

6635  
part 4 of 4

GEOPHYSICAL SURVEY  
NORMA CLAIM - #207  
SIMILKAMEEN M.D. B.C.  
10 UNITS

120-50SE      1-11-77 : 8-12-77  
92H-7E

Alfred R. Allen, P.Eng.

For:

GILFORD RESOURCES LTD.

302 - 750 West Pender  
Vancouver, B.C.

By:

ALLEN GEOLOGICAL ENGINEERING LIMITED

203 - 2025 Bellevue  
West Vancouver, B.C. V7V 1B9

December 31, 1977.

MINERAL RESOURCES BRANCH ASSESSMENT REPORT N.O. <u>6635</u> MAP NO. <u>PART 4 of 4</u>
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INTRODUCTION (A)

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- B. Subject Survey Costs: Personnel, rates/day  
All field & Office.....12.

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- 1. Location
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Geochemical
- 7 sheets - V.L.F. - E.M. Profiles

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## INTRODUCTION (A)

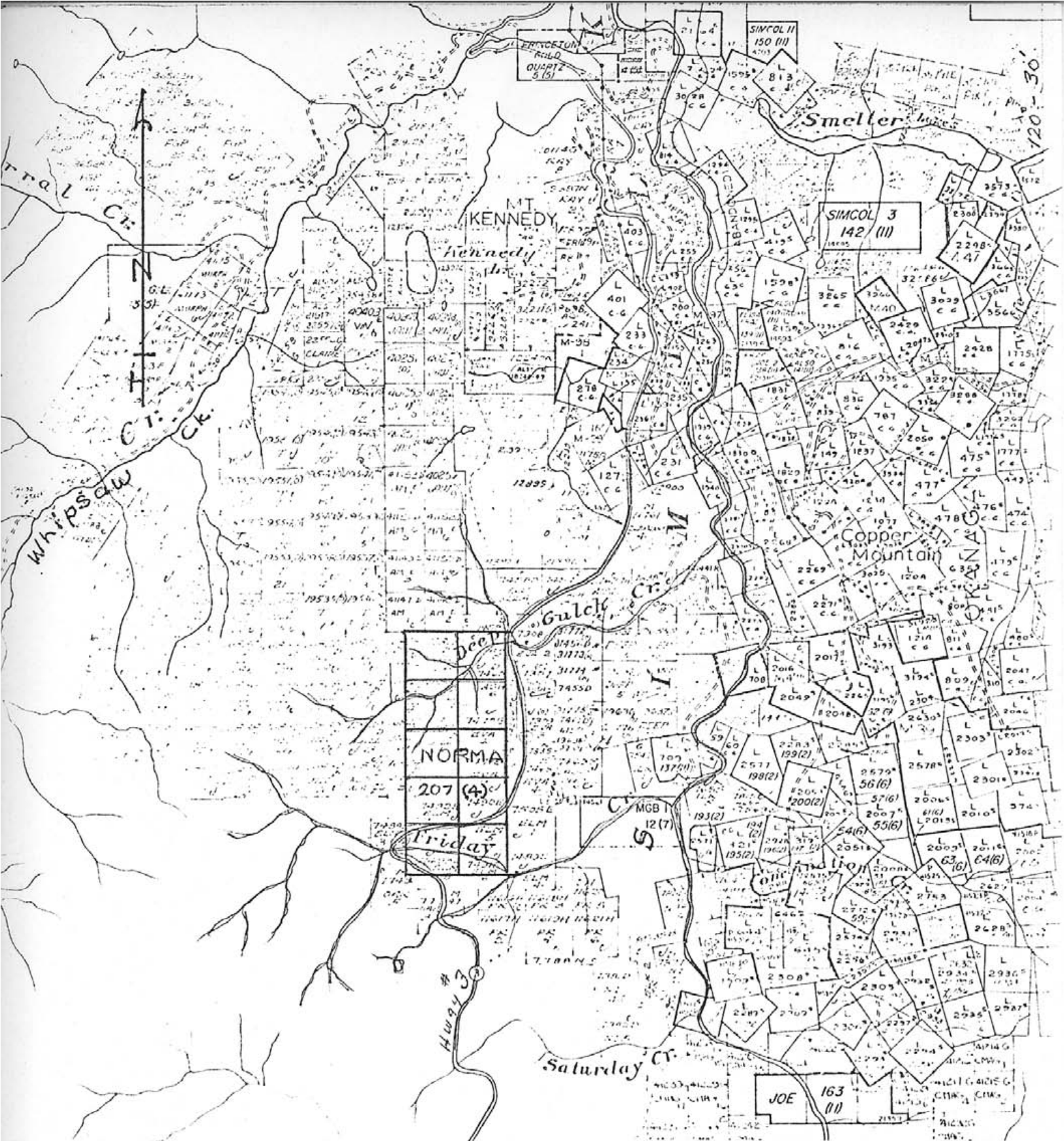
The Norma property is 24 kilometres south of Princeton on Highway #3 between Friday and Deep Gulch Creeks at  $49^{\circ}-18'$  latitude and  $120^{\circ}-34'$  longitude.

Mr. J.W. Galagher staked the area in 1952. It was subsequently held by Deep Gulch Mines and Oro Mines. Gilford Resources Ltd. acquired the Norma claim from J. Turner, locator, in early 1977.

The east boundary of the property is just west of the exposed Copper Mountain igneous complex. The north three-fifths of the claim is underlain by Nicola andesitic rocks and the remainder by Princeton volcanics. Faulted and silicified rocks exposed by trenches near the east boundary contain pyrite with some pyrrhotite and chalcopyrite.

Geological, topographic, geochemical, magnetometer and electromagnetic surveys were conducted over a surveyed grid covering the 250 hectare property by Allen Geological Engineering Ltd., from November 1 - December 8, 1977.

Over 26.5 line kilometres 268 soil samples were taken and assayed for copper. Two hundred and fifty altimeter, 363 magnetometer and 400 VLF-EM observations were recorded. Geological traverses included roads and all grid lines.



**GILFORD RESOURCES LTD.**  
**INDEX**  
**PROPERTY MAP**

**NORMA 1-10 207 (4)**

No. 2

31/12/77

Allen Geological Engineering Ltd.

Per Allen R. Allen P. Eng.

Sunday Cr. 49°-15'

92 H-7 E

## ELECTROMAGNETIC SURVEY

### NORMA CLAIM

1-11-77 : 8-12-77

### INTRODUCTION

An electromagnetic survey was conducted over the Norma property in November and December, 1977. Alfred R. Allen, P.Eng., was the operator and T.Thomas and R. Thomas were field assistants. Richard O. Crosby, P.Eng., consulting geophysicist, assisted with interpretation of the survey results.

Observations were made over a surveyed grid at 50 metre intervals along lines directed west at 75 metre spacing. A Ronka EM 16 instrument was used, and the Seattle VLF transmitter provided clear transmission.

Profiles of in phase and quadrature tilt angles for each grid line indicate at least six conductor zones. A plan of filtered in phase tilt angles clearly illustrated these results.

Interpretation of the electromagnetic response, coupled with magnetic data, resulted in determination of target areas, three of which have been recommended for further investigation.



GILFORD RESOURCES LTD.

LOCATION MAP

SCALE: 1" = 136 MI.

Drawn by \_\_\_\_\_ Date 3/12/57  
 Checked by \_\_\_\_\_ Dwg. no. 1

*Allen Geological*  
 ALLEN GEOLOGICAL  
 ENGINEERING LTD.

### LOCATION AND ACCESSIBILITY

The Norma property is located 24 kilometres south of Princeton, B.C., on the west side of Highway #3, between Friday and Deep Gulch Creeks.

Copper Mountain is about 4 kilometres and the Similkameen mine about 10 kilometres to the northeast.

Geographic location is west  $120^{\circ}-34'$  longitude north  $49^{\circ}-18'$  latitude.

### PROPERTY

The legal corner post for the Norma claim is 60 metres west of Highway #3, and 2,500 metres north of Friday Creek.

It comprises five units south and two units west.

The tag number is 35043.

John Turner located the claim March 7 and 8, 1977, and recorded it March 17, 1977.

On Claims Map 92H-7E of the B.C. Ministry of Mines and Petroleum Resources, the Norma claim is designated as #207.

### HISTORY

J.W. Galagher prospected and staked the area in 1952.

Subsequently Deep Gulch Mines Ltd. held the property.

In 1968 it was owned by Oro Mines Ltd., and limited field work included some geophysical investigations, trenching, and several diamond drill holes.

The claim was acquired by Gilford Resources Ltd. in the spring of 1977.

### TOPOGRAPHY

The Norma property is located on the gentle slopes of Friday Mountain, west of the Similkameen River, between 3,700 and 4,800 feet above sea level.

Friday Creek flows easterly in a V-shaped valley at the south boundary and Deep Gulch Creek flows northeast across the northerly part of the claim in a shallow open valley. The creeks are separated by an easterly sloping rounded ridge.

### GEOLOGY

The Norma claim is located on the western boundary of the Copper Mountain intrusive complex.

The north three-fifths of the claim area is underlain by Upper Triassic Nicola andesitic rocks. Limited exposures show these to be faulted, silicified and pyritized.

The south two-fifths of the claim area is underlain by Tertiary volcanic rocks of the Princeton group.

### GRID CONTROL

A base line was surveyed by chain and Brunton compass along the east boundary of the Norma claim.

Stations were established at 75 metre intervals from 0+00 to 15+00 south, and from there to 24+00 south at 150 metre intervals.

From base line stations lines were surveyed west to the claim boundary. Along each line, from 0+00 to 14+25 south stations were



established at 50 metre intervals, and from there to 24+00 south at 100 metre intervals.

All lines were blazed and flagged.

Grid location was marked on a stake and/or flagging at each station.

The grid is shown on the accompanying maps #3 and #4.

#### VLF-ELECTROMAGNETIC SURVEY

At each grid station observations were taken with a Ronka 16 instrument. The transmitter VLF station at Seattle provided clear reception.

In phase and quadrature tilt angles were determined and recorded. These were mapped on profiles of each grid line and are included with this report.

In phase tilt angles were used, in accordance with the technique devised by Teck Corporation consultants of Toronto, to clarify the survey data and display the results on a single plan map. This plan of "filtered" results is shown on map #3 accompanying this report.

#### SURVEY RESULTS

The filtered VLF-EM survey results, shown by coloured areas on Map #3, illustrate the conductor zones on the grid area. Interpretation of field data was made by the writer and Mr. Richard O. Crosby, consulting geophysicist of 422-510 West Hastings Street, Vancouver, B.C.

The large anomalous zone extending along Deep Gulch Creek may be indicative of a strong but dislocated fault. The three zones near the northwest corner of the area are considered to be indicative of a weaker zone of faulting, displaced by west and northwest cross faults.

The two parallel zones near the southeast corner of the grid area, 8+50S to 12+75S and 0+00 to 3+50 W, are interpreted as conductor zones caused by bedrock mineralization.

A composite of electromagnetic, magnetic and geochemical survey results are shown on Map #4 accompanying this report. Target areas warranting further investigations are outlined at three locations.

No.1 is the two northerly trending conductor zones west of the trenched area.

No.2 includes the indicated Deep Gulch Creek fault zone, a cross fault and a magnetic high zone.

No.3 includes the fault and zones of high and low magnetic effects.

SUMMARY AND CONCLUSIONS

The Norma claim is favourably located 24 kilometres south of Princeton, and southwesterly from the Similkameen mine and the former Copper Mountain operation.

Limited trenching on the property exposed strong faulting, shearing, silicification and pyritization of Nicola andesitic rocks.

The map of the "filtered" electromagnetic results shows well defined zones of positive response, from which three target areas have been outlined for further investigation.

A programme of stripping and trenching is recommended on the Norma property.

RECOMMENDATIONS

It is herewith recommended that the following exploratory investigations be conducted on the Norma property.

	<u>Estimated Costs</u>
1. On target areas #1 and #2 expose bedrock for detailed examination by stripping and trenching the conductor zones,	\$ 5,000.00
2. Strip and trench the indicated fault zone and magnetic high and low areas in order to provide detailed bedrock information,	2,000.00
3. Extend trenches 2, 3, 4, 5 to provide additional information pertaining to the faulting, silicification and sulphide mineralization,	2,000.00
4. Map and sample bedrock exposures,	2,000.00
5. Office, overhead and supervision,	2,000.00
6. Contingencies,	<u>1,000.00</u>
Estimated total costs	\$14,000.00

The estimated time which will be required to complete the above works programme is six weeks.

Respectfully submitted,

ALLEN GEOLOGICAL ENGINEERING LIMITED

Per Alfred R. Allen P.Eng.

Alfred R. Allen

Vancouver, B.C.

December 31, 1977.

REFERENCES

- Rice, H.M.A., G.S.C., Princeton Sheet, Mem. 243
- B.C. Department of Mines, M.M. Report 1959 pp. 53-54
- Maps, 888A, 889A G.S.C.
- Map, Princeton Sheet 92 H/SE, N.T.S., 1969
- Watson, R.K. and Finney, W.R.,  
Reports on the JJJ, JILL, ASH, EVA, TOW Groups,  
Oro Mines Ltd., 1968  
Assessment Report #1601
- Fraser, D.C.,  
Contouring of VLF - EM Data,  
Geophysics, Vol 34, #61, 1969, pp. 958-967

\* \* \* \* \*

10.

# Allen Geological Engineering Limited

#203 - 2025 Bellevue

West Vancouver, B.C.

V7V 1B9

926-4785

December 27, 1977.


British Columbia Securities Commission  
756 Fort Street  
Victoria, B.C.

Dear Sirs:

Re: Gilford Resources Ltd.

I hereby consent to the use of my report on the Norma property, Copper Mountain Area, Similkameen M.D., B.C., in any prospectus or Statement of Material facts or other material to be filed with the British Columbia Securities commission or the Vancouver Stock Exchange by Gilford Resources Ltd.

Yours very truly,

 P.Eng.

Alfred R. Allen

For:

ALLEN GEOLOGICAL ENGINEERING LIMITED

# Allen Geological Engineering Limited

203 - 2025 Bellevue  
West Vancouver, B.C. V7V 1B9

926-4785

## CERTIFICATE

December 27, 1977.

I, Alfred R. Allen, certify that:

I am a graduate of the University of British Columbia  
and hold the following degrees therefrom:

BASc Geological Engineering 1939

MASc Geological Engineering 1941

I am a member of the Association of Professional Engineers of  
the Province of British Columbia.

I have practised my profession for the past thirty years.

I hold no interest in the properties or securities of Gilford  
Resources Ltd., or affiliates thereof, nor do I expect to  
receive any, directly or indirectly.

The accompanying report on the Norma property is based on  
field work done by the writer during November - December, 1977.

I consent to this report being filed with the British Columbia  
Securities Commission.

*(Alfred R. Allen)*

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Alfred R. Allen

THE NORMA PROPERTY

SIMILKAMEEN M.D. B.C.

120 - 50 SE

PERSONNEL AND TIME

GRID

GEOLOGICAL SURVEY

GEOCHEMICAL SURVEY

MAGNETOMETER SURVEY

ELECTROMAGNETIC SURVEY

TRENCHING

Alfred R. Allen, P.Eng., Field

	<u>Grid,</u>	<u>Geol.</u>	<u>Geochem.,</u>	<u>Mag.</u>	<u>EM</u>	<u>Trenches</u>	<u>Man Days</u>
Nov.77	-	16-20	22&23	24&25	26	•	10
Dec.77	-	--	--	--	1,2,4,5,7	6	6

Tom Thomas and Richard Thomas, Field

Nov.77	1-9	10&11	12-18	19-24	25-30	--	60
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Alfred R. Allen, P.Eng., Reports and Maps

Dec.77 9-17, 19-22, 27-31

Jan.78 3-10.



ELECTROMAGNETIC SURVEYNORMA CLAIM - #207120 - 50 SESIMILKAMEEN M.D. B.C.For: GILFORD RESOURCES LTD.

OPERATOR: Alfred R. Allen, Geological Engineer, @ \$185.00/day  
 202 - 2025 Bellevue, West Vancouver, B.C.  
 November 1, 1977 - January 10, 1978

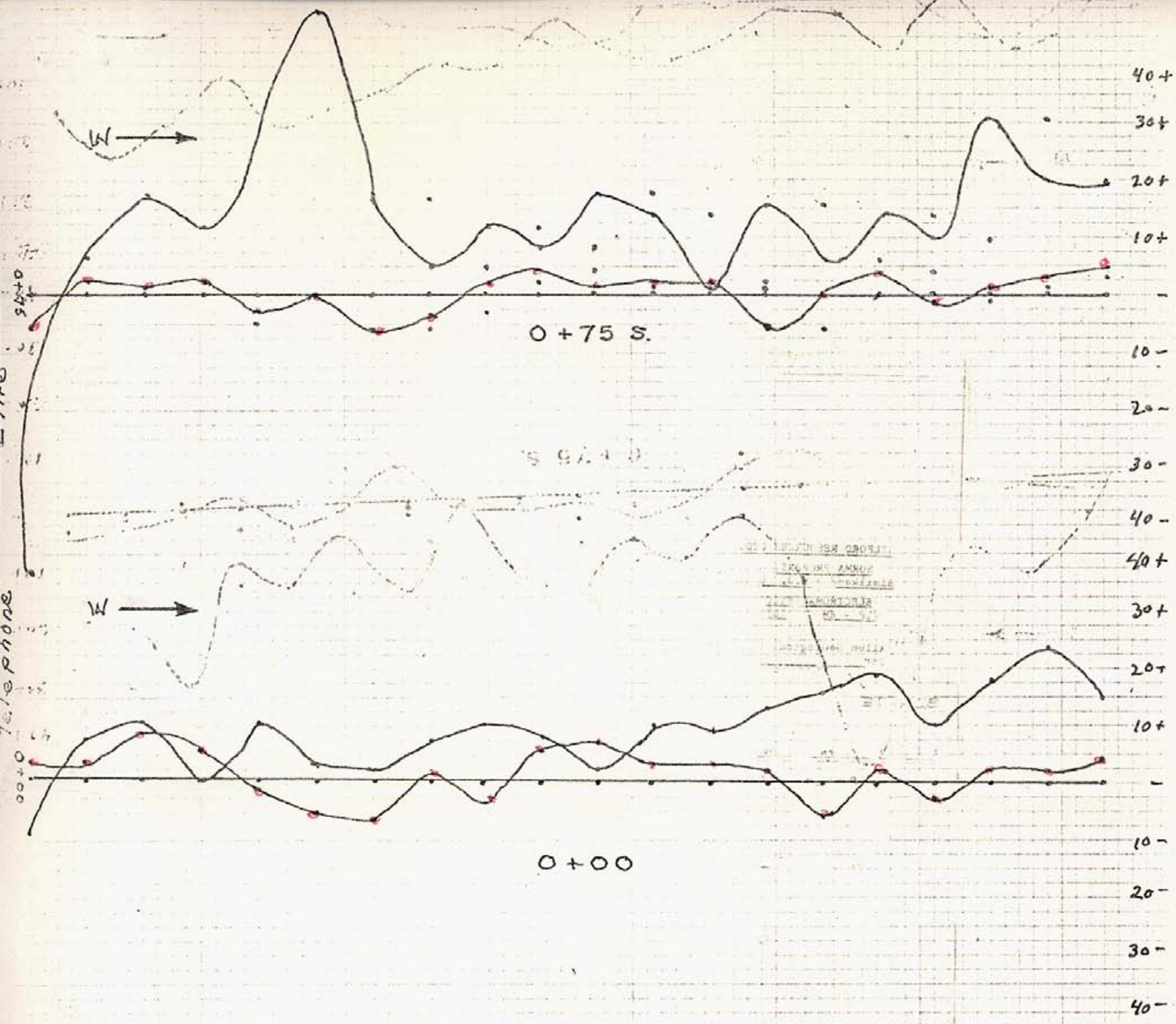
ASSISTANTS: Thomas Thomas, Experienced field man @ \$ 99.00/day  
 Richard Thomas, Field helper @ \$ 55.00/day  
 R.R. 4, Mission, B.C.  
 November 1-30, 1977.

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<u>SURVEY:</u>	<u>Man Days</u>	<u>Costs</u>
T. Thomas	6	\$ 594.00
R. Thomas	6	330.00
Alfred R. Allen	6	1,110.00

Data Processing, Mapping, Interpretation, Preparation

Alfred R. Allen	6	1,110.00
Transportation		160.00
Food		170.00
Supplies		30.00
Accommodation, 18 man. days.		250.00
Maps, reproductions, stenographic		30.00
Grid, (pro-rated)		450.00
Instrument Rental, Nov 23-Dec 5/77, 16 days @ \$ 13.50/day <i>Serial # 291, VLF-EM unit</i>		218.00
<b>Total costs,</b>		<b>\$4,452.00</b>

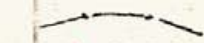



MINERAL RESOURCES BRANCH  
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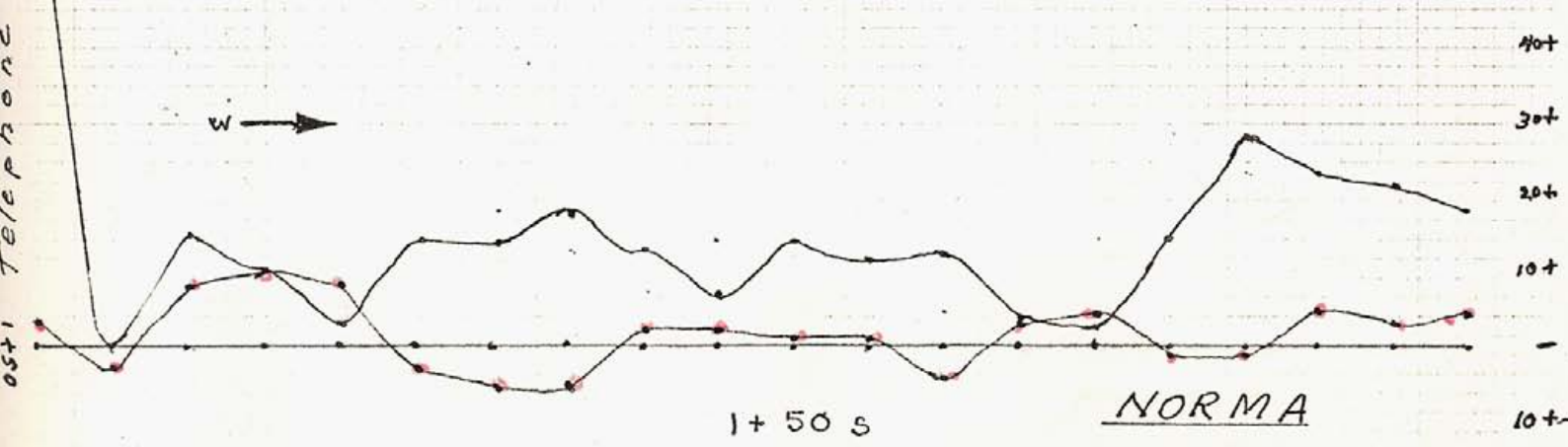
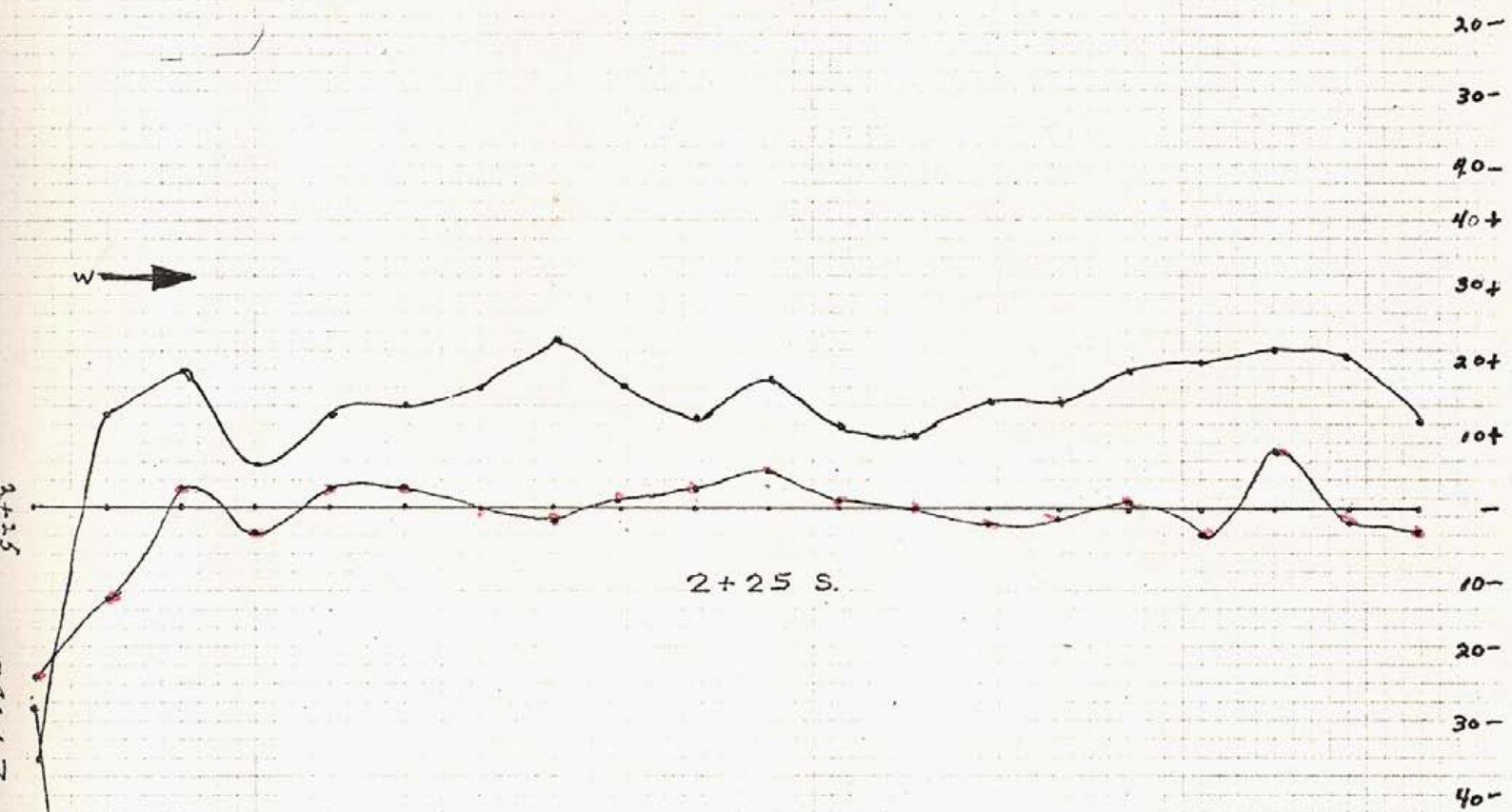
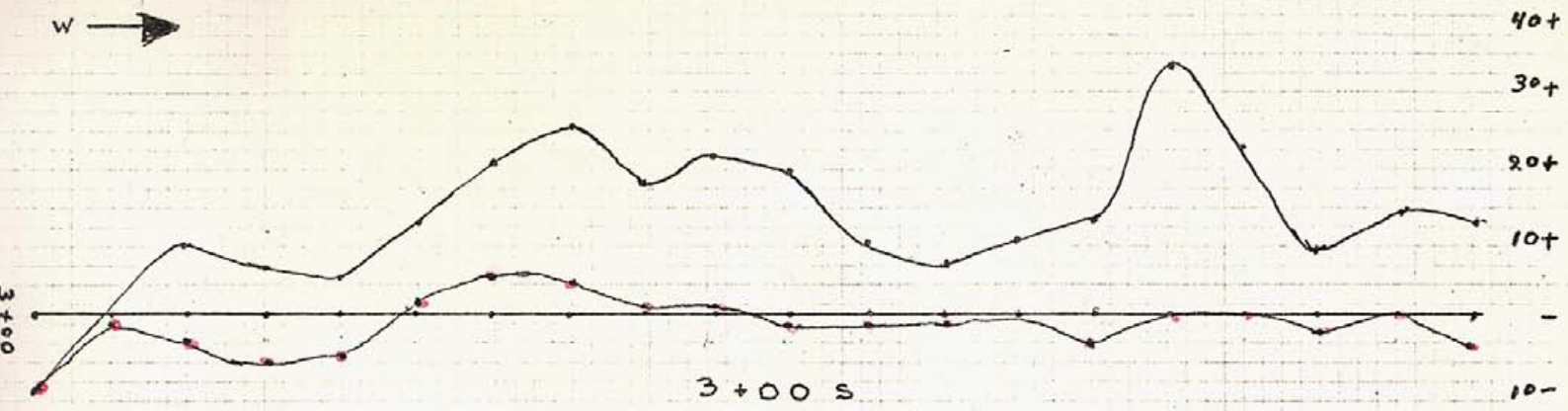
NORMA  
E-M. PROFILES

Dec. /77 *Clifford R. Allen P. Eng.*

0 10 Degrees  
 0 50 Metres

In Phase   
 Quad. 





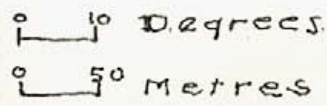
NORMA

E. M. PROFILES

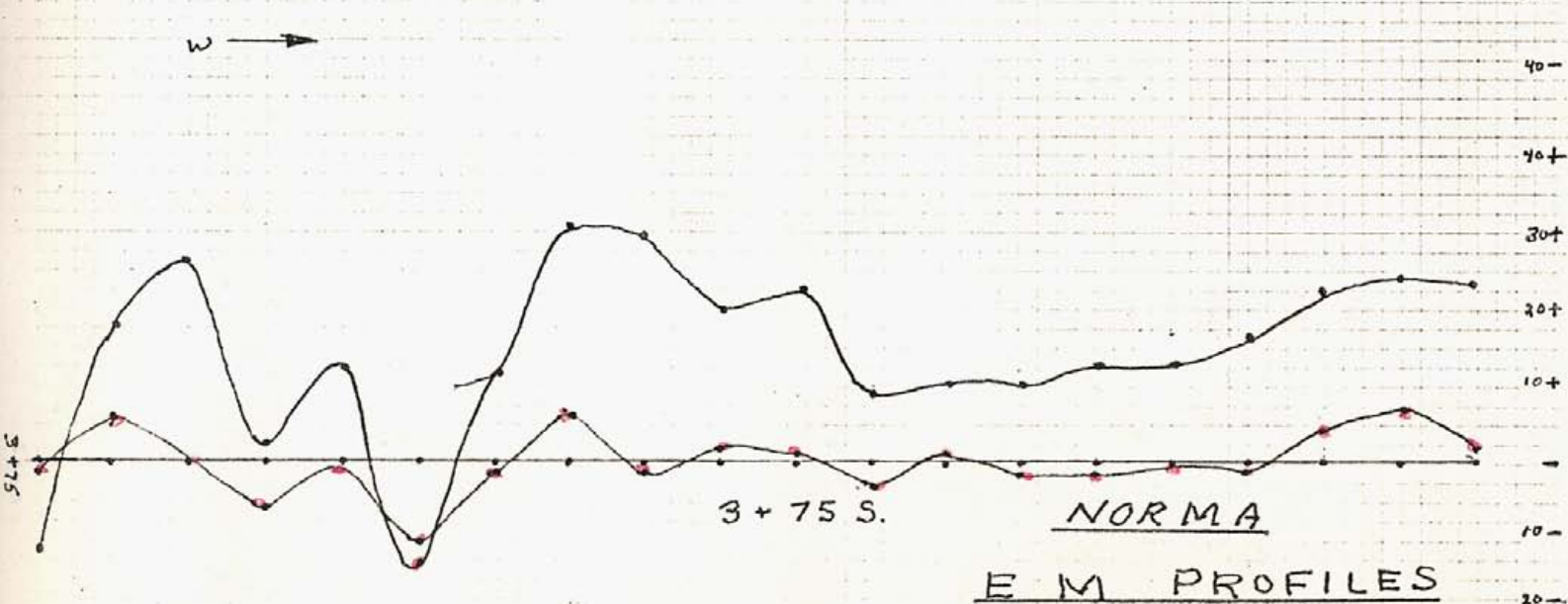
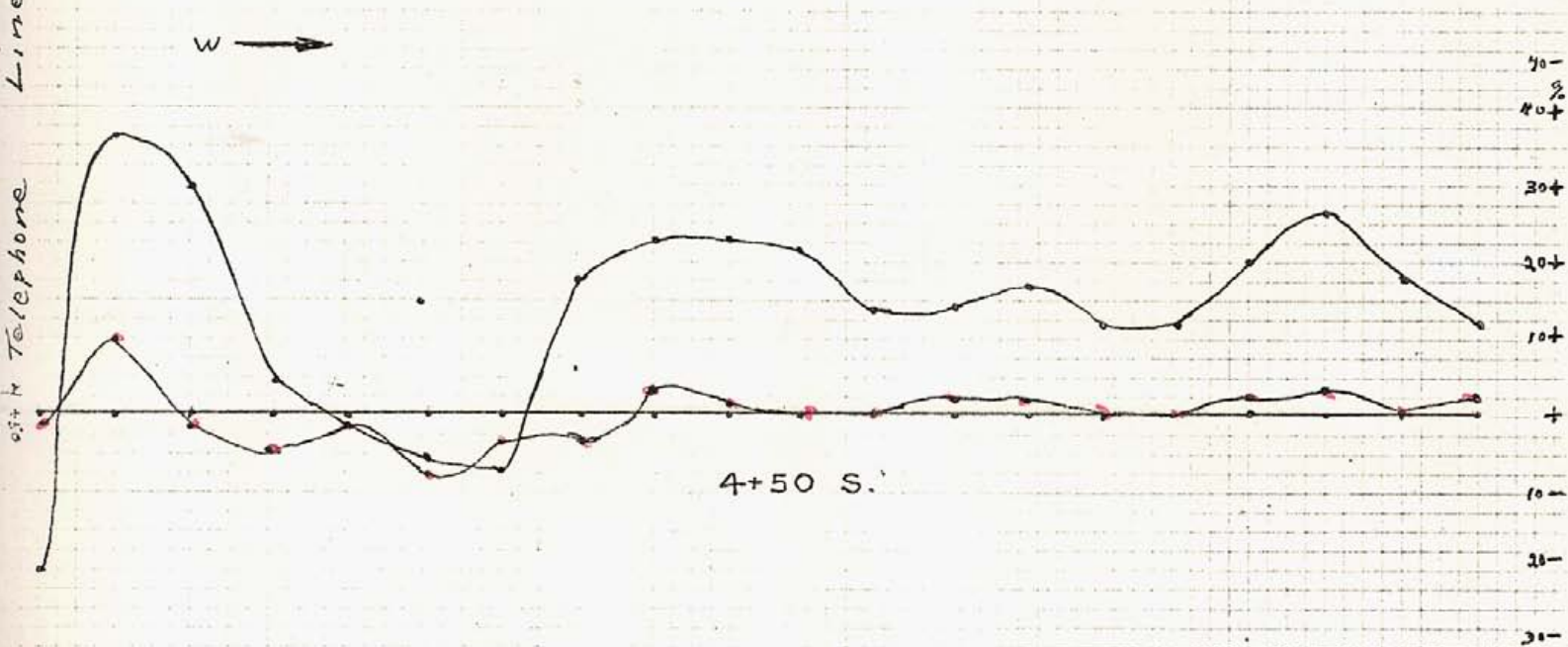
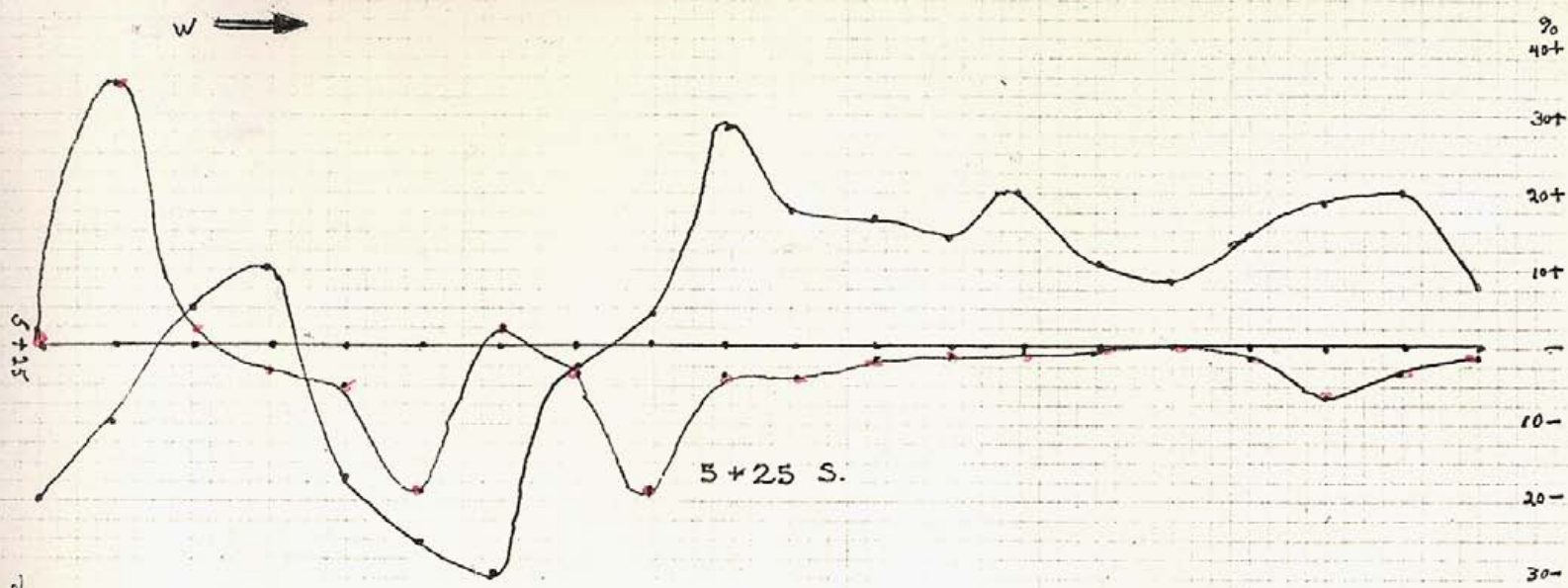
Dec 177 *W. R. Allen* P. Eng.

In Phase



Quad.



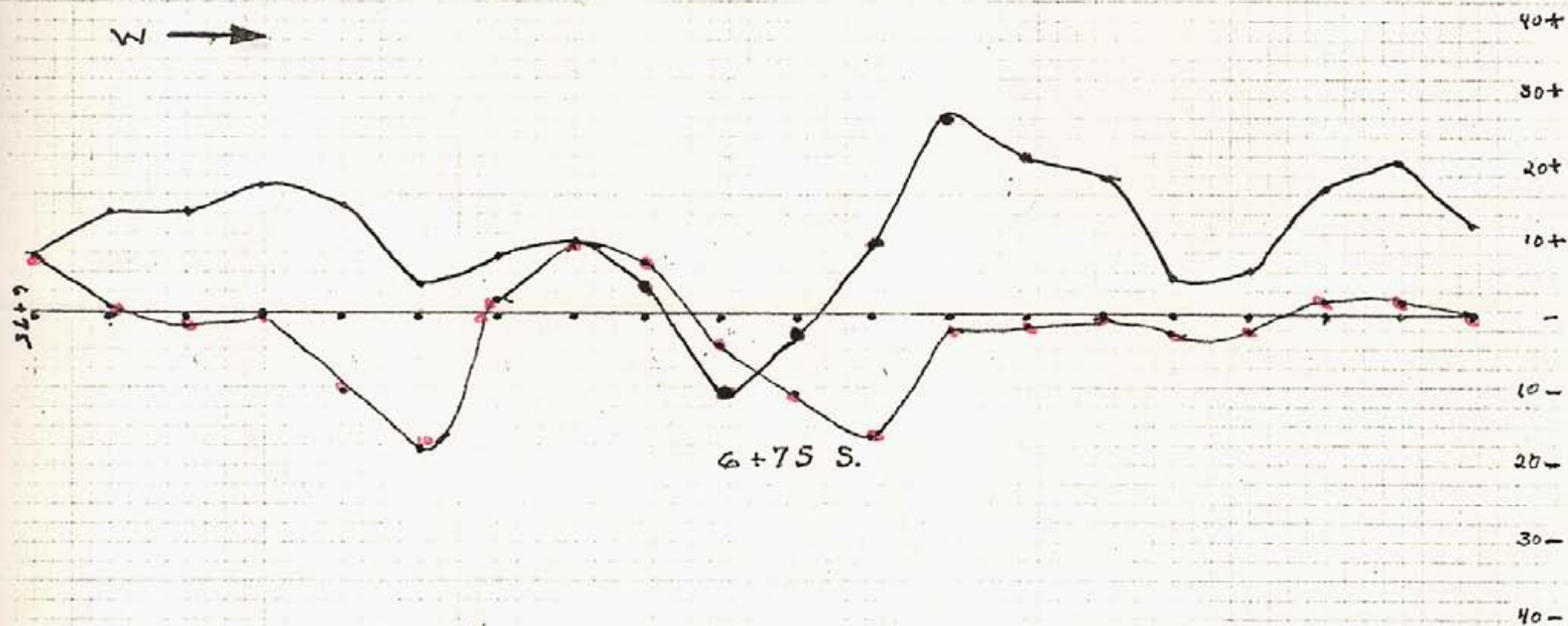
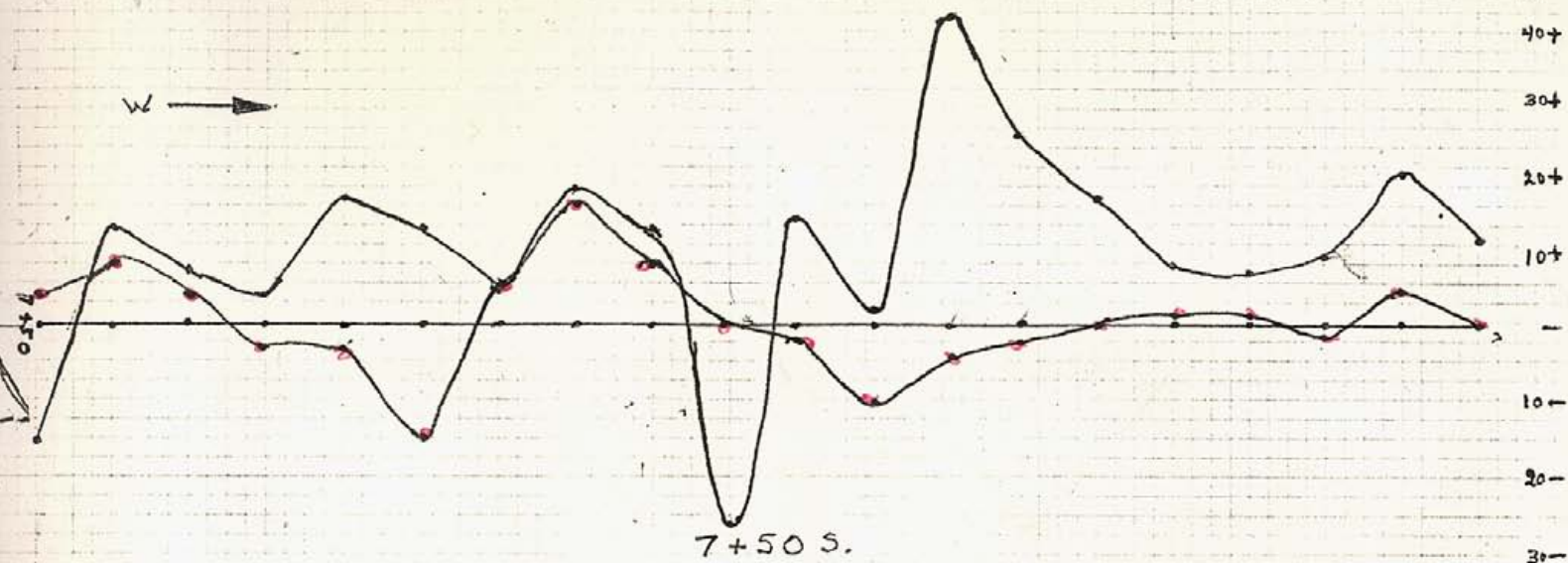
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0 10 Degrees  
0 50 Metres

NORMA  
EM PROFILES  
Dec. 177 Alfred R. Allen P. Eng.  
In Phase   
Quad. 





 10 Degrees  
 50 Metres

NORMA  
E. M. PROFILES

Dec-1-77 Alfred R. Allen P. Eng.

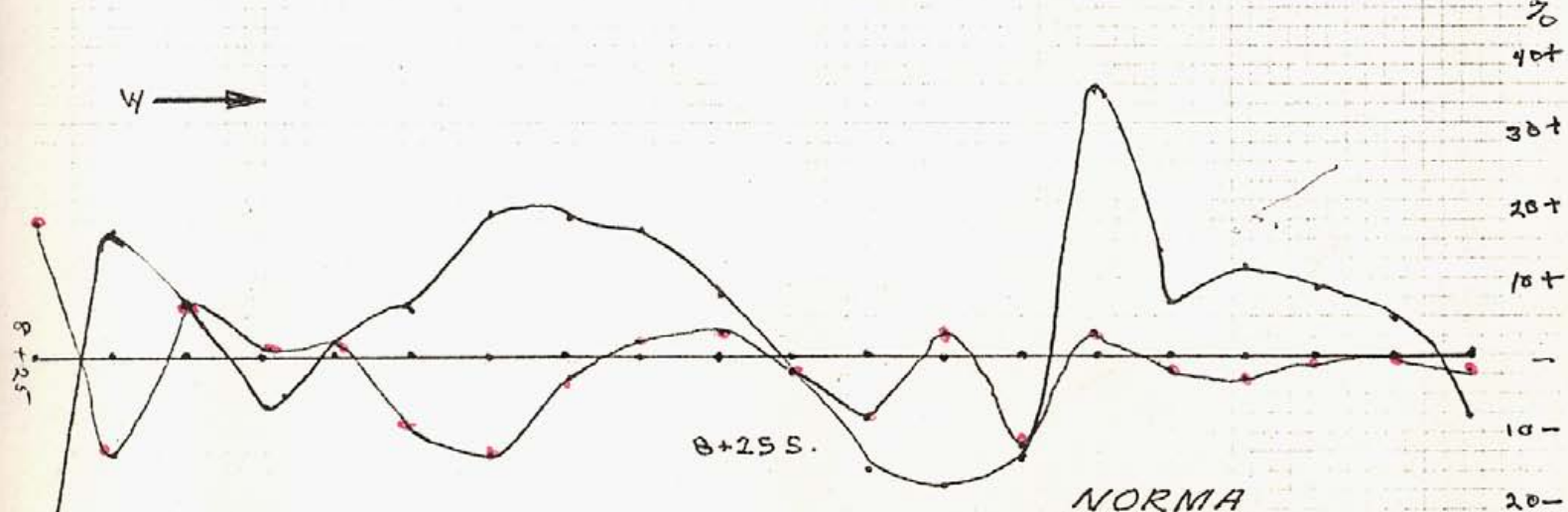
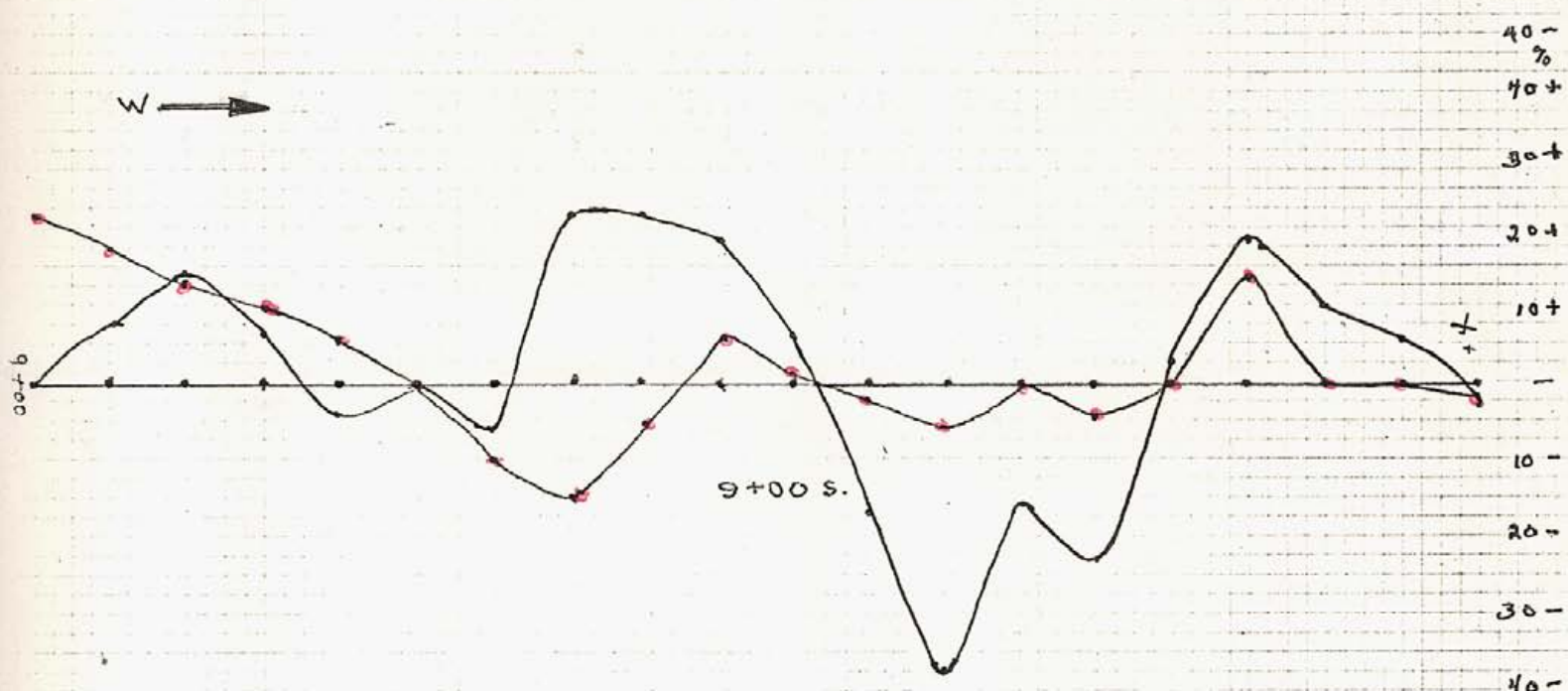
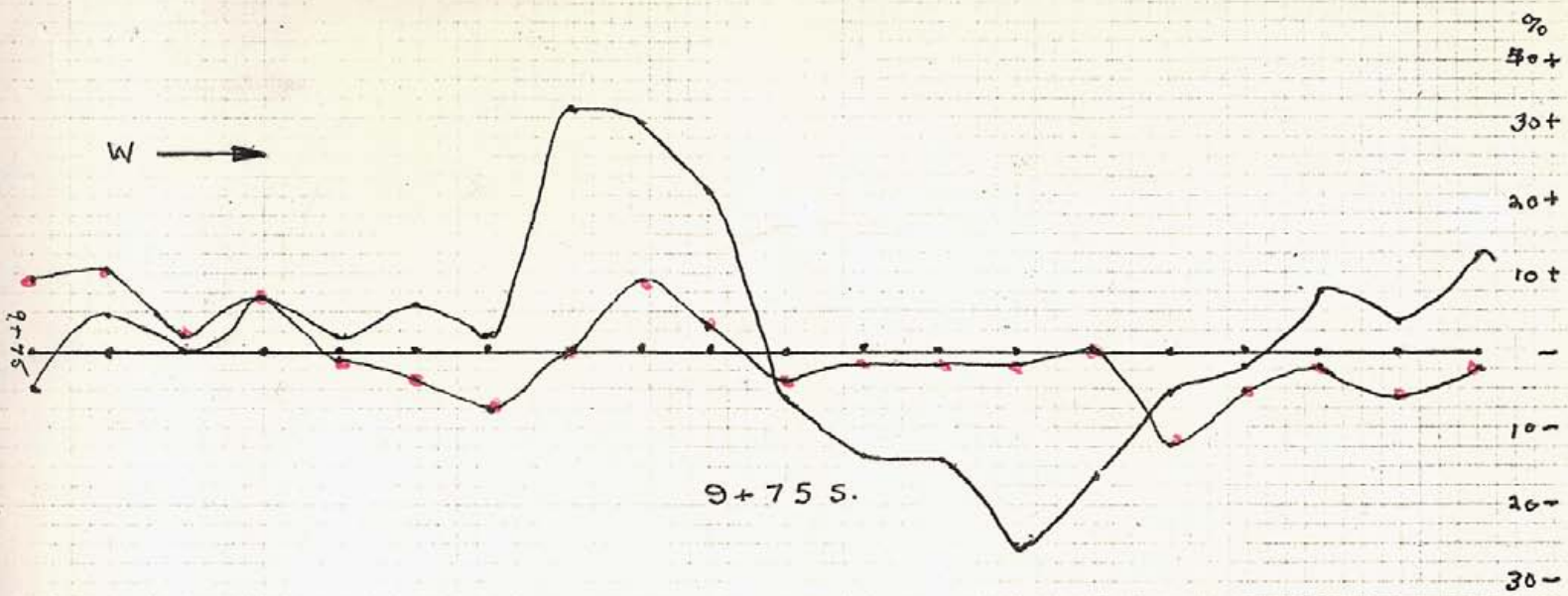
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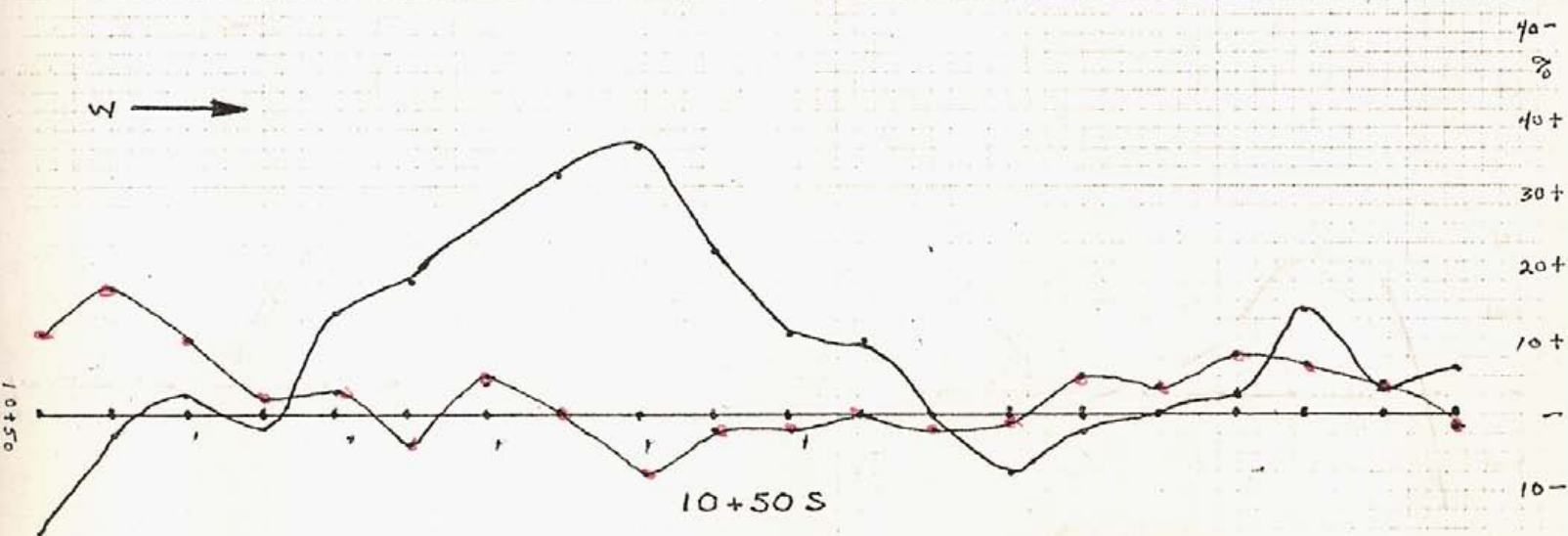
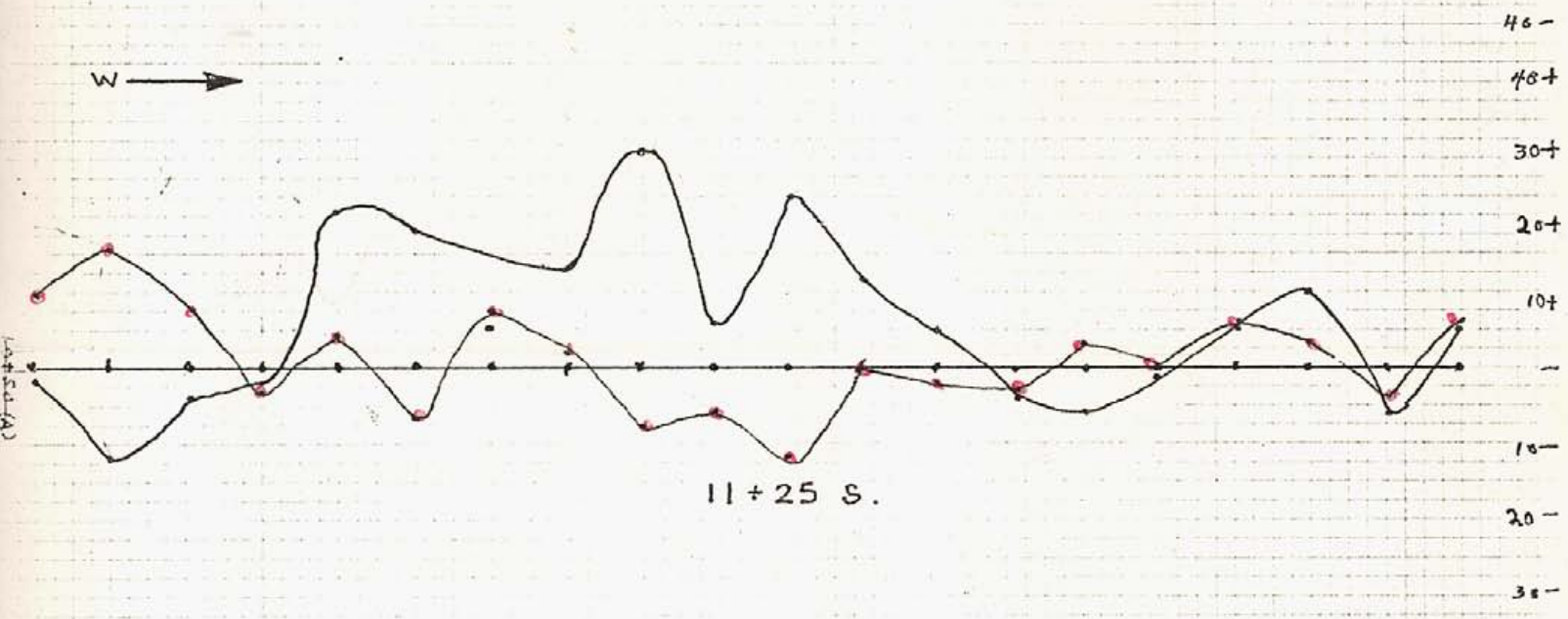
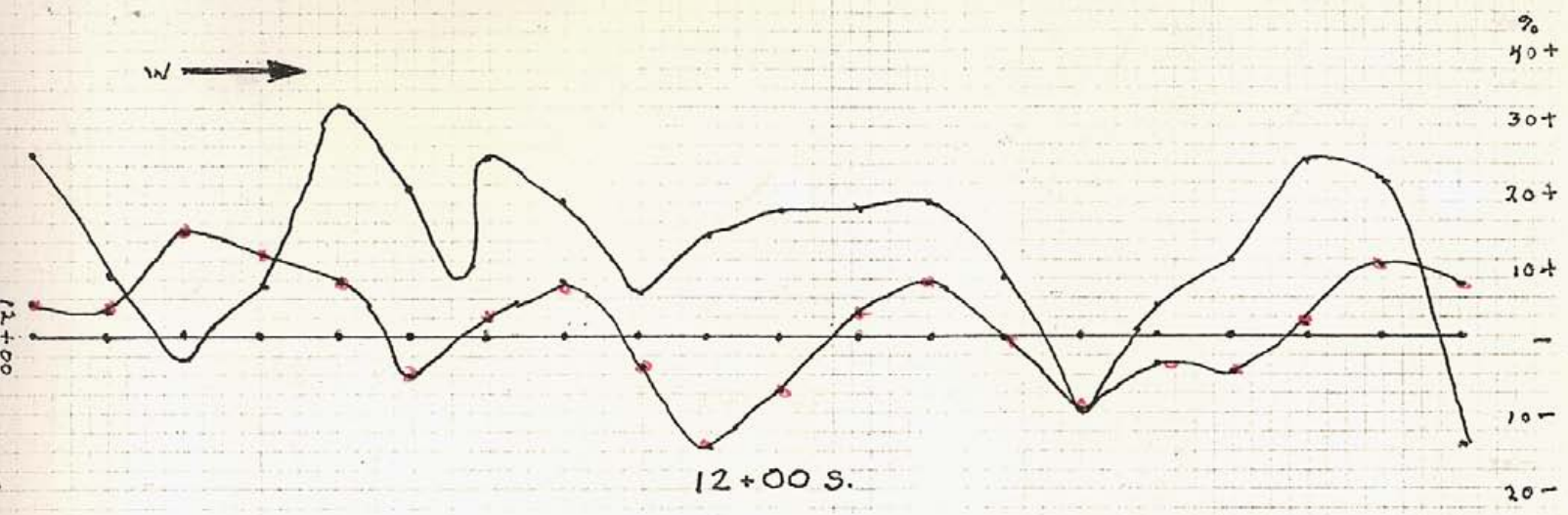
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0 10 Degrees  
0 50 Metres

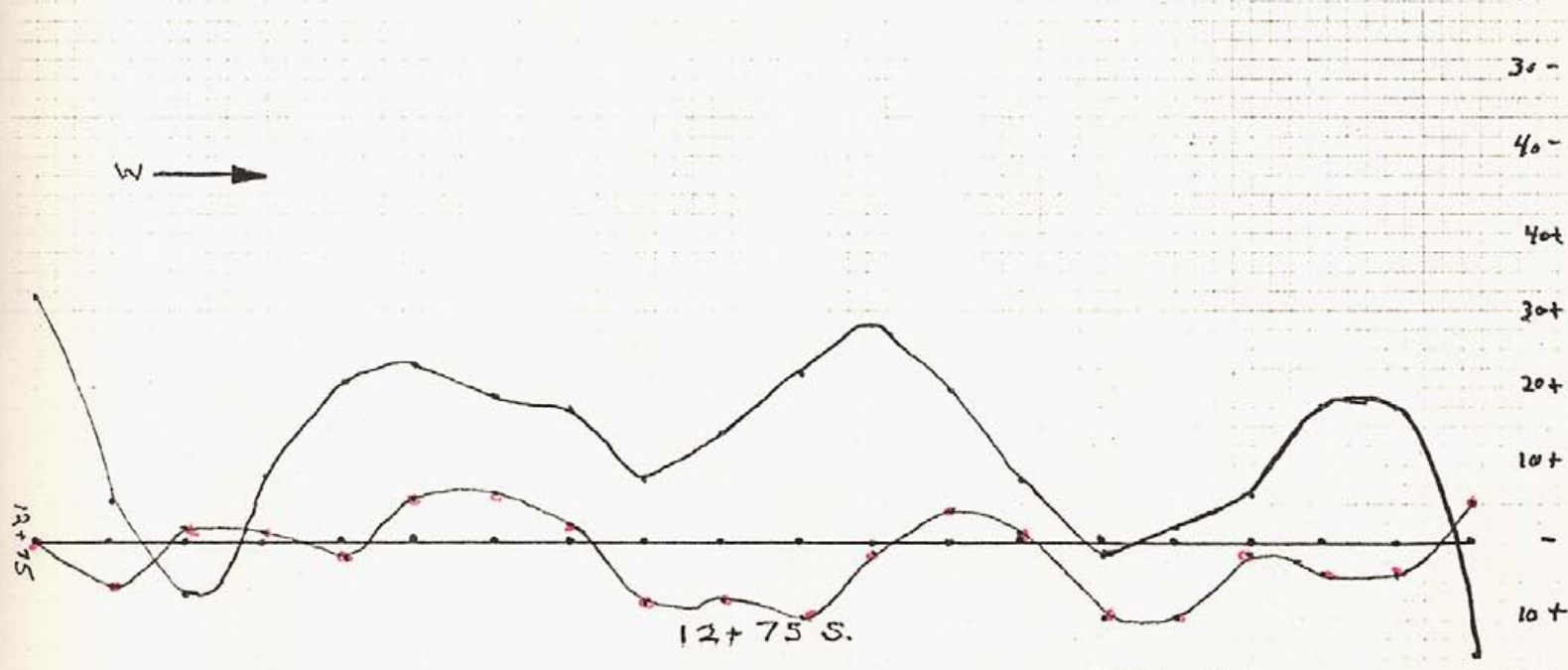
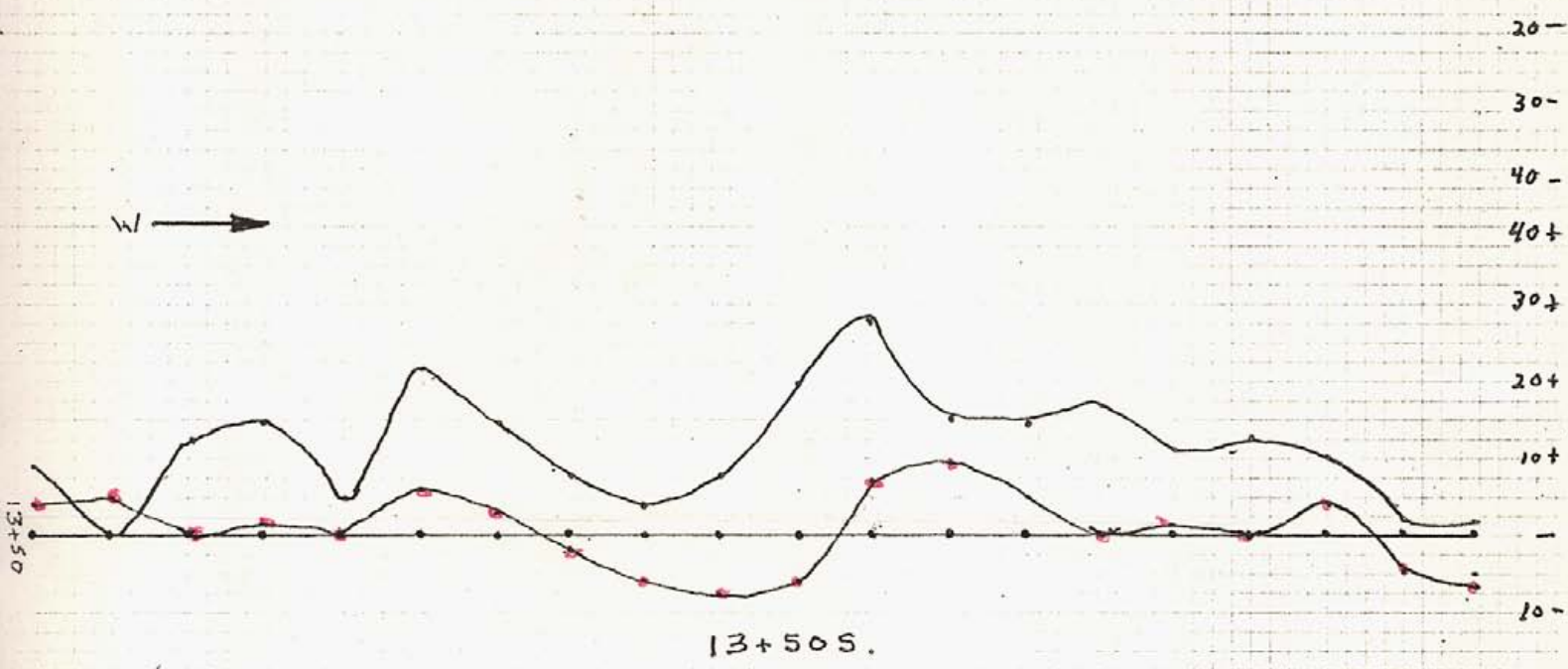
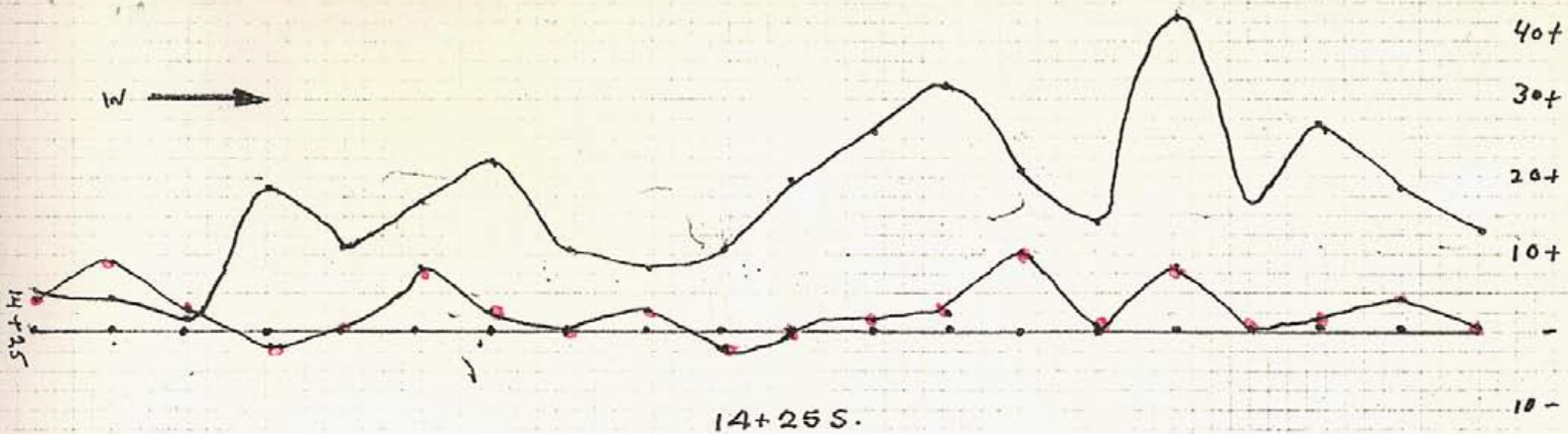
NORMA  
E.M. PROFILES  
 Dec. / 77 Alfred R. Allen P. Eng. 38-  
 In Phase ———  
 Quad. - - - - -





0 10 Degrees  
 0 50 Metres

NORMA  
 E.M. PROFILES  
 Dec. 177 Alfred R. Allen P. Eng.  
 In Phase   
 Quad. 



0 10 Degrees  
 0 50 Metres

NORMA  
E. M. PROFILES  
 Dec. 177 Alfred R. Allen P. Eng. 30+  
 In Phase ———  
 Quad. ———



GILFORD RESOURCES LTD.

NORMA PROPERTY

Stikine M.D. B.C.

ELECTROMAGNETIC GEOCHEMICAL MAGNETOMETER








No. 4 Scale 1cm = 50 m

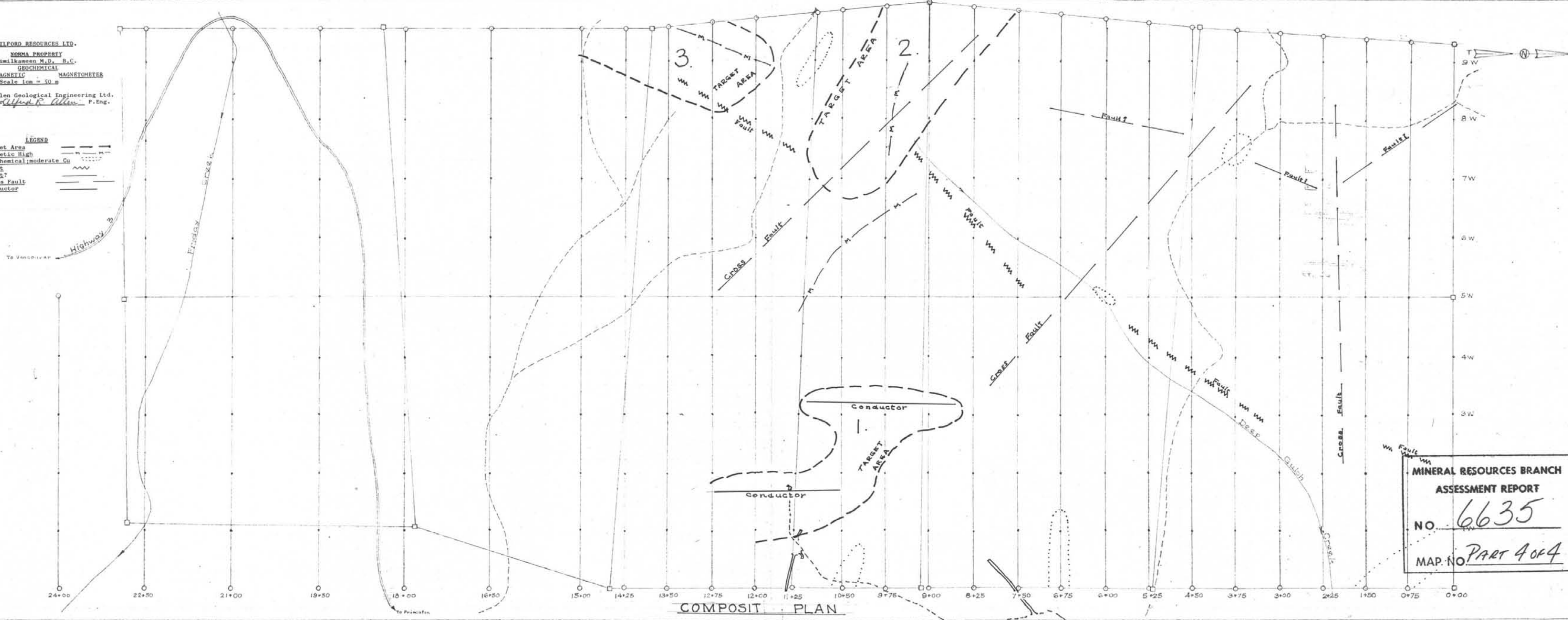
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31 Per *Allen R. Allen* P.Eng.

12/77

LEGEND

- Target Area 
- Magnetic High 
- Geochemical: moderate Cu 
- Fault 
- Fault? 
- Cross Fault 
- Conductor 



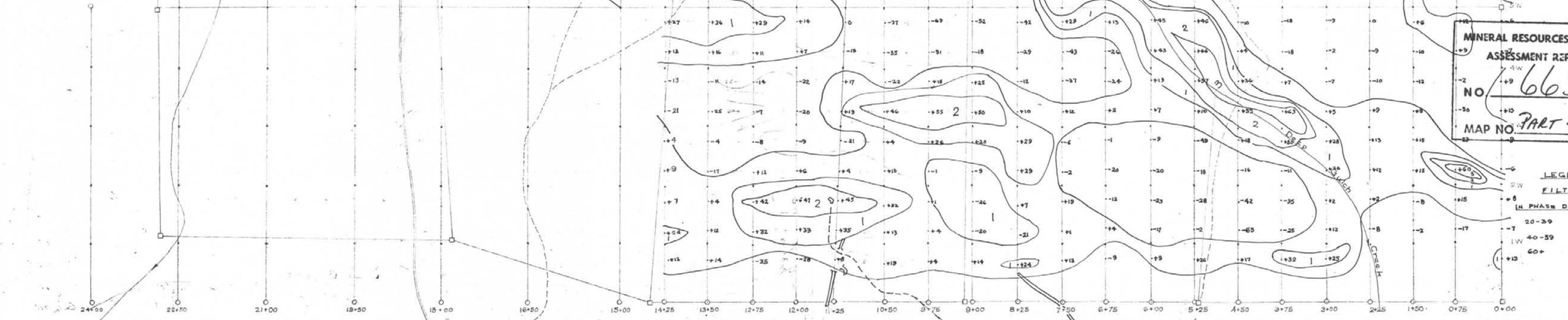
COMPOSIT PLAN

MINERAL RESOURCES BRANCH  
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 MAP NO. PART 4 OF 4

GILFORD RESOURCES LTD.  
NORMA PROPERTY  
Similkameen M.D. B.C.  
ELECTROMAGNETIC  
VLF - EM FILTERED

No. 3  
Date: Allen Geological Engineering Ltd.  
27  
12/77  
Per *Allen* P. Eng.

92H-7E



MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
NO. *6635*  
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LEGEND  
FILTERED  
IN PHASE DIP ANGLES

20-39	1
40-59	2
60+	3