

# Copper Mines of Tasmania Pty Ltd

RL3/2006

Copper Clays Annual Report  
3<sup>rd</sup> Nov 2009 – 3<sup>rd</sup> Nov 2010



# vedanta



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## 1. Introduction

RL 3/2006 is a 2 km<sup>2</sup> retention licence acquired by Copper Mines of Tasmania after a decision to relinquish the exploration license EL 52/94 to the east of the mining lease 1M/95. The retention licence (Figure 1) is within the land district of Montagu vicinity of Linda. The area covers three known mineralised zones: Lyell Consols, Lyell Blocks and King Lyell. The King Lyell deposit is located within a SE plunging tight syncline, the basement of the syncline consists of the Pioneer Sandstone which overlies the Owen Conglomerate. Gordon Limestone infills the syncline and is the host for the mineralised clay in the southern portion of the deposit. In the northern part of the deposit the clay is exposed at surface and has been interpreted as material that has been derived from the limestone through acidic water reactions.

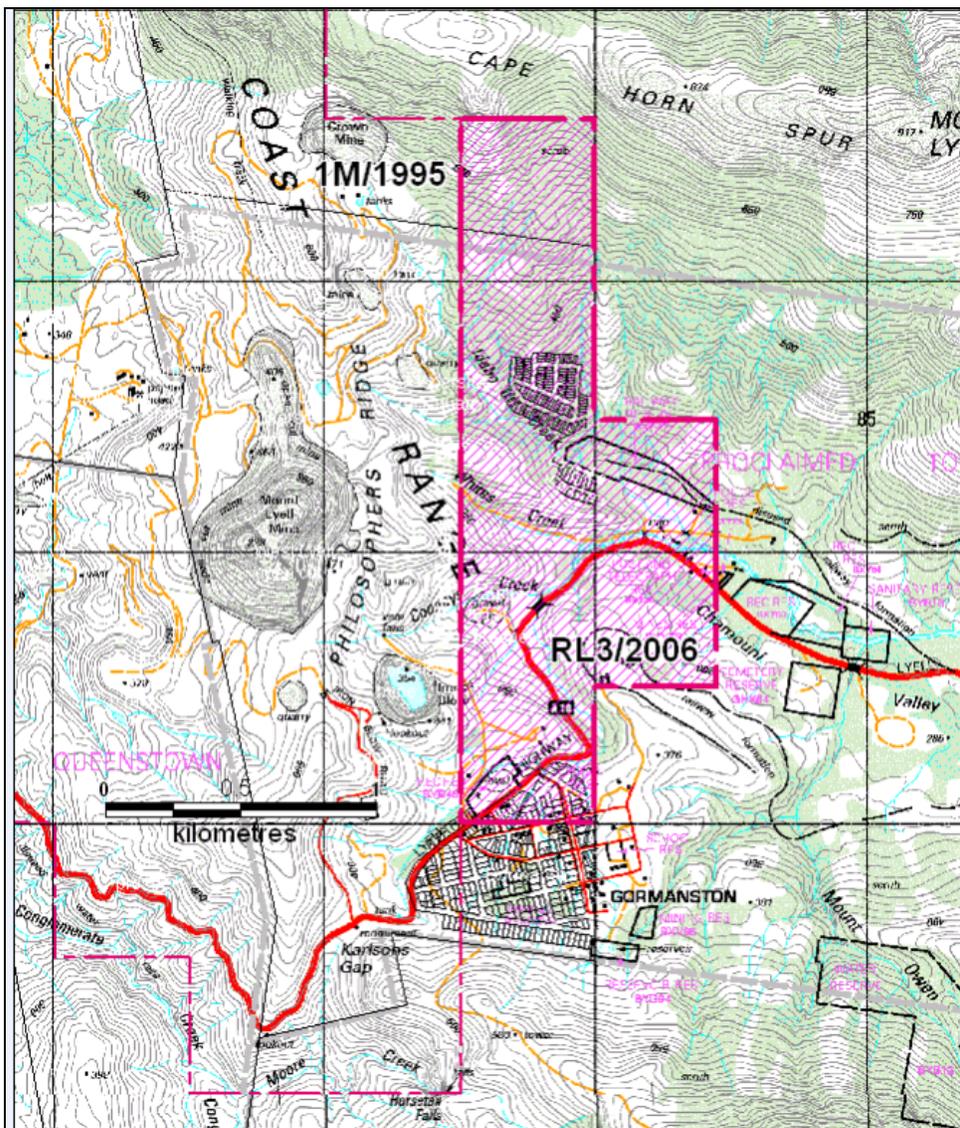


Figure 1, RL3/2006 licence position to the East of 1M/1995

## 2. Review of previous work

2.1 Most significant recent work prior to RL 3/2006 was a report titled 'Open cut potential of the copper clays area Mt Lyell Tasmania' by K. Wills, (1995). This report summarises previous work done on the prospect and aims to assess the potential resource of the three known copper clay deposits. This work was continued by K. Morrison and J. Knight (1997), with a report titled King Lyell Copper Clays Resource Assessment. This report calculates an inferred resource using wireframed cross-sections and a longitudinal section created from unvalidated historical drilling and the 1996 CMT drilling results. This report concluded that with a modelled pit an estimated resource of 1.2 million tonnes at 1.37% copper exists with a stripping ratio of 2.3:1. The resource potential was further evaluated with a preliminary mine economics analysis in 1997 by CMT senior Mining Engineer Tony Weston. These reports have been submitted previously to MRT along with the EL 52/94 Linda Annual Report, K. Morrison 1997.

2.2 During 2005, 6 diamond drill holes totalling 452m were drilled to test the reproducibility of historical drilling results and to provide a more defined extent of mineralisation in areas where drill density was low. Only 2 of the 6 holes intersected the mineralised clay (05KLD002 & 05KLD003). The mineralisation in 05KLD002 occurred between 41-55m with a grade of 0.51% Cu occurring through a zone of highly oxidised clay. These results have been used to validate a nearby RC hole (96KLC001) which had reported values of 14m @ 0.51% Cu and 8m @ 1.27% respectively. This drilling program was also used to test modern drilling techniques and their ability to increase core recoveries in clay environments, provide some definition of the extent of the mineralisation boundary and to test the reproducibility of historical drilling (R.Hill, 2006). With this drilling there is now 13 drill holes over the King Lyell deposit.

2.3 Cu Clay Mineralogy Sep 2005 report compiled by McArthur Ore Deposit Assessments Pty Ltd. CMT provided 6 composite samples from a single drillhole for mineralogical assessment, only 3 of the samples contained adequate mineralisation for analysis. The results of this report identified native copper, cuprite (mainly rimming native copper, but also commonly liberated), covellite, chalcocite, bornite and chalcopyrite as the main copper bearing minerals.

2.4 A 3D lithological model based on K.Wills interpretative cross sections and surface mapping from 1995 has been created using Surpac mining software. Using this modelling a wireframe encapsulating the interpreted mineralisation is now available for future resource estimates and to help define future drilling programs.

2.5 Modelling of known underground workings from historical maps around the King Lyell deposit and the Iron Blow was created after the geological model. This data can now be used to establish their effect on any future operation on the King Lyell deposit. The most noticeable features within the King Lyell area include the Batchelor shaft, the 323m level adit and the Iron blow access tunnel. These features directly impact any proposed pit design over the King Lyell deposit. The Iron Blow underground workings link with the Iron Blow access tunnel providing a direct link between the water stored in the Iron Blow pit and presumably the underground workings to the King Lyell area. The condition of the underground workings is unknown.

2.6 Aerial photography was updated based on data flown in March 2010. This data was then used for vector mapping and contour data was used to update digital terrain models. Aerial photography is flown over CMT's mine lease approximately every two years. In January 2010, CMT reflew the aerial photography and included the copper clays.

2.7 During May 2007 AMC consultants submitted a high level Strategic Review of the Mt Lyell operation with the purpose of identifying and ranking exploration targets and development to extend the life of mine beyond the current Prince Lyell reserves. This review identified the Copper Clay deposits and recommended the initiation of a scoping study to allow the investment in sampling and test work to progress these deposits to a prefeasibility study. Late 2007 – Mid 2008 AMC consultants prepared a scoping study to determine the potential of the Copper Clay deposits. This was used to justify the expenditure required to gain the relevant data to proceed with a feasibility study. The review is a comprehensive overview of the issues and aspects related to mining the King Lyell deposit.

### **3. Exploration completed**

A strategic review of the results for the copper clays was done resulting in coming up with an exploration drilling and metallurgical testing program for the copper clays. The program has been approved and sonic drilling technique is expected to be utilised for drilling this deposit.

### **4. Expenditure**

November 09 – November 10:

Aerial photography was done in January 2010 and results sent to mine in March 2010. Approximately \$8000 dollars was spent on flying and analysis of the data over the copper clays. Conversion and analysis of the data supplied was done. The dtms are now available in surpac format.

A review of this data was done and several discussions were held with Vedanta to push forward exploration for this deposit until the final approval which was given in September 2010.

## **5. Proposed works program Nov 10 – Nov 11**

A budget of \$250,000 was approved by Vedanta resources for the King Lyell project on the 11/9/08, this was then put on hold (December 08) due to the sudden economic downturn. Recent discussions have been aimed at getting this project re-approved so drilling can commence.

The drilling program was resented to Vedanta management for approval by Vedanta and approval was granted in September 2010

The proposed works program consists of:

- Detailed geological mapping
- Surface sampling program, collection of bulk sample for metallurgical testwork.
- Drilling program which allows better recoveries
- Assay and metallurgical testwork
- Resource modelling

Fig 2 below indicates the proposed holes to be drilled in yellow and past drilled holes are in blue.

Fig 2: Photograph of proposed Drillholes



The geological review of the King Lyell Clay deposit was done by AMC in 2008. The estimated resource for the conservative model was as follows:

<b>Tonnes(Mt)</b>	<b>Cu Grade (%)</b>	<b>Cu Metal(kt)</b>
<b>1.7</b>	<b>1.4</b>	<b>23.8</b>

The scoping Study completed by AMC Consultants (2008) concluded that the Mineral Resource should not be reported in accordance with the JORC Code due to the following reasons:

- The drill hole dataset is limited to thirteen holes in the central portion of the model.
- No information was available on the QA/QC aspects of the sample and assay data sets, and a reproducibility test failed on the 1970/71 assay data.
- There is no density data available in the current resource database.
- Inaccurate topographic surface.
- Lack of recovery and void data.

The current drilling program attempts to address some of the issues highlighted above.

## **6. Environment**

There were no on ground activities during the reporting period.

A review of environmental impacts from previous drilling and bulk sampling has not identified any outstanding environmental issues.

A first pass environmental assessment of the proposed drilling program is complete. All holes will be located within the previous disturbance of the gravel storage area at King Lyell. There will be no requirement for clearing of vegetation for drill sites or access. All drill sites will have sumps and appropriate sediment and hydrocarbon retention. Waste management will follow CMT's requirements, including disposal of excess drill sludge and cuttings if they are potentially acid generating on the CMT waste rock dump. Non acid generating materials will be safely disposed on site. General waste management will include waste minimization practices, with recycling where possible and disposal of other non hazardous waste in the West Coast Council landfill. Water for drilling will be sourced locally from stream flows if suitable, and will not exceed 50% of background stream flow. Noise, dust and vibration are not likely to have impact on residents, with the nearest habitation being approximately 750 metres away at Linda. Residents within 1 kilometre of the site will be consulted and advised of the program.

Drilling is expected to be on a single day shift basis. Traffic movement will be low with single mobilization and demobilization and limited daily light vehicle access by crews via existing roads and tracks. All equipment entering the site will be subject to CMT's weed and pathogen hygiene requirements, including thorough wash down and inspection by CMT's environmental officers before entry to site. No gravel or fill will be allowed to be imported to the site. The site will be inspected for weeds and evidence of phytophthora before and after the program. All contractors and staff will be inducted and trained on environmental awareness for drilling operations. There will be regular inspections for environmental compliance.

## **7. Conclusions**

The justification has been provided to progress the King Lyell deposit with the AMC scoping study suggesting that the King Lyell deposit has the potential to provide a project with a NPV at an 8% discount rate ( $NPV_{8\%}$ ) in the range of A\$20M to A\$40M dependant on commodity price. Again these suggestions are based on limited geological data and are only used as a guide to determine the potential of the project. The results of the report suggest that the King Lyell deposit possesses significant value to CMT and has justified the work required to progress the deposit.

## References

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