CENTRAL BRITISH COLUMBIA

F & S

(82L/13W)

By G.P.E. White

The F & S claims, owned by John Filek, are under option to Interior Stone & Marble Ltd. and are operated as a source of quartz for stucco dash. The claims are located near the headwaters of Niskonlith Creek, northeast of Pritchard.

During the quarrying operation scheelite and tungstenite (WS_2) in dolomite have been uncovered along the contact of the quartz body and the schistose country rocks. The tungsten minerals have been found in patches measuring up to 10 by 30 centimentres.

Soil samples collected below a scant A horizon between the quartz quarry and a coarse-grained granite about 0.8 kilometre to the east showed anomalous concentrations of scheelite using a gold pan and an ultraviolet lamp. Glacial clays and gravels are present in the area in variable thicknesses and it is possible that the anomalous scheelite has been transported from the northwest.

POTENTIAL CARBONATITE LOCALITIES

By G.P.E. White

Two properties containing carbonatite-like bodies were examined in 1979. These include the JTM claims (83D/3E) and the Sandy Victor (82L/16W) properties.

The JTM property, owned by John Morton, is located along the Mud River logging road 14 kilometres northeast of Blue River. Limited study has indicated a possible metabeforsite (metamorphosed dolomitic carbonatite) with enveloping ferroaugite-albite-perthite fenitization replacing granulite schists of quartz-albite-biotite or biotite-sillimanite-garnet composition. This carbonatite-like unit has been traced at one outcrop locality for 150 metres along strike and is greater than 4 metres in thickness. In its present form the unit is composed of a reddish brown residual soil containing elongate, oval fragments of metabeforsite up to 30 centimetres in diameter. Forsterite and chondrodite have been determined by X-ray analysis of the soil. Other minerals identified megascopically in the soil are phlogopite, limonite, a pyroxene, and magnetite. Coarse banding of the soil is exhibited by varying quantities of phlogopite.

Preliminary thin section study of the metabeforsite has identified dolomite, augite, phlogopite, calcite, probably ankerite, magnetite, pyrrhotite, and minor secondary chlorite and sericite. Variations in the composition of the metabeforsite are indicated by the percentage of dolomite to mafic minerals, with some samples containing about 70 per cent mafic minerals.

Fenitization marginal to the metabeforsite extends 1 metre into country rock schists and the fenite is also coarsely banded. Often a 5-centimetre band of ferroaugite-rich rock with interstitial albite and perthite separates the fenite and metabeforsite. This contact is usually sharp with the metabeforsite intrusive showing embayed and intersecting relations with the fenite. The fenite/schist contact is gradational.

Although the outcrops are limited, the metabeforsite/fenite appears to be sill-like and concordant with the regional schistosity. These criteria may at a later date indicate that these bodies are not true metasomatic replacements but may be limestone beds containing abnormally high rare earths. However, Rb-Sr dating at the University of British Columbia yielded an age of 370 Ma in this area for these carbonatite-like units

(R. L. Armstrong and W. J. McMillan, personal communication, August 1979) which would suggest a younger age than the country rock schists.

A carbonatite-like unit has been discovered by Francis Jenkins and partners near the intersection of the Victor Lake main logging road and the British Columbia Hydro and Power Authority right-of-way at an elevation of 476 metres, 14 kilometres west of Revelstoke.

The field relations and petrography are similar to the metabeforsite/fenite at the JTM claims near Blue River situated 148 kilometres to the northwest.

At some localities the metabeforsite measures 3.5 metres in width and has been traced by intermittent outcrop for 1.5 kilometres along strike in a northwest-southeast direction. Possibly due to better rock exposures than at the JTM claims, the embayed and intersecting nature of the metabeforsite/fenite contact is more obvious at this site. Further, fragments of altered schist are present in the metabeforsite.

A mineralogical variance from the JTM site is that the ferroaugite in the fenite is partially altered to hornblende.

A partial semiquantitative spectrographic analysis of soil and rock specimens from both properties is shown in the following table.

PARTIAL ELEMENT COMPARISON OF CARBONATITE–LIKE UNITS IN CENTRAL BRITISH COLUMBIA AND CARBONATITES IN SOUTH WEST AND SOUTH AFRICA

	JTM Claims – Blue River			Sandy Victor Claims – Three Valley Gap			South African
	Soil	Metabeforsite	Metabeforsite	Soil	Metabeforsite	Metabeforsite	Average Carbonatite Content
Sr (ppm)	trace	3 500	2 000	200	3 000	2 000	4 735
Nb (per cent)	0.02	0.4	------	0.015	0.01	0.01	------
P (per cent)	-----	2.0	------	2.5	2.5	1.0	------
Th (ppm)	29	254	<7	29	<7	<7	------
U (ppm)	19	<3	<3	31	<3	<3	------

Studies in South West and South Africa on carbonatites showed a clear distinction between carbonatites, metacarbonatites, and limestones based on strontium content. Usually beforsite has a corresponding lower strontium content than sovite at similar localities in South Africa. Transvaal carbonatites range from 620 ppm strontium to 9 975 ppm strontium. Metacarbonatites in South Africa are generally regarded to have greater than 1 000 ppm strontium. Using these criteria, the Blue River and Three Valley Gap metabeforsite units with 3 500 ppm, 2 000 ppm, 3 000 ppm, and 2 000 ppm would have to be accepted as metabeforsites.

REFERENCE

Verwoerd, W. J. (1967): *South African Department of Mines,* Handbook 6.