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7W

REPORT TO  
KEN NEWTON  
ON A

MAGNETIC SURVEY  
OF PART OF THE  
KEN MINERAL CLAIMS

NEAR MERRITT

IN THE NICOLA MINING DIVISION, B.C.

NOVEMBER - DECEMBER 1973

BY

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GEOPHYSICIST AND GEOLOGIST

APRIL 17, 1974

Department of  
Mines and Geology  
ASSESSMENT DIVISION  
NO. 4936

REPORT  
ON A  
MAGNETIC SURVEY OF THE  
KSN CLAIMS

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REPORT TO  
KEN NEWTON  
ON A MAGNETIC SURVEY  
OF PART OF THE KEN CLAIMS  
ON REY CREEK, NEAR MERRITT B.C.  
BY  
SHERWIN F. KELLY, P. ENG.

SUMMARY

A magnetic survey was conducted over a portion of the Ken mineral claims by Donegal Developments Ltd., of Vancouver, B.C., in December, 1973. The 40 claim group, belonging to Ken Newton, of Vancouver is located on Rey Creek, almost 18 miles north of Merritt, in the Nicola Mining Division, B.C. Readings were taken at 100 ft. intervals along east-west grid lines spaced 300 ft. apart, covering all or parts of 14 claims of this Ken claim group.

The Ken group is on a broad band of Nicola volcanics and sediments of Triassic age. These beds have been folded in generally open anticlines and synclines with a northerly trend. Volcanics of andesitic composition, both flows and tuffs, are the predominant type of bedrock, although the volcanics range from rhyolite to basalt. The Nicola belt is here about eight miles wide, bounded on the west by the Guichon batholith and on the east by the Central Nicola batholith. Both are dioritic in composition and were intruded in Jurassic time. Magmas of this type are believed to be the sources of mineralizing solutions responsible for metalliferous deposits in this area.

From base station readings, the usual corrections were made for diurnal variation, which was slight. The corrected readings, entered on a plan map, were then contoured. The range of corrected readings was between 10 gammas and 1600 gammas, although the usual range was from 400 gammas to 1400 gammas.

A bank of curvilinear highs extends north-south across the claim group. These highs are clustered in a band extending about a claim width either side of the base line. To the east and west of this band, the magnetic relief is weaker and the contour pattern generally nondescript.

The band of highs is probably ascribable to a flow or flows of basic character whose truncated edges were crossed by the grid lines. The area of flatter relief may be due to upturned, flanking beds or flows of more acidic character or, alternatively, to grid lines crossing an area of flat-lying beds or flows of acidic, intermediate or even basic character.

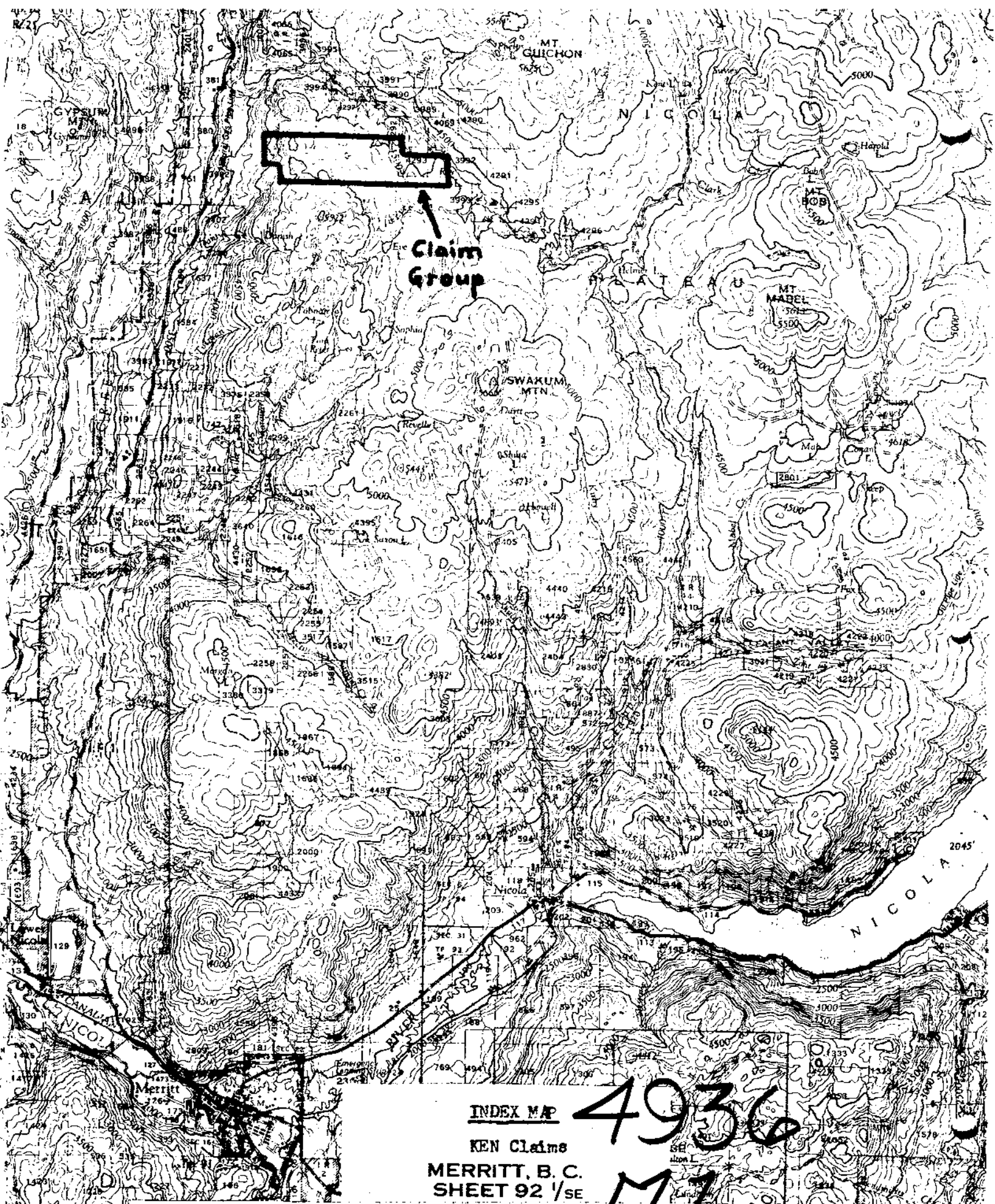
The patterns described could be produced by flat-lying flows of basic volcanics, whose truncated edges crop out at bedrock surface in the walls of a gully, where a stream has incised its bed in the area of the highs. Or, the truncated flows responsible for the highs may be on the upturned limb of a north-trending fold, which here has undergone a slight flexure, convex to the west. Such folding and flexuring might produce rock fracturing favorable to ore deposition.

The known occurrences of mineralization, in copper and other metals, in this vicinity, make it advisable to conduct a geochemical soil survey of these claims.

The work herein reported was applied to satisfy one year's assessment requirements on 23 of the Ken claims.

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#1



**Claim Group**

INDEX MAP

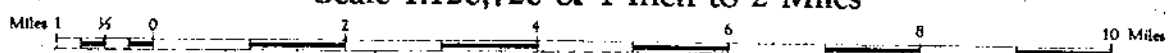
**4936**

KEN Claims

MERRITT, B. C.  
SHEET 92 1/SE

**M1**

Scale 1:126,720 or 1 Inch to 2 Miles



### CLAIMS, LOCATION AND ACCESS

The Ken Group, consisting of claims Ken nos. 1 to 40, is located immediately south of Rey Creek, on the east side of the Guichon valley, 17 to 18 miles north of Merritt, in the Nicola Mining Division of south-central British Columbia. The area is shown on the Merritt topographic sheet, 92 I/SE, in the northwest quadrant. The co-ordinates are,  $120^{\circ} 45'$  west longitude and  $50^{\circ} 21'$  north latitude. The elevation is about 4,500 ft.

The forty Ken claims were staked by Robert Schumacher as agent for K. Newton and recorded on March 27, 1972. Record numbers are, 51375-51414. They are valid to March 27, 1974.

Access to the group is from the Mamit Lake road, running north off the Merritt-Spences Bridge highway from a junction three miles west of Merritt. Fifteen miles north from that junction, a dirt road, the Rey Lake Road, turns east (right) up the north side of Rey Creek valley. It passes through the northeast corner of the Ken claims, five miles east of the Mamit Lake highway. The road is a graded, dirt road, suitable for passenger cars. The bulk of the claim group, in rugged territory, is accessible only on foot.

The Ken claims shown on the insert "Claim Location Map", on the Magnetometer Survey map, in the envelope bound in back of this report, do not have the configuration depicted on the staker's map or on the map of the Mining Recorder in Merritt. Those maps are erroneous, as the laying out of the grid revealed that claims Ken Nos. 26, 28, 30, 32, 34, 36, 38 and 40, had completely over-staked claims Ken Nos. 1, 3, 5, 7, 9, 11, 13 and 15. The former were therefore invalid and claims Ken Nos. 1, 3, 5, etc., are adjoined to the south by claims Ken Nos. 25, 27, 29, 31, 33, 35, 37, and 39. This is the configuration depicted on the inset map and on the index map facing this page.

### PLAN OF SURVEY

Compass bearings cited in this report, refer to astronomic north.

A north-south base line was laid out perpendicular to the location line for Ken claims 1, 2, 3, 4, etc. The zero station on this base line is on the location line for claims #1 and #2, 150 ft. east of the final post for Ken #1 and #2. The base line runs north 1,000 ft. and south 3,000 ft. from the zero station on the location line, for a total length of 4000 ft.

Thirteen grid lines, turned off the base line at 300 ft. spacings, run east and west, some to a maximum distance of 4,000 ft. west and 2,400 ft. east. Others are shorter. The lengths of individual lines was controlled largely by topography, as there are some steep slopes and high cliffs in the area. The total length of grid lines run was 63,000 ft., or 12.69 miles. The grid lines were flagged at 100 ft. intervals.

Since the base line, magnetically read in "loop" fashion, was actually covered twice, the length of lines run magnetically totals 71,000 ft., or 13.45 miles. The average of the 12.69 miles chained and flagged and the 13.45 miles magnetically observed, is 13 miles. This was the figure used in filing the affidavit of work.

### INSTRUMENT AND PROCEDURE

A fluxgate magnetometer for measuring the relative (not absolute) values of the vertical component of the earth's field, was utilized in making this survey. It was an M700, serial number 70119, manufactured by McPhar Geophysics Ltd. of 139 Bond Ave., Don Mills, Ontario. The scales utilized were the K



and 3K, providing respectively a sensitivity of 20 gammas per scale division with a reading of 1,000 gammas at full scale deflection, and a sensitivity of 60 gammas per scale division with a reading of 3,000 gammas at full scale deflection.

Station 0, at the intersection of the base line and the location line for Ken #1 and #2, was chosen as the base station. From this station the base line was run in "loop" fashion, out from the base station to each end of the base line and back, with magnetic readings therefor taken twice at each intersection of base line with grid lines. The corrections for diurnal variations, deduced from the observations at the base station, were then apportioned to the readings taken at grid line intersections, between base-station checks. Thus, each grid line station on the base line became a subsidiary base station. As each grid line was read, check-ins were automatically made on the appropriate subsidiary base station and the diurnal variation noted. Corrections for diurnal variation were then made on the grid line readings between such check-ins. Corrected values were used to plot the results. Diurnal variation is found to be generally low to negligible.

#### RESULTS OF MAGNETIC SURVEY

The results of the magnetic survey on the Ken claims, are shown on the map in the envelope bound in back of this report. The area is characterized by an irregular scattering of moderate magnetic highs and lows, usually not individually persistent, but oriented in a generally north-south pattern.

The maximum magnetic relief in the area is from 10 gammas to 1600 gammas, for a total range of about 1600 gammas. The more usual range, however, is in the neighborhood of 1000 gammas, with readings varying between roughly 400 gammas and 1400 gammas. The oval contours outlining the lows and highs are generally short, extending across only one or two grid lines. Some show greater persistence, with lengths of 900 to 1800 ft.

The distribution pattern is irregular, but there is generally a northerly to west of north trend in evidence, particularly within a claim width or so either side of the base line. Towards the northern part of the grid area, there is a slight easterly bend in the northerly-striking contour clusters.

Outside of the zone of more noticeably elongated and persistent contours near the base line, the smaller centers of highs and lows are irregularly scattered, although there is a slight tendency for them to occur along north-trending bands. The contrast between lows and highs is generally not great and the gradients, except occasionally, are not steep.

There is nothing that stands out as strongly "anomalous". The most noticeable feature is the band of moderate highs extending across the claim group in a north-south, curvilinear pattern. This band is about two claim lengths wide, lying east and west of the base line.

#### INTERPRETIVE COMMENTS

The geological setting of this claim group is in the band of Nicola volcanics and sediments of Triassic age, which extends from the American border north to somewhat beyond Kamloops Lake. It varies in width, usually of the order of several miles wide. Here it has a width of eight to nine

miles. In this area, these strata are bounded east and west by intrusive batholiths of Jurassic age, predominantly granodiorite, quartz diorite and diorite.

The Guichon batholith lies some four miles to the west of the claims and is the site of intensive copper mining activity in the Highland Valley. Some four miles east of the Ken claims, is the smaller, Central Nicola batholith. Copper and molybdenum deposits have been found there and minor production has taken place.

Batholithic intrusives of this type are believed to be the source magmas, as well as frequently the host rocks, of the mineralizing solutions responsible for the metallic deposits occurring both in the batholiths and in the invaded Nicola series. Widespread mineralization is known to occur in the Nicola rocks of this area, including copper, tungsten, lead, zinc, gold and silver. The outstanding example is the Craigmont copper mine, just off the southern tip of the Guichon batholith, some eleven miles southwest of the Ken claims.

The Nicola series is made up of volcanic flows and intercalated beds of tuff along with occasional bands of sediments. The latter range from conglomerate to limestone and the volcanics from rhyolite to basalt. The predominant volcanic type, however, in both flows and tuffs, is andesitic. The Nicola beds have, in general, been folded into open anticlines and synclines with a northerly trend and limbs of moderate dip. Closer folding does occur however, as does considerable faulting.

The band of curvilinear highs striking north-south through the Ken claims in the vicinity of the base line, could be ascribed to the effect of upturned edges of andesitic or basaltic flows or tuffs lying on the truncated limb of a fold. The bedrock beneath this band of stronger reactions may be expected

to be somewhat more basic than the rocks to either side. If andesitic, it contains more magnetite than the flanking beds; or, it might be basaltic.

The curvature in the alignment of these highs is not pronounced. It could be the effect of topography on the trace, at bedrock surface of dipping formations; or, there could be a flexure, convex to the west, in upturned Nicola beds.

The nondescript patterns of the contours to the west and east, lack such clear persistent alignments, so cast no light on the validity of postulated curvature. These irregular patterns of generally lower magnetic relief, might correspond to flanking, upturned bedrock layers less basic and with less contained magnetite, than the beds underlying the highs just described. Or, the irregular and weak patterns to the west and east may be underlain by flat or gently dipping beds of intermediate, or even basic character.

Flows of andesitic or basaltic magmas, high in magnetite, often show a segregation of that heavy mineral near the base of the flow. A truncated edge of such a flow will consequently exhibit a pattern of linear magnetic highs corresponding to the higher magnetite content of the basal portion. The overlying portion, especially of a thick flow, however, would be deficient in magnetite. Since the magnetite-rich, basal portion is buried beneath the thickness of the magnetite-deficient upper portion of the flow, magnetic observations over an expanse of flat-lying flows would be expected to reveal a weaker magnetic response, lacking the linearity encountered when the cross-section is exposed to magnetic observation. The pattern would be one of scattered highs and lows reflecting the irregular dispersion of magnetite throughout the upper portion of the flow.

Hence, the pattern exhibited on this map could also be due to flat, or gently dipping flow or flows, incised by the stream running northerly through claims Ken 25 and Ken 1 and northeasterly across Ken 24. The magnetic highs could then be due to the exposures of the magnetite-bearing basal portions of such flows in the walls of the stream gully.

The pattern of magnetic responses on the Ken claims is therefore, I believe, subject to two principal, alternative interpretations. In both cases, the pattern of linear highs is ascribed to magnetite concentrations in the basal portions of one or more volcanic flows of basic character..

In one interpretation, the north-south, curvilinear magnetic pattern would correspond with the bedrock trace of the basic flows on an upturned, truncated limb of a fold, synclinal or anticlinal, which had been subjected to a flexure, convex westerly. The beds or flows adjoining to west and east would be assumed to be less basic in character and with but weakly disseminated magnetite.

On the other hand, the curvilinear pattern of highs could be the result of the stream near which it occurs, having incised a gully which exposed the cross-section of a series of flat, or gently dipping flows. The magnetic highs then correspond to the outcrops, or suboutcrops of such basic flows on the side-hills above the stream. The patterns of reduced intensity to east and west merely reflect that the readings there were taken over the near-horizontal extensions of the flows, not across their cross-sections.

Field examination would resolve the question raised by these alternatives, or possibly reveal yet another explanation. If the structural basis for the magnetic pattern is corroborated, namely a flexure in the

truncated limb of a fold, the possibility would then be presented that accompanying fracturing of the rock could have provided zones of circulation for mineralizing fluids and offered openings wherein they could have deposited their mineral load.

In any event, there are numerous occurrences of known mineralization nearby in this area, as on Swakum Mtn., at Rey Lake, on Helmer Lake, and at Tolman Lake, which warrant at least making a geochemical soil survey of these claims to see if mineralization has occurred here.

#### STATEMENT OF EXPENDITURES

The magnetic geophysical survey on part of the Ken claim group, reported herein, was conducted, under my general direction, by Donegal Developments Ltd., of Vancouver on a contract basis. The field work was carried out by Seamus Young, proprietor of Donegal, assisted by Charles Ballou, of Donegal Developments.

The survey was made from Nov. 27 to Dec. 4, 1973. An Affidavit on Application for Certificate of Work, covering this survey, was filed by Seamus Young, as agent for Kenneth J. Newton, with the Sub-Mining Recorder in Vancouver, on Dec. 28, 1973.

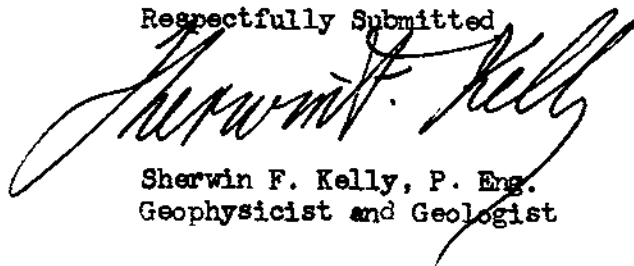
Ken Claims

Chaining and Flagging 13 miles @ \$60 per mile _____	\$ 780.00
Magnetometer survey over same grid @ \$90 per mile _____	1170.00
Preparation of this report _____	<u>500.00</u>
	\$2450.00

Of the above amount, \$2300 was applied for one year's assessment requirements, on claims Ken #1 to #12, #19 to #25 and #27, #29, #31 and #33.

I hereby certify that the above expenditures were duly and properly incurred for the work performed and reported on herein.

Respectfully Submitted



Sherwin F. Kelly, P. Eng.  
Geophysicist and Geologist


Box 277  
Merritt, B.C.  
April 17, 1974

CERTIFICATE OF QUALIFICATIONS

I, Sherwin F. Kelly, P. Eng., residing at the Adelphi Hotel in Merritt, B.C., certify that:-

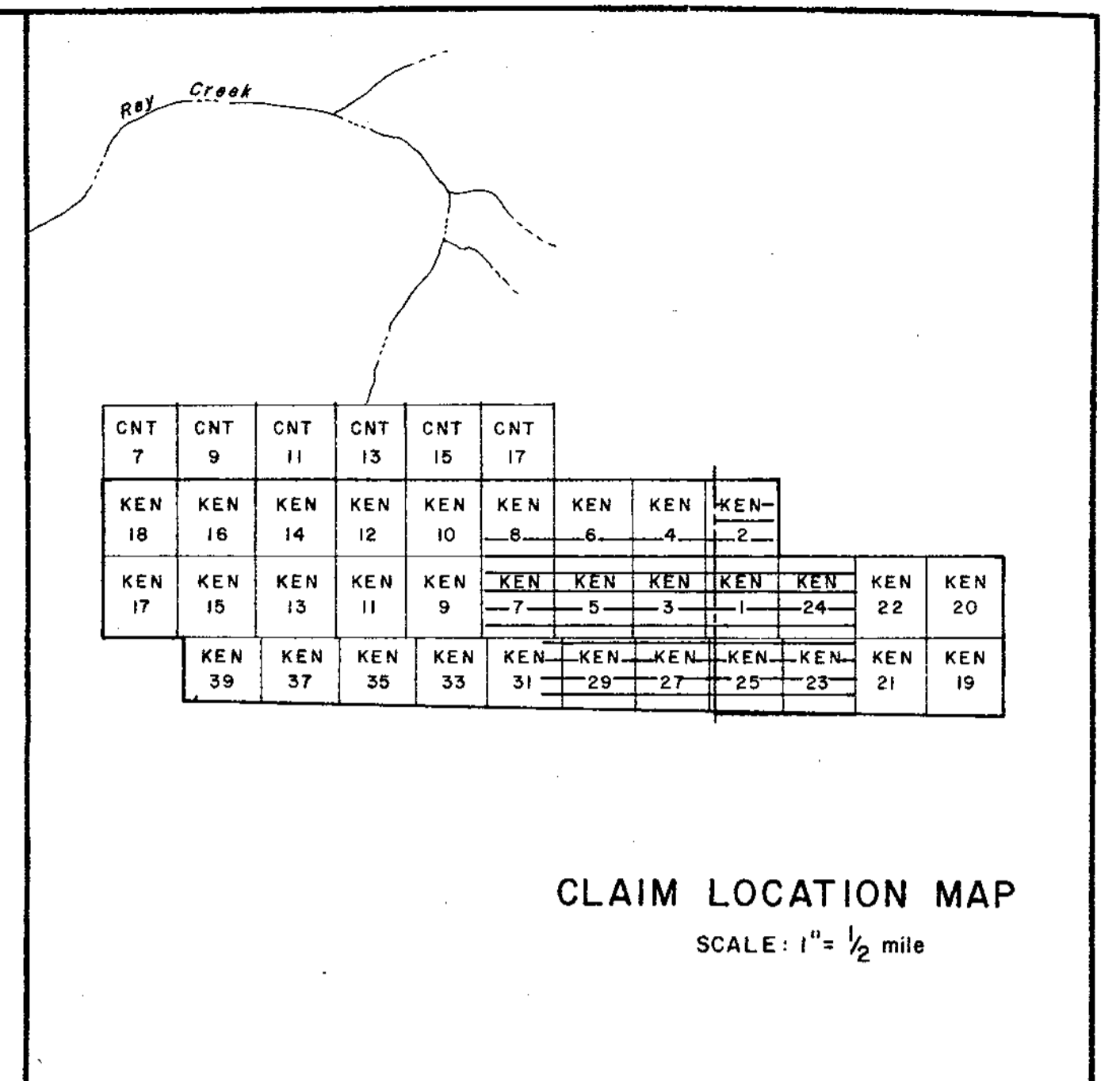
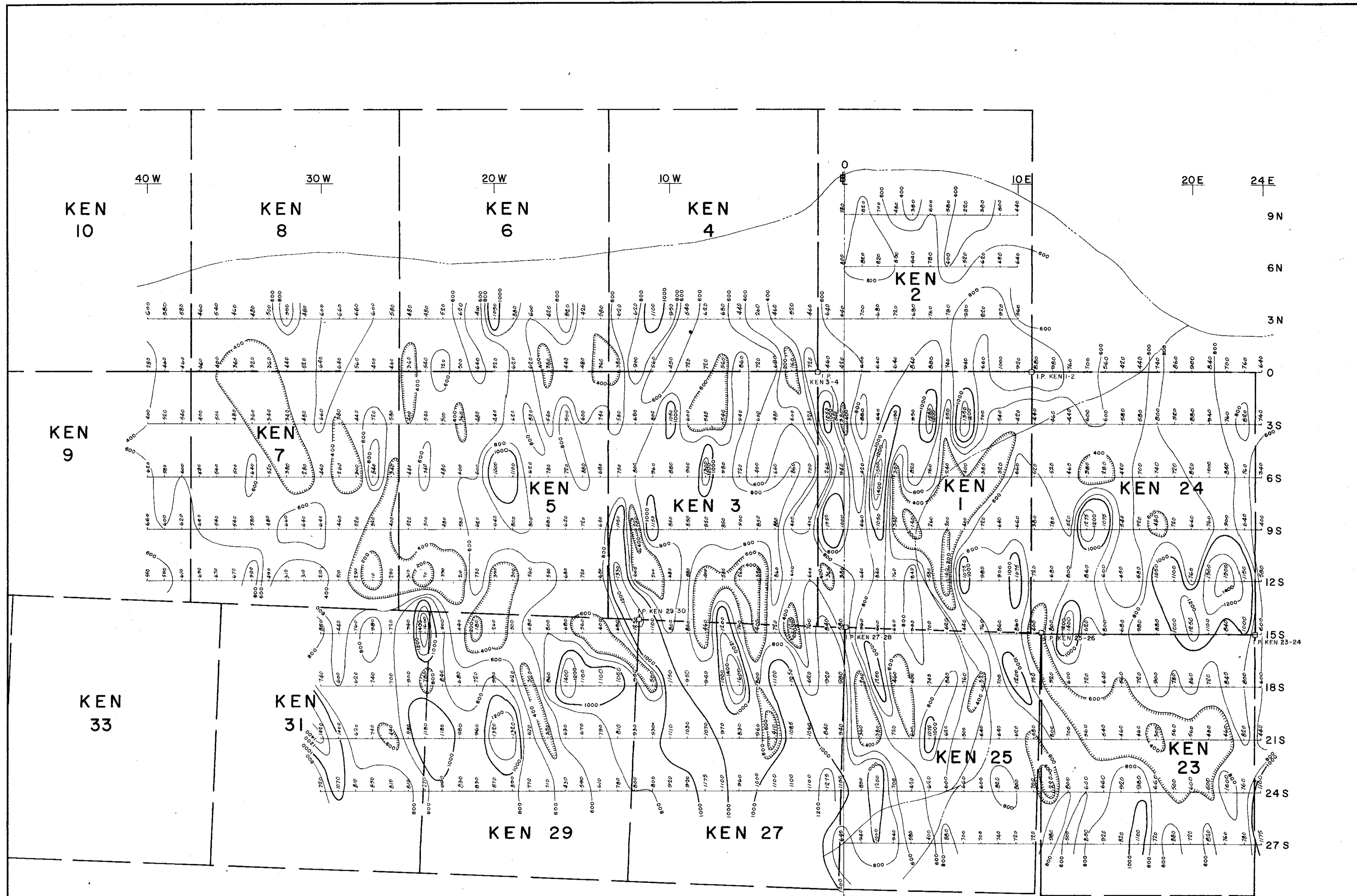
- (1) I am a registered Professional Engineer in the Province of British Columbia.
- (2) I received the degree of B. Sc. in Mining Engineering from the University of Kansas in 1917.
- (3) I pursued graduate work in geology and mineralogy at the Sorbonne, Ecole des Mines and Museum d'Histoire Naturelle in Paris and at the University of Kansas and the University of Toronto. I also taught those two subjects at the two latter universities. I received my training in geophysics from Prof. Conrad Schlumberger of the Ecole des Mines, in Paris.
- (4) I have practised as a geophysicist and geologist in Europe, North Africa, United States, Canada, Mexico, Central America, South America and the Caribbean, since 1920. Since 1935, my work has been principally as a consultant.
- (5) This report on a magnetic survey conducted on a portion of the Ken mineral claims, is based on field work carried out under my general direction and on my personal knowledge of the district, gained during 15 years experience in the area.

Respectfully submitted

  
Sherwin F. Kelly, P. Eng.  
Geophysicist and Geologist

Box 277  
Merritt, B.C.  
April 17, 1974





**MAGNETIC CONTOUR MAP**  
To accompany a report dated April 17, 1974 by Sherwin F. Kelly, P. Eng. on a geophysical survey of a portion of the Ken mineral claims in the Nicola Mining Division

*Sherwin F. Kelly P. Eng.*

- LEGEND**
- CLAIM POST AND LINE
  - ~ CREEK
  - ⊖ MAGNETIC DEPRESSION
- CONTOUR INTERVAL IS 200 GAMMAS

4936

M 2  
NO. 4936 #2

SCALE: ONE INCH = 300'

**MAGNETOMETER SURVEY**  
KEN CLAIM GROUP  
NICOLA M.D.

WORK BY <i>[Signature]</i>	DRAWN BY L. BELL	DATE DECEMBER, 1973
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