

2603

GOLDEN, B.C.
Mining Recorder
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GOLDEN, M.D.

GEOCHEMICAL & GEOPHYSICAL REPORT

ON THE

SLIDE GROUP OF CLAIMS

GOLDEN MINING DIVISION, B. C.

- f o r -

CANADIAN JOHNS-MANVILLE CO. LTD.

P. O. Box 1500
Asbestos, P.Q.

Covering: Slide Claims No. 1-54

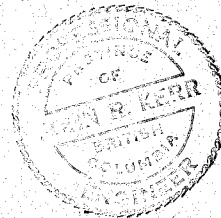
Located:

- 1) $50^{\circ}37'$, $116^{\circ}28'$
- 2) N.T.S. Map 82 M/9 W
- 3) On Forster Creek, 23 miles
east of Radium Hot Springs, B. C.

- PREPARED BY -



John R. Kerr, P. Eng.
September 1970



John R. Kerr

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1":1000'

Department of	
Mines and Petroleum Resources	
ASSESSMENT REPORT	
NO. <u>2603</u>	MAP

S U M M A R Y A N D C O N C L U S I O N S

Geochemical sampling and a radiometric survey were completed over the Slide Group of Claims to investigate reconnaissance stream sediment anomalies of molybdenum and uranium. Sampling included collection of soils, talus fines and stream sediments along preselected contours. Scintillometer readings were taken while sampling. A total of 742 samples were collected and analyzed for uranium and molybdenum. Individual metal maps were prepared, and the results shown are an expression of statistical analysis for each metal.

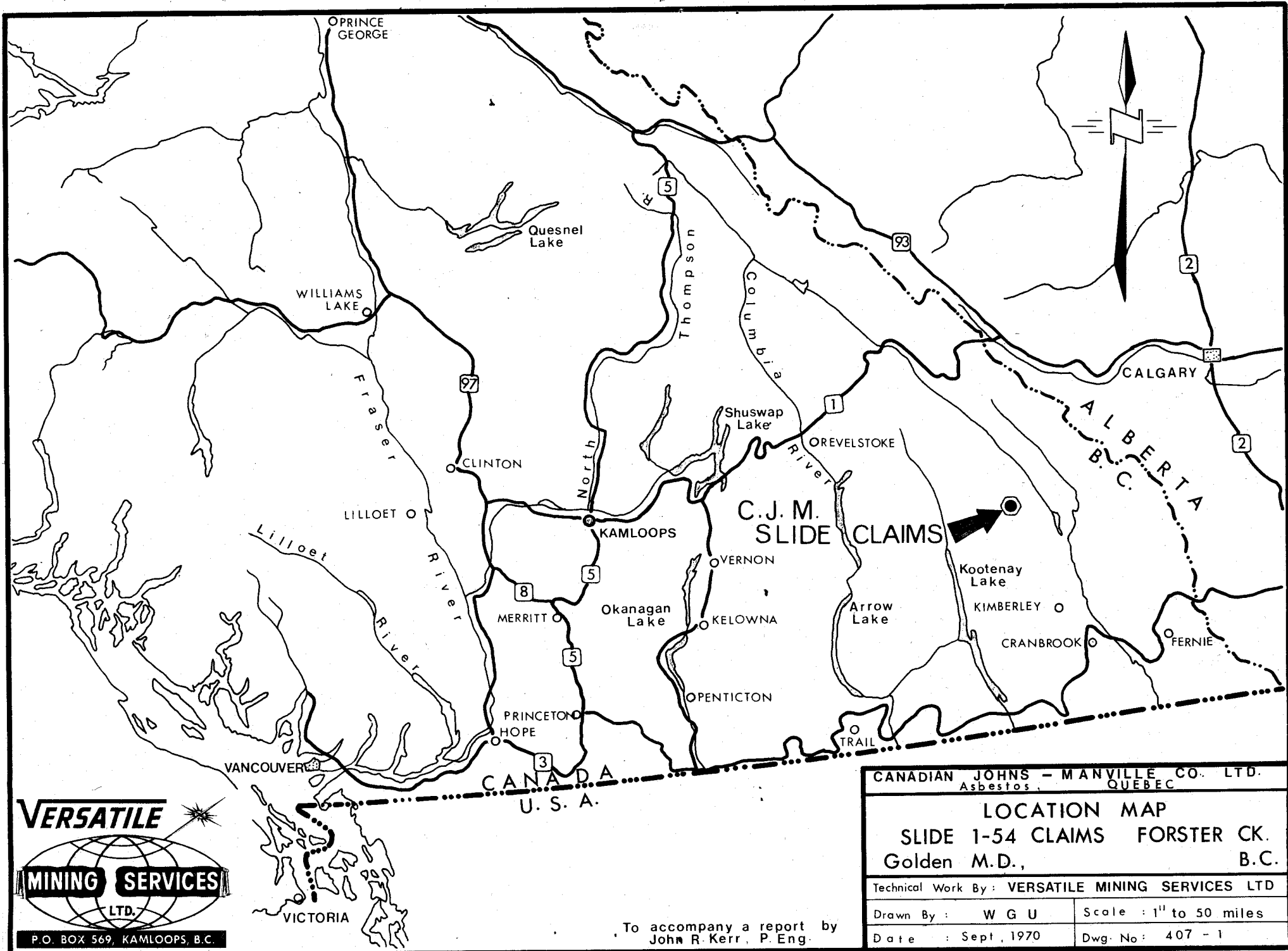
Six anomalies were interpreted from the results. Molybdenum is significant in all anomalies, and uranium is significant in four. Several other high readings were encountered in the interpretation, however were either isolated or considered of no significance with the available data. Molybdenum mineralization was found in bedrock associated with one anomaly. Molybdenite occurs along fracture fillings of a highly fractured and altered quartz-monzonite.

It can be concluded that geochemistry aided in delineating targets for future exploration. As the terrain is rugged, and ground access is poor, further exploration methods are limited and costly. It is suggested that further surface evaluation of the zones, in the form of geochemistry, prospecting and detailed mapping, be completed on the anomalous zones, before refined techniques such as drilling are considered.

R E C O M M E N D A T I O N S

Based on the results of this programme, it is recommended that:

- 1) Anomalies outlined in this report warrant further surface evaluation. Recommended procedures are discussed for each anomaly under "Discussion of Results".
 - 2) Reconnaissance contour sampling continue to close off all known anomalies and, to investigate stream sediment anomalies to the west and south of the existing claim block.
 - 3) Diamond drilling would be contingent upon the success of the above recommendations.
 - 4) The claim block be extended to the south and west to cover any possible extension of geochemical anomalies.
-



P.O. BOX 569, KAMLOOPS, B.C.

To accompany a report by
John R. Kerr, P. Eng.

CANADIAN JOHNS - MANVILLE CO. LTD. Asbestos, QUEBEC	
LOCATION MAP	
SLIDE 1-54 CLAIMS FORSTER CK.	
Golden M.D., B.C.	
Technical Work By : VERSATILE MINING SERVICES LTD	
Drawn By : W G U	Scale : 1" to 50 miles
Date : Sept, 1970	Dwg. No: 407 - 1

I N T R O D U C T I O N

During July 1970, a geochemical sampling programme and scintillometer survey was completed over the Slide Group of Claims in the Forster Creek area of the Golden Mining Division, B. C. Reconnaissance stream sediments collected during September 1969, indicated high molybdenum and uranium values, thereby initiating staking of Slide No. 1-54 mineral claims, and this detailed geochemical and geophysical programme. The surveys were completed by personnel of Canadian Johns-Manville Co. Ltd. during the period July 1-29, 1970.

LOCATION AND ACCESS:

The Slide Claims are located 23 miles west of Radium Hot Springs, B. C. on Forster Creek. Radium Hot Springs is in the East Kootenay valley at the junction of Provincial Highways No. 93 and 95. Access into the property is possible via a logging road west of Radium to the portion of the claims on Forster Creek. Access into the central portion of the claims is possible only by foot or helicopter.

PHYSIOGRAPHY:

The claim block is situated in the Purcell Mountains. Total relief within the claim group is in excess of 4500 feet with elevations rising from 4800 feet in the Forster Creek valley to over 9500 feet. Mount Sally Serena, to the south of the claim group is approximately 10,000 feet a.s.l.

Vegetation varies according to elevation. Between 4800 and 6000 feet timber is abundant, mainly fir, hemlock and spruce. Between 6000 and 8000 feet vegetation is mainly alpine cover, with sparse juniper trees. Above 8000 feet, little vegetation is present, ground cover being ice, snow and talus. In wooded areas, soil profiles are generally present, however considerable intermixing of the horizons was encountered.

GENERAL GEOLOGY:

The claim group has been mapped by reconnaissance traverses at a scale of 1":1000'. Detailed mapping on selected targets and obvious anomalies was completed on a scale of 1":200'. Quartzite, slate, argillite and limestone of the Purcell Formation are located east of Kerr Creek, and north of Forster Creek. The remainder of the area is underlain by a medium-coarse grained quartz-monzonite of the Horsethief batholith. Considerable evidence of thermal metamorphism is present along the contact of the batholith. A hornfels facies of thermal alteration, containing such minerals as staurolite, cordierite, andalusite and pyrite are present for a distance of 2000 feet from the contact.

Rocks within the batholith vary considerably in composition, alteration, grain size, and intensity of fracturing. Generally the rock may be described as a coarse-grained, biotite rich, quartz-monzonite. Some large crystals of feldspar give the rock a pegmatitic appearance. Variations of the composition include zones of hornblende rich granodiorite. The most notable alteration feature of the quartz-monzonite are the large secondary growths of bright pink K. feldspar crystals. The pink crystals are in contrast to the primary purple crystals of K. feldspar. Secondary pink feldspar is dominant along fracture faces. In zones of intense fracturing, K. feldspar alteration is high, giving rise to a pink cast to the rock mass. Sericitization, silicification, pyritization, secondary biotite and muscovite alteration and minor chloritization are also associated with fractures.

Molybdenite has been found to date mainly in talus boulders, as rosettes along fracture faces and disseminations in quartz veins. At the headwaters of Welsh Creek, associated with Anomaly A, molybdenite has been found in place in quartz veins and along fracture faces. Assays of chip samples and selected samples from this zone range from 0.005-0.111% MoS₂. Iron oxide staining and rusting is very evident on surface, and suggests a deeply leached surface zone. A pit, blasted to a depth of 10 feet indicates surface weathering is still persistent along fracture faces.

G E O C H E M I C A L S U R V E YFIELD METHODS:

Sampling was conducted on the 500 foot contours from the 5000 feet to 8500 feet elevations where possible. At the higher elevations, contour traverses were inaccessible, therefore alternate routes were sampled or the contour not sampled at all. Samples were located by chain and altimeter methods at 200 foot intervals along contours traversed. Sample stations were marked on the ground by red flagging.

Samples were collected in the field by two crews of Canadian Johns-Manville Co. Ltd., headed by Mr. Wm. Burry and Mr. A. Gussen, both experienced field men. Mr. Burry has been employed by Canadian Johns-Manville Co. Ltd. for 5 field seasons and has had seven years experience collecting samples. Mr. Gussen has spent 2 years collecting samples with Canadian Johns-Manville Co. Ltd.

Samples were coded and identified in the field by the following system:

LETTERS 1) F - symbolizes Forster Creek

2) S - soil sample

T - talus fine sample

L - stream sediment sample

NUMBERS 0- 502 collected by Burry
 1000-1239 collected by Gussen.

Other data recorded at sample sites are as follows:

- 1) Colour
- 2) Texture
- 3) Direction of drainage slope
- 4) Discharge of water in the case of stream sediment samples
- 5) Horizon and depth
- 6) Remarks as to rock-types and mineralization.

ANALYTIC TECHNIQUES:

A total of 742 soil, talus fines and stream sediment samples were analyzed for molybdenum and uranium in the Vancouver laboratories of Bondar-Clegg & Co. Ltd. The samples were dried at 40-50° C. in infra-red ovens and sieved to -80 mesh in Tyler sieves. An aliquot of -80 mesh fraction was digested in hot aqua regice to extract the Mo, and in HNO₃ to extract the Uranium. Mo was determined by atomic absorption spectrophotometry at a detection limit of 1 ppm, and uranium was determined by fluorometric methods at detection limit of 0.2 ppm.

CLASSIFICATION OF DATA:

Separate histograms were plotted for each of the talus fines and soil samples of both elements and the mean and standard deviation were calculated for each statistical population. The data was classified into the following anomalous categories:

negative	-	o - m
possibly anomalous	-	m - (m + s)
probably anomalous	-	(m + s) - (m + 2s)
definitely anomalous	-	(m + 2s) - (m + 3s)
high values	-	> m + 3s

As less than 50 stream sediment samples were collected in this programme, a proper statistical analysis of the data was considered impractical. It is also noted that the location of stream sediments are concentrated in specific areas, and do not reflect a true statistical drainage picture of the entire claim area. Therefore, the stream sediment samples were classified into two categories for each element by arbitrary limits:

	Mo	U
negative	0-20 ppm	0-100 ppm
anomalous	> 20 ppm	> 100 ppm

PRESENTATION OF DATA:

Location of contour samples, with numbers are shown on Figure 407-2. Results of the Mo and Cu are shown, with anomalous interpretation, on Figures 407-3 and 407-4, respectively. Anomalous classification charts accompany each map.

Contours around zones of concentrated anomalous stations were drawn from visual observation of compiled results. The order of lettering suggests a possible priority for future follow-up.

SCINTILLOMETER SURVEY

Radioactive readings were taken at every geochemical sample station with a Rank Ratemeter, calibrated in microrontgens per hour (MR/hr.), at the same time as sample collection and by the same personnel. All readings were standardized with a base station at the main camp. Reading stations and values are shown on Figure 407-5.

Two sets of radioactive values were recorded at each station:

- 1) Ground Level
- 2) Waist Level

The variation in the two readings was generally small and insignificant, therefore only the readings at ground level were plotted.

D I S C U S S I O N o f R E S U L T S

Dispersion of metals in extremely precipitous mountain terrain is mainly by mechanical methods. Mechanical concentration of metals is strongly evident in the Forster Creek area in both talus and stream sediment samples. Normal organic leaching of B horizon soils is present in the lower elevations, areas of deep overburden.

60% of the samples collected were talus samples, and 35% were soil samples. This would suggest that areal distribution of talus to soil is approximately the same ratio. Therefore, a large portion of the area is in a mechanically concentrating geochemical environment. This is born out by the erratic nature of talus and stream sediment values.

Six anomalies were recognized and considered worthy of detailed description. Molybdenum was recognized in all anomalies. Uranium values of significance were recognized in anomalies A, B, D and E.

ANOMALY A:

	Mo	U
Total No. of Samples	27	24
No. of possible anomalies	12	14
No. of probable anomalies	5	2
No. of definite anomalies	9	4

This anomaly has not been closed to the west. Due to extreme ruggedness of the terrain, further sampling and prospecting to the west is impossible. The anomaly is associated with intense fracturing, alteration and scattered molybdenum mineralization along fracture planes and in quartz veins. For these reasons, the anomaly commands high priority for future exploration.

A suggested programme for future work would be detailed mapping and prospecting of the anomalous zone. Detailed sampling is recommended both along existing contours and intermediate contours. Series of pits and trenches should be established to expose the rock below a leached capping. As anomalies B and C are closely associated or possibly connected to anomaly A, a similar programme should be considered for the entire area.

ANOMALY B:

	Mo	U
Total No. of samples	41	29
No. of possible anomalies	17	12
No. of probable anomalies	7	4
No. of definite anomalies	7	8

The anomaly parallels the trend of Welsh Creek, which possibly marks a major structural break in the area. The anomaly may be connected with anomaly A and C, and recommendations for the entire area are outlined under anomaly A.

ANOMALY C:

	Mo	U
Total No. of samples	8	-
No. of possible anomalies	3	-
No. of probable anomalies	1	-
No. of definite anomalies	3	-

The anomaly is expressed only along one contour, and is possibly associated with anomalies A and B. More sampling is required to close the anomaly to the west, and determine if the anomaly is connected to others in the area.

ANOMALY D:

	Mo	U
Total No. of samples	37	8
No. of possible anomalies	13	2
No. of probable anomalies	7	5
No. of definite anomalies	2	0

The anomaly is large, however only a small percentage of the samples are definitely anomalous. Uranium is associated with the anomaly, however only in two small zones. Molybdenite has been found on fracture faces in boulders and float at the north west corner of the anomaly. Further sampling and prospecting is recommended for this zone.

ANOMALY E:

	Mo	U
Total No. of samples	4	4
No. of possible anomalies	3	1
No. of probable anomalies	-	-
No. of definite anomalies	1	3

The anomaly contains only 4 samples along one contour. Significance of the anomaly is that the underlying rocks are sedimentary, and the anomaly may represent a contact type of mineralized zone. As all the samples are within 400 feet of Kerr Creek, mechanical concentration of metal values should be suspected. The area is heavily covered with overburden, and future work would be given a low priority.

ANOMALY F:

	Mo	U
Total No. of samples	7	-
No. of possible anomalies	2	-
No. of probable anomalies	1	-
No. of definite anomalies	1	-

The anomalous zone is represented by only a small percentage of anomalous samples along one contour. No mineralization has been found associated with the zone, and future work would be given a low priority.

The geochemical techniques employed in this programme served as a useful means of delineating targets for future exploration. The anomalous targets still represent a large portion of the claim block (5-10%), and future surface-exploration should be aimed at reducing the anomalous zones to provide reliable drill targets. Because of the widespread mechanical dispersion and concentration of metals in talus and streams, the interpreted anomalies do not necessarily reflect underlying mineralization. Existing sample traverses are widespread, in some areas up to 2000 feet apart. Further geochemistry is required to provide a reliable interpretation of the size, shape and closure of anomalies.

Structural controls to host a porphyry-type of ore deposit are evident within the claim group and anomalous zones. Detailed mapping of fracture intensity, alteration and variations in rock composition would provide valuable information for a more refined interpretation of known geochemical anomalies.

The most significant feature of the radiometric survey was the noticeable variation of readings between the sedimentary and intrusive rocks. This feature aided in the interpretation of the contact in areas of deep overburden and talus.

The original investigations of the claim block indicated that veins and fractures contained uranium concentration up to 1/4 lb/t and high radioactivity (4-5 times background). It had been hoped that this survey would indicate zones with concentrated radioactive veins. The average background for the area is 40 MR/hr. Very few readings exceeded twice background (80 MR/hr.), therefore the suspected zones were not delineated.

Overburden, snow and water affect the measurement of radioactivity of the rock. To interpret the minor variations in radioactivity may reflect only the depth of overburden, radioactivity of boulder talus, or moisture content of the soil. Therefore only 40 MR/hr. contours were drawn from the results.

A P P E N D I X A

C O S T O F S U R V E Y

COST OF GEOCHEMICAL SURVEYS

SLIDE GROUP OF CLAIMS

1. LABOUR COSTS:

Project Supervisor - J. Binnie 5 days at \$27/day	135.00
W. Burry - 29 days at \$24/day	696.00
A. Gussen - 29 days at \$20/day	580.00
C. Binnie - 13 days at \$20/day	260.00
J. Lim - 13 days at \$20/day	<u>260.00</u>

\$ 1,931.00

2. CAMP COSTS - ROOM & BOARD:

89 man days at \$6/day	534.00
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3. TRANSPORTATION COSTS:

1 - 4 x 4, 3/4 Ton rental for 1 month at \$375/mo.	375.00
Helicopter rental to establish fly camps - 2 hrs. at \$140/hr..	<u>280.00</u>

655.00

4. ANALYTICAL COSTS:

Sample preparation and Analysis for Mo - U 742 samples at \$2.56/sample	1,900.00
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5. CONSULTING:

John R. Kerr, P. Eng. 6 days at \$100/day	600.00
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(Costs - con't.)

6. REPORT PREPARATION COSTS:

J. Kerr, P. Eng. 5 days at \$100/day	500.00	
Draughtsman 12 days at \$55/day	660.00	
Secretarial	<u>30.00</u>	
		1,190.00

7. MISCELLANEOUS COSTS:

Express Charges	60.00	
Reproduction	<u>50.00</u>	
		110.00

TOTAL \$ 6,920.00



John R. Kerr
John R. Kerr, P. Eng.

VERSATILE MINING SERVICES LTD.

A P P E N D I X B

STATEMENT OF QUALIFICATIONS



TELEPHONE 374-6263
TELEX 048-8191

VANCOUVER ADDRESS:
1575 TWO BENTALL CENTRE, VANCOUVER 1, B.C.

STATEMENT OF QUALIFICATIONS

I, JOHN R. KERR, of Kamloops, B.C., HEREBY CERTIFY THAT:

1. I am a member of the Association of Professional Engineers in the Province of British Columbia.
2. I am a geologist residing at 295 Greenstone Drive, Kamloops, B.C., and employed by Versatile Mining Services Ltd., P. O. Box 609, Kamloops, B.C.
3. I have practised as a geologist for 6 years since graduation from the University of British Columbia in 1964 with a B.A.Sc. in Geological Engineering.
4. I supervised crews in the field, and compiled and interpreted the technical data.
5. I have no beneficial interest in Canadian Johns-Manville Co. Ltd. or in the mineral claims described in this report, nor do I expect to receive any.



John R. Kerr
John R. Kerr, P. Eng.,

VERSATILE MINING SERVICES LTD.

September, 1970



TALUS & SOIL CLASSIFICATION

		TALUS	SOIL
colour classification	m—mean s—std. dev.	6.9 ppm 10.8 ppm	2.6 ppm 7.04 ppm
○	negative	0-6 ppm	0-2 ppm
●	possibly anomalous	m-(m±s) 7-17 ppm	3-9 ppm
○	probably anomalous	(m±s)-(m±2s) 18-28 ppm	10-16 ppm
●	definitely anomalous	(m±2s)-(m±3s) 29-39 ppm	17-23 ppm
●	high readings	>m±3s >39 ppm	>23 ppm

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NO. **2603** MAP # **3**

STREAM SEDIMENT CLASSIFICATION

○	0-20 ppm	Low values
⊗	> 20 ppm	Anomalous

LEGEND

- DEFINITELY ANOMALOUS CONTOUR
- POSSIBLY ANOMALOUS CONTOUR
- E** - ANOMALY REFERENCE
- ND** - NOT DETECTED
- I.S.** - INSUFFICIENT SAMPLE

2603

To accompany a report by John R. Kerr, P. Eng.

REVISIONS	PREPARED BY	CANADIAN JOHNS-MANVILLE Co. Ltd.
Date	FOR	Asbestos, QUEBEC
	MOLYBDENUM CONTENT	
	SOILS, TALUS FINES & STREAM SEDIMENTS	
	SLIDE 1-54 CLAIMS	
Technical Work By	Scale	1 INCH = 1000 FT.
Drawn By	Date	Sept., 1970
Approved By	Drawing Number	407-3





TALUS & SOIL CLASSIFICATION

Colour Classification	m - mean s - std. dev		TALUS	SOIL
			18.0 ppm 48.4 ppm	3.7 ppm 9.9 ppm
○	negative	0 - m	0 - 18 ppm	0 - 3 ppm
●	possibly anomalous	m - (m+s)	19 - 66 ppm	4 - 13 ppm
●	probably anomalous	(m+s) - (m+2s)	67 - 114 ppm	14 - 23 ppm
●	definitely anomalous	(m+2s) - (m+3s)	115 - 163 ppm	24 - 34 ppm
●	high readings	> m+3s	> 163 ppm	> 34 ppm

STREAM SEDIMENT CLASSIFICATION

○	0 - 100 ppm	Low values
⊗	> 100 ppm	Anomalous

NOTE: Refer to Dwg. No. 407-3 for LEGEND.

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Mines and Petroleum Resources
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NO. 2603 MAP #4

2603

To accompany a report by John R. Kerr, P. Eng.

REVISIONS	DATE	BY	PREPARED FOR
			CANADIAN JOHN'S-MANVILLE Co. Ltd. Asbestos, QUEBEC
			URANIUM CONTENT SOILS, TALUS FINES & STREAM SEDIMENTS
			SLIDE 1-54 CLAIMS
		Technical Work By	Scale 1 INCH = 1000 FT
		Drawn By WGU	Date Sept., 1970
		Approved By	Drawing Number 407-4



John R. Kerr



REFERENCE

- O 125 - SAMPLE LOCATION, SAMPLE NUMBER
- L - STREAM SEDIMENT
- S - SOIL
- T - TALUS

2006

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ASSESSMENT REPORT
NO. 2603 MAP #2

2603

To accompany a report by John R. Kerr, P. Eng.

REVISIONS		PREPARED FOR	CANADIAN JOHN'S-MANVILLE Co. Ltd. Asbestos, QUEBEC
Date	By		
		<p>LOCATION MAP</p> <p>SOIL, TALUS AND STREAM SEDIMENT</p> <p>SAMPLES, SLIDE 1-54 CLAIMS</p>	
<p>Technical Work By VERSATILE MINING SERVICES LTD</p>		<p>Scale 1 INCH = 1000 FT</p>	
<p>Drawn By WGU</p>		<p>Date Sept, 1970</p>	
<p>Approved By John R. Kerr, P. Eng</p>		<p>Drawing Number 407-2</p>	





2603

To accompany a report by John R. Kerr, P. Eng.

RADIOMETRIC CLASSIFICATION

All readings taken with Rank Ratemeter.

COLOUR CLASSIFICATION

- 0-40 MR/hr Low
- 40-80 MR/hr Medium
- > 80 MR/hr High

LEGEND

- 50 - Sample station with radioactive value in Micro Roentgen per hour
- 40 MR/hr - Contours of equal radioactivity

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ASSESSMENT REPORT
NO. 2603 MAP #5

CANADIAN JOHNS-MANVILLE Co. Ltd. Asbestos, QUEBEC		 P.O. BOX 549, KAMLOOPS, B.C.
SCINTILLOMETER READINGS		
SLIDE 1 - 54 CLAIMS		
Geological Work By:	Scale:	 John R. Kerr
Drawn By:	1 INCH = 1000 FT	
WGJ	Date:	
Approved By:	Sept., 1970	
		Drawing Number:
		407-5