

# 4485

## GEOLOGICAL & GEOCHEMICAL REPORT

- on the -

### SPICEBOX SHOWINGS

- for -

CANADIAN JOHNS - MANVILLE CO. LTD.,

Box 1500,  
ASBESTOS, P. Q.

COVERING: Blue 2, 4, 6, 8, 26, & 27 Mineral Claims

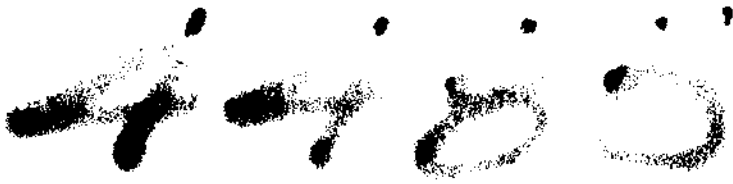
LOCATED: NTS - 82K/9W  
50° 37'N; 166° 28' W  
20 miles W of Radium, B. C.

Prepared by:

John R. Kerr, P. Eng.,  
KERR, DAWSON & ASSOC. LTD.,  
#9-219 Victoria St.,  
KAMLOOPS, B. C.  
July, 1973.

Department of  
Mines and petroleum Resources  
ASSESSMENT REPORT

NO. 4485 MAP



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## SUMMARY & CONCLUSIONS

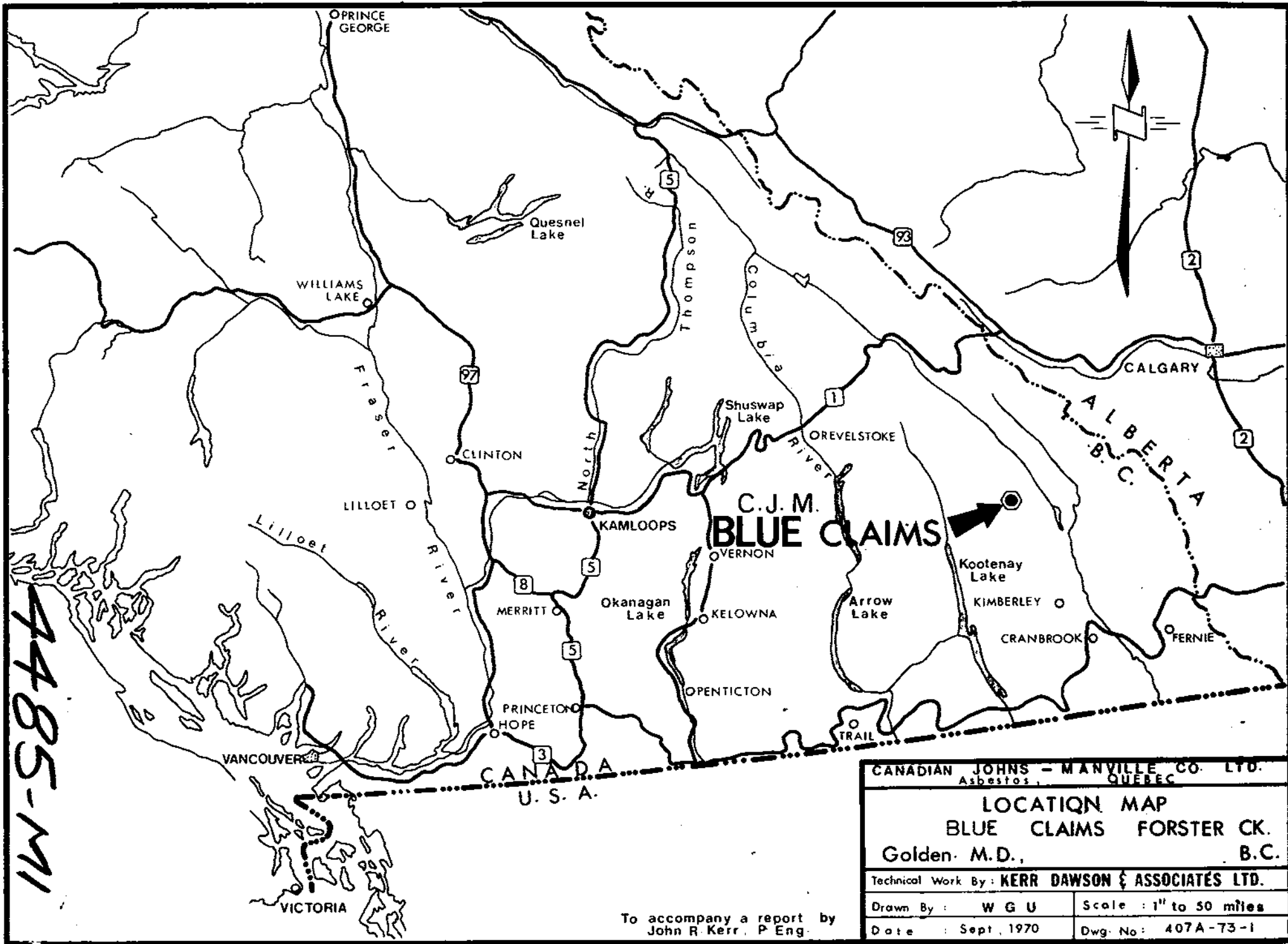
During July, 1973, a short detailed mapping and talus - fine sampling programme was completed over six Blue Claims located at the 7,500 - 8,000 ft. elevation at the head of Kerr Creek, 20 miles west of Radium. The claims are held to cover Cu mineralization located in fractures of coarse - grained, quartz monzonite of the Horsethief Stock, found by K. Schrijver (1971). From the 1973 mapping programme, two new showings were discovered; one being Cu, and the other being MoS<sub>2</sub>. There is a distinct possibility that the showings may be part of a large mineralized zone, at least 1,600 ft. long. Outcrop between the showings could not be examined due to inaccessible cliffs and talus slides.

An attempt to delineate the mineralized zone by geochemistry failed entirely, as the weak copper anomaly is not related at all to the known copper showings. The molybdenum anomaly can be related to the known MoS<sub>2</sub> showing; however, the broad downhill dispersion pattern of the anomaly confuses the interpretation of the mineralized zone. In summary, it is felt that geochemistry is an insufficient tool in this type of environment.

## RECOMMENDATIONS

Further surface work to establish possible grade and the full extent of exposed surface mineralization is necessary on the claims before a drill programme is warranted. Trenching and channel sampling the bottom of trenches is suggested as the best method of obtaining surface grade. The use of climbing apparatus and experienced mountain climbers would be required for further prospecting of the zone.

If diamond drilling is warranted, the best set - ups would be at the base of the hill ( 7,500 ft. contour) drilling flat to very shallow angled holes to intersect the zone at 300 - 500 ft. depth.



4485-11

CANADIAN JOHN'S - MANVILLE CO. LTD. Asbestos, QUEBEC	
<b>LOCATION MAP</b>	
<b>BLUE CLAIMS FORSTER CK.</b>	
Golden, M.D., B.C.	
Technical Work By: <b>KERR DAWSON &amp; ASSOCIATES LTD.</b>	
Drawn By: <b>W G U</b>	Scale: 1" to 50 miles
Date: <b>Sept. 1970</b>	Dwg. No: <b>407A-73-1</b>

To accompany a report by  
John R. Kerr, P. Eng.

## INTRODUCTION

Following a reconnaissance geochemical programme in the summer of 1969, in portions of the Horsethief Stock, Canadian Johns - Manville Co. Ltd. have completed follow - up detailed ground surveys in an attempt to locate Mo and Cu/Mo porphyry type mineralization. Through the period 1969 - 1973, the company has acquired as many as 400 mineral claims in the area. At the present time, the total claims have been reduced to 130, to tie up specific targets of interest. Six Blue claims, at the head of Kerr Creek, have been held to cover Cu/Mo showings found by K. Schrijver in 1971. During the 1973 field season, a crew of Canadian Johns - Manville Co. Ltd. completed a five day detailed mapping and talus fine sampling programme in the vicinity of this showing. The showing was referred to as the Spicebox Peak Showing by Schrijver, after the tall pinnacle just to the west of the showing. This report summarizes the work completed during 1973.

Normal introductory remarks regarding location, access, topography, etc. are well documented in previous company reports by Kerr, (1970), H. K. Conn and C. P. Lin (1971), Schrijver (1971), and Conn and Lin (1972), and are only summarized in this report. The Spicebox Peak showing is located 20 miles due west of Radium, B. C. at the head of a small northerly flowing tributary of Forster Creek, referred to as Kerr Creek. Access is possible to the showing by foot two miles up Kerr Creek from the main logging road along Forster Creek. There are many good helicopter landing sites at the head of Kerr Creek. Except for the broad glacial carved valley

floor of Kerr Creek, the terrain is very rugged. The showings are at an elevation of 7,700 - 8,000 ft. a.s.l. and on the extremely steep west wall of Kerr Creek. Much of the outcrop in the showing area could not be examined due to the rugged terrain.



## GEOLOGY

The general geology of the area is well documented in G. S. C. Memoir 369, Geology of the Lardeau Map - Area, East Half by J. E. Reesor, and in a private company report entitled Geology of the Horsethief Stock by K. Schrijver. In general, the Horsethief Stock is concentrically zoned, grading from a medium - coarse grained white granodiorite at the center, to a coarse - grained porphyritic pink quartz monzonite around the periphery. The stock intrudes argillites, slates, limestones and quartzites of the Purcell and Horsethief Groups of rock.

The area of the Spicebox showings was mapped in 1":200' detail by R. D. Willis, a junior geologist employed by the company. Control for mapping was altimeter and pacing methods on a 1":200' scale topographic base map. Results of the mapping are shown on Figure 407A-73-3. The general geology of the Horsethief stock as mapped by Schrijver indicating the location of the Blue claims and the Spicebox showing is illustrated in Figure 407A-73-2.

The showings are all found in the coarse - grained quartz monzonite, within 300 ft. of the intrusive contact. This is similar to other showings within the Horsethief Stock at Whirlpool Pass and Molly Lake. The metamorphosed rocks at the contact are a thermally altered, spotted hornfels. Large cordierite and staurolite crystals are present in a fine - grained, black matrix, probably originating from a slate, quartzite or argillite.

In the area of the showings, the quartz monzonite is moderately fractured, with the main set of fractures trending N50 - 60° W. A secondary fracture set trends N30 - 40° E, some of the fractures being quartz filled. It is along fracture faces that chalcopyrite/bornite/molybdenite/ pyrite mineralization is found. Secondary alteration along fractures includes silicification, sericitization and pink K-feldspar. Three showings have been found, and are described in detail below.

(1). Schrijver (1971) Showing #1: This is the most northern showing, found between the 7,700 - 7,800 ft. contours. A fracture system, in a N60° W direction, consists of pyrite and chalcopyrite blebs along fracture faces with prominent K-feldspar alteration. Fracture density is approximately one every four feet, only two fractures noted to carry chalcopyrite mineralization. Rust colourations are evident along fractures, which is evidence of leached sulphides.

(2). Willis (1973) Showing #2: This showing is found 800 ft. south of Showing #1, separated by a large snow and talus slide, and is considered the most attractive showing. Chalcopyrite/bornite/pyrite mineralization is found in the N 60 W fractures, fracture density being one every six inches. Dominant secondary alteration of fractures includes pink K-felspar, sericite, and quartz. Mineralized fractures were noted over an outcrop area of 100 ft. long by 50 ft. wide.

(3). Willis (1973) Showing #3: This showing is at the 8,000 ft. elevation, approximately 800 ft. south of Showing #2, and separated by inaccessible rock cliffs.  $\text{MoS}_2$  was noted as spotty disseminations in two of the N 30 E trending, 2" wide quartz veins. The N 60 W trending fractures persist in this area; however, the only sulphide noted was pyrite.

Due to snow and talus slides, and inaccessible cliffs, much of the area of the showings have not been well prospected or mapped. The area between Showing #2 and Showing #3 is a steep cliff, and rock can only be examined from a distance. It is noted that the same fracture system persists between showings. Therefore, interpretation of a mineralized zone could conceivably be 1,600 ft. (plus) long.

## GEOCHEMISTRY

### FIELD METHODS:

During the 1973 field programme, a total of 60 talus samples were collected from contours immediately below the known surface showings. It had originally been intended to collect more samples; however, due to inaccessible terrain, snow, and coarse talus, samples could only be collected from selected traverses and contours.

Samples were collected at 100 ft. intervals along the 7,500 - 7,700 ft. contours. A third traverse, KC-3 to KC-10, was taken immediately below showing #3 from the 8,100 ft. contour to the 7,700 ft. contour. Location of samples are shown on Figures 407A-73-4 & 5. Two rock samples were taken for assay, results being shown on the same diagrams. Samples were all talus fines, and identified as such on data sheets. Samples were collected by J. Binnie, an experienced field assistant.

### ANALYTICAL TECHNIQUES:

Samples were sent to the Vancouver Laboratories of Bondar - Clegg & Co. Ltd. for geochemical analysis of Cu and Mo. The samples were dried at 40 - 50<sup>o</sup> C in infra - red ovens, and sieved to -80 mesh in Tyler Screens. An aliquot of the -80 mesh fraction was digested in hot aqua regia to extract the metals, and the metal content of each sample was determined by atomic absorption methods at a detection limit of 1 ppm.

CLASSIFICATION AND PRESENTATION OF DATA:

A partial statistical analysis was completed on all the samples for each element to derive only the arithmetic mean. It was felt that only 60 samples were insufficient for a total statistical analysis; and as the samples were of poor quality, a total statistical analysis may have been meaningless.

Therefore for each element, the sample data were classified into the following anomalous categories:

Negative	o - m	0 - 52 ppm	0 - 17 ppm
Possibly Anomalous	m - 3 m	53 - 157 ppm	17 - 52 ppm
Definitely Anomalous	> 3 m	> 157 ppm	> 52 ppm

m - arithmetic mean

The geochemical results were plotted at each sample station for each element; Mo - Figure 407A-73-4; Cu - Figure 407A-73-5. Anomalous categories were represented as follows:

- Negative
- ◐ Possibly anomalous
- ◑ Definitely anomalous

Anomalous zones were delineated based on the above categories.

## DISCUSSION OF RESULTS

The mineralization found at the Spicebox Showings is suggestive of a low - grade porphyry Cu/Mo deposit. The full extent of the surface zone, or zones, has not been delineated due to inaccessible terrain and talus slides. However, if the three known showings are part of the same zone, mineralization could conceivably extend over a length of 1,600 ft. As values are found in fractures, with possible surface leaching, no attempt has been made to obtain representative samples of surface outcrop. Therefore an estimate of grade is not available at the present time.

Geochemistry was completed in attempt to correlate downhill dispersion of values in talus with the known showings. It was hoped that geochemical interpretation would assist in delineating the entire zone of surface mineralization. As can be noted on the geochemical maps, there is very little correlation between copper and molybdenum, and no correlation between copper anomalies and known copper showings.

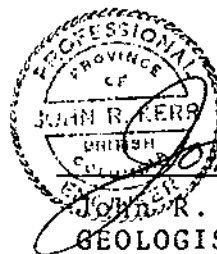
As all samples are talus, the results should reflect approximate content of metal in bedrock. Copper, in this regard is very low, and results would indicate values far below economic limits. However one main Cu anomaly was interpreted, which does not have any apparent correlation to the two known copper showings. There is no indication of values being reflected from either showing #1 or #2 on contours immediately below the showings; e.g. Talus samples KCD-77-14, 15, & 16 are on the downhill dispersion path of showing #2; however, have very low values, 18, 12, & 8 ppm Cu respectively.

Molybdenum values in talus correlate quite well with the  $\text{MoS}_2$  showing #3. The broad extent of the anomaly in a NE direction is the result of a downhill dispersion pattern.

In summary, it is felt that geochemistry is an impractical method of delineating the mineralized zone. Values of mineralization are not totally reflected in talus, probably due to the disturbed nature of the talus by snow, water, wind, and slides. Further surface work is therefore limited; however, some attempt should be made to evaluate surface grade before diamond drilling is considered. This would be best accomplished by blasting trenches in exposed and accessible outcrop.

Respectfully Submitted by:

KERR, DAWSON AND ASSOCIATES LTD.,



*John R. Kerr*  
John R. Kerr, P. Eng.,  
GEOLOGIST

July, 1973,  
KAMLOOPS, B. C.

APPENDIX A

COST ANALYSIS



COST ANALYSIS

(1). Field Personnel, July 4 - 10, 1973:

J. Binnie - Sr. Assistant		
6 days at \$40.00 per day . . . . .	\$240.00	
R. Willis - Jr. Geologist		
6 days at \$35.00 per day . . . . .	210.00	
J. Kerr, Project Supervisor		
1 day at \$100.00 per day . . . . .	100.00	\$ 560.00
	<u>          </u>	

(2). Room and Board:

13 man days at \$7.00 per man/day . . . . .		91.00
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(3). Transportation:

Helicopter Rental		
2.1 hrs. at \$150.00 per hour . . . . .	315.00	
4 x 4 truck		
6 days at \$20.00 per day . . . . .	120.00	435.00
	<u>          </u>	

(4). Assays and Geochemical Analysis:

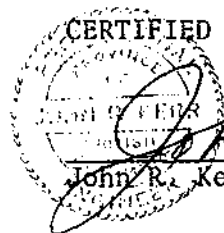
60 Talus samples analyzed for Cu/Mo		
at \$1.70 per sample . . . . .	102.00	
2 Cu/Mo assays at \$8.00 per sample . . . . .	16.00	118.00
	<u>          </u>	

(5). Report Preparation:

J. Kerr, P. Eng. . . . .	300.00	
Drafting . . . . .	150.00	
Secretarial . . . . .	12.00	
Photocopying and Reproduction . . . . .	25.00	487.00
	<u>          </u>	

TOTAL . . . . . \$1,691.00

CERTIFIED CORRECT:



*John R. Kerr*  
\_\_\_\_\_  
John R. Kerr, P. Eng.

APPENDIX B

WRITER'S CERTIFICATE

ASSOCIATION OF PROFESSIONAL ENGINEERS  
GEOLOGICAL ENGINEER

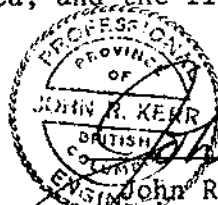
9-219 VICTORIA STREET  
KAMLOOPS, B.C.

PHONE (604) 374-6427

WRITER'S CERTIFICATE

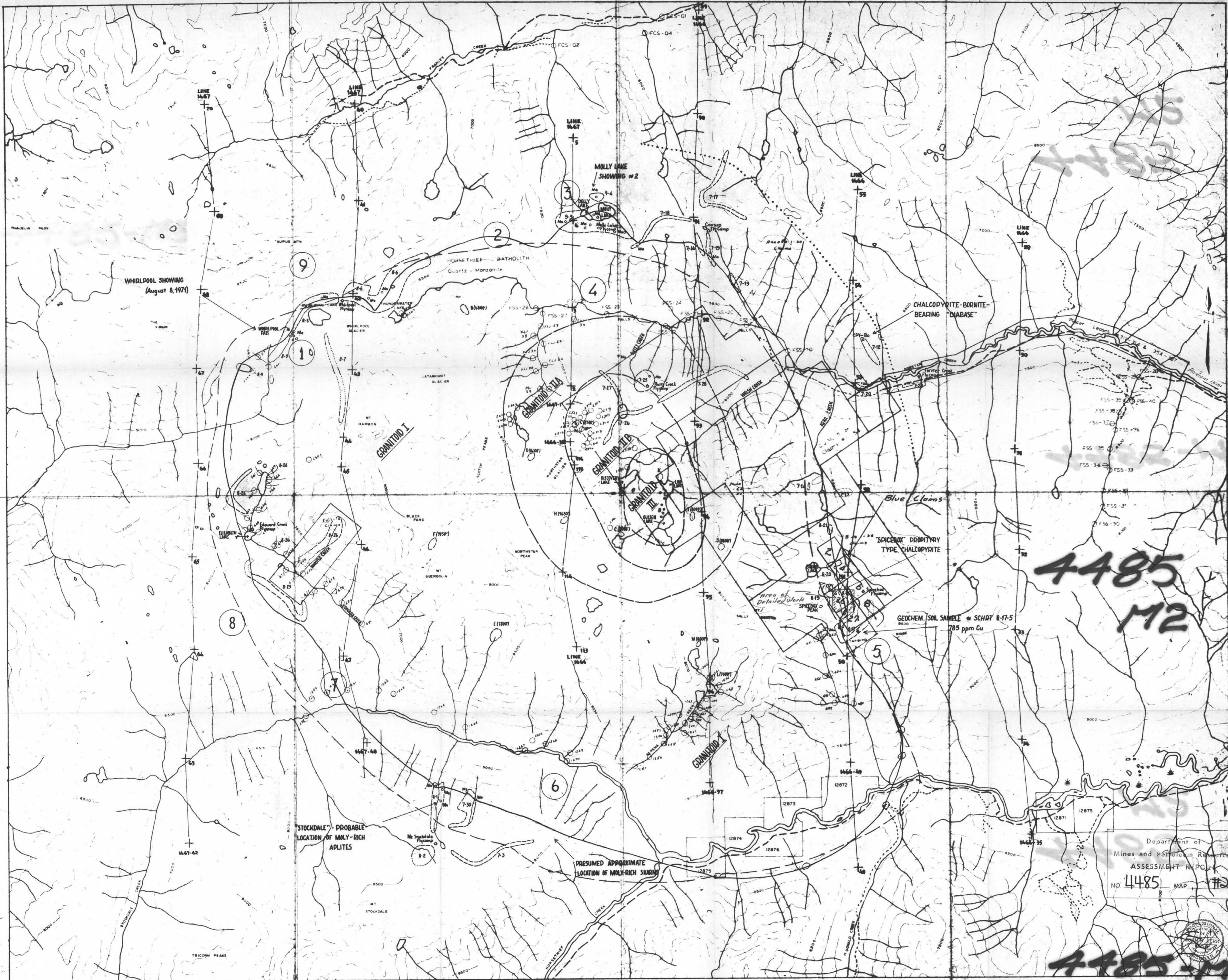
I, JOHN R. KERR, OF KAMLOOPS, B. C., HEREBY CERTIFY THAT:

- (1). I am a member of the Association of Professional Engineers in the Province of British Columbia, and a Fellow of the Geological Association of Canada.
- (2). I am employed by Kerr, Dawson and Associates Ltd., with my office at #9 - 219 Victoria Street, Kamloops, B. C.
- (3). I have practiced as a geologist for 9 years since graduation from the University of British Columbia in 1964 with a BA. Sc. in Geological Engineering.
- (4). I have no direct interest or holdings of securities of Canadian Johns - Manville Co. Ltd., or in the Blue claims described in this report.
- (5). The work described in this report was completed from July 4th. - 10th., 1973, and was supervised directly by myself,
- (6). The costs, as shown in Appendix C of this report, are to the best of my knowledge correct.
- (7). This report is based on published and unpublished data, my own personal knowledge of the area, and the field data collected during the field programme.



John R. Kerr, P. Eng.,  
GEOLOGIST

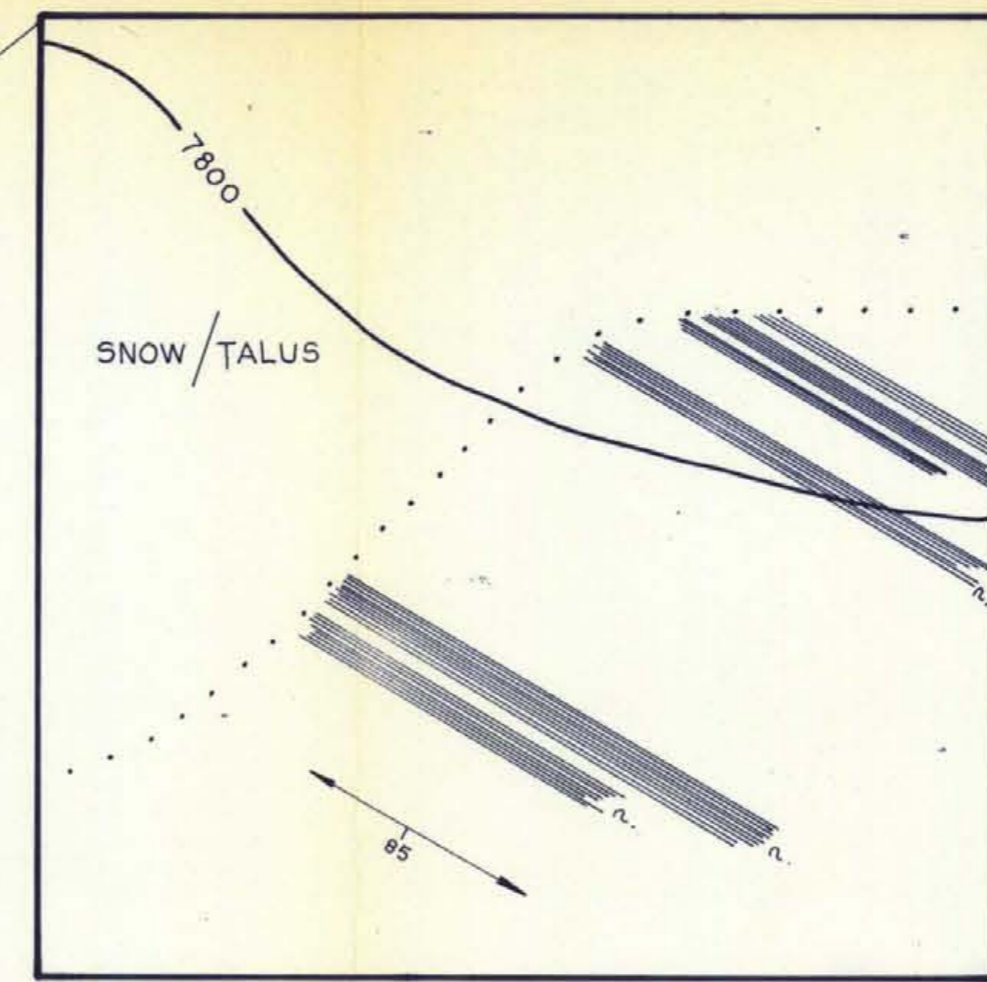
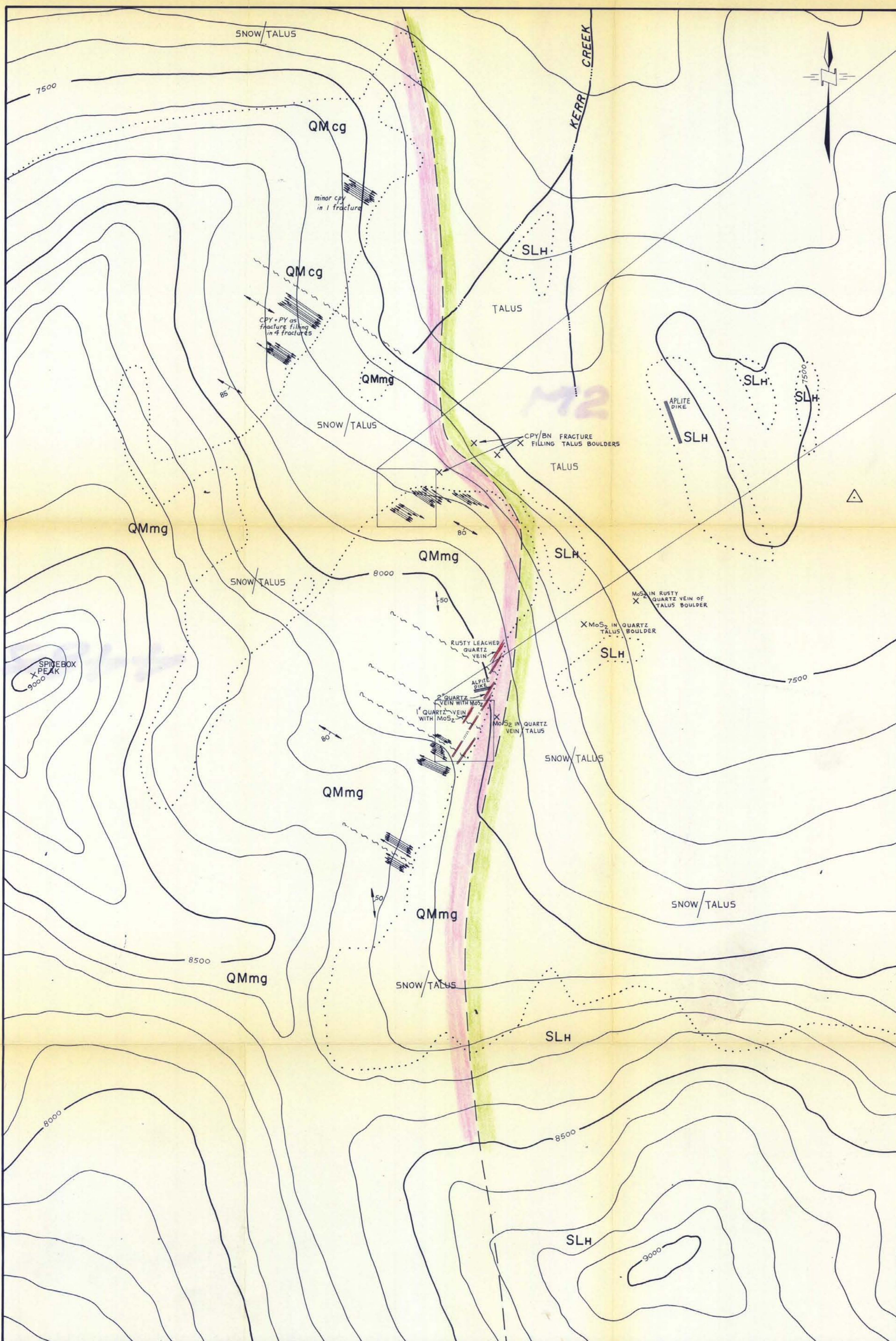
July, 1973,  
KAMLOOPS, B. C.



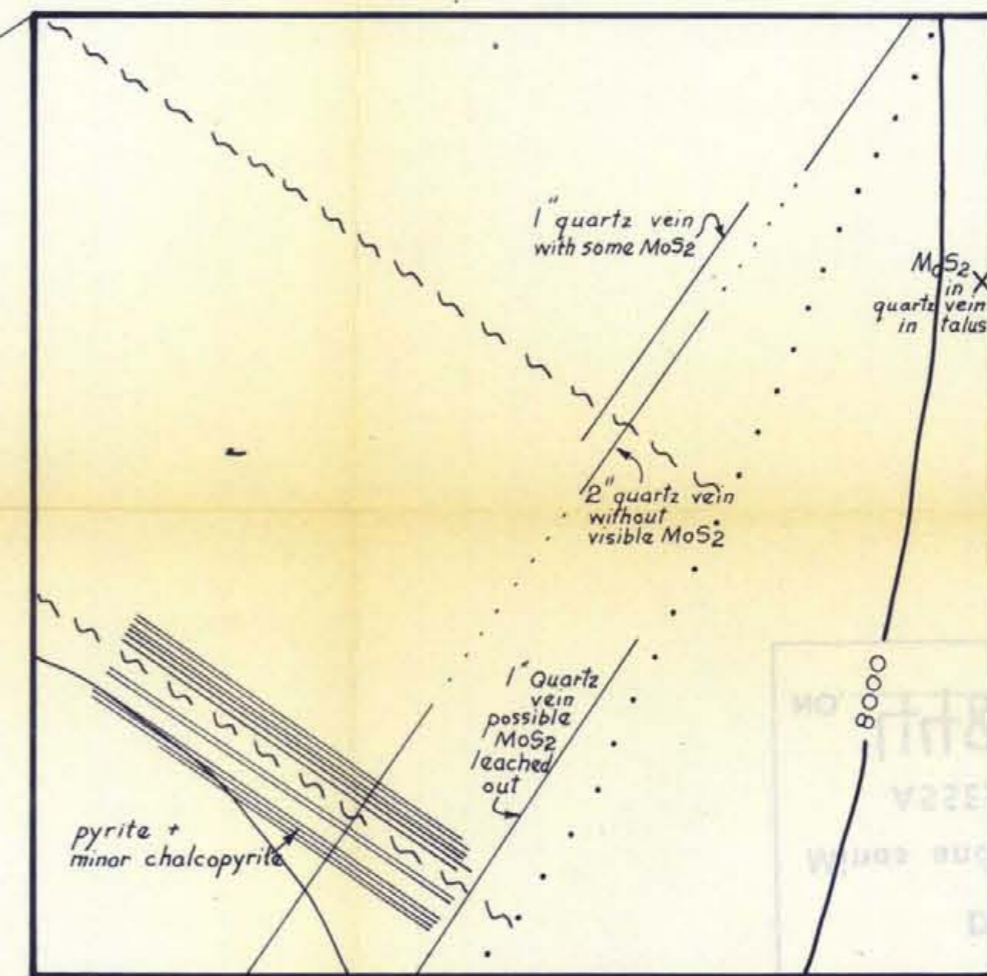
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M2

Department of  
Mines and Geotechnical Research  
ASSESSMENT REPORT  
NO. 4485 MAP #2

Figure 407A-73-2



Average fracture density is 1 per 12". One out of two fractures exhibits K-feldspar alteration up to 1" on each side of the fracture. Fracture filling includes quartz, feldspar, sericite, pyrite, chalcopyrite and bornite in decreasing order of abundance. Only K-feldspar altered fractures contain sulphide mineralization which occurs at irregular intervals along the fracture. Fracture filling width varies from 1mm to paper thin. Evidence of leaching occurs in all fractures with quartz and some sericite being the only minerals left in the fracture.



Average fracture density in the major fracture zones is 1 per 6". Most of these fractures are K-feldspar altered and leached however pyrite and minor chalcopyrite was observed in one fracture. MoS<sub>2</sub> was observed in two quartz veins in a minor quantity, however, MoS<sub>2</sub> seen on freshly fractured surfaces of quartz veins indicate MoS<sub>2</sub> has been leached at the surface.

### ROCK CLASSIFICATION

- HORSETHIEF STOCK**
  - QMcg** Quartz Monzonite coarse grained with large K-feldspar phenocrysts (1/2 - 3" in length). Pegmatitic pods occur; very large crystals of plagioclase, orthoclase, quartz and muscovite.
  - QMmg** Quartz Monzonite medium grained and locally porphyritic.
- PURCELL FORMATION**
  - SLH** Slate; cordierite hornfels, characteristically spotty appearance; some argillite and quartzite.

### LEGEND

- CONTACT INTRUSIVE SEDS.
- QUARTZ VEIN ASSUMED
- FRACTURE TRACE
- FRACTURE CLEAVAGE
- CPY/BN CHALCOPYRITE / BORNITE
- OUTCROP LIMIT
- MAJOR FRACTURE ZONE
- FLY CAMP

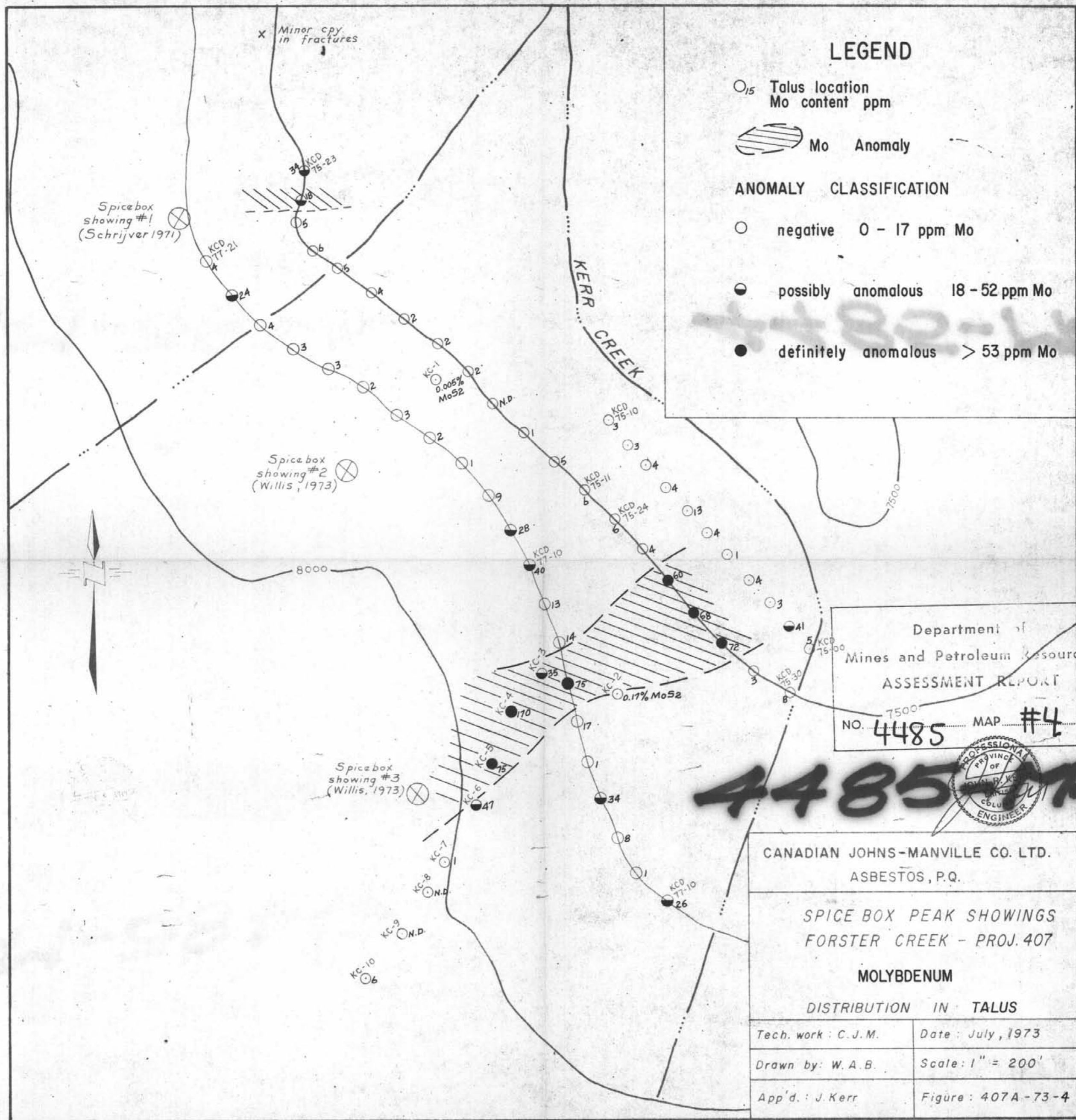


CANADIAN JOHNS-MANVILLE CO. LTD.  
KAMLOOPS, B.C.

PROJECT 407 - FORSTER CREEK  
UPPER KERR CREEK - SPICEBOX PEAK SHOWINGS  
DETAILED GEOLOGY

Tech. work : R.D. WILLIS	Date : JULY, 1973
Drawn by : W. A. B.	Scale : 1" = 200'
App'd. by : J. KERR	Figure : 407A-73-3

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**LEGEND**

○<sub>15</sub> Talus location  
Mo content ppm

▨ Mo Anomaly

**ANOMALY CLASSIFICATION**

○ negative 0 - 17 ppm Mo

◐ possibly anomalous 18 - 52 ppm Mo

● definitely anomalous > 53 ppm Mo

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Mines and Petroleum Resources  
**ASSESSMENT REPORT**  
NO. 7500 4485 MAP #4

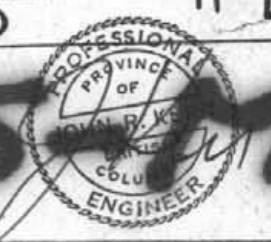
CANADIAN JOHNS-MANVILLE CO. LTD.  
ASBESTOS, P.Q.

SPICE BOX PEAK SHOWINGS  
FORSTER CREEK - PROJ. 407

**MOLYBDENUM**

DISTRIBUTION IN TALUS

Tech. work : C. J. M.	Date : July, 1973
Drawn by: W. A. B.	Scale: 1" = 200'
App'd. : J. Kerr	Figure : 407A-73-4



4485-174

