



The University of Tasmania

Postal Address: Box 252C, G.P.O, Hobart, Tasmania, Australia 7001

Telephone: 202101. Cables 'Tasuni' Telex: 58150 UNTAS

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ASK FOR

AMIRA PROJECT

QUARTERLY REPORT

November 1, 1985

CONTROLS ON GOLD AND SILVER GRADES
IN VOLCANOGENIC SULPHIDE DEPOSITS (84/P210)

DEPOSIT STUDIES IN TASMANIA

1. Rosebery: David Huston has completed his preliminary study on gold and silver distribution in the northern orebody. A detailed report will be distributed to sponsors in late January.

Gerald Purvis is compiling gold assays in the southern orebody onto the four major level plans - 15, 16, 17 and 18 L at 1:250 scale. The 16 level compilation is now complete.

2. Que River: No progress has been made to date. Field work (core logging, and sampling) will be carried out in February - March 1986.
3. Barren massive sulphide systems: An M.Sc. project has been set up with the co-operation of Renison Goldfields for Mr. Steven Hunns to study the barren sulphide system at Lake Selina on the eastern side of the Mount Read Volcanics about midway between Mt. Lyell and Rosebery.

ACCESS TO OTHER AUSTRALIAN DEPOSITS

1. Gossan Hill, Scuddles and Teutonic Bore, W.A.: Permission has been given by the Golden Grove Joint Venture and B.P. Minerals for a comparative geochemical study of Gossan Hill, Scuddles and Teutonic Bore to form part of the AMIRA project. An outline of the proposed study is attached. This work will take the form of a Ph.D. planned to commence in February - March 1986.
2. Thalanga, Qld.: A proposal to study precious metal distribution and genesis in the Thalanga massive sulphide was rejected by Penarroya.
3. Benambra, Vic.: W.M.C. and B.P. are farming out their interests in the Benambra massive sulphides. A proposal for research studies at Benambra will be put to the new manager of the project, when farm out arrangements are completed.

DISCUSSIONS WITH THE MINES DEPARTMENT

Discussions have been held with Mines Department geologists (Rod Hargreaves, David Duncan, Keith Corbett and Geoff Green) concerning potential areas of collaboration between this AMIRA project and their \$2 million Mount Read project. At present the Director of Mines is considering sponsorship of the AMIRA project and has offered the early release of data to AMIRA that is relevant to our work. In particular permission has been gained to obtain draft copies of a series of 1:50,000 mineral deposit/geology maps covering the Mt. Read Volcanics which are presently in preparation.

The Department considers these draft maps will be available by March 1986. For this reason the map compilation of geology and prospects proposed as part of this AMIRA project has been deferred, as it would only lead to a duplication of the Mines Department work.

ROCK GEOCHEMISTRY OF MOUNT READ VOLCANICS

Dr. Tony Crawford is presently studying the silicate and trace element geochemistry of Cambrian Volcanic suites within the Mount Read Volcanics and Dundas Trough. About 150 whole rock and trace element analyses are being undertaken on a range of unaltered volcanic lithologies, with major emphasis on the basalts and andesites. This information will constitute an excellent data base for geochemical studies of alteration in the volcanics, which will form part of this AMIRA project.

Dr. Crawford will present preliminary results and conclusions from this work at the next AMIRA meeting in February.

APPOINTMENT OF POST-DOCTORAL FELLOW

A post-doctoral fellow has been appointed to the project and will commence duties in January 1986.

PROGRAMME FOR NEXT 6 MONTHS

1. Complete studies on the Rosebery North orebody (Dave Huston).
2. Continue studies on the Rosebery South orebody (Gerald Purvis).
3. Commence work on the Que River gold-silver mineralisation. Core logging, sampling, and ore petrology (Ross Large, Post-doc.).
4. Report on the major and trace element chemistry of Cambrian lavas in Mount Read Volcanics and Dundas Trough (Tony Crawford).
5. Commence a Ph.D. project on Golden Grove and Teutonic Bore.
6. Literature review of precious metals in volcanogenic massive sulphide systems, world-wide.



Ross R. Large
Chief Investigator

RESEARCH PROPOSAL: A COMPARATIVE GEOCHEMICAL STUDY OF THREE ARCHAEOAN MASSIVE SULPHIDES:

GOSSAN HILL, SCUDDLES AND TEUTONIC BORE.

AIM: To study the distribution and genesis of gold, silver and base metals in the three deposits.

PLAN:

1. Utilise assay data, drill sections and plans to plot and study metal distribution and zonation in each deposit.
2. Investigate gold and silver mineralogy and the relationship to other trace elements such as Sb, As, Ba, Mo, etc.
3. Study gangue mineral variations within the deposits and associated alteration envelopes in relation to base and precious metals.
4. Analyse sulphur isotope variations through each deposit and compare to metal zonation, and alteration patterns.
5. Utilise other techniques as appropriate (fluid inclusions, oxygen/hydrogen isotopes) in order to gain further information on the chemistry of the ore fluids.
6. Develop geological/geochemical models to account for metal transport and deposition within each deposit.

COMMENTS:

- a) This project would form part of a general AMIRA study on gold and silver in volcanogenic ores, being undertaken at the University of Tasmania.
- b) The Joint Venture parties would receive regular progress reports prior to data being passed on to AMIRA. The Joint Venture parties would have the right to veto any information they regarded as confidential.
- c) Access to all drill hole assay data (preferably on computer tape) and drill hole cross sections and plans would be a necessary requirement. However no sensitive commercial information such as ore reserve data would be required or studied in this project.
- d) Direct financial assistance by the Joint Venture parties is not requested however field support (accommodation and meals) for the Ph.D. student would be much appreciated.

R. R. Large
7th August, 1985.