

1.1 Whyte River ERA 655

1.1.1 Location

The centre of this exploration licence application, ERA655, is approximately 65km south west of the coastal port of Burnie in NW Tasmania. The licences are close to the Savage River Mine which lies 5km to the west. The licence is split into two, the Eastern and Western Sub-areas.

Road access to both areas is via the sealed road from the Lyell Highway to the Savage River Mine. Access to other parts of the tenement will be by unsealed roads constructed for previous exploration and may be in a state of disrepair. It is likely that helicopter support will be required for access to potential target areas.

1.1.2 Geological Setting and Mineralisation

The Geology of the Whyte River licence involves a complex arrangement of five structurally-bound elements within the Dundas Stratotectonic Element (figure 8). These are:

1. Part of a Late Proterozoic high to moderate grade metamorphic belt (Oonah and Burnie Formations).
2. Cambrian volcanoclastics and mafic lavas associated with the Mt Read Volcanics.
3. Sub-sections of the Heazlewood Ultramafic Complex; an ophiolitic sequence.
4. A structurally bound Ordovician-Siluro-Devono clastic basin.
5. Devonian Granite, the northern margin of the Meredith Granite.

In addition there are localised zones of Tertiary basalts and Quaternary cover.

The Western licence has in its southern half an ultramafic embayment within the Meredith Granite. This ultramafic unit comprises serpentinised layered dunite and harzburgite and is likely to have a substantial thermal metamorphic overprint caused by the granite. This presents the opportunity for an Avebury-style nickel deposit. The Avebury Nickel deposit is located near Zeehan in West Tasmania and is essentially a nickel skarn hosted by ophiolitic ultramafics in proximity to a major Devonian granite, the Heemskirk Granite.

Further north in this western area lie Late Neoproterozoic highly metamorphosed fine grained clastics of the Burnie and Oonah Formations. The metamorphic effect could be a result of either thermal metamorphism associated with the Meredith Granite or more likely, an effect associated with the Arthur Lineament. The latter is a major structural zone that cuts across NW Tasmania on a NE line. Interestingly within this unit are small, Cambrian-aged gabbro 'plugs' as well as a much larger circular Tertiary Basalt feature. Finally the northern quarter of the Western Area contains ultramafics in the form of layered pyroxenite and dunite juxtaposed with Cambrian mafic volcanics that are thought to be genetically related to the ultramafics.

In the Eastern Area, fault bounded Cambrian mafic volcanics similar to those in the Western area make up 30% of the area. These rocks are in faulted contact with Cambrian volcanoclastics of the Mt Read's on the licence eastern margin. South of the mafic volcanics lies a remnant of the Tasmanian-wide Ordovician to Silurian sedimentary basin. This basin includes the Gordon Limestone at its base, followed by a gradual deepening and fining series of siliciclastics. This Ordovician-Silurian sequence is abutted against the Meredith Granite and is thus likely to have a significant thermal metamorphic overprint with potential for skarn formation.

Structurally the area is very complex with all the sub-units mentioned above in faulted contact with each other. There is scope for thrusting to have taken place although this has not been indicated in the published mapping.

The airborne magnetic data flown by MRT at 200m line spacing indicates some discrepancies with the mapping data. It is worth noting that the Whyte River iron ore mineral occurrence is characterised by a distinct, isolated magnetic high hosted by a mapped outcrop of Gordon Limestone.

Other mineral occurrences within the Western part of the licence area include a tungsten (scheelite skarn) feature, Mt Youngbuck, coincident with a small order magnetic anomaly hosted by Neoproterozoic rocks close to the shallow north dipping contact of the Meredith Granite. A gold occurrence also occurs in a similar position but supposedly hosted by serpentinitised layered dunite and harzburgite. In the Eastern sector of the licence there are several lead occurrences running along strike of the contact (faulted?) between the Gordon Limestone and the Silurian Crotty Quartzite. A small silver occurrence occurs on the eastern margin of the licence hosted by Cambrian turbiditic mafic volcanoclastics, red mudstone and chert.

The lead occurrences have been the subject of historical mining and diamond drilling (EZ in the 1940's). Three of the occurrences, Godkin, Discoverer and Bell's Reward were opened up. At Godkin Cambrian igneous rocks are in contact, possibly via thrusting, with Ordovician and Silurian sediments including the Gordon Limestone. The old workings reached a depth of 110' (~ 35m) with 3 level developments. A 10' (~3m) wide lode was reported running at 15% Pb, 27% Zn and 49oz/ton Ag. Production figures state that 52.3 tons of lead was produced from 327 tons of ore. At North Godkin mining reached a depth of 210' but encountered barren gossan material. Godkin Extended comprised 3 levels with a sulphide lode between 2 and 3 level grading 4.75% Pb, 30.16% Zn and 13dwt/ton Ag.

At Discoverer mining reached a depth of 460' below the summit of Mt Bell using 4 adits. However, only barren, ferruginous material was encountered at the expected ore position. For Bell's Reward a 700' adit and a 154' deep shaft were developed only to intersect a few feet of gossanous lode with minor sulphide impregnations hosted by limestone. Diamond drilling by EZ resulted in 3 holes targeting being targeted on Bell's Reward, with a single hole at both Discoverer and Godkin Extended. In all 5 holes were completed for a total of 3157' along the line of the supposed lode. In all five instances, only a few feet of ferruginous material was intersected.

Near the margin of Western licence section lies the Mt Stewart Pb/Zn lode hosted by schistose pyroxenite with the schistosity striking north-south with a vertical dip. Historical mining comprised a main shaft, two smaller shafts and two adits to a total

depth of 200'. Two ore shoots are known to have existed, with the lodes up to 200' long and 1-3' wide, with grades of 4%Pb, 8%Zn and 30oz/ton Ag.

The Mount Youngback scheelite occurrence occurs on the western boundary of the Western section. Aberfoyle in 1982 drilled two diamond holes into a magnetic anomaly which corresponded to a mineralised zone up to 36m wide with variable tungsten distribution, peaking at 0.75m at 0.68%W.

The Whyte River iron occurrence lies on the SE edge of the Huskisson Syncline. The occurrence consists of an irregular magnetite body hosted by the Gordon Limestone at the latter's contact with the Meredith Granite. The magnetite body was reported by RGC to be several hundred metres long and up to 50m wide. It is mapped at surface as a hematite/magnetite feature. There has been no reported diamond drilling of the target.

Within the greater area of the two licence sub-sections there is a substantial outcrop of the Heazlewood Ultramafic Complex with recorded instances of osmium and iridium (two members of the platinum group elements (PGE)), most notably in the serpentinised layered dunite and harzburgite unit. There are copper occurrences peripheral to the Whyte River licence hosted by Cambrian mafic lavas. In addition there are some lead and nickel occurrences within the layered pyroxenite and dunite.

1.1.3 Exploration Programme

Manasia's exploration plans and strategies for this tenement (as advised to the Author) comprise targeting a number of different commodities and deposit styles.

The initial strategy will comprise reviewing and assessing the recent airborne magnetic data with some data reprocessing and 3D modelling in order to identify significant anomalies in relation to their geology. Geochemical processing will also be undertaken in order to identify areas for detailed follow up. Prompt field testing of discrete anomalies associated with major structures will follow, possibly with helicopter support. Encouraging outcomes will result in more detailed geochemical sampling (if feasible due to the basalt cover) and ground geophysical surveys e.g. magnetic and/or IP, aiming to delineate drill targets.

In addition a review and field inspection of all known deposits/mineral occurrences within the licence will also be undertaken to firmly establish the geological nature and potential of the occurrence to signify possible ore.

Drilling will initially be of a reconnaissance style moving to a detailed diamond drilling campaign whenever results are favourable.

The initial focus will be on the Whyte River iron deposit which is clearly identified as a discrete magnetic anomaly in the MRT airborne magnetic data.

Manasia's exploration plans and strategies for this tenement also recognise that stratiform PGE mineralisation can be found towards the base of layered ultramafic magma chambers of the type seen at Whyte River. The methodology for the PGE exploration will incorporate recent theories for locating platinum/palladium mineralisation in ophiolites. In addition improved assaying techniques for PGE's, not available to

previous explorers, can help the detection of low grade surface anomalies possibly indicating mineralisation at depth.

This strategy would also be considered relevant for stratabound nickel mineralisation.

The proposed programme and budget is considered by the Author to be appropriate for the level of work intended. The project will be results driven and thus some modifications to the programme may be required as field results are obtained.

1.1.4 Exploration Potential

The principal targets are:-

1. Possible iron ore deposits similar to Savage River e.g. the Whyte River iron ore occurrence.
2. Avebury-style nickel deposits within the ultramafic rocks proximal to the Meredith Granite
3. Platinum group elements (PGE's) associated with the layered ultramafics.
4. Irish-style lead/zinc mineralisation associated with the lead/zinc vein occurrences proximal to the Gordon Limestone
5. Devonian tin/zinc (and tungsten) skarn-type mineralisation, typical of West Tasmania, in proximity to the Meredith Granite
6. Possible high grade magnesite as skarn, similar to the deposits occurring 15km to the NW of the licence.

Figure 1 Geology map of Whyte River ERA 655

