

1845

GEOLOGICAL REPORT

on the

BEAR - DOE GROUP,

Franklin District

(About 40 miles north of Grand Forks)

Latitude: 49° Longitude: 118°

By

G.W.H. Norman, P. Eng.

Geological Field Work - June 20 - 25, 1968.

Final Map and Report - May 12 - 15, 1969.

May 13th, 1969.

Vancouver, B.C.

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In Envelope

Notice to Group
Affidavit on Application for Certificate of Work
Statutory Declaration

Illustrations

- (1) Location Map
- (2) Geological Map - Bear - Doe Group

<p>Department of Mines and Petroleum Resources ASSESSMENT REPORT NO. <u>1845</u> MAP.....</p>

Introduction

During the period prior to the 1914 - 1918 war and for a short period thereafter considerable prospecting was done in the old Franklin mining camp. Many claims were staked and have been described in the annual reports of the British Columbia Department of Mines. Directly east of the old Franklin townsite about forty miles north of Grand Forks, the Copper No. 2 and adjoining claims were staked during this period. The annual reports for 1923, 1927 and 1928 give descriptions of the mineralization. This ground was restaked in May, 1968 by Boundary Exploration Ltd. and examined by G.W.H. Norman for Newmont Mining Corporation of Canada Limited, June 20 - Thursday to June 25 - Tuesday, 1968.

Summary

The claims are underlain by four lithological units. Gneisses, with pegmatite, outcrop east of a major fault which H.W. Little, Geological Survey of Canada has mapped southward towards the U.S. Border where it should continue south along the east side of the Tertiary Republic graben of Washington. Mesozoic granodiorite underlies the greater portion of the claim group. It extends northward beneath a steeply overlapping Tertiary conglomerate and is limited by a cherty group of sedimentary rocks eastward between the major fault and the Tertiary conglomerate. The cherts are probably late Palaeozoic in age but the contact with granodiorite is concealed.

Chalcopyrite with some molybdenite and pyrite occurs along fractures in the granodiorite in the central part of the claim group. The fractures seem to be too widely spaced to be of commercial

interest, but further work can be justified.

Location and Access

The Bear - Doe Group straddles Burrell Creek about forty miles north of Grand Forks. (See Figure 1 in pocket) This creek flows south-southwest to join the Granby River 28 miles by road north of Grand Forks.

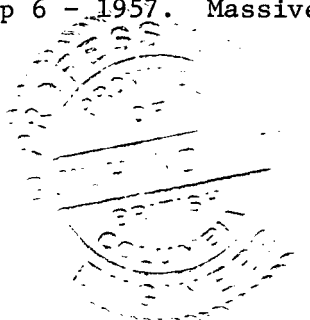
Access from Grand Forks is by way of a well graded road to the junction of Burrell Creek with Granby river of which the first 8 miles is paved and the first twenty miles is an old railway road bed. A grader maintained road continues north along the east side of Burrell Creek for a few miles to a bridge crossing to the west side of the river. The remaining 12 miles to the claims is by a narrower forest road which has poor clearance for low slung vehicles.

Geology

Rock Units

The rock units underlying the claims may be divided, as shown on the accompanying Figure 2 into four principal groups. The oldest group are gneisses and pegmatite, which are classified as Precambrian (?) in age on Map 6 - 1957, by the Geological Survey of Canada. The gneisses are in fault contact with Mesozoic granodiorite, and chert.

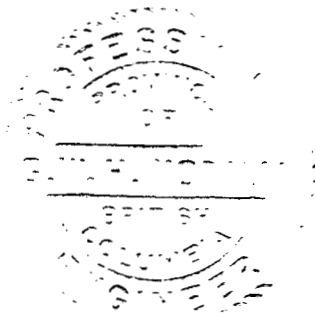
The cherts underlie the eastern side of the Bear No. 4 and No. 6 claims, where they form a prominent knob. Lithologically they are similar to rocks classed as the Anarchist group on the west side of the Franklin camp but the occurrence of the group on the east side of Burrell Creek is not shown on Map 6 - 1957. Massive chert is described



in the Phoenix camp as part of the Knob Hill Formation Paper 65 - 1, G.S.C., page 58, and the chert on the Bear Group may perhaps be a correlative of this formation of Permian or earlier age. A reason for this correlation is the presence in the Franklin camp of a sharpstone conglomerate sequence on Franklin Creek. This is 1,000 feet or more thick, east of the McKinley mine and is identical lithologically with the middle Triassic rocks of the Greenwood area described in Paper 65 - 1, page 58, G.S.C. Volcanics lie east of the Franklin Creek sharpstone and may be of Jurassic age.

The granodiorite chert contact is concealed on Bear No. 4 and No. 6 claims. The adjoining chert is not metamorphosed and the contact may be a faulted one. The granodiorite is a medium grained rock but the constituent minerals lack the sharp definition characteristic of a fresh undeformed crystalline intrusive. The ferro-magnesian minerals show alteration to chlorite. The general appearance of the rock suggests that it has undergone considerable stress and deformation.

The conglomerate of the Kettle River Formation which underlies part of the Doe No. 1 and Bear No. 2 claims is overlain by Rhyolite and Trachyte north of the claims and is cut by numerous syenite dikes, which also cut the granodiorite in places. The conglomerate is a brownish massive rock with faint indications of bedding due to sorting of uniform sized pebbles to cobbles in widely spaced layers. The conglomerate is underlain in the Franklin camp by 50 feet or more of thinly bedded arkose, which forms the base of the formation.



Structure

The most important features of the structure in the vicinity of the Bear - Doe Group are two large faults. The largest of these extends north-northeast to northeast and separates gneisses from granite and chert at the southern end of the group. It lies on the northward projected extension of the large fault which bounds the east side of the Republic graben in Washington State. It has an apparent length of at least 100 miles and could be part of an even larger regional fault zone of central British Columbia. A large fault branches from the regional northeast fault north to north - northwest and separates the chert and conglomerate on its west side from Mesozoic intrusives with inclusions of metamorphosed sediments and volcanics to the east. This fault extends north to bound the east side of the conglomerate on Franklin mountain and may be exposed in some of the workings on the old Maple Leaf claim. On Franklin Creek where the conglomerate is well exposed it dips fairly steeply east throughout from its base eastward to the fault. This suggests that the fault has a very large vertical movement and cuts off the westward extension of the Union vein.

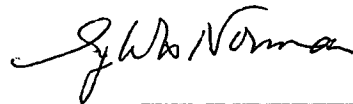
Mineralization

The copper mineralization is confined to the granodiorite, where it occurs along fractures spaced ten to fifty feet apart and to a very minor degree as disseminated grains near fractures. A few of the fracture fillings are nearly 1/4 inch wide with conspicuous chalcopyrite and molybdenite but the majority are less than 1/16 of an inch. The majority of fractures have an east-southeast trend and a south dip with some striking northeast and dipping north.

The old working on the claims consist of a series of widely scattered shallow pits, one short adit and a caved shaft. The mineralization is best exposed at the old shaft on the Bear No. 2 claim and though an interesting occurrence is hardly an impressive showing.

The additional work that can be justified would be systematic soil sampling near the shaft area followed by I.P. for further clarification of mineral intensity of this seems to be required.

Respectfully submitted by:

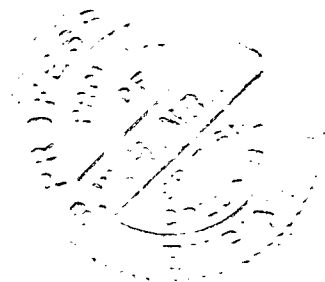


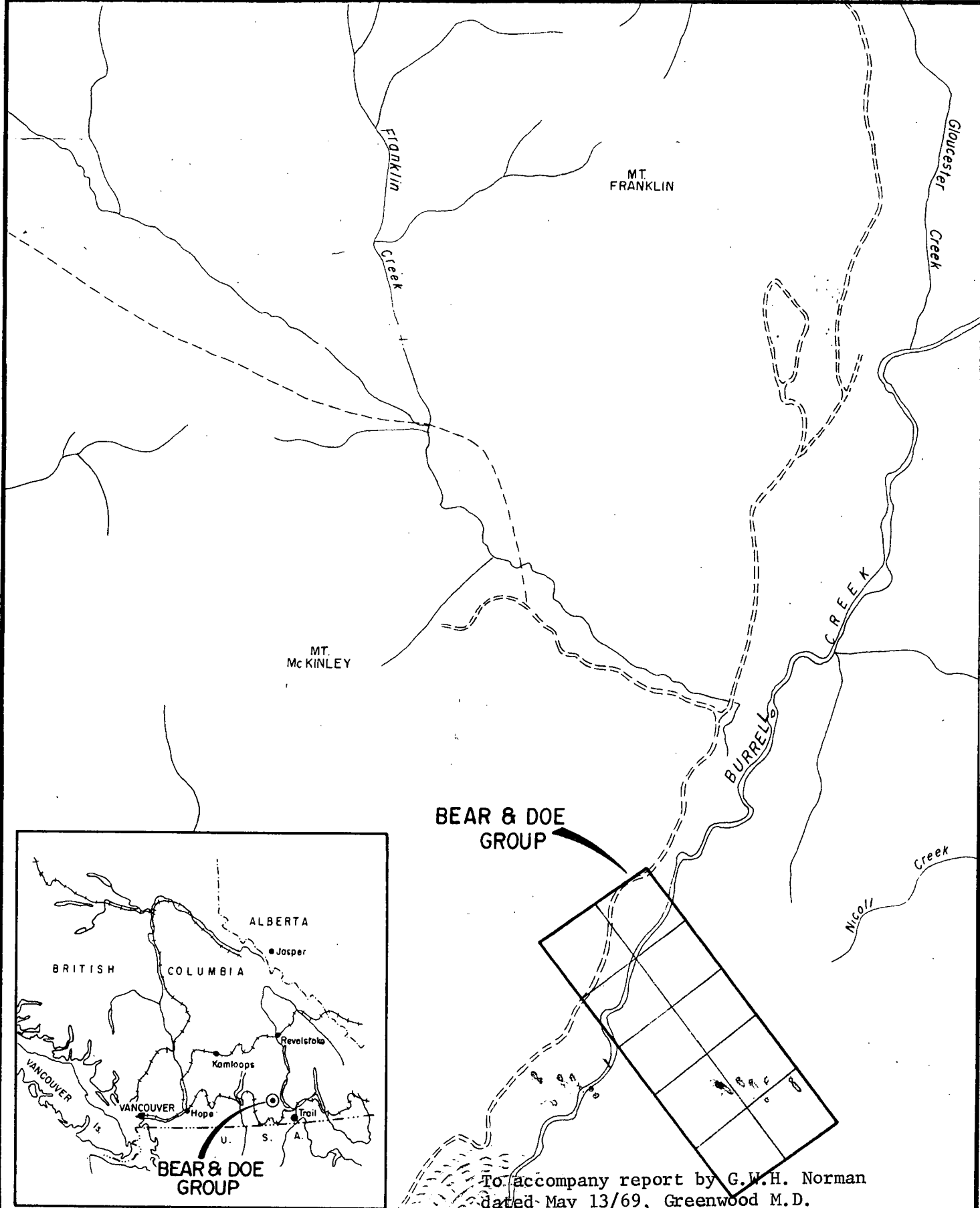
G.W.H. Norman, P. Eng.,

Province of British Columbia.

Encls.-

GWHN:kin





BEAR & DOE GROUP

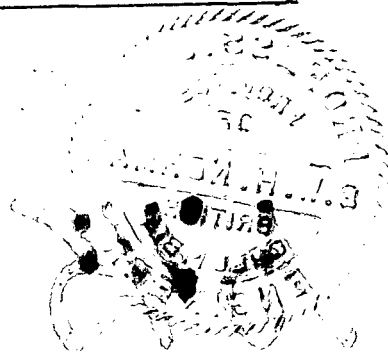
To accompany report by G.W.H. Norman dated May 13/69, Greenwood M.D.

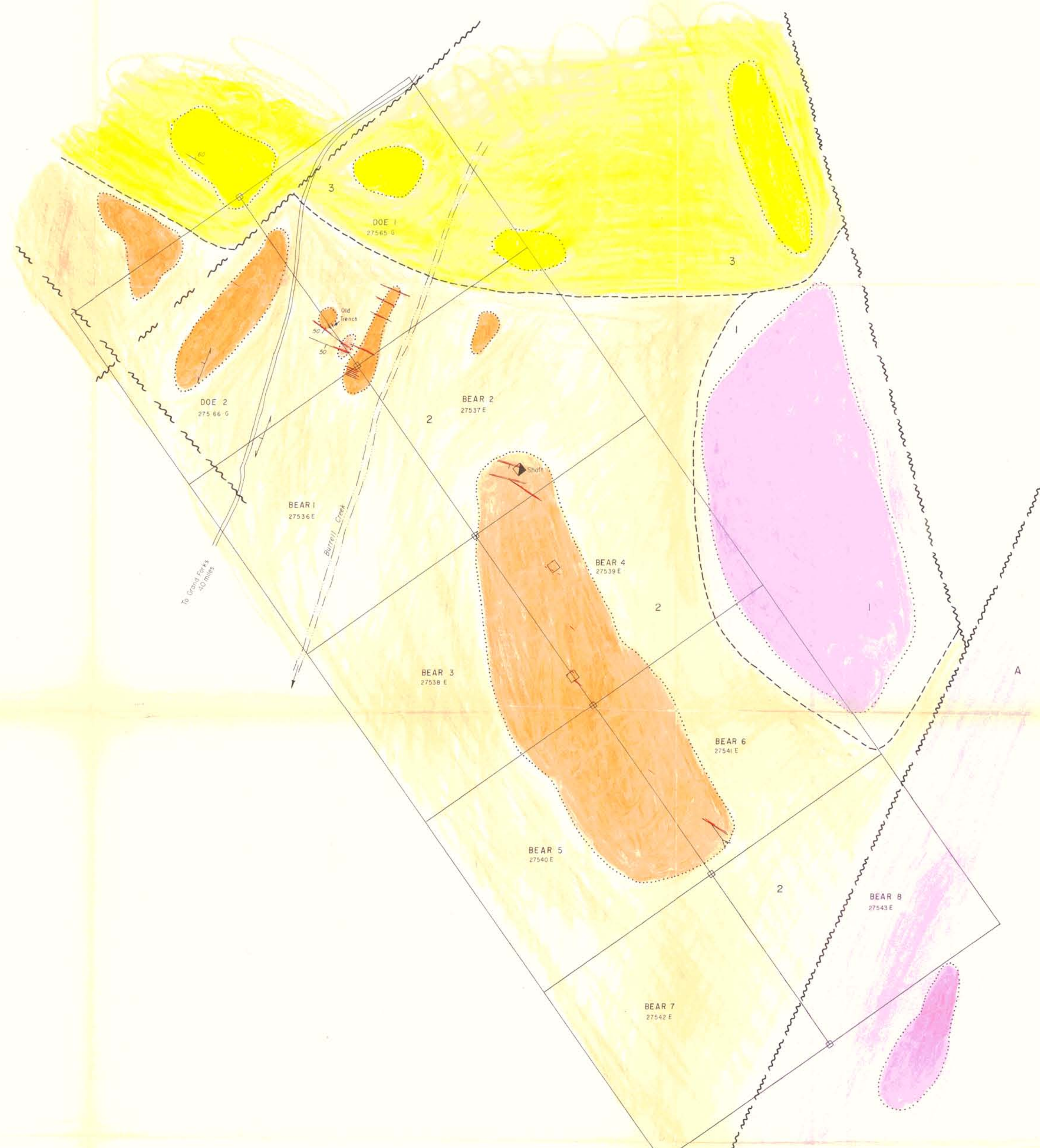
G.W.H. Norman
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NEWMONT MINING CORPORATION OF CANADA LTD.
 FRANKLIN DISTRICT, B.C.
LOCATION MAP
 BEAR AND DOE CLAIMS
 SCALE: 1" = 1/2 Mile
 May, 1969

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ASSESSMENT REPORT

NO. 1845 MAP #2





LEGEND

- | | | |
|-----------|---|---|
| CENOZOIC | 3 | KETTLE RIVER FORMATION
Conglomerate |
| MEZOZOIC | 2 | NELSON INTRUSIONS
Granodiorite, aplite |
| PALAEZOIC | 1 | ANARCHIST GROUP
Chert, banded chert |
| ? | A | Granite gneiss; pegmatite |

- Fault
- Fractures mineralized with chalcopyrite, minor molybdenite
- Areas of outcrops
- Pit
- Adit
- Road
- Creek

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ASSESSMENT REPORT
NO. 1845 MAP #1

1845

To accompany report by G.W.H. Norman dated May 13, 1969, Greenwood M.D.
NEWMONT CORPORATION OF CANADA LTD.
FRANKLIN DISTRICT, B.C.

**BOUNDARY EXPLORATION'S BEAR AND DOE CLAIMS
ON BURRELL CREEK 40 MILES NORTH OF GRAND FORKS
GEOLOGICAL SKETCH MAP**



G.W.H. Norman