

1983 GEOCHEMICAL REPORT

M M 100 CLAIM GROUP

SKEENA MINING DIVISION

NTS 104 A/4 W

Lat. 59 01 N

Long. 129 55 W

Owner: Kingdom Resources Ltd.

Operator: Kingdom Resources Ltd.

Consultant: C. R. Harris, P.Eng.

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,915

Report Prepared By;



C. R. Harris, P.Eng.

November 15, 1983

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8	" " " " Zn. "
9	" " " " Ag. "

INTRODUCTION

During the period August 6 to September 9, 1983, Kingdom Resources carried out geochemical and geological investigations along with considerable trenching on their M.M. 100 Claim near Stewart, B. C. Five men were employed under the direct supervision of the writer.

The soil sampling was performed to confirm and more closely define several anomolous zones discovered in 1981. This report describes only the soil geochemical program.

The Stewart area experienced record rainfall during the program making helicopter scheduling impossible and seriously impeding the progress of work as well as adding considerably to the costs.

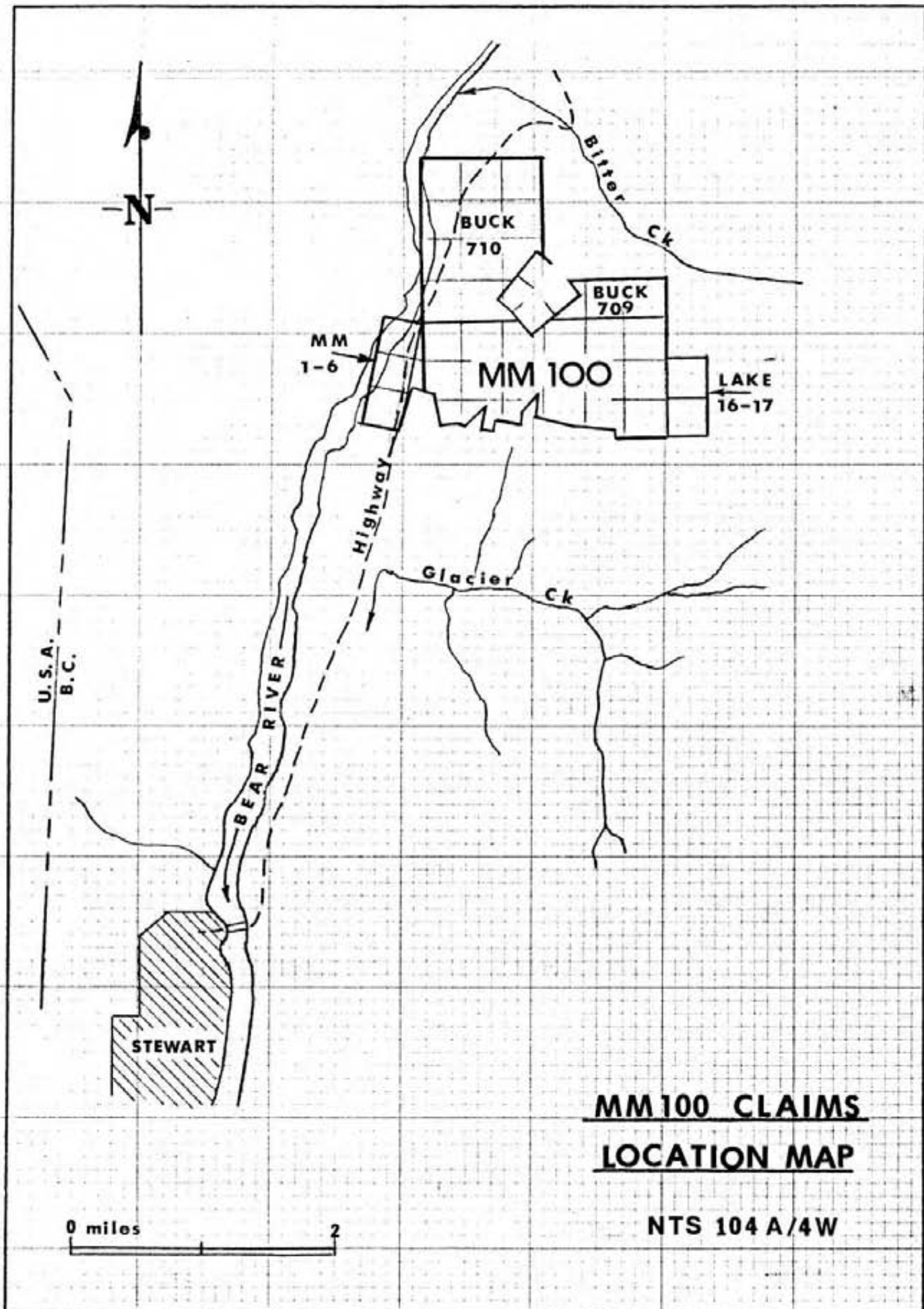
LOCATION & ACCESS

The M.M. 100 group of claims is located about nine kilometers north of Stewart, B. C., between Glacier and Bitter Creeks to the east of Bear River as shown on Figure 1.

Access to the central and eastern portions of the group is by helicopter only although suitable landing areas are not plentiful. The lower western portion can be reached from the Stewart highway but only one trail exists at present.

PHYSICAL FEATURES

The MM 100 claim group lies on the hillside east of Bear River and ranges in elevation from 200' near the highway to 3000' along the eastern boundary. East of Victoria Creek, several small lakes and open swampy areas occur but in general the claims are heavily timbered with



MM 100 CLAIMS
LOCATION MAP

NTS 104 A/4W

first growth trees to 4' diameter and a thick tangle of underbrush.

Water is generally available from lakes, creeks and swamps but could be a problem during dry years. Outcrops are scarce except in and along creeks and steeper slopes. The creeks are deeply incised with numerous waterfalls and dangerous sections.

PROPERTY

The M.M. 100 Claim Group consists of the following located claims:

M.M. 100	Rec.# 1594	M.M. #1 Fr.	Rec.# 3314
Buck 709	" 3138	#2	" 3311
Buck 710	" 3170	#3	" 3312
Lake 16	" 3139	#4 Fr.	" 3315
Lake 17	" 3140	#5	" 3313
		#6 Fr.	" 3316

The group totals 35 units and 6 claims or fractions.

The property is presently owned by Kingdom Resources Ltd., and is currently in good standing.

HISTORY

Several old prospects exist on the claim group dating from as early as 1908. Considerable work was done along Victoria Creek in 1911 but for the most part serious exploration and development did not take place until the 1920s when the Tye, Mayflower, Victoria, Silver Ledge and Emperor were worked. However, because of the heavy overburden and lack of outcrop, work was confined to water courses where outcropping quartz veins could be easily developed.

No previous work is known to have been done to the east of Victoria Creek which is the main subject area of this report.

ECONOMIC ASSESSMENT

The M.M. 100 Claim Group is of economic interest for the known occurrences of gold and silver bearing sulphide mineralization in veins of the old Tyee, Mayflower, Victoria, Silver Ledge and Emperor prospects as well as the possibilities of additional hidden veins indicated by soil sampling.

The property is favorably located being close to Stewart, at a reasonable elevation and not subject to avalanche or ice movement. Both the known veins, partly developed by old adits, as well as the several geochemically inferred veins are worthy of further exploration and possible development.

GEOLOGICAL SETTING

The M.M. 100 claims extend over three major rock units mapped by Grove as the Hyder quartz-monzonite stock along the western edge, then Hazelton fragmental volcanics followed by Bowser sediments over the eastern portion. Grove (1971) provides a detailed description of the rock units and regional geology.

The major feature on the claims is the northern extension of the so-called Portland Canal Shear Zone along which one producing mine and numerous prospects were located south of the claims. The Victoria and Silver Ledge prospects appear to be on the west or hanging wall of this zone while the main sample area of this report appears to cover the central and eastern portions of the Shear Zone. The known veins are complex quartz-carbonate-breccias usually associated with dykes. The veins strike north-south and dip west at 50 - 60 degrees.

The Tyee showing is a highly pyritized shear with some silicification in the Hyder Intrusive. The Mayflower Creek prospects occur along a silicified shear in Hazelton volcanics striking easterly from the Intrusive contact. Sulphide bearing quartz veins and shears branch from or intersect the main shear in the creek.

SAMPLING & ASSAY PROCEDURES

All samples were taken from the B horizon using either hand auger or test pits. Depth of sampling ranged from about 1 foot to as much as four feet in mossy ground. Samples were taken by Mr. Eric Becker, an experienced sampler. Samples were analyzed by Min-En Laboratories of North Vancouver by screening through 80 mesh followed by total acid digestion and atomic absorption analysis. Results are shown on Appendix II.

Prior to plotting the assays it was decided to compare a number of 1981 assays done by Can-Test with assays of the same sample rejects as done by Min-En in 1983. A total of 28 pulps were sent for check assay. The original and check results are shown on Appendix I.

It was immediately apparent that while the copper values were comparable, the lead, zinc and silver results were quite different. However, statistical tests showed that the differences were proportional to the assay values therefore the 1983 lead, zinc and silver assays were multiplied by factors of 0.652, 1.747 and 0.359 respectively. The new distributions obtained were then tested for equality of variance and means using standard F and Student t statistical tests for each metal. The unadjusted copper and the adjusted zinc distributions were found to have no significant differences in variance or mean at the 95% confidence level. The lead and silver distributions were found to have a lesser but still acceptable confidence level for the equality of variance but a 95% level for the means. The unadjusted copper and the adjusted lead, zinc and silver assays were then accepted for analysis with the 1981 data.

Figures 2,3,4 & 5 combine the 1981 and 1983 sample data for the Victoria Creek area and figures 6,7,8 & 9 the data for the Mayflower Creek sampling.

SUMMARY OF WORK

Following the establishment of a base camp on August 6 a total of 5.5 km of new lines were laid out from the 1981 base-line east of Victoria Creek. Sample stations were established every 50 metres. In addition to the new 1S, 3S, 5S, 7S & 8S lines, some of the old lines were extended. A total of 110 samples were taken east of Victoria Creek.

On the completion of the above the camp was moved to the Bear River flats and additional sampling done in the Mayflower Creek area. At this location 1.3 km of new lines were cut and 28 soil samples taken.

DISCUSSION

For the Victoria Creek section the copper and zinc assay contouring show practically identical patterns with several northeast trending anomalous highs. The lead contouring, probably due to the very narrow range of values, does not develop the same strong pattern for the northeastern portion of the sample area but does tend to confirm the copper and zinc anomalies for the western and southern parts. The silver data, because of the generally low values and range, could not be sensibly contoured but many of the higher values obtained coincide with the copper and zinc highs.

The contour intervals were chosen after calculating the means of the assay distributions with the lowest contour plotted being very nearly the mean and therefore considered the lowest significant value. Twice these values are considered highly significant.

For the Mayflower Creek area contouring was not attempted as still more data is required. However, copper, zinc and lead show distinct similarities and NNW trending veins may be indicated which confirms observations made while trenching and mapping along Mayflower Creek.

The 1983 Victoria Creek soil sampling confirm and better define the anomolous zones found during 1981 and show that several very worthwhile exploration targets exist to the east of Victoria Creek. Because of the lack of road access, trenching is not feasible therefore the most effective method of further prospecting is by a series of diamond drill holes across the strongest anomolies.

The Mayflower Creek section has not been completely sampled but the indicated NNW extension of the veins of #3 adit should be tested by short hole diamond drilling.

COST STATEMENT

The work done by Kingdom Resources during 1983 on the MM 100 claim was comprised of geochemical, geological and physical work. On the following detailed cost statement the writer has apportioned the total costs to the various types of work on the basis of time spent and a personal knowlege of the various costs incurred

COST STATEMENTMM 100 PROJECT

<u>Jul. 30 - Sep. 9, 1983</u>	<u>Geoch.</u>	<u>Phys.</u>	<u>Geolog.</u>	<u>Total</u>
<u>Wages</u>				
E. Becker, Prospector 20 da @ 120	2,400			2,400
D. Boyte, Prospector 23 da @ 110	440	2,090		2,530
D. Harris, labor 25 da @ 110	440	2,310		2,750
M. Harris, student 26 da @ 100	1,400	1,200		2,600
E. Smith, helper 13 da @ 110	1,430			1,430
<u>Engineering & Supervision</u>				
C. R. Harris, P.Eng. 27 @ 160	1,600	2,400	320	4,320
P. W. Green, P.Eng. 4½ @ 200			900	900
<u>Transp. Mob & De-mob</u>				
Truck Rental 30 @ 30	500	400		900
Gas, oil, repairs	200	160		360
Air Fares, E. Becker, D. Harris	300	100		400
Travel, meals & Accom.	300	200		500
Helicopter Support	4,050			4,050
<u>Camp Costs & Accom.</u>				
Stewart meals & accom.	780	1,000	200	1,980
Camp food & supplies	800	710	100	1,610
Camp expendibles, lumber, fuel etc.	1,000	850		1,850
Camp equipment rentals	500	400		900
Drill rental, powder, fuse		600		600
<u>Assay</u>				
Geochem samples 138	1,240			1,240
Fock samples 75			1,340	1,340
<u>Preparation of Reports</u>				
C.R.Harris, P.Eng.	400		300	700
	<u>400</u>	<u>12,420</u>	<u>3,560</u>	<u>33,160</u>
	\$ 17,780	12,420	3,560	33,160

Revised
April 25
[Signature]

C.R. Harris, P.Eng.,
2709 Wembley Drive
North Vancouver, B.C.
V7J 3B7

CERTIFICATE

I, Charles R. Harris, of 2709 Wembley Drive, North Vancouver, B. C., hereby certify that:

1. I am a graduate of the University of British Columbia with a degree of Bachelor of Applied Science in Mining Engineering.
2. I am a registered member, in good standing, of the Association of Professional Engineers of B.C.
3. I have been practicing my profession continuously for the past eighteen years.



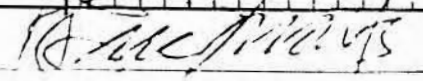
C. R. Harris, P.Eng.
November 15, 1983

ATTENTION: _____

Sample Number	Mg ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	1981 ASSAY				70	75	80
									Cu.	Pb.	Zn.	Ag.			
B.L.O.+0.0		57	29	145			26		50	27	290	1.5	(40 mesh)		
B.L.O. 5E		18	23	35			45		28	39	70	14.3	(40 mesh)		
0.5E Dup.		50	27	69			14						(40 mesh)		
1.0ME		61	33	77			17		58	24	123	.5	(40 mesh)		
1.5ME		82	52	91			34		88	56	157	.9	(40 mesh)		
2.0		53	38	58			28		43	21	100	.6	(40 mesh)		
2.5		16	23	14			09		18	11	24	.3	(40 mesh)		
3.0		34	39	58			26		46	24	160	.8	(40 mesh)		
3.5		18	21	17			13		17	15	34	.5	(40 mesh)		
4.0		126	24	32			15		6	3	39	.2	(40 mesh)		
4.5		20	17	32			12		15	11	43	.5	(40 mesh)		
5.0		11	8	16			11		7	7	20	.3	(40 mesh)		
5.5		219	27	53			14		190	17	75	.5	(40 mesh)		
6.0		330	41	60			58		311	24	97	1.4	(40 mesh)		
6.5		28	34	53			09		33	14	110	.3	(40 mesh)		
7.0		48	29	115			14		47	11	207	.3	(40 mesh)		
7.5		11	12	16			10		9	6	21	.3	(40 mesh)		
8.0		9	11	15			06		6	7	20	.3	(40 mesh)		
8.5		6	4	10			12		6	7	13	.5	(40 mesh)		
B.L.9.0ME		17	8	18			10		9	11	34	.6	(40 mesh)		
2.5N4.0E		45	34	193			00		76	17	356	.3	(40 mesh)		
4.5		63	38	106			07		88	16	213	.2	(40 mesh)		
5.0		33	35	68			09		45	16	91	.3	(40 mesh)		
5.5		45	37	105			06		58	24	197	.3	(40 mesh)		
6.0		28	40	79			06		32	17	145	.9	(40 mesh)		
6.5		60	36	99			06		76	17	179	.3	(40 mesh)		
7.0		39	31	67			15		36	7	75	.5	(40 mesh)		
2.5N7.5E		62	28	46			17		55	9	63	.9	(40 mesh)		

MM 100 GEOCHEMISTRY
 1981/83 ASSAY COMPARISONS

APPENDIX I

CERTIFIED BY 

COMPAN

Kingdom Resources

GEOCHEMICAL ANALYSIS DATA SHEET

No. 3-877

PROJECT No.: _____

MIN - EN Laboratories Ltd.

DATE: Sept. 1

705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

1983.

ATTENTION:

Sample Number	6 ppm	10 ppm	15 ppm	20 ppm	25 ppm	30 ppm	35 ppm	40 ppm	45 ppm	50 ppb	55 ppm	60 ppm	65 ppb	70	75	80
L1S0.0W			52	34	71			1.8								
0.5			7	16	13			0.9								
1.0			13	13	24			1.2								
1.5			43	40	61			1.6								
L1S2.0W			41	31	86			1.3								
L3S0.5W			38	38	41			1.2								
1.0			39	29	54			0.9								
1.5			8	10	13			0.6								
2.0			81	32	56			1.7								
L3S2.5W			79	36	131			1.8								
L5S0.5W			34	20	36			0.8								
1.0			62	24	25			1.1								
1.5			58	52	31			2.3								
2.0			99	40	39			1.6								
2.5			66	47	63			1.6								
3.0			35	27	65			0.9								
L5S3.5W			8	20	17			0.8								
L4S2.0W			58	42	34			1.2								
2.5			73	29	166			0.9								
3.0			29	25	47			0.6								
L4S3.5W			45	56	25			2.0								
L1S0.5E			15	10	17			0.7								
1.0			229	21	143			1.0								
1.5			38	33	57			2.4								
2.0			55	29	108			1.3								
2.5			24	27	35			1.0								
3.0			44	44	99			1.1								
3.5			43	49	54			1.0								
4.0			39	32	48			1.0								
L1S4.5E			51	39	55			1.3								

MM 100 SOILS

APPENDIX II 1/5

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PROJECT No.: _____

MIN - EN Laboratories Ltd.

DATE: Sept

705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2

1983

PHONE (604) 980-5814

ATTENTION:

Sample Number	% %m	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb			
81	86	90	95	100	105	110	115	120	125	130	135	140	145	150	155
L1S5.0E		133	42	73			12								
5.5		37	40	64			14								
6.0		18	22	21			12								
6.5		31	32	46			10								
7.0		30	39	55			11								
7.5		39	35	58			12								
L1S8.0E		27	33	38			14								
L6S2.0W		109	47	32			14								
2.5		63	39	52			10								
3.0		17	40	23			05								
3.5		11	31	15			04								
L6S4.0W		5	14	11			04								
L8S0.5W		39	32	49			10								
1.0		44	33	53			11								
1.5		31	31	34			09								
2.0		3	9	8			02								
2.5		80	28	49			09								
3.0		77	66	69			10								
3.5		26	22	25			13								
4.0		25	50	55			19								
4.5		63	39	70			16								
L8S5.0W		8	16	12			02								
L5S0.0E		44	32	44			14								
0.5		25	28	105			13								
1.0		60	42	46			15								
1.5		54	33	39			15								
2.0		30	31	41			11								
2.5		11	24	22			04								
3.0		48	35	57			13								
L5S3.5E		43	39	124			12								

MM 100 SOILS
APPENDIX II 2/5

PROJECT No.: _____

MIN - EN Laboratories Ltd.

DATE: Sept. 1

705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2

PHONE (604) 980 5814

1983.

ATTENTION: _____

6	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80
Sample Number	As ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb			
81	86	90	95	100	105	110	115	120	125	130	135	140	145	150	160
L5S4.0E		4.2	2.4	3.8			2.6								
L3S0.0E		3.3	2.9	4.7			1.1								
0.5		3.6	5.7	7.4			1.3								
1.0		3.4	3.6	5.5			4.3								
1.5		2.1	2.4	3.4			1.5								
2.0		4.7	5.1	9.3			6.8								
2.5		4.0	3.8	5.0			1.8								
3.5		4.4	3.0	6.3			1.4								
4.0		14.9	3.6	21.8			1.0								
4.5		4.6	4.0	6.4			2.2								
5.0		4.6	4.8	5.2			3.5								
5.5		2.6	3.4	4.8			1.6								
L3S6.0E		4.4	3.8	5.8			1.6								
L7S0.0W		1.7	2.6	1.5			1.0								
0.5		8.9	2.7	6.6			1.5								
1.0		9.8	3.5	7.0			1.3								
1.5		7.0	3.1	3.4			1.7								
2.0		3.8	2.5	4.3			1.1								
2.5		3.3	2.8	2.0			1.4								
3.0		2.8	4.1	5.1			1.6								
3.5		3.2	3.9	4.3			1.3								
4.0		7.1	4.3	26.7			0.5								
4.5		5.2	3.5	8.2			1.9								
L7S5.0W		1.7	5.0	3.4			1.3								
L8S0.0E		11.5	3.2	13.5			1.5								
0.5		5.7	4.1	8.8			1.8								
1.0		5.0	3.4	5.3			1.2								
1.5		14.7	2.8	13.0			1.0								
2.0		5.2	3.2	5.2			0.9								
L8S2.5E		13.3	3.6	5.9			1.6								

APPENDIX II 3/5
MM 100 SOILS

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PROJECT No: _____

MIN - EN Laboratories Ltd.

DATE: Sept. 1

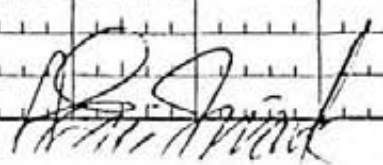
705 WEST 15th ST. NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

1983.

ATTENTION: _____

Sample Number	86	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160
	Ni ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb				
L8S3.0E		67	32	69			1.2									
3.5		69	29	32			2.2									
4.0		71	42	119			1.1									
L8S4.5E		128	50	290			1.7									
L7.75S5.0E		87	49	77			1.4									
5.5		77	29	343			1.5									
L7.75S6.0E		45	28	115			3.3									
L7S0.5E		61	32	76			1.4									
1.0		58	29	43			1.3									
1.5		141	31	175			1.9									
2.0		117	38	107			1.3									
2.5		103	43	121			1.7									
3.0		104	47	223			1.8									
3.5		45	34	61			1.1									
4.0		35	35	51			1.2									
4.5		58	34	74			1.0									
L7S5.0E		44	38	77			1.0									
HB2		16	27	22			0.9									
HB3		27	32	66			1.4									
HB5		32	30	54			1.8									
							.									
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APPENDIX II 4/5
MM 100 SOILS



GEOCHEMICAL ANALYSIS DATA SHEET

PROJECT No.:

MIN-EN Laboratories Ltd

DATE: Sept.

ATTENTION:

705 WEST 15TH ST. TORONTO, ONT.

M7M LTD

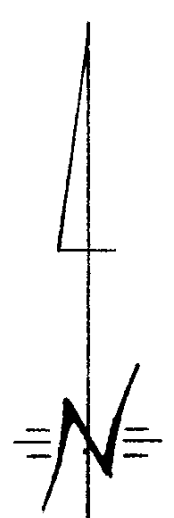
1983

Sample Number	% Zn	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb				
81	86	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160
T1N+0.	0.0	4	13	19			05									
0.	5	36	195	344			24									
1.	25	4	14	89			04									
1.	5	19	56	290			26									
2.	0	1	23	17			03									
T1N+2.	5	13	50	204			08									
T1S+0.	5	11	16	148			06									
T1S+1.	0	2	11	13			03									
FC1		17	15	24			03									
T2N+0.	0.0	87	190	1815			37									
0.	5	35	86	437			16									(40 mesh)
1.	0	50	53	388			12									
1.	5	21	37	25			03									
T2N+2.	0	1	11	12			02									
T2S+0.	5	4	15	176			03									
1.	0	13	36	60			10									
1.	5	1	13	13			03									
T2S+2.	0	15	60	72			16									
T3N+.	25	22	59	119			40									
0.	5	13	38	445			11									
1.	0	33	85	259			21									
1.	5	5	19	15			04									
2.	0	12	23	44			03									
T3N+2.	5	7	34	25			05									
T3S+0.	5	32	64	449			27									
1.	0	9	18	32			13									
1.	5	21	51	133			12									
T3S+2.	0	1	13	18			06									

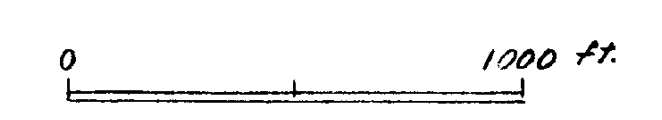
MM 100 SOILS
APPENDIX II 5/5

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11,915



SCALE 1 : 5000



LEGEND

- 121 1981 Assay
- 121 / 131 1983 Assay as assayed

- Claim Post
- x Adit
- Claim Boundary

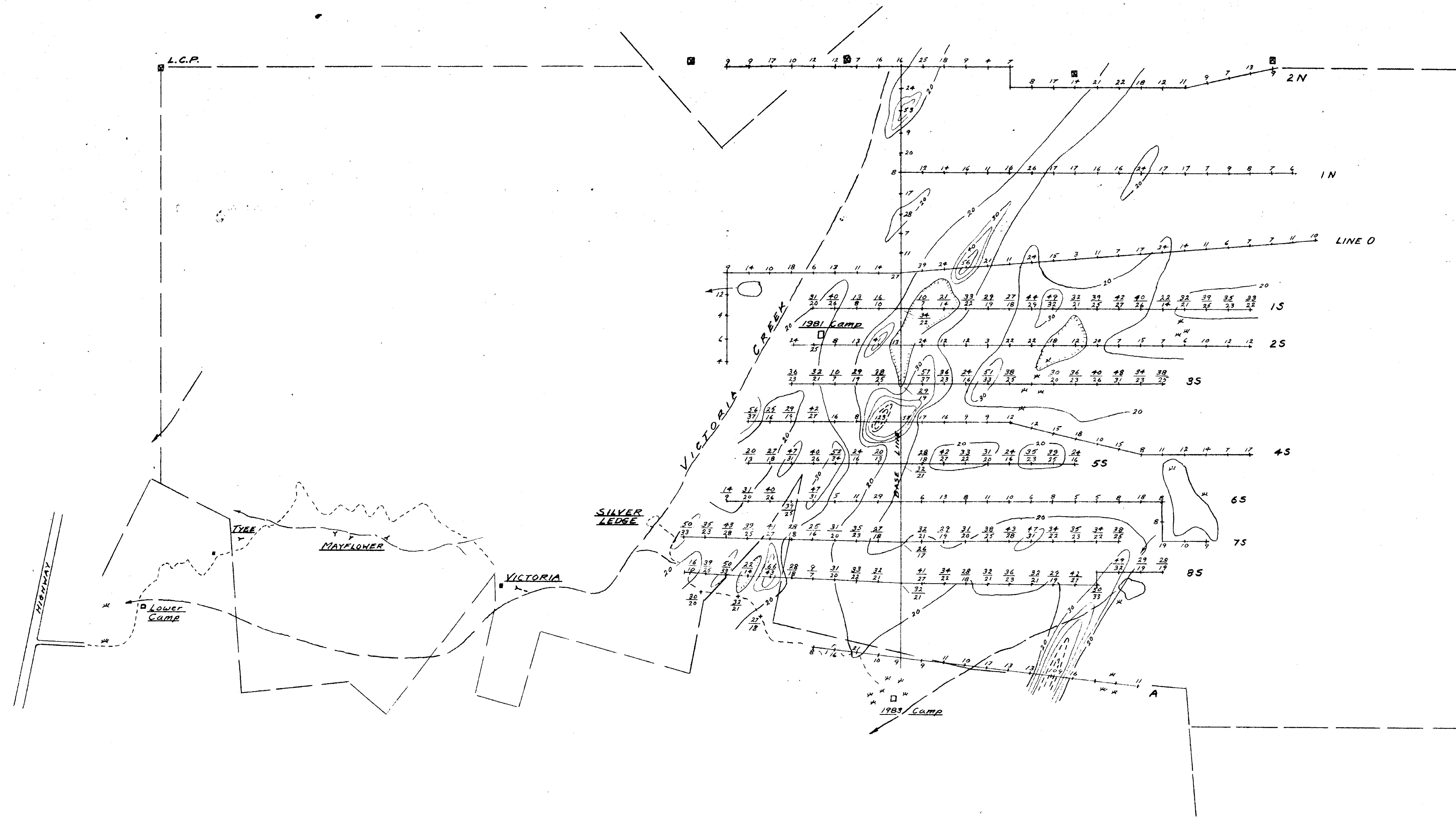
- Contours
- 40, 60, 80, 100 ppm
 - - - 200, 300, 400 ppm

MM100 CLAIM.

SOIL SAMPLING

VICTORIA CREEK EAST

COPPER - ppm



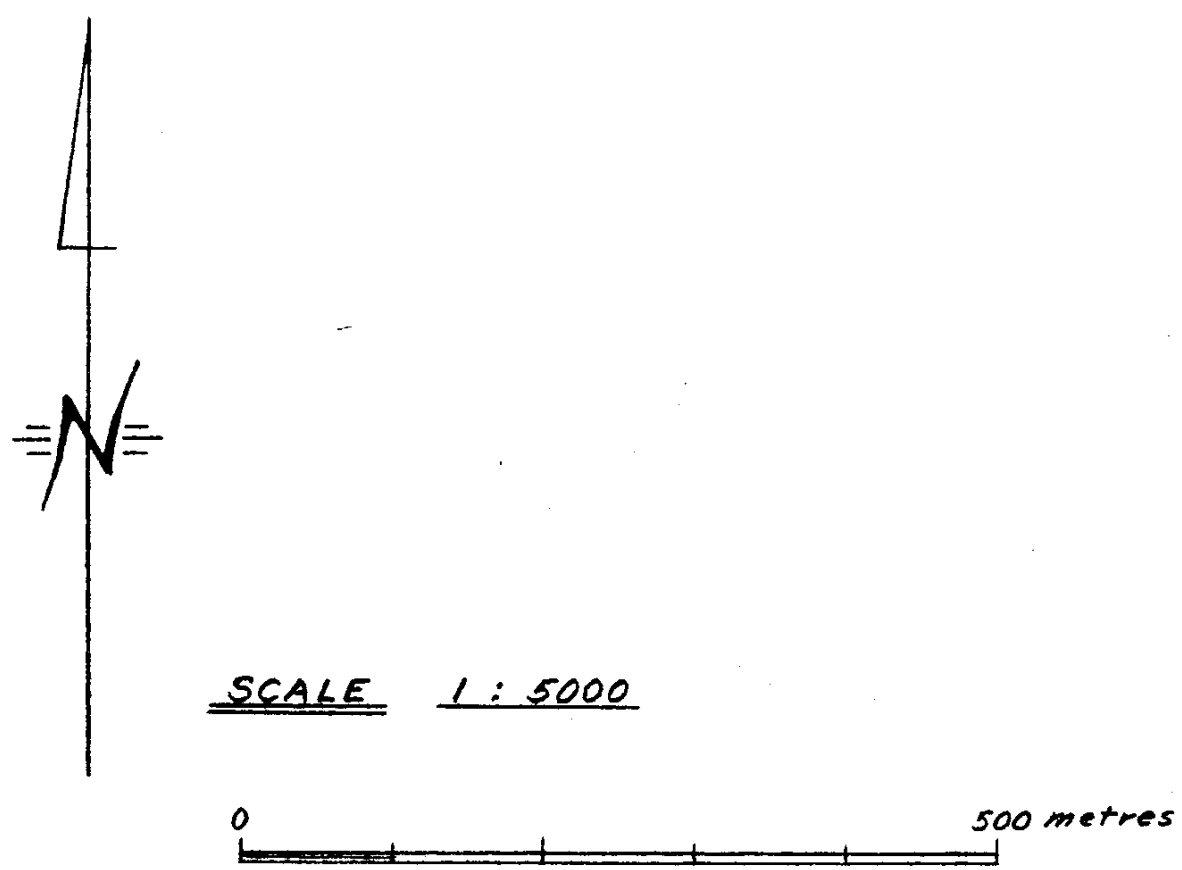
LEGEND

121 1981 Assay
 121/131 1983 Assay as assayed
 131 corrected

☒ Claim Post
 - - - Adit
 - - - Claim Boundary

Contours
 — 20, 30, 40, 50 ppm
 - - - 75, 100 ppm

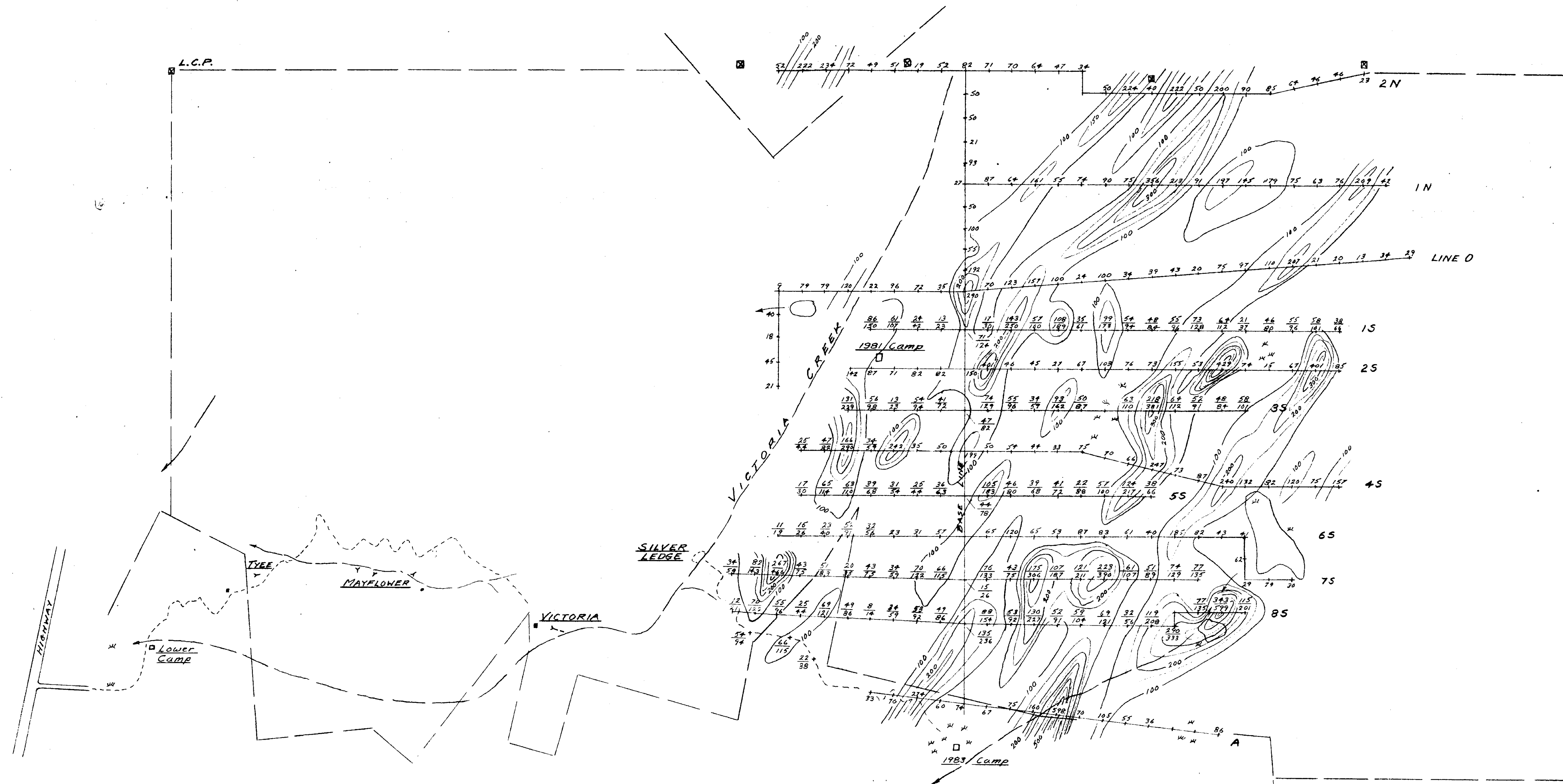
MM100 CLAIM
SOIL SAMPLING
VICTORIA CREEK EAST
LEAD - ppm



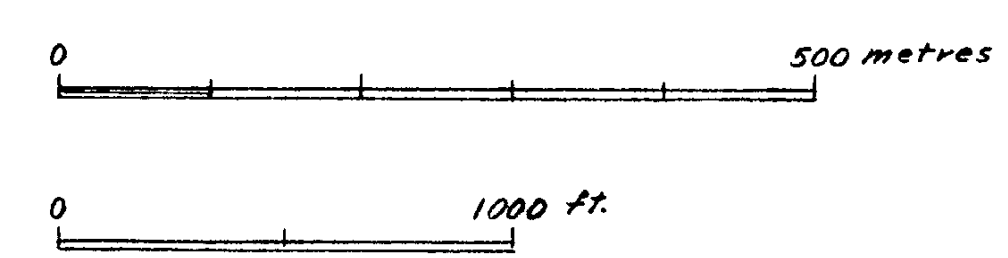
SCALE 1 : 5000

GEOLOGICAL BRANCH
 ASSESSMENT REPORT

11,915



SCALE 1:5000



LEGEND

- 121 1981 Assay
- 151 1983 Assay as assayed
- 151 1983 Assay corrected
- ☒ Claim Post
- - - Adit
- Claim Boundary

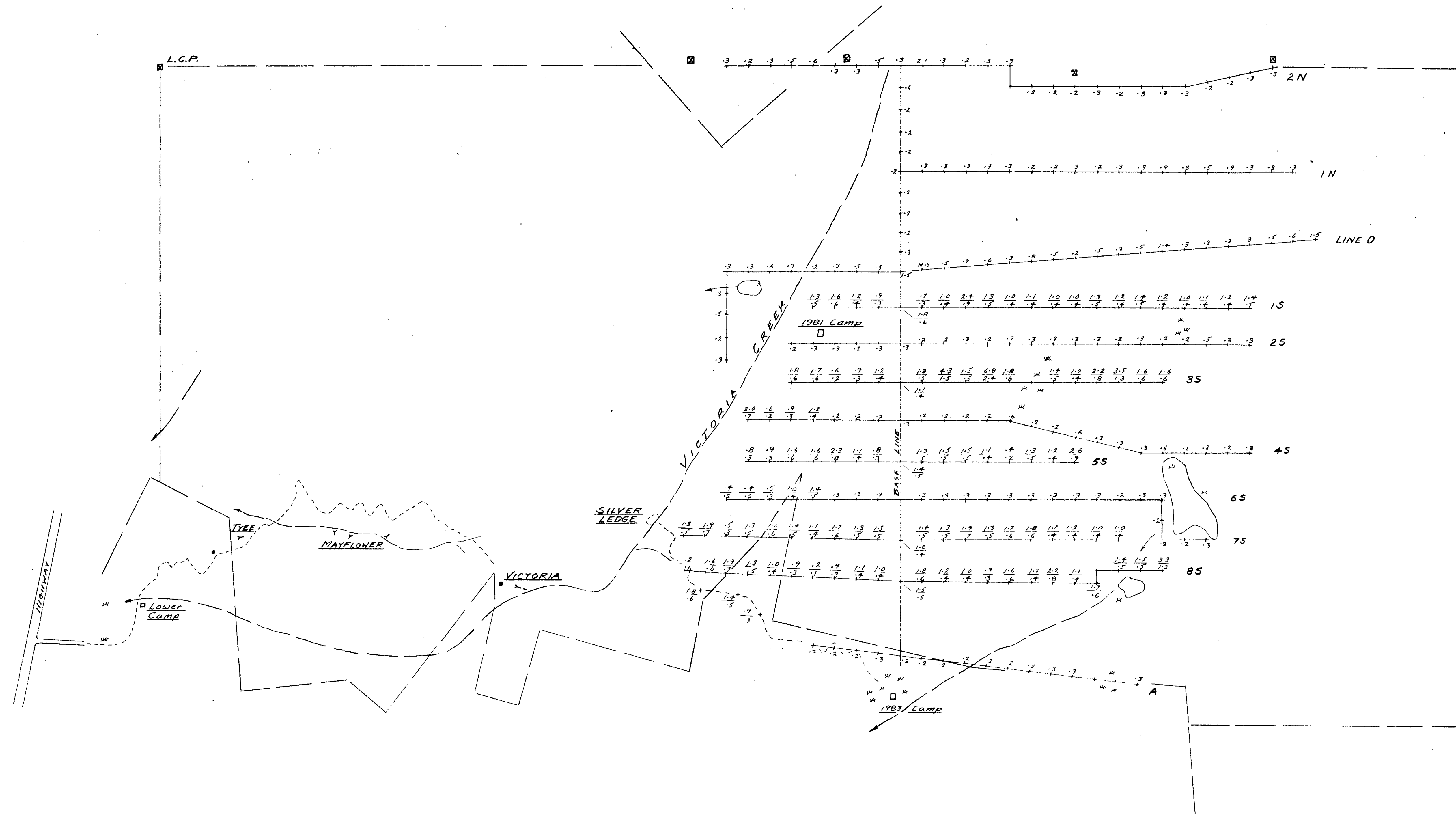
MM100 CLAIM

SOIL SAMPLING

VICTORIA CREEK EAST

ZINC - ppm

11.915



LEGEND

- 12/ 1981 Assay
- 12/ 1983 Assay *as assayed*
- 13/ 1983 Assay *corrected*
- ☒ Claim Post
- - Adit
- - - Claim Boundary

MM100 CLAIM
SOIL SAMPLING
VICTORIA CREEK EAST
SILVER - ppm

FIGURE 6

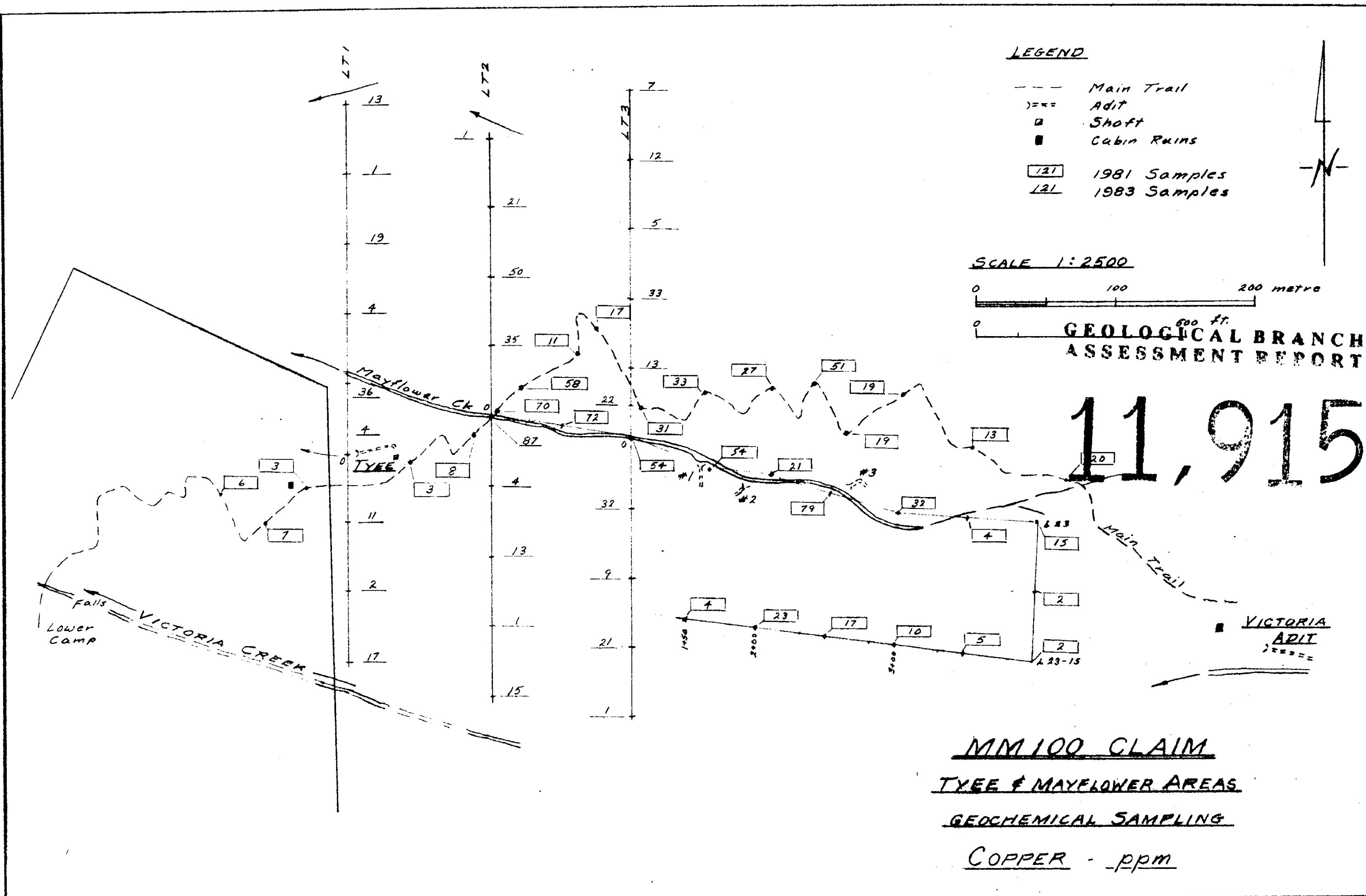


FIGURE 7

