81-#928, -#9715

GEOLOGICAL & GEOCHEMICAL REPORT

- ON THE -

MEL # 1 CLAIM

LILLOOET MINING DIVISION, BRITISH COLUMBIA

- FOR -

DENISON MINES LTD.,
#2300 - 650 West Georgia Street,
Vancouver, B. C. V6B 4N7

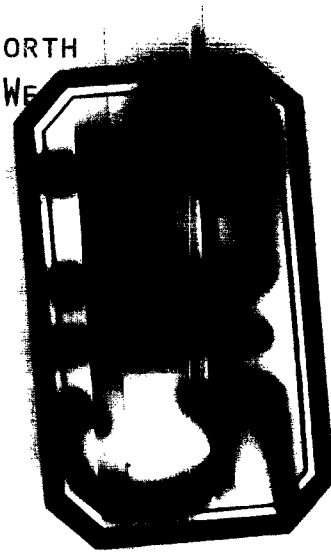
COVERING: MEL #1 CLAIM (20 UNITS)

WORK PERFORMED: AUGUST 6 - 23, 1981.

LOCATION: (1) 34 km Southwest of Lillooet, B.C.

(2) NTS Map No. 92J/8W

(3) Latitude 50° 29.2' North
Longitude 122° 18.9' We



W. Gruenwald, B.Sc.
PREPARED BY

KERR, DAWSON & ASSOCIATES LTD.
#6 Nicola Place, 310 Nicola Street
Kamloops, B.C.

October 30, 1981

9715

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Prepared By

KERR, DAWSON & ASSOCIATES LTD.,
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KAMLOOPS, B. C.

W. Gruenwald, B.Sc.

October 30, 1981

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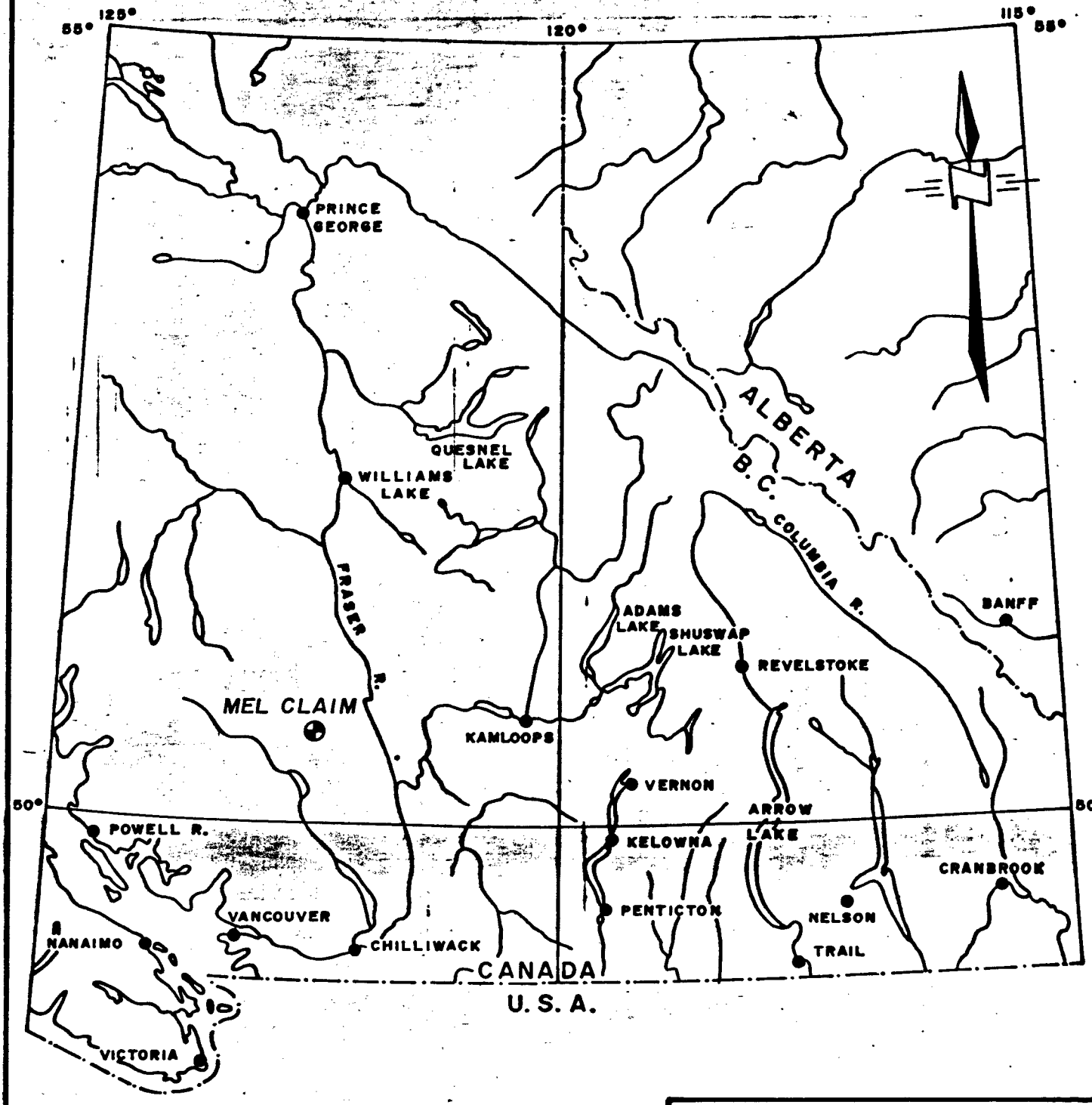
INTRODUCTION

In July, 1980, Kerr, Dawson and Associates Ltd. carried out a regional stream sediment sampling programme for Denison Mines Ltd. of Vancouver, B. C. The regional programme covered a 640 square kilometer area immediately southwest of lillooet, B. C.

During the course of this programme, two anomalous molybdenum values were encountered at the headwaters of Melvin Creek. Follow - up sampling and mapping in August, 1981 revealed disseminated molybdenum mineralization in an altered and pyritic intrusive bordering a larger biotite granodiorite pluton.

The results of the 1981 programme are described in this report and in the appended maps..



DENISON MINES LTD.

LOCATION MAP

MEL CLAIM

LILLOOET MINING DIVISION, B.C.

Date: Oct. 1981.	Scale: 1" = 64 Miles
Dwn by: W.G.	Dwg no. 234-1

SUMMARY AND CONCLUSIONS

(1). The Mel property consists of one twenty unit claim owned by Denison Mines Ltd. The property is situated in the Coast Mountains approximately 34 kilometers southwest of Lillooet, B. C. Access to the property is on foot or by helicopter.

(2). The Mel claim was staked after the discovery of anomalous molybdenum values in stream sediments, soils and rocks at the headwaters of Melvin Creek. The mineralized zone responsible for the anomalous values appears to be a new discovery.

(3). The geology of the Mel claim consists of metasedimentary and metavolcanic rocks of the Triassic (?) Bridge River Group. Intruding these rocks is a small pluton of Upper Mesozoic biotite granodiorite, related to the intrusives of the Coast Range Complex. Emplaced soon after and partially bordering the main biotite granodiorite pluton is a small body of feldspar porphyritic granodiorite containing disseminated iron sulphides and molybdenite.

Transecting the Mel claim is a narrow body (dyke) of upper Mesozoic (?) ultrabasic rock. Quartz veins are found throughout the property, however the bulk of these are barren.

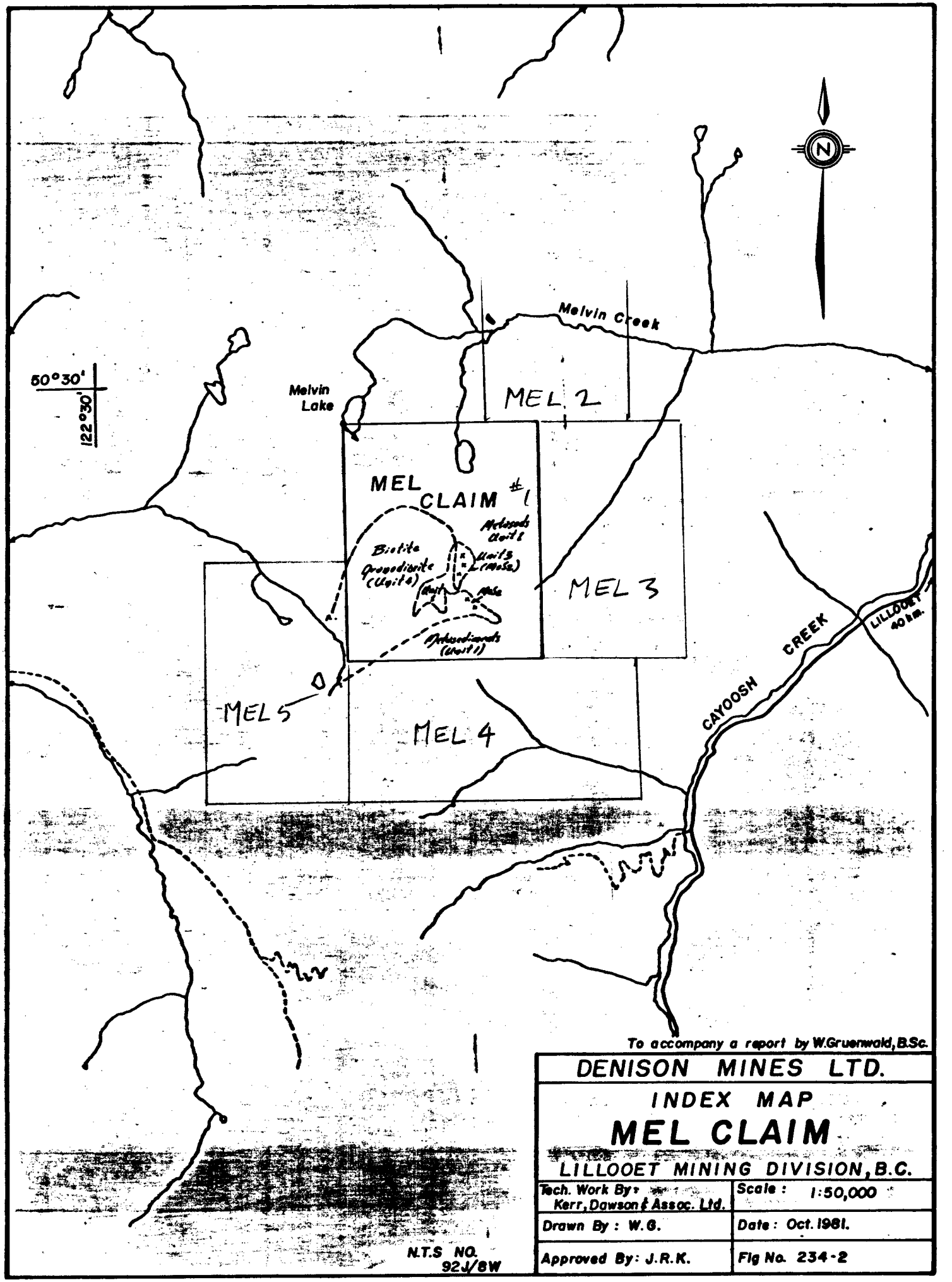
(4). Molybdenite mineralization along with pyrite and pyrrhotite was found as fine grained disseminations within a feldspar porphyritic granodiorite intrusive. Felsic dykes, quartz veins and small silicified zones and/or stockworks within this rock type are also mineralized with molybdenite. Minor pyrite and galena was found in some quartz veins within the biotite granodiorite pluton, which in general is very barren. Small amounts of malachite were observed in quartz veins and in float. Disseminations of chalcopyrite and pyrrhotite are locally present in hornfelsed metasediments.

(5). Geochemical sampling indicates that the area of the feldspar porphyritic granodiorite is highly anomalous in molybdenum. Anomalous molybdenum values (soils and rocks) to the southeast and south-southwest suggest that the mineralized intrusive (or phases of) may be considerably more extensive than is presently known. Highly anomalous arsenic values ($>$ 400 ppm) suggest the presence of arsenopyrite or other unidentified arsenic minerals in several rock types on the Mel claim.

LOCATION AND ACCESS

The Mel claim is situated southeast of Melvin Lake, at the headwaters of Melvin Creek which flows into the Cayoosh Creek approximately 7 km. to the east. By air the claim is located approximately 34 kilometers southwest of Lillooet, B. C. (See fig. no. 234-1, 2).

The approximate geographic co-ordinates for the center of the claim are 50° 29.2' north latitude and 122° 18.9' west longitude on N.T.S. Sheet No. 92J/8W. The best means of access at present is by helicopter from Lillooet, B. C.



To accompany a report by W.Gruenwald, B.Sc.

DENISON MINES LTD.

INDEX MAP

MEL CLAIM

LILLOOET MINING DIVISION, B.C.

Tech. Work By: Kerr, Dawson & Assoc. Ltd.	Scale: 1:50,000
Drawn By: W.G.	Date: Oct. 1981.
Approved By: J.R.K.	Fig No. 234-2

N.T.S NO. 92J/8W

TOPOGRAPHY AND VEGETATION

The Mel claim is found within the Coast Mountains and is therefore not without its share of rugged terrain. Topographic relief over the property is 640 m (2100') ranging from 1740 m (5700'+) on the north claim boundary to 2380 m (7800'+) in the south central part of the claim.

Slopes vary from gentle to steep. Locally, precipitous slopes are found, the most notable of which is the north facing slope in the south central portion of the claim. The creek valleys within the claim are of glacial origin with steep walled cirques at their head.

Vegetation above the 1900 m (6500') elevation is sparse consisting of low balsam and spruce bushes along with alpine grasses & related ground cover. Below the 1900 m elevation the vegetation consists of "alpine type" stands of spruce, balsam and pine trees.

PROPERTY

The Mel claim is comprised of one Modified Grid claim containing 20 units (500 hectares). Details of the claim are as follows:

Claim Name	No. of Units	Mining Division	Record No.	Expiry Date
Mel # 1	20	Lillooet	1522	Sept. 12, 1984

The registered owner of the Mel 1 claim is Denison Mines Ltd., of Vancouver, B. C.

HISTORY

The search for precious metals at the turn of the century led prospectors into the Lillooet region. This soon led to the discovery of such deposits as the Golden Cache (Au) (1895 - 1910) and the Silver Queen (Pb, Ag, Au).

The area of the Mel claim, undoubtedly attracted some attention since a series of prominent quartz veins are present on a ridge in the western portion of the claim. These veins were soon found to be rather barren and thus no significant work appears to have been done.

Prospecting to the northwest (1.5 to 2.0 km.) of the previously mentioned veins led to the discovery of a group of small, sporadic argentiferous tetrahedrite bearing quartz veins in metasedimentary rocks. This occurrence, the closest documented mineralization to the Mel claim, was worked primarily in the mid 1930's by Burkley Valley Mines Co. Work on this property, known as the Twin Lake property has consisted of surface blasting and trenching along with the establishment of a cat road from the village of D'Arcy. No recent work appears to have been done or recorded in the past ten years.

GEOLOGY

On a regional scale, the Mel claim is situated within the eastern margin of the Coast Range Plutonic Complex. This north-northwesterly trending "complex" consists of several varieties of granitic rocks of upper Mesozoic to Tertiary age. Mapping by the Geological Survey of Canada (Map 13-1973) indicates that the Mel claim is underlain by rocks of the Lower Mesozoic Bridge River Group. At least two granodiorite plutons are shown to intrude the "metasediments" approximately 6 km. north of the Mel claim. No intrusive rocks are indicated on the Mel claim by the G.S.C. mapping.

On a local scale the geology of the Mel claim is considerably more complex with at least four rock types being present (See fig. 234-3).

The most widespread and most likely the oldest rock type is a sequence of metasedimentary and metavolcanic rocks of the Bridge River Group (Map Unit 1). The most notable components of this unit are gray, brown or black, often thinly laminated (platy) phyllites. Locally these rocks are intercalated with argillites, cherts and very minor limestone and metaconglomerates.

Fine grained, felsic rocks possibly representing rhyolitic ash beds (noted some spherulitic structures?) may also be intercalated within this sequence.

Dark green, possibly andesitic metavolcanic rocks are found locally as thin units within the metasediments. More massive horizons are present in the southwestern portion of the Mel claim, especially south of Melvin Lake.

Hornfelsed phyllites, argillites along with minor biotite schist and/or gneiss are present along portions of the metasedimentary - granodiorite contact. The rocks of Unit 1 form a prominent roof pendant over the granodiorite (Unit 4) on the peak (7500' +) in the south central portion of the claim.

Foliation attitudes within rocks of Unit 1 are quite variable especially near the intrusive body in the southern half of the property. The strike of foliations vary from east - west to north - south. Dips range from 22° to 60° northerly or easterly (See fig. 234-3). Regional deformation and intrusive activity are undoubtedly responsible for such variations in attitudes.

Extending nearly diagonally from the northwest corner of the claim toward the southeastern portion of the claim is a dyke like mass of ultrabasic rock (Unit 2). The observed widths of this unit ranges from 30 to 80 meters.

This rock typically consists of tan to dark green and/or orangish weathering serpentinite that locally is steatized (talc) and carbonatized. Magnetite is invariably present making this rock type generally quite magnetic.

In several areas the surrounding metasediments show signs of being serpentinized. This may suggest that hydrothermal alteration of the original ultrabasic rock (ie. peridotite) locally pervaded the host rocks. Slickensided surfaces are fairly common suggesting that considerable movement (faulting) may have taken place possibly during and after serpentinization.

An attitude taken on the contact of the serpentine body revealed a dip of 30° to 40° northeasterly. Ultrabasic bodies of similar attitudes found to the west of the property (1 - 1.5 km.) are likely related to this serpentinite dyke.

Rock unit 4 which underlies much of the south and southwestern part of the Mel claim consists of a pale brown to gray, medium to coarse grained biotite granodiorite. Biotite, which is often well developed (0.5 - 1 cm across) is typically dominant over all other mafic minerals. Alteration is generally absent, however weak sericitization and alteration of feldspars is observed along some contact zones.

This plutonic body is oblong in shape, measuring at least 1.5 km. in length (NE-SW) and from 1.0 to 1.3 km. (NW-SE) in width (See fig. 234-3). Border contacts with the surrounding rocks appear to be steep ($\rangle$ 45°).

Jointing within the granodiorite is often well developed. Good examples of this are found in the southern cirque wall at the head of the central valley where the joints strike west - northwest and dip southerly from 35° to 60°. Occasionally some of these joints are the site of quartz veins and are undoubtedly products of late stage hydrothermal fluids derived from the cooling of the intrusive body.

Found along the northeast edge and in partial contact with the biotite granodiorite body is rock unit 3. This rock consists of a pale greenish gray, buff to white, fine to medium grained feldspar porphyritic intrusive rock which is often characterized by the presence of scattered large flakes of biotite (secondary?).

Mafic minerals are not common, having generally been altered to chloritic micas. The biotite flakes often appear altered to a mixture of chlorite and/or sericite. Epidote is occasionally observed. The feldspars are invariably altered to some degree, locally however they are nearly totally kaolinized.

Fine grained felsic dykes (aplites?) and quartz veinlets, veins and silicified zones also appear to be associated with this rock unit. Small stockwork systems may locally be present. Finely disseminated sulphides are a distinctive feature for most of rock unit 3.

Mapping completed thus far seems to indicate that this intrusive is elongated in a north-northwesterly direction. The estimated length is nearly 300 meters however, dykes of this rock observed on the ridge top (7500' elevation) suggest a length closer to 500 meters. The width ranges from 100 to 150 meters. Abundant blocks (roof pendants) of unit 1 within this intrusive may suggest that the present surface of this intrusive body may be the very top of a larger plutonic body.

As a point of interest, talus in the vicinity of sample GM-76, approximately 800 meters to the south-southwest consists in part of rock that appears in many respects similar to that just described.

The origin of the Unit 3 intrusive is at present debatable however, until proven otherwise the writer feels that it is a distinct and separate intrusion that was emplaced as a late stage "sulphide rich differentiate" soon after the intrusion of the main granodiorite mass.

Quartz veins and minor silicified zones (Unit 5) are found over much of the property examined and within all rock types except Unit 2 (ultrabasic rock). Quartz veining observed ranges from hairline fracture fillings to large (1 - $\geq$ 3 m) quartz veins. In some areas near the northeast end of the granitic intrusive the metasediments contained irregularly shaped drusy voids probably formed by local shattering of the rock and subsequent quartz flooding.

The cores of many of the larger veins often contained vugs filled with quartz crystals in varying stages of development. The most notable crystalline veins are those observed on the ridge top ($>$ 7500') along the western boundary of the Mel claim. Individual quartz crystals in place, and in talus float to the north attained lengths of over 10 cm and diameters of up to 6 to 8 cm. Vein attitudes are highly variable with no obvious trend being evident.

The bulk of the quartz veins are most likely derived from hydrothermal fluids that emanated from the cooling granitic intrusives and thus formed in joints within the granodiorite or in fissures within the surrounding rocks. Some veins in the metasediments quite distal from the intrusives may have been derived at least in part from the metamorphic processes (ie. quartz sweats) active during the period of regional deformation.

From the mapping done thus far it would appear that no significant faulting has taken place on the Mel claim. An airphoto study of the region, however indicates a major north-northwesterly trending linear (fault?) passing through the northeast corner of the claim, an area which is underlain primarily by metasediments.

A chronological order for the rocks on the Mel claim would be as follows: From oldest to youngest - 1). Metasedimentary/metavolcanic sequence; 2). biotite granodiorite intrusion soon followed by 3). Feldspar porphyritic granodiorite (sulphide rich); 4). hydrothermal quartz veins in pluton & surrounding rocks; 5). ultrabasic/serpentinite dyke(s).

MINERALIZATION

The rocks of Unit 1 almost always contain at least some very finely disseminated iron sulphides in the form of pyrite and/or pyrrhotite. One locality (Sample No. GM-107) contained talus boulders of hornfelsed argillite with finely disseminated pyrrhotite and chalcopyrite. Occasionally scattered pyrite cubes up to 0.5 cm. across were observed in some phyllites, argillites and quartz veins.

The ultrabasic (Unit 2) was devoid of mineralization except for minor disseminations of magnetite. The bright green mineral(s) often found in association with the ultrabasic or in the adjacent serpentinized rocks is suspected to be mariposite and/or fuchite (chromium bearing micas).

The rocks of Unit 3 are by far the most mineralized rocks found on the property, containing anywhere from $\leq$1% to 5% disseminated sulphides. The sulphide minerals in order of abundance are pyrite, pyrrhotite, molybdenite and arsenopyrite. Arsenopyrite was observed with pyrite in a feldspar porphyritic granodiorite dyke in metasediments (Sample No. GM-108), and may in fact be more common especially in light of the high arsenic content of some of these rocks (See Geochemistry Section).

The molybdenite, as well as the other sulphides is almost always finely disseminated in the host rock. Molybdenite appears to be found in most variations (altered zones etc.) of the feldspar porphyritic granodiorite as well as the felsic (aplitic?) dykes and quartz veins that cut these rocks. Substantial concentrations of molybdenite were found in a talus sample of silicified, quartz veins & kaolinized felsic dyke rock.

Samples from this locality (GM-107) contained large patches of molybdenite covered with ferrimolybdite and would conceivably assay in excess of 1% MoS_2. Detailed prospecting, uphill (southeast) of the previously mentioned site revealed similar mineralization "in place" between samples GM 135 and 133. This higher grade mineralization is associated with small siliceous and altered zones within the rocks of Unit 3. It is evident that much more detailed mapping will be required to more accurately delineate the extent of the molybdenum mineralization.

As a point of interest, molybdenite was found in quartz talus and in an outcrop of relatively unaltered granodiorite at the head of the eastern cirque suggesting that the molybdenite mineralization may be more extensive than presently thought.

The biotite granodiorite intrusive (Unit 4) is devoid of any significant mineralization. Several quartz veins in joints (ie. Sample No. GM-14) contained minor amounts of pyrite and/or galena.

The vast majority of quartz veins (Unit 5) are totally barren. Minor amounts of pyrite and/or pyrrhotite were observed in some veins in the metasediments. Traces of malachite and tetrahedrite (?) were observed in one vein (Sample KM-58) on the ridge top near the western boundary of the Mel claim.

An as yet unidentified fine grained gray, metallic mineral was found in what appears to be a silicified pebble conglomerate (?) on the ridge top between the central & eastern valleys (Sample No. GM-129). An antimony mineral such as stibnite is suspected. Copper and molybdenum values for this sample were essentially negative.

GEOCHEMISTRY

During August, 1981 detailed geochemical sampling was carried out to follow - up anomalous molybdenum values obtained on the Mel claim in the summer of 1980. The sampling of soils, rocks and a few streams and seepages was generally done along specific contours due to the rugged nature of the property. A total of 150 soil, 77 rock chip and 6 stream sediment samples were collected from the Mel claim area (See figs. 234-4 to 7). Rock chip sampling and geological mapping in the extremely steep areas at the head of the central valley was carried out by two geologists (Dihedral Exploration Inc.) trained in technical rock climbing. The remainder of the sampling of the Mel claim was carried out by Kerr, Dawson & Associates Ltd. personnel.

Soil samples often consisted of talus "fines" or residual soil derived from decomposed bedrock. Distinct soil horizons were generally absent over much of the property examined, since physical weathering would be more active than chemical weathering.

Geochemical samples, upon collection were placed in kraft waterproof envelopes and labelled with a designated code number. All samples were later packaged and shipped to the Bondar Clegg and Co. Ltd. laboratory in North Vancouver, B. C. for analysis.

After drying, soil and silt samples were seived to obtain the -100 mesh fraction. Rock samples were crushed to the appropriate mesh size. The samples were all analyzed as follows:

Element	Digestion	Determination
Copper Zinc Molybdenum Silver	A 0.5 gram sample is digested in hot nitric & hydrochloric acid (HNO_3 & HCl)	Atomic Absorption
Arsenic	Digestion in hot nitric-perchloric acid	Colorimetric.
Gold	Digested in aqua regia	Fire assay Atomic Absorption.

The results for each element was stated in parts per million (ppm) except for gold which was stated in parts per billion (ppb). Samples assigned a value "ND" represents a sample with a particular metal content below the detection limit. The lower detection limits for copper, zinc and molybdenum are 1 ppm, silver 0.1 ppm and gold 5 ppb. Silver and gold analyses were not complete at the time this report was being prepared and thus discussion of these elements is omitted.

All values were plotted on base maps at a scale of 1:5000 (1 cm = 50 meters).

A statistical analysis was done with the following geochemical categories being derived.

	Copper	Molybdenum	Zinc	Arsenic
Mean ($\bar{x}$)	50 ppm	8 ppm	118 ppm	95 ppm
Standard Deviation (s)	43 ppm	11 ppm	55 ppm	76 ppm
Background	<50 ppm	<8	<118 ppm	<95 ppm
Possibly Anomalous	50 - 93	8 - 19	118-173 ppm	95-171
Probably Anomalous	94 - 136	20 - 30	174-228 ppm	172-247
Definitely Anomalous	>136	>30	>228 ppm	>247

In arriving at these figures, the extremely high values were "cut" to avoid unrealistic geochemical categories. These extremely high values were >300 ppm, >50 ppm, >300 ppm & >400 ppm for copper, molybdenum, zinc and arsenic respectively. In applying the geochemical categories to the metal values, the following anomalous areas are indicated and described as follows:

1. COPPER: (See fig. no. 234-4)
   - -range of values from background to 2,250 ppm.
   - -in general the metasediments and metavolcanics of Unit 1 have a greater copper content than other rock types on the Mel claim.
   - -biotite granodiorite pluton (Unit 4) is devoid of any significant copper values.
   - -feldspar porphyritic granodiorite (Unit 3) is moderately anomalous, undoubtedly due to the presence of minor amounts of copper in the disseminated sulphides.

I. COPPER (continued)

-anomalous copper values at the head of the eastern cirque appear at least in part due to copper mineralized talus emanating from quartz veins and granitic rocks to the west and south.

-moderate co-incidence between copper and molybdenum values, especially in the area of the feldspar porphyritic granodiorite (Unit 3).

II. MOLYBDENUM: (See fig. no. 234-5)

-range of values from background to 348 ppm.

-the vast majority of the anomalous molybdenum values are found in the southeast quadrant of the Mel claim, especially within and around the feldspar porphyritic granodiorite (Unit 3) and are related to known molybdenite mineralization.

-several definitely anomalous values in the area of GM-75 suggest that the granitic rocks in this area may be related to the main body of Unit 3.

-anomalous values at the head of eastern cirque appear due to mineralized quartz veins and granitic talus and outcrop in the area.

-moderate molybdenum-copper co-incidence primarily in area of rock unit 3.

III. ZINC: (See fig. no. 234-6)

-values range from background to 760 ppm.

-anomalous values found scattered over most of the property, however seven of the highest zinc values are found in the area of rock unit 3 and at the head of the eastern cirque.

-cause of the zinc geochemical "highs" is probably due to the presence of small amounts of zinc tied up in sulphides in metasediments near the granodiorite contact and within the iron sulphides in the intrusive rocks, especially unit 3.

-Zinc : Arsenic - weak to moderate co-incidence.

-Zinc : Copper - poor co-incidence in unit 3, moderate co-incidence in metasediments especially in eastern portion of the claim.

-Zinc : Molybdenum - poor co-incidence for most part; weak co-incidence in eastern portion of claim in unit 1 & 3 rock types.

IV. ARSENIC: (See fig. no. 234-7)

-values range from background to >1000 ppm (upper detection limit).

-bulk of anomalous values associated with metasedimentary and meta-volcanic rocks of unit 1. Some "highs" associated with qtz.veins on ridge.

-some "geochem highs" in intrusive terrain probably due to scattered amounts of arsenopyrite which was described previously in the "Mineralization Section".

-co-incidence with other metals (Cu, Mo, Zn) is generally poor.

-cause of extreme arsenic highs (500 to >1000 ppm As) in the metasediments is as yet unexplained.

-analysis for gold and silver is presently being carried out however, these were not available during the writing of this report.

RECOMMENDATIONS

Based on the encouraging geochemical data and the recently discovered molybdenite bearing intrusive plug, a more detailed exploration programme is most definitely warranted on the Mel claim. Further work should include the following:

1). Geologically map the extent of the molybdenite bearing intrusive in detail and determine whether it may be related to the anomalous molybdenum values at the head of the eastern cirque and those in the area of sample GM-75.

2). Carry out detailed sampling of rock outcrops and soil in and around the area to be mapped.

3). Contingent on the results of the above carry out a diamond drilling programme of at least 500 meters. Since drill set-ups are scarce, the drilling could be carried out from a single set-up utilizing vertical and angled holes.

Respectfully submitted,

KERR, DAWSON & ASSOCIATES LTD.,

GEOLOGICAL ASSOCIATION OF CANADA W. GRUENWALD FELLOW

W. Gruenwald, B.Sc. Geologist

Kamloops, B. C.
October 30, 1981.

APPENDIX A

GEOCHEMICAL RESULTS (See Pocket)

&

ROCK SAMPLE DESCRIPTIONS

BONDAR-CLEGG & COMPANY LTD.
130 PEMBERTON AVE., NORTH VANCOUVER, B.C. V7P 2R5 PHONE: (604) 985-0681 TELEX: 04-352667

Geochemical Lab Report

NO. 9715

REPORT: 421-2585 PAGE 2

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Mo PPM	As PPM	NOTES
GD:246		16	56	1		
GD:247		12	65	1		
GD:248		19	129	2		
GD:250		29	110	1		
GE:29		54	69	19		
GE:30		21	80	3		
GE:31		20	90	3		
GE:32		44	106	6		
GE:34		19	73	5		
GE:35		55	95	4		
GE:36		24	80	4		
GE:37		32	90	3		
GE:39		74	97	8		
GE:40		47	101	2		
GE:42		28	100	1		
GE:43		40	83	2		
GE:44		48	67	3		
GE:45		23	55	1		
GE:46		31	101	1		
GE:47		43	123	1		
GE:48		17	57	ND		
GK:33		17	11	3		
GK:42		52	17	6	7	
GM:01		47	90	8	165	
GM:02		57	107	19	120	
GM:03		101	117	18	80	
GM:04		110	168	47	160	
GM:06		209	760	162	165	
GM:07		164	350	111	83	
GM:08		127	183	87	400	

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Mo PPM	As PPM	NOTES
GM:11		201	245	121	> 1000	
GM:12		232	298	161	> 1000	
GM:13		132	173	31	600	
GM:16		11	117	6	400	
GM:17		16	120	2	180	
GM:18		16	180	1	200	
GM:20		19	145	1	260	
GM:21		27	175	2	70	
GM:22		25	148	1	180	
GM:24		24	148	1	125	
GM:25		16	169	1	220	
GM:26		11	112	1	150	
GM:27		12	89	1	70	
GM:29		18	169	1	140	
GM:30		79	105	4	240	
GM:32		79	108	4	220	
GM:34		85	150	4	800	
GM:35		67	70	2	48	
GM:37		77	145	4	180	
GM:38		69	116	2	82	
GM:39		87	110	3	85	
GM:45		78	154	2	600	
GM:46		48	87	2	800	
GM:47		16	36	ND	110	
GM:48		88	157	4	220	
GM:50		70	147	1	> 1000	
GM:51		58	94	3	190	
GM:52		102	215	4	700	
GM:53		163	165	3	240	
GM:54		102	160	3	190	

BONDAR-CLEGG & COMPANY LTD.

130 PEMBERTON AVE., NORTH VANCOUVER, B.C. V7P 2R5 PHONE: (604) 985-0681 TELEX: 04-352667

Geochemical Lab Report

REPORT: 421-2585

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Mo PPM	As PPM	NOTES
GM:55		191	160	6	1000	
GM:57		134	156	7	65	
GM:58		54	147	4	400	
GM:59		39	52	2	700	
GM:60		35	85	3	210	
GM:61		19	105	2	67	
GM:62		13	89	2	33	
GM:63		11	100	2	70	
GM:64		12	103	2	62	
GM:65		11	123	2	42	
GM:66		12	106	2	32	
GM:67		13	130	1	25	
GM:68		12	112	1	40	← Mel Claim →
GM:69		13	117	1	57	
GM:70		13	139	2	90	
GM:71		17	138	4	110	
GM:74		46	180	46	400	
GM:75		39	150	48	400	
GM:77		52	161	25	400	
GM:78		83	139	10	120	
GM:80		46	114	9	240	
GM:81		51	93	5	125	
GM:82		48	106	4	240	
GM:84		57	118	2	180	
GM:85		22	40	2	220	
GM:86		33	49	3	280	
GM:87		60	98	1	500	
GM:88		43	86	ND	500	
GM:89		134	126	3	240	
GM:90		68	112	2	82	

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Mo PPM	As PPM	NOTES
GM:91		80	119	3	140	
KM:01		35	94	3	20	
KM:02		31	77	3	28	
KM:03		45	90	1	40	
KM:04		49	101	3	22	
KM:05		68	132	5	20	
KM:06		65	113	6	45	
KM:08		60	124	4	55	
KM:10		96	134	3	40	
KM:11		91	145	2	80	
KM:12		72	134	4	70	
KM:13		84	132	5	20	
KM:14		70	113	2	25	
KM:16		36	130	4	17	
KM:17		85	155	7	43	
KM:18		47	110	7	52	
KM:20		84	142	36	52	
KM:21		81	195	30	55	
KM:23		46	161	38	160	
KM:24		30	124	28	140	
KM:25		309	284	152	38	
KM:27		183	287	115	800	
KM:29		132	254	80	220	
KM:31		186	187	41	210	
KM:33		96	123	6	105	
KM:34		110	167	22	130	
KM:36		83	117	4	70	
KM:37		77	108	4	45	
KM:40		74	87	1	50	
KM:41		109	77	1	10	

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Mo PPM	As PPM	NOTES
KM:42		78	105	2	21	
KM:43		58	80	3	36	
KM:44		68	35	1	120	
KM:46		49	181	ND	50	
KM:47		19	138	1	140	
KM:48		43	105	1	23	
KM:49		24	174	1	200	
KM:50		14	158	1	220	
KM:51		20	165	1	170	
KM:52		19	173	2	210	
KM:53		61	132	5	140	
KM:54		135	150	4	210	
KM:55		55	169	5	> 1000	
KM:56		32	95	2	> 1000	
KM:57		63	113	1	500	
KM:59		81	155	2	> 1000	
KM:60		35	105	1	400	
KM:61		68	120	1	400	
KM:62		38	107	2	95	
KM:63		38	125	2	210	
KM:64		22	189	1	90	
KM:65		17	207	1	105	
KM:66		14	164	1	90	
KM:67		11	110	1	130	
KM:68		16	119	1	70	
KM:69		21	130	1	95	
KM:70		12	73	1	28	
KM:71		19	147	1	44	
KM:72		15	120	1	15	
KM:73		45	180	1	30	

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Mo PPM	As PPM	NOTES
KM:74		13	130	2	180	
KM:75		15	115	2	170	
KM:76		14	62	1	21	
KM:77		23	135	3	165	
KM:78		42	113	7	56	
KM:79		127	110	5	70	
KM:80		88	128	13	240	
GA:01	ROCK	3		6	16	
GA:04		13		7	12	
GA:05		13		3	23	
GA:06		4		6	15	
GA:09		1		4	31	
GA:18		2		4	3	
GA:19		670		10	9	
GA:21		4		3	2	
GA:23		83		4	2	
GA:27		1		4	2	
GA:38		20		6	2	
GA:39		16		5	12	
GA:41		6		2	5	
GA:42		3		4	2	
GA:44		6		5	25	
GA:45		13		2	22	
GA:51		5		2	2	
GA:56		2		7	4	
GA:58		31		2	11	
GA:60		15		6	65	
GA:61		2		3	6	
GA:63		8		4	11	
GA:65		9		5	24	

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Mo PPM	As PPM	NOTES
GA:68		3		6	15	
GD:226		2	58	4		
GD:227		38	56	5		
GD:230		8	54	5		
GD:232		141	30	76		
GD:233		9	54	8		
GD:234		21	49	6		
GD:237		4	28	4		
GD:238		1270	139	12		
GD:240		9	36	4		
GD:241		58	48	8		
GD:242		7	40	4		
GD:249		3	52	4		
GD:251		5	44	3		Mel Claim
GE:33		18	47	5		
GE:38		41	87	13		
GE:41		3	2	11		
GK:29		18	5	4	13	
GK:30		11	107	3	4	
GK:31		63	73	9	7	
GK:32		77	25	7	22	
GK:34		13	12	5	7	
GK:35		3	2	3	2	
GK:36		22	160	3	11	
GK:37						5*
GK:38		11	23	1	6	
GK:39		11	15	5	5	
GK:40		12	32	ND	4	
GK:41		32	57	6	2	
GK:43		50	80	3	5	
GK:44		3	8	3	2	
GK:45		36	73	4	5	
GM:05		14	14	22	ND	
GM:08		98	90	112	9	
GM:10		39	80	18	85	
GM:14		3	41	2	140	
GM:15		4	62	4	16	
GM:19		2	110	2	55	
GM:23		2	57	3	3	
GM:28		4	33	2	160	
GM:31		10	64	4	20	
GM:33		58	40	15	12	
GM:36		139	84	3	12	
GM:40		8	10	ND	25	
GM:41		57	64	7	30	
GM:42		4	15	2	210	
GM:43		34	34	2	12	
GM:44		36	84	2	62	
GM:49		40	107	4	47	
GM:56		38	83	1	8	
GM:72		5	228	7	14	
GM:73		18	83	12	63	
GM:76		29	40	55	400	
GM:79		17	65	2	6	
GM:83		22	50	3	30	
KM:07		50	51	2	2	
KM:09		44	40	5	2	
KM:15		8	25	3	30	
KM:19		1	21	2	3	
KM:22		25	185	3	200	

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	Mo PPM	As PPM	NOTES
KM:26		20	71	16	> 1000	Mel Claim.
KM:28		21	46	12	23	
KM:30		18	56	7	11	
KM:32		52	94	15	7	
KM:35		2	3	96	2	
KM:38		29	6	2	8	
KM:39		15	63	3	4	
KM:43		2	3	8	ND	
KM:58		2250	265	3	600	

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Mo PPM	NOTES
[illegible]		55	47	
[illegible]		35	72	
[illegible]		140	1000	
[illegible]		84	25	
[illegible]		25	16	
[illegible]		43	46	
[illegible]		69	39	
[illegible]		4	450	
[illegible]		24	39	
[illegible]		15	7	
[illegible]		6	7	
[illegible]		32	7	
[illegible]		19	11	
[illegible]		19	12	
[illegible]		14	5	
[illegible]		27	6	
[illegible]		11	7	
[illegible]		16	13	
[illegible]		17	5	
[illegible]		13	11	
[illegible]		12	4	
[illegible]		4	10	
[illegible]		13	7	
[illegible]		9	8	
[illegible]		4	5	
GM-092		54	4	Mel Claim.
GM-093		38	9	
[illegible]		13	14	
[illegible]		48	6	
[illegible]		9	2	

Mel Claim

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Mo PPM
GM-097		44	6
GM-098		50	10
GM-099		30	6
GM-100		56	8
GM-101		76	10
GM-102		59	2
GM-103		56	27
GM-104		52	38
GM-105		64	43
GM-106		25	62
GM-107		233	7
GM-108		16	75
GM-109		18	25
GM-110		47	348
GM-111		5	8
GM-112		72	70
GM-113		25	12
GM-114		5	7
GM-115		6	6
GM-116		4	5
GM-117		4	6
GM-118		4	7
GM-119		6	6
GM-120		4	7
GM-121		18	7
GM-122		22	10
GM-123		32	21
GM-124		101	32
GM-125		27	9
GM-126		220	6

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Mo PPM	NOTES
GM-127		206	20	
GM-128		12	63	
GM-129		57	3	
GM-130		55	44	
GM-131		177	22	
GM-132		29	10	
GM-133		19	60	
GM-134		31	180	
GM-135		12	42	
RM-03		10	12	
RM-04		9	105	
RM-05		152	10	
RM-06		5	5	
RM-07		6	3	
RM-08		23	6	
RM-09		53	328	
RM-10		7	12	
RM-11		69	316	

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SAMPLE NUMBER	ELEMENT UNITS	Zn PPM	As PPM	NOTES
GD-303		110	5	
GD-304		105	5	
GD-305		28	2	
GD-306		94	5	
GD-307		263	6	
GD-308		103	6	
GD-309		227	7	
GD-310		9	6	
GD-311		77	11	
GD-312		50	6	
GD-313		23	5	
GD-314		74	5	
GD-315		66	6	
GD-316		66	4	
GD-317		55	6	
GD-318		69	3	
GD-319		61	5	
GD-320		70	7	
GD-321		60	53	
GD-322		58	7	
GD-323		51	28	
GD-324		61	5	
GD-325		57	12	
GD-326		59	6	
GD-327		50	3	
GM-092		104	40	
GM-093		106	30	
GM-094		10	7	
GM-095		97	34	
GM-096		34	12	
GM-097		84	21	
GM-098		115	67	
GM-099		100	26	
GM-100		81	28	
GM-101		154	35	
GM-102		34	32	
GM-103		112	82	
GM-104		67	12	
GM-105		92	98	
GM-106		13	7	
GM-107		76	11	
GM-108		11	> 1000	
GM-109		86	400	Mel Claim ->
GM-110		31	15	
GM-111		63	12	
GM-112		125	250	
GM-113		59	120	
GM-114		53	11	
GM-115		73	4	
GM-116		71	7	
GM-117		44	14	
GM-118		47	22	
GM-119		44	70	
GM-120		42	85	
GM-121		55	58	
GM-122		78	125	
GM-123		50	12	
GM-124		158	60	
GM-125		8	43	
GM-126		74	12	

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Geochemical Lab Report

REPORT: 121-3221

SAMPLE NUMBER	ELEMENT UNITS	Zn PPM	As PPM	NOTES
GM-127		209	130	
GM-128		8	320	
GM-129		72	75	
GM-130		52	23	
GM-131		302	13	
GM-132		74	7	
GM-133		17	62	
GM-134		77	20	Mol claim.
GM-135		18	160	
~~GM~~-03 RM		59	800	
~~GM~~-04 RM		4	320	
~~GM~~-05		30	> 1000	
~~GM~~-06		37	15	
GM-07		27	7	
GM-08		53	5	
GM-09		108	7	
GM-10		34	300	
~~GM~~-11 RM		136	280	

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Mo PPM	NOTES
BM-1	ROCKS	15	22	
BM-2		99	4	
BM-3		13	1	
BM-4		20	12	
BM-5		104	46	
BMT-1;022		8	10	
BMT-1;061		6	24	
BMT-1;132		123	71	
BMT-2;212		50	43	
GD-252		4	19	
GD-253		5	4	
GD-254		39	7	
GD-255		9	5	
GD-256		3	5	
GD-257		6	4	
GD-258		5	9	
GD-259		6	6	
GD-260		6	9	
GD-261		44	4	
GD-262		110	123	
GD-263		5	9	
GD-264		8	13	
GD-265		9	8	
GD-266		3	7	
GD-267		18	11	
GD-268		4	4	
GD-269		4	9	
GD-270		4	17	
GD-271		4	12	
GD-272		4	39	
GD-273		5	37	
GD-274		7	9	
GD-275		7	16	
GD-276		7	31	
GD-277		3	11	
GD-278		10	9	
GD-279		12	15	
GD-280		11	12	
GD-281		10	14	
GD-282		11	23	
GD-283		11	12	
GD-284		12	10	
GD-285		6	12	
GD-286		9	14	
GD-287		10	26	
GD-288		20	7	
GD-289		8	10	
GD-290		11	11	
GD-291		30	9	
GD-292		81	15	
GD-293		24	36	
GD-294		19	18	
GD-295		32	6	
GD-296		26	10	
GD-297		31	6	
GD-298		40	13	
GD-299		31	10	
GD-300		15	10	
GD-301		24	8	
GD-302		16	10	

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SAMPLE NUMBER	ELEMENT UNITS	Zn PPM	As PPM	NOTES
BM-1	ROCKS	29	7	
BM-2		52	6	
BM-3		20	13	
BM-4		23	10	
BM-5		66	4	
BMT-1:022		53	42	
BMT-1:061		381	30	
BMT-1:132		109	62	
BMT-2:212		140	140	
GD-252		50	85	
GD-253		25	12	
GD-254		93	11	
GD-255		62	8	
GD-256		41	37	
GD-257		29	3	
GD-258		35	7	
GD-259		31	6	
GD-260		18	3	
GD-261		58	5	
GD-262		41	11	
GD-263		45	4	
GD-264		27	5	
GD-265		27	3	
GD-266		28	5	
GD-267		57	7	
GD-268		36	4	
GD-269		13	2	
GD-270		47	3	
GD-271		37	5	
GD-272		33	21	

Mel Claim.

SAMPLE NUMBER	ELEMENT UNITS	Zn PPM	As PPM	NOTES
GD-273		38	2	
GD-274		26	7	
GD-275		36	6	
GD-276		26	7	
GD-277		20	4	
GD-278		40	12	
GD-279		52	8	
GD-280		44	6	
GD-281		54	8	
GD-282		38	7	
GD-283		41	6	
GD-284		65	5	
GD-285		32	5	
GD-286		50	5	
GD-287		80	5	
GD-288		87	6	
GD-289		51	4	
GD-290		33	5	
GD-291		17	5	
GD-292		73	ND	
GD-293		46	6	
GD-294		49	7	
GD-295		60	7	
GD-296		67	12	
GD-297		69	6	
GD-298		76	6	
GD-299		86	7	
GD-300		66	6	
GD-301		80	6	
GD-302		76	7	

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Geochemical Lab Report

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Mo PPM	NOTES
KD-231		18	6	
RD-1		30	3	
RD-2		6	7	
RD-3		14	4	

ROCK SAMPLE DESCRIPTIONS

SAMPLE NUMBER		ASSAY			
		Cu	Mo	Zn	As
GM - 08	Brown, fine grained intrusive, possible secondary biotite. Fine grained disseminated sulphides ~5%. Molybdenite noted in quartz veinlet & disseminated.	98	112	90	9
GM - 106	Fine to medium grained felsic intrusive rock with low mafic content, sulphides ~1% (pyrite and minor molybdenite).	25	62	13	7
GM - 107	Talus sample of dark gray, purplish hornfelsed meta-sediment with disseminated pyrrhotite and chalcopyrite.	233	7	76	11
GM - 108	Rock chip of qtz. rich dyke rock with disseminated pyrite, minor arsenopyrite and molybdenite. Dyke cutting metaconglomerates and rusty phyllites.	16	75	11	>100
GM - 110	Fine grained, grayish-green feldspar porphyritic granodiorite, - mafics altered to chlorite, fine grained MoS_2 on fractures, disseminated pyrite 2 - 3 %.	47	348	31	15
GM - 126	Pale brown, fine grained feldspar porphyritic(?) with secondary biotite. Rock moderately well altered. Disseminated sulphides (pyrite) ≥3%.	220	6	74	12
GM - 128	White, fine grained, porous, well altered rock (ie. dyke), feldspars altered to clays, ghosts of secondary biotite seen, limonitic cavities suggest most of sulphides weathered. Minor MoS_2 seen.	12	63	8	320
GM - 129	Siliceous rock (possibly conglomeritic) with infilling of fine grained gray metallic mineral. Suspect antimony mineral.	57	3	72	75

ROCK SAMPLE DESCRIPTIONS CON'T

		Cu	Mo	Zn	As
GM - 134	Pale gray, medium grained feldspar porphyitic granodiorite with 5 - 6% disseminated sulphides (pyrite $\pm$ pyrrhotite)). Secondary biotite, minor epidote near pyrite clusters. Minor f.g. molybdenite noted - disseminated.	31	180	77	20
KM - 26	Buff weathering, possible serpentinized siliceous metasediment containing bright green mariposite and/or fuchite. Little or no sulphides.	20	16	71	100
BM - 3	Dark green-gray, medium grained serpentinized rock. Quite magnetic.	13	1	20	13
BMT - 1:132	Pale gray-green, fine to medium grained intrusive rock with secondary biotite (feldspar porphyritic granodiorite). Disseminated sulphides 2 - 3%, minor molybdenite.	123	71	109	62

APPENDIX B

PERSONNEL

PERSONNEL

FIELD:

J. R. Kerr, P. Eng.
August 7, 8, 9, 1981 — 2 ½ days

W. Gruenwald, B.Sc.
August 6, 7, 8, 19, 20, 1981 — 5 days

K. Davies, Assistant,
August 6, 7, 8, 19, 20, 1981 — 5 days

W. Kitson, Geologist & Professional Mountain Climber
August 20, 21, 1981 — 2 days

G. Radford, Geologist & Professional Mountain Climber
August 20, 21, 1981 — 2 days

A. Lingor, Assistant,
August 7, 1981 — 1 day

OFFICE:

W. Gruenwald, B.Sc.
September 4, 8, 9, 14, 15, 21.
October 13, 14, 21, 22, 23, 26, 27, 28 — 10 3/4 days

APPENDIX C

STATEMENT OF EXPENDITURES

COST STATEMENT

MEL CLAIM

August 6 - 23, 1981

PERSONNEL		
John R. Kerr, P. Eng. 2½ days @ $250.00/day	625.00	
W. Gruenwald, Geologist, 5 days @ $180.00/day	900.00	
G. Radford, Geologist & Professional Mtn. climber 2 days @ $300.00/day	600.00	
W. Kitson, Geologist & Professional Mtn. climber 2 days @ $300.00/day	600.00	
K. Davies, Assistant, 5 days @ $120.00/day	600.00	
A. Lingor, Assistant, 1 day @ $120.00/day	120.00	
		$3,445.00
HELICOPTER CHARTER		
8.0 hrs @ $350.00/hr	2,800.00	
Fuel - 835 litres @ 0.60/l	501.00	
		3,301.00
ROOM & BOARD		
17.5 man days @ $40.00/man/day		700.00
TRANSPORTATION		
4 X 4 Suburban 5 days @ $35.00/day	175.00	
190 miles @ 0.35/mi.	66.50	
		241.50
EQUIPMENT RENTAL		
5 days @ $35.00/day		175.00
LABORATORY CHARGES		
236 samples @ $3.10/sample		731.60
MISCELLANEOUS PURCHASES & SUPPLIES		37.60
TOTAL		$8,631.70

COST STATEMENT

MEL CLAIM

*****Total of $8,631.70 submitted in Statement of Exploration & Development for period August 6 - 23, 1981.

ADDITIONAL: COSTS FOR THE PERIOD OF SEPTEMBER 20 - OCTOBER 30, 1981
-data compilation, report preparation, drafting, etc.

PERSONNEL:

W. Gruenwald, B.Sc. 10 3/4 days @ $180.00/day	$1,935.00
MAP PRINTING, XEROXING, SECRETARIAL & MISCELLANEOUS:	315.00
TOTAL	$2,250.00

GRAND TOTAL FOR 1981 PROGRAMME: $10,881.70

APPENDIX D

REFERENCES

REFERENCES

Roddick, J. A. & Hutchison, W. W.	1973	G.S.C. Paper 73-17 -Geology of the Pemberton (East Half) Map Area, B. C.
Kerr, J. R.	1980	Summary Report on the Lillooet Regional Programme.
B. C. Minister of Mines Annual Reports	1935, 1954, 1967, 1968.	
Kitson, W. & Radford,, G.	August, 1981	-Field Notes & Report by; DIHEDRAL EXPLORATION INC.

APPENDIX E

WRITER'S CERTIFICATE

Werner GRUENWALD, B. Sc.
Geologist

#1 - 219 VICTORIA STREET • KAMLOOPS, B.C. V2C 2A1 • TELEPHONE (604) 374-0544

CERTIFICATE

I, WERNER GRUENWALD, OF KAMLOOPS, BRITISH COLUMBIA, DO HEREBY CERTIFY THAT:

(1). I am a geologist residing at 45 West Battle Street, Kamloops, British Columbia, and employed by Kerr, Dawson and Associates Ltd., of Suite #206 - 310 Nicola Street, Kamloops, B. C.

(2). I am a graduate of the University of British Columbia, B. Sc. (1972), and a fellow of the Geological Association of Canada. I have practised my profession for 9 years.

(3). I am the author of this report which describes the results of the geological and geochemical exploration programme carried out under the supervision of John R. Kerr, P. Eng., on the Mel claim, Lillooet Mining Division, British Columbia.

KERR, DAWSON AND ASSOCIATES LTD.,

Werner Gruenwald, B. Sc.
GEOLOGIST

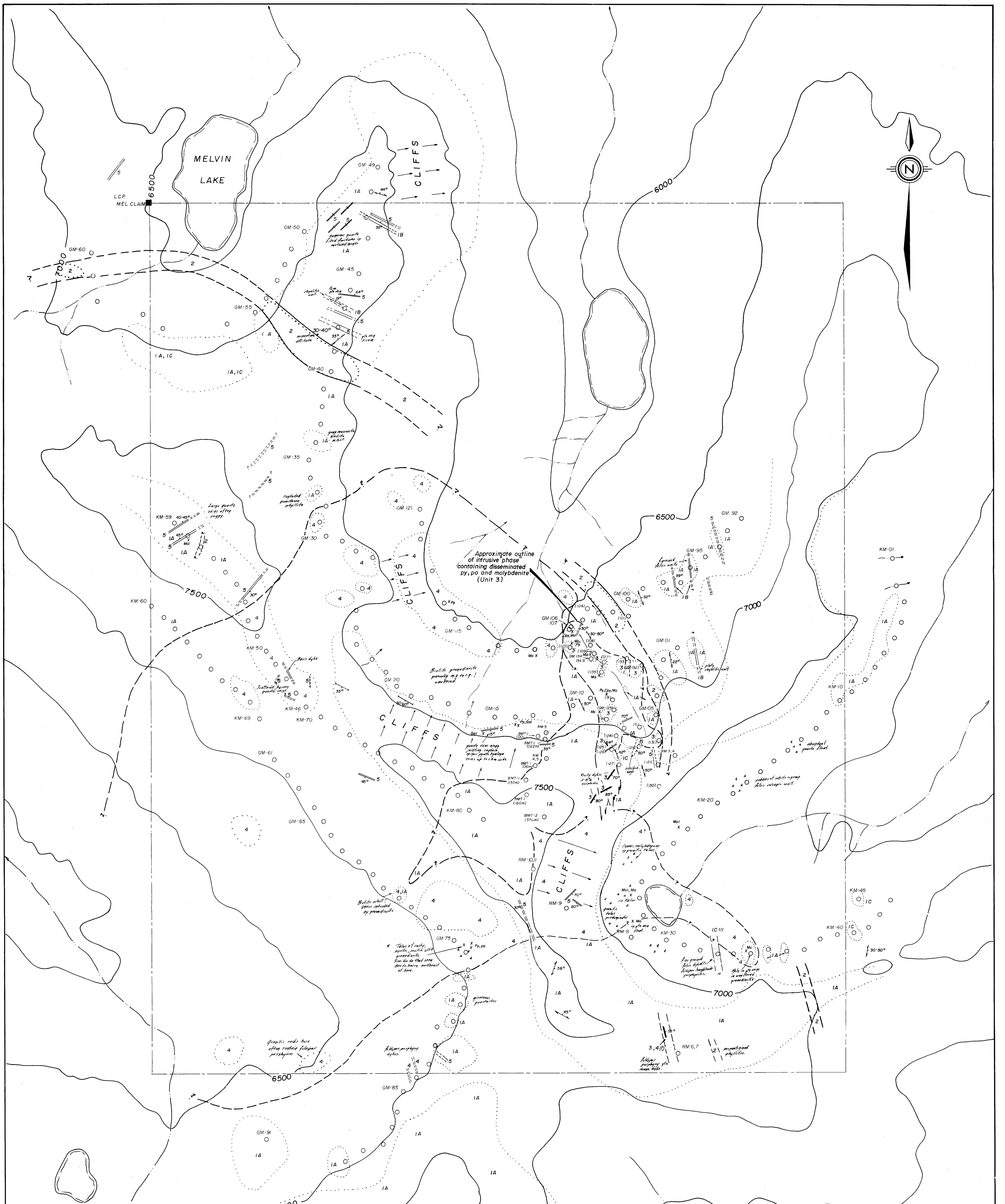
KAMLOOPS, B. C.
October 30, 1981

APPENDIX F

MAPS

MAPS

Figure No.		Scale:
234-1	Location Map	1" = 64 mi.
234-2	Index Map	1:50,000
234-3	Geological Plan	1:5,000
234-4	Geochemical Plan (Copper)	1:5,000
234-5	Geochemical Plan (Molybdenum)	1:5,000
234-6	Geochemical Plan (Zinc)	1:5,000
234-7	Geochemical Plan (Arsenic)	1:5,000



ROCK CLASSIFICATION

5 — MAJOR QUARTZ VEINS AND ZONES OF SILICIFICATION:- LARGER QUARTZ VEINS ARE OFTEN QUITE CRYSTALLINE. MALACHITE NOTED IN SOME VEINS.

4 — BIOTITE GRANODIORITE : MEDIUM TO COARSE GRAINED, COMMONLY WITH LARGE BIOTITE "BOOKS" LOCALLY PRONOUNCED JOINTING, SOME OF WHICH ARE THE SITE OF QUARTZ VEINS. MINOR PYRITE AND GALENA NOTED IN SOME VEINS. ROCK IS GENERALLY UNALTERED.

3 — FELDSPAR PORPHYRITIC GRANODIORITE (?) : FINE TO MEDIUM GRAINED INTRUSIVE ROCK OFTEN CONTAINING LARGE FLAKES OF BIOTITE (SECONDARY). DISSEMINATED PYRITE AND PYRRHOTITE GENERALLY PRESENT IN AMOUNTS RANGING FROM 1% TO ≥ 5%. MOLYBDENITE FOUND AS FINE GRAINED DISSEMINATIONS, IN QUARTZ VEINLETS AND FELSIC DYKES WITHIN THIS ROCK UNIT. MAFIC MINERALS GENERALLY ALTERED TO CHLORITE. SERICITIZATION AND SILICIFICATION OFTEN PRESENT.

2 — ULTRABASIC ROCKS : TAN WEATHERING SERPENTINITE FOR THE MOST PART. SOME STEATITE AND CARBONATIZED EQUIVALENTS. LOCALLY NEARBY METASEDIMENTS AND METAVOLCANICS ARE SERPENTINIZED.

1 — METASEDIMENTARY AND METAVOLCANIC SEQUENCE (PART OF TRIASSIC BRIDGE RIVER GROUP):
- 1A GRAY, BROWN OR BLACK PHYLLITES, LOCALLY HORNFELSED VARIETIES CARRY DISSEMINATIONS OF PYRITE ± PYRRHOTITE ± CHALCOPYRITE. INTERCATED WITH THE PHYLLITES ARE ARGILLITES, CHERTS AND MINOR LIMESTONE.
- 1B PALE GRAY, FINE GRAINED RHYOLITIC ASH UNITS.
- 1C DARK GREEN ANDESITIC METAVOLCANICS; OFTEN INTERCALATED WITH UNIT 1A AND THUS NOT DIFFERENTIATED.

NOTE: ROCK UNITS NOT MENTIONED ABOVE, IE. BASIC DYKES, METACONGLOMERATES ETC. ARE DESCRIBED AS SUCH WITHOUT ANY SYMBOLS.

- LEGEND -

- 7000 — TOPOGRAPHIC CONTOUR IN FEET (A.S.L.)
- CREEK
- LAKE , POND
- CLAIM BOUNDARY AND LEGAL CORNER POST (L.C.P.)
- GM-134 ○ — SAMPLE LOCATION : KM, GM, RM, BM & BMT REFER TO SAMPLE NUMBERS.
- OUTCROP AREA
- 45° — SCHISTOSITY OR CLEAVAGE ATTITUDE
- 25° — JOINTING ATTITUDE
- 50° — VEIN ATTITUDE
- GEOLOGICAL CONTACT
- X Mo, Cpy, Mal, Py, Po, Gal. — MINERAL OCCURRENCE, MOLYBDENITE, CHALCOPYRITE, MALACHITE, PYRITE, PYRRHOTITE, GALENA.

W. Gruenwald

To accompany a report by W. Gruenwald, B.Sc.

DENISON MINES LTD.	
GEOLOGICAL PLAN	
MEL CLAIM	
LILLOOET MINING DIVISION, B.C.	
TECH. WORK BY: KERR, DAWSON AND ASSOC. LTD.	SCALE: 1:5,000 (0 50 100 m 200)
DRAWN BY: W.G.	DATE: OCT. 1981
APP'D BY: J.R. KERR, P.ENG.	FIG NO 234-3

MELVIN LAKE

LCP MEL CLAIM

6500

6000

7000

7500

GM-49 O4 (K)

O4

O ND

O2

GM-50 O1

O3

O4

GM-45 O2

O2 (K)

O2

O2 (K)

O2 (K)

O7

GM-40 (K) O ND

O3

O2

O4

O3 (K)

O2

GM-60 O2

O2

O4

GM-55 O6

O1 (K)

O7

GM-35 O2

O4

15 (K)

4

KM-59 O2

O3 (K)

O1

O2

O5

O4

O5

KM-60 O1

O1

O2

O2

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KM-50 O1

O1

O1

O1

O1

O1

O1

KM-46 ND

KM-69 O1

KM-70 O1

O1

O1

O1

O2

GM-61 O2

O2

O2

O2

O2

O2

O2

O2

O1

O3

O1

GM-65

GM 121 O7

O7

O6

O7

O6

O5

O6

O7

O1

O1

O3

O1

O2

GM-20 O1

O2

O1

O2

GM-15 (K) O6

(K)2

O4

31

161

RM-3

12

BMT-1 (001m)

10

BMT-1 (022m)

RM 4,5

125

10

BMT-1 (106m)

24

BMT-1 (132m)

71

BMT-1 (160m)

KM-80 13

BMT-2 (370m)

RM-10,11 12,3,4

RM-9 328

GM-75 18

46

53 (K)

25

10

(K)2

9

5

4

(K)3

2

GM-85 2

3

1

ND

O3

O2

GM-91 O3

7000

7500

6500

Biotite granodiorite (Unit 4)

Metasediments & Metavolcanics

Roof Pendant of Unit 1

Biotite Granodiorite (Unit 4)

Metasediments (Unit 1)

GM 92 O4

9

GM-95 14

6

2

10 6

GM-100 6

8

(104) 38 27

2

(101) 10

GM 106 107 13

62

7

GM-115 6

5

(112) 70

12

(110) 348

8

(109) 75

(108) 95

GM 134 134 A 180

(122) 10

(133) 60

(132) 10

(135) 42

GM-01 8

13

18

17

GM-10 (K) 18

(9) 87

121

GM-123 (K) 112

21

(8) 18

GM-05 (K) 22

(7) 111

(6) 142

(5) 162

(124) 32

(131) 22

(128) 63

(125) (126) 9 6

(127) 20

(129) 3

BM 3,4 1,12

(130) 44

Feldspar porphyritic granodiorite (Unit 3)

KM-20 36

2 (K)

30

3 (K)

38

28

152

14 (K)

115

12 (K)

80

RM-8

KM-30 7 (K)

41

(K) 15

6

22

96 (K) QTZ float rgdi outcrop Mo%

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2 (K)

KM-01 3

3

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3

5

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2 (K)

4

5 (K)

KM-10 3

3

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3 (K)

4

7

7

2 (K)

KM-45 (K) 8

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3

2

KM-40 (K) 3

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RM 6,7 5.3

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KM-1000

- LEGEND -

7000 — TOPOGRAPHIC CONTOUR IN FEET (A.S.L.)

CREEK

LAKE , POND

CLAIM BOUNDARY AND LEGAL CORNER POST (LCP.)

SAMPLE LOCATION : KM, GM, RM, BM & BMT REFER TO SAMPLE NUMBERS.

GM-134 O (K) Rock Sample

GEOCHEMICAL VALUES FOR ALL METALS EXPRESSED IN PARTS PER MILLION (PPM).

GEOCHEMICAL CATEGORIES

	COPPER	MOLYBDENUM
○ BACKGROUND		< 8 ppm
◔ POSSIBLY ANOMALOUS		8-19
◑ PROBABLY ANOMALOUS		20-30
● DEFINITELY ANOMALOUS		> 30

MINERAL RESOURCES DIVISION ASSESSMENT REPORT NO. 9715

GEOLOGICAL ASSOCIATION OF CANADA W. GRUENWALD FELLOW

To accompany a report by W. Gruenwald, B.Sc.

DENISON MINES LTD.

GEOCHEMICAL PLAN (MOLYBDENUM)

MEL CLAIM

LILLOOET MINING DIVISION, B.C.

TECH. WORK BY: KERR, DAWSON AND ASSOC. LTD.	SCALE: 1:5,000 (0 50 100 m 200)
DRAWN BY: W.G.	DATE: OCT. 1981.
APP'D BY: J.R. KERR, P.ENG.	FIG NO. 234-5

MELVIN LAKE

LCP MEL CLAIM

Metasediments / Metavolcanics (Unit 1)

Biotite granodiorite (Unit 4)

Roof Pendant (Unit 1)

Biotite Granodiorite (Unit 4)

Metasediments (Unit 1)

Feldspar porphyritic granodiorite (Unit 3)

Metasediments (Unit 1)

-LEGEND-

- 7000 — TOPOGRAPHIC CONTOUR IN FEET (A.S.L.)
- CREEK
- LAKE , POND
- CLAIM BOUNDARY AND LEGAL CORNER POST (LCP)
- SAMPLE LOCATION : KM, GM, RM, BM & BMT REFER TO SAMPLE NUMBERS.
- GM-134 O(R) Rock Sample — GEOCHEMICAL VALUES FOR ZINC EXPRESSED IN PARTS PER MILLION (PPM)

GEOCHEMICAL CATEGORIES

	ZINC
○ BACKGROUND	<118 ppm
◔ POSSIBLY ANOMALOUS	118 - 173
◑ PROBABLY ANOMALOUS	174 - 228
● DEFINITELY ANOMALOUS	>228

To accompany a report by W. Gruenwald, B.Sc.

DENISON MINES LTD.

GEOCHEMICAL PLAN (ZINC)

MEL CLAIM

LILLOOET MINING DIVISION, B.C.

TECH. WORK BY: KERR, DAWSON AND ASSOC. LTD.	SCALE: 1:5,000 (0 50 100 m 200)
DRAWN BY: W.G.	DATE: OCT. 1981.
APP'D BY: J.R. KERR, P.ENG.	FIG NO 234-6

MELVIN LAKE

L.C.P. MEL CLAIM

Metasediments & Metavolcanics

Biotite granodiorite (Unit 4)

Metasediments (Unit 1)

Feldspar porphyritic granodiorite (Unit 3)

Roof Pendant of Unit 1

Biotite Granodiorite (Unit 4)

Metasediments (Unit 1)

-LEGEND-

7000 — TOPOGRAPHIC CONTOUR IN FEET (A.S.L.)

CREEK

LAKE , POND

CLAIM BOUNDARY AND LEGAL CORNER POST (L.C.P.)

SAMPLE LOCATION : KM, GM, RM, BM & BMT REFER TO SAMPLE NUMBERS.

GM-134 Q(R) Rock Sample

GEOCHEMICAL VALUES FOR ALL METALS EXPRESSED IN PARTS PER MILLION (PPM).

GEOCHEMICAL CATEGORIES

	COPPER	MOLYBDENUM
○ BACKGROUND	<50 ppm	
◔ POSSIBLY ANOMALOUS	50-93	
◑ PROBABLY ANOMALOUS	94-136	
● DEFINITELY ANOMALOUS	>136	

9715

To accompany a report by W. Gruenwald, B.Sc

DENISON MINES LTD.

GEOCHEMICAL PLAN (COPPER)

MEL CLAIM

LILLOOET MINING DIVISION, B.C.

TECH. WORK BY: KERR, DAWSON AND ASSOC. LTD.	SCALE: 1:5,000 (0, 50, 100 m, 200)
DRAWN BY: W.G.	DATE: OCT. 1981.
APP'D BY: J.R. KERR, P.ENG.	FIG NO. 234-4

MELVIN LAKE

L.C.P. MEL CLAIM

6500

7000

7500

6000

N

Metasediments Metavolcanics (Unit 2)

Biotite granodiorite (Unit 4)

Metasediments (Unit 1)

Roof Pendant (Unit 1)

Biotite Granodiorite (Unit 4)

Feldspar porphyritic granodiorite (Unit 3)

Metasediments (Unit 1)

GM-49 47 (K) 220 110 GM-50 >1000 800 190 700 240 190 GM-55 1000 8 (K) 65 400 GM-60 210 700 GM-45 600 62 (K) 12 (K) 210 30 (K) GM-40 (K) 25 85 82 180 12 (K) GM-35 48 800 12 (K) 220

KM-59 >1,000 600 (K) 500 >1,000 >1,000 210 140 KM-60 400 400 95 210 170 KM-50 220 200 23 140 KM-46 50 KM-69 95 KM-70 28 44 15 30 180 GM-61 67 33 70 62 42 32 25 40 57 90 110 14 63 400 GM-75 400 400 (K) 400 120 (K) 6 240 125 240 (K) 30 180 GM-85 220 280 300 500 240 500 82 GM-91 140 GM-30 240 140 160 (K) 70 150 220 125 3 180 70 GM-20 260 55 200 180 GM-15 (K) 400 16 (K) 140 600 >1000 RM-3 800 BMT-1 (00m) BMT-1 (022m) 42 RM 4,5 320 1000 30 BMT-1 (061m) BMT-1 (132m) 62 BMT-1 (160m) 70 KM-80 240 BMT-2 (370m) RM-10,11 300 280 RM-9 7 GM 121 58 85 70 22 14 GM-115 7 4 11 120 250 12 (110) 15 (109) 100 (108) >1000 GM 134 134 A 20 (122) 125 (133) 62 (132) 7 (135) 140 GM-10 (K) 85 >1000 (9) 400 GM-123 (K) 12 (8) 9 (7) 183 (6) 165 (124) 60 (125) (126) 13 12 (128) 320 (127) 130 (131) 13 BM 3,4 13,10 (129) 75 (130) 23 GM 92 40 30 GM-95 7 34 12 67 21 GM-100 24 28 12 82 32 (101) 35 GM 106 107 98 11 GM-01 165 120 80 140 GM-05 (K) ND 38 71,000 (K) 800 23 (K) 220 KM-30 11 (K) 210 (K) 7 105 130 2 (K) 70 45 8 (K) RM-8 5 RM 6,7 15,7 KM-01 20 28 40 22 20 45 2 (K) 55 2 (K) KM-10 40 80 70 20 25 30 (K) 17 43 52 3 (K) KM-20 52 55 200 (K) 160 140 KM-45 (K) ND 120 36 KM-40 (K) 4 30 21 10

-LEGEND-

- 7000 — TOPOGRAPHIC CONTOUR IN FEET (A.S.L.)
- CREEK
- LAKE , POND
- CLAIM BOUNDARY AND LEGAL CORNER POST (L.C.P.)
- SAMPLE LOCATION : KM, GM, RM, BM & BMT REFER TO SAMPLE NUMBERS.
- GM-134 O 47 Rock Sample — GEOCHEMICAL VALUES EXPRESSED IN PARTS PER MILLION (PPM)

GEOCHEMICAL CATEGORIES

	ARSENIC
○ BACKGROUND	< 95 ppm
◔ POSSIBLY ANOMALOUS	95-171
◑ PROBABLY ANOMALOUS	172-247
● DEFINITELY ANOMALOUS	> 247

GEOLOGICAL ASSOCIATION OF CANADA — W. GRUENWALD — FELLOW

W. Gruenwald

ASSESSMENT REPORT NO. 9715

To accompany a report by W. Gruenwald, B.Sc.

DENISON MINES LTD.

GEOCHEMICAL PLAN (ARSENIC) MEL CLAIM

LILLOOET MINING DIVISION, B.C.

TECH. WORK BY: KERR, DAWSON AND ASSOC. LTD.	SCALE: 1:5,000 (0 50 100 m 200)
DRAWN BY: W.G.	DATE: OCT. 1981
APP'D BY: J.R. KERR, P.ENG.	FIG NO. 234-7