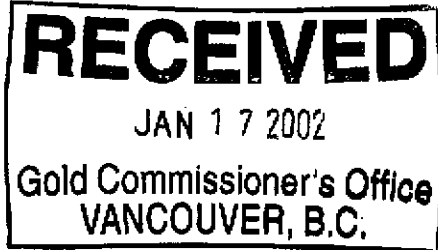


**GEOLOGICAL REPORT**

on the

**RUFF Claims**



Atlin Mining Division  
British Columbia

N.T.S 104N11/104N12  
Latitude 59° 43' North  
Longitude 133° 30' West

by

Stephen Kenwood, P. Geo.

January 15, 2002

**GEOLOGICAL SURVEY BRANCH**  
**ASSESSMENT REPORT**

26,762

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## **SUMMARY**

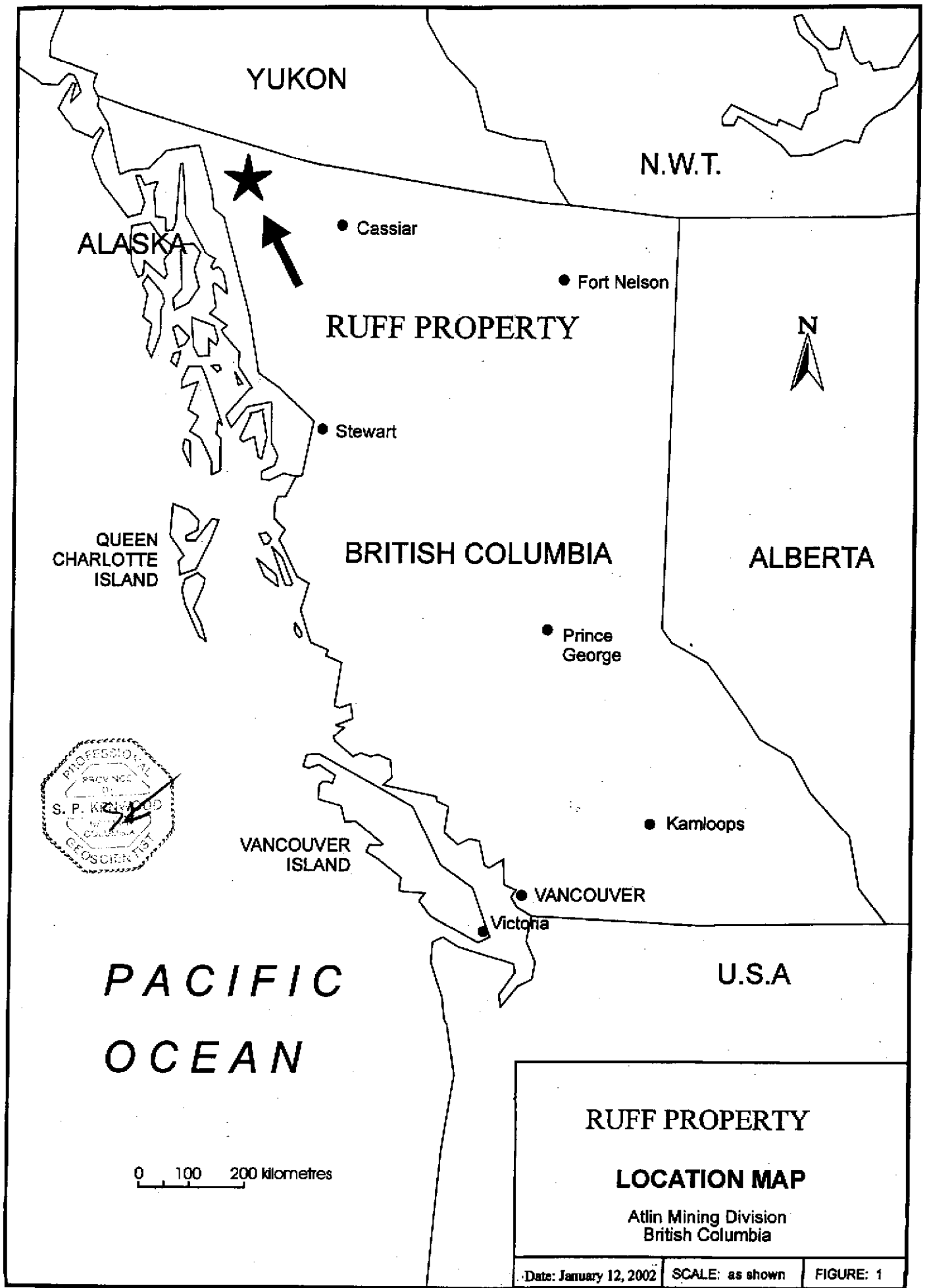
The RUFF claims are located approximately eighteen kilometres northeast of the town of Atlin, in the extreme northwest corner of the province of British Columbia. Silver-lead-zinc mineralization was discovered in the area in 1901. The RUFF property is a 20 unit claim owned by the author.

A short program of reconnaissance mapping and limited prospecting took place on the property from September 11 – September 15 in an effort to explore for extensions to the known silver-lead-zinc Vulcan and Ruff veins. A secondary, and possibly more significant target is an extension of a porphyry style of alteration and mineralization that has recently been identified in the southeast portion of the Atlin Ruffner crown grants immediately north of the RUFF property.

## **LOCATION, ACCESS, AND PHYSIOGRAPHY**

The property is located on the southwestern slopes of Mount Vaughn, approximately eighteen kilometres northeast of the town of Atlin in the extreme northwest corner of British Columbia (Figure 1). The property can be accessed by a good all weather gravel road off the Atlin-Whitehorse highway. Numerous trails and roads on the property provide excellent access.

The property is almost entirely above treeline, with elevations ranging from 1,350 metres to 2,000 metres. The bulk of the showings and workings are found in the grass-covered uplands; thick talus cover obscures fresh rock exposure on the upper slopes of Mount Vaughn. Frozen overburden covers a large portion of the property and is comprised of glacial ablation till which ranges in thickness from one to ten metres. Permafrost occurs above the 1,650 metre elevation.



YUKON

N.W.T.

ALASKA

• Cassiar

• Fort Nelson

RUFF PROPERTY

• Stewart



QUEEN CHARLOTTE ISLAND

BRITISH COLUMBIA

ALBERTA

• Prince George



• Kamloops

VANCOUVER ISLAND

• VANCOUVER

• Victoria

PACIFIC OCEAN

U.S.A.

0 100 200 kilometres

RUFF PROPERTY

LOCATION MAP

Atlin Mining Division  
British Columbia

Date: January 12, 2002

SCALE: as shown

FIGURE: 1

## CLAIM STATUS

The RUFF property (Figure 2) is comprised of 20 units in the Atlin Mining Division. The following is the pertinent claim information:

<u>Claim</u>	<u>Units</u>	<u>Record Number</u>	<u>Expiry</u>	<u>Owner</u>
RUFF	20	372574	October 5, 2002	S. Kenwood

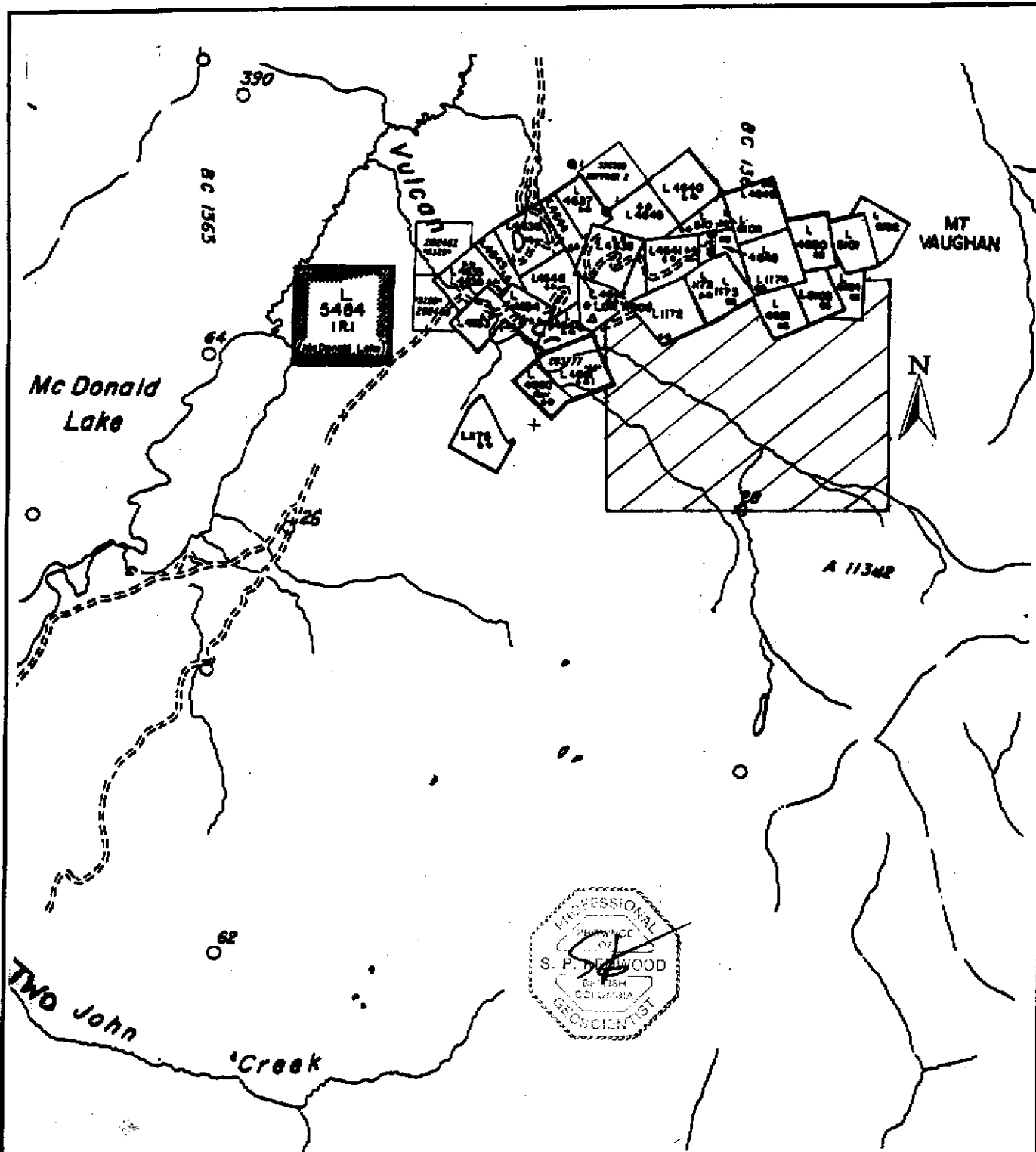
## HISTORY

During the Klondike gold rush of the late 1890's, placer gold was discovered in the Atlin area. This activity resulted in the discovery of silver-lead deposits on the slopes of Mount Vaughn and Mount Leonard.

M.J. Ruffner later optioned and staked the Atlin Ruffner crown grants, which are contiguous with the RUFF claims to the north, in 1918. Surface prospecting revealed four vein zones on the present property with the bulk of all subsequent work being performed on the No. 2 and No. 4 veins. Underground work began in 1921 on the number four vein at the 4975 level and later drifting was done on the number two vein at the 4300 level. Small shipments of sorted lead-silver ore were made in 1923 and 1927.

After Ruffner's death, the C.V. Bob Group acquired control in 1928 and continued to develop the underground workings, driving the 3900 level crosscut for a length of about 2650 feet. This crosscut intersected the No. 2 vein at 1450 feet and continued toward the No. 4 vein for another 1200 feet. Diamond drilling of four holes from the end of this level intersected the No. 4 vein but recoveries were poor (Morgan, 1981). Work on the 4100 and 4300 levels was also accomplished by this group but failed to provide sufficient encouragement to warrant further work and they dropped their option in 1934.

Bobjo Mines Ltd. acquired the property in 1934 and continued underground exploration on the 5150 (4E drift) and 4300 (2X drift) levels, advancing them 640 and 580 feet respectively.



0 500 1000 1500 2000 meters

SCALE: 1:50,000

 RUFF PROPERTY

## RUFF PROPERTY CLAIM MAP

Atlin Mining Division  
British Columbia

Date: January 12, 2002

SCALE: as shown

FIGURE: 2

In 1951 Atlin Ruffner Mines reopened the workings and produced a shipment of 44 tons of ore grossing 7 ounces gold, 5,343 ounces silver, 36,197 pounds lead, and 5,824 pounds of zinc. Their surface work included bulldozer trenching and drilling of about 4,000 feet of AX core on the Vulcan vein, which lies on the current RUFF claims, and the Big Canyon vein, which lies immediately west of the RUFF claims.

Interprovincial Silver Mines Ltd. optioned the Vulcan Property in 1966, part of which is covered by the RUFF claims, and drilled 9,120 feet of AX core on the veins that parallel the mineralized structures on the Atlin-Ruffner claims. The company optioned the Atlin-Ruffner claims in 1967 and work that year included construction of ten miles of access roads that improve access to the RUFF property.

Cyclone Development Ltd. controlled 5 mineral claims totalling 35 units and 2 crown grants from 1979 to 1982 during which time a hand trenching and 1,500 feet of NQ diameter core drilling program was undertaken on the Ruff and Vulcan silver-lead-zinc+/-gold-molybdenite veins.

The most recent work in the immediate area was performed by Pacific Harbour Resources Inc. That company performed an extensive grid geochemical survey, VLF and IP geophysical surveys between 1996 and 1997 on 28 Atlin Ruffner crown grants to the north of the RUFF property. Of particular interest is an altered and mineralized quartz diorite unit, which was noted to possibly be associated with another phase of the batholith (Church, 1998). A multi-element soil geochemical anomaly measuring approximately 200 by 400 metres and is coincident with similar shaped anomalies from the VLF and IP geophysical surveys. This coincident anomaly is open to the east and to the south, on ground covered by the RUFF claims. There is very little outcrop exposure in the area but the only piece of subcrop sampled from this area was noted to be a silica-flooded quartz diorite that returned 0.96% copper and 48.7 g/t silver.

## REGIONAL GEOLOGY

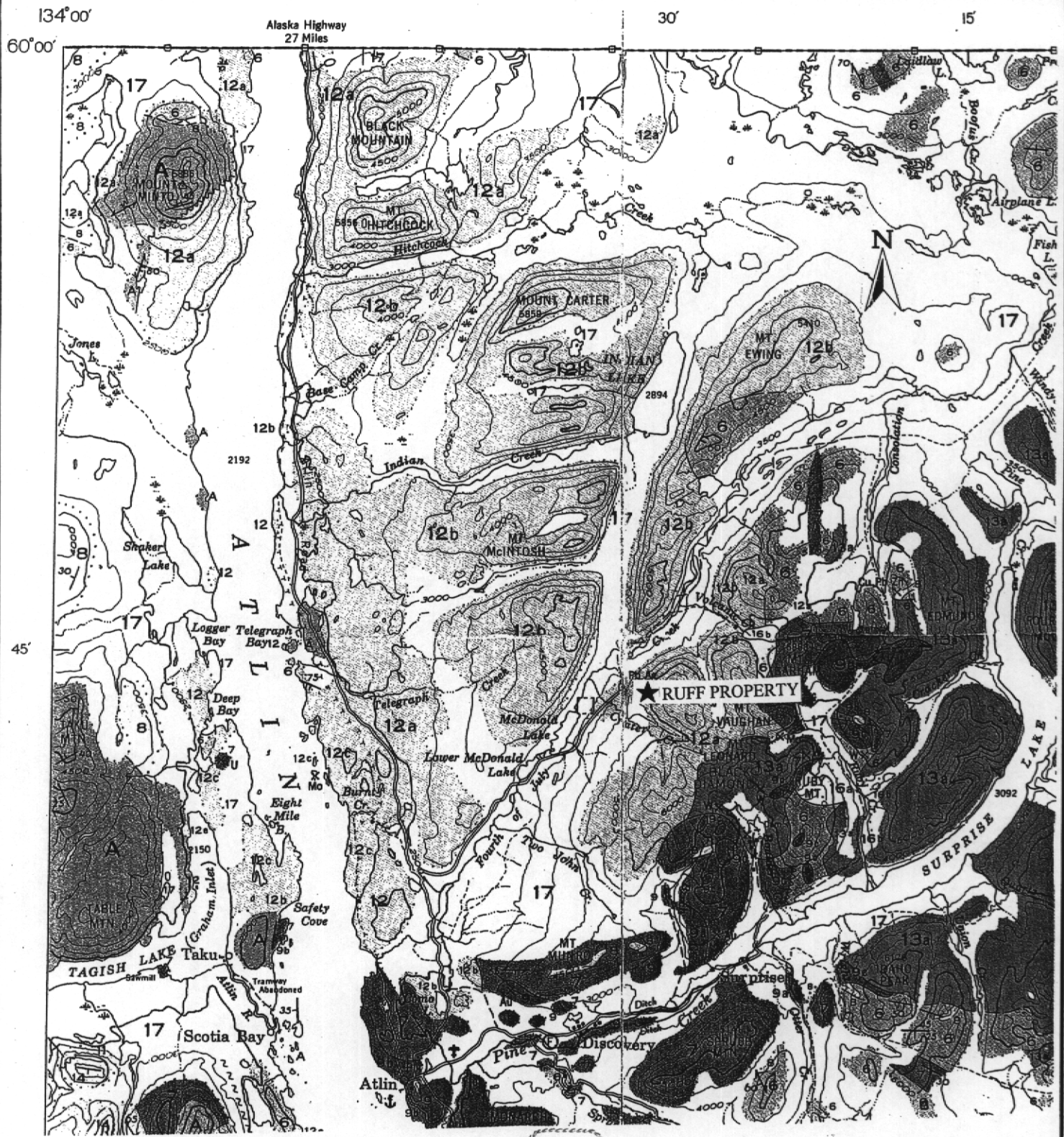
The Atlin district lies east of the eastern fringe of the Coast Range batholith and at the western margin of an 80 kilometre wide belt of Upper Mississippian to Upper Triassic of the Cache Creek Group, referred to locally as the Atlin Terrane (Figure 3). The main lithologies in the Atlin Terrane are a basal unit of Mississippian to Pennsylvanian basalt that is overlain by cherts and argillaceous sediments with minor carbonates and volcanics. These rocks extend for 300 kilometres to the southeast and for over 100 kilometres to the northwest. The first of several intrusive events in the area are the Permian aged Atlin Intrusions; mafic and ultramafic rocks, mainly serpentinized peridotite and minor dunite and gabbro that are found east and south of the RUFF property.

The many mineral occurrences in the area lie within and around the fringe of a Cretaceous aged intrusive stock of complexly zoned granitic rocks that lie east of the north end of Atlin Lake, extending eastward 80 kilometres to Teslin Lake.

The inner zone of the Cretaceous aged batholith varies from biotite hornblende diorite to granodiorite and is referred to as the Fourth of July Creek batholith. Potassium argon ages range from 73.3 +/- 2.6 Ma to 110 +/- 4 Ma from biotite and hornblende, respectively (Christopher and Pinsent, 1979). The eastern limit of the batholith is north and east of the property. This unit is characterized by late stage emplacement of lamprophyre dykes. These dykes are host to or adjacent to mineralization found on the adjacent Atlin Ruffner property.

The Surprise Lake Batholith is also locally of economic significance with the Adanac molybdenum porphyry five kilometres to the southeast of the RUFF claims. This deposit is reported to contain 104 million tons grading 0.096% Molybdenum (Morgan, 1981).

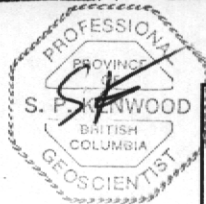




Scale: One Inch to Four Miles =  $\frac{1}{253,440}$   
Miles



(After Aitken 1959)

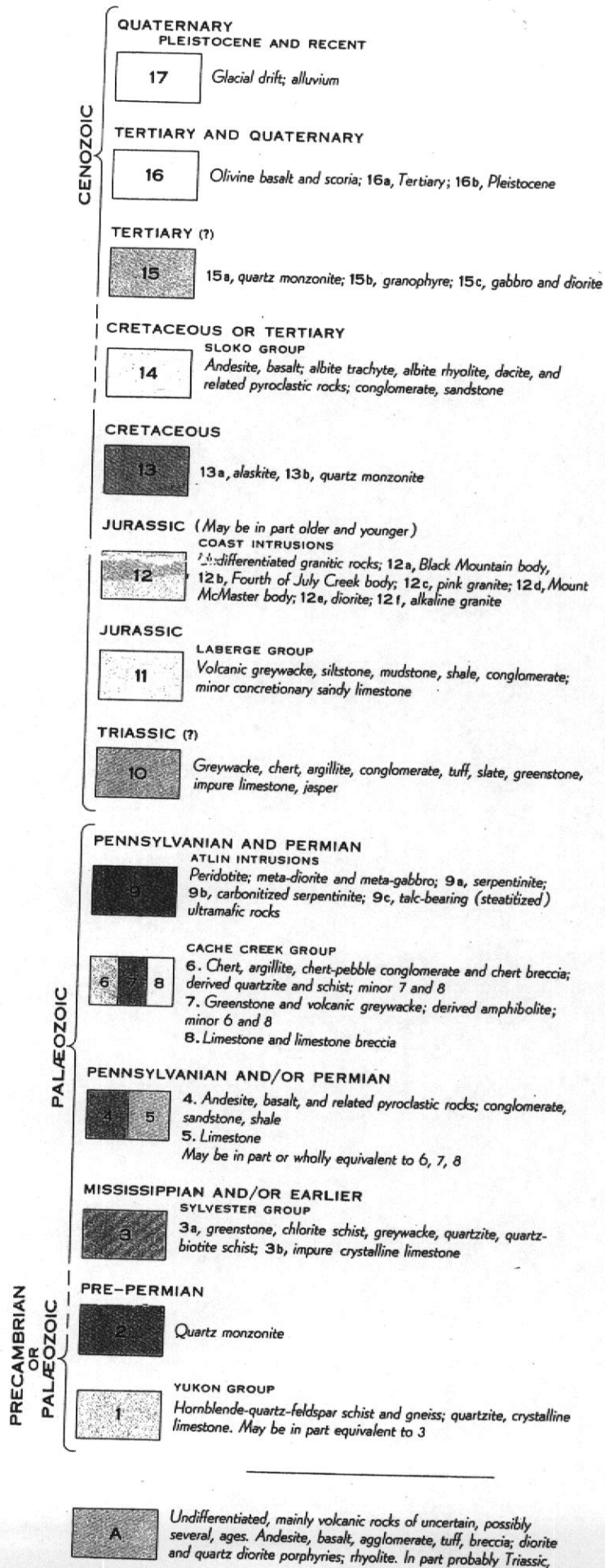


# RUFF PROPERTY

## REGIONAL GEOLOGY

Atlin Mining Division  
British Columbia

# LEGEND



## PROPERTY GEOLOGY

The entire property is underlain by multiphase intrusions of the Fourth of July batholith, which was correlated by Aitken (1959) as belonging to the Coast intrusions. The majority of the property is underlain by medium to coarse-grained quartz monzonite with the extreme eastern portion underlain by quartz diorite, which is believed to be a product of magmatic differentiation.

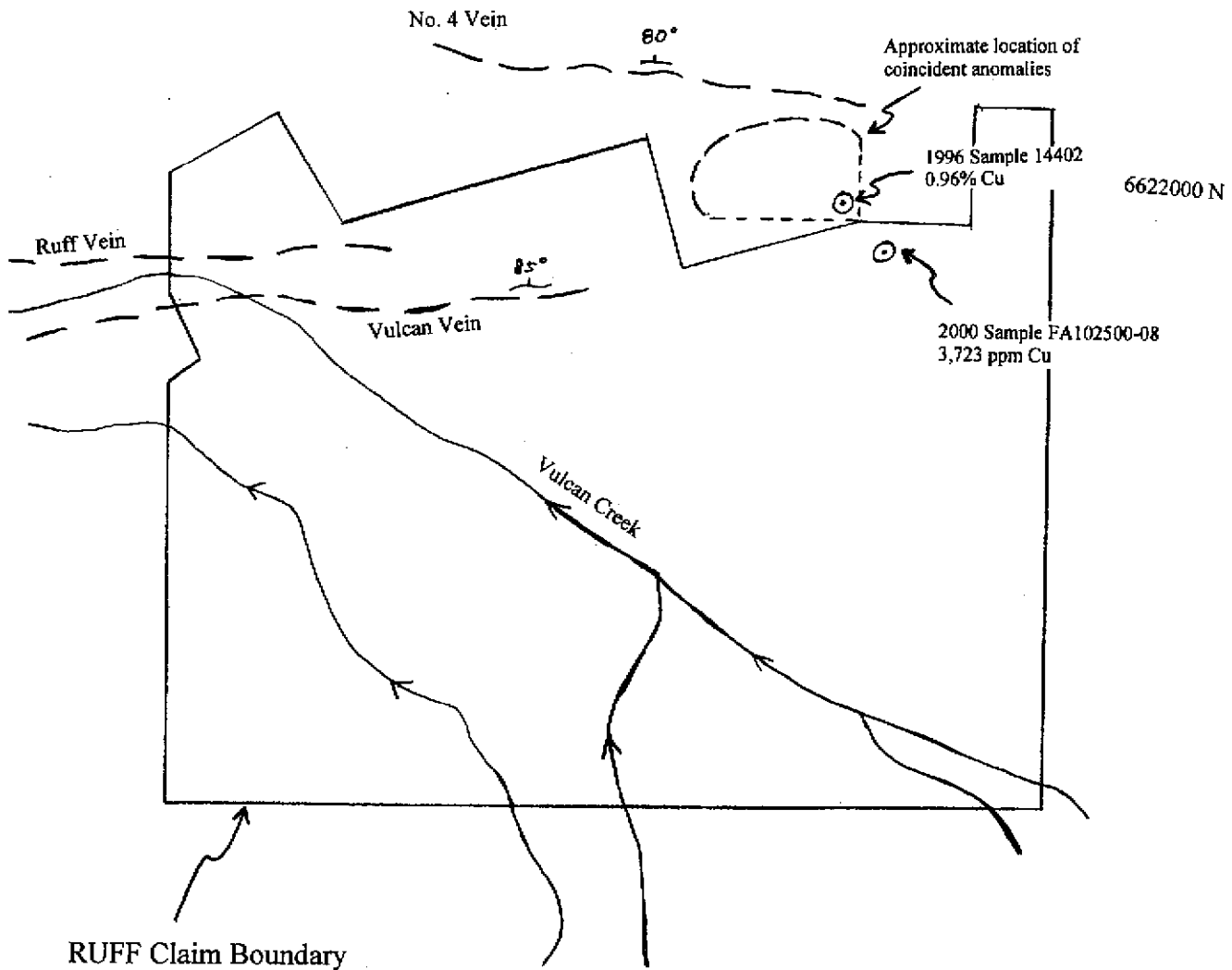
A series of east trending faults dipping 60 to 80 degrees north represent the main structural features on the property and acted as conduits for mineralization (Figure 4). This trend is consistent with the structural trends of mineralized lode gold deposits in the area that occur along the Pine Creek, Adera, and Union Mountain faults.

Between September 11 and September 15, five days were spent mapping and prospecting the property. The presence of relatively high grade silver-lead-zinc vein mineralization on the property has been well documented in the past and there is evidence of trenching and some small diameter surface drilling of the Vulcan vein on the property, dating back to programs in 1967 and 1981.

The Vulcan vein is similar to most vein structures in the area in that it trends east-west and dips steeply to the north. It appears that the surface trace of the structure is more east-northeast toward the east, lending credence to the idea that the Vulcan, the Ruff, and the No. 4 vein on the Atlin Ruffner crown grants could possibly intersect along strike or at depth (Morgan, 1982). This possible intersection could also be manifested in the coincident geochemical and geophysical anomalies that were found during the 1996 and 1997 programs on the Atlin Ruffner crown grants. It was thought that the anomalies could possibly represent the existence of porphyry style copper style of mineralization, coincident geochemical, VLF, and I.P. anomaly in the southeast area of the existing grid.

The relatively finer grained quartz diorite found in the northeast portion of the property exhibits various degrees of argillic alteration. The characteristic white clay is a

584500 E



RUFF Claim Boundary



# RUFF PROPERTY PROPERTY GEOLOGY

Atlin Mining Division  
British Columbia

Date: January 12, 2002

Scale 1:20,000

Figure 4

weathering rind, though the porphyry has been altered by chalcedony and quartz veining. Mafic content varies, although it could be generalized that mafic content is highest in this area of finer grained quartz diorite; further south and west the porphyry is more coarse and can be classified more as a quartz monzonite.

## CONCLUSIONS

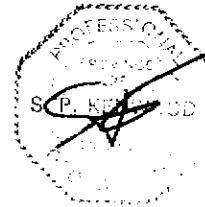
Sampling on the property from 2000 and in previous years on the Atlin Ruffner crown grants adjoining the RUFF property indicate the potential for the presence of an altered and mineralized porphyry system. In general, the hillside has very poor outcrop exposure, making it difficult to determine the origin of the multi-element geochemical anomaly found in the 1996 soil survey on the Atlin Ruffner crown grants. The semi-circular anomaly is open to the east and to the south (Church, 1998), onto ground covered by the RUFF claims.

With any kind of increased budget, further work on the property should focus on the potential porphyry target on the northern boundary of the property. Work should include attempting to locate portions of the 1996 grid on the Atlin Ruffner crown grants and extending the eastern lines onto the RUFF property. Trenching in the area might help expose altered quartz diorite that was found in one subcrop sample taken in 1996 to return an assay of 0.96% copper and 46.7 g/t silver. Float samples of altered intrusive taken in 2000 from the RUFF claims returned copper values of up to 3,723 ppm in the same relative vicinity (Figure 4).

The east-west trending Vulcan and Ruff vein structures are interesting in that they demonstrate extensive and consistently mineralized where they have been sampled. Historical sampling indicates that these structures are not as well mineralized as the similar parallel structures on the Atlin Ruffner crown grants to the north. Any work performed in expanding the above mentioned porphyry target, such as soil geochemistry or trenching, will be done for the benefit of expanding the eastern extent of both of these known structures so there is no need to recommend any other work on these structures.

**STATEMENT OF COSTS**

Geologist -	Field Work: 5 days @ \$350	\$1,750
	Travel: 3 days @ \$250	750
Expenses -		
	- Truck Rental - 7 days @ \$100	800
	- Fuel, Food, Accommodation @ \$125 per day	1,000
Report -	2 1/2 days @ \$350	<u>875</u>
	<b>Total:</b>	<b>\$5,175</b>



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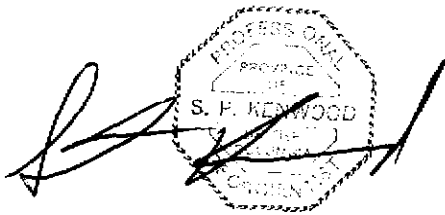
## APPENDIX I

### Statement of Qualifications

I, Stephen Patrick Kenwood, hereby certify that:

1. I am a Consulting Geologist with an office at 2073 149<sup>th</sup> Street, Surrey, British Columbia, Canada, V4A 8L4.
2. I am a graduate of the University of British Columbia with a Bachelor of Sciences Degree in Geology (1987).
3. I am a registered Professional Geoscientist with the Association of Professional Engineers and Geoscientists of British Columbia (#20447).
4. I have practiced my profession since 1987 working as an employee and consultant for International Mining Companies and Junior Resource Companies.
5. The work described in this prospecting report was carried out under my supervision.

Dated at Surrey, British Columbia, this 14th day of January, 2002.



Stephen Kenwood, P.Geol.