GEOCHEMICAL REPORT

ON THE

SOB (1 - 18) MINERAL CLAIMS

by

R. E. VAN TASSELL

Latitude: 63° 52'

Longitude: 135° 22'

Sheet No. 105M-14

Date: June 25 to July 14, 1964

TABLE OF CONTENTS

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SOB CLAIM GROUP

SUMMARY

The SOB Claim Group was staked in June, 1964 when galena float was reported in a creek bed in the area.

As the area is completely covered by overburden it was felt that a preliminary soil sampling program would give an indication to possible vein zones in the area and would closer define areas for more detailed follow-up work.

In addition to the geochemical survey, a preliminary geological reconnaissance was made by a two man party, to locate any information which might aid in interpretation of geochemical results.

PROPERTY

The SOB Claim Group was staked for and is now held by United Keno Hill Mines Limited, Elsa, Yukon.

LOCATION

The Claim Group lies on the south slope of Galena Hill some 2½ miles south of Calumet and 2½ miles west of Keno City. The property lies just north of the Duncan Creek Road.

GEOCHEMICAL SURVEY

Two main baselines were cut using a Brunton compass, these lines were chained and picketed every 100 feet.

(a) SAMPLING

922 soil samples were taken in 21 man days. Preliminary sampling was done on 400 foot line spacings with samples taken at 100 foot intervals on the lines.

Samples of approximately one cup size were taken, using a mattock. Holes from 6 to 18 inches deep were dug in order to obtain an "organic free" sample. All samples were tagged and placed in small plastic sample bags.

(b) LAB PROCEDURE FOR CHEMICAL ANALYSIS OF SOIL SAMPLES FOR LEAD, ZINC AND COPPER

(1) General

The initial laboratory techniques and methods of analysis were set up by Dr. R. E. Delevault of the University of British Columbia, during a three week visit early in the season. He felt that the techniques as set up were those best applicable to the particular conditions of the area.

(ii) Sampling

1. Place approximately 200 grams of the soil sample on a clean sheet of paper and allow to dry thoroughly.
2. When soil has dried, mix thoroughly and crush.
3. With one gram scoop select a sample which possesses as little organic matter as possible and disregard any rock fragments larger than 1 mm. (a one mm. mesh seive may be used.)
4. Place the one gram soil sample in a small aluminum cup (made from aluminum foil) and tag.

(iii) Digestion

1. Place the one gram (well crushed) soil sample into a 22 x 175 mm. test tube, add one ml. of aqua regia and heat gently (about an hour) in the fume hood until the aqua regia has evaporated.
2. Allow the sample residue to cool for 10 or 15 minutes.
3. Add 1 ml. of dilute hydrochloric acid (1HCl : 10 H_2O) to the residue and gently heat (approx. 15 minutes) until the soil is just moist.
4. Dilute to 20 mls. with demineralised water and shake well.

(iv) Copper Test

1. Make a series of copper standards by diluting the 100γ/ml. stock solution to 1γ/ml., i.e. take 1 ml. of 100γ/ml. solution and dilute it to 100 mls. with demineralised water. The copper standards should be 0γ, 0.2γ, 0.5γ, 0.7γ, 1γ, 2γ, 3γ, 4γ, 6γ, 10γ. Therefore measure with a pipette respectively 0.2, 0.5, 0.7, 1.0, 2.0 mls., etc. of the 1γ solution into separate 18 x 150 mm. test tubes. Add the reagents for this test described below. These standards will keep for days, even weeks, if well stoppered.
2. To an aliquot of the sample solution in a 18 x 150 mm. test tube add 2 ml. of the ammonium citrate- sodium acetate- acetic acid buffer solution, enough demineralised water to make the total volume 6 to 8 mls., mix, and add 1 ml. of the biquinoleine solution.
3. Put a plastic stopper on the test tube and shake about 20 seconds or 100 strokes.

(v) Lead Test

1. To an aliquot of the sample solution add 5-10 milligrams of ascorbic acid, wait a few minutes, then add ½ ml. of the potassium cyanide solution, andl ml. of ammonium-citrate buffer solution. Wait at least two minutes if much iron is present.
2. Add ½ or 1 ml. of dithisone working solution (dithisone dissolved in chloroform).

3. Shake and compare with the standards unless the color is the pink color of the pure complex. In such case, add more dithizone until a mixed color persists and match to the standards. The amount contained in a matching standard must, of course, be multiplied by the total number of ½ mls. of dithizone used.
4. Prepare a series of standards in the same manner as for copper and add the reagents as in "1" above. The standards should have the following range:
γ's lead 0, 0.2, 0.5, 0.8, 1, 1.5, 2, 3, 4, 5, 8 mls. of Dz.1 ml.
½ ml, ½ml, 1 ml, 1ml, 2 ml, 2 ml, 3 ml, 3 ml, 4 ml.
For higher amounts then 8γ per ml. add dithizone and shake until color for 8 is reached then there are 2γ per ml. used. These standards will keep for about 4 hours at normal room temperatures.

(vi) Zinc Test

1. Make a series of zinc standards by diluting the 100γ/ml. stock solution to 1γ/ml. solution in the same manner as for copper. The zinc standards should be 0γ, 0.2γ, 0.5γ, 0.6γ, 0.8γ, 1γ. Add the reagents for the test described below. These standards will keep for about 1½ hours at normal room temperatures.
2. To an aliquot of the unknown sample solution add 5 - 10 milligrams of ascorbic acid, wait a few minutes, and then add 2 mls. of the sodium-acetate buffer solution, and 2 mls. of the dithizone working solution (dithizone dissolved in toloene-10 milligrams/liter).
3. Shake from 30 to 40 seconds and compare to standards.

NOTES 1. Extreme care must be taken to prevent contamination from any source. This necessitates good cleaning of glassware with metal-free water. Acetone and/or ethyl ether can be used as a rinser. Extreme care must be exercised with these latter organic solvents as they are extremely flammable.
2. Lead and zinc standards are very unstable (at normal room temperatures they keep from 1 to 4 hours), in presence of light and heat the metal dithizonate tends to break down. If standards wish to be preserved for a limited time, they should be put in a cold, dark place, e.g., a refrigerator. The author experimented with artificial standards by mixing suitable colored inks. These artificial standards were found to be unsatisfactory as the colors faded slightly in a short time and the accuracy desired was not possible.

(c) INTERPRETATION OF RESULTS

Ground prospecting revealed that all the area was covered by overburden. A few old caved pits and shafts were found on the west end of the claim group. Minor galena, siderite and breccia was found near an old shaft west of Anomaly No. 1.

From previous work on Galena and Keno Hills, soil sampling has proved to be an effective tool in locating vein zones in areas of relatively shallow overburden, e.g., less 10 feet. Copper analysis of soil samples is no longer done as values have proved to be too erratic.

In contouring lead values are cut at 50 parts per million (ppm) and zinc at 100 ppm. Lead has proven to be the best indicator, whereas zinc values occasionally reflect lead values but on the whole erratic and widespread distribution makes zinc interpretation difficult.

In the case of the SOB Claim Group, interpretation is based primarily on the lead plot.

Anomalies 1, 2 and 3 (see figure for lead plot) are small but are strongly supported in that they lie on strike to the general vein direction in the Galena Hill area. Two of the lead anomalies are further supported by zinc anomalies.

Anomalies 4, 5, 6 and 7 are rather weak and erratic in distribution, only one anomaly, No. 7, is supported by a weak zinc anomaly.

CONCLUSIONS AND RECOMMENDATIONS

Prospecting located very little information to aid in geochemical interpretation.

Seven lead anomalies were found by soil sampling, zinc gave a few isolated anomalies with only a few giving any support to the lead.

Anomalies 1, 2 and 3 probably represent mineralized areas on a possible vein system. It is recommended that these anomalies be investigated on a closer grid pattern, e.g., 100 foot line spacings with samples every 25 feet on the lines. If anomalous results are obtained 2 or 3 trenches should be cut to locate the cause of these anomalies.

Although anomalies 4, 5, 6 and 7 are weak and erratic; they should be resampled on a closer grid pattern to examine their true extent.

SUMMARY OF WORK

1. GEOLOGICAL RECONNAISSANCE JUNE 29 - JULY 14

A two man party prospected approximately 63 line miles for a total of 24 man days.

2. GEOCHEMICAL SURVEY JULY 1 - JULY 9

A three man party collected 922 samples in 7 days for a total of 21 man days. All samples were analyzed in the Geochemical Lab at Calumet.

GEOLOGICAL RECONNAISSANCE:

1 Party Chief @ 450 per month by 2 weeks	-	$ 207.70
1 Assistant @ 375 per month by 2 weeks	-	173.08

GEOCHEMICAL SURVEY:

3 soil samplers @ 375 per month by 1 week	-	259.62
922 soil samples @ 2.00 per sample for 2 analysis (lead and zinc)	-	1,844.00
Total		$ 2,484.40

AFFIDAVIT OF COSTS

I, R.E. van TASSELL, of Calumet in the Yukon Territory, make oath and say:

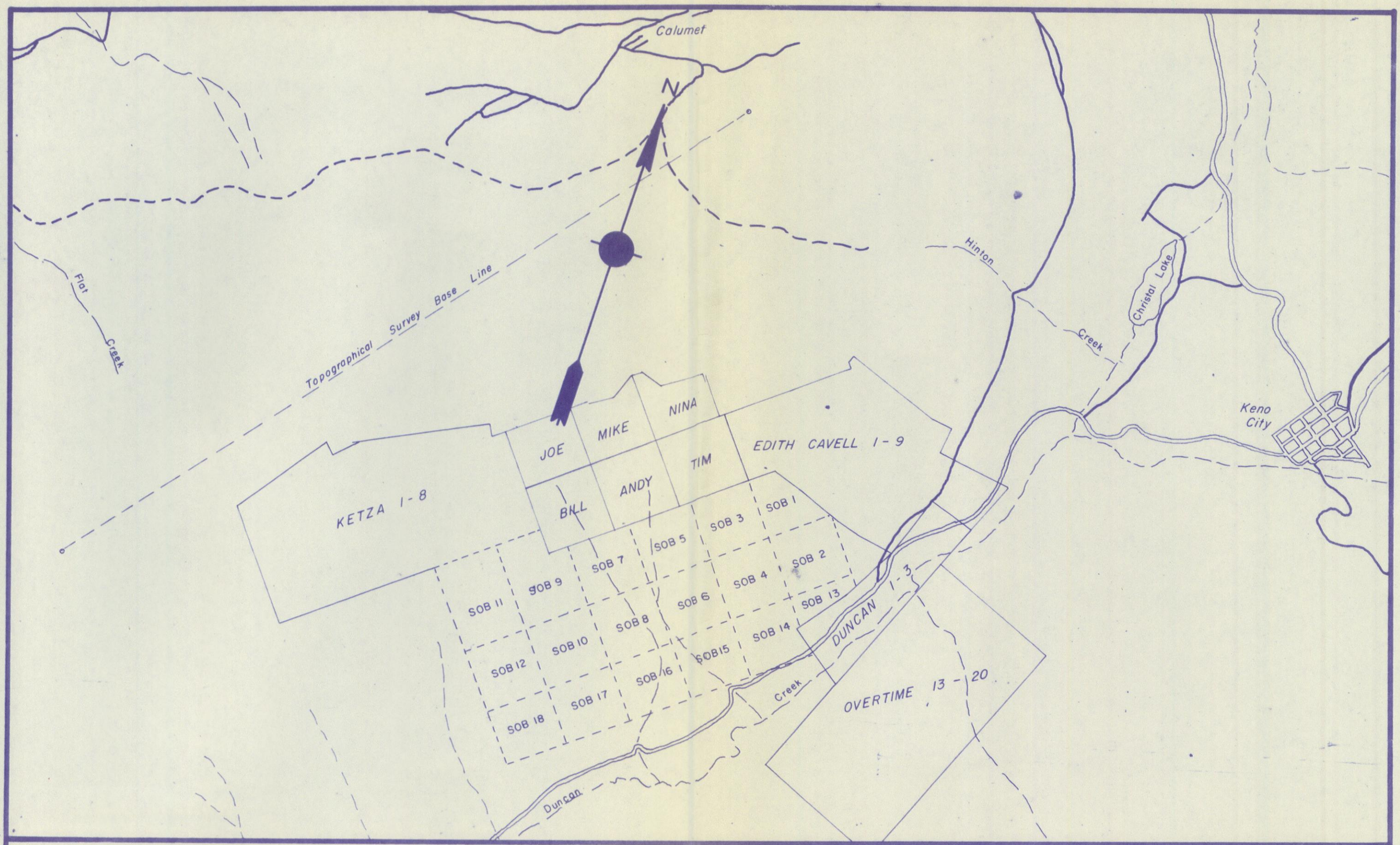
That the cost statement on page 5 of the Geochemical Report on the SOB (1-16) Mineral Claims, to the best of my knowledge and in my belief, is the true amount of money spent on geological reconnaissance and geochemical survey of the said claims in 1964.

Robert E. van Tassell

Sworn before me at Calumet in the Yukon Territory this 21 day of April 1965.

Robt Falconer J.P.

A Commissioner for Oaths for Yukon Territory.



Latitude 63° 52'
Longitude 135° 22'
Bearing N 50E

LOCATION MAP OF SOB CLAIM GROUP

SHEET 105 M 14 - KENO HILL

Scale 1 inch = 2000 feet

Figure 1

R.E. Van Tassell

UNITED KENO HILL MINES LTD.
ELSA YUKON

EXPLORATION DEPARTMENT

SOB CLAIMS
SOIL SAMPLING
LEAD PLOT

ALL LINES SAMPLED ARE COMPASS TRAVERSES

CONTOUR INTERVALS IN PARTS PER MILLION (PPM)

- 0 - 50
- 50 - 100
- 100 - 200
- 200 - 400

•65 SAMPLE LOCATION WITH LEAD PLOT IN PPM

② ANOMALY REFERENCE NUMBER

CLAIM BOUNDARY

12 CLAIM NUMBER

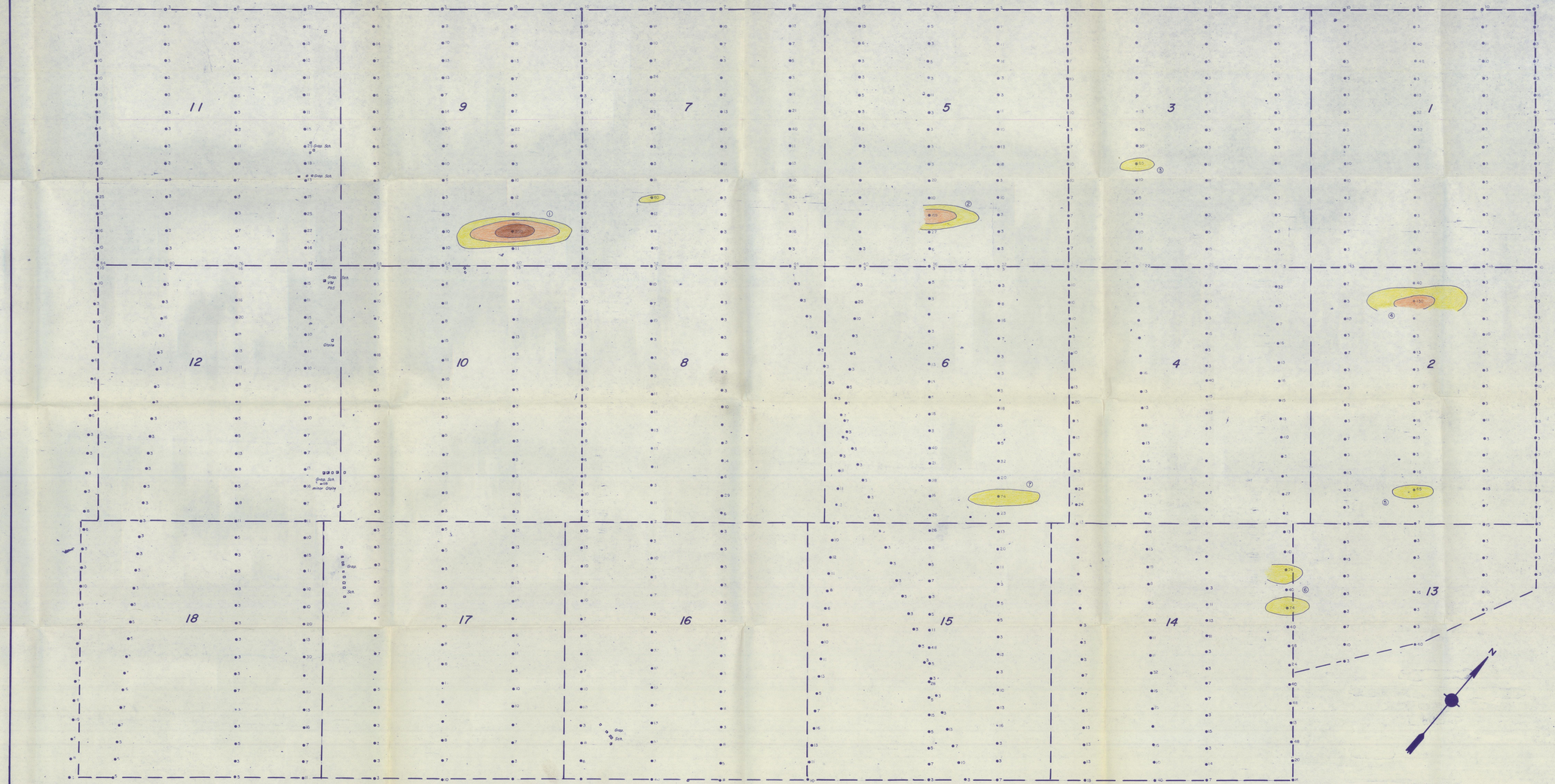
PROSPECT PIT

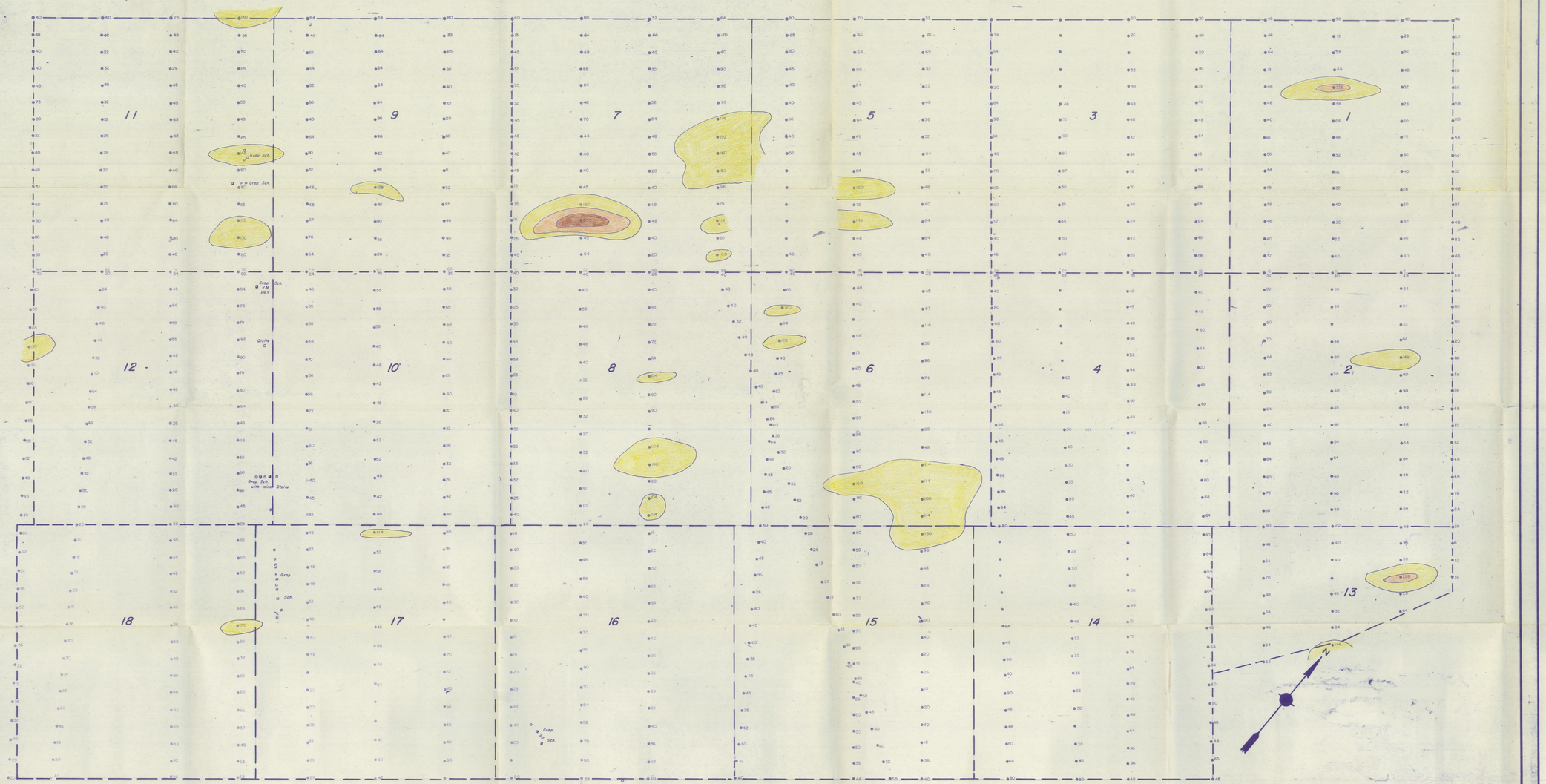
PROSPECT SHAFT

Grap. Sch. - Graphite Schist
Qtzite - Quartzite
PbS - Galena
VM - Vein Material

200 0 200 400 600 800
Scale 1 inch = 200 feet

JULY 1964





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EXPLORATION DEPARTMENT

SOB CLAIMS
SOIL SAMPLING
ZINC PLOT

ALL LINES SAMPLED ARE COMPASS TRAVERSES

CONTOUR INTERVALS IN PARTS PER MILLION (PPM)

	0 - 100
	100 - 200
	200 - 400
	400 - 800

•45 SAMPLE LOCATION WITH ZINC PLOT IN PPM

CLAIM BOUNDARY

12 CLAIM NUMBER

PROSPECT PIT

PROSPECT SHAFT

Grap. Sch.	-	Graphite Schist
Qtzite	-	Quartzite
PbS	-	Galena
VM	-	Vein Material

200 0 200 400 600 800

Scale 1 inch = 200 feet

JULY 1964