



NOTES ON CARBONATITES IN CENTRAL BRITISH COLUMBIA  
(83D/6E)

By G.P.E. White

Carbonatites were examined at the Verity (Lempriere), Paradise Lake, Howard Creek, Mud Lake, and Gum Creek localities as well as at one new site; an extension of the Gum Creek carbonatite which lies to the west of the original locality.

Generally carbonatite is conformable to the hosting schists or, less commonly, syenite as at Howard Creek. Two or more bodies of carbonatite separated by schist bands may be present. Beforsite is sometimes interbanded with sovite and their contacts are usually well defined. Some textures resemble flow banding, but others are suggestive of carbonate phenocrysts in a carbonate matrix.

In the Verity area, coarse olivine is often associated with sovite and apatite creates banding in trenched areas; otherwise lateral and vertical mineral zoning is not obvious.

Minerals identified in carbonatite on the JTM property (Mud Lake) are calcite, dolomite, apatite, ilmenite, olivine (ferroan forsterite with secondary iddingsite and goethite), tremolite-actinolite, chlorite, antigorite, vermiculite, talc, hydromica, and pyrrhotite along with previously reported phlogopite, chondrodite, pyroxene, magnetite, and limonite.

From the Howard Creek site zircon, baddeleyite, pyrochlore, sphene, apatite, calcite, pyrite, richterite, and titanite were identified as well as traces of ilmenite and hornblende (possibly edenite).

In the Howard Creek area there is a black, hard, relatively coarse-grained rock consisting of hornblende, sphene, clinopyroxene (acmite-augite) and apatite with interstitial calcite, and minor mica, for which A. Mariano has tentatively suggested the name 'lemprierite' (Bent Aaquist, pers. comm., September 1981).

Columbite and pyrochlore are common to many of these sites and molybdenite was noted in core from the Gum Creek area.

Attempts at age dating have not been definitive or correlative to date. Potassium-argon dates by Joe Harakal of the University of British Columbia were  $205 \pm 8$  Ma on phlogopite from Howard Creek, and  $92.5 \pm 3.2$  Ma and  $80.2 \pm 2.8$  Ma on richterite from the Verity site. Dr. R. Armstrong of the University of British Columbia has suggested that we confine our dating with zircons. Euhedral, coarse-grained zircon is present at the Verity site and zircon has been noted in thin sections from the Howard Creek carbonatite.

John Kwong of the Analytical Laboratory in Victoria is responsible for much of the mineral identification while Lynn Sheppard carried out the heavy mineral separations. Bill McMillan suggested methods to obtain age dates and thanks are due to Mitch Mihalyuk who assisted in the field.

Bent Aagquist of Anschutz Mining Corporation gave freely of his time and discussed results of their work in the area.