

TBS → A.M. S. 2000
 - Huckleberry
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END OF FIELD SEASON REPORT - SUMMER 2000

Vic Levson

QUATERNARY STUDIES

Quaternary studies, till geochemistry and property scale surficial geology mapping completed this summer concentrated on the Huckleberry Mine area. Surficial mapping, Quaternary stratigraphy and till geochemistry studies were conducted by Vic Levson (BCGSB), Travis Ferbey (U. Vic. and BCGS), David Mate (U. Vic. and Huckleberry Mines), and Tansy O'Connor-Parsons (U. of A., summer student) and included the involvement of staff of Huckleberry Mines (Steve Blower). About 400 till samples were collected as well as about 50 samples of other media. Ground verification of aerial photograph interpretation was also completed.

Anomalous westward ice flow during the Late Wisconsinan glaciation, described by Levson *et al.*, (1998), and Stumpf *et al.* (in press) from the region east of the study area, was also found this field season throughout the Coast Mountains west, north and south of Huckleberry. This indicates that westerly ice flow and consequent west-directed glacial dispersal effected a much larger area than previous known. Westerly flow was independent of large topographic barriers and occurred when ice centers over the Hazelton and Coast mountains migrated eastward into the Interior Plateau. In addition, evidence for a later easterly flow event was also found in the map region and areas to the east of Huckleberry. Consequently, the effects of westward flow on geochemical dispersal are expected to diminish eastward.

Westerly ice-flow locally extended to the end of the last glaciation as indicated by preservation of paleoflow indicators at unprotected, low elevation sites. These observations confirm that the maximum buildup of interior ice extended late into the last glaciation and that a topographically controlled, late-glacial, ice-flow phase back to the east was short-lived in this region.

Implications of shifting ice divides in the study area for exploration are significant in that 180 degree changes in ice flow direction and complex glacial dispersal patterns are likely. Explorationists working in this region should base paleoflow interpretations on detailed field data. Some locations show both eastward and westward flow directions, even on outcrops that occur in close proximity, and therefore a clear understanding of the temporal relationships of multiple flow events is required.

QUATERNARY STRATIGRAPHY

The Quaternary stratigraphy of the study area has been reconstructed from a number of exposures in the region. The most complete stratigraphic sections encountered mainly occur in the vicinity of the mine site where exceptionally thick sequences with multiple till units occur. Tills in the area are underlain by a complex sequence of glaciolacustrine sediments and interbedded diamicts possibly of subglacial lake origin. The tills are

overlain by a well exposed sequence of peats and organic silts interpreted to be bog and lacustrine deposits, and some glaciofluvial sediments.

TILL GEOCHEMISTRY, DISPERSAL AND DRIFT PROSPECTING STUDIES

The primary objectives of till geochemical studies conducted in the region were to investigate patterns of glacial dispersal and secondarily to identify geochemically anomalous sites that might reflect areas of buried mineralization. Till dispersal studies were carried out in the vicinity of known copper mineralization in the Huckleberry area and a brief study was conducted at the Imperial Metals **Chisolm Lake** property. Till and profile sampling were conducted at these sites to document glacial dispersal and mineral concentrations in various soil horizons. Results will be used to develop an dispersal model that will be useful to exploration programs throughout west central British Columbia.

Unusually high concentrations of copper in till, were observed in preliminary geochem results from a sample taken west of the Huckleberry mine early in the field season. Copper-rich (up to .6% copper) mineralized float was also found at a number of sites in the area. Copper concentrations at the new anomaly are higher than at most sites in the area close to the present mine. Huckleberry Mines has shown significant interest in this new geochemical discovery and has done some deep trenching in the vicinity of the high copper site and is planning a drilling program in the area. Results of geochemical analysis from our sampling program may help Huckleberry geologists in further planning of their drill program. Discovery of a new copper zone in this area, which is relatively close to the mine, would be much more favorable for extending the mine life than would a discovery in the more distant Whiting Creek area where Huckleberry is currently drilling.

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client?*

SUMMARY OF MAIN FINDINGS

A high geochemical anomaly and several mineralized erratics (granodiorite with chalcopyrite and moly) were identified in the area west of the Huckleberry Mine. It is unlikely (but not impossible) that the source of the till anomaly is known mineralization in the vicinity of the mine suggesting that an undiscovered copper zone may be present west of the mine in an area of thick till cover.

Ice flow during the Late Wisconsinan glaciation in this region was unusually complex and field results indicate that simple airphoto analysis of ice flow indicators would be misleading in some areas for exploration purposes. The southern extent of westerly ice flow and consequent west-directed glacial dispersal has been extended well south of the Morice River area where it has been previously described by Levson et al. Implications in the study area for exploration are significant because a shift in 'up-ice' exploration strategies of up to 180° will be required in some cases and complex glacial dispersal patterns are expected, locally reflecting westerly flow that was independent of large topographic barriers.

Stratigraphic studies indicate the presence of multiple till units in the region and their presence has important implications for interpretation of geochemical data.

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M.Sc.

Quaternary studies and till geochemistry in the Huckleberry mine area

Expected Completion date: 2002

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M.Sc.

Surficial Geology and Quaternary Stratigraphy of the Marilla Area

Completion date: Sept. 2000

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University of New Brunswick

Ph.D.

Quaternary geology of the Smithers region (93L/NE).

Expected Completion date: 2000

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