GEOLOGICAL - GEOCHEMICAL REPORT ON THE

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SILENCE 1 CLAIM RAFT RIVER AREA, KAMLOOPS M. D. 82 M 13

Latitude 51°48'North Longitude 119°36'30"West

Claim Owner: W. J. Coulter Operator: W. J. Coulter Consultant: H. M. Jones, P.Eng. G. A. Noel & Associates, Inc.

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Author:

H. M. Jones, P.Eng. W. Vanderpol

Date Submitted: August 22, 1979

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#### SUMMARY

The Silence 1 claim is located in the Raft River area approximately 25km north northeast of Vavenby, B. C. in the Kamloops Mining Division.

On July 13, 1979 a crew consisting of one geologist and two field assistants conducted a reconnaissance geological-geochemical survey on the Silence 1 claim.

Meagre outcrops suggest at least the northern part of the claim is underlain by a granitic to dioritic intrusive which is gneissic to pegmatic in texture. No outcrop was seen on the southern half of the claim.

Geochemical silt and soil samples indicate one area to be anomalous in tungsten, elsewhere all other samples assayed low in all elements.

It is recommended that a small follow-up geological-geochemical program be conducted in the vicinity of the tungsten assays. This work could be done by two men in two days. This work is estimated to cost \$1,500. It is recommended that it be done in the summer of 1980 when a new logging road in the area should give access to or near the area of interest.

It is also recommended that the exploration costs be applied as one year's assessment work on Silence 1 claim.



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#### INTRODUCTION

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At the request of W. J. Coulter, G. A. Noel & Associates Inc. conducted a geological-geochemical survey on the Silence 1 claim. This work was carried out July 13, 1979 by a crew consisting of one geologist and two field assistants.

LOCATION - 51°48' north latitude; 119°36'30" west longitude

The Silence I claim is located 25km north northeast of Vavenby, a small community situated on the North Thompson River 110km north northeast of Kamloops (Fig. 1).

The claims cover the nose of a ridge which lies between Raft River to the west and Stratton Creek to the northeast. Elevations range from 850 metres at the north end of the claims to 1675 metres at the south end (Fig. 2).

#### ACCESS

Excellent access is available to within several kilometres of the claims. British Columbia Highway 5, an all weather road running north from Kamloops passes within 12km, of the Silence 1 claim. Main logging roads leave this highway and follow northerly up Raft River and Mad River, each respectively 3km west and 3km east of the property.

A logging road, which branches of the Mad River road, follows the east fork of Martin Creek up to near its headwaters. When the road is completed, it may give direct access to the claims.



#### TOPOGRAPHY AND VEGETATION

The general area is characterized by deeply incised valleys and fairly high rugged mountain peaks. The Silence 1 claim covers a part of the higher plateau and its northwest slopes, at the base of which is the Raft River. All slopes are moderate except at the northwest corner of the claim where they become much steeper and rugged.

Dense stands of balsam and spruce with lesser cedar cover most of the property. A large old burn covers a part of the higher ground.

#### PROPERTY

The property consists of one claim:

<u>Claim Name</u>	No. of Units	Record No.	Recording Date	Mining Division
Silence 1	12	1615	December 1, 1978	Kamloops

The claims are owned by:

William J. Coulter 310 - 885 Dunsmuir Street Vancouver, B. C.

#### HISTORY

In 1973 boulders of massive sphalerite and galena were found by Mr. A. Horne while prospecting in the Raft River area. Trenching by Horne in this area uncovered massive sphalerite mineralization on the slopes of McKlosky Creek approximately 10km north of the Silence 1 claim. The CK property was staked to cover the showings and the surrounding area.

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They were then optioned to Rio Tinto Exploration Ltd. who carried out extensive exploration on the property during 1974 and 1975. Their work located several small sulfide zones. They terminated their option in 1975.

In 1974 Mr. Horne prospected to the south of his discovery area. He conducted a silt and soil reconnaissance survey 'in the area which is now partially covered by the Silence 1 claim. Assay results from this survey showed anomalous zinc values in silts from streams which drained off of LKY 2 claim.

In 1976 Sicintine Mines Ltd. optioned the CK property. They conducted limited surface trenching and a magnetometer survey during the 1976 field season. They terminated their option in 1977.

Cominco Ltd. are currently exploring in the same vicinity as that covered by Rio Tinto. They are rumoured to have located a significant zone of sulfide mineralization.

There are no known mineral showings or workings on the Silence 1 claim. The present program will attempt to explain the 1974 anomalous silt samples taken by Mr. Horne.

#### FIELDWORK

A reconnaissance geological-geochemical survey was conducted over Silence 1 claim. A main drainage which flows northwesterly through the northwest corner of the claim was silt sampled at approximately 100 metre intervals. A sample was also taken from each tributary stream.

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A reconnaissance soil sample line was run along the northern claim boundary, and also along or near the eastern boundary. This latter line was run south for approximately 1100 metres then west for 750 metres where it joined the headwaters of the creek. Several minor streams encountered on these soil lines were silt sampled.

Soil samples were taken, using a mattock, and placed in kraft paper envelopes upon which was marked the appropriate sample number. Silt samples were also placed in similarily marked envelopes. They were sun dried, then packed in a carton for delivery to Acme Laboratories Ltd., Vancouver, for analysis of Pb, Zn, Cu, Mo, Ag and Wo<sub>3</sub>. A total of 18 silt and 22 soil samples were taken.

Geological reconnaissance traverses were made along the stream and sample lines. Random traverses were also made throughout the claim. As is common to this area, very little outcrop was seen.

#### GEOLOGY

#### Regional Geology

The entire area between the Raft and Mad Rivers in the general vicinity of the claims is underlain by rocks of the Shuswap Metamorphic Complex. This formation is of uncertain age but is placed by Campbell (G.S.C. Map 48-1963) between Proterozoic and Lower Paleozoic. Campbell (1963) describes the Shuswap Metamorphic Complex as "a strongly foliated and lineated assemblage of metasedimentary gneisses and schists intruded by an enormous number of dykes, silts and small irregular bodies of granitic rocks. Pegmatite comprises more than 70% of the exposed rocks in some places ...".

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#### Local Geology

The claims area is covered by a thin (?) mantle of overburden. Rock exposures are very poor, even in the creek beds.

The only rock exposed on the claims is a granitic to dioritic gneiss. It varies from fine grained to almost pegmatitic'. Biotite, the dominant mafic mineral varies from 5-20%. Hornblende may or may not be present. Rocks containing hornblende are more dioritic than those without.

Mineralization is limited to minor disseminated pyrite and pyrrhotite.

#### GEOCHEMICAL RESULTS

Soil was well developed in the surveyed area. It consisted of 5-10cm of grey leached podzol-type soil underlain by deep brown-red enriched "B" horizon. In the swampy areas the organic "A" horizon was often too deep to penetrate. In places, the leached horizon is also deep.

Depth of soil samples varied depending on the nature of the soil. These ranged from 15cm to 40cm.

All soil samples were assayed by Acme Laboratories Ltd., 852 East Hastings Street, Vancouver, B. C. Their treatment of samples was as follows for all of the elements tested except  $WO_3$ .

The samples were dried at 75°C, then sieved to -80 mesh. A 0.50 gram portion of the sample was digested with dilute aqua regia in a boiling water bath. It was then diluted to 10 mls with demineralized water. This solution was then analysed by Atomic Absorption.

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For analysing  $WO_3$ , a 1 gram portion of the dried sample was fused with KCl, KNO<sub>3</sub> and Na<sub>2</sub> Co<sub>3</sub> flux in a test tube, then leached with 10 mls of demineralized water. An aliquot was used to develop a complex with SnCl<sub>2</sub>, KSCN and HCl which was extracted by n-tributyl phosphate and carbon tetrachlorite.

The geochemical soil and silt survey on Silence 1 claim was part of a broader program which also explored the adjoining Silence 2 and 3, LKY Bear claims. Since geology was similar on all claims it was decided to combine all assay results from the entire program to establish which values should be considered as anomalous. Assays of all samples taken from the Silence 1 claim accompany this report in Appendex I.

A frequency distribution and a cumulative percent frequency distribution graph was plotted for molybdenum, copper, zinc, lead, silver soil sample assays (see figures 9 - 18).

From these graphs the following values were obtained.

<u>Mo in ppm</u>	<u>Cu in ppm</u>	<u>Zn in ppm</u>	<u>Pb in ppm</u>	<u>Ag in ppm</u>	<u>Class Feature</u>
< 5	< 55	< 130	<65	< 0.5	background
5-10	55-110	130-260	65-130	0.5-1.0	possibly anomalous
10-20	110-220	260-520	130-260	1.0-2.0	probably anomalous
>20	>220	>520	> 260	-2.0	definitely anomalous

Only two samples showed any  $WO_3$  content, consequently this element was not included in the above studies nor was a separate map prepared showing only  $WO_3$  results. The two samples with  $WO_3$  values are shown on figure 4.

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Silt assays were reviewed separately and, except for zinc, their distributions of elements were very similar to those for the soils.

From a plot of zinc silt assays the following values were obtained:

< 100 ppm - background
100-140 ppm - possibly anomalous
140-180 ppm - probably anomalous
> 180 ppm - definitely anomalous

A map was prepared for each element and contoured according to the above values (Fig. 4-8). On reviewing these maps it is readily apparent that all soil values are very low. One sample, B276, is anomalous in  $WO_3$  and moderately anomalous in Ag and Zn. An adjacent sample, B275 is also anomalous in  $WO_3$ . There is no outcrop in the area to explain the cause of the anomaly.

#### CONCLUSION

Two samples on the east boundary of the claim showed values of WO3. One also had coincident anomalies in Ag and Zn. Elsewhere, all sample values are low in all minerals.

No significant mineralized zone was located by the exploration program. The significance of tungsten values in the above two samples is unknown but, because the Shuswap Metamorphic Complex includes limy rocks, this one area is worthy of follow-up exploration for tungsten.

#### RECOMMENDATION

A modest prospecting - soil sampling program should be conducted in the vicinity of samples B275 and 276 to check for the possibility of tungsten mineralization. This work could be done in two days by a two-man field party for a total cost of \$1500.

This follow-up work should be done during the summer of 1980. At this time, the Martin Creek road should give good access to or very near the area of interest.

It is also recommended that all costs related to this year's exploration program be applied as one year's assessment work on Silence 1 claim.

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# STATEMENT OF COSTS

<u>Office</u>	- assembling all data, literature research	\$	100.00
<u>Wages</u>	- W. Vanderpol, geologist - 1 day @ \$175 W. F. McKenzie, field assistant - 1 day @ \$50 W. Buckler, field assistant - 1 day @ \$50		175.00 50.00 50.00
Camp	- equipment, food, etc.		165.00
Transportation	- 4x4 truck, helicopter		284.48
<u>Assays</u>	- 40 samples 0 \$5.00/assay		200.00
Mobilization,	Demoblization		200.00
Report & Map P	reparation		
	- H. M. Jones - W. Vanderpol - F. Chong, drafting - Secretarial - typing, xeroxing	_	175.00 87.50 100.00 50.00
	TOTAL	\$1	,637.86

Respectfully submitted,

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HAROLD M. JONES, P.Eng.

#### REFERENCES

Beckman, H. (1975) - C. K. Option, ULO, Raft and North Claims, Clearwater, B. C., Report on Geophysical Survey, Assessment Report by Rio Tinto Can. Expl'n. Ltd.
Campbell, R. B. (1963) - Geology, Adams Lake (Seymour Arm), Westhalf, B. C., Map 48-1963, Geol. Surv. Can.

Paltser, U. (1975) - C. K. Option - North Claims, Clearwater, B. C., Geology and Diamond Drilling Programme, Assessment Report by Rio Tinto Expl'n. Can. Ltd.

Sanguinetti, M. H. (1976) - Report on the C. K. Option, private company report by Cordilleran Engineering Ltd.

Seraphim, R. H. (1974) - Report on the C. K. Claims, Raft River, Kamloops M.D., private company report.

Wheeler, J. O. (1965) - Big Bend Map area, B. C., Geol. Surv. Can., paper 64-32.

#### CERTIFICATE

I, Harold M. Jones, of the City of Vancouver, British Columbia, do hereby certify that:

- I am a Consulting Engineer, and a partner in the firm of G. A. Noel & Associates.
- I am a graduate of the University of British Columbia in Geological Engineering, 1956.
- 3. I am a registered Professional Engineer of the Province of British Columbia and also a member of the Canadian Institute of Mining and Metallurgy.
- I have practised my profession continuously since 1956 in mining exploration in British Columbia, Saskatchewan, Yukon and Northwest Territories, Alaska, Arizona and Australia.
- 5. I have reviewed all the data listed under References in this report.
- 6. I did not work on the property but I planned the work program and reviewed all of the results. I have not received, nor do I expect to receive any interest, direct or indirect in the Silence l claim.
- 7. W. J. Coulter is hereby given permission to reproduce this report, or any part of it, for the purposes of a financial prospectus; provided, however, that no portion may be used out of context in such a manner as to convey a meaning differing materially from that set out in the whole.

DATED at VANCOUVER, B. C. this 14th day of August, 1979.

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HAROLD M. JONES, P.Eng.

#### CERTIFICATE

I, Wim S. Vanderpoll of West Vancouver, British Columbia, do hereby certify that:

- 1. I am a geologist, residing at 405, 2187 Bellevue Avenue, West Vancouver, B.C.
- I am a graduate of the University of Tulsa B.Sc. (1972), and a member of the Can. Institute of Mining. I have practised my profession for seven years in British Columbia, the Yukon and Northwest Territories, Saskatchewan and Alaska.
- 3. I am the co-author of this report which is based on the results of previous exploration programs as well as the program conducted during July of 1979 under my direction.
- 4. I have no direct or indirect interest in the property described in this report nor do I expect to receive any.

Wim S. Vanderpoll, Geologist

July 17, 1979

# APPENDIX I

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# Geochemical Assays and Distribution Curves



ppm Molybdenum

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![](_page_26_Figure_0.jpeg)

![](_page_27_Figure_0.jpeg)

![](_page_28_Figure_0.jpeg)

Cumulative Percent

![](_page_29_Figure_0.jpeg)

![](_page_30_Figure_0.jpeg)

![](_page_31_Figure_0.jpeg)

![](_page_32_Figure_0.jpeg)

![](_page_33_Figure_0.jpeg)

![](_page_33_Figure_1.jpeg)

![](_page_34_Figure_0.jpeg)

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Assaying & Trace Analysis

852 E. Hastings St., Vancouver, B. C. V6A 1R6 phone:253 - 3158

File No. 0276

GEOCHEMICAL ASSAY CERTIFICATE

Disposition\_\_\_\_\_

![](_page_35_Picture_8.jpeg)

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Type of Samples \_ Soil\_\_\_\_

GEOCHEMICAL ASSAY CERTIFICATE

To:

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G. A. Noel & Associates