CUNNINGHAM CREEK CLAIMS

CHAPUT LOGGING LTD

BARKERVILLE BC

CARIBOO MD NTS 93 A 14W

JANUARY 1988

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LIST OF PLANS AND FIGURES

PLAN **IN POCKET (Cont)**

Geological & Geophysical Interpretation:

West Grid
Central Grid
East Grid

Detail Grid:

Total Field Magnetometer Survey

Second Derivative Analysis of the Total Magnetic Field

VLF EM Field Strength Survey, Cutler, Maine

VLF EM Field Strength Survey, Seattle, Washington

VLF EM Dig Angle and Quadrature Surveys, Cutler, Maine

VLF EM Dip Angle and Quadrature Surveys, Seattle, Washington

Structural Interpretation From Geological and Geophysical Study

Detailed Geology of Adit with Magnetometer Study

INTRODUCTION

In August 1987, the author of this report was invited by Bill Blyth, of Coast Interior Ventures, to tour the Cunningham Creek Claims with Mr Wallace Chaput. A short report was produced at that time outlining an interpretation of the mineralizing process evidenced on the property. This report is a subsequent study undertaken for assessment purposes and to evaluate the property on the author's model of the mineralizing process assumed to be operative here.

Discussion and examination of other geological endeavours in the area indicate that this model, briefly introduced in this study, is at variance with that used by these other companies. Dr Simon, a geologist from Yugoslavia, developed the model showing its ability to describe other BC deposits and its relation to plate tectonic theory.

LOCATION AND ACCESS

The Cunningham Creek claims of Chaput Logging Ltd are situated in the area known as the Cariboo Gold Fields of British Columbia, see **Fig 1.** This claim group is accessible from the community of Wells by paved road 5 km east to Barkerville, thence the 3100 logging road for 14 km. From the 3100 logging road a series of mining roads follow Cunningham Creek south for 10 km. A total of 50 units compose the property which is in two claim groups: group number 2798 of 13 units includes the Park 1 to Park 12 and Tarn claims, group number 2576 of 37 units includes the Roundtop, Bon Fraction, Base Metal, and Silver Mountain claims.

See **Figure 2.**

Topographic description of Location:

NTS 93 A 14W
Latitude 52 55 N
Longitude 121 20 W

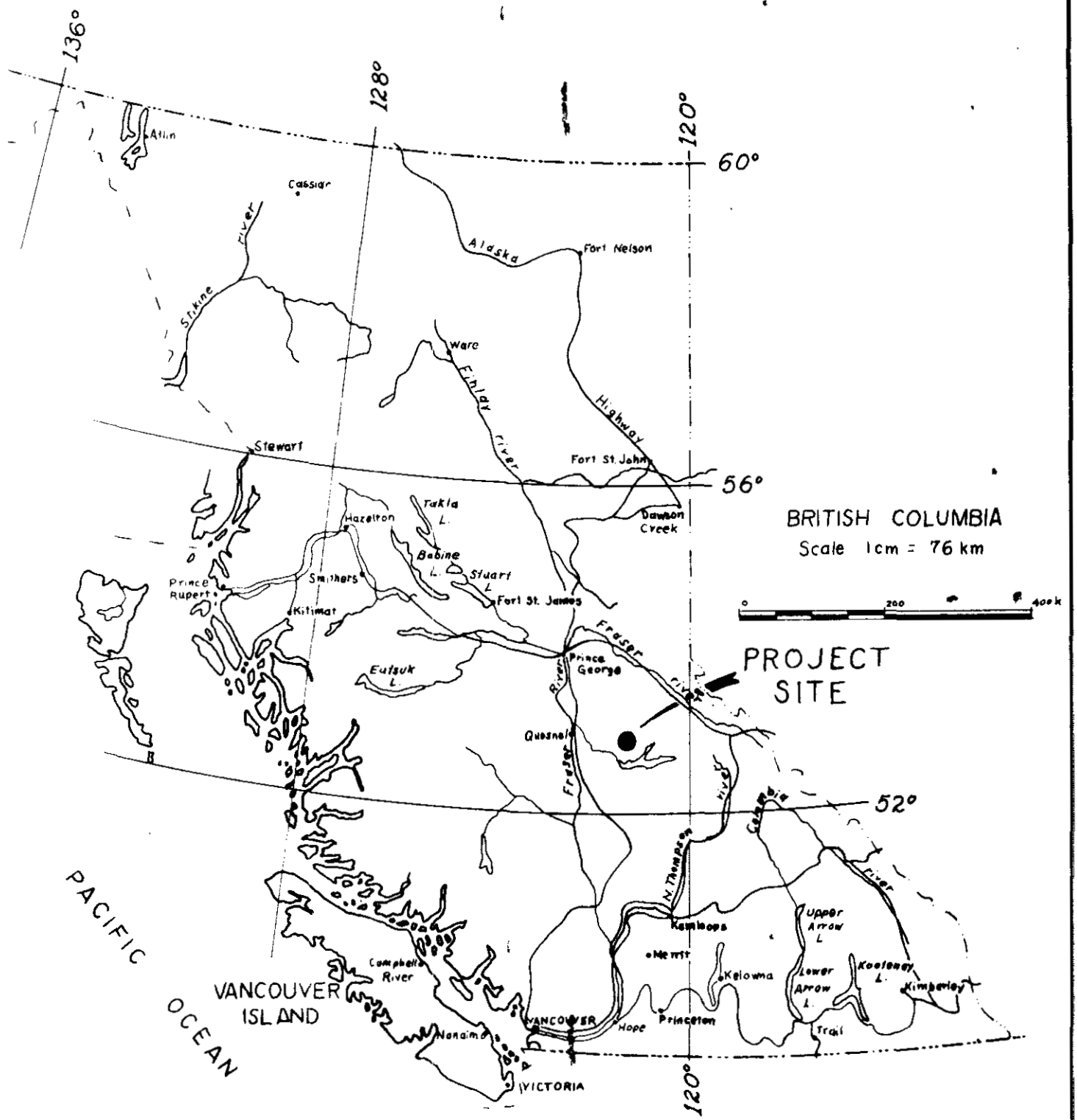

FIG 1

LOCATION MAP

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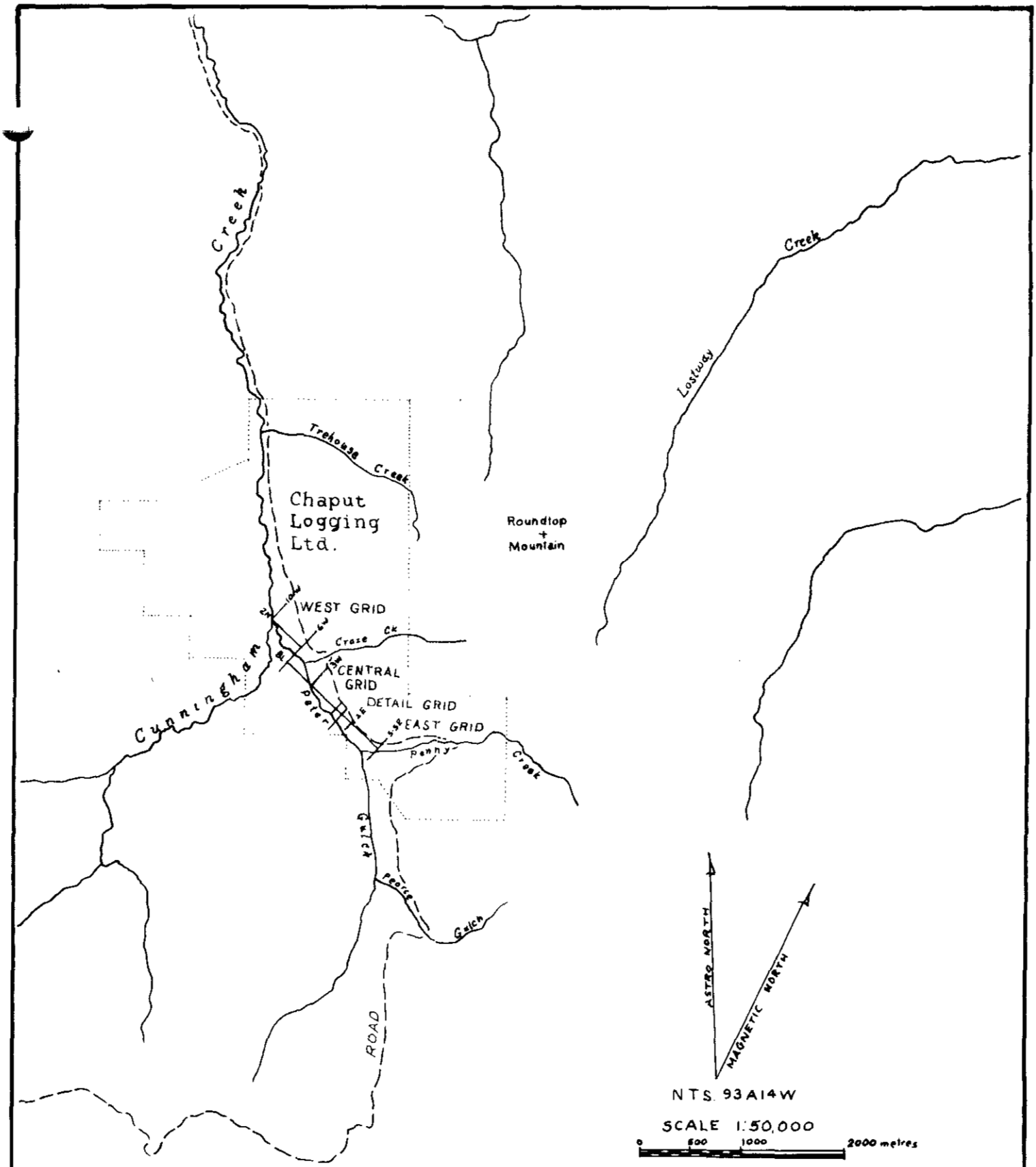

FIG 2

LOCATION MAP

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HISTORY

Cunningham Creek was first worked for placer gold in 1860 by William Cunningham and is still being actively worked by several operators using heavy equipment. Gold mining from quartz veins started in 1922 on a tributary of Cunningham Creek, Peters Gulch, at the site of the Cariboo Hudson mine. The Cariboo Hudson mine area was also worked in the early 1950's for tungsten.
Coast Interior Ventures Ltd explored for base metals between 1971 and 1974, their work included 130 km of geochemical sampled grid an IP survey and 1000 meters of diamond drilling. This work concentrated in the area of known high grade silver gold quartz veins. Coast Interior Ventures identified 11 geochemical anomalies at that time.

Between 1973 and 1976 Kerr Addison did soil sampling on neighbouring claims for the purpose of identifying a large tonnage gold deposit.
Rio canex optioned the property from 1976 to 1978 and had a 20 man camp in the valley. Their work included: verification of Coast Interior Ventures geochemical anomalies, an extension of that geochemical program, they identified one more anomaly, geological mapping, a geophysical orientation survey to test four techniques to see if they would identify mineralization, trenching and diamond drilling. Due to a dissagreement Rio canex lost their option with Coast Interior Ventures.

Since 1978 there has been further exploration including the driving of a 60 meter adit and the milling of ores recovered from that work.

REGIONAL GEOLOGY

The sediments that strike NNW - SSE through the region have been aged from the Proterozoic to Devonian, between 600 to 400 million years before present. Fossil evidence, Ordivician graptolites present in the shales, and Cambrian archaeocyathids in the associated limestones support a 500 million to 600 million years before present age.

The sediments are differentiated into two units: shales, known as the Midas or Isaac Formation and phyllites and schists known as the Snowshoe or Kaza Formation.
Their age relation to each other is open to argument. Both units have associated limestones that are very similar. The black colored shale unit increases in limestones content towards the top and siltstone and sandstones are present in it.

The age is significant as they are contemporary with similar sediments in Northern British Columbia and the Yukon that carry very economic lead and zinc values. These sediments have undergone deformation identified as broad anticlinal and synclinal structures with associated sub folding and faulting. Regional metamorphism evident in the area is of green schist facies.

LOCAL GEOLOGY

The mineralized quartz veins seen on Cunningham Creek, carry a diverse assortment of metals: gold, silver, copper, lead, zinc, tungsten, and possibly molybdenum. Of interest is the patterns seen in the veins.

Previously the association of these mineralized zones with carbonate rocks, coarse clastics, and graphitic shists was used to identify these as strata bound deposits. It may be that these are the most brittle units and have a tendency to shatter forming open voids as a plumbing system for subsequent quartz veining. The other rock units in the area when deformed just flowed plastically and no cavities were formed. The areas of known mineralization on this property are along a straight line trending from the North West to South East. To the North West on Nugget Mountain mineralization is exposed for over 450 meters. With the lead and zinc it shows an interesting pattern in gold values as determined by Rio canex's sampling: At the bottom of the hill sample 7820084 was 0.48 oz/ton gold. Up the hill 120 meters away gold values increase at sample 7820079 to 0.60 oz/ton gold. Another 60 meters up the hill gold values increase to 0.70 oz/ton in sample 7820158 which appears to be 5 meters wide. Beyond this point sampling is not as detailed. At 270 meters further a value of 0.21 oz/ton gold was assayed in sample 7820088, this is still mineable ore even in limited widths. This mineralization has an elevation relation to it.

LOCAL GEOLOGY (cont)

In the valley bottom the mineralization studied by this report is dominated by iron pyrites as a vein mineral though galena and sphalerite occur with it in the west grid in zoned veins.

Off the study grid on Penny Creek to the East the veins again carry abundant galena and sphalerite, tetrahedrite which with the added elevation brings out a similarity with Nugget Mountain. The lack of pyrite and interesting gold values also add to the similarity.

GRID GEOLOGY

The first area of geological study on the grid was the adit at 60s, 175E which is detailed in the plan labeled "Detailed Geology of Adit with Magnetometer Study". This occurrence is thought to be a key in understanding the mineralizing process over the whole area.

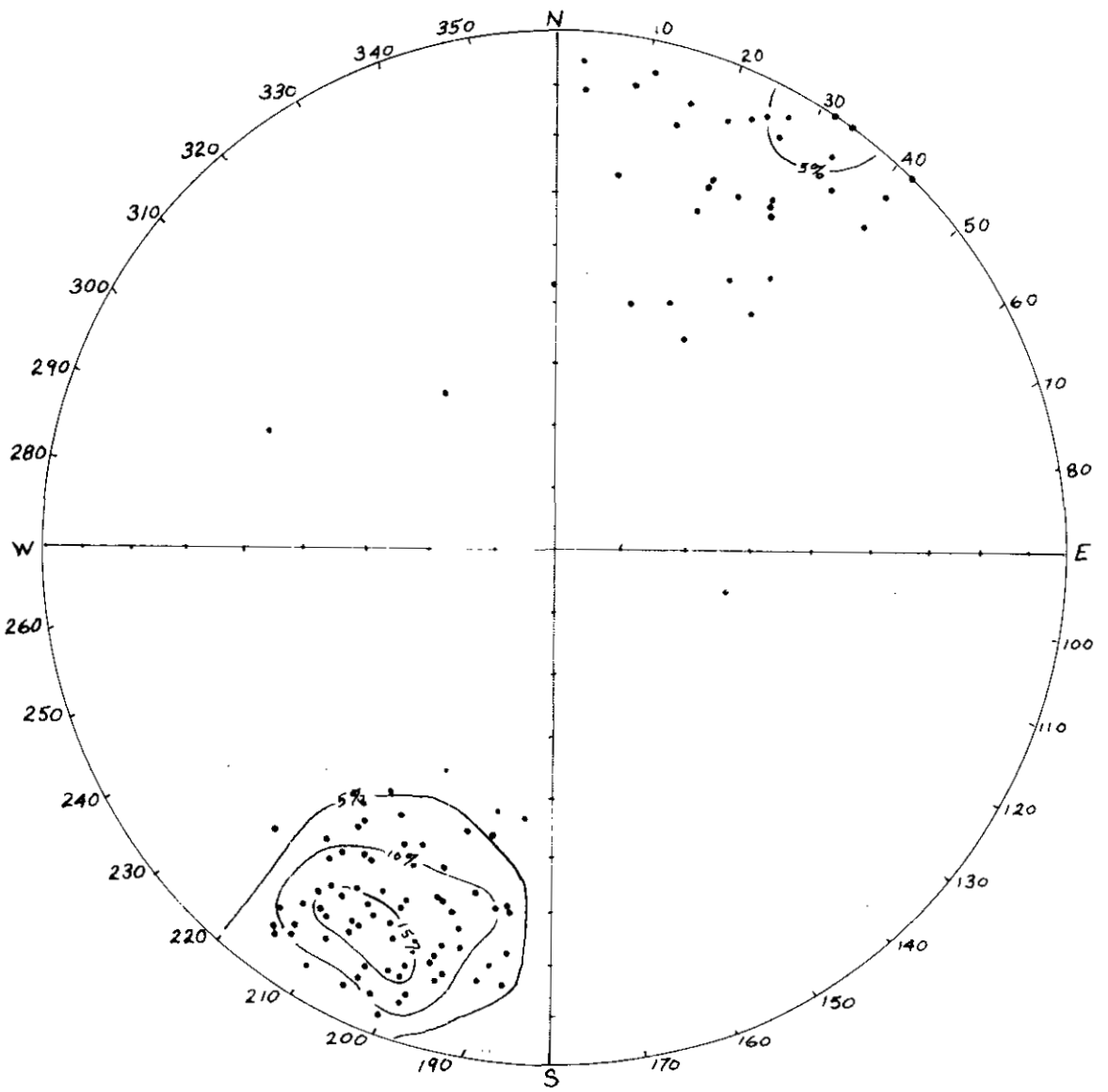
The rock seen in this occurrence is a buff brown sericitic quartzite which with minor variations is the rock seen throughout the four grid areas. Variations include: coarse quartz pebbles to 1 inch diameter, lenses of mica giving the rock a phyllitic appearance though not over a great area, greenish coloration suspected as being a chloritic alteration halo. The adit exposed a small but intersting pyrite vein, it was known to carry 6 oz/ton of gold. Of great significance is the junctioning or turning habit of the quartz veins indication centers of stress release. This is more in evidence when studying the area from portal to internal shaft as the rock is highly fractured. It is truly scary ground to be entering. In contrast, past the shaft the adit takes on a very safe, sound, appearance marking the change in rock stress environment. Other zonal patterns to be noted include sericitic gouge to be found in the shear frature that the adit follows. This gouge is thought to be representative of the halo zone identified as potassic alteration though restricted here in the shear at the location of zoned pyrite veins and the end of the adit where it suggests the approach of another pyritic vein.

GRID GEOLOGY (Cont)

Another zonal pattern is the fan of quartz tension veins with ankeritic cores indicating the cap area of the intrusive. Also, typical of the cap zone are epidote and tourmaline of the variety schorl. These are not seen in this adit but are suspected closer to the intrusive. It is unfortunate the adit doesn't go another 10 meters where it might encounter another vein and better show the symetrical pattern of the mineralization.

The importance of structual orientations as indicated in the adit area prompted their further study throughout the grids. To facilitate this understanding the orientations of schistosity, joints, and quartz veins were plotted as poles projected to the lower hemisphere on equal area nets. See **Figures 3, 4,** and **5.**

The schistosity is thought to parallel the bedding throughout the area as areas of pebble conglomerate bear the same orientation. The sericite which gives this dominantly quartzite rock a schistose character probably represents clay partings between the beds of quartz. The dispersion of poles to the NE quadrant probably represents the deep water drop off area of beach sediments. One pole in the NW quadrant is known to represent a limb of a Z fold though deformation is very minor in the quartzite unit.



EQUAL AREA PLOT
OF 107 SCHISTOSITY DETERMINATIONS

POLES PROJECTED TO LOWER HEMISPHERE

MEAN ORIENTATION : STRIKE 115° mag.

DIP 70° N

FIG 3

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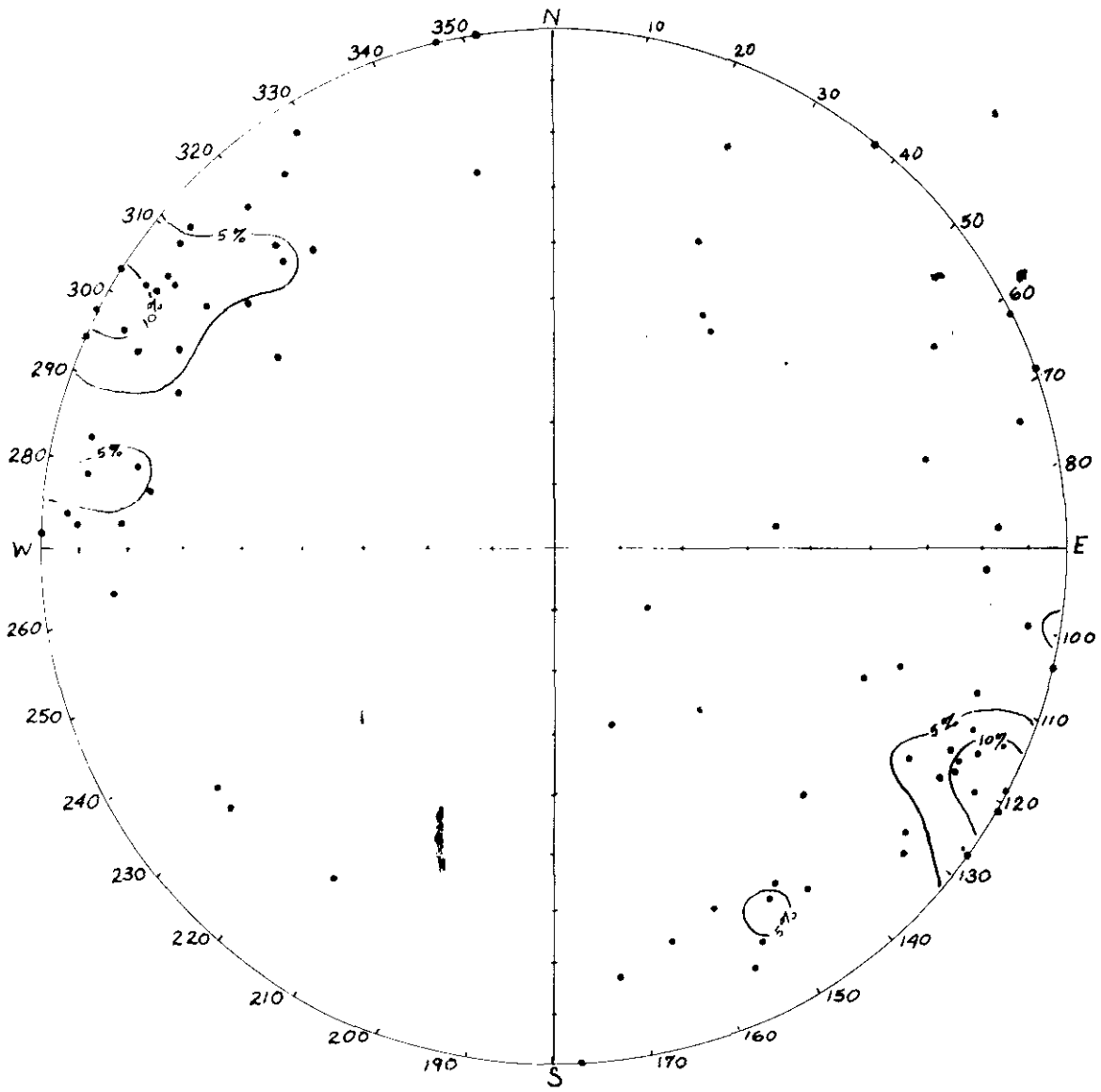

EQUAL AREA PLOT

OF 81 JOINT MEASUREMENTS

POLES PROJECTED TO LOWER HEMISPHERE

MEAN ORIENTATION : STRIKE 029° mag.

DIP 90°

FIG 4

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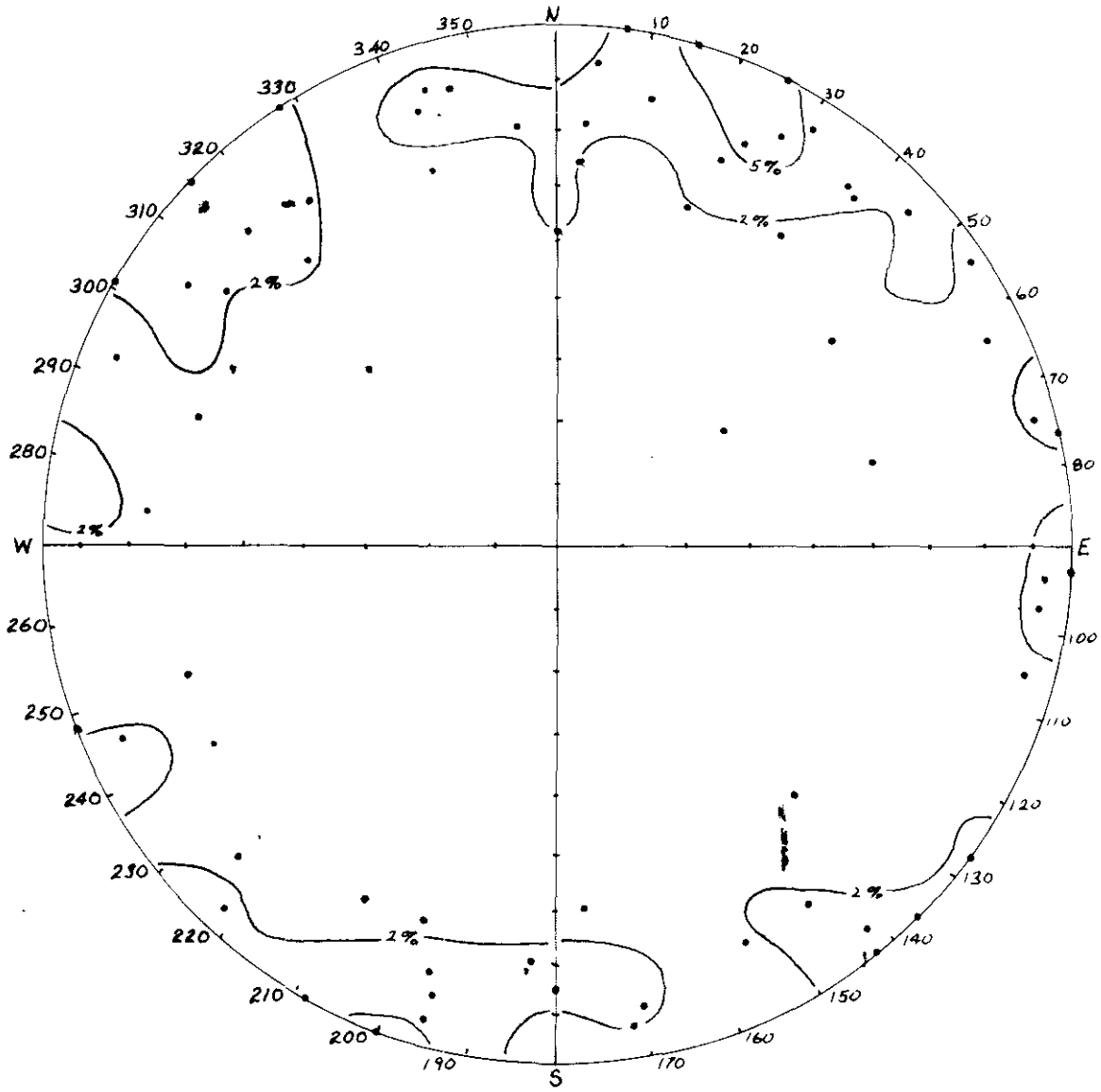

EQUAL AREA PLOT
OF 70 QUARTZ VEIN MEASUREMENTS

POLES PROJECTED TO LOWER HEMISPHERE
MAXIMUM ORIENTATION : STRIKE 115° mag
DIP 85° S

FIG 5

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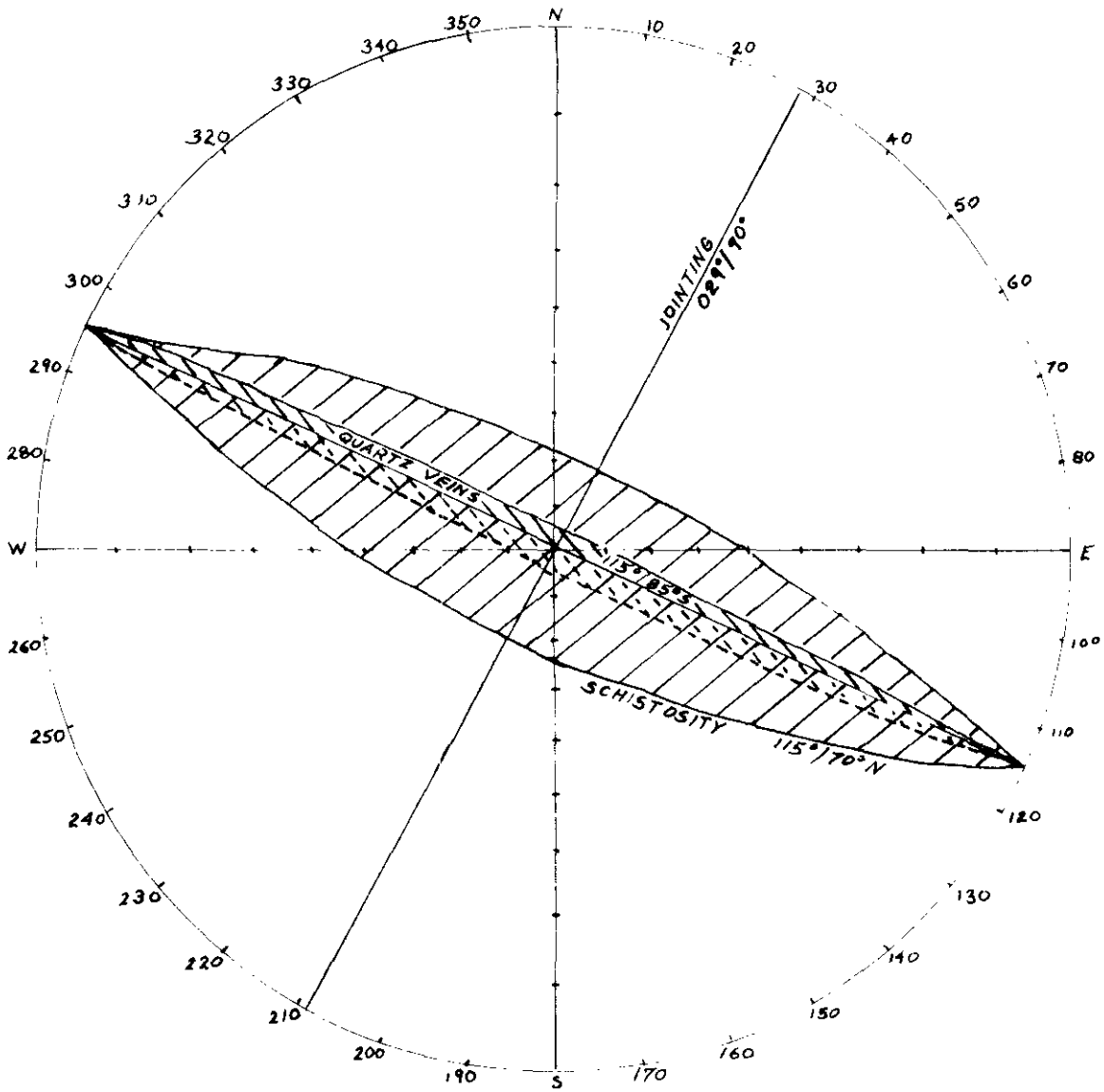
GRID GEOLOGY (Cont)

The jointing represented in **Figure 4** has prominant maxima which as illustrated in **Figure 6** are at right angles to the bedding. This is a very typical orientation of joints in all rock types probably indicating the ease with which tabular rocks break in this direction. One field observation of importance that seems to apply equally to quartz veins too is that they are not uniformly distributed throughout the area. Both jointing and quartz veins are abundant together in some areas and absent in others. It is believed they are an important tool to identify the location of mineralization.

The quartz veins are more diversely oriented than the joints though a maximum can be identified in the strike as the schistosity/bedding though different in its dip. More structural information may be present in the plot if the veins are categorized by whether they contain sulphides or ankerite.

A mafic sill was identified at 50N on 500W see **Figure 7.** When first observed this was thought to be a volcanic flow but observation of dike intrusives off the property indicated the similar occurrence. Jointing and veining with ankerite near this sill suggest this intrusives relationship to the mineralizing process.



STEREOGRAPHIC PLOT ILLUSTRATING
RELATIVE ORIENTATION OF:

SCHISTOSITY - 115°/70°N
JOINTING - 029°/90°
QUARTZ VEINS - 115°/85°S

FIG 6

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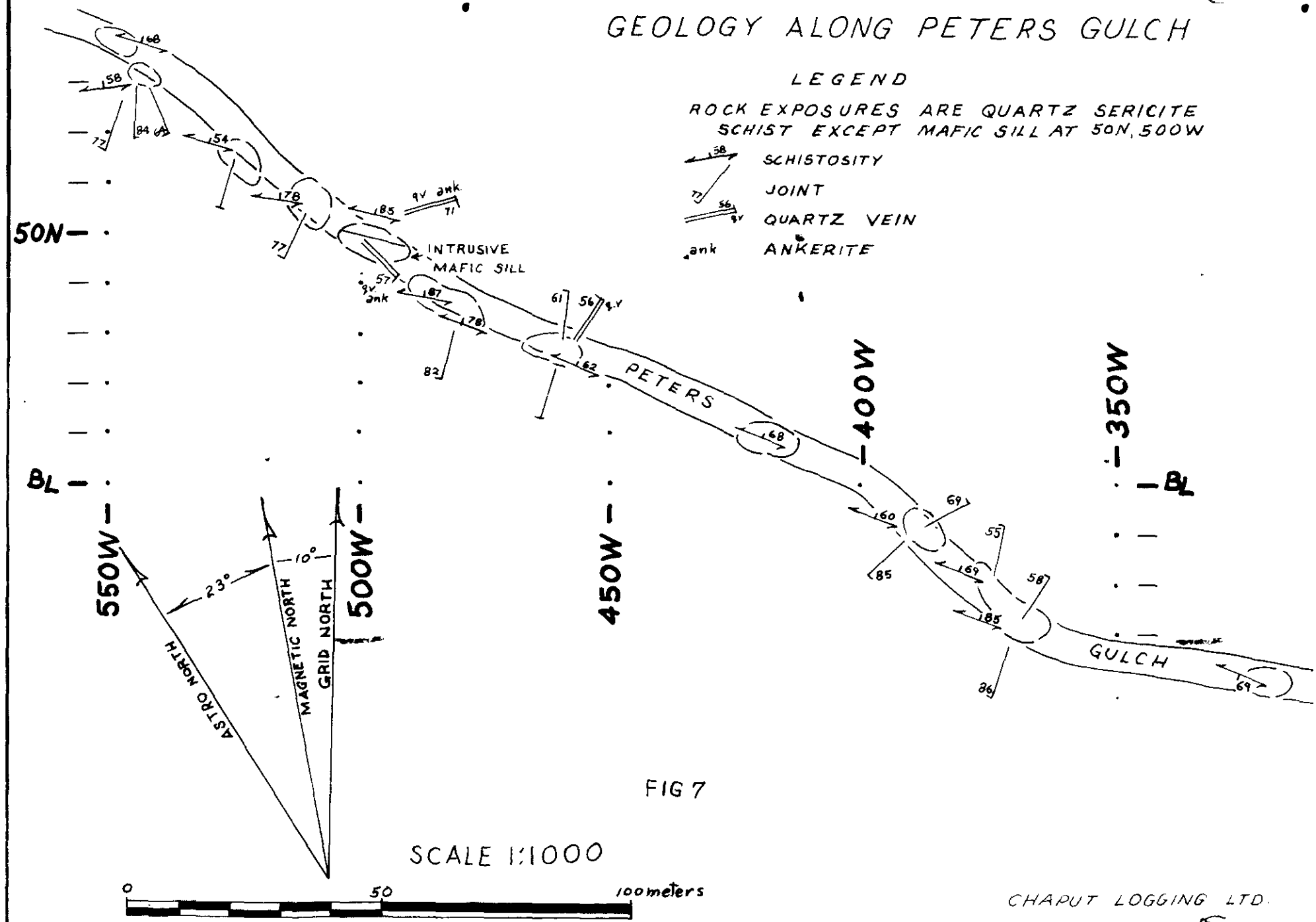
GEOLOGY ALONG PETERS GULCH
LEGEND
ROCK EXPOSURES ARE QUARTZ SERICITE SCHIST EXCEPT MAFIC SILL AT 50N, 500W
SCHISTOSITY
JOINT
QUARTZ VEIN
ANKERITE
INTRUSIVE MAFIC SILL
PETERS GULCH
50N
BL
550W
500W
450W
400W
350W
ASTRO NORTH
MAGNETIC NORTH
GRID NORTH
23°
10°
SCALE 1:1000
0
50
100 meters
CHAPUT LOGGING LTD.
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FIG 7

GEOPHYSICS

This property has previously been explored using geophysical methods. Rio canex did an orientation survey to evaluate four techniques: Horizontal Loop EM, Double Dipole EM, Self Potential, and magnetics gave limited success. Both magnetic and EM techniques were used in this study.

The initial grid was cut from the east to the west and at the separation of 50 meters between lines very poor results were obtained. The mapping of the adit at 60s and 175 E indicated the location of an intrusive structure. That, and a weak structure indicated by the magnetometer survey prompted the cutting of a detail grid at 10 meters between lines. The weak structure was two magnetic high ridges with a trough between them to the west of the adit and on strike with the quartz ankerite vein fan in the adit.

At the closer grid spacing, 10 meters by 10 meters, both the magnetometer and VLF give interesting structural detail. It was also found that the survey days had to be picked to obtain the required accuracy. With the total field magnetometer which gives readings to one gamma, perfectly cloudless days had to be used as it was found that clouds caused reading drift in the range of 10 gammas. This is not acceptable when the total range of the readings is about 50 gammas. The VLF on the other hand gave a more stable response on uniformly overcast days, without thunder. The magnetometer survey is the more useable of the two methods due to its speed and greater precision.

GEOPHYSICS (Cont)

Comparing the two surveys it is seen they correlate very well indicating they are responding to the same structures. All of the grids were surveyed with VLF using Cutler, Maine as the transmitter. On part of the detail grid Seattle, Washington was used as transmitter, it also showed some correlation but gave very little new information.

The interpretation of these surveys is quite straight forward over the detail grid. The tension veins radiating laterally from the intrusive show up as weak magnetic highs and form dumbbell patterns or pairs on the sides of the intrusive. To the west the tension vein pattern disappears and an oblique or shear fracture is mineralized. The extreme west of the detail grid had the mineralization concentrated in a vertical tension vein or the intrusive cap. The postassic alteration halo is marked by a stronger magnetic response. This pattern has been seen in other deposits where drilling has revealed a strongly sericitized zone quite similar to the gouge seen in the adit. Iron was also being bound to oxygen as both specularite and magnetite halos when sulfur was depleted on the marqins of the intrusive.

GEOPYSICS (Cont)

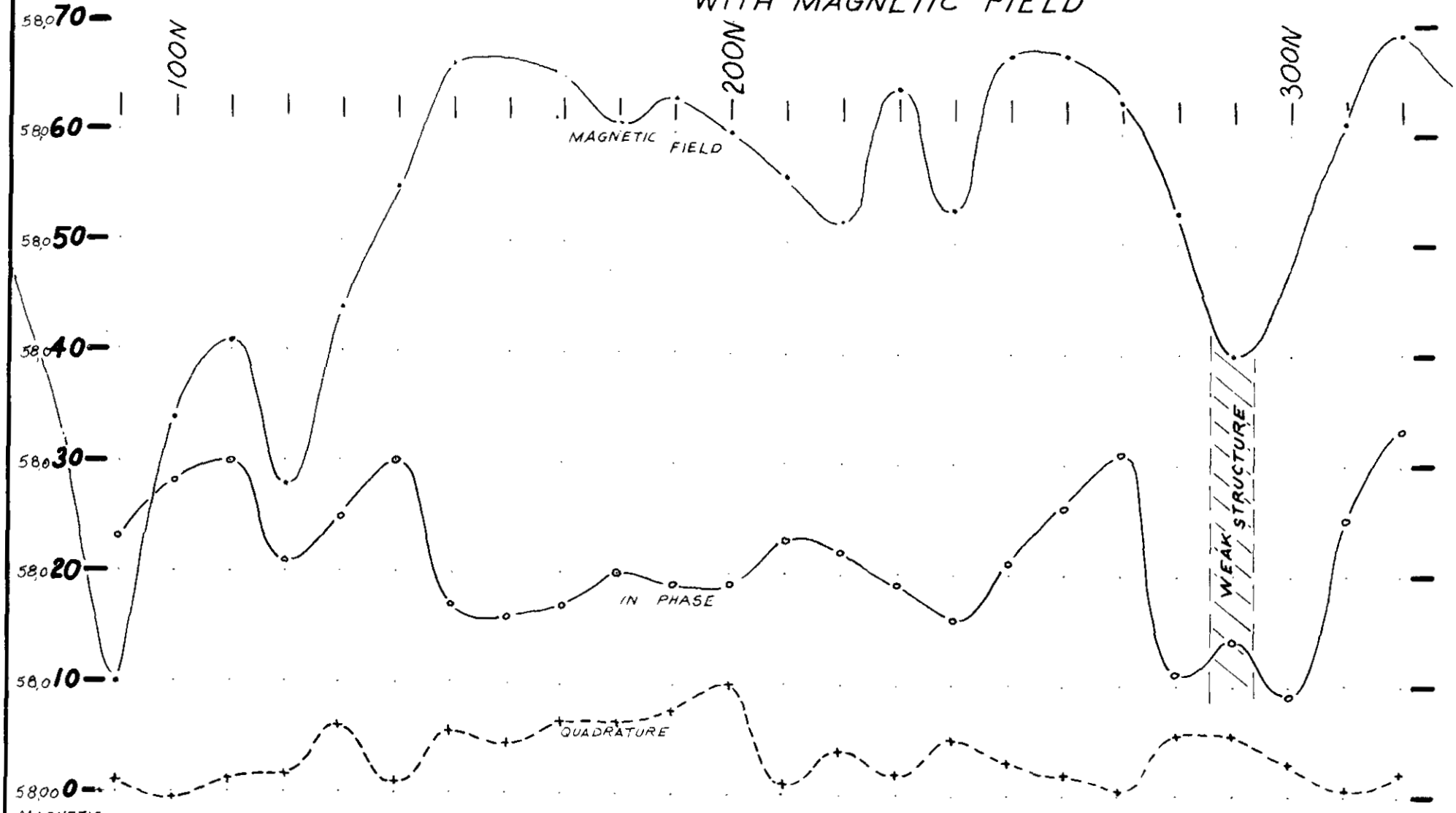
For interpretation purposes a second derivative may was calculated from the total field magnetometer survey on the detail grid. It added very little to the understanding of the structure. The value usually of the second derivative calculation is in picking structural boundaries and estimating depth. It is evident that the lateral tension veins are less than 10 meters or 30 feet deep. Due to their limited size accurate location is not possible at this grid separation. To better locate these veins an even more detailed grid is needed.

Another interesting halo to this intrusive is seen in the reverse quadrature response of the VLF survey. This response is the horizontal component of the EM field at right angles to the maximum field strength. It is supposedly related to vertical inductive structures, in this case it is possibly magnetite.

A short horizontal loop EM traverse was conducted while the assistance of Gary Young was available. The instrument used was Geonics EM 17L at 600 feet separation, that is approximately 190 meters between the transmitter and receiver. See **Figure 8.**

An intrusive should cross this line, 600W, between 200N and 300N. Though not wide enough for a typical cross over the response at 290 N is associated with a mag depression. It had been hoped that this instrument could have been used for determining the depth to the intrusive using several different coil separations but dissatisfaction with the survey prevented this application.

LINE 600W - HORIZONTAL LOOP EM PROFILE WITH MAGNETIC FIELD



MAGNETIC FIELD	010	034	041	028	044	055	066		065	061	063	060	056	052	064	053	067	067	063	053	040	066	061	069
HORIZONTAL LOOP EM (GEONICS EM17L)																								
IN PHASE	23	28	30	21	25	30	17	16	17	20	19	19	23	22	19	16	21	26	31	11	14	9	25	33
QUADRATURE	1	-0·5	1	1·5	6	1	5·5	4·5	6·5	6·5	7·5	10	1	4	2	5	3	2	0·5	5·5	5·5	3	0·5	2

FIG 8

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CONCLUSIONS AND RECOMMENDATIONS

A grid with 10 meter separation between lines and stations is necessary to locate the mineralized structures on this property. Though the VLF gives some added information the magnetometer is adequate in their definitions. The intrusive source is located accurately enough that it can be drilled with some hope of success in intersecting it. The interesting zone of the intrusive is the cap area which should be drilled vertically from above. Inclined holes are hazardous as they can pass under or away from the cap zone which is a thin narrow ribbon of mineralization.

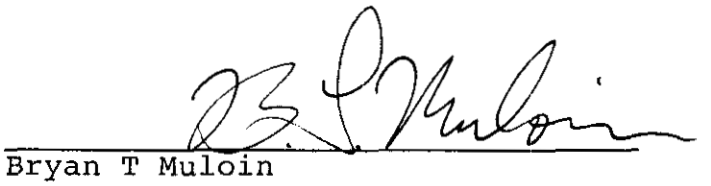
The shallow tension veins becvause of their small size should be detailed with a smaller grid, possibly readings on 2 meter by 2 meter spacing. A backhoe is then probably capable of exposing these small, but possibly high grade veins.

SURVEY COSTS

Three visits to the property by W Chaput for supervision including travel meals etc	$1000
Initial report on property proposing exploration plans	$ 310
Payed to Gary Younq for 3km grid, 25 Horizontal loop EM readings and travel	$1000
Cut and surveyed grid, 11.51 km - 3 km = 8.51 km @ $300/km	$2553
Magnetometer survey 1274 readings @ $2.00 each	$2574
VLF survey 1274 readings @ $2.00 each	$2574
Geological mapping at same cost as mag. survey	$2574
VLF survey on detail grid only 176 readings @ $2.00	$ 352
Horizontal Loop EM traverse 25 readings @ $3.00 each $25 to Gary Young	$ 50
Cost for drafting, reproduction supplies	$ 374
Typing and copy costs	$ 160
Total value of exploration	$13621

STATEMENT OF QUALIFICATIONS

I, Bryan T Muloin, am a graduate of Queen's University, Kingston, Ontario, receiving a bachelors degree in the Geological Sciences from the faculty of Applied Science in 1971. Since that time I have been actively employed in mining exploration.



Bryan T Muloin

REFERENCES

Campbell RB 1978 GSC Open File 574

Campbell RB Mountjoy EW and Young FG

1973 Geology of McBride Map - Area
British Columbia GSC Paper 72-35

Campbell KV and Campbell RB 1970

Quesnel Lake Map - Area
British Columbia (93A) in Report of Activities
GSC paper 70-1(A) Pages 32-35

Holland SS 1954

Geology of the Yanks Peak - Roundtop
Mountain Area Cariboo District
British Columbia BC Dept of Mines
Bulletin 34

Mansy JL and Campbell RB 1970

Stratigraphy and Structure of the Black Stuart Synclinorium
Quesnel Lake Map Area
British Columbia (93A)
GSC paper 70-1 (A) Pages 38-41

Mitchell JA 1973

Summary Report on work completed on properties
of Coast Interior Ventures Ltd

Rio canex Report Barkerville Project 1978

Volumes 1 and 2

Sutherland Brown A 1957

Geology of the Antler Creek Area Cariboo District
British Columbia
BC Department of Mines Bulletin 38

Sutherland Brown A 1963

Geology of the Cariboo River Area
British Columbia
BC Department of Mines Bulletin 47

SAND & GRAVEL CONSTRUCTION FARMING MINING

Chaput Logging Ltd.

BOX 245, LUMBY, B.C. V0E 2G0
547-2311
547-2321

CUNNINGHAM CREEK CLAIMS

N.T.S. 93 A 14

VLF EM DIP ANGLE and QUADRATURE SURVEYS
DETAIL GRID

INSTRUMENT: CRONE RADEM
TRANSMITTER: CUTLER, MAINE
DIP ANGLE SECTION SCALE: 1mm : 1°, 6W.3
QUADRATURE: LIGHT LINES
REVERSE QUADRATURE: DASHED LINES
CONTOUR INTERVALS: 2%

0 50E 100E 150E 200E

50N 0 50S 100S

BL

50W 0

ASTRO NORTH
MAGNETIC NORTH 10°
GRID NORTH 23°
AZ 042° m
CM SIGNAL DIRECTION

SCALE 1:500

0 50 100 meters

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CUNNINGHAM CREEK CLAIMS

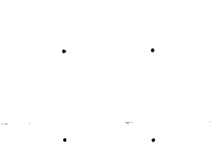
N.T.S. 93 A 14

VLF EM DIP ANGLE and QUADRATURE SURVEYS
DETAIL GRID

INSTRUMENT; CRONE RADEM
TRANSMITTER; SEATTLE, WASH
DIP ANGLE SECTION SCALE; 1mm : 1°, cw.
QUADRATURE; LIGHT LINES
CONTOUR INTERVAL; 20%

0 | 50E | 100E | 150E | 200E

50N | BL | 50S | 100S



SCALE 1:500

0 50 100 meters

50W | 0

(2)

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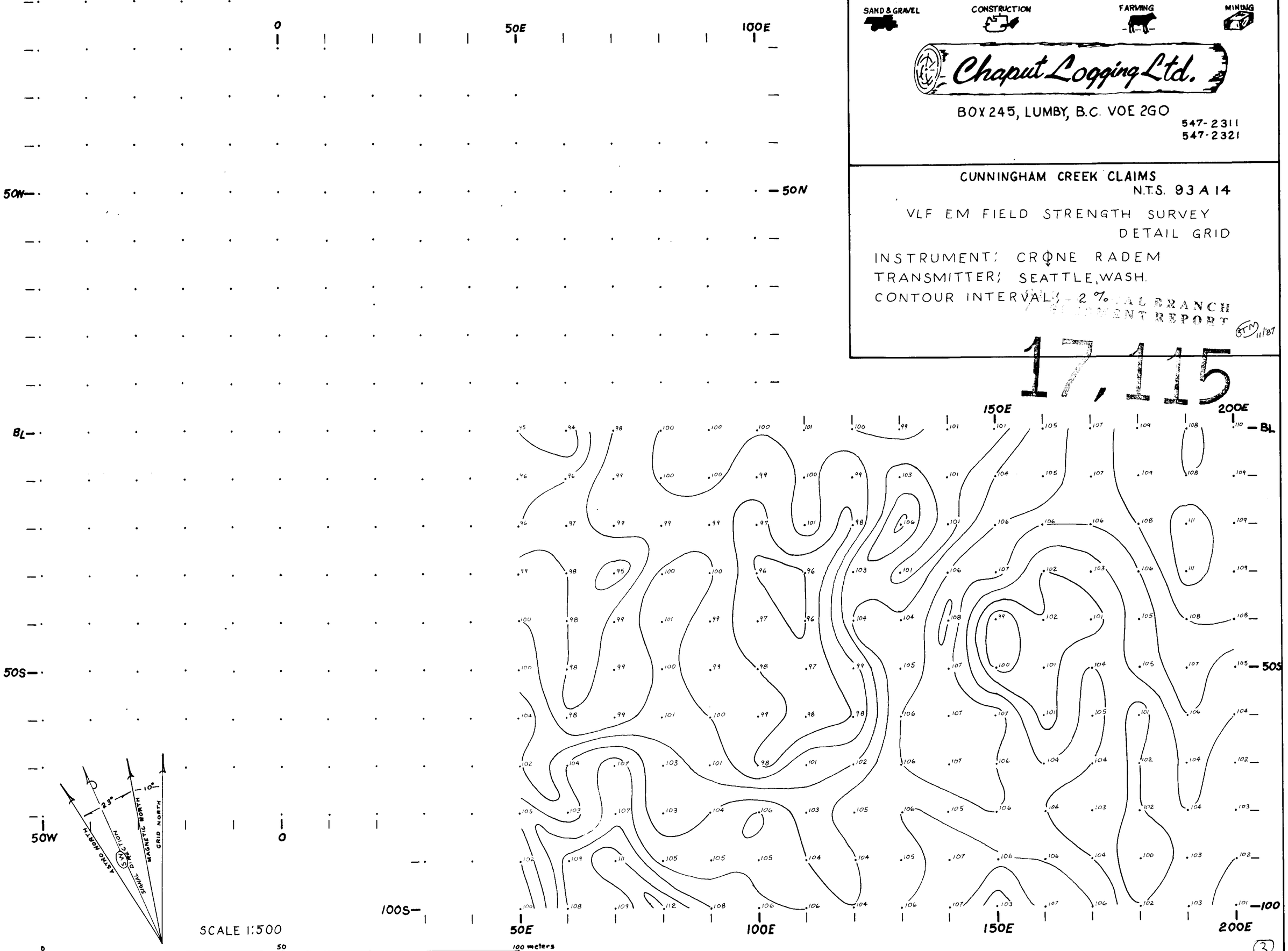
CUNNINGHAM CREEK CLAIMS
N.T.S. 93 A 14

VLF EM FIELD STRENGTH SURVEY
DETAIL GRID

INSTRUMENT: CRONE RADEM
TRANSMITTER: SEATTLE, WASH.
CONTOUR INTERVAL: 2%



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CUNNINGHAM CREEK CLAIMS

N.T.S. 93 A 14

VLF EM FIELD STRENGTH SURVEY
DETAIL GRID

INSTRUMENT; CRONE RADEM
TRANSMITTER; CUTLER, MAINE
CONTOUR INTERVAL; 2%

GTM 11/87

0 | 50E | 100E | 150E | 200E

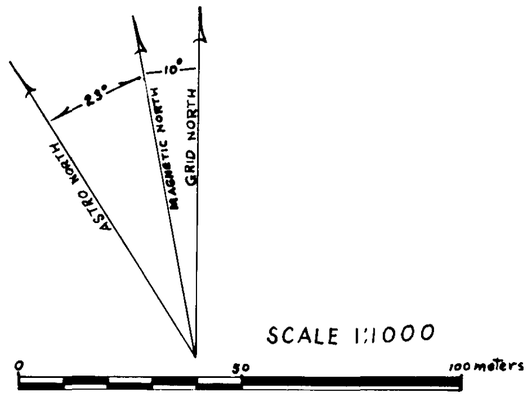
50N | BL | 50S | 100S

ASTRO NORTH
23°
10°
MAGNETIC NORTH
GRID NORTH
AZ 042° m
CM SIGNAL DIRECTION

SCALE 1:500

0 50 100 meters

50W | 0 | 50E | 100E | 150E | 200E



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CUNNINGHAM CREEK
CLAIMS
N.T.S. 93 A 14
GEOLOGICAL AND
GEOPHYSICAL
INTERPRETATION

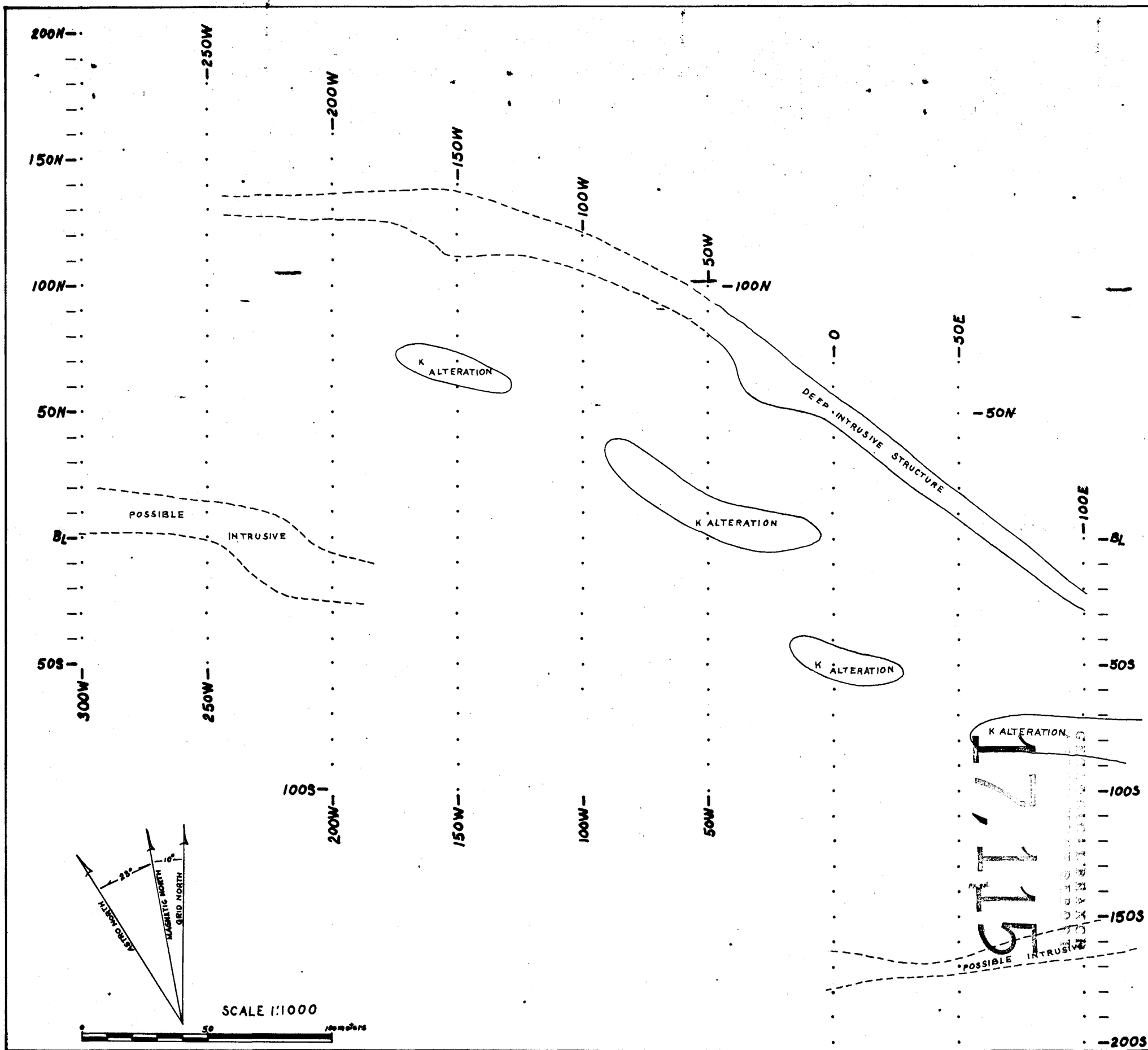
EAST GRID

THE TWO MINERAL SHOWINGS ON THIS MAP HAVE SIMILAR MINERAL PATTERNING. THE COARSE AND DRUZY FINE GRAINED AURIFEROUS PYRITE OCCURS AT THE JUNCTION OF QUARTZ VEINS. VEINS BEARING ANKERITE AND EPIDOTE OCCUR ABOVE THE PRIMARY SOURCE. LATERAL ALTERATION HALOS WHICH ARE IDENTIFIED BY WEAK MAGNETIC HIGHS DUE TO IRON OXIDES ARE LABELLED K ALTERATION AS IT IS BELIEVED THEY ARE POTASSIUM ENRICHED, SERICITIZED.

TWO OTHER DEEP INTRUSIVE STRUCTURES ARE LOCATED THOUGH THERE IS WEAK SUPPORT FOR THEM. THE SOUTHERN STRUCTURE FOLLOWS A WEAK MAGNETIC TREND NEAR A SWARM OF QUARTZ AND PYRITE VEINS. THE NORTHERN ONE SIMPLY FOLLOWS A MAGNETIC TREND WITH A MAGNETIC HIGH, K ALTERATION HALO, TO THE NORTH OF IT.

THIS SIZE GRID DOES NOT GIVE ENOUGH DATA TO DEFINE THE MINERAL STRUCTURES, THE DETAIL GRID DOES. JUST AS A RADIO ANTENNA MAY NEED TUNING THE GRID SIZE HAS TO BE IN TUNE WITH THE TARGET FREQUENCY.

BTM 12/87
(5)



SAND & GRAVEL — CONSTRUCTION

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CUNNINGHAM CREEK
CLAIMS
N.T.S. 93 A 14

GEOLOGICAL AND
GEOPHYSICAL
INTERPRETATION

CENTRAL GRID

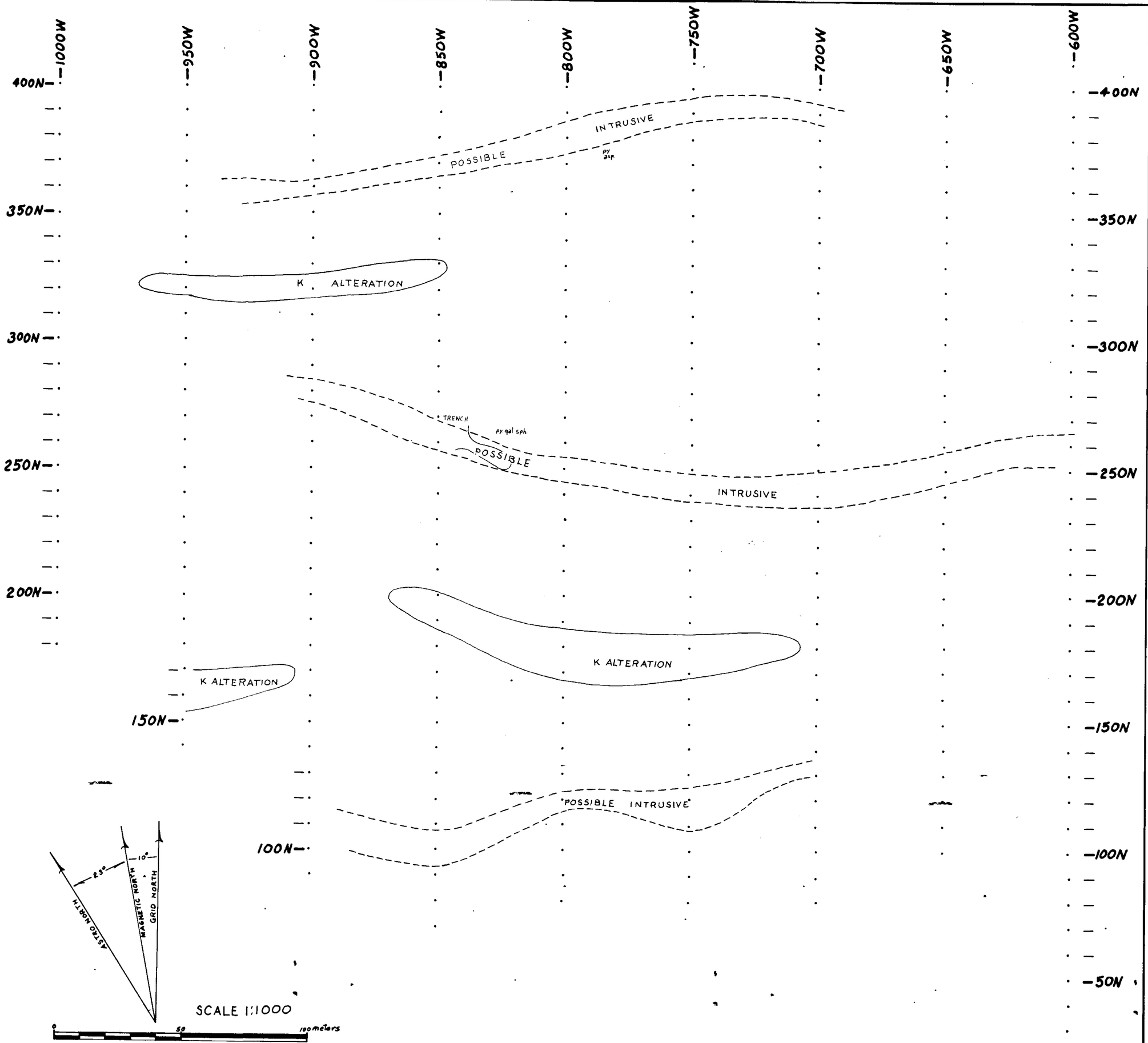
THE DEEP INTRUSIVE STRUCTURE LOCATED ON THIS MAP IS A FEEDER FOR SHALLOWER VEINS IN SHEARS OBLIQUE TO IT. VEINS ALSO OCCUR IN TENSION FRACTURES AT RIGHT ANGLES TO THE STRUCTURE. BOTH TYPES OF SHALLOW VEIN FEED INTO EACH OTHER AS SEEN ON THE DETAIL GRID INTERPRETATION. THE IDENTIFYING OF THESE FINER DETAILS IS NOT POSSIBLE WITH THIS GRID SEPERATION OF 50 m. MUCH LIKE FOCUSING A MICROSCOPE THE CLOSER GRID LINES GIVE IMAGES OF SMALLER SIZE, INDEED THIS 50m. GRID SEPERATION DOES NOT IDENTIFY THE MINERALIZING PATTERN VERY WELL AT ALL

THE K ALTERATION HALOES ARE RELATIVELY EASY TO IDENTIFY BY THEIR PRONOUNCED MAGNETIC ANOMALY DUE TO THE PRESENCE OF IRON OXIDES, THEIR PARALLEL, AND THEIR SEPERATED RELATION TO THE SOURCE STRUCTURE.

THE TWO POSSIBLE INTRUSIVES ARE POORLY DEFINED BY THE MAG. AND VLF SURVEYS. OCCASIONAL QUARTZ VEINS SUGGEST ITS PRESENCE AND THAT IT IS CONTINUOUS ALONG THE SOUTH OF THIS AND THE EAST GRID.

BTM 12/87

(6)



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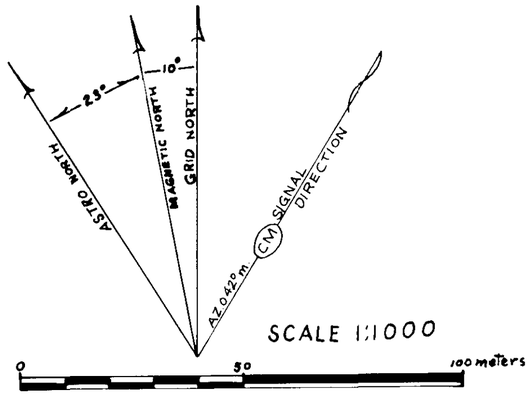
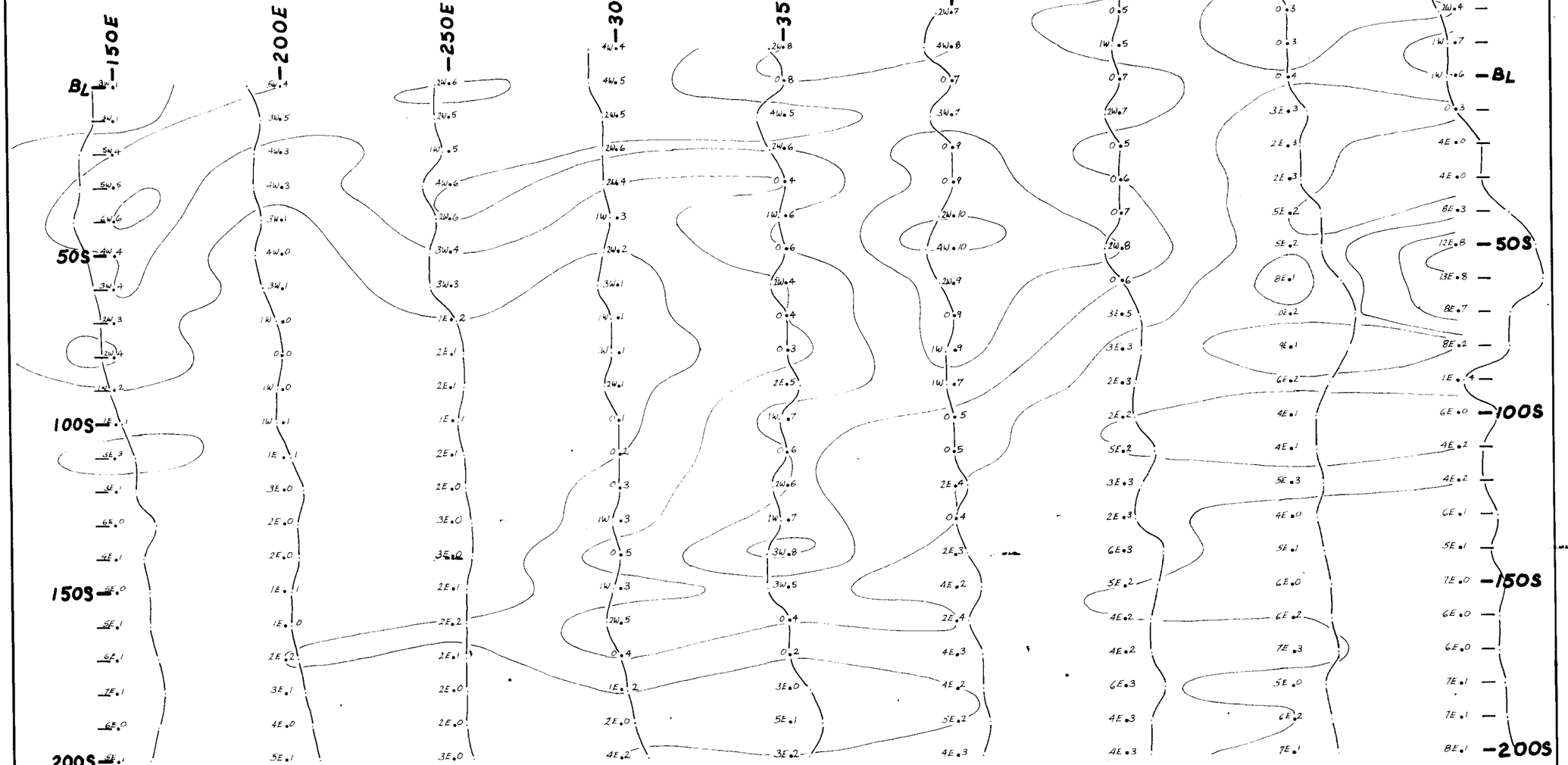
CUNNINGHAM CREEK
CLAIMS
N.T.S. 93 A 14

GEOLOGICAL AND
GEOPHYSICAL
INTERPRETATION

WEST GRID

AS ON THE OTHER SEGMENTS OF THIS GRID ACCURATE LOCATION AND DESCRIPTION OF THE MINERALIZING STRUCTURES IS NOT POSSIBLE WITH THE 50 m. SEPERATION BETWEEN SURVEY LINES. FOR COMPARISON SEE THE DETAIL GRID PLANS. THE INTRUSIVES AND ALTERATION HALOES ON THIS PLAN ARE TENTATIVLY LOCATED USING WEAK MAGNETOMETER AND VLF TRENDS AS WELL AS THE QUARTZ VEIN PATTERN.





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CUNNINGHAM CREEK
CLAIMS
. N.T.S. 93 A 14

VLF EM DIP ANGLE
and QUADRATURE
SURVEY

EAST GRID

INSTRUMENT:
CRONE RADEM

TRANSMITTER:
CUTLER, MAINE

DIP ANGLE
SECTION SCALE:
1 mm : 1°
0 5° 10° 20°

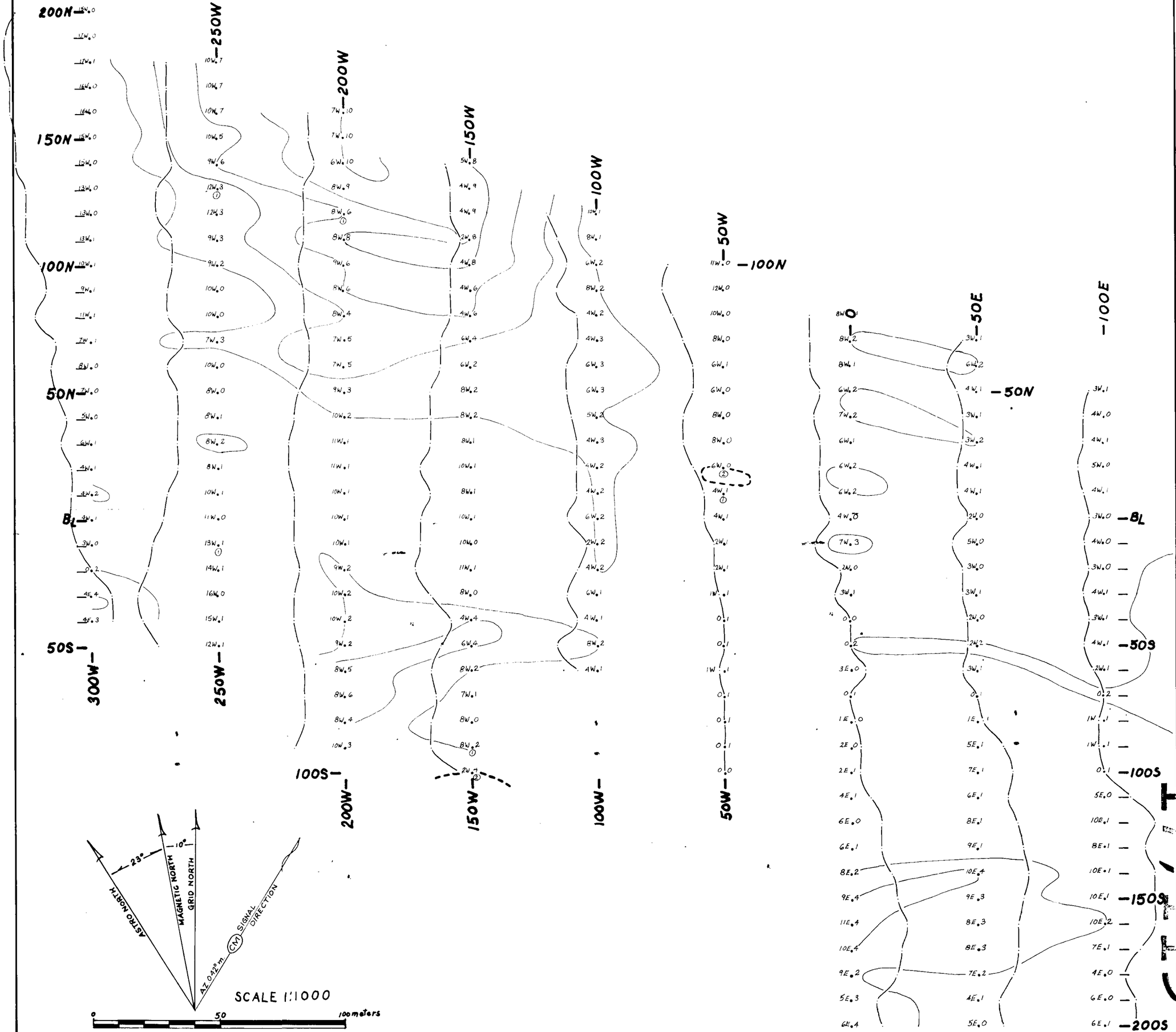
QUADRATURE:
LIGHT LINES

CONTOUR
INTERVAL: 2%

GEOPHYSICAL BRANCH
ASSESSMENT REPORT

17,115

BTM 11/87
(8)



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CUNNINGHAM CREEK
CLAIMS
N.T.S. 93 A 14

VLF EM DIP ANGLE
and QUADRATURE
SURVEYS

CENTRAL GRID

INSTRUMENT:
CRONE RADEM

TRANSMITTER:
CUTLER, MAINE

DIP ANGLE
SECTION SCALE:
1 mm : 1°

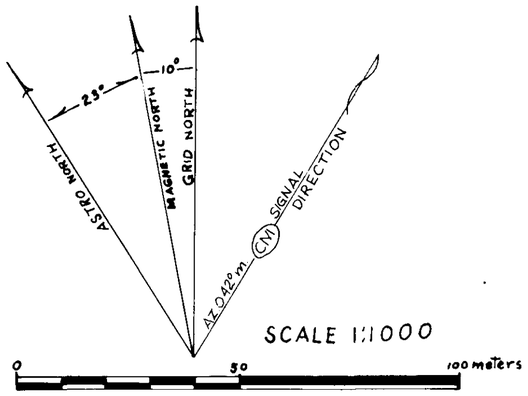
QUADRATURE:
LIGHT LINES

REVERSE
QUADRATURE:
DASHED LINES

CONTOUR
INTERVALS: 2%

57

9 GTM 11/87



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CUNNINGHAM CREEK
CLAIMS
N.T.S. 93 A 14

VLF EM
FIELD STRENGTH
SURVEY

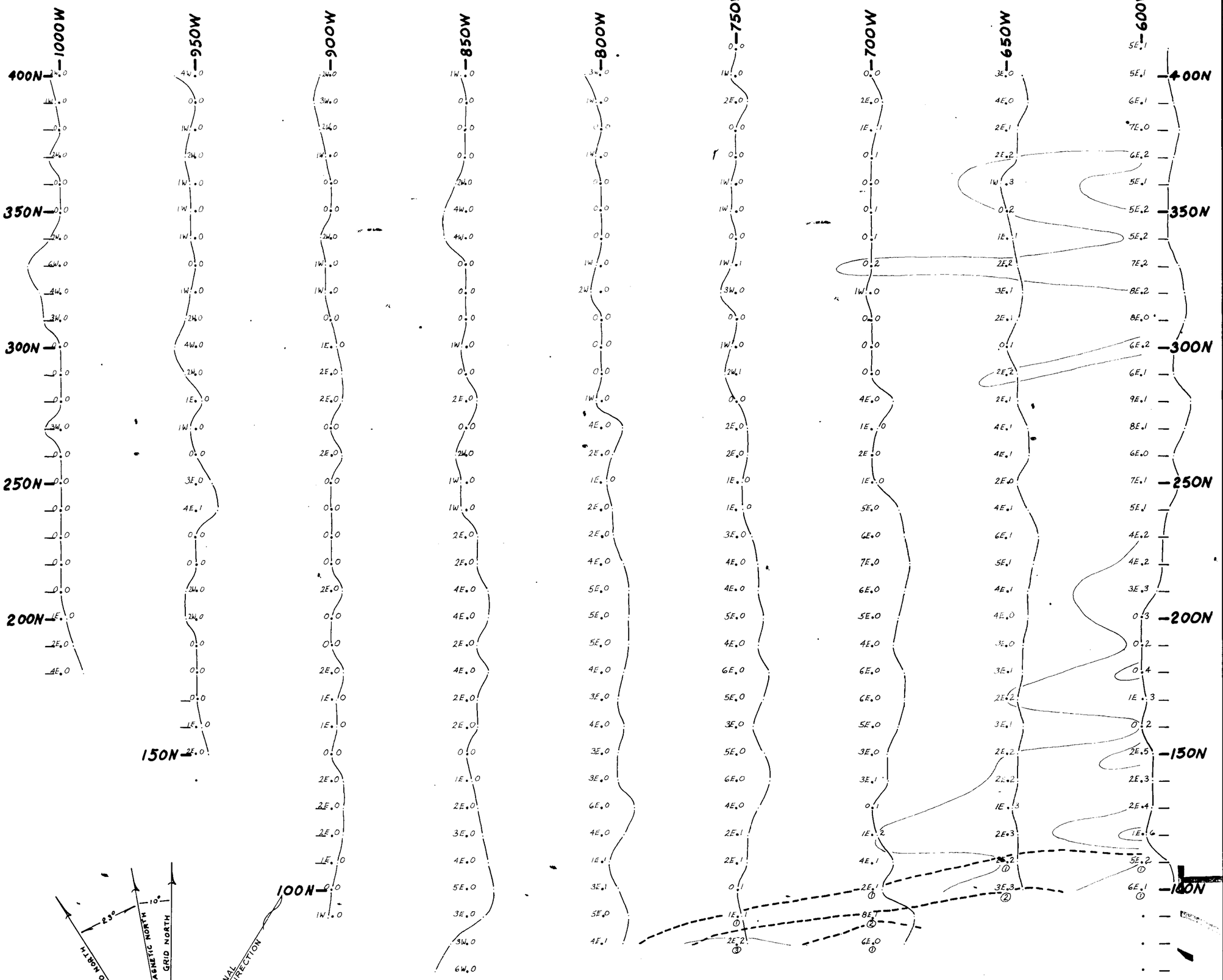
EAST GRID

INSTRUMENT:
CRONE RADEM

TRANSMITTER:
CUTLER, MAINE

CONTOUR
INTERVAL: 2%

(10) BTM 11/87



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CUNNINGHAM CREEK
CLAIMS
N.T.S. 93 A 14

VLF EM DIP ANGLE
and QUADRATURE
SURVEYS

WEST GRID

INSTRUMENT:
CRONE RADEM

TRANSMITTER:
CUTLER, MAINE

DIP ANGLE
SECTION SCALE:
1 mm : 1°
6W. 0 5° 10° 20°

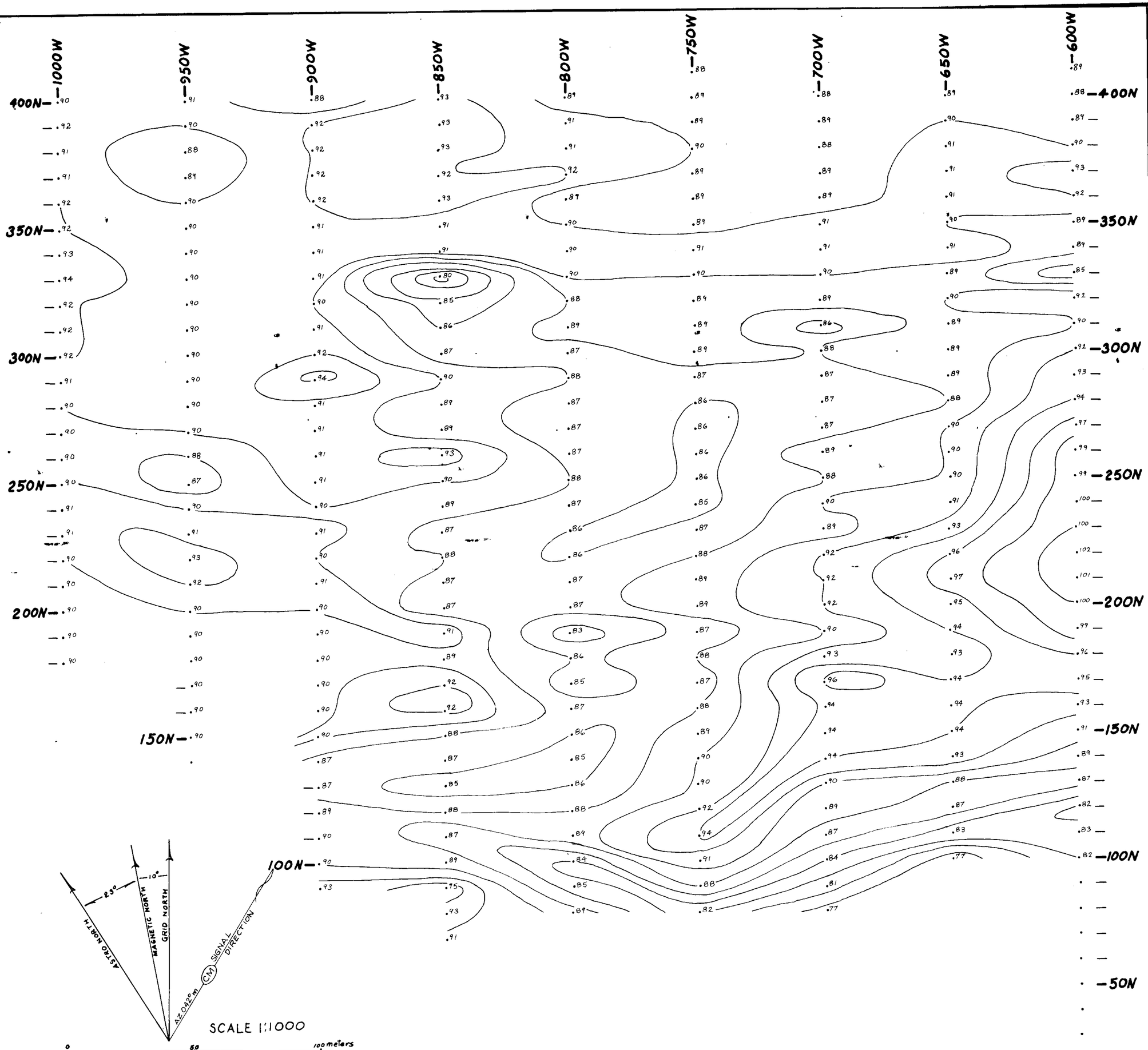
QUADRATURE:
LIGHT LINES

REVERSE
QUADRATURE:
DASHED LINES

CONTOUR
INTERVALS: 2%

GTM 11/87

11



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CUNNINGHAM CREEK
CLAIMS
N.T.S. 93 A 14

VLF EM
FIELD STRENGTH
SURVEY

WEST GRID

INSTRUMENT:
CRONE RADEM

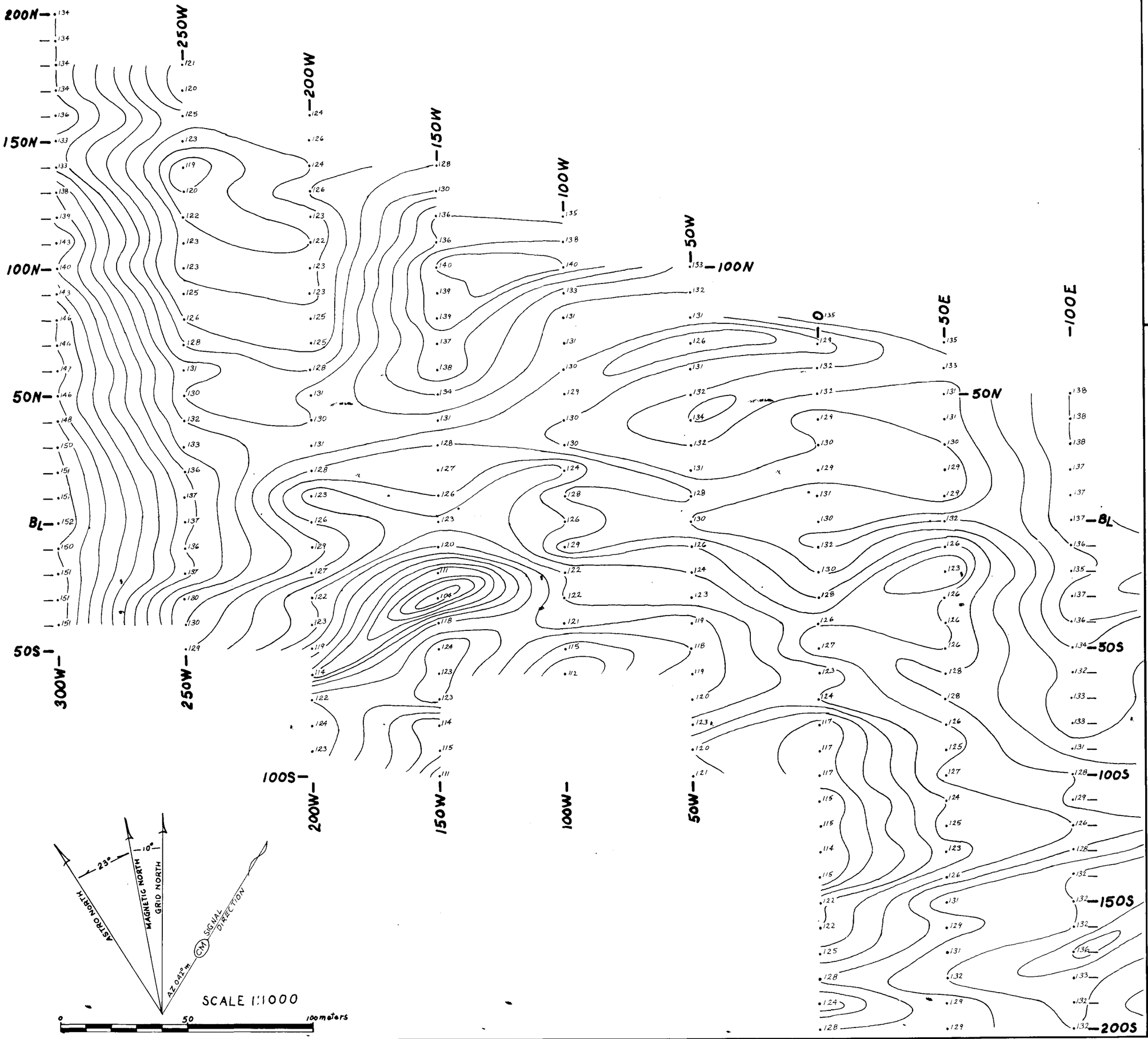
TRANSMITTER:
CUTLER, MAINE

CONTOUR
INTERVAL: 2%

GEOPHYSICAL BRANCH
ASSESSMENT REPORT

17,171

(12) BTM 11/87



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CUNNINGHAM CREEK
CLAIMS
N.T.S. 93 A 14

VLF EM
FIELD STRENGTH
SURVEY

CENTRAL GRID

INSTRUMENT:
CRONE RADEM

TRANSMITTER:
CUTLER, MAINE

CONTOUR
INTERVAL: 2%

GEOLOGICAL BRANCH
ASSESSMENT REPORT

17,115

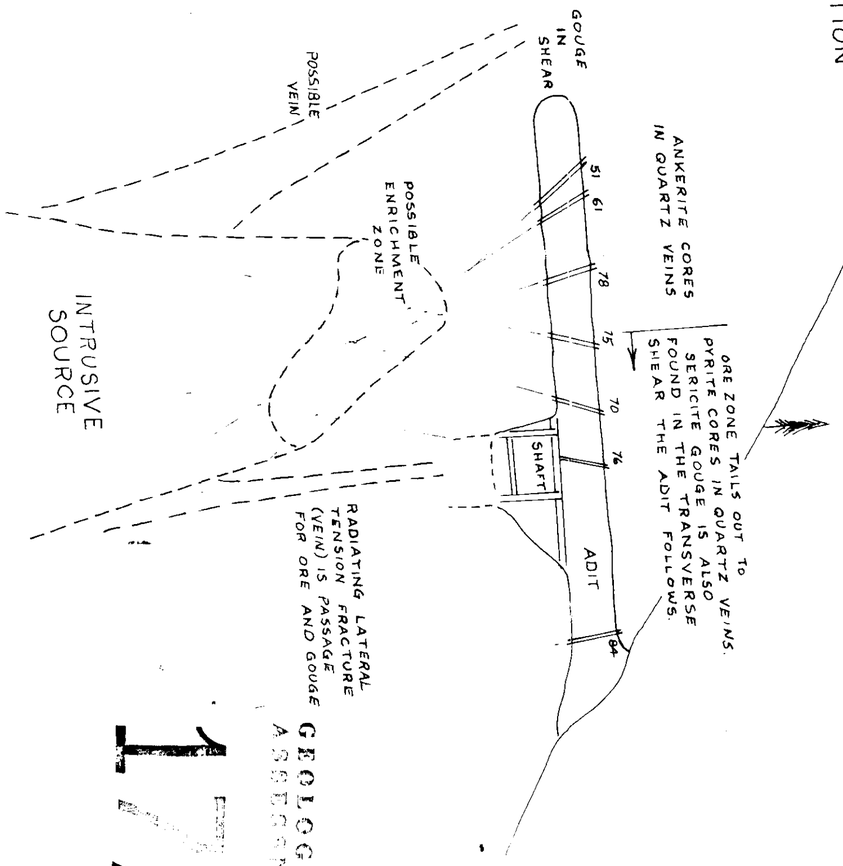
BTM 11/87

13

DETAILED GEOLOGY OF ADIT
with MAGNETOMETER STUDY

THE ROCK EXPOSED IN THE THREE OUTCROPS IDENTIFIED ON THIS MAP IS A BUFF BROWN SERICITIC QUARTZITE TYPICAL OF THE STUDY AREA. THIS ADIT IS REPUTED TO HAVE PRODUCED ORE CARRYING 6 TO 7 OUNCES OF GOLD PER TON. SULPHIDE ZONES LOCALLY ARE AT THE JUNCTION OF QUARTZ VEINS AS HERE OR IN CURVED VEINS. THEY ARE ALSO OF LIMITED SIZE BUT THEY ARE CLOSE TO THE SURFACE, MANY OF THEM, AND EASILY LOCATED USING MAGNETIC AND OTHER SURVEYS.

THE PORTAL TO SHAFT OF THE ADIT IS HIGHLY FRACTURED, THE ROCK WALLS OF THE ADIT THEN BECOME SOUND MARKING THE CHANGE IN MINERALIZING ENVIRONMENT. THE ADIT FOLLOWS THE VERTICAL SHEAR ASSOSCIATED WITH THE ORE ZONE. THE MINERS HAD PROBABLY SEEN THESE JOINTS JOIN SIMILAR ORE ZONES AT THE CARIBOO HUDSON MINE UP THE HILL. THERE ARE INDICATIONS THE MINERS STOPPED TOO SOON: THEY CROSSED THE VERTICAL FAN OF QUARTZ TENSION VEINS SHOW IN THE SECTION; THE CHANGE IN STRIKE OF QUARTZ VEINS AT THE END OF THE ADIT; THE OCCURANCE OF GOUGE IN THE SHEAR, AN ALTERATION HALO; THE MAGNETIC HIGH AT 30S, 150E OF 58067γ, DUE TO THE PRESENCE OF PYRITE. NOTE ALSO LINE 190E WHERE BETWEEN 30S AND 40S THERE IS PROBABLY AN OTHER VEIN.



LEGEND

.53 MAGNETOMETER READING 58053 γ
CONTOUR INTERVAL IS 5 γ
QUARTZ VEIN WITH DIP
SCHISTOSITY
JOINT

GEOLOGICAL BRANCH
ASSESSMENT REPORT

17,115

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CUNNINGHAM CREEK
NTS 93A14
SCALE 1:200
0 5 10 15 meters

ASTRO NORTH 23° | MAGNETIC NORTH 10° | GRID NORTH

FOLD LINE
SECTION
FOLD LINE @ 006.mag
SECTION

ZONED WITH AN ANKERITIC CORE
SERICITIC GOUGE
ANKERITE
ZONED WITH ANKERITE CORES
ZONED WITH PYRITE CORE
PYRITE
SHAFT 25m+ DEEP UNDERCUT TO SHAFT
SERICITE GOUGE
OUTCROP
PORTAL TO ADIT
DENDRITIC PSILOMELANE
OUTCROP
GOSSAN SURFACE ON QUARTZ VEIN
DRUZY PYRITE
OUTCROP

30S
40S
50S
60S
70S

160E
170E
180E
190E
200E

BTN 11/87

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CUNNINGHAM CREEK CLAIMS

DETAIL GRID N.T.S. 93 A 14

STRUCTURAL INTERPRETATION FROM GEOLOGICAL AND GEOPHYSICAL STUDY

A DEEP INTRUSIVE STRUCTURE TRAVERSING THE GRID IS THE SOURCE FOR QUARTZ VEINS AND ALTERATION PATTERNING. SOME SEGMENTS OF THIS STRUCTURE MAY BE MINERALIZED. SEE PLAN LABELLED "DETAILED GEOLOGY OF ADIT WITH MAGNETOMETER STUDY." THE VEINS SO MARKED ARE GENERATED AS TENSION AND SHEAR FRACTURE FILLINGS. AMONG THE ALTERATION PATTERNS IDENTIFIED IS THE INDICATED K ALTERATION HALO IDENTIFIED BY ITS STRONG MAGNETIC RESPONSE.

0 50E 100E 150E 200E

50N BL

SHEAR VEIN
VEIN
TENSION
VEIN
K ALTERATION
TENSION FRACTURE
VEIN
VEIN
VEIN
VEIN
DEEP INTRUSIVE STRUCTURE
K ALTERATION HALO
VEIN
VEIN
VEIN
VEIN
MINED VEIN
ADIT
VEIN
VEIN
K ALTERATION HALO
K ALTERATION HALO

50S 100S

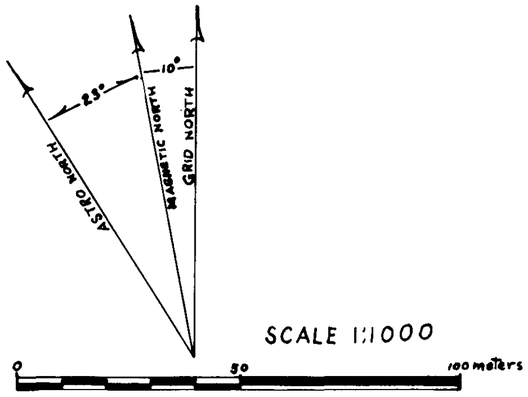
50W 0 50E 100E 150E 200E

23° 10° MAGNETIC NORTH ASTRO NORTH GRID NORTH

SCALE 1:500.

0 50 100 meters

BTM 12/'87 (15)



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CUNNINGHAM CREEK
CLAIMS
N.T.S. 93 A 14

GEOLOGICAL MAPPING

EAST GRID

LEGEND

ROCK EXPOSURES ARE QUARTZ SERICITE SCHIST

- SCHISTOSITY
- JOINT
- QUARTZ VEIN
- ank. ANKERITE
- epi. EPIDOTE
- Lim. LIMONITE
- py. PYRITE

ON THIS MAP BOTH QUARTZ VEINS AND JOINTING ARE SEEN TO OCCUR IN SWARMS. THE FRACTURING WITH THE Z FOLDS IN THE SOUTH EAST HAS THE SAME TREND AS THE DOMINANT JOINT DIRECTION, SEE BOTH FIGURES 4 AND 6.

SAND & GRAVEL

CONSTRUCTION

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CUNNINGHAM CREEK
CLAIMS
N.T.S. 93 A 14

GEOLOGICAL
MAPPING

CENTRAL GRID

LEGEND
ROCK EXPOSURES
ARE QUARTZ
SERICITE SCHIST

- SCHISTOSITY
- JOINT
- QV QUARTZ VEIN
- Py. PYRITE
- gal. GALENA
- BT36 BEARING TREE

GEOLOGICAL BRANCH
ASSESSMENT REPORT

G1717

200N
150N
100N
50N
BL
50S
100S
150S
200S
300W
250W
200W
150W
100W
50W
50E
100E

ROAD

PETERS GULCH

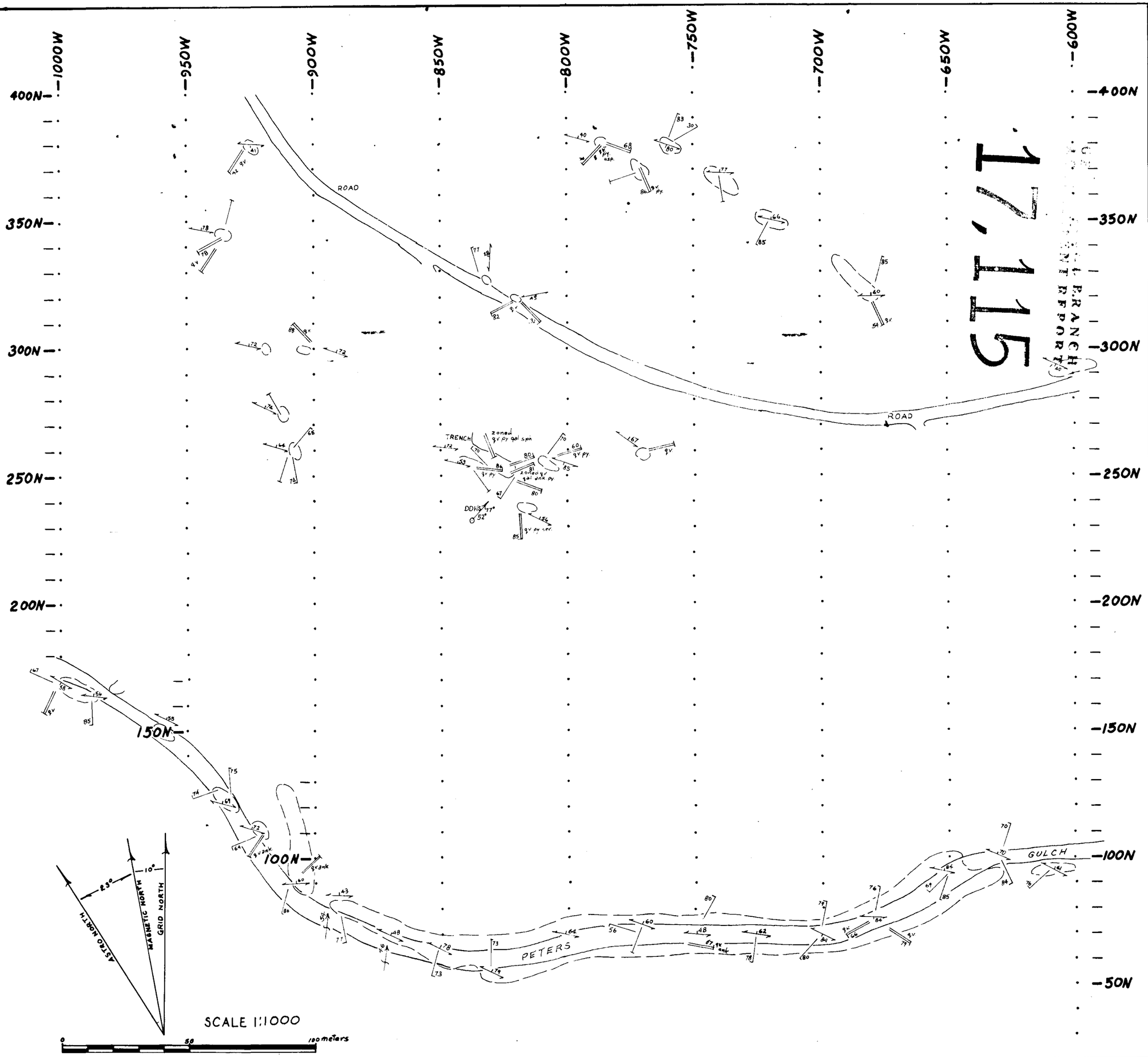
BT36

ASTRO NORTH
MAGNETIC NORTH
GRID NORTH
25°
10°

SCALE 1:1000

0 50 100 meters

(17) BTM 12/87



SAND & GRAVEL CONSTRUCTION

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CUNNINGHAM CREEK
CLAIMS
N.T.S. 93 A 14

GEOLOGICAL
MAPPING

WEST GRID

LEGEND
ROCK EXPOSURES
ARE QUARTZ
SERICITE SCHIST

58	SCHISTOSITY
77	JOINT
56 qv	QUARTZ VEIN
ank	ANKERITE
asp	ARSENOPYRITE
gal.	GALENA
py	PYRITE
ser	SERICITIC ALTERATION
sph	SPHALERITE

THE MINERALIZED TRENCH IS SIMILAR TO THE TWO OCCURANCES ON THE EAST GRID IN THAT THE VEINS ARE SEEN TO CURVE. THIS EXPRESSES THE SAME STRESS PATTERNING THAT CAUSES THE MINERALIZATION TO OCCUR AT THE JUNCTION OF VEINS TO THE EAST. THE MINEROLOGY IS DIFFERENT IN THAT GALENA AND SPHALERITE ARE PRESENT WITH THE PYRITE. ALSO PRESENT IN THIS OCCURANCE IS A YELLOW STAINING, PROBABLY MOLYBDIC OCHRE. THESE MINERALS INDICATE A HIGHER TEMPERATURE OCCURANCE THAN THOSE TO THE EAST.

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CUNNINGHAM CREEK CLAIMS
N.T.S. 93 A 14

SECOND DERIVATIVE ANALYSIS OF THE TOTAL MAGNETIC FIELD, $d^2\gamma/dWdN$
DETAIL GRID
METHOD: HENDERSON, R. G., and ZIETZ, I. (1949)
CONTOURS: on 0 γ/m^2
and at an INTERVAL of 50×10^{-2} γ/m^2

BTM 11/87

17,115

0 | 50E | 100E | 150E | 200E

50N | BL | 50S | 100S

50W | 0

ASTRO NORTH | 23° | MAGNETIC NORTH | 10° | GRID NORTH

SCALE 1:500

0 | 50 | 100 meters

(19)

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CUNNINGHAM CREEK CLAIMS

N.T.S. 93 A 14

TOTAL FIELD MAGNETOMETER SURVEY
DETAIL GRID

INSTRUMENT: SCINTREX MP2, DIGITAL PROTON PRECESSION MAGNETOMETER

CONTOUR INTERVAL: 5γ and 50γ

BACKGROUND: 58000γ

BTM 11/87

0 | 50E | 100E | 150E | 200E

50N | BL | 50S | 100S

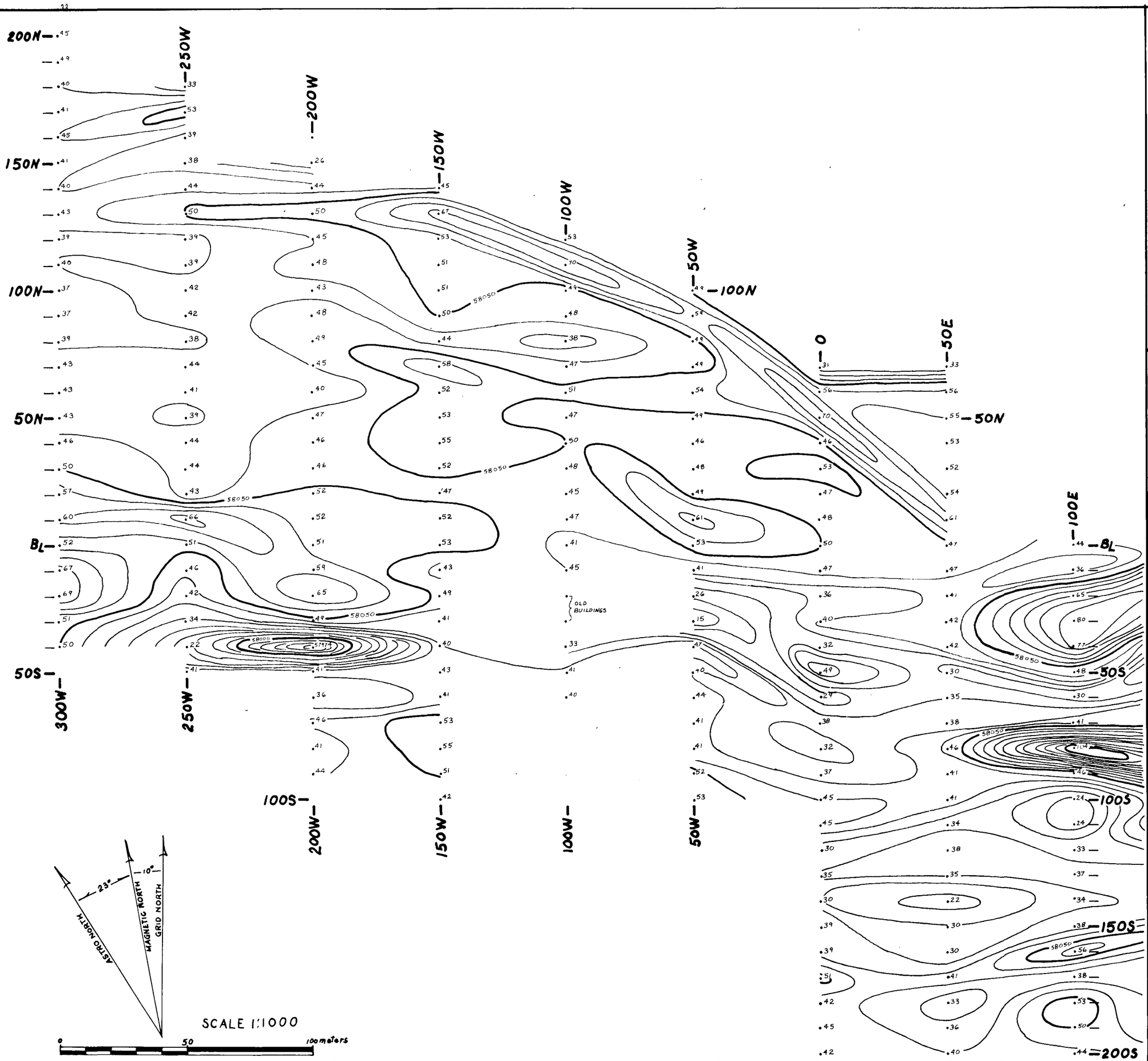
50W | 0

58050

ASTRO NORTH
MAGNETIC NORTH
GRID NORTH
23°
10°

SCALE 1:500

0 | 50 | 100 meters



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CUNNINGHAM CREEK
CLAIMS
N.T.S. 93 A 14

TOTAL FIELD
MAGNETOMETER SURVEY

CENTRAL GRID

INSTRUMENT:
SCINTREX MP2 DIGITAL
PROTON PRECESSION
MAGNETOMETER

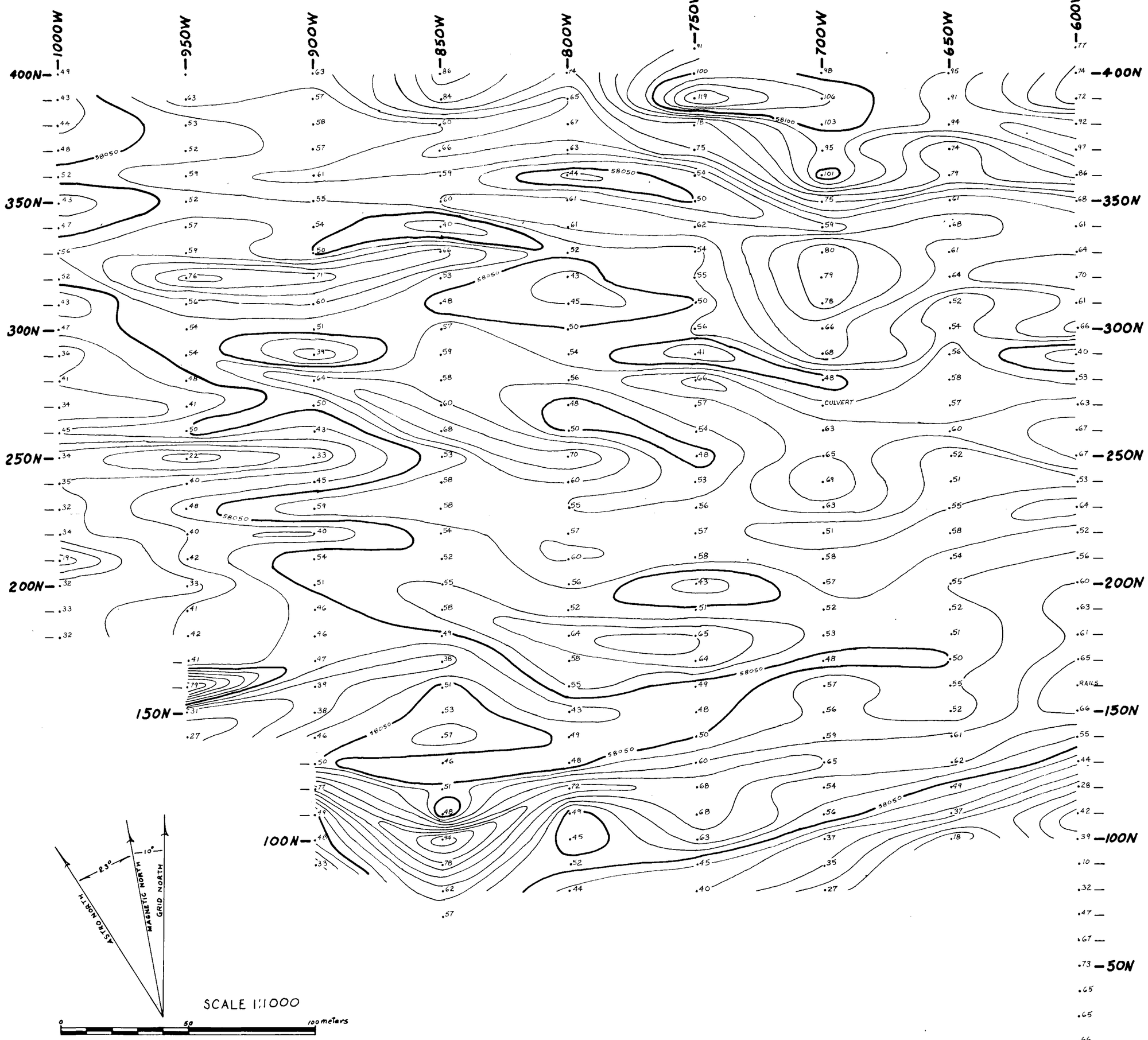
CONTOUR INTERVAL:
5 γ and 50 γ

BACKGROUND:
58000 γ

GEOLOGICAL BRANCH
ASSESSMENT REPORT

17,515

(21) BTN 11/87



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CUNNINGHAM CREEK
CLAIMS
N.T.S. 93 A 14

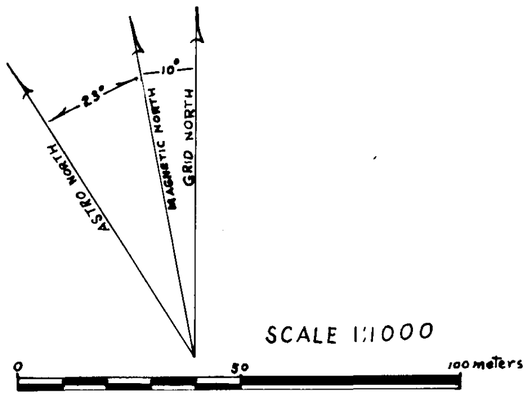
TOTAL FIELD
MAGNETOMETER SURVEY

WEST GRID

INSTRUMENT:
SCINTREX MP2 DIGITAL
PROTON PRECESSION
MAGNETOMETER

CONTOUR INTERVAL:
5 γ and 50 γ

BACKGROUND:
58000 γ



SCALE 1:1000

0 50 100 meters

BL — 150E — 200E — 250E — 300E — 350E — 400E — 450E — 500E — 550E

100N — 50N — BL — 50S — 100S — 150S — 200S

58050

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CUNNINGHAM CREEK
CLAIMS
N.T.S. 93 A 14

TOTAL FIELD
MAGNETOMETER SURVEY

EAST GRID

INSTRUMENT:
SCINTREX MP2 DIGITAL
PROTON PRECESSION
MAGNETOMETER

CONTOUR INTERVAL:
5 γ and 50 γ

BACKGROUND:
58000 γ

GEOLOGICAL BRANCH
ASSESSMENT REPORT

1 of 5

(23) BTM 11/81