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GEOLOGICAL AND GEOCHEMICAL REPORT
ON THE
BORDER PROPERTY
BORDER 1 TO 4 MINERAL CLAIMS

Skeena Mining Division, British Columbia

NTS 104B/7E
 Latitude: 56° 21' North
 Longitude: 130° 38' West

SUB-RECORDER
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on behalf of

ROSS RESOURCES INC.
 Calgary, Alberta

by

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GEOLOGICAL BRANCH
 ASSESSMENT REPORT

December 3, 1990

Keewatin Engineering Inc.

SUMMARY

The Border property consists of four contiguous modified-grid claims totalling 80 units located approximately 80 km northwest of Stewart, British Columbia. Access to the property is by fixed-wing aircraft from Terrace, Stewart, or Smithers to various airstrips in the area and then via helicopter to the property.

The property is situated within the Intermontane Tectono-Stratigraphic Belt, near the contact between the Stikine Terrane and the unmetamorphosed sediments of the Bowser Basin. Diorites of the Coast Plutonic Complex underlie the southern property area, with the northern part underlain by the Lower Jurassic Unuk River Formation consisting of andesitic volcanics with lesser sediments, intruded by a number of dioritic to granodioritic dykes or sills.

The area has an exploration history dating back to the turn of the century when prospectors passed through the region on their way to the interior. In the 1970's, the porphyry copper boom again brought prospectors and companies into the area. The current gold exploration rush began in 1980 with the option of the Sulphurets property by Esso Minerals Canada and the acquisition of the Johnny Mountain claims by Skyline Exploration Ltd. which was brought into production in mid-1988. The adjacent SNIP property is slated for production in 1991.

At this time, the Eskay Creek property, located 35 km northeast of the Border property and currently being explored by Corona and Placer-Dome, is the most significant deposit in the area. The prospect comprises at least eight mineralized zones occurring over a strike length of 1800 m within a sequence of felsic volcanics. The mineralization is associated with disseminated sulphides in felsic volcanic breccias and graphitic argillites in contact with overlying intermediate volcanic rocks. A total of 665 surface diamond drill holes have been completed plus an exploration decline has been driven to test underground mineralization.

A review of all available information indicates that the entire Unuk River area was subjected to reconnaissance geological mapping and prospecting by Newmont Mines Ltd. in 1959-1962 which led to the discovery of three showings within or adjacent to the property boundaries.

The Gold Run occurrence, which is reportedly located in the southeastern portion of the Border 4 mineral claim adjacent to Boulder Creek, is described as a narrow gold-bearing quartz vein with pyrite, galena and sphalerite mineralization. The McQuillan Ridge showing occurs adjacent to the northeastern corner of the property and is portrayed as mid-Jurassic diorite dykes containing

minor copper mineralization. The Jim-Flory occurrence, located on the Border 4 mineral claim, reported gold values of about 64 grams/tonne in 1911. Exploration work completed over this showing in 1969 by Granduc Mines Ltd. outlined a sporadic alteration zone within a tuff, which is probably restricted to one horizon within the greenstone sequence. The alteration consists mainly of epidotization, associated skarn-type minerals and magnetite, pyrite and chalcopyrite.

The 1989 exploration program consisted of helicopter-supported reconnaissance prospecting, geological mapping and geochemical sampling with the objective of evaluating the property's potential for hosting economic precious metals deposits. A limited amount of reconnaissance prospecting combined with geological mapping and lithochemical sampling was completed over selected portions of the property. This work was concentrated in the areas of reported mineralization and gossans noted within the property. Rhyolitic volcanics were located in the northeastern portion of the property and in the south-central part of the Border 4 claim. Reconnaissance prospecting completed over the reported location of the Jim-Flory occurrence located a number of quartz veins within a gossanous zone. Quartz veins were also located in the northwestern part of the property and along Boulder Creek. Lithochemical sampling in these areas did not yield any anomalous precious or base metals values. A heavy mineral stream sediment sampling survey was completed over the property as part of the 1989 exploration program. One sample, collected from a creek draining the eastern portion of the Border 4 claim, near the reported location of the Gold Run occurrence, yielded an anomalous gold value of 2786 ppb.

The 1990 exploration program consisted of helicopter-supported geological mapping, lithochemical sampling and geochemical soil sampling with the objective of evaluating, further, the property's economic potential as recommended in the 1989 report.

A total of 20 rock grab and float samples, eight soil samples and three stream silt samples were collected from an area in the north-central Border 1 claim which was targeted for examination. This gossanous, sheared, quartz veined area was mapped, lithochemically sampled and soil sampled in the vicinity of a large, 150 metre long limonitic quartz lens. The primary lithologies mapped on the claim are the Lower Jurassic Unuk River Formation intermediate volcanic tuffs and flows in the northern part of the claim and Coast Plutonic Complex biotite granite to quartz diorite underlying the southern part of the claim.

Results of the geochemical survey were somewhat disappointing. Weakly elevated gold-in-soil values up to 38 ppb Au and gold-in-rock values up to 52 ppb Au were recorded. A program of geological and geochemical follow-up exploration is recommended for the northern half of the property with particular attention focusing on gossanous areas and structures.

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INTRODUCTION

Ross Resources Inc. of Calgary, Alberta commissioned Keewatin Engineering Inc. to conduct a field exploration program on the Border property located in the Unuk River area of northern British Columbia. Exploration was directed by Keewatin Engineering Inc. and crews were based out of the "Doc Camp", situated on the South Unuk River approximately 10 kilometres east of the Border property.

The objective of this program was to evaluate the property's economic potential through follow-up exploration as specified in the 1989 report. The 1990 exploration program was conducted during the period of September 26 and 27, 1990 and included geological mapping, lithogeochemical sampling and soil sampling. Stream silts were collected from active streams encountered during traverses.

A total of 19 rock grab samples, one float sample, eight soil samples and three stream silt samples were collected during this examination. A 170 metre soil line was established at roughly 045° azimuth and the soil samples (talus fines) were collected at 25 metre intervals. Geological data, sample locations and results were plotted at a 1:5,000 scale on contour maps enlarged from 1:50,000 scale NTS topo maps.

All geochemical samples were shipped to Bondar Clegg & Company Ltd. in North Vancouver for geochemical analysis for Au, Ag, Cu, Pb, Zn, As, Sb, Mo and Hg. Analytical procedures are described in Appendix III and analytical results are presented in Appendix IV.

Location and Access

The Border property is located in northwestern British Columbia, approximately 80 km northwest of Stewart (Figure 1). The claims are situated within N.T.S. map-sheet 104-B/7E and centred about 56°21' North latitude and 130°38' West longitude. Access to the property is by fixed-wing aircraft from Terrace, Stewart, or Smithers to various airstrips in the area and then via helicopter to the property. The claims may also be directly accessed by helicopter from Stewart.

In the fall of 1991, a 72 kilometre road over the mountains is scheduled to open connecting the Eskay Creek area with the main Stewart-Cassiar Highway.

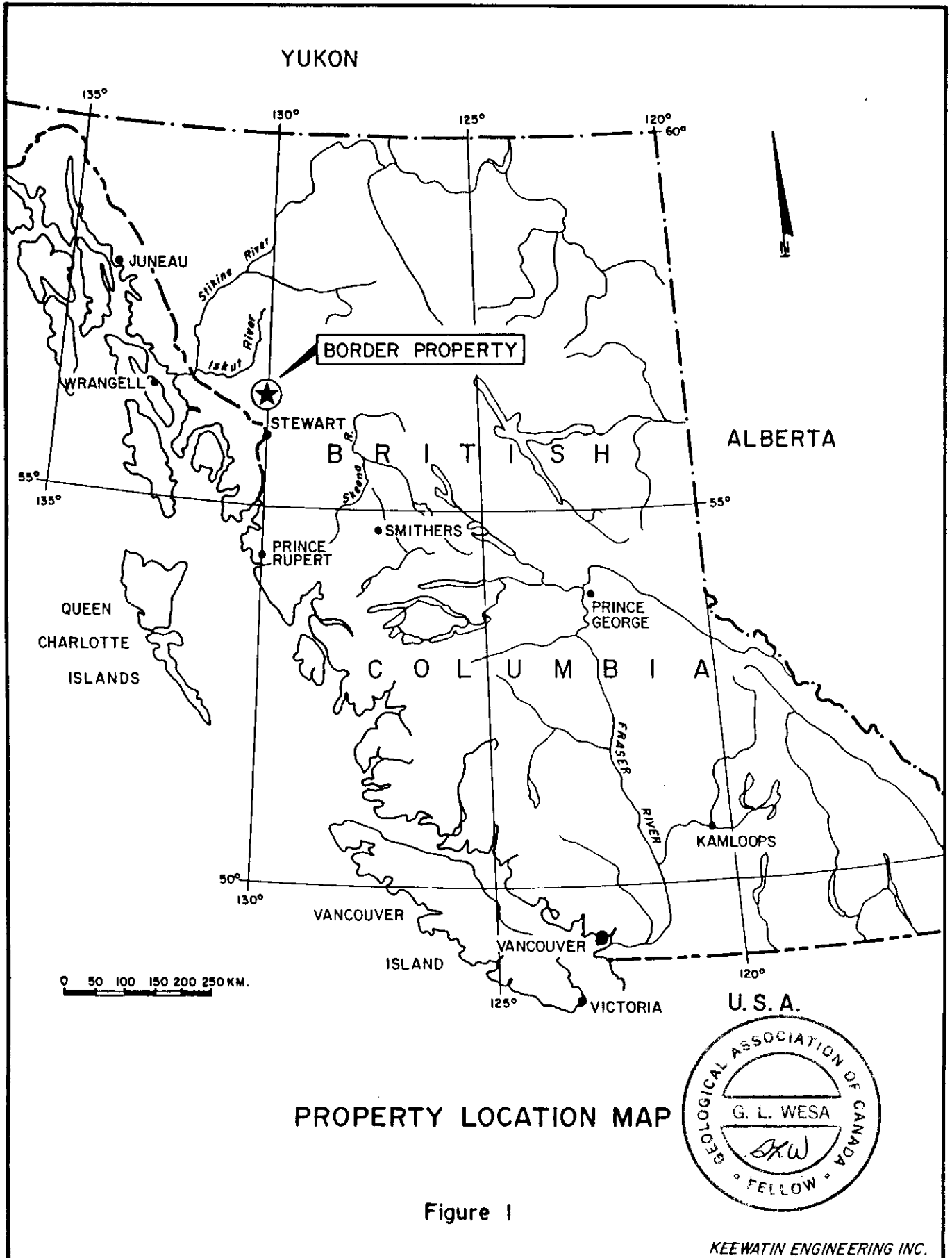


Figure 1

Physiography and Climate

The Border property is situated within the Coast Range Physiographic Division and is characterized by northern rain forests and sub-alpine plateaux. Valleys are steep-sided and U- to V-shaped. Elevations (see Figure 2) range from 365 metres in the valley of Boulder Creek to 1705 metres on the northeastern and south-central claim boundaries.

A transitional treeline, characterized by dense sub-alpine scrub, meanders through the property at, approximately, the 915 m elevation. The terrain above the treeline is typified by intermontane alpine flora. Permanent glacial ice is found intermittently above the 1065 to 1370 m elevations. Conifers up to 30 m tall are common below the treeline, especially in stream valleys. Water for camp and drilling purposes is generally in good supply from the numerous creeks draining the claim area.

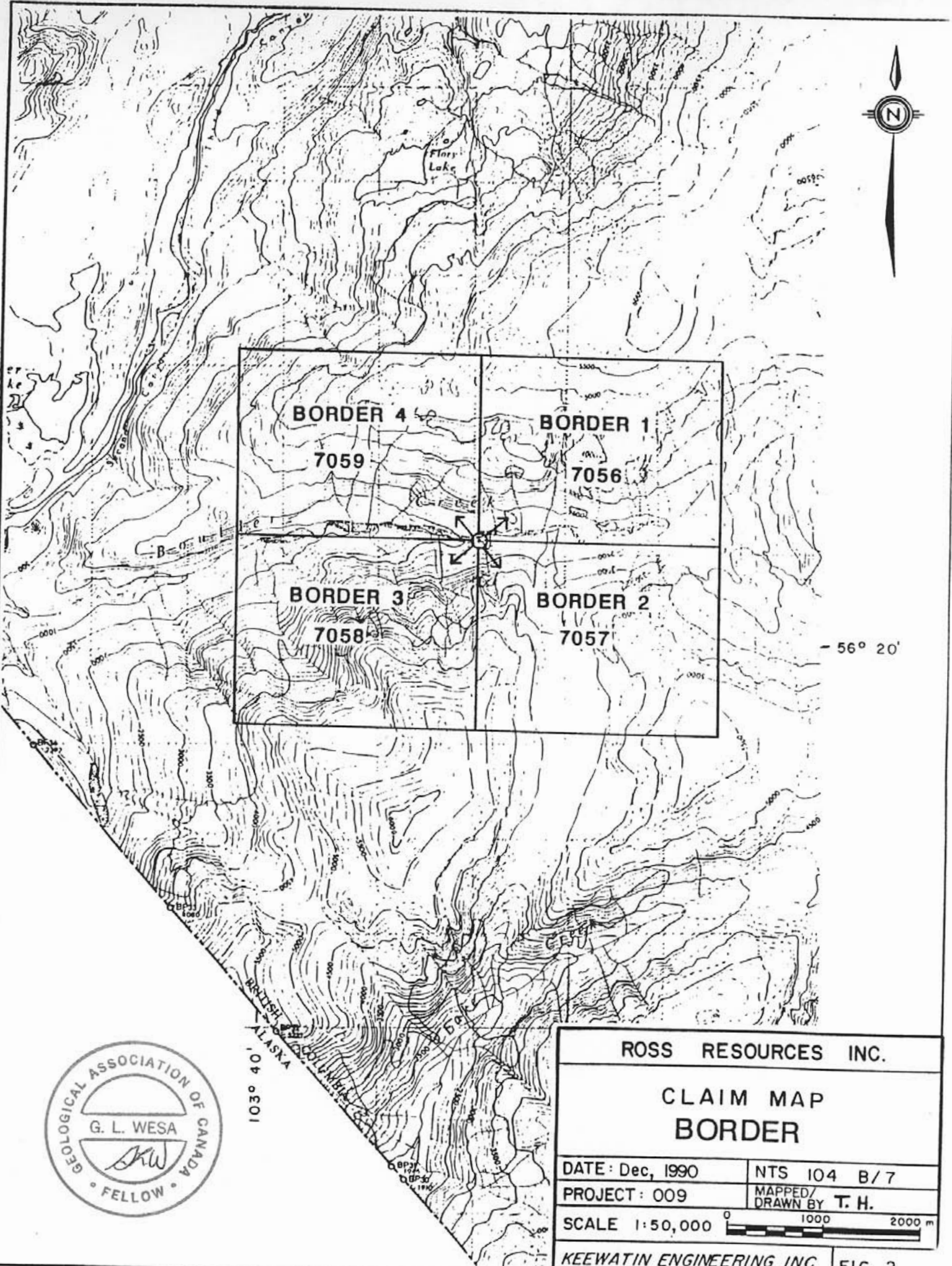
Precipitation is heavy, exceeding 200 cm per annum, with short mild summers but very wet spring and fall periods. Thick accumulations of snow are common during winter. It is seldom possible to begin surface geological work before July and difficult to continue past September.

Property Status and Ownership

The Border property (Figure 2) consists of four modified-grid claims totalling 80 units, located within the Skeena Mining Division. Relevant claims data are tabulated below in Table 1.

Claim Name	Record No.	No. of Units	Date of Record	Expiry Date
Border 1	7056	20	December 21, 1988	1991
Border 2	7057	20	December 21, 1988	1991
Border 3	7058	20	December 21, 1988	1991
Border 4	7059	20	December 21, 1988	1991

These claims are apparently the subject of an agreement between the claim holder (K. S. Gourley) and Ross Resources Ltd.



104 0301

ROSS RESOURCES INC.	
CLAIM MAP BORDER	
DATE: Dec, 1990	NTS 104 B/7
PROJECT: 009	MAPPED/ DRAWN BY T. H.
SCALE 1:50,000	0 1000 2000 m

KEEWATIN ENGINEERING INC. FIG. 2

HISTORY OF EXPLORATION

Regional History

The area drained by the upper reaches of the Stikine, Iskut, Unuk, Craig and Bell-Irving Rivers has been explored for gold since the late 1800's when prospectors passed through the region on their way to the interior.

Exploration to the north of Stewart in the late 1920's and early 1930's resulted in the discovery of mineralization in the vicinity of the Eskay Creek, Summit Lake and East Gold occurrences. Activity was relatively intermittent until the 1950's copper "boom" when the Granduc and Galore Creek deposits were discovered. Much of the area underwent preliminary prospecting during the 1950's and 1960's. Numerous showings and prospects were documented but the inaccessibility of the region and low metal prices resulted in limited exploration activity.

In the 1970's, the porphyry copper boom again brought prospectors and companies into the area. With the dramatic increase in precious metal prices in 1979, all prospects and former producers in the region were re-evaluated. Exploration programs focusing on potential high grade gold and silver deposits were initiated. Approximately \$140 million in exploration expenditures have been spent in the region over the last ten years. Subsequent to 1986, total annual expenditures have averaged between \$25 to \$40 million. These expenditures have pushed several prospects to the advanced stage and resulted in the discovery of over 100 new mineralized occurrences. The advanced projects include the SNIP (Cominco-Prime), Eskay Creek (Corona-Placer-Dome), SB (Tenajon-Westmin) and Sulphurets (Newhawk-Granduc) deposits. Skyline Gold's Johnny Mountain deposit and Westmin/Pioneer/Canacord's Silbak-Premier and Big Missouri deposits went into production during the late 1980's. The exploration activity has been extended north of the Iskut River where numerous gold occurrences have been reported. The most prominent include the McLymont Creek (Gulf International), Iskut J.V. (American Ore-Golden Band-Prime), KRL (Kestral) and Forrest (Avondale) properties. Major exploration programs on these properties were conducted in 1990 and the SNIP property is scheduled for production in 1991.

The 1988 discovery of the Eskay Creek gold-silver-zinc-lead deposit demonstrates the area's potential to host world class deposits.

The recent high level of exploration activity in the area led to federal-provincial government geological mapping programs which began in 1986. These programs will continue in the 1990's.

The Unuk River area was covered by geological mapping in 1988 as part of the Iskut-Sulphurets project conducted by the B.C. Ministry of Energy, Mines and Petroleum Resources (Britton et al., 1989). The entire NTS 104B map sheet is currently being mapped by the Geological Survey of Canada (Anderson, 1989).

The results of a regional stream sediment sampling program conducted over this area were released in July, 1988 (National Geochemical Reconnaissance, 1988). Britton et al. (1989) reported that almost every known precious metal prospect in the Unuk River area is associated with high stream gold values. Known gold occurrences are also associated with high but variable values for such pathfinder elements as silver, arsenic, antimony and barium. Three stream silt samples were collected from the streams draining the Border property. Two of these (#873295, #873296) exhibit anomalous gold values (120 ppb, 95 ppb).

Property History

A review of the material in the B.C. Ministry of Energy, Mines and Petroleum Resources assessment report archives indicates that the entire Unuk River area was subjected to reconnaissance geological mapping and prospecting by Newmont Mines Ltd. during the period 1959 to 1962. This work led to the discovery of three showings within or adjacent to the property boundaries.

The Gold Run occurrence (Minfile #017) is reportedly located in the southeastern portion of the Border 4 mineral claim adjacent to Boulder Creek. This showing is described as a narrow gold-bearing quartz vein hosted by granitic rocks. The vein contains pyrite, galena and sphalerite mineralization. This showing was originally staked in 1934 by J. McQuillan, and underwent a limited amount of prospecting during the mid-1930's (Figure 4).

The McQuillan Ridge showing (Minfile #220) occurs adjacent to the northeastern corner of the property. The showing is hosted by mid-Jurassic diorite dykes which contain minor copper mineralization.

The Jim-Flory occurrence (Minfile #219), located on the Border 4 mineral claim, is described as a zone of sporadic alteration within a tuff and skarn-style alteration within sedimentary units. Magnetite, pyrite and chalcopyrite occur within the altered zone. In 1911, gold values of about 64 grams/tonne were reported from this area (Figure 4).

In 1968, Granduc Mines Ltd. conducted an airborne electromagnetic and magnetic survey over McQuillan Ridge. A portion of this survey encompassed most of the Border property.

In 1969, Granduc Mines Ltd. completed geological and geophysical surveys on their JIM 1 to 22 mineral claims. This work covered the Jim-Flory copper showing, and located a sporadic zone of alteration within a tuff, which is probably restricted to one horizon within the greenstone sequence. The alteration consists mainly of epidotization with associated skarn-type minerals including garnet, and minor amounts of oxides. Magnetite, pyrite and chalcopyrite occur within the alteration zone.

The assessment records (Korenic, 1982) indicate that Duval Corp. undertook a regional heavy mineral survey in the Unuk River area in 1981.

1989 Exploration Program

The 1989 property exploration program, conducted by Keewatin Engineering Inc., was completed between September 9 and October 16, and consisted of helicopter-supported reconnaissance prospecting, geological mapping and geochemistry (lithochemical, stream silt and heavy mineral sampling). Reconnaissance prospecting and geochemical sampling were completed over selected parts of the property. This work was concentrated in the areas of reported mineralization and gossans noted within the property. Reconnaissance prospecting was conducted along Boulder Creek in conjunction with the heavy mineral sampling program. Numerous quartz veins up to 60 cm wide were located, however, rock grab samples failed to yield any significant anomalous geochemical results. A 10 cm thick quartz vein discovered near the reported location of the Gold Run showing yielded a weakly elevated silver value (1.7 ppm). A grab sample from a poorly laminated rhyolite containing trace to minor chalcopyrite, pyrite and pyrrhotite near the south-central part of the Border 4 claim yielded an elevated gold value of 172 ppb.

Aerial reconnaissance of the property located a large iron-stained area in the centre of the Border 1 claim. Investigation of the stained area found it to be underlain by diorite with up to 1% disseminated pyrite. Rusty weathering rhyolite containing stringers and up to 1% disseminated pyrite

was located directly east of this area, however, lithogeochemical samples did not yield any elevated geochemical values for the elements tested.

Additional prospecting over the northeastern part of the Border 1 claim found the remaining areas to be underlain by andesite and minor amounts of sedimentary rocks. A number of quartz-carbonate stringers and veins up to one metre wide were located. A reconnaissance prospecting traverse across the ridge parallel to the northern property boundary failed to locate any mineralization. A gossanous area was found near the reported location of the Jim-Flory showing. Quartz veins up to 50 cm wide, traceable for up to 20 metres, were also located in this area. Lithogeochemical samples yielded very weakly elevated values (up to 64 ppb Au and 1.1 ppm Ag).

Only one stream silt geochemical sample was collected on the property during the 1989 exploration program, however, no anomalous values were detected for any of the elements tested.

A heavy mineral stream sediment sampling survey was conducted on the property and a total of 13 heavy mineral samples were collected from creeks draining the property. Samples collected from creeks draining the southern portion of the property, underlain by diorites of the coast Plutonic Complex, yielded low values for most of the elements. Samples collected from creeks draining areas underlain by the Unuk River Formation yielded a higher gold value, generally between 95 and 282 ppb. Only one sample (XWH-8) yielded a significant gold value (2786 ppb). This sample was collected from a creek draining the eastern portion of the Border 4 claim. A stream silt sample collected from this creek in 1987, as part of a regional stream sediment sampling program, yielded an anomalous value of 120 ppb Au. The Gold Run occurrence, which is described as a narrow gold-bearing quartz vein, is reportedly located in this area. The elevated gold values obtained from this creek may be derived from the Gold Run mineralization, or possibly from another mineralized occurrence.

GEOLOGY

Regional Geology

The property lies within the Intermontane Tectono-Stratigraphic Belt -- one of five parallel, northwest-southeast trending belts which comprise the Canadian Cordillera (Figure 3). The Border

property is situated near the boundary between the Stikine Terrane, which comprises the majority of the western part of the Intermontane Belt, and the unmetamorphosed sediments of the Bowser Basin.

During Late Triassic and Early Jurassic time, the Stikine Terrain was the site of very active calc-alkaline volcanism. This volcanism was also accompanied by felsic intrusions that may have been comagmatic with the volcanic events. The sequences of rocks deposited at this time are now referred to as the Hazelton Group (Table 2). This predominantly volcanic assemblage is characterized by basal pyroclastic rocks overlain by argillites and, finally, by coarse volcanic breccia and conglomerate with interbedded tuffs, greywacke and siltstone.

At the end of Early Triassic time, this volcano-plutonic complex was uplifted to form the Stikine Arch. During Middle to Late Jurassic time, parts of the Stikine Terrain were filled with detritus shed from the Stikine Arch. The resulting, mainly sedimentary, sequences are referred to by Grove (1986) as the Betty Creek Formation, the Salmon River Formation and the Nass Formation (Table 2).

The Unuk River Valley is predominantly underlain by an Upper Triassic to Lower Jurassic section composed of miogeosynclinal volcanic and sedimentary rocks. The composition of the volcanic rocks ranges from andesitic to rhyolite. Thick layers of siltstone and greywacke are intercalated within the predominantly volcanic assemblage. Grove (1986) assigns most of these rocks to the Unuk River Formation. This formation is the oldest of the Hazelton Group and unconformably overlies older Triassic units. The Unuk River Formation includes diagnostic Hettangian, Upper Pleinsbachian and Lower to Middle Toarcian fossil assemblages. In the type area, this formation has a measured cumulative thickness of over 14,000 metres.

The Unuk River Formation is unconformably overlain by the Middle Jurassic Betty Creek Formation which is mainly composed of clastic sediments with minor conglomerate, carbonate, chert, and volcanic rocks. Fossil collections made from the various sedimentary units have defined the age of the Betty Creek Formation as Lower to Middle Bajocian, that is, lower Middle Jurassic.

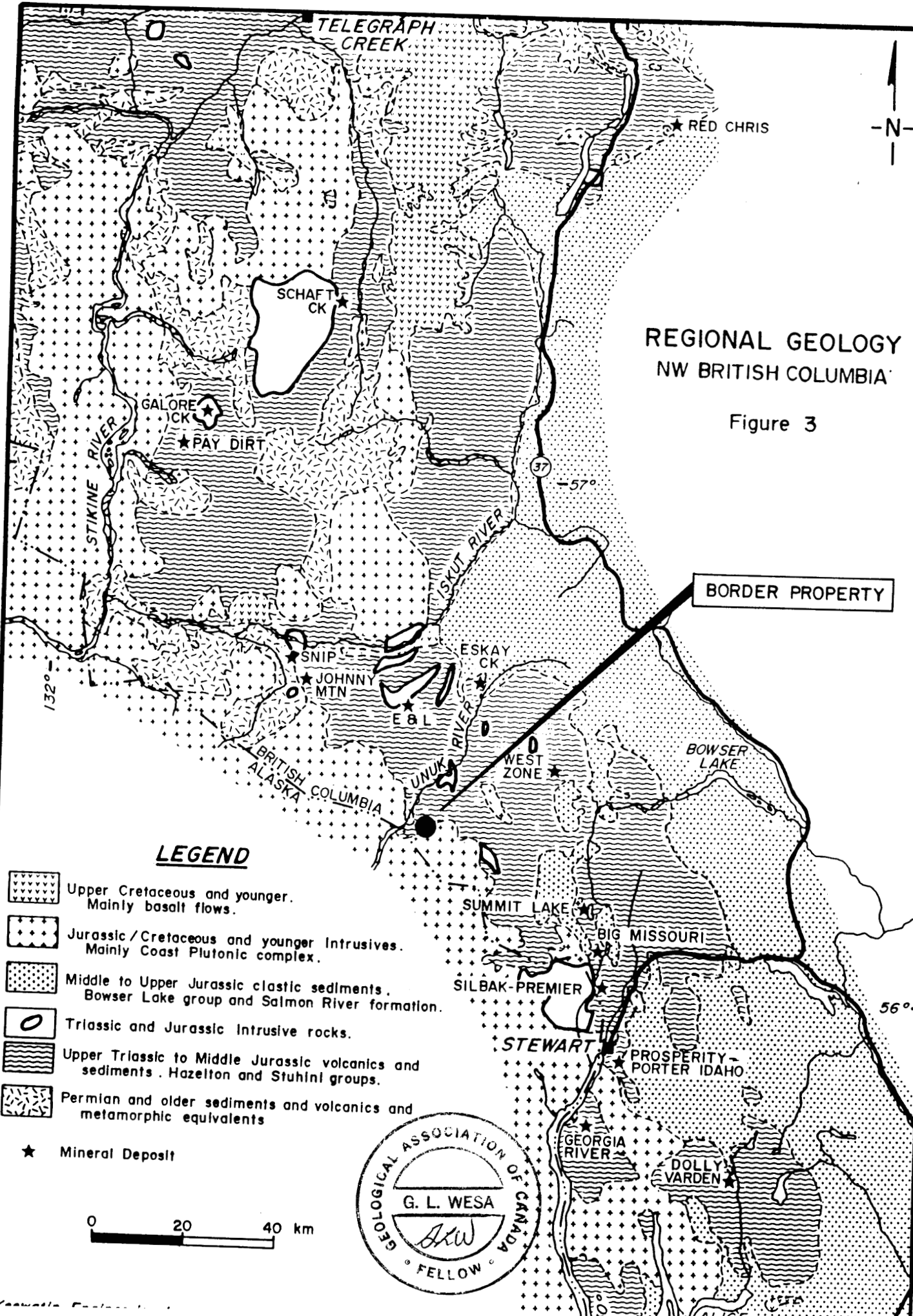
The Mount Dilworth Formation, a thin but regionally extensive blanket of felsic pyroclastics, overlies the Betty Creek Formation. Pyritiferous felsic welded tuffs, tuff breccia flows and thin lenses of siltstones, mudstones and argillites are the prevalent lithologies.

AGE	GROUPS	FORMATIONS	MEMBERS	LITHOLOGIES
Bathonian	Bowser Lake	Ashman	Main Sequence Basal Conglomerate	Turbidites, wackes, intraformational conglomerates Chert pebble conglomerates
Bajocian to Toarcian	Spatsizi(?)	Salmon River	Pyjama Beds Basal Limestone	Thin bedded, alternating siltstones and mudstones Gritty, fossiliferous limestone
Toarcian	Hazelton	Mount Dilworth	Upper Lapilli Tuff	Dacitic lapilli tuff with flow-banded clasts
			Middle Welded Tuff	Dacitic welded ash flow and lapilli tuff
			Lower Dust Tuff	Dacitic dust tuff
Pliensbachian	Hazelton	Betty Creek	Sedimentary Members	Hematitic volcanoclastic sediments, and turbidites
			Volcanic Members	Andesitic to dacitic tuffs and flows
Sinemurian to Hettangian(?)	Hazelton	Unuk River	Premier Porphyry	Two feldspar + hornblende porphyritic tuffs
			Upper Andesite	Massive tuffs with local volcanoclastic sediments
			Upper Siltstone	Turbidites, minor limestones
			Middle Andesite	Massive tuffs and minor volcanoclastic sediments
			Lower Siltstone	Turbidites
			Lower Andesite	Massive to bedded ash tuffs
Norian to Carnian	Stuhini		Volcanic Members Sedimentary Members	Pyroxene porphyry flows and tuffs Turbidites, limestones, conglomerates







TABLE 2. Table of Formations - Unuk River Area

REGIONAL GEOLOGY NW BRITISH COLUMBIA

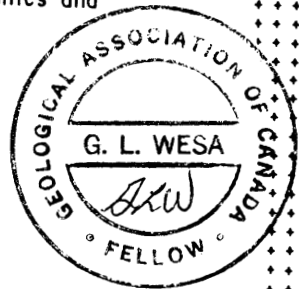
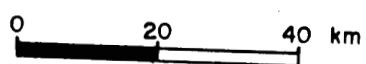
Figure 3



LEGEND

-  Upper Cretaceous and younger. Mainly basalt flows.
-  Jurassic / Cretaceous and younger Intrusives. Mainly Coast Plutonic complex.
-  Middle to Upper Jurassic clastic sediments. Bowser Lake group and Salmon River formation.
-  Triassic and Jurassic Intrusive rocks.
-  Upper Triassic to Middle Jurassic volcanics and sediments. Hazelton and Stuhini groups.
-  Permian and older sediments and volcanics and metamorphic equivalents

★ Mineral Deposit



A thick sequence of Middle Jurassic, thinly bedded turbiditic siltstones (Salmon River Formation) overlies the Mount Dilworth Formation. Anderson (1990) has recently postulated that the Eskay Creek deposit "appears to be stratabound within the siliceous to limy sedimentary rocks and pillowed lava sequence of the Eskay Creek facies of the Salmon River Formation".

The Hazelton Group rocks were intruded by granitic rocks of the Coast Plutonic Complex. These intrusions consist of a variety of plutons representing at least four intrusive episodes spanning late Triassic to Tertiary time. These include synvolcanic plugs, small stocks, small satellite diapirs, dyke swarms, isolated dykes and sills as well as batholiths belonging to the Coast Mountain Complex. Granodiorite is the predominant rock type, although a variety of lithotypes are recorded. The orogenic event which accompanied this intrusive phase also produced a major structural grain along the western margin of the Central Cordillera. The stratigraphic sequence has been folded, faulted and weakly metamorphosed during Cretaceous time, however, some Jurassic strata are polydeformed and may record an earlier deformational event. Regional metamorphism is classified as lower greenschist facies and is characterized by saussuritized plagioclase, chloritized mafic minerals and the conversion of clay constituents to white mica. The age of metamorphism is Cretaceous, however, near the contact of the Coast Plutonic Complex, granitic dykes thought to be offshoots of the complex have been mylonitized, indicating that deformation has also occurred after this Eocene intrusive event (Alldrick et al., 1987).

Regional Economic Geology

The Iskut-Unuk River property area hosts many significant gold, silver and base metal deposits (Figure 3 and Table 3). These deposit types include epithermal and mesothermal precious metal shear-veins and replacements, calc-alkaline and alkaline copper ± gold porphyries, concordant massive sulphides, stratabound hydrothermal and skarns. The majority of these are hosted by Upper Triassic to Lower Jurassic volcanics and sediments and display a spatial relationship with early Jurassic potassic intrusions. A brief description of some of the more important deposits in the region are as follows:

Eskay Creek (21 Zone)

The mineralization at Eskay Creek was discovered in 1932 and active prospecting has continued sporadically since then. Two adits were the result of limited mining activity on this

prospect. In 1988, Calpine Resources Incorporated discovered high-grade gold and silver mineralization on the #21 Zone (Northern Miner, November 7, 1988).

Eskay Creek appears to display characteristics of both epithermal exhalative and volcanogenic massive sulphide types of deposits. The deposit has been described as consisting of stratabound gold-silver-base metal zones, hosted by a carbonaceous mudstone unit (Salmon River Formation?) at the top of a rhyolite breccia sequence. The mudstone is overlain by andesitic pillow lavas. The rhyolite (Mount Dilworth Formation) is underlain by dacitic tuffs of the Betty Creek Formation. The southern part of the deposit (21A Zone) contains massive to disseminated stibnite-realgar mineralization with associated high grade gold and minor silver contents. This is underlain by a footwall stockwork zone in the rhyolite. The northern part of the deposit (21B Zone) is a very gold-silver rich, base metal sulphide lens, with extensive footwall stockwork mineralization. This mineralization is associated with pervasive quartz-chlorite-muscovite alteration and minor gypsum, barite, feldspar and calcite (Idziszek et al., 1990).

The 21C Zone lies 25 metres to 50 metres down section from the 21B Zone. Diamond drilling has identified the mineralized zone along a minimum strike length of roughly 600 metres. The 21C Zone is strongly mineralized with gold and silver, however, sulphide content is low compared to the 21B Zone. In addition, the Pumphouse Lake Zone has been traced by drilling over a strike length of 250 metres. There have been 665 surface diamond drill holes drilled to date plus an exploration decline has been driven to test the main contact ore lens and three mineralized horizons. Wall chip assay results indicate a grade-width return of 1.56 oz/t Au and 40.5 oz/t Ag over 10 metres. This section includes 2.51 oz/t Au and 62.6 oz/t Ag over 5.54 metres. Underground drifting, bulk sampling and drilling will continue through the winter months of 1990-91.

Exploration activity has brought the total geological reserve base to an estimated 5,300,000 ounces gold equivalent at the 0.10 oz/ton Au threshold. This high grade reserve is contained within both the 21B and 21A Deposits. The potential to significantly increase the total reserve base is considered to be excellent. Immediately apparent potential lies within the northern 21B Deposit, in the Pumphouse Lake Zone, and the 21C Deposit. Additional new zones of discovery may be forthcoming pending results of surface drilling now underway elsewhere on the Eskay Creek property (Vancouver Stockwatch, September 18 and October 1, 1990).

Sulphurets Area

Several different deposit types are present in the Sulphurets map sheet (Open File 1988-4): A group of occurrences known as the Sulphurets Camp is located approximately 20 km southeast of Eskay Creek. Both porphyry type and mesothermal to epithermal precious metal deposits are present. Apparent overprinting of mineralization types and multiple generations of alteration and vein assemblages are noted. Most mineral occurrences in the area are hosted by the upper part of the Unuk River Formation or the lower part of the Betty Creek Formation (Britton et al., 1988). The Goldwedge Zone is hosted by the Betty Creek Formation. Other deposits in the camp include the Sulphurets and Snowfield Zones, the West Zone deposit and the Kerr deposit. Mineralization can be grouped into four main categories; veins, disseminations, intrusive contacts and stratabound. Extensive gossans are associated with mineralization in the area.

The mineralization of the West Zone is located in structurally controlled quartz vein stockworks within a silicified, sericitic alteration zone. The complex vein system, within the zone, is up to 40 metres thick and contains in excess of 60% vein material. The zone has been traced for over 600 metres along strike and for 500 metres at depth. Andesitic tuffs of the Unuk River Formation, near the volcanic-sediment contact, host the deposit. The mineralization consists of pyrite, electrum, native gold, argentite, galena, sphalerite, chalcopyrite, tetrahedrite, pyrargyrite, proustite, freibergite and stephanite.

Johnny Mountain

This mine has produced 100,300 tons of ore grading 0.46 oz/t gold, 1.0 oz/t silver and 0.75% copper to the end of October, 1989 (D. Yeager, personal communications, January, 1990). The deposit comprises five sub-parallel quartz veins, hosted by interbedded andesitic to dacitic volcanoclastics and volcanic sediments (Lower Jurassic) which are cut by feldspar porphyry dykes. The veins reportedly thicken and contain higher grades at quartz-carbonate cross structures and at lithologic contacts. The northeast trending veins are generally one to two metres wide and contain pyrite and chalcopyrite with minor sphalerite, galena and pyrrhotite. Electrum and native gold have been reported. A distinctive alteration halo surrounds the veins. Outward from the vein, the alteration sequence progressively changes from massive potassium feldspar and ankerite to a quartz-pyrite stringer zone to a disseminated pyrite zone.

Snip

This deposit is hosted by massive to bedded siltstone and feldspathic wacke (Upper Triassic). The ore zone ("Twin Zone") is described as a one to ten metre thick, discordant, banded shear vein which trends southeast. The zone consists of veins with alternating bands of massive, streaky calcite, heavily disseminated to massive pyrite, biotite-chlorite, quartz and pyritic to non-pyritic fault gouge. Mineralization consists of pyrite, lesser pyrrhotite, minor sphalerite and locally abundant arsenopyrite, galena, molybdenite and chalcopyrite. The gold grades are reported to be fairly uniform throughout, although native gold has been observed locally.

Summit Lake (Scottie Gold)

This mine produced 160,264 tonnes of ore grading 18.6 g/t gold and 10.1 g/t silver between 1981 and 1984. Epigenetic, mesothermal veins are developed along three sub-parallel shear systems which form part of a ladder vein set. Within these structures are plunging, parallel ore shoots consisting of massive pyrrhotite and/or pyrrhotite-pyrite, up to 5 metres wide. The shoots are usually symmetrically bordered by gold-bearing, quartz-carbonate-pyrrhotite-base metal sulphide vein swarms and disseminated base metals. These are hosted by brecciated and intensely silicified, hematized, carbonatized and chloritized wallrock. The overall gold/silver ratio is 2:1.

SIB Group

American Fibre and Silver Butte Resources have drilled 20 holes on their SIB claims and intersected mineralization contained in graphitic mudstone interbedded with felsic volcanic units. One hole returned 49.6 feet grading 0.42 oz/t Au and 30.91 oz/t Ag which includes 16.7 feet of 0.86 oz/t Au and 50.24 oz/t Ag. The geological setting is believed to be similar to the Eskay Creek deposit (The Northern Miner, October 22, 1990).

Inel

Avondale Resources conducted underground drilling and drifting of the AK Zone at the Inel property which produced significant high grade assay results in 1989. The underground program comprised 1,500 feet of adit and footwall drifting. A recent 24.3 foot intercept grading 1.19 oz/t Au, 1.39 oz/t Ag and 0.87% zinc was returned from underground drilling (The Northern Miner, October 15, 1990).

Recent exploration activity north of the Iskut River has resulted in the discovery of three different styles of mineralization. Gulf International has been drilling stratabound skarn mineralization (Mississippian age) on their McLymont Creek property. The zone has been traced for some 300 metres along strike and 200 metres at depth. The best reported drill results include 3.55 oz/t gold over 6.5 feet and 0.62 oz/t gold over 10 feet (L.O.M. Western Securities Ltd., 1990). Mineralization consists of pyrite, chalcopyrite, sphalerite and galena with a gangue of barite, calcite, gypsum, magnetite and specularite. It is believed that the formation of the deposit is due to the presence of a strong structure, chemically reactive host rocks and close proximity to intrusive bodies (Logan et al., 1990). Palaeozoic strata on Kestral's KRL property and Avondale's Forrest property are reported to host mesothermal, shear related gold mineralization. Kestral has reported that channel samples from veins graded up to 7.28 oz/t gold. Avondale has indicated that a large mineralized hydrothermal system, which has been traced for over 3 miles, hosts at least 19 precious and base metal occurrences. Rock samples grading up to 5.8 oz/t gold, 3.6 oz/t silver and 9.5% copper have been reported (L.O.M. Western Securities Ltd., 1990). The mineralization is found in quartz stockworks and veins and consists of gold and silver-bearing quartz-chalcopyrite, with or without malachite, azurite, arsenopyrite, galena, bornite and hematite. The mineralization is spatially related to granitic (Jurassic) and, locally, dioritic (Permian) intrusions. Further north, Cominco has reported polymetallic, massive sulphide float on their Fore More property. They have found more than 800 massive sulphide boulders containing fine-grained pyrite, sphalerite, galena, barite, chalcopyrite and, locally, silver minerals (Logan et al., 1989).

Britton et al. (1989) listed 55 mineral occurrences on the Unuk area map sheet. These showings are predominantly gold/silver occurrences and are hosted by a number of various lithologies. Most can be classified into one of four categories: stratabound, vein, skarn, and disseminations. Grove (1986) determined that the age of the mineralizing events is variable, and notably, can be post-Triassic.

Stratabound mineralization consists almost exclusively of pyritic zones and lenses contained within a particular stratum or restricted set of strata. The best example is the Eskay Creek deposit.

Intrusive-contact (skarn) deposits show a close spatial and temporal relationship with igneous intrusions. Three deposits in this category are the E & L nickel/copper deposit (Minfile #006), the Max copper/iron skarn (Minfile #013), and the Chris-Anne copper/iron skarn (Minfile #125). Britton et al. (1989) stated:

Mineralization at the E & L occurs within two medium- to coarse-grained, olivine-pyroxene gabbro bodies. These roughly triangular plugs are each approximately 1300 square metres in area and are probably connected. They intruded a sequence of argillites, tuffaceous siltstones, and grey dacitic ash tuffs that strike northwest with moderate to steep southwesterly dips. Mineralization consists of pyrrhotite, pentlandite, and chalcopyrite, with lesser amounts of pyrite and magnetite. In the northwestern gabbro, mineralization extends up to the contact with the sediments, whereas in the southeastern gabbro, mineralization is confined to the pluton. Diamond drilling has delineated pipelike pods and disseminations of sulphides to a depth of 120 metres. Drill-indicated reserves are 2.8 million tonnes of 0.7% Ni and 0.6% Cu (Sharp, 1965).

The Max prospect lies on the northwest side of McQuillan Ridge, between the Unuk and South Unuk Rivers, at elevations between 455 and 1500 metres. Massive magnetite with lesser pyrrhotite and chalcopyrite occur in skarn-altered sedimentary rocks adjacent to a diorite stock. Garnet, epidote, actinolite, and diopside characterize the skarn assemblage. Drilling has indicated a reserve of 11 million tonnes at 45% iron (Canadian Mines Handbook 1973-1974, page 432).

The Chris-Anne prospect lies approximately 3 kilometres east of the Max. Skarn mineralization is reported in limestone beds which are up to 10 metres thick and that are interbedded with volcanoclastics. Magnetite and pyrrhotite-rich layers, from 0.5 to 7 metres thick, with minor chalcopyrite, extend over a distance of 1 km. There are minor intrusive bodies reported on the property. Grades range from 0.1% to 0.4% copper (Allan and MacQuarrie, 1981).

The gold potential of these skarn deposits does not appear to have been tested. Based on recent skarn studies (Ettlinger and Ray, 1988), this area has many features that are associated with gold-enriched skarns elsewhere in the province: sequences of calcareous and tuffaceous host rocks; structural deformation; intrusion by dioritic I-type granitoids; and contact metamorphism and recrystallization. Some auriferous skarns are enriched in cobalt, an element that may be a useful pathfinder.

High-grade precious metal quartz veins are the target of exploration programs at Mount Madge (Minfile #240 and #233) by Bighorn Development Corporation, and at the Doc prospect (Minfile #014) by Echo Bay Mines Limited. Britton et al.(1989) reported:

The Mount Madge prospects are located south of Sulphurets Creek near its confluence with Unuk River, on the east and west sides of Mandy Glacier. Two different targets are being evaluated (Kruckowski and Sinden, 1988). On the west, the C-10 prospect (Minfile #240) is a stockwork of thin quartz veinlets, locally with thicker quartz lenses, in intensely altered, fine-grained tuffaceous andesite or dacite. Quartz veinlets locally form up to 30% of the rock. The alteration assemblage consists of quartz and sericite with up to 10% pyrite. Chalcopyrite and traces of sphalerite are also present. The rocks are strongly foliated to schistose and are very similar to the broad alteration zones seen at Brucejack Plateau 12 kilometres to the northeast (Britton and Alldrick, 1988). Soil samples locally return analyses in excess of 1 ppm gold.

Two kilometres to the east, Ken Konkin discovered a massive pyrite-siderite float boulder with visible gold. Prospecting uphill led to the discovery of the GFJ veins (Minfile #233), apparently flat-lying, zoned siderite-quartz-sulphide veins that returned assays up to 121 grams per tonne gold (Kruchkowski and Sinden, 1988). The veins are poorly exposed. Float blocks seen this year display symmetrical zoning from margin to core across vein widths of 10 to 15 centimetres. Vein margins are 1 to 2 centimetres of thin white quartz layers separated by hairline accumulations of very fine-grained tin-white sulphide, probably arsenopyrite. The core is a very coarse-grained intergrowth of siderite, milky quartz, and cubes and clusters of pyrite, with lesser amounts of sphalerite and chalcopyrite as crystals and irregular masses. Rare tetrahedrite and visible gold have been observed (K. Konkin, personal communication, 1988). The veins cut variably foliated andesitic ash tuffs with thin interbeds of foliated to schistose siltstones.

The Doc prospect (Minfile #014) is located at treeline on a ridge overlooking the South Unuk River, opposite the mouth of Divilbliss Creek. The prospect consists of several west-northwest trending quartz veins up to 2 metres wide that have surface strike lengths of up to 275 metres (Gewargis, 1986). The main veins (Q17, Q22) are massive white quartz with sparse sulphide mineralization (5% to 10%) consisting of galena, pyrite, chalcopyrite, and sphalerite, with associated specular hematite and magnetite. Precious metal values are mostly confined to the sheared edges of veins and immediately adjacent wallrock. Shear zones with very little quartz may also return good values. Seraphim (1948) observed that gold was associated with either specular hematite or with galena and pyrite, but not with chalcopyrite and pyrite assemblages. The veins are a true fissure type, crosscutting folded and metamorphosed andesitic tuffs and thin-bedded sediments, including marble, that have been intruded by irregular dioritic dykes or sills and small monzodioritic plugs. The veins are different from any others seen in the Sulphurets or Unuk map areas. They have very restricted wallrock alteration aureoles, no apparent zoning, and appear to be limited to a few large fluid pathways. In this, they display characteristics of mesothermal veins. Structural control of the vein sets has not been determined but may be due to fractures related to folds in the host rocks. Total mineral inventory of the Q17 and other veins is given as 426,000 tonnes with 9.26 grams per tonne gold and 44.91 grams per tonne silver (*Northern Miner*, November 7, 1988).

Porphyry-type disseminated pyrite, chalcopyrite, and molybdenite mineralization occurs immediately north and south of King Creek, west of Harrymel Creek. Two properties have been worked: the VV to the south and the Cole to the north.

The VV property (Minfile #079) is the site of a heavily weathered monzonitic intrusive body in fault contact, on the east and west, with layered andesitic lapilli tuffs and tuff breccias with minor siltstone and calcareous sandstone interbeds. The stock is 250 metres wide, at least 6 kilometres long, strikes northerly, and dips steeply to the west, parallel to the country rocks. Chalcopyrite occurs in quartz stockworks and as fine disseminations within the monzonite. Molybdenite, sphalerite, malachite, and azurite have also been reported (Winter and McInnis, 1975; Mawer et al., 1977). Representative assays give 0.34% copper, 0.003% molybdenum, 2.1 grams per tonne silver, and 0.8 gram per tonne gold. Maximum gold and silver values obtained were 8.65 grams per tonne gold and 19.54 grams per tonne silver (Mawer et al., 1977).

TABLE 3: Summary of Mineral Deposits in the Golden Triangle Area

Deposit	Type	Host	Ore Reserves (tons)	Grade	Comments
Silbak-Premier	epithermal/ porphyry	Unuk River Formation (Lower Jurassic)	6,100,000	0.064 oz/t Au & 2.39 oz/t Ag	production resumed 1989
Big Missouri	epithermal and stratabound	Unuk River Formation (Lower Jurassic)	1,860,000	0.091 oz/t Au & 0.67 oz/t Ag	production resumed 1989
SB	epithermal	Unuk River Formation (Lower Jurassic)	152,000	0.335 oz/t Au, 0.79 oz/t Ag, 1.42% Pb-Zn	1982 discovery
Summit Lake	mesothermal shear vein	Unuk River Formation (Lower Jurassic)	132,000	0.56 oz/t Au	closed 1985
West Zone	mesothermal shear vein	Unuk River Formation (Lower Jurassic)	854,072	0.354 oz/t Au & 22.94 oz/t Ag	feasibility stage
Granduc	concordant massive sulphide	Unuk River Formation (Lower Jurassic)	10,900,000	1.79% Cu, 0.004 oz/t Au & 0.24 oz/t Ag	closed 1984
Kerr	alkaline porphyry	Unuk River Formation (Lower Jurassic)	66,000,000	0.86% Cu & 0.010 oz/t Au	1987 discovery
Eskay Creek	stratabound hydrothermal system	Mount Dilworth Formation (Lower Jurassic)	6,035,220 (prelim.)	0.643 oz/t Au & 15.61 oz/t Ag	1988 discovery drilling still in progress
Goldwedge	mesothermal shear vein	Betty Creek Formation (Lower Jurassic)	295,000	0.63 oz/t Au & 2.44 oz/t Ag	1981 discovery
Johnny Mountain	mesothermal shear vein	Unuk River Formation (Lower Jurassic)	740,000	0.52 oz/t Au, 1.0 oz/t Ag & 0.75% Cu	production commenced 1988
Snip	mesothermal shear vein	Stuhini Group (Upper Triassic)	1,032,000	0.875 oz/t Au	feasibility stage
Galore	alkaline porphyry	Stuhini Group (Upper Triassic)	125,000,000	1.06% Cu, 0.013 oz/t Au & 0.25 oz/t Ag	1955 discovery
Shaft Creek	calc alkaline porphyry	Stuhini Group (Upper Triassic)	1,000,000,000	0.30% Cu & 0.004 oz/t Au	dormant
Red Chris	alkaline porphyry	monzonite (Late Triassic to Early Jurassic)	43,700,000	0.56% Cu & 0.010 oz/t Au	dormant
E & L	porphyry	Nickel Mountain Gabbro (Jurassic)	2,930,000	0.80% Ni & 0.62% Cu	dormant

The Cole prospect (Minfile #209) is situated approximately 4 kilometres north of the VV claims; it appears to be on strike with the same fault system and has similar intrusive and country rocks. Mineralization consists of up to 10% pyrite as disseminations and fracture fillings. Minor chalcopyrite and malachite have been reported but the bedrock source of the gold/silver soil anomalies has not been located (Korenic, 1982; Gareau, 1983). Reported assays range up to 0.43% copper, 7.12 grams per tonne gold, and 13.03 grams per tonne silver. Gold and copper values show a positive correlation on both properties.

Property Geology

The Border property was mapped and sampled by Keewatin Engineering Inc. personnel and data were plotted on 1:5,000 scale contour maps enlarged from 1:50,000 scale NTS topo maps (Map 1). Approximately 45% of the property is covered by forest and alpine to sub-alpine scrub vegetation, and a further 5% is covered by valley glaciers and ice sheets. The remaining 50% of the property consists almost exclusively of outcrop (90%) and a surface covering (10%) composed of morainal deposits, talus debris and glaciofluvial material. Good outcrop exposure at higher elevations results from the recent recession of ice and the high elevation of the property which ranges from 3,500 to 5,700 feet above sea level.

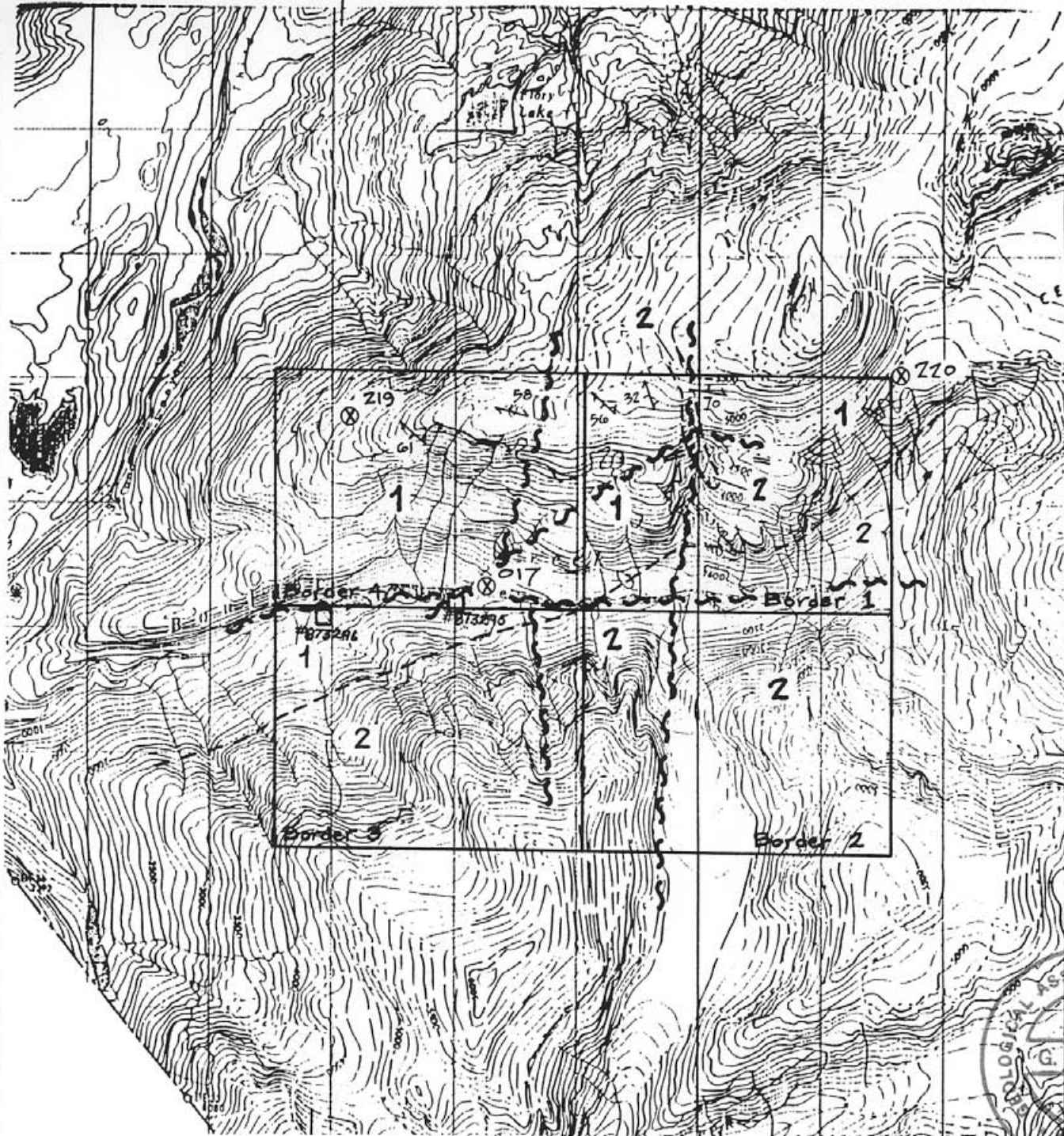
Regional geological mapping by Britton et al.(1989) shows that the southern property area is underlain by diorite of the Coast Plutonic Complex (Figure 4). The northern property area is underlain by the Lower Jurassic Unuk River Formation. A number of Eocene to Lower Jurassic dioritic to granodioritic dykes or sills intrude the Unuk River Formation. These units are described by Britton et al. (1989) below:

Lithologies

Upper Triassic to Lower Jurassic Unuk River Formation

These Norian to Sinemurian age rocks of the Unuk River Formation constitute the lowermost unit of the Hazelton Group. Britton et al.(1989) described this sequence as green and grey intermediate to mafic volcanoclastics and flows with locally thick interbeds of fine-grained immature sediments. The volcanics are reported to be dominantly massive to poorly bedded plagioclase (\pm hornblende) porphyritic andesite. The sediments are predominantly grey, brown, and green thinly bedded tuffaceous siltstone and fine-grained wacke. The basal contact with Triassic strata appears to lie near the top of a thick sequence of clastic sedimentary rocks. Neither an angular unconformity nor a widespread conglomerate marks the lower contact. Government regional geological mapping and mapping completed during the 1989 property exploration program indicate this unit underlies the northern portion of the property.

130°40'



56°20'

LEGEND

2 Eocene Coast Plutonic Complex: biotite-granite to biotite-hornblende quartz diorite.

1 Upper Triassic to Lower Jurassic Unuk River Formation: andesitic volcanoclastics and flows with thick interbeds of fine-grained immature sediments.

--- Geologic contact (Known)

~ Fault zone

⊗ 219 Minfile occurrence

□ N.C.P. Stream silt sample

— Quartz vein

32/ Foliation or compositional layering (inclined)



ROSS RESOURCES INC.

**BORDER PROPERTY
 COMPILATION MAP
 GEOLOGY and
 MINERAL OCCURRENCES**

DATE: Dec., 1990

NTS: 104 B/7

PROJECT: 009

PRJ. GEOL.: G. Wesa

SCALE: 1:50000



Eocene and possibly Jurassic Coast Plutonic Complex

Britton et al.(1989) described the intrusions as ranging in composition from biotite granite to biotite-hornblende quartz diorite. Numerous discrete stocks are probably present. The country rock contacts are reported to be sharp, discordant, and thermally metamorphosed. The age of these intrusives is Eocene, but the complex may include remnants of Jurassic granitoids.

Geological mapping, in the central to east-central portion of the Border 1 claim, by Keewatin Engineering Inc. personnel confirms that the northern and northeastern areas of the property are underlain by Upper Triassic to Lower Jurassic Unuk River Formation rocks (Map 1). This unit comprises an assemblage of thinly bedded to laminated, dark green to dark grey andesitic ash fall and lapilli tuffs which commonly show graded bedding. Sub-rounded anhedral clasts, up to 1 cm, and stretched fragments occur in a fine to coarse ash matrix.

Banded andesitic ash and lapilli tuff is in contact with massive andesitic flows on the west side of a deeply incised gully at the 4,500 foot elevation in the northwestern part of the Border 1 claim. The volcanic sediments are cut by feldspar-hornblende porphyry dykes (up to 2 metres wide) and diorite dykes (up to 5 metres wide). This locality is also characterized by a 150 metre long by 25 metre wide gossanous lens of banded, or "sheeted", vuggy massive quartz. This tabular body contains extensive post-emplacement quartz veining, stockwork veining and brecciation plus abundant drusy quartz in vugs and dilatant zones. The quartz lens may be emplaced along a shear zone as evidenced by fractured, brecciated and slickensided contacts with the thinly bedded lapilli tuffs to the north.

Silicified, weakly folded, bedded tuffs with intercalated siltstone and mudstone are exposed eastward along a ridge south of a large icefield. The general strike of the stratigraphic package appears to be 110° azimuth with moderate to steep southerly dips. Bedding attitudes were measured on several thinly bedded tuffaceous layers and these show that the strike of the stratigraphy varies between 090° and 120° with dips of 37° to 85° south. Local deviations from this orientation were observed; the result of minor folding. The quartz lens strikes 060° with 85° to 90° dips to the south. A narrow, northerly to northwesterly trending wedge of granodiorite, sub-parallel to a north-trending fault zone, occurs in the northwestern part of the Border 1 claim.

Structure

Britton et al. (1989) mapped several assumed faults to the north and east of the property and a number of faults were proposed (Aussant and DuPre, 1989) within the property boundaries. The

quartz lens discussed in the previous section appears to coincide with a fault zone, or shear, striking 060° azimuth. A narrow (<0.5 metre) limonitic fault zone occurs south of the snowfield in the north-central Border 1 claim. This shallow south dipping fault strikes 115° azimuth and is marked by crushed and milled limonite-clay gouge containing up to 20% disseminated and very fine smoky grey pyrite and pyrrhotite. The tuffaceous sediments hosting the mineralization are silicified, limonitic and intensely hydrothermally altered, producing a bleached appearance within the fault zone. A north-south trending gossanous incised gully which bisects the Border 1 claim probably represents the surface trace of a fault zone, however, precipitous terrain precluded a direct examination of the gully during this program.

Alteration

Strong limonitic surface weathering marks zones of faulting in an east-west trend across the north-central portion of the Border 1 claim. The quartz lens discussed in the previous sections is selectively rusty weathering, particularly at the quartz-wallrock contacts. Strongly gossanous patches are observed in the incised north-south gully cutting across the stratigraphy in the Border 1 claim. The tuffs east of this gully are pervasively siliceous and commonly quartz-sericite altered. Fault/shear zones are marked by >90% earthy reddish-brown limonite hosting quartz-calcite and fine pyritic sulphides.

Mineralization

Many of the outcrops of the andesitic tuffs and interbedded sediments examined during the 1990 program are weakly mineralized with trace to 1% finely disseminated pyrite, however, higher (3-7%) sulphide concentrations occur within fractures and limonitic selvages and shear zones associated with the large quartz lens. Up to 20% disseminated, stringer and fine pyritic and pyrrhotite sulphides, hosted in limonite-clay gouge, occur within a narrow fault zone at approximately 4,600 feet elevation east of the gully in the north-central Border 1 claim.

1990 EXPLORATION PROGRAM

Geological Mapping

Geological mapping and geochemical sampling carried out during the 1990 exploration program was limited to the Border 1 claim. Approximately 10% of the claim area was evaluated by

geological mapping, lithogeochemical sampling, soil sampling and limited stream silt sampling (Map 1). This area was targeted for examination following a brief helicopter reconnaissance of the property which outlined a series of bright gossans in the central and north-central portion of the Border 1 claim. The gossans and fault zones within this locality were lithogeochemically sampled and a short 170 metre soil line was established along the southeastern side of a 150 metre long, fault related, massive quartz lens. Silt samples were collected from a few narrow active streams draining nearby snowfields.

Geochemistry

Sampling Procedure

A total of 20 rock grab and float samples, eight soil (talus fines) samples and three stream silt samples were collected during the 1990 reconnaissance survey. Rock samples were collected during the mapping survey from sulphide bearing, gossanous, altered and sheared lithologies and placed in marked plastic sample bags accompanied with a numbered tag for sample identification purposes. All sample sites were marked with a tyvek tag and fluorescent ribbon coded with the corresponding sample number.

Soil samples, classified as talus fines, were collected from depths of 10-30 cm using long handled mattocks. Samples were placed in marked, large, gusseted kraft paper sample bags and the sample sites were correspondingly marked with a numbered fluorescent ribbon and a tyvek tag.

Stream silts were collected, where possible, from the active portions of drainages and likewise placed in kraft paper bags. The samples were coded and the sample sites marked with fluorescent ribbon and a tyvek tag.

Detailed notes were recorded for each sample and these are incorporated in Appendix V. Analytical results are presented in Appendix IV and geochemical values are plotted on Maps 2 and 3. Ground control for soil line sampling was provided by compass and topo chain and personnel were supplied with 1:10,000 scale maps for plotting geological and geochemical data. This data was subsequently transferred to 1:5,000 scale enlarged contour maps.

All of the samples were shipped to Bondar-Clegg & Company Ltd. of North Vancouver, B.C. for assay/analyses. The analytical techniques are described in Appendix III.

Rock Geochemistry

Concurrent with geological mapping, 20 rock samples were collected, of which 19 were rock grab from outcrop and one was from float. Rock sample locations are plotted on Map 1 and geochemical values are plotted on Maps 2 and 3. Rock sample descriptions are attached in Appendix V. The rock samples were generally sulphide (pyrite, pyrrhotite) bearing and were collected from areas of faulting, with coincident quartz-limonite alteration, and from contact zones characterized by alteration and brecciation (Map 1). Lithochemical analysis proved disappointing. The highest values for gold and copper were 52 ppb Au and 184 ppm Cu. Geochemical analyses failed to return anomalous values for any other elements tested.

Soil Geochemistry

A total of eight soil samples were collected at 25 metre intervals from a 170 metre soil line established in close proximity to the large massive quartz lens. The soil line is plotted on Map 1 and the geochemical values are recorded on Maps 2 and 3. Sample descriptions are presented in Appendix V.

Soil profiles are non-existent on the barren slopes above treeline due to the steepness of the terrain plus the recent deglaciation. Therefore, soils are effectively classified as talus fines. The soil survey failed to identify any significant gold targets, however, three soil samples yielded coincident weakly elevated gold (up to 38 ppb), silver (up to 4.2 ppm), copper (up to 107 ppm), zinc (up to 293 ppm) and arsenic (up to 243 ppm) values. Mercury appears to correspond with these elevated values suggesting a gold-arsenic-mercury association.

Stream Silt Geochemistry

Owing to the steepness of the terrain and lack of drainages in an area dominated by cliffs and barren outcrop, only three stream silts were collected. These silts failed to produce anomalous gold and base metal values.

CONCLUSIONS

Geological mapping, lithochemical sampling, soil sampling and limited stream silt sampling was the focus of exploration activity on the Border 1 claim during the limited 1990 reconnaissance

program. This work was performed on the Border 1 claim, subsequent to an aerial survey of the property, which targeted this area owing to the presence of several gossans. Geological mapping on the Border 1 claim has shown the bedrock geology to comprise an assemblage of Unuk River andesitic volcanics, pyroclastics and interbedded sediments in the northern two-thirds of the claim and Coast Plutonic Complex multiphase intrusions of granitic to dioritic composition in the southern one-third of the claim. These units are cut by several observed and assumed fault zones, which are represented by incised fault gullies and observed limonitic-clay gouge with coincident iron sulphide mineralization.

A total of 20 rock grab and float samples, eight soil (talus fines) samples and three stream silt samples were collected for analysis with the objective of evaluating the economic potential of the gossanous areas as recommended in the 1989 report.

The results of the rock, soil and silt sampling survey were not encouraging although geological mapping confirmed the presence of limonite-quartz-sulphide mineralization associated with fault zones and local limonitic shear zones. This program defined only a few weak single-station anomalies.

Although this program failed to identify economic mineralization, an evaluation of previous work performed on the property in 1989 plus observations made during the 1990 program suggest that the presence of elevated gold and base metals values in soil and rock samples may be related to structural controls. The existence of several fault zones accompanied by coincident elevated gold and base metal values may prove to be favourable exploration targets for continued follow-up exploration.

RECOMMENDATIONS

Further detailed geological, geochemical and structural information is required to better define the mineral potential of the Border property. A proposed exploration program is warranted consisting of:

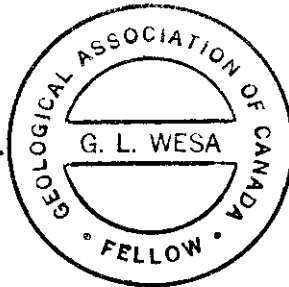
- 1) Geological mapping and litho-geochemical sampling of all gossans and all areas underlain by felsic to intermediate tuffs and related thinly bedded sedimentary horizons.
- 2) More detailed geological and geochemical examination of observed and proposed fault zones and other structural features. These zones yielded the highest values for gold

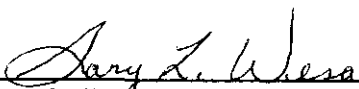
and arsenic in the south-central part of the Border 4 claim, the northwestern corner of the Border 3 claim and the southwestern part of the Border 1 claim (1989 report).

- 3) Owing to the precipitous nature of the terrain within some of the gullies, it is recommended that sampling in this environment employ the technical skills of an experienced climber - explorationist with the appropriate equipment. These skills may be required in the Border 1 and 4 claims.

Respectfully submitted,

KEEWATIN ENGINEERING INC.





Gary L. Wesa, B.Sc., FGAC

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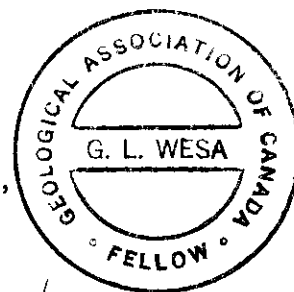
STATEMENT OF QUALIFICATIONS

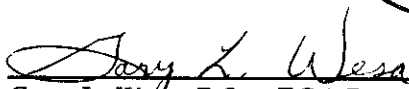
I, GARY L. WESA, of #309 - 6669 Telford Avenue in the Municipality of Burnaby, in the Province of British Columbia do hereby certify that:

1. I am an independent consulting geologist under subcontract to Keewatin Engineering Inc. with offices at Suite 800 - 900 West Hastings Street, Vancouver, B.C.
2. I am a graduate of the University of Saskatchewan (1974) with a B.Sc. degree in Geology and I have practised my profession continuously since graduation.
3. I have been employed in mineral exploration since 1970 in Canada and the U.S.A.
4. I am a Fellow of the Geological Association of Canada.
5. I am the author of the report entitled "Geological and Geochemical Report on the Border Property, Skeena Mining Division, British Columbia", dated December 3, 1990.
6. I have personally performed or supervised the work referenced in this report and I am familiar with the regional geology of nearby properties.
7. I do not own or expect to receive any interest (direct, indirect or contingent) in the property described herein nor in the securities of Ross Resources Inc. in respect of services rendered in the preparation of this report.

Dated at Vancouver, British Columbia this 3rd day of December, 1990.

Respectfully submitted,





Gary L. Wesa, B.Sc., FGAC

APPENDIX I

Itemized Cost Statement

ITEMIZED COST STATEMENT

BORDER SUMMARY - 009 (381E)		
1	Domicile	\$ 377.50
2	Wages	1,165.00
3	Equipment Rental	135.00
4	Helicopter	1,062.44
7	Assays: Rocks - 20 Soils - 8 Stream Silt - 3	270.00 88.00 33.00
8	Demobilization	2,000.00
10	Post-Field/Report	2,909.06
12	TOTAL	\$8,000.00

APPENDIX II

Summary of Personnel

SUMMARY OF PERSONNEL

Employee	Days	Day Rate	Total \$
McIntyre, Brian	1.0	\$300.00	\$ 300.00
Viens, Robert	0.5	\$200.00	100.00
Wardwell, Aaron	1.0	\$190.00	190.00
Wesa, Gary	1.0	\$325.00	325.00
Wilson, Pat	1.0	\$250.00	250.00
TOTAL:			\$1,165.00

APPENDIX III

Analytical Procedure

ANALYTICAL PROCEDURE

The Bondar-Clegg analytical methods are described as follows:

Sample Preparation

- Silt & Soil:** Dry and sieve through 80 mesh screens. Gold values are determined on 30 gram, representative sample of minus 80 fraction by fire assay with AA finish; remaining elements are determined using 0.6 gram sample of minus 80 fraction by hot aqua regia digestion followed by ICP.
- Rocks:** Dry and crush to minus 150 mesh; analysis made on minus 150 fraction by methods described above.
- Geochemical Analysis:** Gold is determined on a test sample of 30 g using Fire Assay Lead Collection pre-concentration. The bead is dissolved in nitric acid and hydrochloric acid and run by Atomic Absorption.
- Mercury is determined on a test sample of 0.6 g. The sample is digested by aqua regia and bulked to 12 ml. The solution is then run by Cold Vapour Atomic Absorption.
- All other elements are determined on a test sample of 0.6 g. The sample is digested by aqua regia and bulked to 12 ml. The solution is then run by ICP.
- Fire Assay Procedure for Au:** A prepared sample of one assay ton (29.166 grams) is mixed with a flux which is composed mainly of lead oxide. The proportions of the flux components (the litharge, soda, silica, borax glass, and flour) are adjusted depending upon the nature of the sample. Silver is added to help collect the gold. The samples are fused at 1950 F until a clear melt is obtained. The 30-40 gram lead button that is produced contains the precious metals. It is then separated from the slag. Heating in the cupellation furnace separates the lead from the noble metals. The normal-sized precious metal beads that are produced are transferred to test tubes and dissolved with aqua-regia. This solution is analyzed using Atomic Absorption by comparing the absorbance of these solutions with that of standard solutions. In the case of high grade samples, the precious metal bead is parted to separate the silver and the remaining gold is weighed.
- Comments:** As part of the routine quality control we run a duplicate analysis for about 12% of the samples. Also, all samples which are over 0.20 opt on the original fusion are run again to verify the results. If a sample gives erratic results, such as 0.10,

0.020, 0.30, we will indicate this on the report. We suggest that a new split should be taken from the reject for preparation and analysis by our metallics sieve procedure. These assay results will always be signed by the registered assayer.

Contamination Prevention:

The test tubes and cupels are used only once so that there is no possibility of cross contamination. The fusion crucibles are cleared before re-use by discarding any which had high samples in them. During the analysis a blank solution is run between each sample to ensure that there is no carry over.

Determination of Arsenic by Borohydride Generation:

Samples of 0.5 grams in weight are digested in borosilicate glass test tubes, with concentrated nitric and hydrochloric acids. These tubes are heated in a 90 degree Celsius water bath for two and one-half hours. The sample is then diluted with 14% HCl and mixed. A 0.5 ml aliquot is taken from this solution and HCl, deionized water, and potassium iodide are added. The resulting mixture is allowed to sit for one hour, after which it is run through a hydride generation system. In this system, the solution is reduced with sodium borohydride, releasing arsenic as arsine gas. The arsine gas is then swept into a quartz furnace mounted on a flame AA unit. The absorbance is recorded and compared to a standard series to determine the amount of arsenic present.

Quality Control:

Standards, repeats, and blanks are run with each batch of samples. These are carefully checked, and reweighs of samples are ordered if necessary. High arsenic results are also checked by running the original solution by flame AA and comparing the results from the two procedures.

APPENDIX IV

Rock, Soil and Stream Silt Geochemistry Results



A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

DATE PRINTED: 22-OCT-90

REPORT: V90-02387.0

PROJECT: 009

PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Au 30g PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	As PPM	Sb PPM	Mo PPM	Hg PPM
R2 90 GW 009 R-3598		<5	0.4	60	7	14	8	<5	2	<0.010
R2 90 GW 009 R-3599		47	1.2	56	7	8	12	<5	6	0.014
R2 90 GW 009 R-3600		<5	0.3	5	5	10	<5	<5	<1	<0.010
R2 90 GW 009 R-3601		34	1.9	184	6	3	12	<5	4	<0.010
R2 90 GW 009 R-3602		<5	0.4	15	7	11	11	<5	3	<0.010
R2 90 X 009 R-3235		<5	0.3	17	3	4	<5	<5	2	0.012
R2 90 X 009 R-3236		<5	<0.2	21	3	5	<5	<5	2	<0.010
R2 90 X 009 R-3237		<5	0.5	23	4	20	16	<5	4	<0.010
R2 90 X 009 R-3238		<5	<0.2	47	<2	5	<5	<5	2	0.012
R2 90 X 009 R-3239		23	0.8	84	7	39	6	<5	1	<0.010

Bondar-Clegg & Company Ltd.
130 Pemberton Ave.
North Vancouver, B.C.
V7P 2R5
(604) 985-0681 Telex 04-352667



Geochemical Lab Report

A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

REPORT: V90-02264.0

DATE PRINTED: 12-OCT-90

PROJECT: BORDER

PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Au 30g PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	As PPM	Sb PPM	Mo PPM	Hg PPM
R2 90 X 009 R-3225		<5	0.4	11	5	17	15	<5	2	0.032
R2 90 X 009 R-3226		10	1.2	23	3	17	12	<5	2	<0.010
R2 90 X 009 R-3227		<5	1.2	41	5	50	45	<5	<1	0.032
R2 90 X 009 R-3228		<5	0.6	13	8	32	15	<5	4	<0.010
R2 90 X 009 R-3229		25	0.9	25	3	32	108	<5	3	<0.010
R2 90 X 009 R-3230		8	2.0	114	3	44	40	<5	1	<0.010
R2 90 X 009 R-3231		14	3.7	33	10	10	47	<5	<1	<0.010
R2 90 X 009 R-3232		<5	0.9	16	4	41	11	<5	4	0.017
R2 90 X 009 R-3233		12	0.9	10	5	50	39	<5	9	0.032
R2 90 X 009 R-3234		52	2.5	7	7	10	67	5	25	0.233



A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

DATE PRINTED: 25-OCT-90

REPORT: V90-02402.0

PROJECT: 009

PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Au 30g PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	As PPM	Sb PPM	Mo PPM	Hg PPM
S1 90 RV 009 S-001		<5	1.0	60	7	66	16	<5	4	0.134
S1 90 RV 009 S-002		30	2.2	66	23	293	243	<5	6	0.102
S1 90 RV 009 S-003		38	1.9	157	9	171	75	<5	4	0.093
S1 90 RV 009 S-004		<5	1.0	77	14	119	32	<5	3	0.041
S1 90 RV 009 S-005		<5	1.0	75	15	94	36	<5	4	0.072
S1 90 RV 009 S-006		<5	1.0	35	15	101	26	<5	7	0.094
S1 90 RV 009 S-007		<5	1.3	106	8	109	44	8	3	0.064
S1 90 RV 009 S-008		38	4.2	107	17	192	116	<5	4	0.119
T1 90 RV 009 L-001		<5	0.7	97	8	120	21	<5	2	0.080
T1 90 RV 009 L-002		<5	1.0	81	16	82	18	<5	<1	0.093
T1 90 X 009 L-001		<5	0.7	87	3	69	19	<5	2	0.042

APPENDIX V

Rock, Soil and Stream Silt Data Sheets

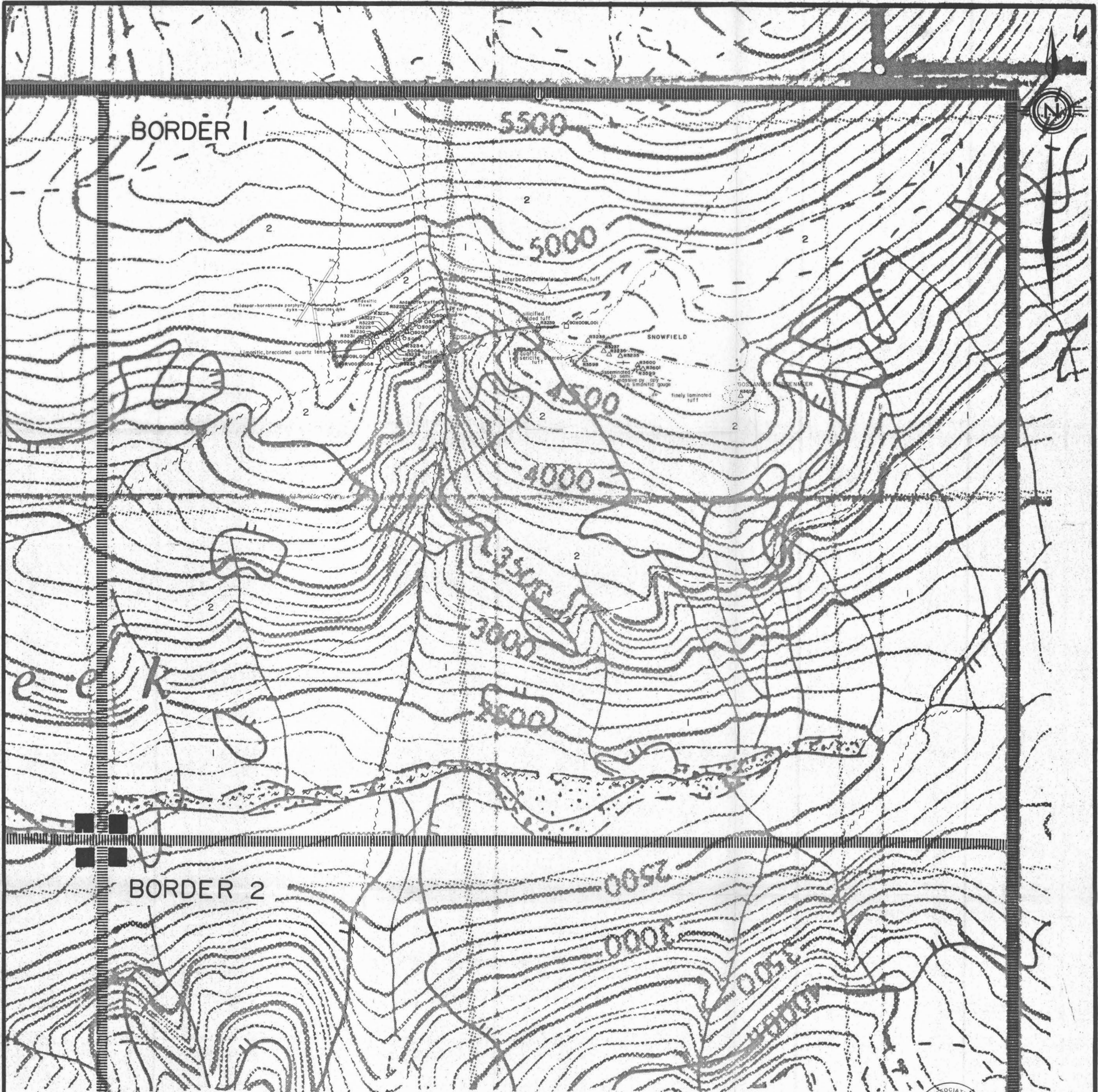
KEEWATIN ENGINEERING INC.

ROCK SAMPLES

Project: BORDER 009
 Area (Grid): Border 1 claim 'Q ZONE'
 Collectors: B. McIntyre

Results Plotted By: B. McIntyre
 Map: _____ NTS: 104 B/7
 Date: Sept 1990 Surface Underground _____

X009 SAMPLE NUMBER	LOCATION	NOTES	REP. SAMPLE NUMBER	SAMPLE TYPE (LENGTH)					ROCK TYPE	SAMPLE DESCRIPTION	MAP SHEET
				GRAB	CHIP	CHANNEL	CORE	FLOAT			
R 3230	4510'	QV. ZONE W. end N side		✓					Qtz	QV. stockwork with linear vugs, heavy limonitic content, trace sulphides.	
R 3231	4495'	Q.V. ZONE W end.		✓					Qtz.	Intense limonitic alteration in very vuggy to brecciated Q.V. stockwork near contact with highly silicified tuffs	
R 3232	4490'	Q.V. ZONE S side 5m E of west terminus.		✓					Qtz.	White vuggy QV cuts chert 292°/60°N. Highly limonitic selvage with dark red stain. Trace sulphides.	
R 3233	4480'	QV. ZONE S. side 75m E of west terminus.		✓					Qtz.	QV. filling small fault/fracture 360°/85E cutting cherty tuffs - med gray. Fine Py on fractures	
R 3234	4480'	QV. ZONE mid section S. side		X				✓	Intarmed Tuff.	Sharp angular local float, Qtz flooded, rusty weathering, carries 3-5% Py	
R 3235	4620'	Q ZONE EAST W end snow patch. S side small Crk.		✓					Tuff.	Highly fract'd, intensely silicified graded tuff carries 7-7% Py and form porous rubble to subcrop	
R 3236	4640'	Q ZONE EAST		✓					Tuff	As 3235 75% Py	
R 3237	4610'	Q ZONE EAST		✓					Tuff.	See 3235 72% Py	
R 3238	4660'	Q ZONE EAST		✓					Tuff.	see 3235 3-5% Py	
R 3239	4500'	Q Zone East folded dome.		✓					int. volc.	Small exposure (2m) of dark grey int. volc (plug or dyke?) intrudes intensely folded, silicified tuffs. 72% Py.	



LEGEND

- 2 UPPER TRIASSIC TO LOWER JURASSIC
Unuk River Formation: andesite sequence, green and grey, intermediate to mafic volcanoclastics and flows with locally thick interbeds of fine-grained immature sediments.
- 1 TERTIARY
Coast Plutonic Complex: hornblende-biotite-quartz diorite to granodiorite.
- Outcrop boundary
- Geological contact (approximate)
- Fault
- Bedding (inclined, vertical)
- Cliffs
- Rock grab sample (90G009B3600)
- Stream silt sample (90RV009L001)
- Soil sample (90RV009S001)

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

20,852



ROSS RESOURCES INC.

**BORDER PROJECT
GEOLOGY AND
SAMPLE LOCATIONS**

DATE: NOV. 1990	NTS: I04B/7
PROJECT: 009	PROJ. GEOL.: G. L. WESA
SCALE: 1:5,000	
Keewatin Engineering Inc. MAP No. 1	

0 100 200 300 400 500 m

BORDER 1

5500

5000

4500

4000

3000

2500

BORDER 2

2500

2000

1500

LEGEND

- △ Rock grab sample
 - Stream silt sample
 - Soil sample
- Cu (ppm), Pb (ppm), Zn (ppm)

GEOLOGICAL BRANCH
ASSESSMENT REPORT

20,852



ROSS RESOURCES INC.

BORDER PROJECT

GEOCHEMICAL VALUES
(Cu, Pb, Zn)

DATE: NOV. 1990	NTS: 104B/77
PROJECT: 009	PRJ. GEOL: G L WESA
SCALE: 1:5,000	
Keewatin Engineering Inc.	MAP No. 3

0 100 200 300 400 500 m