

MT. WASHINGTON PRECIOUS METAL PROJECT**Vancouver Island, B.C.****BETTER RESOURCES LIMITED**

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INTRODUCTION

Since 1983 Better Resources Ltd. have been exploring for gold and silver on Mount Washington. To date approximately 235,900 tons of ore have been outlined in the Lakeview - Domineer zones. Indications are this tonnage figure should increase substantially in the coming year.

The property consists of a total of 199 units, inclusive of modified grid, crown grant and two-post claims, which are wholly owned by Better Resources Ltd. Courtenay, the nearest sizable community is located 20 km to the southeast. Access to the property is afforded by a number of gravel roads. Past logging operations have resulted in a good network of gravel roads throughout the property.

PROPERTY HISTORY

In 1940, while searching for the source of some placer gold, the McKay brothers located several gold-bearing veins near the top of Mt. Washington. The following year the Number 1 vein, or Domineer as it was later called, was explored by K.J. Springer. Consolidated Mining and Smelting further explored the Domineer vein during 1944 and 1945. Access at the time proved cumbersome since all equipment had to be either backpacked or carried by packhorse.

Noranda Exploration Ltd. explored the property between 1951 and 1959. Initially, the work concentrated on the area north of the Domineer vein. The Mt. Washington Copper Company was formed in 1956 to further explore the mineral deposits of Mt. Washington. An access road was built to the West Arm of Mt. Washington where copper mineralization along Murex Creek was discovered. In 1957 Noranda Explorations joined with Mt. Washington to explore the Murex basin.

Subsequent drilling outlined a somewhat large zone of low grade copper mineralization (0.5%).

An electromagnetic survey followed by trenching and diamond drilling in 1958 outlined a near surface flat lying zone of relatively high grade (2.0%) copper mineralization north of the Domineer zone (Carson, D.J., 1960). From 1965 to 1966 the Mt. Washington Copper Company milled 392,000 tons of ore averaging 1.16% Cu, 0.01 oz/ton Au, and 0.5 oz/ton Ag from two small open pits within this zone.

Cominco again worked the property, drilling 22 diamond drill holes (12,596 ft.) between 1963 and 1964. Following the shutdown of the mine, Marietta Resources drilled a number of holes (6,947 ft.) plus contracted an airborne magnetic survey. Following the drilling of five short drill holes by Mt. Washington Copper in 1971, Esso Minerals Ltd. optioned the property (McGuigan, P.J., 1975). Between 1972 and 1982 a total of 31 drill holes (10,489 ft.) were drilled, along with soil sampling, geological mapping and an I.P. survey. This work in part resulted in the discovery of the Lakeview zone, located west of the Domineer vein.

In 1983, Heinz Veerman submitted this property to Better Resources Ltd. Better Resources' decision to option the property was based upon the presence of known gold mineralization, a huge arsenic soil anomaly (greater than 2 km), realgar and a Tertiary age to the intrusives. During 1983 two short drill holes were drilled immediately west of the Domineer vein, plus a soil sampling program for gold was undertaken on the West Grid - Lakeview zone. This work extended the gold mineralization of the Domineer vein to the west, plus outlined a large well defined gold anomaly coincident with the previously known arsenic anomaly.

In 1984, a total of 16 drill holes were drilled in the West Grid area confirming the presence of gold mineralization. In conjunction with the diamond drilling further soil geochemistry, geological mapping and water geochemistry was carried out, along with petrographic and mineralogical studies (Northcote, K.E., 1985). An additional 49 holes were drilled by Better Resources Ltd. following a trenching program in 1986. The gold mineralization present in the West Grid was extended south into the Lakeview zone, the Domineer vein was shown to join up with the

south pit, a lower mineralized zone was discovered in the vicinity of Glacier Lake and a potentially significant gold bearing zone was discovered in the Murex Breccia. Soil sampling for gold was extended northward from the West Grid, plus grids were established over portions of the Oyster Breccia and Murex Breccia. Both of which were found to contain anomalous gold values.

PROPERTY GEOLOGY - STRATIGRAPHY

The oldest rocks on the property are a series of upper Triassic mafic volcanics of the Karmutsen Formation. Although dominantly basaltic, the flows vary from massive to pillowed, are commonly porphyritic, and grade into pillow breccias and aquagene tuffs.

Unconformably overlying the Karmutsen Formation is the Upper Cretaceous Comox Formation of the Nanaimo Group. A basal conglomerate of variable thickness containing rounded clasts of the Karmutsen Formation sporadically overlies the Karmutsen Formation. Dominantly the Comox Formation consists of a fine-grained sandstone/wacke interbedded with a siltstone.

The core of Mt. Washington is a Tertiary (35₊₆ Ma) stock consisting of a variably porphyritic quartz diorite (Carson, D.J., 1973). Peripheral sills of quartz diorite are also present such as Constitution Hill, as are dykes of quartz diorite porphyry.

Cross-cutting the entire sequence are a number of breccia bodies. These represent a complete spectrum breccia development from crackle breccias to the diatremes to collapse breccias.

The youngest breccia is the Washington breccia, located between the Domineer vein and south pit on a ridge north of Mt. Washington. Contact relationships between the Washington breccia and the quartz diorite, Murray breccia and Glacier breccia although cross-cutting are gradational, often being represented by a vertically oriented crackle breccia zone. Within the breccia large angular clasts dominate over a finely comminuted rock flour matrix, which in places has been replaced by magnetite and actinolite. Slab-like fragments with length to width ratios of 10:1 are common features suggesting collapse may have been the operative process (McGuigan, P.J., 1975).

Immediately to the north of the Washington Breccia is the Murray Breccia. In general this breccia contains a much higher proportion of matrix material than the other breccias, although a considerable amount of variability does exist. Clasts range from 1 - 10 cm in diameter averaging about 2 cm, and are in general subrounded to subangular. Clasts composition is mixed, consisting of varieties of quartz diorite, sandstone, siltstone and mafic volcanic. Overlying and in places adjacent to this breccia is a crackle breccia. The high degree of rounding, mixing of clasts plus a large percentage of matrix material suggest this breccia to be a diatrema.

The McKay breccia located 2 km to the northeast of the Washington breccia also appears to be a diatrema. Features which suggest this mode of origin include: (1) an apparent pipe shaped morphology, (2) generally subrounded clast shape, (3) highly variable matrix content, (4) variety of clast compositions, (5) the presence of steeply dipping channels and (6) an increase in the fracture density of the country rock towards the breccia (McGuigan, P.J., 1975). As with the Washington breccia, veins of magnetite and actinolite are found to replace portions of the matrix.

The Murex breccia is both the largest and most complicated. Located at the eastern end of the property, this breccia has been subdivided by McGuigan (1975) into three variants or types. The first two types consist of subrounded to subangular clasts 1 to 10 cm in diameter of the Comox and Karmutsen Formations respectively. Matrix is generally less than 25% consisting entirely of finely comminuted rock fragments. Contact relations between the two mimic the overall trend of the unconformity, suggesting collapse to be the dominant process. The third form of Murex breccia is much more variable. More specifically the clast composition is heterolithic, with the size varying from 1 to 50 cm and the degree of roundness from subangular to spherical. The matrix content is also quite variable (20 to 80%) containing numerous matrix-rich channels. All of these features indicate a fair degree of movement has taken place, suggesting a mode of origin akin to a diatrema.

The Glacier Breccia located immediately east of the Washington Breccia consists of a sill-like body of highly mixed fragments. The Quarry Breccia located on the eastern slope of Mt. Washington is a composite breccia consisting of a core of rotated mixed fragments which is enclosed by a crackle breccia. Collapse appears to be mode of origin for this breccia.

Another collapse breccia is Oyster Breccia located approximately 2 km northwest of the Washington Breccia. Intense sericite alteration has affected the clasts with dolomite and vuggy quartz present in the matrix. Surrounding this breccia is a concentric, inward dipping fault-fracture set (McGuigan, P.J., 1975).

PROPERTY GEOLOGY - STRUCTURE

Structurally, the property is relatively simple, with the attitude of the Comox and Karmutsen Formations deviating little from the horizontal. Block faults accompanied the deposition of the Comox Formation resulting in wedges of conglomerate bounded by faults. Block faulting also preceded the tertiary diorites and breccias. This may have been in response to doming caused by the forceful intrusion of the McKay stock (Carson, D.J., 1960). Accompanying this is the development of a radial fault pattern which has resulted in the formation of a series of "pie-shaped" grabens and horsts (McGuigan, P.J., 1975).

MINERALIZATION - DOMINEER / LAKEVIEW ZONE

This is perhaps the most extensively mineralized zone, and to date, has received the most extensive exploration effort by Better Resources. At present, a strike length of almost 1.5 km has been defined originating at the Domineer vein passing through the south pit to the north pit. Based upon diamond drilling this same zone can be traced for approximately 0.5 km on the west side of Mt. Washington through the Lakeview - West Grid area. Coincident with the gold mineralization on the Lakeview - West Grid side is a 1.5 km long soil anomaly which extends off the grid. Preliminary tonnage and grade figures for the drill indicated portions of the Lakeview - Domineer indicate 235,900 tons of 0.23 oz/ton Au and 1.15 oz/ton Ag. From this tonnage 131,300 tons of open-pittable material is present at the West Grid zone at a grade of 0.07 oz/ton Au and 0.95 oz/ton Ag. Based upon two drill

holes it appears likely the Domineer and Lakeview zones represent a continuous ore body. Assuming this can be demonstrated, then a reasonable expectation for this area should be approximately 485,000 tons at a grade of 0.18 oz/ton Au.

In general, the mineralization consists of a tabular stockwork zone of quartz - pyrite - arsenopyrite veins which dip at a slight angle to the west. Enveloping the quartz - sulphide veins is a broad zone of kaolinite(?) alteration, which is up to 30 m wide. Generally, in the centre of the alteration is a 2-5 m thick zone of hydrothermal breccia. This breccia consists of angular clasts of altered wallrock set in a matrix of quartz and sulphides. In places the sulphides envelope these clasts, exhibiting a banded appearance. Progressing outward from this central zone is a stockwork of smaller quartz-sulphide veins. With increasing distance the quartz - sulphide veins decrease in size and frequency. In addition the alteration becomes restricted to envelopes surrounding these veins as opposed to pervasive. Also with the increasing distance chlorite becomes the dominant alteration mineral. Pyrite and arsenopyrite are the dominant sulphide minerals, within the gold-bearing veins although chalcopyrite, covellite, sphalerite, galena, tennantite, bornite, wehrilite, hessite, chalcocite, realgar and orpiment are also present in varying amounts (Carson, D.J., 1960). Pyrrhotite, molybdenite and magnetite are also present in the general vicinity, but appear to be unrelated to the gold-bearing mineralization. Photomicrographs of the gold shows it occurring as disseminated grains up to .03 mm in diameter hosted by a variety of sulphide minerals (Northcote, K.E., 1985).

MINERALIZATION - MUREX BRECCIA ZONE

This breccia represents the largest mineralized zone of the property. Disseminated and veined sulphides infilling the voids between breccia clasts occur over an area of roughly 700 by 700 m. One hole drilled by Better Resources in 1986 intersected 13 m of 0.22 oz/ton gold.

Although subject to changes in abundance and habit, the mineralization consists of varying amounts of pyrrhotite, pyrite, chalcopyrite and magnetite infilling voids between breccia clasts. Quartz, often vuggy accompanies the sulphide mineralization generally enveloping the sulphides within the interstices. Epidote

also occurs within the interstices, usually at the expense of the sulphides. Chlorite generally accompanies the epidote indicating a form of propylitic alteration has taken place. Also exerting an influence on the amount of sulphides is the percentage of comminuted rock flour within the matrix. In addition, where the rock flour content is low, the clasts tend to be angular and often elongate, suggesting little movement has taken place. In these areas the origin of the Murex Breccia is interpreted to be the result of collapse. Within blocks of unbrecciated mafic volcanic adjacent to the breccia a minor amount of sulphide veining is present. However, within the breccia the degree of veining is minimal.

The origin of the mineralization within the Murex Breccia is interpreted to be the result of hydrothermal solutions originating in the areas of propylitic alteration entering the voids created by the collapse of the Murex Breccia.

MINERALIZATION - OYSTER BRECCIA ZONE

Perhaps the most conspicuous feature of this breccia is the intense sericite alteration of the clasts and vuggy nature of the quartz in the matrix. Both these features suggest the possibility of epithermal mineralization. One assay of 0.10 oz/ton over 10 feet has been obtained from this breccia. Soil sampling over half this breccia has revealed the presence of an elongate gold anomaly. In part coincident with this anomaly is a magnetite-bearing Washington-type breccia.

MINERALIZATION - QUARRY BRECCIA ZONE

Mineralization within the Quarry Breccia consists of disseminated and veined pyrite, chalcopyrite, with minor amounts of realgar. Initially, this prospect was explored for Cu, consequently, little is known about the gold potential.

MINERALIZATION - GLACIER LAKE ZONE

Two gold-bearing quartz veins are present in the immediate vicinity of Glacier Lake. The Number 2 vein located by the McKay in 1940 is a 10 cm thick quartz vein containing visible gold. A second vein containing visible gold was located by Esso Minerals. This vein was approximately 60 cm thick. Both these veins are localized in a set of radial faults which originate from McKay Lake.

FUTURE WORK

Once the summer field season arrives exploration will resume on Mt. Washington. Drilling on the Domineer - Lakeview zone will concentrate on filling in the area between these zones. Successful conversion of Inferred to Drill Indicated reserves would lead to a program of underground exploration. This could get underway in the fall. In conjunction with this a program of trenching followed by drilling will be carried to the north of the West Grid zone. This will concentrate on evaluating the 1.0 km of anomalous gold values which remain untested from the soil geochemistry. Drilling will also follow up on a lower horizon discovered near Glacier Lake, where values of 0.12 oz/ton Au were intersected over 1.0 m. In addition the soil sampling will be extended to the east and south of the existing grid. Accompany this will be some form of EM survey.

Further work on the Murex Breccia will be carried out. Initially, this will involve more detailed soil sampling, geological mapping, plus geophysics. Once this data has been compiled, drilling will no doubt resume.

Other targets which remain to be evaluated include the Oyster Breccia, Quarry Breccia and Glacier Lake veins.

REFERENCES

- Carson, D.J., 1960. Geology of Mount Washington, Vancouver Island, British Columbia. Unpublished M.Sc. thesis, University of British Columbia.
- _____, 1973. The plutonic rocks of Vancouver Island. Geological Survey of Canada, Paper 72-44, 70 pages.
- McGuigan, P.J., 1975. Certain Breccias of Mount Washington Property, Vancouver Island. Unpublished B.Sc. thesis, University of British Columbia.
- Northcote, K.E., 1985. 1984 Year End, Geological Report on Work Completed, Better Resources Ltd., Mt. Washington, Company Report.