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REVIEW REPORT ON THE TOTEM MINERAL CLAIM

GOLDEN BEAR PROJECT

for

NORTH AMERICAN METALS B.C. INC.

February 11, 1987

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North Vancouver

zone, that is, relatively pure carbonate in fault contact with massive mafic tuffs. This lithologic package continues only to Surprise Ridge. North and east ~~from~~ of this point, the ~~lithologies~~ package consists of a ~~are confined to the~~ limestone unit and the siltstone unit. An explanation for this variation may be due to the northerly plunge of the stratigraphy observed by Shaw (per. comm).

The carbonates of the limestone units are the oldest rocks on the property. They are for the most part, massive to thickly bedded and have been silicified and dolomitized to varying degrees. The carbonates are multi-colored ranging from white, buff, pink and grey to black. They are relatively pure carbonates with very little argillaceous or tufaceous material.

Several types of breccia are found within the carbonates. The most common ~~type of~~ breccia ~~present~~ is due to some form of solution collapse or karstification. This assumption is based on textural relationships noted in core. These features include crackle breccias grading into mosaic or rubble breccias. Another

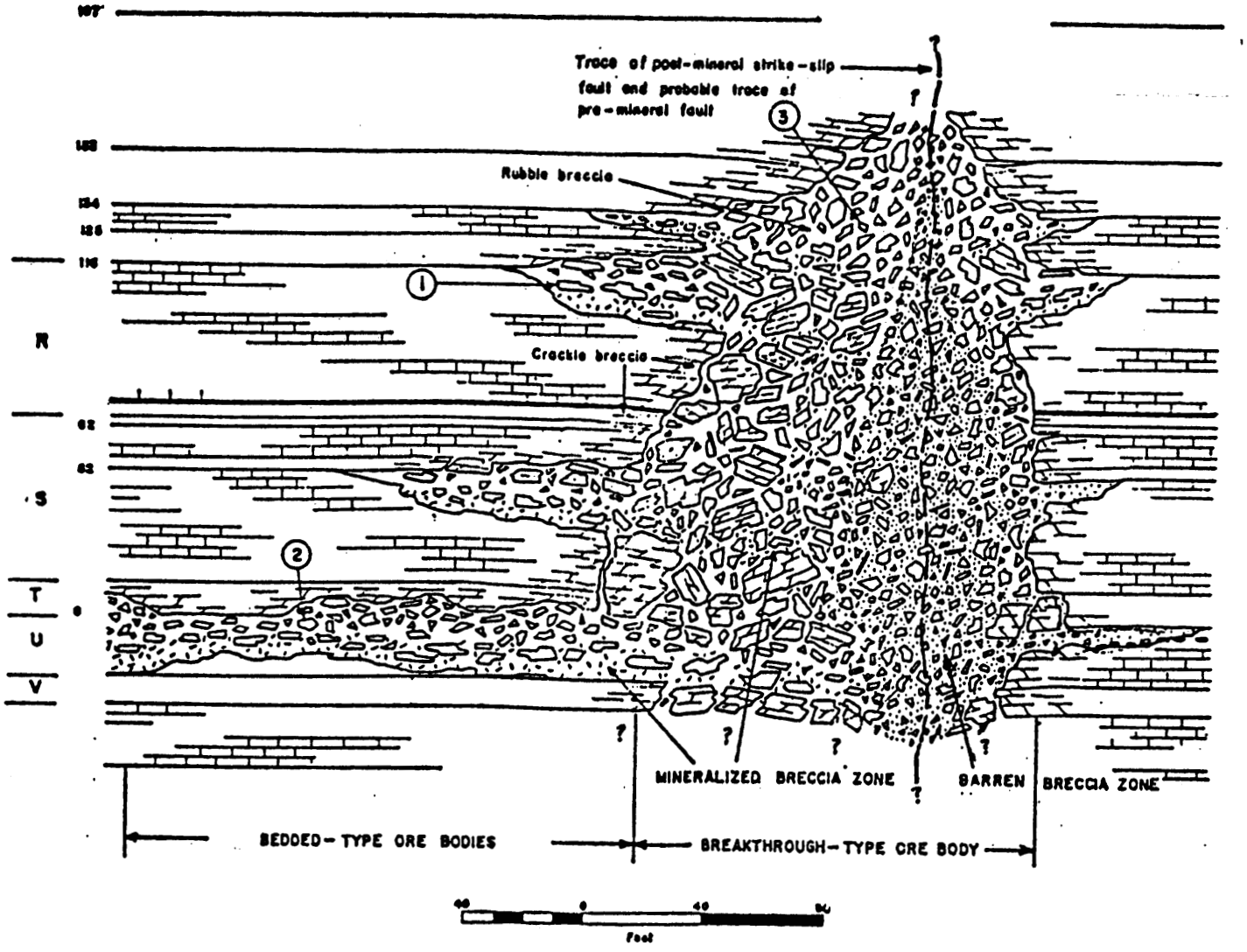

FIGURE 12

An example of brecciation styles in carbonate rocks.

is thin karst tubes adjacent to crackle breccias or undeformed carbonate. Sparry matrix infill is also present. These features are all common within carbonate terrains and are indicative of solution collapse not tectonic activity. An example of a similar feature is shown in Figure 12. Similar conclusions concerning the nature of the brecciations were reached by other investigations. These include a thin section study by P. Read (1986) and an interim report by G. Lowey (1986). No unconformities were recognized in core and this would suggest solution collapse and brecciation at depth due to circulating ground waters. Tectonic breccias occur adjacent to faults. These can be either consolidated (re-healed) or unconsolidated (gouge-rich). Chevron has reported sedimentary or slump breccias however, none were observed in this study.

Carbonate rocks on the Totem have undergone extensive alteration. Silicification, to varying degrees, is the most common alteration product. Often, silicification is so intense, the rocks become jasperoids or, in property terminology, quartz. The silicified

rocks still retain remnant or ghost carbonate textural features. These features include bending or laminations, fossils, and dolomitic porosity. As a rule, silicification is associated with and decreases away from faults. An exception to this is the Totem Silica Zone (Figure 2). Here rocks on the surface are intensely silicified for 1500 m in a north-south direction and 200 m east-west. ~~However,~~ drilling beneath this zone ~~however, revealed~~ DEMONSTRATED THAT THE SILICIFICATION HAS A CAP-LIKE geometry. ~~that intense~~ silicification is associated with faults and only At depth the SILICIFICATION DECREASES UNTIL ~~spotty else where.~~ IT IS CONFINED ONLY TO the vicinity OF FAULT STRUCTURES.

The siltstone unit is a highly variable package composed of carbonates, volcanoclastics, and fine grained clastics. It is felt that the term siltstone should be used here as a name only and does not imply rock type. During this study, very little siltstone was seen. Rather, the dominant grain size was in the clay range.

The siltstone unit underlies a large area of the TOTEM and POLE claims. As it is recessive, very little siltstone can be found