

# 1712

GEOPHYSICAL REPORT ON PMLs 278, 279, 280 & 281

ON UPPER VOWELL CREEK, GOLDEN MINING DIVISION

By J. M. Black, P. Eng.

## INTRODUCTION

Radioactive minerals such as pyroclore are known to occur in post-glacial gravels of Upper Vowell Creek. These gravels come from an area at the head of this creek.

## METHOD & INSTRUMENT

The instrument used is a Model G15-2 Gamma Ray Spectrometer manufactured by Scintrex Ltd., Downsview, Ontario, Series No. 807148. This instrument is provided with two energy thresholds and can be used to determine number of counts per second from thorium only, or from thorium and uranium only, in addition to the overall count for these elements plus potassium.

A minimum of two men were required to run the survey. One man with compass and chain to locate station and the second to occupy station, take readings and hold the chain. When one or two other men were available they helped with the survey and enabled it to proceed more rapidly.

The readings were taken at the station shown unless it happened to be covered with vegetation, and then the readings were taken within 15 feet of it where the vegetable cover was less or bare gravel was exposed.

The probe that picked up the radiation was held about 9 inches above the ground.

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## RESULTS

Three readings were taken at each station and they are shown on map attached. These readings are shown on Fig. 1, also attached.

## INTERPRETATION

The highest readings of total count are about 310 counts per second, which are somewhat more than twice the lowest counts of 140 counts per second. These readings are appreciably higher than those found further down the creek.

The readings are erratic indicating that the radioactive minerals are distributed erratically within the gravel, though some of the variation is due to a cover of vegetable matter which reduces the effect of the radiation.

The counts per second of uranium and thorium is consistently slightly less than 1/10 of the total count, which indicates that the radioactivity is caused by a mineral or by two or more minerals that are generally about in the same proportions throughout the length of the area surveyed. The minerals are not present in uniform amounts but in uniform proportions, as if they have the same specific gravity and settle at the same rate and tend to be classified together by the current.

The count for thorium follows the same pattern as the other two counts but is much lower. It is generally slightly less than 1/4 of the count for U+Th at the upper end of the traverse and slightly more than 1/4 at the lower end. It would appear that there is a slight relative reduction of uranium minerals downstream relative to the thorium.

EMPLOYMENT

Oct. 27 - Black $\frac{1}{2}$ day	\$ 55
Oct. 31 - Delgado, Isett, Seward	102
Nov. 1 - Delgado, Isett, Seward & Woodsworth	136
Nov. 2 - Delgado - office	22
Nov. 26 - Delgado - office	<del>22</del>
Nov. 27 - Black - office	110
Cost of Camp & Board	<u>70</u>
	\$517
Helicopter transportation - 5 hours @ \$140/hr.	<u>700</u>
	<u>\$1,217</u>
Rental of Spectrometer - Oct. 31, Nov. 1	\$ 40
Total Payment:	
J. M. Black, P. Eng., $1\frac{1}{2}$ @ \$110	\$ 165
G. Delgado, M.E. 4 @ \$ 22	\$ 88
G. Isett 2 @ \$ 30	\$ 60
C. Seward 2 @ \$ 30	\$ 60
B. Woodsworth Geologist 1 @ \$ 34	\$ 34

JMB: jh  
Nov. 26/68

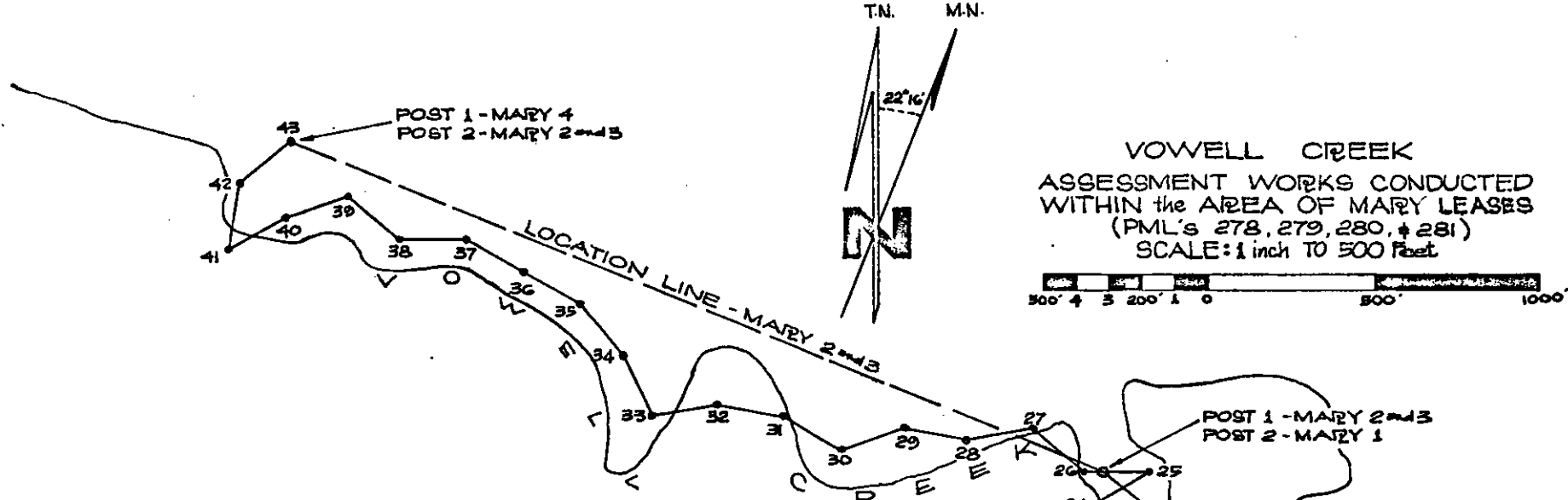
J. M. Black, P. Eng.

*JMB*  
Nov 26/68

Declared before me at the *City*  
*of Vancouver*, in the  
Province of British Columbia, this *29th*  
day of *November, 1968*, A.D.

*J. Paul*

*J. Paul* SUB - MINING RECORDER  
A Commissioner for taking Affidavits within British Columbia or  
A Notary Public in and for the Province of British Columbia.



GROUND SPECTROMETER SURVEY

STA.	ENERGY THRESHOLD AT			STA.	ENERGY THRESHOLD AT		
	0.30	7.65	5.00		0.30	7.65	5.00
0	405	8.1	38.7	22	197	4.7	18.7
1	207	4.5	19.3	23	235	4.9	22.5
2	345	7.2	33.2	24	185	4.1	17.3
3	265	5.7	25.2	25	225	4.9	21.7
4	250	5.5	23.9	26	250	5.0	23.6
5	225	5.0	22.1	27	295	5.3	28.4
6	135	3.0	12.7	28	145	3.8	13.7
7	295	5.3	28.4	29	165	4.3	16.1
8	247	5.2	23.8	30	240	5.2	23.5
9	215	4.8	20.7	31	175	4.2	16.3
10	135	3.4	12.6	32	270	5.5	26.0
11	290	5.7	28.3	33	145	3.6	13.8
12	195	4.4	18.6	34	140	3.5	13.1
13	175	4.3	16.2	35	205	4.4	19.6
14	170	4.2	16.5	36	175	4.1	16.9
15	150	4.1	14.5	37	185	4.2	17.3
16	180	4.5	17.2	38	165	3.8	15.2
17	350	7.2	33.6	39	175	3.7	16.9
18	225	5.0	21.9	40	165	3.7	15.8
19	230	4.6	22.7	41	150	3.6	14.2
20	145	3.7	13.6	42	135	3.5	12.7
21	140	3.5	13.8	43	140	3.5	13.5

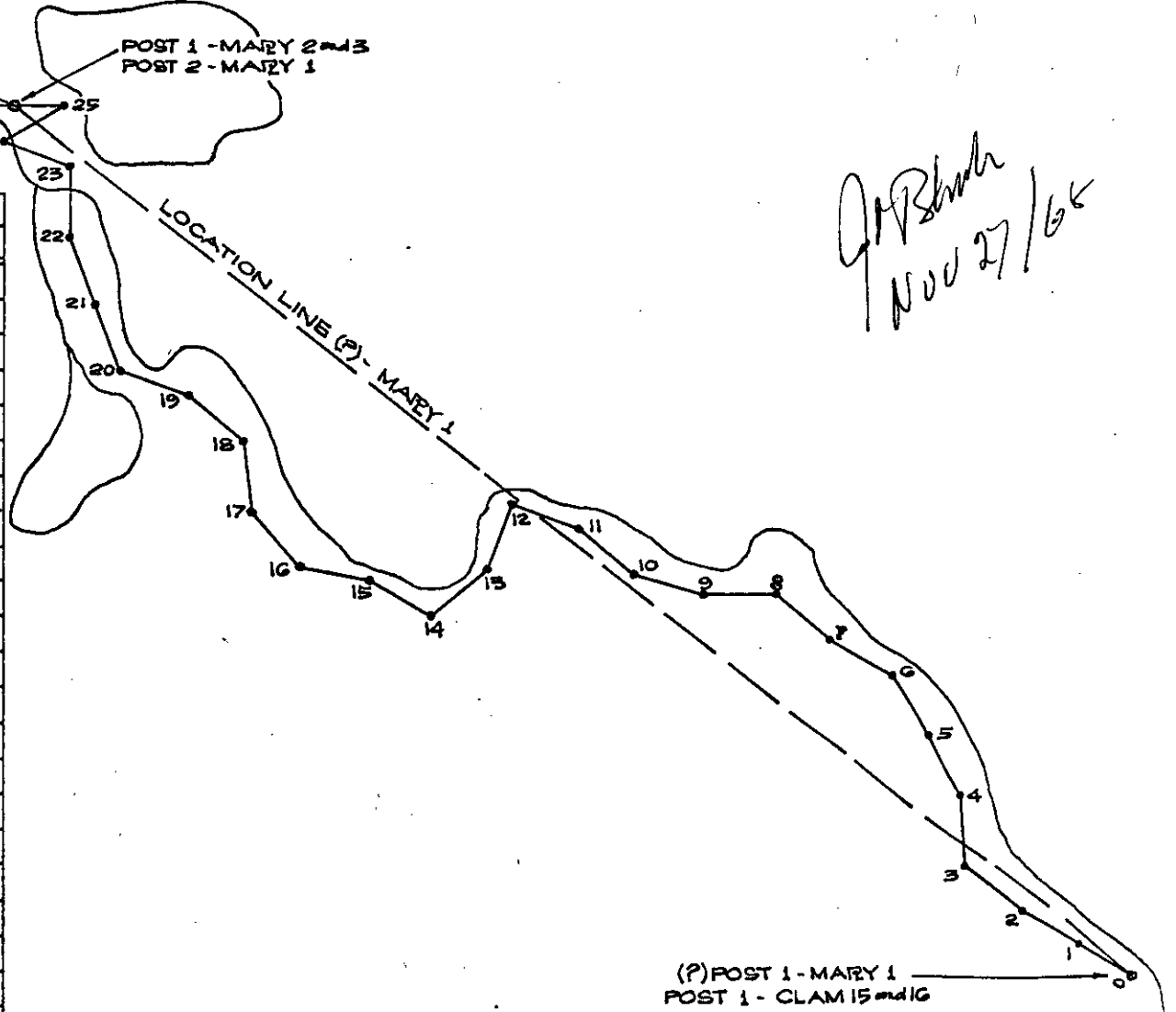
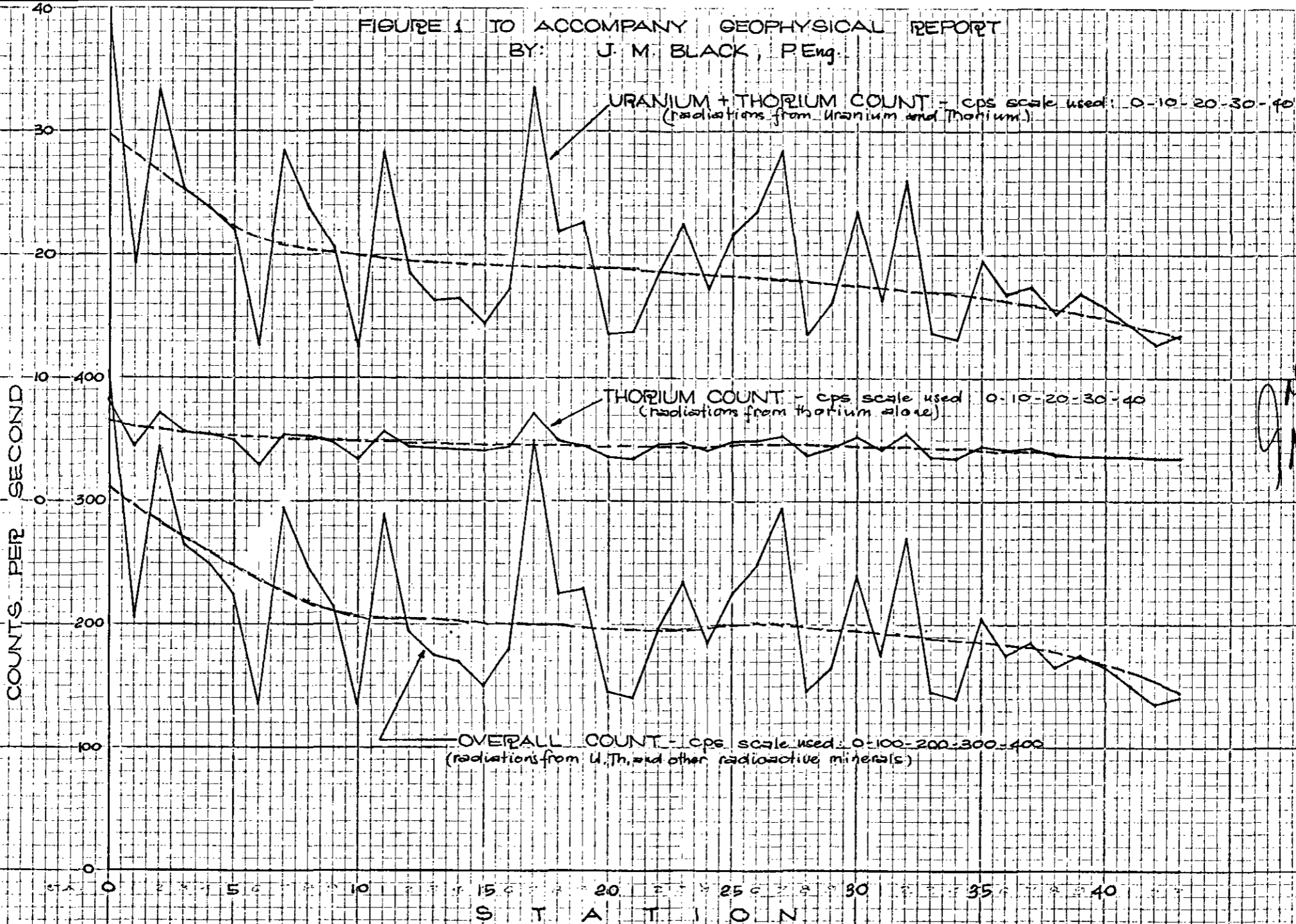


FIGURE 1 TO ACCOMPANY GEOPHYSICAL REPORT

BY: J. M. BLACK, P. Eng.



*J. M. Black*  
Nov 27/68

GROUND SPECTROMETER SURVEY on PML's 278, 279, 280, and 281  
VOWELL CREEK

FIGURE 1 TO ACCOMPANY GEOPHYSICAL REPORT  
 BY: J.M. BLACK, P.Eng.

NOTE: THRESHOLD = 0.30 means OVERALL COUNT (i.e., radiations from U, Th, and other radioactive minerals)  
 cps scale used: 0-100-200-300 scale

" = 5.00 " U+Th COUNT (i.e., only radiations from U and Th.)  
 cps scale used: 0-10-20-30 scale

" = 7.65 " THORIUM COUNT (i.e., only radiations from Thorium)  
 cps scale used: 0-10-20-30 scale



GROUND SPECTROMETER SURVEY  
 on PML's 282, 283, and 284  
 VOWELL CREEK