

# 4710

GEOLOGICAL & GEOCHEMICAL SURVEY  
ON

THE BARN, NIVEN, SNO, PIKE, ICE & BEAR CLAIMS

SUSTUT PEAK AREA  
OMINECA MINING DIVISION

by

W. MEYER, P. Eng.

(Work done on behalf of DORITA SILVER MINES LTD. (N.P.L.)

Claims: Sno 1 - 24; Niven 1 - 48; Barn 1 - 48;  
Pike 1 - 22; Ice 1 - 3; Bear 1 - 16

Location: 22 miles west-northwest of Johanson Lake  
4 miles west of Moose Valley  
56° 43'                      126° 47'

Owner: M. Bratlien; T. Cross

Dates: July 30 - August 15, 1973

November 12, 1973

Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT

NO. 4710 MAP.....

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SUMMARY

Dorita Silver Mines Ltd. (N.P.L.) in early 1973 optioned 142 full sized mineral claims in the Sustut Peak area of Northern B.C. The claims were optioned on the basis of their geological environment and proximity to a recently discovered significant copper deposit in that area.

A general exploration programme was undertaken whose object was to make a geological assessment of the claim area. Reconnaissance geological mapping, prospecting and three types of geochemical surveys were carried out.

A number of showings were found in the course of the general programme. Chalcocite mineralization associated with quartz and calcite stringers is found in many of the shear zones in the Takla Group rocks. Minor chalcopyrite mineralization is spatially related to scattered narrow porphyry dykes.

## INTRODUCTION

The following report is based on field work carried out by the staff of W. Meyer & Associates Ltd. on behalf of Dorita Silver Mines Ltd. (N.P.L.) on the 142 optioned BARN, NIVEN, SNOW and PIKE claims. The claims are located on a tributary of Moosevale Creek in the Sustut Peak Area, 140 miles north northeast of Smithers, B.C.

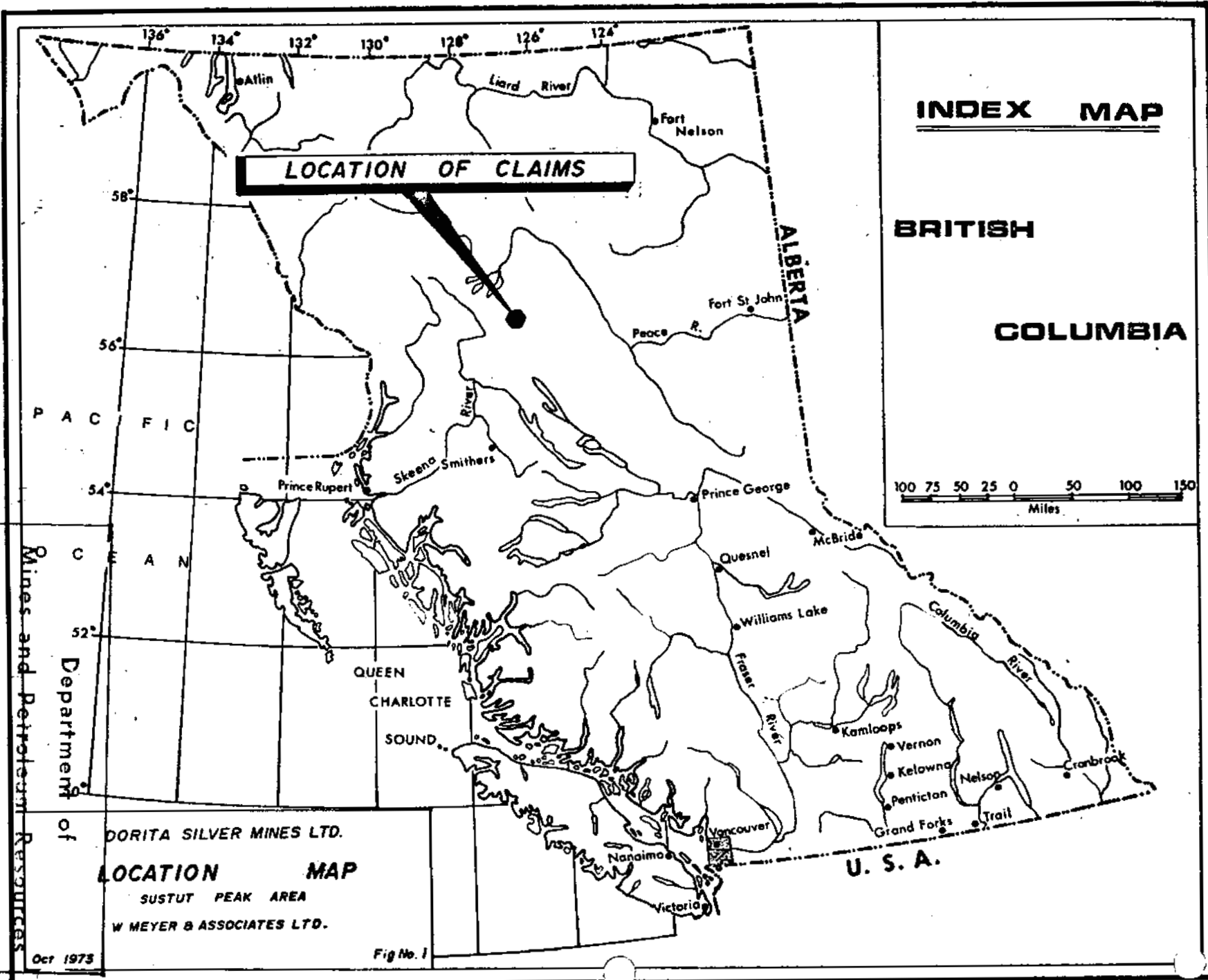
A programme of mapping, prospecting, soil and silt sampling was carried out during the period July 30 - August 15, 1973. The object of the programme was to make a geological assessment of the optioned claims.

At the time of the programme, the majority of the area was snow free and the weather generally good.

A number of small showings were found during the course of the surveys. Although some were of high grade, none were of significant extent.

## LOCATION and ACCESS

The Dorita Silver block of claims is located 22 miles west-northwest of Johanson Lake, 4 miles west of Moose Valley and 140 miles north of Smithers. The claims are centred around latitude  $56^{\circ} 43'$  N and longitude  $126^{\circ} 47'$  W.



**INDEX MAP**

**BRITISH  
COLUMBIA**



NO. 4710 MAP #1

Mines and Petroleum Resources  
Department of

DORITA SILVER MINES LTD.  
**LOCATION MAP**  
SUSTUT PEAK AREA  
W MEYER & ASSOCIATES LTD.

Oct 1973

Fig No. 1

Considering the apparent remoteness of the area, access is relatively good. Airstrips at Moose Valley and/or Johanson Lake are serviced 3 times per week by scheduled flights from Smithers via T.P.A. (Otter) or Prince George and McKenzie via N.T.Air (Twin Otter). Both services connect with flights of the major carriers servicing the Northern Interior of the province. Two or more helicopters available on a casual basis were stationed at Johanson Lake throughout the summer.

The claims are reached by a 5 minute helicopter trip from the Moose Valley strip or a 15 minute flight from Johanson Lake.

#### PHYSIOGRAPHY

The claim group lies in an area of strong local relief with valleys just below 5,000 feet and the peaks just above 7,000 feet.

The tree line is just above 5,000 feet and above this level a large proportion of the area is made up of ridges, peaks and talus slopes.

Below the tree line the vegetation is made up of jackpine and spruce usually of moderate diameter.

Intense glaciation has been the dominant landform control producing cirques, aretes and U-shaped valleys. The valleys, however, have only a thin layer of moraine left in them due to their immature nature.

North facing slopes were generally scarp slopes while the south facing slopes were generally dip slopes. Talus was ubiquitous at the base of all these slopes.

An even drainage pattern was present over the whole area with the majority of the streams in the claim group draining into the lake from whence the water flowed into Moosevale Creek.

### HISTORY

The area has a colourful early history centred around the fur trade and the establishment of Fort Connelly on Bear Lake by the Hudson's Bay Company in 1826 and a gold rush sparked by the discovery of placer gold on McConnell Creek in 1899. The period around 1899 and two subsequent periods of activity did not result in any substantial finds of placer or lode gold.

Prospecting for base metals has been intermittent over the years with early emphasis on small high grade occurrences in the Takla Group rocks and later emphasis on the Omineca intrusions in the search for porphyry type occurrences. In 1971, Falconbridge Nickel Mines Ltd. discovered a large high grade copper occurrence in Takla Volcanics on the north-west side of Sustut River near Sustut Peak. Geological reserves published at the end of the 1972 season were 30 million tons grading 1.25% copper. During the 1973 season, exploration by Falconbridge continued at

a high level, at one point employing 5 diamond drills and a large exploration crew headquartered at Moose Valley.

In 1973 Dorita Silver Mines Ltd. (N.P.L.) optioned a group of claims thought to be located in a similar geological environment approximately 4 miles northwest of the Falconbridge main showing.

### CLAIMS

The group consists of 142 claims whose claim lines run on a bearing of  $288^{\circ}$ . They form a block eight claims wide and varying from twenty-four claims long on the west side to eleven claims in length on the east side. The block is located in the Omineca Mining Division of British Columbia.

The claims are:

<u>Claim</u>	<u>Record No.</u>	<u>Date Recorded</u>
Sno # 1 - 24	120725 - 748	March 6, 1973
Niven #1 - 48	120867 - 914	March 6, 1973
Barn #1 - 48	120797 - 844	March 6, 1973
Pike #1 - 22	120845 - 866	March 6, 1973

Close examination of the claim lines and exact location of all the witness posts reveals that the claim block in reality is disjointed and shorter in dimensions than is shown on the idealized sketch.(see Fig. 2).





**NIVEN  
GROUP**

23	24
21	22
19	20

23	24	17	18
21	22	15	16
19	20	13	14

17	18	11	12	17	18		
15	16	9	10	15	16		
13	14	7	8	13	14	17	18
11	12	5	6	11	12	15	16
9	10	3	4	9	10	13	14
7	8	1	2	7	8	11	12

Dewars  
Peak

15	16	5	6	26	25	5	6	9	10	3
13	14	3	4	28	27	3	4	7	8	2
11	12	1	2	30	29	1	2	5	6	1
9	10	28	25	32	31	20	19	3	4	
7	8	28	28	34	33	22	21	1	2	
5	6	30	29	36	35	24	23	20	19	
3	4	32	31	38	37	SNO GROUP		22	21	
1	2	34	33	40	39	PIKE GROUP				

ICE 1-3

CLAIMS TO BE  
RETAINED

BEAR 1-16

BARN  
GROUP

36	35	42	41
38	37	44	43
40	39	46	45
42	41	48	47

44	43
46	45
48	47

Moosevale Cc

Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 4710 MAP # 2

DORITA SILVER MINES LTD.

CLAIM MAP

SUSTUT LAKE AREA

W MEYER & ASSOCIATES LTD.

Oct 1973

FIG - 2

During the programme, a total of 19 claims were staked to cover showings on the north side and fractions between Dorita and Falconbridge ground on the south.

These claims are as follows:

<u>Claim</u>	<u>Record No.</u>	<u>Date Recorded</u>
Ice #1 - 3	127675 - 127677	August 21, 1973
Bear #1 - 16	127678 - 127693	August 21, 1973

For assessment purposes it is recommended that work be applied to 80 claims (per agreement) as outlined on the claim sketch (Fig. 2) and listed in the table below:

<u>Claim</u>	<u>Record No.</u>
Bear 1 - 14	<del>123878</del> - <del>123691</del>
Niven 1 - 4	120867 - 120870
Niven 6	120872
Niven 25 - 40	120891 - 120906
Barn 1 - 12	120797 - 120808
Barn 25 - 32	120821 - 120828
Barn 34	120830
Barn 36	120832
Barn 38	120834
Barn 40	120836
Barn 42	120838
Barn 44	120840
Barn 46	120842

<u>Claim</u>	<u>Record No.</u>
Sno 1 - 6	120725 - 120730
Sno 19	120743
Pike 3 - 10	120847 - 120854
Ice 1 - 3	127675 - 127677

### GEOLOGY

The Sustut area is underlain by sedimentary and volcanic rocks ranging in age from Paleozoic to Tertiary. The older formations are intruded by crystalline rocks of the Omineca Batholith (Jurassic Age) and narrow dykes and small stocks of feldspar porphyry and quartz feldspar porphyry, probably related to the Kastberg Intrusions (Tertiary Age) which are mapped in the south of the area.

The claim group is almost entirely underlain by Takla Group rocks. Near the north boundary, the Takla rocks are in fault contact with Asitka Group and in the south are intruded by narrow dykes of feldspar porphyry and quartz feldspar porphyry. The porphyry dykes have a close spatial relationship to several of the showings.

Within the Takla Group 6 subdivisions were identified as mappable units. These are listed below in terms of C.S. Lord's broad stratigraphic divisions (C.S. Lord - G S C Memoir 251 and Map No. 962A).

Lower Takla (Lord's Map Unit 3a)

1. Basic and intermediate lavas with phenocrysts of augite (referred to as augite porphyry).
2. A fine to coarse agglomerate whose fragments of 1/2" to 6" size are often suspended in a coarse tuffaceous matrix.

Upper Takla - Older part (Lord's Map Unit 4)

3. Reddish agglomerate tuffs, massive feldspar porphyry flows.
4. Purple agglomerates.

Upper Takla - Younger part (Lord's Map Unit 5a)

5. Limestone.
6. Thick succession of shale, argillite, greywacke and conglomerate with minor fine tuffs and flows.

The overall structure is synclinal resulting from block faulting rather than folding. Faults mark most of the contacts between the major stratigraphic divisions, thus accounting for the discrepancy between the current mapping (showing the majority of the claims underlain by Upper Takla or Lord's Unit 5a) and G S C mapping (showing the area to be underlain by Lower Takla or Lord's Unit 3a).

The best evidence for this is in good bed rock exposures in the extreme north ("ICE" claims) where a thick succession of sediments (Lord's Unit 5a) overlie purple agglomerates (Lord's Unit 4) and both are clearly in fault contact with rocks of the Asitka Group.

Some of the rocks show evidence of having undergone low grade metamorphism which in places may be due to regional effects and locally may be due to the intrusion of the porphyry dykes.

The general geology of the claim area is shown on Figure 3 drawn on a scale of 1" = 1,000'.

### MINERALIZATION

Numerous small occurrences of mineralization were found on the claim group. Typically malachite, minor chalcocite and traces of bornite occur with quartz or calcite stringers along faults or small shear zones.

Malachite, chalcopyrite and traces bornite occur in quartz veins or small lenses and pods of calcite in the sheared rocks near porphyry dykes.

The locations of showings are shown on Figure 3 and are briefly described below:

<u>Showing</u>	<u>Location</u>	<u>Remarks</u>
1.	Ice Claims	Malachite & chalcocite in fault in purple tuff

<u>Showing</u>	<u>Location</u>	<u>Remarks</u>
2.	4,000 feet east of Showing /	chalcocite and bornite in cherty limestone
3.	2,500 feet southwest of Showing /	float - purple tuff
4.	ridge near east end of lake	malachite in a small shear zone
5.	1½ miles south of lake	malachite, chalcocite in sheared tuff. Chalcopyrite in cherty limestone
6.	1-3/4 miles southwest of group	chalcopyrite, tr. molybdenite in quartz vein near porphyry dyke.
7.	1½ miles south west of lake	malachite in sheared augite porphyry.
8.	3½ miles west of lake	malachite, chalcopyrite near porphyry dyke

Although well mineralized locally over narrow widths (1/4" to 2"), none of the showings appear to have any significant extent.

## GEOCHEMISTRY

The geochemical survey carried out on the property consisted of a reconnaissance silt survey over the whole claim block, a break of slope soil survey around the base of all the ridges and soil sampling on a small grid in the valley bottoms.

Approximately 526 samples of the 3 types were collected. The samples were collected in Kraft paper envelopes and dried in the tent before shipment to Acme Analytical Laboratories, Burnaby, B.C. Some shipping problems were encountered due to numerous strikes during the summer. The samples were further dried and screened to 80 mesh. A weighed portion was then digested in concentrated nitric acid and perchloric acid and analysed by atomic absorption. All samples were analysed for copper. The results are plotted on Figure 4 accompanying this report.

## RESULTS

The anomalous results of the geochemical analysis shown on Fig. 4 correlate for the most part with known showings. In a general way, values are higher in areas underlain by rocks of the Lower Takla Group where it was initially anticipated, on the basis of the Falconbridge showing, that the best chances for significant mineralization lay.

The principal unexplained anomalous values occur near the height of land in the west part of the group. There is a reasonable amount of bedrock exposure in this area and careful prospecting failed to find mineralization. The erratic high values (peak value of 690 ppm Cu) are probably related to typical fault controlled mineralization in the fault mapped in this area.

#### CONCLUSION

None of the mineralization encountered appears to have any significant extent.

Respectfully submitted

A handwritten signature in cursive script that reads "W. Meyer".

W. Meyer, P. Eng.



APPENDIX 1

PERSONNEL & DATES

<u>Name</u>	<u>Position</u>	<u>Dates of Work</u>	<u>Days</u>
W. Meyer	Geologist	Aug. 10-15; Oct. 18-21/73	9
A. Floyd	Geologist	July 30-Aug. 11; Aug. 20-28/73	20 $\frac{1}{2}$
R. Fassler	Sampler	July 30 - Aug. 15/73	17
D. Bacon	Sampler	July 30 - Aug. 15/73	17
G. Sander	Sampler	July 30 - Aug. 15/73	17
P. Dunsford	Technician	Oct. 17-18; Nov. 7/73	3
W. Raymond	Draftsman	October 22/73	1
M. Maybury	Draftsman	October 22/73	1/2

AFFIDAVIT RE COST OF SURVEY

I, W. Meyer, do solemnly declare that the geological and geochemical survey done on the Dorita Silver Mines Ltd. (N.P.L.) "BARN", "NIVEN", "SNO", "PIKE", "ICE" and "BEAR" claims was done during July and August of 1973 and is described in this report. The data was obtained by W. Meyer & Associates Ltd. for Dorita Silver Mines Ltd. (N.P.L.) at a total property related cost of at least \$11,600.00. I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act".

DECLARED before me at the City of

Vancouver, in the Province of

British Columbia, this 14

day of Nov., A.D. 1973

W. Meyer

Jill Luman  
Sub - mining Recorder

CERTIFICATE

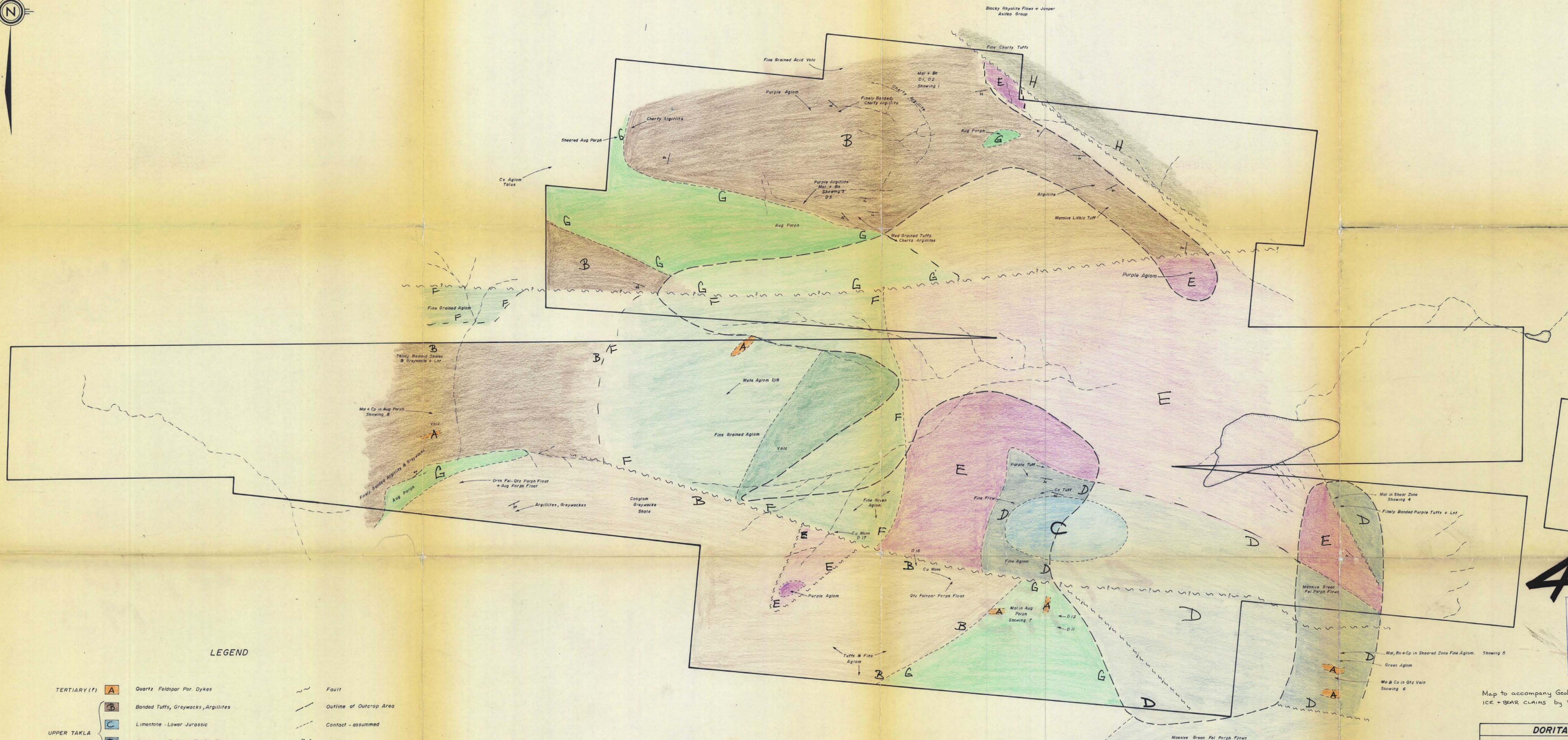
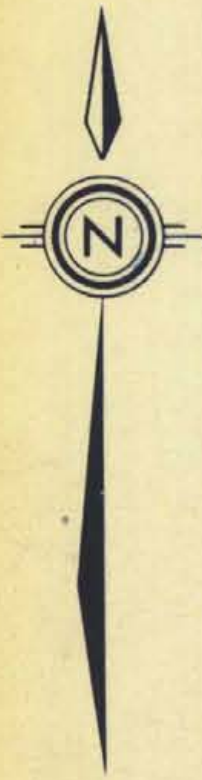
I, William Meyer, do hereby certify that:

1. I am a geologist with residence at 911 Jarvis Street, Coquitlam, B.C.
2. I am a graduate of the University of British Columbia (B.Sc., 1962).
3. I am a registered member of the Association of Professional Engineers of the Province of British Columbia.
4. I have worked as an exploration geologist for eleven years for the following companies: Phelps Dodge Corporation of Canada Ltd., Gibraltar Mines Ltd., Associated Geological Services Ltd., Western Geological Services Ltd., (senior partner). I am presently a senior partner in W. Meyer & Associates Ltd.
5. The programme described in this Report was carried out by a W. Meyer & Associates Ltd. crew under my supervision.
6. I have no interest, direct or indirect, nor do I anticipate receiving any, in the properties or securities of Dorita Silver Mines Ltd. (N.P.L.).

November 12, 1973

  
\_\_\_\_\_  
William Meyer, P.Eng.





LEGEND

- |              |   |   |                               |
|--------------|---|---|-------------------------------|
| TERTIARY (?) | A | Quartz Feldspar Por. Dykes                        | --- Fault                     |
| UPPER TAKLA  | B | Banded Tufts, Greywacks, Argillites               | - - - Outline of Outcrop Area |
|              | C | Limestone - Lower Jurassic                        | - - - Contact - assumed       |
|              | D | Agglomerate, Tuff and Fei Por Flows               | - - - Bedding                 |
| LOWER TAKLA  | E | Purple Agglomerate                                | - - - Creek                   |
|              | F | Fine Green Agglomerate                            |                               |
| ASITKA (?)   | G | Augite Porphyry                                   |                               |
|              | H | Rhyolites, Jaspers, Cherty Limestone and Red Beds |                               |

**4710**  
**M3**  
 Mines and Exploration Resources  
 NO. 4710 MAP #3

Map to accompany Geological & Geochemical report on the BARN, NIVEN, SNO, PIKE, ICE + BEAR CLAIMS by W. Meyer P. Eng. Dated Nov. 12, 1973

**DORITA SILVER MINES LTD.**

**GEOLOGY**

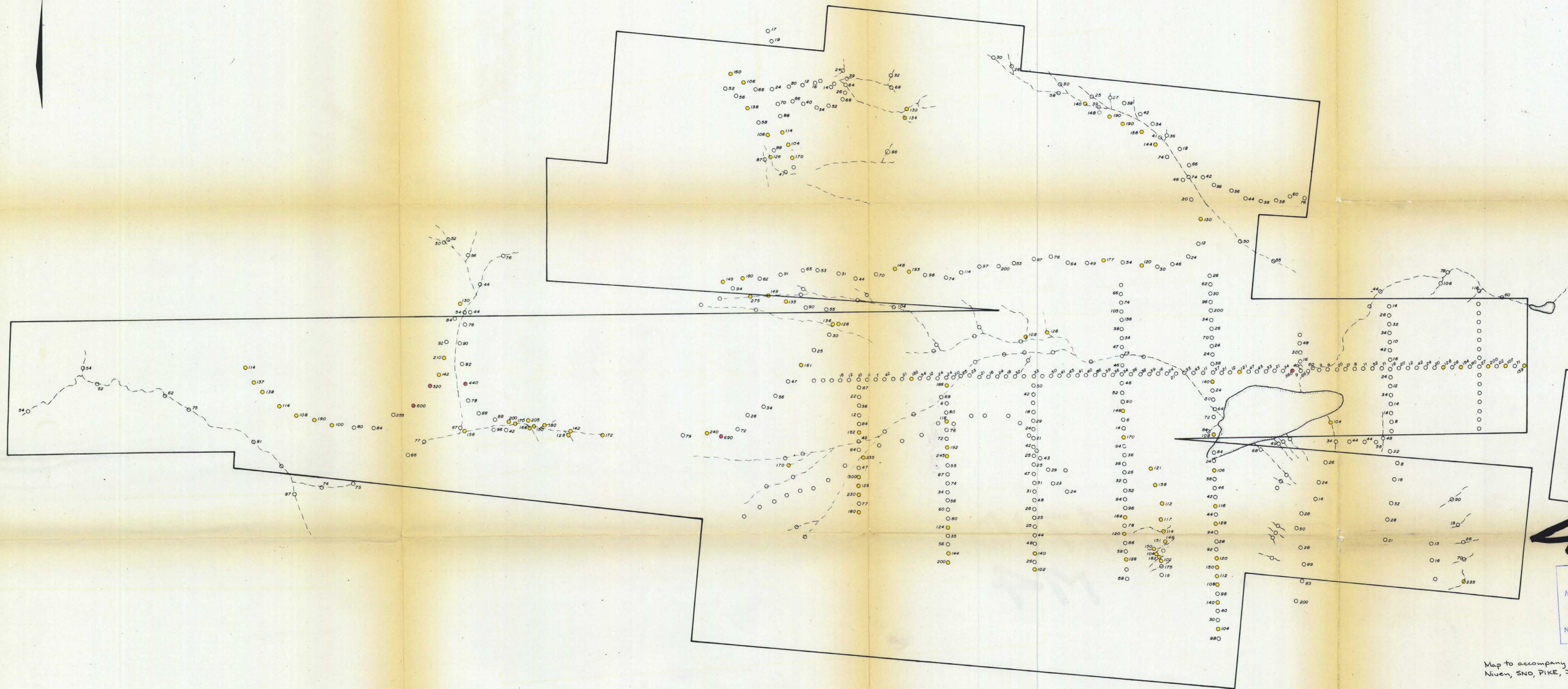
SUSTUT PEAK AREA — OMINECA MINING DIVISION

Scale: 1000 500 0 1000 2000 Feet

W MEYER AND ASSOCIATES LTD.

August 1973 Figure No - 3





**LEGEND**

- 0-100 ppm Cu
- 100-300
- ≥ 300
- Soil sample location
- Silt sample location

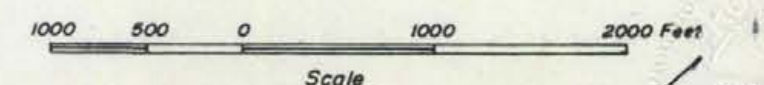
**4710**  
**M4**  
 Assessment Report  
 NO. 4710 MAP #4

Map to accompany Geological & Geochemical report on the Barr, Niven, SNO, PIKE, ICE & BEAR CLAIMS by W. Meyer P. Eng.  
 Dated Nov. 12, 1973

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**COPPER GEOCHEMISTRY**

SUSTUT PEAK AREA — OMINECA MINING DIVISION



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August 1973

Figure No - 4