

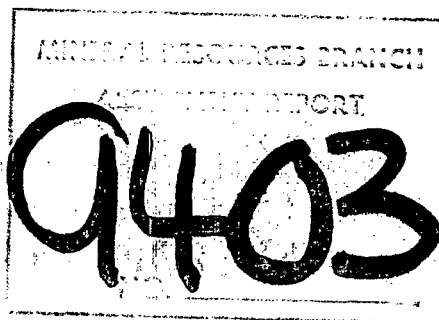
GEOCHEMICAL AND GEOPHYSICAL REPORT
JP#1 Mineral Claim

PLACER DEVELOPMENT LIMITED
Endako Mines Division
Omineca Mining Division
TCHENTLO LAKE, B.C.

(Latitude $54^{\circ} 14'$, Longitude $125^{\circ} 7'$)

93N/3E

Field work undertaken during period
1 June to 4 June 81



P. Buckley P. Eng.
A.J. Peters

July 1981

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INTRODUCTION:

Soil and rock geochemical surveys in addition to a VLF Radem survey were conducted over the JP #1 Mineral Claim during period 1 June 1981 to 4 June 1981. The work was undertaken as part of commitments for assessment work on the claim which is owned by Placer Development Limited, Endako Mines Division; and is located approximately two and one-half kilometres north of midpoint on north shore of Tchentlo Lake.

SUMMARY:

Soil geochemical results showed that the area is anomalous in copper content and weakly anomalous in silver content. Molybdenum content is below threshold levels. Rock geochemical results indicated similar results to soil survey. Highest soil copper geochemical result was 1190 ppm and highest rock copper geochemical result was 0.5%. Highest soil silver geochemical result was 1.4 ppm and highest rock silver geochemical result was 4.1 ppm.

Several anomalous zones were outlined by the VLF Radem survey. These zones are in part due to the pyritic nature of the rock underlying the mineral claim.

Comparison of geochemical results and VLF Radem survey results indicates a coincidence of some anomalous zones from both surveys.

MINERAL CLAIMS:

The JP #1 Mineral Claim is located two and one-half kilometres north of the north shore of Tchentlo Lake in the Omineca Mining Division. The property is geographically located at Latitude 54° 14' and Longitude 125° 7'. (Fig. #1)

The JP #1 Mineral Claim is comprised of nine units.

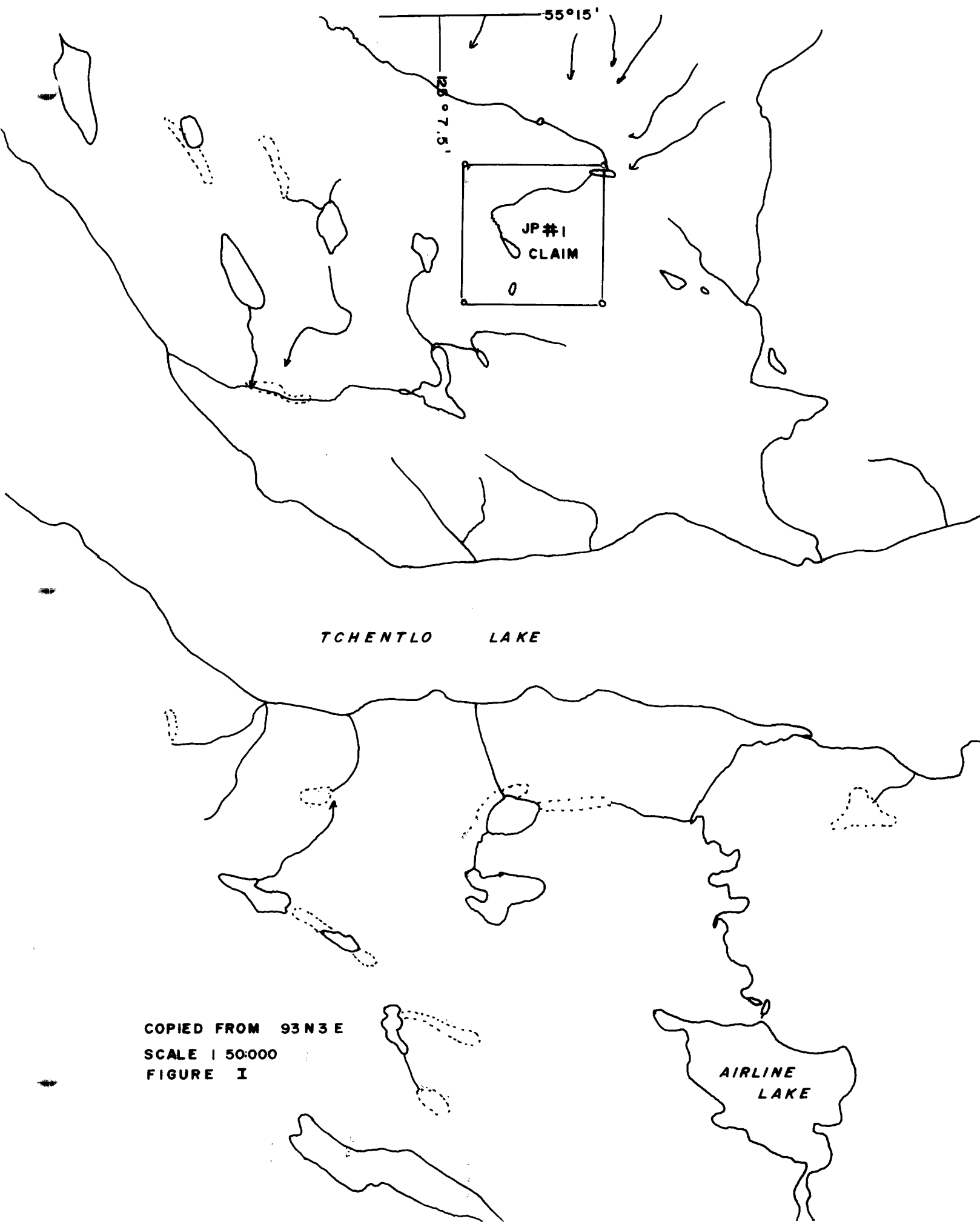
<u>MINERAL CLAIM</u>	<u>RECORD NO.</u>	<u>RECORD DATE</u>
JP #1	2865	8 July 80

All of the field work, as covered by this report, was conducted on the JP #1 Claim.

The mineral claim was located by hip chain and compass method with the aid of air photo and topographic map.

TOPOGRAPHY AND ACCESS:

JP #1 Mineral Claim is centered over an area of small knolls at approximately 1000 metres above mean sea level Tchentlo Lake surface is approximately 800 metres a.m.s.l. The claim is partially in an old burn with much deadfall and low brush cover. The unburned



TCHENTLO LAKE

AIRLINE LAKE

COPIED FROM 93N3E
SCALE 1:50,000
FIGURE I

Topography and Access con't.

portion is covered by spruce and pine forest. Small spruce and alder swamps are common between the knolls.

Access is via float plane or helicopter from Fort St. James or Burns Lake. A possible water route is via Chuchi and Tchentlo Lakes.

GENERAL GEOLOGY:

The mineral claim is underlain by the border phase rocks of the Hogem Batholith presumably of Upper Jurassic to Lower Cretaceous age (Armstrong 1949). (Fig. #2). The syenodiorites are generally green, medium to coarse grained and highly magnetic rocks. Composition ranges as follows: quartz 0-3%, k-feldspar 10-25%, plagioclase feldspar 25-70%, hornblende 5-20%, biotite 0-10%, chlorite 0-10%, and 0-5% magnetite. The gabbros are coarse grained dark green rocks consisting mainly of bytownite 45%, orthoclase 5%, augite 40%, chlorite as alteration of augite 5% and magnetite 5%.

Both rock types are mineralized with pyrite ranging from trace amounts to 5%.

Fracturing is locally evident and is shown in Figure #2.

ECONOMIC ASSESSMENT OF THE PROPERTY:

Economic potential for copper is indicated by anomalous geochemical results from both soil and rock surveys.

Observed pyrite mineralization, fracturing and coincidences of anomalous geochemical results and sinuous VLF Radem anomalies suggests sulfide mineralization and maybe restricted to fracture zones or be of a stock work nature.

SURVEY CONTROL:

The southerly perimeter line of the claim was used as a baseline. North-south oriented compass lines were run from this baseline. Station locations on these lines were determined by hip chain. All soil sample locations were demarked by blue flagging tape.

SOIL GEOCHEMICAL SURVEY:

Soils were collected on the aforementioned north-south lines at 50 metre intervals. The lines were spaced 200 metres apart. Whenever bog was encountered to depths greater than 0.7 metres, samples were not collected.

Soil is largely composed of glacially transported material and consists of medium to orange brown clayey material. Local patches of sandy alluvial soils occur on the easterly portion of the claim.

SAMPLING:

Soil samples were collected from holes dug with a pick-mattax to depths of 10 to 75 centimetres. This allowed approximately one-half kilogram of B horizon soil to be collected for analysis.

ASSAY METHOD:

All soil and rock samples were analysed for Mo, Cu and Ag by Placer Development Laboratory at Vancouver, B.C.

Standard analysis methods used by Placer Development Limited Geochem Laboratory are as follows:

<u>ELEMENT</u>	<u>UNITS</u>	<u>WT. G.</u>	<u>ATTACK USED</u>	<u>TIME</u>	<u>RANGE</u>	<u>METHOD</u>
Mo	ppm	0.5	c HClO ₄ /HNO ₃	4 hrs	1-1000	Atomic Absorption
Cu	ppm	0.5	C HClO ₄ /HNO ₃	4 hrs	2-4000	Atomic Absorption
Ag 1	ppm	0.5	C HClO ₄ /HNO ₃	4 hrs	0.2-20	Atomic Absorption Background Correction
Ag 2	ppm	0.5	C HNO ₃	2 hrs	0.02- 4.00	Atomic Absorption Solvent Extract

RESULTS:

Results from soil and rock geochemical analysis for molybdenum, copper and silver are summarized and sample locations shown in Figures 3 to 8 inclusive. These figures are located in the envelope at the end of this report.

Copper assay results from the soil and rock geochemical surveys (Figs. 4 & 7) indicates that the claim area is anomalously high in copper content. Results greater than 100 ppm Cu are considered anomalous. Several soil and rock assays are above this threshold level, however, very rarely do anomalies extend for more than 150 metres along survey lines. Maximum soil geochemical result was 1190 ppm Cu and maximum rock geochemical result was 0.5% Cu.

Silver assay results from the soil and rock geochemical surveys (Figs. 5 & 8) indicates a few locations slightly above the threshold value of 1.0 ppm. Silver anomalies occur generally as isolated one or two samples anomalies in the central portion of the claim area.

Maximum silver soil geochemical result was 1.4 ppm silver and the maximum rock geochemical result was 4.1 ppm silver.

Molybdenum assay results from the soil and rock geochemical surveys were below the threshold level except for one rock specimen which assayed 15 ppm molybdenum and is considered slightly anomalous (Fig. 3 & 6).

VLF RADEM SURVEY:

Eight point three kilometres were surveyed using a Crone VLF Radem. Cutler Maine (station NAA, frequency 17.8 khz) was the station utilized to conduct this survey.

Tilt angle readings were recorded at 25 metre intervals along the previously mentioned geochemical lines which were spaced 200 metres apart. The radem survey was conducted in conjunction with the geochemical survey. Tilt angle readings are shown in Figure 9. Several crossovers are evident. Those crossovers situated on southerly portion of the map are most likely due to pyrite in the underlying bedrock. The more easterly crossovers near the centre of the map may partially be due to wet clay zones which are evident in this area.

Rock geochem results for copper in the southern portion of the map tend to coincide with VLF Radem crossovers.

The Fraser Filter resulting in a F 2.3 plot point was applied to tilt angle data. Contoured results of positive values obtained tend to enhance the crossover points shown in Figure 9. The contoured filter results align quite closely with outcrops where pyrite was observed. These results are shown in Figure 10.

STATEMENT OF EXPENDITURES:

The following expenses were incurred by Placer Development Limited, Endako Mines Division for conducting geochemical and VLF Radem surveys over JP #1 Claim. To facilitate field work, both surveys were carried on simultaneously; as a result the personnel costs for the surveys are lumped together.

PERSONNEL COSTS

<u>Personnel</u>	<u>Period Employed</u>	<u>Rate</u>	<u>Cost</u>
P. Buckley	1-30 June 1981	10 hrs. @ \$18.90	\$ 189.00
A.J. Peters	1-30 June 1981	40 hrs. @ \$14.10	\$ 564.00
M. McMahon	1-4 June 1981	40 hrs. @ \$ 7.75	\$ 310.00
T. Williams	1-4 June 1981	40 hrs. @ \$ 7.75	\$ 310.00
J. Wilson	1-4 June 1981	40 hrs. @ \$ 7.75	\$ 310.00
TOTAL PERSONNEL COSTS			<u>\$1,683.00</u>

CAMP OPERATIONS

Total of 12 man days @ \$15.00 per day \$ 180.00

TRANSPORTATION

L.D.A.'s Beaver Float Plane Docket Nos. 1048 and 1049. Total of 390 miles @ \$1.75 per mile \$ 692.50

GEOCHEMICAL ANALYSES COSTS

170 samples @ \$5.35/sample for Mo, Cu, Ag determinations \$ 909.50

MAP DRAFTING COSTS

A.J. Peters 10 hours @ \$14.10 \$ 141.00

TOTAL GEOCHEMICAL AND VLF RADEM SURVEY COSTS \$3,606.00

CONCLUSION:

Soil and rock geochemical surveys conducted over the claim indicate anomalous copper content of both soils and rocks. The VLF Radem survey conducted over the claim area indicates several crossovers some of which are coincident with anomalous geochemical results.

These results indicate a potential for copper mineralization over the claim area, however, the extent and continuity of this mineralization has not been determined.

Submitted by,



P. Buckley P. Eng.
Senior Geologist
Placer Development Limited
Endako Mines Division



A.J. Peters
Geological Technician
Placer Development Limited
Endako Mines Division

PB/AJP:hh
07/06/81

APPENDIX I

CERTIFICATION
P. Buckley

I, Paul Buckley, of Placer Development Limited,
Endako Mines Division, Endako, B.C., do hereby certify that:

1. I am a Geological Engineer and a member of the Association of Professional Engineers of the Province of British Columbia.
2. I am a graduate of the University of British Columbia with a B.A. Ap. Sc. in Geological Engineering in 1973.
3. From 1973 until the present I have been engaged in open pit operations and exploration geology in British Columbia.
4. I personally planned the work on JP #1 Mineral Claim with A.J. Peters assistance.
5. I personally reviewed the geology and the interpretation of the geochemical and VLF Radem surveys; and to the best of my knowledge believe the interpretation thereof to be correct.
6. To the best of my knowledge, the Statement of Expenditures is correct.

Paul Buckley P. Eng

P. Buckley P. Eng.

APPENDIX II

CERTIFICATION

A.J. Peters

I, A.J. Peters, of Placer Development Limited, Endako Mines Division, Endako, B.C., do hereby certify that:

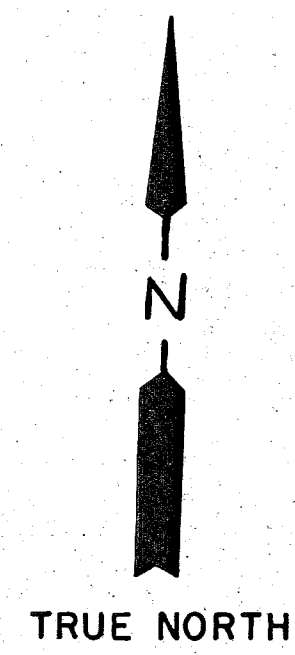
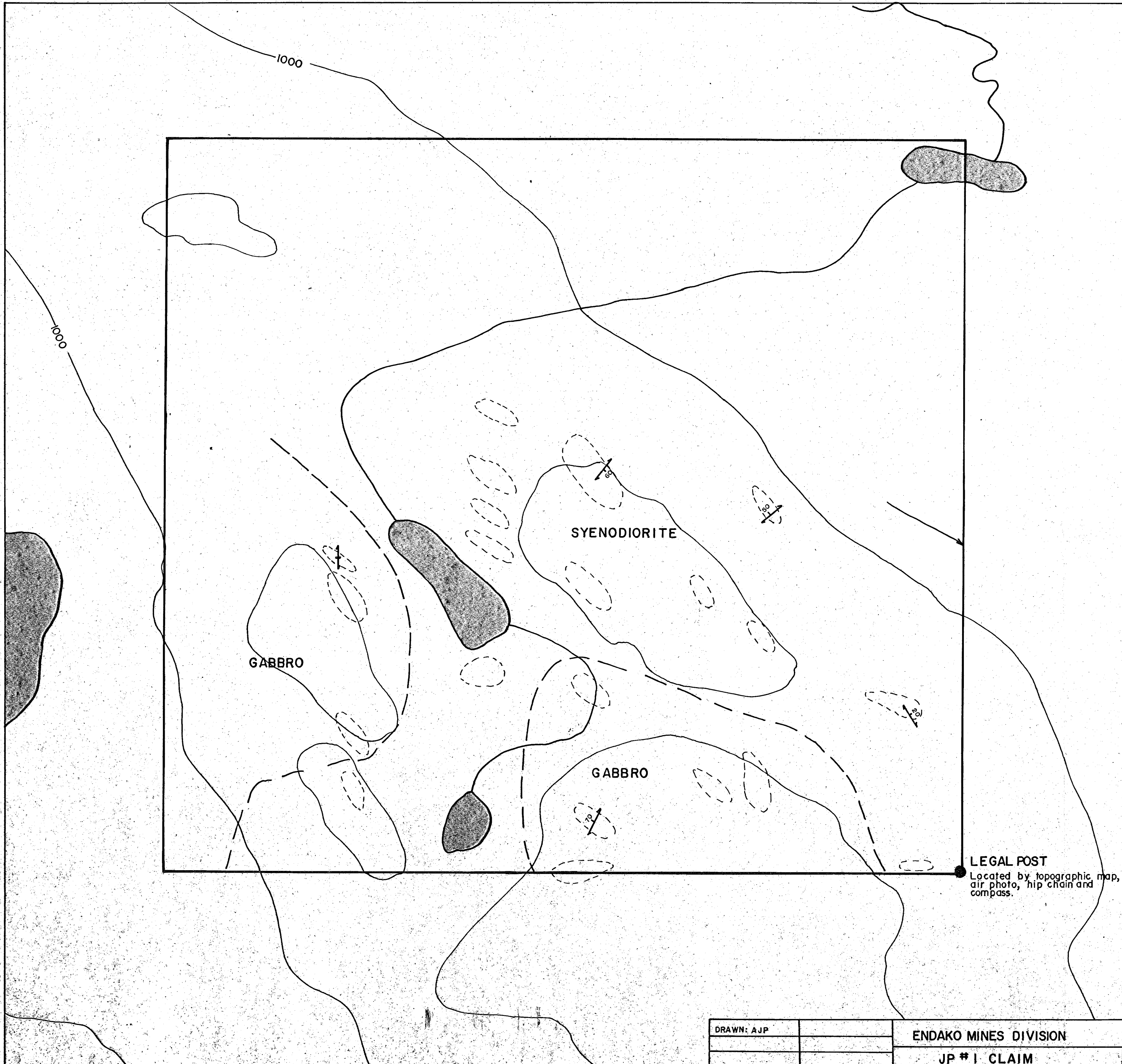
1. I am a Geological Technician.
2. I graduated from Nechako Valley Senior Secondary School in 1966 on University Entrance Programs with electives in Mathematics, Science and Social Studies.
3. My practical training from 1967 to the present has included the following:
 - a) Sampling and surveying in open pit mine;
 - b) Diamond and percussion drill sampling;
 - c) Plan, recommend, perform relevant field work and supervise actual drilling projects.
 - d) Plan, conduct field work and interpret results on regional and detailed geochemical surveys;
 - e) Assist with planning, conduct field work and make preliminary interpretations on regional geological mapping programs;
 - f) Assist and conduct geophysical surveys; particularly induced polarisation and VLF surveys;

All of the above experience has been obtained under supervision of geologists and geophysicists.

4. I was personally involved in assisting the planning of the surveys conducted on the JP #1 Mineral Claim.
5. I did personally conduct and supervise the work performed on the JP #1 Mineral Claim.

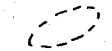







A.J. Peters



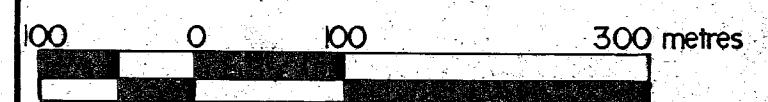
TRUE NORTH

LEGEND
GEOLOGY

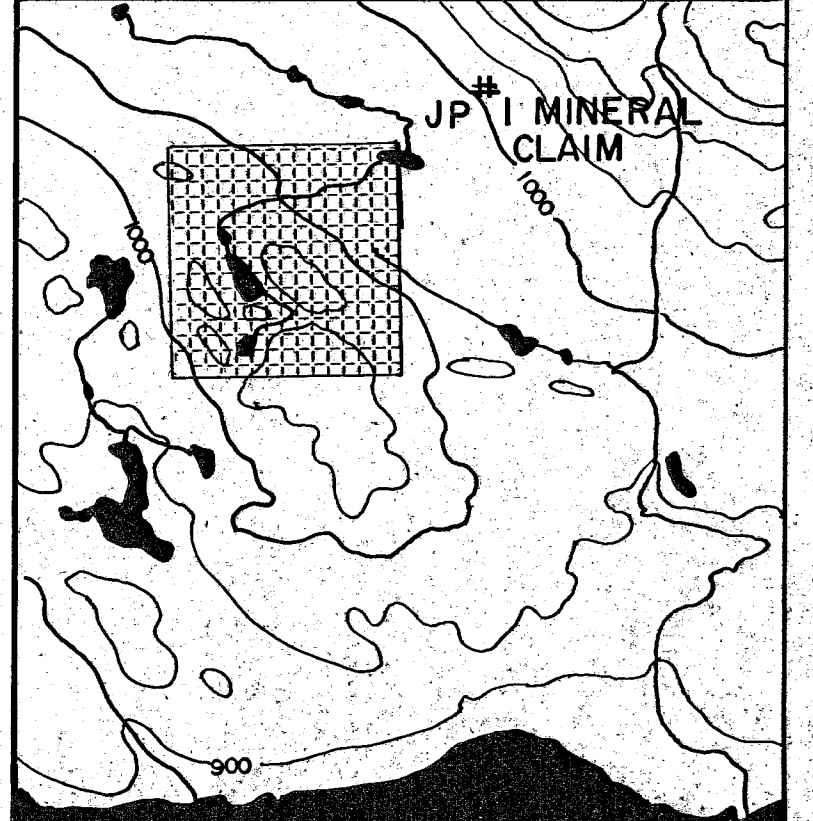
-  OUTCROP
-  INFERRED CONTACT
-  HOGEM BATHOLITH SYENODIORITE
Green medium to coarse grained magnetic rock
-  HOGEM BATHOLITH GABBRO
Coarse grained, dark green magnetic rock
-  INCLINED
-  VERTICAL

9403

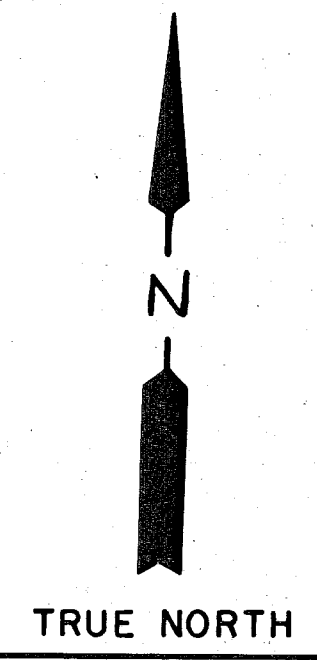
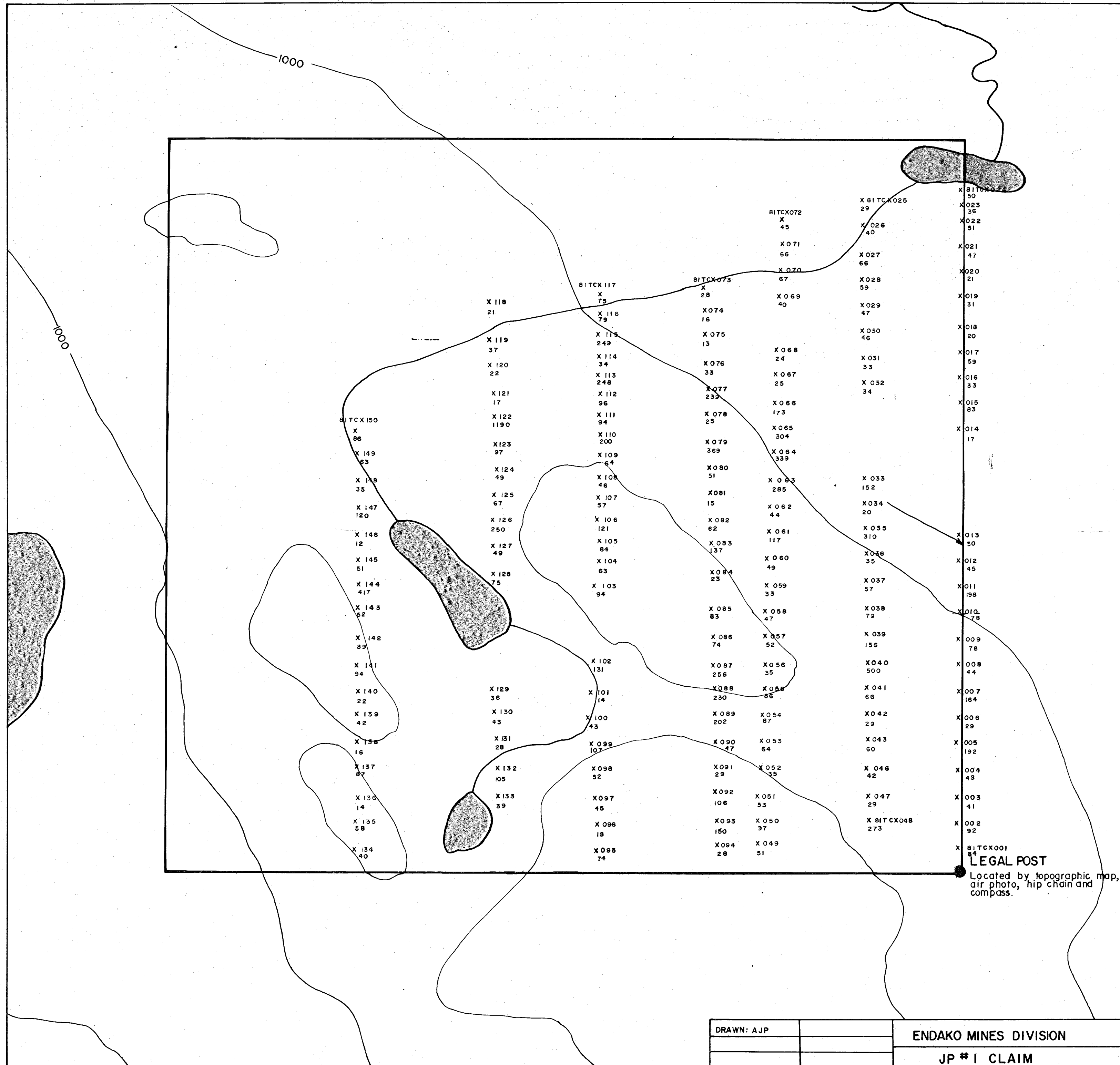
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DRAWN: AJP	ENDAKO MINES DIVISION	FIGURE # 2
	JP # 1 CLAIM	GEOLOGY

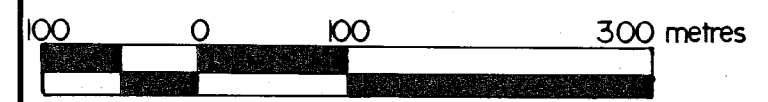


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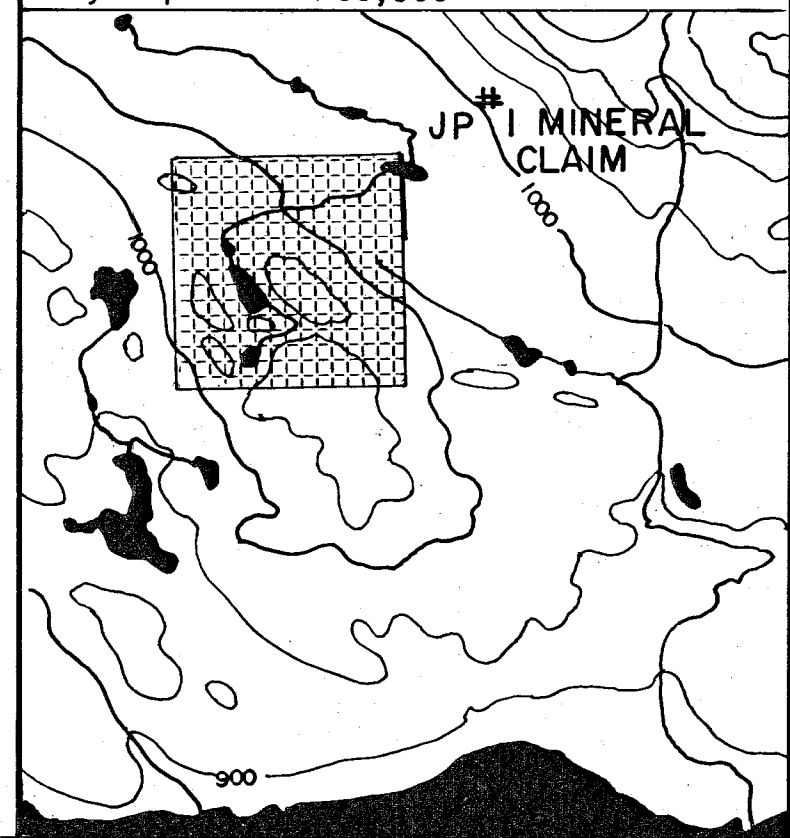
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- BITCX002 Sample Numbers
- 003 " "
- 78 Copper Assay ppm

9403

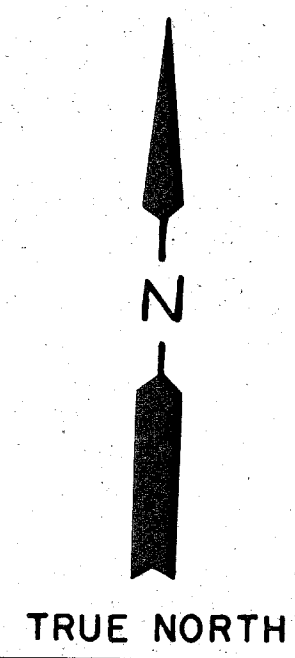
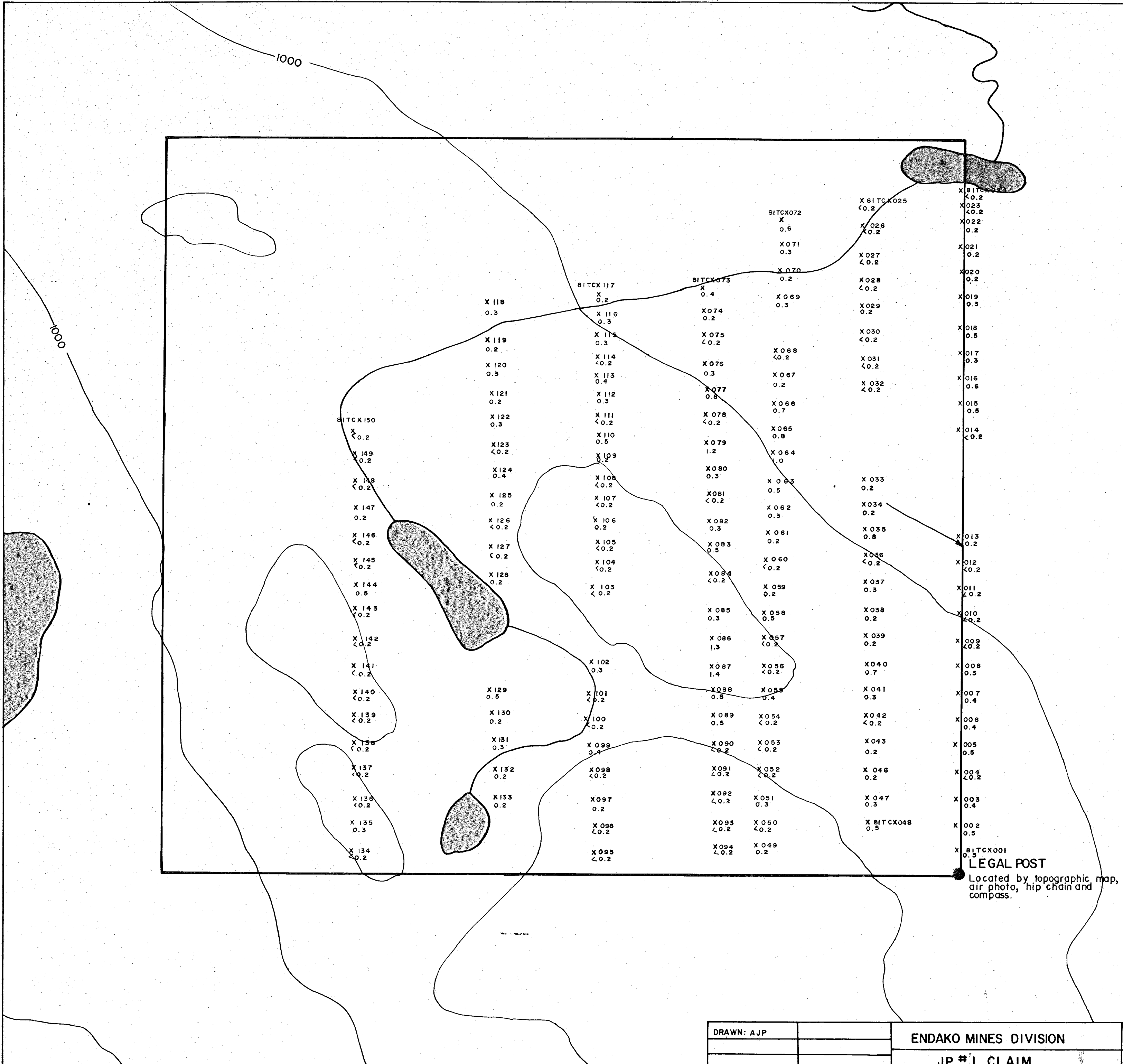
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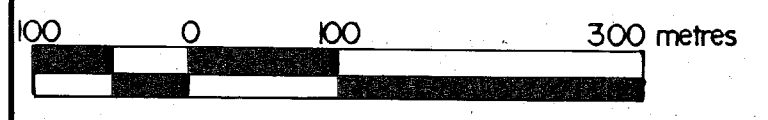
DRAWN: AJP	ENDAKO MINES DIVISION	FIGURE # 4
	JP #1 CLAIM	COPPER SOIL GEOCHEMICAL RESULTS



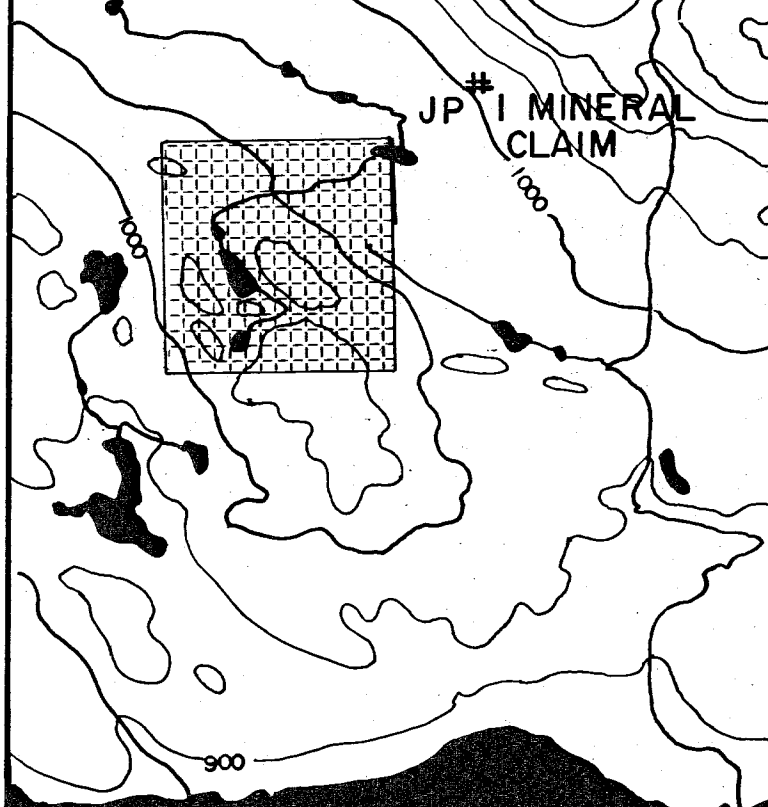
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- x Soil Sample Location
- BITCX002 Sample Numbers
- 003 " "
- 0.2 Silver Assay ppm

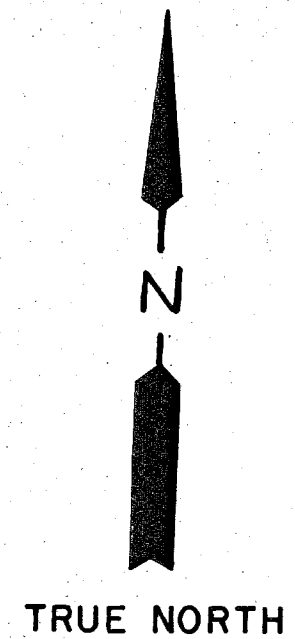
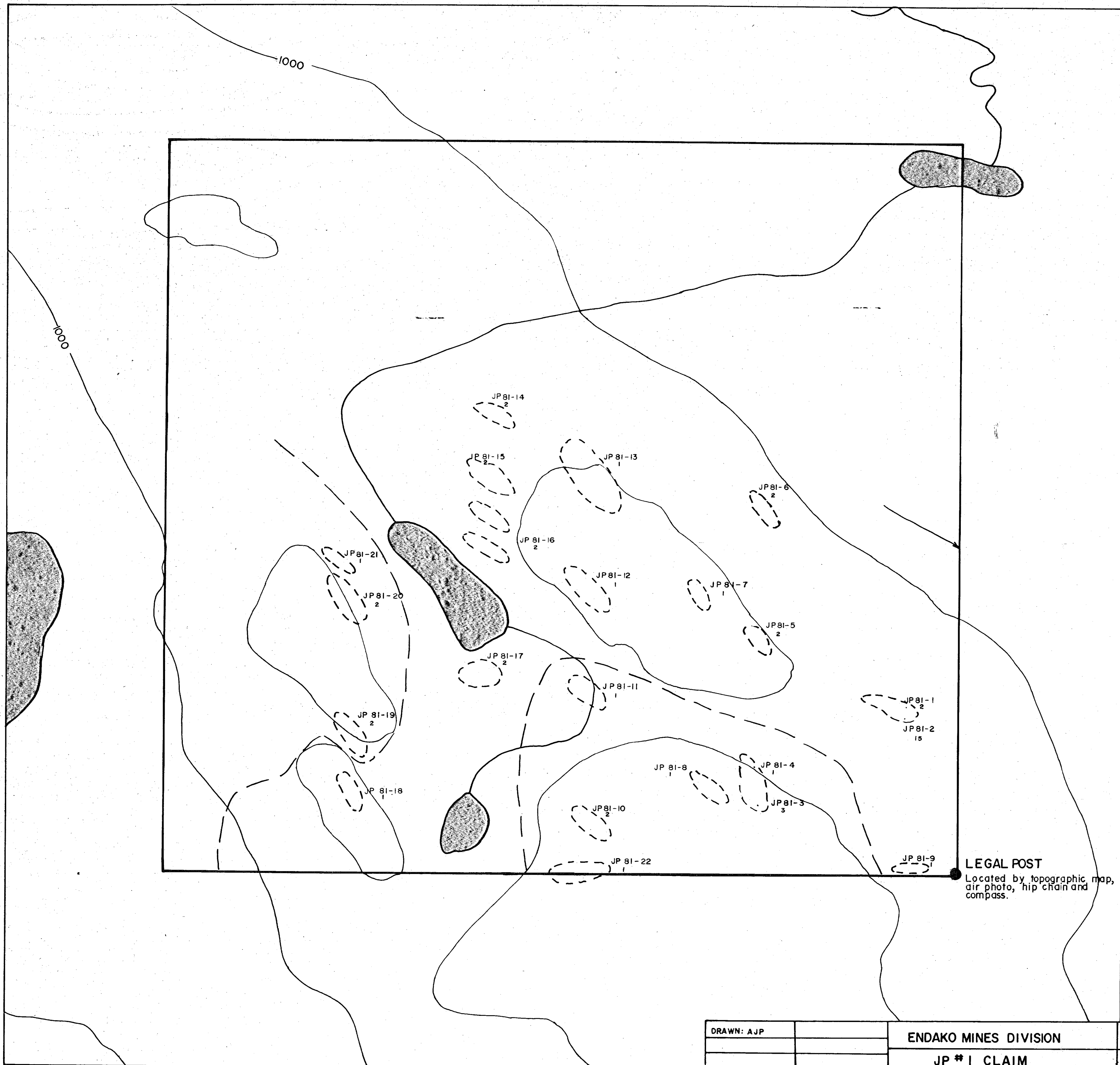
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DRAWN: AJP	ENDAKO MINES DIVISION	FIGURE # 5
	JP #1 CLAIM	SILVER SOIL GEOCHEMICAL RESULTS



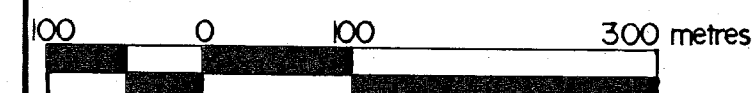
TRUE NORTH

LEGEND

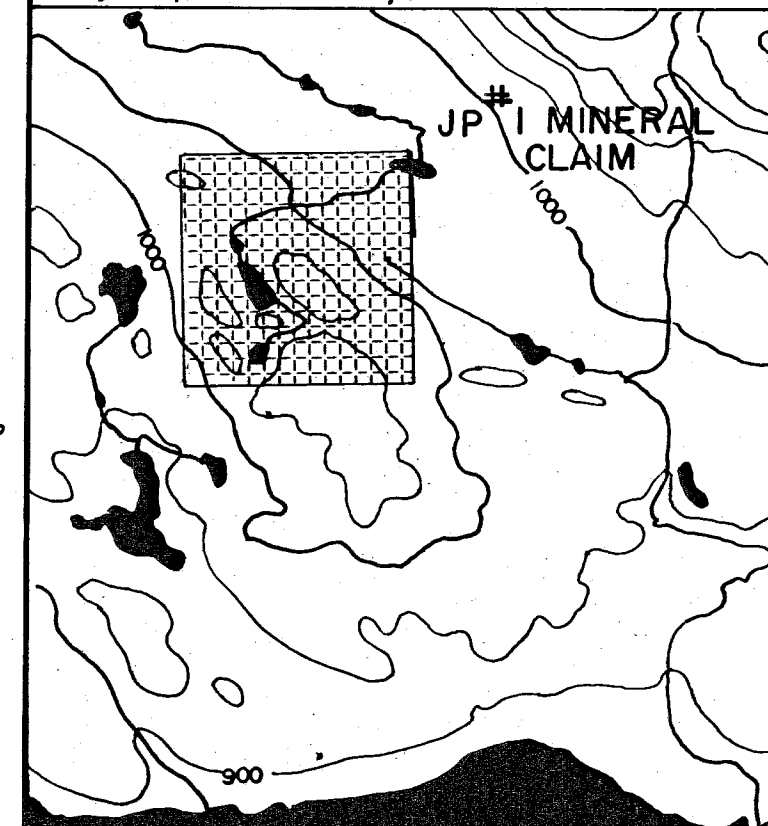
- Outcrop Location
- JP 81- 1 Sample Number
- | Moly Assay ppm

9403

SCALE

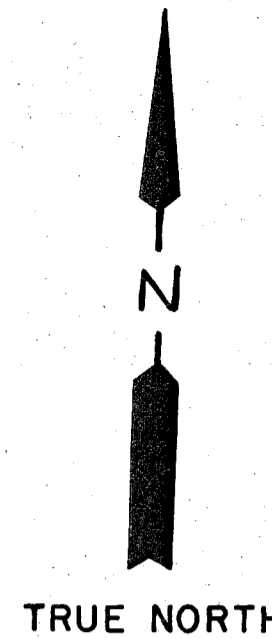
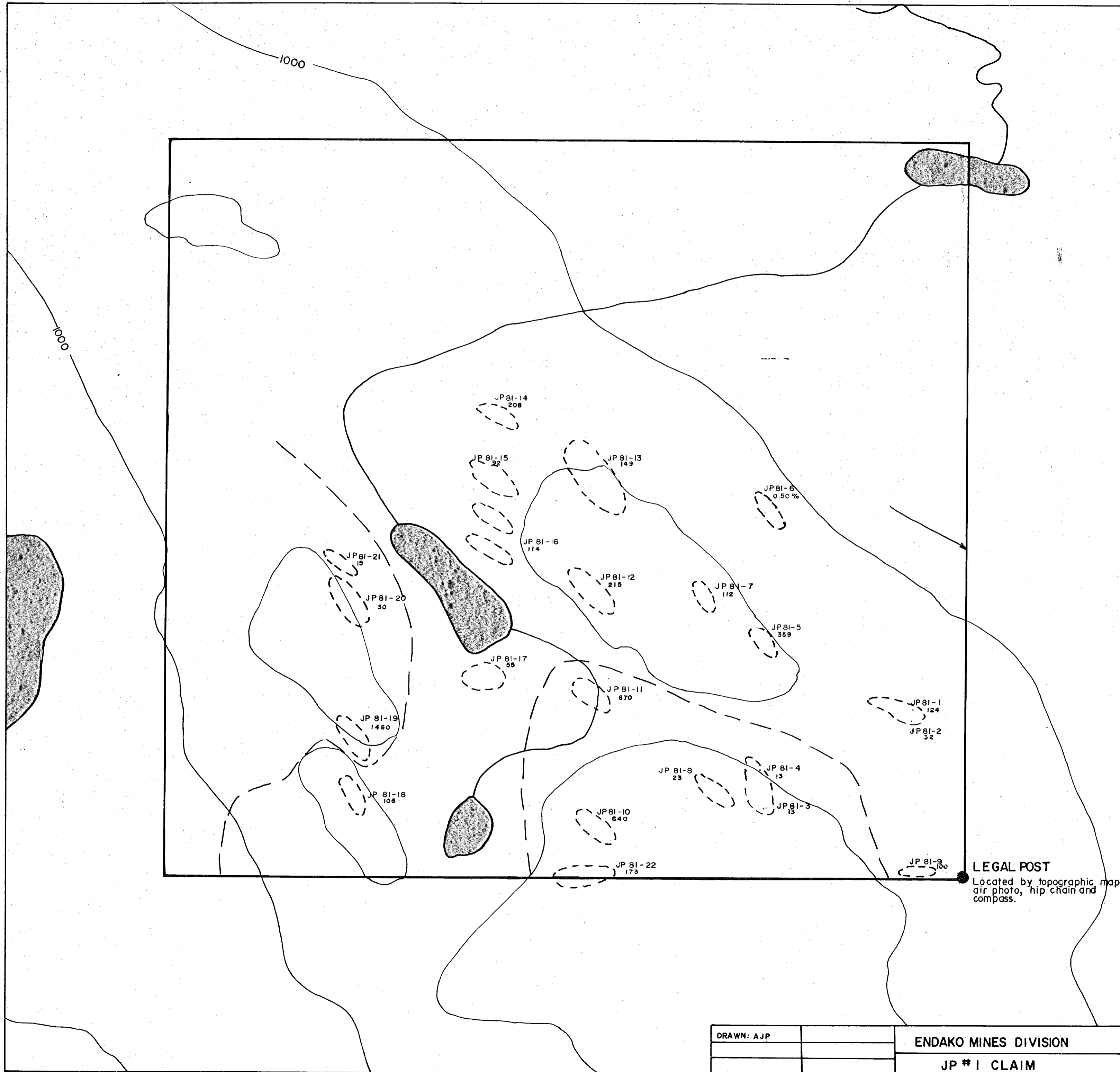


Key Map Scale 1 50,000



LEGAL POST
Located by topographic map,
air photo, hip chain and
compass.

DRAWN: AJP		ENDAKO MINES DIVISION	FIGURE # 6
		JP # 1 CLAIM	MOLY ROCK GEOCHEMICAL RESULTS

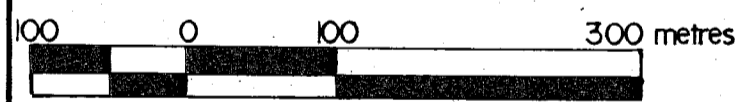


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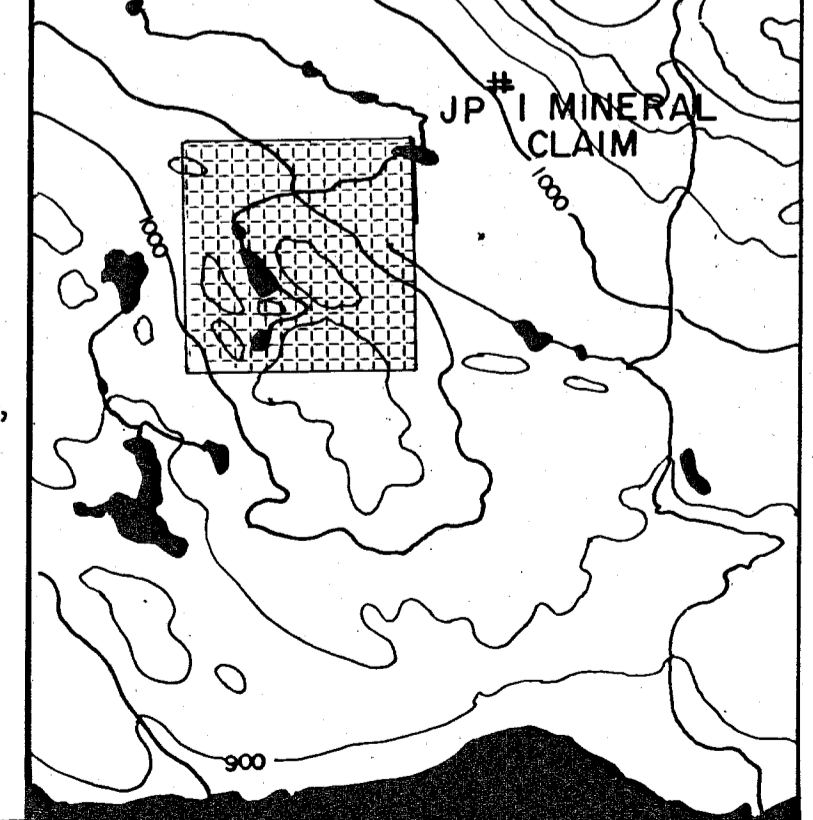
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- JP 81 - 1 Sample Number
- 78 Copper Assay ppm

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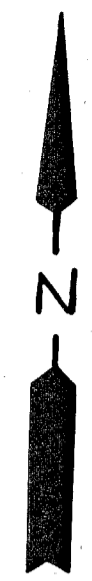
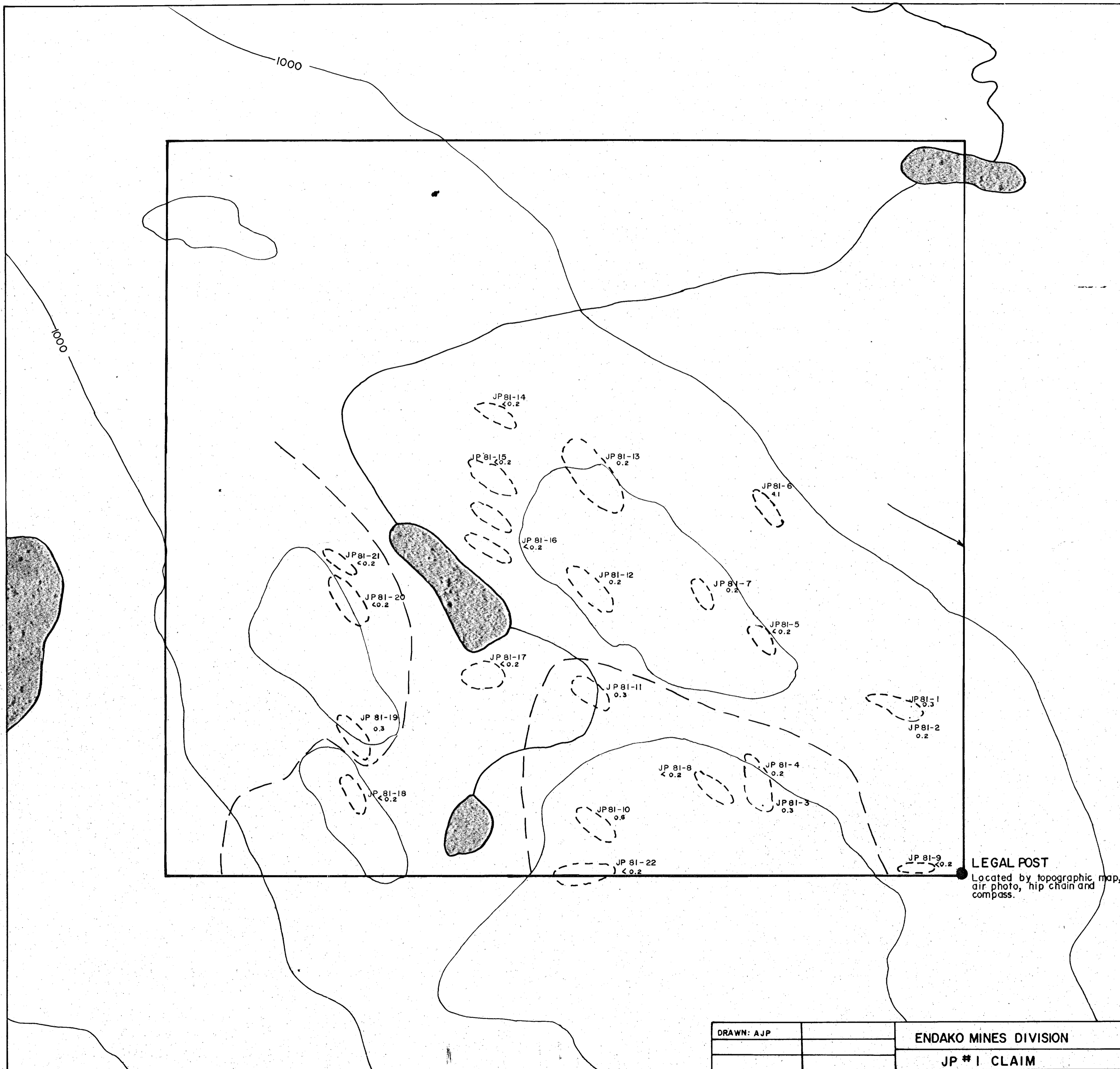
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DRAWN: AJP	ENDAKO MINES DIVISION	FIGURE # 7
	JP #1 CLAIM	COPPER ROCK GEOCHEMICAL RESULTS

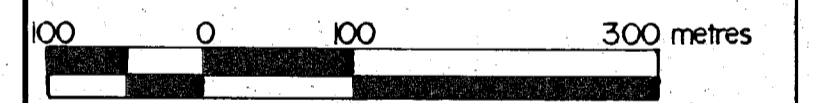


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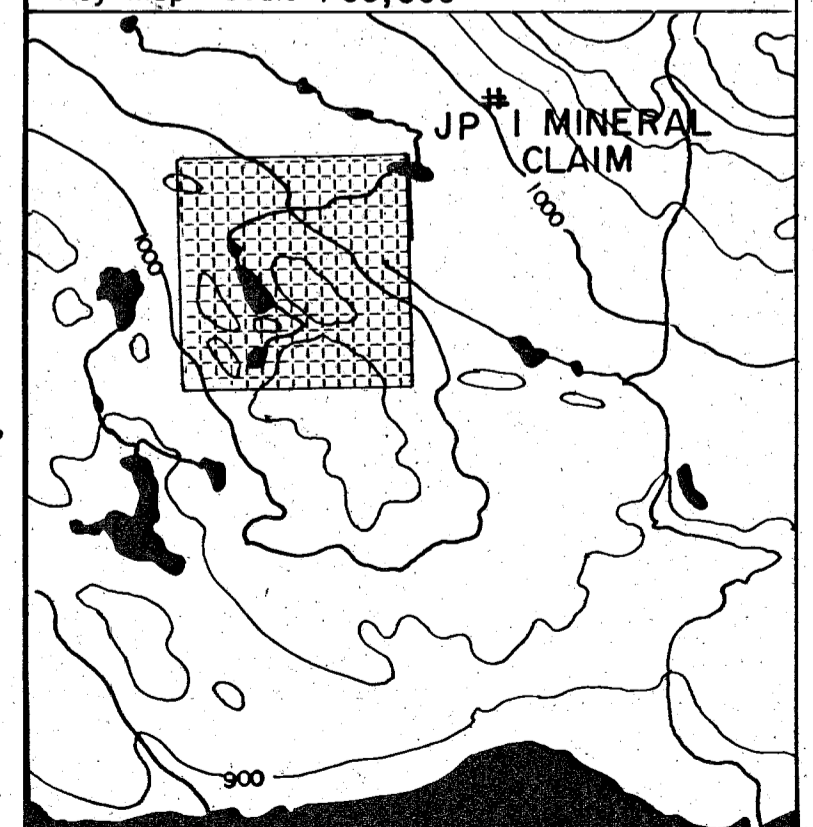
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- Outcrop Location
- JP 81 - 1 Sample Number
- 0.2 Silver Assay ppm

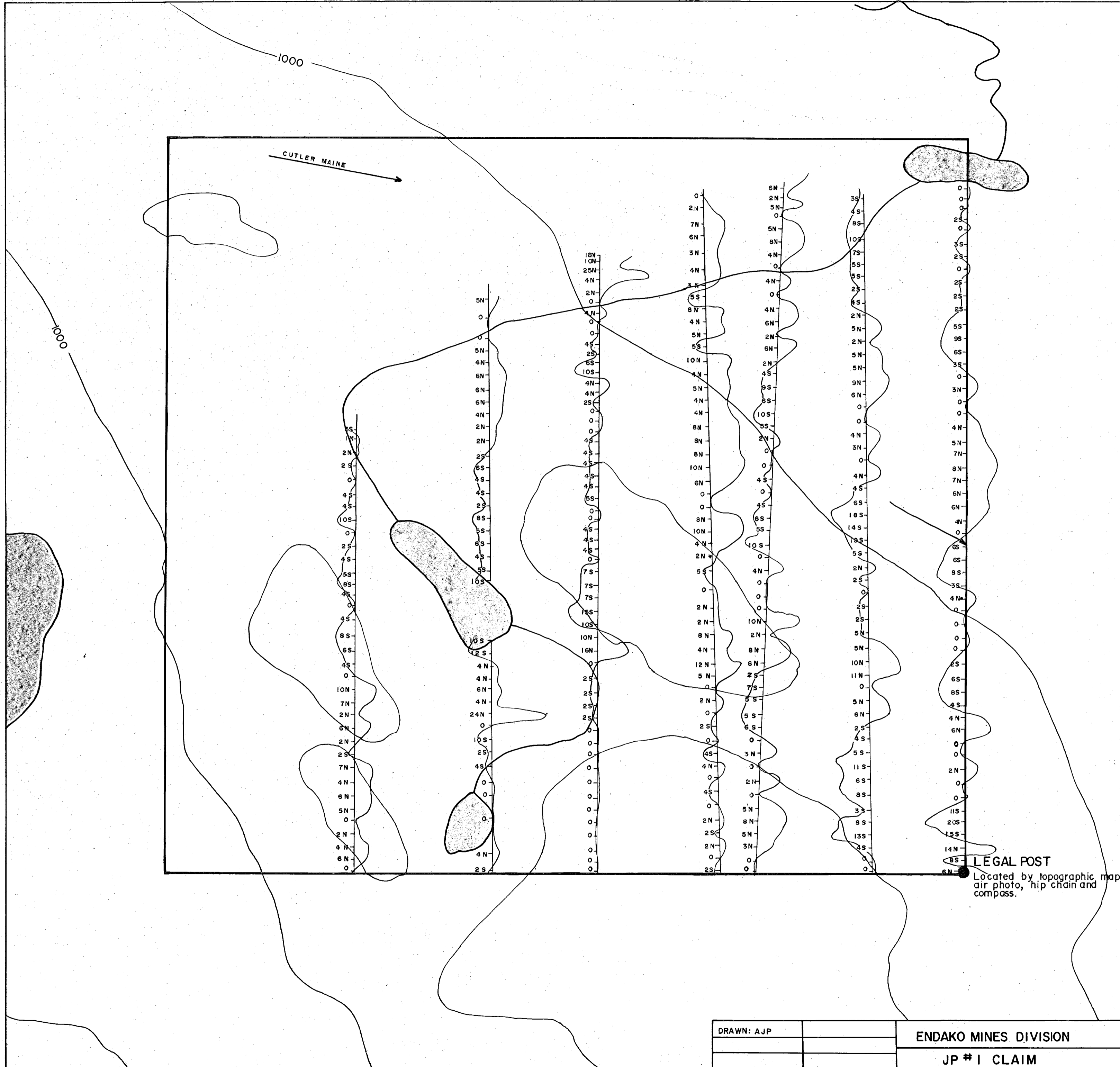
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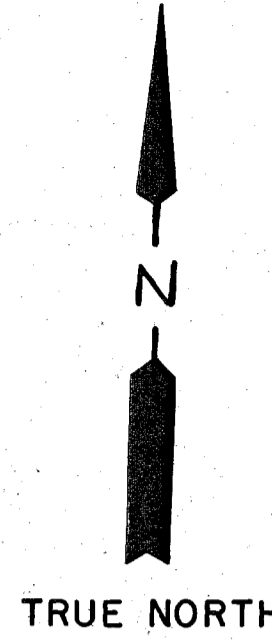
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DRAWN: AJP	ENDAKO MINES DIVISION	FIGURE # 8
	JP #1 CLAIM	SILVER ROCK GEOCHEMICAL RESULTS

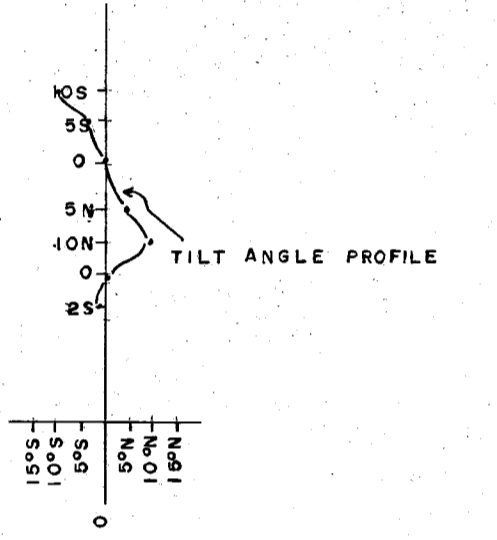


CUTLER MAINE



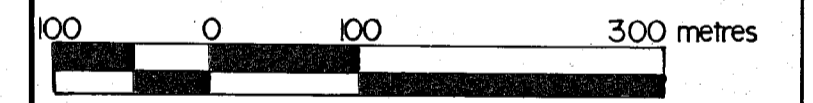
TRUE NORTH

LEGEND
TILT ANGLES

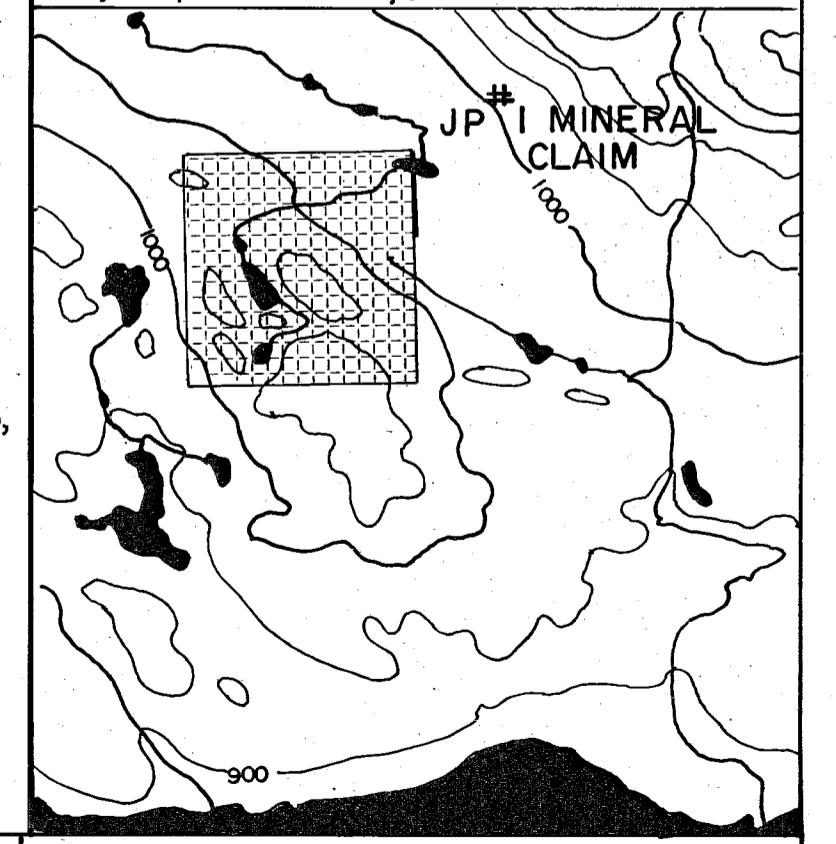


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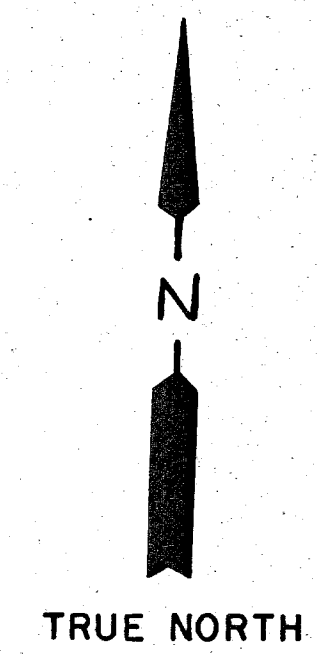
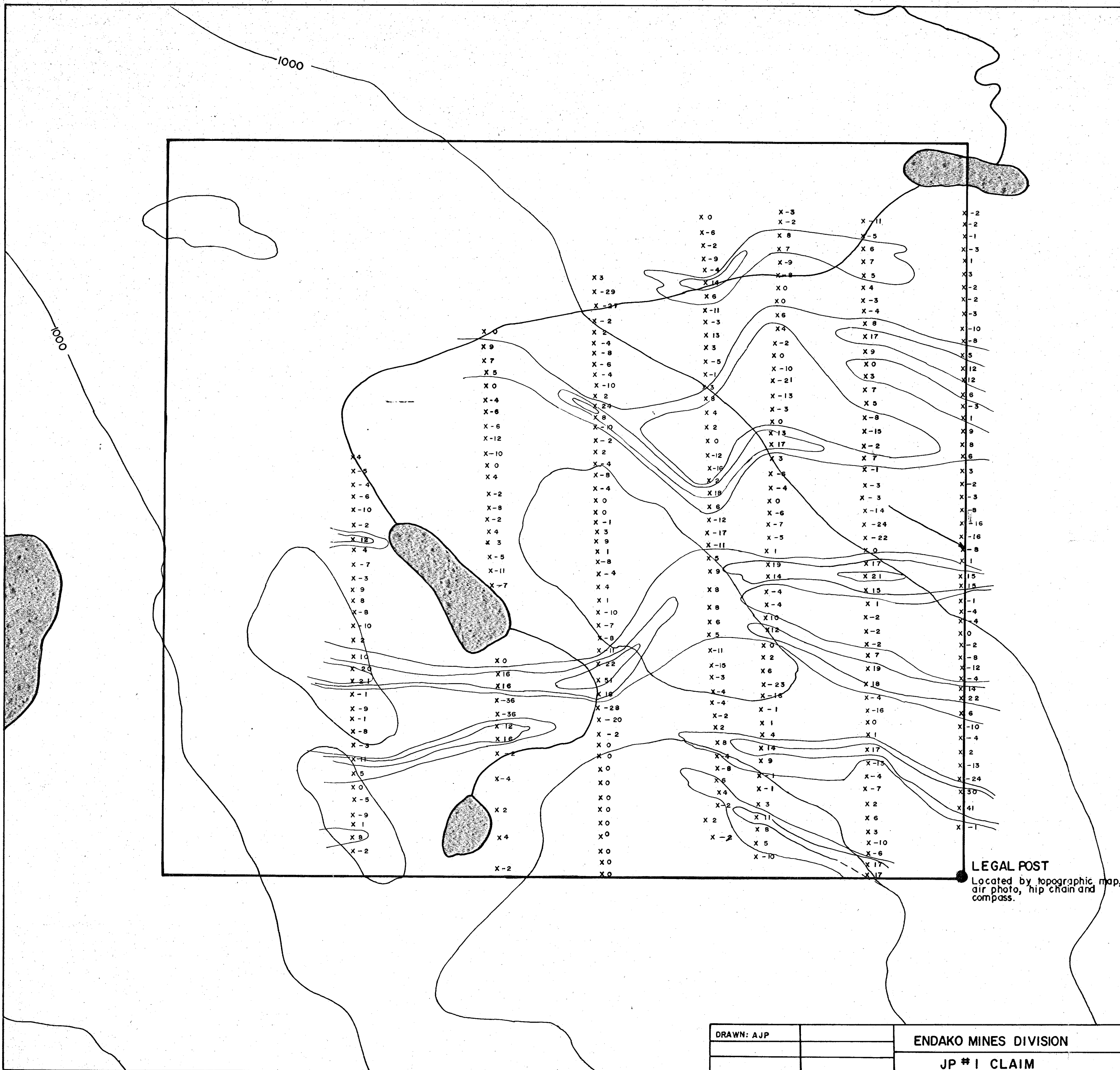
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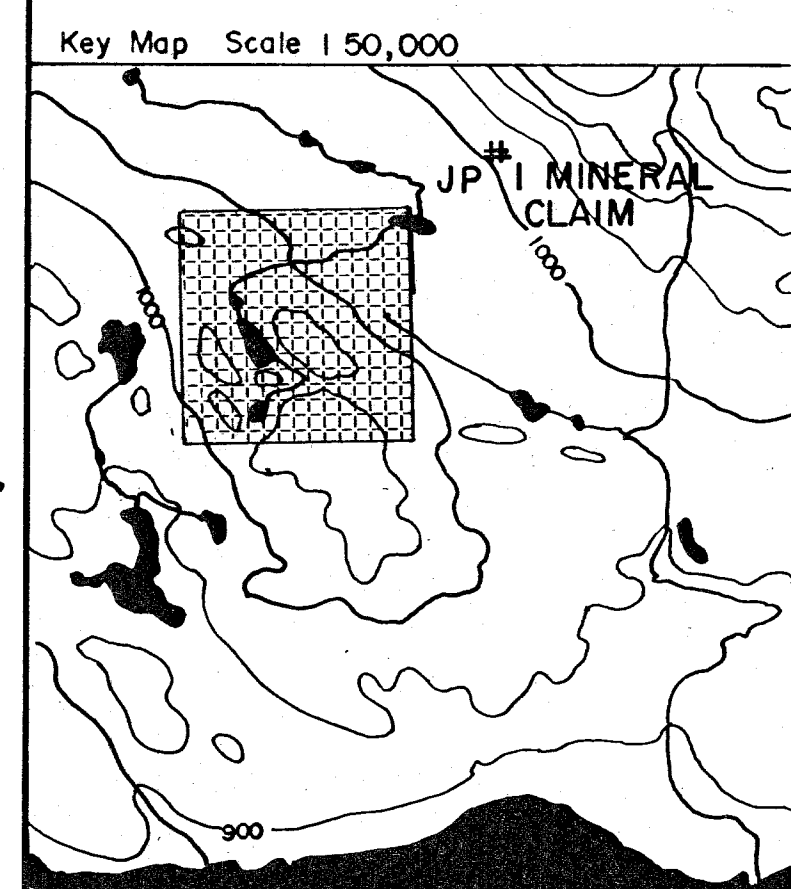
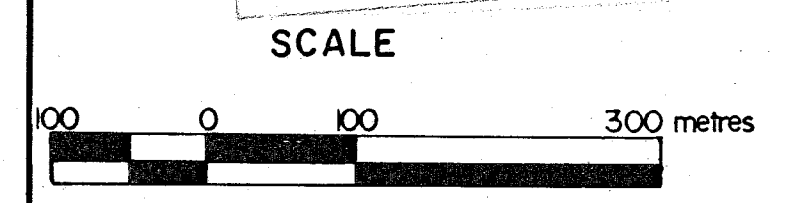


DRAWN: AJP	ENDAKO MINES DIVISION	FIGURE # 9
	JP #1 CLAIM	TILT ANGLES



LEGEND
 FILTERED TILT ANGLE DATA
 X FILTERED DATA PLOT POINT
 -9 FILTERED TILT ANGLE RESULT
 ONLY POSITIVE RESULTS CONTOURED

MINING BRANCH
 REPORT
9403



DRAWN: AJP	ENDAKO MINES DIVISION	FIGURE # 10
	JP #1 CLAIM	FILTERED TILT ANGLE DATA