

6. GEOLOGY

Almost the whole of EL 5/63 part 4 is underlain by Mount Read Volcanics or their sedimentary equivalent. These rocks have been thrust by the Owen Shear over sedimentary rocks of the Dundas and Crimson Creek Groups to the west.

A line of volcanic vents is thought to occur along a line stretching from Mount Kershaw through the Pinnacles Peaks. Rock types show a gradational change from sub-aerial ignimbrites at Chester, to submarine pyroclastics and sediments north of Burns Peak.

Structurally the geology of the area is very complex. The volcanic sequence at Chester is dipping and facing east, whereas, in the northern part of the area, at least two major synclines have been defined, but are thought to be cut off by the Owen Shear.

7. GEOPHYSICS

EL 5/63 part 4 was included in the Input Survey in 1975, but no anomalies were defined. Ground geophysics on grids has included gradient array IP, dipole dipole IP, SP, vertical shootback EM and magnetics. EM has proved unresponsive, even over the massive pyrite deposit at Chester. Best geophysical response has been given by dipole dipole IP, which has outlined pyritic black shales at East Chester, and two sub-parallel anomalies at Chester.

8. GEOCHEMISTRY

8.1. Stream Sediment Sampling

Stream sediment sampling results are disappointing, although they do show the mineral occurrences at Thomas' Tunnel and Silver Falls. Cumulative frequency plots of results indicate several populations, but the high background values for zinc and nickel over the Crimson Creek basic rocks masks more subtle effects over the Mount Read Volcanics. The paucity of lead values over the area is a disadvantage as lead is a more stable element than zinc.

Samples west of the Owen Shear were treated separately from those over the Mount Read Volcanics. The following tables summarise the results: