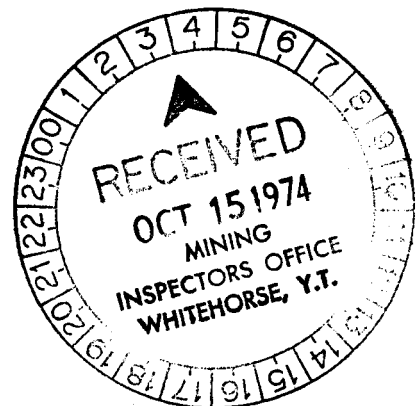
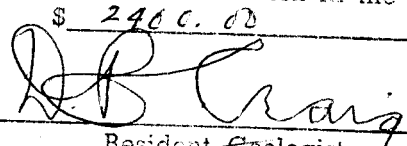


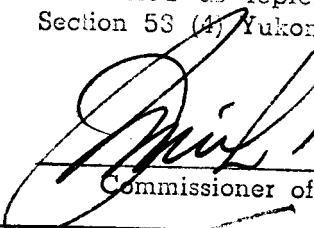
REPORT ON GEOLOGICAL, GEOCHEMICAL
AND CLAIM SURVEYS
LIZ 43-48 and 59-64
for
MR. HUGH SMITH



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 \$ 2466.00


Resident Geologist or
Resident Mining Engineer

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


Commissioner of Yukon Territory

Vancouver, B.C.
August 27, 1974.

TABLE OF CONTENTS

| | Page. |
|---------------------------|-------|
| Introduction | 1. |
| Geography | 1. |
| Topography | 2. |
| Property | 2. |
| History | 2. |
| Geology | 4. |
| Mineralization | 4. |
| Detail Geology | 4. |
| Geochemistry | 5. |
| Results | 6. |
| Interpretation | 6. |
| Discussion and Conclusion | 7. |

Cumulative percent frequency - Zn

Cumulative percent frequency - Pb

REPORT ON GEOLOGICAL, GEOCHEMICAL
AND CLAIM SURVEYS
LIZ 43-48 and 59-64
FOR
MR. HUGH SMITH.

INTRODUCTION

The Liz 43-48 and 59-64 mineral claims are located approx-
5.5 miles east of a major zinc discovery made by Barrier Reef
Resources Ltd. during the summer of 1973 in the Bonnet Plume
River Area, Northwest Yukon.

This report is based on field work conducted by
Agilis Engineering Ltd.

Work consisted of claim survey, geological mapping, gridding,
800 foot line and 200 foot stations, and soil sampling.

The geological mapping was completed by J. Deighton,
Geologist. The program was supervised by the writer.

GEOGRAPHY

Location and Access

The Liz mineral claims are located approximately 125 miles
northeast of Mayo, Y.T. on Duo creek, a tributary of the
Bonnet Plume River.

Coordinates of the property are 64° 24' N. Latitude and
132° 26' W. Longitude.

The property lies within the map sheet 106C of the
National Topographic series.

Access to the property from Vancouver is either by motor vehicle to Mayo, Y.T and from there by helicopter to the property, or by Canadian Pacific Airlines to Whitehorse, via North Air to Mayo and hence via helicopter to the property.

A small lake, Porters Puddle, on Duo Creek is accessible by fixed wing planes. Barrier Reef Resources Ltd. is constructing a winter airstrip on Goz Creek and a winter tote road is planned from Mayo.

TOPOGRAPHY

The Liz mineral claims lie along the valley of Duo. Only small isolated outcrops have been found on the property. Just north of the claim boundary topography steepens and outcrops become plentiful. Numerous cliffs traverse this area.

PROPERTY

The Liz mineral claims were acquired by Mr. Hugh Smith from Mr. Andy Harman, prospector and consists of the following contiguous mineral claims.

| <u>Name</u> | <u>Record Number</u> | <u>Record Date</u> |
|-------------|----------------------|--------------------|
| Liz 43-48 | Y69728 - 33 | Aug. 21, 1973. |
| Liz 59-64 | Y69744 - 49 | Aug. 21, 1973. |

HISTORY

The area was mapped by Dr. J.O. Wheeler, Geological Survey of Canada, in 1952 and the information was published as Preliminary Map 53-7, at a scale of 1 inch = 4 miles. The area was remapped in more details by S.L. Blusson, Geological Survey of Canada.

The first lead-zinc discoveries associated with brecciated dolomites were made in the early 1950's by the K.J. Springer interests. These showings were followed up in recent years by Gordon Dickson, prospector.

Further exploration along the belt of Palaeozoic sedimentary units lead to the discovery of the Tom deposit of Hudson Bay Mining and Smelting at McMillan Pass, the strati-form lead-zinc deposits of the Vangorda Area, of which the Anvil Mines with 60 million tons grading 10% lead-zinc combined is producing at a rate of 7,500 tons per day.

From 1965 to 1972 exploration in the area, because of low metal prices and high exploration costs, was discontinued.

In 1972, the discovery of the Summit Lake deposit by Canex Placer Ltd. along a 25 mile long belt of Ordovician graptolitic shales resulted in renewed exploration.

During 1972 important base metal discoveries were made in the Godlin Lake area in the Northwest Territories, 100 miles north of Summit Lake. The mineralization occurs within a belt of open-folded and faulted Lower Palaeozoic carbonate rocks, the Mackenzie fold belt.

Exploration concentrated along this fold belt results in the discovery of the Bonnet Plume discoveries of Barrier Reef Resources Ltd. and the discoveries by Cypress Resources Ltd., 10 miles to the west of the first.

The Liz mineral claims lie approximately 5 miles east of the main Barrier Reef discovery and approximately 2 miles east of a zinc discovery along the eastern boundary of Barrier Reef Resources Ltd., property.

GEOLOGY

The Liz 43-48 and 59-64 claims owned by Mr. H. Smith are underlain by Lower Cambrian Strata of the Backbone Range Formation. This unit is composed of the varied colored shales, argillites, quartzites, grits and minor limestone and dolomites. The western portion of the claim group may be underlain by a subdivision of the Backbone Range Formation, - buff grey weathering poorly bedded and in part pistolithic dolomite. This sub-division is the unit in which lead-zinc mineralization occurs on the adjacent ground of Barrier Reef.

MINERALIZATION

Mineralization in the Bonnet Plume area is comprised of light to buff-colored to reddish-brown sphalerite associated with porous, brecciated and in places silicified dolomites. Galena has been reported from the higher grade ores.

The best mineralization is usually associated with breccia but has also been found parallel to bedding. The latter type has usually little associated quartz.

Surface outcrops of mineralized rocks are strongly weathered and zinc carbonates (Smithsonite) is abundant. This feature makes recognition of economic mineralization difficult without the use of geochemical aids.

DETAIL GEOLOGY

The Liz mineral claims occupy low, rolling flats bordering Duo Creek and are mainly overburden covered.

Geological mapping of the claim group did not locate any rock exposures except along the north western margin of the

claim group.

Rocks exposed in this area are believed to be part of the Backbone formation. The exposure consists of grey, massive limestone 20 to 30 feet thick dipping flatly to the north.

An east-west trending synclinal fold with flatly (20° E) plunging axis is indicated.

There is abundant indication from topographic features, for faulting and shearing. A strong N-S fault appears to cut the dolomites along the western margin of the claim group.

This fault outcrops to the north of the claim group and at this point it seems to form the contact between the Backbone formation and shales of the Sheepbed Formation.

No mineralization has been found on the claim group.

GEOCHEMISTRY

Field Method

The Liz mineral claims were soil sampled on a grid system. The grid consisted of North-South compass lines, 800 feet apart with sample stations every 200 feet along the lines marked by flagging. East West tie lines were established for control.

Samples were collected by auger from the "B" horizon where ever possible. Soils were packed in Kraft paper envelopes and shipped to Chemex Labs Ltd., 212 Brooksbank Ave., North Vancouver, B.C. for preparation and analysis for total lead and zinc.

Lab Technique

All samples were analysed by Chemex Labs Ltd.,

A minus 80 mesh fraction was taken from each sample, digested for 2 1/2 hours in hot nitric acid. A second minus 80 mesh fraction was digested for 4 hours in hot perchloric-nitric acid.

Quantitative analysis for lead and zinc content was performed by atomic absorption methods.

RESULTS

Results were obtained for a total of 156 samples. Statistical analysis is based on a total of 984 samples collected from the Liz mineral claims and surrounding areas.

The results were grouped, percent frequency and accumulated percent frequency calculated and data plotted on probability paper.

| | <u>Range</u> | <u># of Sample</u> | <u>Background ppm</u> | <u>%</u> | <u>Anomalous ppm</u> | <u>%</u> |
|------|--------------|--------------------|-----------------------|----------|----------------------|----------|
| Zinc | 10 to 4000 | 984 | 140 | 73.99 | 280 | 9.23 |
| Lead | 10 to 700 | 984 | 40 | 70.81 | 84 | 3.56 |

INTERPRETATION

The geochemical survey outlined two general areas and 3 spot highs anomalous in the zinc.

Area one is centered on line 80E, 6S and has a peak of 1,000 ppm zinc. This anomaly appears to be of very limited extent.

Area two peaks on Line 8E, 20S. Maximum value is 620 ppm

Zn. The anomaly extends from 96E, 20S to 8E, 20S a total length of 1,600 feet and obtains a maximum width of 800 feet along the western claim boundary.

The intensity of the anomaly is low and further investigation will depend on the underlying rock unit.

The spot highs are in the order of 300 ppm and are considered too weak to be of further interest.

Lead has been found to be anomalous in two areas, both areas coinciding with the zinc anomalies described above.

The first at 8E, 6S has a peak value of 120 ppm, but no lateral extent.

The second at 8E, 20S coincides also with a zinc anomaly but has a lateral extent of 800 ft. in length and 400 ft. in width with a peak value of 150 ppm. lead.

DISCUSSION AND CONCLUSIONS

Since no detailed geological information is available over the anomalous areas indicated it is difficult to evaluate the significance of the anomalies outlined.

The anomaly on 80E, 6S lies along the western boundary and has no lateral extent, hence it is considered important.

The second anomaly is well outlined by both, lead and zinc. The smaller extent of the lead is due to the lesser mobility of that metal in soils.

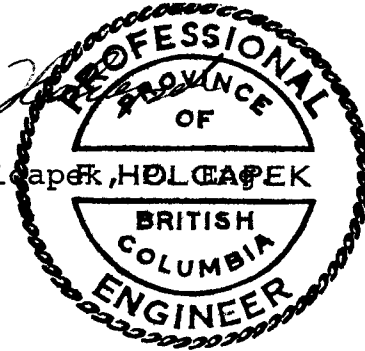
Geological mapping suggest that the favorable limestone unit breccia zone trends towards the anomaly.

Further work on the property will depend on more detailed geological information and should be deferred till such information is available.

The anomaly at 8E, 20S is classified as a second class target area.

Respectfully submitted,

F. Holcapek, HOLCAPEK



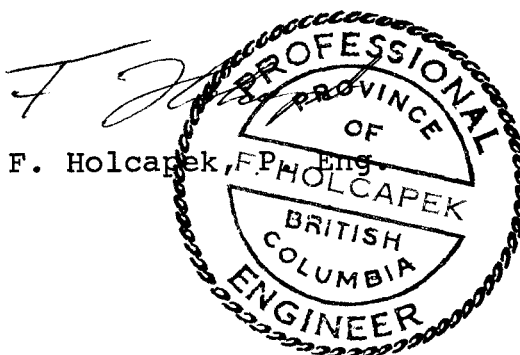
Vancouver, B.C.
August 27, 1974.

CERTIFICATION

I, Ferdinand Holcapek of 92 - 10842 152nd Street, Surrey, British Columbia, do hereby certify that:

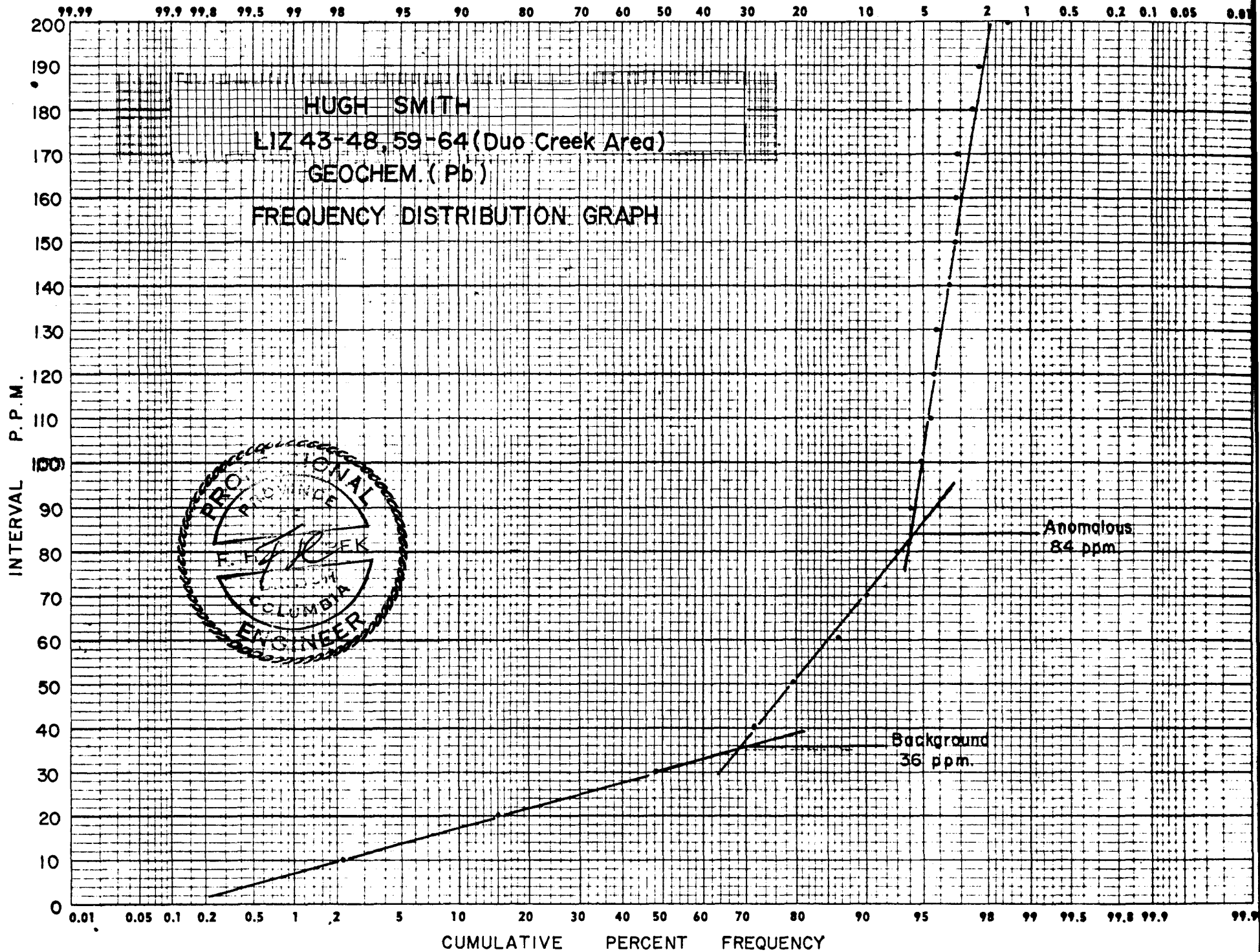
1. I am a graduate of the University of British Columbia, with a Bachelor of Science Degree in Geology, 1969.
2. Since graduation I have been engaged in mining exploration in British Columbia, Yukon Territory, Northwest Territories, Quebec, Nevada, Arizona, Mexico and Australia.
3. I am a registered member, in good standing, of the Association of Professional Engineers of British Columbia, the Geological Association of Canada and the Society of Exploration Geophysists.
4. I am a consulting geologist.
5. This report is based on field work conducted under my supervision, during the period of June 15 to July 31, 1974.
6. That the cost statement attached outlines expenditures incurred to complete the work program.

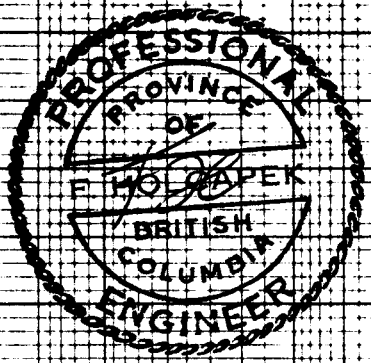
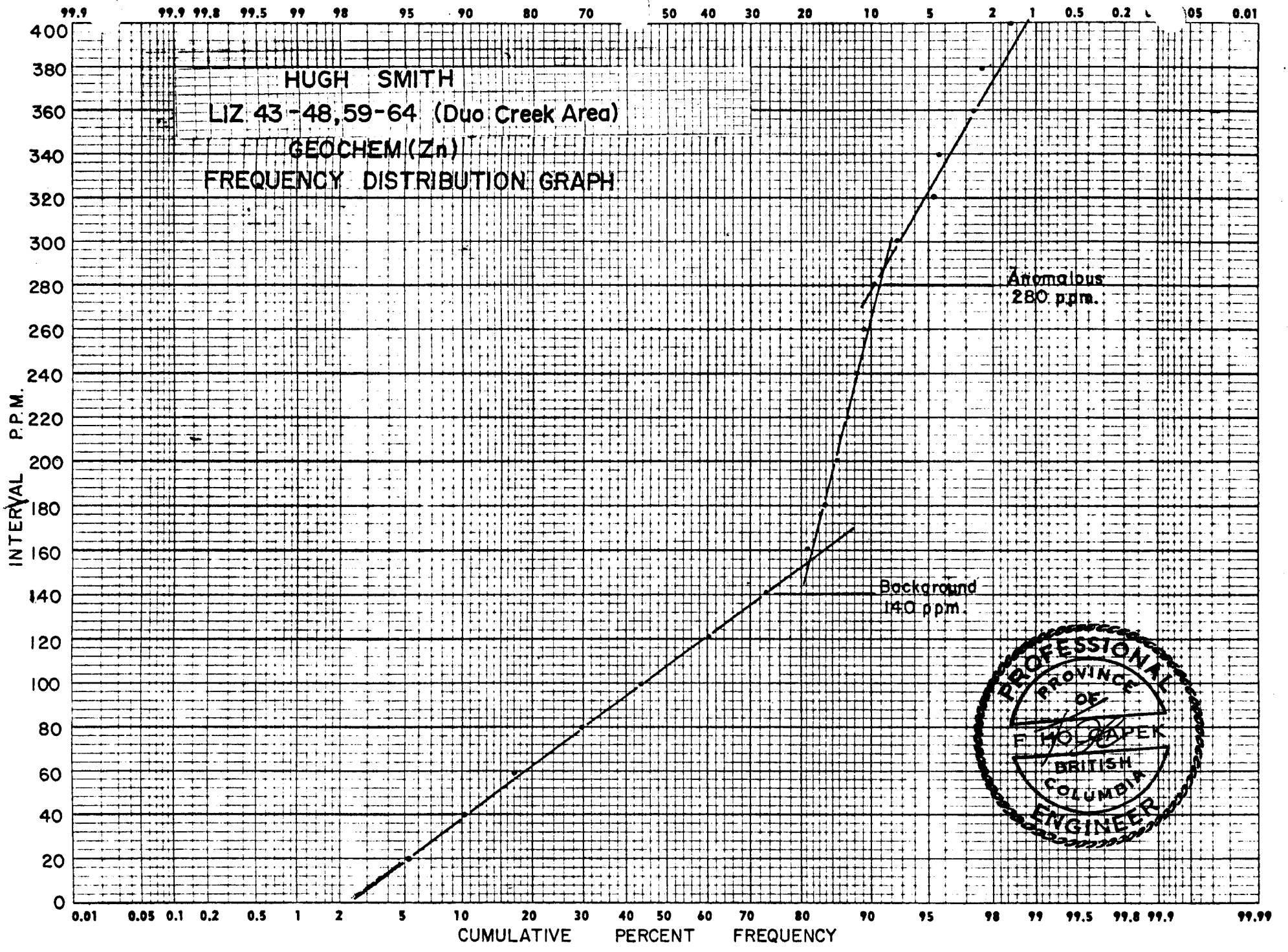
Vancouver, B.C.
August 27, 1974.



ZINC - ppm

| <u>Interval</u> | <u>No. of samples</u> | <u>%</u> | <u>Accumulative %</u> |
|-----------------|-----------------------|----------|-----------------------|
| 0-20 | 51 | 5.18 | 5.18 |
| 21-40 | 49 | 4.98 | 10.16 |
| 41-60 | 68 | 6.91 | 17.07 |
| 61-80 | 134 | 13.62 | 30.69 |
| 81-100 | 134 | 13.62 | 44.31 |
| 101-120 | 176 | 17.89 | 62.20 |
| 121-140 | 116 | 11.79 | 73.99 |
| 141-160 | 69 | 6.01 | 80.00 |
| 161-180 | 31 | 3.15 | 83.15 |
| 181-200 | 24 | 2.44 | 85.59 |
| 201-220 | 13 | 1.32 | 86.91 |
| 221-240 | 12 | 1.22 | 88.13 |
| 241-260 | 12 | 1.22 | 89.35 |
| 261-280 | 14 | 1.42 | 90.77 |
| 281-300 | 20 | 2.03 | 92.80 |
| 301-320 | 22 | 2.23 | 95.03 |
| 321-340 | 6 | .60 | 95.63 |
| 341-360 | 15 | 1.59 | 96.92 |
| 361-380 | 3 | .30 | 97.22 |
| 381-400 | 9 | .91 | 98.13 |
| 401-420 | 3 | .30 | 98.43 |
| 421-440 | 0 | | |
| 441-460 | 1 | .11 | 98.54 |
| 461-480 | 1 | .11 | 98.55 |
| 481-500+ | 11 | 1.12 | 99.67 |





YUKON TERRITORY

HUGH SMITH

DUO CREEK AREA

Liz 43-48, 59-64 Mineral Claims

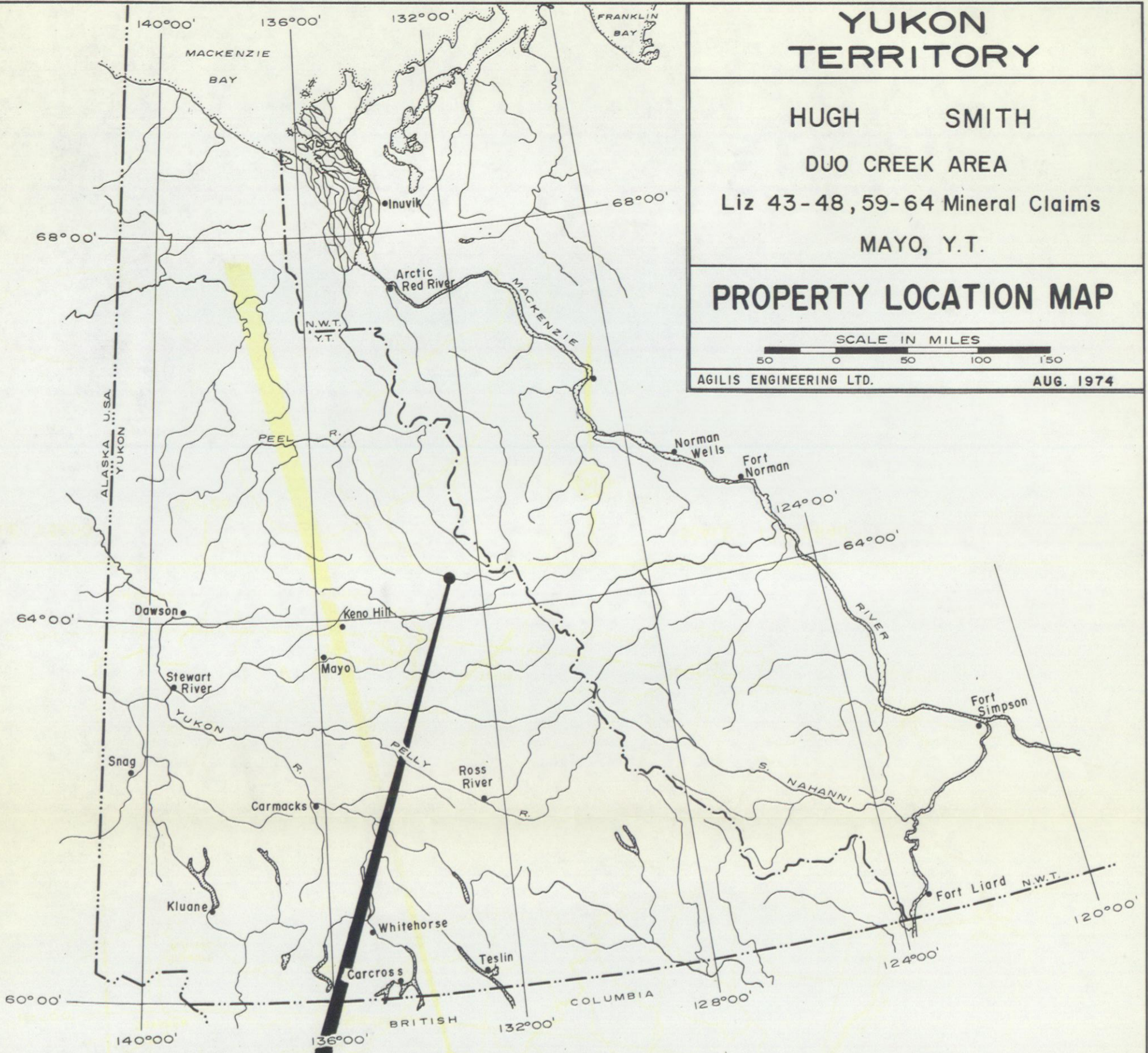
MAYO, Y.T.

PROPERTY LOCATION MAP

SCALE IN MILES
50 0 50 100 150

AGILIS ENGINEERING LTD.

AUG. 1974



SCALE: 1:5000

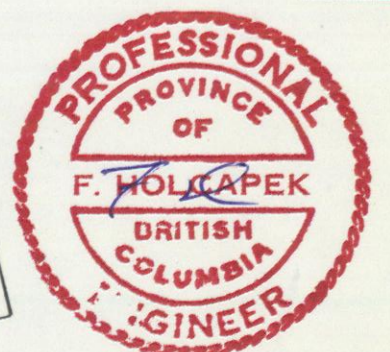
132°26'

SCALE: 1" = 2640'



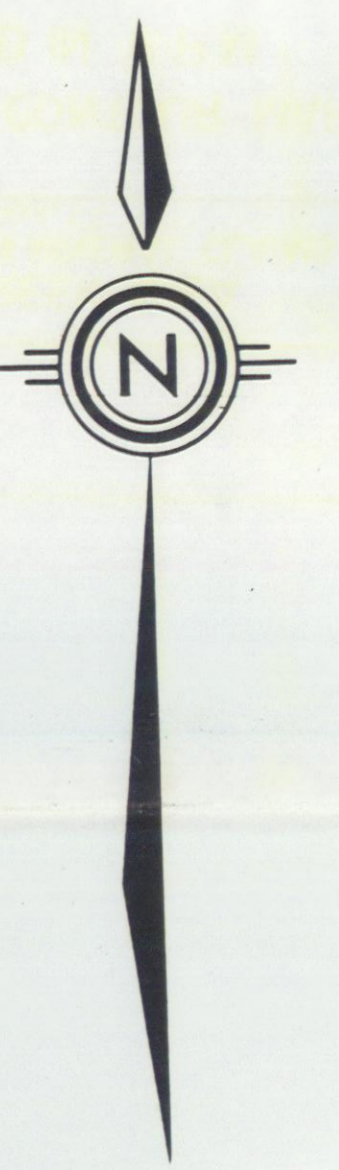
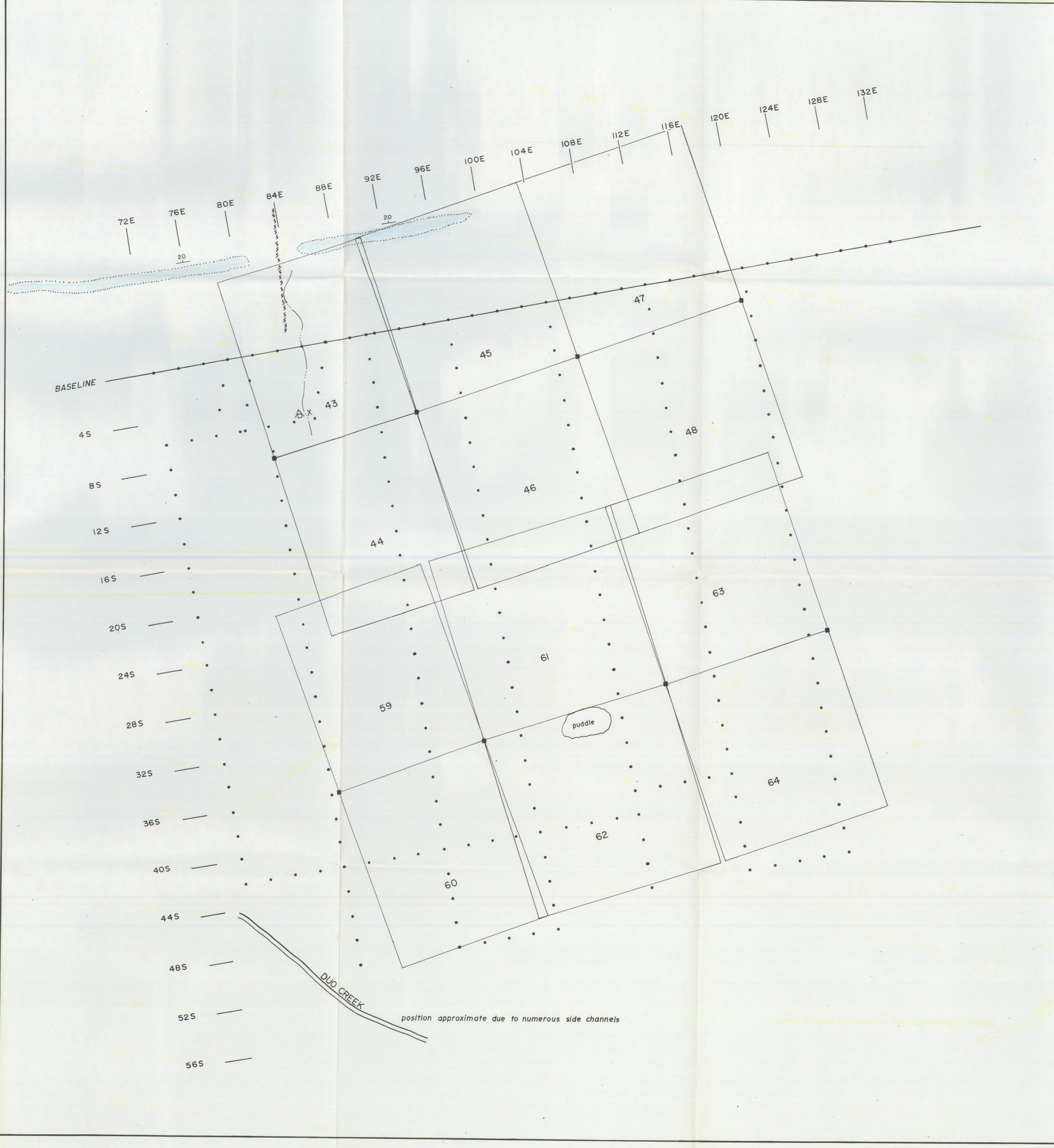
PROPERTY LOCATION MAP

| | | |
|--------|--------|--------|
| Liz 43 | Liz 45 | Liz 47 |
| Liz 44 | Liz 46 | Liz 48 |
| Liz 59 | Liz 61 | Liz 63 |
| Liz 60 | Liz 62 | Liz 64 |



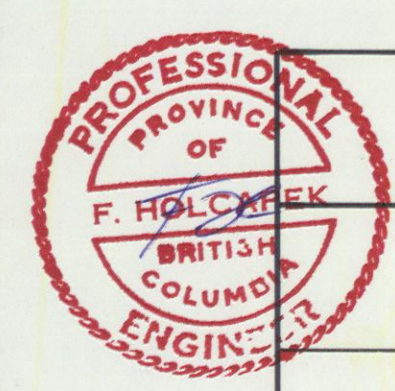
64°24'

132°26'



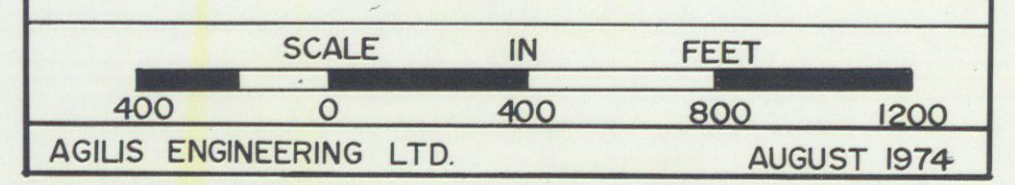
LEGEND

- △ Camp
- X Helicopter pad
- Claim post
- Geochemical survey station
- ~~~~~ Creeks
- ==== Fault
- 20 Strike & Dip
- Outcrop
- Grey massive Limestone 20'-60' thick.

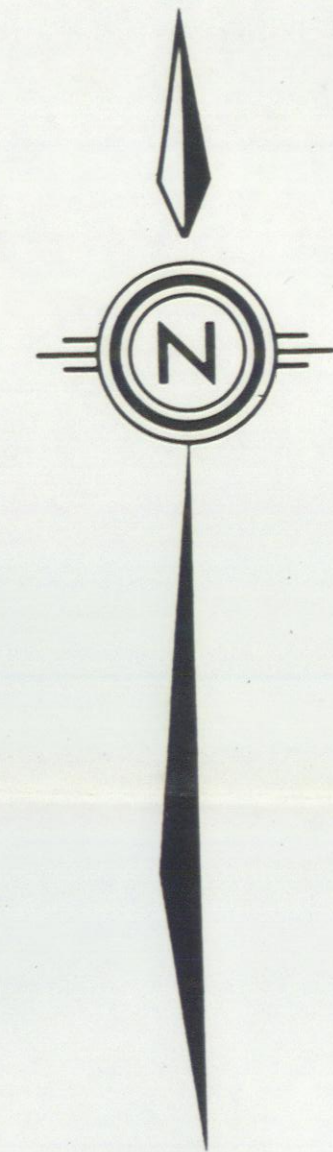
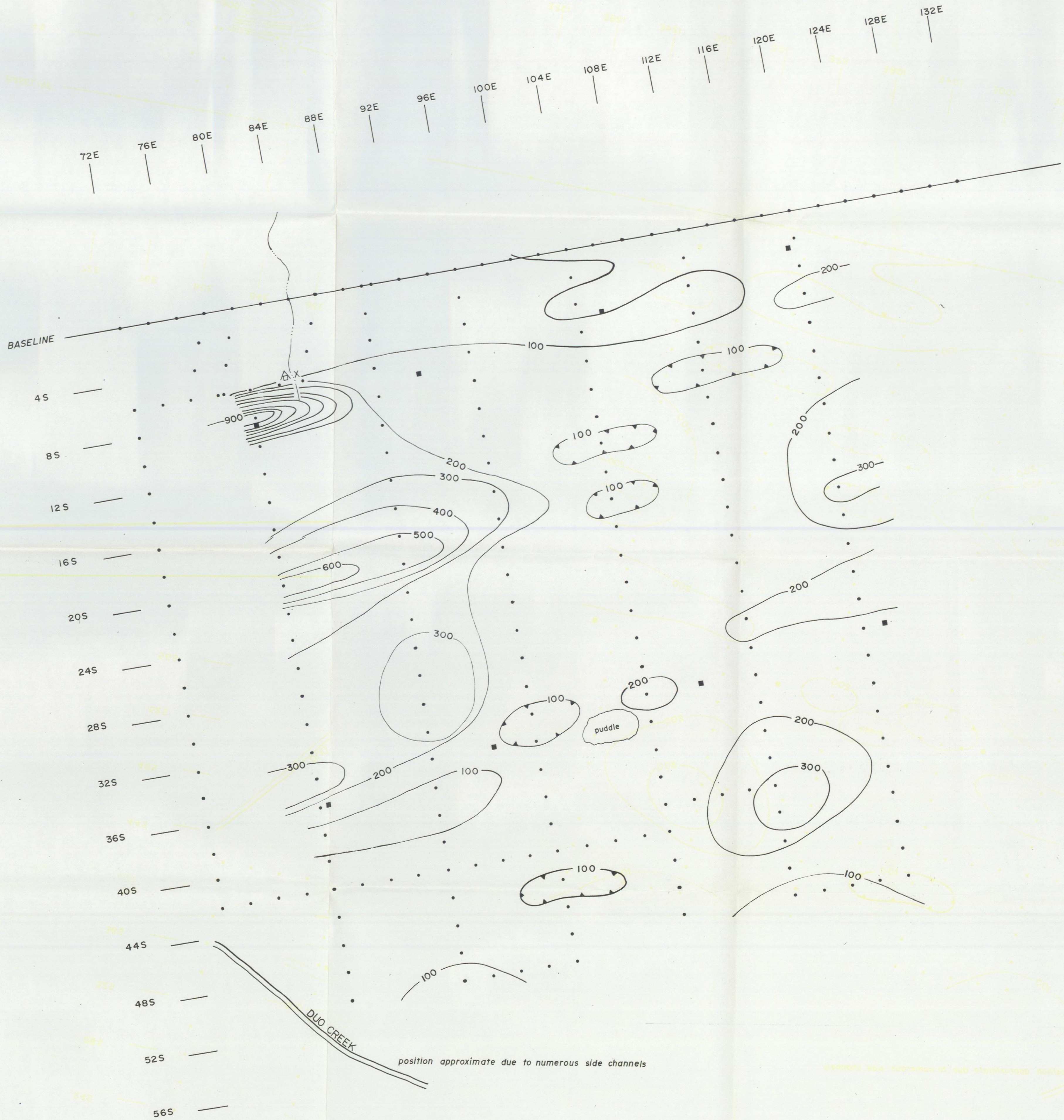


DUO CREEK AREA
LIZ 43-48, 59-64 MINERAL CLAIMS
Mayo, Y.T.

GEOLOGY &
CLAIM MAP

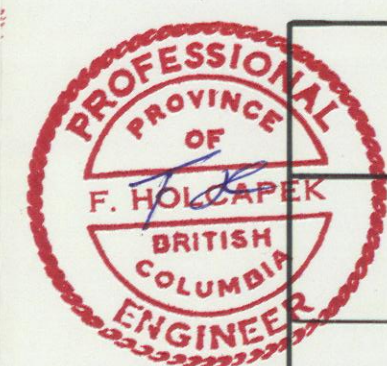


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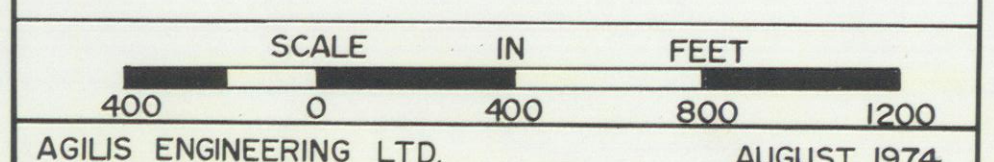
LEGEND

- Camp
- Helicopter pad
- Claim post
- Geochemical survey station
- Creeks
- Geochemical contour for zinc
- 600 CONTOUR INTERVAL - 100 p.p.m.

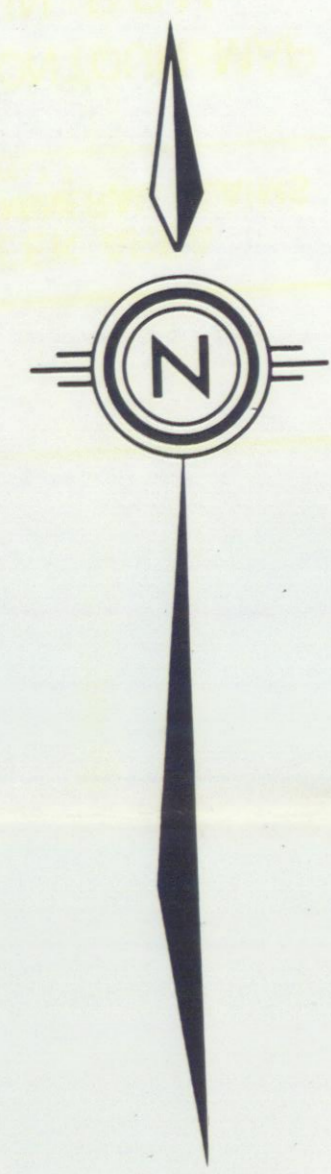


DUO CREEK AREA
 LIZ 43-48,59-64 MINERAL CLAIMS
 Mayo, Y.T.

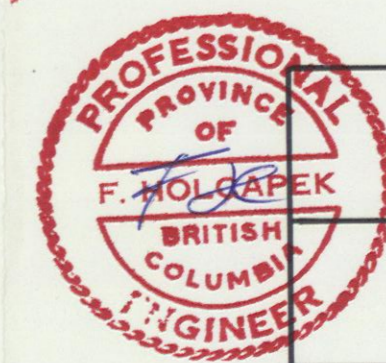
GEOCHEMICAL CONTOUR MAP
 FOR ZINC IN P.P.M.



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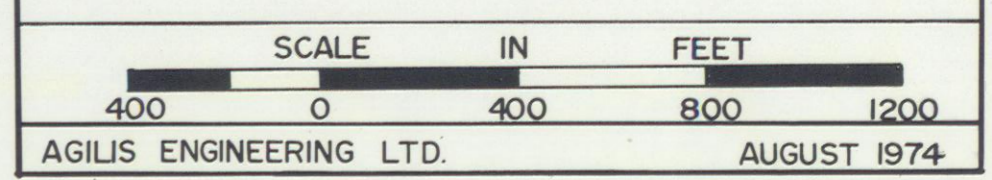


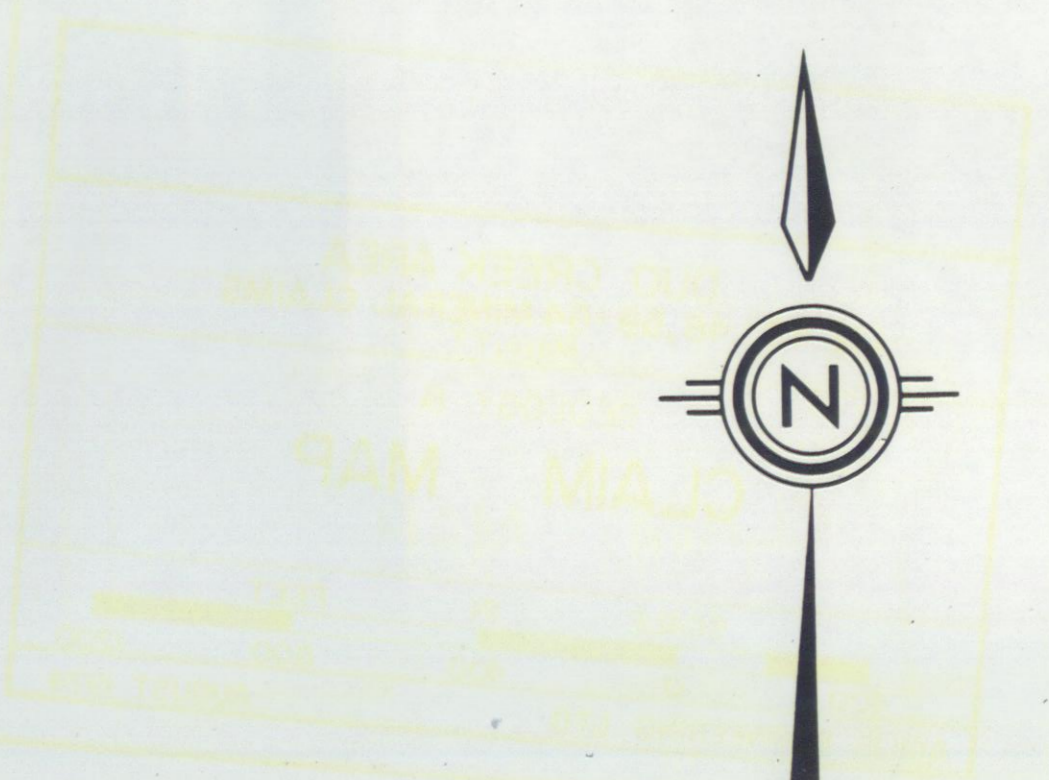
- LEGEND**
- Camp
 - Helicopter pad
 - Claim post
 - Geochemical survey station
 - Creeks
 - Contour line for lead in p.p.m.
CONTOUR INTERVAL - 10 P.P.M.



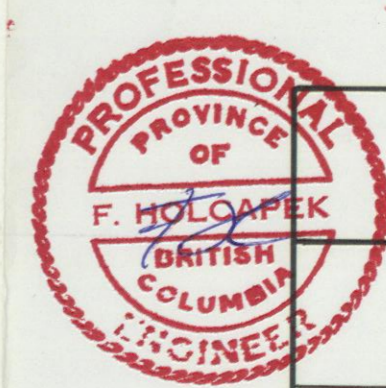
DUO CREEK AREA
LIZ 43-48, 59-64 MINERAL CLAIMS
Mayo, Y.T.

GEOCHEMICAL CONTOUR MAP
FOR LEAD IN P.P.M.



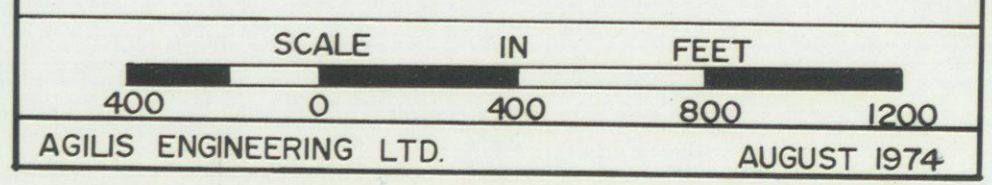


- LEGEND**
- △ Camp
 - X Helicopter pad
 - Claim post
 - Geochemical survey station - GEOCHEMICAL VALUE OF ZINC IN P.P.M.
○ GEOCHEMICAL VALUE OF LEAD IN P.P.M.
 - Creeks



DUO CREEK AREA
LIZ 43-48,59-64 MINERAL CLAIMS
Mayo, Y.T.

GEOCHEMICAL SURVEY MAP FOR
LEAD AND ZINC IN P.P.M.



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