PROSPECTING REPORT

on the

SHANNON CLAIM (667)

Raffuse Creek Area, Vancouver Mining Division

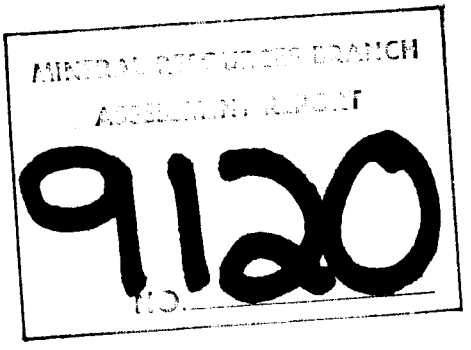
92G10W, Lat. 49 38' Long. 122 59'

by

K.R. MacKenzie, B.Sc. M.D.

Owner/Operator: Alpen Exploration Ltd.

Squamish, B.C. May 1981



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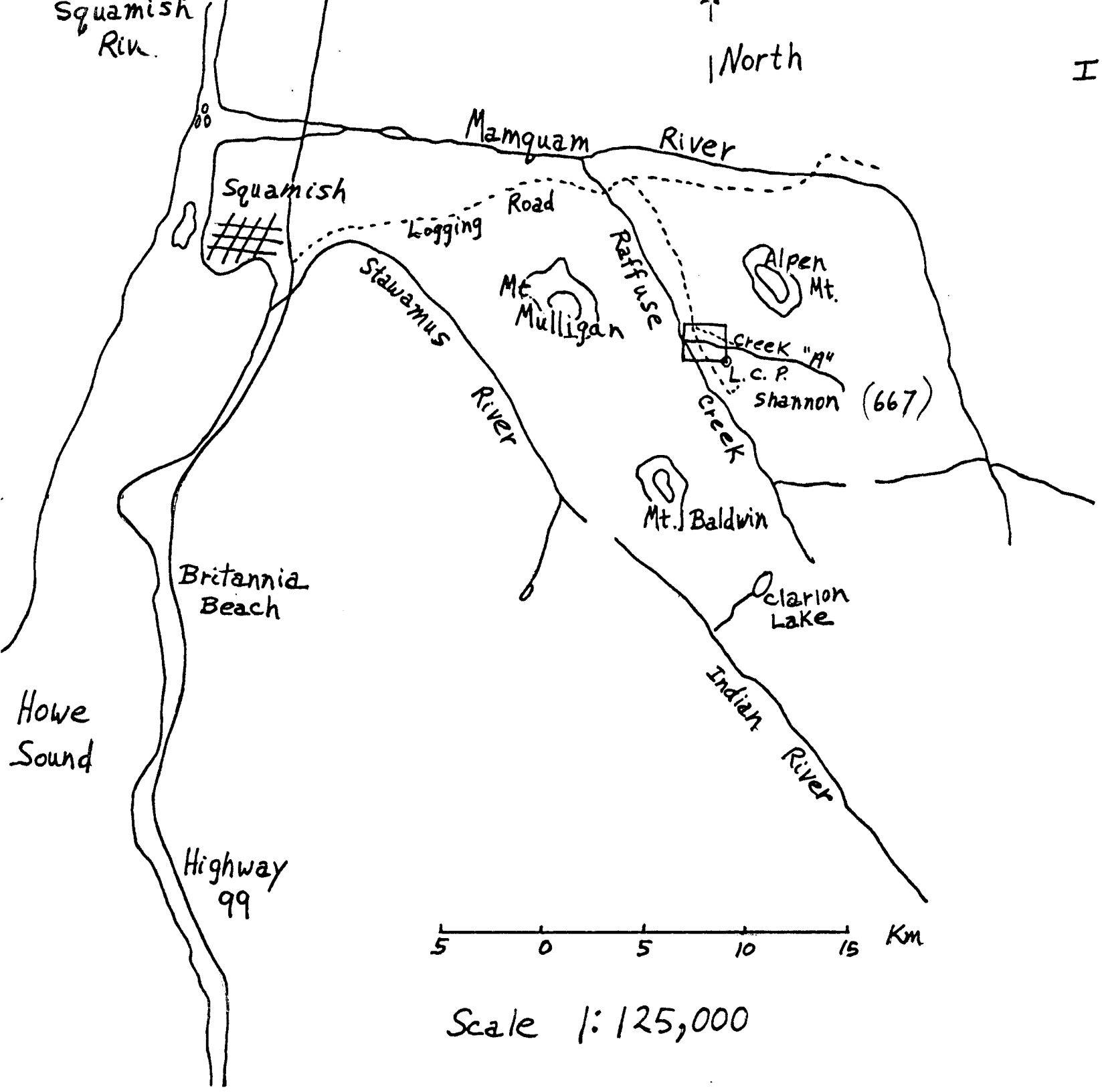
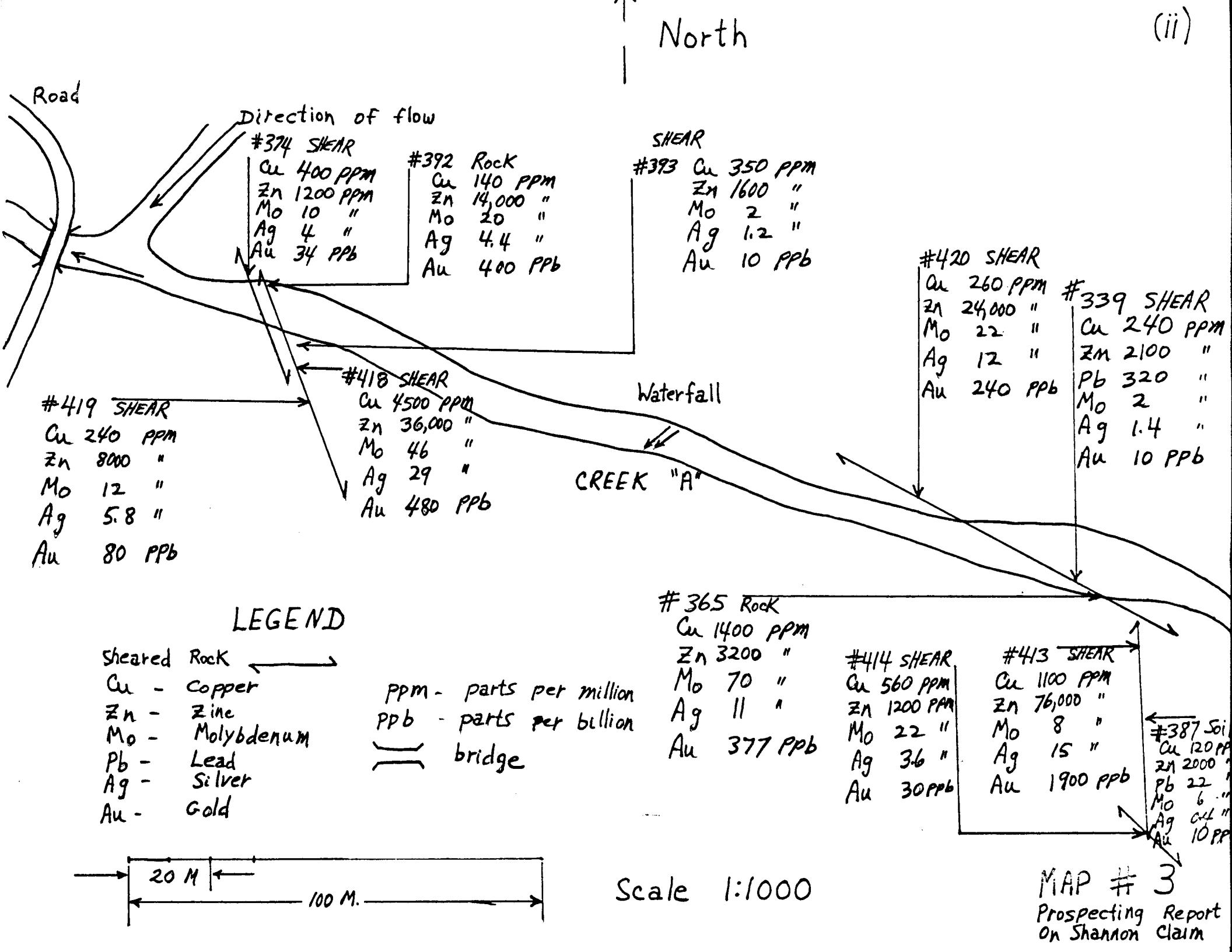


Map #1
92 G 10 & 11
Location Map
For Prospecting
Report on
Shannon Claim (667)



MAP # 3
Prospecting Report
On Shannon Claim

INTRODUCTION

The Shannon claim, which forms part of the Alpen South mineral prospect is located approximately fifteen kilometers southeast of squamish on a northwest trending ridge to the south of Alpen Mountain and north of Clarion Lake. The Mamquam River lies to the east and Raffuse Creek to the west.

Access is by logging road that leaves Highway 99 approximately one-half kilometer south of the turnoff to Squamish. The road is used for active logging by MacMillan-Bloedel and Weldwood. Permission to use the road can be obtained from the MacMillan-Bloedel offices near the entrance to the road. The logging road to the area is shown on the index map.

To my knowledge, this area has not been staked in the past. The property is owned by Alpen Exploration Ltd. of Squamish.

The Shannon claim has been explored mainly by geochemical and regular prospecting methods. The geochemical assessment of the property has been done with a Dithizone kit sold by Bondar-Clegg & Company Ltd. Anomalous samples found with the kit have been checked by having lab analyses done by Noranda Exploration Ltd. in their own lab, or by Rossbacher Laboratory Ltd.

The Dithizone kit was used to test silt thirty-four times, soil once, and shear gouge twenty-five times. Analyses were

done on four silts, one soil, seventeen shear gouges and eight rocks. A separate list of these will be found in Appendices C,D.

The total area prospected was three hundred hectares or twelve units.

TECHNICAL DATA AND INTERPRETATION

The Dithizone Field Kit was used to test silt from almost every creek in the area. It was also used to test shear gouge from many shears or faults that occur on the claim. Shear gouge is essentially ground rock produced by differential movment along a fault. The finely ground rock and any metallic minerals emplaced or mobilized into the shear zone are well exposed to the weathering processes that produce secondary minerals. As Dithizone is sensitive to secondary minerals and not to primary sulphides, shear gouge is an excellent medium for this type of field testing. A table and a graph correlating the dithizone readings and subsequent analyses of the shears measured on this claim are given in Appendix C.

The Dithizone field test is a colorimetric measure of the total heavy metals in a given sample. It measures the total of zinc, lead, copper, tin, silver, cobalt and nickel, but it is most sensitive to zinc.

The test is roughly quantitative and can distinguish between low, medium and high totals of heavy metals. The higher the number of cc's of dithizone to reach an end point, the higher is the total heavy metal content. The range of the

test is from zero to fifty according to the company literature, however, it was found that a high reading of fifty was insufficient and the reading of the test has been modified to give an upper limit of one hundred.

The results of the silt, shear and soil sample survey done are shown on Map #2 and Map #3. They are given in cc's of dithizone and are shown as a circled number, i.e. (50). Where analyses were done, the results are given.

For the purpose of prospecting, the rock in this area has been classified into two groups:

1. The Gambier Group rocks that include rhyodacites, dacites, andesites, pyroclastics and porphyrys.

2. Quartz Diorite.

The names and definitions for these rocks were taken from G.S.C. Memoir #335 by J.A. Roddick pp. 58-61. The approximate boundaries of these rock groups are shown on Map #2. The contacts are shown as linear but in actual fact, they interdigitate in a very complicated manner.

In looking at Map #2, it is seen that any significant mineral found is located in the Gambier Group rocks. The northeast corner of the claim contains mainly Quartz Diorite and the streams draining that area show consistently low readings with the dithizone kit. No samples worth analysing have been found in that section. The south central stock of Quartz Diorite also appears barren of significant mineralization.

The Quartz Diorite intrusion in the southeast corner of the claim is possibly not so barren. It is a highly jointed and probably sheared body of rock that can be seen on air photos or from below as a moderately large landslide of rusty coloured rock. As the rock is so badly broken up, it is difficult and dangerous to climb in the area. Pyrite is disseminated in much of the rock present here and malachite stains have been found at the base of one of the cliffs. A piece of quartz float containing 2800 ppm copper and 2400 ppm zinc has been found in Creek A below this area. The small creeks draining this hillside showed only dithizone readings. A silt sample taken from one of the streams was analysed to have only background levels of minerals.

Gambier Group rocks have been found to outcrop mainly in Creek A. To the west of the logging road, or downstream from the bridge, the rocks in the area show a lot of jointing and shearing, mainly in two directions, north-south and northwest-southeast. Pyrite is the main mineral of this area and it can be found in veins approaching 100%. These veins are emplaced in sheared zones and are parallel to the shearing direction. One sample of rock from this area was analysed to contain 100 ppm copper, 12.3 ppm silver and 68.7 ppb gold. Across the creek and on strike with this narrow mineralized zone, a continuation was found where the rock contained 2200 ppm copper, 4400 ppm zinc, 9.6 ppm silver and 34 ppb gold.

To the east of the road or upstream from the bridge in Creek A lies the main area of interest. All the results found in this area could not be plotted on Map #2, so a more detailed view was required, and this has been labelled Map #3. The rock in this zone is mainly Gambier Group that is again highly jointed and sheared. Any mineral found to date has been contained within the gouge of shear zones and forms veins, veinlets and lenses that run parallel to shearing direction. The widths of these mineralized zones are generally narrow and range from one-half centimeter to approximately thirty centimeters. These mineralized structures have been traced along strike up to thirty meters.

An example of the lab values obtained in this area is #418, a gray mineral found in shear gouge. It contained 4500 ppm copper, 36,000 ppm zinc, 29 ppm silver and 480 ppb gold. The variable nature and irregular deposition of the metallic minerals is illustrated by sample #419, taken a few meters along strike from #418. Sample #419 contained only 240 ppm copper, 8000ppm zinc, 5.8 ppm silver and 80 ppb gold.

Farther upstream, a north-south shear is also mineralized with a similar gray material. Sample #413 was analysed to contain 1100 ppm copper, 76,000 ppm zinc, 15 ppm silver and 1,900 ppb gold. This vein is also narrow, being only about six centimeters wide.

CONCLUSIONS

1. On the Shannon claim, mineralization is associated with shearing within Gambier Group rocks.

2. The Dithizone Field Test was found to be a useful and reasonably reliable tool in analysing shear gouge for heavy metal ions.

3. Although fairly high grade material has been analysed from four different shears in this area, the inconsistent deposition, the narrow widths of the veins and the wide spacing of the mineralized zones means that this claim does not at present contain an economic concentration of mineral. However, similar but more extensive mineralization in Gambier Group rocks occurs on the adjoining Mcvicar and Maggie Mines properties so it is possible that larger veins or lenses may be discovered on the Shannon claim as well.

APPENDIX A

AUTHOR'S QUALIFICATIONS

K. R. MacKenzie, B.Sc., M.D.

Doctor MacKenzie is a medical doctor who graduated from the University of British Columbia in 1963 with a B.Sc. in Chemistry and Mathematics. Geology 105 was taken as part of his undergraduate studies. He spent three summers working for the Geological Survey of Canada under Dr. J. O. Wheeler.

After graduating from U.B.C. in 1968 with a medical degree, Dr. MacKenzie has continued to prospect as a hobby.

Recent reading by the author inludes:

- G.S.C. Memoir No. 335 - J.A. Roddick
- Prospecting in Canada (G.S.C.) by A.H. Lang.
- G.S.C. Paper 72-53, Rock and Mineral Collecting in British Columbia, by S. Leaming.
- G.S.C. Paper 72-22, Precambrian Volcanogenic Massive Sulphide Deposits in Canada: A Review by D.F. Sangster.
- Geol. Soc. Malaysia, Bulletin 9, Nov. 1977, pp.1-16, Mineralization in the Coast Plutonic Complex of British Columbia, south of latitude 55°N by G.J. Woodsworth and J.A. Roddick.
- International Geologic Congress, Field Excursion A09-C09, Copper and Molybdenum Deposits of the Western Cordillera.
- Exploration and Mining Geology by William C. Peters.
- A Field Guide to Rocks and Minerals by Pough.
- Volcanogenic Deposits and their Regional Setting in the Canadian Cordillera - Abstracts from the Geological Association of Canada Conference, January 25, 26, 1980.
- Colorimetric determination of traces of Metals by E.B. Sandell
- Geology and Economic Minerals of Canada (G.S.C.) by Douglas

- The Geochemistry of Silver and its Deposits (G.S.C.) by Boyle.

- The Geochemistry of Gold and its Deposits (G.S.C.) by Boyle.

- Geophysics and Geochemistry in the search for Metallic Ores by Duncan R. Derry, Michener, Booth.

- Geochemistry in Mineral Exploration by Rose, Hawkes, Webb.

- Time and Stratabound Ore Deposits by Klemm, Schneider.

- Theory and Practice of Regional Geochemical Exploration by M. Foldvari-Vogl.

- Summary Report on War Eagle, Clarke and Janette Claims (Maggie Mines Ltd.) by Andrew E. Nevin Ph.D., P.Eng. September 18, 1980.

- Western Mines- Myra, Lynx and Price deposits by R.H. Seraphim C.I.M. Bulletin, December 1980.

- Western Mines-Myra, Lynx and Price deposits: a discussion by R.R. Walker C.I.M. Bulletin, December 1980.

APPENDIX B

ITEMIZED COST STATEMENT

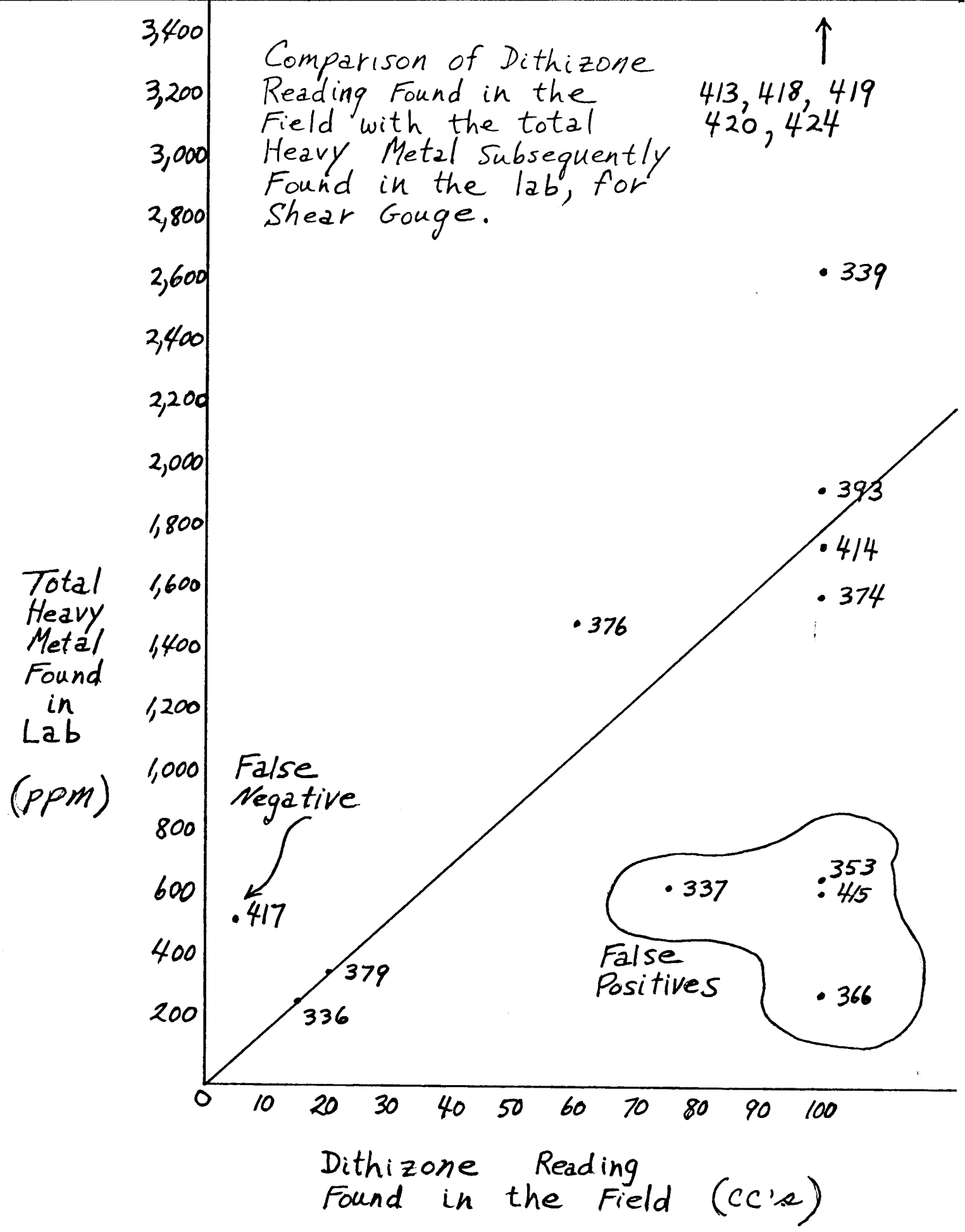
SHANNON CLAIM (667)

Value of Man-Hours of Work Performed		
K. Mackenzie		
Period - 1981	January 10, 12(½ day), 13, 20, 25, 27(½). February 16, 17(½), 20, 22, 27(½). March 13, 19, 20, 26(½) April 5(½), 17, 26.	
Total:	15 days @ $75.00	1125.00
R. Price	February 22 1981	
Total:	1 day @ $75.00	75.00
D. Pegg Geologist for Noranda Mines Ltd.		
One hour consultations per day		
Period - 1981	January 12, 27. February 17, 27. March 16. April 5.	
Total:	6 hours @ $30.00 per hour	180.00
Transportation		
19 miles on 12 days - 228 miles		
90 miles on 6 days - 540 miles		
Total:	768 @ 31¢	238.08
Dithizone Testing (Geochemical)		
Cost of 60 Samples @ $1.00		60.00
Lab Analyses		
Cost of 30 Samples @ $10.75		322.50
Report Preparation Costs		
Preparation time: January 24 - 2 hrs, 25 - 2 hrs, 28 - 4 hrs. February 19 - 5 hrs. April 30 - 3 hrs. May 4 - 10 hrs, 5 - 10 hrs, 6 - 10 hrs, 7 - 4 hrs.		
Total:	50 hrs @ $7.50	375.00
Maps		30.00
Miscellaneous		25.00
Total Cost		2430.58

APPENDIX C

Table of values analysed for shear gouge. Copper, lead, zinc molybdenum and silver values given in parts per million. Gold values given in parts per billion.

Sample Number	Cu ppm	Pb ppm	Zn ppm	Mo ppm	Ag ppm	Au ppb
336	20	18	250	6	0.2	10
337	20	12	620	4	0.2	10
339	240	320	2,100	2	1.4	10
353	110	92	460	2	0.4	
366	100		200	10	0.7	34
374	400		1,200	10	4.0	34
376	1,300	26	180	2	1.6	10
379	260	34	80	12	0.4	30
393	350		1,600	2	1.2	10
413	1,100		76,000	8	15.0	1900
414	560		1,200	22	3.6	30
415	120		500	2	0.6	10
417	380		170	2	0.4	10
418	4,500		36,000	46	29.0	480
419	240		8,000	12	5.8	80
420	260		24,000	22	12.0	240
424	690		3,200	28	3.6	20



Graph to Accompany Prospecting Report on Shannon Claim (667) Appendix C page 2.

Interpretation

The graph shown on page two of this appendix illustrates the general trend to increasing mineral content with increasing values of dithizone. Every test has a range of error and this one is no exception. The range of error for the Dithizone Test is probably quite wide but the test is still reliable enough to show high levels of total heavy metals when they are in fact present.

Every test also has false positives and/or false negatives. A false positive result is one where the field test says there is a high total heavy metal content present when the lab result does not confirm a high reading. False positives may be caused by a number of things, the most likely being contamination of the sample. False positives are fairly easy to live with because any test showing a high reading will most likely be analysed and the true result will be found.

False negatives, on the other hand are more difficult and subtle. In this case, a high mineral content is present in the sample but the Dithizone Test records it as a low value. This could result in an important anomaly being overlooked and not analysed.

From this discussion, it can be seen that the Dithizone Field Test can be a useful tool as long as its shortcomings are known and compensated for.

APPENDIX D

Table of analysed silt, rock and soil samples. Copper, lead, zinc, molybdenum and silver values given in parts per million. Gold values given in parts per billion.

Sample Number	Type of Sample	Cu ppm	Pb ppm	Zn ppm	Mo ppm	Ag ppm	Au ppb
347	silt	140	18	150	2	0.2	40
350	silt	320	630	1,400	2	3.4	20
351	rock	100				0.7	34
352	rock	100				12.3	68
365	rock	1,400		3,200	70	11.0	377
373	rock float	2,800		2,400	10	8.2	68
375	rock	100		100		2.0	34
387	soil	120	22	2,000	6	0.4	10
388	silt	130	20	760	2	0.2	10
391	silt	160	48	270		1.0	10
392	rock	140		14,000	20	1.2	400
423	rock	2,200		4,400	50	9.6	34
425	rock	100		800	10	2.0	34

North

Alpen Mountain

4000

3000

Raffuse Creek

Creek "A"

Road

Q.D.

G.G.

Rock (Py)
Cu 100 PPM
Ag 12.3
Au 68.7 PPb

Rock
Cu 100 ppm
Ag 0.7
Au 34 PPb

Cu 110 PPM
Zn 460
Pb 92
Ag 0.4
Mo 2

Shear
Cu 400 PPM.
Zn 1200
Mo 10
Ag 4
Au 34 PPb

Rock (Py ccp)
Cu 1400 PPM
Zn 3200
Mo 70
Ag 11
Au 377 PPb

Shear
Cu 240 PPM
Mo 2
Pb 320
Zn 2100
Ag 1.4
Au 10 PPb

Shear
Cu 100 PPM
Zn 200
Mo 10
Ag 0.7
Au 34 PPb

Float Rock (ccp)
Cu 2800 PPM.
Zn 2400
Mo 2
Ag 8.2
Au 68 ppb

Silt
Cu 140 PPM.
Zn 150
Pb 18
Ag 0.2
Mo <2
Au 40 PPb

Shear
Cu 670 PPM
Zn 3200
Mo 28
Ag 3.6
Au 20 PPb

Rock
Cu 2200 PPM
Zn 4400
Mo 50
Ag 9.6
Au 34 PPb

Rock
Cu 100 PPM
Zn 80
Mo 10
Ag 2
Au 34 PPb

Shear
Cu 20 PPM
Mo 4
Pb 12
Zn 620
Ag 0.2
Au 10 PPb

Cu 20 PPM
Mo 6
Pb 18
Zn 250
Ag 0.2
Au 10 PPb

Shear
Cu 1100
Zn 76,000
Ag 15 PPM
Mo 8 PPM
Au 1900 PPb

Cu 560 PPM
Zn 1200
Ag 3.6
Mo 22
Au 30 PPb

Cu 380 PPM
Zn 170 PPM
Ag 0.4 "
Mo 2 "
Au 10 PPb

Rock
Cu 100 PPM
Zn 100
Ag 2
Au 34 PPb

Cu 120 PPM
Zn 500
Ag 0.6 "
Mo 2 "
Au 10 PPb

Shear
Cu 1300
Zn 180
Pb 26
Mo <2
Ag 1.6
Au 10 PPb

Shear
Cu 260 PPM
Zn 80
Pb 34
Ag 0.4
Mo 12
Au 30 PPb

Silt
Cu 320 PPM
Zn 1400
Pb 630
Ag 3.4
Mo 2
Au 20 PPb

Silt
Cu 130
Zn 760 PPM
Pb 20
Ag <2
Mo <2
Au 10 PPb

Silt
Cu 160 PPM
Zn 270
Pb 48
Ag 1.0
Au 10

S.C.P. SHANNON Located by:
Compass, Pace,
Air photo, topographic map, altimeter

LEGEND

Gambier Group (G.G.)

Quartz Diorite (Q.D.)

Dithizone Readings Maximum - (100) in cc's
Minimum - (0)

Mineral Found in outcrop:
chalcopyrite (ccp)
Malachite (mal)
Sphalerite (sph)
Sheared Rock ⟷

Cu - Copper
Pb - Lead
Zn - Zinc
Mo - Molybdenum
Ag - Silver
Au - Gold

PPm - parts per million
PPb - parts per billion

100 0 100 200 300 400 500
Meters

Scale 1:5000
Contour Interval 100 Feet

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 9190

MAP #2

Prospecting Report
On Shannon Claim