GEOCHEMICAL REPORT

on the

URSULA (476) CLAIM

MAMQUAM RIVER AREA, VANCOUVER MINING DIVISION

92G 10W, Lat. 49° 38' Long. 122° 25'

by

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

Endorsed by

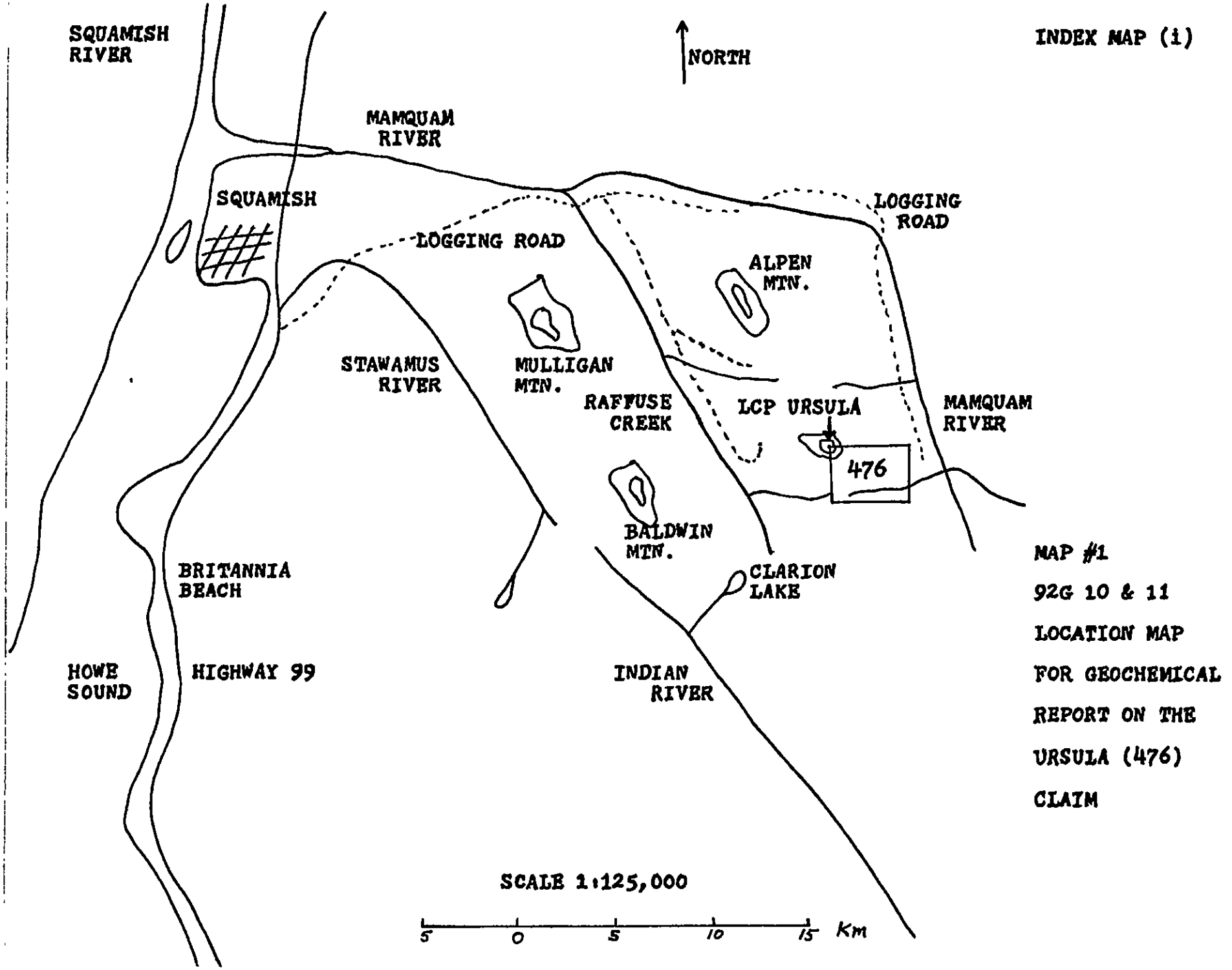
Frank W. Baumann, P.Eng.

Owner/Operator: Alpen Exploration Ltd.

Squamish, B.C. August, 1982

TABLE OF CONTENTS

	PAGE
INDEX MAP	(i)
INTRODUCTION	1
INTERPRETATION	5
CONCLUSION	7
APPENDIX A	
Authors Qualifications	
APPENDIX B	
Itemized Cost Statement	
APPENDIX C	
Results of Geochemical Analyses	
APPENDIX D	
Analysis Methods Used	
APPENDIX E	
Description of analysed Samples and Sample Sites	
LIST OF ILLUSTRATIONS	
INDEX MAP (MAP #1)	(i)
PLAN MAP (MAP #2)	in pocket


SQUAMISH RIVER
NORTH
INDEX MAP (1)
MAMQUAM RIVER
SQUAMISH
LOGGING ROAD
LOGGING ROAD
ALPEN MTN.
STAWAMUS RIVER
MULLIGAN MTN.
RAFFUSE CREEK
LCP URSULA
MAMQUAM RIVER
476
BALDWIN MTN.
BRITANNIA BEACH
CLARION LAKE
HOWE SOUND
HIGHWAY 99
INDIAN RIVER
MAP #1
92G 10 & 11
LOCATION MAP
FOR GEOCHEMICAL
REPORT ON THE
URSULA (476)
CLAIM
SCALE 1:125,000
5 0 5 10 15 Km

INTRODUCTION

The Ursula claim, which forms a part of the Alpen South mineral prospect, is located approximately fifteen kilometers southeast of Squamish. The Ursula claim lies on the east side of a ridge that lies between the headwaters of the Mamquam River and Raffuse creek.

Access is by logging road that leaves Highway 99 approximately one-half kilometer south of the turnoff to Squamish. Due to the recent severe recession, no logging is being carried on anywhere in this area at the present time. This reduces the dangers that one has to face when passing though an active logging area, but it also means that the roads are no longer being maintained. Heavy rains in the Squamish area have washed out some bridges and damaged many parts of the road, with the result that access is more difficult than in previous years.

A prospecting report was filed on the Ursula claim two years ago (1980) and was written by the author of this report.

The property is owned by Alpen Exploration Ltd. of Squamish, B.C.

To date, no mineral of economic grade or extent has been found on these claims.

INTRODUCTION

For this report, a total of twenty-five geochemical samples have been analysed. The total includes ten rock samples, seven soil samples and eight silt samples. The results of these geochemical analyses can be found in Appendix C.

A description of each individual sample and the site where it was obtained is included in Appendix E.

In general, silt samples were obtained by using a clean hand and scooping fine material from creek bottoms and sides. If no fine silt was available, then mixed fine and coarse sand, silt and gravel was screened through a home-made plastic screen with five millimeter holes drilled in it. The coarse material was rejected and the fine material that collected in a plastic container below the screen was kept as the sample.

Usually two or more pools in one creek were sampled and mixed in one bag so that the results obtained would be a reasonably true picture of the mineral present in that creek. Standard brown paper sample bags were used to carry the samples. After

INTRODUCTION

the collection of each silt sample had been completed, all tools (including hands) were cleaned to reduce the possibility of contamination between samples.

Soil sampling was done using an ice axe as a digging tool. The ice axe has a good scooping blade that is useful for cutting roots or pulling dirt from a hole. The ice axe also has a long sharp pick that is useful for digging aroung rocks or breaking up sheared rock that the scoop cannot penetrate. Every effort was made to reach "B" level soil. Occasionally, some soil was scraped right off bed rock and so such a sample probably represents a mixing of "B" and "C" level soils.

Once the hole was dug and the appropriate soil loosened, the sample was removed by hand, and placed in a brown paper sample bag. Both the ice axe and the hand were cleaned after each use to reduce contamination between samples. At each sample site, field notes were made and a number was placed on the sample bag and also recorded in the notes.

Rock samples were collected with a standard

INTRODUCTION

geological rock hammer. Fresh, unweathered rock was taken whenever possible. Chip samples were placed in a labelled, brown paper sample bag while larger hand samples were labelled with black marker pen.

All of the sample sites were marked with coloured plastic ribbon, with the sample number written on the ribbon, so that the site can be easily found and re-examined.

Abbreviations frequently used in this report are:

Cu	copper
Pb	lead
Zn	zinc
Mo	molybdenum
Ag	silver
Au	gold
ppm	parts per million
ppb	parts per billion

Element values for Cu, Pb, Zn, Mo and Ag are reported in parts per million. Gold values are reported in parts per billion.

Map #2 shows each sample number in the approximate location where it was collected.

INTRODUCTION

A base line with a direction of 130° was surveyed and samples were taken at 100 meter intervals, or less as warranted. The zero point of the base line is the same as that used for the geochemical survey grid previously reported on the Diddi claim. At the 3800' level, sampling was done at 90° to the base line until a major fork of the main stream was reached. Both branches of the creek were sampled at this point and the north branch was followed and systematically sampled every 100 meters or less. As this creek runs roughly parallel to the base line, the samples form a rectangular "box" with specimens collected at least every 100 meters on the perimeter.

INTERPRETATION

Background values for this area have been defined as:

Cu	100 ppm or less
Pb	50 ppm or less
Zn	100 ppm or less
Mo	5 ppm or less
Ag	0.3 ppm or less
Au	10 ppb or less

Referring to map #2 or appendix C, it is seen that

INTERPRETATION

all the samples collected in this area, contain at least one anomalous value. Most of the samples contain two or more anomalous levels, and some specimens show highly anomalous values of many times the background.

Of the highly anomalous values, #174 looks very interesting. It contains a zinc level of 990 ppm and a gold level of 210 ppb. It was found on an east-west linear flat area that may represent an underlying structure. #179 is a wet soil that is full of black manganese oxides. Some authors consider the presence of these manganese oxides a good indicator of ore nearby and the high levels of copper, lead, zinc and gold in this sample support this possibility. Samples #191 to #193 show increased levels of copper and silver. This mineral is associated with fractured, quartz rich, pyritized, sheared rock. All of these highly anomalous results indicate that more detailed work is required on this claim.

A more minor anomaly possibly requiring follow-up is the grouping of anomalous silver values near the junction of the main creek and its north branch. Samples #186 to #189 form a cluster that may be worthy of further investigation in the future.

INTERPRETATION

Of interest is the fact that nearly all the silts measured in this study are anomalous for copper, but that nearly all the soils are below background levels for copper. Anomalous levels of copper clearly exist in the rock as samples #67, 191, 192, and 193 illustrate. It may be that copper is easily leached from the soil in this area and so appears low in soils and high in silts.

CONCLUSION

The Ursula claim shows anomalous values of metallic minerals in almost all the samples collected. The highly anomalous values of copper, lead, zinc, molybdenum, silver and particularly gold found in this area clearly indicates that further study and investigation is warranted.

CONCLUSION

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

Frank W. Baumann, P.Eng.

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.
- Gold in early Precambrian plutonic rocks; The relation between geochemical abundance and concentration to exploitable levels. by W.J. Wolfe, Econ Geol. 70, No 1 page 253, 1975.
- Semi-Conducting Ore Minerals by R.T. Shuey.
- Introduction to Exploration Geochemistry by A.A. Levinson.
- Handbook of Geochemistry by K.H. Wedepohl et al.
- Ultraviolet Guide to Minerals by Sterling Gleason

APPENDIX A

AUTHOR'S QUALIFICATIONS

Frank W. Baumann, P.Eng.

Mr. Baumann graduated in 1971 from U.B.C. with a B.A.Sc. in Geological Engineering and obtained his P.Eng. in 1973. Prior to graduation, he had spent four summers working with Amax Exploration Inc. and Duval Corp. as a geological field assistant. From 1971 until 1975, he worked for Duval Corporation as an exploration geologist, specializing in the evaluation of mineral deposits. In 1976, he left Duval to do a four month consulting job for the United Nations Development Program in Burma. This job also entailed the evaluation of mineral properties.

Since 1977, Mr. Baumann has been teaching geology and physics at Howe Sound Secondary School in Squamish, as well as doing summer projects in exploration geology. His last major project was in the summer of 1981 when he was the project manager of a program to re-evaluate the Cariboo Gold Quartz mine at Wells, B.C.

Mr. Baumann is the author of numerous private technical reports and has also co-authored a United Nations paper on the Shangalon Porphry Copper Deposit in Burma and a second published paper on the North Fork Copper Deposit in Washington State, U.S.A.

APPENDIX B

ITEMIZED COST STATEMENT

for

URSULA (476) CLAIM

Value of work performed		
K. Mackenzie	1981	
July 31; Aug 4,5(½ day)		
Oct 19,21,23(½day)		
Total	5 days @ $110/day	550.00
D. Hall July 31, 1981		
Total	1 day @ $80/day	80.00
Transportation	Motor vehicle	
30 Km on 4 days	120 Km	
145 Km on 3 days	435 Km	
Total	555 Km @ 24¢/Km	133.20
Laboratory Analysis		
10 rock samples @ $12.55		125.50
7 soil samples @ $10.65		74.55
8 silt samples @ $10.65		85.20
Report Preparation	1982	
K. Mackenzie		
July 16-4 hrs, 17-4 hrs, 18-2 hrs,		
21-10 hrs, 22-6 hrs, 23-4 hrs		
Total	30 hrs @ $13.75/hr.	412.50
Page total		1,460.95

APPENDIX B

ITEMIZED COST STATEMENT

for

URSULA (476) CLAIM

Report Preparation (cont.)	
F. Baumann July 1982	
1 hr @ $16.25/hr	16.25
Maps	25.00
Reproduction	15.00
Miscellaneous	20.00
Previous page total	1,460.95
GRAND TOTAL	1,537.20

APPENDIX C

RESULTS OF GEOCHEMICAL ANALYSES

Sample Number	Type of Sample	Cu ppm	Pb ppm	Zn ppm	Mo ppm	Ag ppm	Au ppb
65	rock	34	12	700		0.2	5
66	rock	38	13	290		0.2	5
67	rock	1,220	31	250		1.0	5
172	soil	92	67	352	4	0.2	5
173	rock	8	39	58	32	0.2	20
174	soil	42	19	990	3	0.2	210
175	rock	35	65	2,070	6	0.2	5
176	soil	51	204	67	2	0.7	5
177	soil	31	32	126	2	0.2	5
178	soil	31	35	247	3	0.2	5
179	soil	271	103	4,100	8	0.2	50
180	silt	112	106	1,030	7	0.2	30
181	silt	93	65	297	6	0.2	5
182	rock	520	21	52	126	0.6	5
183	silt	400	53	1,310	6	0.2	5
186	silt	234	68	310	2	0.4	5
187	silt	207	35	340	2	0.5	5
188	soil	53	38	329	15	1.0	5
189	silt	225	45	400	2	0.5	5
190	silt	164	48	440	2	0.2	5
191	rock	6,400	12	22	32	3.8	30
192	rock	7,650	12	31	5	2.1	5
193	rock	1,840	9	23	3	1.0	5
194	rock	55	11	98	3	0.2	60
195	silt	182	77	563	16	0.4	30

APPENDIX D

ANALYSIS METHODS USED

All the samples analysed in this study were done by the Placer Development Ltd. research lab at 323 Alexander Street, Vancouver, B.C.

ANALYSIS METHODS USED BY PLACER DEVELOPMENT LTD.

Element	Extraction	Method	Size fraction
Cu	C HCL04/HN03	Atomic Absorption	-80
Pb	C HCL04/HN03	A.A. Background correction	-80
Zn	C HCL04/HN03	Atomic Absorption	-80
Mo	C HCL04/HN03	Atomic Absorption	-80
Ag	C HCL04/HN03	A.A. Background correction	-80
Au	C HBR/BR	A.A. Solvent extract	-80

DESCRIPTION OF ANALYSED SAMPLES AND SITES

Sample Number	Description
65	This rock sample consists of a light brown coloured rhyodacite with some pyrite and small flecks of sphalerite. It was found while surveying the base line for a geochemical grid. The base line direction is 130°. The sample was found in outcrop at the 1,400 meter level.
66	A rock sample taken from an outcrop of greenish rhyodacite that contained chalcopyrite, pyrite, and sphalerite. It was found at elevation 1,340 meters on the base line. The geochemistry reported for this sample does not confirm what was seen in the field and it is possible that sample 66 and 67 have been transposed.
67	This rock sample was found in outcrop at the 1,190 meter level on the base line. It is fractured sheared quartz diorite that appeared to contain some sphalerite, but no copper minerals. The geochemistry reported for this sample may really have been for the previous sample (66).

Sample Number	Description
172	This soil sample was found 100 meters east of the zero point on the base line. It is dry soil, exposed on a hill side, "B" level from twenty centimeters deep. It is found near some outcrops of greenish rhyodacite with 0.5% pyrite. There is a linear depression nearby that has the bearing 170°.
173	This rock sample was collected 200 meters east on the base line. No soil was available here as the organics were growing directly on the rock. A chip sample of the whitish, silicious rhyodacite which contained 5% pyrite was taken.
174	Dry "B" level soil, thirty centimeters deep on a linear flat that has a direction of 260°.

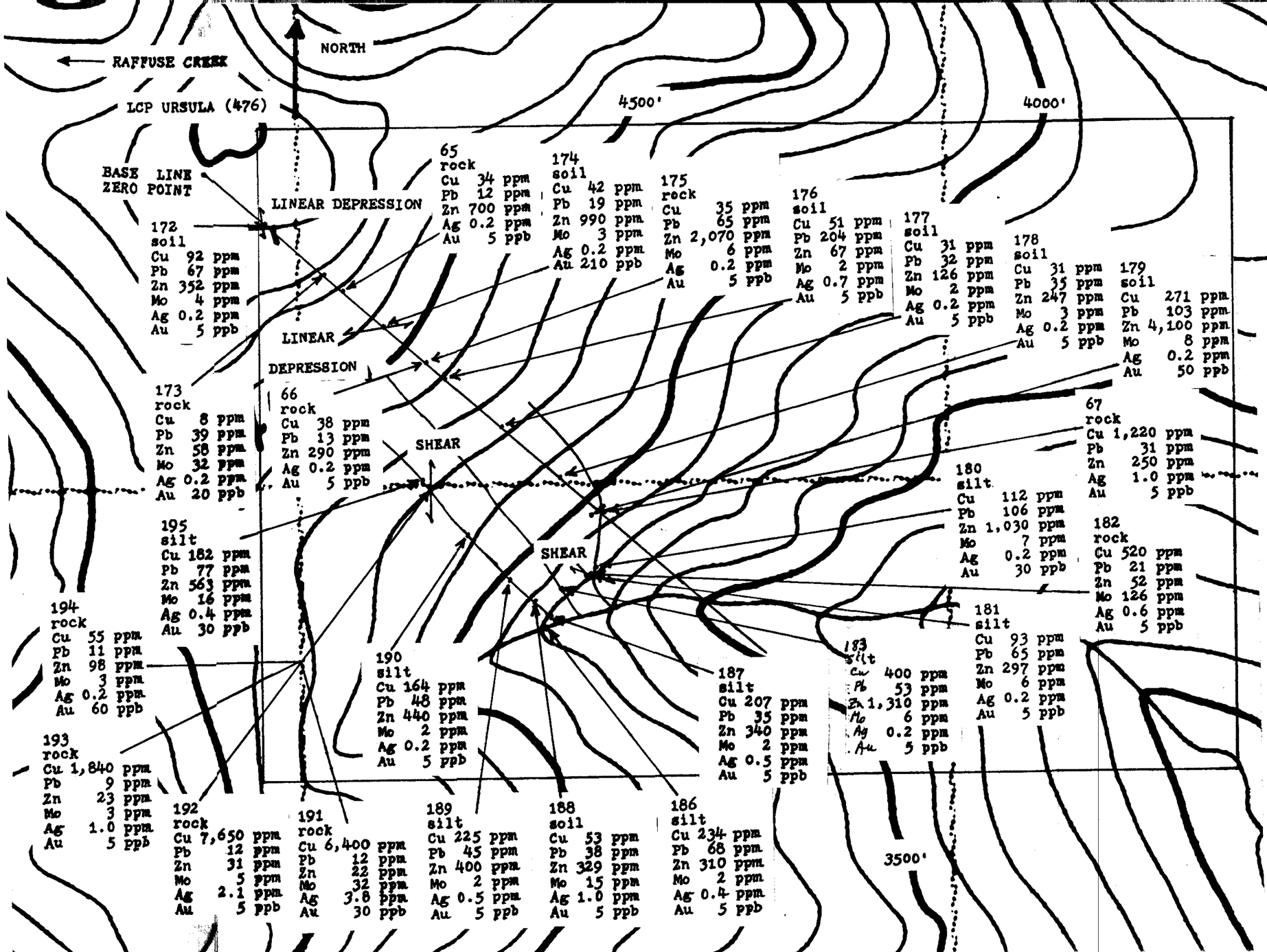
Sample Number	Description
175	A rock sample taken near the site of 66. The rock is a green altered rhyodacite with pyrite, sphalerite and chalcopyrite. It was found at 372 meters east on the base line at elevation 1,325 meters.
176	Dry soil, "B" level; thirty centimeters deep. Nearby outcrop green rhyodacites with up to 5% pyrite. East 400 meters.
177	Dry soil, "B" level thirty centimeters deep. No outcrop nearby, 520 meters east on the baseline.
178	Dry soil, "B" level, thirty centimeters deep. Soil is a rich brown-yellow. Nearby outcrop is sheared pyritic quartz diorite. East 600 meters along the base line.
179	At the site of previous sample #67. This is a soil sample obtained by digging into a steep wet hillside in a shear zone. This sample was uncovered by digging down to bedrock and it contained considerable black manganese oxide material.

Sample Number	Description
180	This silt sample was taken from a small stream that drains the sheared rock of sample #179. This stream is a small surface flow only until it reaches the region of #179 where it abruptly changes direction from east flowing to south flowing and forms a steep sided canyon about ten meters high. The rock in this area is fractured, sheared quartz diorite, that contains pyrite and chlorite.
181	A silt sample taken from a small surface stream that drains into #180 from the west.
182	The rock in this area is severely sheared and contained pyrite and flecks of another unidentifiable mineral. The shear direction is 290°. with a dip of 45°north. Scattered quartz veins are also present here.
183	This silt sample was taken from the next major east flowing stream to the south of #182.

Sample Number	Description
183	The source of this stream is in an avalanche slope close to where sample #174 was collected.
186	A silt sample taken from the main creek just above its junction with a major branch to the north.
187	A silt sample taken from the major branch to the north, just above the junction with the main creek. This side stream cuts mainly quartz diorite and has formed a canyon up to ten meters deep.
188	This soil sample was taken from the north bank of the creek, fifty meters upstream from #187. The soil was wet, rusty coloured, "B" level, from fifteen centimeters deep.
189	Silt from the same creek, one hundred meters upstream from #187.

Sample Number	Description
190	A silt sample from the same major branch of the main creek, one hundred meters upstream from #189. The rock in this area is quartz diorite, fractured and containing pyrite.
191	This rock sample was taken eighty meters upstream from #190. The rock here is fractured, sheared, quartz rich (similar to rhyolite) and contains pyrite and chalcopyrite. The shear direction is 180° and dips 80° west.
192	A similar rock sample found three meters upstream from #191.
193	Oxidized rock from the same shear zone two meters upstream from the previous sample. Pyrite and malachite staining was present in this rock.
194	A rock sample taken from solid quartz diorite three meters upstream from #193. This sample was clearly beyond the mineralized zone.

Sample Number	Description
195	A silt sample taken from above the waterfall that bounds the mineralized zone described in samples #191 to #194. This sample is one hundred meters upstream from #190. This stream, if followed leads to the place that sample #221 (prospecting report Ursula claim) was previously reported.



10,601

LEGEND

MAP #2

Geochemical report

on the

Ursula (476) claim

Scale 1:5000 Meters

100 0 100 200 300

Contour interval 100 feet

Cu = copper

Pb = lead

Zn = zinc

Mo = molybdenum

Ag = silver

Au = gold

ppm = parts per million

ppb = parts per billion

174 = sample number

= any linear structure

Ken Mackenzie. Frank W. Baumann