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INTRODUCTION

A Maxmin (horizontal loop EM) survey has been carried out to verify a Dighem anomaly recorded near the old Murchison River bridge (now flooded) within E.L. 1/62. The Dighem survey was flown in December, 1984 for Getty Oil (the Rosebery East survey). At the time of the survey (and the writing of this report), Dighem's interpretation report had not been received.

The Dighem anomaly occurred on two lines and was located, from the film strip, between the Murchison Highway and Lake Rosebery with the northernmost anomaly over the water. Lines of the Murchison River Grid north of the Highway were re-established and pegged at 20m intervals.

The Maxmin survey recorded strong anomalies (with amplitudes to 40%) near the expected position. The responses were open to the north and continued to the south of the road with reduced amplitude and conductances. A drill target is given below. Survey details are listed in the table.

GEOLOGIC SETTING AND EXPLORATION TARGET

The conductor lies within the Farrell Slates which are a sequence of steeply dipping greywackes, siltstones and black slates within the Cambrian Mt Read Volcanics. The Slates are 600m-800m wide and are in faulted contact with the Mt Black Volcanics to the west. To the east, they grade into the massive lavas and pyroclastics of the Eastern Volcanics. Much of the area is covered by glacial moraine. In the area of interest, the cover is patchy and probably thin.

The Farrell Slates are host to several mineral occurrences including the abandoned Farrell and Sterling River Pb-Ag mines. These sulphides and those of the lesser deposits, occurred in structurally controlled fissure lodes.

In the past, the area has been explored for base metals but more recently the EZ company has looked for tin. Drilling along the Mt Black Volcanics - Farrell Slates contact has revealed sub-economic quantities of cassiterite and geochemically significant amounts of Sn occur within the Slates.

Thus the target may be for base metals, presumably of vein-type, or for pyrite-hosted cassiterite (the lack of an associated magnetic anomaly suggests that pyrrhotite is not present in significant quantities). Both of these types of deposits might give EM responses, although both are likely to have low conductivities.

Previous EM surveys in the Sterling Valley (by RTAE in 1959 and by McPhar for Asarco in 1974) defined conductors over long strike distances: these have all been attributed to black slates. Although no such rocks have been mapped along the Maxmin anomaly, it would be instructive to integrate the results of the new and old surveys. (The Dighem survey was not effective south of the