

Moina Gold Pty Ltd

Annual Report on Exploration EL 11/2016 “Lake Margaret” April 2018 to April 2019

Grant MacDonald

April, 2019

Executive Summary

Work carried out on EL 11/2016 has consisted of the compilation of previous exploration data, specifically drill hole, geophysical, geochemical and geological data and the commencement of the creation of a 3D model of the geology and geophysics of the licence to allow focused targeting beneath the glacial cover.

That work is ongoing and incomplete but to date has defined three prospect areas worthy of further attention.

- Deep drillhole through the glacial moraine to between LMD1/LMD1A and Tyn 16 to test the 2.5km strike length of the Holy Host Horizon obscured by the glacial cover.
- The strong chargeability anomaly at Langdons between drillholes TYN11 and BLD893 with 450m strike length of untested strike of the Holy Host Horizon.
- At Langdons prospect a hole to target the outcropping Great Lyell Fault/Holy Host Horizon position on the flanks of the Tyndall Range to test the theory that the glacial erratic has travelled downslope (as is a reasonable conclusion given the spread of mineralised erratics in the glacial cover). Bass's hole LMD2 did not test the ideal position by ~300-400m down-dip.

Of these target #2 has been selected and an application made successfully for an Exploration Drilling Grant Initiative grant to carry out the drilling of a 700m hole.

Application has been made for an extension of the tenement (variation of conditions) to allow this drilling to occur as soon as approval is given.

Table of Contents		page
1.0	Introduction	1
1.1	Introduction	1
1.2	Location/Access/Land Usage	1
1.3	Tenure	1
1.4	Exploration Rationale	1
1.5	Geology	2
2.0	Review of Previous Work (after MacDonald, 2017)	5
3.0	Exploration Completed April 2018 to April 2019	9
4.0	Discussion of Results	10
4.1	Introduction	10
4.2	Langdons Chargeability Anomaly Quartz Porphyry Target	10
5.0	Proposed Work for 2019/20 Reporting Period	13
6.0	Environmental Management	14
7.0	Expenditure	15
8.0	References	16

Figures

1.1	EL 11/2016 “Lake Margaret” looking south along the western slopes of the the Tyndall Range with the powerline to the left and the target horizon along the base of the slope.	1
1.2	Location of EL 11/2016 “Lake Margaret” with respect to the other polymetallic volcanic hosted sulphide deposits in the Mt Read Volcanics (green fill).	3
1.3	North-south (looking west) long section of the Mt Read Volcanics ‘Holy Host’ horizon showing orebodies (maroon), alteration (yellow) and drill traces and the location of EL 11/2016 “Lake Margaret”. The figure was produced for a general audience and is approximate as suggested by the size of Henty ore blobs w.r.t. Rosebery’s. Alteration extent is generalised and approximate.	4
2.1	Bass Metals SWIR drill hole alteration assemblages superimposed on compiled historic grids (pre 1987), prospects and geology. Thick maroon outline is EL 11/2016, thinner maroon line was area of ERA1033.	6
2.2	Glacial erratic of intensely advanced argillically altered volcanic assaying 5.6% Cu and 0.6g/t Au.	7
2.3	Compilation of Basin Lake/Langdons exploration data consisting of MMI soil sampling results, geology and IP (Bass Metals). Note anomalous geochemistry in Langdons area with coincident IP anomaly (lower right hand side in chargeability image).	8
4.1	Dipole-dipole IP image at 350m depth superimposed on MRT 1:25,000 geology with proposed hole.	12
4.2	Legend for following sections.	13
4.3	Section 5,353,550mN showing historical drilling, short wave infra-red determined alteration assemblages and quartz porphyry unit superimposed on dipole-dipole IP chargeability.	14
4.4	Section 5,353,300mN showing historical drilling, short wave infra-red determined alteration assemblages and quartz porphyry unit superimposed on dipole-dipole IP chargeability.	15
4.5	Section 5,353,050mN showing historical drilling, short wave infra-red determined alteration assemblages and quartz porphyry	

	unit superimposed on dipole-dipole IP chargeability.	16
4.6	Section 5,352,800mN showing historical drilling, short wave infra-red determined alteration assemblages and quartz porphyry unit superimposed on dipole-dipole IP chargeability.	17

1.0 Introduction

1.1 Introduction

This report details exploration activity carried on EL 10/2016 “Lake Margaret” during the period April 8th 2018 to April 8th 2019.

1.2 Location/Access/Land Usage

EL 11/2016 “Lake Margaret” lies midway between the Mt Lyell copper+gold mine to the south and Henty gold mine to the north. The licence covers a section of the north-south trending Tyndall Range and the foot slopes down to the Yolande River. The target horizon lies along the base of the slope.

The land is Crown Land and part of the Tyndall Regional Reserve for the most part with the northwest corner Future Productive Forest land. Access to the northern end is by the HEC powerline track which turns off the Henty-Anthony Road near the Tyndall Creek bridge, or by the Lake Margaret township road to the south.

Vegetation is largely heath with some pockets of rain forest on the lower slopes with alpine vegetation along the range.



Figure 1.1: EL 11/2016 “Lake Margaret” looking south along the western slopes of the the Tyndall Range with the powerline to the left and the target horizon along the base of the slope.

1.3 Tenure

The licence was granted in April, 2017 to Moina Gold Pty Ltd as a partially successful tender for ERA 1103. This report details work from the licences first year of tenure.

1.4 Exploration Rationale

EL 11/2016 “Lake Margaret” contains 5 km’s of the Holy Host Horizon, the seafloor in Middle Cambrian time when there was active bimodal volcanism with accompanying hydrothermal fluids both venting onto the seafloor and altering the rocks beneath it with the formation of the polymetallic sulphide orebodies of Hellyer, Que River and the Tasman and Crown lenses (at Mt Lyell) largely by the former exhalative processes, and Henty, Hercules, Rosebery and Mt Lyell largely by the latter replacement and processes. Significant parts of this horizon are obscured by glacial gravels, other parts in rainforest or on mountain slopes impeding exploration.

A second lower mineralised horizon is suggested by the presence of mineralised clasts in a mass flow unit outcropping in the Lake Newton spillway to the north of the licence but potentially extending into the EL.

EL11/2016 has excellent potential to host an economic precious and/or base metal resource.

Historically exploration has focused on discovering massive sulphides and particularly using EM methods. The recognition that epithermal and footwall alteration style (sulphide, silica) mineralisation are possible alternatives means IP and CSAMT are more relevant geophysical tools.

Advances in the mapping of alteration facies utilising Short Wavelength Infra-Red spectroscopy and trace element “pathfinder” lithogeochemistry have allowed for geochemical vectoring within footwall alteration systems.

1.5 Geology

The licence covers a steeply dipping belt of Cambrian Mt Read Volcanics in fault juxtaposition against Ordovician siliclastics. These older rocks are obscured for the most part by a veneer of glacial gravels.

Geologically the Lake Margaret tenement contains some of the most prospective ground in the Mt Read Volcanics outside of current mine leases. The stratigraphic zone around the contact between the overlying basal Tyndall Group and the underlying Central Volcanic Complex is the host to mineralisation at Henty and Mount Lyell south of the Henty Fault and Hellyer, Que River, Rosebery and Hercules north of the Henty Fault. It is known colloquially amongst Tasmanian geologists as the Holy Host Horizon.

The tenement also contains the horizon on which massive sulphide clasts outcrop in the spillway to the Newton Creek dam, immediately to the north of the Lake Margaret tenement.

The tenement also contains a glacial erratic with ore grade (5.6% Cu + 0.6g/t Au) copper+gold in a high sulphidation epithermal assemblage. The source of this erratic is unknown, however, further scattered clasts over a small area nearby support a local source.

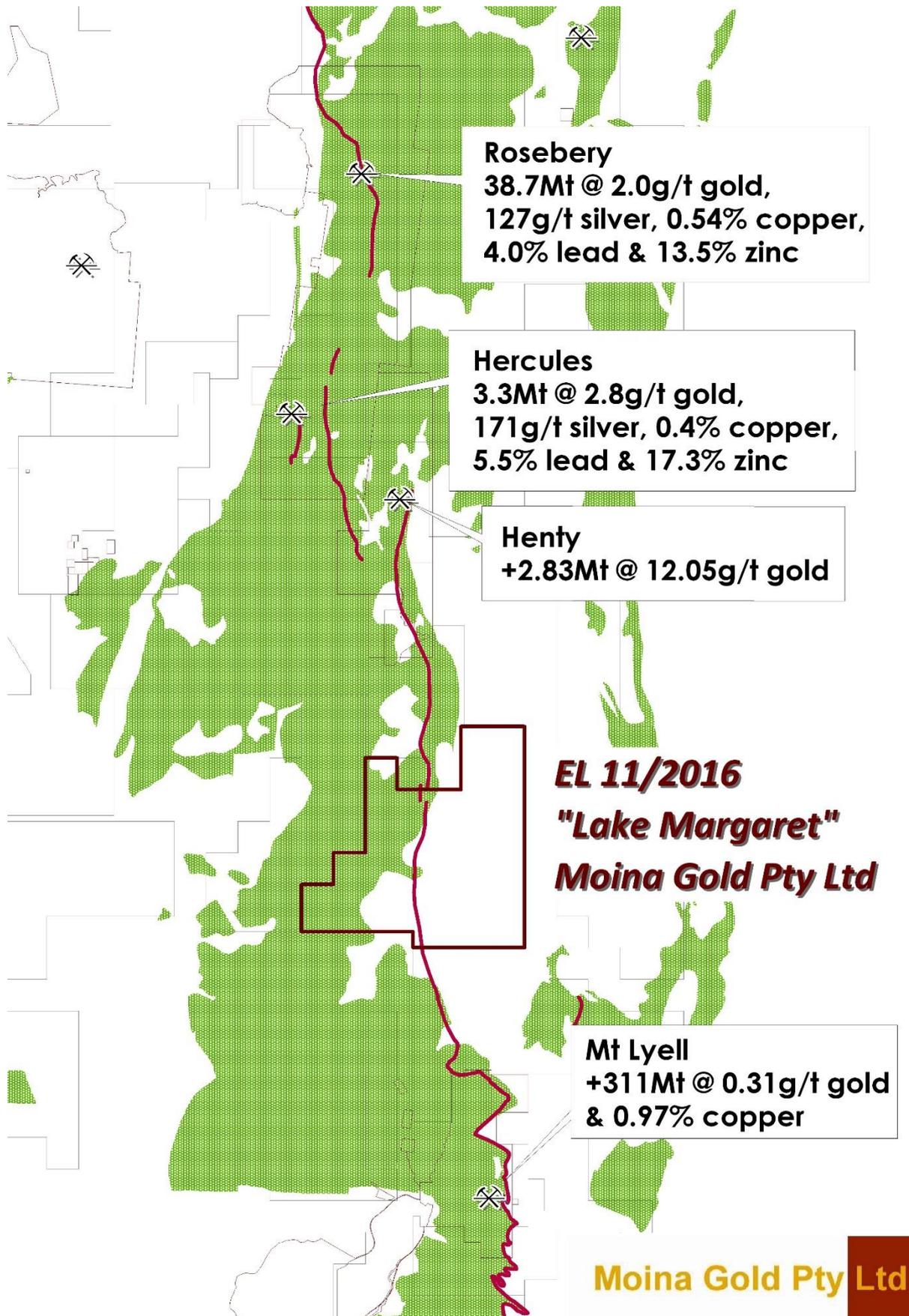


Figure 1.2: Location of EL 11/2016 "Lake Margaret" with respect to the other polymetallic volcanic hosted sulphide deposits in the Mt Read Volcanics (green fill).

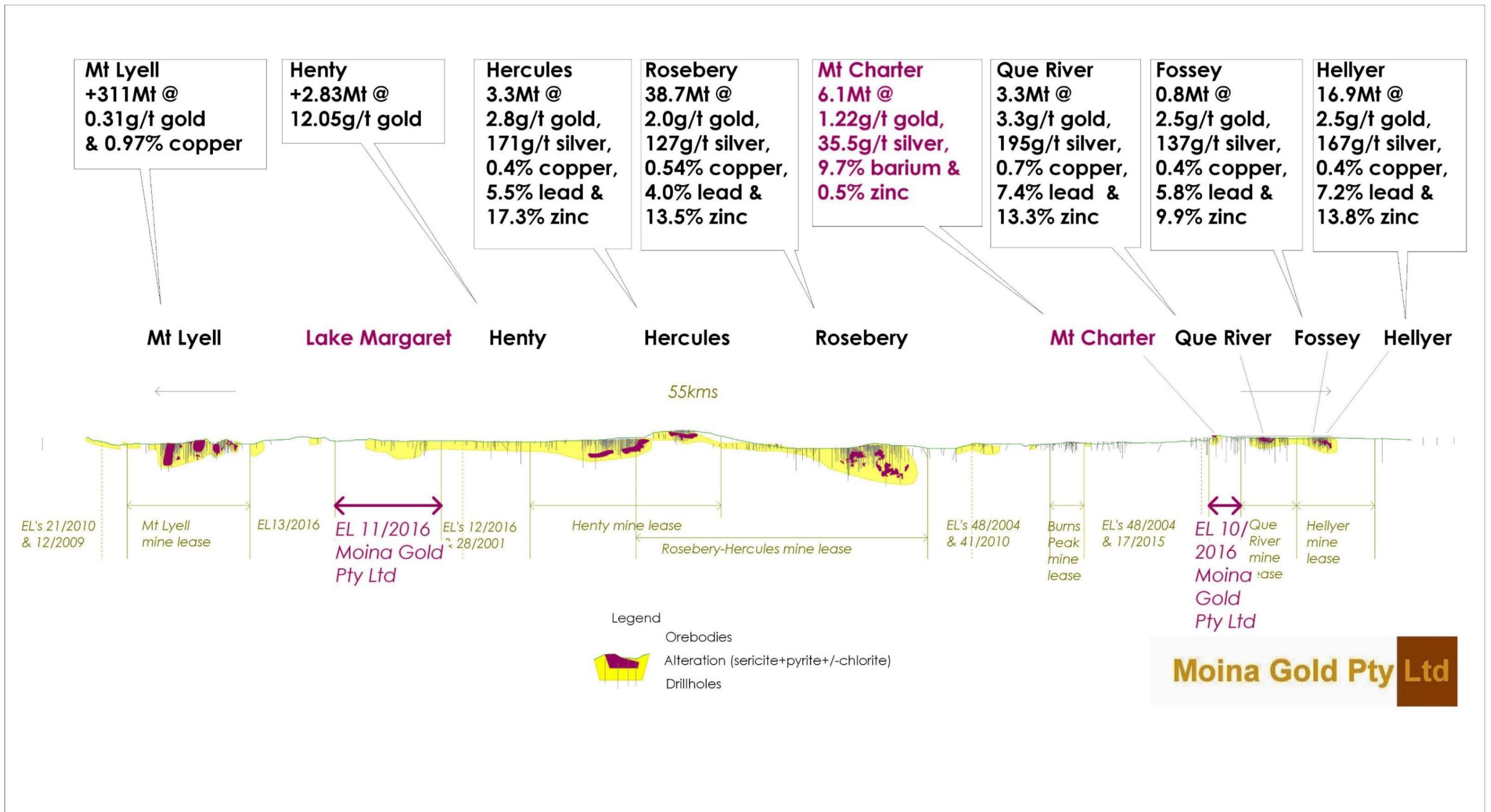


Figure 1.3: North-south (looking west) long section of the Mt Read Volcanics 'Holy Host' horizon showing orebodies (maroon), alteration (yellow) and drill traces and the location of EL 11/2016 "Lake Margaret". The figure was produced for a general audience and is approximate as suggested by the size of Henty ore blobs w.r.t. Rosebery's. Alteration extent is generalised and approximate.

2.0 Review of Previous Work (after MacDonald, 2017)

The country covered by EL 11/2016 “Lake Margaret” has been a major focus of exploration on the west coast due to its position between Mt Lyell and firstly Rosebery/Hercules, and later Henty.

Much of the prospective sequence is covered by glacial gravels which handicap exploration. For this reason exploration has been largely geophysically driven with conceptual geological models based on stratabound “VHMS” Pb-Zn-Ag mineralisation, and disseminated VHMS footwall “Mt Lyell type” Cu-Au. The main phases of modern exploration were:

From the mid 1960’s until 1986 the Mt. Lyell Mining and Railway Company and related company Goldfields Exploration undertook systematic mapping and stream sediment sampling followed by soil sampling, IP and EM surveys over several grids (on ELs 41/71, EL 9/66 and EL 10/69). Specific targets generated in this work were drilled at the Zig Zag Hill, Beatrice, Basin Lake and Leech Hill prospects (see figures 3 and 4).

BHP Minerals (EL 102/87) conducted a blanket UTEM survey of the Mount Read Volcanics designed to test for volcanogenic massive sulphides to 200-300m depth over the southern half of the Lake Margaret property in 1988-1990. No significant conductors deemed worthy of drilling were detected.

In 1992, RGC Ltd (the successor to Goldfields Exploration) entered into a farm-in agreement with BHP in EL 102/87 but focused their initial efforts elsewhere within that tenement(Beatrice and Zig Zag Hill prospects).

During the period 1988-1998, the northern part of the Lake Margaret tenement was explored by Billiton followed by then farm-in partners Aberfoyle and Resolute. Work completed included an airborne magnetic-radiometric survey, ground magnetics, gravity, CSAMT, IP and EM over various targets. Drilling focused on testing of geochemical and geophysical anomalies at Basin Lake and Leech Hill.

During this time the southern area was held and explored by Goldfields Exploration and its successors AurionGold and Placer Dome. A series of target areas were followed up with dipole-dipole IP. Five holes were drilled in this period (TYN17-21).

During this period an outcropping glacial erratic (figure 2.2) of intensely hydrothermally altered volcanic was discovered. The mineral assemblages are of high sulphidation type with average copper grades of 5.6%, gold 0.6g/t and silver 29g/t.

The mineralogy of this erratic – an intensely silicified rock with pyrite, enargite and tennantite and trace covellite, stannoidite and mawsonite is very similar to the mineralogy at North Lyell and the high copper grade part of the Iron Blow. The fact that this mineralisation occurs in glacial float suggests that the original source may be outcropping but covered by glacial deposits.

In 2004 Copper Strike pegged the area which became ERA 1033 as EL 35/2004. Copper Strike were interested in the relatively limited prior exploration in the Comstock Valley, partly as a consequence of the glacial till cover and the possible extension of Pb-Zn mineralisation at the Tasman Crown from the Mine Lease northwards, as well as several pyritic alteration zones lying along the Great Lyell Fault (eg “North East Pyrite Zone”) which have been inadequately tested.

Copper Strike carried out a systematic review of previous exploration, reprocessing and reinterpretation of the WTRMP 2001-02 helicopter EM survey, a dipole-dipole IP survey and diamond drill hole LMD01/1A located to test an IP anomaly. The hole intersected pyrite-chlorite-sericite-quartz-siderite alteration but low associated base metal values. Recommendations to extend the IP survey to the north (i.e. into EL 11/2016) were not followed up and Copper Strike relinquished the ground in 2009.

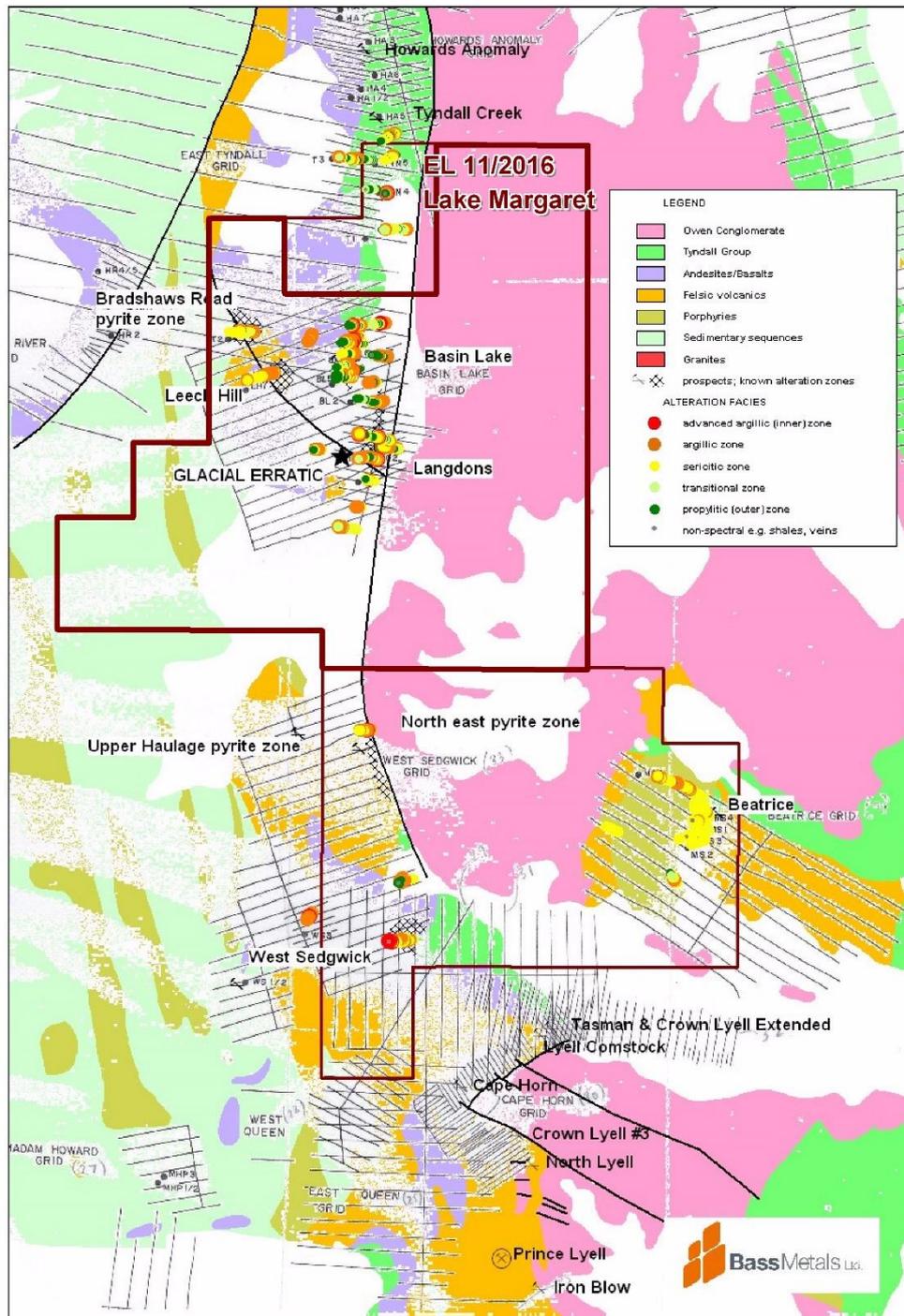


Figure 2.1: Bass Metals SWIR drill hole alteration assemblages superimposed on compiled historic grids (pre 1987), prospects and geology. Thick maroon outline is EL 11/2016, thinner maroon line was area of ERA1033.



Figure 2.2: Glacial erratic of intensely advanced argillically altered volcanic assaying 5.6% Cu and 0.6g/t Au.

Bass Metals successfully tendered for the ground and explored it under EL 28/2009. Bass undertook a regional scale Short Wave Infra Red (SWIR) study of hydrothermal alteration in all drillcore from the tenement in combination with core sampling and analysis for trace element using ICPMS/OES.

Bass collected 8777 spectral measurements from 56 holes and 1467 lithochemical samples.

High-sulphidation epithermal type alteration minerals were mapped in a number of drillholes at Basin Lake and Langdons consistent with the high-sulphidation copper sulphide minerals described from the boulder of high grade copper ore and supporting the interpretation that the source of the boulder is proximal. Favourable argillic alteration is also mapped at West Sedgwick in drill holes W5A, W6, W7 and W8 and at the North East Pyrite Zone in drillhole LMD1.

Field mapping of glacial erratics to determine the spatial distribution of altered and mineralised types was carried out followed by a 3 hole diamond drilling program (totalling 448.6m) designed to test the upslope potential source of the erratic on the Great Lyell Fault where it intersects the Lynchford Member. Unfortunately the hole was not optimally position testing the target position 350m below its surface outcrop.

An MMI soil survey in 2011 on the projection of the Great Lyell Fault in the northern part of the licence did define anomalous responses at a number of localities (see figure 6). This survey was extended in 2013 to cover a strike of 2.5km's.

The MMI anomaly associated with Great Lyell Fault and previously detected in 2011 was repeated by the most recent survey. However, the anomaly did not extend further to the south and its small strike length of between 100-200m was argued as not warranting further investigation. For financial reasons Bass surrendered the tenement in 2016.

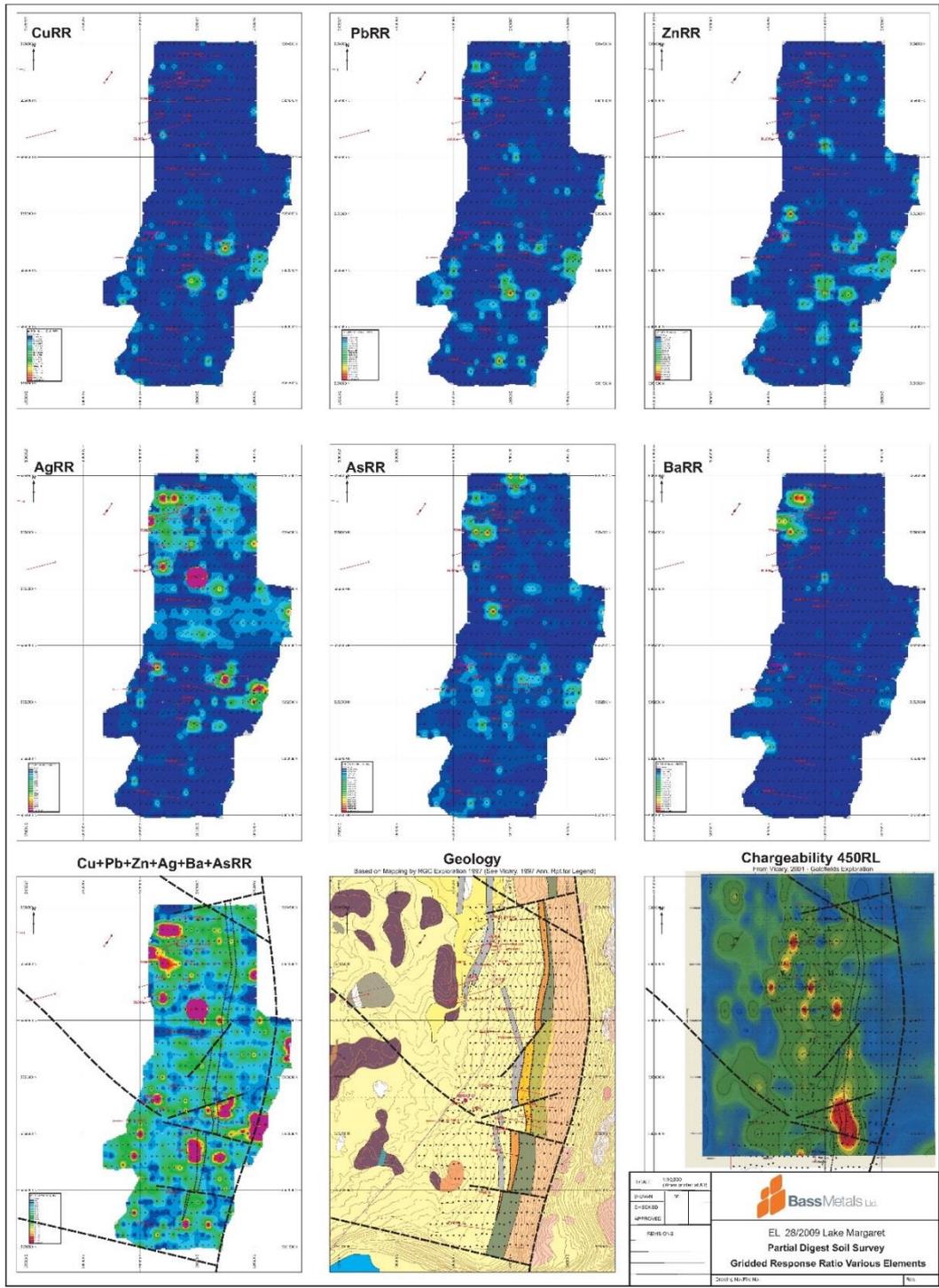


Figure 2.3: Compilation of Basin Lake/Langdons exploration data consisting of MMI soil sampling results, geology and IP (Bass Metals). Note anomalous geochemistry in Langdons area with coincident IP anomaly (lower right hand side in chargeability image).

3.0 Exploration Completed April 2018 to April 2019

Work carried out on EL 11/2016 has consisted of

- further compilation of previous exploration data, specifically drill hole, geophysical, geochemical and geological data
- ongoing 3D modelling of the geology and geophysics of the licence to allow focused targeting beneath the glacial cover
- generation of drill targets application for an EDGI grant

MacDonald (2018) listed three potential target positions.

1. Deep drillhole through the glacial moraine to between LMD1/LMD1A and Tyn 16 to test the 2.5km strike length of the Holy Host Horizon obscured by the glacial cover.
2. The strong chargeability anomaly at Langdons between drillholes TYN11 and BLD893 with 450m strike length of untested strike of the Holy Host Horizon.
3. At Langdons prospect a hole to target the outcropping Great Lyell Fault/Holy Host Horizon position on the flanks of the Tyndall Range to test the theory that the glacial erratic has travelled downslope (as is a reasonable conclusion given the spread of mineralised erratics in the glacial cover).

Effort was made towards designing a hole to test 1. in time for the first round of EDGI grants, however, it was determined that a single line of a CSAMT survey in 1989 by Billiton (line 350200) had traversed the targeted geology without any anomalous response (Creagh and Hungerford, 1990) and so this target was shelved for the time being.

Attention was then turned towards target 2., a major chargeability anomaly corresponding with an enigmatic quartz porphyry unit and along strike from epithermal style advanced argillic alteration intersected in historic drill holes TYN11, TYN15, BL001 and BLD89-003 with an application for an EDGI grant completed (included in appendix A).

4.0 Discussion of Results

4.1 Introduction

Compilation work is ongoing with further drill targets expected. In particular target model #3 in section 3.0 is being firmed up, however, at this stage the priority drill target defined in that work is target model #2 from section 3.0 which has been successful in winning an EDGI grant.

The following is largely reproduced from the EDGI application (which is included in appendix A).

4.2 Langdons Chargeability Anomaly Quartz Porphyry Target

A total pre-mining resource worth over A\$60 billion lies along or near to Tasmania's world class "holy host" horizon mineralised trend, which passes through the Cambrian Mt. Read Volcanics on the state's west coast.

Along it lie the Hellyer, Fossey, Que River, Mt Charter, Rosebery, Hercules, Henty and Mt. Lyell orebodies along with numerous smaller mineralised occurrences and extensive associated hydrothermal alteration.

The stratigraphic position, at or near to the base of the lowermost Lynchford Member of the Tyndall Group, passes through the Lake Margaret tenement and the Basin lake prospect.

In most of the deposits and related prospects in the Mt Read Volcanics an enigmatic quartz feldspar porphyry also occurs in proximity to mineralisation and is interpreted to be coeval with the eruption/deposition of the Lynchford Member. This porphyry has a distinctive chemistry and large quartz phenocrysts (to ~10mm) with embayed margins and commonly creamy inclusions. Such a porphyry is intersected in drilling at the Basin Lake (and Langdons) prospect where it is commonly hydrothermally altered with alteration assemblages including both paragonite + illite and paragonite + pyrophyllite, argillic and advanced argillic alteration facies respectively.

These alteration assemblages indicate that the hydrothermal fluids responsible for this alteration are acidic and more representative of epithermal systems. Further, characteristics of the Henty Au deposit to the north, considered to be formed by shallow sub-seafloor replacement, and the Comstock and North Lyell orebodies of the Mt Lyell field, also considered to have shallow marine characteristics, point to the potential for hybrid epithermal/VHMS and more classic epithermal deposits, particularly south of the Henty Fault.

The discovery on the surface at the Basin Lake prospect of a glacial erratic of altered quartz porphyry with pyrite, enargite and tennantite and trace covellite, stannoidite and mawsonite and pervasive silica and pyrophyllite alteration indicates that a high sulphidation epithermal style deposit has been exposed and eroded.

The fact that this mineralisation occurs in glacial float suggests that the original source may be outcropping but covered by glacial deposits.

(Bass Metals Limited mapped the distribution of this erratic and drilled a hole up-slope pursuing the model that the source of the erratic was a North Lyell style deposit formed in the Mt Read Volcanics against the Great Lyell Fault where it outcrops on the side of the Tyndall Range. However, this position does not correspond with any previous indications of the presence of the quartz feldspar porphyry at this stratigraphic position.)

Bass Metals Limited's detailed trace element lithogeochemical and short wavelength infra-red study of almost all of the historic drill holes in the region showed that argillic and advanced argillic alteration assemblages occur almost always within or immediately adjacent to the quartz porphyry unit where intersected in drilling at the Basin Lake and Langdons prospect within EL 11/2016 (also at the North east Pyrite Zone and West Sedgwick prospects to the south) – see figures 4.2 to 4.6.

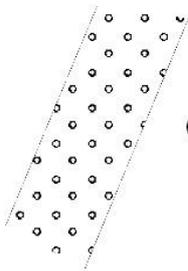
At Basin Lake a strong chargeability high extending for ~400-500 metres north south and centred at a depth of 300-350m has been defined by dipole-dipole IP surveying, with support from a CSAMT survey, corresponds to the predicted strike of this quartz porphyry unit (see figures 4.1 to 4.6).

Drill holes to the north and south of this anomaly have intersected argillic and advanced argillic alteration in the porphyry though without economic intersections.

It is proposed to drill a ~700m hole into this chargeability anomaly coincident with the quartz porphyry unit.

Legend

- advanced argillic
- argillic
- sericitic
- transitional
- propylitic



quartz feldspar porphyry

Figure 4.2: Legend for following sections.

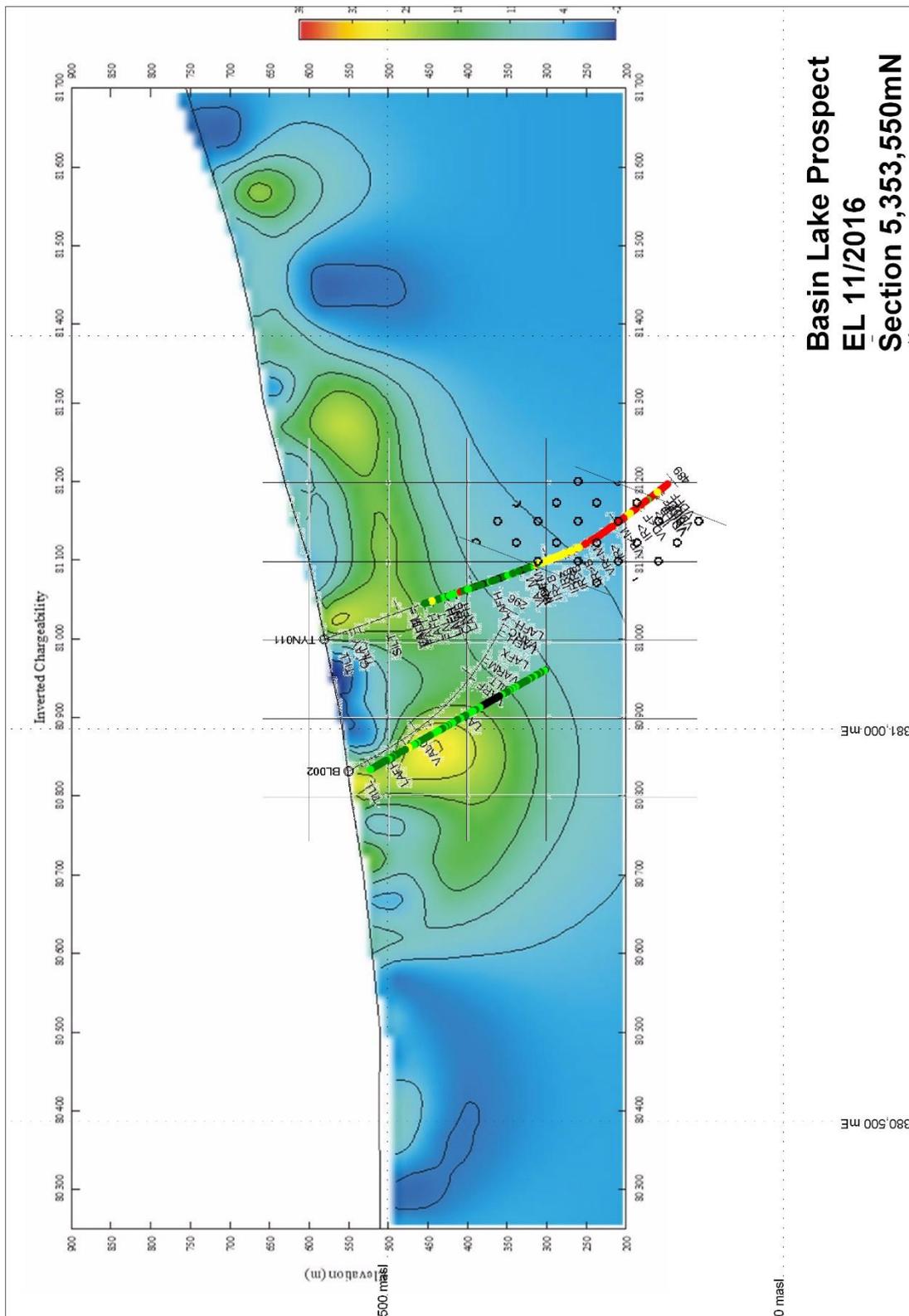


Figure 4.3: Section 5,353,550mN showing historical drilling, short wave infra-red determined alteration assemblages and quartz porphyry unit superimposed on dipole-dipole IP chargeability.

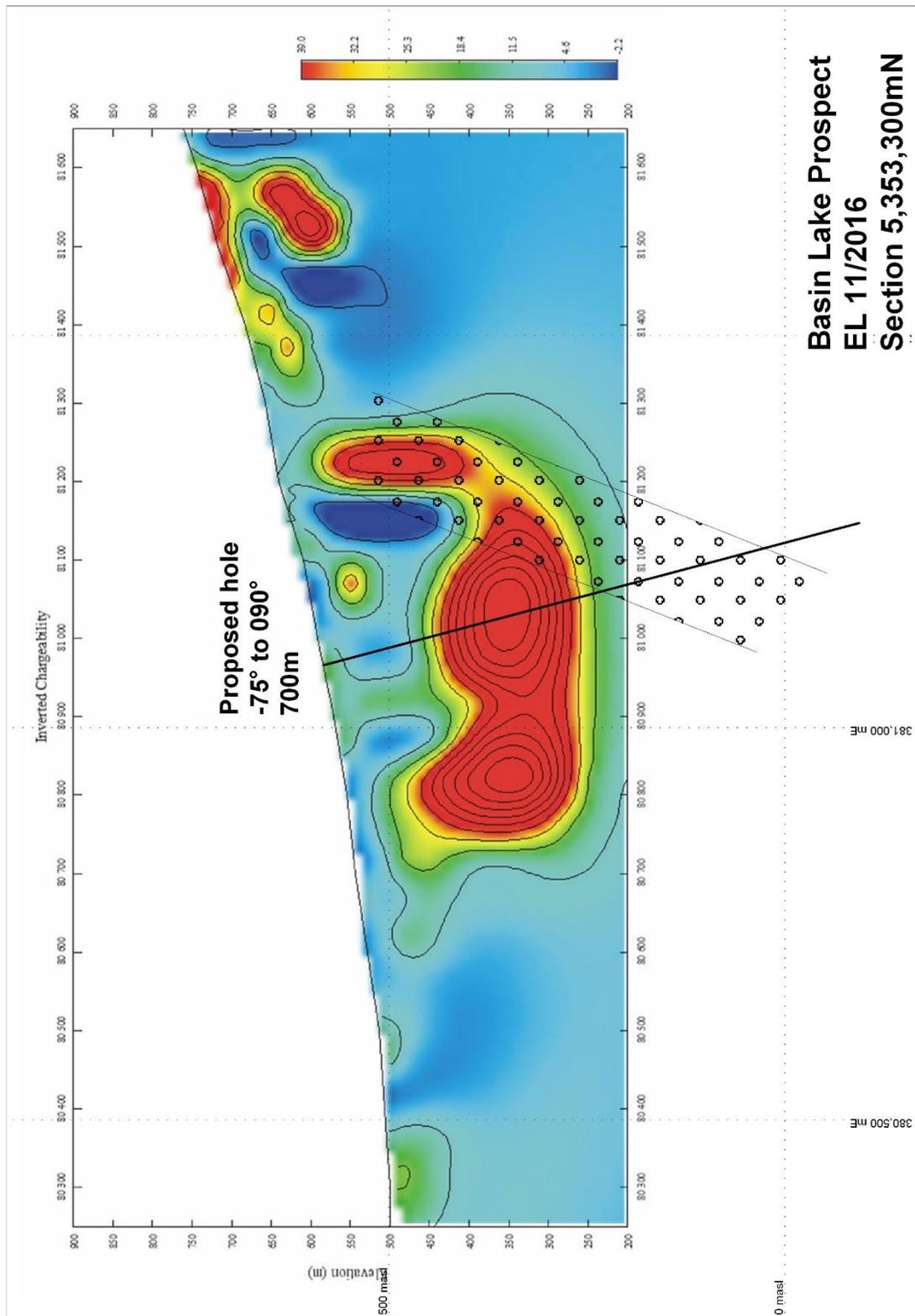


Figure 4.4: Section 5,353,300mN showing historical drilling, short wave infra-red determined alteration assemblages and quartz porphyry unit superimposed on dipole-dipole IP chargeability.

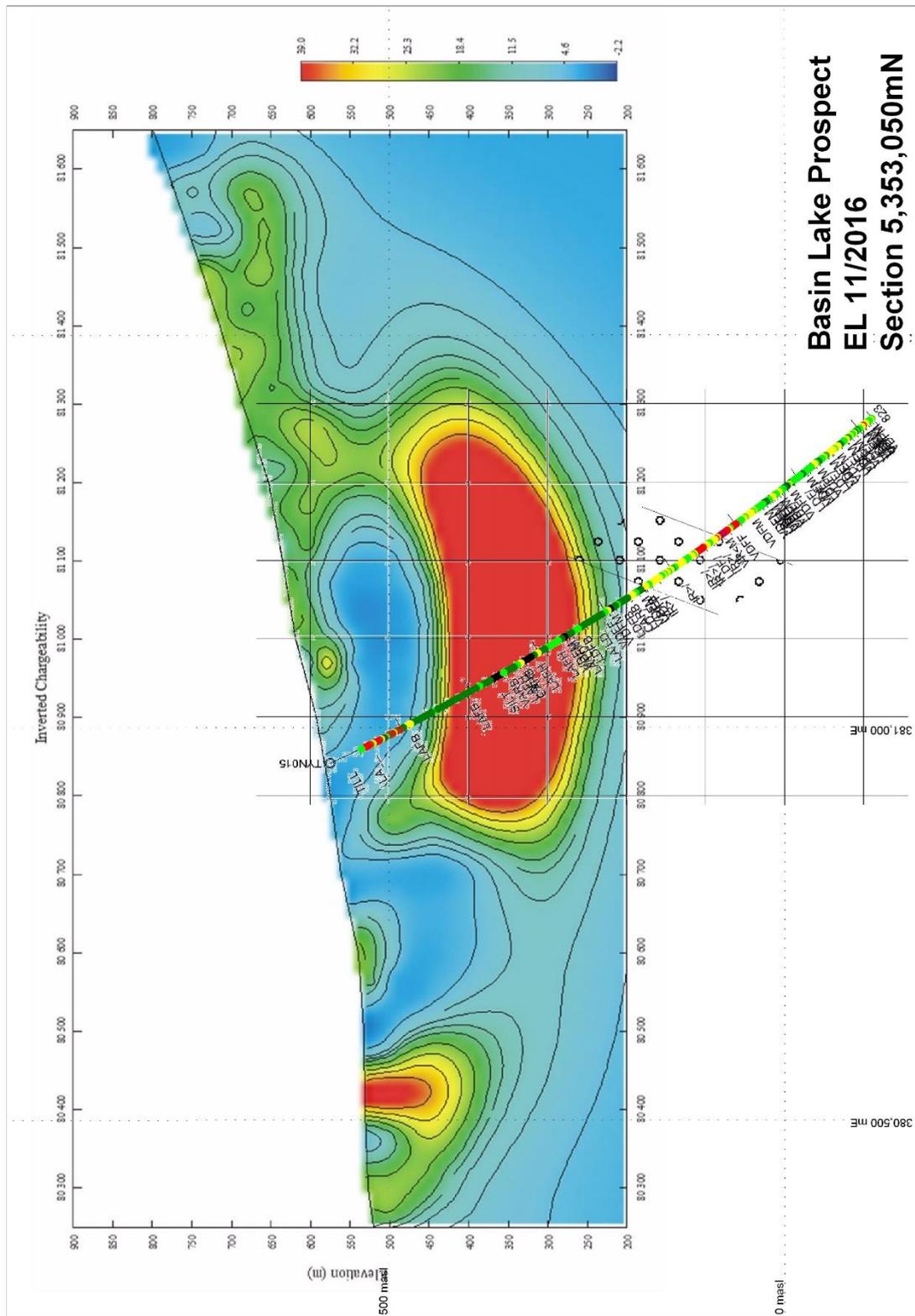


Figure 4.5: Section 5,353,050mN showing historical drilling, short wave infra-red determined alteration assemblages and quartz porphyry unit superimposed on dipole-dipole IP chargeability.

5.0 Proposed Work for 2019/20 Reporting Period

Application has been made for a variation on conditions to allow the diamond drilling at the Langdons prospect and to complete the \$300,000 exploration programme in the 2019/20 year.

Work proposed will consist of

- drilling a 700m deep diamond drill hole at the Langdons chargeability anomaly
- carrying out DHEM on the hole
- ongoing 3D modelling of geology, geophysics and historic drill holes
- planning for further drilling to be completed during the 2019/20 year

6.0 Environmental Management

There has been no active fieldwork and thus no environmental impact requiring management.

7.0 Expenditure

	\$
Geology	10,000
Geochemistry	0
Geophysics	0
Remote Sensing	0
Drilling	0
Gridding	0
Land Access	0
Rehabilitation	0
Feasibility Studies	0
Other	946
Administration	500
Total	11,446

8.0 References

- Bates, S., 2011. Lake Margaret Project, Tasmania, EL28/2009. Annual Progress Report, 10th July 2010 – 9th July 2011. Unpublished Report to Mineral Resources Tasmania
- Creagh, C.J. and Hungerford, N. (1990). EL 103/87 Basin Lake. Progress Report on Exploration for the Period Ending 21st April, 1990. unpub. report for Billiton
- Hill, R and Vicary, M.J. (1999). EL 19/98 Anthony. Annual Report on Exploration. unpub report for Goldfields Exploration
- MacDonald, G and Ikstrums, J (1998). EL 103/87 Basin Lake. Final Report on Exploration. unpub report for Resolute Limited
- MacDonald, G. (2017). Documentation Accompanying Application for ERA 1033 Lake Margaret, unpublished report for Moina Gold Pty Ltd
- MacDonald, G. (2018). Annual Report on Exploration April 2018 to April 2019 EL 11/2016 “Lake Margaret”, unpublished report for Moina Gold Pty Ltd
- Randell, J.P. (1991). EL 103/87 Basin Lake. Progress Report on Exploration for the Period Ending 30th October, 1990. unpub. report for Billiton
- Richardson, S., 2012. Lake Margaret Project, Tasmania, EL28/2009. Annual Progress Report, 10th July 2011 – 9th July 2012. Unpublished Report to Mineral Resources Tasmania
- Richardson, S., 2013. Lake Margaret Project, Tasmania, EL28/2009. Annual Progress Report, 10th July 2012 – 9th July 2013. Unpublished Report to Mineral Resources Tasmania
- Richardson, S. (2014). Lake Margaret Project, EL 28/2011, Annual Report on Exploration 10th July 2013 to 9th July, 2014. unpub. report for Bass Metals Limited
- Vicary, M.J. (1996). EL 14/93 Basin Lake. Annual Report on Exploration. unpub report for RGC Exploration
- Vicary, M.J. (1996). EL 19/98 Anthony. Annual Report on Exploration. unpub report for RGC Exploration
- Vicary, M.J. (1997). EL 14/93 Basin Lake. Annual Report on Exploration. unpub report for RGC Exploration
- Vicary, M.J. (1997). EL 19/98 Anthony. Annual Report on Exploration. unpub report for RGC Exploration
- Vicary, M.J. (1999). EL 14/93 Basin Lake. Annual Report on Exploration. unpub report for Goldfields Exploration.
- Vicary, M.J. (2000). EL 19/98 Anthony. Annual Report on Exploration. unpub report for Goldfields Exploration
- Vicary, M.J. (2001) EL 14/93 Basin Lake. Annual Report on Exploration. unpub report for Goldfields Exploration.
- Vicary, M.J. (2001) EL 19/98 Anthony. Annual Report on Exploration. unpub report for Goldfields Exploration
- Vicary, M.J. (2002) EL 19/98 Anthony. Annual Report on Exploration. unpub report for Aurion Gold
- Vicary, M.J. (2003) EL 25/01 Anthony. Annual Report on Exploration. unpub report for Placer Dome

Appendix A – Document to Accompany Application for EDGI Grant

Moina Gold Pty Ltd

**Document to Accompany
Application for Exploration
Drilling Grant
- Moina Gold Pty Ltd**

Grant MacDonald (B.Sc. Hons.), M.A.I.G.
on behalf of
Moina Gold Pty Ltd
15 Anglesea St
Wivenhoe, Tasmania 7320

Table of Contents

	Page
1.0 Applicant Details	1
2.0 Location and Timing	2
3.0 Summary Drilling Programme	3
4.0 Project Rationale	4
4.1 Summary Project Description	4
4.2 Exploration Model and Geological Context	4
4.3 Previous Work	12
4.4 Proposed Drilling Programme	12
4.5 Programme Objectives and Results	12
4.6 Environmental Impact Information	12
4.7 Project Risk Management	14
5.0 Stakeholder Engagement	16
6.0 Contact Details	17
7.0 References	18

Figures

2.1	Location of Exploration Licence EL 11/2016 "Lake Margaret" on Tasmania's West Coast shown as a maroon outline, and the approximate position of the drill site shown as a red star.	2
4.1	Glacial erratic of intensely advanced argillically altered volcanic assaying 5.6% Cu and 0.6g/t Au.	5
4.2	Dipole-dipole IP image at 350m depth superimposed on MRT 1:25,000 geology with proposed hole.	6
4.3	Legend for following sections.	7
4.4	Section 5,353,550mN showing historical drilling, short wave infra-red determined alteration assemblages and quartz porphyry unit superimposed on dipole-dipole IP chargeability.	8
4.5	Section 5,353,300mN showing historical drilling, short wave infra-red determined alteration assemblages and quartz porphyry unit superimposed on dipole-dipole IP chargeability.	9
4.6	Section 5,353,050mN showing historical drilling, short wave infra-red determined alteration assemblages and quartz porphyry unit superimposed on dipole-dipole IP chargeability.	10
4.7	Section 5,352,800mN showing historical drilling, short wave infra-red determined alteration assemblages and quartz porphyry unit superimposed on dipole-dipole IP chargeability.	11
4.8	Plan of the area around the target zone showing historical grids.	13

1.0 Applicant Details

Moina Gold Pty Ltd is a Tasmanian owned and based mineral exploration company headquartered in Wivenhoe, Burnie.

Moina Gold Pty Ltd holds tenements at Moina, Mt Charter and the southern Mt Read Volcanics at Elliott Bay as well as the Lake Margaret tenement EL 11/2016 to which this application applies.

The companies Managing Director is Mr Geoffrey Summers (0414 451 053) and Exploration Manager/Chief Geologist Mr Grant MacDonald (0408 778 195).

2.0 Location and Timing

The proposed drill hole is on EL 11/2016 “Lake Margaret” in the western part of Tasmania (see figure 2.1). The tenement is wholly owned by Moina Gold Pty Ltd.

The proposed drill hole and its target is at the Basin Lake prospect to the north of the Hamilton Moraine.

The drilling is to take place during the summer months of 2018/19 and should take 2 months to complete.

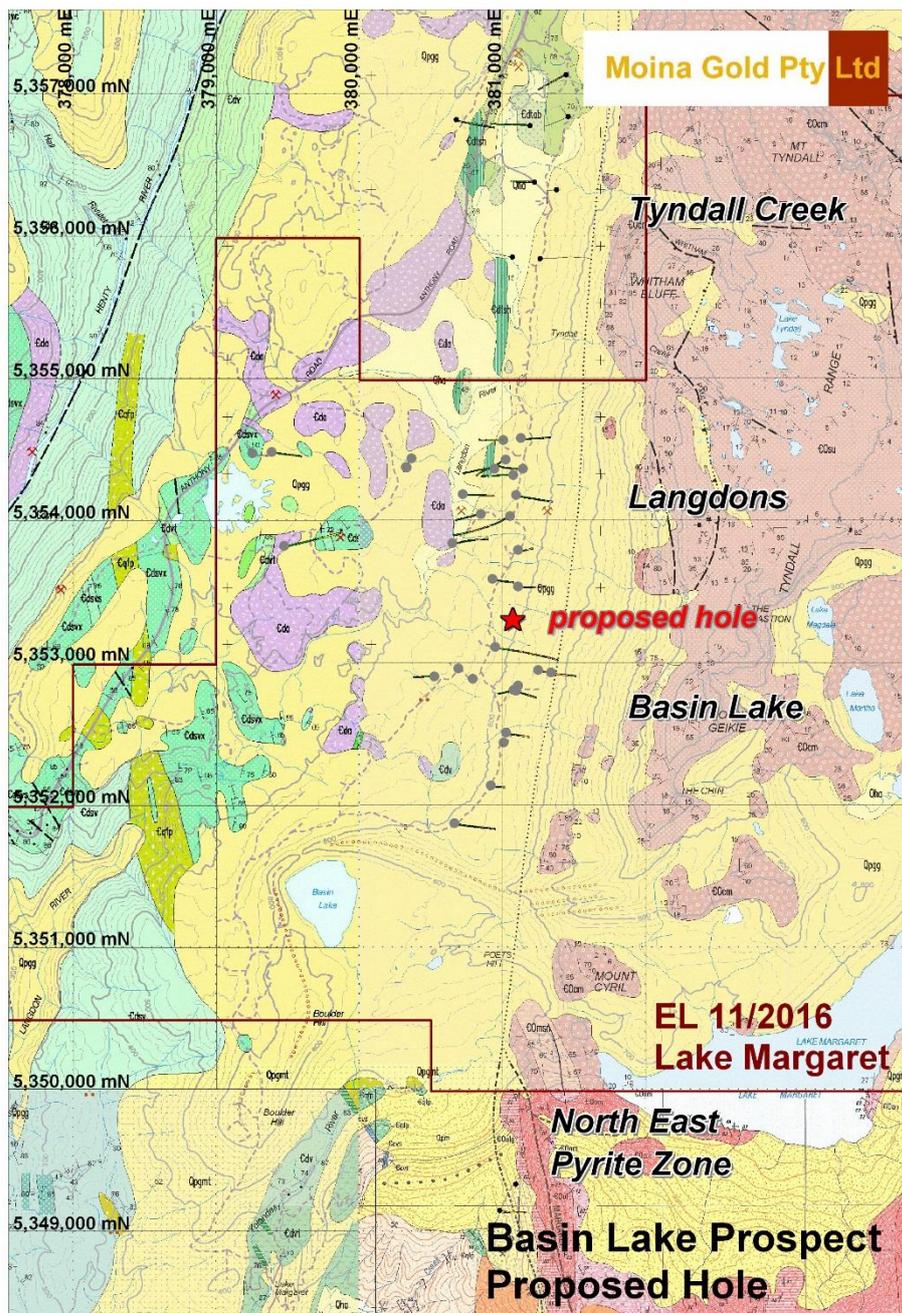


Figure 2.1: Location of Exploration Licence EL 11/2016 “Lake Margaret” on Tasmania’s West Coast shown as a maroon outline, and the approximate position of the drill site shown as a red star.

3.0 Summary Drilling Programme

A single diamond drill hole of 700 metres is proposed. A quote for the work has been provided by a preferred drilling contractor Max Harvey who has had considerable experience in the region.

It is estimated that the drilling will cost \$100,000

The drill site is in an area of open heath such that the drill pad will require little clearing and later rehabilitation. To access the drill pad site a vehicular track of 0.2km length will need to be constructed to the site.

It is estimated that the track and drill pad clearing will cost \$10,000

The drill core will be systematically assayed for the target commodities Cu, Pb, Zn, Ag and Au. Selected samples will also be (1) analysed for pathfinder elements Bi, As, Sb, Te, Tl amongst others using ICP-MS, and (2) analysed by Short Wave Infra-Red Spectrometry (SWIR), in order to classify alteration assemblages consistent with the large body of similar work completed by Bass Metals Limited in 2011/2012 (see discussion below).

It is estimated that assaying and SWIR spectrometry will cost a total of \$15,000

The hole will be surveyed by down hole EM (DHEM). This will require (1) casing the hole with 40mm PVC pipe upon completion of drilling, (2) surveying of a nominally 400m square loop, (3) surveying of the hole using Moina Gold Pty Ltd's own DigiAtlantis down hole EM system which will require helicopter mobilisation/demobilisation, and (4) processing of the data.

It is estimated that the DHEM survey in total will cost \$7,000

The total cost of the drilling, mobilisation/demobilisation, access track and drill pad clearing/rehabilitation, assaying and SWIR spectrometry and DHEM survey is estimated to be \$132,000.

4.0 Project Rationale

4.1 Summary Project Description

A single diamond drill hole of 700m length is proposed to test a strong 400-500m long dipole-dipole IP chargeability high (with CSAMT support) anomaly centred at ~300-350m depth and corresponding with the strike continuation of an enigmatic, argillic and advanced argillically altered quartz feldspar porphyry at the Basin Lake prospect in Tasmania's Mt Read Volcanics.

A glacial erratic boulder of similarly altered quartz feldspar porphyry occurs at the Basin Lake prospect and assays 5.6% copper and 0.6g/t gold. Whilst the IP anomaly cannot represent the actual direct source of the erratic the grades in it indicate the potential grades and style of alteration and mineralisation which may be producing the IP anomaly.

4.2 Exploration Model and Geological Context

A total pre-mining resource worth over A\$60 billion lies along or near to Tasmania's world class "holy host" horizon mineralised trend, which passes through the Cambrian Mt. Read Volcanics on the state's west coast.

Along it lie the Hellyer, Fossey, Que River, Mt Charter, Rosebery, Hercules, Henty and Mt. Lyell orebodies along with numerous smaller mineralised occurrences and extensive associated hydrothermal alteration.

The stratigraphic position, at or near to the base of the lowermost Lynchford Member of the Tyndall Group, passes through the Lake Margaret tenement and the Basin lake prospect.

In most of the deposits and related prospects in the Mt Read Volcanics an enigmatic quartz feldspar porphyry also occurs in proximity to mineralisation and is interpreted to be coeval with the eruption/deposition of the Lynchford Member. This porphyry has a distinctive chemistry and large quartz phenocrysts (to ~10mm) with embayed margins and commonly creamy inclusions. Such a porphyry is intersected in drilling at the Basin Lake (and Langdons) prospect where it is commonly hydrothermally altered with alteration assemblages including both paragonite + illite and paragonite + pyrophyllite, argillic and advanced argillic alteration facies respectively.

These alteration assemblages indicate that the hydrothermal fluids responsible for this alteration are acidic more representative of epithermal systems. Further, characteristics of the Henty Au deposit to the north, considered to be formed by shallow sub-seafloor replacement, and the Comstock and North Lyell orebodies of the Mt Lyell field, also considered to have shallow marine characteristics point to the potential for hybrid epithermal/VHMS and more classic epithermal deposits, particularly south of the Henty Fault.

The discovery on the surface at the Basin Lake prospect of a glacial erratic of altered volcanic rock with pyrite, enargite and tennantite and trace covellite, stannoidite and mawsonite and pervasive silica and pyrophyllite alteration indicates that a high sulphidation epithermal style deposit has been exposed and eroded.



Figure 4.1: Glacial erratic of intensely advanced argillically altered volcanic assaying 5.6% Cu and 0.6g/t Au.

The fact that this mineralisation occurs in glacial float suggests that the original source may be outcropping but covered by glacial deposits.

Of further significance is the presence within the rock of distinctive quartz phenocrysts of the type seen in the quartz feldspar porphyry discussed earlier.

Bass Metals Limited mapped the distribution of this erratic and drilled a hole up-slope pursuing the model that the source of the erratic was a North Lyell style deposit formed in the Mt Read Volcanics against the Great Lyell Fault where it outcrops on the side of the Tyndall Range. However, this position does not correspond with any previous indications of the presence of the quartz feldspar porphyry at this stratigraphic position.

Further, Bass Metals Limited's detailed trace element lithochemical and short wavelength infrared study of almost all of the historic drill holes in the region showed that argillic and advanced argillic alteration assemblages occur almost always within the quartz porphyry unit where intersected in drilling at the Basin Lake and Langdons prospect within EL 11/2016 (also at the North east Pyrite Zone and West Sedgwick prospects to the south).

The geology of the Mt Read Volcanics is structurally complex in the Basin Lake-Langdons-Tyndall Creek area. Vicary (1999) describes the volcanics in the western part of the area as steeply east dipping and facing and part of the Anthony Road Andesite unit, whilst the rocks in the eastern part are steeply west dipping and facing with the rocks against the Great Lyell Fault considered to be correlates of the Central Volcanic Complex which underlies the Anthony Road Andesite. This complexity is resolved by a synclinal fold with a fault passing through the axis.

Exploration at the Basin Lake (and Langdons) prospect has recognised the presence of argillic and advanced argillic alteration in the quartz feldspar porphyry unit.

At Basin Lake a strong chargeability high extending for ~400-500 metres north south and centred at a depth of 300-350m has been defined by dipole-dipole IP surveying, with support from a CSAMT survey, corresponds to the predicted strike of this quartz porphyry unit.

Drill holes to the north and south of this anomaly have intersected argillic and advanced argillic alteration in the porphyry though without economic intersections.

Previous workers have recommended that this anomaly be drilled as a priority.

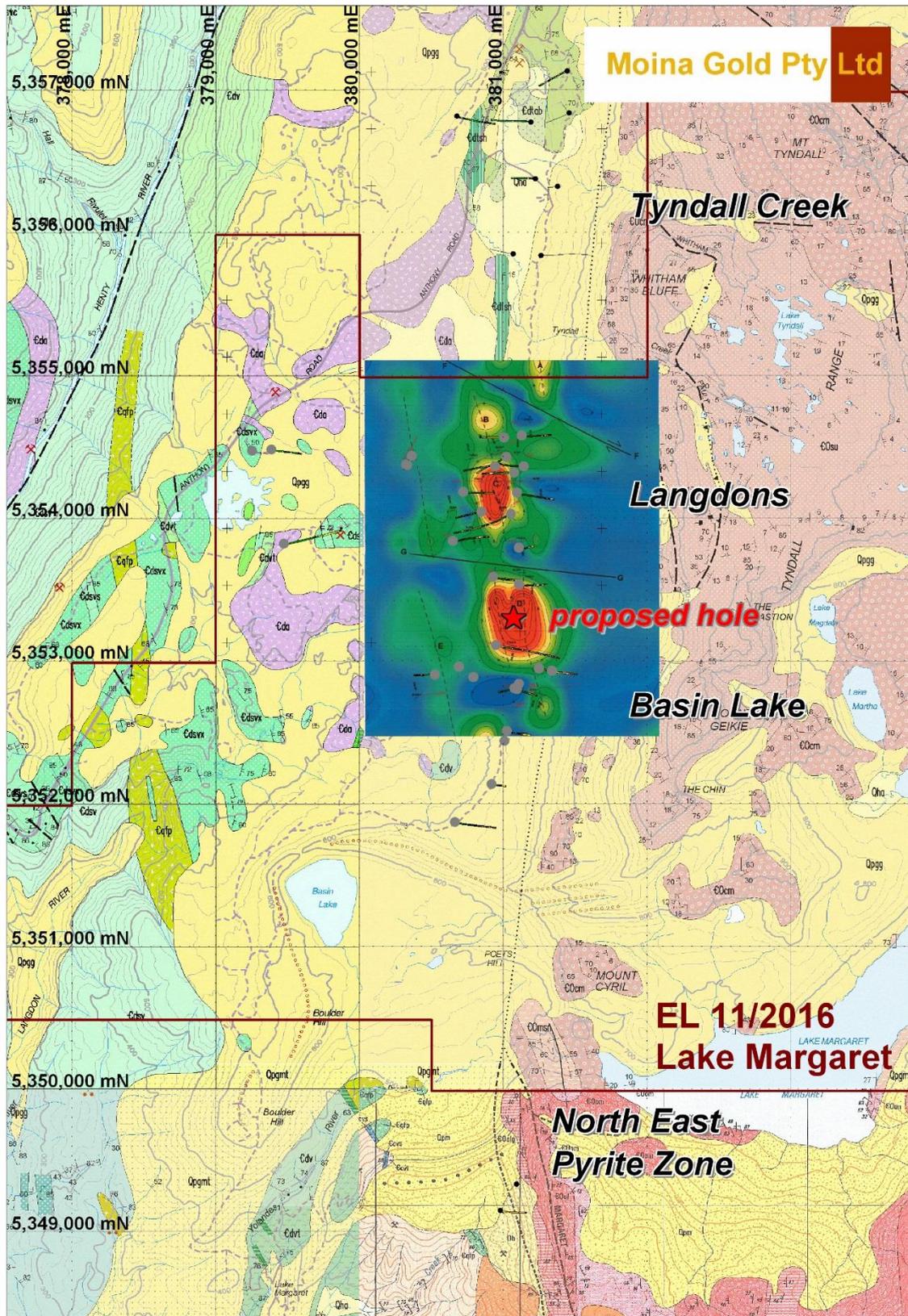


Figure 4.2: Dipole-dipole IP image at 350m depth superimposed on MRT 1:25,000 geology with proposed hole.



Figure 4.3: Legend for following sections.

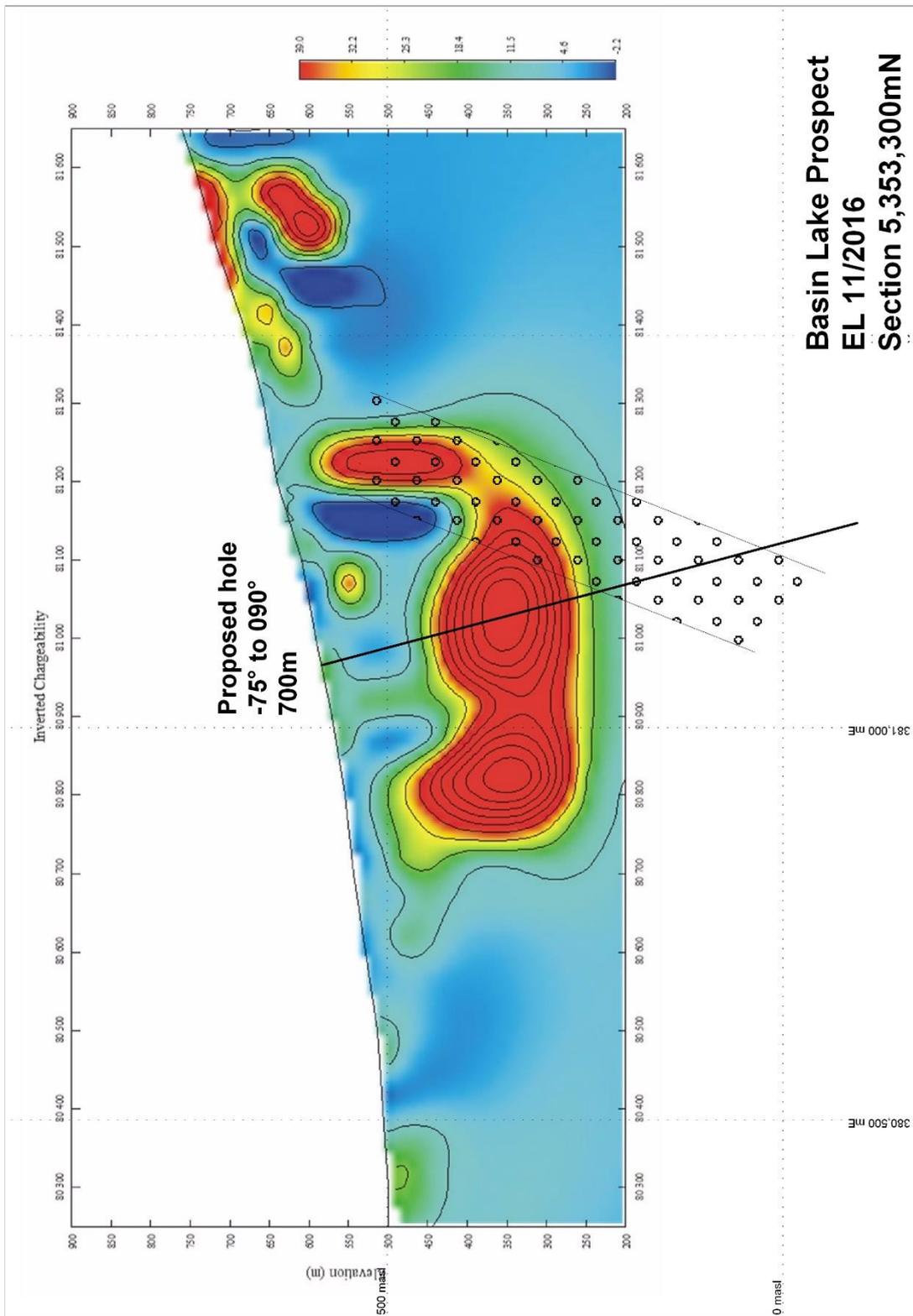


Figure 4.5: Section 5,353,300mN showing historical drilling, short wave infra-red determined alteration assemblages and quartz porphyry unit superimposed on dipole-dipole IP chargeability.

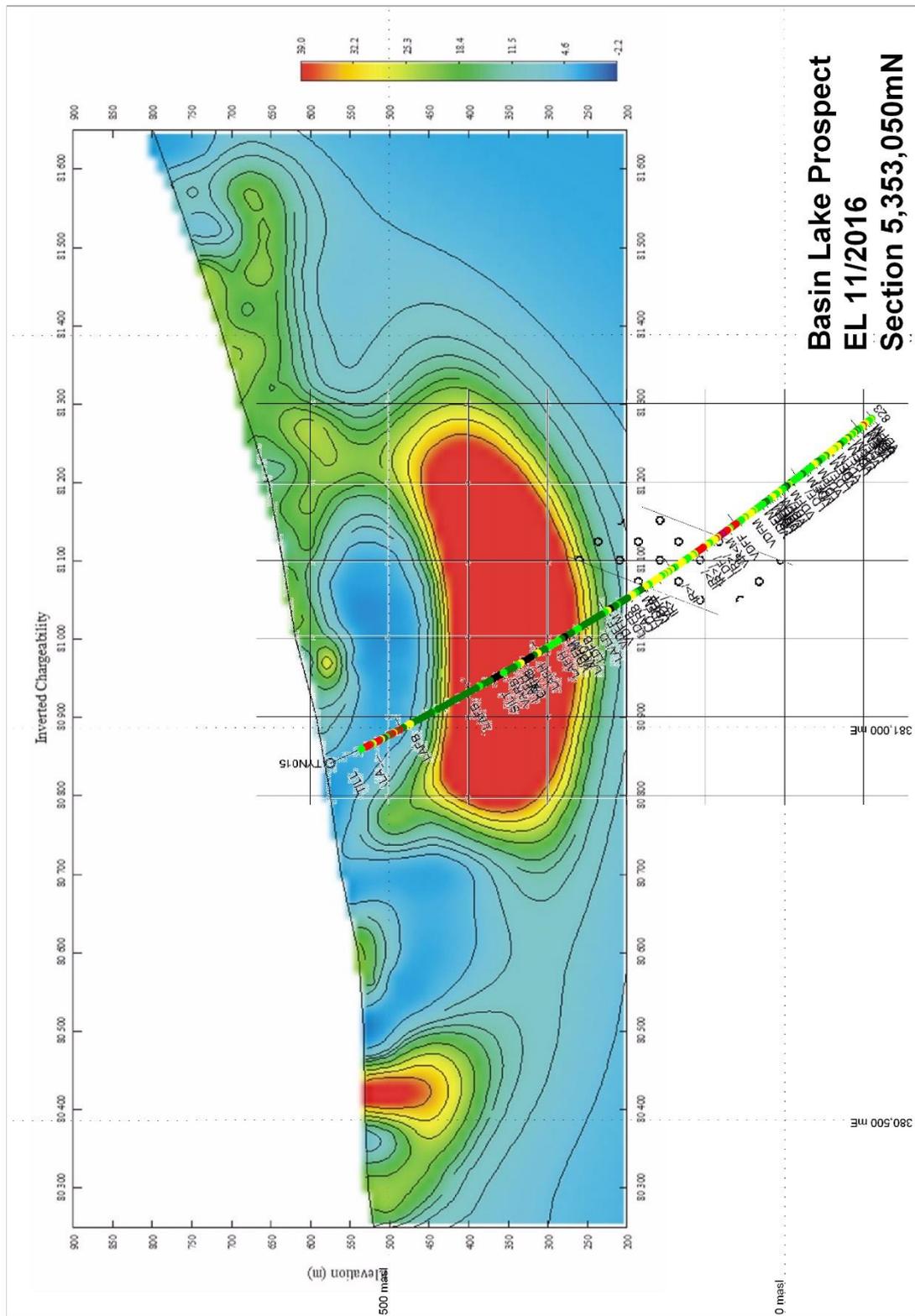


Figure 4.6: Section 5,353,050mN showing historical drilling, short wave infra-red determined alteration assemblages and quartz porphyry unit superimposed on dipole-dipole IP chargeability.

4.3 Previous Work

The northern Mt Read Volcanics in the western part of Tasmania have been extensively explored over the last six decades and the Basin Lake prospect has seen activity over much of that time.

Much of the prospective sequence is covered by glacial gravels which handicap exploration. For this reason exploration has been largely geophysically driven with conceptual geological models based on stratabound "VHMS" Pb-Zn-Ag mineralisation, and disseminated VHMS footwall "Mt Lyell type" Cu-Au.

Previous exploration on the Basin Lake prospect to 1997 is described in detail in MacDonald and Ikstrums (1997).

Originally the Basin Lake prospect was considered to encompass a larger area. In around 1995/1996 the alteration and mineralised zone in the northern half became known as the Langdon prospect (due to its proximity to the Langdon River) with the apparently spatially distinct alteration and mineralisation in the southern half (closer to Basin Lake) retaining the Basin Lake prospect name.

Exploration of the Basin Lake prospect proper started with Pickands Mather poorly reported work in the late 1950's. From 1966 to 1987 the Mt. Lyell Mining and Railway Company explored the region including drilling holes BL801 (228m), BL802 (68m), BL1 (484m), BL2 (296m) and BL5 (346.5m) at Basin Lake as well as carrying out a number of geophysical surveys (largely dipole-dipole IP but also UTEM) and soil geochemical surveys (A-horizon and mostly over glacials so results of dubious relevance).

From 1988 to 1993 the Basin Lake prospect was explored by Billiton and later Aberfoyle in JV. Work consisted of drilling BLD89-1 (235m), BLD89-2 (250m) and BLD89-3 (388.4m) with CSAMT and UTEM geophysical surveys. From 1993 to 1998 Renison Goldfields Consolidated explored part of the Basin Lake prospect drilling TYN10 (271m), TYN11 (483m), TYN12 (361m), TYN14 (791m), TYN15 (822.5m) and TYN16 (449m) and a helimag survey.

From 2000 to 2003 Goldfields attention was focussed on the Langdon prospect but they also carried out a new dipole-dipole IP survey over the Basin Lake prospect. During this period the outcropping glacial erratic (figure 5) of intensely hydrothermally altered volcanic was discovered.

Bass Metals successfully tendered for ground including the Basin Lake prospect in 2008 and explored it under EL 28/2009. Bass undertook a regional scale Short Wave Infra Red (SWIR) study of hydrothermal alteration in all drillcore from the tenement in combination with core sampling and analysis for trace element using ICPMS/OES. In all Bass collected 8777 spectral measurements from 56 holes and 1467 lithochemical samples.

High-sulphidation epithermal type alteration minerals were mapped in a number of drillholes at Basin Lake and Langdons prospects consistent with the high-sulphidation copper sulphide minerals described from the boulder of high grade copper ore and supporting the interpretation that the source of the boulder is proximal.

Field mapping of glacial erratics to determine the spatial distribution of altered and mineralised types was carried out followed by the drilling of LMD2 (351m) designed to test the upslope potential source of the erratic on the Great Lyell Fault where it intersects the Lynchford Member. Unfortunately the hole was not optimally position testing the target position 350m below its surface outcrop. Two shallower holes LMD3 (32.5m) and LMD4 (65.1m) were drilled into the glacials where the mineralised erratic was discovered.

Bass also carried out an MMI soil survey in the area defining anomalous responses at a number of localities.

The MMI anomaly associated with Great Lyell Fault and previously detected in 2011 was repeated by the most recent survey. However, the anomaly did not extend further to the south and its small strike

length of between 100-200m was argued as not warranting further investigation. For financial reasons Bass surrendered the tenement in 2016.

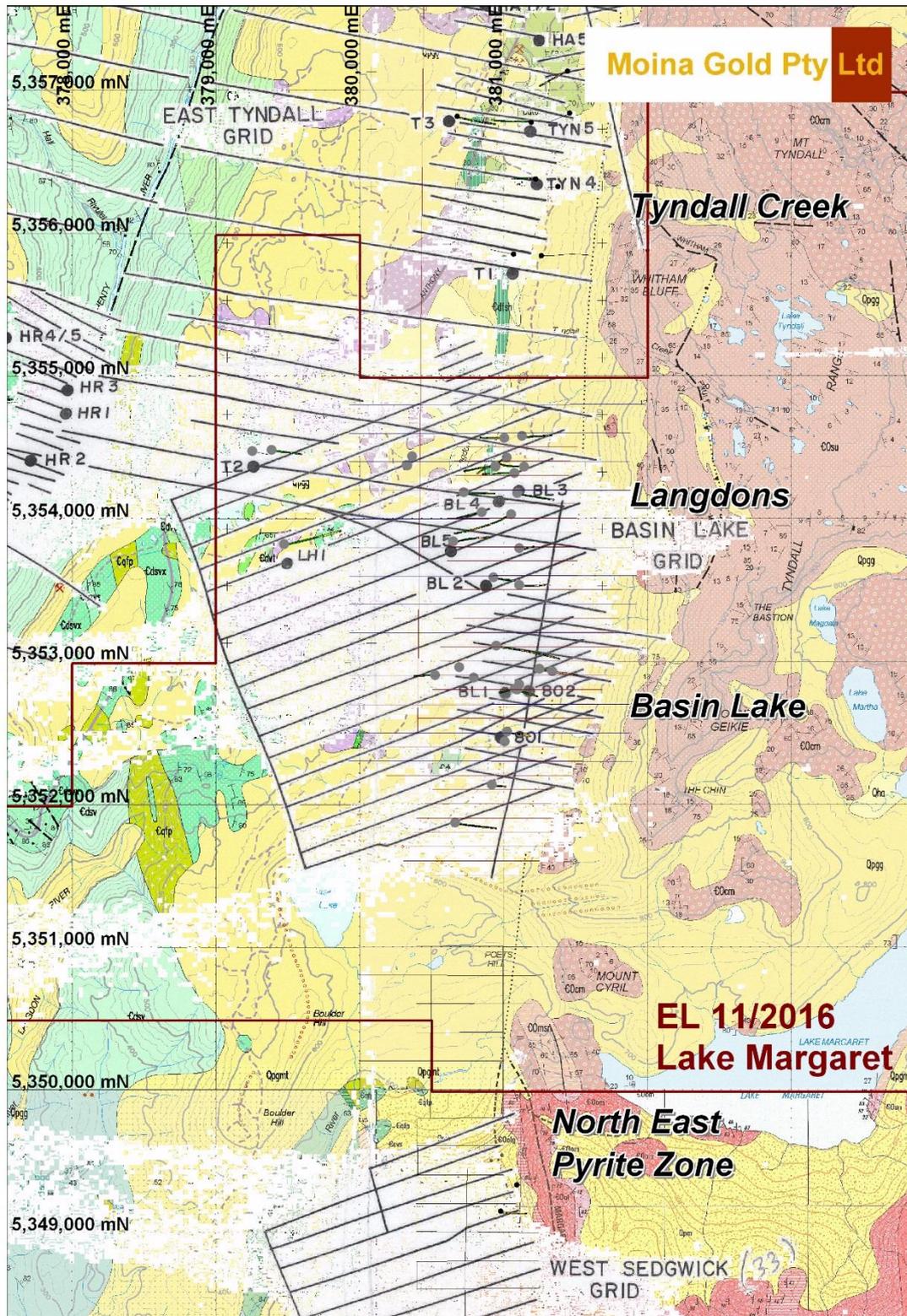


Figure 4.8: Plan of the area around the target zone showing historical grids.

4.4 Proposed Drilling Programme

A single diamond rill hole of 700 m's length collared at approximately 381,080mE and 5,353,300mN (MGA94 zone55 datum) will be drilled at -75° towards due east.

The hole will be drilled in HQ until at least the depth of the glacials and ideally for some considerable distance further before casing off and continuing with NQ core.

The hole will be lined with 40mm PVC for downhole EM surveying using the companies owned new generation DigiAtlantis EM system (triated successfully at holes at Balfour and the Copper King prospects elsewhere in the state).

Core will be sampled systematically for target commodity elements Au, Ag, Cu, Pb and Zn. In addition to this selected samples will be analysed for pathfinder trace elements including Bi, Sb, As, Te, Tl,= and Mo amongst others using ICP-MS in conjunction with short wavelength infra-red spectroscopic analysis of alteration, at a density consistent with Bass Metals Limited's work.

The proposed hole is shown on figures 2.1, 4.2 and 4.5.

4.5 Programme Objectives and Results

The primary aim of the drill hole is to intersect economic copper +/- gold mineralisation.

Secondary aims will be to:

1. Intersect hydrothermal alteration which:
 - a. Explains the anomaly
 - b. Provides vectors for follow-up drilling
2. Provide a platform for a down hole EM survey

4.6 Environmental Impact Information

The drill site and access track both lie within the Tyndall Regional Reserve and are subject to tighter environmental constraints than non-reserve areas. Further, the site and track are in open heath country on the west facing lower slopes of the Tyndall Range and are relatively visible.

Consideration has been given to flying the rig in by helicopter, however, given the relatively short access track required, and the effectiveness of rehabilitation of other drill access tracks along the range it is considered reasonable to request that access be by a vehicular track.

Track construction and rehabilitation will seek to be industry best practice and follow the Mineral Exploration Code of Practice and any directions/recommendations made by Mineral Resources Tasmania staff to the fullest.

It is expected that the track and site will be successfully rehabilitated to its original state.

4.7 Project Risk Management

There are a number of risks associated with the drilling worthy of detailed consideration.

Firstly, the drill target being derived from a dipole-dipole IP survey and subsequent inversion is only moderately well depth constrained. Whilst it is considered most probable that the target lithological unit, the quartz feldspar porphyry will be intersected, it is quite conceivable that the centre of the alteration system might not be optimally intersected. To cover this eventuality the hole will be drilled at a relatively steep angle in order to reduce the chance of missing the anomaly.

Secondly, from a drilling perspective it is conceivable that the glacials overlying the bedrock geology may provide difficult drilling conditions. To mitigate against this risk a contingency has been provided in the budget costings to allow for regular cementing. Further the drilling contractor has drilling equipment capable of allowing the advancing of larger diameter casing without withdrawing the HQ

and NQ rod string. With both measures and the experience of the proposed drilling contractor, Max Harvey of Zeehan, it is expected that this risk will be minimised.

Thirdly, it is possible that bad ground conditions deeper in the hole may mean that casing off is required. Whilst a BQ rod string is available this is considered less than ideal particularly since the hole is to be lined with 40mm PVC for down hole EM surveying. To this end it is proposed to drill HQ for as far as possible before casing off and proceeding with NQ.

5.0 Stakeholder Engagement

The drill target, drill site access track all lie within the Tyndall Regional Reserve.

6.0 Contact Details

Exploration Manager/Chief Geologist Mr Grant MacDonald

0408 778 195

grantmacdonald@live.com.au

Managing Director Mr Geoffrey Summers

0414 451 053

geoffsum1@bigpond.com

7.0 References

- Bates, S., 2011. Lake Margaret Project, Tasmania, EL28/2009. Annual Progress Report, 10th July 2010 – 9th July 2011. Unpublished Report to Mineral Resources Tasmania
- Creagh, C.J. and Hungerford, N. (1990). EL 103/87 Basin Lake. Progress Report on Exploration for the Period Ending 21st April, 1990. unpub. report for Billiton
- Hill, R and Vicary, M.J. (1999). EL 19/98 Anthony. Annual Report on Exploration. unpub report for Goldfields Exploration
- MacDonald, G and Ikstrums, J (1998). EL 103/87 Basin Lake. Final Report on Exploration. unpub report for Resolute Limited
- Randell, J.P. (1991). EL 103/87 Basin Lake. Progress Report on Exploration for the Period Ending 30th October, 1990. unpub. report for Billiton
- Richardson, S., 2012. Lake Margaret Project, Tasmania, EL28/2009. Annual Progress Report, 10th July 2011 – 9th July 2012. Unpublished Report to Mineral Resources Tasmania
- Richardson, S., 2013. Lake Margaret Project, Tasmania, EL28/2009. Annual Progress Report, 10th July 2012 – 9th July 2013. Unpublished Report to Mineral Resources Tasmania
- Richardson, S. (2014). Lake Margaret Project, EL 28/2011, Annual Report on Exploration 10th July 2013 to 9th July, 2014. unpub. report for Bass Metals Limited
- Vicary, M.J. (1996). EL 14/93 Basin Lake. Annual Report on Exploration. unpub report for RGC Exploration
- Vicary, M.J. (1996). EL 19/98 Anthony. Annual Report on Exploration. unpub report for RGC Exploration
- Vicary, M.J. (1997). EL 14/93 Basin Lake. Annual Report on Exploration. unpub report for RGC Exploration
- Vicary, M.J. (1997). EL 19/98 Anthony. Annual Report on Exploration. unpub report for RGC Exploration
- Vicary, M.J. (1999). EL 14/93 Basin Lake. Annual Report on Exploration. unpub report for Goldfields Exploration.
- Vicary, M.J. (2000). EL 19/98 Anthony. Annual Report on Exploration. unpub report for Goldfields Exploration
- Vicary, M.J. (2001) EL 14/93 Basin Lake. Annual Report on Exploration. unpub report for Goldfields Exploration.
- Vicary, M.J. (2001) EL 19/98 Anthony. Annual Report on Exploration. unpub report for Goldfields Exploration
- Vicary, M.J. (2002) EL 19/98 Anthony. Annual Report on Exploration. unpub report for Aurion Gold
- Vicary, M.J. (2003) EL 25/01 Anthony. Annual Report on Exploration. unpub report for Placer Dome

