GEOLOGICAL, GEOPHYSICAL & GEOCHEMICAL REPORT

ON THE

TOREADOR CLAIMS

BIRCH ISLAND, B.C.

Prepared by

W. MEYER, P.ENG.

On behalf of

HIGHMONT MINING CORP.

Claims:	Toreador 1 and 2
Dates:	November 1/77 - February 10/78
Location:	51°35'N, 119°53'W [NTS 82M/12W] Birch Island Area Kamloops Mining Division

May 6, 1978 Vancouver, B.C.

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
6773
NO.

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INTRODUCTION

The Toreador Claims are located in the Birch Island area of the Kamloops Mining Division. The claims were staked in 1976 to cover a uranium prospect adjacent to the Rexspar Uranium occurrence.

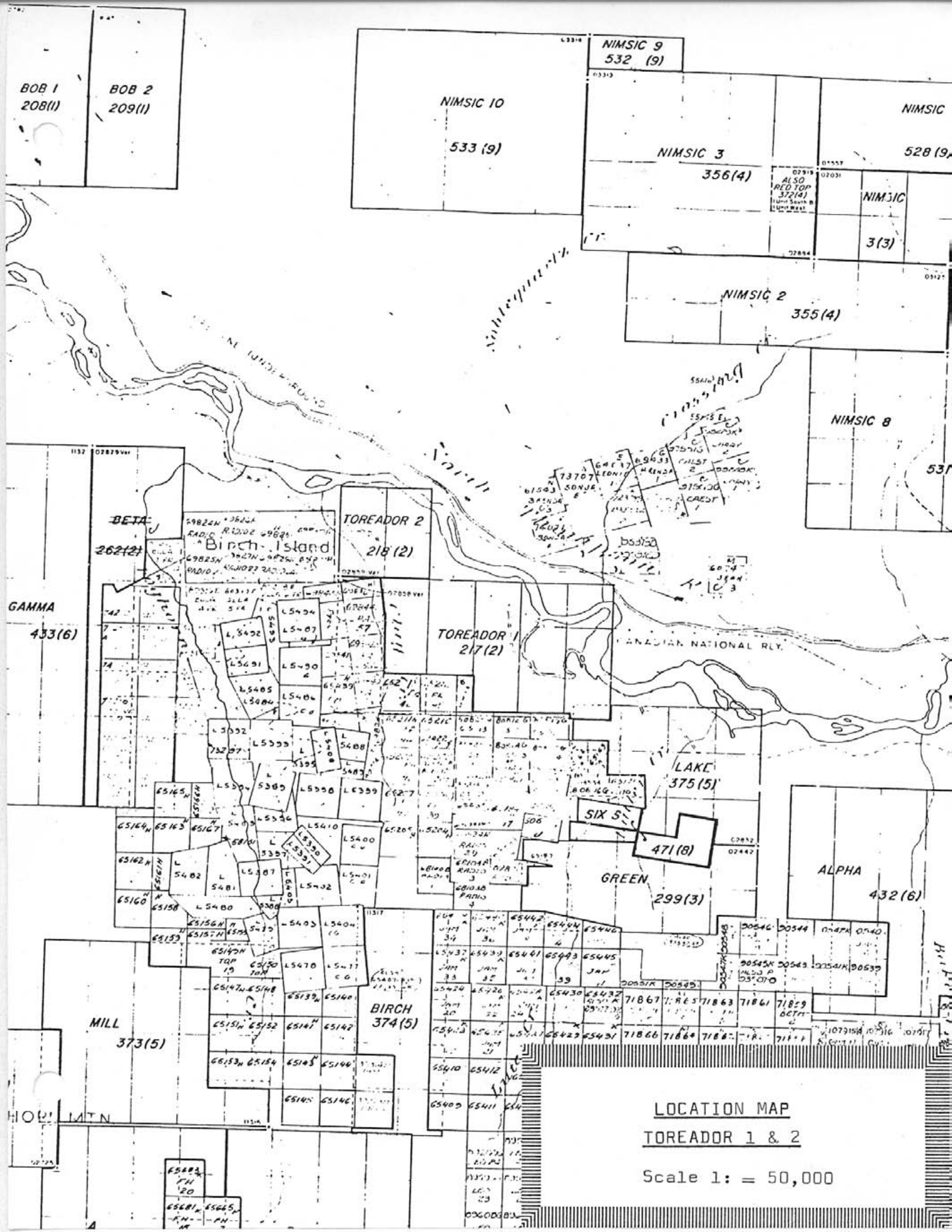
A preliminary geological and geophysical [VLF-EM] survey was completed on the southern portion of the Toreador #1 claim during 1976. The results of these surveys are described in the report "Geological and Geophysical Report on the Toreador 1 Mineral Claim" by A.J. Reed, P.Eng., dated January 28, 1977. An area of favourable host rocks for the occurrence of uranium had been identified.

The current programme is a follow-up to the initial surveys. A total of 15.5 line kilometers of geochemical sampling and radiometric surveys were completed. 6.8 kilometers of E.M. and mapping extended the earlier surveys to the north.

LOCATION & ACCESS

The Toreador claims are located in the Birch Island area of the Kamloops mining division centered around Latitude 51°35'N and Longitude 119°53'W [Ref: Map Sheet 82M/12W]. The claims are in the North Thompson Valley. The north portion of the group is traversed by the North Thompson River and the C.N. Railroad.

The claim area can be reached by major highways from the lower mainland area to Birch Island, a small community off the Yellowhead Highway 130 km. north of Kamloops. Good secondary road access is available to the claim area from Birch Island via Rexspar's Foghorn Creek road to the west claim area or two logging roads to the east and southeast claim area. All roads are suitable for two-wheel drive vehicles during dry weather.


BOB 1
208(1)
BOB 2
209(1)
NIMSIC 10
533 (9)
NIMSIC 9
532 (9)
NIMSIC 3
356(4)
NIMSIC
528 (9)
NIMSIC
3(3)
NIMSIC 2
355(4)
NIMSIC 8
BETA
262(2)
Birch Island
TOREADOR 2
218 (2)
TOREADOR 1
217(2)
GAMMA
433(6)
CANADIAN NATIONAL RLY.
LAKE
375(5)
SIX S
471(8)
GREEN
299(3)
ALPHA
432(6)
MILL
373(5)
BIRCH
374(5)
HOU MTN
LOCATION MAP
TOREADOR 1 & 2
Scale 1: = 50,000

CLAIMS

The claim group comprises twenty-two units two claims in the Kamloops Mining Division.

The pertinent claim data is shown below:

Claim	Units	Record No.	Record Date
Toreador 1	18	217[2]	February 6, 1976
Toreador 2	4	218[2]	February 10, 1976

GEOLOGY

Bedrock exposures on the Toreador claims occur in a narrow strip in the southern part of the claims at the base of the steeply sloping south side of the North Thompson Valley. These exposures were mapped by A.J. Reed, P.Eng., and described in his January 1977 report "Geological and Geophysical Report on the Toreador 1 Mineral Claim". No new bedrock exposures were noted in the current survey when the extended grid was located in an area of glacial deposits and/or alluvium of the flood plain of the North Thompson River.

The geology of the claim area is summarized from observations by A.J. Reed, the writer and Dr. J.M. Carr's comments in his memo of November 2, 1977, based on his discussions with Dr. V.A. Preto of the B.C. Department of Mines.

Pale grey, rusty, weathering sericite schists outcrop along the west bank of Clay Creek in the southwestern claim area. Schistosity strikes approximately east-west with 20^{o} - 40^{o} dips to the north. Minor

folds plunge 30^{o} to the north. These schistose stratified rocks are equivalent to the Eagle Bay Formation of pre-Upper Triassic age.

To the east of Clay Creek, pinkish-grey tuffs, fragmental rocks and intrusive porphyries outcrop. This suite of rocks appears to be equivalent to the trachyte porphyry, tuff breccia and tuff which outcrops east of Fog Horn Creek. The trachyte marks an eruptive centre of pre-Upper Triassic age. It is this trachyte and tuff unit which hosts uranium-thorium-fluorite mineralization on the adjacent Rexspar property, where five principal ore bodies are located within $1\frac{1}{2}$ km of an inferred volcanic centre. The exposures on the Toreador claims are located approximately 2 km northeast of this volcanic centre. As on the Rexspar property, pyrite and minor chalcopyrite occurs throughout the unit as fine disseminations, locally reaching 5% combined sulphides [as at 14S-1150E].

RADIOMETRIC SURVEY

A radiometric survey aggregating 15.5 km was carried out over the existing line grid. A Mc-Phar model Scintillometer was used to record data at 25 meter to 50 meter intervals along lines spaced 100 meters apart. Gamma radiation due to a combination of potassium, thorium and uranium [T1] was recorded in counts per minute at 25 meter intervals. Values for thorium and uranium [T2] and thorium alone [T3] were taken at 50 meter intervals. Values due to the contribution of uranium were calculated from the data. [T2 - 3.5 T3]

Figures 3 and 4 show the data for the total radioactivity measured [T_1] and the calculated values for uranium [$T_2 - 3.5 \times T_3$] in counts per minute. Anomalous data for total counts is grouped along the southern and southwestern boundaries. Anomalous radiation due to uranium in a general way corresponds to the total count data and also to the area of bedrock exposures or areas of shallow overburden.

Peak anomalies occur along line 14S centered around 9+00E to 13+50E. This area is underlain by the favourable trachyte and tuff breccias which host uranium mineralization on the adjacent Rexspar claims. Peak total sulphide content [to 5% sulphides] also occur over this interval. If significant uranium mineralization were to occur on the Toreador claims, it is anticipated that it would occur near this location in the Trachyte and tuff breccia.

Other lower grade but anomalous area is the southwest claim area corresponding to weakly radioactive sericite schists which occur both above and below the host trachyte unit. A drill hole completed by Rexspar and located near the base line at 13+00S apparently intersected no significant values.

VLF-EM SURVEY

The VLF-EM survey of 1976 carried out over the southern claim area was extended to the north. A survey of 6.8 km was completed. Readings were taken at 25 meter intervals along lines spaced 100 meters apart. A Radem Electromagnetic Detector was used to monitor the VLF radio signals transmitted from NLK, Jim Creek, Washington at a frequency of 18.6 KH_2. The results were filtered by the Fraser method [1969, 1971].

The observed data and filtered results are shown on Figure 5. 1976 data is combined with the current [1977] data.

A number of north-south trending anomalies have been outlined. At least two can be related to major fault zones. The anomaly located at approximately 750E on line 14S occurs on the east side of Clay Creek and corresponds to the contact between the sericite schist and trachyte-tuff breccia. This is probably a fault contact.

The anomaly located near 1350E on line 14S marks the eastern limit of bedrock exposures and may represent a fault zone.

The anomaly near 400E has a similar form to the anomaly on Clay Creek and may also correspond to a fault. Anomalies at 100E on line 11S and 300E on line 7S are unexplained. The conductor at 300E-7S has not been completely outlined to the north.

GEOCHEMICAL SURVEY

287 soil samples were taken at 50 meter intervals on lines spaced 100 meters apart. Samples were taken from the top of the B horizon where possible, on the most southerly lines and below the humus layer in the northern portion of the surveyed area where it extends over the flood plain sediments. Samples were placed in kraft paper envelopes marked with the sample location. All samples were shipped to Bondar Clegg in North Vancouver, B.C. for analysis for uranium by the fluorimetric method and for molybdenum by atomic absorption.

Figure 6 shows a plot of the data. Geochemical values are generally low throughout the surveyed area. Contouring of uranium values of +3 ppm and molybdenum values of +5 shows a general correspondence between the two metals [as at Rexspar].

The peak uranium-molybdenum anomaly is located approximately 700E in the southern part of the claim [L10S - 14S] corresponds to the general area of Clay Creek, the flanks of an EM conductor, an inferred fault contact between the favourable host

trachyte-tuff breccia and the sericite schist and to a scintillometer anomaly. The possibility of this anomaly being a drainage feature cannot be overlooked, however. The area and sample sites should be re-examined in the field prior to drawing a definite conclusion on the probable source of mineralization.

Coincident radiometric and geochemical anomalies in a favourable geological environment occur on Line 14S at 1100E and 2400E. The anomaly at 2400E is open to the north and will require some follow-up.

Anomalies attributable to erratics in the till are located at 7S-1300E and 10S-1600E.

CONCLUSIONS & RECOMMENDATIONS

The 1977 programme on the Toreador Claims was a follow-up to an earlier preliminary survey in the southern claim area. The initial survey outlined an area of favourable host rocks for the occurrence of uranium east of Clay Creek. Work completed in the current programme included 15.5 km of geochemical and radiometric surveys and 6.8 km of VLF-EM and mapping.

Coincident geochemical and radiometric anomalies were outlined along Clay Creek and to the east of Clay Creek. One anomaly at the eastern limit of the survey remains open to the north. Much of the claim area to the north of the anomalous areas is obscured by recent sediments from the flood plain of the North Thompson River.

A modest amount of technical work will be required east of the present grid and along the base line south of line 7S. The anomalies along Clay Creek and at 1100E on line 14S can be examined by drilling and blasting in bedrock exposures in order to examine fresh material and sample any resulting uranium mineralization. The anomaly at 2400E on

line 145 occurs in an area of no exposures. Pending the outcome of further technical programmes in this area, bulldozer stripping may be required to expose this area.

A chain and compass survey should be carried out to determine the Toreador #1 south and west boundaries relative to prior staking before initiating a work programme.

Respectfully submitted,

W. Meyer, P.Eng.

Vancouver, B.C.
May 6, 1978

[redacted] **W. MEYER & ASSOCIATES LTD.**

Suite 1015 - 470 Granville Street
Vancouver, B.C. V6C 1V5
Canada (604) 688-4638

July 25, 1978

5155

MINISTRY OF MINES AND PETROLEUM RESOURCES

JUL 27 1978

MINERAL TITLES FILE ROOM

Mr. E.J. Bowles
Chief Gold Commissioner
Parliament Buildings
Victoria, B.C. V8U 1X4

Dear Sir:

Re: Toreador Mineral Claims
Geochemical-Geophysical Report '78 - #110
File: 166 - Kamloops

The cost of the programme described in the previously submitted report is itemized below:

W. Meyer & Associates Ltd.	$2,973.33
Bondar Clegg & Co. Ltd.	1,434.40
Merle Porter	200.00
Mitch Porter	675.00
Total property related expenses	$5,282.73

Yours truly,

W. Meyer, P.Eng.

WM/LA

cc. Highmont Mining Corp.
1400-1799 West Hastings Street
Vancouver, B.C.

REFERRED TO		DATE	INITIAL
C.G.C.	✓		
D.C.G.C.			
G.C.			
FILE NO.			
FILING CLERK			

PERSONNEL & DATES

Name	Dates Worked	No. of Days
W. Meyer	Nov./77 - Feb./78	13
Merle Porter	Nov. 1-2/77	2
Mitchel Porter	Nov. 1-9/77	9

APPENDIX

CERTIFICATE

I, William Meyer, do hereby certify that:

1. I am a geologist with residence at 911 Jarvis Street, Coquitlam, B.C.

2. I am a graduate of the University of British Columbia [B.Sc., 1962].

3. I am a registered member of the Association of Professional Engineers of the Province of British Columbia.

4. I have worked as an exploration geologist for fourteen years for the following companies: Phelps Dodge Corporation of Canada Ltd., Gibraltar Mines Ltd., Associated Geological Services Ltd., Western Geological Services Ltd. [senior partner].

   I am presently a senior partner in W. Meyer & Associates Ltd.

W. Meyer, P.Eng.

May 6, 1978 Vancouver, B.C.

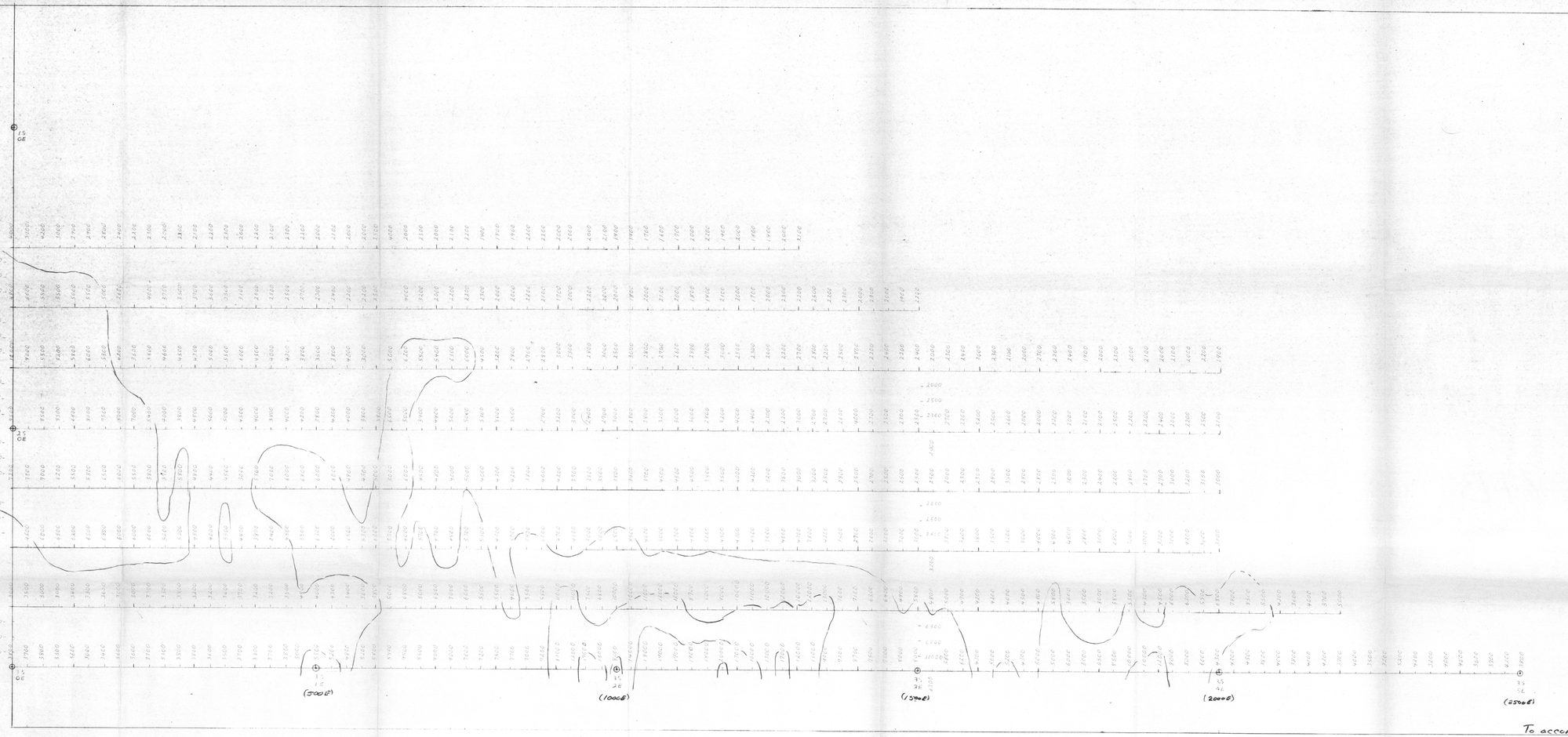


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Fig. 3

HIGHMONT MINING CORP. LTD.
PRINCE RUPERT ISLAND KAMLOOPS M.D.
TORE PROPERTIES MINERAL CLAIMS

Radiometric Survey

Total Counts in cpm

1:2,500 JAN. 1978

50 0 100 250
METRES

Fig. 3

To accompany Geological, Geophysical & Geochemical Report
by W Meyer, PEng May 6, 1978

W^m Meyer


L. 700 S.
L. 800 S.
L. 900 S.
L. 1000 S.
L. 1100 S.
L. 1200 S.
L. 1300 S.
L. 1400 S
BLO
95 - calculated cpm uranium.
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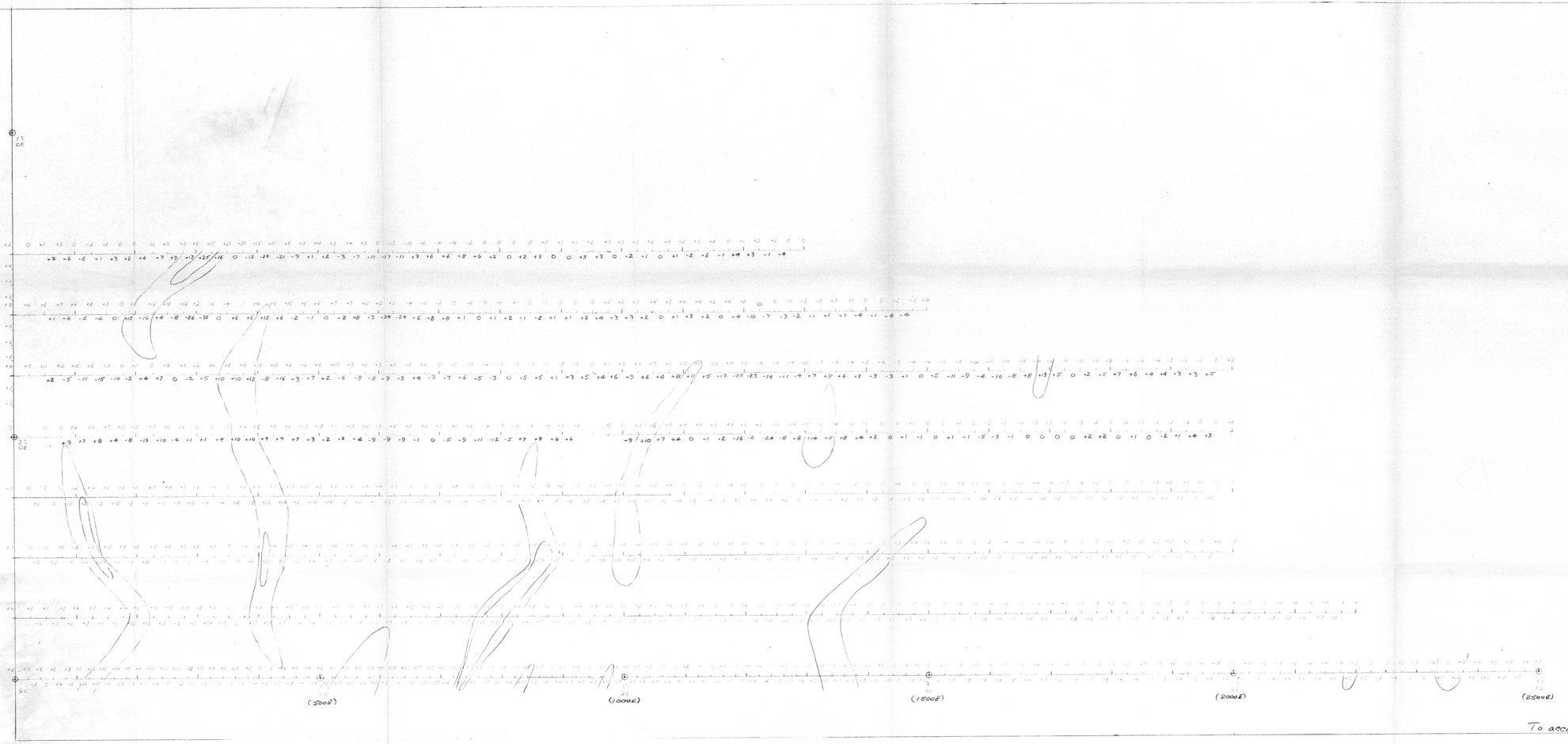
Fig. 4
HIGHMONT MINING CORP. LTD.
AREA BIRCH ISLAND KAMLOOPS, M.D.
TOREADOR 1&2 MINERAL CLAIMS
Radiometric Survey
cpm Uranium
1:2500
JAN. 1978
METRES
Fig. 4
To accompany Geological, Geophysical & Geochemical Report
by W Meyer, P.Eng. May 6, 1978



-15 -20 -15 -11 (dip angles)
+10 (filtered values)

filtered values contoured

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Fig 5

HIGHMONT MINING CORP. LTD.

AREA BIRCH ISLAND KAMLOOPS, M.D.
TOREADOR 1 & 2 MINERAL CLAIMS

VLF - E.M.

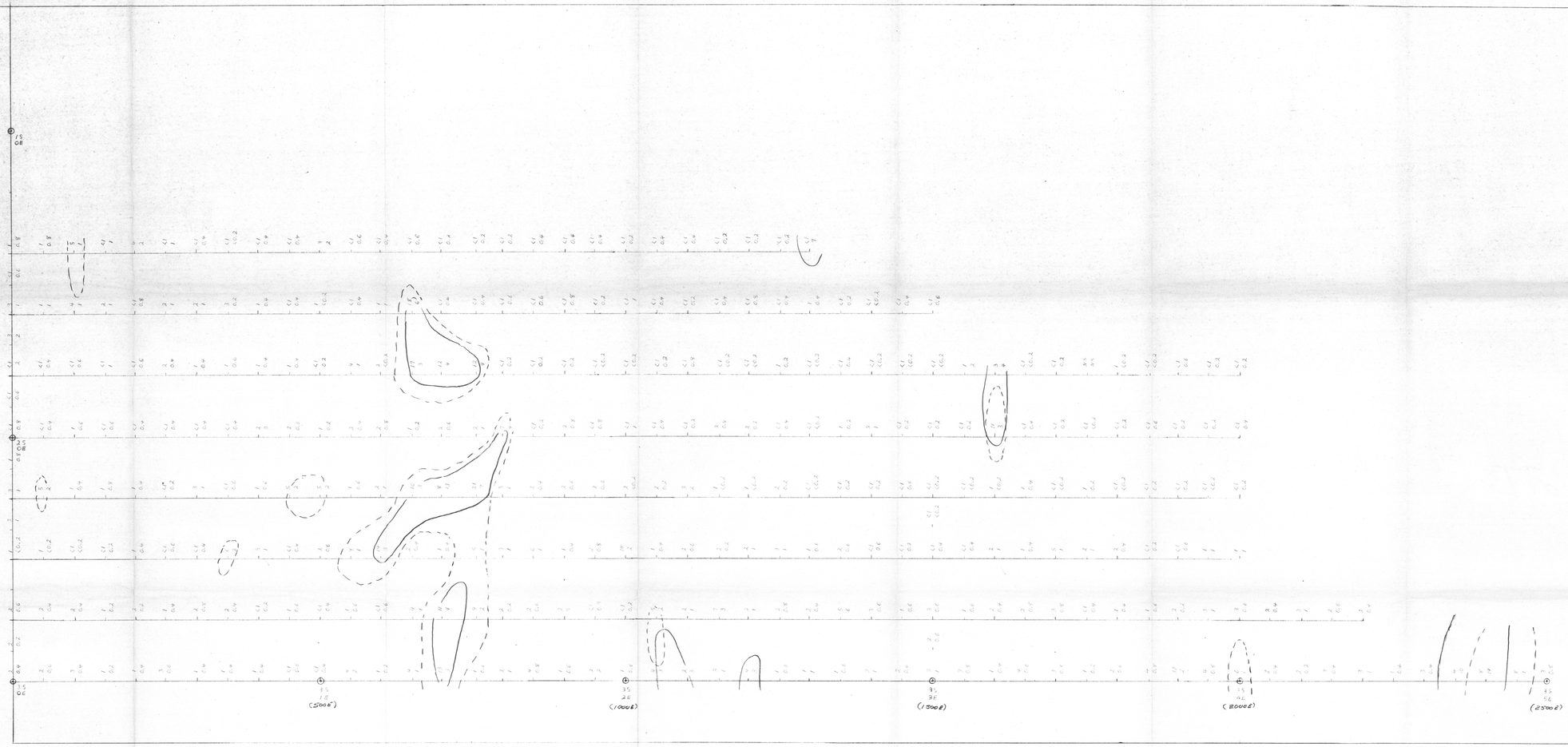
SCALE 1:2000 JAN. 1978

0 50 100 250
METRES

Fig. 5

To accompany Geological Geophysical & Geochemical Report
by W Meyer. P.Eng May 6, 1978

W. Meyer



4 molybdenum (ppm)
10 uranium (ppm)

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Fig. 6

HIGHMONT MINING CORP. LTD.
AREA BONANZA ISLAND KAMLOOPS M.D.
TORREADOR 162 MINERAL CLAIMS
Geochemical Survey
Cu. - Mo.
SCALE 1:2,500 JAN. 1978

0 100 250
METRES

Fig. 6.

To accompany Geological Geophysical & Geochemical Report by W Mayer, P.Eng May 6, 1978.

W. Mayer