

Geochemical Soil Survey

Loon Mineral Claims

53° 122° NE

B.O. Brynelsen, P. Eng.

J.D. Knauer

53 G 9/16

Noranda Exploration Company, Limited

Cariboo Mining Division

August 1, 1968 to August 10, 1968

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GEOCHEMICAL SOIL SURVEY

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of the  
Loon Mineral Claims  
Noranda Exploration Company, Limited**

**INTRODUCTION:**

The Willow Creek property consists of 16 full-sized mineral claims. The property is approximately 28 miles south 81 degrees east of Prince George, B.C. along the northwest side of Willow River (Taspai Creek). The claims are accessible by road by travelling west from Provincial Highway 97 at the Buckhorn turnoff. A panel truck was used to supply the camp and transport men and equipment during the course of this survey.

Topography in the area under investigation varies from gentle slopes which extend for about one-half mile then rise steeply to elevations exceeding 4,000 feet.

In June 1965 a grid was established and a soil survey conducted in an attempt to locate the source of copper found in the stream sediments. Claim lines were used in plotting the exact location of the grid. One claim line was used as the north-south base line. The control base line extending north-south was chained, blazed and flagged at 100 foot intervals. Lines running east and west from the base line were established by chain and compass, and marked by flagging and blazing. The east-west lines were spaced at 800-foot intervals north and south along the base line and in specific areas at 200 foot intervals. Samples were taken at 100 foot intervals east and west.

Present sampling was done to check results of the previous work by more closely controlled sampling. Work was done under the direction of B.O. Brynelsen, P. Eng., with field supervision by J.D. Knauer and a crew of two men. The soil survey was carried out between August 1, 1968 and August 10, 1968.

SUMMARY-CONCLUSIONS-RECOMMENDATIONS:

Loon 1, Loon 2, Loon 3, Loon 4, Loon 8, Loon 11 and Loon 13 mineral claims were covered to include the main areas of interest, determined by previous work. Determinations were run on all samples for total copper, cold extractable copper, molybdenum and zinc. Results of this survey substantiated previous results in the two main areas of interest. Values for both copper and zinc are anomalous in these two areas as indicated on the accompanying map. Molybdenum was not present in the samples. One copper and zinc anomaly is located in the northeast portion of the grid and the other in the southwest portion. Total copper values range from background mean of 47 ppm to intensities ranging from 200 - 6400 ppm. Cold extractable copper values range from a background mean of 3 to intensities ranging from 50 - 1600 ppm. Total zinc values follow a similar pattern as the total copper with the background mean of the zinc 93 ppm and anomalous values ranging from 200 - 2500 ppm. Molybdenum values are negligible.

The general reconnaissance geology indicates fine-grained andesites, bedded siliceous tuffs and argillites are the common rock types occurring in the area. Minor pyrite and pyrrhotite mineralization was found in outcrop.

Further work recommended on the property is as follows:

1. Soil sampling intermediate 200 foot grid lines at 100 foot intervals in the main areas of interest.
2. Induced Polarization survey in the areas of interest should follow soil sampling.
3. If either of the above give any identification as to the source of the copper and zinc values, or more specific anomalies, then surface trenching and/or blasting would be feasible followed by diamond drilling.

GENERAL GEOLOGY:

Reconnaissance geology shows the claim area is underlain mainly by fine-grained andesites, bedded siliceous tuffs and argillites. The sediments strike  $N25^{\circ} - 45^{\circ}W$  and have an average dip of  $45^{\circ}$  south-west. The rocks are generally unaltered. Minor brecciation was noted in the andesites. Pyrite is the most common sulfide mineral observed with lesser amounts of pyrrhotite.

GEOCHEMISTRY:

All samples were analyzed for copper, zinc and molybdenum in the Noranda Exploration Company, Limited laboratory located at 1050 Davie Street, Vancouver, B.C.

SAMPLING METHOD:

The samples were obtained by digging holes with a mattock and shovel, to a depth at which the grey C Horizon was encountered. Two samples were taken; one from the overlying brownish B Horizon, and one from the C Horizon. In some cases it was possible to obtain only one representative sample. Profiles were taken at specific locations on the grid. The sampled material was then placed in "Hi Wet Strength Kraft, 3 1/2" by 6 1/8" Open End" envelopes and the grid station locations were marked on the envelopes with indelible felt pens.

LABORATORY DETERMINATION METHOD:

The samples are first hung in a dry cabinet for a period of 24 hours to 48 hours. They are then mechanically screened and sifted to obtain a -80 mesh fraction.

The determination procedure for total copper is as follows: 0.125 grams of -80 mesh material is fused with potassium bisulfate. This is dissolved in 5 m.l. of 0.5N hydrochloric acid. A 2 m.l. aliquot is shaken with 10 m.l. acetate buffer and 1 m.l. biquinolin solution. The samples are then compared with colorimetric standards.

The determination procedure for total zinc is as follows: 0.1 gram sample of the -80 mesh material is fused with potassium bisulfate. This is dissolved in 5 ml of 0.5N hydrochloric acid. Dilute to 10 ml. with 0.5N HCl. Pipette a 2 ml. aliquote of this solution into 5 ml. of buffer solution. Add 5 ml. of 0.001 to dithizone. The samples are then compared with colorimetric standards.

The determination procedure for total molybdenum is as follows: 0.1 gram sample of the -80 mesh material is fused with a sodium carbonate mixture. It is then dissolved in water (demineralized) and diluted to 10 ml. A 2 ml. aliquot is shaken with 2 ml. hydroxylamine hydrochloride solution and 0.5 ml. dithiol solution. The samples are then compared with colorimetric standards.

The determination procedure for cold extractable copper is as follows: Weigh 0.2 grams of sieved sample into a pyrex test tube. Add 5 ml. of buffer solution and 2 ml. of the 0.001% dithizone. Cork the tube and shake vigorously. The samples are then compared with colorimetric standards.

RESULTS:

Values for total copper showed a background mean of 47 ppm and anomalous values above 200 ppm. Cold extractable copper values ranged from a background mean of 3 ppm to anomalous values above 50 ppm. Values for total zinc had a background mean of 93 ppm and anomalous values above 200 ppm. Molybdenum values were negligible. Both copper and zinc indicate anomalous conditions. One area is located in the northeast portion of the grid and the other in the southwest portion. These anomalies warrant further work as previously stated in this report.

Respectfully submitted,

*B. Brynelsen*  
B.O. Brynelsen, P. Eng.

*James D. Knauer*  
James D. Knauer  
Geochemical Co-ordinator



In the Matter of a statement of Exploration Expenses on 16 contiguous Mineral Claims in the Cariboo Mining Division having record numbers 43451-43466 inclusive.

I, W.W. Young (F.M.C. 69905 issued May 13, 1968 at Vancouver), agent for Noranda Exploration Company, Limited (No Personal Liability) (F.M.C. 71082 issued May 27, 1968 at Vancouver

both of 1050 Davie Street, Vancouver 5, B.C.

in the Province of British Columbia, do solemnly declare that the cost of a Geochemical Survey on the Willow Creek Property (Record Numbers 43451-43466) done between August 1 and August 10, 1968 was:

1.	<u>SALARIES FOR LINE PREPARATION AND COLLECTING SOIL SAMPLES</u> (including W.C.B., U.I.C., Holiday Pay, Canada Pension Plan, etc.)	
	Personnel: M. Bagnall, B. Prentice	
	Man-Days: 14	
	Cost Per Man Day: \$20.04	
	<u>Total Labour Cost:</u> 14 x 20.04	\$ 280.56
2.	<u>FIELD COSTS</u> (including living expenses and transportation directly applicable to survey)	
	14 Man-Days at \$10/Man-Day	140.00
3.	<u>GEOCHEMICAL DETERMINATIONS</u>	
	136 HCl Tol Cu Determinations @ 1.25 ea.	\$ 170.00
	136 CX Cu Determinations @ .75 ea.	102.00
	136 Mo Determinations @ .75 ea.	102.00
	136 Zn Determinations @ .75 ea.	102.00
		<u>476.00</u>
4.	<u>CONSULTING FEES</u> - (B.O. Brynelsen) - 2 days @ 150./day	300.00
5.	<u>DRAFTING &amp; REPORT PREPARATION</u> - 6 days @ 25./day	150.00
		<u>\$ 1,346.56</u>

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

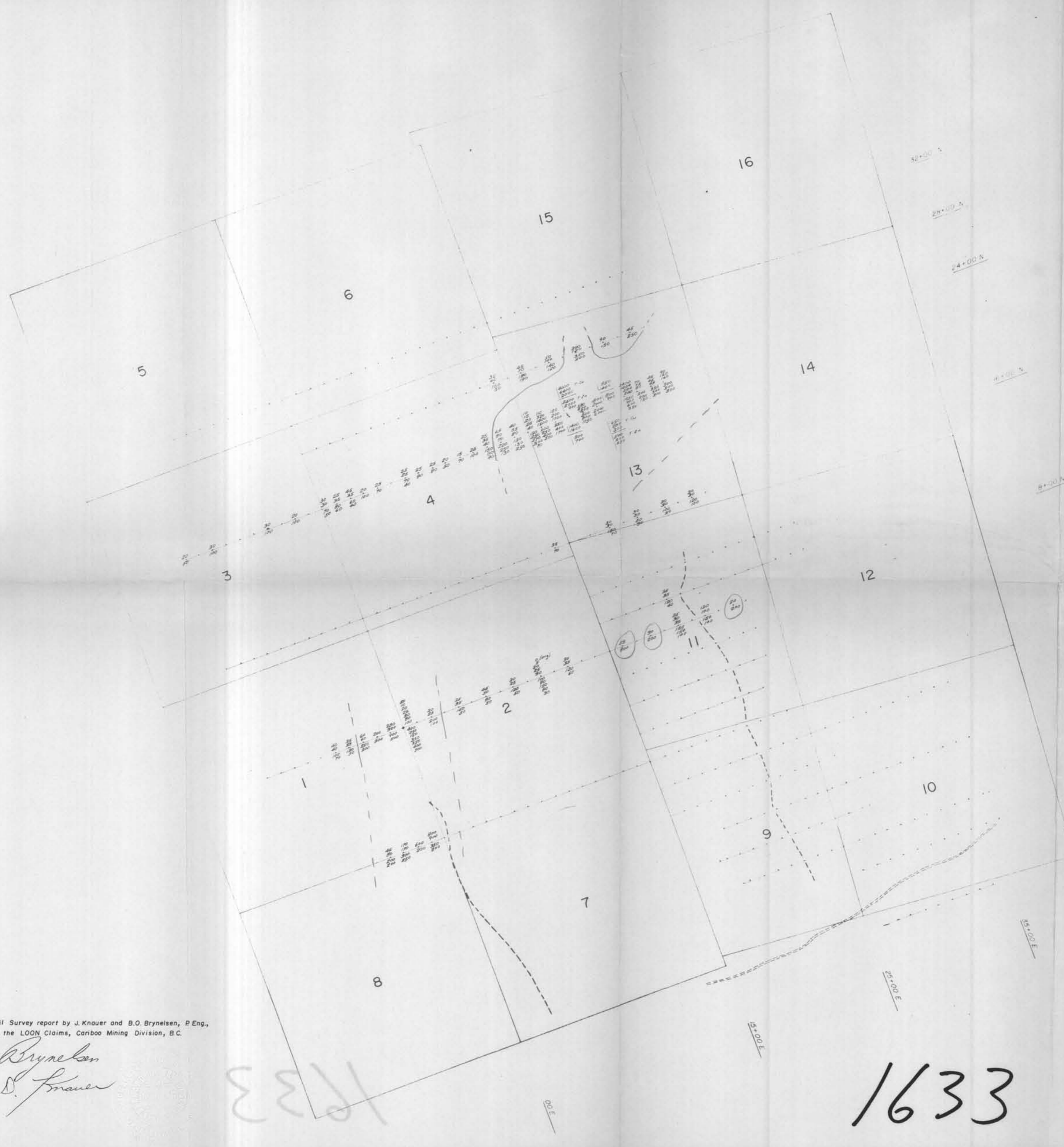
Declared before me at the City  
 of Vancouver, in the  
 Province of British Columbia, this 5  
 day of September, 1968, A.D.

*W W Young*

*J. Gerrette*  
 A Commissioner for taking Affidavits for British Columbia or  
 A Notary Public in and for the Province of British Columbia.

\*o

SUB-MINING RECORDER



Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 1633 MAP 1

SOIL VALUES: Ppm Total Cu  
Ppm Total Zn

To accompany Geochemical Soil Survey report by J. Knauer and B.O. Brynelsen, P. Eng.,  
Dated September 15, 1968 on the LOON Claims, Cariboo Mining Division, B.C.

*B. Brynelsen*  
*James D. Knauer*

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REVISED	WILLOW CREEK	
	1968 Soil Sampling of the LOON CLAIMS 1-16	
	PROJECT:	
PROJ. NO	SURVEYED BY:	DATE: AUG 1968
N.T.S. 93 G/16 E	DRAWN BY: P. Mc Feely	SCALE: 1" = 400'
DWG. NO	NORANDA EXPLORATION CO. LTD.	
	OFFICE: VANCOUVER	





Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 1633 MAP 2

SOIL VALUES: Ppm CX-Cu  
Ppm Total Mo

To accompany Geochemical Soil Survey report by J. Knauer and B.O. Brynelsen, P. Eng.,  
Dated September 15, 1968 on the LOON Claims, Cariboo Mining Division, B.C.

*B. Brynelsen*  
*James D. Frauer*



REVISED	WILLOW CREEK	
	1968 Soil Sampling of the LOON CLAIMS 1-16	
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