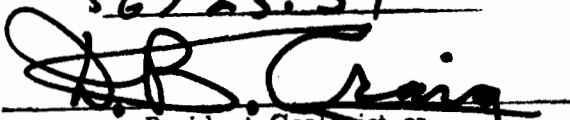


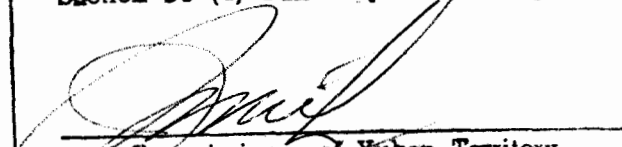


GEOLOGICAL AND GEOCHEMICAL REPORT  
ON THE  
PAT 1-40 MINERAL CLAIMS OF  
ACHERON MINES LTD (NPL) AND  
CREAM SILVER MINES LTD (NPL)  
SUMMIT LAKE AREA, 060900  
YUKON TERRITORY.

This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of \$ 6723.51

  
Resident Geologist or  
Resident Mining Engineer

Considered as representation work under Section 53 (4) Yukon Quartz Mining Act.

  
Commissioner of Yukon Territory

November, 1973  
Vancouver, B.C.

D.P. Taylor, M.Sc., D.I.C.,  
Geologist.

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ILLUSTRATIONS

Property Location Map	1" = 80 miles; 4 mi; 4000 feet
Geology	1" = 400 feet

GEOLOGICAL AND GEOCHEMICAL  
SURVEY REPORT ON THE  
PAT 1-40 MINERAL CLAIMS OF  
ACHERON MINES LTD (NPL) AND  
CREAM SILVER MINES LTD (NPL)  
SUMMIT LAKE AREA, YUKON TERRITORY

INTRODUCTION

The PAT claims were staked for Acheron Mines Ltd (NPL) and Cream Silver Mines Ltd (NPL) in February 1973. The claims lie 18 miles west-southwest of Canex-Placer's lead-zinc deposit at Howard Pass.

During the summer of 1973 reconnaissance geological and rock geochemical surveys were conducted on the property by personnel of Agilis Engineering Ltd. Mapping was done by Dr. A.M. de Quadros. All work was done under the direction and supervision of the writer.

LOCATION AND ACCESS

The PAT claims are in the Yukon Territory 10 miles west of Summit Lake, which is 158 miles north of Watson Lake Y.T.

The property is located:-

62° 21' N; 128° 40' W

Access to the property is by float or ski equipped fixed-wing aircraft to Summit Lake, or to a small lake 4 miles northwest of the property, from Watson Lake or Ross River. Local access is by helicopter.

### PHYSIOGRAPHY AND CLIMATE

The property lies on the northwest flank of a 5,600 foot mountain and across the peak area of the mountain.

Northwest trending ridges from the peak are separated by deeply incised creek valleys, lower elevations on the property are about 4,000 feet A.S.L. Areas southeast of the peak are generally precipitous while most of the property is steep, it is negotiable.

Below tree line, at 5,000 feet, vegetation is of spruce and balsam with buckbrush, and is locally dense. Above tree line grass and caribou moss cover the open ridge tops.

The climate in this area is very cold in the winter, with 6-8 feet of snow. Summers are short and mild with a snow-free working season from mid-June to late September.

### PROPERTY

The PAT group was staked for Acheron Mines Ltd (NPL) and Cream Silver Mines Ltd (NPL) in February 1973. The claims are located and recorded in the Watson Lake Mining Division of the Yukon Territory.

The property consists of:-

<u>Claims</u>	<u>Record Numbers</u>
PAT 1-40	Y72412-Y72451

Claim tags were affixed to the appropriate claim posts during August 1973.

### REGIONAL GEOLOGY

The geological map for this area is the Geological Survey of Canada Map 8-1967, Nahanni 1 inch = 4 mile sheet.

The geological basement in the PAT group area is composed of Cambrian and Earlier gritty feldspathic quartzite, quartz and feldspar pebble conglomerate, sandstone, gray, green, and maroon shale and phyllite; and minor limestone.

Presumably unconformably overlying this is Upper Cambrian and (?) Ordovician limestone, dolomitic siltstone, silty dolomite, with minor basal sandy dolomite and quartzite. Overlying this, Upper Ordovician and Silurian black graptolitic shale, argillaceous limestone, and minor black chert, cherty argillite and dolomite are found. It is in the vicinity of this sequence that lead-zinc mineralization has been discovered at Howard Pass.

Stratigraphically uppermost in the area are Devonian and (?) Mississippian black shale and argillite, sandstone, siltstone, banded chert, and chert pebble conglomerate.

Intense folding on northwesterly trending axes predominates in the area. This folding is accompanied by strong parallel to sub-parallel cleavage. Less intense folding on north to northeasterly axes is inferred in the area. Competent rocks are highly fractured by cleavage and incompetent rocks tend to be isoclinally folded on a minor scale.

### PROPERTY GEOLOGY

The PAT mineral claim group is underlain by siliceous sediments which, on the basis of lithology and fossils, are assigned to the Upper Ordovician-Silurian group.

The succession of rocks is as follows:

- a. Gray weathering, fine-grained, coarsely foliated, black chert with minor graptolitic shale layers.
- b. Black fissile slaty graptolitic shale with a thickness approximately 200 feet.
- c. Red and black, thinly-bedded, very fissile and fine-grained shale.

The black chert is at the stratigraphic top of the succession. It occurs along the two outer ridges, where it forms prominent cliffs. It also occurs at the top of the peak where it is highly fractured, here attitudes tend to be somewhat random due to the fracturing and slumping. Minor shaley layers are graptolitic, though not quite so abundantly as the lower strata.

The middle strata of graptolitic shale is highly fossiliferous and also contains a notable amount of graphite. Bedding surfaces are crowded with graptolites which tend to weather white and are very distinctive. The base of the stratigraphically uppermost sequence on the eastern corner of the claims produced one specimen of *Dicellograptus Complinatus* which is reported to be found only in the latest part of the Upper Ordovician.

The lowest member is red and black shale. These shales are highly sheared, and tend to form small slides on the central ridge. Generally it is not possible to measure the strike or dip due to the fragmentation of the rocks. These shales are apparently non-fossiliferous.

Structurally the rocks are anticlinally folded into an oval dome whose axis runs northwest-southeast. Due to the poverty of outcrop the exact details are difficult to measure, but the domical structure is easily observed. The highest point of the dome coincides with the peak; here the rather random attitudes

appear to be the effect of strong deformation of brittle rock.

Two other types of folding were seen, both on minor scale. One set is parallel to the main fold axis; the other trends north-south.

No faults or shears were noted. The small discontinuities in the sequences are due to fractures resulting from the folding of a mixture of competent and incompetent beds.

No calcareous rocks were found in this area. It is possible that calcareous rocks exist lower in the succession. However, lack of knowledge of the precise stratigraphy of the Upper Ordovician sequences make it impossible to predict the potential depth of any possibly present calcareous shales.

No metalliferous minerals, apart from minor pyrite, were seen in the rocks on the PAT claim group. However the sequences known to carry lead-zinc in Howard Pass correlated to the Upper Ordovician and Silurian mapped on the property.

Sampling was carried out in the areas felt at the time most likely to carry mineralization.

#### GEOCHEMICAL SURVEY

A reconnaissance rock geochemical survey was conducted on the south-east end of the property. Rock samples were taken every 200 feet along 4 northeasterly bearing lines 400-600 feet apart. Samples were taken from outcrop only, talus was generally avoided.

A total of 72 rock samples were crushed and analysed.

### ANALYSIS

A minus 80 mesh fraction from crushed rock samples was analysed at Agilis Engineering Ltd. base-camp at Summit Lake.

Analysis was conducted on an Echo Portable Mineral Analyser M8524 X-ray refraction machine. Two readings, for each of lead and zinc content, were taken from each sample. Reliable detectable limits for each element is 0.10% on this equipment.

### RESULTS

No zinc results were obtained of higher than reliable detectable limit (0.10%). Ten valid lead results were obtained. The lead values range up to 0.76 - 0.83%.

### INTERPRETATION

The valid lead results are relatively widely distributed over the limited area sampled. Unfortunately the samples test the higher portions of stratigraphic exposure, the area most distant from any calcareous sequences that might underlie the property; it is believed that should any significant lead-zinc mineralization exist in the PAT group it would be in the calcareous sequences immediately below the Upper Ordovician. The unknown factor in the PAT claim area is whether the calcareous unit has gone through a facies change to siliceous shale, leaving the area devoid of calcareous rocks.

### CONCLUSIONS

The PAT mineral claims of Acheron Mines Ltd (NPL), and Cream Silver Mines Ltd (NPL) are underlain by a northwesterly striking anticlinal dome of Ordovician and Silurian shales.

Rock geochemical reconnaissance of the southeast end of the claims

has failed to yield any significant anomalies. The geochemical work done to date is not considered sufficient to adequately test the potential of the property.

Potentially economically favourable calcareous sequences associated with the Ordovician and Upper Ordovician at Howard Pass are not exposed on the PAT claims. Whether they exist at shallow depths on the property or are phased out by a facies change in the PAT claim area is not known at this time.

Further information on the stratigraphic relationship of graptolitic shales and the calcareous shales in the Howard Pass deposit would be valuable in interpreting the economic potential of this property.

#### RECOMMENDATIONS

The area of the two creek bottoms on the PAT group should be soil sampled in some detail. Lead background on the claims is apparently spordically high, particular attention should be given to any high zinc values obtained from these samples.


The purpose of the sampling is to test strata as low as possible in the stratigraphy, and to detect the geochemical expression of any mineralization that may be mobilized upward along fractures.

As Canex-Placer release more detailed information on the nature and structure of their deposit in Howard Pass, their data, particularly regarding stratigraphy, should be applied to the PAT claims.

Should any encouraging results be obtained from the above work it should be checked by further detailed sampling. Diamond drilling with NQ wireline equipment into the anticline should follow

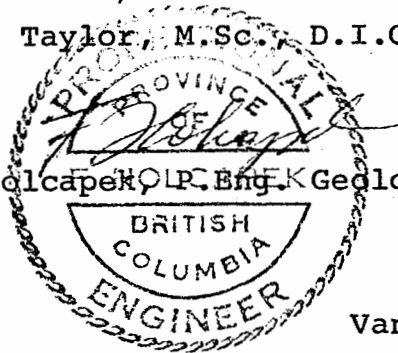
definition of any anomalous areas. Drilling should first be directed to determining the presence or absence of mineralized calcareous sequences in the axial hinge area of the anticline. Follow up drilling should investigate the favourable strata on the flanks of the anticline.

Respectfully submitted,



D.P. Taylor, M.Sc., D.I.C.

Endorsed by F. Holcapek, P. Eng. Geologist.



November 15, 1973

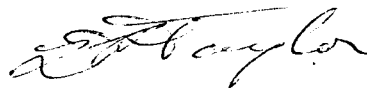
Vancouver, B.C.

CERTIFICATION

I, DAVID PELHAM TAYLOR, of Vancouver, B.C.  
do hereby certify that:

1. I am an exploration geologist, residing at  
2097 West 6th Avenue, Vancouver, B.C.
2. I am a graduate of the Royal School of Mines  
London University (M.Sc., D.I.C. 1971).
3. I have practised as an exploration geologist  
in B.C. for five years.
4. I am registered as an Engineer-in-training with  
The Association of Professional Engineers of  
the Province of British Columbia.
5. The work subject of this report was conducted  
by myself and a crew under my supervision.

D.P. Taylor, M.Sc., D.I.C.



November, 1973

Vancouver, B.C.

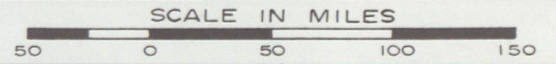
# YUKON TERRITORY

ACHERON MINES LTD. (NPL)  
& CREAM SILVER MINES LTD. (NPL)

## PAT CLAIMS HOWARD PASS AREA

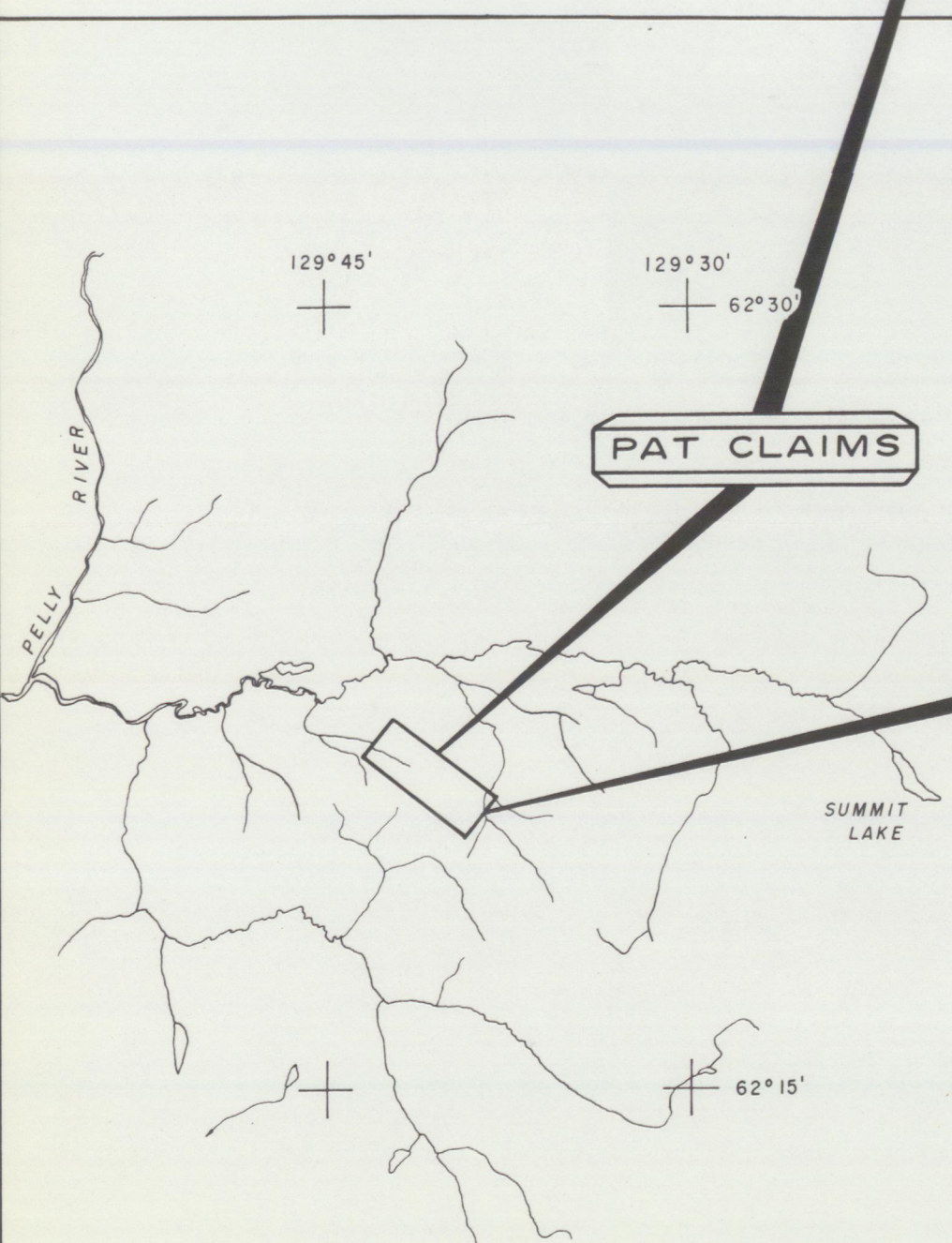
WATSON LAKE MINING DISTRICT, Y.T.

### PROPERTY LOCATION MAP



AGILIS ENGINEERING LTD.

NOVEMBER, 1973

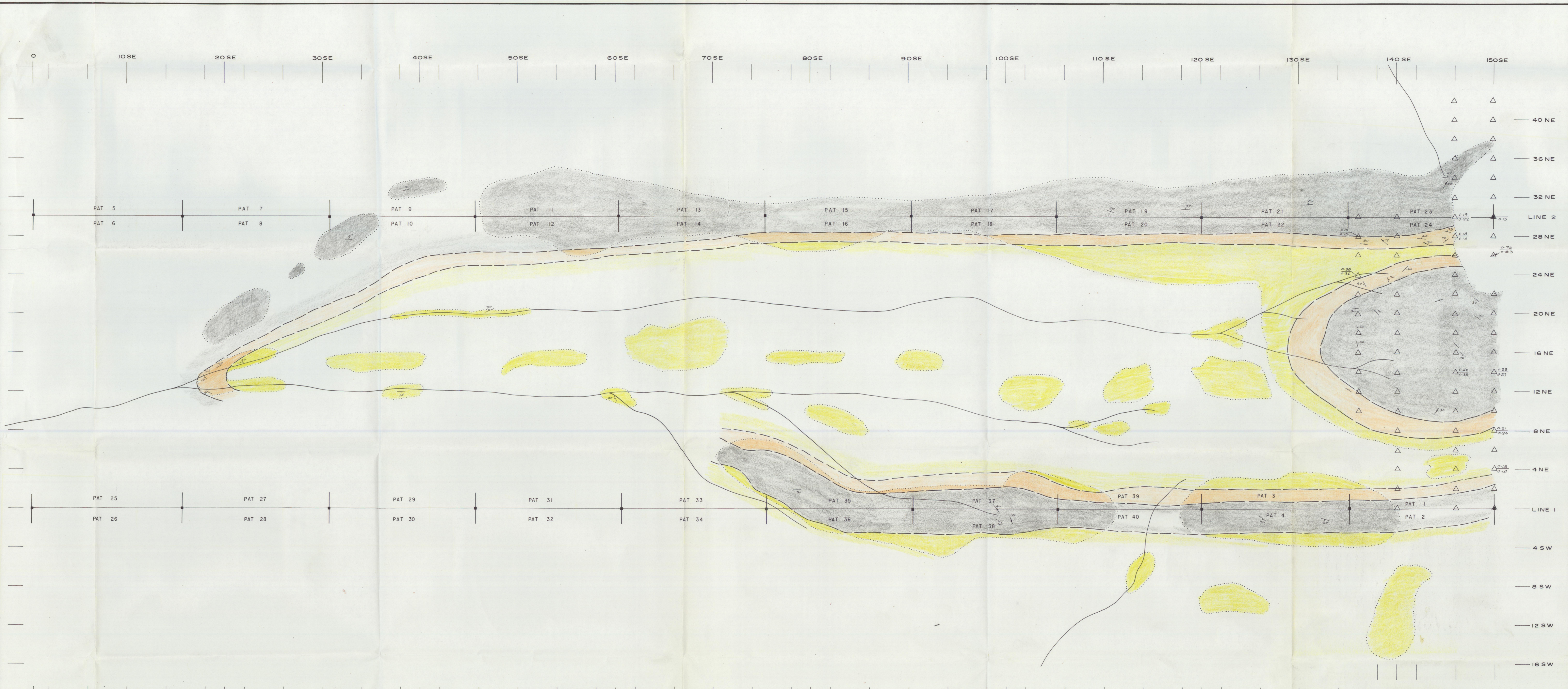


**PAT CLAIMS**

Pat 5	Pat 7	Pat 9	Pat 11	Pat 13	Pat 15	Pat 17	Pat 19	Pat 21	Pat 23
Pat 6	Pat 8	Pat 10	Pat 12	Pat 14	Pat 16	Pat 18	Pat 20	Pat 22	Pat 24
Pat 25	Pat 27	Pat 29	Pat 31	Pat 33	Pat 35	Pat 37	Pat 39	Pat 41	Pat 43
Pat 26	Pat 28	Pat 30	Pat 32	Pat 34	Pat 36	Pat 38	Pat 40	Pat 42	Pat 44

SCALE 1" = 4000 Ft.

SCALE 1 : 250,000



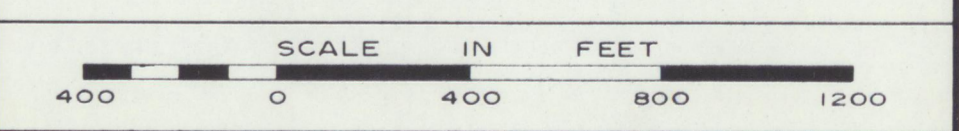
LEGEND:

- Black banded chert with minor graptolitic shale lenses.
- Black graphitic graptolitic shale
- Red & black fissile slaty shale
- Outcrop
- Contact approximate
- Strike & dip of bedding
- Fold axis & plunge

- Claim post
- Rock sample location (value in percent concentration)
- Soil sample location (value in percent concentration)

ACHERON MINES LTD. (NPL)  
 & CREAM SILVER MINES LTD. (NPL)  
 PAT CLAIM GROUP-HOWARD PASS AREA  
 WATSON LAKE MINING DIVISION

**GEOLOGY MAP**



AGILIS ENGINEERING LTD. NOVEMBER 1973