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2/88

GEOPHYSICAL REPORT  
ELECTROMAGNETIC (VLF-EM) SURVEY

ON

YUMA MINERAL CLAIM

WELLS-BARKERVILLE AREA, CARIBOO MINING DIVISION

LATITUDE 53° <sup>06.7'</sup> ~~07'~~ North

LONGITUDE 121° <sup>33.7'</sup> ~~34'~~ West

<b>SUB-RECORDER RECEIVED</b>
MAY 1 1987
M.R. # _____ \$ _____
VANCOUVER, B.C.

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*Owner:* INTERNATIONAL SHASTA RESOURCES LTD.  
#409 - 1200 West Pender Street  
Vancouver, B.C.  
V6E 2S9

*Operator:* A. Dyakowski

Wm Howard Myers P.Eng. (B.C.) P. Geol (Alta)  
Geological - Geophysical Consultant  
#309 - 543 Granville Street  
Vancouver, B.C.  
V6C 1X8

April 1987

15,837

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

## TABLE OF CONTENTS

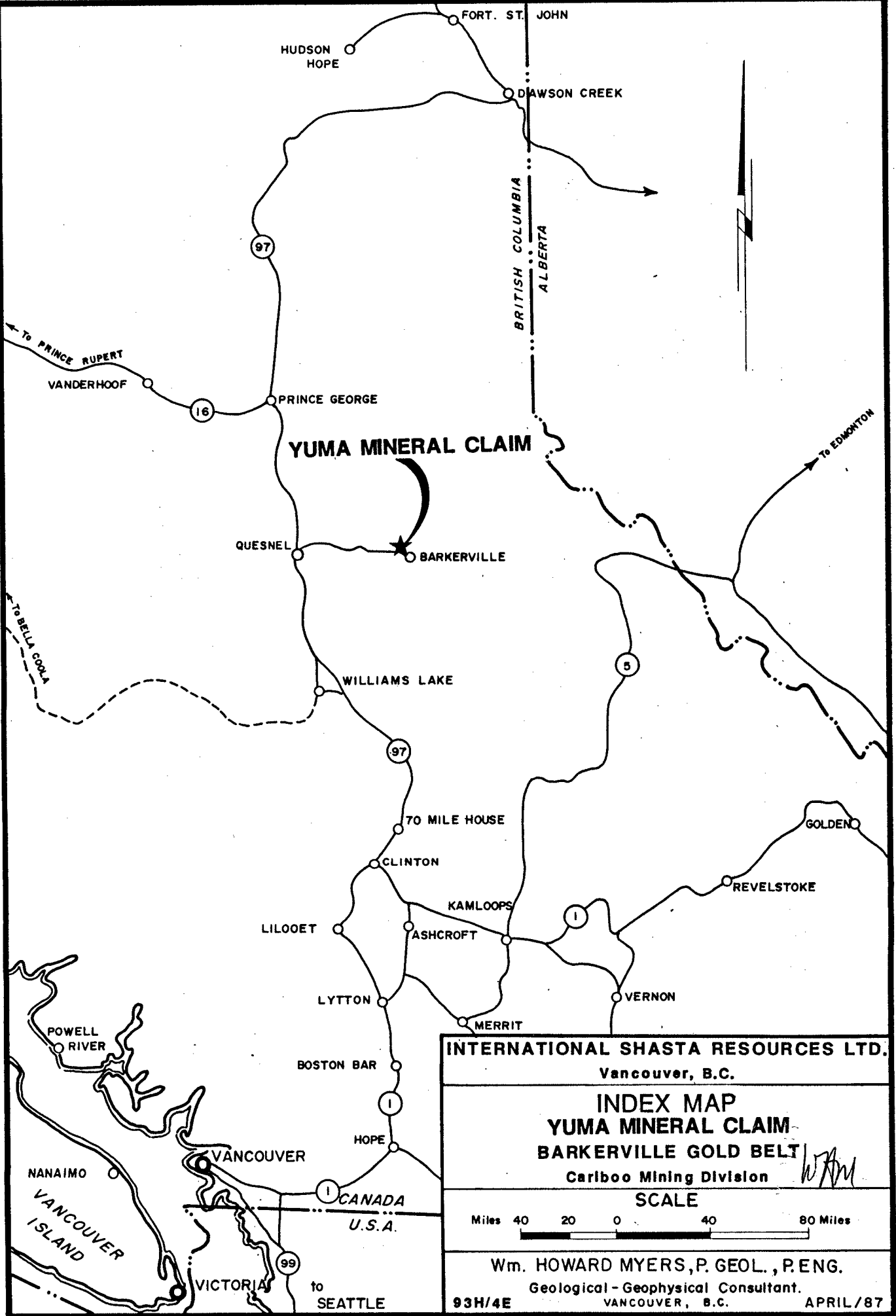
	Page
Abstract	i
Introduction	1
History	3
Geology	4
Results of VLF-EM Survey 1986 Season	8
Line 01 N    E-W Line	9
Line 02 N    EM16 Just	10
Line 02 N    Sabre 27 E-W Line	10
Line 08 N    E-W Line	10
Line 09 N    E-W Line	11
Base Line    N-S Line	11
Conclusions	12
Recommendations	13

### Appendix

Certificate  
Bibliography  
Detailed Breakdown of Costs for Work  
Claim Map  
VLF-EM Cross sections of raw data Line 01H, 02N, 02N Sabre Just,  
08H, 09N and base line NS.

### Illustrations

Index Map  
Claim Map with EM Lines



**YUMA MINERAL CLAIM**

**INTERNATIONAL SHASTA RESOURCES LTD.**  
 Vancouver, B.C.

**INDEX MAP**  
**YUMA MINERAL CLAIM**  
**BARKERVILLE GOLD BELT**  
 Cariboo Mining Division

**SCALE**  
 Miles 40 20 0 40 80 Miles

Wm. HOWARD MYERS, P. GEOL., P. ENG.  
 Geological - Geophysical Consultant.  
 VANCOUVER, B.C. APRIL/87

93H/4E

## ABSTRACT

During the period January 11th to February 3rd, 1987, five east west lines and one north-south base line of VLF electromagnetic survey were run over the Yuma Claim block. The east-west lines were run using the Seattle Station NLK with a frequency of 18.6 KHz and the north-south base line along the east boundary of the claim block was run using the Cutler Maine Station with a frequency of 24.0 KHz. A total of 13.4 km of line were completed during the 9 days of field work.

The ground VLF electromagnetic survey was used to check the conductors mapped on the airborne VLF electromagnetic and magnetometer survey of the claim block during the 1985 field season by Western Geophysical Aero Data Ltd.

There is very little correlation between the electromagnetic data of the airborne survey and the ground electromagnetic data plotted on the enclosed cross sections. The ground electromagnetic survey does not show a strong conductor in the area of the Cariboo Coronada Adit as shown on the airborne VLF electromagnetic survey. The magnetic data presented in the form of a total intensity (gammas) by Western Geophysical Aero Data Ltd in the area of the claim block, does not correlate with the magnetic survey of the entire Wells-Barkerville carried out by Aerodat Ltd. in 1980 under the writers supervision.

Additional ground electromagnetic (VLF) surveys should be run over the claim block to detail the conductors indicated on the ground electromagnetic lines run during the 1986 season.

## GEOPHYSICAL (VLF - ELECTROMAGNETIC) SURVEY OF THE YUMA CLAIM BLOCKS FOR 1986 SEASON

### INTRODUCTION

The field work and report on the VLF Electromagnetometer survey of the Yuma Claim Block were commissioned by Mr. Antony Dyakowski on behalf of Shasta International Resources, owner of the claim block. The monies spend on the field work and report were claimed as assessment work on the claims and was filed on February 5, 1987.

The claim is identified as the Yuma claim with record number 926 and an anniversary date of February 5th, 1979. The claim contains a total of 20 units, 4 units north and 5 units west of the legal corner post.

The claim is located immediately north of the village of Wells, B.C. in the Cariboo Mining Division of British Columbia. The location of the claim is shown on the enclosed claim map in the appendix of the report. The claim map is a portion of Map 93H/4E (Mineral) published and updated periodically by the Department of Mines and Petroluem Resources of the Province of British Columbia.

The claim block is in good standing with assessment work filed through February 5, 1988.

Access to the Yuma claim is by gravel road running north northwest from the village of Wells, approximately one kilometer to the bridge over Williams Creek near the confluence with the Willow River. Access to the eastern portion of the claim is from the Downey Creek road or locally known as the "one mile road". There is no road access to the northern portion of the claim block.

The terrain in the area of the claim is moderate with elevations varying from 1,200 metres in the south near the swamp to 1,500 metres to the north near the eastern slopes of Mt. Carnish. The terrain along the east boundary of the claim in the vicinity of Downey Pass Creek is very steep for a short distance near the creek bed.

The field work on the Yuma claim for the 1986-87 season was carried out on the snow during the period January 11th to February 10th, 1987 while the crew was in the area carrying out various VLF electromagnetic surveys. The field work on the claim was carried out on the following days during that period: January 11, 12, 13, 14, 16, 29, 30 and February 1, 1987. A total of nine days were spent in the field with a total of 13.4 kilometers of line. The steep terrain along the east boundary of the claim near Downey Creek gave some trouble for a short distance. Access to the base line along Downey Pass Creek Road was by Skidoo from the village of Wells, B.C.

All of the lines except the base line were run in an east-west direction using the Seattle Station NLK with a frequency of 18.6 KHz. All readings were taken facing east. The Seattle station is almost due south of the property. The north-south base line was run using the Cutler Maine Station with a frequency of 24.0 KHz and located almost due east of the claim block. All readings on this line were taken facing to the north.

The electromagnetic survey was run using the Geonics Limited EM-16 instrument with Serial No. 19010 which is owned by the writer. Station spacing on all lines was 15 metres.

The raw data from the field work has all been plotted on cross sections showing both the in-phase and out of phase or quadrature in a percent scale as outlined on the section. The horizontal scale on the cross sections is 1 centimeter equals approximately 20 metres.

A detail breakdown of the costs of the survey and report is enclosed in the appendix of the report.

Published and unpublished maps and reports used on the preparation of this report are tabulated under Bibliography located in the appendix of the report. My qualifications and experience for the report are detailed in the Certificate in the Appendix.

## HISTORY

This area of the Cariboo has produced many millions of dollars in gold from both placer and lode type of deposits. The majority of the placer gold was produced during the gold rush which started around 1861 and tapered off substantially near 1898 when the gold rush started in the Yukon. There was a slight resurgence of placer gold production in this area during the depression of the thirties. Lode gold production started in 1933 from the Cariboo Gold Quartz Mine at Wells, B.C. The Cariboo Gold Quartz Mine took over the Island Mountain Mines on the other side of the Jack of Clubs Lake, and during the period January 10, 1933 through April 15th, 1967, when the mine was closed down, some 2,929,246 tons of ore grading an average of 0.4 oz. per ton produced a total of 1,253,683 ounces of gold. The foregoing figures are from the Canadian Mines Handbook 1982-83, page 337.

The Mosquito Creek Mine located northwest of the original Cariboo Gold Quartz Mine produced gold from replacement type ore bodies in contrast to the gold produced from quartz veins with pyrite and gold in the original Cariboo Gold Quartz Mine. The Mosquito Creek Mine now owns all of the original crown granted claims of the Cariboo Gold Quartz Mine which adjoin the Arch claim on the northeast.

The 413 metre adit with a north  $130^{\circ}$  west trend located in the southern portion of the claim block, was driven in 1934. It is known as the Cariboo-Coronada Adit. It was driven to intersect the downwards extension of a number of mineralized quartz veins on the surface some 200 metres above the adit. The adit has been subsequently opened and sampled with little or no gold or silver values. VLF electromagnetic lines in the area of the adit show only minor conductive zones. Another adit near the northwest corner of the claim block or possibly off the claim block near the northwest side of Martins Creek reported higher gold and silver values. The VLF electromagnetic profiles in this area show much stronger anomalies especially on line 09N. This portion of the area contains numerous northeast trending faults as detailed in the literature and mapped in the Eight Mile Lake area northeast of the claim block.

## GEOLOGY

### General

A wide spread mantle of glacial drift overgrown with trees and vegetation, limits the outcrop of bedrock largely to the tops of ridges, divides and individual mountains and along steep slopes of the more prominent rivers and streams. Outcrops of bedrock are not extensive even along the ridges and mountain tops. Local bedrock outcrops are found in the bottom of some of the incised streams.

Bedrock composed of phyllite, quartzite outcrops in local areas on the hill above and north of the Coronada adit. The bedrock contains quartz veins with pyrite mineralization. The Coronada adit was driven to investigate these quartz veins with depth. It has been reported that the adit stopped short of its objective. Near the northern boundary of the claim above Downey Pass Creek there are numerous quartz boulders and rocks in the glacial drift cover. In this same area there are numerous springs and normal vegetation associated with wet ground.

### Stratigraphy

The Cariboo group, which underlies the area of the claims, is composed of clastic rocks with lesser amounts of carbonate rocks. The rocks have been subjected to a low-grade regional metamorphism and intense deformation. The deformation has impressed a marked secondary foliation on most all the clastic rocks and some carbonate rocks. Despite the effects of deformation and regional metamorphism, the rocks still commonly show original bedding and other sedimentary features. Many of the rocks are difficult to name accurately because of their original sedimentary and subsequent metamorphic character. Many clastic rocks of the Cariboo group are composed of poorly sorted sediments of grains much larger than average. It is very difficult to assign a name to this type of rock even if not metamorphosed. Most of the clastic rocks and even some of the limestones are schistose, however, in any one unit the degree of schistosity may vary, depending on structural position. For example, an argillaceous rock may range from an argillite through phyllite to a true schist or graphitic schist as it is traced from an open fold to a tight fold or its proximity to fault structures. In many places along



the northerly trending fault zones, as mapped by different geologists, argillites are changed to a very soft and possibly pure graphitic schist. At numerous places along the Last Chance-Nelson Creek fault, as mapped by Stuart Holland in Bulletin 26 and identified by the writer in the field with electromag profiles, argillites were replaced by soft graphitic schist and abundant quartz veins with massive sulphides. The graphitic schists produce text-book conductive anomalies on the electromag profiles, making the electromag very useful as a tool for identifying major north trending faults.

The thickness of the formations in the Cariboo group cannot be measured directly and estimates are subject to considerable error due to poorness of exposures and the intricacy of structure. In many exposures of bedrock, the bedding can not be distinguished from schistosity with any degree of certainty. The folding is known in general but the details are very rarely recognizable and measurements are liable to include duplications. According to A. Sutherland Brown in Bulletin No. 38, the thickness in this area is deemed to be less than 1200 metres.

The age of the Cariboo group is now known to be Early Cambrian and younger. Earlier publications by Bowman, Jonston and Uglow, and George Hanson placed the age of the Cariboo group or series as Pre-Cambrian in age. No fossils have been found in the group in this general area and the age has been assigned on the basis of archaeocyathids and trilobites collected at Turks Nose Mt., Kimball Creek, and other localities within a thick limestone which has been traced into this general area and identified with the Cunningham limestone, which is the basal member of the Cariboo group.

Hydrothermal alteration has had a more severe effect on the various formations of the Cariboo group than the regional metamorphism. The alteration has obliterated all sedimentary structures and also a cleavage that is common in the unaltered limestone. The distribution of the alteration is patchy and in some instances, seems to bear an areal relation to major faults primarily the more persisent northerly trending faults in the area.

The rocks in the immediate area of the claims are argillites, quartzose phillite, grey to brown micaceous quartzite, slate, and thin lenses of grey limestones of the

Snowshoe and Midas Formations of the Cariboo group. In the central portion of the claims, quartz veins up to 2 feet in diameter are fairly abundant in the argillites and quartzites of the Snowshoe Formation. The quartz veins trend generally to the northeast and probably are of the Transverse and Diagonal types as classified by G. Hanson in Bulletin No. 181 of the Geological Survey of Canada. A few strike veins were also noted in this portion of the area.

### Structure

The rocks of the Cariboo group within the claim block lie on the northeastern limb of a large northwesterly trending anticline or possible anticlinorium. The antiformal axis, as mapped by most observers, is situated immediately southwest of the claim blocks near the top of Mt. Burns, Mt. Amador and Mt. Nelson, with a N 50°-60° west bearing. The rocks strike northwest and dip to the northeast. In the main, the folding within the area of the claim seems simple, but in some places minor folds can be observed where the dip changes to 45° and some local evidence of overturning to the southwest. Many of the folds in the area have their original stratigraphic order disrupted by shearing, rupture and flowage. Some of the folds are so compressed that the actual texture cannot be recognized. The rocks of the Cariboo group have been folded at least twice. The more intense folding took place before the younger Slide Mountain group was laid down. It is rarely possible to identify the second generation folds in the Cariboo group, due partially to the less intense folding in the youngest folds. Schistosity and cleavage are well developed in the Cariboo group in the area of the claims. The difference in the development of the two features is due primarily to the intensity of folding and mineral composition. The characteristic rocks of the Cariboo group are phyllite and micaceous quartzite.

Faults are very common in the general area of the Yuma Claim. Several fairly large and continuous northerly trending faults have been mapped in the immediate area of the claim. The Lowhee and Rainbow faults were mapped in mine area a few kilometers south of the claim. The Lowhee fault has been projected to the north up the Downey Pass Creek. This projection has been confirmed with electromagnetic work on the EML claims immediately north of the Yuma claim, by the writer. The possible northerly extension of Richfield was also identified to

the north on the EML claims. The structural condition in the northern portion of the Yuma claims and the EML claims are very complex due to strong northeast trending faults mapped in outcrop and government publications and in the electromagnetic work on the EML claims by the writer. The strong anomaly recorded on the VLF-EM work on Line 09N on the west end of the line near Martins Creek, may be the result of the strong northeast faulting along the creek.

### Mineralization and Origin of Ore Deposits

The earliest quartz mineralization seen in this general area in the Cariboo group, is in the form of narrow bed veins formed mainly or entirely by the replacement of narrow bands of rock. They are known to be early because they are folded with the strata. Other bands of silicified clastic sediments are very similar to these veins but they are clearly silicified rock bands and not quartz veins. They are cut by transverse quartz veins and the silicification shows no relation to them, suggesting that the silicified rock bands are decided earlier than the veins cutting them.

After the formation of the early bed veins and the silicification of some beds, the rocks were subjected to fracturing and the fractures were mineralized with quartz to form the transverse and diagonal veins. The fractures in which the transverse and diagonal veins occur were formed after the rocks were folded and sheared. The shapes and pattern of the fractures indicate that they were formed by compression, tension and also torsion. The wall rock of the veins contains a great deal of coarsely crystalline pyrite. Pyrite cubes occur many feet from any vein also, but a great many examples serve to show that pyrite is more plentiful near veins, therefore there seems little doubt that the pyrite was formed from constituents moving outward from the vein fractures. The transverse and diagonal veins produced the majority of the gold ore in the Cariboo Gold Quartz Mine. The strike and bed veins are not too numerous and so far as known, have produced much lower gold values than the normal pyritic transverse and diagonal veins. Only a few bed veins have been observed. The bed veins are quite thin, composed of quartz and contain no pyrite or gold. Some ore shoots were mined on the strike vein, known as the B.C. Vein. Gold values were lower than in the transverse and diagonal veins. Other strike veins will have to be worked before this type of vein can be called uncommercial.

The other main type of lode gold deposit in the Cariboo group is one formed by the replacement of limestone. The ore is typically a solid mass of fine grained pyrite. This type of deposit was first recognized in the Cariboo in 1933. The largest of this type of deposit was found in the Island Mountain Mine. The presently producing Mosquito Creek Mine produces a great deal of its gold from this type of deposit. The ore in this type is in general, higher in gold values than the transverse and diagonal veins. The highest gold values are obtained from these massive fine grained pyrite replacement type ore bodies. Gold values as high as 5 ounces per ton are obtained from these massive fine grained pyrite deposits. The ore is massive but commonly contains bands of ore separated by bands of grey ankerite or phyllite. Near the fringes of the ore bodies, ankerite becomes dominant and pyrite becomes more sporadic and coarser grained. There may be some silicification also near the fringes of the ore body with minor amounts of galena, sphalerite, arsenopyrite and scheelite. The gold mineralization is believed to be later than the formation of the quartz veins. The quartz veins are later than the formation of the quartz veins. The quartz veins are later than most of the northerly trending faults because they are concentrated beside or near the northerly faults, they occur in a conjugate set of fractures related to the faults and in some instances, actually occur within the fault. The gold mineralization is believed to be older than the gold bearing Tertiary gravels. This would date the gold mineralization in this area between the Carboniferous and Early Tertiary.

#### RESULTS OF VLF-EM SURVEY

The field work was carried out under the supervision of Alan Samchek, geological engineer with substantial experience in running VLF-EM surveys in British Columbia, Alberta, Saskatchewan and Manitoba. A local man with a skidoo was used as a helper. The survey was run on the snow using snowshoes. The raw field data has been plotted on cross section paper and included with the report. Possible faults or contacts have been indicated on the section as well as surface features. The lines were all run using the EM 16 manufactured by Geonics of Toronto. Line #1 was also run using a Sabre #27 available for use on the job. The operator preferred the EM 16 instrument so the survey was completed with the EM 16. The sharp surface relief near the east boundary of the claim caused by Downey Pass Creek gave considerable trouble and slowed down progress of the survey.

The results obtained on each profile are outlined under proper heading below.

Line 01N

East-West Line No. 01N is located some 400 metres north of the south boundary of the Yuma claim. The south boundary is in a swamp formed in Williams creek. The overburden in the swamp is over 200 feet deep in this area so a VLF-EM line in this area would be worthless. The line crosses the southern portion of the claim just above or north of the Cariboo Coronada Adit. The line ends just above the bend in Williams Creek. There is a steady climb in elevation from the swamp near the mouth of Downey Pass Creek to the ridge above the adit then a gentle down slope to the west end of the line.

A fairly strong and well defined anomaly or conductor was recorded near the east end of the line near station 0 + 150. The anomaly is located in Downey Pass Creek before it enters the broad glaciated valley of Williams Creek. Most of Downey Pass Creek is cut in bedrock further north and bedrock is probably quite shallow in the swamp at this point. As noted earlier a probable northerly extension of the Lowhee fault has been mapped in the Downey Pass Creek Area by many government reports of the area. Further north on the EML claims very strong anomalies or conductors were mapped in the Downey Pass area with the VLF-EM by the writer. These conductors were along the northerly extension of the Lowhee fault.

Further west on line 01N, very weak, poor or questionable anomalies or conductors were recorded near stations 0+700 and 1+100 west. The station 1+100 is immediately above or north of the Cariboo Coronada adit. The VLF-EM data on this portion of the line is very weak and not diagnostic. The Rainbow fault is some 600 to 800 metres west of the Lowhee fault to the south of the mine area on Cow Mountain. Several fairly strong conductive zones were mapped along these two fault zones with the VLF-EM work on the Arch claims by the writer. On the EML claims to the north of the Yuma claim good anomalies were recorded near both faults; however, the Rainbow fault produced less continuous conductive zones than along the Lowhee fault to the east. It could be that in this area the strong northeast trending fault north of the Yuma claim produces some interference from

the complex structural conditions. The east side of the claim block between the two faults described above should be further detailed with VLF-EM work.

The relief on the in-phase curve on the west end of the line may be due to sharp relief on bedrock or thick overburden.

#### Line 02 North

The line is located 200 metres north of line 01 north and parallel to it. The surface relief is somewhat steeper on the west side of Downey Pass Creek than on line 1. It is not too steep to use the VLF-EM data. To the west there is a gradual climb to the ridge near station 1+100 west thence a gradual decline to the end of the line.

There is a strong and well defined conductor or anomaly near station 0+125 or near the center of the Downey Pass Creek which is covered with a small shallow lake. This anomaly has the same general configuration and lies approximately due north of the anomaly on line 01 N. This is in the general area of the "projected" Lowhee fault trend to the north.

The anomaly or conductor near station 0+700 W is much better defined on line 02 N than on line 01 N some 200 metres south. This anomaly at station 0+700 W could well be due to the northerly extension of Rainbow fault mapped to the south some 600 - 800 metres west of the Rainbow fault zone.

Further west near stations 1+500 W and 1+700 W two fairly good conductors appear to be developing. In all cases there appears to be a general north-south trend on the conductors are anomalies. Further electromagnetic work is warranted to the north of these lines.

#### Line 08 North

This east-west line is located some 100 metres south of the north boundary of the claim and south of line 09 north. The terrain near the east end of the line in the vicinity of Downey Pass Creek is quite rugged for a short distance. The steep bank on the west side of the valley is very difficult to traverse on snowshoes. The

remainder of the line contained normal terrain and light cover. In the western portion of the area near Martins Creek there are numerous open areas with northeast trending meadows. Martins Creek is locally incised but easy to cross.

The electromagnetic data on this entire line is poor. The two weak conductors at station 1+050 and 1+300 west appear to be possible contacts or a result of stratigraphy. The stronger conductor further west near station 2+200 west is probably related to the northeast trending fault in the vicinity of Martins Creek.

#### Line 09 North

Line 09 north is located along the north boundary of the Yuma claim some 100 metres north of line #08 north. This line also contains a steep bank near the Downey Pass Creek.

The local conductor on the east end of the line may be due to surface conditions rather than structure. the conductor or anomaly at station 0+550 west could be due to near surface conditions. The stronger anomaly between stations 0+900 W and 1+000 west may be from a contact rather than structural conditions. Government publications map the contact between the Midas and the Snowshoe formations in this general area. The strong anomaly near the west end of the line at station 2+450 is near the west boundary of the claim. The anomaly could be associated with the northeast trending fault zone through Martins Creek further to the east.

#### N-S Base Line

This line is located along the east boundary of the claim and was run along the Downey Pass logging road. There is very little or no relief along the line from north to south. The south end of the line starts at Line 01 north and ends near Mugford Gulch some 600 metres north of line 09 north located on the north boundary of the claim.

The line contains a number of possible conductors or anomalies. The anomalies appear to be stronger and better defined to the north immediately north of the claim boundary. Electromagnetic surveys by the writer on the EML claims north of the Yuma claim, mapped quite strong northeast trending anomalies in this general area. These strong northeast trending conductors or anomalies line up very well with the strong northeast trending fault along Summit Creek to the northeast. This northeast trend should be traced into the Yuma claim near the eastern boundary.

### CONCLUSIONS

There appears to be very little or no correlation between the ground VLF electromagnetic data and the airborne VLF electromagnetic data carried out in 1985 by Western Geophysical Aero Data Ltd.

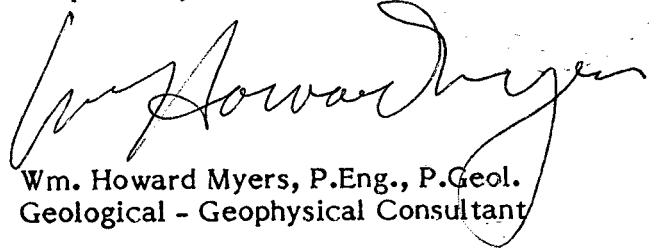
Additional ground electromagnetic (VLF) lines should be run over the claim block. The strong northeast trending anomalies or conductors outlined on the EML claims to the northeast should be traced into the east central portion of the claim. The intersection of the strong northeast trending anomalies, produced by the Summit Creek fault mapped in outcrop, and the northerly trending Lowhee fault should produce good conductors in the eastern portion of the Yuma claim. This area of interest would be east of the Cariboo Coronada Adit between the northerly projection of the Rainbow and Lowhee faults. The VLF electromagnetic surveys of the EML claims carried out by the writer and filed as assessment reports were filed in 1985 and 86 and are now released.



## RECOMMENDATIONS

Additional east-west lines should be run to cover the entire claim block with lines Spaced 200 metres apart. In the eastern one half of the claims the lines should be spaced at 100 metre intervals. The work should be carried out in the summer when access to the steep bank of Downey Pass Creek is better.

Respectfully submitted,



Wm. Howard Myers, P.Eng., P.Geol.  
Geological - Geophysical Consultant

April 1987

APPENDIX

## BIBLIOGRAPHY

### Geological Survey of Canada Department of Mines

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Bulletin 149, 1926, Johnson and Unglow

Paper 72-35, 1973, J.R. Campbell, E.H.

Mountjoy and F.G. Young

Annual Report 1887-88, V.III Amos Brown, 1889

Map 335A Willow River Sheet (west half), G. Hanson

Map 336A Willow River Sheet (east half), G. Hanson

Bulletin, 280, R.W. Boyle, 1979. "The Geochemistry of Gold and its Deposits."

Economic Geology Report 31, 1977, "Geophysics and Geochemistry in the Search for Metallic Ores"

### British Columbia, Department of Mines

Bulletin No. 26, 1948, Stuart S. Holland

Bulletin No. 38, 1957, A. Southerland-Brown

Annual Report, 1967, pp. 459-460, A. Sutherland-Brown

## CERTIFICATE

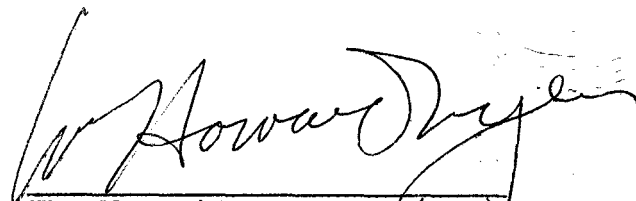
I, William Howard Myers, do hereby certify that I am an independent geological-geophysical consultant with offices at Suite #309 - 543 Granville Street, Vancouver, British Columbia, V6C 1X8. I have been actively engaged in my profession as an independent consultant in both oil and mining since 1952. I am a professional geologist, P.Geol., #16704 of the Association of Professional Engineers, Geologists and Geophysicists of Alberta. I am also a member P.Eng., #14056, of the Professional Engineers of British Columbia. I now hold a Life Membership in both Societies.

I graduated from Fresno State College, Fresno, California in 1939 with high honors and a B.Sc. degree in Geology. I did graduate work at Stanford University, Stanford California for M.Sc. degree in Geology, 1939-1941. After graduating I spent three years with the U.S. Geological Survey as field geologist and eleven years in the field of geophysical exploration for oil and minerals.

During the past 24 years, I have spent the majority of my time in the exploration for both placer and lode gold in the Cariboo Area of British Columbia. In the past five years, I have carried out extensive geophysical surveys and research programmes for gold exploration in the Cariboo Area of British Columbia. Much of the work involved the techniques recommended by R.W. Boyle in Bulletin 280 of the Geological Survey of Canada.

I was in the Wells-Barkerville area during the survey and supervised the field work during the period January 11th to February 3rd, 1987. The report was prepared in April, 1987.

The published maps and reports used in the preparation of the report are tabulated in the Appendix of the report.



Wm. Howard Myers, P.Eng. (B.C.)  
P.Ged. (Alta)  
Geological-Geophysical Consultant  
Vancouver, B.C.

April 1987

## COST ANALYSIS FOR 1986-87 FIELD WORK ON THE YUMA CLAIM

### Daily costs for VLF-EM Field Work

1 Party chief Alan Samchek

geological engineer	\$ 125.00/day
helper	75.00/day
skidoo rental	25.00/day
EM-16 instrument rental	25.00/day
subsistence \$50.00/day/man	<u>100.00/day</u>

**Total** \$ 375.00/day

9 days field work Jan 11-16 incl.  
Jan 29 & 30, Feb 1, 1987 @ 375.00/day

3,375.00

Plotting data 1 man @ 125/day

125.00

Report, Supervision by  
Wm Howard Myers, P. Eng  
3 days @ \$250.00/day

750.00

Typing, drafting and printing report  
estimated

200.00

**Total Costs Survey**

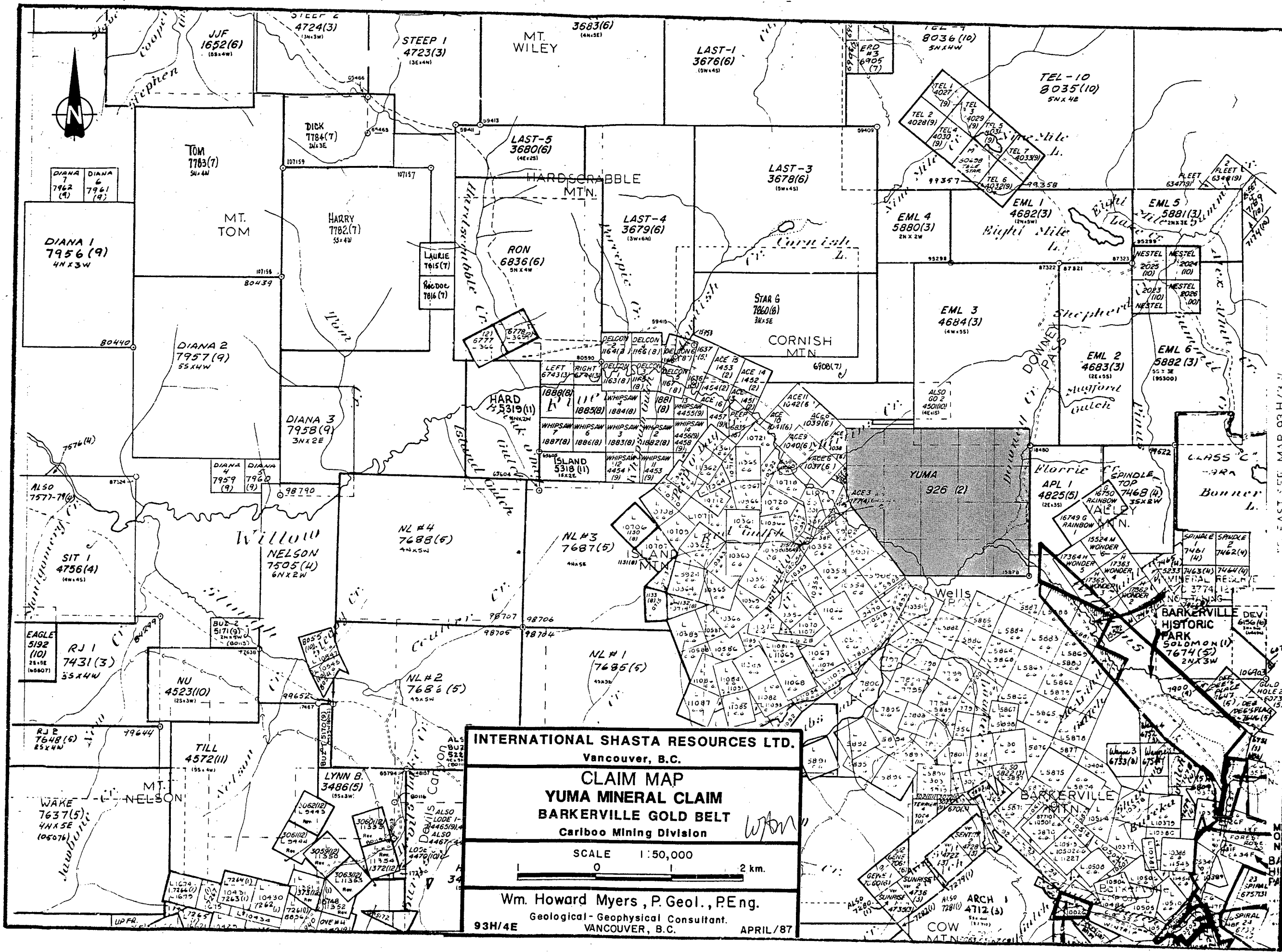
\$ 4,450.00

13.4 km of Line  
Cost/km including report

\$ 332.09

Line run per day

1.49 km



**INTERNATIONAL SHASTA RESOURCES LTD.**  
 Vancouver, B.C.

**CLAIM MAP**  
**YUMA MINERAL CLAIM**  
**BARKERVILLE GOLD BELT**  
 Cariboo Mining Division

SCALE 1:50,000  
 0 1 2 km.

Wm. Howard Myers, P. Geol., P. Eng.  
 Geological-Geophysical Consultant.  
 93H/4E VANCOUVER, B.C. APRIL/87

EAST SEE MAP 93H/37

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

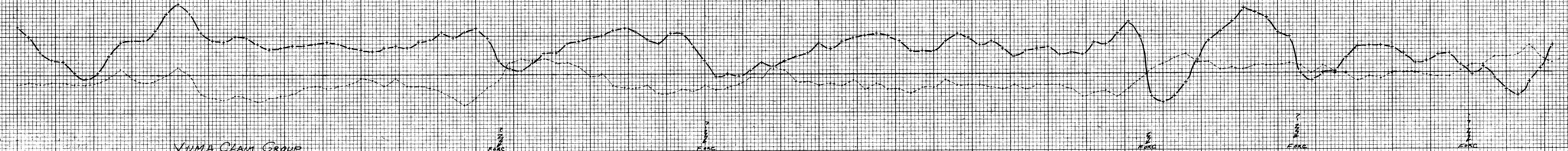
**15,837**

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01000N 01100N 01200N 01300N 01400N 01500N 01600N 01700N 01800N 01900N 02000N 02100N 02200N 02300N 02400N 02500N 02600N 02700N 02800N 02900N 03000N

1401N 1402N NORTH READ CUTLER MAINE 24.0KPa SCALE: 1CM=20M 1408N 1409N

160 140 120 0 -20 -40



YUMA CLAM GROUP  
VLF-EM SURVEY (EMM BONNS)  
BASE LINE B NORTH-SOUTH  
CUTLER MAINE - READ NORTH  
FEB-MAR-1987

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

15,837

QUADRATURE (OUT OF PHASE) %  
IN PHASE %

*[Handwritten signature]*  
or  
①





2700W 17900W 17800W 17700W 17600W 17500W 17400W 17300W 17200W 17100W 17000W 07900W 07800W 07700W 07600W 07500W 07400W 07300W 07200W 07100W 07000W

READ EAST

SEATTLE 18.6 KHz

SCALE 1 CM = 20 M

60%

40%

20%

0

-20%

-40%

YUMA CLAIM GROUP  
VIETNAM GEODYS SURVEY FEB-MAR-1987

LN02 NORTH READ EAST - SEATTLE 18.6 KHz

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

?  
FORC

?  
FORC

?  
FORC

?  
FORC

?  
FORC

?  
FORC

QUADRATURE (OUT OF PHASE) 2  
IN PHASE READINGS (2)

15,837

*[Signature]*  
02  
③

2+800W 2+700W 2+600W 2+500W 2+400W 2+300W 2+200W 2+100W 1+500W 1+400W 1+300W 1+200W 1+100W 1+500W 1+400W 1+300W 1+200W 1+100W 0+500W 0+400W 0+300W 0+200W 0+100W 0+000W

EAST  
ROAD

SEATTLE WA 18674

SCALE: 1 CM = 20 M

160%

140%

120%

0

-20%

-40%

YUMA CLAIM GROUP  
VLF-EM SURVEY (EM-16 GEOPHYS)  
JAN-FEB 1987

LN 08 NORTH

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

15,837

FORC

MARTINS CR.

FORC

FORC

CLIFF FACE

RAMP

ROAD

QUADRATURE (OUT OF PHASE) (20)  
IN PHASE (20)

*[Handwritten signature]*  
④

24800W 24700W 24600W 24500W 24400W 24300W 24200W 24100W 24000W 23900W 23800W 23700W 23600W 23500W 23400W 23300W 23200W 23100W 23000W 22900W 22800W 22700W 22600W 22500W 22400W 22300W 22200W 22100W 22000W 21900W 21800W 21700W 21600W 21500W 21400W 21300W 21200W 21100W 21000W 20900W 20800W 20700W 20600W 20500W 20400W 20300W 20200W 20100W 20000W 19900W 19800W 19700W 19600W 19500W 19400W 19300W 19200W 19100W 19000W 18900W 18800W 18700W 18600W 18500W 18400W 18300W 18200W 18100W 18000W 17900W 17800W 17700W 17600W 17500W 17400W 17300W 17200W 17100W 17000W 16900W 16800W 16700W 16600W 16500W 16400W 16300W 16200W 16100W 16000W 15900W 15800W 15700W 15600W 15500W 15400W 15300W 15200W 15100W 15000W 14900W 14800W 14700W 14600W 14500W 14400W 14300W 14200W 14100W 14000W 13900W 13800W 13700W 13600W 13500W 13400W 13300W 13200W 13100W 13000W 12900W 12800W 12700W 12600W 12500W 12400W 12300W 12200W 12100W 12000W 11900W 11800W 11700W 11600W 11500W 11400W 11300W 11200W 11100W 11000W 10900W 10800W 10700W 10600W 10500W 10400W 10300W 10200W 10100W 10000W 9900W 9800W 9700W 9600W 9500W 9400W 9300W 9200W 9100W 9000W 8900W 8800W 8700W 8600W 8500W 8400W 8300W 8200W 8100W 8000W 7900W 7800W 7700W 7600W 7500W 7400W 7300W 7200W 7100W 7000W 6900W 6800W 6700W 6600W 6500W 6400W 6300W 6200W 6100W 6000W 5900W 5800W 5700W 5600W 5500W 5400W 5300W 5200W 5100W 5000W 4900W 4800W 4700W 4600W 4500W 4400W 4300W 4200W 4100W 4000W 3900W 3800W 3700W 3600W 3500W 3400W 3300W 3200W 3100W 3000W 2900W 2800W 2700W 2600W 2500W 2400W 2300W 2200W 2100W 2000W 1900W 1800W 1700W 1600W 1500W 1400W 1300W 1200W 1100W 1000W 900W 800W 700W 600W 500W 400W 300W 200W 100W 0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500 2600 2700 2800 2900 3000 3100 3200 3300 3400 3500 3600 3700 3800 3900 4000 4100 4200 4300 4400 4500 4600 4700 4800 4900 5000 5100 5200 5300 5400 5500 5600 5700 5800 5900 6000 6100 6200 6300 6400 6500 6600 6700 6800 6900 7000 7100 7200 7300 7400 7500 7600 7700 7800 7900 8000 8100 8200 8300 8400 8500 8600 8700 8800 8900 9000 9100 9200 9300 9400 9500 9600 9700 9800 9900 10000



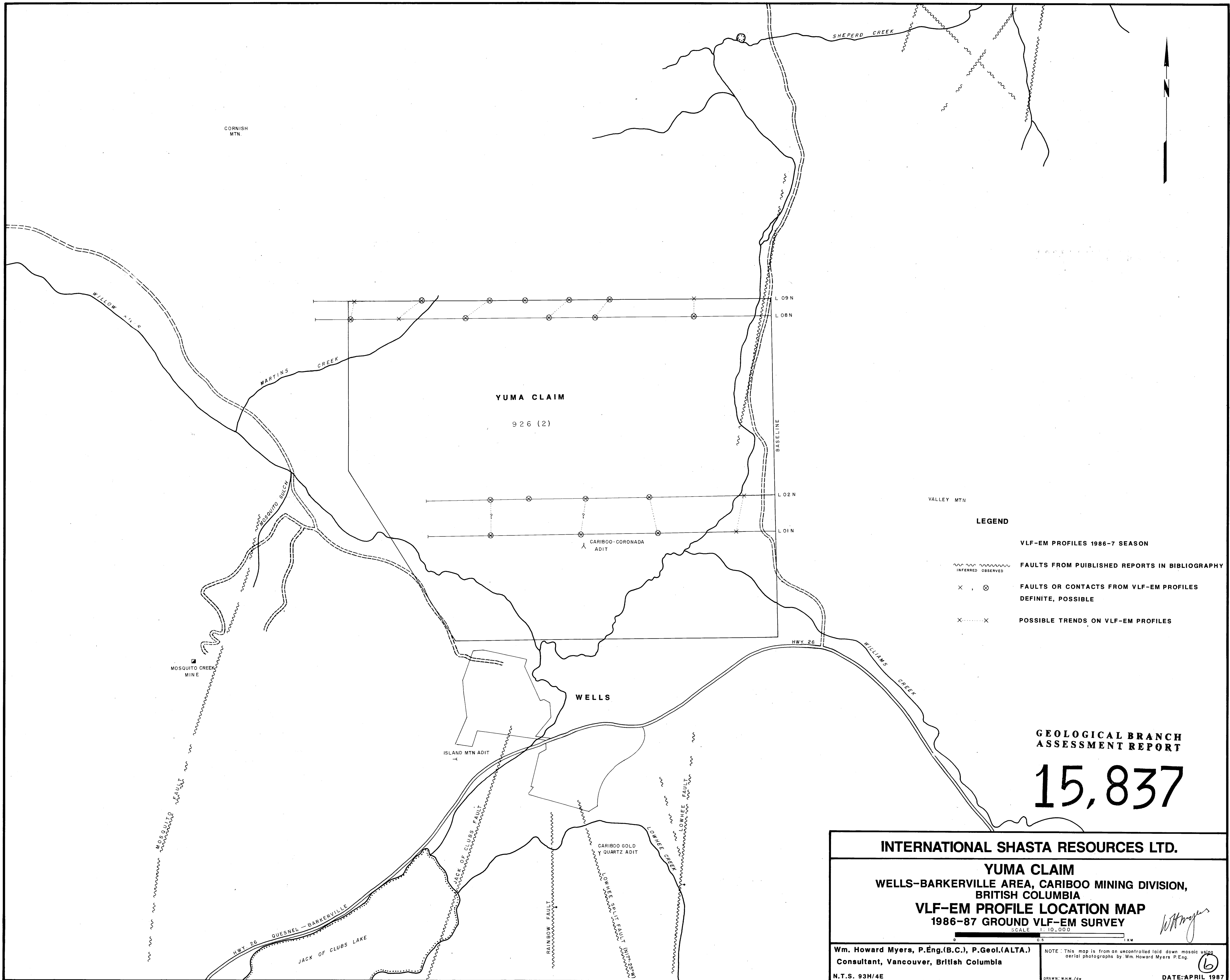
YUMA CLAIM GROUP  
V.F.E. SURVEY (GRANITE) FEB-MAR 1987  
READ EAST - SEATTLE WA  
15M STATION SPACING

LOGICAL BRANCH  
ASSESSMENT REPORT

EN 09 NORTH

QUADRATURE (DOT OR PHASE) (2)  
IN PHASE (0)

15,837



CORNISH MTN.

WILLOW CREEK

MARTINS CREEK

YUMA CLAIM

926 (2)

SHEPERD CREEK

L 09 N

L 08 N

BASELINE

L 02 N

L 01 N

VALLEY MTN

**LEGEND**

VLF-EM PROFILES 1986-7 SEASON

INFERRED OBSERVED

FAULTS FROM PUBLISHED REPORTS IN BIBLIOGRAPHY

X ⊗

FAULTS OR CONTACTS FROM VLF-EM PROFILES  
DEFINITE, POSSIBLE

X-----X

POSSIBLE TRENDS ON VLF-EM PROFILES

MOSQUITO CREEK MINE

WELLS

ISLAND MTN ADIT

CARIBOO GOLD QUARTZ ADIT

HWY 26

WILLIAMS CREEK

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

15,837

**INTERNATIONAL SHASTA RESOURCES LTD.**

**YUMA CLAIM**  
WELLS-BARKERVILLE AREA, CARIBOO MINING DIVISION,  
BRITISH COLUMBIA  
**VLF-EM PROFILE LOCATION MAP**  
1986-87 GROUND VLF-EM SURVEY  
SCALE 1:10,000

Wm. Howard Myers, P.Eng.(B.C.), P.Geol.(ALTA.)  
Consultant, Vancouver, British Columbia

NOTE: This map is from an uncontrolled laid down mosaic using aerial photographs by Wm. Howard Myers P.Eng.

N.T.S. 93H/4E

DRAWN: W.H.M./ew

DATE: APRIL 1987