LOG NO: 1203	RD.
ACTION:	
FILE NO: 87 -694	-16517

### GEOPHYSICAL REPORT

on the

LOWHER 1-8 INCL. AND RAINBOW MINERAL CLAIMS

Record Nos. 7761-7769(7) Incl.

7/88

Wells, Barkerville Area, Cariboo Mining Division

British Columbia

Latitude 53 degrees 03' North Longitude 121 degrees 35' West NTS 93H/4E 34'30"

for

Owner(s);

MICHAEL HILL 304-1030 Harvard Street Vancouver, B.C.

and

ANTONY DYAKOWSKI Blackberry Gold Resources Inc. 827 West Pender Street Vancouver, B.C. V6C 3G8

Operator: A. Dyakowski GEOLOGICAL BRANCH ASSESSMENT REPORT

16,517

Wm. Howard Myers, P.Eng.(B.C.) P.Geol.(Alta) Geological-Geophysical Consultant #814-602 West Hastings Street Vancouver, B.C. V6B 1P3

October, 1987

FILMED

# TABLE OF CONTENTS

Abstract					
Introduction					
History					
Geology					
Results of VLF-EM Survey					
Line 7S Extension					
Line 7AS Extension	)				
Line 8 and 8A South Extension	)				
Line 9, 10 and 11 South Extension	)				
Conclusion	)				
Recommendations					
APPENDICES					
Certificate					
Bibliography					
Detail Breakdown of Costs for Survey and Report					
VLF Cross Section Plots of All Lines					
Claim Map (Portion of 93H/4E					
ILLUSTRATIONS					
Claim Man (Geological) with EM Lines					

### ABSTRACT

By agreement dated April 29, 1987, Antony Dyakowski, optioned the Lowhee 1-8 and Rainbow mineral claims owned by Michael Hill of Vancouver. The claims join the Arch 1-4 claim block on the west. The Arch 1-4 block was optioned to Mr. Dyakowski and Blackberry Gold Resources in 1986 and subsequently carried out extensive exploration surveys. Later on in the 1987 field season, several of the electromag lines were extended to the west onto the Lowhee claims. The costs of the extension at the lines and the report have been claimed as assessment work filed on July 13, 1987.

The results of the electromag survey are considered good and were plotted on profiles of raw data enclosed with the report. A claim map of the Arch Claim block as well as the Lowhee and Rainbow claims, showing the locations of the electromag lines are enclosed with the report.

## GEOPHYSICAL (VLF-EM) REPORT

#### LOWHEE & RAINBOW MINERAL CLAIMS

### INTRODUCTION

The field work and geophysical report on the Lowhee and Rainbow Claims was commissioned by Mr. Antony Dyakowski, owner of an option to acquire the claims from Mr. Michael Hill, owner of the claims. The option is dated April 29, 1987. The monies spent on the field work and the geophysical report were claimed as assessment work on the claims and filed on July 13, 1987. A detail breakdown on the monies spent for the work is enclosed in the Appendix of the report.

The claim block is composed of eight two post claims identified as Lowhee 1-8 inclusive and the Rainbow Claim composed of nine units. The claims are shown on the enclosed map of the area.

The claims are in good standing with assessment work filed through July 15, 1988.

The claim block is located on the west side of Cow Mountain and adjoins the Arch 1-4 claims as shown on the map. The claims are located some four kilometers south of the village of Wells, British Columbia in the Cariboo Mining Division.

Access to the claims is by logging road up to the Jack of Clubs Creek from Provincial Highway #26 from the south end of the Jack of Clubs Lake then by improved skidder trail up to the west side of Cow Mountain. In good weather this road can be accessed by 4X4 pickups. This same road cuts through the Lowhee claims and part of the Rainbow Claim block.

The terrain in the area of the claim block is quite varied with large flat treeless area to the east near top of Cow Mountain to deeply incised creeks near the western portion of the claims.

The climate in this portion of British Columbia is moderate to cold. The area does experience "chinook" conditions during the winter months and the climate becomes very moderate for brief periods of time. Snowfall in the area to moderate to heavy on Cow Mountain which is some 6000 feet above sea level.

The field work consisting of some 5.7 kilometers of east-west line were run during the period June 16-23 when weather permitted. A total of four days were required to complete the VLF-EM field work. A detail breakdown of the costs of the work and report is enclosed in the Appendix of the report.

The survey was carried out using the Geonics limited EM16 instrument with serial No. 19010 which is owned by the writer. The lines were run in a general east-west direction using the Seattle Station HLK with a frequency of 24.8 KHz. Station spacing was 15 metres and read facing east. All lines were west extensions of lines run on the Arch Claims to the east.

Published and unpublished maps and reports used in the preparation of this report are tabulated in the Bibliography in the Appendix of the report. My qualifications and experience 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 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 form 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 15, 1967 when the mines was closed down, some 2,929,638 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.

Exploration work is now being carried out in the area of the Mosquito Creek Mine by Hecla Mining, who have an option to take over the mine as well as all of the original Crown granted claims of the original Cariboo Gold Quartz adjoining the Arch claims on the northeast. The original Mosquito Creek 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 absence of outcrop on the claim block makes geophysical exploration work mandatory. Test profiles using both VLF and input electromag on the claim block have produced favorable results in outlining conductive zones produced by faulting and/or alteration along overturned and drag folding on the north limb of the anticlinorium. The refraction seismograph can be used to determine bedrock depths for lithogeochem samples in the area of shallower bedrock.

# **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.

On the Arch 1 and 2 claims, bedrock outcrops in places along the steep north side of Cow and Richfield Mountains. The remainder of the area contains a fairly thick mantle of glacial drift. There are numerous outcrops at the higher elevations along the headwaters of Williams Creek and Jack of Clubs Creek, along the north side of Elk Mountain, Mount Agnes as well as Bald Mountain. Many of these outcrops contain quartz veins and suspect gold mineralization.

## 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 phillite 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 know 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 a real relation to major faults primarily the more persistent 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 N50-60 degree 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 degrees 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. 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 area of the claims. Several fairly large and continuous northerly trending faults have been mapped in the area. Lowhee and Rainbow Faults cut the northwestern portion of the Arch 1 claim block. Several major northerly trending faults are mapped by A. Sutherland Brown in this general area and are described in Bulletin No. 38. The Lowhee, Rainbow and No. 1 Faults were all mapped and studied in some detail in the underground workings of the Cariboo Gold Quartz Mine. Near these faults there is also a preponderance of quartz veins of the transverse and diagonal types. Most of these veins contain sulphides and free gold. In the entire Barkerville Gold Belt, extending from the Island Mountain Mine in the northwest to the Round Mountain area in the southeast, there is a total of 13 northerly trending faults which have been identified and mapped. The northerly trending faults strike between north and north 20 degrees east and dip steeply to the east. Most are normal faults which have some strike-slip. Other faults with similar orientation or surface expression have been subject to large strike-slip and much less dip-slip. Johnston and Uglow, in Memoir 149, 1926, describe a northeast trending fault near the top of Island Mountain, immediately northwest of the lode mines in the Wells area, as having a horizontal displacement to the southwest of 4 miles. They further say that this has displaced the Barkerville Gold belt to the southwest some 4 miles to near the Willow River. Stuart S. Holland, in Bulletin #26, recommends prospecting for gold mineralization along the three northerly trending fault zones he mapped in the STanley area southwest of the claims.

## 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 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 THE VLF-EM SURVEY

A brief description of each extension line ran during May, 1987, that extend the previous surveyed lines of 7S, 7AS, 8S, 8AS, 9S, 10S, and 11S past the Arch Claim boundary into the Lowhee claims and the Rainbow Claim Group, are given below with possible interpretation of the results.

### Line 7S

This line extends line 7S from the previous survey starting at 1455m West then crosses the boundary of the Rainbow Claim Group at 1600m West. The terrain in the area of the line is fairly flat in the eastern portion as it starts out in the flat meadows or Cow Mountain than it begins to slope steeply west into the

headwaters of Victoria Creek, just past the Rainbow Claim boundary. The line is fairly quiet electromagnetically and has no apparent anomalous and/or conductive zones except at the far east part of the line which is possibly part of the Rainbow Fault extension.

Line 7AS

This line crosses into the Lowhee Claim 7761 as soon as it leaves the Arch Claims at 1360m west, then moves into the Rainbow Claims at 1600m West. The terrain in the area of the line is a moderate to steep slope to the west just south of the headwaters of Victoria Creek. Fairly well defined anomalies are shown at the extreme west point of the line and just west of the most easterly Rainbow Claim boundary.

Line 8 and 8A South

These two lines are well past the Arch Claim boundary and start well into the Lowhee claims, crossing the Rainbow Claim boundary of 1600m west. The terrain in the area of the line is moderately sloping to the west until it crosses over into the Rainbow Claim area where it becomes steeper. Both profiles show continuations of the extension line 7AS anomalous zones which appear to be trending north-north west. Profile 8AS, however, contains a very strong anomaly to the east of these other zones and apparently not correlated with these other zones.

Line 9, 10 and 11 South

These three extension lines start in the Lowhee Claim 7763 and move into the Rainbow Claim group at 1600m west. The terrain of these lines are similar as they start in a flat meadow well south of Cow Mountain and drop moderately in elevation to the west just north of Stoney Creek. These profiles contain the continuing trends of the above line and give a definite northwest/southeast trend. The anomalous zones may be the extension of the Jack of Clubs fault zone mapped in the area.

# CONCLUSIONS

There appears to be a northwest-southeast alignment or trend to the anomalies recorded on the profiles of the electromag fieldwork. This is parallel to the stronger trend mapped on the Arch Claims to the east. This north 40 to 50 west trend is parallel to faulting mapped to the northeast in the area of the Mosquito Creek Mine.

# RECOMMENDATIONS

Additional intermediate lines of VLF EM electromag work should be carried out in the area of the claim block.

Respectfully submitted

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

APPENDIX

#### CERTIFICATE

I. William Howard Myers, do hereby certify that I am an independent geological-geophysical consultant with offices at Suite #814 - 602 West Hastings Street, Vancouver, B.C., V6B 1P3, British Columbia. 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 o geophysical exploration for oil and minerals.

During the past 23 years since 1964, I have spent the majority of my time in the field and consulting for gold exploration in the Cariboo Area of British Columbia. In the past four 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. This publication does not follow the older conventional exploration techniques.

Information for this report is from published and unpublished maps and reports of this general area together with my personal experience in the Cariboo Area, exploring for gold over the past 23 years.

Wm. Howard Myers, P.Eng.,

(B.C.)

P. Geol. (Alta) Geological-Geophysical Consultant

Vancouver, B.C.

October, 1987

# BIBLIOGRAPHY

Geological Survey of Canada Department of Mines
Memoir 181, 1935, G. Hanson
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, kp. 459-460, A. Sutherland-Brown

Assessment Report

Geophysical Report on Arch 1-4 incl. Mineral Claims, May, 1987 Wm. Howard Myers, P.Eng. P.Geol.

Assessment Report

Geological-Geophysical Report on the Arch 1-4 Mineral Claims, May 1986, Wm. Howard Myers, P. Eng. P.Geol.

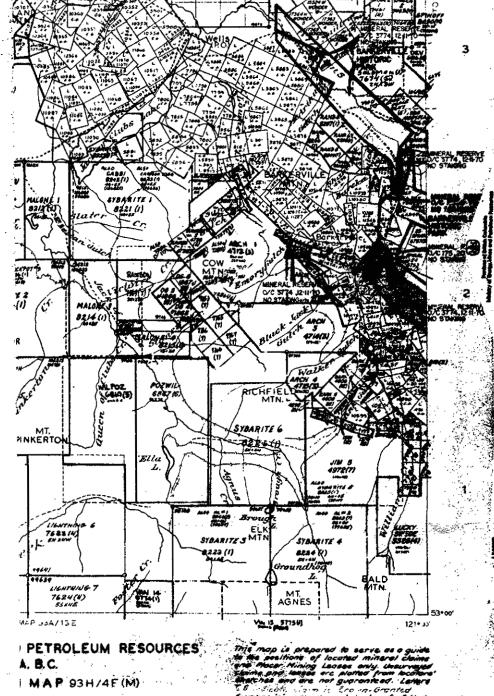
# DETAIL COST ANALYSIS FOR VLF-EM

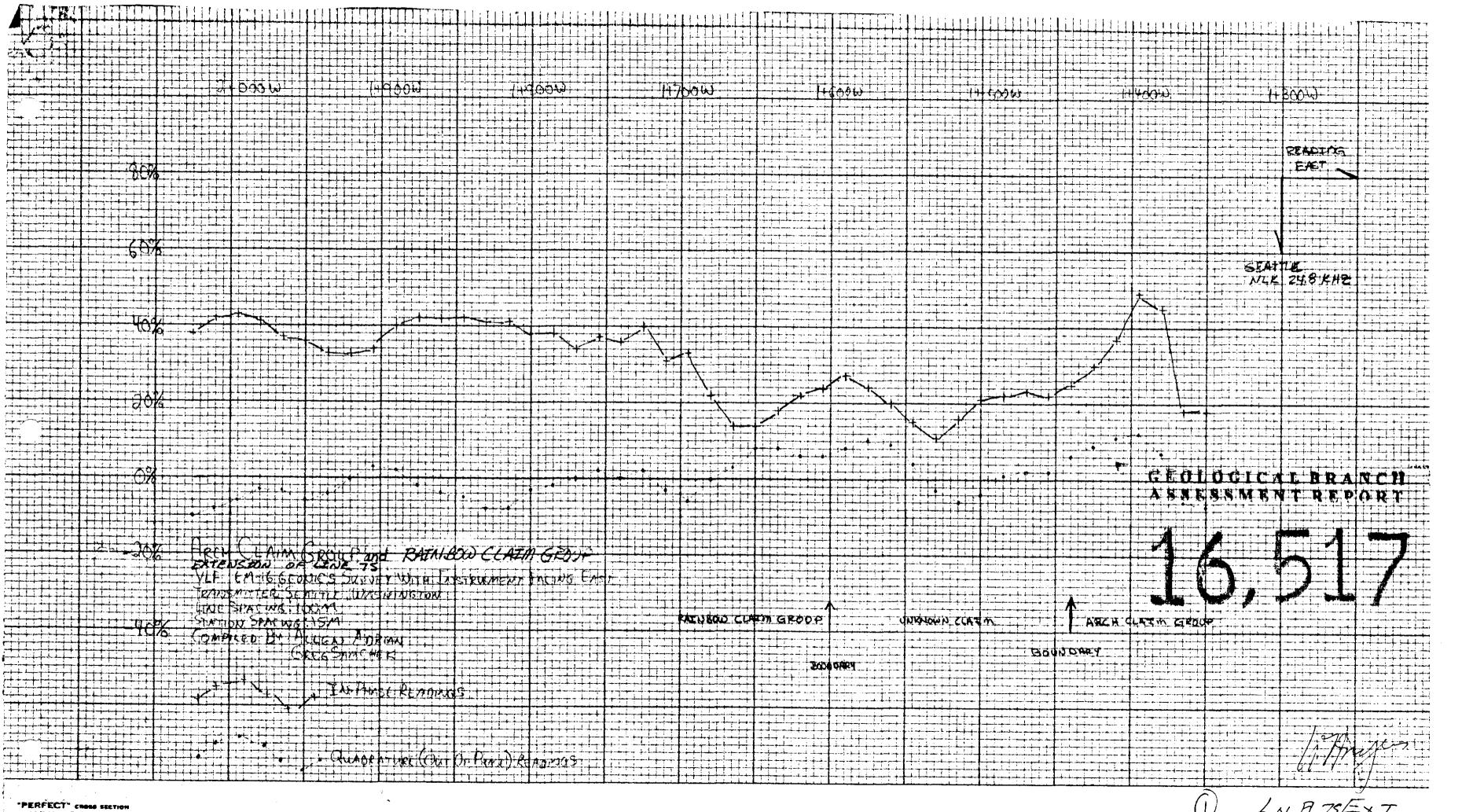
Survey of Lowhee 1-8 and Rainbow Claim Block, 1987 field season

# DAILY FIELD EXPENSES

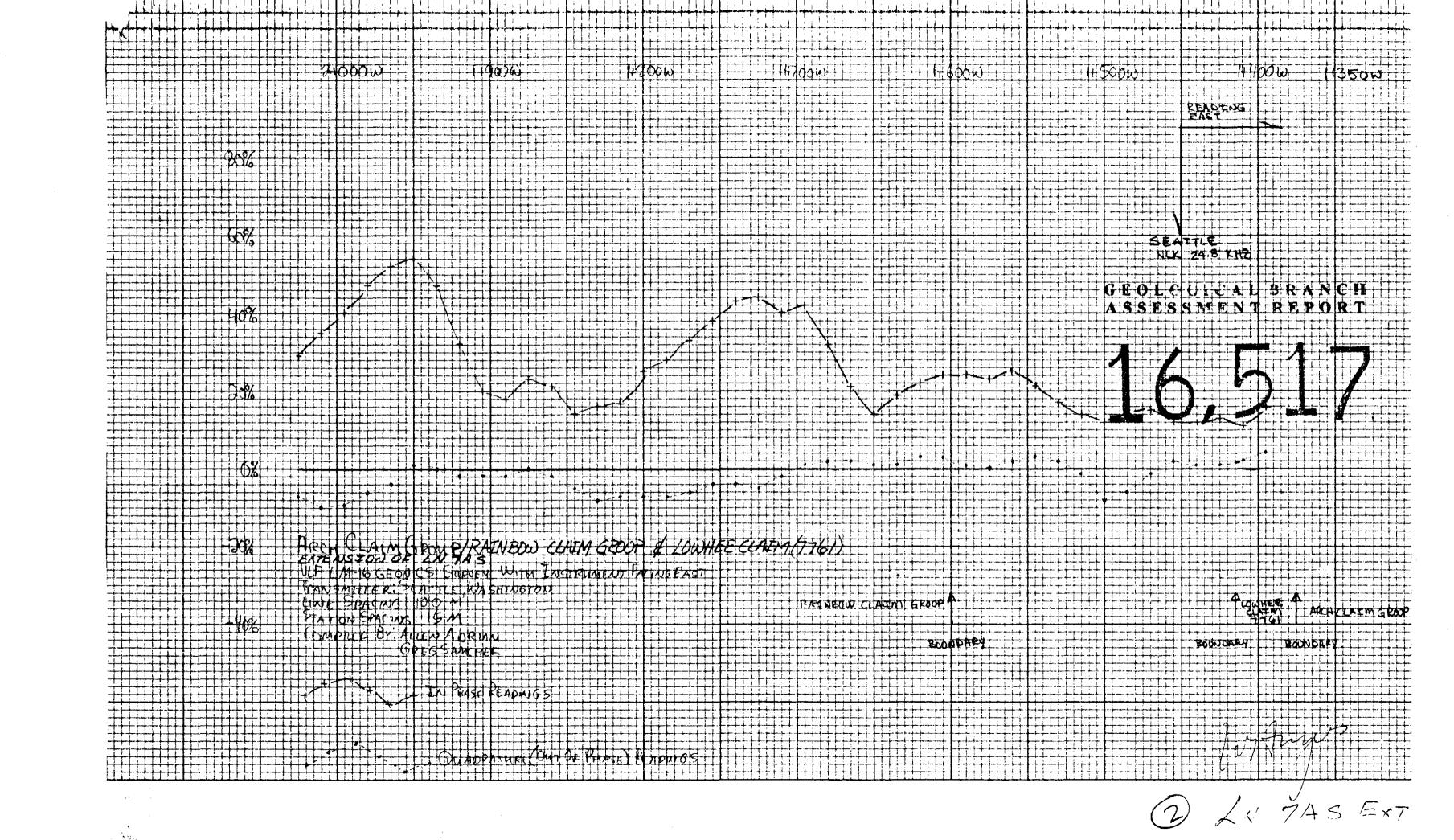
1 Chief Geophy @ \$125/day 1 Helper @ \$85/day Instrument rental \$25/day Rental of truck and ATV equipment Subsistence, 2 men @ \$50/day/man	\$ 125.00 75.00 25.00 40.00 100.00
Total per day	365.00
FIELD WORK DURING PERIOD JUNE 16-23, 1987 (weather permitting)	
4 days @ \$365/day	1,460.00
Supervision and report by Wm. Howard Myers, P.Eng. P.Geol. 4 days @ \$250/day	1,000.00
Typing and producing report	230.00
Total costs	\$ 2,690.00
5.7 kilometers run Cost per km including supervision and report	\$ 472.00

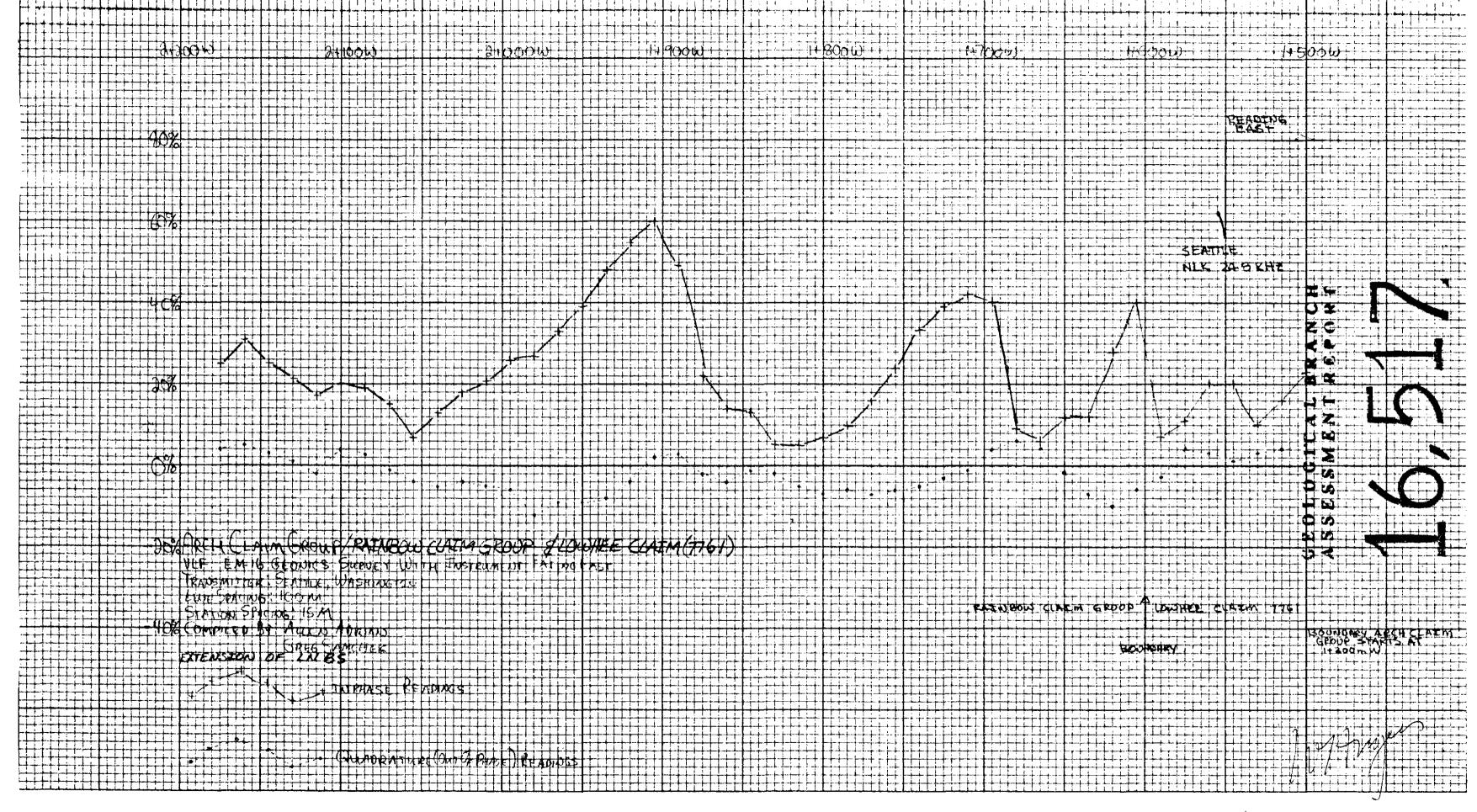
MIMM



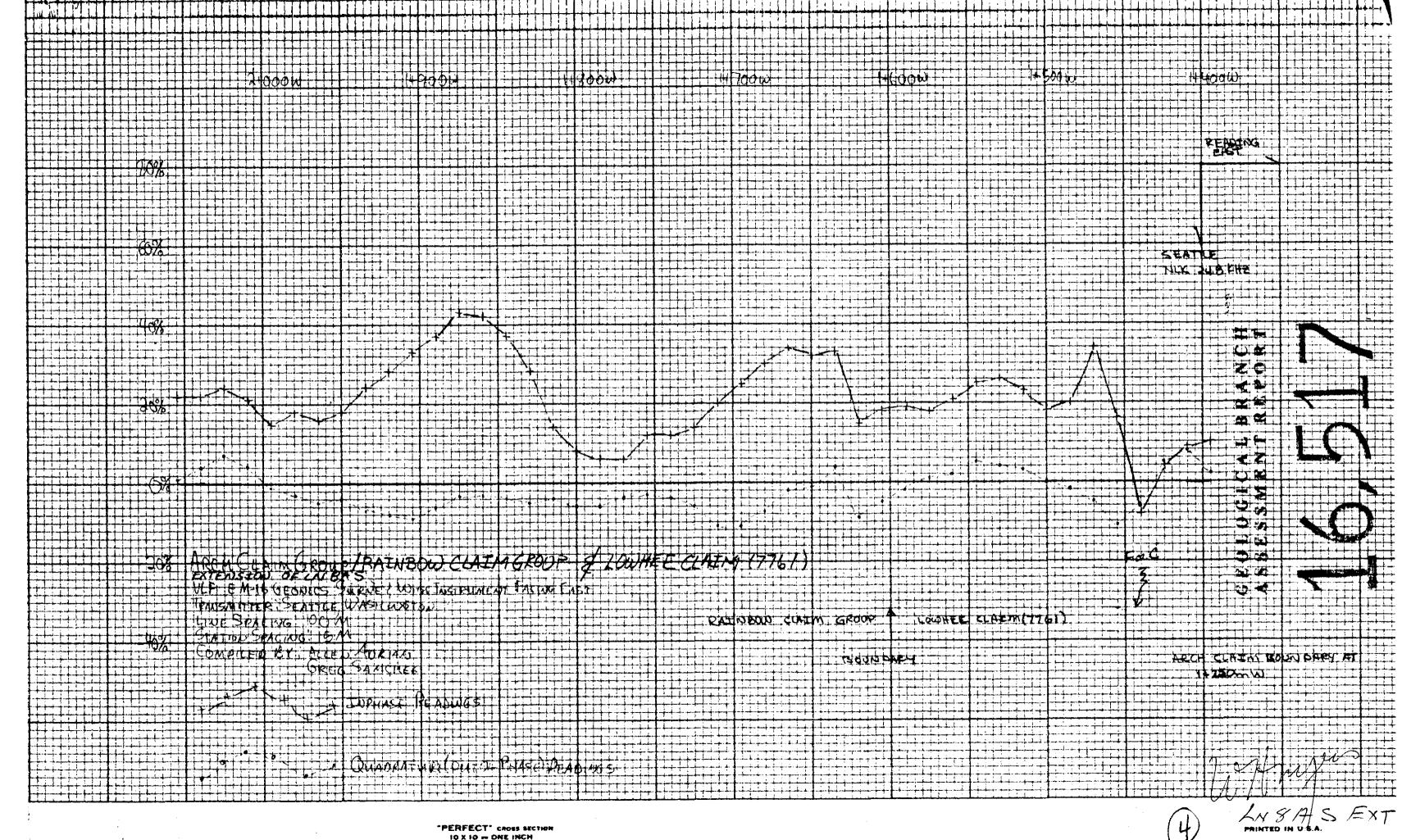


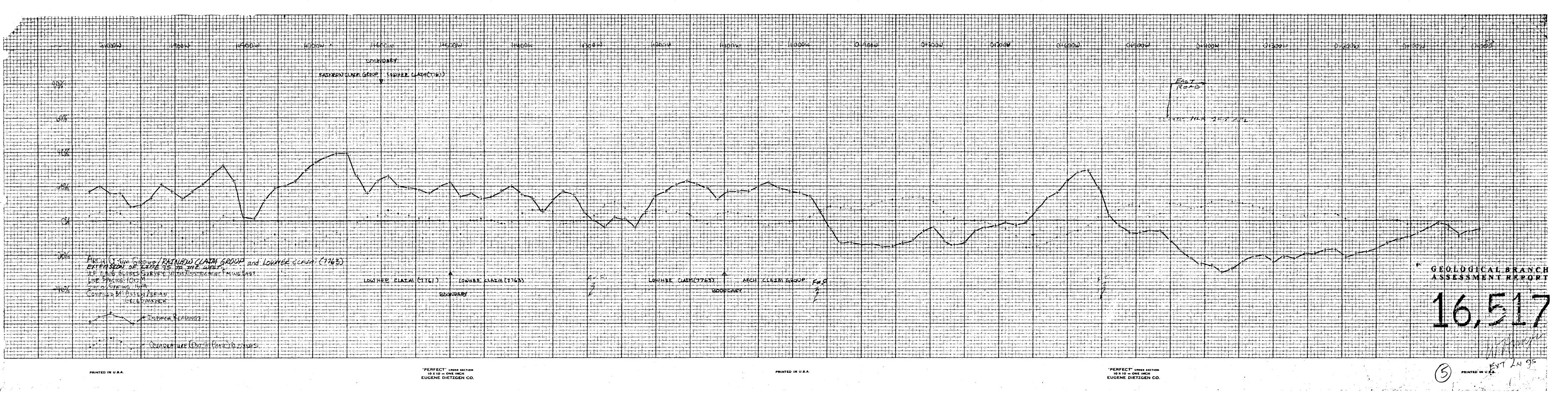
LNB75EXT

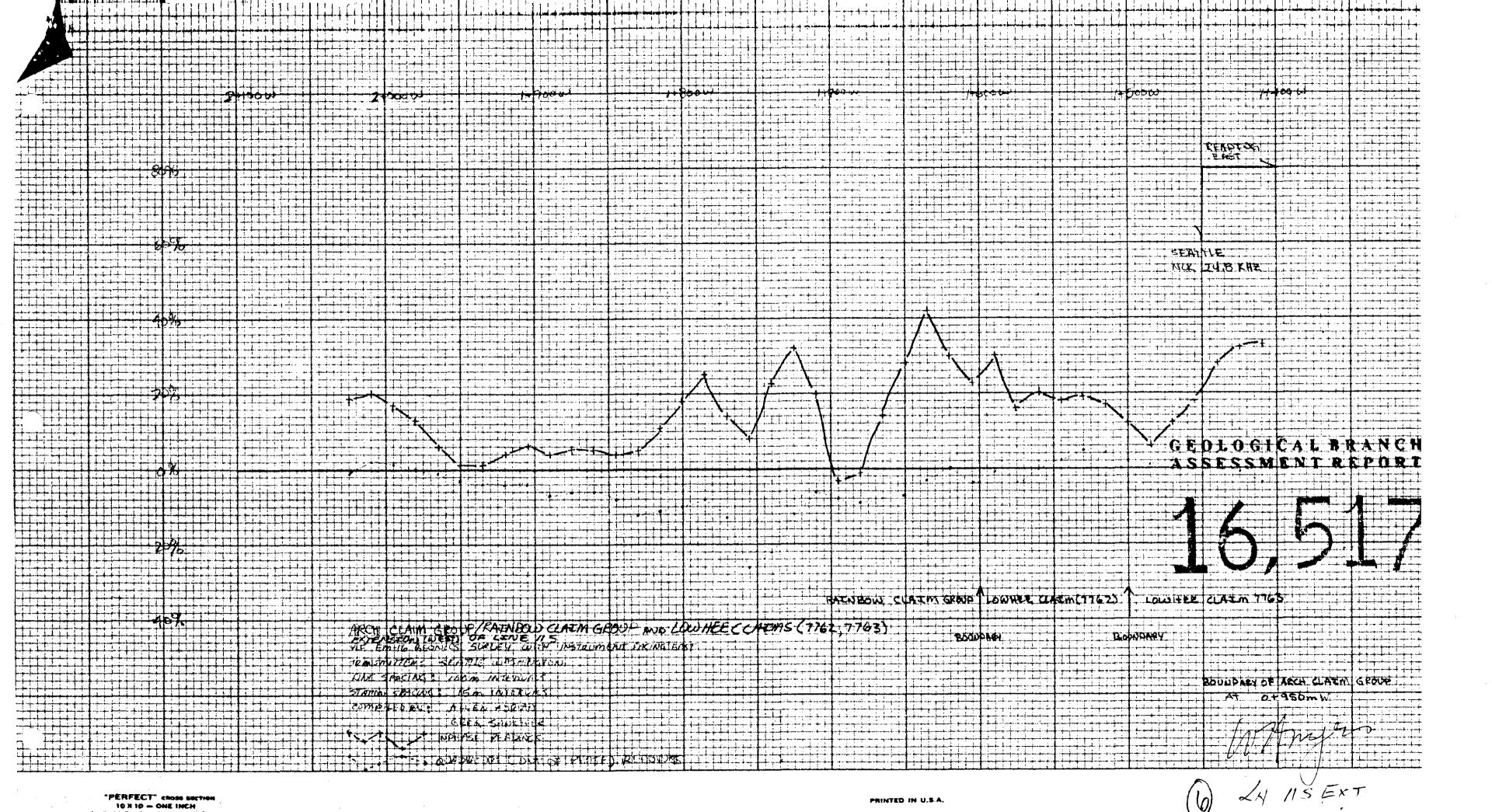


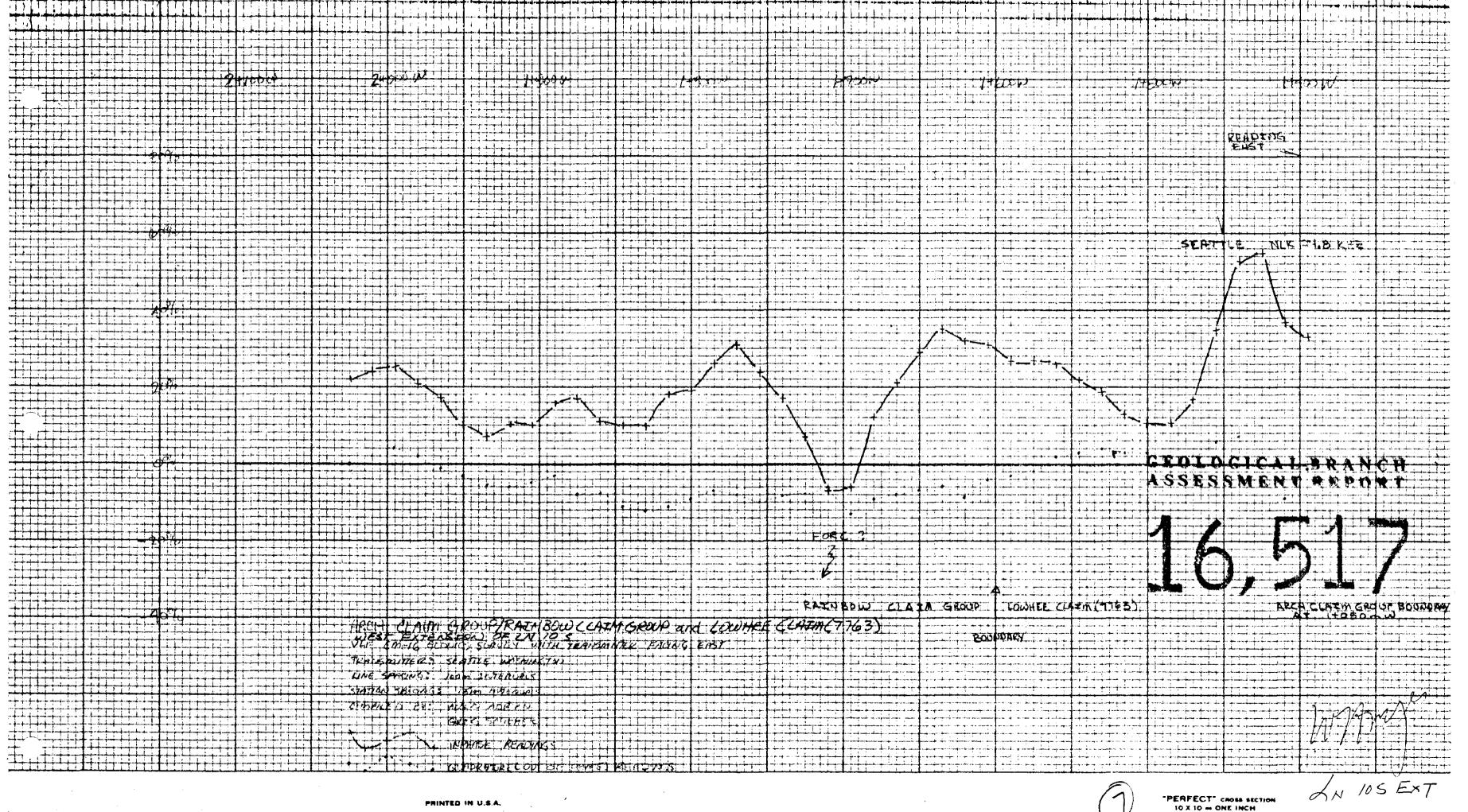


3 LN 85 FX7









EUGENE DIETZGEN CO.

