

The mineralisation occurs in quartz-siderite veinlets within strongly brecciated black shales and thus the high Fe assays reflect the abundance of siderite. Both pyrite and pyrrhotite are present. The drill log does not clearly indicate the mode of occurrence of the sphalerite, but it probably occurs in the veinlets. Lithologies intersected by the hole are interbedded black slates and sandstone of the Westcott Argillite or Munro Creek Slates. The hole was drilled on or very close to a strong photo-lineament which follows Natone Creek; this may account for the strong brecciation.

NP 107 (bearing $289\frac{1}{2}^{\circ}$ (true); declination -47°) was drilled at 83S, 31W in 1962-63; it had a total depth of 780' (237.7m). A 49' (15m) intersection averaged 13% pyrite with only trace Cu, Pb, Zn, Ag. Assays are:

<u>Interval</u>	<u>Width</u> (ft)	<u>Core Re-</u> <u>covery %</u>	<u>Cu%</u>	<u>Pb%</u>	<u>Zn%</u>	<u>Ag(oz)</u>	<u>Au</u>	<u>Fe%</u>	<u>S%</u>
205-209	4	77	0.02	0.2	0.1	<0.1	nd	10.6	4.2
209-222 $\frac{1}{2}$	13 $\frac{1}{2}$	96	0.02	0.1	0.1	<0.1	nd	18.0	11.9
222 $\frac{1}{2}$ -228	5 $\frac{1}{2}$	97	0.02	0.1	0.1	<0.1	nd	8.1	5.6
228-234	6	36	0.03	0.2	0.8	<0.1	nd	20.8	13.9
234-254	20	46	0.02	0.1	0.1	<0.1	nd	4.9	2.8
Av. 205-254	49	67	0.02	0.12	0.19	<0.1	nd	11.3	7.1

The mineralisation in this hole comprises pyrite veinlets; no mention is made of the gangue mineralogy, if any. The mineralisation occurs in a zone of black slates and minor sandstone of the Westcott Argillite or Munro Creek Slates and includes a 10' wide (apparent thickness) brecciated zone.

The Mines Department diamond drill hole, designated Rosebery 1, was collared just east of Natone Creek on the track into NP 107 (metric co-ords 5,371,062 N, 376,415E) in 1976 on a bearing of 083° (true?) and declination of -45° to a total depth of 290.16m. The hole was collared in the Westcott Argillite (dolomite sandstones and 10m apparent thickness of impure dolomite) and passed through Salisbury Conglomerate before finishing well into Natone Volcanics. A consistent east facing was noted and contact relationships indicated that the Natone Volcanics are younger than Salisbury Conglomerate. No significant mineralisation was intersected. The drill log is held in E.Z. files and the core is at the Mines Department library at Derwent Park.

The mineralised core from holes NP 104 and 107 should be re-logged with particular attention to the mode of occurrence of sphalerite in NP 104; petrographic work may be necessary to determine whether any syngenetic mineralisation is present in the black shales. Representative samples of mineralisation from both holes should be analysed for Sn. Core of the contact between Salisbury Conglomerate and Natone Volcanics in the Mines Department drill hole should be examined to check the validity of their facing interpretation.

11. EXPLORATION POTENTIAL

Lithologies within the Natone area are mostly sedimentary; minor volcanic (predominantly pyroclastic) units occur within the Rosebery Group and Crimson Creek Fm. Hence there is little likelihood of proximal volcanogenic Cu-Pb-Zn deposits occurring in the area, although distal facies deposits are a stronger possibility. The occurrence of black shales, sometimes pyritic, within the