

105-5-6

GEOLOGICAL AND GEOCHEMICAL SURVEY REPORT
ON THE ROSS 1-48 MINERAL CLAIMS OF
CREAM SILVER MINES LTD. (N.P.L.)
HOWARD PASS AREA, WATSON LAKE MINING DISTRICT
YUKON TERRITORY

SITUATED 168 MILES NORTH OF WATSON LAKE
AND 10 MILES NORTH OF SUMMIT LAKE

62⁰29' N. LAT. 129⁰17'W. LONG.

SUBMITTED BY: D. P. TAYLOR, GEOLOGIST
ENDORSED BY: F. HOLCAPEK, P.ENG., GEOLOGIST
OWNER: CREAM SILVER MINES LTD. (N.P.L.)
WORK CONDUCTED BY: AGILIS ENGINEERING LTD.

October 19, 1973
Vancouver, B.C.

**GEOLOGICAL
and
GEOCHEMICAL SURVEY REPORT
ON THE
ROSS CLAIM GROUP**

of

CREAM SILVER MINES LTD (NPL)

HOWARD PASS, Y.T.

**October 19, 1973
Vancouver, B.C.**

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ILLUSTRATIONS

FREQUENCY DISTRIBUTION GRAPHS - LEAD & ZINC

PROPERTY LOCATION MAP 1" = 80 miles

GEOLOGY 1" = 400 feet

CLAIM MAP 1" = 400 feet

GEOCHEMICAL SURVEY

Zinc (ppm): values (1) contours (1) 1" = 400 feet

Lead (ppm): values (1) contours (1) 1" = 400 feet

DETAILED GEOCHEMICAL SURVEY

Zinc (ppm): values (1) contours (1) 1" = 200 feet

Lead (ppm): values (1) contours (1) 1" = 200 feet

GEOLOGICAL AND GEOCHEMICAL SURVEY REPORT
ON THE
ROSS CLAIM GROUP OF CREAM SILVER MINES LTD. (NPL).
HOWARD PASS, YUKON TERRITORY

INTRODUCTION

The Ross claim group was staked in November, 1972 and acquired by Cream Silver Mines Ltd. The group is located 10 miles north of Summit Lake, Y.T. and five miles northwest of Canex-Placer's major lead-zinc discovery in Howard Pass.

During July and August of 1973, geological mapping by T. Turner, geologist, and soil and rock geochemical surveys were conducted on the property by personnel of Agilis Engineering Ltd., all work was done under the direct supervision of the author of this report.

LOCATION AND ACCESS

The Ross mineral claim group is located in the Yukon Territory 168 miles north of Watson Lake, Y.T. and 10 miles north of Summit Lake. Float and ski equipped fixed wing aircraft operate from Watson Lake or from Ross River to Summit Lake, access from the lake to the property is by helicopter at the present time.

The centre of the property is located:-

$62^{\circ} 29' N - 129^{\circ} 17' W$

PROPERTY

Forty-five claims were bought by Cream Silver Mines Ltd (NPL) from A. Harman. Ross 1-45 were staked November 25, 1972. During the summer of 1973 open ground on the perimeter of the claim group in geologically favourable areas was staked, 4 claims and 2 fractions, by personnel of Agilis Engineering Ltd. All claims are recorded in the Watson Lake Mining District of the Yukon Territory.

<u>Claim Name</u>	<u>Record Number</u>
Ross 1-45	Y71079 - Y71123
Ross 46	Y73930
Ross 47	Y73929
Ross 48	Y73931
Ross 49	Y74223
Ross 1 Fraction	Y73932
Ross 2 Fraction	Y74222

PHYSIOGRAPHY AND CLIMATE

Elevations on the property vary from 4200 feet to about 6300 feet above sea level. There are precipitous areas around the southern and northern parts of the property while the centre is relatively level with steep creek valleys cutting to the northwest and northeast. Extensive areas of talus are found below the precipitous areas.

Vegetation consists of stunted spruce to tree line at about 4600 feet and cariboo moss at higher elevations.

Climate in this area is extremely cold in the winter with temperatures generally in the 30 to 40 below zero range. Summers are short and tend to be wet. The snow free period on the property is generally from the end of June to late September, shorter for the very high elevations. Patchy snow remains on north facing slopes all year.

REGIONAL GEOLOGY

Regional geological mapping has been conducted in this area and is covered by G.S.C. Map 8-1967 Nahanni by Green, Roddick and Blussom.

Three major rock units have been described in the Howard Pass area.

Cambrian slates and phyllites, generally brown to red brown, green or purple underly the area.

This sequence is overlain by Upper Cambrian and Ordovician limestone, dolomitic siltstone, silty dolomite, sandy dolomite and quartzite.

Uppermost in the general stratigraphy is Devonian and (?) Mississippian black shale and argillite, minor sandstone and siltstone, banded chert and massive chert pebble conglomerate.

Some areas on a reported unconformity between the Upper Cambrian and Ordovician calc rocks and the Devonian siliceous shales are underlain by Upper Ordovician and Silurean black graptolitic shale and argillaceous limestone with minor black chert, cherty argillite and dolomite.

PROPERTY GEOLOGY

The Ross Group is underlain by two major lithological units. The largest exposure is that of Devonian and (?) Mississippian chert pebble conglomerate, pebble sandstone, and black sometimes argillaceous shales.

The chert pebble conglomerate is generally a massive rock composed of angular to rounded chert pebbles in a poorly sorted sand and gravel matrix. Sandstone units tend to be lenticular and vary from light grey poorly sorted units containing chert and shale clasts to thinner more homogeneous bedded dark brown sandstones generally found associated with shale units.

Black shales in this unit tend to be thin bedded and are often argillaceous or cherty.

This unit covers the southern, western, central and northern parts of the property.

Cambrian and (?) Ordovician beds are exposed in the eastern sector of the property. A complex sequence of these black cherts, dark grey limestone, light brown weathering shales and dark grey slightly calcareous shales are exposed on the east side of the property. Limestone is the predominant rock in this unit and lies at the stratigraphic bottom of the exposures on the

property. Shales and argillite are intercalated and gradational close to the top of this section, some minor limestone is found above these rocks. The top of this unit, at the contact (unconformable?) with the Devonian, is dark grey mudstone varying to black chert, this strata apparently varies considerably in thickness and apparently lenses out to the west.

The black chert beds are less than one hundred feet thick, strike in a direction of approximately 100 degrees, and contain interbedded shale and limestone units. The individual chert beds are one to two inches thick and are commonly highly folded and fractured. Quartz veining is locally abundant. The irregular limestone lenses are generally only a few feet thick and cannot be traced for more than one hundred feet. Dark grey and milky white cross-cutting calcite veins are very common.

Light brown weathering, dark grey shales are strongly cleaved in a 100 to 120 degree direction. The unit is about 200 feet thick.

A small exposure of the Cambrian and (?) Ordovician is exposed on the northwestern flank of the property, where black shales and cherty mudstones and one outcrop of limestone have been mapped.

Rocks of the Upper Ordovician and Silurian sequence have not been identified on the property, no graptolitic shales were noted during mapping. The black chert-mudstone sequence presently identified as the top of the Devonian may belong to this sequence.

Structural mapping on the property is complicated by intense east-west cleavage, parallel to sub parallel to folding, and by extensive rock creep, these tend to make dip readings unreliable.

It is believed that there is isoclinal folding in the Devonian sequence of rocks, and inference drawn from regional mapping though not definitively identified on the property.

The valley immediately north of the property is the location of a major west-northwesterly striking, apparently close to vertical synclinal axis. The exposures of the Cambrian and (?) Ordovician rocks on the property are around the crest of an anticline which also strikes west-northwest, the northerly limb apparently dips about 50 degrees, and the south limb is apparently steeply dipping.

A regionally inferred synclinal axis strikes parallel to these features immediately south of the property.

Local isoclinal folding will need highly detailed mapping for reliable interpretation.

MINERALIZATION

Visible sphalerite-galena mineralization was not noted during field mapping. Pyrite occurs as minor disseminations in the limestones and was also noted as erratic disseminations in the chert pebble conglomerate and sandstone.

Traces of chalcopyrite, with malachite and azurite were noted in float in a small creek in the Devonian sequence on the eastern boundary of the claim group.

A barite occurrence was noted in the area of anomaly C on the east flank of the claim group in argillaceous shales.

GEOCHEMICAL SURVEY

A grid was established on the property with northeasterly bearing lines 400 feet apart. Sample stations were put in every 200 feet along the grid lines. Depending on what was found at each station a rock or soil sample was taken for analysis. A total of 411 soil samples and 421 rock samples were taken during this survey.

Soil samples were taken, using mattocks, from 6 to 12 inches depth, as practical. An attempt was made to obtain B horizon material in each case, though the soil profile is poorly developed. Samples were placed in kraft paper bags provided by the laboratory and marked with a grid reference.

Four soil anomalies were located by this survey, which are correlatable to rock geochemical anomalies. Rock samples were analysed by XRF methods.

The anomalies were detail gridded utilizing the established grid for reference. Detailed sampling was conducted on a 100 x 100 foot grid. A total of 301 soil samples and 75 rock samples were taken on the four (A, B, C and D detailed grids).

ANALYSIS

All soil samples were shipped to Core Laboratories Ltd at 325 Howe Street, Vancouver, B.C. Analysis was conducted on a minus 80 mesh fraction of the sample digested in hot nitric acid for 2 1/2 hours. Quantitative analysis for ppm lead and zinc content was performed by atomic absorption methods on a Jarrell Ash 800 machine.

All rock samples were shipped to Agilis Engineering Ltd., base-camp at Summit Lake, Y.T. where a laboratory was set up equipped with a crusher and an X-ray refraction machine. All samples were crushed and a minus 80 mesh fraction was taken for XRF analysis. Two readings for each element, lead and zinc, were taken from each sample. Analysis was conducted on an Echo Portable Mineral Analyser M8524.

RESULTS

Zinc:

Soil sample results for zinc on the general survey yielded results ranging from 3 to greater than 4000 ppm. Statistical analysis of cumulative percentages of values plotted on arithmetic probability paper show background to be 410 ppm and the anomalous samples to be those greater than 760 ppm, results being plotted for 412 samples.

Rock results yielded 15 samples above the reliable detectability limit of the XRF ranging from 0.10 to 0.40%. One sample on the detailed gridding ran up to 0.70% Zn.

Statistical analysis is not relevant to the detailed grids.

Lead:

Lead soil values range from 1 to greater than 4000 ppm on the general survey over the 412 samples analysed.

Statistical analysis on the same basis as that used for zinc results show a background of 33 ppm lead and anomalous values to be those greater than 137 ppm.

Rock results yielded 231 results at or above the reliable detectable limit of 0.10% Pb. Only 5 results, however, reached the level of greater than 0.30%, and none reached 0.40%. One sample on the detailed survey produced 1.60% Pb.

INTERPRETATION

Four geochemical anomalies were localised by the reconnaissance survey and detailed sampling was conducted on each anomaly.

The reconnaissance survey results for lead and zinc both show roughly coincident anomalies in the area underlain by Cambrian and (?) Ordovician sediments.

The anomalies lie close to the peak of the anticline which exposes the older sequences.

Detailed sampling and assaying of the high soils has confirmed the validity of the anomalies.

There is a marked tendency for the anomalies to increase in size and intensity toward the west. This may be a function of exposure in regard to the size of the anomalies but should represent some increase in represented mineralization toward the west. The western anomaly lies in a relatively flat saddle area but its boundaries extend into steeper sections of the topography.

An isolated lead anomaly is noted on the west flank of the grid in an area of limited exposure of the earlier Cambrian and (?) Ordovician sequence, believed to be the axial hinge of the same fold exposed to the east.

CONCLUSIONS

An exposure of favourable horizon in the stratigraphic top of the Cambrian and (?) Ordovician lithology is exposed on the property. This section is correlatable to the lithologies of Canex-Placer's lead zinc deposit 5 miles east of the Ross group.

Although no visible mineralization was noted during field mapping, rock samples assayed up to 2.2% combined lead-zinc have been taken from areas of soil anomalies.

Four coincidental lead-zinc soil geochemical anomalies have been located, one of them substantial in size and intensity. The most significant anomaly has developed on the contact where the favourable horizons plunge under overlying strata.

The anomalies appear to develop in intensity toward the west, where the favourable strata plunge beneath the overlying strata.

A minor exposure to the west shows the anticlinal axial ridge of favourable strata to continue, at relatively shallow depths, though the property.

RECOMMENDATIONS

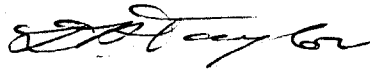
The property requires detailed structural mapping by an experienced sedimentary structural geologist.

Interpretation of structure should be oriented toward determination of the location of the favourable horizon beneath the Devonian, and the structure of the favourable horizon; particularly as to whether it is isoclinally folded in unexposed areas.

On the basis of the findings of the mapping, exploratory diamond drilling should be conducted preferably using NQ wireline to assure full core recovery and structural data return.

Needless to say, constant attention should be paid to any information released on the nature and structure of the Canex-Placer deposit in Howard Pass.

Respectfully submitted,

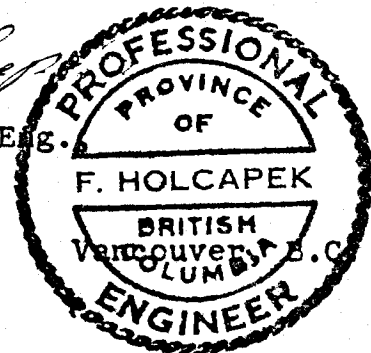


D. P. Taylor
Geologist



Endorsed:

F. Holcapek, P.Eng.
Geologist



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.
3. I have practiced as an exploration geologist in B.C. for five years.
4. Information contained in this report is based upon work performed by myself or by personnel under my direction.

D. P. Taylor, M. Sc.



October 24, 1973

Vancouver, B.C.

YUKON TERRITORY

CREAM SILVER MINES LTD. (NPL)

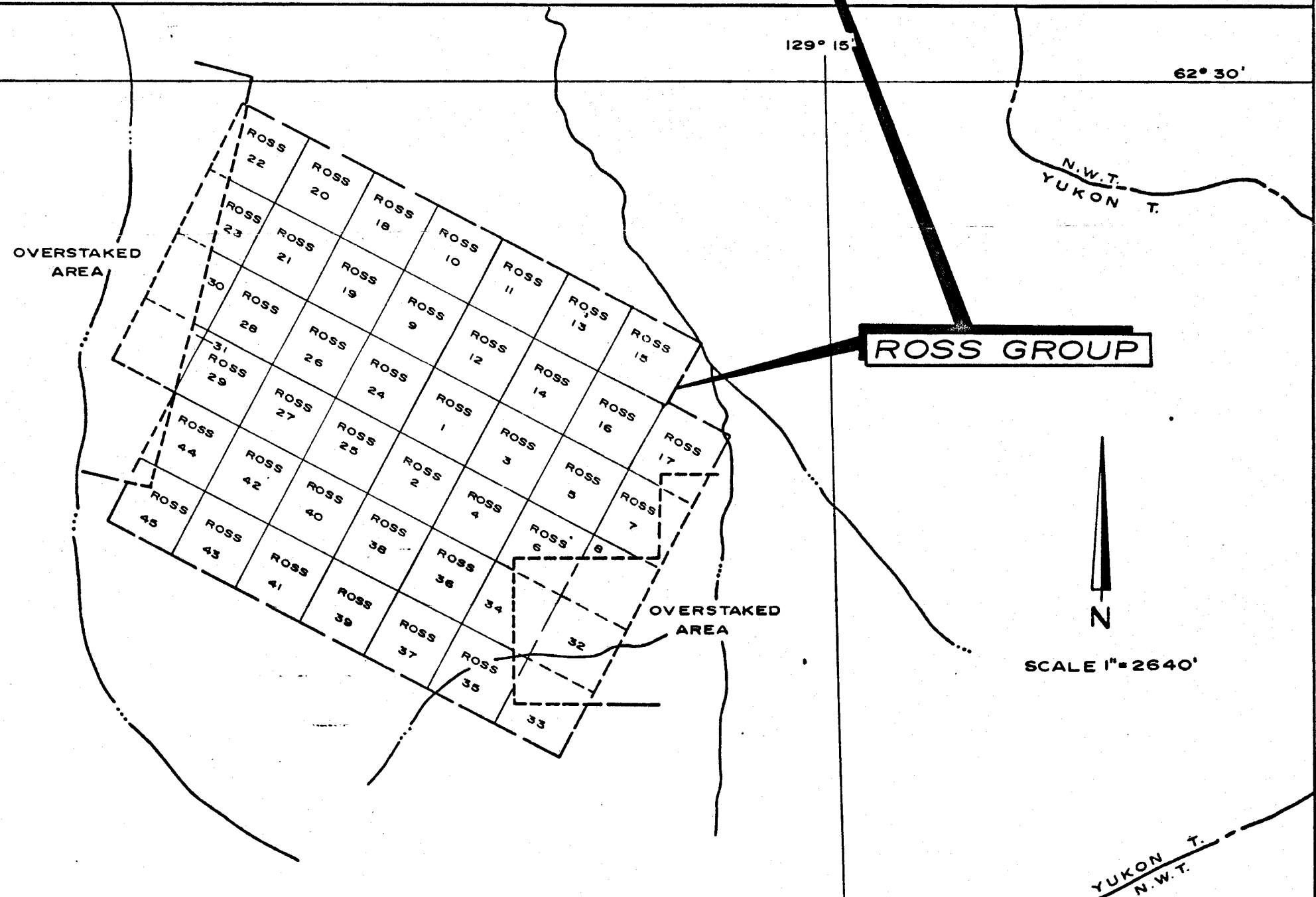
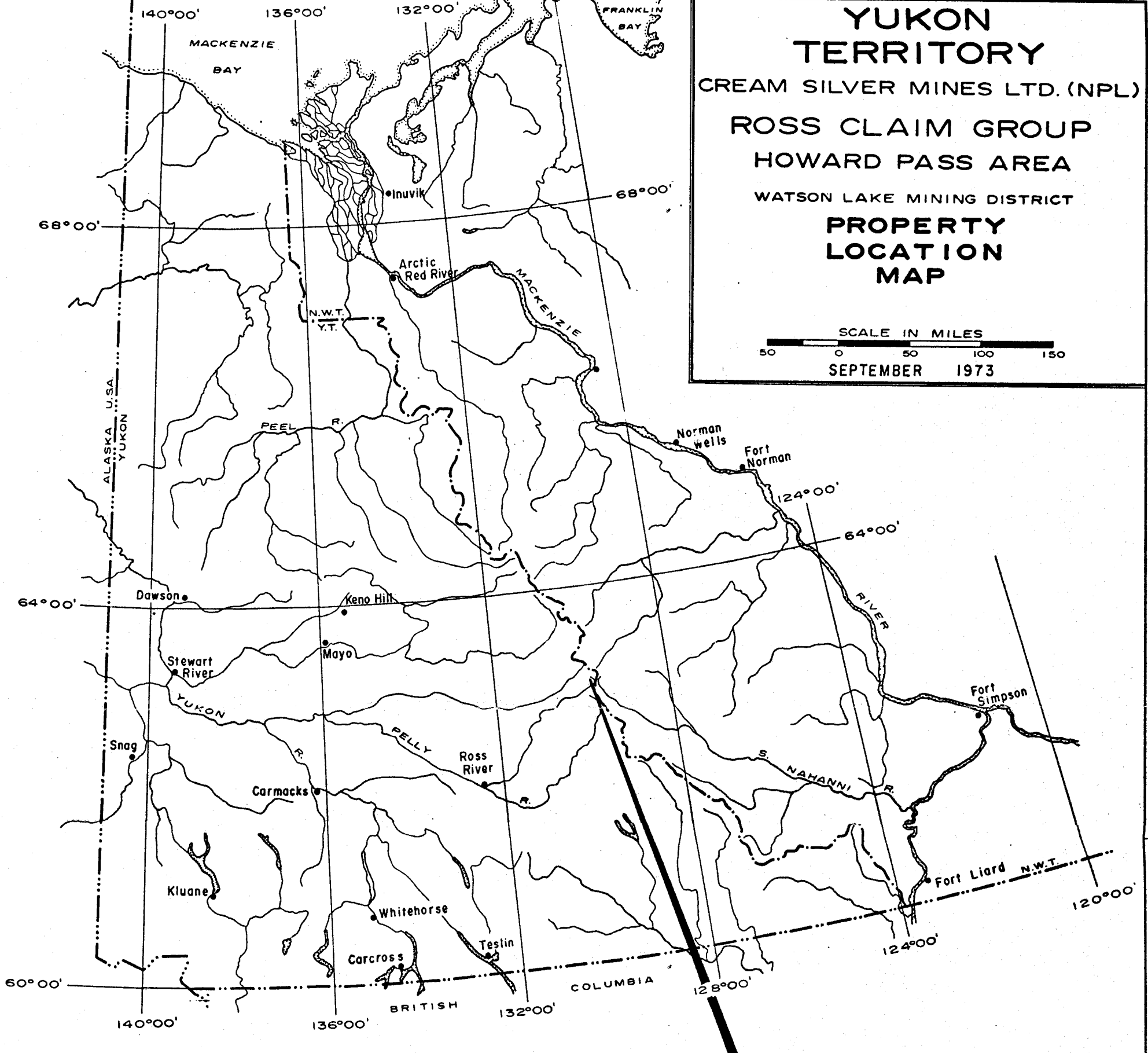
ROSS CLAIM GROUP

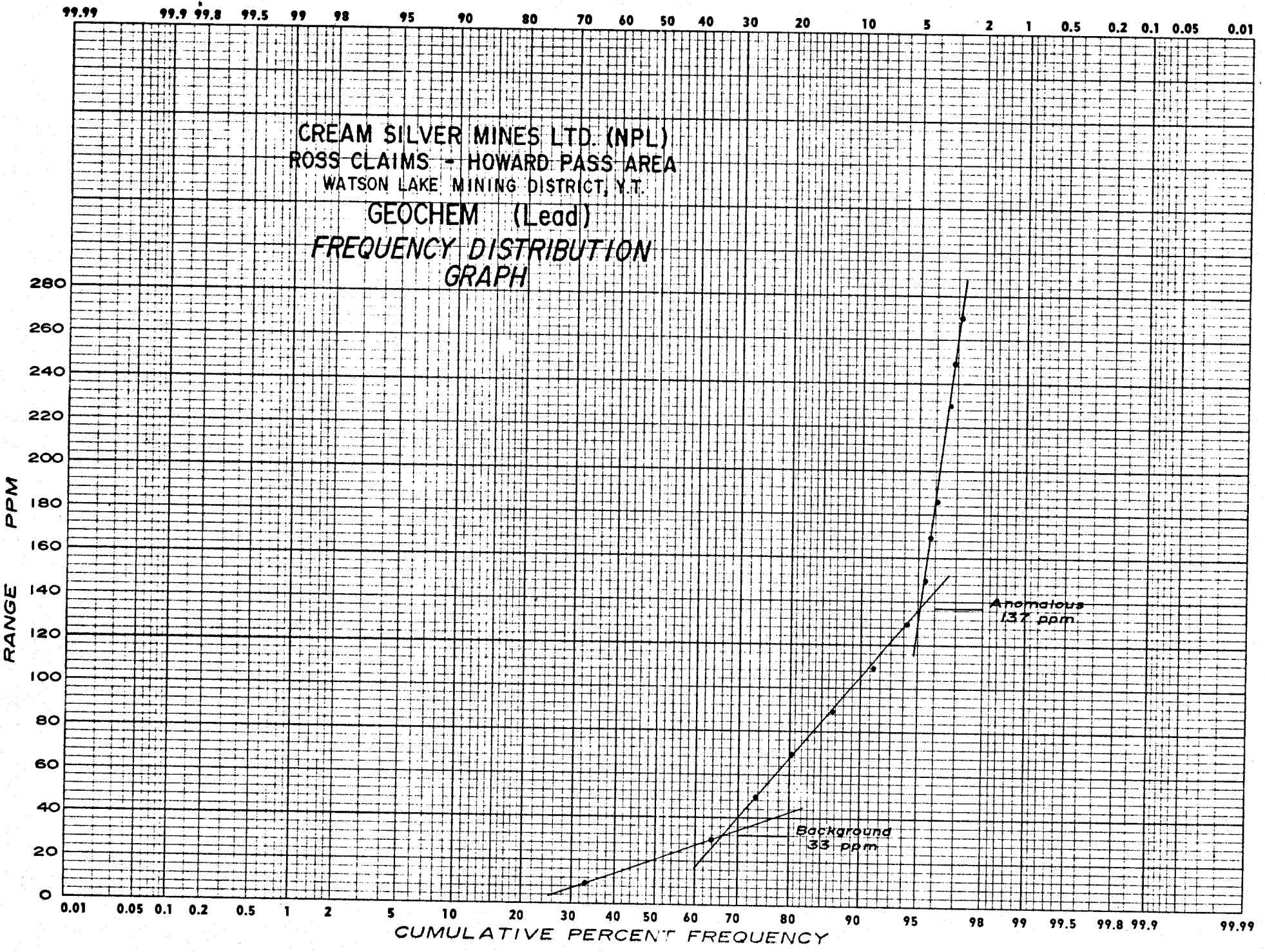
HOWARD PASS AREA

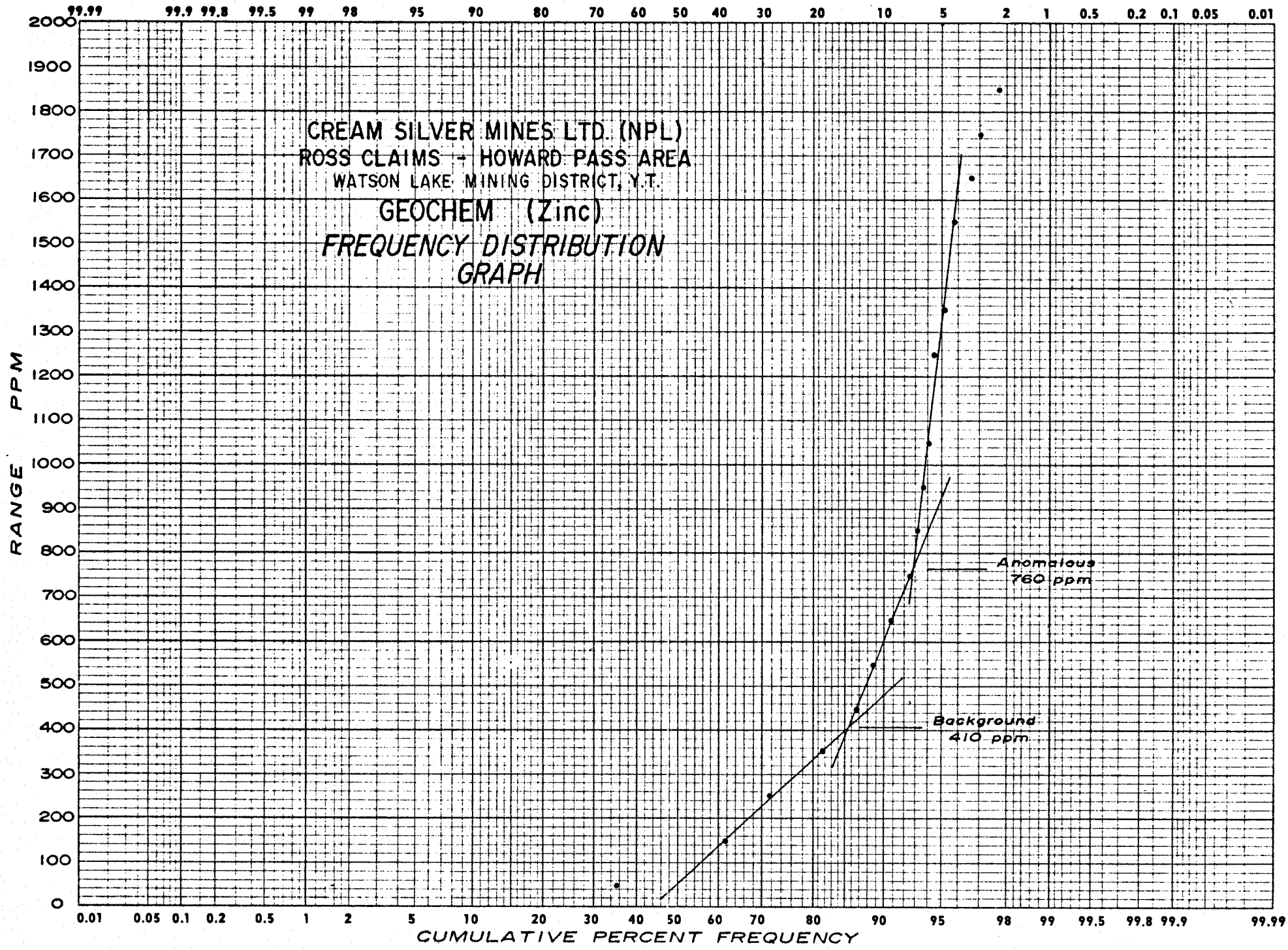
WATSON LAKE MINING DISTRICT

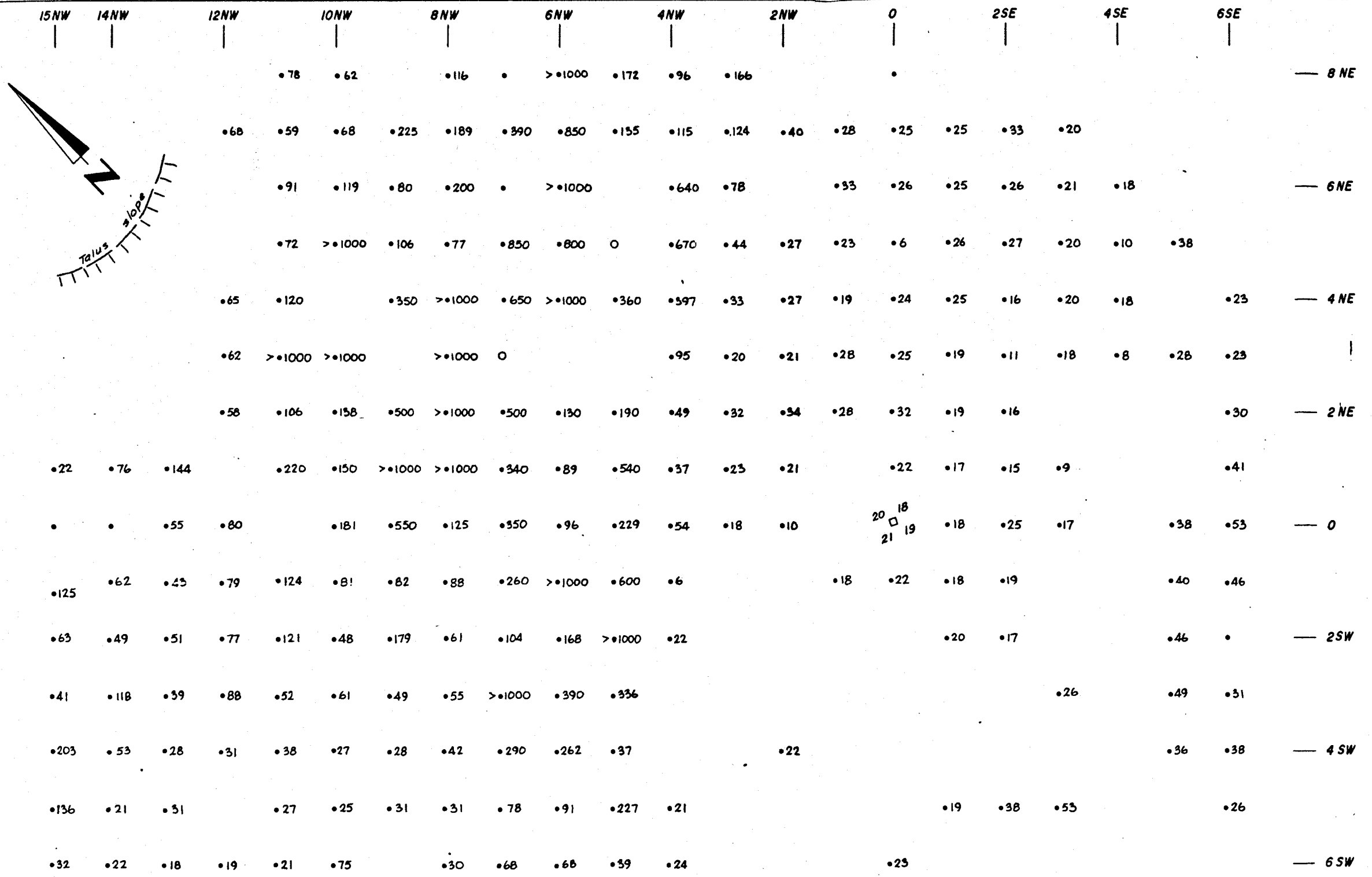
PROPERTY LOCATION MAP

SCALE IN MILES
 50 0 50 100 150
 SEPTEMBER 1973









Grid CA

CREAM SILVER MINES LTD. (NPL)
 ROSS CLAIMS HOWARD PASS AREA
 WATSON LAKE MINING DISTRICT, Y.T.

DETAILED
 GEOCHEMICAL
 SURVEY
 LEAD (P.P.M.)

SCALE: 1" = 200 ft

AGILIS ENGINEERING LTD.

SEPTEMBER, 1973

4NW

2NW

0

2SE

4SE

5SE

•54 •51 •22 •24 — 1 NE

28 36
SE NE
600 •490 •520 •258 — 0

•47 •67 •218 •297 — 1 SW

Grid CB

• • •550 •279 •37 — 3 NE

• •69 •492 •105 •68 — 2 NE

•96 •700 •205 •218 •29 — 1 NE

•232 •151 36 40
SE NE
495 •41 •59 — 0

•540 •260 •39 •67 •52 — 1 SW

Grid CC



•178 •85 •166 •109 •18 — 6 NE

•61 •80 >•1000 •210 •153 — 5 NE

•87 •78 •253 •257 •216 — 4 NE

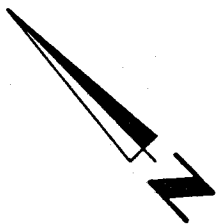
•164 •133 •122 •85 •108 •161 •190 •184 •138 — 3 NE

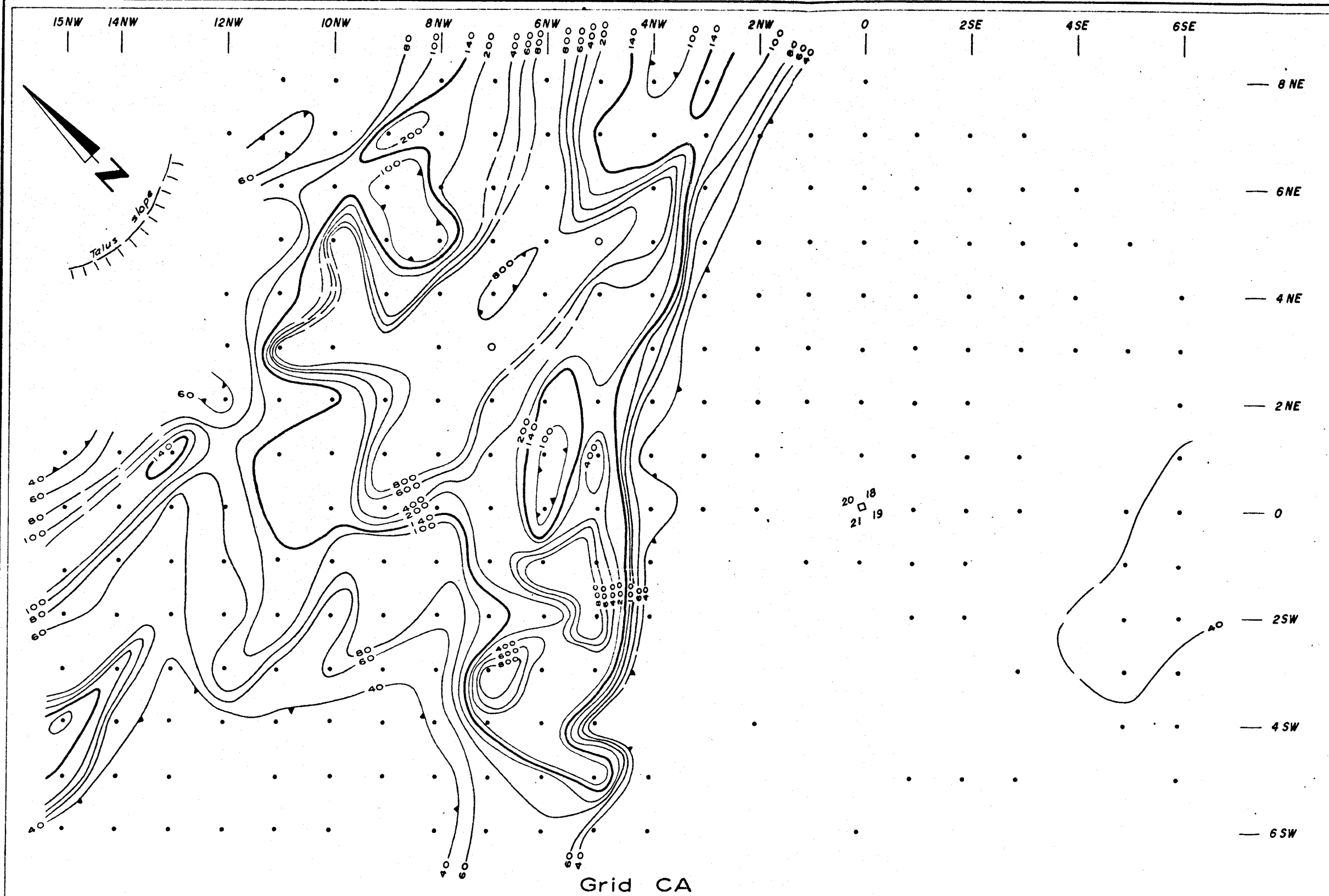
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28 50
SE NE
•166 •268 •389 •107 •50 — 1 NE

•99 •511 •121 •58 — 0

Grid CD





CREAM SILVER MINES LTD. (NPL)
 ROSS CLAIMS HOWARD PASS AREA
 WATSON LAKE MINING DISTRICT, Y.T.

**DETAILED
 GEOCHEMICAL
 SURVEY**

LEAD CONTOUR PLAN

SCALE: 1" = 200 ft

AGILIS ENGINEERING LTD. SEPTEMBER, 1973

LEGEND:

— 40 — Background
 — 140 — Anomalous

4NW

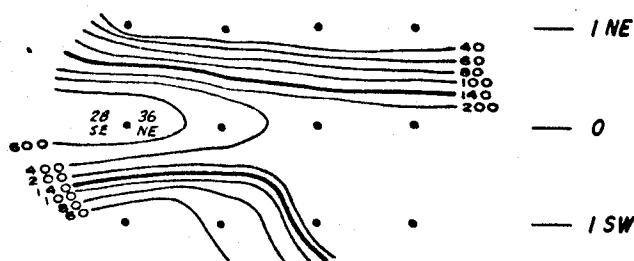
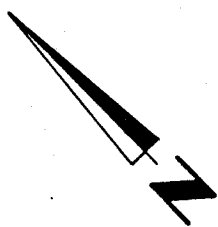
2NW

0

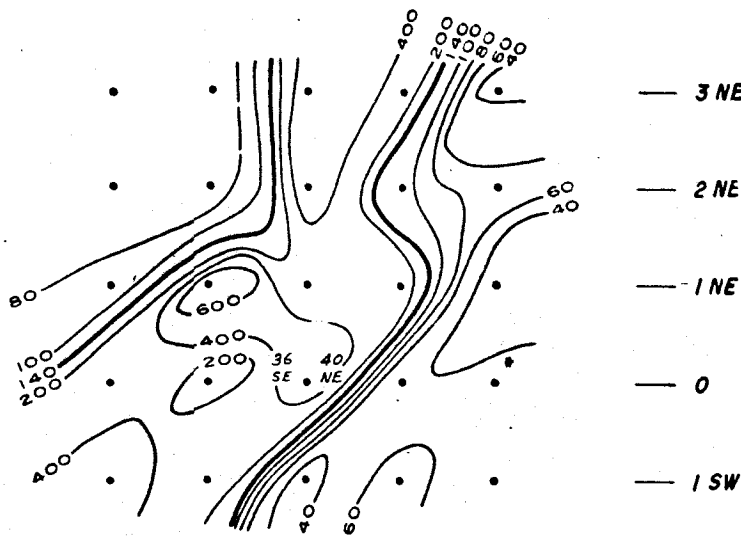
2SE

4SE

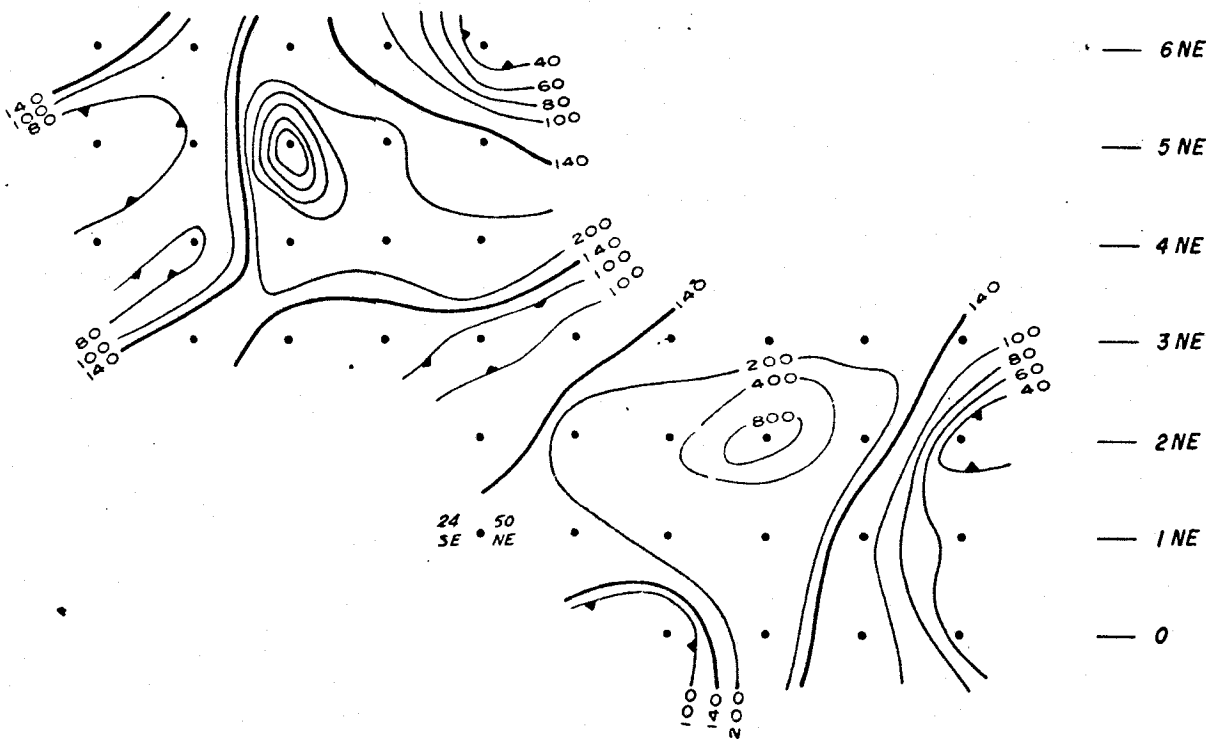
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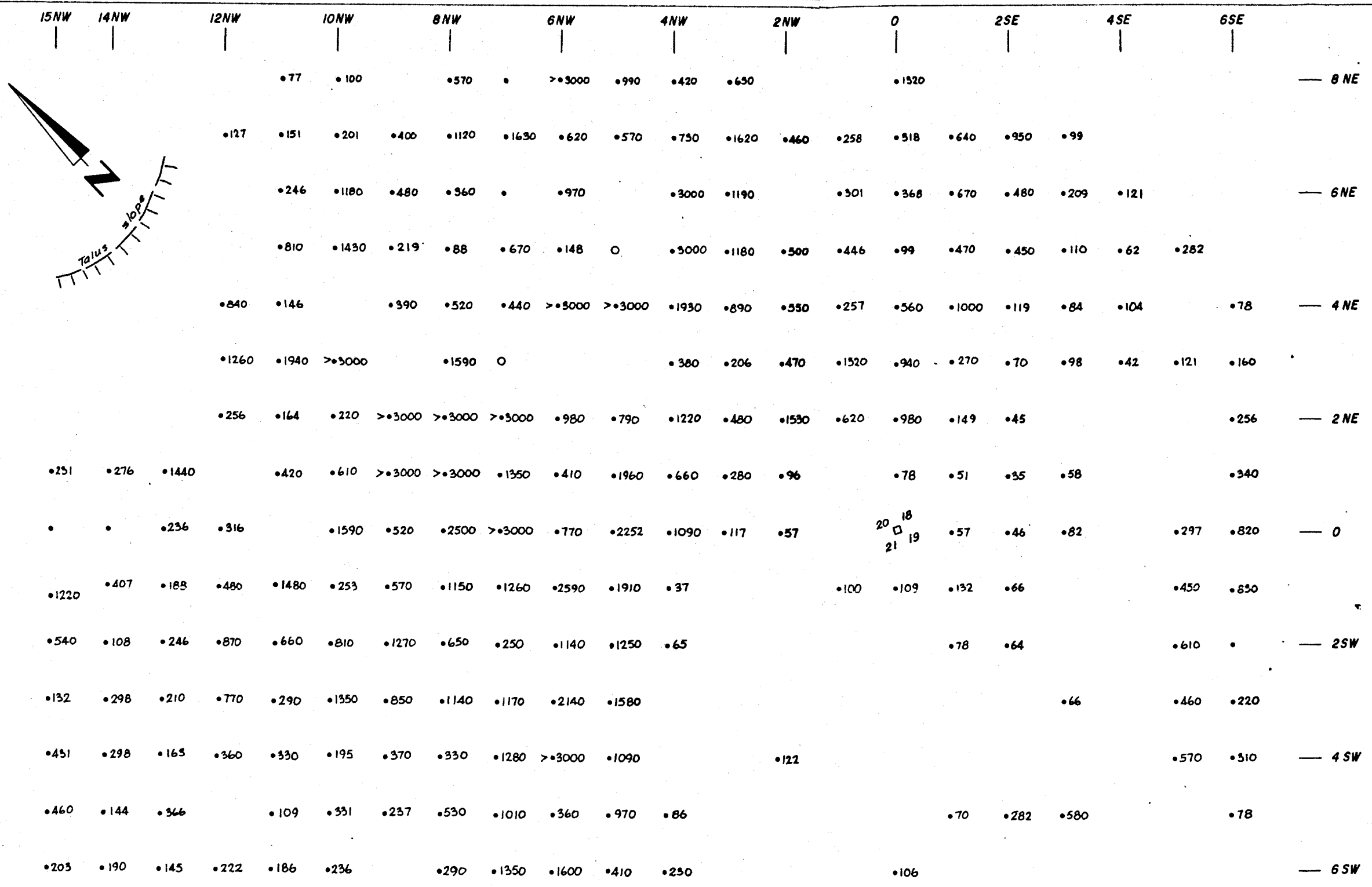
Grid CB



Grid CC



Grid CD



Grid CA

CREAM SILVER MINES LTD. (NPL)
 ROSS CLAIMS HOWARD PASS AREA
 WATSON LAKE MINING DISTRICT, Y.T.

DETAILED
 GEOCHEMICAL
 SURVEY
 ZINC (P.P.M.)

SCALE: 1" = 200 ft

4NW

2NW

0

2SE

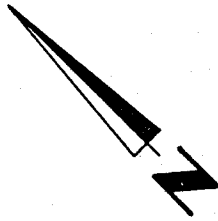
4SE

5SE

•317 •282 •527 •180 — 1 NE

28 36
SE • NE
1500 •2010 •2250 •1670 — 0

•378 •289 •790 •840 — 1 SW



Grid CB

• • •1030 •570 •142 — 3 NE

• • •413 •690 •740 •255 — 2 NE

•1890 •2010 •740 •1090 •124 — 1 NE

•1820 •2250 •36 40
SE • NE
2080 •201 •182 — 0

•2180 •1970 •193 •199 •80 — 1 SW

Grid CC



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•270 •290 •960 •1020 •970 — 5 NE

•380 •560 •222 •960 •680 — 4 NE

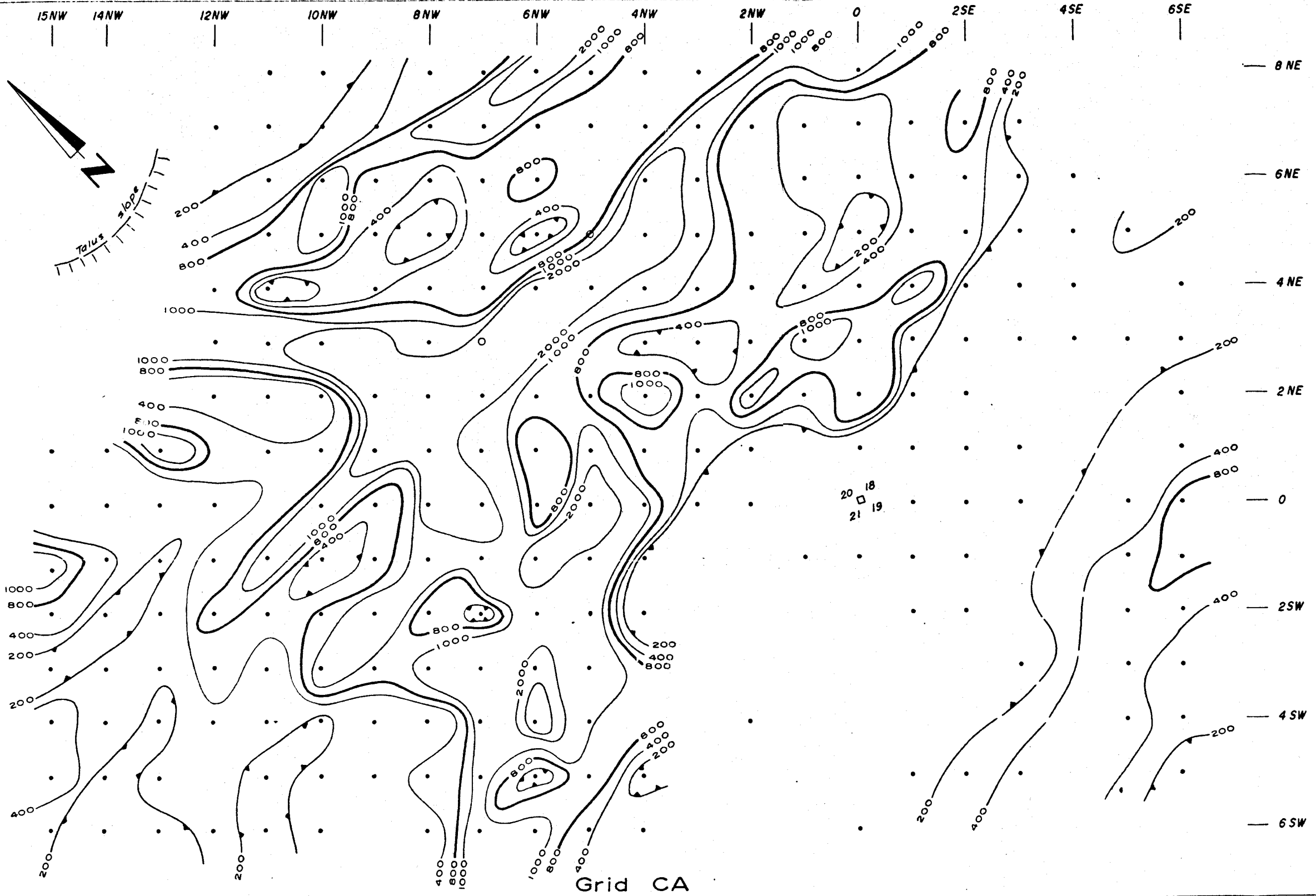
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•430 •202 • •780 •600 •129 — 2 NE

24 50
SE • NE •233 •1290 •980 •690 •127 — 1 NE

•150 •1180 •1650 •181 — 0

Grid CD



CREAM SILVER MINES LTD. (NPL)
 ROSS CLAIMS HOWARD PASS AREA
 WATSON LAKE MINING DISTRICT, Y.T.

**DETAILED
 GEOCHEMICAL
 SURVEY**

ZINC CONTOUR PLAN

SCALE: 1" = 200 ft

LEGEND:

— 400 — Background

— 800 — Anomalous

4NW

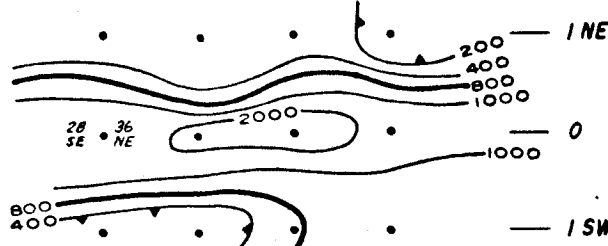
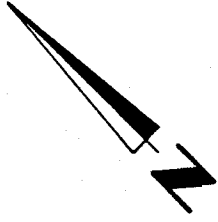
2NW

0

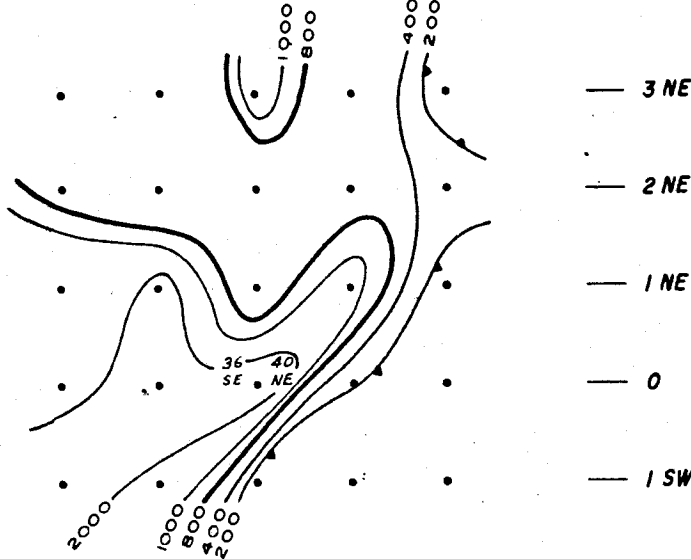
2SE

4SE

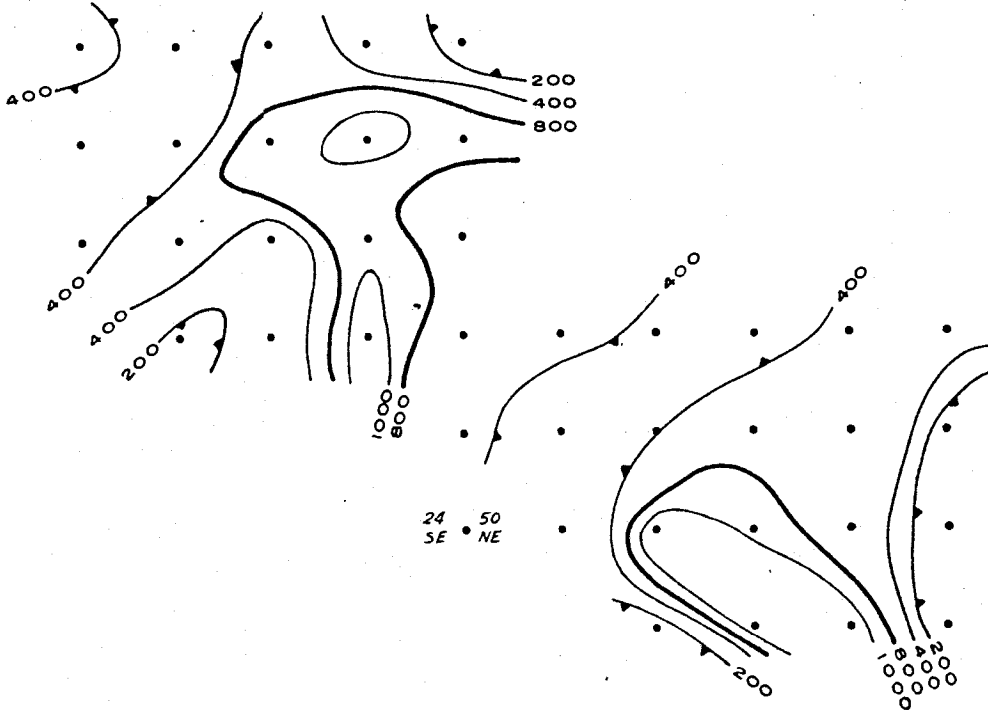
5SE



Grid CB



Grid CC

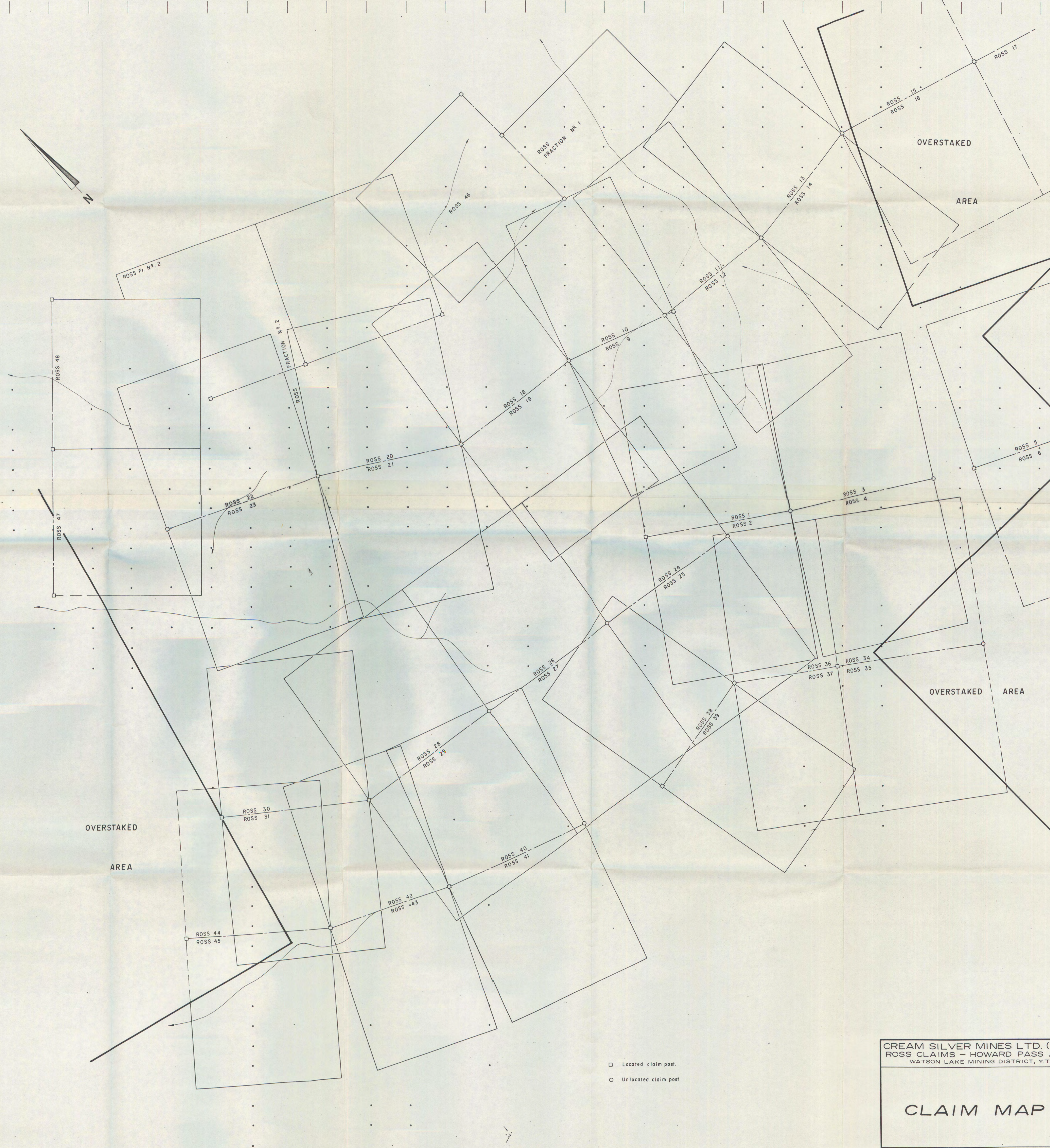
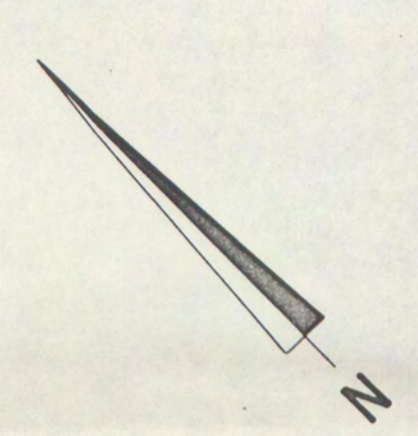


Grid CD

- 1 NE
- 0
- 1 SW
- 3 NE
- 2 NE
- 1 NE
- 0
- 1 SW
- 6 NE
- 5 NE
- 4 NE
- 3 NE
- 2 NE
- 1 NE
- 0

48 NW 44 NW 40 NW 36 NW 32 NW 28 NW 24 NW 20 NW 16 NW 12 NW 8 NW 4 NW 0 Baseline 4 SE 8 SE 12 SE 16 SE 20 SE 24 SE 28 SE 32 SE 36 SE 40 SE 44 SE 48 SE 52 SE 56 SE

64 NE
60 NE
56 NE
52 NE
48 NE
44 NE
40 NE
36 NE
32 NE
28 NE
24 NE
20 NE
16 NE
12 NE
8 NE
4 NE
0
4 SW
8 SW
12 SW
16 SW
20 SW
24 SW
28 SW
32 SW
36 SW
40 SW
44 SW



OVERSTAKED AREA

OVERSTAKED AREA

OVERSTAKED AREA

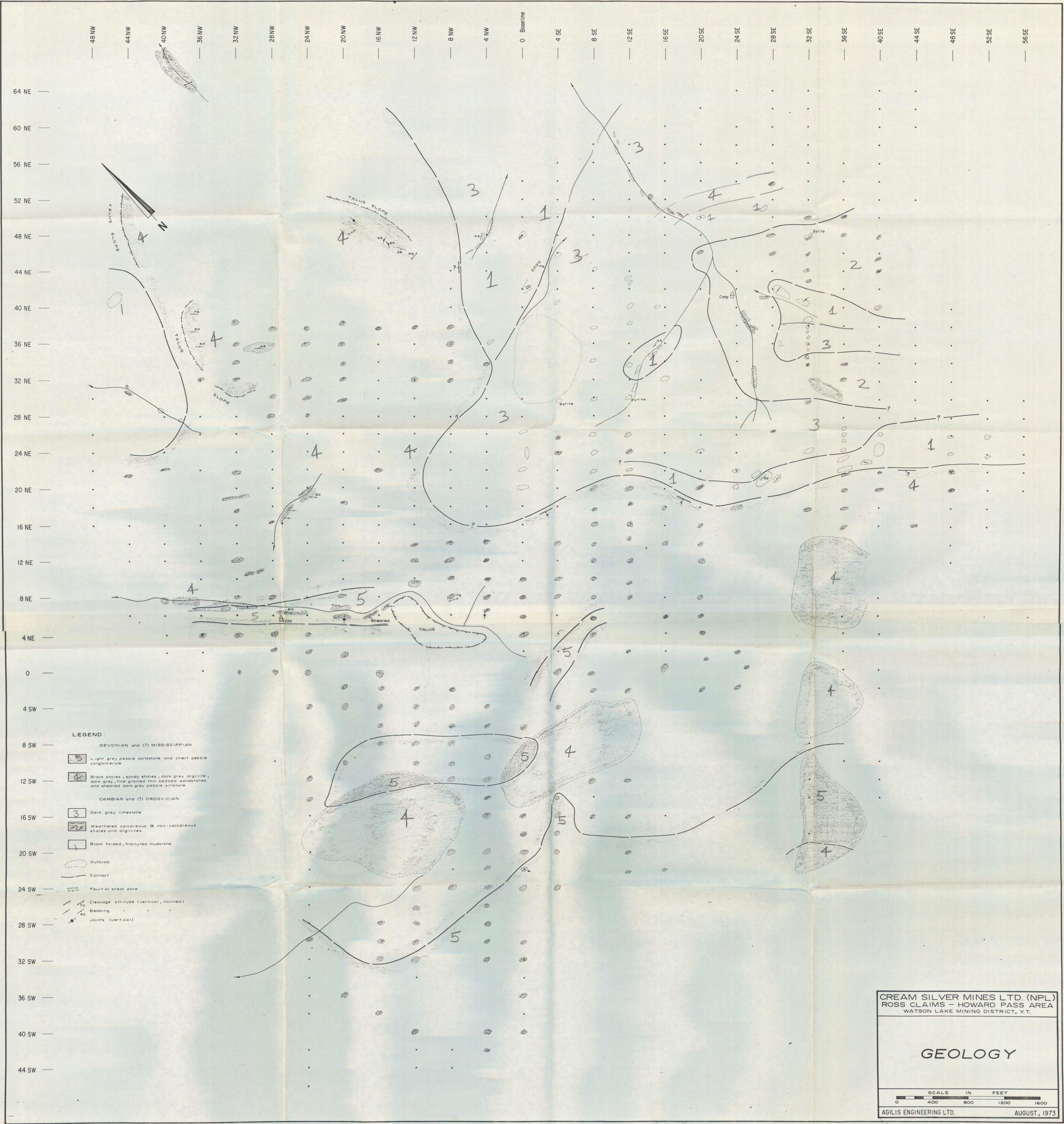
- Located claim post.
- Unlocated claim post

CREAM SILVER MINES LTD. (NPL)
ROSS CLAIMS - HOWARD PASS AREA
WATSON LAKE MINING DISTRICT, Y.T.

CLAIM MAP

SCALE IN FEET
0 400 800 1200 1600

AGILIS ENGINEERING LTD. AUGUST, 1973



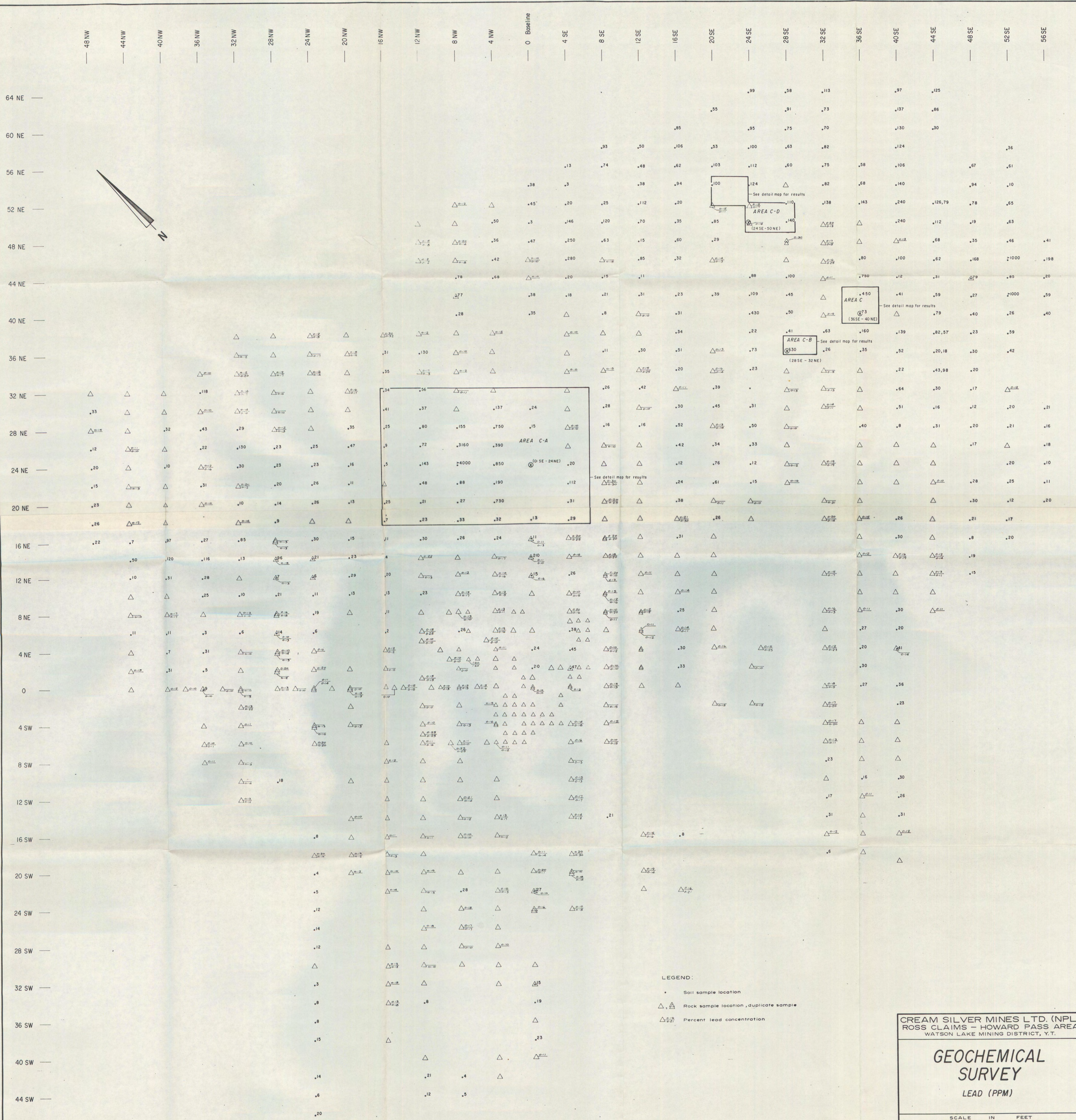
- LEGEND:**
- DEVONIAN and (?) MISSISSIPPIAN**
- 5 Light grey pebble sandstone and chert pebble conglomerate
 - 4 Black shales, sandy shales, dark grey argillite, dark grey, fine grained thin bedded sandstones and sheared dark grey pebble siltstone
- CAMBIAN and (?) ORDOVICIAN**
- 3 Dark grey limestone
 - 2 Weathered calcareous & non-calcareous shales and argillites
 - 1 Black folded, fractured mudstone
- Outcrop
 - Contact
 - Fault or shear zone
 - Cleavage attitude (vertical, inclined)
 - Bedding
 - Joints (vertical)

CREAM SILVER MINES LTD. (NPL)
 ROSS CLAIMS - HOWARD PASS AREA
 WATSON LAKE MINING DISTRICT, Y.T.

GEOLOGY

SCALE IN FEET
 0 400 800 1200 1600

AGILIS ENGINEERING LTD. AUGUST, 1973



LEGEND:
 • Soil sample location
 △, △ Rock sample location, duplicate sample
 △^{0.12}/_{0.21} Percent lead concentration

CREAM SILVER MINES LTD. (NPL)
 ROSS CLAIMS - HOWARD PASS AREA
 WATSON LAKE MINING DISTRICT, Y.T.

GEOCHEMICAL SURVEY

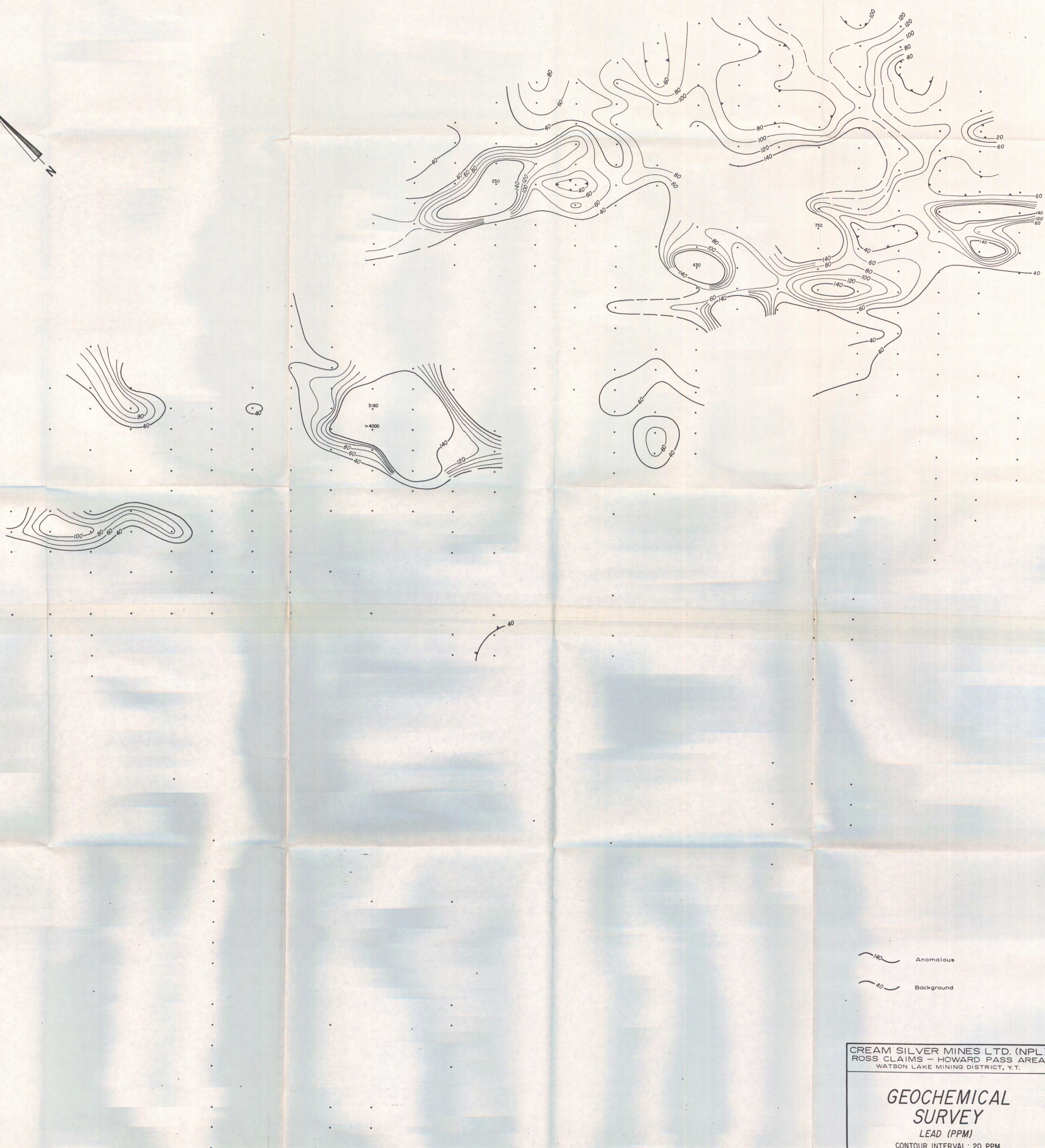
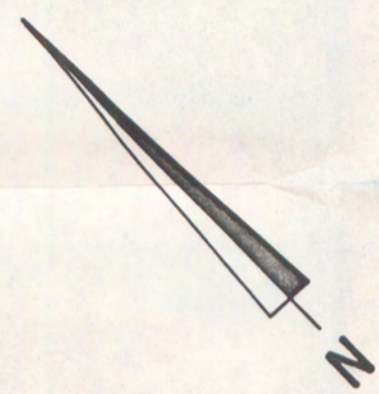
LEAD (PPM)

SCALE IN FEET
 0 400 800 1200 1600

AGILIS ENGINEERING LTD. AUGUST, 1973

48 NW — 44 NW — 40 NW — 36 NW — 32 NW — 28 NW — 24 NW — 20 NW — 16 NW — 12 NW — 8 NW — 4 NW — 0 Baseline — 4 SE — 8 SE — 12 SE — 16 SE — 20 SE — 24 SE — 28 SE — 32 SE — 36 SE — 40 SE — 44 SE — 48 SE — 52 SE — 56 SE

64 NE —
60 NE —
56 NE —
52 NE —
48 NE —
44 NE —
40 NE —
36 NE —
32 NE —
28 NE —
24 NE —
20 NE —
16 NE —
12 NE —
8 NE —
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44 SW —



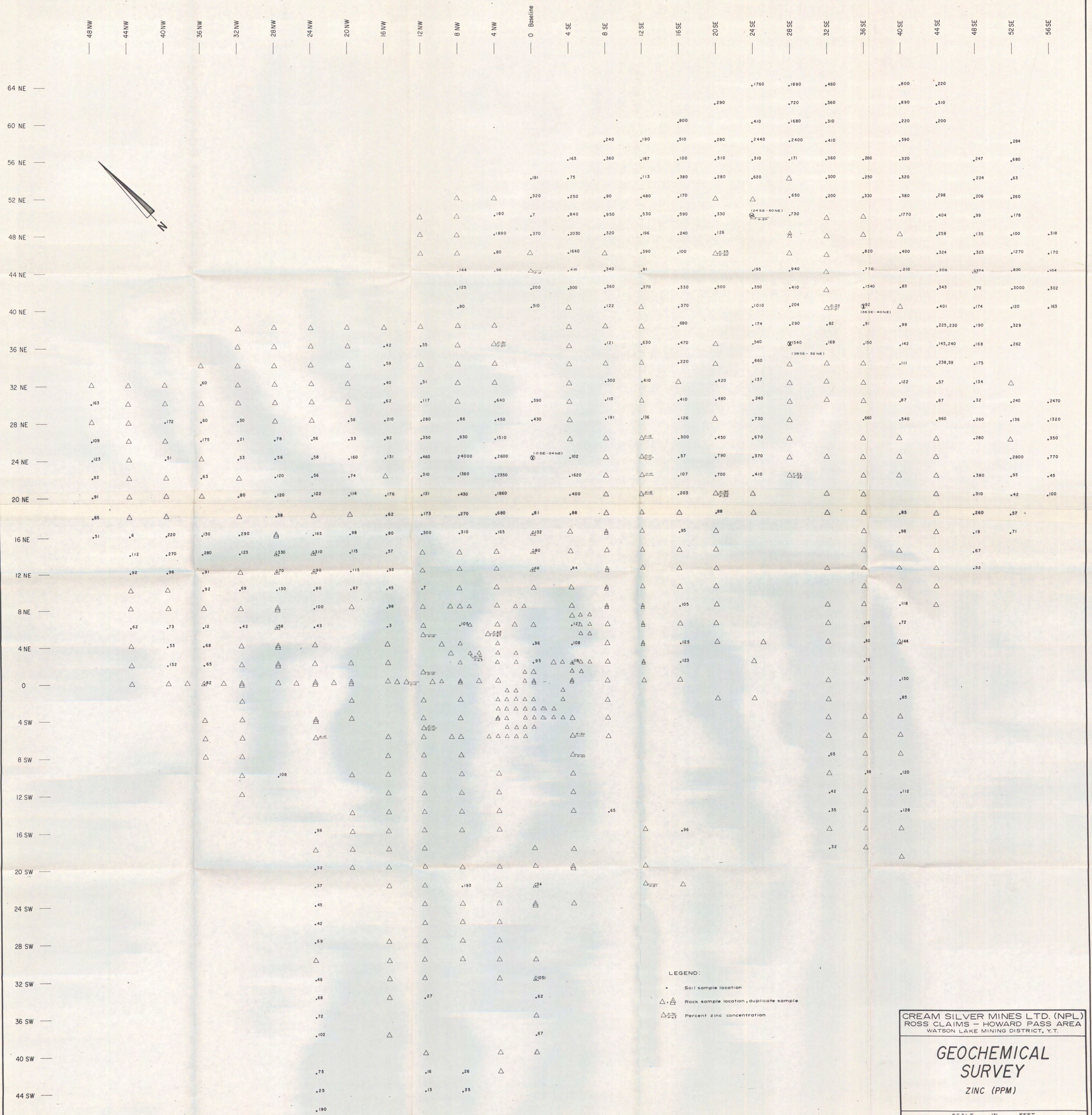
—140— Anomalous
—40— Background

CREAM SILVER MINES LTD. (NPL)
ROSS CLAIMS - HOWARD PASS AREA
WATSON LAKE MINING DISTRICT, Y.T.

**GEOCHEMICAL
SURVEY**
LEAD (PPM)
CONTOUR INTERVAL: 20 PPM

SCALE IN FEET
0 400 800 1200 1600

AGILIS ENGINEERING LTD. AUGUST, 1973



LEGEND:
 • Soil sample location
 △ Rock sample location, duplicate sample
 △_{0.25} Percent zinc concentration

CREAM SILVER MINES LTD. (NPL)
 ROSS CLAIMS - HOWARD PASS AREA
 WATSON LAKE MINING DISTRICT, Y.T.

**GEOCHEMICAL
 SURVEY**

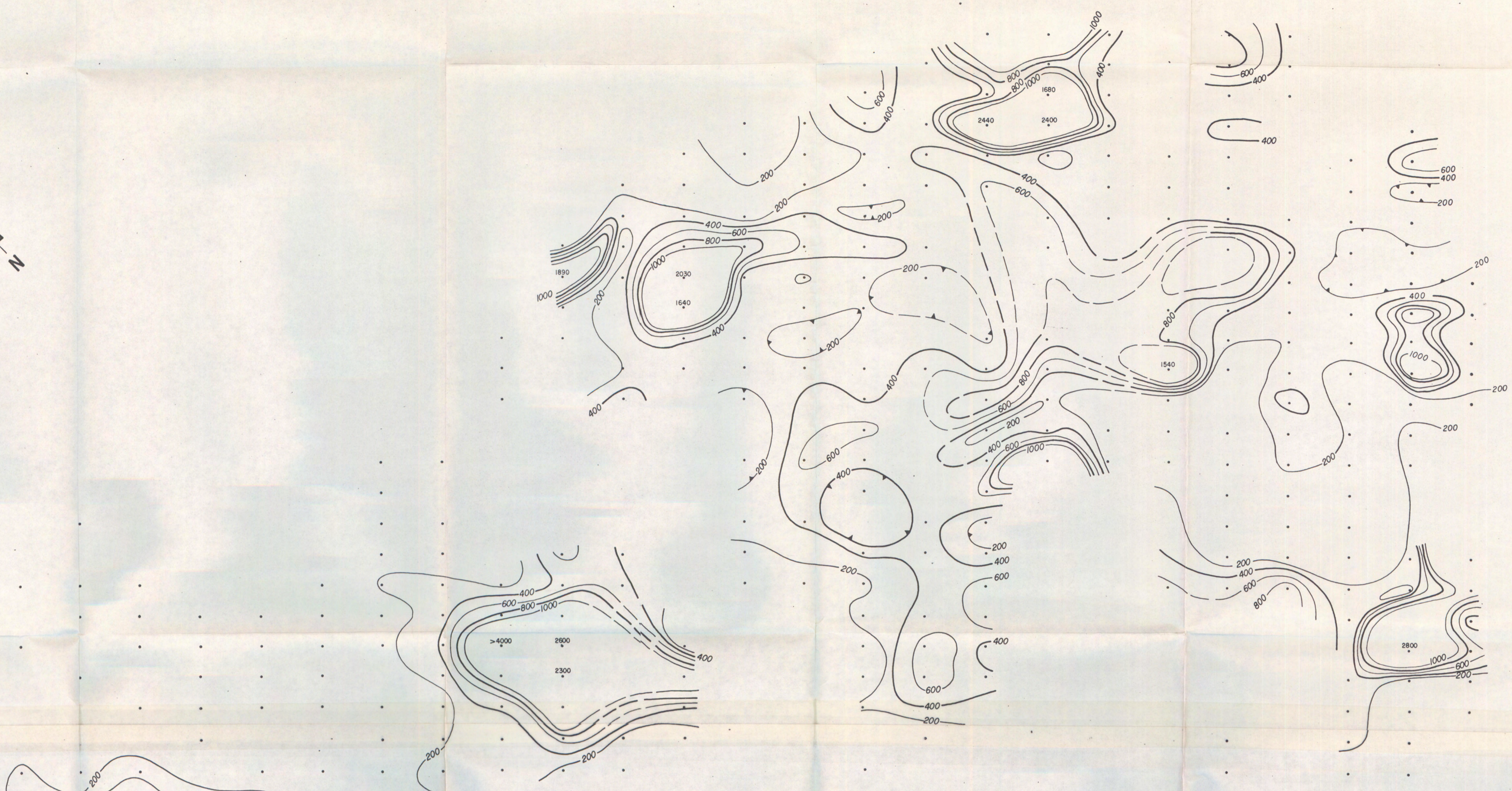
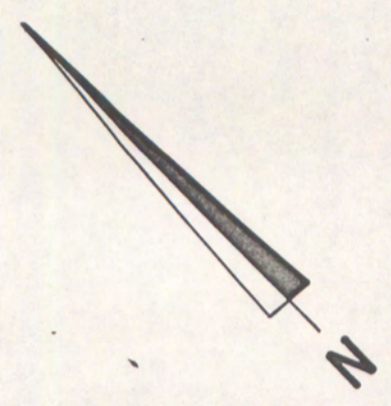
ZINC (PPM)

SCALE IN FEET
 0 400 800 1200 1600

AGILIS ENGINEERING LTD. AUGUST, 1973

48 NW 44 NW 40 NW 36 NW 32 NW 28 NW 24 NW 20 NW 16 NW 12 NW 8 NW 4 NW 0 Baseline 4 SE 8 SE 12 SE 16 SE 20 SE 24 SE 28 SE 32 SE 36 SE 40 SE 44 SE 48 SE 52 SE 56 SE

64 NE
60 NE
56 NE
52 NE
48 NE
44 NE
40 NE
36 NE
32 NE
28 NE
24 NE
20 NE
16 NE
12 NE
8 NE
4 NE
0
4 SW
8 SW
12 SW
16 SW
20 SW
24 SW
28 SW
32 SW
36 SW
40 SW
44 SW



800 Anomalous
400 Background

CREAM SILVER MINES LTD. (NPL)
ROSS CLAIMS - HOWARD PASS AREA
WATSON LAKE MINING DISTRICT, Y.T.

**GEOCHEMICAL
SURVEY**
ZINC (PPM)
CONTOUR INTERVAL: 200 PPM

SCALE IN FEET
0 400 800 1200 1600

AGILIS ENGINEERING LTD. AUGUST, 1973