



GEOLOGICAL, GEOPHYSICAL, GEOCHEMICAL
 SURVEYS AND DIAMOND DRILL RESULTS
 WOP MINERAL CLAIMS (ANVIL RANGE SYNDICATE)
 TENAS CREEK AREA, WHITEHORSE M.D., YUKON TERRITORY

Lat 62°03'N

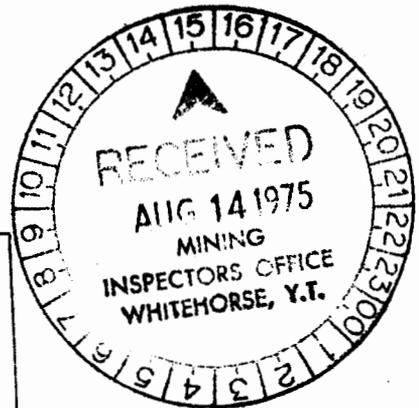
NTS 105 K/1

Long 132°20'W

Field work completed in 1974 - between July and September

by

R. Chaplin, P. Eng.



This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of \$ 33,000

W.D. Sinclair
 Resident Geologist or
 Resident Mining Engineer

Considered as representation work under
 Section 53 (4) Yukon Quartz Mining Act.

[Signature]
 D.R. BAXTER
 Supervising Mining Recorder
 Commissioner of Yukon Territory

July 14, 1975.

09

Vancouver, B.C.

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LIST OF ILLUSTRATIONS IN POCKETS

1-	Claim Map & Grid Location	1:50,000
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3-	Geochemical Map Magnetometer Survey	1"=1000'
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5-	Induced Polarization APP. Resist. Ohm-meters	1"=1000'
*	See 5 maps in Ager's Gravity Report under separate cover.	

INTRODUCTION

The Anvil Range Syndicate was formed in 1974 to prospect for massive lead-zinc "bedded" type ore deposits of the Faro-Vangorda-Swim Lake type. A brief reconnaissance of the Tenas Creek - Ross River - Olgie Lakes area in 1973 indicated a lithology and structural similarity with the above mentioned mineralized belt. A straight line drawn between the Faro-Vangorda-Swim Lake deposits would extend easterly through the Tenas Creek - Ross River topographic depression, an overall distance of fifty miles!

Outcrop is not abundant in the lower elevations of the Tenas Creek valley and consequently a regional geophysical, and geochemical reconnaissance based on Faro-Vangorda & Swim Lakes case history studies was proposed in the vicinity of the present WOP claims. Forty-five line miles of IP reconnaissance was completed in the Tenas Creek valley at 1500-foot line intervals. Anomalous areas were soil sampled and otherwise prospected.

Property Location, Access, Ownership

The WOP claims are located on the NTS 105 K/1 approximately nine miles northerly from the village of Ross River, Y.T. Lat: 62°03'N Long: 132°20'W in the Whitehorse Mining District.

The claims are accessible by a standard automobile via the north Canol road which passes through the WOP claims. The area of main interest is approximately one mile north of the Canol road at the 3000' elevation above sea-level.

The claims are owned by R. Chaplin, P. Eng. on behalf of the Anvil Range Syndicate comprising Dupont Explorations of Canada Ltd. and Teck Mining Group, all of Vancouver, B.C.

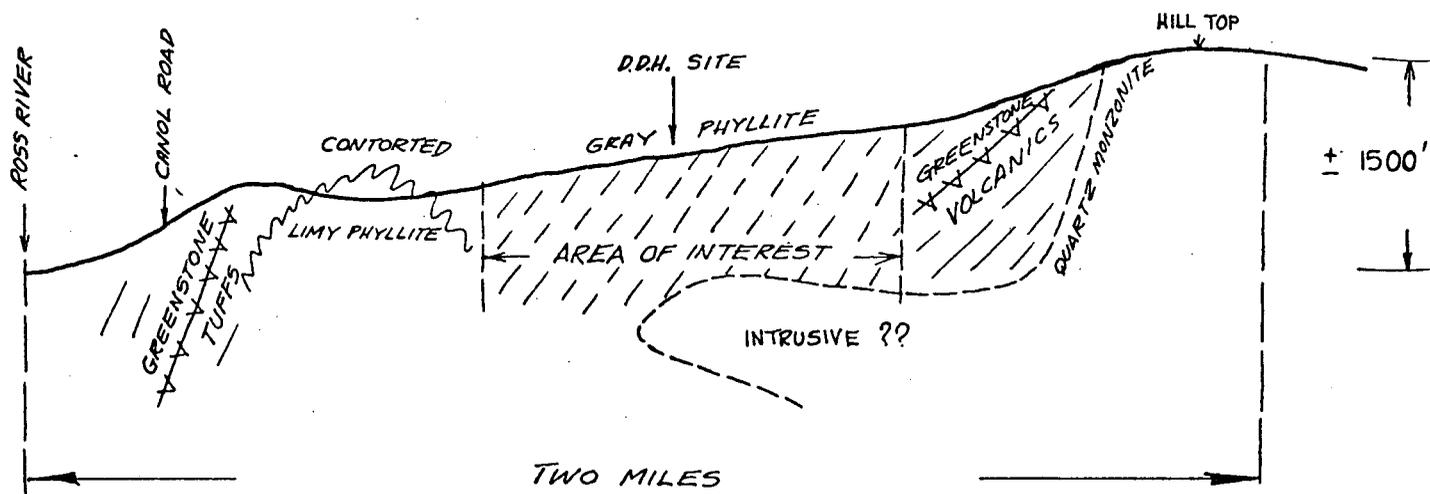
The claim names, record numbers and anniversary dates are as follows:

<u>CLAIM</u>	<u>STAKER</u>	<u>GRANT NO.</u>	<u>ANNIVERSARY DATE</u>
WOP 1-8	R. Chaplin	Y79660-67	July 22, 1974
9-16	M. Berretta	Y79668-75	"
17-20	L. Ladue	Y79696-99	"
21-28	W. White	Y79676-83	"
29-36	J. Ladue	Y80208-15	August 16, 1974
37-44	A. Dieckmann	Y80216-23	"
45-52	N. Dieckmann	Y80224-31	"
53-60	J. Atkinson	Y80232-39	"
61-66	H. Carson	Y80240-45	"

GEOLOGY

Approximately five percent of the land surface is rock outcrop, and the geology is imperfectly known. The rock units comprise, from north to south, a northwesterly trending quartz-monzonite intrusive, in contact (not exposed) with pyrrhotite-rich green "andesitic volcanic" with moderate south-west dipping foliations. The volcanic appears to be overlain by a grey sericitic phyllite of very low south-west dip which is similar, lithologically, to the Faro-Vangorda-Swim Lake schistose rocks which tend to weather forming gentle "dip" slopes of very little outcrop. South of the grey phyllite are a few outcrops of a light coloured highly contorted limy-phyllite of irregular strike and dip (no breccia blocks were recognized). Outcrop is more plentiful, south of the lime-rich rocks, near the Canol road and comprise green-coloured tuffaceous competent greenstones bounded by sheared chloritic borders of steep inclination.

A sketch of the likely geology in profile on the WOP claims is as follows:



The "area of interest" shown on the above sketch contains a combined induced polarization, Bouguer gravity, and base metal geochemical soil anomaly. A 1000-gamma magnetic anomaly flanks the southern part of the "area of interest", however no outcrops have been found to explain the magnetic or gravity features. Bedrock in this area consists of grey sericite phyllite which contains abundant quartz-stringers containing irregularly disseminated pyrrhotite with very minor chalcopyrite forming up to 5% of the vein material. At least two generations of quartz-veins may be observed in the drill core. The sulphide mineralization in veins contains rare larger clots of arsenopyrite with very low gold values. Disseminated scheelite is common in some thin quartz-stringers. The phyllite adjacent to the quartz stringers contains disseminated pyrrhotite in a thin brown biotite border. On weathered outcrop, revealed in trenches, irregularly light cream to rusty alteration areas are common, not as a pervasive zone, but rather a widespread number of narrow alteration zones containing pyrrhotite, biotite, secondary sericite and quartz. The area of interest is approximately 5000 feet long and 2500 feet across, and coincides with the IP, Bouguer gravity and soil geochemical anomaly.

Two surface vertical diamond drill holes were completed at line 32E-46N (318 feet deep) and at line 20E-44N (480 feet deep). The core (95% recovery) consists

of grey phyllite and minor, slightly hornfelsed tuffaceous greenstone. Quartz stringers and narrow silicified zones, commonly parallel to the rock foliation, occur throughout the drill holes. No obvious explanation of the gravity anomaly was observed in the drill core. Rock densities determined from outcrops and drill core varied slightly between 2.7 and 2.9 grams per cubic centimeter. The quartz monzonite intrusive rocks possess a density of 2.65.

No indication of massive lead-zinc sulphide mineralization was observed. One small light coloured float boulder of silicified phyllite contained 1/16" stringers of chalcopyrite along relict foliation planes.

GEOCHEMISTRY

Approximately 250 soil samples were collected from the WOP claims on the cut grid. The soil was obtained from immediately below the white volcanic ash layer and contained very little organic matter. The soil consists of a brown to reddish mineral soil containing numerous fragments and "buttons" of local country rock. The samples were dried, sieved and tested for copper, lead, and zinc using atomic absorption on hot aqua regia extractions. The Ph was slightly acidic. Background values for copper, lead and zinc are 50, 40 and 250 ppm respectively.

The data was plotted on a single map by combining the sum of the individual metal contents as times above background. Anomalous zinc quantities with no corresponding copper or lead anomaly were discarded for plotting purposes.

Zinc-only anomalous soils occurred downhill from the copper-lead-zinc-rich soils. The highest combined values varied up to seven times background, forming three distinct bands, approximately conformable with the IP and gravity features.

Soil sample rejects were later analysed for tungsten and indicated an anomaly approximately coincident with the base-metal anomalous areas. No high molybdenum was indicated from selective tests.

All samples were tested by Acme Analytical Laboratories Ltd. in Ross River, Y.T. and in Burnaby, B.C.

The cause of the geochemical anomaly is due to concentrations of pyrrhotite, scheelite and chalcopyrite in near-surface bedrock and is coincident with an IP and Bouguer gravity anomaly.

GEOPHYSICAL SURVEYS

Please see the Gravity Survey Report by C. Ager under separate cover.

INDUCED POLARIZATION

Approximately 15 line miles of pole-dipole frequency-type induced polarization survey was completed on the property. A GEOSCIENCE frequency-type unit with a 2.5 KW generator operated on a 3.0 - 0.1 frequency range using a 400-foot spread to the first and second separation. Apparent resistivities were calculated in ohm meters.

All receiver deviations were obtained by maintaining power supply at currents between 0.2 and 1 ampere. Transmitter deviations in excess of one percent were not accepted and all such stations were re-read.

The IP effect, called the percent frequency effect (P.F.E.) on the 3.0 - 0.1 cps frequency range, was obtained by deducting transmitter deviations from the receiver deviation.

The background PFE vary up to 10% and two anomalous areas were obtained. One, centering on line 20E and 40N, has a peak of 25% and is coincident with the Bouguer gravity high and soil geochemical anomaly. A second PFE anomaly centered on L20W and 30N is unexplained to date. The former anomaly is clearly due to the disseminated sulphides described in the geology section.

Note that the PFE map shows a plot of the N=2 separation, and consequently indicates an averaging effect from surface down to approximately 400 feet below surface. (In keeping with apparent resistivity range.)

A comparison of the N=1 and N=2 data indicates that the anomaly of known interest dips gently beneath the surface in a westerly direction.

The apparent resistivity plot indicates that the two PFE anomalous zones are due to two different causes in that the 20E - 40N anomaly has a corresponding resistivity low due probably to grey phyllitic rocks whereas the 20W - 30N anomaly is more likely caused by disseminated sulphide in a more competent, more resistive rock, with some possible associated slightly magnetic mineral.

MAGNETOMETER SURVEYS

A ground magnetometer survey was performed with an M-F-1 fluxgate magnetometer with readings at 200-foot intervals. Diurnal variations up to 100 gammas were ignored.

The known, main area of interest lies between a localized magnetic low of 800-1000 gammas on the north, and a linear magnetic high up to 2000 gammas to the south.

In profile, the magnetic pattern suggests a dipole effect due to a slightly magnetic mass that dips gently to the southwest. The cause of the magnetic anomaly has not been determined.

CONCLUSIONS

Base metal concentrations do occur in the Tenas Creek - Ross River trend which is located on a linear extension of the Faro-Vangorda-Swim Lake trend, a distance of approximately 50 miles and parallel to the Tintina Trench.

The mineralization found on the WOP claims tends to be iron, copper and tungsten with very minor gold and silver values. No hint of a large concordant lead-zinc deposit is readily apparent. The area of known mineralization is large but tests of the upper 400 feet below surface to date have not revealed any economic concentrations of mineralization.

All the geochemical and IP results may be explained by the work done, however the gravity and magnetic patterns are unexplained.

It is possible that a large lead-zinc deposit occurs on the claims at some depth in excess of 500 feet below surface.

The writer believed that a copper-tungsten deposit may similarly exist at depth in excess of 500 feet below surface, possibly as deep as 1000 feet.

With reference to the geologic map and the general cross section provided, it may be that the contorted limy-phyllite, underlies the grey phyllite and possibly contacts a buried quartz-monzonite intrusive contact,

producing a large, deeply buried skarn zone that could explain the gravity anomaly and magnetic pattern.

RECOMMENDATIONS

Two deep diamond drill holes are recommended to further test the Bouguer gravity anomaly to a depth of 1500 feet. The two vertical holes should be collared in the central portion of the anomaly and should be of N-Q size using mud.

The cost for such a program would be approximately \$20.00 per foot in terms of 1975 prices.

Respectfully submitted,

A handwritten signature in cursive script that reads "R.E. Chaplin P. Eng." The signature is written in dark ink and is positioned above the typed name.

R.E. Chaplin, P. Eng.

Personnel Involved in Project

M. Berretta	- Geophysicist & Lecturer at BCIT in Burnaby, B.C. June - September 1975
C. Ager, PhD	- Geophysicist August 1975
G. Ellis, BAsC	- Geophysicist August 1975
C. Green	- Laborer & surveyors assistant August 1975
S. Atkinson	- Laborer June - August 1975
L. Ladue	- Laborer June - August 1975
G. Peter	- Laborer June - August 1975
U. Carson	- Cat operator August 1975
R. Chaplin, BAsC	- Geological Engineer June - September 1975
R. Voisine	- Line cutter August 1975
Coates Enterprises Ltd.	- Diamond drillers September 1975

EXPENDITURES ON WOP CLAIMS FOR

ASSESSMENT WORK PURPOSES

1974 SEASON

<u>Date</u>	<u>Detail</u>	<u>Amount</u>
14/6/74	Riverside Grocery - Whse	\$ 1,398.84
26/6/74	Wages - L. Ladue, G. Peter, S. Atkinson, Dr. Berretta, G. Gray, J. Hayes	4,190.00
2/7/74	Prof. Geo. Services	5,050.00
7/7/74	ACME Geochem	186.94
7/7/74	Welcome Inn	368.55
6/8/74	Ross River Store	900.00
20/8/74	Listers (saws)	317.00
25/8/74	C. Matsen (500)	200.00
25/8/74	Crew Pay	1,064.00
26/8/74	Arctic Tracking (saw)	46.10
26/8/74	Ross River Store	335.66
26/8/74	L. Ladue (200.00
26/8/74	S. Atkinson (pro rated)	80.00
29/8/74	Bombardier	600.00
30/8/74	ACME Geochem	608.05
31/8/74	Welcome Inn - meals	360.95
31/8/74	Welcome Inn - meals	308.50
1/9/74	S. Atkinson	175.00
2/9/74	Bombardier	100.00
5/9/74	U. Carson	200.00
6/9/74	Eastern Assoc. Line Cutting	1,515.00
18/9/74	G. Ellis	1,000.00
21/9/74	Drillers extra pay	725.00
21/9/74	S. Atkinson & Family	1,000.00
21/9/74	G. Peter	490.00
21/9/74	G. Gray (pro rated)	650.00
22/9/74	L. Ladue	200.00
22/9/74	Canol Petroleum	60.00
23/9/74	Welcome Inn	1,702.00
27/9/74	Whitehorse Esso (pro rated)	100.00
28/9/74	Lester Saw #2	317.90
3/10/74	Whitehorse Assay	117.00
3/10/74	Whitehorse Esso (pro rate)	150.00
28/10/74	M. Berretta	2,000.00
28/10/74	Cat work	245.04
29/10/74	Welcome Inn - drillers	2,412.05
	Prof. Geo Services (pro rated) July to September 1974	8,175.00
	Personal Expenses of R. Chaplin (pro rate)	562.00
	PGS Cheques (pro rate)	1,807.00
	Camp Supplies from Deakin Equipment (pro rate)	2,463.72
	Diamond Drilling, Coates Enterprises	15,693.00
	Gravity Survey, C. Ager (pro rate)	8,625.00
	TOTAL	\$66,699.30

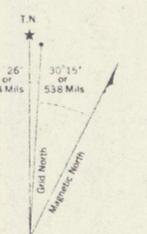
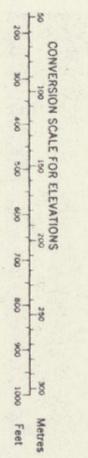
WRITER'S QUALIFICATIONS

- Geological Engineer B.A.Sc. - U.B.C. - 1958
- Professional Engineer - B.C. & pending in Y.T.
- 24 years experience in mineral exploration

Yours truly,

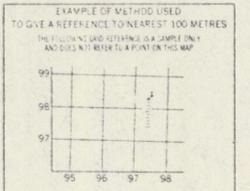
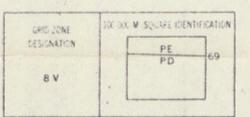
A handwritten signature in cursive script that reads "R.E. Chaplin P. Eng." The signature is written in dark ink and is positioned above the typed name.

R.E. Chaplin, P. Eng.



Use diagram only to obtain numerical values.
APPROXIMATE MEAN DECLINATION 1972
FOR CENTRE OF MAP
Annual change decreasing 4.2"

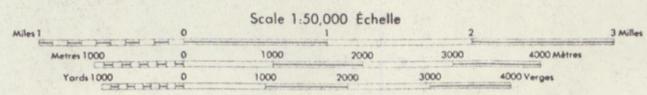
ONE THOUSAND METRE
UNIVERSAL TRANSVERSE MERCATOR GRID
ZONE 8



REFERENCE POINT	CHURCH (as above)
EASTING: Read number on grid line immediately to left of point	97
EASTING: Estimate distance of square from this line towards to point	5
NORTHING: Read number on grid line immediately below point	975
NORTHING: Estimate distance of square from this line towards to point	4
EXAMPLE: MILITARY GRID REFERENCE: 975084	
Nearest 100 metres grid reference (100 metres about 53 miles)	

BROWN NUMBERED TICKS INDICATE THE 1000 METRE U.T.M. GRID ZONE 9

TENAS CREEK
YUKON TERRITORY



This Provisional Map is equivalent to a standard map in accuracy of content

Some names on this map are not yet official. Corrections or additions are invited by the Surveys and Mapping Branch.

CONTOUR INTERVAL 100 FEET
Elevations in Feet above Mean Sea Level
North American Datum 1927
Transverse Mercator Projection

Cette carte provisoire équivaut à une carte régulière au point de vue précision de l'information.

Certains noms inscrits sur cette carte ne sont pas encore officiels. La Direction des levés et de la cartographie saurait être au public de lui signaler corrections et additions.

EQUIDISTANCE DES COUPRES 100 PIEDS
Élevations en pieds au-dessus du niveau moyen de la mer
Système de référence géodésique nord-américain, 1927
Projection transverse de Mercator

Carte en 1970 par la DIRECTION DES LEVÉS ET DE LA CARTOGRAPHIE, MINISTÈRE DE L'ÉNERGIE, DES MINES ET DES RESSOURCES, d'après des photographies aériennes prises en 1967-1968. Levés sur le terrain en 1967. Imprimée en 1973.

La traduction en numérique de la compilation et du tracé a été réalisée par le système de cartographie automatique.

Ces cartes sont en vente au Bureau des Cartes du Canada, Ministère de l'Énergie, des Mines et des Ressources, Ottawa, ou chez le vendeur le plus près.

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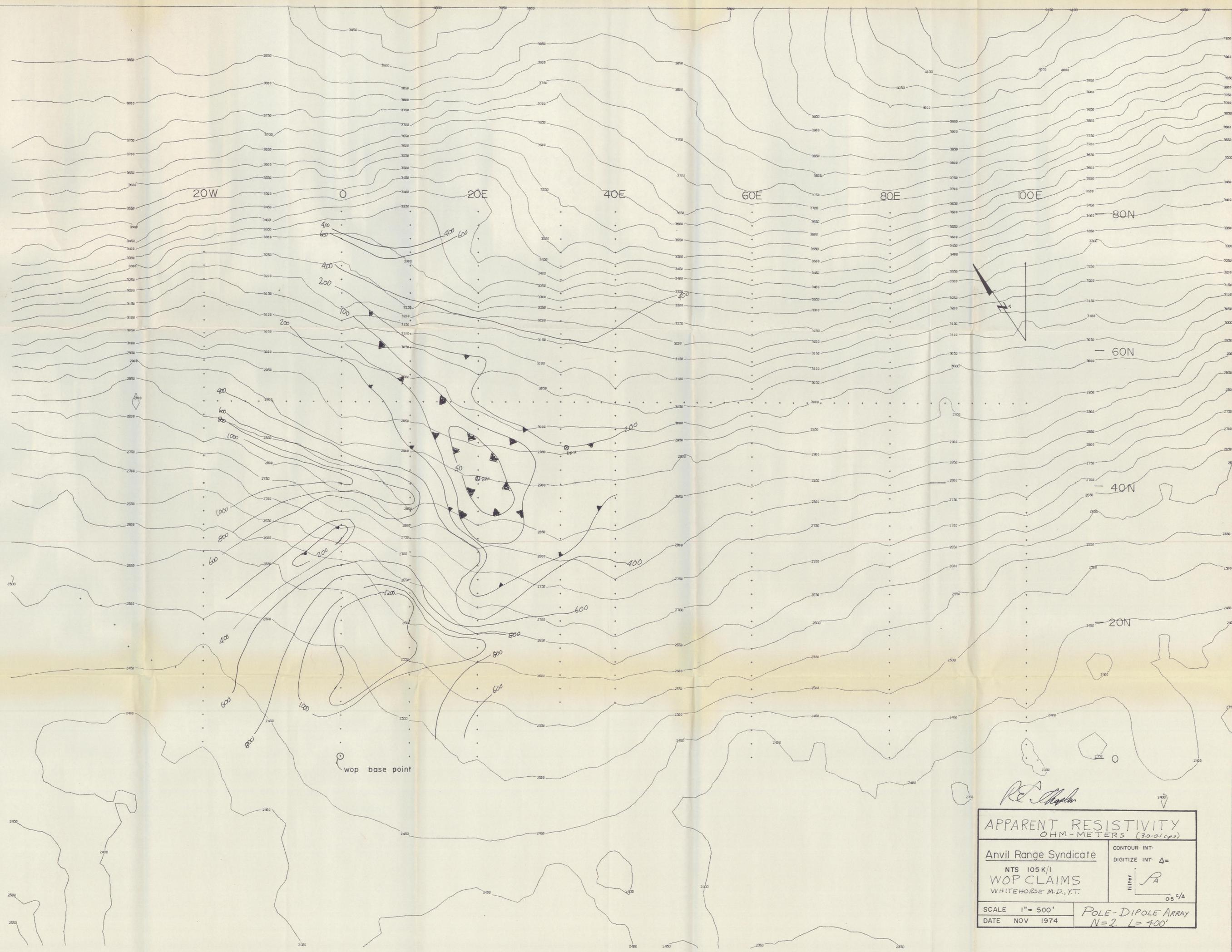
Produced 1970 by the SURVEYS AND MAPPING BRANCH, DEPARTMENT OF ENERGY, MINES AND RESOURCES, from aerial photographs taken in 1967-1968. Field Surveys 1967. Printed 1973.

Digitizing of the compilation and the tracing were carried out on the Automated Cartographic System.

Copies may be obtained from the Canada Map Office, Department of Energy, Mines and Resources, Ottawa, or your nearest map dealer.

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Roads: cart track, trail or portage
Routes: de terre, sentier ou portage



APPARENT RESISTIVITY
 OHM-METERS (30-01 cps)

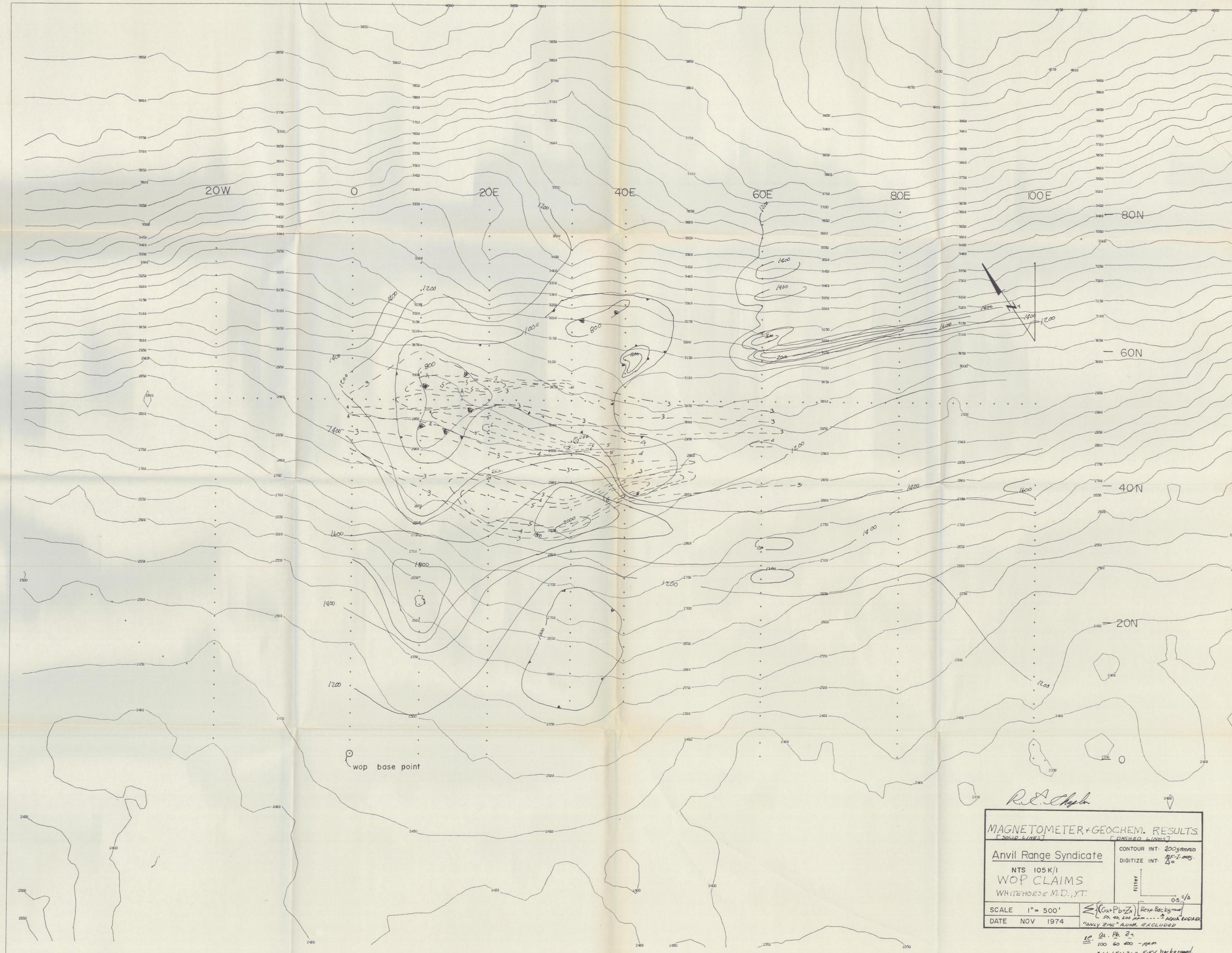
Anvil Range Syndicate
 NTS 105 K/1
 WOP CLAIMS
 WHITEHORSE M.D., Y.T.

CONTOUR INT. _____
 DIGITIZE INT. $\Delta =$ _____
 filter $\frac{R}{0.5 \text{ } \mu\text{A}}$

SCALE 1" = 500'
 DATE NOV 1974

POLE-DIPOLE ARRAY
 N=2, L=400'

RE Alpha



R.A. Chapin

MAGNETOMETER + GEOCHEM. RESULTS
 [SOLID LINES] [DASHED LINES]

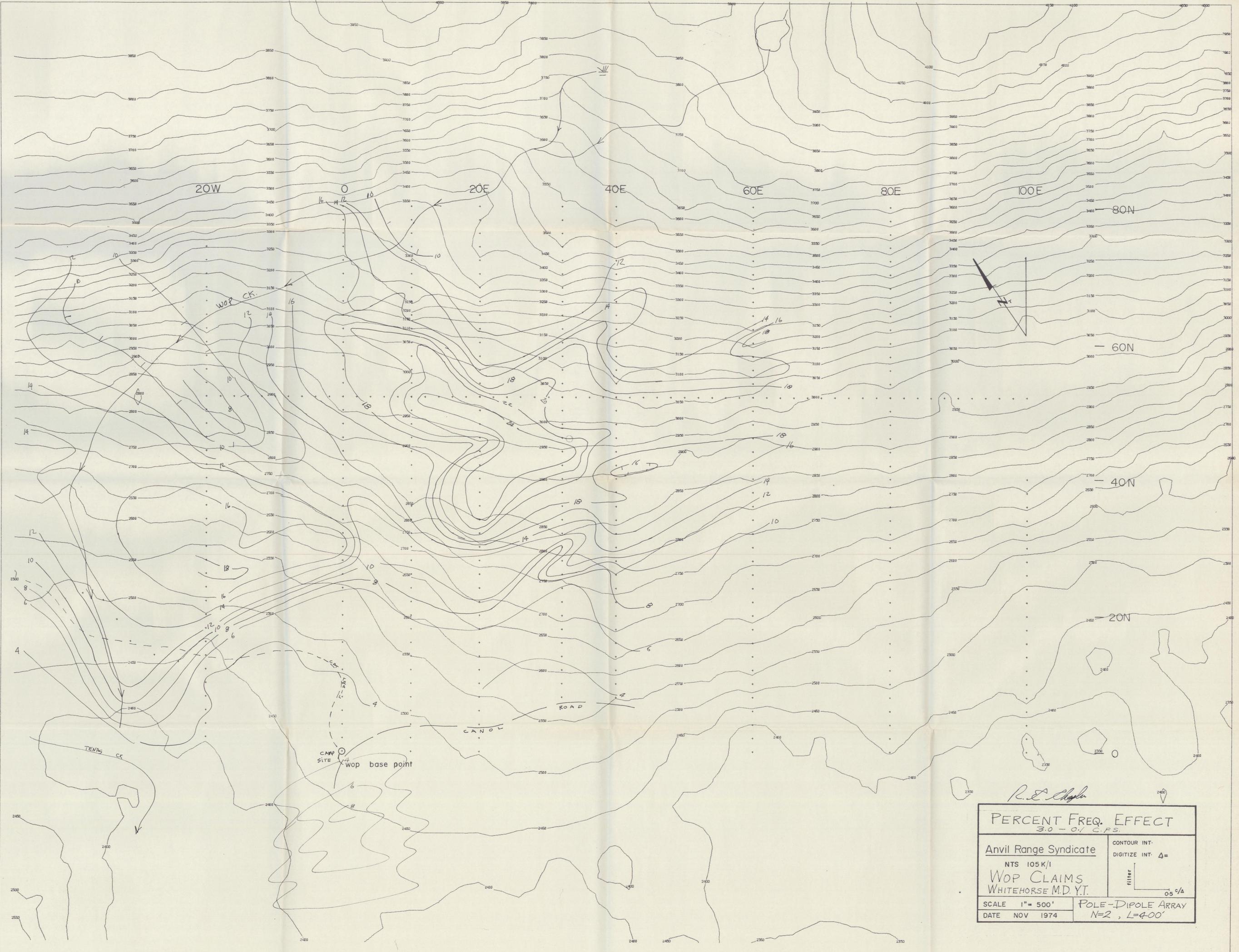
Anvil Range Syndicate
 NTS 105 K/1
WOP CLAIMS
 WHITEHORSE M.D., Y.T.

CONTOUR INT. 200 gamma
 DIGITIZE INT. 1/2" = 100 gamma

filter

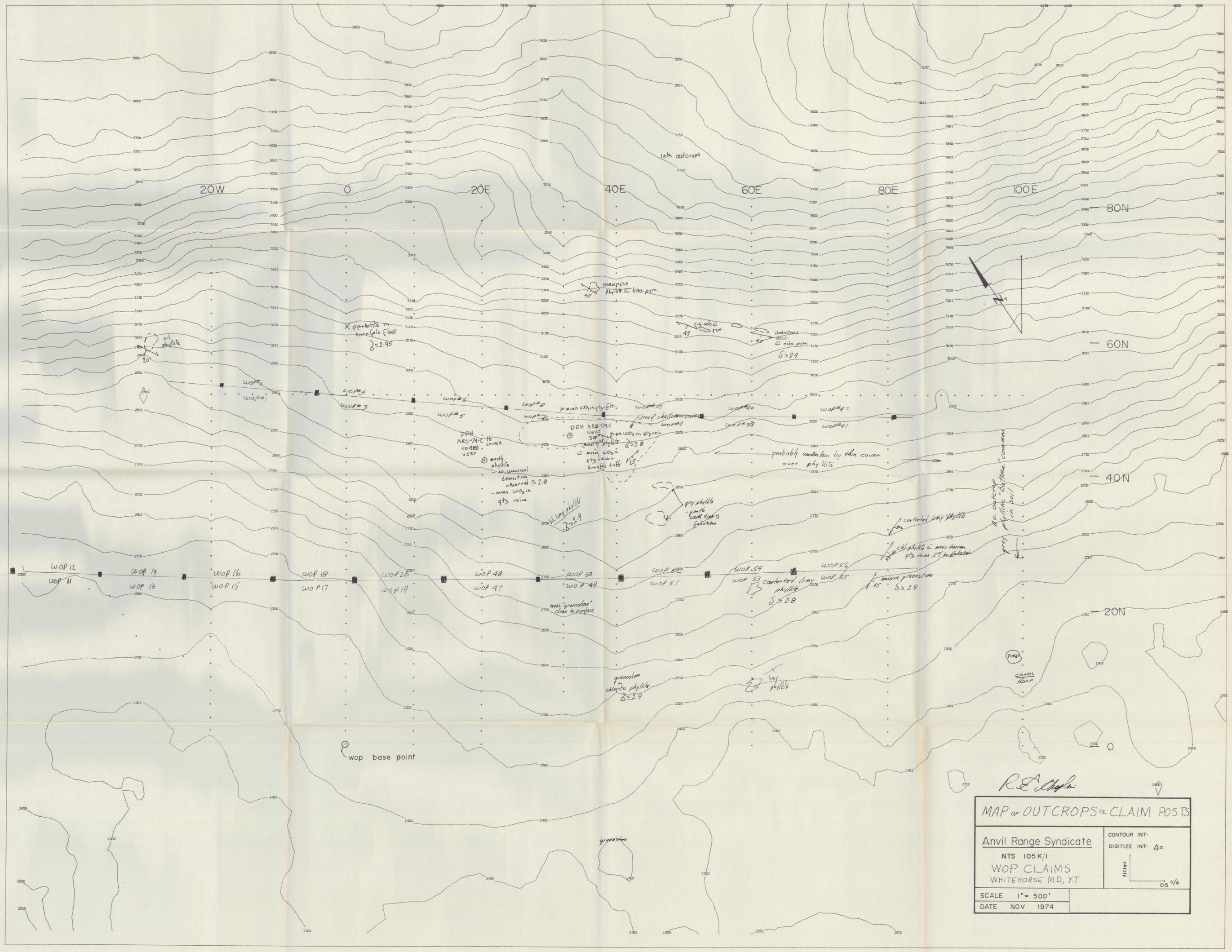
SCALE 1" = 500'
 DATE NOV 1974

$\sum (Cu + Pb + Zn)$ Resp. Background
 50, 40, 200 ppm --- 1 AQUA REGIAE
 "ONLY ZINC" ANVM. EXCLUDED
 i.e. Cu, Pb, Zn
 100 60 400 - ppm
 2x + 15x + 2x = 5.5x background



R. E. Chappell

PERCENT FREQ. EFFECT 3.0 - 0.1 C.P.S.	
Anvil Range Syndicate	CONTOUR INT. DIGITIZE INT. Δ =
NTS 105 K/I WOP CLAIMS WHITEHORSE M.D. Y.T.	filter 0.5 c/A
SCALE 1" = 500'	POLE-DIPOLE ARRAY N=2, L=400'
DATE NOV 1974	



MAP OF OUTCROPS & CLAIM POSTS

Anvil Range Syndicate		CONTOUR INT. =
NTS 105 K/1		DIGITIZE INT. Δ =
WOP CLAIMS		
WHITEHORSE M.D., Y.T.		
SCALE 1" = 500'		
DATE NOV 1974		

R.E. Stephn