

INDUSTRIAL MINERALS AND STRUCTURAL MATERIALS

By Z. D. Hora

The 1983 field work consisted of property visits and examinations throughout the Province. The following descriptive report highlights magnesite, barite, limestone, and building stone prospects.

MAGNESITE

DRIFTWOOD CREEK AREA ($50^{\circ} 54' - 116^{\circ} 34'$; 82K/15)

This new occurrence is in the Upper Purcell Mount Nelson Formation of Proterozoic age (Fig. 81). Medium to coarse-grained crystalline magnesite of white to yellowish white and pale grey colours forms steep

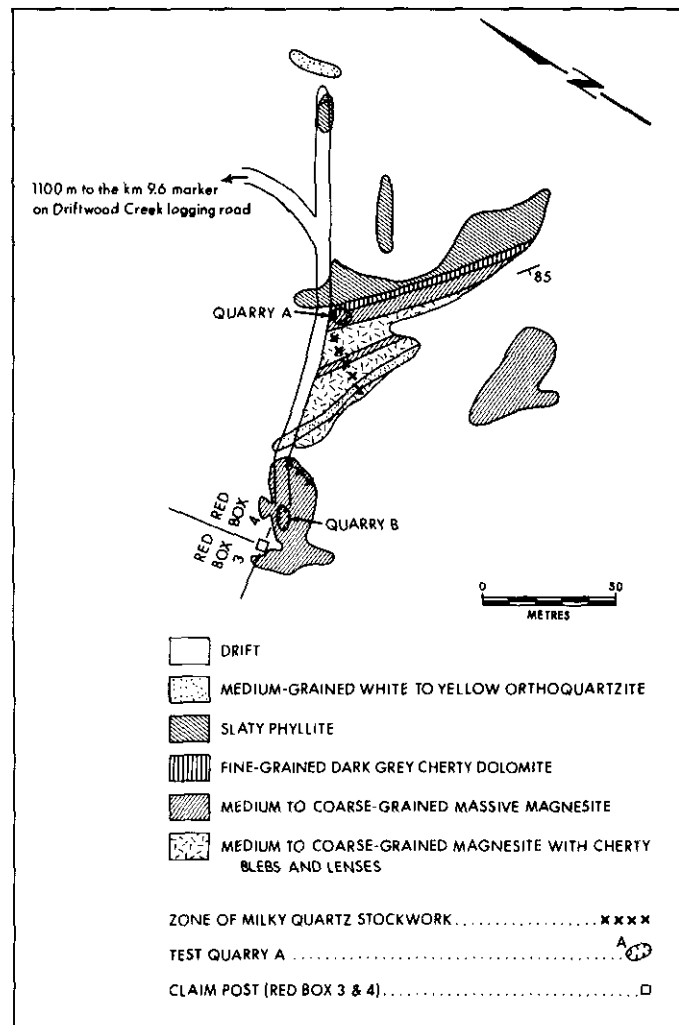


Figure 81. Driftwood Creek magnesite, 82K/15.

southwesterly dipping beds (85 degrees) in a zone approximately 110 metres wide. While the upper main 45 metres of exposed magnesite is a massive rock with no visible impurities, the lower 65 metres contains cherty lenses and blebs of variable proportions, reaching up to 50 per cent of the rock. Within the lower zone there are two continuous massive magnesite beds 2.2 metres and 4.5 metres thick. In June 1983, a sample for metallurgical testing was taken at this site from two newly opened test quarries.

The main massive magnesite bed (upper zone) extends along strike for at least several hundreds of metres; it may continue for more than 1 kilometre.

	MgO Per Cent	CaO Per Cent	SiO ₂ Per Cent	Al ₂ O ₃ Per Cent	Fe ₂ O ₃ Per Cent
Test Quarry A	42.5	4.20	2.5	0.06	0.77
Test Quarry B	40.0	6.00	4.6	0.13	0.82

The showing is on the northwestern end of the rocky ridge on the northern side of Driftwood Creek. The test pit site can be reached by Driftwood Creek logging road and is 9.6 kilometres northwest from the Bugaboo road intersection.

BARITE

PEDLEY MOUNTAIN (50° 25' – 115° 43'; 82J/5)

Barite is exposed on steep north-facing slopes 3 kilometres northeast of Mount Pedley at an elevation of approximately 1 800 metres (Fig. 82). The showing consists of brecciated barite in a vein with many irregular offshoots and branches; it has a general strike of 30 degrees and dips 80 degrees southeast. The

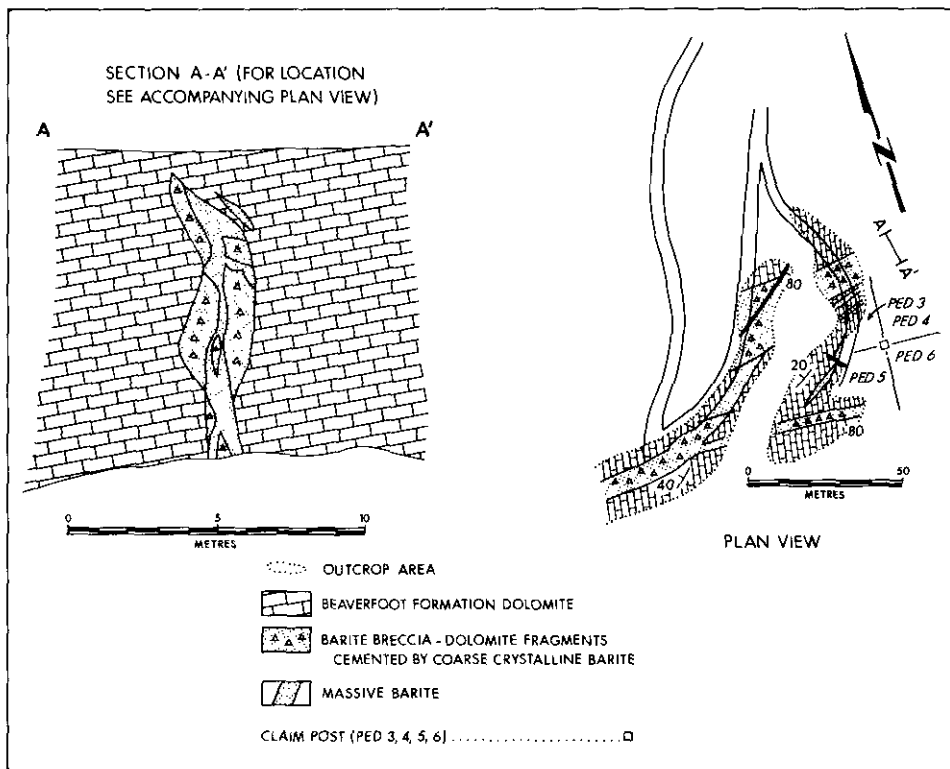


Figure 82. Pedley Mountain barite, 82J/15.

barite is exposed in two areas separated by a vertical distance of approximately 100 metres. The barite is white in colour and coarse grained; galena in scattered grains and aggregates is a common accessory component. The surrounding rocks are massive, brittle dolomites of the Upper Ordovician/Lower Silurian Beaverfoot Formation. The dolomites, which are greyish brown in colour at this site, strike east-west and dip 20 degrees to 40 degrees to the north. In 1982-83, Bar-Well Resources Ltd. of Calgary mined several thousand tonnes of Pedley Mountain barite ore; it was processed in the Windermere plant. The mining road to the site starts at a point on the Old Settlers road, 8 kilometres north of the Palliser River logging road and 1 kilometre south of the Pedley Creek bridge.

WINDERMERE (50° 26' – 115° 53'; 82J/5)

Irregular patches of barite from the west-sloping sidehill 8 kilometres southeast of Windermere were originally described in 1970 by J. W. McCammon. Mining on this property from 1981 to 1983 produced more than 10 thousand tonnes of baritic ore.

The original showing consisted of barite lenses and offshoots developed within and near a mylonitic shear zone that strikes east-west (105 degrees) and dips 20 degrees south. In addition to the main showing, sporadic pods, short veins, and breccia zones of barite were exposed in an area approximately 500 metres to the southeast (Fig. 83). The barite occurs in massive, fine-grained, light grey Upper Jubilee dolomite; there is an almost complete absence of recognizable bedding. Barite in all these showings is coarse grained and milky white with occasional grains of galena and less common copper stains. The location and access were described by McCammon (1971).

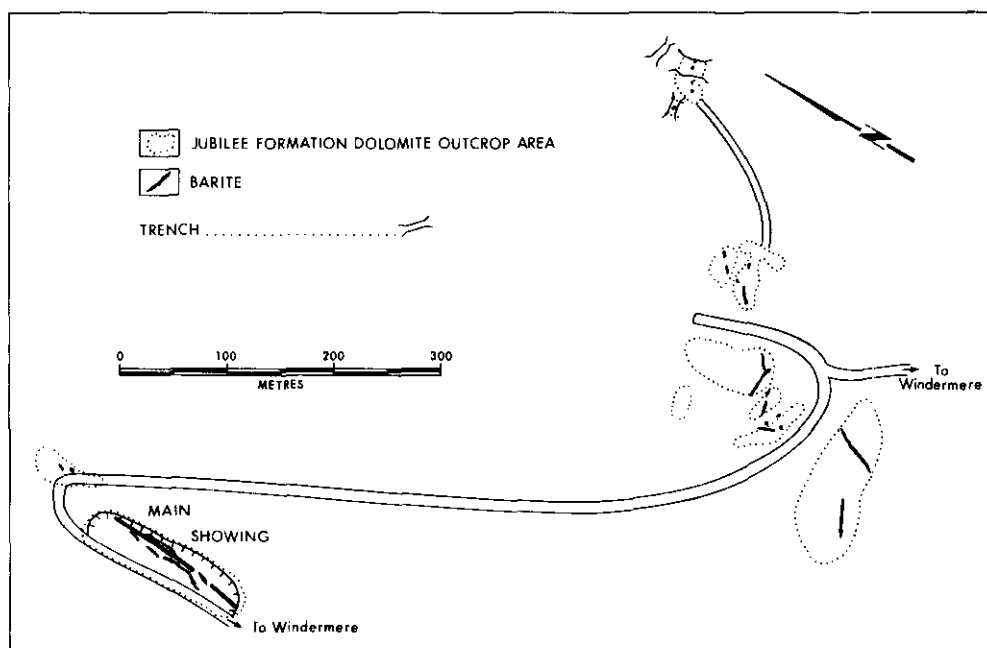


Figure 83. Windermere barite, 82J/15.

LIMESTONE

BOWRON RIVER (53° 42' – 121° 42'; 93H/12)

In 1983 a banded grey marble of the Lower Cambrian Mural Formation was developed into a small quarry by Western Lime and Marble Inc. of Prince George. The quarry is located on the eastern side of Bowron

River, 27 kilometres south of Highway 16, and can be reached by both Giscome and Bowron logging roads. The rock is medium grained and massive; it is processed on the site into agriculture grade limestone. A random sample of the crushed rock provided the following analysis:

CaO Per Cent	MgO Per Cent	SiO ₂ Per Cent	Al ₂ O ₃ Per Cent	Fe ₂ O ₃ Per Cent
46.8	7.60	0.34	0.08	0.11

BUILDING STONE

McGREGOR PASS (53° 58' – 120° 14'; 93H/16)

Massive beds of beige-coloured orthoquartzite of the Lower Cambrian Mahto Formation are quarried in large blocks for building-stone applications. The quarry site is located on the continental divide at an elevation of 1 700 metres north of Wishaw Lake (Fig. 84).

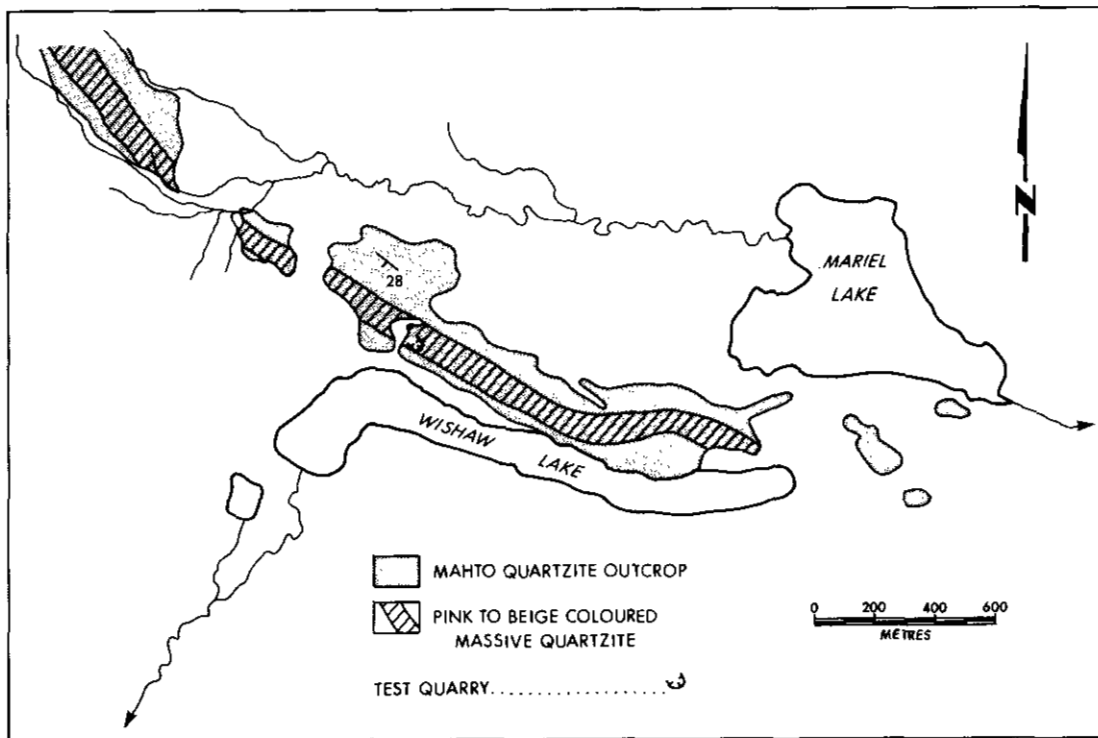


Figure 84. McGregor Pass quartzite, 93H/6.

The rock is a massive, fine to medium-grained, cross-bedded quartzite. The test quarry opened quartzite beds with beige to pink-coloured stripes and irregular smears. In appearance, the quartzite can compete with the best commercial marbles. In the quarry, the quartzite splits along bedding planes of 1.0 metre to 2.0 metres apart; in several cases the separating bedding plane has a very uneven deeply dotted surface like wet sand after a hailstorm. The beds strike uniformly at 70 degrees and dip 28 degrees south. About one third of the exposed 300-metre to 350-metre width of Mahto quartzite at Wishaw Lake constitutes the commercially interesting beige and pink-coloured rock.

The physical properties of this brittle, but very strong and competent rock are comparable to the best varieties of granite on the building-stone market, but it is more difficult to achieve the same closed and evenly distributed high lustre by polishing.

REFERENCES

- Campbell, R. B., Mountjoy, E. W., and Young, F. G. (1973): Geology of McBride Map-Area, British Columbia, *Geol. Surv., Canada*, Paper 72-35, 96 pp.
- Henderson, G.G.L. (1954): Geology of the Stanford Range of the Rocky Mountains, *B.C. Ministry of Energy, Mines & Pet. Res.*, Bull. 35, 84 pp.
- McCammon, J. W. (1971): Barite, Lucky (Cameron), *B.C. Ministry of Energy, Mines & Pet. Res.*, Geology, Exploration and Mining in British Columbia, 1970, pp. 487, 488.
- McIntyre, J. F. and McIntyre, R. F. (1983): Report on Engineering, Geology and Feasibility Considerations, Proposed Wishaw Lake Quartzite Quarry, Private Rept., *Canroc International Corporation*, British Columbia, 129 pp.
- Reesor, J. E. (1957): Lardeau, British Columbia, *Geol. Surv., Canada*, Map 12-1957.