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GEOLOGICAL REPORT

on the

**ELM GROUP OF MINERAL CLAIMS
KAMLOOPS M.D.**

NTS 921/15W
Lat. 50°58' N Long. 120°52' W

by

J.D.MURPHY, P.Eng.

Owner and Operator

1993-07-24

TENURE NUMBERS

219195 to 219200, 218620 & 218621

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

22,948

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INTRODUCTION

The ELM Group of eight claims, located under the 2-post system, is centred on the junction of Criss and McGee creeks, 25 km straight line distance almost due north of Savona and 41.5 km by road. Access from Savona is via the Trans Canada Highway 9.3 km west to Deadman Creek road. This is followed north for 12.4 km, the first 5 km being hard surfaced, the balance well maintained gravel. From Deadman Creek road an active logging road branches northeast for 10.6 km to the 23 km sign. From here the road branches north for approximately 7 km, then southeast by a little used track for 2 km, to the ELM claims at Criss Creek.

The claims have been partially logged, mainly on the west side of the creek, but also on ELM 7 east of the creek. The resulting network of logging trails provides good access within the claims. The area is now extensively used for cattle grazing during the snow free period.

Elevations within the claims vary from 900 to 1100 metres. Relief is generally moderate. One exception is the northwest trending ridge along the southwest side of the claim group, which slopes steeply southeast to Criss Creek, a drop of over 200 m. The area is well drained by Criss Creek, a fast flowing stream draining southwest to Deadman Creek, which in turn flows south to the Thompson River.

Bush is fairly open and park-like, with little underbrush, even where tree growth is thickest. Topography is subdued, with relatively gentle slopes except immediately adjacent to Criss Creek, where rock scarps up to 30m, but usually much less, are common. Rock exposures are confined mainly to the channels and banks of Criss and McGee creeks. Elsewhere, overburden predominates and rock exposures are restricted to ridges and road cuts.

Overburden varies from a thin mantle of detritus from the present erosion cycle, to remnants of glacial outwash deposits 5 to 10 m thick as seen at several locations along Criss Creek. These remnants vary from silt grade to boulders and exhibit distinct cross bedding.

Government reports indicate that mineralization on Criss Creek has stimulated exploration activity since at least 1893. Initial work was done for placer gold, later, mercury and lode gold. More recently, molybdenum and silver have been the minerals of interest.

Previous work on the claim group included driving five short adits, drilling at least three diamond drill holes, eight percussion drill holes, and several geochemical surveys involving both stream sediment and soil sampling. Most recent work reported was by Craigmont Mines in 1976, and included eight percussion holes totaling 635 m.

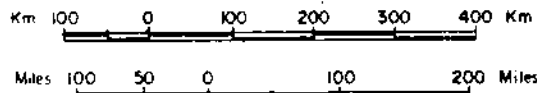
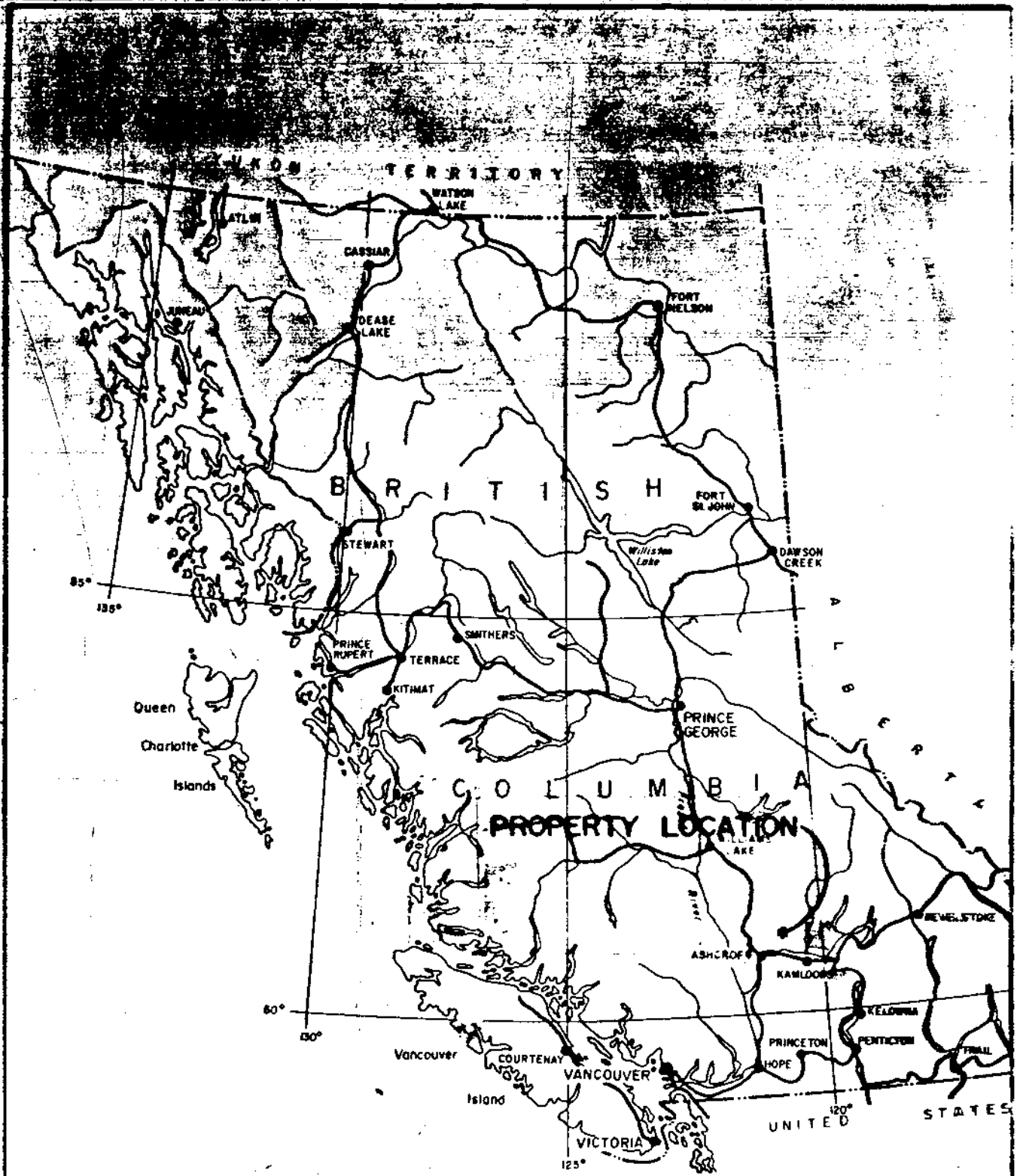


PLATE NO. 1

ELM MINERAL CLAIMS
KAMLOOPS N.D. 821/15W

LOCATION MAP

J.D.M

89-03-27

SCALE NOTED

Molybdenum mineralization is associated with a small granitic body of Triassic-Jurassic age, intrusive into Triassic Nicola volcanics. Gold-silver mineralization is spatially associated with a small diorite plug of probable Triassic age, intruded into clastic Nicola volcanics. The Au-Ag Zone is hosted by carbonate-quartz-mariposite schist, located at the faulted contact between Nicola volcanics and Ashcroft Formation conglomerate of Jurassic age.

SUMMARY AND CONCLUSIONS

Most identified structures in the ELM claim group, including the main rock units, sulphide mineralization, diorite and granite intrusives, trap dikes and faults, show a consistent WNW trend approximated by the section of Criss Creek adjacent to the Gold-Silver Zone. It is not clear whether the mineralized listwanite of this zone is intrusive in origin, or whether it represents a slice of ophiolitic material emplaced by faulting. The persistent distribution of fine grained chromite disseminated throughout this unit represents unreplaced remnants of the original ultramafic, now altered to 80% carbonate minerals.

The limits of the listwanite unit are as yet poorly defined. but has an indicated width of approximately 100m and a strike length of 400m. As defined, this unit would contain an estimated 10.8 million tonnes to a depth of 100m.

RECOMMENDATIONS

Diamond drilling sufficient to make an accurate estimate of the average grade of material in the Au-Ag Zone.

FIELD PROCEDURES

Fieldwork was directed toward more closely defining the limits of main rock units exposed in McGee Creek and, to a lesser extent in Criss Creek. Mapping was extended to the west boundary of claim ELM 3 (Plate No. 3-B), covering a large trap dike.

Mapping was done on a scale of 1:1000 except for some low water exposures in Criss Creek itself that were mapped at 1:500 (Plate No. 4).

Several control points were established or re-established in both Criss and McGee Creek, to facilitate mapping.

Brush was cleared along Criss Creek in the adits and Hanging Wall Vein areas to permit better access to bedrock exposures.

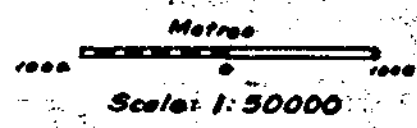
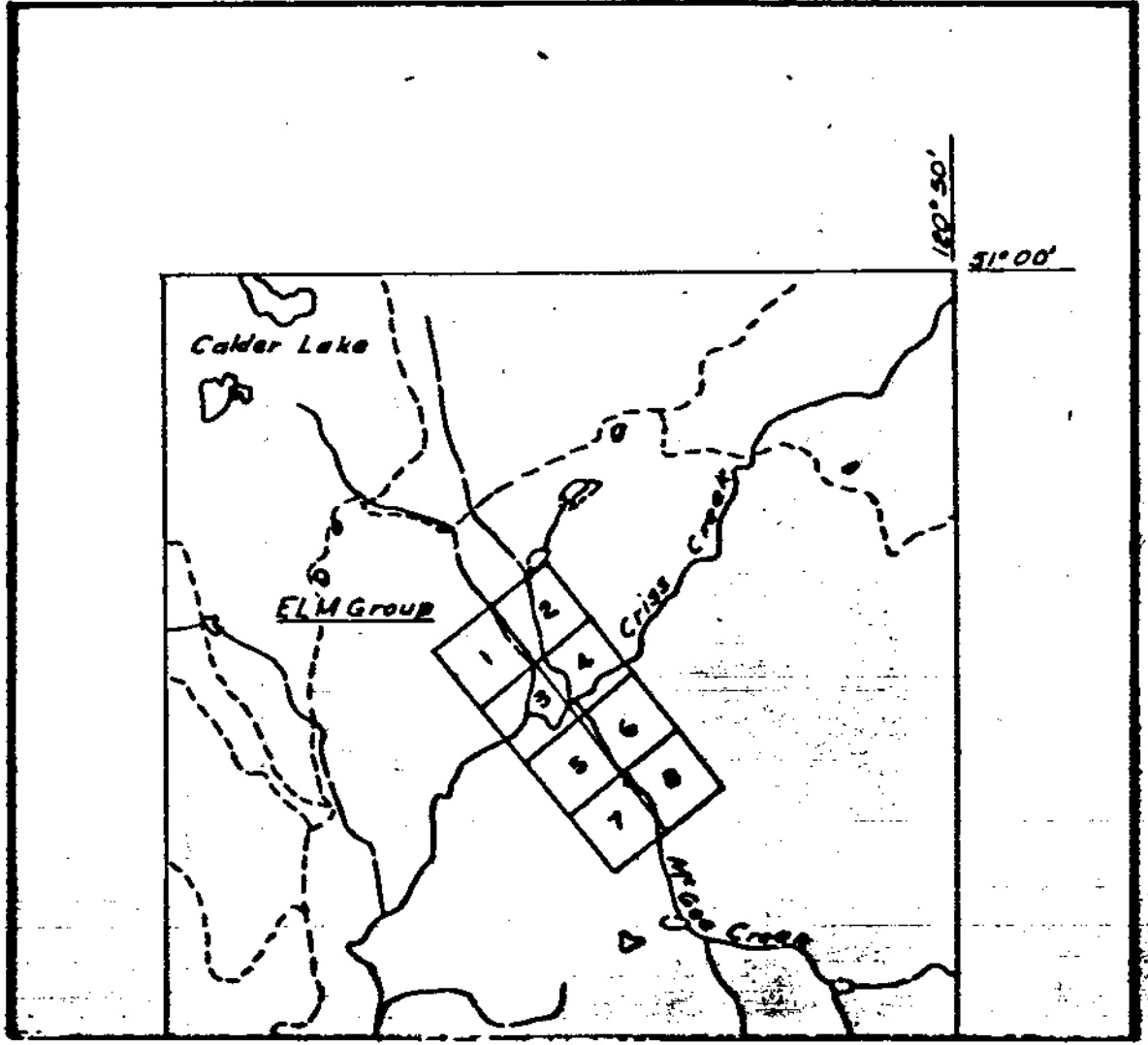
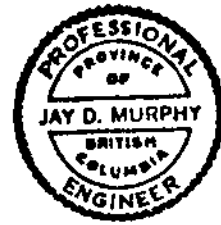


PLATE NO. 2
ELM MINERAL CLAIMS
921/15W
CLAIM MAP

J.D.M. | 1:50000 | 85-04-22

DISCUSSION OF RESULTS

A-Geology

Mapping confirms that the WNW trending section of Criss Creek forming right angle bends with the general SW direction of flow, marks the approximate boundary between Nicola volcanics to the NE and Ashcroft conglomerate to the SW.

A small body of altered ultramafics, or listwanite, up to 100m wide, hosts mineralization of the Au-Ag Zone and separates the two principal rocktypes described. Isolated listwanite outcrops trace this unit over a strike length of 400m as illustrated by Plate No. 3.

About 70m north of the Au-Ag Zone, a small, poorly exposed diorite plug approximately 60m by 200m appears to trend NW, approximately parallel to mineralization.

The diorite body intrudes clastic Nicola volcanics, probably coeval, that have a cherty aspect in exposures near the intrusive contact. Between the diorite plug and Criss Creek to the south and west, are numerous trap dikes having a variety of attitudes with respect to strike and dip. Similar dikes are common in the claims area, but the high concentration here suggests a genetic link with diorite.

In McGee Creek the sulphide bearing quartz veins of the Molybdenum Zone parallel shearing in the Au-Ag Zone, but are hosted by strongly sheared Nicola rocks near the SW contact with a porphyritic granite intrusion and related fine grained rock types. The granite intrusion is approximately 500m by 1000m, the long axis oriented NW-SE.

Exposures of large "bull quartz" veins occur adjacent to, but distinct from the Mo. Zone. These structures are several metres in width, carry coarse pyrite and minor spotty molybdenite, and closely resemble Quartz Zone veins located 750m to the NW. Both structures have indicated strike lengths in the order of 100m.

B-Structure

Claim mapping supports the NW regional trend determined by G.S.C. work, and related to a series of half grabens that bring Triassic Nicola Group volcanics in faulted contact with Jurassic Ashcroft Formation conglomerates. This Tertiary age faulting post dates the intrusives, but these rocks show an apparent spatial and attitudinal correlation that might be explained by recurrent movement along persistent older structures.

STATEMENT OF COSTS

The following costs were incurred on the FLM Group of Mineral Claims. Fieldwork was carried out by J.D.Murphy, P.Eng, between 92-07-11 and 92-10-07.

Petrographic work was done by Vancouver Petrographics Ltd. in March 1993.

LABOUR

14 days fieldwork;	mapping at 1:1000 and 1:500 scales, sampling, establish control points, clear brush, etc. @ \$250/day	3500.00	
25 hrs office;	drafting and report preparation @ \$40/hr	<u>1000.00</u>	
TOTAL LABOUR		<u>4500.00</u>	\$4500.00

SALARIES

Contract thin section work by Vancouver Petrographics Ltd.			\$ 131.86
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TRANSPORTATION

14 days 4x4 rental @ \$30/day	420.00		
592 km @ \$.25/km	<u>123.00</u>		
TOTAL TRANSPORTATION	<u>543.00</u>		\$ 543.00

FOOD AND LODGING

14 days @ \$25/day			\$ 350.00
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ASSAYING

5-sample preps @ \$3.75	18.75		
4-Mo gechems @ \$2.00	8.00		
1-Au geochem @ \$5.75	5.75		
GST	<u>2.27</u>		
TOTAL ASSAYING	<u>34.77</u>		\$ 34.77

REPORT PREPARATION

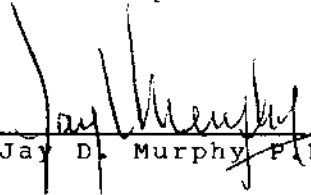
12-blackline paper prints	10.14		
3 -report covers	5.94		
30-photocopies @ \$.20	6.00		
GST and PST	<u>3.09</u>		
TOTAL REPORT PREPARATION	<u>25.17</u>		\$ 25.17

<u>TOTAL COSTS</u>			<u>\$5584.80</u>
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STATEMENT OF QUALIFICATIONS

I, JAY D. MURPHY, hereby certify;

1. That I am a Consulting Geological Engineer, resident at 1335 Todd Road, Kamloops, B.C. V2C 5B4
2. That I am a graduate of the University of Manitoba (1954) with a B.Sc. in Geological Engineering.
3. That I have practiced my profession continuously since graduation.
4. That I am a member of the Association of Professional Engineers and Geoscientists of the Province of British Columbia.
5. That the information contained in this report is based on a personal examination of the subject property.


Jay D. Murphy P.Eng.



Vancouver Petrographics Ltd.

JAMES VINNELL, Manager
JOHN G. PAYNE, Ph.D. Geologist
CRAIG LEITCH, Ph.D. Geologist
JEFF HARRIS, Ph.D. Geologist
KEN E. NORTHCOTE, Ph.D. Geologist

P.O. BOX 39
 8080 GLOVER ROAD,
 FORT LANGLEY, B.C.
 VOX 1J0
 PHONE (604) 888-1323
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Report for: Jay D. Murphy,
 1335 Todd Rd.,
 KAMLOOPS, B.C.
 V2C 5B4

Job 920238

March 22nd, 1993

INTRODUCTION:

One rock specimen (unnumbered) was submitted for polished thin section preparation and petrographic examination.

The principal objective was the identification of a dark sub-metallic mineral which occurs sparsely throughout the rock as tiny disseminated specks.

DESCRIPTION:

The rock is of schistose appearance, greenish and extensively impregnated by pinkish carbonate (unreactive to dilute acid).

The sectioned portion consists predominantly (c.80%) of carbonate. This incorporates diffuse wisps and streaks of a low-birefringent mineral which looks like cherty quartz or possibly a form of serpentine (or a mixture of the two).

Traces of minutely fine-grained sericite or talc, and tiny rounded-equant grains, 10 - 250 microns in size, of a low reflective, oxide-like, opaque phase are the remaining constituents - both closely associated with the non-carbonate component.

The opaque phase could not be identified positively by optical means, and was submitted for SEM microanalysis to obtain information on its composition.

About 10 different grains (varying somewhat in reflectivity) were checked. All yielded the peaks of Fe and Cr, sometimes with lesser amounts of Zn and/or Al.

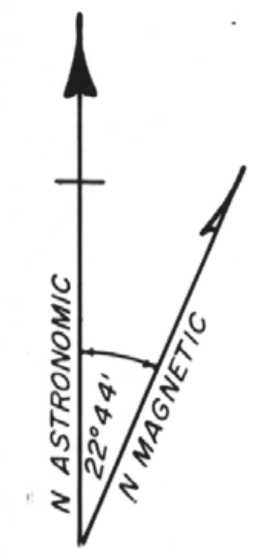
The mineral is indicated as a spinel, ranging in composition from near chromite to a partially aluminous and zincian variety of Fe-Cr spinel.

The rock is of uncertain origin, but has somewhat the aspect of a strongly altered, sheared ultramafic.

A handwritten signature in cursive script, appearing to read "J.F. Harris".

J.F. Harris Ph.D.

(929-5867)



SAMPLE DATA

NUMBER	MO (%)	WIDTH(m)	REMARKS
484	.10	—	Grab - typical MoS ₂ from discontinuous qtz vn
485	.05	2.1	Chip - rusty qtz with bands good MoS ₂ , highly leached in part
486	.18	—	Grab from better grade mat'l of some vn
487	.04	—	Grab - leached MoS ₂ from footwall of vn

SYMBOLS

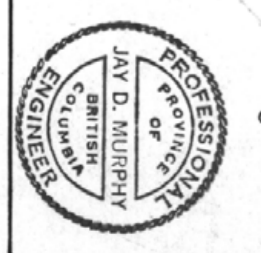
- Outcrop boundary, small outcrop or boulder
- Quartz-carbonate vein, stringer
- Geological contact
- Bedding
- Shear
- Fault
- Adit
- Claim post & boundary
- Sample location & number
- Dolomitic vein



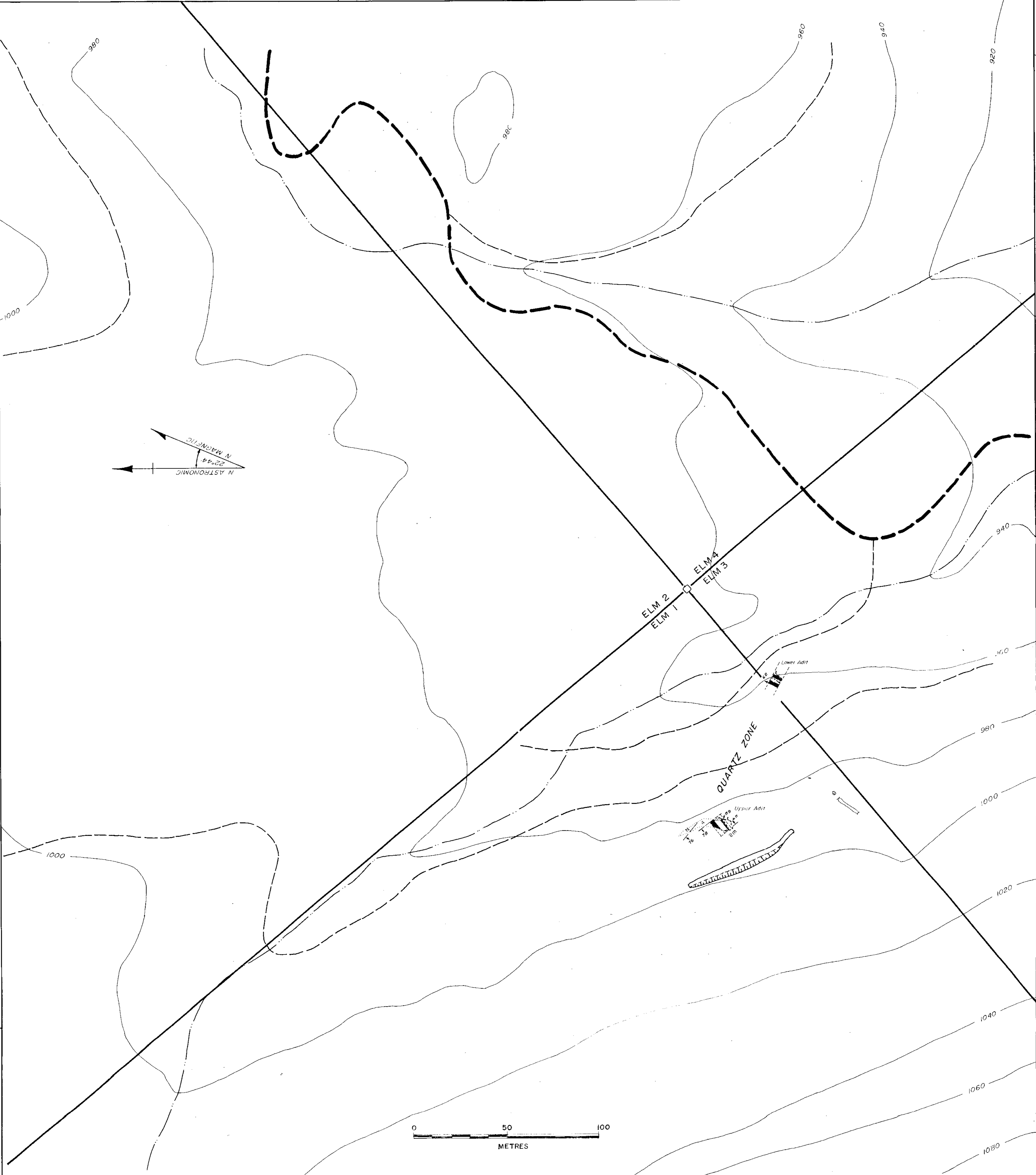
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GEOLOGICAL BRANCH
ASSESSMENT REPORT

PLATE NO. 3

ELM MINERAL CLAIMS
CRISS CREEK AREA
KAMELOPS M.D. 92/151W
GEOLOGY
GOLD-SILVER AND MOLYBDENUM ZONES



JDM 1986-09-22 1:1000



SAMPLE DATA

NUMBER	AU (g/t)	AG (g/t)	PB (%)	CU (%)	ZN (%)	REMARKS
181	---	17.8	---	---	---	Grab - white dolomite vein to 40cm of edge of creek, heavy Py & lesser Tetrahedrite
182	---	5.8	---	---	---	Grab - 30cm dolomite-qtz vein with strong Py, scat'd Tetrahedrite, abundant fuchsite
193	---	120	---	---	---	Mineralized aplite dike, v fine Py, poss. Tetrahedrite
184	---	8.9	---	---	---	Pyritic conglomerate including qtz strcs from hanging wall of vein
185	---	5.1	---	---	---	Grab across 50 cm qtz-carb vein with strong Py & scat'd Cpy
186	4.2	298.3	---	1.27	---	Grab from 40cm block of float in place w strong Py, Cpy & lesser Tetrahedrite
187	---	222.8	---	---	---	Grab - 20cm qtz vn in place w strong Py, poss Tetrahedrite
151	55	224.0	27	1.92	---	Grab - good sulphides, including qtz strcs from hanging wall of vein
469	---	14.8	---	---	---	Grab - qtz - carb vn. with Tetrahedrite
477	2.33	435.4	---	1.37	---	Grab over 20cm dolomite w Py, Tetrahedrite, Cu oxides & fuchsite
91882	4.1	568.5	4.11	1.96	3.62	Selected high grade
5	.60	174.0	1.15	.41	11.33	10-15 cm qtz strcs w Py, Tetrahedrite, Sphalerite & Galena - SAMPLED BY NORTH SLAVE EX. 1968
6	7.54	820.3	27	2.12	2.37	Hanging Wall Vein (?)
9	.68	181.7	20	1.37	1.90	Adit No. 1
10	1.37	349.7	29.78	.67	6.25	Adit No. 2
489	.06	---	---	---	---	Barren conglomerate wallrock from H Wall Vn.

LEGEND

- Overburden
- 5** Trap dike
- 4** Porphyritic granite, m-monzonite, a-aplite & felsite
- 3** Diorite p-porphyritic contact phase
- 2** Carbonate-qtz-mariposite schist (Listwanite)
- 1** Ashcroft Fm. conglomerate
- N** Nicola Gp. volcanics a-flows b-clastics
- c cherty
- s sheared

SYMBOLS

- Outcrop boundary, small outcrop or boulder
- Quartz-carbonate vein, stringer
- Bull quartz vein
- Dolomite vein
- Geological contact
- Bedding
- Shear
- Fault
- Adit
- Claim post & boundary
- Trench, pit
- Sample number
- Sample location defined, approximate

GEOLOGICAL BRANCH ASSESSMENT REPORT

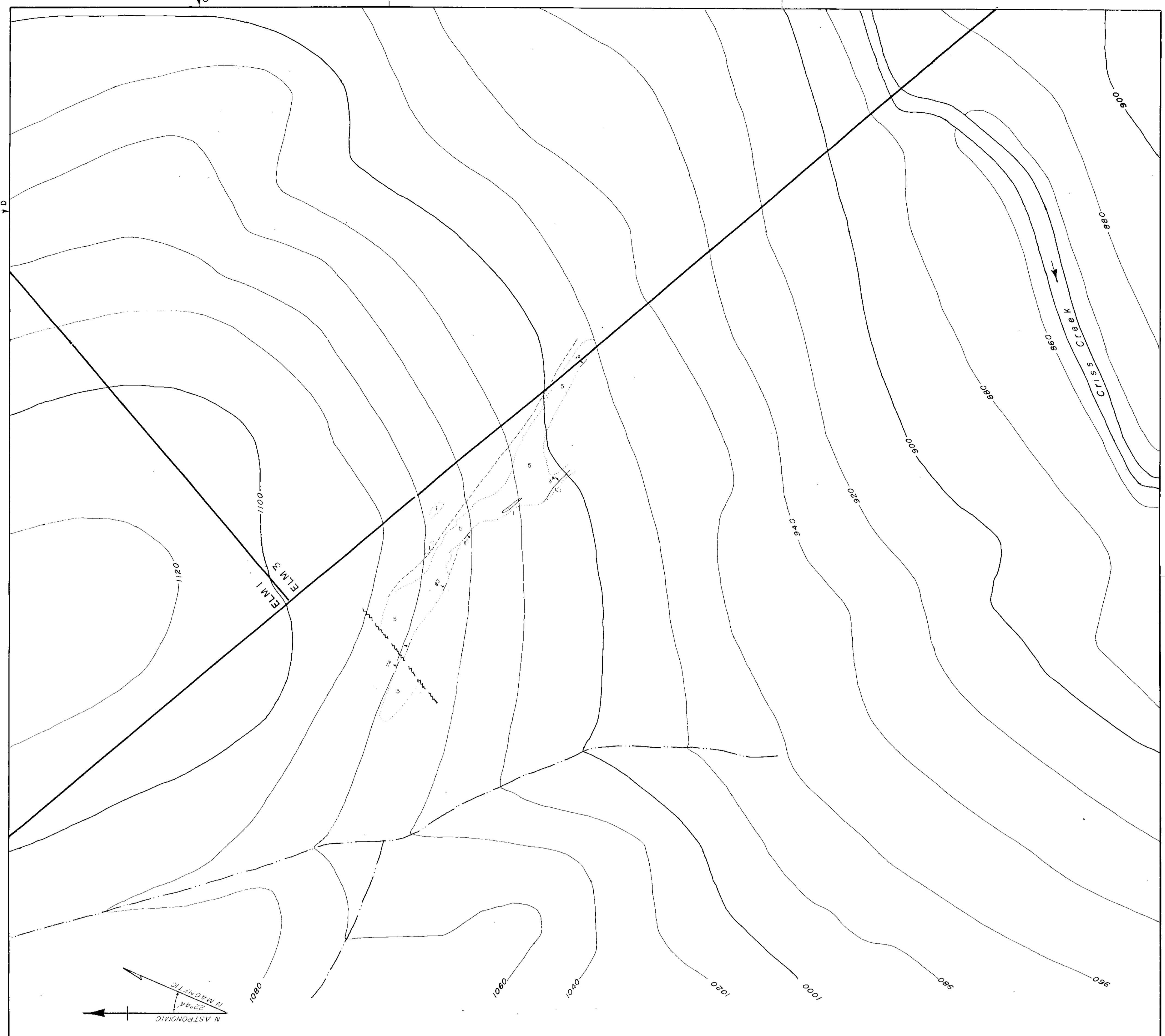
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PLATE NO. 3-A



ELM MINERAL CLAIMS
CRISS CRISS AREA
KAMLOOPS M.D. 921/15W

GEOLOGY
QUARTZ ZONE

J.D.M. | 1990-10-15 | 1:1000



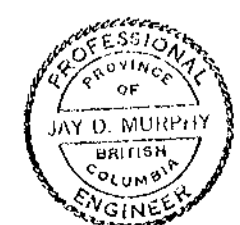
**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

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PLATE NO. 3-B

ELM MINERAL CLAIMS
CRISS CREEK AREA
KAMLOOPS M.D. 92/15W

GEOLOGY



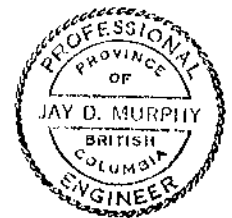
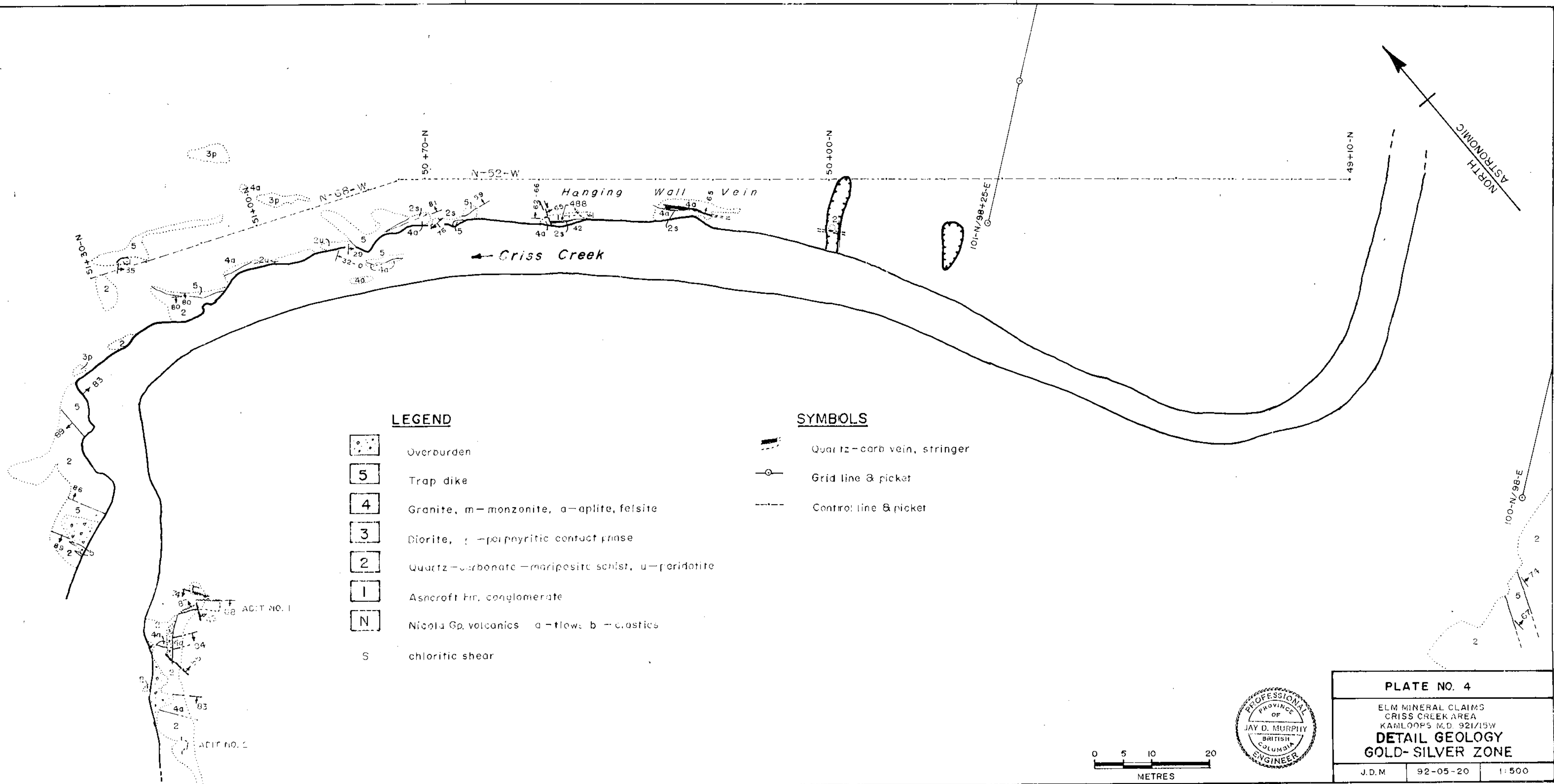


PLATE NO. 4		
ELM MINERAL CLAIMS CRISS CREEK AREA KAMLOOPS M.D. 921/15W		
DETAIL GEOLOGY GOLD-SILVER ZONE		
J.D.M	92-05-20	1:500