

SUMMARY

Background and Objectives

Following the Stage I beneficiation study of the Mt Bischoff tin ores completed in November 1979 (AMDEL Report OD 3437/79), Metals Exploration commissioned AMDEL to continue with the Stage II investigation. Project Proposal 5/0/3387 was prepared and submitted for consideration by the Client in January 1980. It was officially accepted in February 1980. The Stage II beneficiation study commenced on 12 February 1980.

During the course of investigation, there were various amendments and additions made to the originally proposed test programme. These were all instituted according to the instructions received from the Client. Three progress reports were issued for the investigation and these were dated 24 April, 11 June and 23 July 1980 respectively. Test results obtained during the intermediate stages of the Stage II investigation were presented in the progress reports together with a review of progress each time.

This Final Report contains all the test results which were previously submitted in the three progress reports and also the relevant discussions, conclusions and recommendations.

The primary objectives of the Stage II investigation were to establish the nature and mode of occurrence of tin minerals in the porphyry and sulphide-rich ore samples and to study their response to conventional and unconventional tin beneficiation processes.

Summary of Work Done

Eight drill core samples and four composites were prepared for investigation. Head assays were obtained for all head samples and ore-dressing mineralogy was conducted on the head samples of the four composites and Ore Sample No. 1 (Stage I). Additional size/assay analysis was carried out on both the feed and the flotation test products produced from the same size grind feed for Ore Sample No. 1. Unconventional tin beneficiation testwork using a front-end flotation treatment was conducted on the four Composites PC1, PC2, SC1 and SC2. Gravity upgrading performance was also studied in some of the tin flotation rougher concentrate produced. Conventional tin beneficiation testwork using a bulk sulphide pre-float followed by gravity treatment was conducted on the same four composites. The gravity concentrate products were also mineralogically studied to establish the processing performance and to identify the treatment problems. Attempts were also made to produce high grade tin concentrates by further concentrating the gravity concentrates using