

BURN FILE
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KWANIKA CREEK AREA

By J. A. Garnett

INTRODUCTION: The map-area is in the centre of the Kwanika Mountains, part of the Swannell Ranges, a subdivision of the Omineca Mountains. Rocks of the Hogem batholith are exposed along the high ridges of these ranges at elevations between 6,000 and 6,200 feet. To the west, Kwanika Creek and Nation River flow southward into the Nation Lakes chain through a broad drift-covered valley which contains the trace of the Pinchi Fault Zone. Elevations at river level are approximately 3,000 to 3,200 feet. A good four-wheel-drive vehicle road traverses the northern portion of the map-area from east to west, running from Manson Creek, past Germansen Lake, to Takla Landing.

Exploration activity during the 1972 field season was directed mainly towards evaluation of properties acquired in areas within the batholith where previous reconnaissance surveys had indicated regionally anomalous copper and molybdenum geochemical results. Approximate location of claims are plotted on Figure 57, along with preliminary results of regional mapping done by the writer, J. P. Franzen, and D. V. Lefebure.

GEOLOGY: The major geologic features of this area include the various rock units of the Hogem batholith, which intrude Takla Group rocks; the Cache Creek Group metasedimentary strata to the west; and the Pinchi Fault Zone, a pronounced northwest-trending regional lineament that separates these major geologic units.

Geographic distribution of the major units of the Hogem batholith in this area is illustrated on Figure 57. Petrographic distribution is recorded on Figure 58, a plot of normalized proportions of quartz-potash feldspar-plagioclase representing modal estimates of 217 stained slabs of specimens uniformly distributed over the map-area. Areas mapped as gabbro-pyroxenite (unit 3) were not plotted on Figure 58.

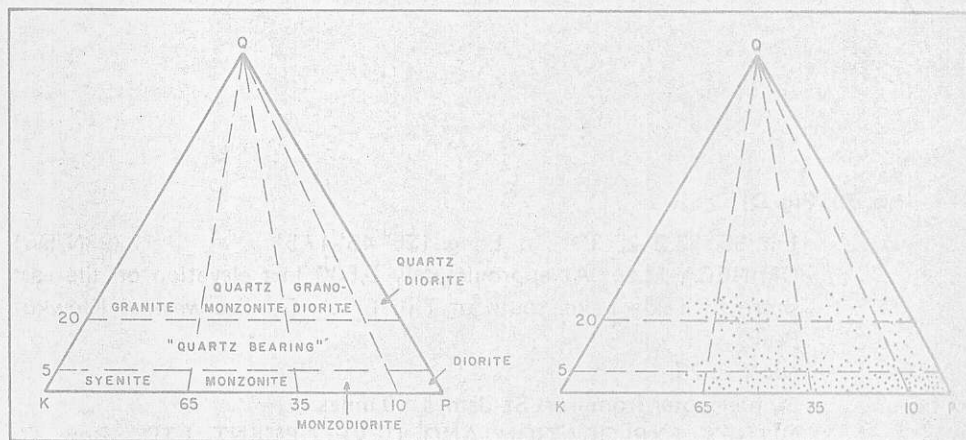


Figure 58. Field classification of plutonic rocks and corresponding modal estimates of 217 stained slabs from Hogem batholith, Kwanika Creek area.

Units 3 to 8 show gradational contacts and are interpreted as representing differentiated units within the batholith. Unit 9 clearly intrudes these more basic rocks. Aeromagnetic contours are very useful in distinguishing certain phases, with units 3 and 4 showing up as distinct highs and unit 9 showing up as distinct lows.

A K-Ar date from fresh secondary phlogopite within unit 5 gave an age of 121 ± 4 m.y.* Dating elsewhere within the batholith has indicated significantly older dates for similar basic to intermediate units of the Hogem, and a preliminary interpretation is that this date represents a resetting due to the nearby intrusion of unit 9.

Along the eastern margin of the batholith in this area, unit 5 dykes cut green, grey-green, and black, mainly porphyritic pyroxene andesites and basalts (unit 2). Intense fracturing, mild hornfelsing, and local pyritization represent further evidence of Hogem intrusion into these volcanic rocks identified as Takla Group (Armstrong, 1949).

Along the western margin of the map-area, the intruded Takla Group rocks are mainly metasedimentary, and occur as wedges between the batholith margin and the Pinchi Fault Zone (unit 2b).

Interbedded, thinly bedded black argillite and brown siltstone cut by intrusive dykes crop out along Kwanika Creek and exhibit slaty cleavage parallel to the steeply dipping compositional layering. The Upper Triassic pelecypod *Halobia* has been identified in similar strata on Halobia Creek (Armstrong, 1942, 1944).

The Pinchi Fault Zone is the main structural feature of this region, and separates Permian rocks (Cache Creek Group) on the southwest from Mesozoic rocks northeast of the fault. In the map-area, the fault trace lies within a wide drift-covered valley, and outcrops close to the fault are rare. However, outcrops exposed along the banks of Kwanika Creek exhibit intense fracturing, brecciation, and numerous faults, indicating proximity to this major lineament. Investigation of these outcrops suggests that the Pinchi Fault is in fact a zone of intense brecciation and faulting which could be up to 1,000 feet wide in this area. There is clearly more than one generation of fracturing present, demonstrating at least two periods of movement along this zone. The regional rock distribution indicates uplift of the southwest (Permian) block relative to the northeast (Mesozoic) block. However, numerous slickensides on the minor faults investigated along Kwanika Creek exhibit mainly shallow-plunging lineations.

A red, hematite-stained, polymict boulder conglomerate (unit 10) was observed at two localities on Kwanika Creek. Well-rounded pebbles and boulders of greenish altered intermediate intrusive rock predominate. Fragments of black argillite were also noted. The conglomerate appears to overlie intrusive unit 9 in one exposed, faulted contact zone. An aligned oblate shape to the boulders defines a vertical, northerly striking foliation, suggesting that the conglomerate has been affected by late movements along the Pinchi Fault immediately west of this area. This unit was mapped previously and was considered to be Cretaceous or younger in age (Armstrong, 1944, 1949).

MINERALIZATION: The claim block outlines on Figure 57 indicate the main areas of exploration activity within the map-area. The most significant areas of mineralization occur along Kwanika Creek (copper-molybdenum), near Burn Creek (molybdenum), and in the southern part of the San group (copper-molybdenum). All are spatially associated

*KWANIKA — University of British Columbia, Department of Geophysics; NTS 93N/6E; 55 degrees 29.1 minutes latitude, 125 degrees 14 minutes longitude.

with unit 9 intrusions into pre-existing units of the Hogem. Other claim blocks (Lin, Rode, Hal, Noble) represent areas of high geochemical response, again associated with unit 9. The Nik claims are staked along the contact of a basic outlier of the Hogem surrounded by Takla Group volcanic flows and pyroclastic rocks, where a high geochemical response is associated with a magnetic high.

REFERENCES: Armstrong, J. E. (1942), The Pinchi Lake Mercury Belt, British Columbia, *Geol. Surv., Canada*, Paper 42-11; (1944), Northern Part of the Pinchi Lake Mercury Belt, British Columbia, *Geol. Surv., Canada*, Paper 44-5; (1949), Fort St. James Map-Area, Cassiar and Coast Districts, British Columbia, *Geol. Surv., Canada*, Mem. 252.

BOOM, FRANKIE (KWANIKA) (No. 130, Fig. D)

By J. A. Garnett

LOCATION: Lat. 55° 28'-32.5' Long. 125° 15'-19' (93N/6W, 11W)
OMINECA M.D. At approximately 3,100 feet elevation on Kwanika Creek, 4 to 8 miles north of its mouth at the east end of Tsayta Lake.

CLAIMS: BOOM, FRANKIE, T GEE, JAM, MG, HG, CHO, OVP, BH, CU, KS, BUD, TX, MAYA, POST, KQ, totalling 120.

ACCESS: By road from Germansen Landing, 50 miles west.

OWNER: BOW RIVER RESOURCES LTD., 333, 885 Dunsmuir Street, Vancouver 2.

METALS: Copper, molybdenum.

DESCRIPTION:

HISTORY: Following the discovery of mercury at Pinchi Lake in 1937, exploration northwestward along the Pinchi Lake Mercury Belt was conducted by geologists of The Consolidated Mining and Smelting Company of Canada, Limited and others. The general Kwanika Creek area is part of this belt, and was first mapped by the Geological Survey of Canada in 1941 and 1943 in conjunction with this search for mercury (Armstrong, 1942, 1944). Occurrences of mercury within the boundaries of the present property were investigated at that time and the Bralorne-Takla mercury mine, which operated during 1943-44, is located 4 miles northwest of the property along the continuation of the Pinchi Fault Zone. The Takla Silver property, first staked in the early 1940's, is located immediately west of Bralorne-Takla (Fig. 57). Placer gold in Kwanika Creek was noted in the reports available from this period, but no mention was made of pyrite-chalcopyrite mineralization.

The rusty outcrops along Kwanika Creek were first recognized as having copper-molybdenum potential by A. Almond, G. Bleiler, and A. G. Hodgson and were staked in 1964. Hogan Mines Ltd. was incorporated in July 1965 and recommendations from consulting reports by A. F. Reeve (1964) and B. C. MacDonald (1965) were initiated. Bulldozer trenching, assaying, and X-ray drilling (two holes, 87 feet) were done on mineralized outcrops along Kwanika Creek in 1965.

The property was optioned by Canex Aerial Exploration Ltd. in 1966, and their investigation included access roads, line-cutting, geological, geochemical, magnetometer, and induced polarization surveys, trenching, and 11 diamond-drill holes (2,807 feet) before dropping the option.