REPORT ON

GEOLOGICAL AND GEOPHYSICAL SURVEYS

of the

T. C. EXPLORATIONS LTD PROPERTY

Highland Valley, B. C.
Kamloops Mining Division

Under Option to and Work Done by or on Behalf of

KEEVIL MINING GROUP LTD.

by

G. D. Ulrich, B. A. Sc.
A. I. Betmanis, P. Eng.

Claims:	LAKE Group and SNO group
Location:	11 Miles east of Spences Bridge
	Latitude 50° 24' N Longitude 121° 06' W
Dates:	June - December 10, 1970

December 10, 1970 2793 Vancouver, B. C.

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APPENDIX

MAPS

INTRODUCTION

The following report is based on field work carried out by consultants to Keevil Mining Group Ltd. during the 1970 field season. The work was completed on an 80 claim group in the Pimainus Lake area of the Highland Valley owned by T. C. Explorations Ltd. and presently under option to Keevil.

The vendor company had previously cut a line grid which was used for control in the course of the present surveys. The initial part of the survey consisted of cleaning out and re-picketing the old grid and detailed geological mapping. The northern half of the grid was cut originally with a bulldozer and was still in good condition.

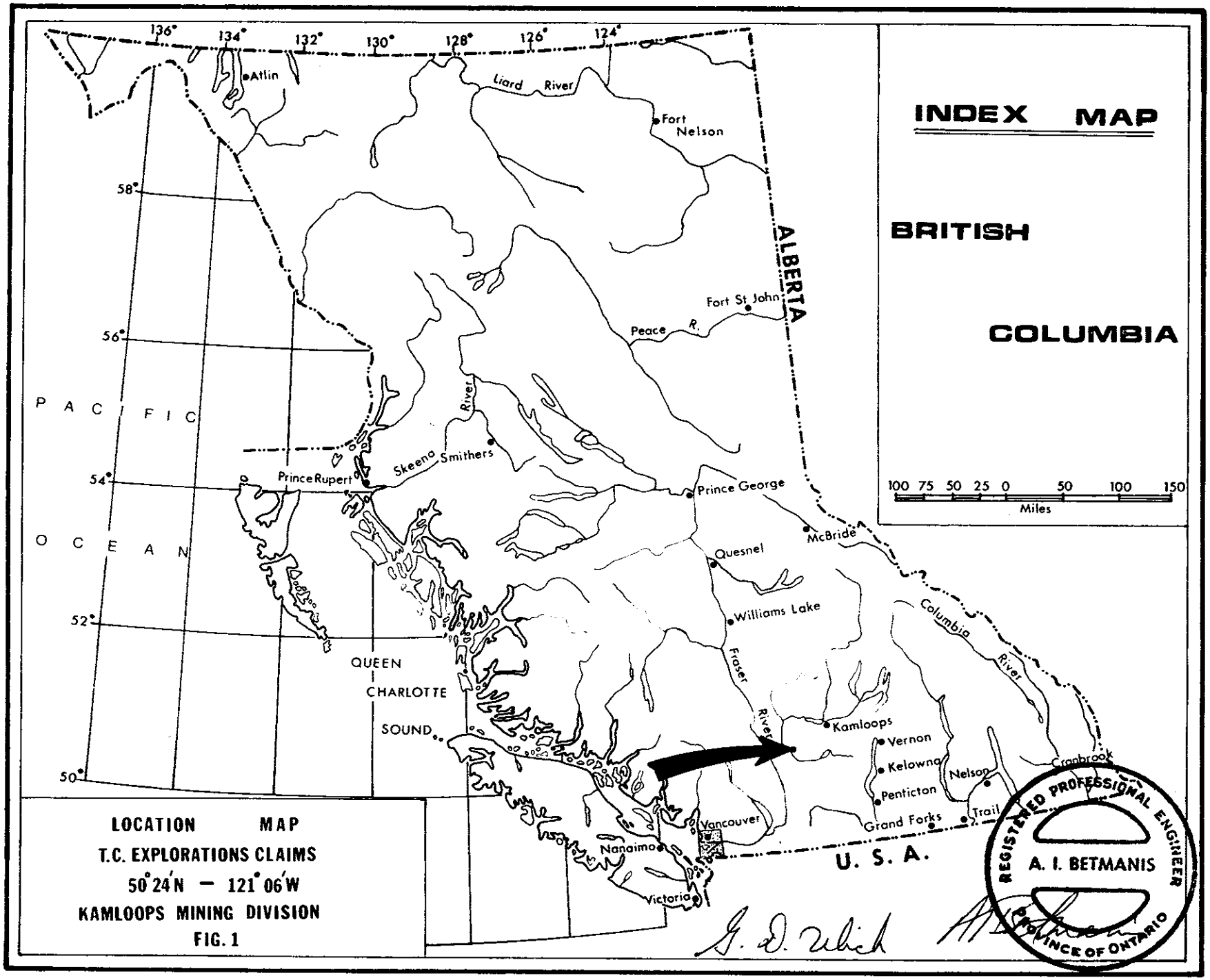
The geological survey emphasizes alteration and structures. The nomenclature used for describing the lithic units was that generally accepted locally and based on nomenclature developed by Dr. Northcote of the B. C. Dept. of Mines.

The second part of the programme consisted of a soil survey carried out by Barringer Research Ltd. The object of this survey was to detect any anomalous copper or molybdenum values in the soil that may be related to bedrock mineralization.

The third part of the programme consisted of an EM ("Radem") and hammer seismic survey. The object of the Radem was to pick-up possible conductors and structural features and the seismic to determine overburden depths, a factor that would later influence the type of physical work (i.e. trenching or drilling).

The fourth part of the programme, consisting of bulldozer trenching in an area of interest outlined by the geological and geophysical work, is presently in progress.

The programme on behalf of Keevil Mining Group Ltd. was directed by W. R. Bergey of Geophysical Engineering & Surveys Ltd. and supervised by W. Meyer of Western Geological Services Ltd. Field mapping was carried out by G. D. Ulrich, geologist, and R. E. Reid, assistant, of Western Geological Services Ltd. The geochemical survey was supervised by B. Smee of Barringer Research Ltd., the geophysical surveys and physical work by A. I. Betmanis of Geophysical Engineering & Surveys Ltd., both under the direction of W. R. Bergey.


INDEX MAP
BRITISH COLUMBIA
100 75 50 25 0 50 100 150
Miles
136° 134° 132° 130° 128° 126° 124°
58° 56° 54° 52° 50°
Atlin
Liard River
Fort Nelson
ALBERTA
Fort St John
Peace R.
PACIFIC OCEAN
Skeena River
Smithers
Prince Rupert
Prince George
McBride
Quesnel
Williams Lake
Columbia River
Fraser River
QUEEN CHARLOTTE SOUND
Kamloops
Vernon
Kelowna
Penticton
Nelson
Cranbrook
Grand Forks
Trail
Vancouver
Nanaimo
Victoria
U. S. A.
LOCATION MAP
T.C. EXPLORATIONS CLAIMS
50°24'N — 121°06'W
KAMLOOPS MINING DIVISION
FIG. 1
REGISTERED PROFESSIONAL ENGINEER
A. I. BETMANIS
PROVINCE OF ONTARIO

AS RPT
2793

LOCATION AND ACCESS

Keevil Mining Group Ltd. holds under option 80 contiguous mineral claims and fractions in the Highland Valley area of South Western British Columbia. The group covers an area of approximately 5 square miles, partly on Pimainus Lake in the Kamloops Mining Division centered around Lat 50° 24' N Long 121° 06' W.

The claim area is accessable from Vancouver by major highways to Ashcroft and by good paved road to the Alwin "turn - off" on the Ashcroft - Highland Valley road. From the "turn - off" the property is reached by 4 miles of good gravel road to the Alwin camp, and 7 miles of good 4 - wheel drive road via Calling and Pimainus Lake.

CLAIMS

A complete list of the 80 claims and fractions on which work is being applied is tabulated in Appendix I attached. The following is a summary of the groups:

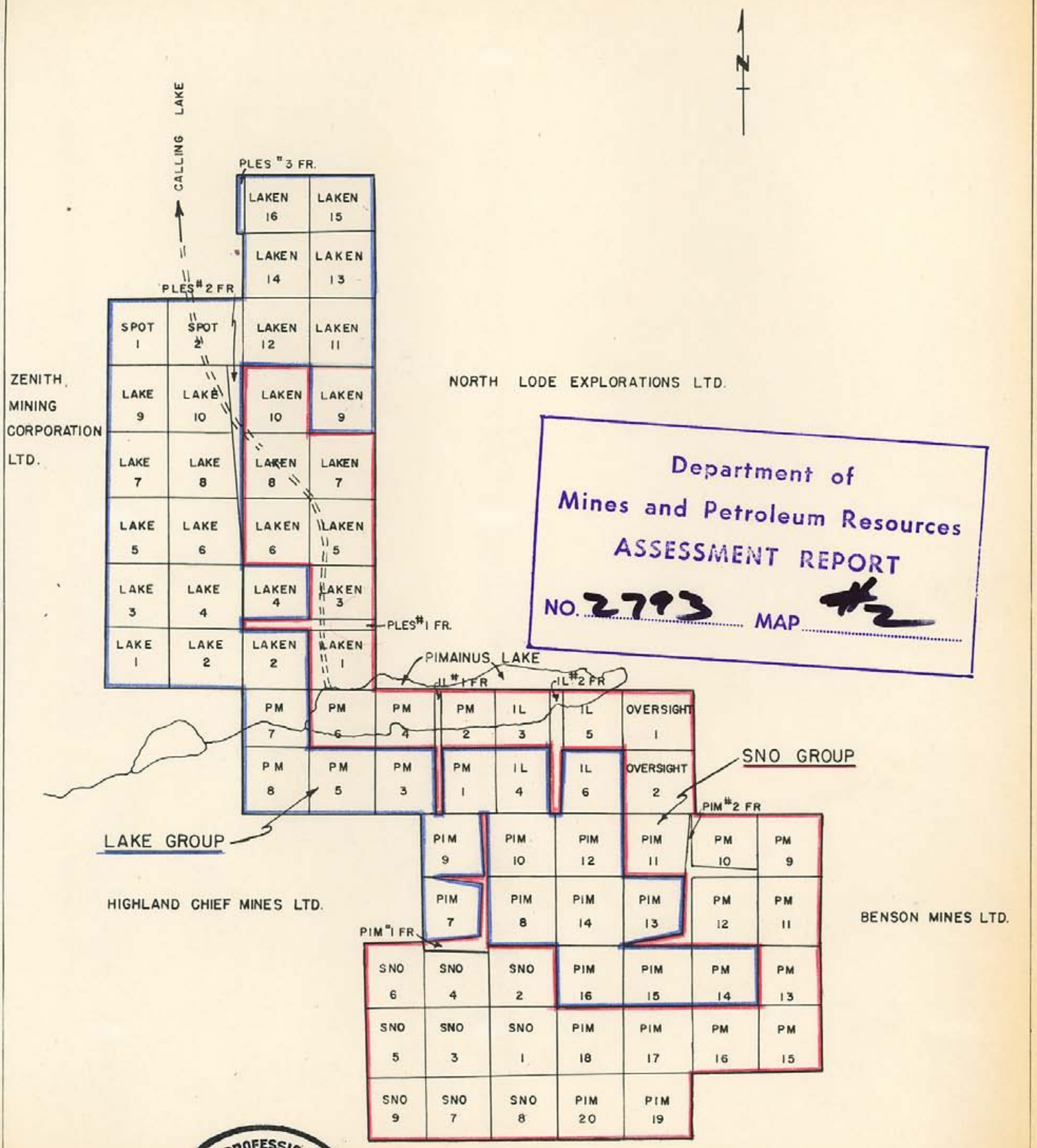
Group	Ownership	Mining Divison	Number of Claims
Lake	T. C. Explorations	Kamloops	40
SNO	T. C. Explorations	Kamloops	40

GEOLOGY

General Statement

The property is completely underlain by rocks of the Guichon Creek batholith. The total area of the intrusive is approximately four hundred square miles. The rocks were emplaced 198 ± 8 million years ago, their age being either Upper Triassic or Lower Jurassic (B. C. Department of Mines, Bull. 56, 1969).

The batholith is a semi-concordant, composite pluton with several nearly concentric phases. The intrusion supposedly took place as a series of pulses of a slowly crystallizing magma over a relatively short period of geological time. Roof stoping of



A. Betmanis G. D. Ulrich

FIG. II
T.C. EXPLORATIONS LTD.
MINERAL CLAIM MAP
PIMAINUS LAKE-HIGHLAND VALLEY, B.C.
SCALE: 1"=1/2 MI. (APPROX)
DN. BY: T. RAVENHILL
DECEMBER, 1970

overlying basic rocks by the outer phases is evident. The phases become more acidic towards the core. This effect is due to contamination of the outer phases and fractional crystallization, leaving a more siliceous melt after each intrusive pulse of crystals and magma.

Lithology

All the main concentric phases of the Guichon Creek batholith occur on the property. Three main types of dykes have been identified. No pre-batholithic rocks occur on the property, except as small xenoliths. The units used on the map are described below.

1. "Hybrid" Phase

The "Hybrid" phase forms the margin of the batholith. On the property, it is a coarse-grained, foliated, hornblende-quartz diorite containing areas of diorite and amphibolite. Fine-grained, mafic-rich inclusions of assimilated wall-rocks are common in the "Hybrid" phase. Amphibolite is common in small areas and seems to follow fractures. The "Hybrid" phase is the most variable and most basic phase due to contamination by pre-batholithic andesitic and basaltic volcanics.

On the property, the "Hybrid" phase contains 25% or more mafics. Hornblende: biotite is approximately 2:1. Most specimens contain less than 1% orthoclase, less than 10% interstitial quartz and greater than 5% magnetite. Plagioclase forms up to 70% of the mineralogy. Pyrite and chalcopyrite are occassionally found as accessory minerals in the "Hybrid".

2. "Highland Valley" Phase

The "Highland Valley" phase occurs on the property as a poorly defined, narrow zone between the "Hybrid" phase and the "Skeena" phase. The two varieties of the phase were identified.

a) "Guichon" Variety

The "Hybrid" phase grades to a "Guichon"-like area which contains fewer Mafics and fewer xenoliths than the "Hybrid" variety. This phase is its narrowest in the whole batholith and may actually pinch out on the property. In general, the "Guichon" variety on the property is a biotite-hornblende quartz diorite. It shows some variation in grain size from medium to medium-fine grained. The "Guichon" over most of the batholith is a granodiorite. The lack of potassium feldspar is probably due to the closeness of the "Hybrid" phase.

The "Guichon" variety contains 25 to 30% mafics. Hornblende: biotite is between 1:1 and 1:2. Magnetite is usually present and may be as much as 7% of the rock. The mafics show a distinct fairly fine-grained regular distribution with seldom any clots or accumulations. Fine grained interstitial quartz makes up 10 or 12% of this variety; plagioclase, about 50 to 60%. A weak foliation of the plagioclase and mafics is occasionally seen in this variety.

b) "Chataway" Variety

The "Guichon" variety grades over an area of less than 100' to the inner "Chataway" variety of the "Highland Valley" phase. The "Chataway" variety is medium to coarse grained and contains fewer mafics than the "Guichon". On the property, the "Chataway" is a hornblende-granodiorite and is not foliated.

The "Chataway" variety contains 15 to 25% mafics. Hornblende: biotite is about 2:1. Magnetite is usually present making up about 3% of the rock. The mafic texture is very distinct in this variety. Hornblende crystals are large and poikilitic being around 0.1 to 0.2 inches across. They are blocky and have a squarish outline. Quartz is fine-to medium-grained, interstitial material making up about 15 to 20% of the rock. Potassium feldspar has a similar texture, but usually does not exceed 5%. Plagioclase forms about 50 to 60% of the rock.

3. "Skeena" or "Bethlehem" Phase

The "Skeena" phase, also known as the "Bethlehem" phase, is a distinct unit occuring in contact with the "Chataway" variety and the "Bethsaida" phase on the property. It is a coarse grained biotite- hornblende -granodiorite. This phase is not foliated, although plagioclase near the "Bethsaida" contact appears to have an orientation approximately parallel to the contact.

The "Skeena" phase contains 10 to 15% mafics. Hornblende: biotite is about 1.5:1. Very large poikilitic hornblende crystals are common. Magnetite is present up to about 3%. The mafics have a typical "seive-texture" with large poikilitic hornblendes containing inclusions of feldspar. Large crystals and clumps of crystals, as well as very fine-grained mafics, are irregularly distributed giving the rock a distinct fabric. The rock is granular with coarse grained quartz making up 20% of the rock. The quartz, however, is interstitial. Potassium feldspar is irregularly distributed, but is on an average about 8 to 10% of the rock. It is fine-grained and interstitial to all other minerals. Plagioclase forms about 60% of the "Skeena" phase and is the earliest mineral, being subhedral to euhedral.

4. "Bethsaida" Phase

The "Bethsaida" phase forms the core of the batholith and is in contact with the "Skeena" phase on the property. This phase is very coarse-grained to medium-coarse-grained biotite-granodiorite. It is in places porphyritic, especially near the contact. Compositionally, the "Bethsaida" is in some locations a quartz monzonite.

Mafic minerals form about 5 to 12% of the "Bethsaida" phase with hornblende: biotite about 1:2; magnetite forms about 1 to 3% of the rock. Biotite is irregularly distributed forming very coarse books. Quartz makes up 20 to 30% of this phase. It is present as large, round, anhedral eyes of clear quartz up to 0.5 inches across. Potassium feldspar makes up 8 to 20% of this phase and is fine-grained interstitial material. Plagioclase is subhedral to anhedral, coarse-grained; it makes up about 50% of the rock.

5. Dykes

a) Quartz-feldspar Porphyry

Two dykes of quartz-feldspar porphyry occur in the northern half of the property. Both dykes are restricted to north-south trending fractures in the "Hybrid" phase.

Phenocrysts make up 50% of the rock. Quartz forms about one-half of the phenocrysts which are anhedral, slightly rounded, clear crystals approximately 0.15 inches across. Plagioclase forms the other one-half of the phenocrysts and is subhedral in crystals up to 0.2 inches long. Incipient argillic alteration of the plagioclase occurs in one dyke. The ground mass of the dykes is fine-grained, aphanitic, light-gray and feldspar-rich. Potassium feldspar is present only in trace amounts. Stained specimens show that it may be irregularly distributed in the groundmass. The altered specimen may actually contain sericite or clay that has stained yellow rather than orthoclase.

b) Aplite and Pegmatite

Numberous occurrences of small dykes and odd shaped intrusions of aplitic and pegmatitic material occur in all the main concentric phases of the batholith. Texture and grain size vary greatly. Most bodies are small, but some large dykes occur in the "Bethsaida" phase. Compositionally, there is little variation. Most of the dykes contain 40% or more potassium feldspar, 35% quartz, 20% plagioclase 2% or less mafics and other accessories.

The large dykes in the "Bethsaida" contain porphyritic quartz in their cores and are fine to medium grained near the margins. The "Bethsaida" has an increasing amount of potassium feldspar towards the contacts with these dykes. The smaller dykes in the "Skeena", "Highland Valley", and "Hybrid" phases commonly have coarse pegmatitic cores of quartz and white or pink feldspar and are finer and aplitic near the contacts.

These dykes tend to follow east-west fractures, whereas the aplite dykes in the "Bethsaida" phase have more random orientations. A concentration of pegmatitic dykes occurs in the "Skeena" at the contact with the "Bethsaida".

c) Volcanic dykes

Fine grained, volcanic dykes cut the intrusive rocks on the property. These rocks are probably related to the volcanic activity associated with the Kamloops volcanics. The dykes are, in general, fine grained light to dark green andesite and dacite. One occurrence in a trench cutting mineralized "Bethsaida" has fine grained specular hematite disseminated through it. Contacts of these dykes are abrupt and do not affect the batholithic rocks.

Structure

1. Contacts

Contacts between the different phases of the Guichon Creek batholith are complex and variable. On the property, each contact has characteristics which do not vary greatly.

The "Bethsaida" - "Skeena" contact is fairly abrupt in this part of the batholith. Some gradation does exist, but the contact is well defined within 50' to 100' in areas of heavy outcrop. Closely spaced shearing or aligning of feldspars occurs in the "Skeena" at this contact. In the southern part of the property, a chilled margin of "Bethsaida" occurs against the "Skeena" in a dyke of "Bethsaida". The "Skeena" - "Chataway" contact is also abrupt, commonly with no chilled margin. In some cases there is a 5 to 10' zone of fractured and altered rock at the contact.

The "Chataway"-"Guichon" and the "Guichon"-"Hybrid" contacts are never abruptly contacted and the "Hybrid" is essentially contaminated "Highland Valley" phase. These contacts are based on studies made of slabbed and stained specimens as well as field relations.

2. Jointing

There are definite trends in the attitudes of joint sets. The north half of the property exhibits well-formed regional joint sets which seldom have a density of more than three joints per foot. The intensity of joints is approximately constant from the "Hybrid" phase to the outer part of the "Bethsaida" phase. The central part of the "Bethsaida" shows a sharp decrease in intensity of jointing. No preferred orientation occurs there either. Most of the outcrops in the south are essentially massive with poorly formed joint patterns.

A stereonet of the poles to joints was plotted for the northern part of the property. Two average joints sets, at almost exactly right angles to each other, occur. Their attitudes are 110/90 and 020/90, the former being the stronger set.

3. Faults

Minor faults occur in trenches as shown on the accompanying map. No major shears or structures outcrop on the property. Some possible regional faults may occur on the property:

a) A NNW trending topographic low in the north half of the property may represent a major fault through the "Skeena" phase, causing it to be extremely thin on this property. This could extend to the base of Spaist Mountain in the south. Air photo linears support this theory.

b) A cross-structure cutting the contacts of the phases of the batholith may run through Pimainus Lakes. The lakes line up in a fairly straight lineation. The contacts appear to swing across the lake where outcrop is poor.

c) A minor cross-structure may occur on the north slope of Spaist Mountain cutting the "Highland Valley" and "Skeena" phases on line 45S. Such a fault would probably occur in a creek there, which parallels local joints at an attitude of approximately 085/90. Such a fault would also explain a local swing in the contacts on this line.

Alteration and Mineralization

Hydrothermal alteration is widespread throughout the whole property. In most places it is irregular and discontinuous although patches of intense alteration are common. Most common secondary products are chlorite, epidote, sericite and hematite. Two main trends of alteration occur on the property.

In the north, a zone of sericite, epidote, chlorite, hematite and minor clay and calcite trends parallel to the "Bethsaida" -"Skeena" contact in the "Bethsaida" phase. This zone is of indefinite width. Several occurrences of bornite and malachite are associated with the zone. Alteration is patchy in this zone. Mineralization is associated with hematite, sericite and quartz veins in shear zones. These shears are commonly shallow dipping, trending perpendicular to the zone.

In the southern half of the property, an area of very intense epidote veining and alteration occurs in the "Hybrid" phase. The intensity of this alteration dies off to the south and east. One occurrence of bornite and hematite in a six-inch quartz vein near the "Bethsaida"-"Skeena" contact is shown in Figure 3b. Trace amounts of chalcopyrite occur as accessory minerals associated with mafics in the "Hybrid" phase in the area of epidote veining as shown on the map.

GEOPHYSICAL SURVEYS

Electromagnetic (Radem) Survey

1. Discussion of the Method

The Radem unit, manufactured by Crone Geophysics, utilizes very low frequency (12 - 24 kilocycles) radio waves broadcast by the U. S. Navy. In this instance the station at Seattle, Washington, was employed, with a frequency of 18.6 kilocycles. This frequency is very much higher than the normal frequency range employed in electromagnetic prospecting. As a result, the effect of relatively poor conductors such as water-filled shears and deep swamps may be comparable to that over more conductive sulfide zones. Since the signal originates from an essentially infinite source, faults of great horizontal and vertical extent give a particularly strong anomalous response.

The Radem method can be effective in locating faults and shears which may provide structural control for disseminated copper deposits, or for the detection of higher grade copper mineralization related to shears.

The data are recorded as inclinations of the electromagnetic field. A conductor is indicated by a "cross over" in the angle of inclination. This can be observed in profile form, but presentation of the data in this way is awkward. A filter operator was designed by Dr. D. C. Fraser, Cheif Geophysicist of Geophysical Engineering and Surveys Ltd., to phase shift the dip angle by 90 degrees. Crossovers are transformed into peaks to yield contourable quantities. Only the filtered data are shown on the accompanying map. Negative values are not meaningful, and have not been plotted. Values of 10 degrees or higher are significantly anomalous.

2. Discussion of the Results

Nine and one half line-miles of Radem survey were done over the northern part of the property to cover an area of known alteration and erratic mineralization. Three moderate faults or shear zones were outlined as well as several minor probable shears.

The trend of the indicated structures is approximately north-south, and coincides with the direction of the mapped alteration zone and mineralized outcrops. An en echelon series of structures, rather than a single continuous fault, is suggested.

SEISMIC SURVEY

Shallow refraction seismic testing was undertaken using a portable facsimile Seismograph, Model FS - 3, manufactured by Huntec Ltd. Energy was transmitted to the ground by means of a sledge hammer striking a heavy steel plate. The work consisted of 21 stations along 3 traverse lines within the area of hydrothermal alteration in the northern portion of the property and 25 stations along 2 traverse lines across the east-west trending Pimainus Valley.

In the refraction method of seismic prospecting the quantity observed is the time between the initiation of the seismic wave (by the hammer blow) and the first arrival of the wave at a geophone which is placed at a measured distance from the hammer station. By observing first arrival times for a variety of stations along a line, a time versus distance

curve can be constructed. The time distance relationships can be analysed in terms of the variation with distance of minimum time paths. From these variations deductions can be made of the nature and depth of the elastic discontinuities required to account for the observed time-distance curves. Finally, the elastic discontinuities may be interpreted in terms of the nature, depth and attitude of geological units below the surface. It is fundamental to the method that accurate data on the nature of the underlying material can be obtained only if the discontinuities are such that a lower velocity layer always overlies a higher velocity material.

On the T. C. Explorations property the seismic work was utilized only to obtain depths of overburden, within the area of the strong hydrothermal alteration and across the valley. The purpose of this information was to determine whether the alteration zone could be tested by trenching and whether or not a fault exists through Pimainus Lake. Additionally the information is of value in determining the usefulness of the geochemical data.

The refraction results indicated that the velocity in the overlying material (glacial till) ranged from 2000 to 5000 feet per second. Velocity in bedrock was in the range of 8000 to 15000 feet per second. A thin, very low-velocity layer, presumably soil and organic matter, overlies the till.

The quality of the data was affected by wet and soft surface materials and by undulations in the bedrock surface. The former condition attenuates the seismic waves rapidly and gives rise to poor quality records. Sharp irregularities in the bedrock topography can affect the accuracy of the depth calculations. However, it is believed that the calculated depths are within the accuracy required for the purposes intended.

The results of the seismic refraction work confirmed that the overburden is too thick over much of the area tested for practical use of a bulldozer for stripping. The overburden increases towards the lake and is its thickest in the valley. The low values in the Pimainus Valley are erratic and nothing conclusive can be stated regarding the existence of a regional fault through Pimainus Lake.

CONCLUSIONS

One significant exploration target has been outlined on the basis of the combined surveys. The target is in the northern part of the property and is characterized by:

1) minor surface showings;

2) area of hydrothermal alteration;

3) magnetic low;

4) conductor indicated by Radem;

5) regional structure;

6) favourable geological environment;

Further work in the form of diamond drilling or bulldozer trenching will be necessary to evaluate this area.

Respectfully submitted

G. D. Ulrich, B. A. Sc.

A. I. Betmanis, P. Eng.

REGISTERED PROFESSIONAL ENGINEER
A. I. BETMANIS
PROVINCE OF ONTARIO

keb

Appendix I

CLAIMS

Claim	Record Number	Expiry Date	Title
LAKE GROUPING			
LAKE 1 - 10	42080 - 42089	April 17, 1971	T. C. Ex.
SPOT 1 + 2	43904 + 43905	June 27, 1972	T. C. Ex.
LAKEN 2,4,9,11-16	46071,46073,46078, 46080 - 46085	April 30, 1971	T. C. Ex.
PLES. #2 Fr.	64991	July 10, 1971	H. T. James
PLES. #3 Fr.	64993	July 10, 1971	H. T. James
PM 1,3,5,7,8,+14	64036,8,40,42,43,+49	April 30, 1971	T. C. Ex.
IL 4 + 6	46057, 46059	April 30, 1971	T. C. Ex.
PIM 7 - 10	42106 - 42109	April 17, 1971	T. C. Ex.
PIM 12 - 16	42111 - 42115	April 17, 1971	T. C. Ex.
SNO GROUPING			
SNO 1 - 9	61949 - 61957	December 12, 1972	T. C. Ex.
PIM 11, 17 - 20	42110, 116 - 119	April 17, 1971	T. C. Ex.
PM 2,4,6,9-13, 15, 16	46037,39,41,44-48, 50, 51	April 30, 1971	T. C. Ex.
OVERSIGHT 1 +2	46052 + 46053	April 30, 1971	T. C. Ex.
IL 3 + 5	46056 + 46058	April 30, 1971	T. C. Ex.
IL #1 Fr. + #2 Fr.	60811 + 60812	September 29, 1973	T. C. Ex.
PLES #1 Fr.	64992	July 10, 1971	H. T. James
LAKEN 1,3,5-8,10	46070,2,4-7,9	April 30, 1971	T. C. Ex.
PIM #1 + 2 Fr.	60809 + 60810	September 29, 1973	T. C. Ex.

Appendix II

CERTIFICATE

I, Andris Betmanis do hereby certify that:

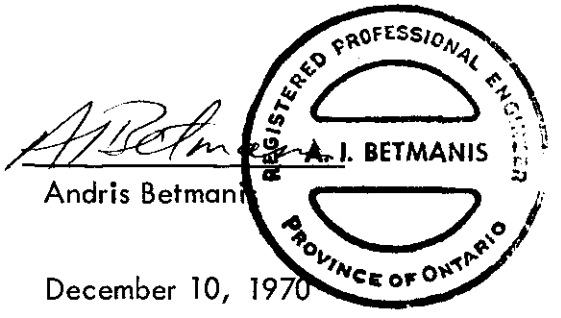
1. I am a geologist with residence at Suite 512, 1550 Duchess Avenue, West Vancouver, B. C.

2. I am a graduate of the University of Toronto, (BASc - 1965, Applied Geology)

3. I am a Professional Engineer registered in the Province of Ontario.

4. From graduation to present I have been employed as a geologist with Geophysical Engineering and Surveys Ltd.

5. Between June and December 1970 I supervised the geological and geophysical work on the property on behalf of Geophysical Engineering and Surveys Ltd.



Andris Betmanis

December 10, 1970

CERTIFICATE

I, Gordon Ulrich do hereby certify that:

1. I am a geologist with residence at 603 Rutland Court, Coquitlam, B. C.

2. I am a graduate of the University of British Columbia, (BASc - 1970, Geological Engineering)

3. From graduation to present I have been employed with Western Geological Services Ltd.

4. During the period June - December 1970 I supervised and carried out the geological mapping of the claims covered by this report.

G. D. Ulrich

G. D. Ulrich

December 10, 1970

Appendix III

PERSONNEL & DATES

Name and Address	Position	Employed From - To	Days
W. R. Bergey 700 - 1177 West Hastings Street	Geologist	June 1 - December 10/70	3
W. Meyer 1015 - 470 Granville Street	Geologist	June 1 - December 10/70	3
A. I. Betmanis 141½ Riverside Drive, N. Van	Geologist	Sept. 28 - Dec. 10/70	9
G. D. Ulrich 1015 - 470 Granville Street	Geologist	June 9 - Dec. 10/70	54
R. E. Reid 1015 - 470 Granville Street	Geological Assistant	June 10 - July 15/70	36
J. Ziegler 141½ Riverside Drive, N. Van	Geophysical Instrument Operator	July 4 - July 10/70	7
R. Barnes 141½ Riverside Drive. N. Van	Seismic Operator	Aug. 30 - Sept 8/70	10
R. Watt 141½ Riverside Drive, N. Van	Assistant	Aug. 30 - Sept 8/70	10
K. Davies 141½ Riverside Drive, N. Van	Assistant	Oct. 25 - Dec 1/70	18
A. Wlenkski 141½ Riverside Drive	Line-cutter	July 4 - 10/70	7
J. Daily 141½ Riverside Drive	Line-cutter	July 4 - 10/70	7
R. Darlington 141½ Riverside Drive	Line-cutter	July 4 - 10/70	7

J. Clarke	Line-cutter	July 4 - 10/70	7
141½ Riverside Drive, N. Van			

Appendix IV

COST OF SURVEY

Geology	
Western Geological Services Ltd.	6404.95
Supervision and Technical Services	
Geophysical Engineering & Surveys Ltd.	2145.42
Related Costs	
Camp cost and accomodation	340.95
Draghting, maps, prints and reports	628.41
Vehicle rentals	1275.02
Sundry - misc. labour	176.00
	10970.75

The above costs are property related costs only and do not include preliminary compilation of previous data, admininstration costs, transportation to and from Vancouver and other cost not normally applicable for assessment credits.

Appendix V

AFFIDAVIT re: COST OF SURVEY

I, Gordon Donald Ulrich B. A. Sc., of 603 Rutland Court in the Municipality of Coquitlam in the Province of British Columbia, DO SOLEMNLY DECLARE that the geological and geophysical surveys of 80 located mineral claims and fractional mineral claims owned by T, C. Explorations Ltd. of Vancouver, B. C. and under option to Keevil Mining Group Ltd. were conducted during the field season of 1970, are described by this report and the field data was obtained at a total property-related cost of at least $10,970.75.

AND I made this solemn declaration conscientiously beleiving 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 22 day of December, A. D. 1970.

Sub-mining Recorder

G. D. Ulrich

L110N
L105N
L100N
L95N
L90N
L85N
L80N
L75N
L70N
L65N
L60N
L55N
L50N
L45N
L40N
L35N
L30N
L25N
L20N
L15N
L10N
L05N
L0+00

LAKEN 16 | LAKEN 15
LAKEN 14 | LAKEN 13
LAKEN 12 | LAKEN 11
LAKEN 10 | LAKEN 9
LAKEN 8
LAKEN 7
LAKEN 4 | LAKEN 3
LAKEN 2 | LAKEN 1
SPOT 1 | SPOT 2
SPOT 1 LAKE 9 | SPOT 2 LAKE 10
LAKE 3 | LAKE 4
LAKE 1 | LAKE 2

APPROX. CLAIM BOUNDARY

PIMAINUS LAKE

B L I

TO ACCOMPANY "REPORT ON GEOLOGICAL AND GEOPHYSICAL SURVEYS OF THE T.C.EXPLORATIONS LTD. PROPERTY"
DATED DECEMBER 10,1970 HIGHLAND VALLEY B.C. KAMLOOPS MINING DIVISION BY G.D.Ulrich B.A.Sc. AND A.I.Betmanis P.Eng.

LEGEND

POST BATHOLITHIC ROCKS (CRETACEOUS)

8 VOLCANIC DYKES

GUICHON BATHOLITH (JURASSIC)

7 APLITE AND PEGMATITE
6 QUARTZ - FELDSPAR PORPHYRY
5 BETHSAIDA PHASE
4 SKEENA PHASE (BETHLEHEM PHASE)

HIGHLAND VALLEY PHASE

3 CHATAWAY VARIETY
2 GUICHON VARIETY
1 HYBRID PHASE

ALTERATION

arg.	ARGILLIC
cal.	CALCITE
chl.	CHLORITE
clay	CLAY
ep.	EPIDOTE
hem.	HEMATITE
k-s.	K-SPAR (SECONDARY)
lim.	LIMONITE
pyr.	PYRITE
ser.	SERICITE
sil.	SILICIFICATION
tr.	TRACE

2793

M-3

SYMBOLS

OBSERVED CONTACT
IMPLIED CONTACT
INFERRED CONTACT
VERTICAL JOINT
85 JOINT SHOWING DIP
VERTICAL SHEAR
76 SHEAR SHOWING DIP
69 FAULT SHOWING DIP
POSSIBLE FAULT
REGIONAL FAULT
70 FOLIATIONS
TRENCH
ROAD
CAT LINE
CUT LINE
OUTCROP
SWAMP
qtz. QUARTZ VEINS
ap. APLITE
peg. PEGMATITE
40 SMALL DYKE SHOWING ATTITUDE
Cu COPPER MINERALIZATION
w. fract. WELL FRACTURED
P.H. PERCUSSION DRILL HOLE
CLAIM POST
ALTERATION ZONE

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 2793 MAP #3

A. I. BETMANIS
REGISTERED PROFESSIONAL ENGINEER
PROVINCE OF ONTARIO

A.I.Betmanis
G.D.Ulrich

FIG. 3A
GEOPHYSICAL ENGINEERING & SURVEYS LTD.

GEOLOGY

T.C. EXPLORATIONS LTD.

HIGHLAND VALLEY, BRITISH COLUMBIA

SCALE: 1"=400'

400 0 400 800

W.G.S. JUNE, 1970

SHEET 1 of 2

L05 N
L0+00
L05 S
L10 S
L15 S
L 20 S
L 25 S
L 30 S
L 35 S
L40 S
L45 S
L50 S

APPROX CLAIM BOUNDARY

P I M A I N U S L A K E

L 10 S
L 15 S
L 20 S
L 25 S
L 30 S
L 35 S
L40 S
L45 S
L50 S
L 55 S
L60 S
L65 S
L70 S
L75 S

APPROX CLAIM BOUNDARY

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2 GUICHON VARIETY

1 HYBRID PHASE

SYMBOLS

OBSERVED CONTACT
IMPLIED CONTACT
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JOINT SHOWING DIP
VERTICAL SHEAR
SHEAR SHOWING DIP
FAULT SHOWING DIP
POSSIBLE FAULT
REGIONAL FAULT
FOLIATIONS
TRENCH
ROAD
CAT LINE
CUT LINE
OUTCROP
SWAMP
qtz. QUARTZ VEINS
ap. APLITE
peg. PEGMATITE
SMALL DYKE SHOWING ATTITUDE
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w. fract. WELL FRACTURED
P.H. PERCUSSION DRILL HOLE
CLAIM POST
ALTERATION ZONE

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k-s.	K-SPAR (SECONDARY)
lim.	LIMONITE
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FIG. 3B

GEOPHYSICAL ENGINEERING & SURVEYS LTD.

GEOLOGY

T. C. EXPLORATIONS LTD.

HIGHLAND VALLEY, BRITISH COLUMBIA

SCALE: 1" = 400'

400 0 400 800

REGISTERED PROFESSIONAL ENGINEER A. I. BETMANIS PROVINCE OF ONTARIO

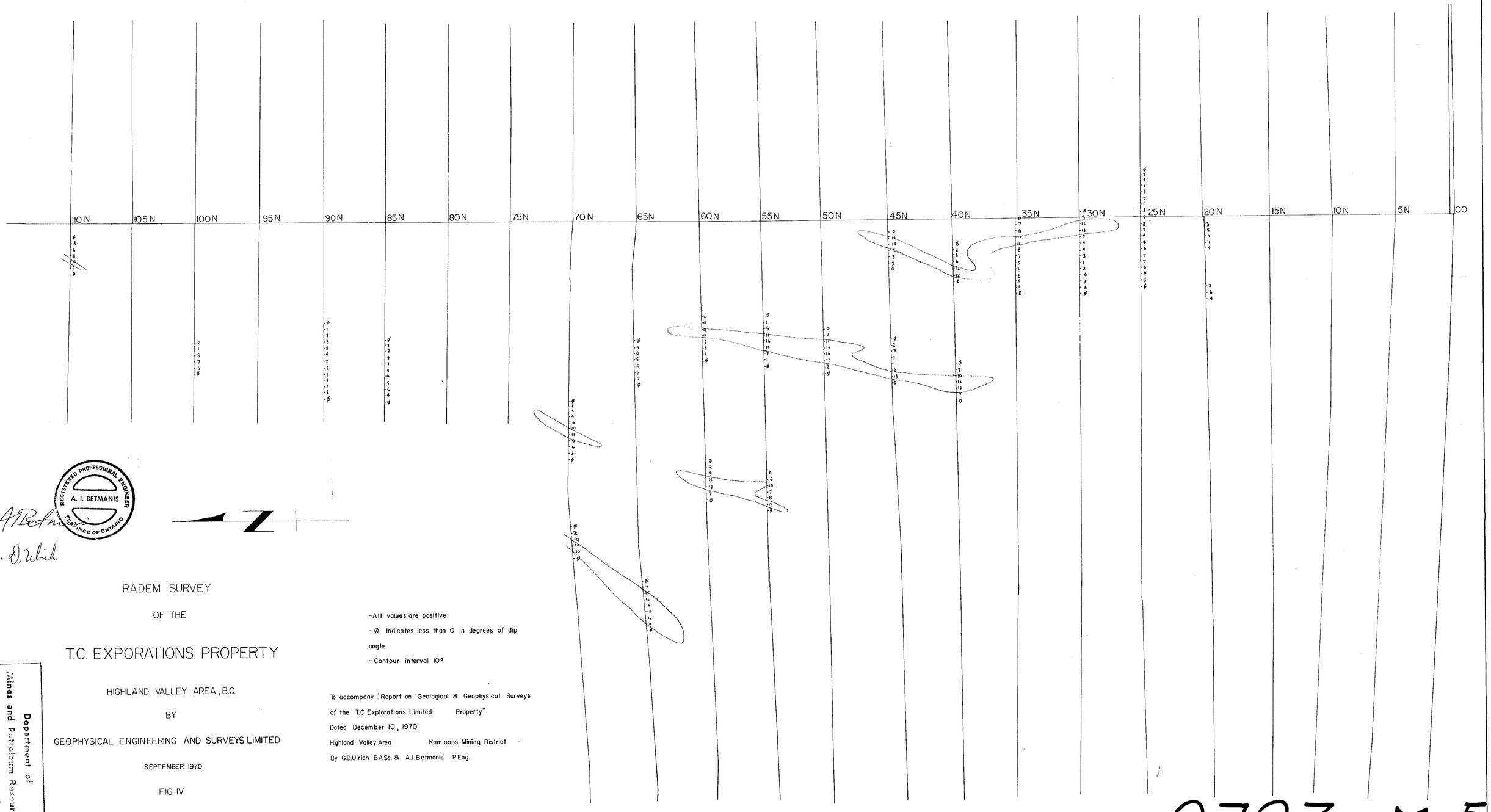
A.I.Bet

G. D. Ulrich

W. G. S.

JULY, 1970

SHEET 2 of 2



A.I. Betmanis

G. D. Ulrich

RADEM SURVEY

OF THE

T.C. EXPORATIONS PROPERTY

HIGHLAND VALLEY AREA, B.C.

BY

GEOPHYSICAL ENGINEERING AND SURVEYS LIMITED

SEPTEMBER 1970

FIG. IV

SCALE: 1"= 400'
DRAWN BY T. Ravenhill

- All values are positive.
- Ø indicates less than 0 in degrees of dip angle.
- Contour interval 10°

To accompany "Report on Geological & Geophysical Surveys of the T.C. Explorations Limited Property"
Dated December 10, 1970
Highland Valley Area Kamloops Mining District
By G.D. Ulrich B.A.Sc. & A.I. Betmanis P.Eng.

SEISMIC SURVEY

OF THE

T.C. EXPLORATIONS PROPERTY

HIGHLAND VALLEY, B.C.

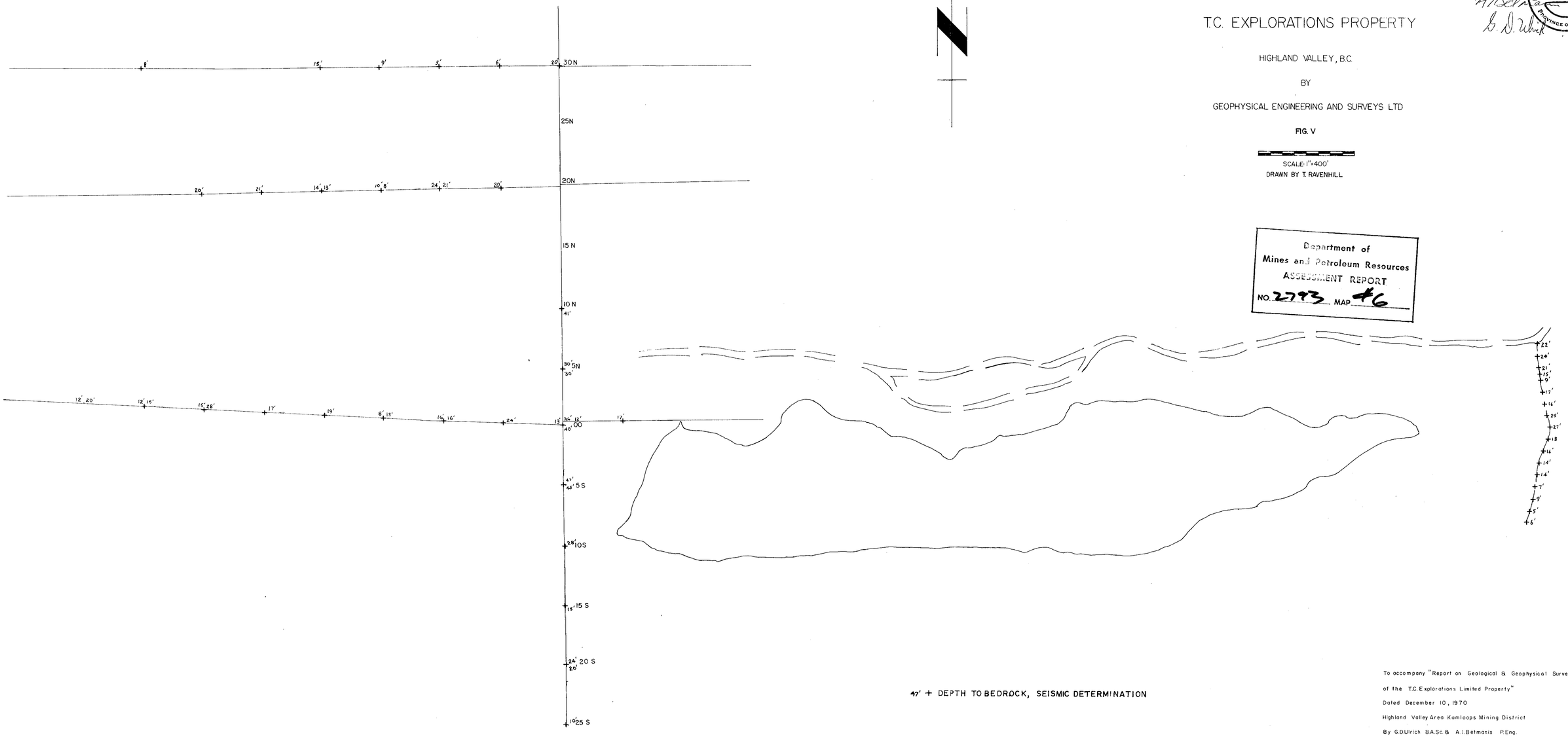
BY

GEOPHYSICAL ENGINEERING AND SURVEYS LTD

FIG. V

SCALE: 1"=400'

DRAWN BY T. RAVENHILL



47' + DEPTH TO BEDROCK, SEISMIC DETERMINATION

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