

MEMORANDUM / NOTE DE SERVICE

TO / A

Dr. D.C. Findlay  
Ottawa

FROM / DE

Dr. K.M. Dawson  
Vancouver Office

SECURITY - CLASSIFICATION - DE SÉCURITÉ
OUR FILE - N / RÉFÉRENCE
YOUR FILE - V / RÉFÉRENCE
DATE 15 June, 1987

SUBJECT / OBJET: Field examination of Mighty White Dolomite Ltd. orebody, Rock Creek, B.C., June 12, 1987

On June 12, 1987 I examined the Mighty White Dolomite Ltd. orebody in the company of Mr. Paul Chaput, mine owner and Mr. Z. Dan Hora, BCGS. The purpose of the examination was to determine the stratigraphic and structural characteristics of the dolomite orebody, particularly as it complied with Subsection 45(1) of the Excise Tax Act as a 'bedded' or 'non-bedded' industrial mineral deposit.

The deposit is located on map sheet 82E/02W; 49°01.3'N, 118°57.8'W; 5.5 km southeast of Rock Creek at elevation 3500'. Access via Harpur Ranch Road. Ref: GEM 1971, p. 456.

The dolomite orebody is a resistant, 1000 x 300 m lens that forms a knoll within less resistant amphibolite of the Carboniferous to Permian Knob Hill Group of Little (GSC Paper 79-29, 1983). Overlying rocks are eroded away, and underlying quartz-hornblende amphibolite exhibits foliation that dips moderately eastward. A steep-walled gully on the east side of the dolomite lens marks an intrusive contact with a rhomb porphyry syenite stock of the Eocene Marron Formation.

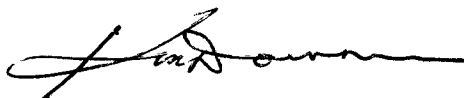
The orebody is a synformal lens that shows sharp, structurally discordant contacts with footwall amphibolite along its western side (Plate 1). The contact was not observed on the east side of the orebody, but internal foliation in the dolomite indicates a gentle (10-15°) westward dip (Plate 2). The lower dolomite member grades downward through siliceous dolomite to an abrupt contact with the underlying amphibolite. The lower dolomite member is overlain by a discontinuous 0.5-1.0 m thick lenticular band of quartz-hornblende-pyrite amphibolite that forms a red-weathering horizon about 10 m above the footwall (Plate 3). The amphibolite lenses are intruded by veinlike bodies of remobilized dolomite (Plate 4). The upper dolomite member is about 20 m thick, massive to weakly foliated (Plate 5), and forms the bulk of the orebody. The dolomite grades from pale grey or cream on the west side, to white crystalline dolomite with porphyroblasts of quartz and muscovite on the east side adjacent to the syenite stock (Fig. 1).

.....2/

External structural relations of the orebody are best exposed along its west side where a structurally interleaved contact with amphibolite is seen (Plate 1) and a small, 2 x 1 m lens of dolomite occurs in amphibolite 4 m below the footwall (Plates 6, 7). The lens, essentially a microcosm of the orebody, illustrates the structural relationship between massive dolomite and foliated amphibolite host.

I conclude that the Mighty White Dolomite Ltd. orebody is a lens that is both stratigraphically and structurally discontinuous with its host amphibolite. The originally sedimentary succession has undergone regional metamorphism and deformation of lower amphibolite facies which resulted in recrystallization, dismemberment and local remobilization of the carbonate beds, and subsequent formation of lensoid monominerallic dolomite members within the predominantly amphibolite host. Clearly the deposit is non-bedded in a geological sense.

The mining cutoff is defined by the structural, not stratigraphic contact between dolomite ore and amphibolite waste, therefore the deposit is 'non-bedded' according to the provisions of Subsection 45(1) of the Excise Tax Act.



Kenneth M. Dawson  
Research Scientist

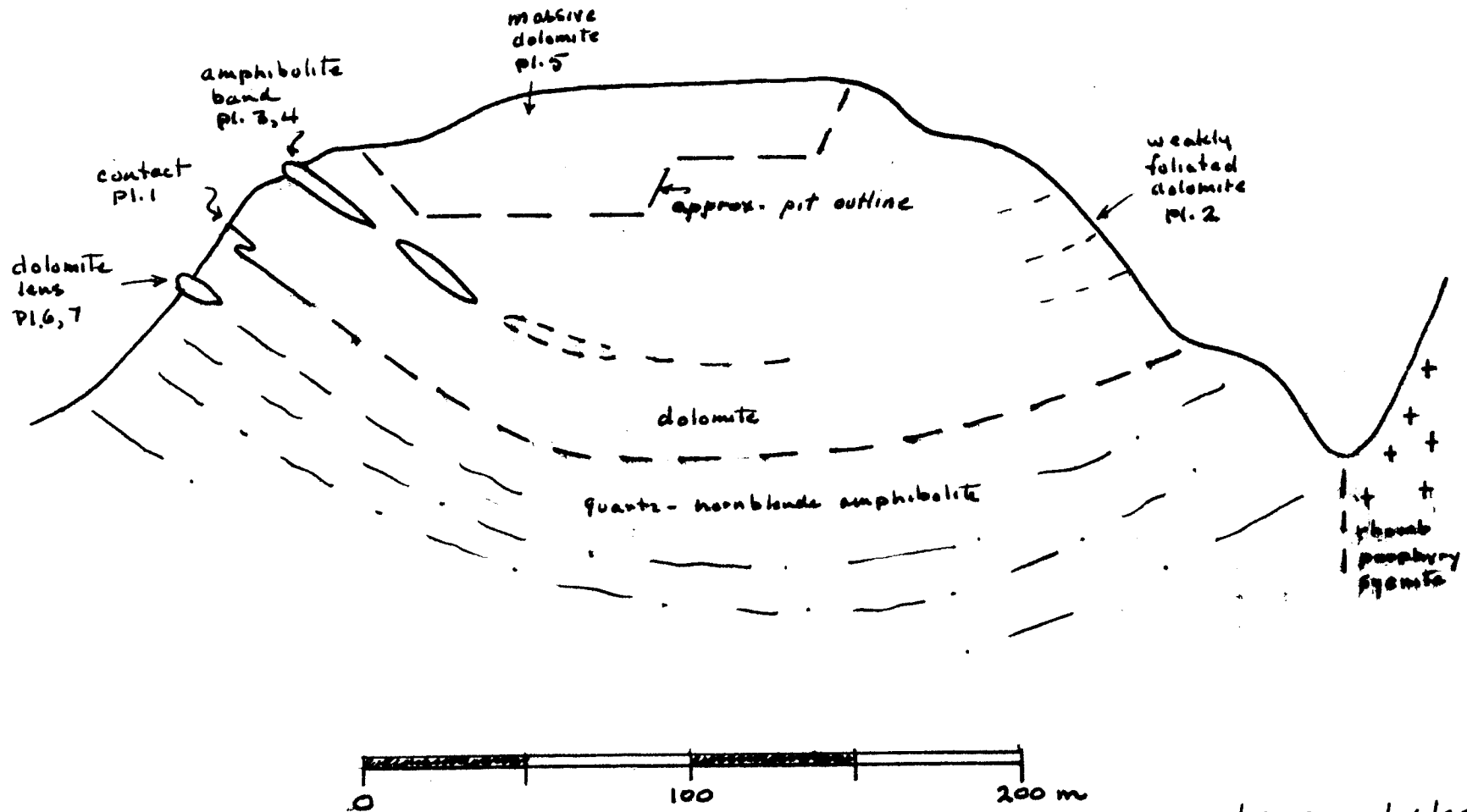
KMD/bv

Figure 1

Diagrammatic Orebody Cross Section  
Mighty White Dolomite Ltd.

West

East



KMD/GSC 15/06/87



Plate 1: West side of orebody, faulted contact between dolomite and underlying amphibolite. Z. Dan Hora



Plate 2: East side of orebody, view southward of gently westward dipping foliation in dolomite.

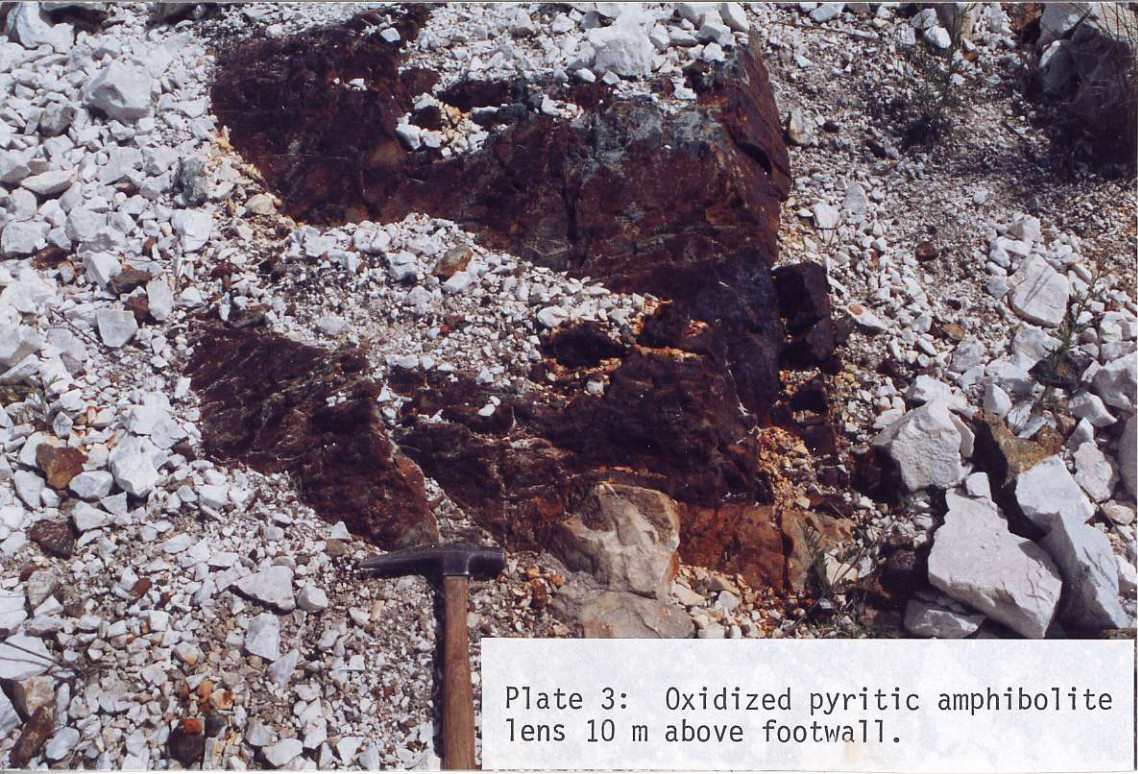


Plate 3: Oxidized pyritic amphibolite lens 10 m above footwall.



Plate 4: Dolomite veins in amphibolite  
Tens; 010/50E.



Plate 5: Open pit developed on massive dolomite, upper member.



Plate 6: Dolomite lens, 2 m x 1 m,  
enclosed by amphibolite.





Plate 7: Dolomite lens, 4 m below ore-body footwall. Z. Dan Hora (L) and Paul Chaput (R).