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P R O J E C T A N D A P P L I E D G E O L O G Y

MAPPING OF SILICA OCCURRENCES IN BRITISH COLUMBIA

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A field reconnaissance of silica occurrences with mapping and sampling was carried on during the 1981 field season. The purpose of the study is to obtain information about the industrial potential of reported occurrences in view of recent interest for raw materials to produce ferrosilicon and silicon metal. The studied occurrences were those where previous data did not provide enough information either on size or chemical composition of the silica. The following properties were examined.

WHITE ELEPHANT (82L/4E, 50° 09'-119° 33')

The silica occurrence consists of an oval-shaped quartz plug, 27 metres long and 12 metres wide, in a coarse-grained hornblende-biotite granite. Part of the plug, which is mineralized by massive pyrrhotite with a small amount of chalcopyrite and some gold values, was mined between 1921 and 1933. The mined-out area left a pit 15 metres by 9 metres that is now filled with water. The old workings extend to a depth of approximately 66 metres below the surface.

FAIRVIEW (82E/4E, 49° 12'-119° 38')

A quartz vein, with minor gold values up to 7.5 metres wide, was mined underground from 1933 to 1961 and more than 350 000 tonnes of smelter flux were shipped to Trail. In outcrop, the vein strikes 118 degrees with dip 30 to 50 degrees northeast; the quartz is exposed in an area 7.5 metres by 31 metres. The surrounding rocks consist of slightly metamorphosed sedimentary rocks, mainly dominated by quartzites and metagreywackes.

SUSIE (82E/4E, 49° 13'-119° 36')

A body of massive, milky white quartz is enclosed in a granitic intrusion and crops out as a knoll 35 metres long and 20 metres wide. Most of the outcrop seems relatively free of impurities, although limonite staining and small amounts of pyrite, galena, and pyrrhotite are present. Between 1964 and 1976 some 20 000 tonnes of silica flux with minor gold values was shipped to Trail from an underground operation.

SNOWDRIFT (82F/11W, 49° 37'-117° 29')

Massive milky white quartz forms the core of a pegmatite dyke. The quartz pod is exposed over an area of 45 metres by 60 metres and is surrounded by a large mass consisting of perthitic undergrowths of feldspar and quartz. In 1971 a small quarry, 10 metres by 20 metres, produced 500 tonnes of silica which was used locally as a stucco dash.

LOUMARK (82E/15E, 49° 58'-118° 40')

Outcrops scattered 50 metres of strike length expose an 8-metre-wide vein of white opaque quartz at least 8 metres wide with northwest strike that cuts through a body of Nelson granite. The quartz is relatively free of impurities although limited areas have disseminated pyrite.

RICE (82F/9E, 49° 34'-116° 04')

A group of outcrops over an area of 15 metres by 30 metres expose a body of hydrothermal quartz that is highly contaminated by limonite malachite stains. Small crystals of pyrite are a common accessory component in unweathered quartz; low gold values are also reported. Foliated fine-grained brown-green pyritic metasediments comprise the surrounding rocks. Some 1 400 tonnes was mined and shipped to Trail in 1973.

QUARTZ (93G/8W, 53° 22'-122° 26')

A massive white quartz vein is exposed in a zone more than 205 metres in length and 21 metres in width. It strikes 140 degrees and, to the northwest, splits into two branches. The country rock consists of slightly foliated, fine-grained, dark green-black metasedimentary rocks.

CARIBOO GOLD QUARTZ (93H/4E, 53° 04'-121° 31')

The B.C. vein is a massive, mostly barren white quartz vein. It is exposed in scattered outcrops along 250 metres of strike length and is up to 10 metres in width. The vein consists of parallel bands of massive quartz with many small fragments of phyllite wallrock between individual bands.

Several sedimentary siliceous units were also examined:

- (1) Monashee quartzites in the Revelstoke area were found to be highly contaminated by muscovite, and to a lesser degree, biotite and other dark minerals.
- (2) South of Salmo near the abandoned Jersey mine, the Quartzite Range Formation contains a 75-metre-wide ridge of massive quartzite with only traces of muscovite.

- (3) In the Barkerville area the Yanks Peak quartzite is locally pure white with no macroscopically visible impurities. However, many exposures exhibit rusty spots replacing mafic minerals. Secondary quartz and carbonate veinlets are common.
- (4) Rocky Mountain Formation sandstones in the Flathead area are highly calcareous beds, locally contaminated by micas and feldspar fragments.

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