DETAILED GEOLOGICAL MAPPING

OF

THE GRID AREA

ON

WEDDING 1 MINERAL CLAIM

(KAMLOOPS MINING DISTRICT, B. C.)

near WALLACHIN

LONG. : 121° 02' W (Center of claim)
LAT. : 50° 44' 30" N (Center of claim)

NTS 92 - I - 11 east half

work done by: Hughes P. SALAT , Prof. Eng.

JORANEX RESOURCES INC.
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on behalf of : AMEX EXPLORATION SERVICES LTD
Box 286
Kamloops, B.C.
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August, 15 1991

Contents

1- Property, location, access and physiography.

The property owned by AMEX EXPLORATION SERVICES LTD of Kamploops, B.C. comprises the following claims (Figure 1):

Claim name	Number of units	Record number	Expiry date
WEDDING 1	20	217839	July 24, 1991
WEDDING 3	8	302254	June 12,1992
WEDDING 5	1	219654	Dec. 01, 1991
WEDDING 6	1	219655	Dec. 01, 1991
WEDDING 7	1	219656	Dec. 01, 1991
WEDDING 8	1	219657	Dec. 01, 1991

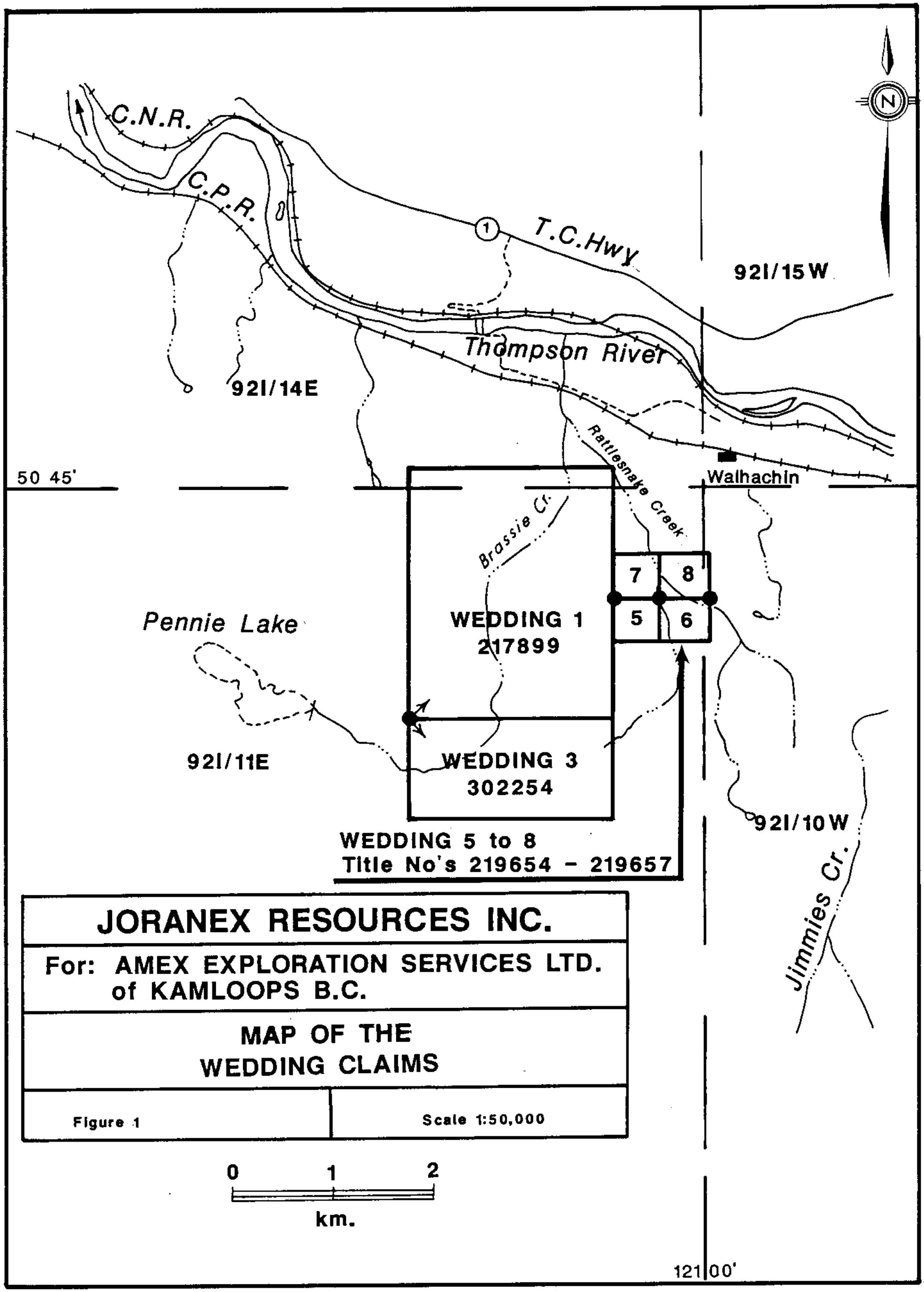
The property is situated 2 kilometers South of the Thompson River, and from the Canadian Pacific Railway, and is located near Wallachin, a railway station, 40 kilometers West of the city limits of the town of Kamloops (Figure 2).

From the main paved service road along the Canadian Pacific Railway, a gravel road branches off southward and leads toward Pennie Lake; this road crosses through the northern half of the WEDDING 1 claim.

The WEDDING 1 claim stretches from the Thompson River alluvial plain to the rolling heavily wooded hills of the Guichon Mountain / Highland Plateau. It covers steep grassy hills, sparsely wooded with pine trees and Douglas firs and rounded rocky knobs, incised by the deeply eroding northward-flowing Brassie and Rattlesnake creeks. Rock outcropping is excellent over most of the WEDDING 1 claim.

2- Available previous geological mapping.

Geological mapping for area NTS 92-I was done some time ago at the 1:250,000 scale by Cockfield (1947) for the eastern half (GSC Map 886A) and by McTaggart (1951) for the western half (GSC Map 1010A).



JORANEX RESOURCES INC.

For: AMEX EXPLORATION SERVICES LTD.
of KAMLOOPS B.C.

MAP OF THE WEDDING CLAIMS

Figure 1 | Scale 1:50,000

More recently, much work and interest in the mineral potential and the presently operating mines of the Highland Valley, led to the compilation of the geology of the Guichon Creek Batholith by McMillan (1978) published by the B.C. Ministry of Energy, Mines and Petroleum Resources, as a preliminary map (B.C. M.E.M.P.R. Preliminary Map no 30) at a scale of approximately 1:25,000.

At a more detailed scale, only one map has ever been produced by Kermeen (1984) on behalf of Turner Energy and Resources Ltd. Unfortunately, the mapping presented at a scale of 1:10,000 was not tied to any grid or survey point, was the result of only one day visit by the author to the property and "study of available relevant data" (Kermeen, 1984, page 4). Not surprisingly, the map remained very unaccurate.

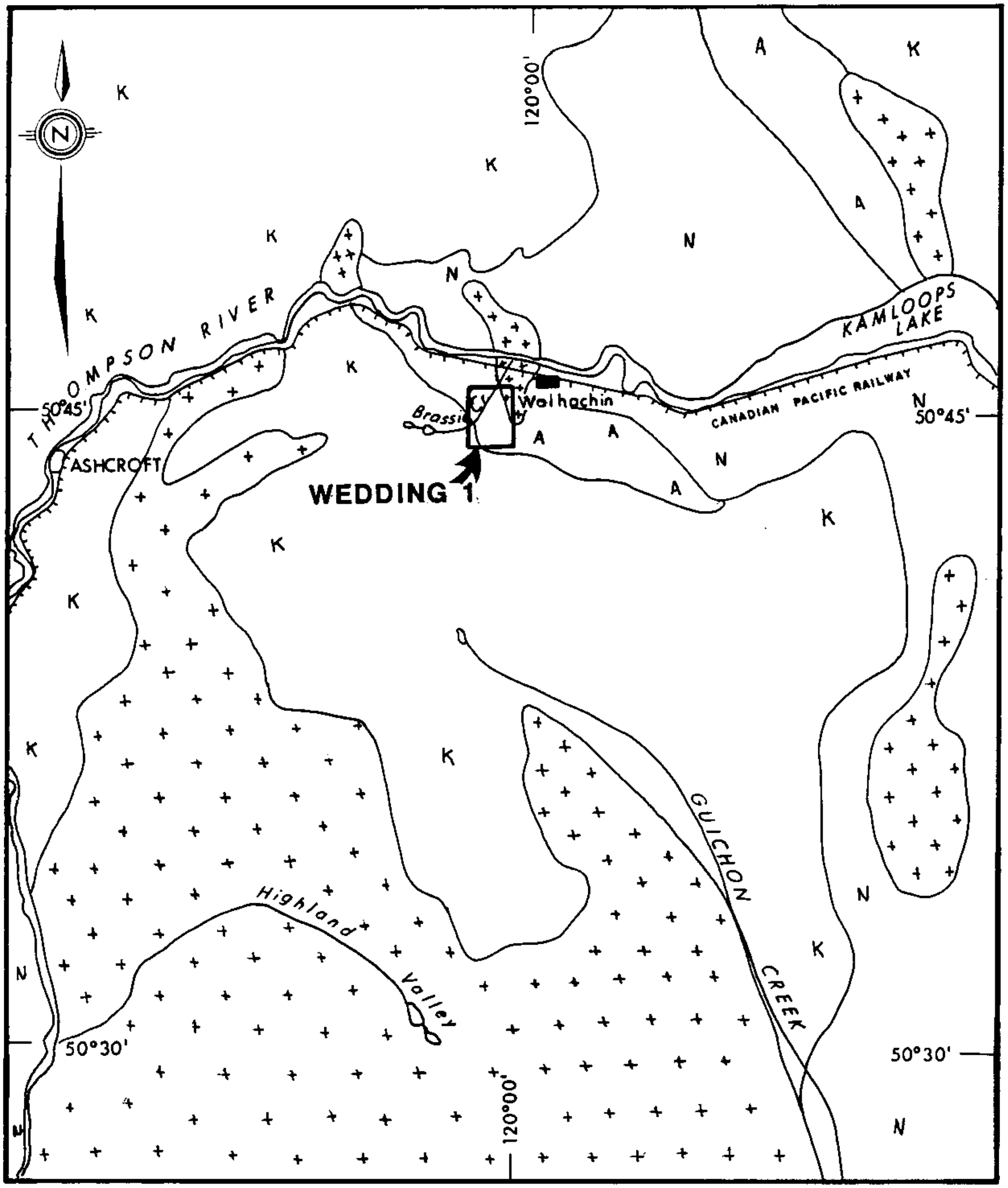
3- Regional geology.

The district is located within the Intermontane Belt of the Canadian Cordillera, and the claims sit on the northern edge of the Guichon Creek Batholith, famous for its prolific copper mines of the Highland Valley.

Here, a large package of greenstone, volcanic breccias and some massive limestone formations lumped under the name of Nicola Group, outcrop around the margin of the batholith which shows intruding relationships with these formations. The Nicola Group is considered as the product of island arc - back arc volcanism at he edge of a continent. Rare microfossils indicate a Upper Triassic age (Preto, 1979).

The intrusive rocks of the Guichon Creek Batholith consists mainly of granite and granodiorite. However on its edges, it is not uncommon to find diorite or quartz diorite which are considered to be older border phases of the batholith. In the particular case of the WEDDING claims, the intrusive rocks are separated from the main batholith and are grouped under the name of Brassie Creek Batholith. Dating of the Guichon Creek granodiorite has given an Upper Triassic age of 198 to 205 Ma (McMillan, 1978).

Subsequently, beds of conglomerate and sandstone were deposited unconformably over the Nicola Goup and the Guichon Creek batholith. Conglomerates contain boulders and pebbles of the two previous formations; called the Ashcroft Formation it had been assigned a Jurassic age (Frebold and Tipper, 1969). The Ashcroft Formation sediments are capped by the thick cover of basaltic, dacite and rhyolite flows of the Kamloops Group (Tertiary).



JORANEX RESOURCES INC.	
For: AMEX EXPLORATION SERVICES LTD. of KAMLOOPS B.C.	
LOCATION MAP and REGIONAL GEOLOGY	
Drawn By: Studio Kemper	Scale 1:250:000
Figure 2	after McTaggart, 1951

LEGEND

- K Kamloops Gp
- A Ashcroft Fm
- N Nicola Group
- + Intrusive Rocks

Table of Formations

Period	Epoch	Formation	Lithology
Tertiary	Eocene(?)	Kamloops Group	Basalt, dacite lava flows
Jurassic		Ashcroft Formation	Conglomerate & sandstone
	Unconformity		
Triassic	Upper Triassic	Guichon Crk Batholith/ Brassie Crk Batholith	Granite,granodiorite, diorite
	Upper Triassic	Nicola Group	Greywacke, basalt-andesite flows breccia & tuffs, argillite, limestone

4- Mapping of the Grid area.

Mineralized showings of Cu-Zn-Pb-Ag-Au-Magnetite are found along the high cliffs cropping out on the eastern bank of Brassie creek as well as scattered over the hills sloping toward the wide Thompson River alluvial plain to the northeast. There, rocks of the Nicola Group composed of intermixed limestone and volcanic units are in contact with dioritic rocks of the Brassie Creek stock, an informally named intrusion belonging to the older border phase suite of the Guichon Creek batholith (McMillan, 1978).

A grid has been laid over the main mineral showings for the purpose of geochemical and geophysical investigations. To assist interpretation of results, it appeared necessary to unravel the complex lithological setting around the showings. Therefore, the grid area was mapped at a scale of 1:2,500.

The work took ten days in the field and is the subject of this report along with the production of the accompanying geological map. A series of 19 rock samples were sent for slabbing and thin sections were made; their study has strongly supported the following interpretation of the field mapping and observations.

5 - Property geology.

5-1. Criteria used for field mapping.

Regional geology shows the area to be underlain by Nicola Group volcanic rocks in contact with intrusive igneous rocks. Prior knowledge of proprerty geology showed the existence of a widespread thermal metamorphism around the intrusions and volcanic rocks to be composed of intermediate to basic fine-grained tuffs and flows. Such volcanic rocks are known to react erratically to thermal metamorphism and are difficult to subdivide while field mapping. Therefore, the following criteria were adopted.

Volcanic rocks were separated on the basis of macroscopic texture such as flow banding and fragmental appearance (crystal tuff, lapilli tuff, breccia, etc....) and for the most common aphanitic flow-units, on the basis of their color suspected to reflect their mafic content, the amount of phenocrysts and their hardness.

Hornfels or hornfelsed rocks when original composition was still perceptible, were defined on the basis of recrystallization, conchoidal fracturing, hardness, vari-colored hues and outcrop appearence. Most hornfelds are exposed in rugged rockfaces, and break up in small angular, hard and sharp pieces, usually to the point where it is difficult to break them open to obtain a fresh surface; the rock seems to have been "cooked". These criteria have proven to be adequate as in most cases, their first recognition was often followed by uncovering of intrusive dikes or stocks.

5-2. Rock units.

A- Layered sedimentary rocks.

Two packages of sedimentary rocks are readily recognizable in the grid area and vicinity.

A-1 The Ashcroft Formation. - The first package consists of brown cobble to pebble conglomerate, gravel conglomerate, and arkosic sandstone. These rock-units are particularly well exposed on the western bank of Brassie creek, over the hills immediately south of the grid area and in a small ravine eroding the grassy slope just east of line 8+50S and line 9+00S. The rare bed attitudes which can be observed are based on pebble-cobble angle of repose. The conglomeratic elements consist mainly of diorite at the base and are matrix-supported.

No gradded-bedding is observed, although there is a general decrease in fragment size away from the basal formation. On the western side of Brassie creek, the conglomerate grades rapidly into coarse-grained arkose and arkosic sandstone.

The contact with underlying formation is sharp and at one location (Line 9+00S 3+25E), a regolith made of rounded and angular dioritic fragments in a dioritic fine-grained matrix and resting on an undulating surface, was observed.

The conglomeratic and sandy units are assigned to the Jurassic Ashcroft Formation.

A-2 The Nicola Group. - The second package of sedimentary rocks found in the grid area, consists of white, sparitic, crumbly limestone. It is well exposed on the cliff face along the eastern bank of Brassie Creek, but also in many wide areas over the grid area.

An adit at the western termination of Line 6+00S, cuts into the massive limestone bed exposed along the cliff rimming Brassie Creek; the adit, is 13 meters long, and its walls are uniformally composed of medium to dark grey, sparitic to microsparitic limestone laced with whitish vein-like zones. The white and crumbly aspect of the limestone on surface is due to weathering.

Intertongues and interlayers of green or dark grey skarns and hornfelds are associated with the massive limestone; their contacts are sharp but highly irregular to the point where no bedding can be accurately measured. Only a rough estimate of compositional layering may be considered. The hornfels are from typical intermediate volcanic rocks. The sequence of limestone is taken to belong to the Nicola Group.

B- Layered volcanic rocks.

The majority of formations exposed in the grid area consists of volcanic flows and tuffs of intermediate to basic composition. However, some felsitic to dacitic tuffs or flows are encountered in minor proportion. In many circumstances, the layering is visible at hand-scale but it is not possible to extend it to the mapping scale. In the best case of crystal tuffs of andesitic to trachy-andesitic composition, it can be followed over a certain area but no relation to the adjacent units, not even its polarity could be found.

In general, the volcanic rock-units are fine-grained or aphanitic; they represent mainly flows. Only on rare occasions, lapilli and pyroclastic tuffs were spotted and in one locale, west of Brassie Creek, a volcanic breccia was recognized.

The volcanic formations, along with the previously described massive limestones, are attributed to the Upper Triassic Nicola Group.

C- Intrusive rocks.

C-1. The Guichon Creek diorite.

The most widespread intrusive rock in the grid area, consists of fine -grained greenish-grey diorite with a few amphibole, usually hornblend. The diorite outcrop extensively in the southeastern and eastern sectors of the grid-area and is a part of the Brassie Creek batholith, a satellite pluton of the Guichon Creek batholith.

Thin section study shows that in most cases the diorite contains 5 to 10% interstitial quartz, not visible in hand specimen. It appears that quartz diorite is as abundant as quartz-free diorite. Both types of rock are mafic poor with its hornblend content never exceeding 10% of the rock.

The contact with country-rocks can be sharp but more often a fringe of mixed country-rock (always volcanic) with dioritic injected material is present. The dioritic material can either form the matrix between broken volcanic rocks or appear in series of small repetitive dikes or sills.

Farther away, from the main pluton, several small stocks of diorite poke through the Nicola Group formations. Also, minor dikes are reported cross-cutting the country-rocks with a tendency, especially in the skarn-hornfels zones, towards potassium enrichment; there syeno-diorite are described.

Micro-dioritic facies developped on the edges of some diorite bodies as well as along dikes like chill-margin.

The intrusive diorite - quartz diorite has always induced contact metamorphism in the immediate country rocks.

C-2. The Kamloops Group.

In the northwest corner of the grid area and adjoining western bank of Brassie Creek, outcrop of fresh, vacuolar olivine basalts are encountered. Horizontal columnar cooling joints are common and the basalts are exposed in vertical dike-like structures stretching over several tens of meters.

The rock outcrops of these basalts are unaffected by the regional jointing or diaclase so prevalent in the surrounding Nicola Group formations. The freshness, rounded undeformed vacuoles and vesicles, the un-jointed appearance suggest these basalts are feeded-dikes to the younger (Eocene?) Kamloops Group lava flows widely outcropping further West of Brassie Creek according to McMillan's (1978) map.

5-3. Metamorphism.

A- Regional metamorphism.

Dynamothermal metamorphism does not appear to have had a major effect on many of the rock-formations present in the area. Chlorite and epidote seem to be widespread in the volcanic rocks.

Outside the grid-area and away from intrusions, the regional metamorphism is reported to be weak (Mc Millan, 1978) and to be part of the lower greenschist facies.

B- Contact metamorphism.

Thermal transformation on country-rocks of the Nicola Group is very extensive. It ranges from conspicuous development of skarn, largely crystalline limy formations to hornfelsed volcanic rocks. Already mentionned, the rubbly angular massive aspects of outcrops are indicators of hornfelsed volcanic rocks.

The intensity of the metamorphism, however, is not very intense. None of the pure limestone is marbellized and the more silica-rich dirty limestones have yielded garnet-epidote skarn and albite-actinolite skarns. The garnet seems to be grossular although its strong greenish color, both in hand-specimen and in thin-section, could indicate the presence of chromium.

The volcanic rocks have been less reactive to the point that some basalts have remained remarkably unaffected . The main effect on andesitic and trachytic flows and tuffs, is destabilization of matrix, and recrystallization into a very fine irresolvable matter. Quartz, calcite and epidote are frequent products of the contact metamorphism of such rocks. However, where chemistry of the rock is favorable as described in thin-section SM-91-04 (Appendix), the rock may have reacted to diffusive metasomatic fluids and gave symplectites as well as skarn minerals (garnet, K-feldspar).

The metamorphic grade of transformed rocks in the grid-area, is of the epidote-albite-actinolite facies.

5-4. Structure and stratigraphy.

A- Structural features.

The massive layers of volcanic rocks or limestone beds do not present internal layering to allow, structural interpretation of folds. Only one rock exposure (Line 0+00N, between 6+50E and 7+00E), along a small cliff, shows well defined layers of fine grained felsitic to dacitic tuffs and possibly tuffaceous silstone. The strike of the layers measured in this outcrop at N 140° E is reflected in the outline of the map-units separated on the basis of their mineral composition, especially between limestone and volcanic interlayers.

The NW-SE strike is also found along the main cliffs near Brassie Creek in compositional layering between limestone and skarn beds or minor volcanic interlayers. The mapping suggests a wide open folding of the rock formations although no fold apices or hinges could be observed. The deformation was not intense enough to create foliation, cleavage or recumbent folding.

However, jointing is very prevalent in the rocks along with brittle faulting, often associated with silicified zones when cutting through limy beds. Two major sets of joints and minor faults are observed to affect the country-rocks as well as the intrusives. They run North-South and N80°-90° E and a lesser set runs N140-150°E which could have been induced by folding.

The angular unconformity beetween the deformed Nicola Group and the near horizontal conglomeratic beds of the Ashcroft Formation is well exposed on the western bank of Brassie Creek. Not enough information is available on the conglomerate bed attitude to decide wether the strike and dip reflect later gentle folding or normal depositional dips in large channels as it is suggested by measuring the pebble long axis in the well exposed ravine east of Line 8+50S and 9+00S.

B. Statigraphic considerations.

No trace of fossil was found during mapping ; no determination of tops could be made, even in the finely laminated tuffs where unquestionable bedding atitudes were measured. It is therefore impossible to give a stratigraphic interpretation and estimates of thickness of the different Nicola Group rock units.

Beds of the Ashcroft Formation overlap marginally in the grid area on the Nicola Group and the intrusive diorite. They represent the eroded edge of thicker layers farther away. In the gully east of the grid, approximately 20 meters of boulder to cobble conglomerate were measured, but immediately south, hills raising 50 meters above the grid area are capped by the same formation.

Age and statigraphic attribution of formations encountered are done on the basis of previous small scale mapping and comparison with similar rock formations better dated and occuring in adjacent areas.

5-5.Alterations and Mineralization.

A- Mineral occurences.

Prospecting and investigation of mineral occurences were not intended in the course of geological mapping. However, any encountered mineralization was noted and described.

Copper showing (mainly Cu stains as malachite, rarely azurite) are typically associated with skarn and more so, where cross-cut by fracture or gouge zone. At the western end of Line 6+00S , an adit follows two 10-20 cm wide limonitic gouge zones which cut first through volcanic hornfels, then into massive limestone and contain much malachite, associated with parallel veinlets of calcite. Veinlets and gouge zones run N140°E and dip 65-85°S.

At the "Main showing" (L8+00S 1+50W), where massive limestone bed stops abruptly against a possible fault zone and where limestone and skarn are close to diorite intrusion, massive magnetite with some copper, form pods or vein. At the showing on L1+15S and 5+50E, magnetite-Cu are associated with garnet-rich skarn.

Where fracturing is intense and limestone is silicified, base metal sulfides (galene, sphalerite) are present. The "Hasso showing" (Line 7+50S 1+00W) is a refolded quartz-calcite vein rich in galena and contain high gold and silver values.

B- Alterations.

A series of observations were made in the field and subsequently confirmed under the microscope. They do not fit properly with the normal geological setting or with the different metamorphisms, since they affect primarily the diorite-quartz diorite suite. They are best considered as products of alteration.

No evidence here or elsewhere as reported in the literature, indicate that the dioritic stocks have participated to the peak of regional metamorphism or been associated to folding phases which were overprinted upon the country-rocks. The diorite is always isotropic and do not show sign of strain.

Under the microscope, most but not all diorite-quartz diorite samples appear partly altered by calcite, epidote and quartz to various degree and sometimes destabilized into irresolvable matter. Most hornblends of the diorite are altered or pseudomorphosed by chlorite or by epidote and calcite or completely destroyed. This pattern is also observed in hornfels and skarn in the area, but in their case, alteration can be assumed to relate to contact metamorphism. It is to difficult to invoke the same cause for the intrusive diorite.

The second set of observations concern a sliver of biotite-rich quartz diorite found on Line 0+75S 7+80E. The biotite is distinctively neoformed and secondary, and much K-feldspar is showing in the fine-grained matrix.

K-feldspar are often suspected in many dikes and sills encountered in the most skarnifield sectors. Such dikes have been mapped as syeno-diorite and are always strongly altered, to the point that they are difficult to separate from surrounding hornfelsed volcanics except for their geometrical relationship found in the field. Potassium enrichment is evidenced in thin section study by the invasion of material composed of quartz-calcite epidote, K-feldspar and symplectites. This invasion is observed in a syeno-diorite as well as in hornfelsed volcanic rock quite a distance apart (refer to thin sections SM-91-24 and 25 in Appendix).

It is obvious from observations that contact metamorphism was due to the intrusion of the diorite-quartz diorite. However, it appears that the whole grid-area has been subjected to overprinting of later alteration, essentially quartz-calcite -epidote alteration, with some degree of potassium metasomatism.

The cause of the late alteration is not readily evident. It could be a late phase of rejuvenated hydrothermal fluids associated with (but past the peak) contact metamorphism, and affecting the intrusive rocks as well. Also the diorite is an older phase of the Guichon Creek batholith which is characterized by its successive younger and more acidic intrusions towards the center of the batholith in the Highland Valley district. A similar situation could be quite possible in the area of the WEDDING claims as the existence of intrusive quartz porphyries has been reported by past exploration near Rattlesnake creek to the northeast of the grid area.

6- Conclusion.

Geological mapping of the WEDDING 1 grid area has delineated in great detail, the limits of the different rock-units of the Nicola Group, their relationship to the intrusive Guichon Creek/Brassie Creek diorite and its thermal effect. It has shown that its borders are complicated by diorite magma injection in the surrounding volcanic rocks and the presence of satellite stocks, dikes and sills.

Mineralization in definitely associated, close to the intrusion, with the presence of limy skarn and fracturation. It could be indicative of mineralized fluids escaping from more important concentrations below.

The new map should allow better understanding and interpretation of soil geochemistry and geophysical measurements done in the past.

7- Recommendations.

Extensive alterations indicate that subsequent and complex history is prevalent in the area. It would be advisable to carry on the large-scale mapping to the North and Northeast of the present grid-area.

In that perspective, sodium-cobaltinitrite field reagents should be considered in order to appreciate the amount and extent of K-feldspar either as a primary constituent or an alteration product.

The intriguing observation that dioritic material is widely injected into the volcanic rocks without much brecciation could suggest that the diorite is co-genetic or co-eval to the adjacent volcanic formations. In such a case, an extraneous intrusive must be assumed to be in part the cause of thermal metamorphism and the extensive alterations. Further studies such as multi-element chemistry and REE (rare-earth elements) line of descent could help in that interpretation.

8-References.

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Statement of Expenditures

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INVOICE

To:

AMEX EXPLORATION SERVICES LTD.,
P.O. Box 286, Kamloops, B.C.
V2C 5K6

Re: Detailed Geological Mapping, on **WEDDING CLAIMS**, Walhachin, B.C., Kamloops Mining Division

Geological Mapping	
10 days (between May 15 and July 19, 1991) at $400.00/day	$ 4000.00
Travel Time	
2 days at $400.00/day	800.00
Field Expenses and lodging	
12 days at $100.00/day	1200.00
Travel expenses	
Calgary to property and local travelling 2800 kms at 27¢/km	756.00
Petrographic study	
Thin section preparation (attached invoices)..	285.58
Thin section study, 3 days at $400.00/day	1200.00
Drafting and reproduction	
2 days at $200.00/day (invoicing pending)	400.00
Reporting	
Writing report, 3 days at $400.00/day	1200.00
2 days secretarial work at $100.00/day	200.00
TOTAL OF INVOICE	**$10041.00**

Respectfully submitted,

Hughes P. Salat
Calgary, Alberta, July 20, 1991

CERTIFICATE

I, HUGHES P. SALAT, of the City of Calgary, Alberta, certify that:

1/ My present address is 5904, Dalhousie Drive N.W., Calgary, Alberta, T3A 1T1 and my occupation is that of a consulting geologist.

2/ I am a graduate of the Ecole Nationale Supérieure de Géologie Appliquée de Nancy and of Faculty of Earth Sciences, University of Nancy (France) with a degree in Geological Engineering, have obtained an M.Sc.equivalence and completed all credit requirements for a degree of Ph.D. at the University of Southern California in Los Angeles (unwritten thesis due to military recall).

3/ I have been practising continuously my profession of geologist since 1968 in Canada and Europe in mineral exploration, first with Aquitaine Company of Canada then with SNEAP (Elf-Aquitaine).
Concomitantly ,from 1983 to 1987, I have also worked for the latter, as petroleum geologist on international projects dealing with Central Africa, Indonesia and South America.
Since 1988, I operate as an independant consultant in mineral and oil-gas exploration from the above-mentionned address.

4/ I am a member of the Association of Professional Engineers, Geologists and Geophysicists of the Province of Alberta, of the Geological Association of Canada and of the Canadian Institute of Mining and Metallurgy.

This day 15 of August 1991

Hughes P. Salat
Consulting Geologist.

APPENDIX

THIN SECTION STUDY

SM - 91 - 04 (B)

Location: L 1+50S 2+60W

Macroscopic description:

brownish aphanitic volcanic rock with vesicles filled with white material and open vacuoles.

Microscopic description:

Texture: glassy to fluidal (aligned microliths)
Composition:
- microliths are all made of plagioclases, very elongated and fresh, in bunches and aligned; tentative measurements on these small laths give An 60 to 80.
- 20% of globular often in round aggregates, olivine.
- many small vesicles are filled with irresolvable yellow material, all uniform in size and round.
- large amiboidal empty vesicles.

Olivine basalt.

SM - 91 - 05

Location: L 0+00N 0+75W

Macroscopic description:

very fine grained to aphanitic grey greenish rock with scattered green rectangular minerals and a few round dark green patches.
slight beige discoloration along the cracks, developping well into the rock.

Microscopic description:

Texture: porphyritic within a glassy matrix including many tiny laths.
Composition:
- among the phenocrysts : 40% are plagioclase (An 70), strongly altered. However many crystals are more globular and xenomorphic with a low refringence fringe around alteration (mainly epidote) and no multiple twinning; it is probably nepheline.
60% are individual or aggregates of clear olivine.
- in the glass, all tiny laths are of plagioclase composition.
- many large vesicles are filled with calcite, or a mixture of chlorite and tridymite.

Olivine (nepheline?) basalt.

SM - 91 - 06

Location: L 0+75S 7+80E

Macroscopic description:

grey greenish very fine grained granular rock with darker patches and rounded feldspar grains up to 1.5 mm in size.

Microscopic description:

Texture: equigranular to slightly porphyritic.
Composition:
- 75% altered feldspars; most phenocrysts show multiple twinning and even compositional zoning for a few (plagioclase). But among the smaller size population, possibility that many may be of K-feldspar composition as they show only the Carlsbad twinning.
- 5 to 10% very red-brown and pleochroic tiny neoformed biotite.
- 5 to 10% tiny grains of epidote
- 3 to 5% interstitial quartz
- 5% opaque
- 1 to 3% patches of disintegrated hornblend replaced by epidote, chlorite, oxides and biotite.

Hydrothermally altered quartz diorite (potassium alteration)

SM - 91 - 07

Location: L 1+00S 6+15E

Macroscopic description:

slightly pinkish with greenish spots, granular (0.2 to 0.8 mm) igneous rock; angular white feldspar, a few rounded quartz with feldspar corona.

Microscopic description:

Texture: equigranular to slightly porphyritic, dominated by rectangular feldspar crystals; in few places, broken up and replaced by irresolvable material.
Composition:
- 75 to 80% plagioclase, all altered with only ghost of multiple twinning, often corroded or cracked.
- 5% quartz, xenomorphic, interstitial and corroding, often globular surrounded by plagioclase but no reaction rim.
- 10% epidote, often in blebs or pseudomorphic after large hornblend. In many occasions, associated with quartz in broken-up patches with irresolvable material
- 1% chlorite mainly after hornblend.
- 1 to 2% opaque.

Quartz diorite (epidotized).

SM - 91 - 08

Location: L 1+00S 5+75E

Macroscopic description:

crystalline, greenish patches surrounded by white vein-like zones consisting of white minerals, very angular and often set in comb-like disposition.

Microscopic description:

Texture: granoblastic to poikiloblastic (mainly quartz)
Composition:
- quartz, anhedral makes up 25-30%
- feldspars up to 75%, locally reaction rim (symplectite) with quartz and intergrowth (web texture); range from1/4 to 1 mm in size and are clouded. Rarely, display fine albite twinning, indicating a low An content; low relief tends to indicate an Albite plagioclase.
- many grains (less than 0.5 mm) of epidote in darker areas, up to 10%; interstitial to pseudomorphs of plagioclase with inclusion of tiny quartz crystals.
- scattered crystals (to 10% in places) of less than 0.250 mm euhedral actinolite in inclusion in plagioclase or quartz, sometimes aligned along cracks.
- local patches of same mineral (actinolite) but not well crystallized or in tiny laths, usually globular, in vein-like or remnants or gulf within large quartz or plagioclases.
- opaques can represent to 5%.

Albite - actinolite skarn

SM - 91 - 09

Location: L 5+25S 2+25W

Macroscopic description:

aphanitic, tan-beige pinkish, greenish in patches, with darker hued mottles, with reddish specks often in clusters; structureless, hornfels looking.
cut by numerous reddish cracks with diffusive alteration on their edges.

Microscopic description:

Nebulous texture of dark and light irresolvable patches.
In the lighter areas, it seems to be made of silica, epidote and some calcite.
Cut by two veinlets composed of 100% calcite.
Some rounded blobs of calcite within the rock.

Hornfels

SM - 91 - 10

Location: L 6+50S 2+50W

Macroscopic description:

aphanitic texture with regular nebulous patches of light green; many scattered laths of beige felspars.
Cross-cutting dilational cracks filled with sparitic dark green calcite, locally with epidote.

Microscopic description:

trachytoid texture of chevron-like organized plagioclase, locally forming 100% of the rock, with some rare large neoformed K- felspars and xenomorphic quartz. Plagioclases are not very basic (An 10-30).
- 10% opaque
- large patches of very fine grained epidote and calcite developping (25% of the section)
- some rare chlorite.

Hornfelsed andesite.

SM - 91 - 11

Location: L 6+90S 2+45W

Macroscopic description:

aphanitic, breccia-like rock made of angular patches of dark green, olive green and light pinkish patches; many veinlets and hairline fractures. Scattered angular white minerals.

Microscopic description:

- very fine grained.
- the "white minerals" are opaque irresolvable material.
- background is composed of tiny quartz in xenomorphic crystals, often associated with clusters of chlorite. Also abundant automorphic quartz but often associated to cracks and veinlets, with undulose extinction.
- many irresolvable patches of possible epidote as many evolve in their center into well developped epidote crystals. Along cracks, some zoisite.
- a few calcite crystals along veinlets.

Silicified epidote skarn.

SM - 91 - 12

Location: L 7+00S 2+00W

Macroscopic description:

aphanitic greenish with beige angular patches bordered by very thin veining, cracks or hairline fractures making the sample to look like a breccia. Many hairline fractures are lined with Fe-oxides and discoloration of host-rock. In lighter beige patches, many tiny bright red spots (garnets?).
Cut by small calcite veinlets.

Microscopic description:

- mostly irresolvable material in dark and lighter patches.
- where lighter, one can recognize a mixture of epidote grains and quartz with calcite. Locally, agglomeration of tiny grains of garnet. In one part of the section , better neoformed garnets.
- along cracks or calcite veinlets: many largely developped epidote grains.

Garnet-epidote skarn

SM - 91 - 24

Location: L 4+50S 3+55E

Macroscopic description:

dark green with brownish hues, aphanitic, with very dark green specks and patches of olive-green and pink.

Microscopic description:

Texture: micro to cryptocrystalline in irregular patches indicating an aphanitic rock in process of recrystallization.
Composition:
- the microcrystalline patches are essentially composed of silica (quartz) mixed with irresolvable material; these patches are surrounded by a network of recrystallized quartz, epidote and calcite, and are largely granular at network nods.
- many globular largely crystalline patches of quartz, epidote and locally K-feldspar, calcite and grossular garnets (anomalous interference colour). One such amygdule is composed of a ring of small grossular grains surrounding a patch of quartz, epidote, grossular garnets and silicified irresolvable material.
- grossular is also found in large neoforming independent crystals.
- in one small zone of the thin section, large clear xenomorphic K-feldspars (0.150 to 0.250 mm) with many symplectic (grahic and myrmekitic) textures indicating diffusional and hot thermal metamorphism.
- 2 to 3% opaques.

Hornfels (from acidic volcanic rock).

SM - 91 - 25

Location: L 6+00S 0+20E

Macroscopic description:

greenish beige with pinkish overtones, fine to very fine grained rock with a few whitish porphyritic feldspars; olive-green blotches and fractures.

Microscopic description:

Texture: microgranular, fluidal, slightly porphyritic.
Composition:
- 90% microliths (0.1 to 0.2 mm) of plagioclases (An 50-60) and a few large phenocrysts (0.5 to 2.2 mm) of same.
- 5 to 10% of medium size (0.250 to 0.500 mm) of K-feldspar.
- network of fine fractures and amygdules composed of mostly epidote with minor calcite and chlorite. Epidote is also scattered in small grains. Chlorite is more frequently isolated or interstitial to plagioclases.
- 3 to 5% opaques.
To be noted: on one side of the thin section, a small gulf invading into the fresh rock, made of material with similar composition as SM-91-24, i.e. cryptocrystalline quartz-calcite-epidote and some K-feldspar with a few symplectites although small plagioclases are yet recognizable.

Microsyeno-diorite (dike)

SM - 91 - 26

Location: L 7+00S 1+00E

Macroscopic description:

grey fine grained igneous rock.

Microscopic description:

Texture: glomeroporphyritic
Composition:
- 90% of phenocrysts are plagioclases (An 65-70) and possibly 10% of K-feldspars The large crystals, especially K-feldspars, are deformed and show patchwork of different extinction pattern. The phenocrysts represent about 60% of the thin section.
- groundmass has a felt-like texture with microliths difficult to recognize, yet ghosts of multiple twinning suggest plagioclases in many cases. Some K-feldspar-quartz seem to be present.

Alteration:
- the section is impregnated in blotches, along fractures or between phenocrysts by mainly calcitic material and some places much epidote.One such blotch or amygdule has a quartz rich center.
- 3 to 5% opaques, especially clustered around calcitic blotches.

Carbonatized syeno-diorite.

WAL - 01

Location: L 1+15S 5+50E

Macroscopic description:

brownish very fine grained crystalline with green globular patches.

Microscopic description:

Texture: hetero-granular with very fine grained matrix and very large (1 to 2 mm) phenocrysts.
Composition:
- matrix is 90% equigranular calcite and 10% small garnets; some patches however are finer grained with 15% garnets and 5% epidote.
- large crystals are essentially green garnet often associated or rimmed by larger calcite crystals. The large garnets show a clear core surrounded by irregular neoforming corona, outlined by lower refringence and lesser green color.
- cross-cutting quartz veinlet.

Garnet skarn.

WAL - 02

Location: 15 meters S of L 0+50S 5+25E

Macroscopic description:

largely crystalline (0.5 to 1.5 mm) magnetite, including and surrounded by greenish stony material.

Microscopic description:

Composition:
- the opaque material (magnetite) is surrounded by finely crystalline dirty calcite (20%) and broken-up garnets (80%).

Magnetite - garnet skarn.

WAL - 03

Location: 15 meters S of L 0+50S 5+28E.

Macroscopic description:

light grey equigranular igneous rock, slightly porphyritic.

Microscopic description:

Texture: equigranular with tendency to porphyritic.
Composition:
- 80% plagioclases, rectangular laths, well developped with An 55 to 70.
- 5 to 10% green hornblend, often chloritized.
- 10 to 15% of irresolvable material with epidote and quartz between plagioclase laths or replacing amphiboles.
- 1 to 2% opaques
- cracks filled with quartz and chlorite.

Hydrothermally altered diorite.

WAL - 05

Location: L 7+50S 1+00W

Macroscopic description:

brown reddish material intertwinned with translucent greenish to grey siliceous vein material.

Microscopic description:

Texture: granular.
Composition: 3 recognizable zones
- zone of large (0.250 to 1 mm) quartz crystals
- zone of small grained quartz (< 0.1 mm) with 20 to 25% opaque minerals.
- zone of medium sized calcite with interstitial xenomorphic quartz and 10 to 15% opaque.
- cross-cutting calcite veining.

Mineralized quartz vein.

WAL - 06

Location L 8+00S 3+50W

Macroscopic description:

breccia-like with whitish opalescent fragments, beige and green aphanitic fragments and white matrix with spots of brownish-red ankerite.

Microscopic description:

Texture: fragmental.
Composition:
- lithic fragment of quartzite, trachyte up to 2 mm in size.
- quartz fragment often rounded, 0.5 to 1 mm in size.
- matrix: very fine quartz, some calcite, feldspars and much irresolvable matter.

Volcanic breccia.

WAL - 07

Location: L 10+50S 2+80W

Macroscopic description:

crystal fragments (white and dark green) in an aphanitic paste.

Microscopic description:

Texture: porphyritic in felt-like matrix (50% of thin section).
Composition:
- megacrysts are composed of
  40% plagioclases,
  20% K-feldspars, most of the time broken, split or corroded,
  30% green hornblend, broken and altered,
  5% olivine,
  some chlorite, and
  5% of fragments identical to matrix.
- matrix is mainly feldspar of all sizes in a felt-like mat, probably with the same percentage as megacrysts, and in place shows a trachytic texture. Some chlorite and rare automorphic quartz. 3 to 5% of opaques.

Trachy-andesitic crystal tuff.

WAL - 12

Location: L 8+00S 6+50W

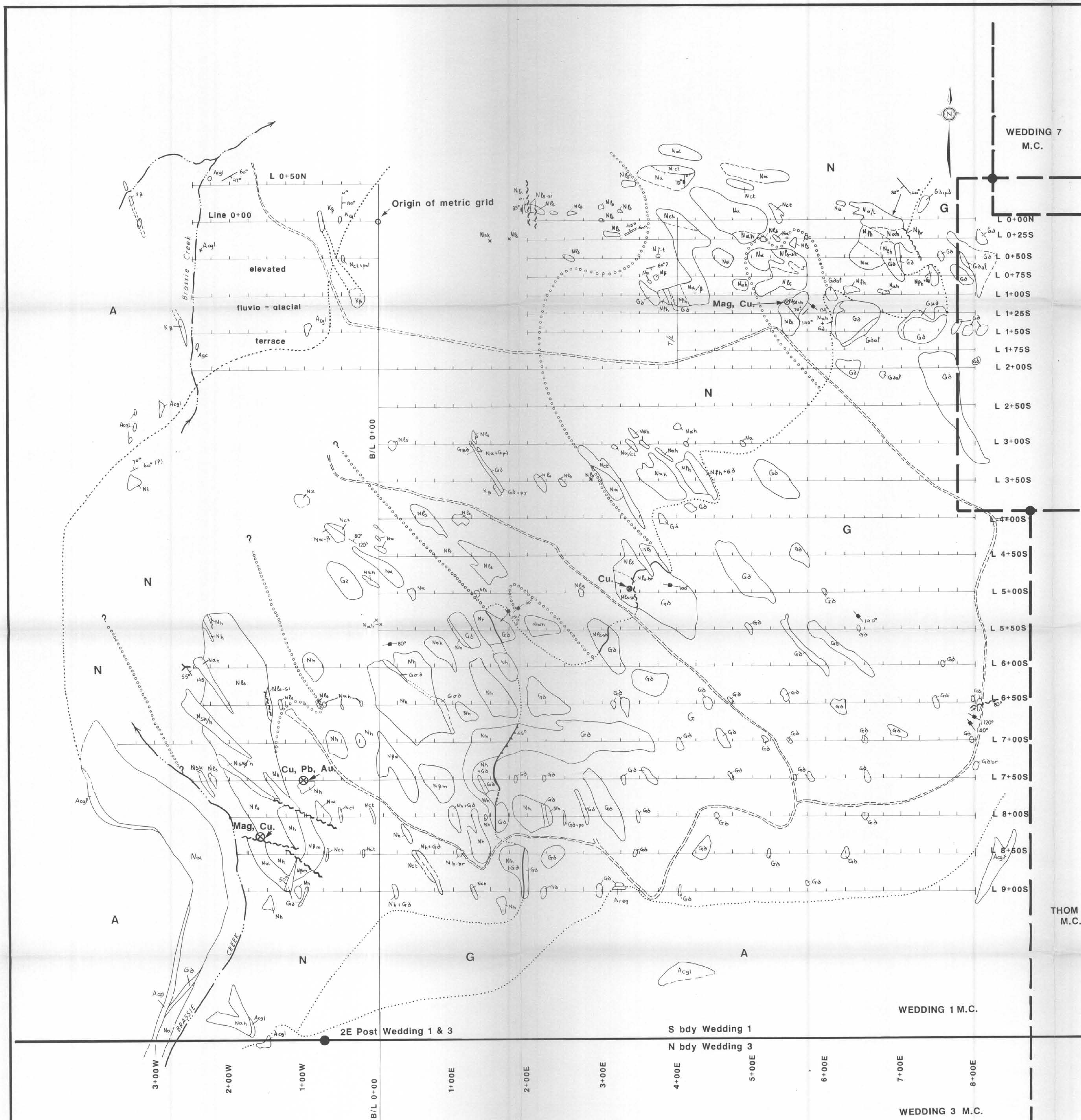
Macroscopic description:

equigranular, grey-green with pinkish patches, intrusive rock.

Microscopic description:

Texture: equigranular, 0.5 to 1 mm.
Composition:
- 90% plagioclase, all altered, An 40-60, very automorphic, rarely zoned,
- 5% green hornblend, mostly corroded and in part chloritized,
- 5% quartz, most often interstitial, rarely automorphic,
- 3 to 5% opaque minerals.

Quartz diorite.



LEGEND

- Bed attitude or compositional contact
- Lamination
- Joint, diaclase (inclined, vertical)
- Fault, shear zone, brecciated zone
- Reverse fault (teeth on overhanging side)
- Limit of outcropping area (conspicuous, suggested)
- Geological contact of main Formations.
- Geological contact of main lithological units of the Nicola Group
- dirt road
- grid line
- claim boundary
- adit
- Mineral occurrence

MAIN ROCK FORMATION SYMBOLS:

K	Kamloops group (Eocene)
A	Ashcroft formation (Jurassic)
N	Nicola group (Triassic)
G	Gulchon Creek Batholith (Triassic) (Brassie Creek border phase)

ROCK TYPE QUALIFIERS

ℓ	limestone
cgl	conglomerate
α	andesite
β	basalt
δ	diorite-quartz diorite
μδ	microdiorite
σδ	syeno - diorite
ct	crystal tuff
f	felsite
t	tuff
pcl	pyroclastics
h	hornfels
sk	skarn
reg	regolith

MODIFIERS: (after rock-type)

h	hornfelsed
sk	skarnified
m	magnetic
br	brecciated
al	altered (deuteric)
si	silicified

MINERALIZATION:

py	pyrite
po	pyrrhotite
Mag	magnetite
Cu	copper stains
Pb	galena
Au	gold

Main rock formation

Example: Nαh = hornfelsed andesite belonging to the Nicola Group

Qualifier Modifier

0 50 100 150 200

meters

Caution: Outlines of outcropping areas are drawn from observations made at grid stations and vicinity as well as from some outside traverses. They do not necessarily reflect the exact and precise general limits of such outcropping areas.

JORANEX RESOURCES INC.

For: AMEX EXPLORATION SERVICES LTD.
of KAMLOOPS, B.C.

WEDDING 1 MINERAL CLAIM
Kamloops Mining District

DETAILED GEOLOGY of THE GRID AREA

PREPARED BY: H.P. Salat	SCALE: 1:2,500
DRAWN BY: Studio Kemper Photography Ltd.	To Accompany: Report on Detailed Geological Mapping of Grid Area on Wedding 1 Claim by: H.P. Salat August 1991
FIGURE: 3	