

EDGI Final Report on LOY19-004, Loyetea EL12/2014

For:- Edrill Pty. Ltd.

By:- Robert Reid (BSc Hons, MSc Econ Geol, MAIG)

Consultant Geologist, email: robreid@bigpond.com

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Summary

Drill hole LOY19-004 (EOH 338m) targeting magnetite, Sn, W and base metal mineralisation was completed at Redwater Creek on 25/2/2019 utilising EDGI grant government co funding. LOY19-004 returned a significant granite contact magnetite-bearing skarn interval of 12m @ 22.76% Fe, 436ppm Zn & 166ppm Sn from 115.2m, including 7m @ 29.9% Fe & 631ppm Zn. The peak Fe analysis was 44.6%.

Edrill wish to claim the full co-funding amount of \$30,000 for direct drilling costs related to LOY19-004, noting that no interim claim was made. No invoices are presented since operations were undertaken by the tenement owner and drilling company Edrill Pty. Ltd. The direct drilling costs claimed are half of the \$60,000 anticipated for the original 300m diamond drill hole proposed. LOY19-004 was actually completed at 338m, with total direct drilling costs amounting to \$67,600 at an estimated \$200/m; which is considered to be a fair industry drilling rate per metre.

New drill core logging observations have resulted in improved geological understanding and characterisation, which will aid interpretation of geophysical data to improve targeting beneath the mineralisation masking Tertiary basalts of the Loyetea area. Regardless, more work is required to elucidate the complex structure and mineral potential of the area. The apparent basin folded pattern interpretation is further substantiated with recent orientated drill core structure measurements. Interpretation highlights exploration potential for granite proximal fold axial skarn targets, possibly located within the Transition Beds between the Gordon Group limestone and Moina Sandstone equivalents.

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Introduction

This report and attached files relating to the drilling of LOY19-004, is provided to fulfil the requirements of the Final EDGI report, as detailed in section 9.3 of the “EDGI Program 2018 – Guidelines for Project Proposal Submission” document (“the Guidelines”). Under the Guidelines Edrill is requesting the final payment of \$30,000, being the unclaimed half of the total co-funded drilling amount (\$60,000; further detail in summary above).

Edrill have completed 4 diamond drill holes to-date on the Loyetea tenement (EL12/2014; 83²km), located in NW Tasmania, approximately 20km south of Burnie (Figure 1). Key exploration targets are granite related Sn-W magnetite skarn, as well as skarn and vein Pb-Zn mineralisation. Some VHMS potential also exists within the Mount Read Volcanics mapped in the licence area.

The datum used in this report and appended digital data files is GDA94.

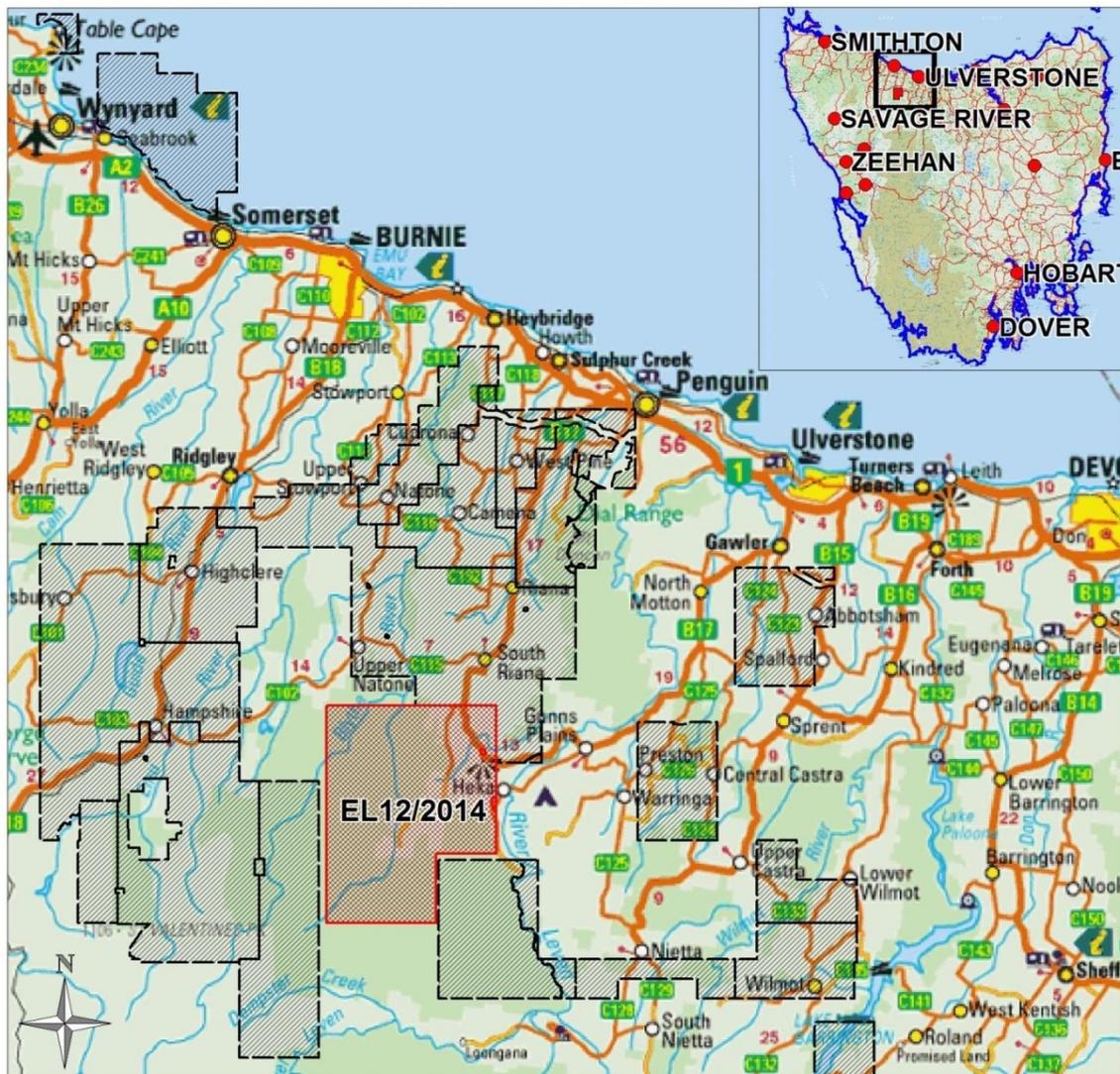


Figure 1: Location of Loyetea EL12/2014.

Review of Previous Work

Previous work undertaken prior to the granting of Loyetea EL12/2014 is detailed in Murphy and Bates (2009) and Hansen (2014). This report only details information pertinent to the current investigation.

Comalco – Shell 1977 - 1981

Weste (1979) reported rock chip and auger sampling, with Sn to 490ppm and 1500ppm W in the latter. Comalco undertook grid based ground magnetics and IP in the Redwater Creek area.

Comalco drilled five diamond holes at Loyetea (RED1-5; see Figure 10) exploring for F, Sn & W. Comment and results follow:-

In RED1, analysis for Sn reached 150ppm and W reached 55ppm. Zn to 700ppm was returned. Analysis in RED2 was more encouraging with Sn reaching 430ppm and W 760ppm. Zinc commonly hovers around 0.1% in most samples. RED3 drilled Tertiary Basalts with basal deep lead deposits, over highly weathered granite. No sampling was undertaken but subsequent samples reported by Banwell (1982) were very low for Sn, W, Cu, Pb and Zn. Banwell (1982) notes that this hole was terminated early, prior to intersecting the magnetic anomaly on 6100N. RED5 tested the magnetic anomaly missed by RED3.

Banwell (TCR82_1784) reports further investigation of the Redwater Creek and Laurel Creek West prospects. Included further gridding extending south on the Redwater Creek Grid, but no soil sampling was undertaken due to extensive Tertiary basalt cover. RED4 testing an IP chargeability anomaly, was extensively sampled top to bottom of hole and returned nothing anomalous; Sn max 40ppm. No Fe analysis were undertaken. The basal 75m of this 349.6m hole possibly drilled down a fault.

Significant analysis from RED5 include 450ppm Sn, 150ppm W, 450ppm Zn, 0.23ppm Au, 230ppm Bi and 31.8% Fe from magnetite skarn (167.8 to 168.2m). Fe values ranged from mostly 5 to 11, peaking at 34.4%. RED5 had a significant swing in azimuth toward holes end (261 to 283), which may have been magnetite influenced. It's unclear if RED4 & 5 surveys are reported as true or magnetic north; actual drill logs are scantily reported.

Edrill Pty. Ltd. 2014 - 2018

Drill hole LOY15-001 (EOH 500m) targeted a ~250m deep VTEM conductor, identified by Bass Metals (Murphy and Bates, 2009) as a potential copper rich skarn. No significant mineralisation was encountered (No. Analytical Samples = 6), however weak skarnification and calc-silicate alteration was evident immediately beneath the targeted 250m deep zone (~265 to 290m) at the down dip end of the modelled conductor.

Drill hole LOY16-002 (EOH 169.6m) targeted a chargeability anomaly, ground magnetic high and rock chip of >50% Fe, including minor Sn (97ppm) and Zn (909ppm). Minor disseminated pyrrhotite (locally 2%) associated with weak pervasive silicification corresponded roughly with the IP chargeability anomaly at surface. No significant analysis were returned.

Drill hole LOY18-003 (EOH 353.3m) targeted a magnetic high and VTEM anomaly with no significant mineralisation intersected.

Hole_ID	From (m)	To (m)	Interval (m)	Sn_ppm	Zn_ppm
LOY15-001	399.8	400.8	1	0	547
LOY16-002	7.6	8.6	1	26	1220
RED1	58.29	60.7	2.41	108	664
RED2	2	6	4	110	500
RED2	25.7	38.8	13.1	216	1152
RW-1	68	72	4	8	674
RW-1	118	120	2	0	784
RW-2	75	76	1	18	1320
RW-3	16	20	4	25	538
RW-3	24	28	4	10	762
RW-3	52	72	20	14	1702
RW-4	26	38	12	24	962
RW-4	46	54	8	12	924

Table 1: Significant intervals in drill holes to 2018 with 500ppm Zn cut off. Note Edrill's LOY15-001 and LOY16-002 were only partially sampled.

Geological Context

Cambrian aged Tyndall Group volcanics representing the top of the Mount Read Volcanics (MRV) outcrop in the southern and central NE portions of EL12/2014. Overlying is an apparently complete sequence of Cambro-Ordovician Owen Group siliciclastics extending up to Moina Sandstone correlates, overlain by Gordon Limestone. The Housetop Granite which extensively covers the central and NW portion of the tenement belongs to a suite of tin bearing I and S type granitoids of Middle Devonian to Early Carboniferous age. Potential for granite intrusion related greisen and magnetite (+/-Sn - W) skarn mineralisation within the Gordon Limestone is known. Tertiary basalt outcrops within a NE aligned corridor, obscuring the potentially mineralised granite contact in the Redwater Creek Prospect area. The geology of the Loyetea Tenement Area is shown in Figure 2.

Known geology and interpretation indicates that the Loyetea area is structurally complex. A NE trending lineament along the south eastern Housetop Granite margin is interpreted as having significant influence upon patterns of faulting and folding in the area. Key is the development of a structural intersection in the Redwater Creek / Peak Hill area, where a NW aligned fault trending through the Loyetea Peak area intersects the NE trending lineament and deflects to a major NNW aligned fault zone passing into the granite to the north. Dextral fault offsets are apparent.

Interpretation suggests the magnetite mineralisation in the Redwater Creek to Peak Hill area is located at a structural flexure where intersecting NW and NNW faulting coincides with an inferred NE trending lineament along the south eastern Housetop Granite margin, forming a triple point junction. The Lavell Fault identified in the Loyetea Road vicinity may in part represent a linking damage zone within this dextral strike slip fault regime, with some strain taken up on granite margin parallel NE aligned faulting. A basin fold within the Gordon and Owen groups likely developed in response to at least two deformations, predating extensive late stage brittle faulting of likely Tertiary age which is clearly evident in drill core.

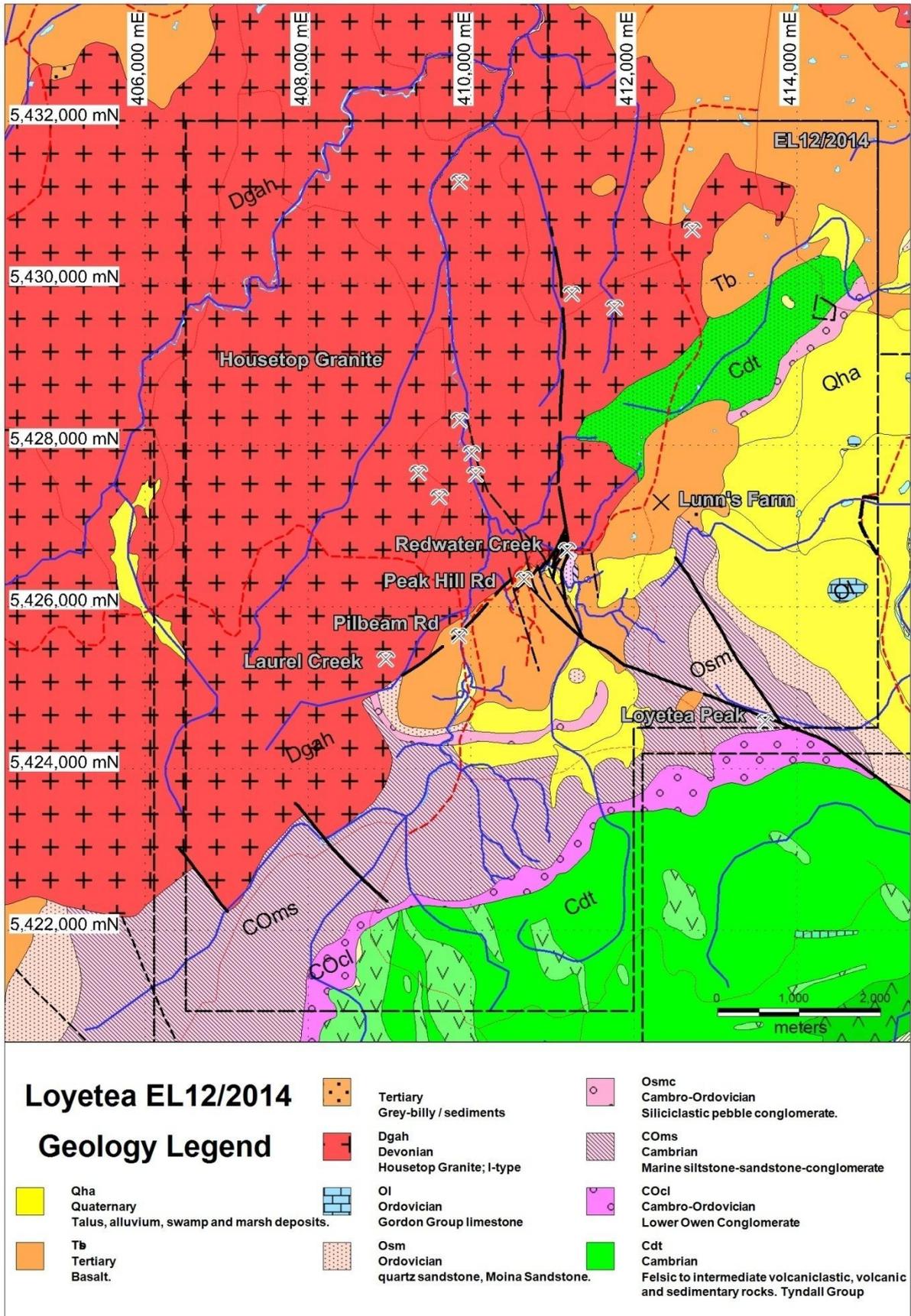


Figure 2: Geology of the Loyetea area highlighting key prospects (Geology modified from 1:25,000 Mineral Resources Tasmania digital geology).

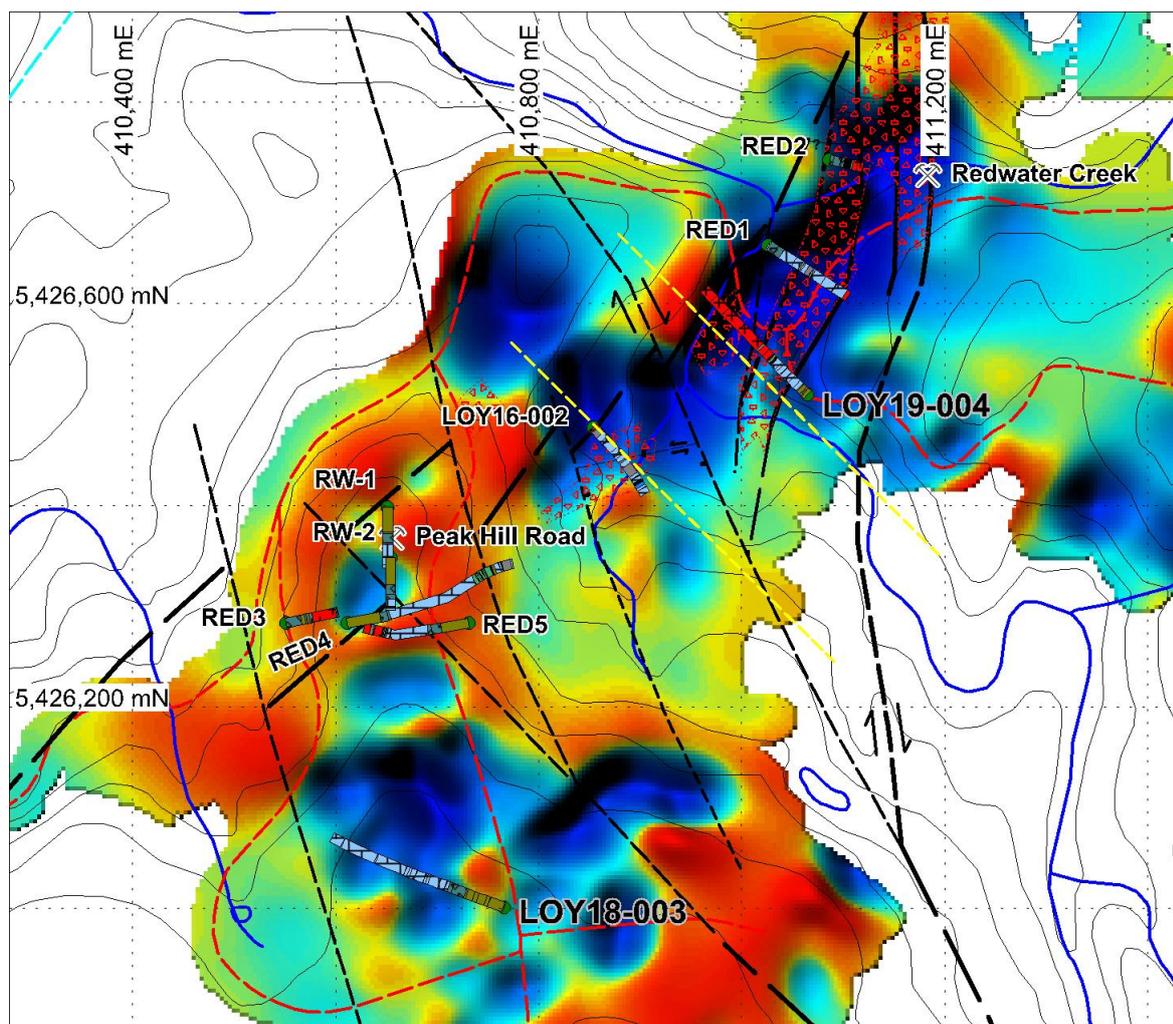


Figure 3: Loyetea location (GDA94) of drill holes (section lines in yellow) with surface projected geology over magnetite distribution (brown), interpreted structure and ground Total Magnetic Intensity grid.

Drilling

Drilling of LOY19-004 was undertaken by the tenement holders and drilling company Edrill Pty. Ltd., utilising government EDGI co-funding. The program commenced in late January 2019 and concluded on the 25th February 2019. The drilling comprised a total of 338m with further hole details shown in Table 2 and as appended digital data (see EL122014_201910_11_FileListing.xls). All drilling, map and location data provided in the report use the GDA 94 (Zone 55) reference datum. All drill core has been submitted to MRT's Mornington Core Store.

Hole_ID	East MGA94	North MGA94	RL	Azimuth	Dip	Depth	Date Commenced	Date Completed
LOY18-003	410766	5426001	462	290	-60	353.3	11/07/2018	10/08/2018
LOY19-004	411065	5426510	393	313.15	-66.21	338	30/01/2019	25/02/2019

Table 2: Drill Collar details 2019

LOY19-004 planned to further test and extend known magnetite resource potential at Redwater Creek, as well as assess base metal skarn and vein potential, whilst intersecting the Housetop Granite contact at depth. The hole collared close to a chargeability high, then expected to intersect Scheelite bearing magnetite beneath surface gossan in the creek immediately in front of the collar. The proposed drill hole planned to test the full width of the faulted magnetite and projects towards a ground magnetic high anomaly located in the granite towards the end of the hole.

Drilling with triple tube aimed to provide best recovery through anticipated extensively faulted broken zone, where previous conventional diamond drilling suffered from poor recoveries. Core recoveries were not re-measured / digitised, although the driller's have recorded recoveries to 0.1m accuracy on core blocks. Visual estimation finds that recoveries appear good (Core photos provided by MRT are appended in ?.zip).

LOY19-004 was examined / logged revealing apparently high core recovery, although core recoveries reported by drillers were not digitally recorded. Notably rock was fresh from surface with partial oxidation extending to 67m and further scattered as weak zones to 146m. Some core blocks were shuffled during transport to MRT's Mornington Core Store and therefore were difficult to reconcile with some logging intervals consequently likely to be slightly out.

Geology

Basalt in the top 24m of the hole is underlain by magnetite bearing Tertiary-aged palaeosol breccia, with sub rounded clasts (Figure 4). The basalt commonly includes inter flow kaki clayey semi-consolidated intercalated silty zones bearing sparse/minor rock fragments and relict medium grained quartz? grains. Clasts to 4cm of sub rounded hematitic sediment are also included. Very weak lacustrine / varve-like lamination is evident locally within the silty clays. Basalt flow bases have possibly burrowed into basal Tertiary lacustrine sediments. Note also that injection like clay fill of this type is evident within drilled limestone elsewhere and likely represents Tertiary fracture and/or cave fill.

Brittle faulting is apparent within the basalt extending from 8.6 to 10.75m, as well as immediately down hole sub parallel to bedding in the limestone from 27 to 37m. The extent of faulting was not as much as expected, although a significant measured fault from the Loyetea Road projects east of and behind the LOY19-004 collar. There apparently being a combination of magnetite clasts in relatively extensive brittle faulting as well as Tertiary talus breccias.

Magnetite skarn mineralisation was intersected from 115 to 121.2m, up hole from skarn extending to the granite contact at 126.65m. LOY19-004 drilled further to depth through granite aiming to intersect the source of a ground magnetic anomaly, located above the surface projected end of the planned 300m hole. This tested greisen and structure host Sn mineralisation potential along a possible fault splay striking NW from LOY16-002, where the faulted granite contact was interpreted as vertical to steeply dipping (Figures 3, 4 & 5).

The granite is weakly porphyritic, particularly in quartz, in the upper near contact zone with pegmatic pink K-Feldspar? – quartz textures also evident. The latter includes euhedral grey quartz crystals to approx 2.5cm diameter. Notably similar porphyritic granite bearing Zn (3730ppm) in rock chip was located as float boulders above the LOY16-002 drill hole, nearby to the south east, whereas only a very narrow aplite dyke was logged in the drill hole beneath (Reid, 2016, Figure 5).

A weak sericite +/- chlorite – sphalerite/leucoxene? (further test analysis required) mineral association appears interstitial to redder pink K-feldspar bearing zones in the top ~100m of the granite, where it appears like K-feldspar mobilising into veins after original red granite, like that evident towards the end of hole. The possible sphalerite/leucoxene appears slightly more concentrated with chlorite rich zones interstitial to groundmass crystals.

Structural interpretation is still unclear, but it appears there may be a shelf in the granite beneath the limestone and Tertiary sediments of the Redwater Creek Prospect area. This feature is possibly formed by porphyritic granite and associated contact magnetite skarn, intruding along the faulted margin of the main Husetop Granite stock.

Notably little sulphide was logged in the upper limestone or basalt and consequently the chargeability anomaly above the top of hole LOY19-004 surface projected trace is not explained or properly tested (Figure 4). A step back hole could test high resistivity at surface (Ordovician Sandstone?), potentially the Transition Beds contact, then the chargeability at depth before the granite and hopefully adjacent magnetite skarn.

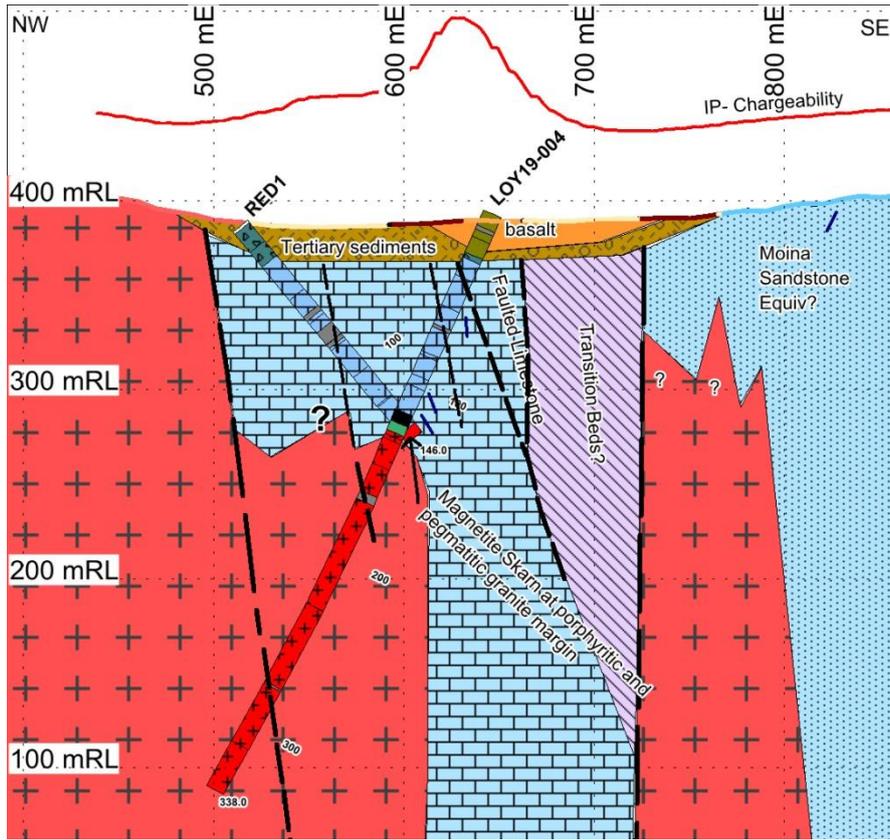


Figure 4: Drill hole LOY19-004 NW-SE aligned section showing rough interpretive geology, limestone bedding tics (dark blue) and rough interpreted structure. NB: 100m search envelope to show RED1 located NE of section.

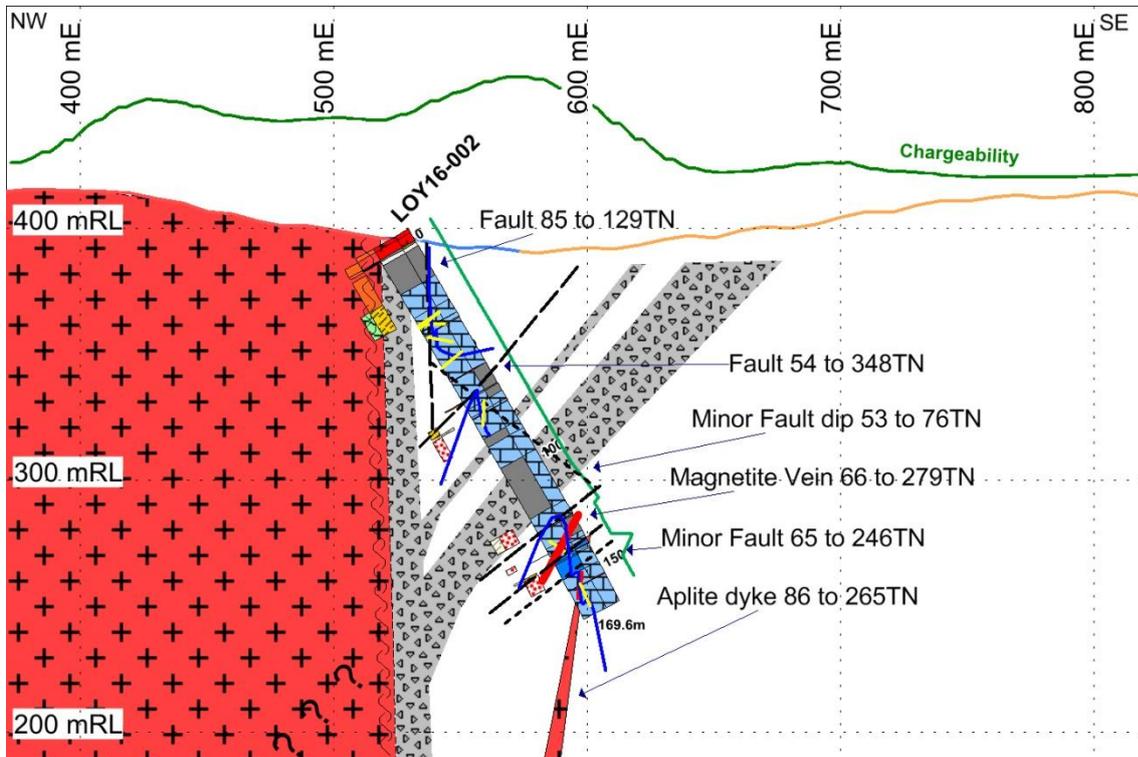


Figure 5: Drill hole LOY16-002 NW-SE aligned section showing key structures, rough interpretive geology, limestone bedding (dark blue) and rough interpreted structure (From Reid, 2016).



Photo 1: LOY19-004 Tertiary basalt and basal magnetite clast bearing sediments.



Photo 2: LOY19-004 magnetite skarn

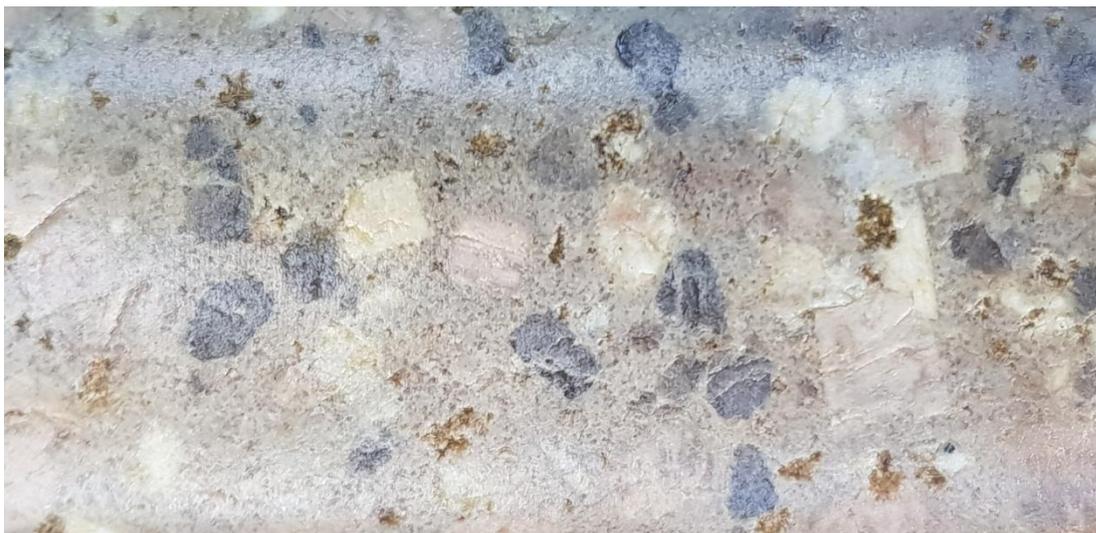


Photo 3: LOY19-004 Porphyritic granite



Photo 4: LOY19-004 Pegmatitic and weakly sericitised granite.

Structure

LOY19-004 bedding mimics that of LOY16-002, commonly dipping 70 to the SE (120TN; Figure 5) possibly on the western limb of a syncline, although facing has not been determined. Conversely, Many LOY18-003 and some LOY16-002 beds dip ~80 to ~280TN and are apparently located on an eastern syncline limb. A syncline keel potential drill target could follow likely fold plunge in the Redwater Creek area of ~60 - 70plunge to 200TN, swinging to 50 to 310TN to the SW, closer to LOY15-001.

Considering all drill hole and outcrop data, magnetite (no. = 1) and FeO (no. = 5) bearing veins dip 65 to 275TN, as well as steeply SE (Figure 5).

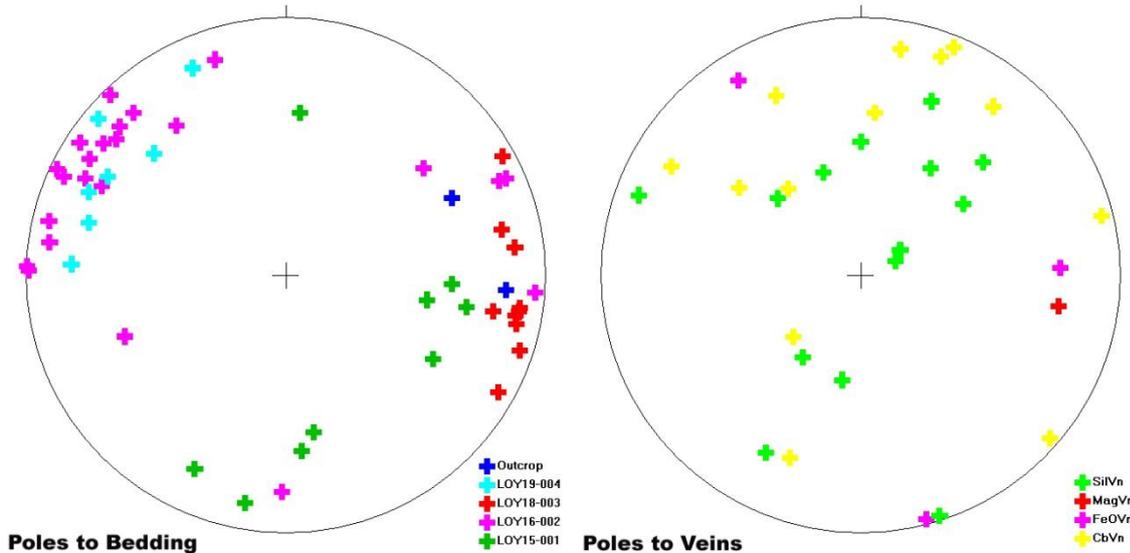


Figure 5: Stereographic projection of bedding and various vein orientations (All drill holes + outcrop).

Analysis

Edrill half diamond core sampled a total of 23 drill core samples, mostly targeting magnetite near the granite contact, but also including lithology and mineralisation checks elsewhere. Edrill's drill core sample descriptions are listed in the appended digital data. One sample submissions was made to ALS Burnie for multi-element ICP-MS (ME-MS61) and fire assay for Au analysis (Au-TL43; see appended pdf's). Multielement geochemistry provides a wide spectrum of data, but ongoing exploration will need to consider Davis Tube recovery and XRF for more accurate magnetite, as well as Sn and W analysis determinations.

Whilst 23 samples were submitted, only 22 were reported with sample 50084 missing. Further, reported sample 50098 is assumed to be the missing 50092, partly upon the basis of similar/comparable granite geochemistry.

LOY19-004 returned a magnetite bearing interval of 12m @ 22.76% Fe, 436ppm Zn & 166ppm Sn from 115.2m, including 7m @ 29.9% Fe & 631ppm Zn. Peak Fe was 44.6%. (Comparatively, RED2 was analysed for key base metals only. Re sampling is justified for comparison to LOY19-004.) Sn whilst elevated to 151ppm in the LOY19-004 magnetite was highest on the margins within diopside skarn reaching 333ppm.

Discussion

The following discussion details new interpretation and observations based upon cursory logging of LOY19-004 and other historic drill holes from the area.

Magnetite skarn is evidently replacing the limestone proximal to porphyritic and pegmatitic granite intrusion in RED2 and LOY19-004. RED5 whilst not examined is logged as magnetite skarn at a granite contact. Several faults to 8m in RED1 are magnetite clast/zone bearing. RED1 lacks a porphyritic granite, as well as calc-silicate and magnetite altered zones, but moderate intensity disseminated tourmaline is evident. The “different” granite contact in RED1 is relatively sharp with no skarn and only minor pegmatitic zones by comparison to LOY19-004. The up hole lithology appears more like a limey quartz sandstone than genuine limestone and drilling was at a low LCA to bedding. Repeated Tertiary Basalt dykes in RED4 indicate proximity to a basalt feeder zone.

Re-logging of RED1 to 3 drill holes in light of observation from recent holes LOY18-003 and LOY19-004 was worthwhile, with revised interpretation showing that whilst brittle faulting bearing magnetite clasts is widespread near Redwater Creek, there are previously miss interpreted likely Tertiary sediments to be accounted for in as yet unrevised geology. New interpretation identifies a mix of lacustrine clays and pebbly alluvium interbedded with local provenance talus. The later are commonly / locally dominated by granite and magnetite detritus, possibly reflecting talus developed at a granite marginal fault.

The top of RED2 was previously reported as a “faulted zone” bearing limestone, magnetite and granite clasts. Re-examination indicates these are likely Tertiary sediments, with “washed” alluvium clearly evident directly over magnetite skarn and granite in RED2. Similarly the westernmost magnetite and granite clast bearing road base deposits mapped on the Loyetea Road are possibly a local talus debris deposit shed directly from a proximal exposed magnetite skarn source. Thus the magnetite skarn in RED2 was probably exposed at a Tertiary erosional surface. Heterolithic but Owen detritus dominated Tertiary greybilly is a potential sulphide clast source/explanation.

Brown / kaki clays logged in LOY19-004 may be conductive influencing VTEM responses; These likely formed as lacustrine to lagoon deposits in Tertiary valleys dammed by basalt eruption and/or local talus breccia(?). Notably, there’s a thick accumulation of two provenances of alluvium in LOY18-003. The basal conglomerate has a dark grey silty matrix, as compared to siltier more siliceous grey matrix in the overlying more poorly sorted conglomerate / breccia. Significant VTEM channels SF10 & 15 conductive anomalies are coincident.

Whilst, initial interpretation suggests peaks in higher frequency VTEM channels SF20 and 24 are possibly more indicative of thick basalt marginal to feeder lava accumulation. Buildings are readily evident as SF34 spot highs. Lower EM frequencies are generally considered better for resolving deeper conductors. Depth penetration might be up to 300 to 650m dependent upon the VTEM system and ground resistivities. A consultant should be engaged to undertake 3D inversion modelling, also producing conductivity depth slices. Strongest low frequency SF10 and SF15 VTEM response is located immediately east of the bottom of drill hole RED5, where numerous basalt dykes were logged. Thus the SF10 response possibly reflects a basalt feeder zone.

Environment

All work was undertaken in accordance with the MRT Mineral Exploration Code of Practice. LOY19-004 was drilled utilising a UDR650 truck mounted rig on private property with land owner and MRT approval. All equipment was washed down prior to mobilisation. The hole was collared on a clear area beside the road with no earth works undertaken.

Water required for drilling was sourced from the adjacent creek and return waters were banded to catch drill cuttings before allowing the waters to disperse away from the rig.

All drilling equipment, fuel, fuel-spill kits, fire fighting equipment, core and waste was transported to and from the licence on a daily basis. All rubbish was removed from site on completion.

On completion of the program, drill hole was capped and buried. The drill sump was removed and waste drill cuttings raked out and mixed with top soil.

References

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Appendices

Appendix 1:- Appended Digital data

Exploration Work Type	Filename	File format
Report	EL122014_201910_01_Report.pdf	<i>pdf</i>
Drilling		
	EL122014_201910_02_SL_1.xls	xls
	EL122014_201910_03_DS_1.xls	xls
	EL122014_201910_04_DL_1.xls	xls
	EL122014_201910_05_Lithologycodes.xls	xls
	EL122014_201910_06_DG_1.xls	xls
	EL122014_201910_07_DStructure_1.xls	xls
	EL122014_201910_08_AnalysisBU19061195.pdf	<i>pdf</i>
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	EL122014_201910_10_CorePhotosWet	<i>zip</i>
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