

GEOLOGICAL AND GEOCHEMICAL REPORT

ALEXANDRA GROUP

VANCOUVER MINING DIVISION
NTS 92K/6W & 92K/11W
50° 29' 51" North; 125° 23' 13" West

Owners of Claims: J.W. MacLeod & M.P. Warshawski

Work done by: G.A. Noel & Associates Inc.
for Corpac Minerals Ltd.

By

G.A. NOEL, P.Eng.

October 8, 1980

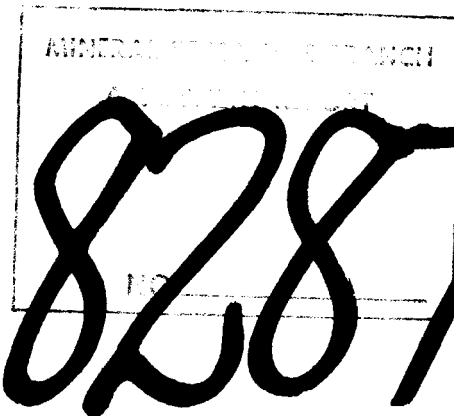


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SUMMARY

From July 16-26, 1980 a soil sampling program was conducted on the Alexandra group of claims located on the west side of Phillips Arm about 55 kilometres north of Campbell River, B.C. The property consists of a contiguous group of 17 reverted crown granted mineral claims which cover gold-bearing quartz veins related to a steeply dipping shear zone along the contact between metasediments and intrusives of the Coast Range intrusive complex. The shear zone extends for over three kilometres from the Alexandria Mine at sea level to the Doratha Morton mine at 700 metres elevation. The Alexandria mine has fairly well proven reserves of 19,000 tons grading 0.306 oz/ton gold. In the 1980 fieldwork the Enid vein was traced intermittently by anomalous gold, silver and copper values in the soils for at least 700 metres northwest from the Enid adit which is about 1.8 kilometres northwest of the Alexandria mine. Additional soil sampling and geological mapping have been recommended for the Alexandra group of claims to define possible extensions of both the Enid and Alexandria veins and to provide suitable drill targets.



INTRODUCTION

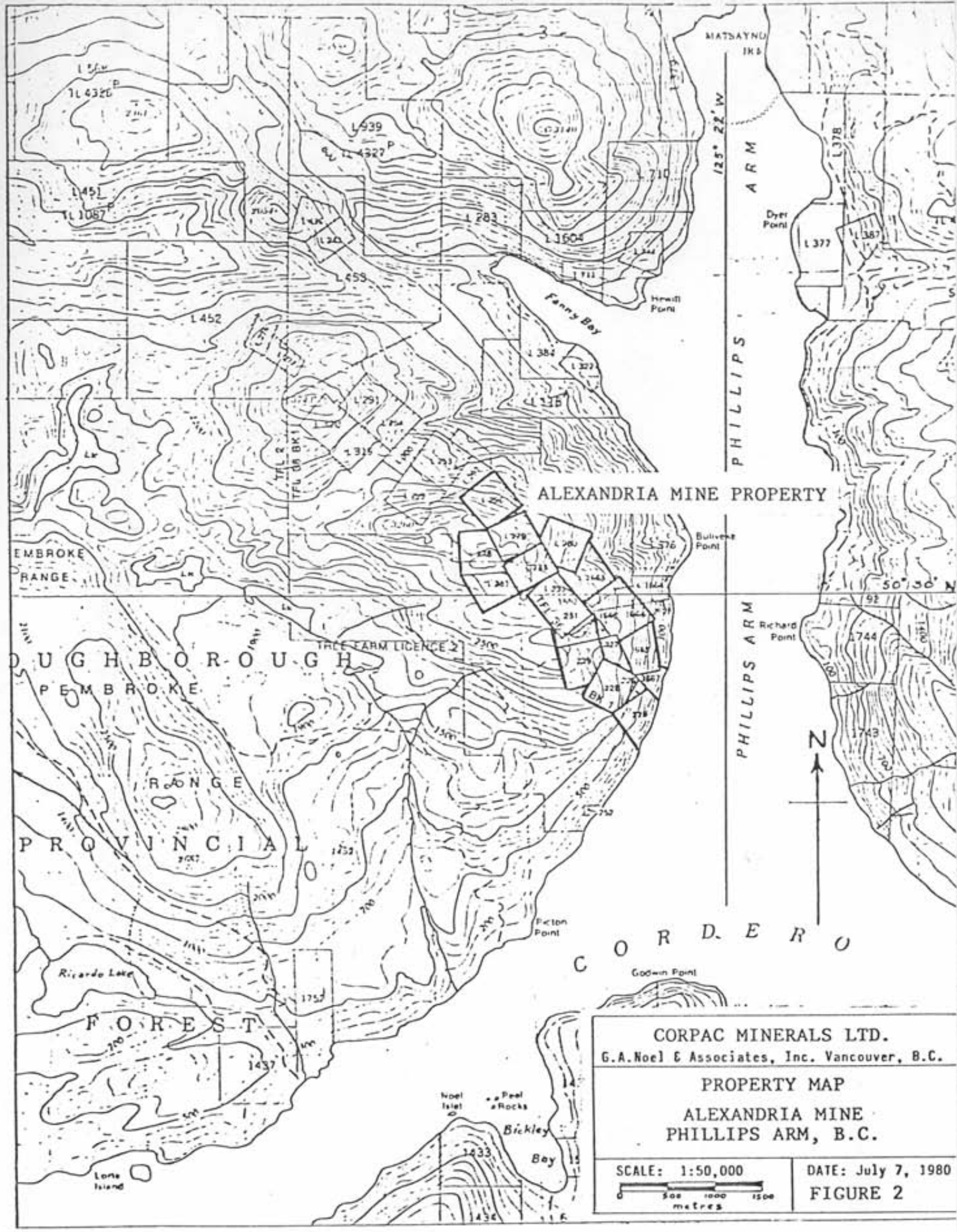
From July 16-26, 1980 soil sampling and geological mapping were done on part of the Alexandra group of claims by a geologist and one field assistant. Specifically the fieldwork was done on the Enid, Empress and Comox claims or Lot No's. 280, 279 and 296 respectively. The work consisted of orientation geochemical and geological surveys to locate the old workings and determine if the gold veins can be traced by surface geology or soil geochemistry. For this investigation a small camp was established at 760 metres elevation on an old logging road near the northwest corner of the Duke claim, Lot No.229.

LOCATION AND ACCESS

The Alexandra group of claims is about 200 kilometres northwest of Vancouver and 55 kilometres north of Campbell River, on the west side of Phillips Arm between Fanny Bay and Picton Point. The nearest settlement is the village of Thurlow on Shoal Bay at the north end of Thurlow Island about five kilometres to the south. The claims can be reached by water-taxi, aircraft on floats, or helicopter from Campbell River.

PROPERTY AND TITLE

The property consists of 17 reverted crown granted mineral claims owned by M.P. Warshawski and J.W. MacLeod. These claims, which form the Alexandra group in the Vancouver Mining Division, are more specifically described as follows:



In October 1976, J.W. MacLeod did a geochemical soil survey over part of the Julie, Stella, Jennie B and Empress claims. The results of this survey were not sufficiently encouraging to warrant follow-up at that time.

DEVELOPMENT

<u>Workings</u>		<u>Elevation (m)</u>	<u>Drift</u>	<u>Length (m)</u>	
				<u>Cross-cut</u>	<u>Shaft</u>
<u>Alexandria</u>	No.1 Adit	sea-level	162	113)	81
	100-Level	-30.5	168	49)	
	200-Level	-61	61	64)	
	No.2 Adit	12	256	119	
	No.3 Adit	91	18	21	
	No.4 Adit	130	12	52	
	No.5 Adit	76	100	76	
<u>Enid</u>	Adit	661	86		
<u>Empress</u>	Shaft	902			4.6

PRODUCTION AND RESERVES

From 1896-1898, three small shipments of ore were made from the Alexandria mine to the Tacoma smelter for testwork. These shipments totalled 48.8 tons grading 1.23 oz/ton gold.

The Alexandria mine has indicated and inferred reserves of 19,299 tons grading 0.306 oz/ton gold as indicated from the development work of Premier Gold Mining Company in 1933 and 1934. The fairly well-defined oreshoot extends along the main level and the 100-level, but does not extend up to the No.2 Adit nor down to the 200-level.

FIELDWORK

After locating the adit on the Enid claim and the shaft on the Empress claim, these workings were tied in with the north-east corner of the Julie claim (Lot 233) which was designated 10,000 North, 10,000 East. Three small grids were then established to cover the Enid vein and its projection to the northwest on the Empress claim (Lot 279) and on the Comox claim (Lot 296). Traverse lines were run north-south at 30-metre spacing with stations along these lines at 15-metre intervals. The grids were established using a Silva compass and M25 hip-chain. All lines and stations were marked with orange plastic flagging. The total length of soil lines traversed was 1400 metres, but establishing the grids and locating the old workings required an additional 3100 metres of controlled traverse.

Very little geological mapping was done due to time limitation but some geology was noted particularly near quartz vein occurrences. Altimeter readings were taken on the geochemical grid and were used to construct a preliminary topographic map at a scale of 1:2500.

A total of 105 soil samples were taken with a mattock generally from the B horizon at depths of 0 to 30 cms. This horizon usually appeared as a sandy, orange-brown soil with varying amounts of clay and silt. Each soil sample was placed in a Kraft envelope marked with its location coordinates. The samples were analysed for copper, zinc and silver in parts per million and for gold in parts per billion by Acme Analytical Laboratories Ltd. using a standard chemical extraction and atomic absorption spectrometer analysis.

GEOLOGY

The Phillips Arm area is within the western margin of the Coast crystalline belt with isolated northwest-trending bands of pre-Middle Jurassic metamorphic rocks surrounded by quartz diorite of the Coast Range Intrusions of Middle Jurassic to Lower Cretaceous age. These bands of older metamorphic rocks are up to 5 miles wide and up to 20 miles long. They include argillaceous sediments, volcanic flows and pyroclastics which have been largely altered to closely folded schistose rocks. The foliation of the rocks generally strikes northwesterly parallel to the trend of the entire rock unit.

Quartz veins with small quantities of sulphides occur in the schistose rocks near their contact with the granitic intrusives. The attitude of the veins closely approximates the foliation of the wall rocks. The sulphides include pyrite, chalcopyrite, sphalerite and galena and these vein minerals occur as lenticular masses which pinch out both along strike and down dip.

Mineralization on the Enid claim is described as follows by J.S. Stevenson (1947): "numerous quartz bands and lenses alternating with schist are found over a width of 35 feet in a marginal contact zone between granodiorite and argillites and greenstone schists. The individual quartz lenses attain widths of two to five feet and may extend several hundred feet along the strike, which is west-northwesterly."

A grab sample of quartz vein material with sulphides taken from the dump of the Enid adit assayed 3.96 oz/ton gold, 16.1 oz/ton silver, 1.72% copper and 3.16% zinc. A grab sample of quartz with some sulphides from the dump of the shaft on the Empress claim assayed 0.096 oz/ton gold and 0.21 oz/ton silver.

GEOCHEMICAL RESULTS

From frequency distribution plots of the analyses the following levels of anomaly were selected:

	<u>Au (ppb)</u>	<u>Ag (ppm)</u>	<u>Cu (ppm)</u>	<u>Zn (ppm)</u>
Possibly	50-100	0.5-1.0	30-70	100-150
Probably	100-200	1.0-1.5	70-150	150-200
Definitely	> 200	> 1.5	> 150	> 200

The soil analyses are plotted on Figures 4, 5, 6 and 7 with the anomalous readings contoured.

The Enid vein zone has been detected in the copper, zinc, gold and silver plots and its projection to the northwest is indicated on the gold and silver plots and to a lesser degree on the copper plot. The total indicated length of this projection of the Enid vein zone is at least 700 metres.

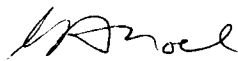
CONCLUSIONS

The gold-bearing veins on the Alexandra claim group can be traced by a closely controlled geochemical soil survey. The geological environment, structural setting and mode of mineralization suggest a good possibility for more gold-bearing ore shoots along the vein zones of the Alexandra group.

RECOMMENDATIONS

The program of geological mapping and soil sampling should be continued to cover the total extent of the Enid vein on the Alexandra claim group as well as the northwesterly extension

of the Alexandria vein across Highland Laddie (Lot 228), Emperor (Lot 227), Jubilee Fraction (Lot 230) and Duchess (Lot 231). The total cost to complete this work is estimated at \$30,000 using a geologist and assistant for about 3 weeks.



October 12, 1980

G.A. NOEL, P.Eng.


REFERENCES

- B.C. Minister of Mines Annual Reports of 1921, 1925, 1929 and 1934.
- MacLeod, J.W. (1976): Geochemical Report, Enid-Julie Group, Nov. 4, 1976
- Noel, G.A. (1980): Summary Report on the Alexandria Mine, Phillips Arm, B.C. for Corpac Minerals Ltd.
- Stevenson, J.S. (1947): Lode Gold Deposits, Southwestern B.C., B.C. Dept. of Mines Bulletin 20, Pt.IV.

STATEMENT OF QUALIFICATIONS

The fieldwork for this report was done by G.A. Noel, P.Eng. (Geological); president of G.A. Noel and Associates, Inc., consulting geologists of Vancouver, B.C. whose qualifications are outlined below:

1. Completed B.A.Sc. (Geol.) at University of B.C. in 1950 and M.A.Sc. at University of Toronto in 1951.
2. Employed in the mineral exploration industry in western Canada and the western U.S.A. from 1951-1976.
3. Consulting geologist with G.A. Noel & Associates, Inc. since 1976.



G.A. NOEL, P.Eng.

STATEMENT OF COSTS
(July 16-26, 1980)

Salaries

G.A. Noel: 11 days @ \$250/day	\$2,750.00	
N. Jacquet: 11 days @ \$40/day	<u>440.00</u>	\$3,190.00

Meals and Accomodation

2 men for 11 days @ \$14/man/day		308.00
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Analysis

105 soil samples	\$ 600.00	
6 rock "	<u>65.00</u>	665.00

Transportation

Truck rental	\$ 132.81	
Helicopter	<u>651.00</u>	783.81

Report preparation		<u>500.00</u>
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Total		<u>\$5,446.81</u>
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G.A. Noel

A P P E N D I X

Soil Analysis & Rock Assays



To: G.A. Noel & Associates Inc.
622 - 510 W. Hastings St.,
Vancouver, B.C.
V6B 1L8

ACME ANALYTICAL LABORATORIES LTD.

Assaying & Trace Analysis

852 E. Hastings St., Vancouver, B.C. V6A 1R6

phone: 253 - 3158

File No. 80-688

Type of Samples Soils

Disposition

GEOCHEMICAL ASSAY CERTIFICATE

Corpac Minerals Project

SAMPLE No.		Cu	Zn	Ag	Au ppb							
9480E 10200N		5 ✓	14 ✓	.1 ✓	60 ✓							1
10215		7	11	.1	5							2
10230		4	8	.1	20							3
10245		6	11	.1	5							4
10260		4	16	.1	30							5
10275		3	9	.1	20							6
9480E 10290N		24	38	.2	10							7
												8
9510E 10215N		13 ✓	26 ✓	.2 ✓	5 ✓							9
10245		7	16	.3	10							10
10260		12	24	.1	100 ✓							11
9510E 10290N		10	14	.2	10							12
												13
9540E 10200N		5 ✓	11 ✓	.1 ✓	40 ✓							14
10215		16	18	.2	10							15
10230		18	11	1.0	10							16
9540E 10245N		16	36	.2	20	silt 11						17
												18
9570E 10200N		12 ✓	18 ✓	.5 ✓	20 ✓							19
10230		5	11	.2	5							20
9570E 10245N		10	14	.1	10							21
												22
9710E 10050N		8 ✓	12 ✓	.1 ✓	20 ✓							23
10110		6	9	.1	10							24
10125		32	40	.2	25							25
10140		31	49	.8	95							26
9710E 10155N		32	39	2.4	90							27
												28
9740E 10050N		4 ✓	6 ✓	.2 ✓	25 ✓							29
10065		6	18	.1	20							30
10095		12	4	.1	10							31
10110		5	4	.1	35							32
10125		28	42	.1	55							33
10140		20	32	1.1	50							34
9740E 10155N		68	68	1.4	50							35
												36
9770E 10050N A		5 ✓	9 ✓	.1 ✓	20 ✓							37
10065N 10050 B		5	19	.1	10	silt 5.14						38
10095N 10050 C		3	8	.2	25							39
9770E 10110N		10 ✓	11 ✓	.2	15 ✓							40

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DIGESTION:.....

DETERMINATION:.....

DATE SAMPLES RECEIVED July 27, 1980

DATE REPORTS MAILED Aug. 5, 1980

ASSAYER

DEAN TOYE, B.Sc.
CHIEF CHEMIST
CERTIFIED B.C. ASSAYER



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phone: 253 - 3158

To: G.A. Noel & Associates Inc.

File No. 80-688

Type of Samples Soils

Disposition

GEOCHEMICAL ASSAY CERTIFICATE

2

SAMPLE No.	Cu	Zn	Ag	Au ppb								
9770E 10125N	42✓	58✓	.1✓	220✓								1
9800E 10065N	5✓	6✓	.1✓	5✓								2
10095	22	29	.7	10								3
10125	49	62	.5	10								4
9800E 10140N	32	36	.7	40								5
9895E 10120N	72✓	152✓	1.0✓	85✓								6
10000E 9970N	86✓	96✓	.3✓	110✓								7
9985	100	92	.6	150								8
10000E 10000N	78	80	.6	150								9
10120E 9880N	1600✓	1350✓	60.0✓	6000✓								10
9910	64	102	.8	50								11
9925	165	218	1.3	30								12
9940	77	84	.4	30								13
9955	91	110	.4	15								14
9970	140	118	.2	5								15
9985	54	90	.2	10								16
10120E 10000N	70	218	.5	20								17
10150E 9880N	190✓	230✓	2.0✓	640✓								18
9895	66	120	.4	10								19
9910	76	102	.6	20								20
9925	67	78	.4	5								21
9940	38	60	.6	10								22
9955	77	240	.3	20								23
9970	31	76	.4	30								24
9985	23	50	.3	15								25
10150E 10000N	56	98	.4	40								26
10180E 9895N	56✓	122✓	.2✓	20✓								27
9910	46	96	.2	5								28
9925	42	58	.3	5								29
9940	40	54	.8	5								30
9955	67	86	.5	5								31
9970	36	66	.3	5								32
9985	24	50	.4	45								33
10180E 10000N	36✓	106✓	.2	5✓								34

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DETERMINATION:.....

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File No. 80-688

Type of Samples Soils

Disposition

GEOCHEMICAL ASSAY CERTIFICATE

SAMPLE No.		Cu	Zn	Ag	Au ppb														
10180E	10015N	15 ✓	18 ✓	.2	20 ✓														1
	10030	11	29	.2	20														2
	10045	18	34	.1	10														3
10180E	10060N	24	40	.3	20														4
																			5
10210E	9910N	56 ✓	84 ✓	.3 ✓	40 ✓														6
	9925	36	51	.3	30														7
	9940	41	64	.3	20														8
	9955	67	76	.1	30														9
	9970	64	174	.4	110														10
	9985	39	88	.3	25														11
	10000	14	20	.2	5														12
	10015	30	34	.2	10														13
	10030	18	25	.4	10														14
	10045	26	38	.3	10														15
10210E	10060N	16	29	.2	10														16
																			17
10240E	9955N	77 ✓	80 ✓	.1 ✓	30 ✓														18
	9970	49	40	.3	15														19
	10000	18	29	.3	20														20
	10015	33	58	.2	20														21
	10030	30	52	.3	10														22
	10045	11	31	.3	5														23
	10060	15	39	.3	10														24
	10075	29	60	.7	20														25
	10090	22	76	.4	5														26
	10105	34	72	.2	40														27
10240E	10120N	30	62	.3	5														28
																			29
10270E	9955N	19 ✓	34 ✓	.4 ✓	5 ✓														30
	9970	15	24	.1	5														31
	9985	4	10	.4	5														32
	9992	17	38	.3	20														33
	10015	18	51	.3	10														34
	10030	37	200	.2	15														35
	10045	44	178	.4	20														36
	10060	51	98	.3	20														37
	10090	12	28	.4	20														38
	10105	29 ✓	50	.6	5														39
10270E	10120N	55 ✓	122 ✓	.8 ✓	20 ✓														40

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DIGESTION:

DETERMINATION:

105

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File No. 80-689

Type of Samples Rocks

Disposition

ASSAY CERTIFICATE

No.	Sample	Cu%	Zn%	Ag oz/ton	Au oz/ton				No.
1	1993	1.72	3.16	16.10	3.960				1
2	1994	.01	.05	.17	.010				2
3	1995			.21	.096				3
4	1996			.09	.021				4
5	1997			.11	.036				5
6	1998			.04	.011				6
7									7
8									8
9									9
10									10
11									11
12									12
13									13
14									14
15									15
16									16
17									17
18									18
19									19
20									20

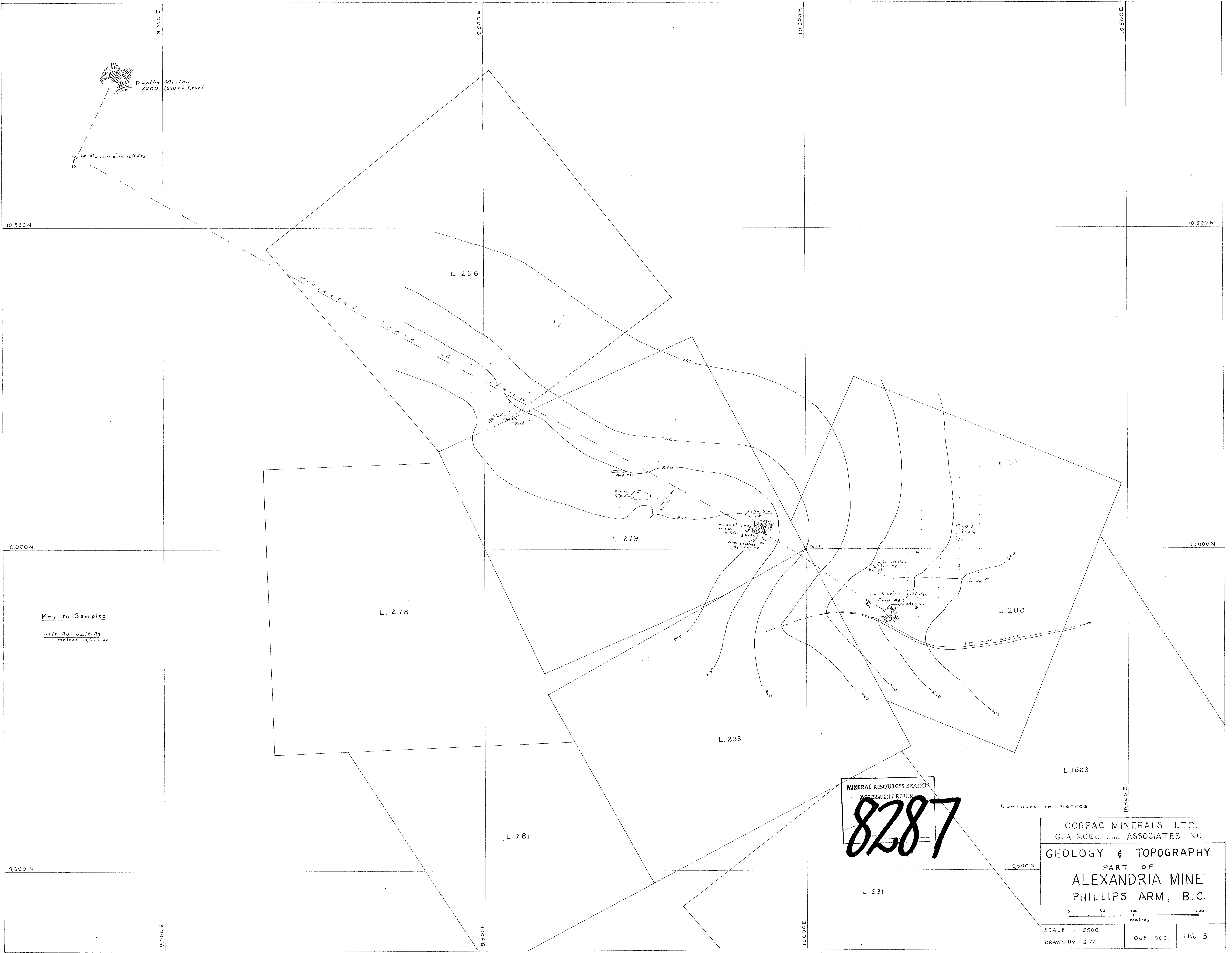
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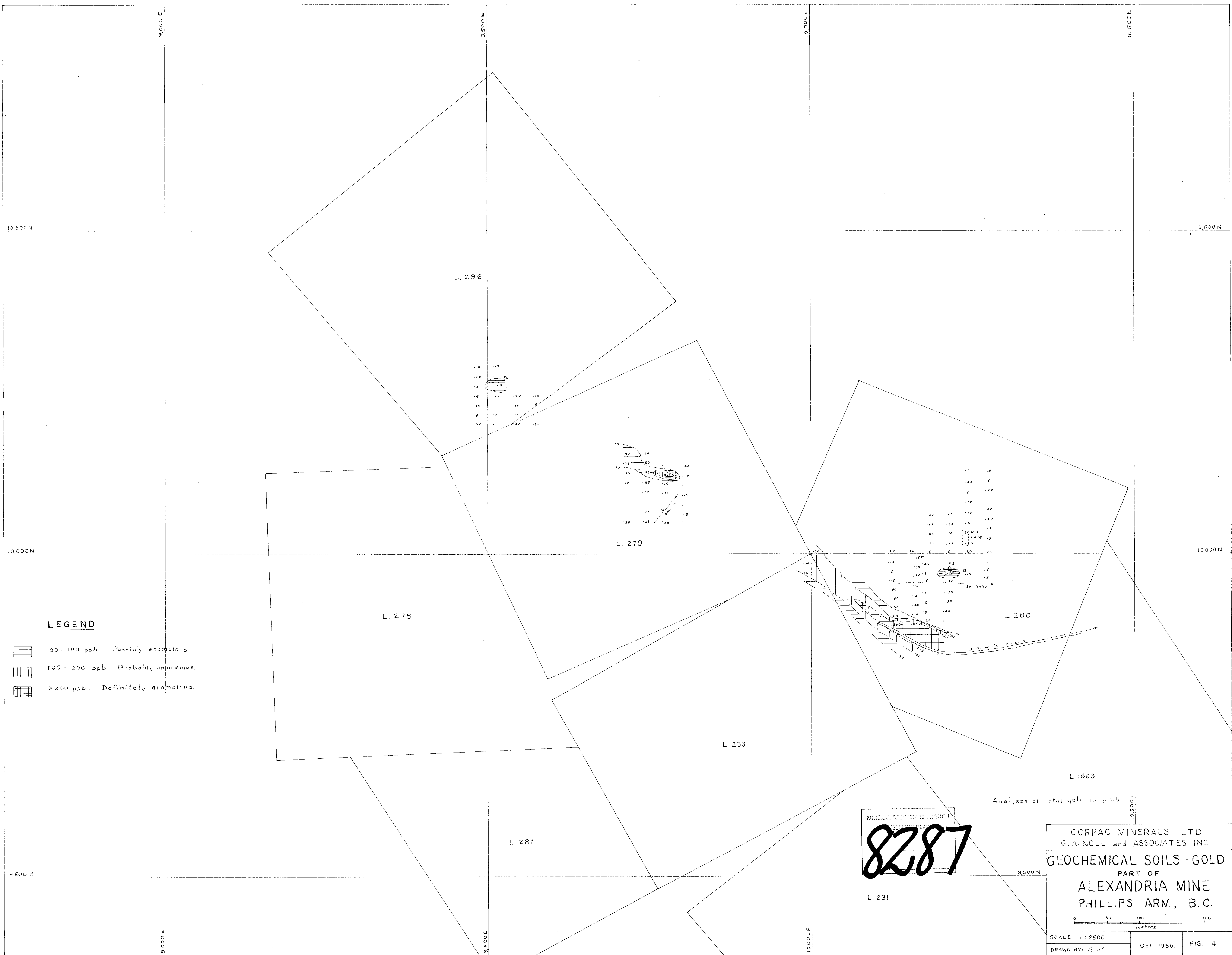
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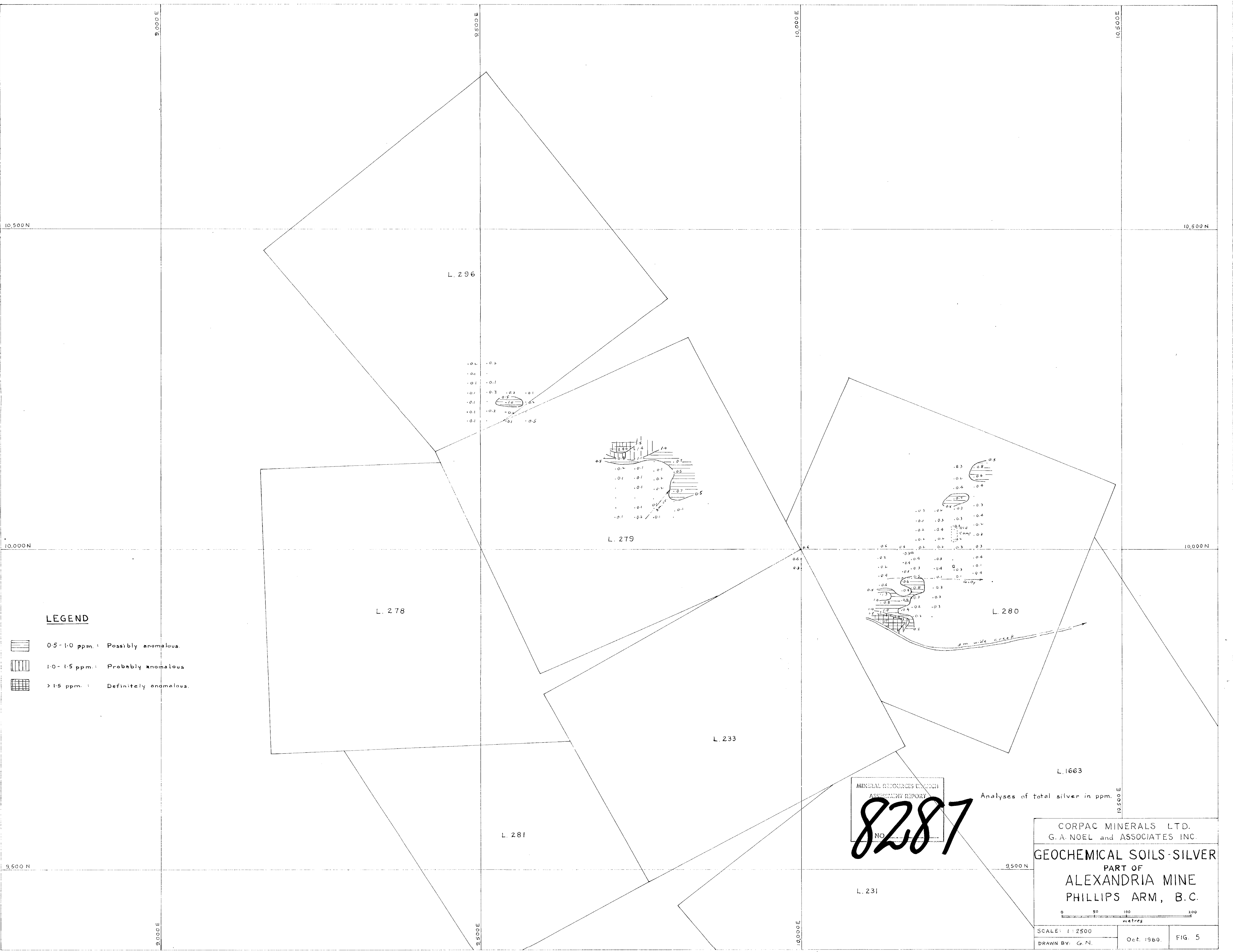
DATE REPORTS MAILED July 31, 1980

ASSAYER

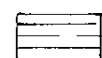

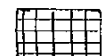
DEAN TOYE, B.Sc.
CHIEF CHEMIST
CERTIFIED B.C. ASSAYER







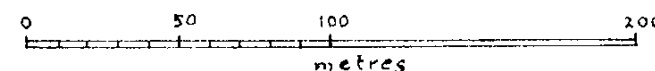
LEGEND

-  0.5-1.0 ppm: Possibly anomalous
-  1.0-1.5 ppm: Probably anomalous
-  >1.5 ppm: Definitely anomalous

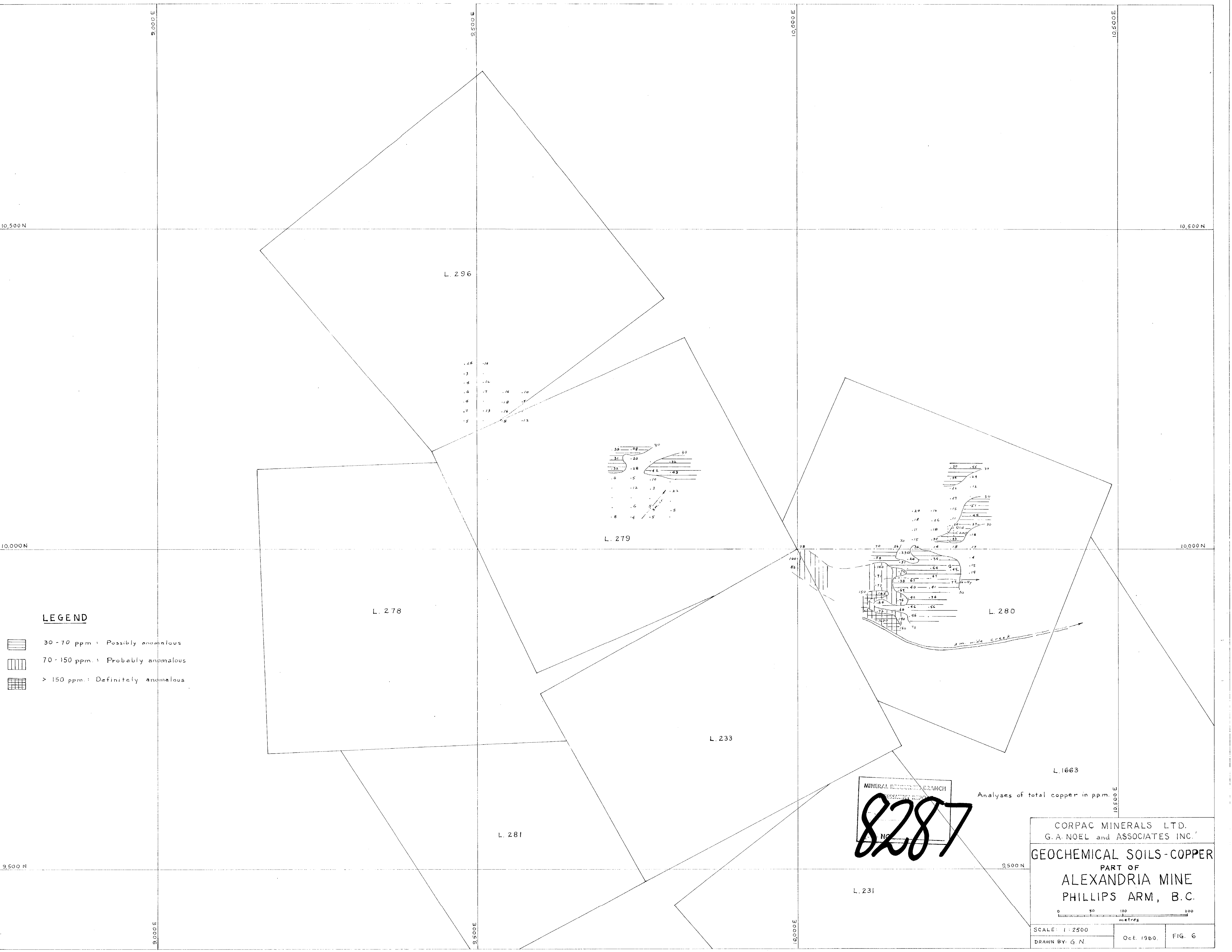
MINERAL RESOURCES DIVISION
ASSESSMENT REPORT
NO. 8287

Analyses of total silver in ppm.

CORPAC MINERALS LTD.
G.A. NOEL and ASSOCIATES INC.
GEOCHEMICAL SOILS-SILVER
PART OF
ALEXANDRIA MINE
PHILLIPS ARM, B.C.



SCALE: 1:2500
DRAWN BY: G.N. Oct. 1980. FIG. 5



LEGEND

- 30 - 70 ppm : Possibly anomalous
- 70 - 150 ppm : Probably anomalous
- > 150 ppm : Definitely anomalous

MINERAL RESOURCES BRANCH
GEOCHEMISTRY SECTION
NO. 8287

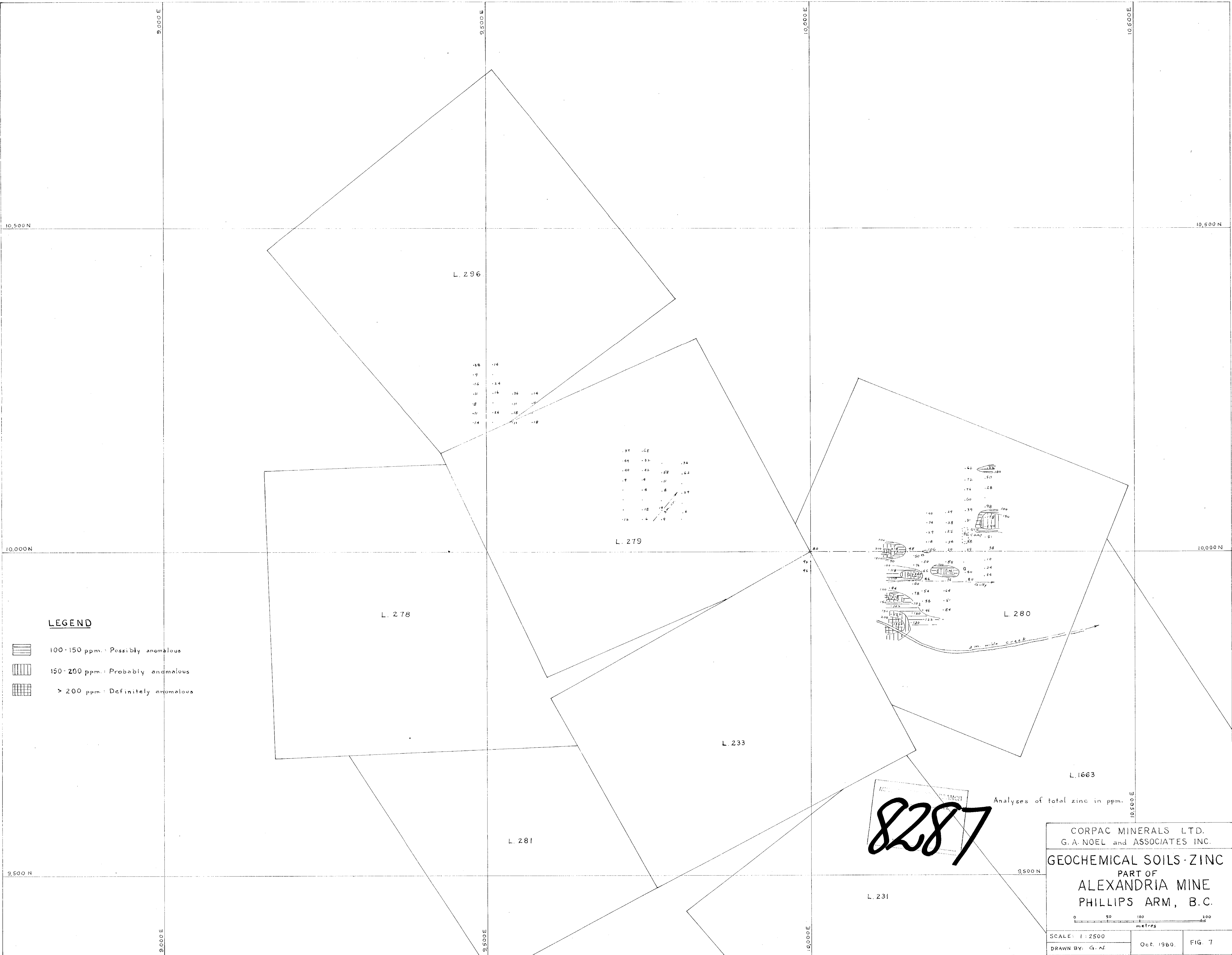
CORPAC MINERALS LTD.
G. A. NOEL and ASSOCIATES INC.

GEOCHEMICAL SOILS-COPPER
PART OF
ALEXANDRIA MINE
PHILLIPS ARM, B.C.

0 50 100 200
metres

SCALE: 1:2500
DRAWN BY: G. N.

Oct. 1980. FIG. 6



LEGEND

- 100-150 ppm: Possibly anomalous
- 150-200 ppm: Probably anomalous
- > 200 ppm: Definitely anomalous

CORPAC MINERALS LTD.
G.A. NOEL and ASSOCIATES INC.

GEOCHEMICAL SOILS - ZINC
PART OF
ALEXANDRIA MINE
PHILLIPS ARM, B.C.

SCALE: 1:2500
DRAWN BY: G. N.

Oct. 1980. FIG. 7