fine to medium grained feldspar+quartz porphyritic (Dgafq) varieties, but the greater part of the pluton is ‘undifferentiated’ (Dgafu). Its north-eastern side abuts monzogranite and granodiorite of the Poimena and Pyengana plutons, respectively.

The wall rocks around the northern western and southern perimeter of the Mount Paris pluton are contact metamorphosed sandstone-dominant turbidites of the Mathinna Beds. The

metamorphic aureole generally appears to be less than about one kilometre wide at surface. However, about a quarter of the pluton, particularly over the south-western half, is covered by metamorphosed Mathinna Beds in extensive roof pendants. This indicates that although the tin-bearing granitoids have been exposed to erosion since late Palaeozoic time and have shed considerable cassiterite into alluvial deposits in north-eastern Tasmania (Askins, 2007), the present level of erosion has not entirely unroofed the Mount Paris alkali granite pluton. Gerald Purvis (1988, quoting Young (1981) noted that the present topography at Rattler Hill at the south-eastern corner of the pluton largely reflects the original form of the granite suggesting relatively recent exhumation of a high level apophysis. Likewise, Nye (1933) considered the remnants of metasedimentary cover rocks at Mt. Paris to be 'of great economic importance' because it meant that 'practically the whole of the [tin] deposits in the cupola are intact and a small proportion only have been removed by denudation'.

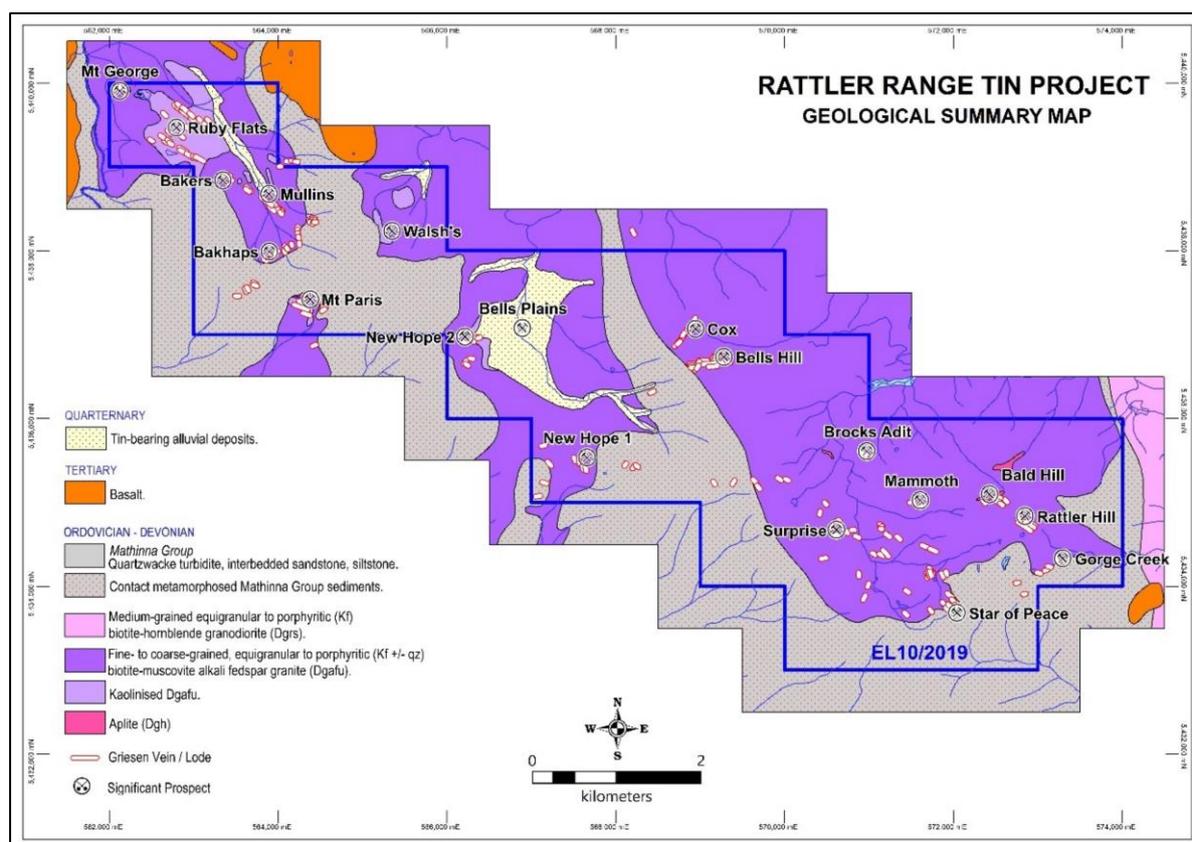


Figure 2. Geology map of the tenement area (adapted from the MRT 1:25,000 scale digital geology and other sources).

1.3 MINERALISATION STYLES

Primary tin and tin-tungsten mineralisation in NE Tasmania generally shows a close spatial relationship to the late-stage, fractionated muscovite-biotite granite bodies (“tin-granites”) of the Blue Tier batholith. Styles of granite-related tin-(tungsten) mineralisation of NE Tasmania can be broadly classified into three groups which are discussed below: 1) Greisen veins, pipes and sheets in granite; 2) Cassiterite stockworks in Mathinna Beds; and 3) Quartz-wolframite-cassiterite veins in Mathinna Beds.

1.3.1 GREISEN VEINS, PIPES AND SHEETS

Steeply-dipping greisen veins and pipes occur within and adjacent to the roof contacts of muscovite-biotite granites of the Lottah and Mt Cameron Sheets, and the Mt Paris Mass, particularly in association with roof irregularities (Groves et al, 1977). They are variable in

width and lateral extent, but generally occur as clusters. The smaller greisen veins commonly have a central fracture or quartz vein, about which the greisen is symmetrical. The greisens consist of quartz and muscovite in granular intergrowths, with no relict granitic textures preserved where the alteration is intense. Cassiterite is intergrown with quartz and muscovite but is more abundant as coarsely crystalline aggregates on fracture surfaces within the greisen veins and associated quartz veins. Sulphides occur in places.

The greisen veins are fracture-controlled, sub-vertical and commonly sheeted, appearing to have formed by alteration of granite along the pre-existing fractures. These fractured controlled systems commonly trend subparallel to the elongation of the batholith and individual plutons (Groves et al, 1977).

Sub-horizontal “sheets” of greisenised granite and greisen may occur within irregularities of the roof zone of muscovite-biotite granite-sheets either at the contact with other typically older granites and or at the roof contact with overlying Mathinna beds. Significant tin mineralisation roughly overlaps the limit of greisenisation and is commonly associated with minor molybdenite, chalcopyrite and fluorite. The main deposits of this Sheet-type occur in the Blue Tier (Lottah) tin field, e.g. the Anchor mine.

The dominant nature of mineralisation in a particular area appears to depend on the permeability of the capping rocks, and the formation or otherwise of jointing in the roof zone of the mineralising granite. Where extensive fractures existed in the roof zones, aqueous fluids may escape upwards, possibly with dilution from circulating meteoric waters, into the country rocks to form sheeted or stockwork vein deposits. The formation of joint systems in the muscovite-biotite granites prior to release of aqueous fluids may depend on the thickness of the emplaced bodies, and their depth of emplacement which will affect the onset of second boiling and the rise of aqueous fluid towards the roof (Groves et al, 1977). The larger and thicker Mt Paris Mass appears to be dominated by greisen vein mineralisation, whereas the smaller and probably thinner Lottah Sheets are characterised by lensoid sheets of greisenised granite and greisens (Groves et al, 1977).

1.3.2 CASSITERITE STOCKWORKS

The main cassiterite stockwork deposit is the Great Pyramid Tin Mine in the Upper Scamander area (Groves et al, 1977). Here fine grained cassiterite occurs in small fractures, and as the matrix to breccias in localised fault zones. The cassiterite is concentrated in fractured sandstone-quartzite beds in a faulted anticlinal structure. The deposit is probably genetically related to the Constable Creek Sheet to the north-west (Groves et al, 1977).

Similar, but smaller, deposits are present in the roof zone of the Mt Paris Mass to the north of Legunia. The deposits appear to occur in more competent beds within the Mathinna Beds, where discrete anastomosing fractures allowed the ready passage of mineralising fluids.

1.3.3 QUARTZ-WOLFRAMITE-CASSITERITE VEINS

Vein-like deposits of quartz-wolframite-cassiterite in NE Tasmania occur mainly above the roof of muscovite -biotite granite sheets or cupolas. The major deposits of this type in eastern Tasmania are at Aberfoyle (total production 2.1 Mt at 0.91 % Sn and 0.28 % WO₃) and Story's Creek (total production 1.1 Mt at 1.09% WO₃ and 0.18% Sn), but small deposits are also known at Upper Scamander and Gladstone. The veins appear to occupy discrete fractures in the contact aureole of the underlying granites.

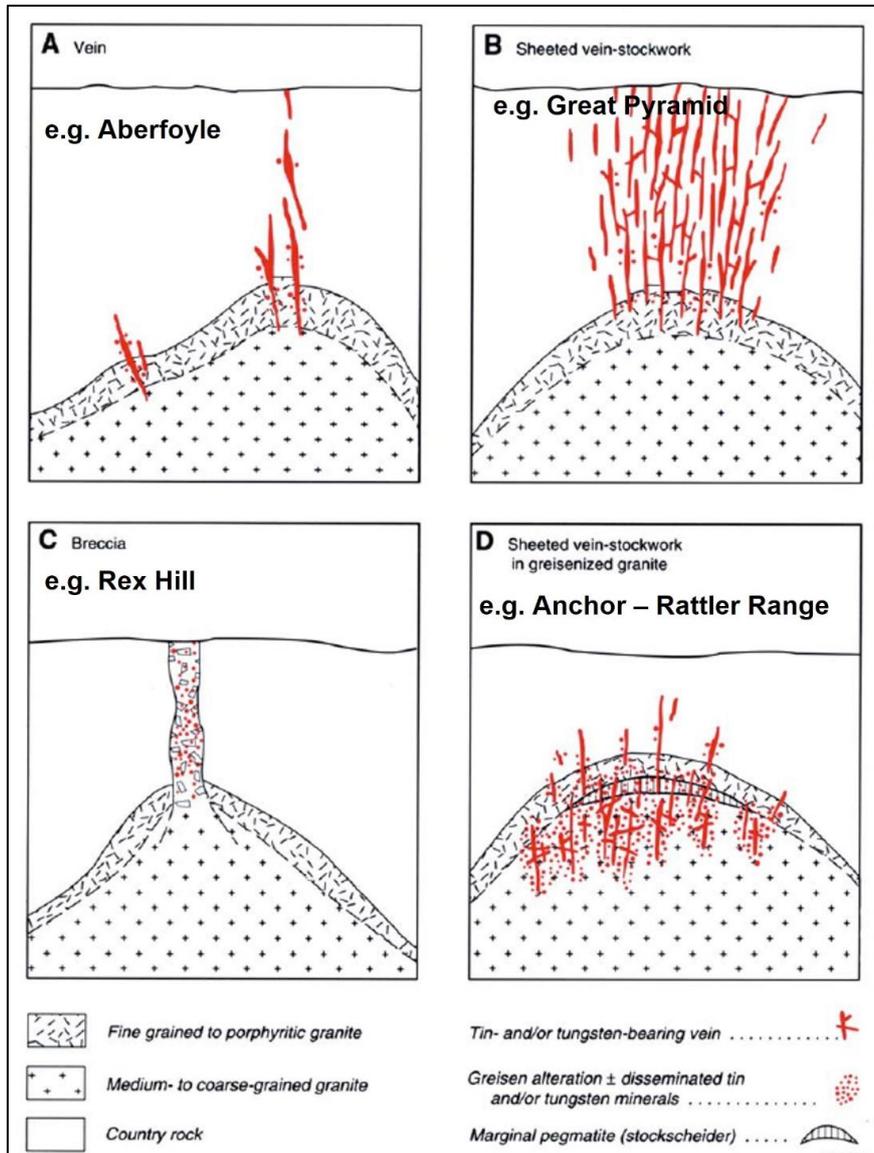


Figure 3. Generalised models of tin mineralisation styles in northeast Tasmania.

2 REVIEW OF PREVIOUS WORK

2.1 HISTORICAL MINING & EXPLORATION

Historical mining and previous exploration activities are discussed in the first Annual Report (Westbrook, 2021).

The Rattler Hill project area has been held under licence in part or in its entirety by numerous groups, including Texins Development Pty Ltd & Geophoto Resource Consultants (EL06/1968, 1968-1974), Ringarooma Exploration Pty Ltd (EL15/1968, 1969-1972), Mineral Holdings / Newmont (EL11/1977, 1977-1978), Union Corporation EL11/1977, 1980-1982), Amax Australia (EL11/1977, 1982-1984), Green River Resources (RL41/2007, 2007-2010), Low Impact Diamond Specialists Pty Ltd and N.B. & S. Brown (EL28/2007, 2007-2012), and, mostly recently, Geotech International Pty Ltd (EL19/2014, 2014-2018). These companies all targeted tin mineralisation. Most previous exploration work was precursory in nature, with some detailed prospect scale activity but generally limited exploration drilling or other follow up.

2.2 PREVIOUS EXPLORATION

Previous exploration activity undertaken by Halona Holdings during Year 1 of EL10/2019 included:

- Historical prospecting/exploration activity data search, review and compilation, desktop review and targeting.
- Reconnaissance site visits to priority target areas.

3 EXPLORATION COMPLETED DURING REPORTING PERIOD

Exploration activity undertaken during the reporting period was limited to site field visits and rock sample collection, however, no new assay data is available at the time of reporting. The limited activity is due to ongoing negotiations for the acquisition of the tenement by TinOne Resources being carried out during the year. These negotiations are nearing completion, and it is expected that work programs will commence in earnest by the new owners subject a tenement transfer has been approved.

4 CONCLUSIONS AND RECOMMENDATIONS FOR FUTURE WORK

No new exploration activity was undertaken during the reporting period, however, the tenement is still considered highly prospective for tin mineralisation as detailed in the Year 1 report.

Geological reconnaissance and detailed mapping/sampling with follow up field work programs is recommended for the priority target areas of Bells Hill, Rattler Hill, Mammoth and Star of Peace prospects (and general area inclusive of these prospects). Focus of the work should be to investigate controls to mineralisation, extensions to known mineralisation and the potential for continuity of mineralisation between these zones.

Recommendations for ongoing exploration work in Year 3 of the licence include:

- Continued data compilation and review.
- Review and re-log any available drillcore held at MRT (Mt Paris, Bells Hill, Bald Hill / Rattler prospects).
- Geological mapping and sampling.
- Gridding over selected target areas to allow geochemical and geophysical surveys.

Additional work programs may include:

- Trial hyperspectral surveys on drillcore and outcrops – to characterise prospective alteration associated with mineralised greisen zones.
- Re-open and re-sample historical trenches, pending further field assessment.

5 ENVIRONMENT

There was no environmental disturbance within EL10/2019 due to exploration activities during the reporting period.

6 EXPENDITURE

Year 2 exploration expenditure for EL10/2019 is summarised in Table 1.

The minimum exploration commitment for the first two years of tenure was \$16,000 over two years. This has been met with the actual expenditure (Years 1 and 2) totalling \$17,960.

	ITEM	EXPENDITURE (AUD)
	GEOSCIENTIFIC COSTS	
1.	Geology	\$ 2,000
	Geochemistry	\$ 0
	Geophysics	\$ 0
	Remote Sensing	\$ 0
2.	DRILLING AND GRIDDING COSTS	
	Gridding	\$ 0
	Drilling	\$ 0
3.	LAND ACCESS COSTS	\$ 0
4.	REHABILITATION COSTS	\$ 0
5.	FEASIBILITY STUDY COSTS	\$ 0
6.	OTHER COSTS	
	Field supplies and equipment, rental fees, insurance	\$ 4,105
7.	ADMINISTRATION COSTS	
	Administration and Legal	\$ 300
	Total Expenditure	\$ 6,405

Table 1. Exploration expenditure on EL10/2019 during the reporting period.

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