

Transient EM in the Eastern Goldfields

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Fig. 1 shows the results of a transient EM traverse MPPO-1 across a pyrite body on the edge of a salt lake in the Eastern Goldfields of Western Australia using 100 feet loops at 50 feet spacings. The results are presented as stacked profiles of the received signal strength at ten delay times ranging from 1.0 to 15 milliseconds after the cutoff of the transmitted pulse. To allow all values to be plotted the vertical scale used is linear to 100 μV and logarithmic beyond 100 μV .

The 8.0 millisecond delay values for both 100 feet and 200 feet loops are shown in Fig. 2, together with the results of diamond drilling. A strong anomaly is associated with the high grade pyrite mineralization. The separation of the major and minor peaks of this anomaly suggest that the mineralization comes to within 130 feet of the surface. The dip, indicated by the relative amplitudes of the anomaly peaks is 70°N . Observed dips in the area are 65° to 75°N .

Evidence of the less massive pyrite above the main body can be seen in the broadening of the northern flank of the anomaly with little effect at 15 milliseconds. The minor anomaly near 14N is probably associated with carbonaceous shales. The sharp peak, generated by a single reading at 18N, is typical of that associated with a geological contact.

Fig. 3 shows the decay curves of 100 feet loop readings at three stations along the traverse. The different rates of decay of the transient signal from differing underlying material can be clearly seen. The transient signal at 6.5N over the massive sulphide zone shows a much greater persistence into the longer delay times than that at 14N over the probable graphitic shales. The latter curve in turn shows a slower decay than that at 18.5N over "barren" rock.

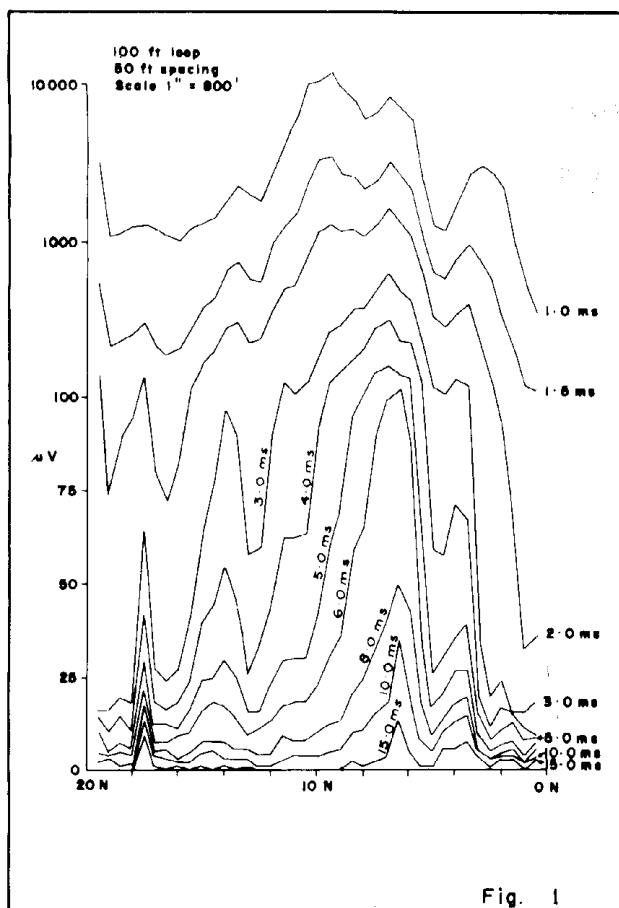


Fig. 1

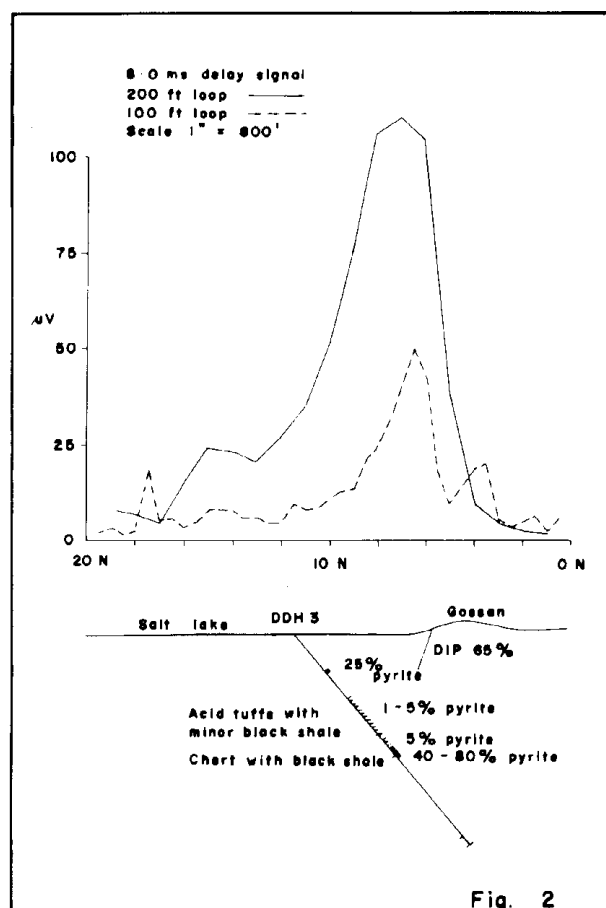


Fig. 2

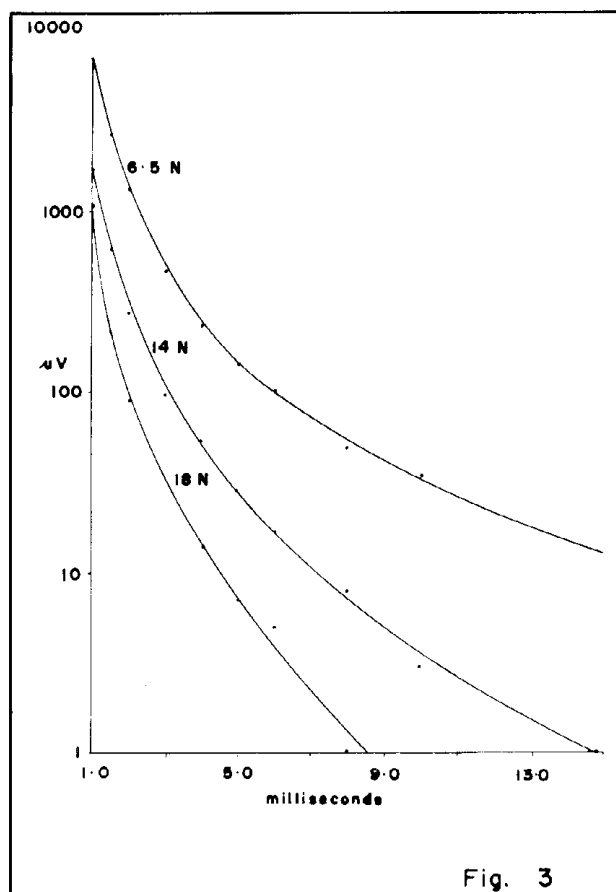


Fig. 3