

GEOLOGICAL AND GEOCHEMICAL REPORT
 ON THE ENVI MINERAL CLAIM GROUP
 OF ACHERON MINES LTD (NPL)
 HOWARD PASS AREA, 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 \$15,284.20

[Signature]

Resident Geologist or
 Resident Mining Engineer

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

[Signature]
 Commissioner of Yukon Territory

November, 1973
 Vancouver, B.C.

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

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Lead (ppm): values only	
Zinc (ppm): values only	
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GEOLOGICAL AND GEOCHEMICAL REPORT
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HOWARD PASS AREA, YUKON TERRITORY

INTRODUCTION

The ENVI group of Acheron Mines Ltd (NPL) is located 4 miles northwest of Canex-Placer's major lead-zinc discovery in Howard Pass on the Yukon - Northwest Territories border. The claims were staked in late 1972 following Canex-Placer's announcement of their discovery, and were subsequently acquired by the company.

During the summer of 1973 geological and geochemical surveys were conducted on the property by personnel of Agilis Engineering Ltd. Geological mapping was performed by Dr. A.M. de Quadros. All work was performed under the direction and supervision of the writer of this report.

LOCATION AND ACCESS

The ENVI claims are located in the Yukon Territory 4 miles northwest of Howard Pass and 12 miles north of Summit Lake, which is 158 miles north of Watson Lake, Y.T. The centre of the property is located:-

62° 31' N; 129° 16' W.

Access to the property is at present limited to fixed-wing

aircraft and helicopter. Float or ski equipped aircraft may be taken to Summit Lake from Watson Lake or Ross River, with local access from Summit Lake by helicopter. Wheel or ski equipped aircraft may be used on Canex-Placer's airstrip at Howard Pass also with local helicopter access.

There is a winter tote-road to Howard Pass from the Cantung road, but to date plans for a permanent road to Howard Pass are tentative.

PHYSIOGRAPHY AND CLIMATE

The ENVI group covers the south facing slope of a fairly high mountain. Elevations on the property range from about 4,100 feet to 6,200 feet A.S.L. The property rises from low southern and eastern valleys up along a northwesterly trending ridge. A creek valley cuts sub-parallel to the regional trend across the property.

The area is covered by moderate to dense stunted spruce and buckbrush to tree line at about 5,000 feet, and grass and caribou moss are found above that.

The climate in this area is typically northern with very cold winters and mild summers. The snow-free working period is generally from mid-June to late September.

PROPERTY

The ENVI mineral claim group of Acheron Mines Ltd (NPL) was located by A. Harman in November, 1972. The property was acquired by the company from Mr. Harman. Claims numbered 1, 2, 21, and 22 were found to be overstaked on the PAS group and are invalid. The claims are located and recorded in the Watson Lake Mining District of the Yukon Territory. Some small part of the

northeast flank of the property apparently is in the Northwest Territories.

The property consists of:-

<u>CLAIMS</u>	<u>RECORD NUMBERS</u>
ENVI 1-40	Y70962 - Y71001

Claim tags were attached to the appropriate claim posts during early August, 1973.

REGIONAL GEOLOGY

This area has been mapped by the Geological Survey of Canada on a scale of 1 inch = 4 miles and is covered by Map 8-1967 Nahanni.

Three major rock units are found in the Howard Pass area, only two of which are pertinent to the property area.

Upper Cambrian and (?) Ordovician limestone, dolomite, siltstone, and silty dolomite, with minor basal sandy dolomite and quartzite are unconformably overlain by Devonian and (?) Mississippian black shale and argillite, sandstone and siltstone, banded chert, and chert pebble conglomerate. In some areas the unconformity between these two units contains Upper Ordovician and Silurian graptolitic shale, and black limestone, with minor black chert, cherty argillite and dolomite.

These beds are exposed in a series of northeasterly trending folds in the property area.

PROPERTY GEOLOGY

The ENVI claims lie on the anticlinal zone of a regional fold. The geology is considerable complicated by local isoclinal folding.

The structural trend on the property is 120° with dips being generally $70 - 80^{\circ}$ N, locally low as 30° N. The major folding on the property is regionally interpreted as being slightly overturned to the north. Minor folds exist on the property, these folds are apparently in harmony with the major structure and are also isoclinal. No fold closures could be definitively identified during field mapping. Isoclinal folding is indicated by continuous steep northerly dips and the repetition of geological sequences on the property.

Regionally interpreted the stratigraphy on the property is all Upper Cambrian in age and is;-

- a. Gray weathering dark gray wavy banded limestone generally exposed as bluff ridges.
- b. Gray weathering, dark, fine grained, fissile calcareous shale, often pyritic, which thins towards the centre of the property.
- c. Light grey weathering, blocky, poorly foliated limestone.
- d. Red, orange and buff weathering highly fissile calcareous and dolomitic shale, siltstone and mudstone.

Large boulders of chert pebble conglomerate found on the property, in the creek bed, are believed to be transported from immediately east of the property.

Sequences noted on the property are slightly too low in the stratigraphy to be related to mineralized strata in Howard Pass.

The only sulphide mineralization noted on the property during field mapping and prospecting was pervasive disseminated pyrite. The pyrite occurs as disseminations, generally very fine grained in all rocks but vary up to crystal agglomerations 1

inch across particularly in wavy banded limestone.

GEOCHEMICAL SURVEY

A geochemical survey was conducted on the property with soil or rock samples, depending on the nature of the ground, being taken on a grid pattern. Grid lines were placed across the property every 400 feet with sample stations every 200 feet along the lines.

Samples were taken with mattocks, and soil samples were taken from 10 - 12 inches depth whenever possible. "B" horizon material is moderately to poorly developed on the property but was obtained where it existed.

ANALYSIS

All soil samples were shipped to Core Laboratories Ltd., 325 Howe Street, Vancouver, B.C.

A minus 80 mesh fraction was taken from each sample and digested for 2½ hours in hot nitric acid. Quantitative analysis for ppm lead and zinc content was performed by atomic absorption methods.

Rock samples were shipped to Agilis Engineering Ltd., base-camp at Summit Lake where they were dried and crushed. A minus 80 mesh fraction was taken from each sample and analysed on an Echo Portable Mineral Analyser M8524 X-ray refraction machine. Two readings for each element, lead and zinc, were recorded on each sample.

RESULTS

A total of 197 soil samples were analysed for lead and zinc content from the ENVI group. Statistical analysis of the results, plotting cumulative frequency percent on arithmetic probability paper, yielded the following parameters:

	<u>Range ppm</u>	<u>Background ppm</u>	<u>Anomalous ppm</u>
Pb	5-145	24	78
Zn	5-680	112	245

The results are regionally low for zinc and somewhat higher than normal for lead. The highest samples are not in the range considered to reflect significant mineralization in the Howard Pass area.

A total of 596 rock samples were taken and analysed for lead and zinc content by the XRF. Only 11 results were obtained higher than the reliable detection limit for the machine of 0.10%, and these were all for lead. The highest rock results were 0.11 - 0.14% Pb.

INTERPRETATION

Small, discontinuous, statistical anomalies have developed in the southwest sector of the property and along the eastern flank of the claim group. None of these are of an intensity to be of economic interest.

The noticeable rise in value toward the east is believed due to geological developments off the property. On the adjoining PAS group of claims mineralogically favourable strata are found and rumours of lead-zinc mineralization on the PAS group have been heard.

The stratigraphic sequence on the ENVI group is marginal to, but below, the strata known to contain the Howard Pass deposit. If mineralization existed on the ENVI group it has been removed by erosion.

CONCLUSIONS

The ENVI mineral claim group of Acheron Mines Ltd (NPL) is underlain by an intensely folded sequence of Upper Cambrian calcareous rocks.

Regionally considered economically favourable Ordovician and later sequences have been eroded from the property.

Statistical anomalies on the property are not of an intensity to be of economic interest in the Howard Pass area.

RECOMMENDATIONS

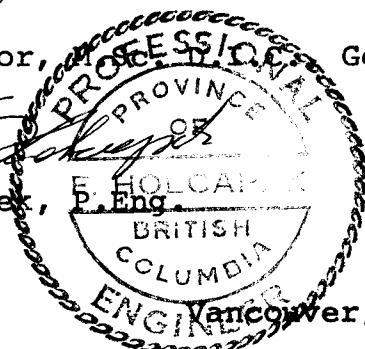
As no indications of economic lead or zinc mineralization have been found on the ENVI group during comprehensive reconnaissance geological and geochemical surveys in the summer of 1973, and the property is unlikely to be of any logistic value, no further resources should be expended on the property.

Respectfully submitted,

D.P. Taylor

D.P. Taylor, Geologist

Endorsed by F. Holcapek,

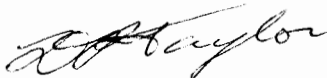


November 6, 1973

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.

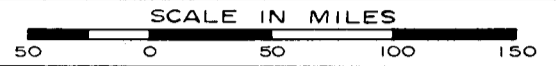
YUKON TERRITORY

ACHERON MINES LTD. (NPL)

ENVI CLAIMS
HOWARD PASS AREA

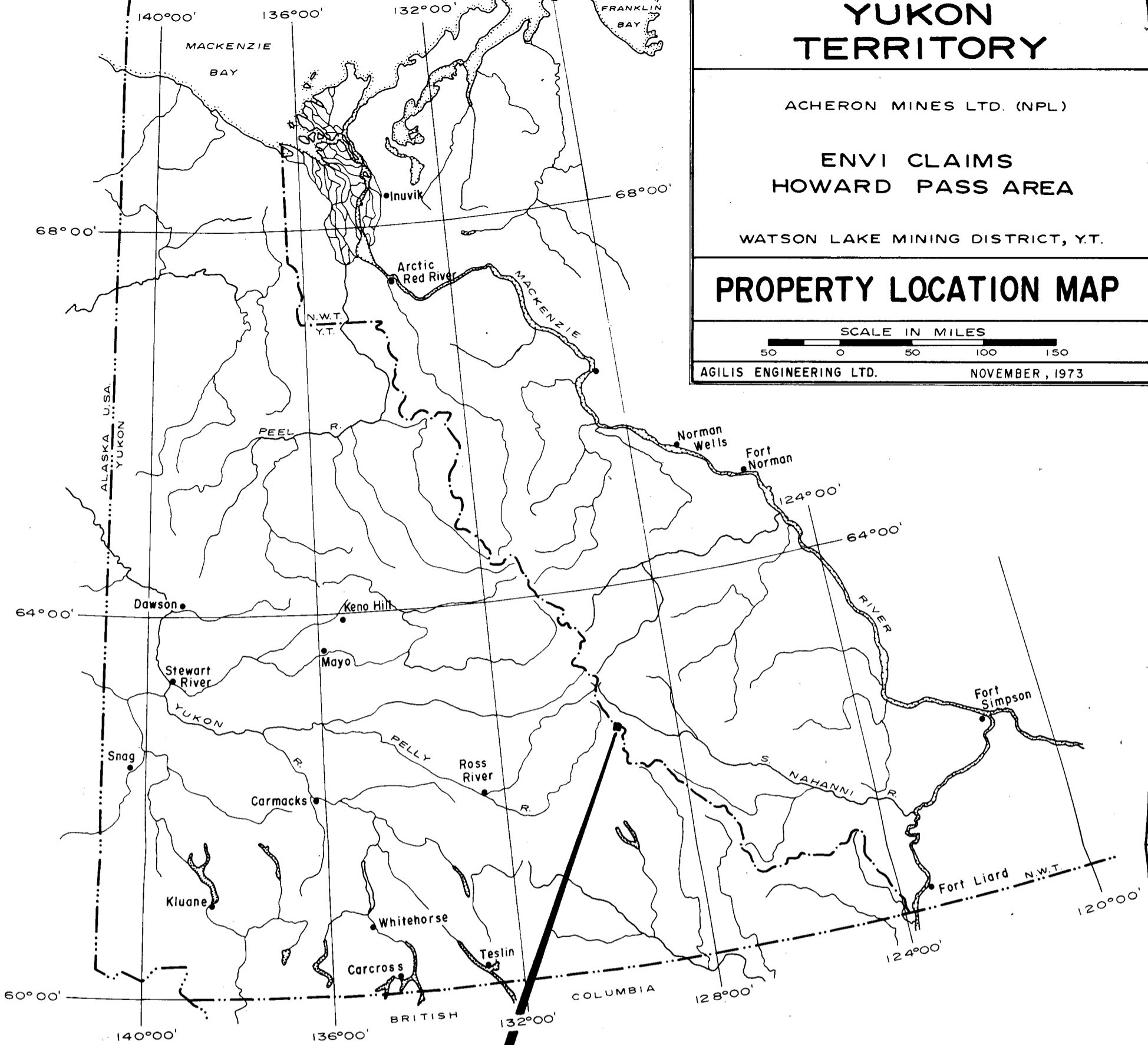
WATSON LAKE MINING DISTRICT, Y.T.

PROPERTY LOCATION MAP



AGILIS ENGINEERING LTD.

NOVEMBER, 1973

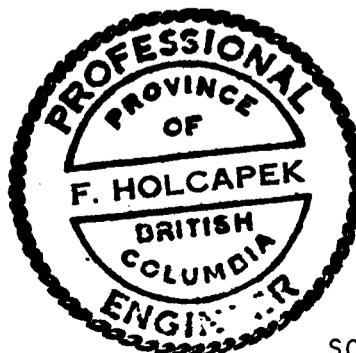


SCALE 1:250,000

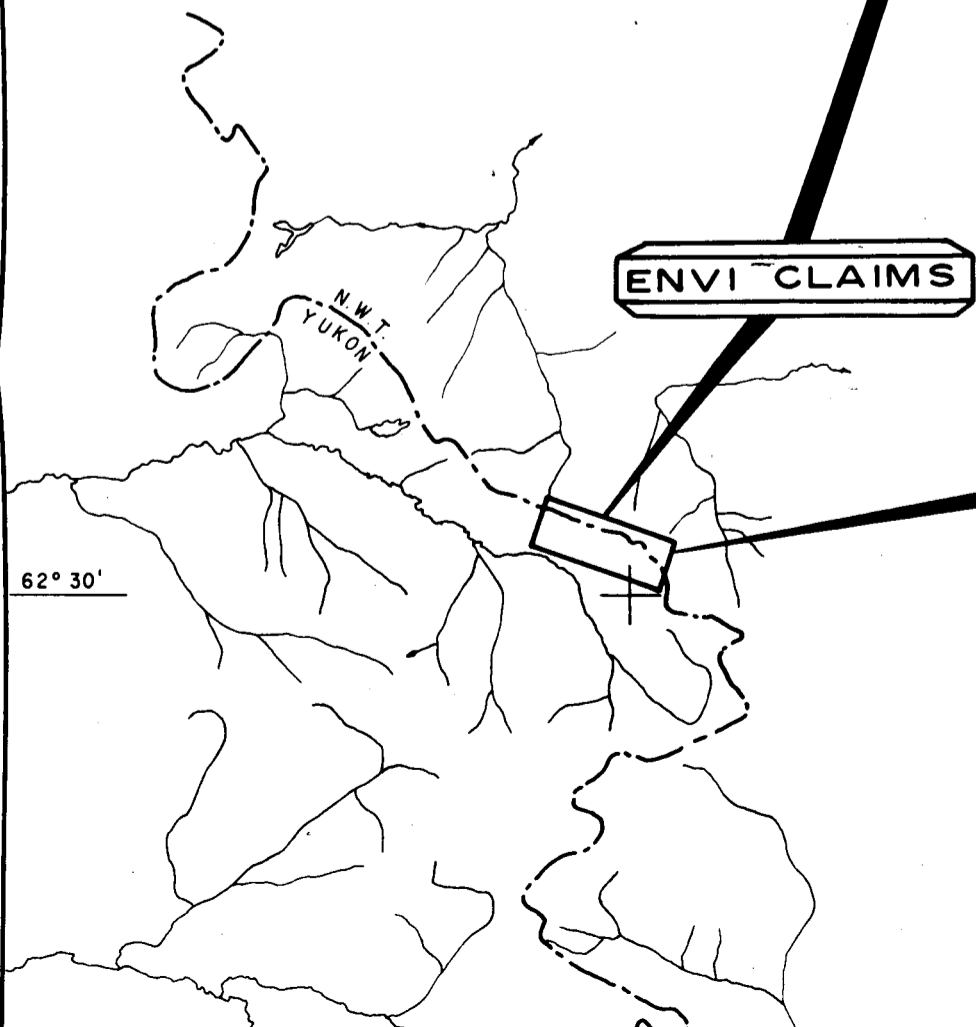
129°15'

ENVI CLAIMS

Envi 40	Envi 38	Envi 36	Envi 34	Envi 32	Envi 30	Envi 28	Envi 26	Envi 24	Envi 22
Envi 39	Envi 37	Envi 35	Envi 33	Envi 31	Envi 29	Envi 27	Envi 25	Envi 23	Envi 21
Envi 20	Envi 18	Envi 16	Envi 14	Envi 12	Envi 10	Envi 8	Envi 6	Envi 4	Envi 2
Envi 19	Envi 17	Envi 15	Envi 13	Envi 11	Envi 9	Envi 7	Envi 5	Envi 3	Envi 1



SCALE 1" = 4000 Feet



99.99 99.9 99.8 99.5 99 98 95 90 80 70 60 50 40 30 20 10 5 2 1 0.5 0.2 0.1 0.05 0.01

ACHERON MINES LTD. (NPL)
ENVI CLAIMS - HOWARD PASS AREA
WATSON LAKE MINING DISTRICT, Y.T.
GEOCHEM (Lead)
FREQUENCY DISTRIBUTION
GRAPH

RANGE PPM.

160

140

120

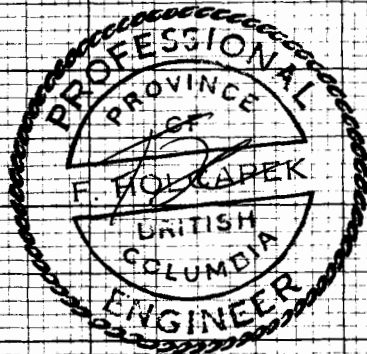
100

80

60

40

20

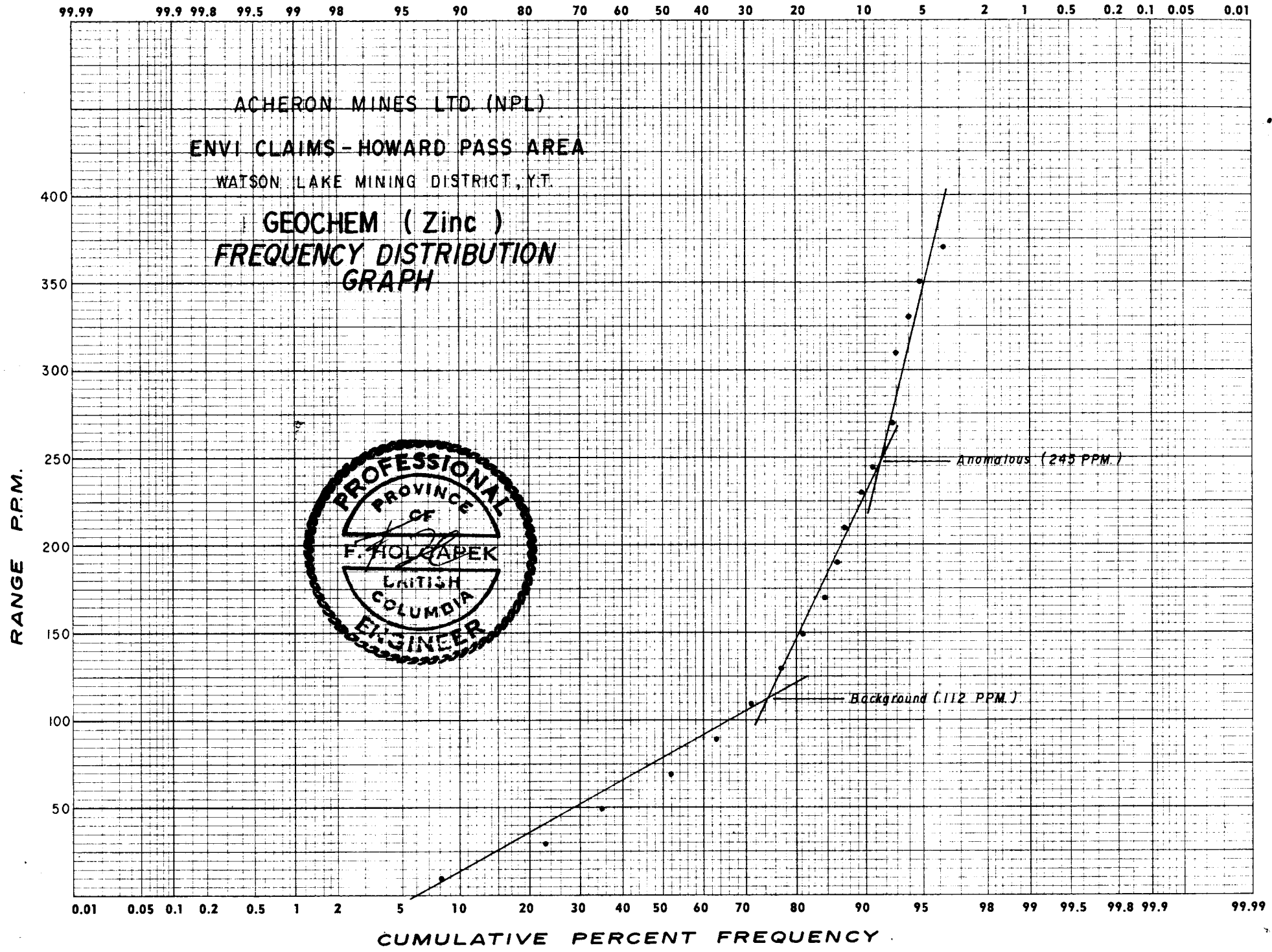


Anomalous (78 PPM.)

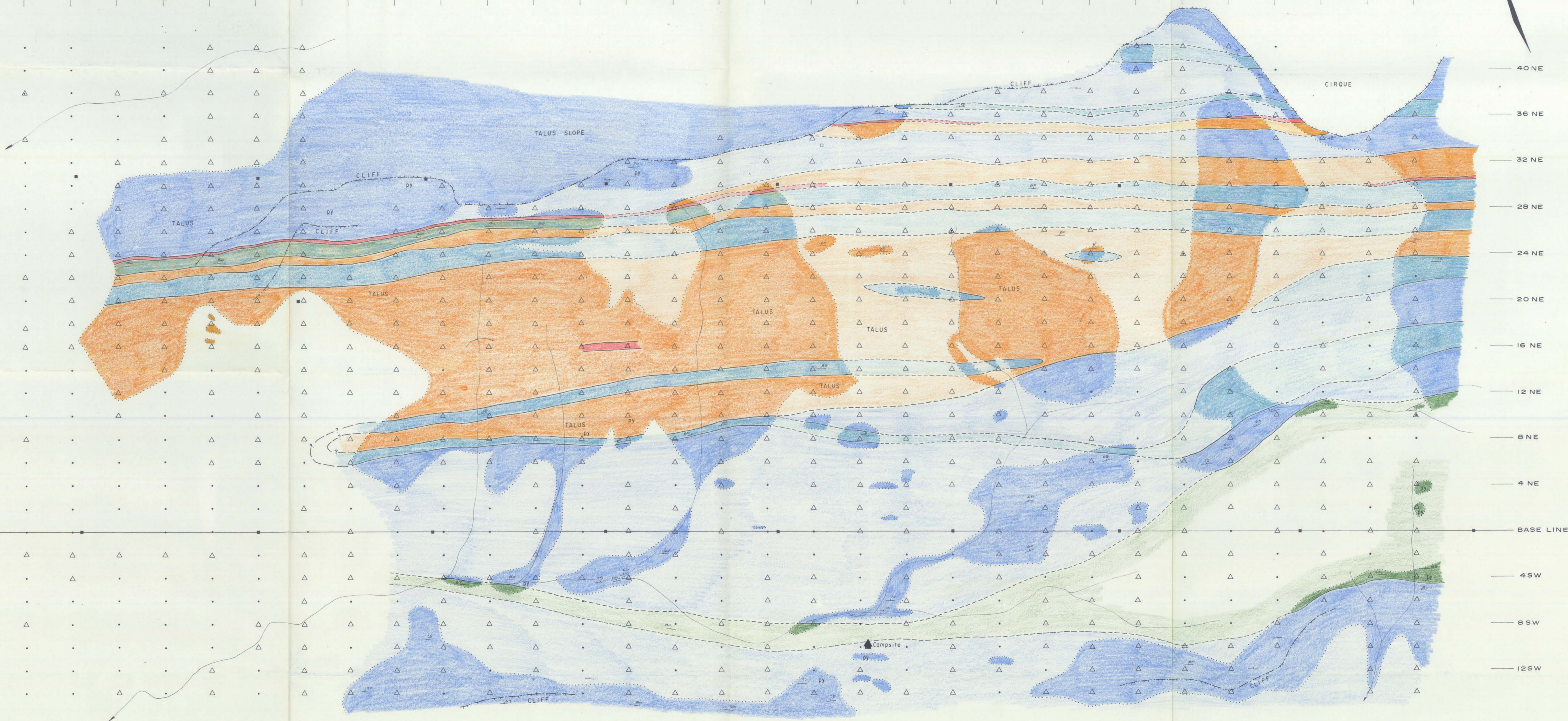
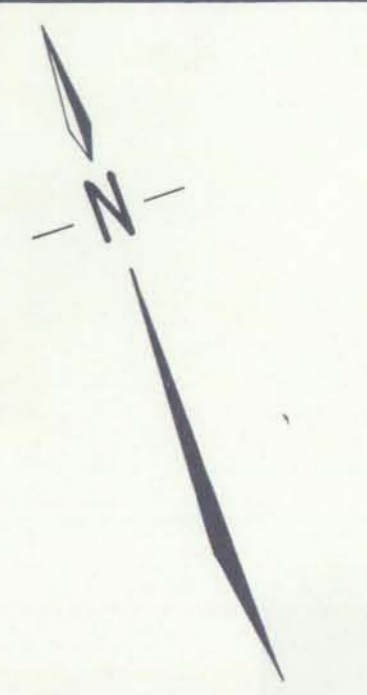
Background (24 PPM.)

0.01 0.05 0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.5 99.8 99.9 99.99

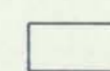




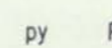



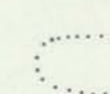
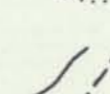
CUMULATIVE PERCENT FREQUENCY



140NW 136NW 132NW 128NW 124NW 120NW 116NW 112NW 108NW 104NW 100NW 96NW 92NW 88NW 84NW 80NW 76NW 72NW 68NW 64NW 60NW 56NW 52NW 48NW 44NW 40NW 36NW 32NW 28NW 24NW 20NW



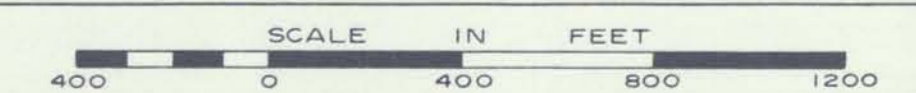
LEGEND:

- | | |
|---|--|
|  Quaternary soil cover |  Soil sample location |
|  Wavy banded limestone, grey-black & fine grained. |  Rock sample location |
|  Red dolomitic shale |  Pyrite |
|  Grey blackly limestone, poorly foliated black fine grained when fresh | |
|  Orange & buff weathering well foliated calcareous shales & siltstone | |
|  Black fine grained well polished calcareous shale. | |
|  Outcrop | |
|  Contact definite, approximate | |



ACHERON MINES LTD. (NPL)
ENVI CLAIMS, HOWARD PASS AREA
WATSON LAKE MINING DISTRICT, Y.T.

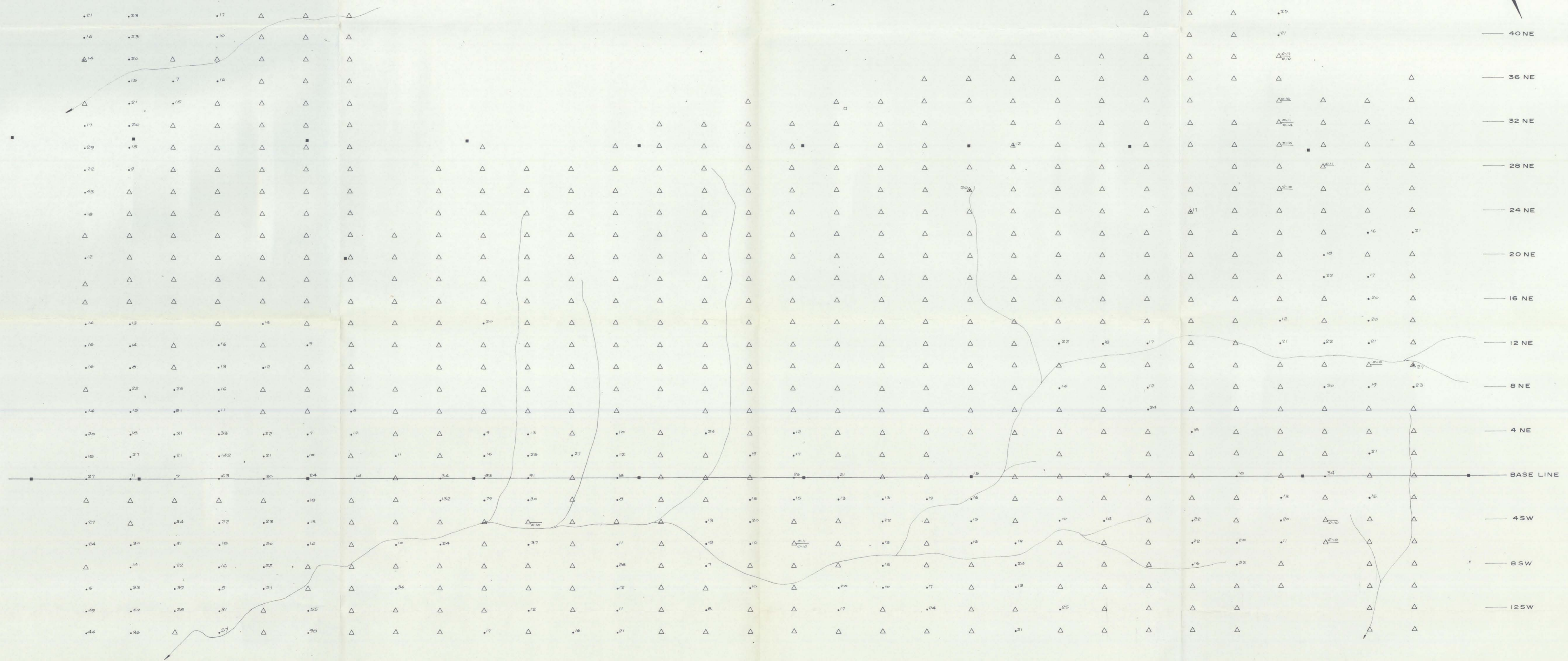
GEOLOGICAL MAP



AGILIS ENGINEERING LTD. NOVEMBER 1973



140NW 136NW 132NW 128NW 124NW 120NW 116NW 112NW 108NW 104NW 100NW 96NW 92NW 88NW 84NW 80NW 76NW 72NW 68NW 64NW 60NW 56NW 52NW 48NW 44NW 40NW 36NW 32NW 28NW 24NW 20NW



LEGEND:
 ■ Soil sample location (value in PPM)
 △ Rock sample location (value in percent concentration)



ACHERON MINES LTD. (NPL)
 ENVI CLAIMS, HOWARD PASS AREA
 WATSON LAKE MINING DISTRICT Y.T.

GEOCHEMICAL SURVEY

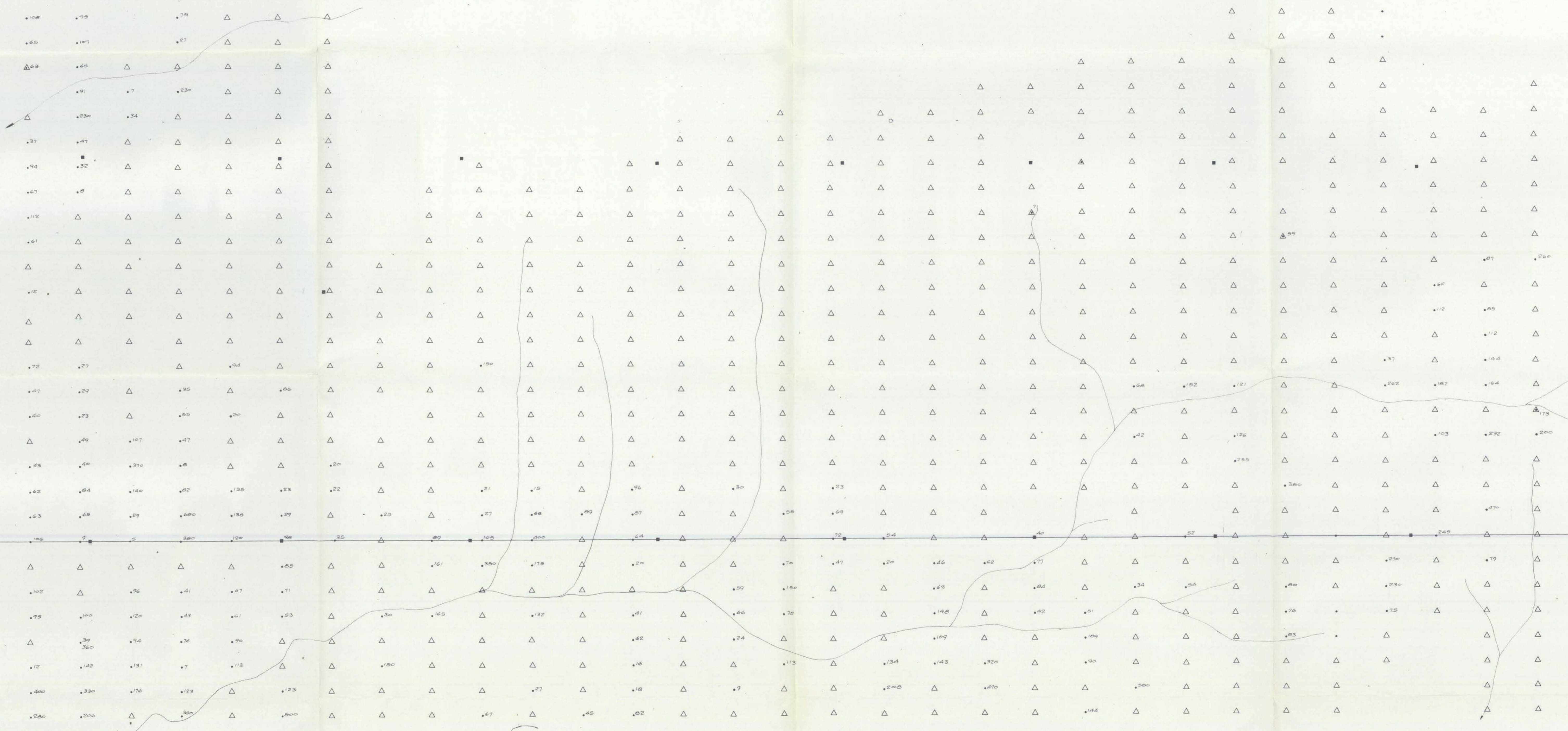
LEAD (PPM)

SCALE IN FEET
 400 0 400 800 1200

AGILIS ENGINEERING LTD. NOVEMBER 1973



140NW 136NW 132NW 128NW 124NW 120NW 116NW 112NW 108NW 104NW 100NW 96NW 92NW 88NW 84NW 80NW 76NW 72NW 68NW 64NW 60NW 56NW 52NW 48NW 44NW 40NW 36NW 32NW 28NW 24NW 20NW



LEGEND
 • Soil sample location
 △ Rock sample location



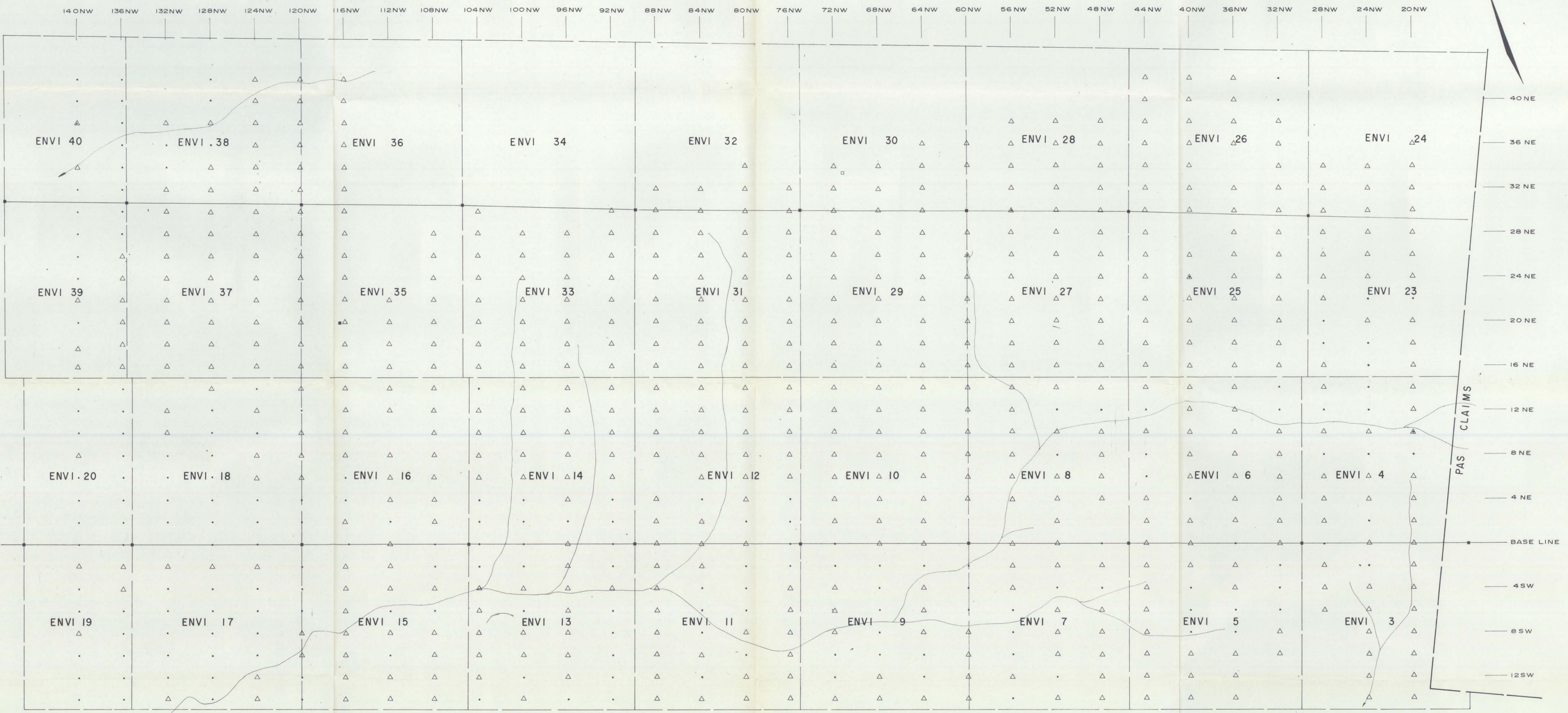
ACHERON MINES LTD. (NPL)
 ENVI CLAIMS, HOWARD PASS AREA
 WATSON LAKE MINING DISTRICT Y.T.

GEOCHEMICAL SURVEY

ZINC (PPM)

SCALE IN FEET
 400 0 400 800 1200

AGILIS ENGINEERING LTD. NOVEMBER 1973



ACHERON MINES LTD. (NPL)
 ENVI CLAIMS, HOWARD PASS AREA
 WATSON LAKE MINING DISTRICT, Y.T.

CLAIM MAP

