

Soil Map - BC. ~~MEIP~~ MEIP

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PROPERTY FILE
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001977

SOIL GEOCHEMISTRY
ALTOONA MINE
SLOCAN MINING DIVISION
B. C.
L.B. GOLDSMITH, P. ENG.
CONSULTING GEOLOGIST
JANUARY, 1979

82F/14E

SOIL GEOCHEMISTRY
ALTOONA MINE
ALTOONA AND BOWKNOT CLAIMS
SLOCAN MINING DIVISION
NTS SHEET 82F/14E
LAT. $49^{\circ}59'30''\text{N}$, LONG. $117^{\circ}14'30''\text{W}$
SANDON, B. C.

PREPARED FOR
HALLMAC MINES LTD(NPL)
OWNER AND OPERATOR

BY
L.B. GOLDSMITH, P. ENG.
CONSULTING GEOLOGIST
JANUARY 14, 1979

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SOIL GEOCHEMISTRY
ALTOONA MINE

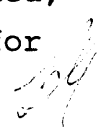
SUMMARY

Anomalous lead, zinc, and silver values on line 12+00W between 6+50N and 9+00N are believed to be the surface expression of the lode zone exposed in the underground workings. An isolated anomalous lead value at 12+00W, 3+00N is not explained by proximity to known mineralization. Trenching with a bulldozer is recommended.

High values in the stream valley and slide area parallel to and south of the base line are considered, at this time, to have originated from mineralization in place farther up the slope to the east and south.

The Majestic and Unexpected Crown Grants should be acquired and six units staked to provide adequate ground for exploration. Soil geochemistry should continue up-slope with grid lines being run off the extension of the current baseline.

A budget of \$22,770.00 for the next phase of staking, geochemical sampling, and trenching is recommended, with an additional provisional budget of \$50,600.00 for diamond drilling, if warranted.



OUTLINE OF PROPOSED STAKING,
6 UNITS, EACH 500 METRES SQUARE

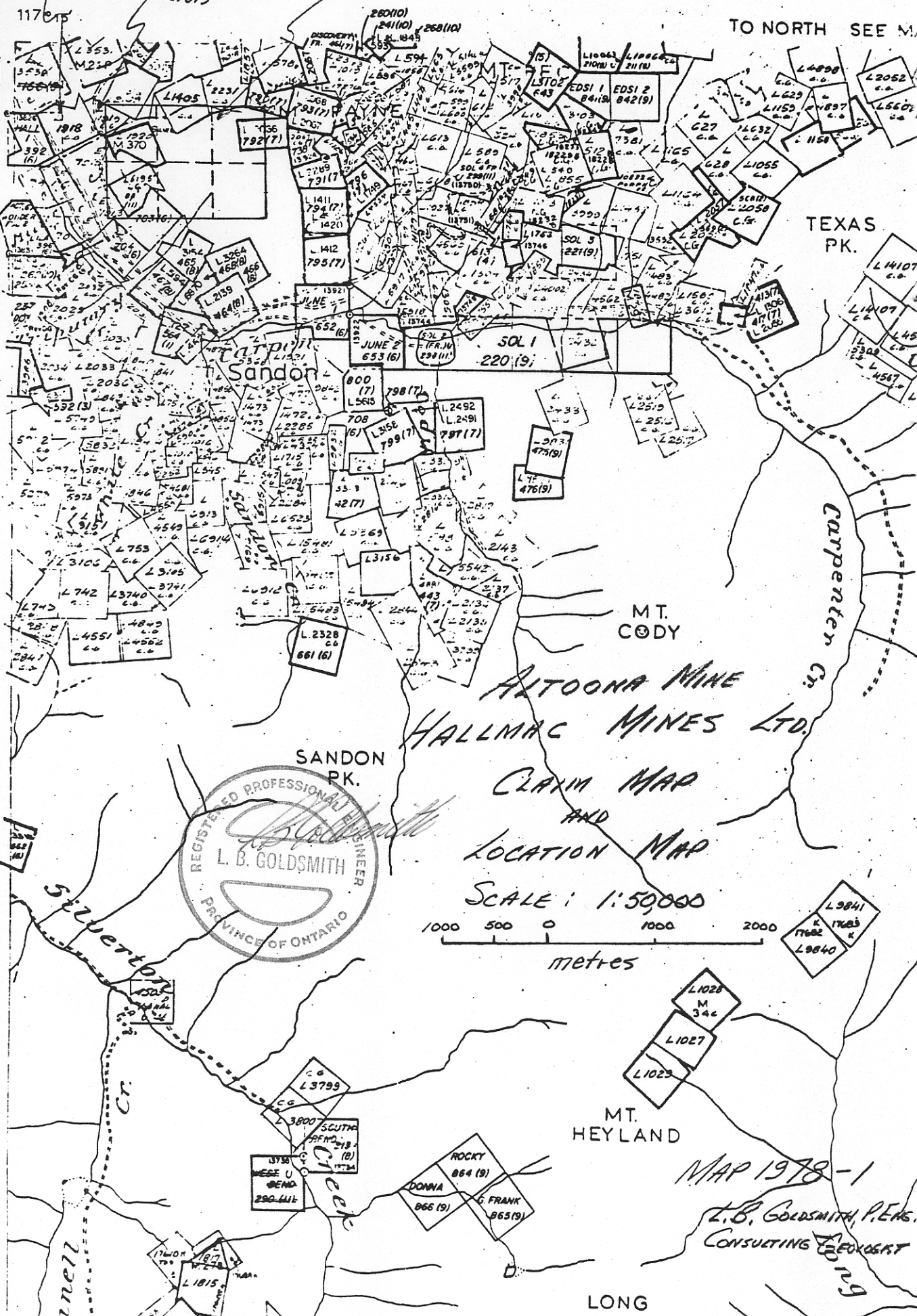
ALTOONA
L1918

BOWKNOT
L1919

A

TO NORTH SEE M...

M82F/14E
50°00'



SCALE: 1:50,000
1000 500 0 1000 2000 metres

ALTOONA MINE
HALLMAC MINES LTD.
CLAIM MAP
AND
LOCATION MAP


MAP 1978-1
L.B. GOLDSMITH, P.ENG.
CONSULTING ENGINEER

INTRODUCTION

The Altoona (L1918) and Bowknot (L1919) Crown Grant claims are located 1.5 miles Az. 330° from the townsite of Sandon in the Slocan Mining District of B. C. The claims are situated on the northeast slope of the valley of Carpenter Creek which rises at an average of 23° towards Az. $061^{\circ}54'$. The southwestern boundary of the Altoona is approximately at El. 3500' and the southeast corner of the Bowknot is approximately El. 5200'. Access is by paved road east from New Denver to Three Forks, from Three Forks southeast to Sandon by gravel road, and from Sandon northwest along the former Kaslo and Slocan railway grade to the portal of the number two adit level on the Altoona claim. The road from Sandon is traversable by cars with a moderate amount of ground clearance and overhang beyond the wheels.

The Altoona claim has had intermittent periods of lead-zinc-silver production since the early years of this century. Exploration has, in later years, been conducted at various times since the early 1960's, with the most recent periods being in 1969, 1974, 1977, and 1978. Diamond drilling from the number two adit indicates that the lode continues beneath the level but the lead and silver content decreases. At this time the zinc content could not be mined profitably. Thence a search to the east and up the valley slope was recommended by the author, object being to discover mineralization with a greater lead-silver content which could perhaps be blended with zinc mineralization from the adit levels to create a profitable product.

A soil geochemical sampling programme and grid preparation was begun on September 1, 1978 on the Altoona and Bowknot claims, and was concluded October 8. The surveyed southern boundary of the Altoona, Az. $061^{\circ}54'$, was used



as a baseline and extended by a chain and compass survey northeasterly. The southeast corner post of the Altoona claim is coordinate 00,00. Grid lines are laid out at 400 foot intervals to 12+00W and 12+00E for a total length of 2400 feet along the baseline. Stations are flagged at 50 foot spacings to 15+00N on all lines, and to 5+00S on lines 4+00E to 12+00E inclusive. Positioning on grid lines is by pace and compass.

Total number of kilometers of line established is 4.4 (14,400 feet). The total number of soil samples collected is 278.

GEOLOGY

In the area of the geochemical survey the rocks are argillites, shales, black shales, limy argillites, and thin limestones of the Slocan Series. Quartz-feldspar porphyry planar bodies are concordant to discordant on dip; in part these may be crystal tuffs.

The Altoona lode strikes easterly along a shear zone which dips predominantly 45° southerly but varies from 30° to 60° . Truncation of the lode by the topographic slope causes the outcroppings to trend Az. 055° .

Outcrops are scarce. Most exposures are in the vicinity of the underground workings.

Mineralization is reported on the Majestic and Unexpected claims (Cairns, C.B., 1935; Description of Properties in the Slocan Mining Camp, GSC Memoir 184); also see claim map, p. 2, this report:

75

MAJESTIC AND UNEXPECTED CLAIMS

References: Ann. Repts., Minister of Mines, B.C., 1896, p. 85; 1904, p. 202.

The Majestic and Unexpected Crown-granted claims are on the northeastern side of Carpenter Creek valley, about 2 miles directly north of Sandon. They are accessible from Sandon by the Payne wagon road and a trail. The claims are owned by Eleanor Bourne, Revelstoke, and Chas. French, Prince Rupert, B.C.

The property has been worked at intervals since 1904, the heaviest production being in the years 1904 to 1907, inclusive, in which period 220 tons of silver-lead ore were mined. The total recorded output amounts to 241 tons, carrying an average content of 60 ounces in silver to the ton and 67 per cent lead.

The rocks are Slocan sediments represented by massive to more or less platy, grey argillites striking north 65 degrees west and dipping 35 degrees northeast.

The principal workings include four adits of about equal length and aggregating over 1,000 feet of tunnelling. These adits range from 5,500 to 5,700 feet above sea-level. They explore a fault-fissure lode striking north 55 to 75 degrees east and dipping southeast at an average angle of 50 degrees. The upper three levels are connected by raises and stopes. The lode varied from a few inches to several feet in width and carried an important ore shoot which extended from No. 3 to No. 1 levels. The ore shoot maintained a fairly constant length of about 60 feet and raked to the southwest. It has been picked up in a raise above No. 4 level. Much of this ore-body has been stoped out. It carried an abundance of both coarse cube and gneissic galena but very little zinc blende.

A parallel lode outcrops about 150 yards northwest of, and 50 feet below, the portal of No. 3 adit. At this outcrop the lode strikes north 75 degrees east, dips 62 degrees southeast, and includes from 6 to 8 inches of oxidized ledge matter carrying a little sulphide mineralization.

The massive wall-rocks, the size of the main lode, and the character of the mineralization on this property encourage further exploration.

SAMPLING AND ANALYSES

A narrow, elongate spade, manufactured by the Union Fork and Hoe Company, was used to collect soil samples. Humus cover was scraped aside and samples taken from 8" to 15" below the top of the soil horizon. Large rock fragments, roots, and organics were removed from the samples and the remainder sealed in plastic bags. Each sample weighed an average of 1.5 pounds, as determined from the cumulative weight of sample shipments.

Samples were analyzed for lead, zinc, and silver and the results reported in parts per million. A summary of the analytical procedure is included in the Appendix.

DISCUSSION OF RESULTS

Crustal geochemical abundances are excerpted from Hawkes, H.E., & Webb, J.S., 1963; Geochemistry in Mineral Exploration.

Lead: Shales, 20ppm; Black shales, 20-400ppm.

Soils: Av, 10ppm; Range, 2-200ppm.

Zinc: Shales, 50-300ppm; Black shales, 100-1000ppm.

Soils: Av, 50ppm; Range 10-300ppm.

Silver: Black shales, 5-50ppm.

Soils: Av, 0.1ppm.

Three populationa of metal contents appear to be present in the samples, as established by logarithmic probability plots. These are:

Lead	Zinc	Silver
+150ppm	+1900ppm(?)	+4.9ppm
150 to 38ppm	1900 to 980ppm	4.9 to 2.3ppm
-38ppm	-980ppm	-2.3ppm

Lead and silver populations appear to have similar distributions, but the distribution of zinc is less well defined. Anomalous levels are chosen as:

Lead	Zinc	Silver
+150ppm	+980ppm	+4.9ppm

More work remains to be done in relating the metal values to soil colour and composition, and eventually to rock types if enough data can be collected.

(1) Line 12+00W, 6+50N to 9+00N.

Anomalous lead, zinc, and silver values are related to the surface exposure of the lode which has been explored in adits 1 and 2. Dispersion of metals may be caused, in part, by old workings up-slope from the grid line. Two zones may be present.

Two parallel, arcuate, weak zinc anomalies may be traced northeasterly from this zone as far as line 8+00E. These may represent the extension of the mineralized zone.

(2) Line 12+00W, 3+00N.

An isolated high lead value is not explained by proximity to known mineralization. The single value is probably not significant but will be checked by trenching.

(3) Line 4+00E, 4+50S.

An unexplained anomalous lead value should be checked by additional soil sampling.

(4) Stream Valley and Slide Area.

Several high lead and zinc values were obtained from the slide area parallel to and lying along the base line. Line 12+00E was run in an attempt to relate the values to a source nearby in the valley walls. These results are considered, at this time to be caused by transport of material down the stream valley, rather than being related to mineralization beneath the valley floor or on the adjacent slopes. This explanation will be reconsidered when more geochemical information is collected from farther up the valley.

RECOMMENDATIONS

Phase 1

1. A. The Majestic (L1405) and Unexpected (L2231) Crown Grants should be obtained under an agreement with the owners.

1. B. A claim block of six units should be staked to provide an adequate area for exploration.

2. Soil sampling should continue to the east and south. Lines 00+00 to 12+00E should be extended southerly to check the high lead value on line 4+00E at 4+50S. The base line should be extended to approximately 48+00E and grid lines placed at 400 foot intervals, to be run mainly to the south of the base line to cover the ground which will be acquired.

3. Bulldozer trenching is recommended for the anomalies on line 12+00W.

4. A bulldozer/backhoe may be required to prepare access roads as work proceeds further up the slope.

It is expected that soil sampling and soil trenching will require one month.

Phase 2

5. A budget for 2000 feet of drilling should be available in the event that geochemical results and trenching are encouraging. This phase should be considered to be contingent upon results of Phase 1.

COST ESTIMATE

Phase 1

Staking, 6 units @ \$65.00/unit	\$ 390.00
Soil sampling, 1000 samples	5,000.00
Analyses, assays, @ aprx. \$3.00/sample	3,000.00
Supplies, etc.	410.00
Vehicle	300.00
Trenching: Cat work	1,000.00
" : Manual labour	1,600.00
Access roads: Cat work	4,000.00
Engineering, reporting	1,000.00
Supervision	<u>4,000.00</u>
	20,700.00
Contingencies @ 10%	<u>2,070.00</u>
	\$22,770.00

Phase 2

Access & drill site preparation	\$ 2,000.00
Supplies, etc.	400.00
Vehicle	600.00
Diamond drilling, 2000 feet @ \$17.00/foot	34,000.00
Sampling, assaying	1,000.00
Engineering, reporting	3,000.00
Supervision	<u>5,000.00</u>
	46,000.00
Contingencies @ 10%	<u>4,600.00</u>
	\$50,600.00

Total of Phases 1 & 2

\$73,370.00

All of which is respectfully submitted,

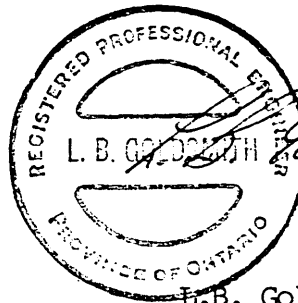


January 14,
1979

Locke B. Goldsmith, P. Eng.
Consulting Geologist

ENGINEER'S CERTIFICATE

1. I, Locke B. Goldsmith, am a Registered Professional Engineer in the Province of Ontario. My address is Box 95, Silverton, B.C., V0G 2B0.
2. I am a graduate of Michigan Technological University (Honours B.Sc., Geology) and of the Haileybury School of Mines (Mining Technician). I am a member of the Society of Economic Geologists, AIME, Australasian Institute of Mining and Metallurgy and am a Registered Professional Geologist in the State of Oregon.
3. I have been engaged in mining exploration for the past 20 years.
4. I have written the report entitled "Soil Geochemistry, Altoona Mine, Slocan Mining District, Kootenay Land District, B.C." I personally collected all samples and supervised the programme.
5. I own 2000 shares of Hallmac Mines Ltd (NPL), acquired by purchase on the open market. Otherwise I have no ownership in the properties or securities of the company.
6. I consent to the use of this report in a prospectus or in a statement of material facts related to the raising of funds.



Vancouver, B.C.

January 14, 1979

L.B. Goldsmith, P. Eng.

Consulting Geologist

REFERENCESCAIRNS, C.E.Memoir 184 -
Geological Survey of CanadaHEDLEY, M.S.Bulletin 29 -
B. C. Department of MinesALLEN, A.R., P.Eng.Allen Geological Engineering
"The Altoona Mine"
December 5, 1968LAMB, JOHN, P.Eng.Geology of the Altoona Mine
May, 1969SHEAR, H.H., P.Eng.Geology of the No. 4 Level
The Altoona Mine
October, 1974GOLDSMITH, L.B., P.Eng. (Ont.)Field Supervisor - 1977
Exploration Program
Correspondence and
discussions with writer.

MILL, G.L., P. ENG.

The Altoona Mine
February, 1978

COST STATEMENT, 1978 PROGRAMME

(a) Wages

Services, L.B. Goldsmith, grid preparation, soil sampling, supervision, consulting, September 1, 2, 3, ½4, ½5, ¾7, ½23, 24, 25, October 7, 8, total 9 days @ \$200/day:	\$1800.00	
Services, L.B. Goldsmith, evaluation of geo-chemical data, map and report preparation, ½ day Nov. 14, ½ Dec. 16, ½18, ½19, ½ Jan. 7, ½8, 9, ½10, 13, 14, 15, total 7½ days @ \$200/day:	1500.00	
Services, C.W. Donald-Hill, assistant; grid preparation, soil sampling, Sept. 2, 3, total 2 days @ \$100/day:	200.00	
Services, J. Hope, assistant; grid preparation, soil sampling, Sept. 1, ½4, ½5, ¾7, ½23, 24, 25, total 5 days @ \$80/day:	400.00	
Services, P. Harker, assistant, grid preparation, soil sampling, October 7, 8, total 2 days @ \$80/day:	<u>160.00</u>	
	\$4060.00	\$4060.00 ✓

(b) Food and Accommodation

September 1 Meals	\$	7.10
2 "		12.20
3 "		1.00
4 "		7.75
5 "		5.70
7 "		9.00
23 "		19.00
25 "		6.50
October 6 "		15.15
6 "		10.60

October 6 Meals	\$ 2.10
9 "	<u>11.50</u>
Sub Total 9 working days	\$ 97.60 ✓

Cost/day for 2 people	\$10.84	
" " " 1 person	5.42	
January 14/79 Meals	\$ 6.60	
15 "	<u>2.20</u>	
Sub Total 2 days	\$ 8.80 ✓	
Cost/day/person	\$ 4.40	
Total		\$106.40 \$106.40 ✓
20 person/days,	\$106.40/20	
Cost/person/day	\$5.32	

(c) Transportation

September 1 Mileage, 120@\$.15, Silver- ton-Nelson-Silverton, bring assistant from Nelson	\$ 18.00
2 Mileage, Silverton-Altoona- Silverton, 35 @ \$0.15	5.25
3 "	5.25
4 "	5.25
5 "	5.25
7 "	5.25
22 Gas	3.70
24 Mileage Sept 23,24, Silverton- Altoona-Silverton, 70@.15	10.50
25 Mileage, Sept 25, Silverton-Altoona- Silverton, 35@.15	5.25
October 5 Gas	6.20
6 "	5.47
"	2.00
"	5.10
"	5.00
Mileage, Vancouver-Silverton, 477 @.15	71.55
7 Mileage Silverton-Altoona-Silverton 35@.15	5.25

October 8 Mileage, Silverton-Altoona-Silverton		
35@.15		\$ 5.25
9 Mileage, Silverton-Vancouver,		
477@.15		71.55
Gas		5.40
"		5.00
"		<u>5.40</u>
Total 9 working days (travel days excluded)		\$256.87 / \$ 256.87 /
Cost/day	$\$254.37/9=\28.26	

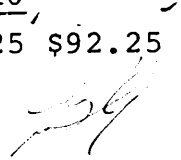
(d) Surveys: Soil sampling
 September 1, 2, 3, $\frac{1}{2}$ 4, $\frac{1}{2}$ 5, 3/4 7, $\frac{1}{2}$ 23, 24, 25, Oct 7, 8,
 Total 9 days
 278 soil samples collected
 Total cost of physically collecting the samples
 = \$960
 $\$960/9=\$106.67/\text{day}$
 $278 \text{ samples}/9=30.89/\text{day}$
 $\$960/278 \text{ samples}=\$3.45/\text{sample}$

(e) Analyses
 278 samples, analyzed for lead, zinc, silver.
 Total cost= \$809.05 \$809.05 /
 Cost/sample = \$2.91

(f) Cost of preparation of report

November 29 Drafting paper		\$ 34.02
December 14 Probability paper		1.30
January 11 Xerox, 56 @ .07		3.92
14 Report folders		3.10
Xerox, 183 @.07		12.81
Typing		29.00
15 Map prints		<u>8.10</u>
Total:		\$ 92.25 \$92.25

(This total could include the time of report preparation from item (a), \$1500.00)



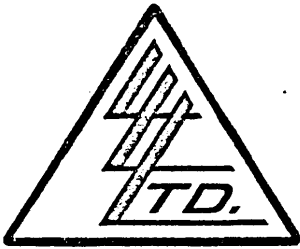
(g) Miscellaneous		
September 1	Flagging, 2 rolls @ \$2.30	\$ 4.60
	23 Sample bags	3.32
	24 Flagging, 3@\$2.30	6.90
October	7 Sample bags	<u>3.15</u>
		\$17.97 / \$ 17.97 /
(h)	Total cost of 1978 Programme:	\$5342.54 /



January 15, 1979

L.B. Goldsmith, P. Eng.
Consulting Geologist

APPENDIX



629 Beaverdam Rd. N.E.
Calgary 67, Alberta

LORING LABORATORIES LTD.

Phone 274-2777

METHODS OF ANALYSIS FOR GEOCHEMS

1. COPPER, LEAD, ZINC, NICKEL, COBALT, SILVER

500 milligrams of -80 mesh material are weighed into test tubes. Aqua regia added and digested in water bath at 100°C for three hours.

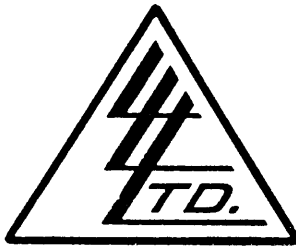
The test tubes are then bulked to the 10 ml. level, mixed and allowed to settle overnight.

The samples are then put through the atomic absorption with appropriate standards and reported in PPM.

2. MOLYBDENUM GEOCHEMS

The same sample weight is used; aqua regia is also used, but just prior to bulking up to 10 mls. volume, 3 mls. of aluminum chloride solution is added to enhance the molybdenum atom. After standing overnight the samples are put through the atomic absorption using a nitrous oxide and acetylene flame. Reported in PPM Mo.

To: HALMAC MINES LTD.
 # 403 Canada Trust Bldg.
 739-8th Avenue S.W.
 CALGARY, Alberta T2P 1B9



File No. 15867
 Date September 20th, 1978
 Samples Soils

Attn: Mr. Wheeler
 cc: L.B. Goldsmith

Certificate of
ASSAY of
LORING LABORATORIES LTD.

PAGE #1

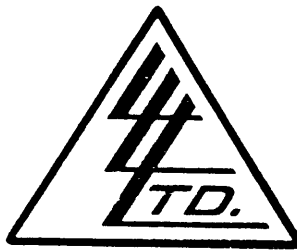
SAMPLE No.	PPM	PPM	PPM
	Pb	Zn	Ag
8E -00+00	85	230	1.0
0+50N	44	470	1.5
1+00N	21	470	1.0
1+50N	21	620	2.5
2+00N	22	650	3.0
2+50N	21	710	2.0
3+00N	21	650	1.5
3+50N	22	590	1.5
4+00N	20	680	1.5
4E -00+00	33	720	1.0
0+50N	51	680	1.0
0+50S	63	420	2.5
1+00N	22	540	1.5
1+50N	19	680	1.5
1+00S	36	340	1.5
1+50S	30	870	1.5
2+00N	19	610	1.5
2+50N	18	530	3.0
2+00S	21	1500	1.5
2+50S	29	840	2.0
3+00N	20	740	1.5
3+50N	26	720	1.5
3+00S	32	700	1.5
3+50S	26	600	1.5
4E -4+00N	24	700	1.0
4+50N	22	680	1.5
4+00S	41	640	2.5
4+50S	240	760	2.5
5+00N	21	640	2.0
5+00S	72	410	1.5
4W -0+00	19	310	1.0

I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE
 ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

Rejects Retained one month.
 Pulps Retained one month
 unless specific arrangements
 made in advance.

L.B. Goldsmith
 Licensed Assayer of British Columbia

To: HALLMAC MINES LTD.
 # 403 Canada Trust BLDG.
 239-3th Avenue S.W.
 CALGARY, Alberta T2P 1B9



File No. 15867
 Date September 20th, 1978
 Samples Soils

Attn: Mr. Wheeler

cc: L.B. Goldsmith

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PAGE # 2

SAMPLE No.	PPM	PPM	PPM
	Pb	Zn	Ag
4W - 0+50N	25	760	2.0
1+00N	23	820	2.0
1+50N	28	510	2.0
2+00N	24	1120	2.0
2+50N	21	790	2.5
3+00N	23	620	1.5
3+50N	33	600	1.5
4+00N	22	620	1.5
50N	30	400	1.5
5+00N	37	880	2.0
5+50N	27	680	2.5
6+00N	23	380	3.0
6+50N	25	560	1.5
7+00N	39	680	2.0
7+50N	30	750	2.0
8+00N	34	780	2.0
8+50N	25	700	1.5
9+00N	26	780	1.5
9+50N	25	740	1.5
10+00N	25	880	1.5
10+50N	28	1020	2.5
11+00N	30	820	3.0
11+50N	22	520	1.5
12+00N	23	640	2.0
12+50N	26	1040	2.0
13+00N	25	1330	2.0
13+50N	35	840	2.0
14+00N	31	640	2.0
14+50N	25	750	2.0
15+00N	34	660	1.5
00+00	36	580	2.5

I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE
 ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

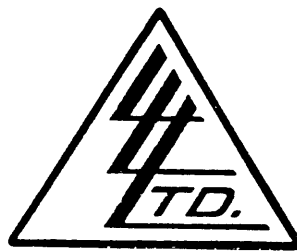
Rejects Retained one month.
 Pulps Retained one month
 unless specific arrangements
 made in advance.

L.M. Soade

Licensed Assayer of British Columbia

To: HALLMAC MINES LTD.
 # 403 Canada Trust BLDG.
 239-8th Avenue S.W.
 CALGARY , Alberta T2P 1B9
 Attn : Mr. Wheeler
 cc: L.B. Goldsmith

File No. 15867
 Date September 20th , 1978
 Samples Soils



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PAGE # 3

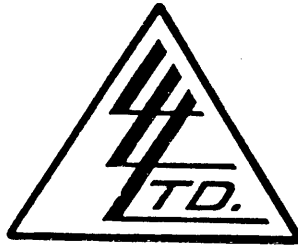
SAMPLE No.	PPM Pb	PPM Zn	PPM Ag
00 - 0+50N	23	600	2.0
1+00N	23	680	2.5
1+50N	24	920	2.0
2+00N	13	580	2.0
2+50N	26	680	1.5
3+00N	24	780	2.5
3+50N	24	770	2.0
4+00N	23	700	1.5
4+50N	87 Road	620	1.5
5+00N	26	520	1.5
5+50N	21	540	1.5
6+00N	19	660	1.0
6+50N	23	540	2.0
7+00N	20	880	2.5
7+50N	21	700	1.0
8+00N	16	570	1.0
8+50N	19	660	1.5
9+00N	18	560	1.5
9+50N	23	730	1.5
10+00N	23	500	2.0
10+50N	26	630	2.0
11+00N	19	390	0.5
11+50N	27	880	1.5
12+00N	22	760	1.0
12+50N	21	740	2.5
13+00N	19	440	1.0
13+50N	29	820	2.0
14+00N	19	780	1.5
14+50N	29	640	1.0
15+00N	30	480	1.0

I **Hereby Certify** THAT THE ABOVE RESULTS ARE THOSE
 ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

Rejects Retained one month.
 Pulp Retained one month
 unless specific arrangements
 made in advance.

..... *e L M E J o a e*
 Licensed Assayer of British Columbia

To: HALLMAC MINES LTD.,
 403, 239 - 8th Avenue S.W.,
 Calgary, Alberta T2P 1B9
 ATTN: W. Wheeler
 cc: L.B. Goldsmith



File No. 15932
 Date: September 29, 1978
 Samples Soil Geochems

Certificate of
 ASSAY of
 LORING LABORATORIES LTD.

Page # 1

SAMPLE No.	PPM Pb	PPM Zn	PPM Ag
<u>"Soil Geochems"</u>			
4E 550N	20	560	1.0
600N	19	510	1.8
650N	23	590	2.0
700N	19	570	2.5
750N	27	470	1.0
800N	22	550	2.0
850N	20	590	1.5
900N	21	840	1.8
950N	19	510	1.0
1000N	17	590	1.2
1050N	16	370	1.5
1100N	26	450	2.7
1150N	28	360	1.0
1200N	21	670	1.2
1250N	22	360	2.0
1300N	21	380	1.0
1350N	23	370	0.8
1400N	18	440	1.0
1450N	20	480	1.0
1500N	19	480	1.0
8E 450N	25	650	2.0
500N	23	500	1.5
550N	18	490	1.3
600N	21	530	1.0
650N	24	610	1.2
700N	22	660	1.5
750N	22	590	1.5
800N	21	600	1.7
850N	21	490	1.5

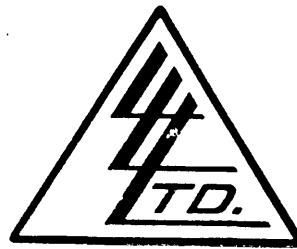
I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE
 ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

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 Pulp Retained one month
 unless specific arrangements
 made in advance.

Edmond J. J. J.

Licensed Assayer of British Columbia

To: HALLMAC MINES LTD.,
 03, 239 - 8th Avenue S.W.,
 Calgary, Alberta T2P 1B9
 ATTN: W. Wheeler
 cc: L.B. Goldsmith



File No. 15932
 Date: September 29, 1978
 Samples Soil Geochems

Certificate of
ASSAY OF
LORING LABORATORIES LTD.

Page # 2

SAMPLE No.	PPM Pb	PPM Zn	PPM Ag
8E 900N	20	560	1.0
950N	23	530	1.5
1000N	23	560	2.8
1050N	21	590	1.5
1100N	21	740	1.0
1150N	32	20600	2.5
1200N	23	3100	1.3
1250N	19	430	2.2
1300N	20	410	1.0
1350N	50	670	2.5
1400N	19	250	0.5
1450N	25	1770	1.8
1500N	41	3300	2.5
8W 00 BL	25	450	1.5
50N	23	420	1.5
100N	25	590	2.4
150N	24	570	1.4
200N	24	610	2.0
250N	24	510	1.5
300N	39	630	1.5
350N	24	730	2.2
400N	24	490	1.5
450N	21	440	1.7
500N	25	520	1.8
550N	29	930	1.8
600N	26	670	1.3
650N	29	950	1.5
700N	24	840	1.0
750N	31	1130	1.5
800N	26	640	1.9
850N	33	760	1.2

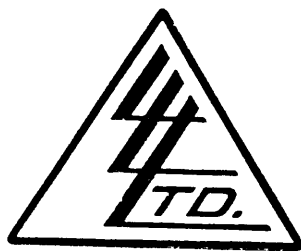
I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE
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Edme J. J. J.
 Licensed Assayer of British Columbia

To: HALLMAC MINES LTD.,
 203, 239 - 8th Avenue S.W.,
 Calgary, Alberta T2P 1B9
 ATTN: W. Wheeler
 cc: L.B. Goldsmith

File No. 15932
 Date: September 29, 1978
 Samples Soil Geochems



Certificate of
ASSAY of
LORING LABORATORIES LTD.

Page # 3

SAMPLE No.	PPM Pb	PPM Zn	PPM Ag
8W 900N	26	620	0.7
950N	24	770	1.1
1000N	27	1010	1.5
1050N	27	920	1.5
1100N	24	770	1.7
1150N	45	540	0.8
1200N	23	690	1.4
1250N	28	720	1.8
1300N	28	670	1.6
1350N	25	830	2.1
1400N	31	1160	1.8
1450N	37	1240	1.0
1500N	20	350	1.5
12W 00 BL	22	210	1.0
50N	28	580	0.8
100N	26	750	1.5
150N	27	1030	1.0
200N	31	330	1.5
250N	32	340	1.0
300N	156	230	0.8
350N	35	220	1.5
400N	29	390	1.0
450N	69	230	0.8
500N	34	490	1.0
550N	65	410	1.2
600N	69	770	5.5
650N	121	730	7.7
700N	390	1460	2.4
750N	95	2060	1.5
800N	45	730	1.8
850N	166	1170	4.0

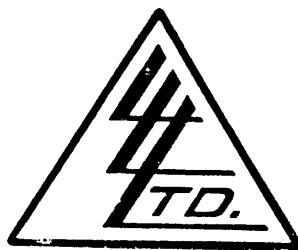
I **Hereby Certify** THAT THE ABOVE RESULTS ARE THOSE
 ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

Rejects Retained one month.
 Pulps Retained one month
 unless specific arrangements
 made in advance.

L. B. Goldsmith
 Licensed Assayer of British Columbia

To: HALIMAC MINES LTD.,
 203, 239 - 8th Avenue S.W.,
 Calgary, Alberta T2P 1B9
 ATTN: W. Wheeler
 cc: L.B. Goldsmith

File No. 15932
 Date: September 29, 1978
 Samples: Soil Geochems



Certificate of
ASSAY of
LORING LABORATORIES LTD.

Page # 4

SAMPLE No.	PPM Pb	PPM Zn	PPM Ag
12W 900N	39	880	1.2
950N	28	510	1.0
1000N	25	590	1.2
1050N	31	590	1.0
1100N	27	660	1.2
1150N	65	790	2.2
1200N	33	530	1.0
1250N	31	580	1.5
1300N	33	700	1.0
1350N	25	670	2.2
1400N	32	600	1.4
1450N	61	840	1.5
1500N	32	930	1.0

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 ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

Rejects Retained one month.
 Pulp Retained one month
 unless specific arrangements
 made in advance.

Ed McJoan
 Licensed Assayer of British Columbia

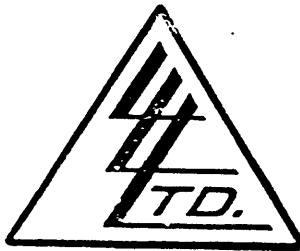
To: HALLMAC MINES LTD.

403, 239-8th Avenue S.W.

CALGARY, Alberta T2P 1B9

Attn: W. Wheeler

cc: L.B. Goldsmith



File No. 15996

Date: October 11th, 1978

Samples Soil Geochems

Certificate of
ASSAY of
LORING LABORATORIES LTD.

PAGE # 2

SAMPLE No.	PPM Pb	PPM Zn	PPM Ag
12E 00+BL	54	520	1.0
12E 00+50N	28	350	1.3
12E 1 +00N	29	1440	1.5
12E 1 +50N	20	650	0.8
12E 2 +00N	26	830	2.3
12E 2 +50N	24	1020	2.5
12E 3 +00N	22	650	1.3
12E 3 +50N	27	770	2.4
12E 4 +00N	29	1050	2.3
12E 4 +50N	24	1110	3.1
12E 5 +00N	25	630	2.5
12E 5 +50N	24	530	2.3
12E 6 +00N	20	460	2.6
12E 6 +50N	23	630	2.4
12E 7 +00N	24	440	1.7
12E 7 +50N	22	440	1.5
12E 8 +00N	21	450	1.7
12E 8 +50N	20	520	2.4
12E 9 +00N	21	580	2.6
12E 9 +50N	22	720	2.8
12E 10+00N	24	540	1.2
12E 10+50N	23	710	1.9
12E 11+00N	19	680	1.9
12E 11+50N	22	490	1.6
12E 12+00N	27	490	1.3
12E 12+50N	32	760	2.4
12E 13+00N	54	910	2.9
12E 13+50N	49	1350	1.7
12E 14+00N	44	1190	1.8

I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE
ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

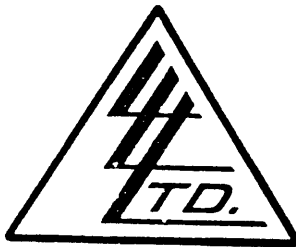
Rejects Retained one month.

Pulps Retained one month
unless specific arrangements
made in advance.

L.M. J. J. J.

Licensed Assayer of British Columbia

To: **HALLMAC MINES LTD.**
 403 , 239-8th Avenue S.W.
 CALGARY , Alberta T2P 1B9
 Attn : W. Wheeler
 cc: L.B. Goldsmith



File No. 15996
 Date: October 11th , 1978
 Samples Soil Geochems

Certificate of
ASSAY of
LORING LABORATORIES LTD.

PAGE # 3

SAMPLE No.	PPM Pb	PPM Zn	PPM Ag
12E 14 + 50N	33	840	2.0
12E 15 + 00N	32	800	2.4

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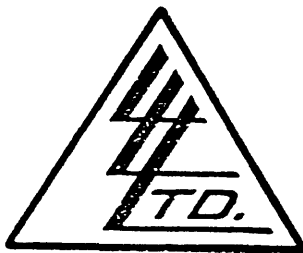
Rejects Retained one month.
 Pulps Retained one month
 unless specific arrangements
 made in advance.

Ed McFadden

Licensed Assayer of British Columbia

To: HALLMAC MINES LTD.
 #403 , 239-8th Avenue S.W.
 CALGARY , Alberta T2P 1B9
 Attn : W. Wheeler
 cc: L. B. Goldsmith

File No. 16080
 Date October 27th , 1978
 Samples Soil



Certificate of
 ASSAY of
 LORING LABORATORIES LTD.

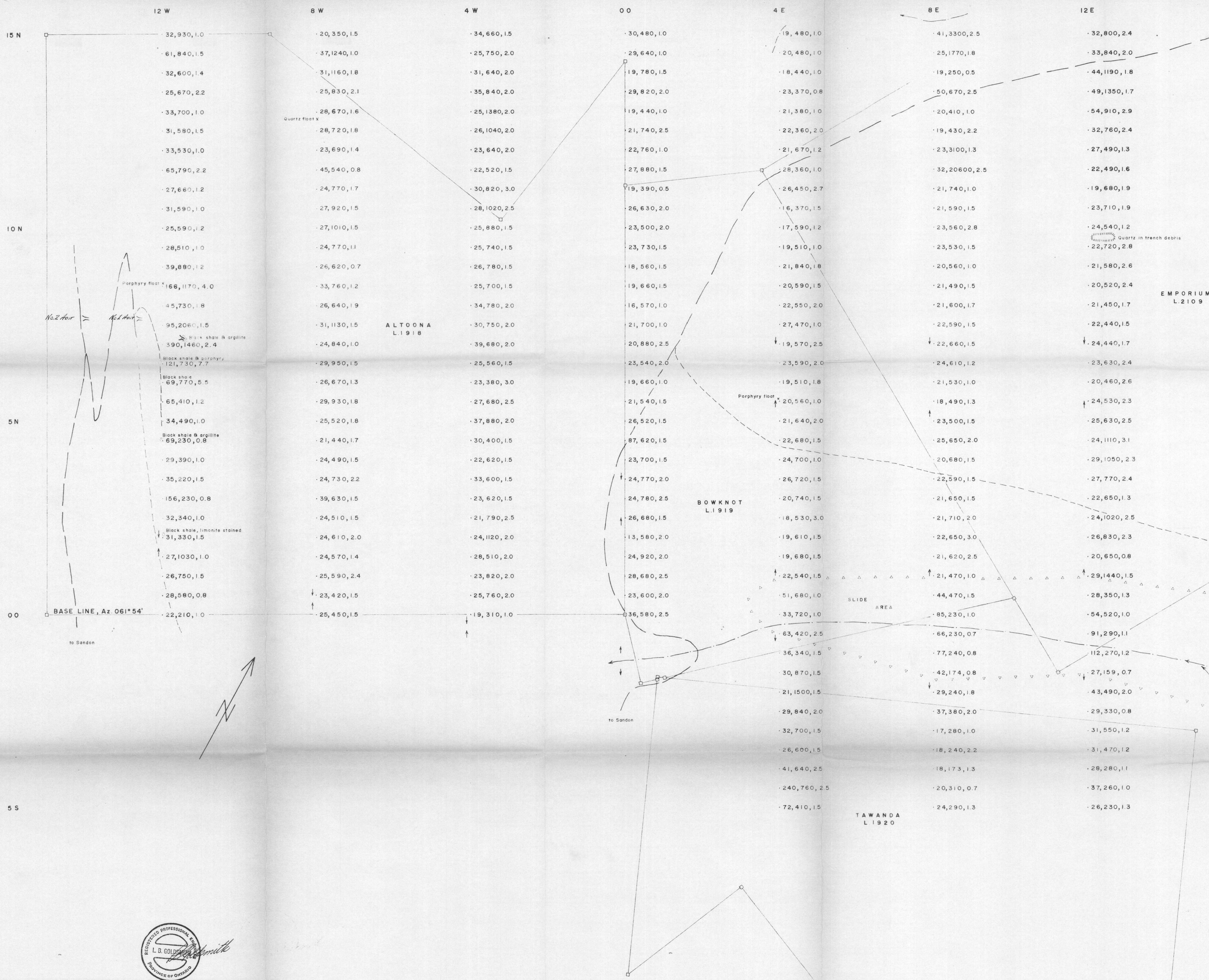
PAGE # 1

SAMPLE No.	PPM	PPM	PPM
	Pb	Zn	Ag
8E 0+50S	66	230	0.7
8E 1+00S	77	240	0.8
8E 1+50S	42	174	0.8
8E 2+00S	29	240	1.8
8E 2+50S	37	380	2.0
8E 3+00S	17	280	1.0
8E 3+50S	18	240	2.2
8E 4+00s	18	173	1.3
8E 4+50S	20	310	0.7
8E 5+00S	24	290	1.3
12E 0+50S	91	290	1.1
12E 1+00S	112	270	1.2
12E 1+50S	27	159	0.7
12E 2+00S	43	490	2.0
12E 2+50S	29	330	0.8
12E 3+00S	31	550	1.2
12E 3+50S	31	470	1.2
12E 4+00S	28	280	1.1
12E 4+50S	37	260	1.0
12E 5+00S	26	230	1.3

I *Hereby* **Certify** THAT THE ABOVE RESULTS ARE THOSE
 ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

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 Pulps Retained one month
 unless specific arrangements
 made in advance.

Ann Joade
 Licensed Assayer of British Columbia



HALLMAC MINES LTD.
ALTOONA MINE, SANDON, B. C.

SOIL GEOCHEMISTRY

Scale: 1" = 100'
 0 50 100 200

82 F/14E
 January, 1979

L. B. Goldsmith, P. Eng.
 Consulting Geologist

LEGEND

- 390,1460,2.4 Pb, Zn, Ag, p.p.m.
- △ △ △ △ △ Outline of Slide Area
- Stream
- Trench
- Trail
- Road
- Adit Portal
- Claim Boundary
- ↑ Arrowhead points up-slope, positioned at break in slope, showing component of topography parallel to grid lines. Overall slope rises 23° towards Az. 061°54'. S.E. corner of the Altoona was established from claim survey plats and observations of the Sun to determine astronomic North.

Map 1978-2