EL5/2019 MT KERSHAW, TASMANIA

FINAL SURRENDER REPORT

20th April 2020 to 25th November 2021

Prepared for: Pieman Resources Pty Ltd

AN NQ MINERALS PLC COMPANY

Prepared by: Dr. Pierre Richard, Director
12 April 2022

Note: All figures and grids are according to the GDA94 datum and MGA94 grid system.

EXECUTIVE SUMMARY

Pieman Resources Pty Ltd (Pieman) is a fully owned subsidiary of NQ Minerals PLC (NQ Minerals). Pieman applied for EL5/2019 in an exploration release area tender process. EL5/2019 hosts the historical Chester pyrite mine.

During 2020-21, given the implications of COVID 19 and its consequences for the business of Pieman's parent that faced severe financial difficulties, the company only undertook desktop and field reconnaissance work.

No sampling or data collection fieldwork was completed and the license was surrendered.

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Digital files submitted with this report:

Filename	File format
EL052019_202204_01_Report.doc	*doc*

1. INTRODUCTION

This report is a summary of exploration activities completed on the Mt Kershaw exploration license EL5/2019 between 20th April 2020 and its surrender on 25th November 2021. EL5/2019 hosts the historical Chester pyrite mine which was mined in the period 1909-1913 at a reported grade of 37.2% S.

TENURE

Pieman applied for EL5/2019 in an exploration release area tender process. The tenement comprises a total of 18km^2. The license is located approximately 2km northwest of the western extent of Lake Rosebery in central west Tasmania, immediately north of the Bastyan Dam. The central part of the license is excised for Mining Lease 6M/2012, which hosts the Pinnacles mines.

LOCATION AND ACCESS

The tenement is located approximately 15 km's north-northeast of the township of Tullah, on the west coast of Tasmania (Figure 1). Access to the area is via the Pieman Rd, off the Murchison Highway. Access tracks traverse the area allowing access to mineralised areas. Access within the tenement is via 4WD and ATV-only tracks.

The Chester Mine is situated 1.6km from the Chester siding. This was an active siding in 1909 and was the point of loading for the southern destined rail train. Pyrite was loaded at the Chester siding and railed to the Mt Lyell mine, where it was roasted to produce sulphuric acid. The rail line has remained active and trains run concentrate from Rosebery to Burnie on a regular basis. The Chester pyrite could be loaded at the Chester siding and trained to several ports within Tasmania suited to large size vessels.

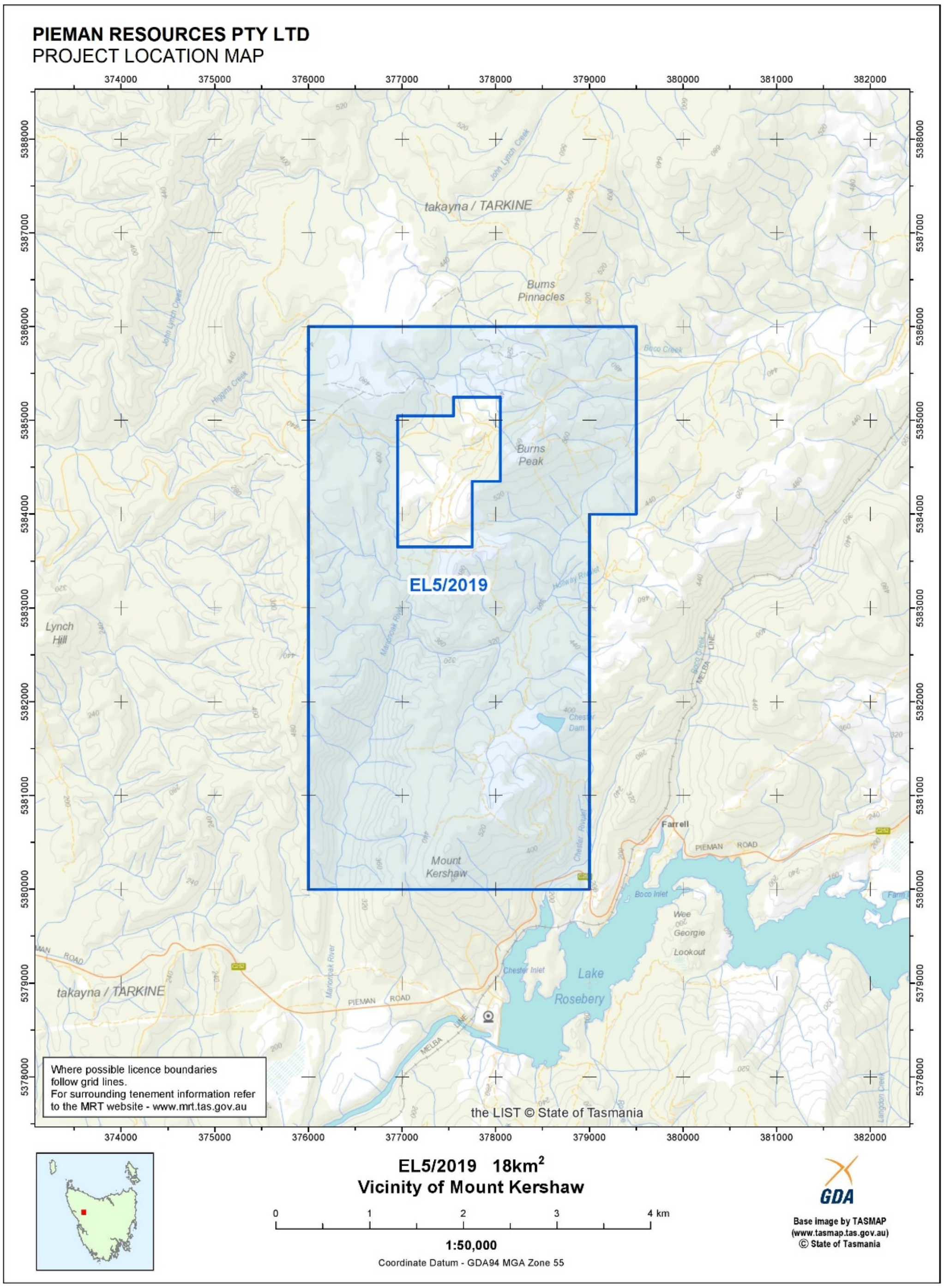

Figure 1 Location of EL5/2019

2. REVIEW OF PREVIOUS WORK AND GEOLOGICAL SETTING

The Chester pyrite deposit occurs within a north-south trending Cambrian volcanic sequence. In the mine area this comprises altered massive, flow-banded, auto brecciated rhyolitic lava and rhyolitic tuff with minor ignimbrite, dacitic lava and tuff, and trachyte. The mineralisation occurs within a dominantly pyroclastic sequence which is flanked to the west by a sequence of rhyolitic lava and to the east by dacitic lava and tuff (Stevens, 1974). The mineralisation exposed in the open cuts occurs within an altered (sericite-quartz-pyrite) sequence of tuff and chert, with minor lavas. Original textures in the tuff and lava are usually destroyed by alteration. Beds up to 200m thick but usually less than 50m of massive, fine-grained pyrite occur interbedded with chert.

The Chester deposit occurs at the northern end of a lenticular hydrothermal alteration zone which parallels the regional trend of the volcanic rocks over a distance of one kilometre to the south of the mine. Stevens (1974) defines three concentric zones of hydrothermal alteration: (i) an inner zone of quartz-sericite (pyrophyllite)-pyrite-(±carbonate), which includes both the Chester deposit and the South Chester prospect; (ii) a narrow zone of quartz-sericite (pyrophyllite)-chlorite-(±carbonate) and (iii) an outer weakly altered zone. Carbonate as an alteration product can intensively developed, particularly within the inner zone.

The pyrite mineralisation exposed in the open cuts occurs as massive pyrite, inter bedded pyrite and chert, disseminated pyrite, and remobilised pyrite and quartz. There is also colloform pyrite in the northern end of the mine: pyrite veins intersect chert beds and euhedral pyrite, quartz and barite are developed along faults and joints. In the north-west corner of the mine is a chert breccia consisting of angular and lenticular fragments of chert, banded chert/rhyolite, pyritic chert, and pyritic pyroclastic rock, which are cemented in a siliceous pyrite matrix. The massive pyrite consists of fine-medium grained anhedral pyrite containing minutely folded wisps of chert and occasionally angular blocks of banded chert, and patches of medium grained sphalerite, quartz and euhedral pyrite. The gossan overlying the massive pyrite is noted to be up to 3-4 m thick.

Reid (1918) concluded that ore deposition resulted from hydrothermal solutions circulating through pre mineralisation fractures and metasomatically replacing the schistose rocks. However, the pyrite mineralisation at the Chester mine has been identified by previous geological assessment to be characterised by (i) parallelism of mineralisation, (ii) interbedded pyrite and chert, (iii) remobilisation of disseminated pyrite and (iv) parallelism of the alteration zone to the host volcanic sequences. The above indicate a pre-deformation, syngenetic origin for the pyrite mineralisation, probably formed by exhalative processes.

Exploration in the Mt Kershaw area has focused on base metals values around lead and zinc values located on mining lease 6M/2012 located at the centre of EL5/2019. 6M/2012 has been host to defined resource and some limited small scale mining of high grade ore from the Pinnacles mines.

The pyrite exposed in several small open cuts on the steep eastern slopes of Mt Kershaw. The ore body has also been systematically tested at shallow depths by diamond drilling, and by a 30.5 m long exploration adit (Reid, 1918). This work was undertaken by the Mt Lyell Mining and Railway Company. Mining was undertaken on 7 bench levels 10-12m apart, with each level connected to a haulage at the north end of the mine. Mining of the deposit was hampered by the variability in pyrite content. This is exemplified by the mineralisation log of bore hole 7 (drilled by the Mt Lyell Mining and Railway Company) in which the following pyritic intersections were encountered: 18.3 m of 20.23% S, 9.1m of 9.0% S, 27.4 m of 24.3% S, 12.2 m of 15.3% S and 2.4 m of 40.0% S (Reid, 1918). Non-JORC historical ore estimated by Reid (1918) were 2.84Mt of over 20% sulphur content pyrite.

Collins (1981) reported that the δ34S values of the massive and disseminated pyrite at the Chester mine have a range of +0.4 to -3.9 per mil, which are abnormally low for stratiform volcanogenic massive sulphide deposits. Similar values had been measured for sulphides in the final stages of mineralisation and in the host rocks of some other volcanogenic deposits. However, Collins (1981) reported that such low values have not been observed in other considered VMS deposits. The almost total lack of copper, lead, and zinc sulphides at Chester appears unique among volcanogenic, massive sulphide deposits. This is consistent with more recent groundwater measures. Dissolved metals in groundwater at Chester (Gurung, 2001) suggested only very low base metal values compared to other VMS (low pH values were also reported, suggesting the high S content of the pyrite).

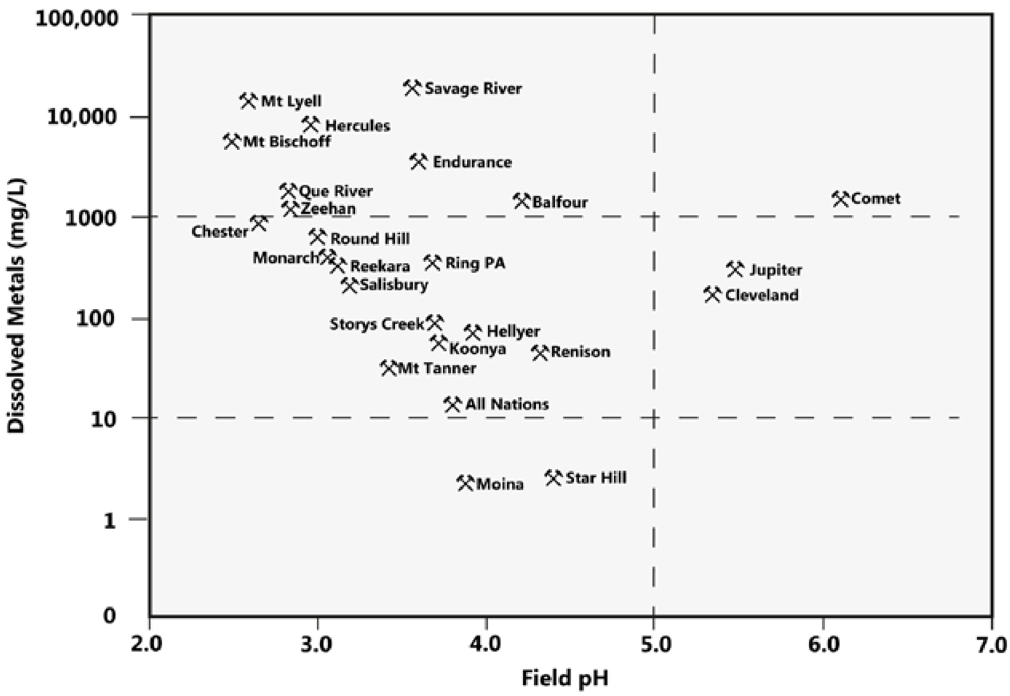

Figure 2 Dissolved metals and pH of groundwater of Tasmanian Mines (Gurung, 2001)

Later, Zinifex ran VTEM over the whole license in 2008 (Geotech Airborne, 2008). EL5/2019 was "Block 2" flown in that survey package. The results of the survey result magnetic responses associated with the mineralised system previously identified as a VMS, albeit with extremely low base metal (Cu, Pb and Zn) values returned at the Chester area.

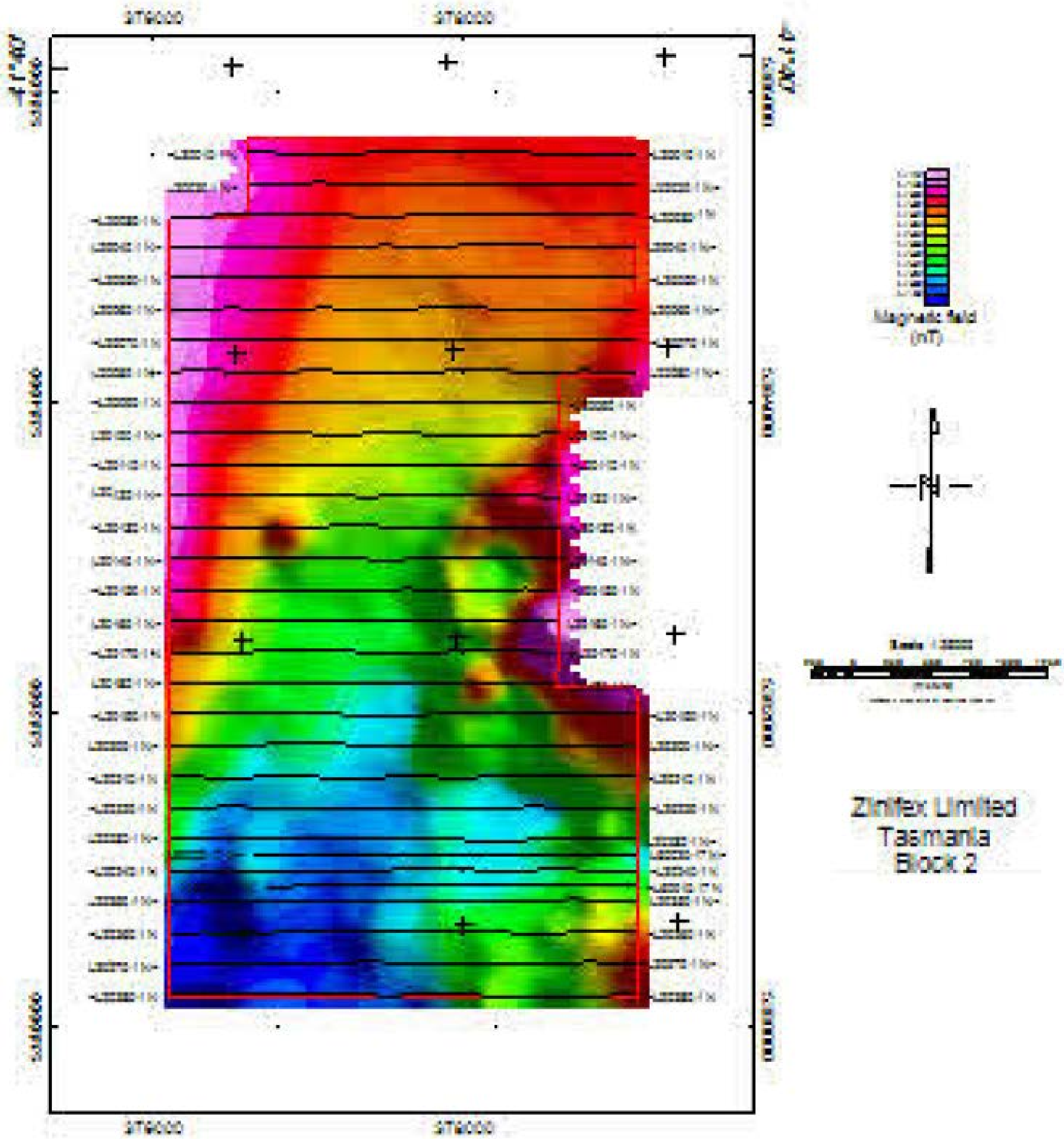

Figure 3 VTEM of EL5/2019 (Geotech Airborne, 2008)

3. EXPLORATION COMPLETED DURING THE REPORTING PERIOD

Work in 2020 saw preparations for a first field visit. This was undertaken and the geological inspection suggested that visibly important co-host rocks in the Chester Pyrite were chert/calcite rocks as noted in previous reports. This suggested that assessment of ore sorting might be useful, as this could have the potential to both increase grades, but also redirect the CaCO3 to an acid control by product (potentially for site remediation after mining).

4. DISCUSSION OF RESULTS AND CONCLUSIONS

No new results or data was reported in the period.

5. PROPOSED EXPLORATION

No further exploration is proposed.

6. ENVIRONMENTAL MANAGEMENT

There was no physical undertaking on the lease in 2020-21 except for low impact, being field and environmental assessment from along existing roads and tracks. This examination did not involve earthworks and therefore no environmental remediation was required.

7. EXPENDITURE

Expenditure from 20th April 2020 to 25th November 2021 is summarised below for the Mt Kershaw EL5/2019.

TABLE 1 EXPENDITURE 20 APRIL 2020 TO 25 NOVEMBER 2021.

1. Geoscience	$7,500.00
2. Drilling and Gridding	
3. Land Access	
4. Rehabilitation	
5. Feasibility Studies	
6. Other	$1,997.40
7. Administration	
TOTAL - ELIGIBLE	**$9,497.40**

8. KEY REFERENCES

Collins, P.L.F. 1981. A sulphur isotope study of the Chester massive pyrite deposit, western Tasmania.

Geotech Airborne 2008. Survey and Logistics Report on a Helicopter borne Versatile Time Domain Electromagnetic (VTEM) Survey on the Tasmania Project Area (Project A371), August 2008.

Gurung, S. 2001. Acid drainage from abandoned mines in Tasmania. Tasmanian Geological Survey, Record 2001/05 (available at: https://www.stategrowth.tas.gov.au/__data/assets/pdf_file/0006/242493/UR2001_05_REPORT.pdf).

Reid, A.M. 1918. The North Pieman and Huskisson and Sterling Valley mining fields, Geological Survey Bulletin 28. Department of Mines Tasmania.

Stevens, A.G. 1974. The geology and mineralisation of the Chester, Pinnacles area, Western Tasmania. B.Sci. (Hons) Thesis, University of Tasmania: Hobart.