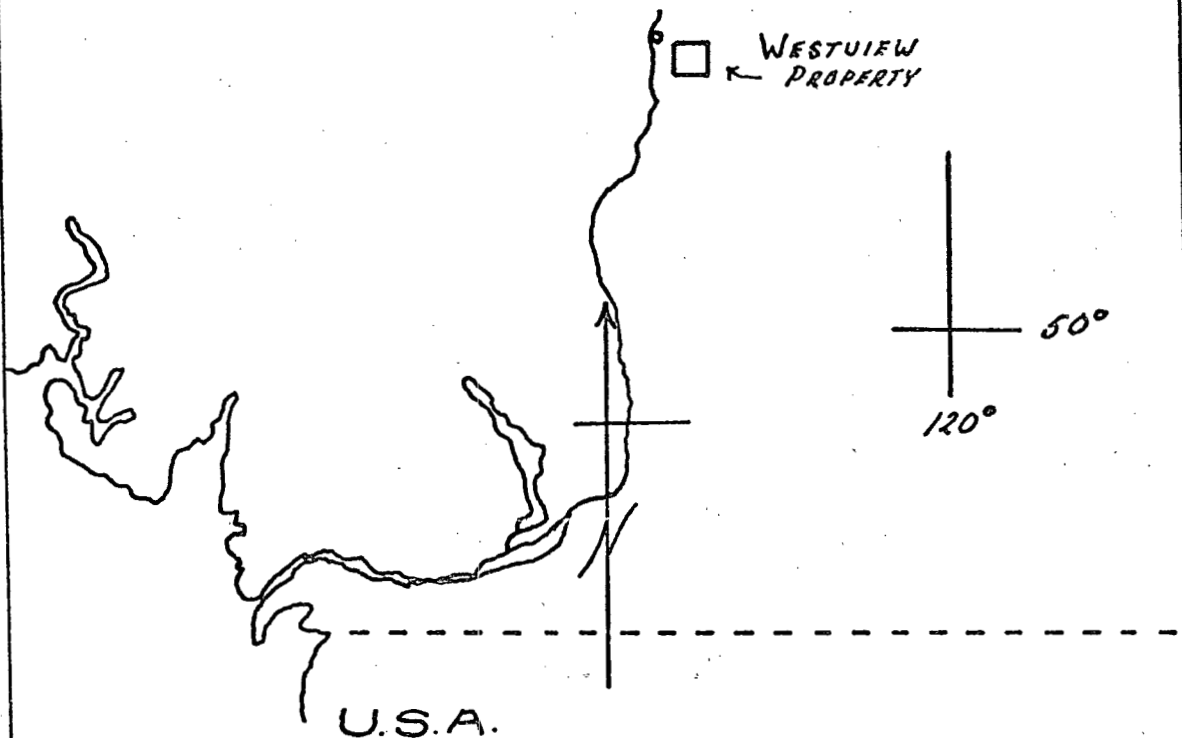


2100

BRITISH COLUMBIA



WESTVIEW MINES LTD.

To ACCOMPANY A REPORT BY  
A. R. BULLIS P. ENG. Oct 15, 1969

HUB MINERAL CLAIMS  
WESTVIEW MINES LTD. (N.P.L.)

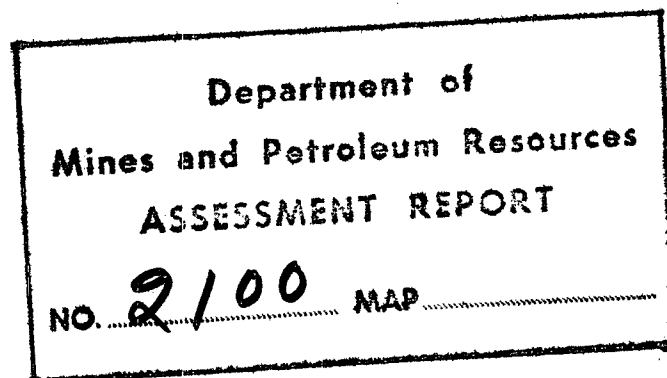
by

A.R. Bullis, P. Eng.

November 3, 1969

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HUB MINERAL CLAIMS  
WESTVIEW MINES LTD. (N.P.L.)

INTRODUCTION

Westview Mines Ltd. (N.P.L.) acquired property in the Ashcroft area and retained the author and Strato Geological Ltd. to do a preliminary study and exploration programme on the property. The author visited the area on September 20th and 21st, 1969, to examine the property and review the work programme in progress.

The following report is based on the results of the various surveys conducted by Strato Geological Ltd., the author's personal knowledge of the area and information contained in the listed references.

CONCLUSIONS

1. The area on Claims Hub 28, 30 and 32 in which an anomalously "high" content of copper-zinc was found in the soil is of interest and should be investigated.
  
2. The magnetic survey was less useful in that no specific target was located, with the possible exception of the area of positive readings that cross Claims Hub 28, 30 and 32 which may be spacially related to the anomaly mentioned in #1 above. The contact between the Kamloops volcanic rocks and the underlying formations may be reflected by the other two areas of positive magnetic readings.
  
3. The spontaneous-potential survey did not show any trend, or zone, that is considered to be significant.

RECOMMENDATIONS

1. Additional soil-sampling should be conducted on Claims Hub 28, 30 and 32. Intermediate lines at 200 foot intervals should be cut and samples taken at 100 foot intervals along them. In addition, intermediate samples should be taken on the existing grid at 100 foot intervals.
2. The result of the above should be compiled on the plan of the claims and where "high" readings are obtained, more detailed sampling on 100 foot centres, or less, may be justified.
3. Any well defined areas, underlain by high soil anomalies, should be "trenched" by bulldozer, if the overburden conditions permit.
4. In conjunction with, and/or in addition to, #3 above, a drill programme should be planned to test anomalous zones found by the soil-sampling programme.

COST OF PROGRAMME

1.	<u>Additional Soil-Sampling</u>		
	3 miles @ \$100.00 per mile	-	\$ 300.00
	Assaying of 250 samples @ 3.00	-	750.00
	Plotting and Interpretation	-	<u>300.00</u>
	Sub Total	-	\$ 1,350.00
2.	<u>Contingency for Trenching</u>		
	200 hrs. @ \$20.00/hr.	-	\$ 4,000.00
	Mobilization and Supervision	-	<u>1,000.00</u>
	Sub Total	-	\$ 5,000.00
3.	<u>Contingency for Drilling</u>		
	5,000 ft. @ \$7.00 per ft.	-	\$35,000.00
	Engineering and Supervision	-	2,000.00
	Assaying etc.	-	<u>1,000.00</u>
	Sub Total	-	\$38,000.00
	Total	-	\$44,350.00
	Plus Contingency		<u>4,650.00</u>
	GRAND TOTAL		<u><u>\$49,000.00</u></u>

Respectfully submitted,

*A.R. Bullis*

A.R. Bullis, P. Eng.

November 3, 1969

DELTA, B.C.

LOCATION & ACCESS

The Hub Group of Mineral Claims is situated in the Kamloops Mining Division, in south-central B.C. The property lies about five miles south-east of the village of Ashcroft and can be reached via the paved Highland Valley road to the Barnes Lake turn-off and thence to the property by local access road and logging roads.

The centre of the claim group is 50° 40' North latitude and 121° 10' West longitude.

PROPERTY

The property consists of nineteen located mineral

claims -	<u>Name</u>	<u>Record No.</u>
	Hub 22	No. 74769
	to (inclusive)	
	Hub 40	No. 74787

The property is presently held by Westview Mines Ltd. (N.P.L.) of Suite 510 - 890 West Pender Street, Vancouver, B.C.

TOPOGRAPHY OF AREA

The Ashcroft-Highland Valley area is the rolling, plateau-like topography typical of the interior of British Columbia. The mountains rarely exceed 6000 feet above sea-level. The area has been deeply dissected by the Thompson River and its tributaries which form steep-sided valleys and canyons in the surrounding plateau. Deep and widespread alluvial deposits form benches along the Thompson River to an elevation of 600 to 700 feet above the river. Very little overburden is found on the mountains above these alluvial deposits except locally in lake beds and stream valleys.



TOPOGRAPHY OF AREA - cont'd.

The climate is semi-arid to arid and the main Thompson River valley is grazing land covered by grass, sage-brush and small bushes. The timber-line lies between 2500 and 3000 feet near Barnes Lake; only sage-brush and grass cover the slopes below 2500 feet while above ponderosa pine, fir and balsam predominate with some poplar and aspen in the stream valleys. The surface of the claim group varies from grassland to sparsely timbered slopes which allows easy pedestrian access to any point of the claim group.

ECONOMIC GEOLOGY OF THE AREA

The copper deposits of the Highland Valley were known before 1900 but it has been in comparatively recent years that the potential of the area has been realized. The known deposits lie in a belt approximately six miles wide that stretches across the Guichon Batholith for a distance of thirty miles. Within this belt lie two producing mines, five deposits that have been explored sufficiently to publish ore reserves and numerous other properties that are in varying stages of development.

The area came into prominence during the decade between 1950 and 1960 when Bethlehem Copper Mines and Craigmont Mines were developing their respective properties prior to production. Both mines were placed in production between 1961 and 1962 and have been in production since that time. Because the tenor of the ore is low, with the exception of Craigmont and several small deposits now under development, the preferred mining method has been, and will continue to be, open-cast mines with large daily production. All deposits lie within the Guichon Batholith or in the Nicola Formation near the contact of the Batholith.

ECONOMIC GEOLOGY OF THE AREA - cont'd.

The published ore reserves of the various properties are:

	<u>Reserves</u>	<u>Grade</u>	
	<u>(in Million of Tons)</u>	<u>%Cu</u>	<u>%MoS<sub>2</sub></u>
Bethlehem	70.0	0.60	-
Craigmont	20.5	1.72	-
Lornex	330.0	0.44	0.031
Highmont	45.0	0.30	0.098
South Seas	17.4	0.75	-
North Pacific	20.0	0.45	-
Valley Copper	500.0 plus		Not given
	<hr/>		
TOTAL	<u>1,002.9 millions</u>		

GEOLOGY OF AREA

The oldest rocks of the region are included in the Cache Creek Group, of probably Permian age, and the Nicola Group of Upper Triassic age. The Cache Creek Group consists of cherty to argillaceous sediments, andesite flows and tuffs and their metamorphosed equivalents. These rocks underlie the valley of the Thompson at Ashcroft and extend north and south for thirty miles along the west side of the Thompson and Bonaparte river valleys. The Nicola Group is composed of dark-green, medium-grained lava flows that range in composition from andesite to basalt. Fine-grained andesite lava with grey porphyritic lava and grey, green to purple agglomerate occur

GEOLOGY OF AREA - cont'd.

in the Ashcroft area. The Nicola Group include some beds of white to grey, fossiliferous limestone. The Group is found south of the Guichon Batholith and as remnants around the north-west and north edges of the Batholith.

The older volcanics and sediments have been intruded by granite, granodiorite, quartz diorite and diorite of Lower Jurassic age. The intrusions form the large Guichon Batholith that extends for forty-five miles in a north-west direction from the town of Merritt to the village of Ashcroft. The Batholith is about sixteen miles in width and outcrops east of the Nicola and Thompson Rivers.

The older Groups and the Guichon Batholith are partially "capped" by the Kamloops Group which is composed of dark basalt flows and breccia, andesite, associated tuff and agglomerate of Tertiary age. The volcanic flows form a vast plateau north and east of Ashcroft where the rocks obtain a thickness of 3500 feet. The Guichon Batholith is "capped" by the Kamloops lavas from Forge and Glossy mountains north to the Thompson River valley.

As mentioned previously, the economic mineral deposits of the area are located within the Guichon Batholith and in the Nicola rocks near the contact of the Batholith. No significant mineralization has been found to date in the younger Kamloops rocks. The Craigmont Mine, which is found in the Nicola sediments near the contact of Batholith, is a replacement of limy sediments by specularite, magnetite and chalcopyrite in a contact metasomatic zone. The ore zones appear to be localized by folding. The Craigmont deposit contains the best grade of ore among the larger deposits of the area.

GEOLOGY OF AREA - cont'd.

The Bethlehem deposits are located in a quartz diorite phase of the Batholith that has been brecciated and altered. The breccia is the host rock for copper mineralization, as are the numerous faces of the joint set that crosses the area on a bearing of North 20 degrees East. The rocks are locally sheared and fractured across widths of four hundred to five hundred feet. The mineralization consists of chalcopyrite, bornite, specularite and molybdenite which occur along the joint planes and as fine disseminations in the rock. The grade of the deposits has ranged from 0.35% to 1.2% Copper.

1969 WORK PROGRAMME HUB GROUP

Westview Mines Ltd. (N.P.L.) retained Strato Geological Ltd. of Vancouver, to carry out a programme of soil-sampling and magnetometer and spontaneous polarization surveys on the Hub Claims.

The work was performed between September 18th and October 9th, 1969 by the following persons employed by Strato Geological Ltd.:

Heino Leis, Supervisor

Chemistry & Physics, Carlton University, Ottawa  
Geophysics & Mining, B.C. Institute of Technology  
3 years experience in field work with Strato Geological Ltd.

Uno Leis, Instrument Operator

B. Sc. from Carlton University, Ottawa  
2 years experience with Strato Geological Ltd.

Edward Thompson, B.S., Assistant

1969 WORK PROGRAMME HUB GROUP - cont'd.

The field work was performed on grid lines cut on the Hub Claims as shown on the enclosed maps. A base-line was cut north and south along the claim location line; side lines were cut at four hundred foot intervals across the base-line in an east-west direction. The grid was used for both geophysical surveys and for the soil-sampling programme.

COST OF 1969 PROGRAMME

Line Cutting		
11 miles @\$90.00	\$	990.00
Magnetometer Survey		
11 miles @ \$100.00		1,100.00
Spontaneous Polarization Survey		
11 miles @ \$120.00		1,320.00
Soil-Sampling		
11 miles @ \$100.00		1,100.00
Mapping and Supervision		600.00
Engineers Fees		600.00
Equipment Rental		140.00
Room and Board Expenses		150.00
Recording Assessment and Grouping		286.00
		<hr/>
	TOTAL	\$ 6,286.00
		<hr/>

GEOCHEMICAL PROGRAMME

The samples were taken at two-hundred foot intervals along the grid lines. Long nosed shovels were used to obtain the soil-samples below the humus layer which were then packed in "Standard soil-sample bags" for shipment to the laboratory

The analysis of the samples was made by T.S.L. Laboratories Ltd., Vancouver, using the hot HCl extraction method (oven temperature 105° C.) The samples were screened to -80 mesh. The samples were analysed for copper and zinc and the values obtained were plotted on a plan of the claim group.

The majority of the samples contain less than 40 p.p.m. of copper, which are considered to be of no interest. There are a number of readings on the east side of the grid on Claims Hub 28, 30 and 32 that range from 43 p.p.m. to 147 p.p.m. of Copper. The samples are adjacent to one another and are grouped in an area 1600 feet by 400 feet.

There are several samples on Hub 23 and 25 Claims that range from 40 p.p.m. to 87 p.p.m. of Copper. These are not adjacent samples but do occur in an area where the average copper content is low, i.e. about 15 p.p.m.

There are two adjacent samples from the location line between Hub 27 and 28 that contain 65 and 78 p.p.m. of Copper. These two samples may be related to the large area on Hub 28 and 30 Claims mentioned above.

GEOCHEMICAL PROGRAMME - cont'd.

The zinc content of the soil ranges from 23 p.p.m. to 1350 p.p.m. with most analyses falling below 150 p.p.m. The same "zone", on Hub 28, 30 and 32 Claims, where anomalous copper readings were obtained, provided zinc readings that range from 238 p.p.m. to 1350 p.p.m.; the "high" zinc and copper readings located in the same area appear to be spacially related. There are several samples, taken from Hub 27 and 29 Claims, that contain more than 200 p.p.m. of zinc; these samples are clustered around the "zone" described above and could be related to the zone. There are one or two samples from Hub 23, 25 and 26 Claims that contain more than 200 p.p.m. of zinc but they appear to be isolated cases.

Generally, the south end of the group contains little copper or zinc in the soil; the central group of claims i.e. Hub 27 to 32 Mineral Claims contain the anomalous readings for both copper and zinc. The north end of the group contain a few "spot" high readings for both metals which seem to be isolated cases.

The most significant readings occur on the Hub 28, 30 and 32 Claims in a zone roughly 1600 feet long by 400 feet wide.

## GEOPHYSICAL SURVEYS

Two surveys were conducted over the grid on the Hub Claims; the first was a magnetometer survey and the second was a spontaneous polarization survey.

The magnetometer used was a Sabre instrument and the readings were reduced to datum and plotted as either plus or minus gammas. The readings were taken at one hundred foot intervals along the grid lines and then plotted on a plan of the claim group.

The readings vary from minus 1340 gammas to plus 3008 gammas. The south end of the group is underlain by rock that contains magnetic minerals which are reflected in the positive readings obtained here. The balance of the claim group shows less magnetic susceptibility with generally negative readings. There are two exceptions to the above generalizations; there is a positive band of magnetic readings that cross claims Hub 29, 30 and 31 in a north-west direction and there are a number of positive readings in the north-east corner of the property on Hub 23 claim.

The positive readings on the south end of the claims probably reflect a change of bedrock from Guichon or Nicola formations to Kamloops volcanic rocks; the positive readings in the north-east corner of the claim group are probably caused by the same formation change. The band of positive readings crossing Hub 29, 30 and 31 is, possibly, the reflection of a basic intrusive dyke, or sill, which may underlie that part of the property.



GEOPHYSICAL SURVEYS - cont'd.

The formation changes are not significant from the point of view of mineralization. The anomaly that crosses Hub 29, 30 and 31 Claims may be related to the geochemical anomaly located in the same general area.

The spontaneous polarization survey readings were taken at the same stations as the magnetometer survey readings; in addition, intermediate S.P. readings were obtained at fifty foot intervals. The instrument used was a sharpe UP6 Ground Voltmeter. The readings have been plotted on a similar plan of the claim group as was used for the geochemical programme and the magnetometer survey.

The readings vary from a plus 85 to minus 92 millivolts with most falling between plus 25 and minus 25 millivolts. There is no significant trend shown in the result and there is no reflection of the zone of anomalous metal content located in the soil-sampling survey.

Respectfully submitted,

*A.R. Bullis*

A.R. Bullis, P. Eng.

November 3rd, 1969

DELTA, B.C.

REFERENCES

- |  |      |
|--|------|
| B.C. Minister of Mines Reports   | 1952 |
| B.C. Minister of Mines & Petroleum Resources<br>Reports                  | 1961 |
| G.S.C. Memoir 262 - "Ashcroft Map Area"<br>by S. Duffel & K.C. McTaggart | 1952 |
| Aeromagnetic Series Map 5218G  | 1968 |

CERTIFICATE OF QUALIFICATIONS

I, Albert Ralph Bullis, do hereby certify that:

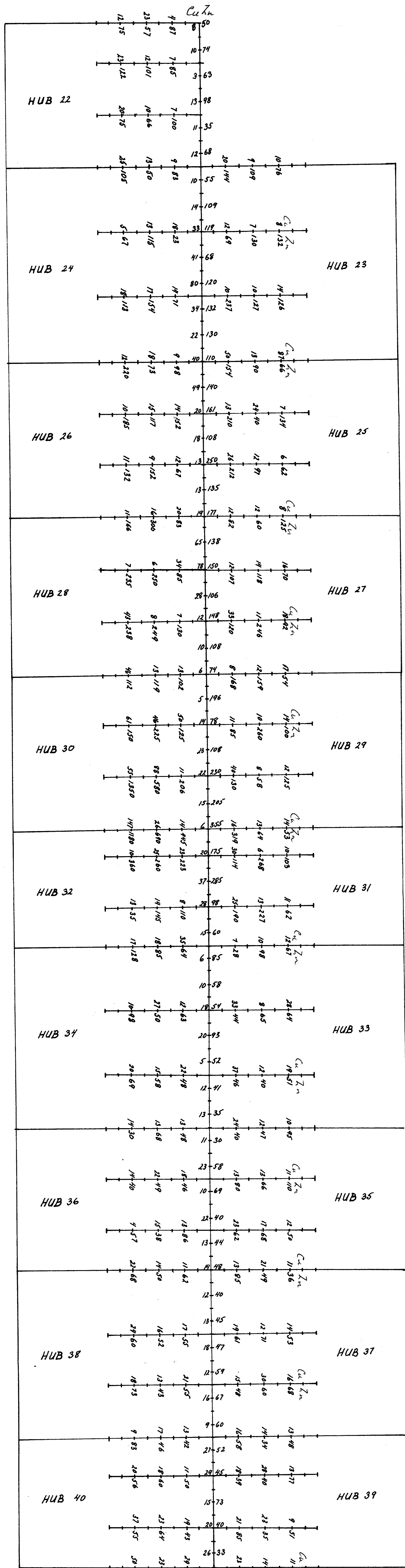
1. I am a practising geological engineer with residence at 5215 Saratoga Driver, Delta, B.C.
2. I am a graduate of the University of British Columbia and have been granted the degree of Bachelor of Applied Science.
3. I have been practising my profession as a geological engineer for sixteen years.
4. I am a member of the Association of Professional Engineers of British Columbia and a member of the Association of Professional Engineers of Ontario.
5. The attached report is based on a personal visit to the property in September, 1969, the information supplied by Strato Geological Ltd., and a review of the information contained in the list of references.
6. I have no interest, directly or indirectly, in the property or securities of Westview Mines Ltd. (N.P.L.), nor do I expect to receive any.

*AR Bullis*

A.R. BULLIS, P. Eng.

November 3rd, 1969

DELTA, B.C.

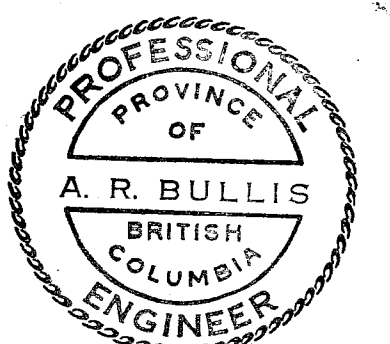


SOIL SAMPLING MAP  
Cu (ppm) Zn (ppm)

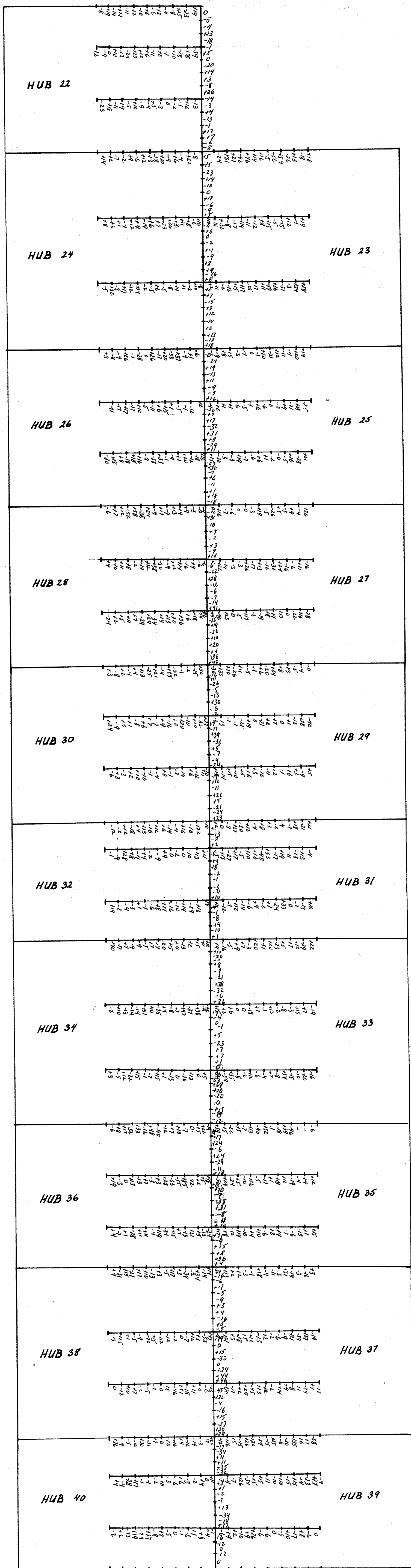
SURVEY BY:  
STRATO GEOLOGICAL LTD  
line cutting, soil sampling, Spontaneous  
Polarization (Sharpe V.P. 6 - millivolts)  
Magnetometer (Sabie - x40 gammas)

-on-  
WESTVIEW MINES LTD  
HUB # 22 - # 40 CLAIMS  
NEAR ASHCROFT, B.C.

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Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 2100 MAP #1



SPONTANEOUS POLARIZATION SURVEY  
 CONVERTED MILLIVOLT READINGS AT  
 50 FT INTERVALS USING 50 FT WIRE.  
 1 INCH = 400 FT.

TO ACCOMPANY A REPORT BY  
 A. R. BULLIS P. ENG.

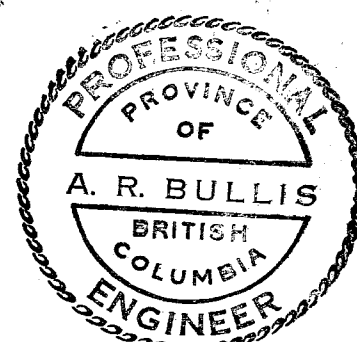
SURVEY BY:  
 STRATO GEOLOGICAL LTD  
 line cutting, soil sampling, Spontaneous  
 Polarization (Sharpe V.P. 6 - millivolts)  
 Magnetometer (Sabre - x 40 gammas)

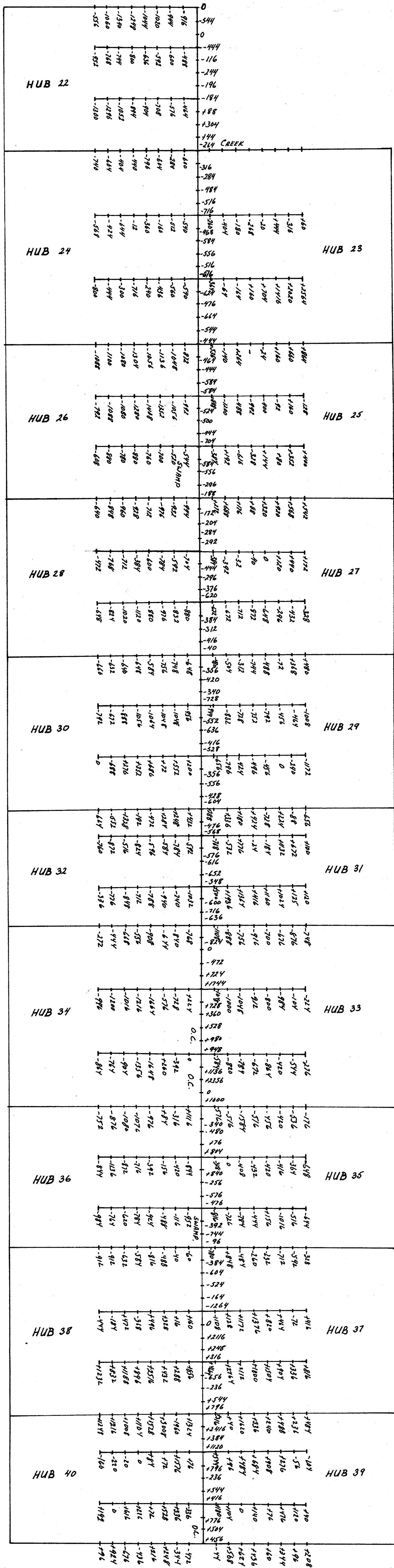
-on-

WESTVIEW MINES LTD  
 HUB # 22 - # 40 CLAIMS  
 NEAR ASHCROFT, B.C.

2100

Department of  
 Mines and Petroleum Resources  
 ASSESSMENT REPORT  
 NO. 2100 MAP # 3





MAGNETOMETER SURVEY MAP

SURVEY BY:  
 STRATO GEOLOGICAL LTD  
 line cutting, soil sampling, Spontaneous  
 Polarization (Sharpe V.P.G - millivolts)  
 Magnetometer (Sabie - x40 gammas)

-on-  
 WESTVIEW MINES LTD  
 HUB # 22 - # 40 CLAIMS  
 NEAR ASHCROFT, B.C.

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 A.R. Bullis P. Eng.

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 Department of  
 Mines and Petroleum Resources  
 ASSESSMENT REPORT  
 No. 2100 MAP #2

