

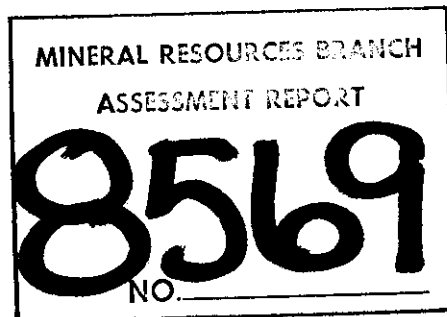
GEOCHEMICAL SOIL SURVEY  
GEOPHYSICAL EM SURVEY

BRE 9 - 34 CLAIMS  
Skeena M.D.

NTS 103 F - 9E  
Lat. 53 Deg. 31' - 32' N.  
Long. 132 Deg. 11' - 13' W.

Owner and Operator:  
MUTUAL RESOURCES LIMITED  
904 - 1199 West Hastings Street  
Vancouver, British Columbia  
V6E 3V4

Consultant - R. Shel Drake  
Author - R. Beaton, P. Eng.  
Date Submitted - December 16, 1980



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## APPENDICES

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# 1 INTRODUCTION

## 1. Location and Access

The BRE 1 - 32 claims are situated on Graham Island of the Queen Charlotte Islands 20 km. south of Port Clements. The Yakoun River at this point flows easterly through the claim block which lies directly south and east of Consolidated Cinola's Babe and Ric claims.

Ready access to the claims are provided by MacMillan Bloedel's 40 and 43 branch logging roads, both of which trend easterly across the property.

The BRE 33 - 34 claims which straddle Canoe Creek are accessible from the end of 4L branch road by trail, trending southerly, which was cut out the previous year.

## 2. History and Ownership

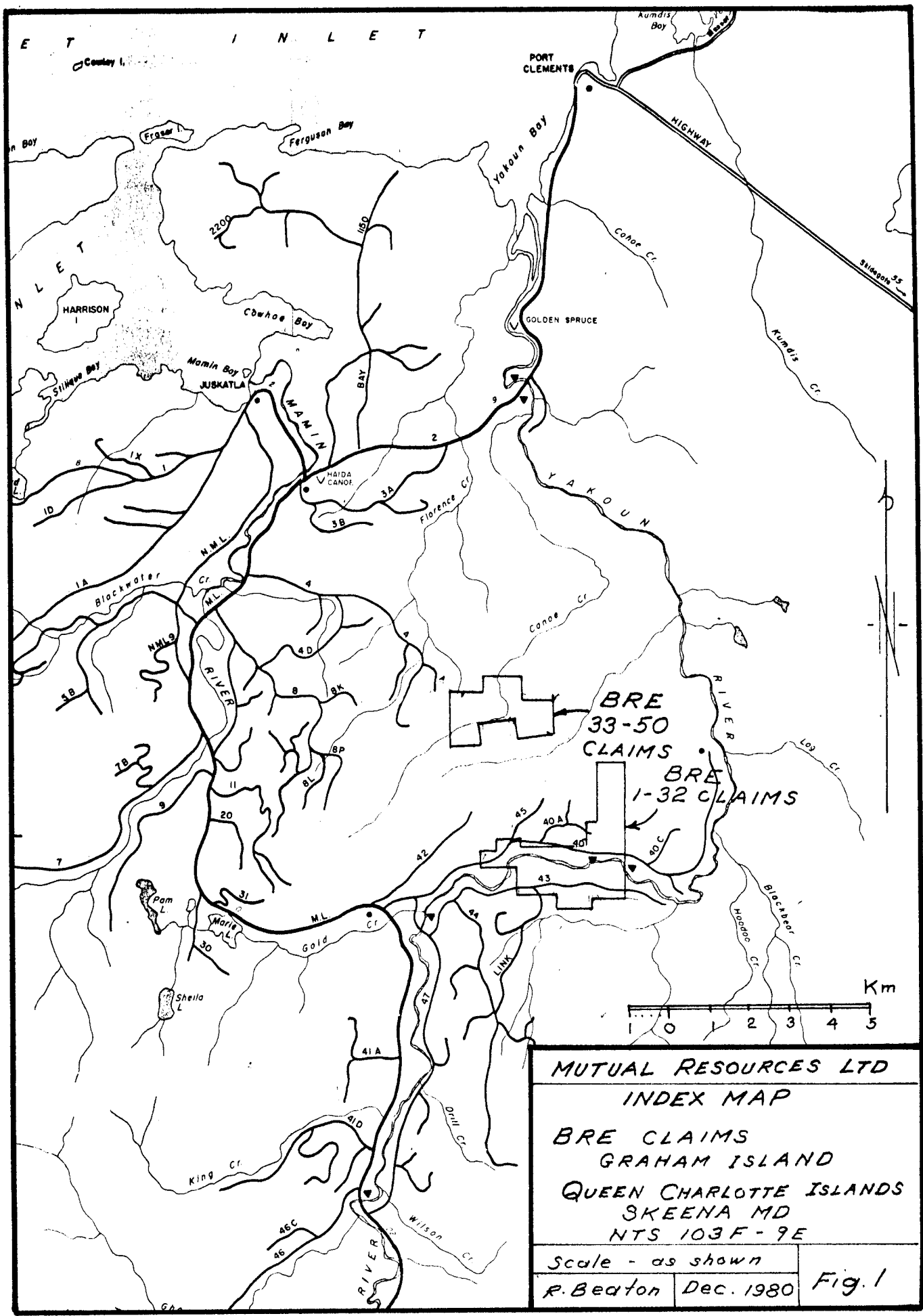
The BRE claims were staked originally in conjunction with Liram Specogna's Ric and Babe claims while under option to Quintana (1974 - 1976). Silver Standard Mines, which had optioned Babe and Ric in 1973 gained control of the BRE following Quintana's withdrawal; and subsequently in 1979 transferred ownership to its subsidiary Mutual Resources Limited.

## 3. Summary of Work Performed

Commencing September 20th and continuing to October 19th a crew of four conducted a soil sampling program on BRE 9 - 32 claims in conjunction with a reconnaissance VLF electro magnetic survey. Soil samples were taken at 50 metre intervals along three base lines (location lines) and along grid lines of 100 metre separations. VLF-EM readings were taken at these same stations, along branch roads 40 and 43, on a limited grid in BRE 33 - 34, and along 3 selected grid lines crossing Consolidated Cinola's Babe 11 and 12 claims. The latter which were run for comparison with owner permission were in addition subjected to a fluxgate magnetometer survey.

A total of 35.4 kilometres of grid line were surveyed as follows:

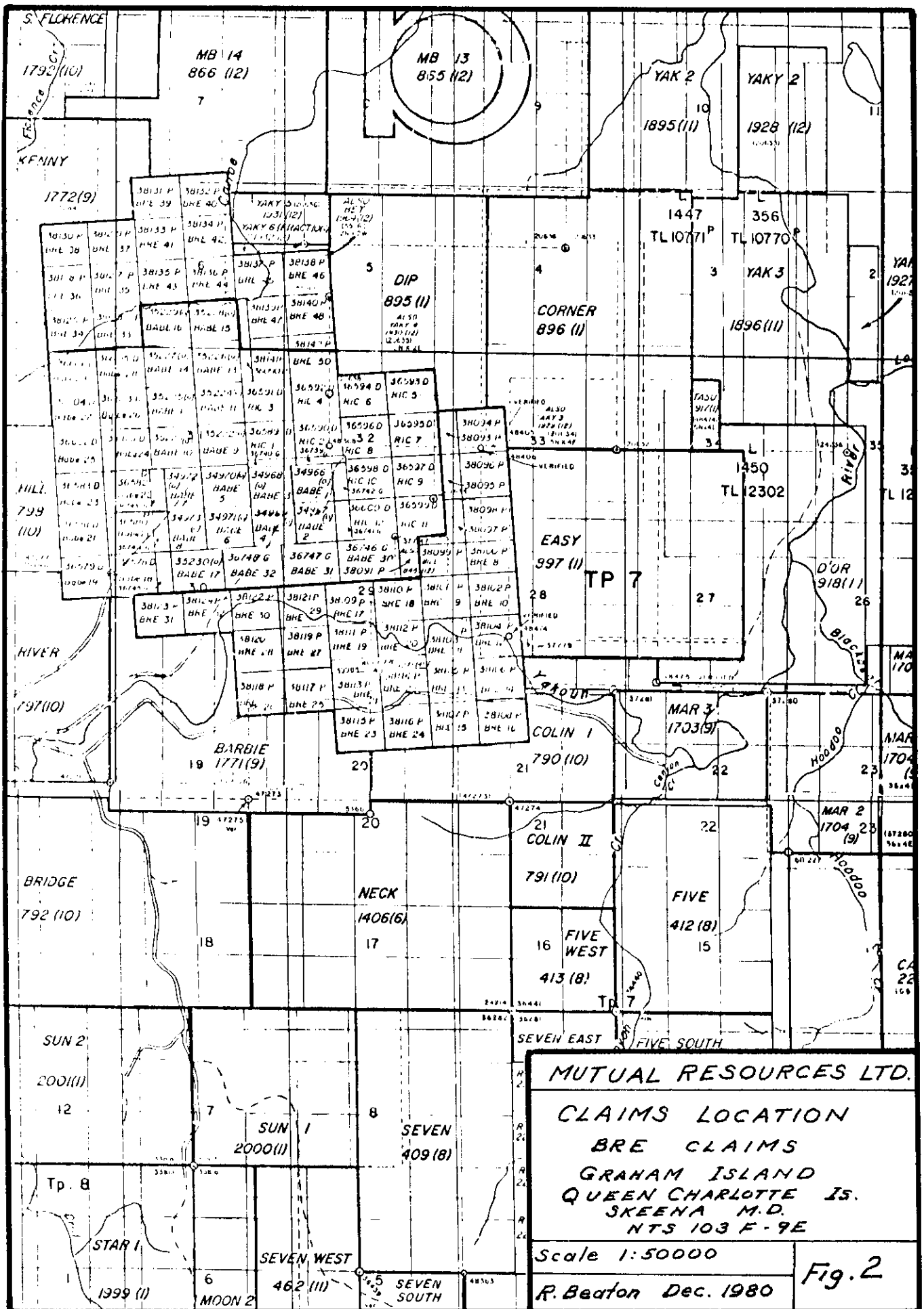
BRE 33 - 34	2.5 km.	- VLF-EM
Babe 11 - 12	3.7 km.	- VLF-EM, Mag
Logging Roads 40,43	6.2 km.	- VLF-EM
BRE 9 - 32	23.0 km.	- VLF-EM, 4 element geochem



**MUTUAL RESOURCES LTD**  
**INDEX MAP**  
**BRE CLAIMS**  
**GRAHAM ISLAND**  
**QUEEN CHARLOTTE ISLANDS**  
**SKEENA MD**  
**NTS 103F-9E**

Scale - as shown  
 R. Beaton Dec. 1980

Fig. 1



MUTUAL RESOURCES LTD.  
 CLAIMS LOCATION  
 BRE CLAIMS  
 GRAHAM ISLAND  
 QUEEN CHARLOTTE IS.  
 SKEENA M.D.  
 NTS 103 F-9E

Scale 1:50000  
 R. Beaton Dec. 1980

Fig. 2

## II PURPOSE

With only one known outcrop area (BRE 26) on the entire BRE 9 - 32 claim block, indirect methods of investigation had to be resorted to. Soils, in conjunction with EM work, were collected with the possibility that they might assist in defining an exploration target akin to the fault-influenced gold occurrence immediately to the north on Consolidated Cinola's property.

## III PROCEDURE

### 1. Geochemistry

To provide suitable ground control the three north-south location lines on the BRE claims were utilized as base lines. These were soil sampled at 25 metre intervals. Grid lines of 100 metre separation were laid out both east and west from the base lines for approximately 450 metres each way. Claim numbers BRE 1 - 8 were not sampled.

Sampling procedure was normal with samples preferably of the B horizon being taken by shovel or, where organic litter and swamp muck were heavy, by auger. Sample material was placed in standard kraft envelopes, after suitably being identified, and subsequently shipped to Chemex Labs in North Vancouver for chemical determinations by A.A. methods. Each sample was run for Au, Ag, Hg, and As. Analytic procedure is appended.

### 2. Geophysics

VLF-EM readings employing the Sabre Model 27 receiver were taken along the grid lines at 50 metre intervals within BRE claims 9 - 32 as outlined under geochemistry preceding. The signal transmitted from the Seattle station was utilized. Logging roads (branches 40 and 43) were also surveyed as were a four-line grid in BRE 33 - 34 on Canoe Creek and a 3-line grid on Consolidated Cinola's Babe 11 and 12 claims to assist in interpretation of data. The latter 3-line grid was also subjected to a Sabre Electronics Model G-18 fluxgate magnetometer survey to determine response and to compare with EM results.

Complete data regarding operation together with procedure for filtering Sabre EM dip readings is appended.



IV RESULTS

1. Geochemistry

Generally, the geochemical results were disappointing. The lack of expression of the four elements selected for the survey must be attributed to excessive overburden cover, to uniformity in bedrock, or to absence of an anomaly source. The former (heavy overburden) is believed the most probable.

In tabular form the following were derived from inspection; and apply to the grid only:

<u>Element</u>	<u>Reported Level</u>	<u>Background</u>	<u>Threshold</u>	<u>Anomalous</u>
Au	ppb	<10	10	20
Ag	ppm	0.1	0.2	0.4
As	ppm	10	20	30
Hg	ppb	<200	200 - 500	> 500

Possibly some comment on the maps resulting from plotting of values is warranted and follows:

1. Gold (ppb)- The map shows virtually no expression apart from a few threshold values in the south part of the grid. Only four determinations (one at 120) were 20 ppb or better. Response values shown in the table apply to the surveyed grid and not to the area as a whole (including the Babe claims) where background might be in the order of < 30, threshold 30 - 60, and anomalous > 60.
2. Silver (ppm)- As with the gold, the silver, providing only a few scattered threshold values in the south part of the grid, was expressionless. Some weak expression occurred on baseline 2 between 1N and 3N; but hardly of significance.
3. Arsenic (ppm)- Weak response was noted on lines 5N, 6N, 7N west of BL-2 and on the lines east of BL-3. Only 2 values at 30 or better resulted from the survey which is low when considering results from north of the grid area which returned levels in the order of background < 30, threshold 30 - 60, anomalous > 60.
4. Mercury (ppb)- With only 7 values at 500 ppb or better, the results when compared to those resulting from Babe and BRE claims to the north of the surveyed area where large areas exceeded 500 ppb, can only be

considered as background. However since the writer believes that widespread distribution of values there can be attributed to dispersion through fluvio-glacial movement, small isolated anomalies may have some significance. Two of these in the south part of the grid should be mentioned. One occurs at the south end of BL 1 where underlying bedrock is believed to be diorite. The other, just east of the south end of BL 2 cannot be explained; but it is noted that it lies on or close to the south-easterly projection of the Consolidated Cinola mineralized fault-rhyolite occurrence. There is no supporting correlation from the other three surveyed elements.

## 2. Geophysics

The results of the Sabre VLF-EM survey were largely negative, and probably reflect limitations of the instrument where overburden ranges from moderate to very heavy. (Four percussion holes previously drilled to depths of 150 feet in gravel immediately south of the Consolidated Cinola mineralized zone failed to reach bedrock.) Moreover, the character of response where readings were taken under more favourable conditions, such as on the Babe 11 and 12 claims, suggest that instrumental noise, swamp conditions and the like may be responsible. Comments by consulting geophysicist R. F. Shel Drake are appended for reference.

Three reconnaissance magnetic lines were run on the same three lines subjected to the VLF-EM work on Babe 11 and 12. An anomalous high-low-high response from the westerly end of the south line is suggestive of a bedrock change and may reflect the fault-rhyolite contact trend known to occur. A coincidental weak EM (contoured filtered dip) anomaly supports this; however a similar EM response north-east of the baseline on the same grid has essentially no magnetic support.

Further northwest on the BRE 33 - 34 claims a "character" grid was run which provided responses comparable to the Cinola lines. Here a similar weak filtered dip high was noted at the east end of the two northerly lines. Unfortunately magnetic readings were not taken; but the location should lie on or close to any northerly projection of the fault-rhyolite system on the Consolidated Cinola claims.

V CONCLUSIONS

1. Geochemistry, because of probable considerable or unfavourable overburden cover, has failed to serve as a means to delineate drill targets on the south BRE grid.

2. The Sabre VLF-EM instrument at very best has shown only doubtful response to bedrock variations under the conditions limited to this report area. Possibly more sophisticated EM equipment; or an IP survey might have proven of greater value.

3. Magnetics may be more useful than originally thought, and should be included in any future program of work.

4. Without substantiative data it is suspected that the area adjacent to Yakoun River in the central and easterly portions of the grid may be underlain by a relatively deep depression occupied by sediment of fluvio-glacial or possibly deltaic marine origin. Certainly the geochemical and VLF-EM surveys from here were notably devoid of expression.

*C. W. Beaton*

APPENDIX 1

ITEMIZED COST STATEMENT

Strato Geological

Labour:

Geoffrey Smith, Supervisor  
17 days, Sept. 23 - Oct. 9, 1980  
Stephen Nowak, Geophysical Operator  
12 days, Oct. 10 - Oct. 21, 1980  
TOTAL of 29 days @ \$135.00/day, including  
Sabre Model 27 VLF-EM instrument rental \$ 3,915.00

Line cutters, soil samplers  
Kevin Dorland, 18 days, Sept.23-Oct.20/80  
Joey McCloud " " "  
Andrew Lawrence " " "  
Stephen Nowak " " "  
TOTAL of 72 man days @ \$100.00/day \$ 7,200.00

Airfare: \$183.50 x 5 men x ½ cost 459.00

Room and Board 2,185.01

Transportation:

29 days @ \$29.95 = \$868.55  
2340 km. @ 0.15 = 351.00  
4% tax = 48.78  
Insurance 29 x \$5.= 145.00  
Fuel & Other Exp. = 203.00

1,616.33 \$ 1,616.33

Field Supplies: flagging, bags, etc. 182.79

Delivery 79.46

Telephone 42.00

Drafting 910.19

\$16,761.98 \$16,761.98

Chemex Labs

587 soil samples - analysed for Au, Ag, As, Hg  
@ \$12.40/sample, when sufficient sample \$ 6,732.31

Apex Airborne

R. Sheldrake, consulting \$ 85.00

Engineering and Overhead-R. H. Beaton

Sept.	Engineering Supplies	\$ 405.57	
	Engineering and Supervision	1,578.75	
	Truck and Auto	20.05	
	Telephone	.35	
	Accommodation	144.70	
	Transportation (P.W.A.)	204.10	
Oct.	Telephone	9.86	
	Engineering Services	50.80	
	Transportation (Tilden Rental)	157.72	
Nov.	Office Services	418.73	
	Administration and General	236.88	
	Engineering and Supervision	1,805.88	
Dec.	Not available at issuance of report	∅	
		<hr/>	
		\$ 5,033.39	\$ 5,033.39

TOTAL: \$28,612.68

APPENDIX II

AUTHOR'S QUALIFICATIONS

I, R. H. Beaton of the City of Vancouver, in the Province of British Columbia, certify that I am a Professional Engineer registered in the Province of British Columbia, that I graduated from the University of British Columbia in Geological Engineering in 1952, that I personally supervised and participated in the geo-chemical and geophysical investigations relating to BRE 11 - 32 mineral claims, and that I was employed by and worked under direction of the officers of Mutual Resources Limited while so engaged.

Dated this 18th day of December 1980, in the City of Vancouver, British Columbia.

A handwritten signature in cursive script, appearing to read "R. H. Beaton", written over a horizontal line.

R. H. Beaton, P. Eng.

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GEOCHEM PROCEDURES

- ✓ PPB Gold: 5 gm samples ashed @ 800°C for one hour, digested with aqua regia - twice to dryness - taken up in 25% HCL<sup>-</sup>, the gold then extracted as the bromide complex into MIBK and analyzed via A.A.  
Detection limit - 10 PPB
- ✓ PPM Arsenic: a 1.0 gram sample is digested with a mixture of perchloric and nitric acid to strong fumes of perchloric acid. The digested solution is diluted to volume and mixed. An aliquot of the digest is acidified, reduced with KI and mixed. A portion of the reduced solution is converted to arsine with NaBH<sub>4</sub> and the arsenic content determined using flameless atomic absorption.  
Detection limit - 1 PPM
- PPM Silver: a 1.0 gm portion of sample is digested in conc. perchloric-nitric acid (HClO<sub>4</sub> - HNO<sub>3</sub>) for approx. 2 hours. The digested sample is cooled and made up to 25 mls with distilled water. The solution is mixed and solids are allowed to settle. Silver is determined by atomic absorption technique using background correction on analysis.  
Detection limit - 0.1 PPM

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(Analytic Procedure)

Sample Preparation

Sils, silts, lake bottom sediments - Samples are sorted and dried at 50°C for 12 - 16 hours. Dried material is then screened to obtain the -80 mesh component of each sample. Coarse material is discarded unless other instructions are received. Other mesh sizes are available if required.

Rock chips or pieces of core designated as rock geochem samples are dried, crushed and then pulverized to -100 mesh in a ring grinder. The sample is homogenized and packaged.

Sample Analyses

ppm Copper & Lead:

A 1.0 gm portion of sample is digested in conc. perchloric-nitric acid ( $\text{HClO}_4$  -  $\text{HNO}_3$ ) for approx. 2 hours. The digested sample is cooled and made up to 25 mls with distilled water. The solution is mixed and solids are allowed to settle. Copper and lead are determined by atomic absorption techniques using background correction for lead.

✓ ppb Mercury:

The sample is digested with nitric acid plus a small amount of hydrochloric acid. Following digestion the resulting clear solution is transferred to a reaction flask connected to a closed system absorption cell. Stannous sulfate is rapidly added to reduce mercury to its elemental state. The mercury is then flushed out of the reaction vessel into the absorption cell where it is measured by cold vapour atomic absorption methods with a Jarrell Ash Multi-Versatility Spectrophotometer. The absorbance of samples is compared with the absorbance of freshly-prepared mercury standard solutions carried through the same procedure. The detection limit of this method is 5 ppb.





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CERTIFICATE OF ANALYSIS

TO : MUTUAL RESOURCES  
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 VANCOUVER, B.C.

CERT. # : A8010574-001-A  
 INVOICE # : 39653  
 DATE : 17-OCT-80

ATTN. BILL DUNN

Sample description	Prep code	Ag ppm	As ppm	Au -(AA) ppb	Hg ppb		
<i>S</i> BRE-LINE2-0S-0N	202	0.1	12	10	150	--	--
BRE 2-S: 0+25	202	0.1	4	10	90	--	--
BRE2-S: 0+50	202	0.1	4	N.S.S.	200	--	--
BRE2- S: 0+75	202	0.1	7	N.S.S.	100	--	--
BRE2-S: 1+00	202	0.1	4	N.S.S.	160	--	--
BRE2-S: 1+25	202	0.1	2	<10	160	--	--
BRE2-S: 1+50	202	0.1	1	<10	120	--	--
BRE2-S: 1+75	202	0.1	1	<10	170	--	--
BRE2-S: 2+00	202	0.1	2	<10	80	--	--
BRE2-S: 2+25	202	0.1	3	<10	180	--	--
BRE2-S: 2+50	202	0.1	7	<10	60	--	--
BRE2-S: 2+75	202	0.1	7	<10	770	--	--
BRE2-S: 3+00	202	0.1	11	<10	360	--	--
BRE2-S: 3+25	202	0.1	15	<10	170	--	--
BRE2-S: 3+50A	202	0.1	11	<10	130	--	--
BRE2-S: 3+50B	202	0.1	11	<10	230	--	--
BRE2-S: 3+75	202	0.1	11	<10	160	--	--
BRE2-S: 4+00	202	0.1	11	<10	240	--	--
BRE2-S: 4+25A	202	0.1	10	<10	130	--	--
BRE2-S: 4+25B	202	0.1	4	<10	130	--	--
BRE2-S: 4+50	202	0.2	10	<10	240	--	--
BRE2-S: 4+75	202	0.1	15	<10	190	--	--
BRE2-S: 5+00	202	0.1	11	<10	300	--	--
<i>BL 2</i> BRE2-N: 0+0	202	0.1	14	10	130	--	--
<i>N</i> BRE2-N: 0+25	202	0.1	3	<10	240	--	--
BRE2-N: 0+50	202	0.1	9	<10	160	--	--



Certified by ..... *Hart Biddle*



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 VANCOUVER, B.C.

CERT. # : A8010648-001-A  
 INVOICE # : 39821  
 DATE : 22-OCT-80

Sample description	Prep code	Ag ppm	As ppm	Au -(AA) ppb	Hg ppb		
27 N BRE1-LINEN-0+50	202	0.1	4	<10	270	--	--
BRE1-LINEN-0+75	202	0.1	4	<10	120	--	--
BRE1-LINEN-1+00	202	0.1	12	<10	190	--	--
BRE1-LINEN-1+25	202	0.1	7	<10	90	--	--
BRE1-LINEN-1+50	202	0.1	11	<10	160	--	--
BRE1-LINEN-1+75	202	0.1	12	<10	480	--	--
BRE1-LINEN-2+00	202	0.1	4	<10	230	--	--
BRE1-LINEN-2+25	202	0.1	40	<10	260	--	--
BRE1-LINEN-2+50	202	0.1	15	<10	250	--	--
BRE1-LINEN-2+75	202	0.1	11	<10	130	--	--
BRE1-LINEN-3+00	202	0.1	10	<10	120	--	--
BRE1-LINEN-3+25	202	0.1	9	<10	150	--	--
BRE1-LINEN-3+50	202	0.1	4	<10	50	--	--
BRE1-LINEN-3+75	202	0.1	2	<10	130	--	--
BRE1-LINEN-4+00	202	0.1	5	<10	260	--	--
BRE1-LINEN-4+25	202	0.1	9	<10	150	--	--
BRE1-LINEN-4+50	202	0.2	3	<10	100	--	--
BRE1-LINEN-4+75	202	0.1	5	<10	120	--	--
BRE1-LINEN-5+00	202	0.1	2	<10	110	--	--
BRE1-LINEN-5+25	202	0.1	2	<10	50	--	--
BRE1-LINEN-5+50	202	0.1	5	<10	60	--	--
BRE1-LINEN-5+75	202	0.1	3	<10	50	--	--
BRE1-LINEN-6+00	202	0.4	15	<10	170	--	--
3 BRE1-LINEN-6+25	202	0.1	10	<10	190	--	--
BRE1-LINEN-6+50	202	0.1	20	<10	200	--	--
BRE1-LINEN-6+75	202	0.1	15	<10	150	--	--
BRE1-LINEN-7+00	202	0.1	19	<10	220	--	--
BRE1-LINEN-7+25	202	0.1	20	<10	170	--	--
BRE1-LINEN-7+50	202	0.1	22	<10	200	--	--
BRE1-LINEN-7+75	202	0.1	14	<10	160	--	--
BRE1-LINEN-8+00A	202	0.1	14	<10	90	--	--
BRE1-LINEN-8+00B	202	0.1	22	<10	120	--	--
BRE1-LINEN-8+25	202	0.1	16	<10	140	--	--
121 S BRE1-LINES-0+25	202	0.1	11	<10	120	--	--
BRE1-LINES-0+50	202	0.1	11	<10	100	--	--
BRE1-LINES-0+75	202	0.1	10	<10	260	--	--
BRE1-LINES-1+00	202	0.1	14	<10	60	--	--
BRE1-LINES-1+25	202	0.1	9	<10	190	--	--
BRE1-LINES-1+50	202	0.1	11	<10	220	--	--
BRE1-LINES-1+75	202	0.1	4	<10	280	--	--



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 VANCOUVER, B.C.

CERT. # : A8010648-002-A  
 INVOICE # : 39821  
 DATE : 22-OCT-80

Sample description	Prep code	Ag ppm	As ppm	Au -(AA) ppb	Hg ppb		
L/ BRE1-LINES-2+00	202	0.1	3	<10	100	--	--
S BRE1-LINES-2+25	202	0.1	6	<10	160	--	--
L/ BRE1-LINEW-0+0	202	0.1	19	<10	250	--	--
of BRE1-LINEW-0+50	202	0.1	17	<10	210	--	--
koon BRE1-LINEW-1+00	202	0.1	20	<10	220	--	--
BRE1-LINEW-1+50	202	0.1	17	<10	200	--	--
BRE1-LINEW-2+00	202	0.1	16	<10	150	--	--
BRE1-LINEW-2+50	202	0.1	16	<10	160	--	--
BRE1-LINEW-3+00	202	0.1	15	<10	210	--	--
BRE1-LINEW-3+50	202	0.1	17	<10	210	--	--
BRE1-LINEW-4+00	202	0.1	20	<10	150	--	--
BRE1-LINEW-4+50	202	0.1	14	<10	150	--	--
BRE1-LINEW-5+00	202	0.1	16	<10	160	--	--
BRE2-LINEN-0+75	202	0.2	12	<10	80	--	--
Y BRE2-LINEN-1+00	202	0.1	9	<10	130	--	--
BRE2-LINEN-1+25	202	0.2	12	<10	100	--	--
BRE2-LINEN-1+50	202	0.1	6	<10	120	--	--
BRE2-LINEN-1+75	202	0.2	12	<10	210	--	--
BRE2-LINEN-2+00	202	0.2	6	<10	250	--	--
BRE2-LINEN-2+25	202	0.2	11	<10	50	--	--
BRE2-LINEN-2+50	202	0.2	9	<10	120	--	--
BRE2-LINEN-2+75A	202	0.4	9	<10	110	--	--
BRE2-LINEN-2+75B	202	0.1	9	<10	140	--	--
BRE2-LINEN-3+25	202	0.1	9	<10	150	--	--
BRE2-LINEN-3+50	202	0.1	11	<10	120	--	--
BRE2-LINEN-3+75	202	0.1	7	<10	170	--	--
BRE2-LINEN-4+00	202	0.1	5	<10	120	--	--
BRE2-LINEN-4+25	202	0.1	5	<10	120	--	--
BRE2-LINEN-4+50	202	0.1	10	<10	80	--	--
BRE2-LINEN-4+75	202	0.1	5	<10	170	--	--
BRE2-LINEN-5+00	202	0.1	7	<10	170	--	--
BRE2-LINEN-5+25	202	0.1	7	<10	190	--	--
BRE2-LINEN-5+50	202	0.1	22	<10	180	--	--
BRE2-LINEN-5+75	202	0.2	22	<10	200	--	--
BRE2-LINEN-6+00	202	0.1	11	<10	180	--	--
BRE2-LINEN-6+25	202	0.1	15	<10	230	--	--
BRE2-LINEN-6+50	202	0.1	14	<10	130	--	--
BRE2-LINEN-6+75	202	0.1	12	<10	120	--	--
BRE2-LINEN-7+00	202	0.1	12	<10	90	--	--
BRE2-LINEN-7+25	202	0.1	14	<10	120	--	--

Certified by *Hart R. Bichler*





# CHEMEX LABS LTD.

212 BROOKSBANK AVE.  
NORTH VANCOUVER, B.C.  
CANADA V7J 2C1  
TELEPHONE: (604)984-0221  
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

## CERTIFICATE OF ANALYSIS

TO : MUTUAL RESOURCES  
904-1199 WEST HASTINGS STREET,  
VANCOUVER, B.C.

CERT. # : A8010648-003-A  
INVOICE # : 39821  
DATE : 22-OCT-80

Sample description	Prep code	Ag ppm	As ppm	Au -(AA) ppb	Hg ppb		
29 N BRE3-LINEN-0+0	202	0.1	16	<10	170	--	--
BRE3-LINEN-0+25	202	0.1	23	<10	140	--	--
BRE3-LINEN-0+50	202	0.1	19	<10	180	--	--
BRE3-LINEN-0+75	202	0.1	20	<10	170	--	--
BRE3-LINEN-1+00	202	0.1	17	<10	200	--	--
BRE3-LINEN-1+25	202	0.1	19	<10	210	--	--
BRE3-LINEN-1+50	202	0.1	16	<10	190	--	--
BRE3-LINEN-1+75	202	0.1	20	<10	150	--	--
BRE3-LINEN-2+00	202	0.1	22	<10	270	--	--
BRE3-LINEN-2+25	202	0.1	22	<10	170	--	--
BRE3-LINEN-2+50	202	0.1	23	<10	210	--	--
BRE3-LINEN-2+75	202	0.1	17	<10	180	--	--
BRE3-LINEN-3+00	202	0.1	23	<10	210	--	--
BRE3-LINEN-3+25	202	0.1	23	<10	190	--	--
BRE3-LINEN-3+50	202	0.1	22	<10	180	--	--
BRE3-LINEN-3+75	202	0.1	24	<10	210	--	--
BRE3-LINEN-4+00	202	0.1	19	<10	250	--	--
BRE3-LINEN-4+25	202	0.1	19	<10	200	--	--
BRE3-LINEN-4+50	202	0.1	22	<10	250	--	--
BRE3-LINEN-4+75	202	0.1	16	<10	320	--	--
BRE3-LINEN-5+00	202	0.1	14	<10	160	--	--
BRE3-LINEN-5+25	202	0.1	19	<10	220	--	--
BRE3-LINEN-5+50	202	0.1	15	<10	170	--	--
BRE3-LINEN-5+75	202	0.1	17	<10	190	--	--
BRE3-LINEN-6+00	202	0.1	17	<10	200	--	--
BRE3-LINEN-6+25	202	0.1	11	<10	150	--	--

Certified by *Hart Bichler*





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 CANADA V7J 2C1  
 TELEPHONE: (604)984-0221  
 TELEX: 043-52597

• ANALYTICAL CHEMISTS

• GEOCHEMISTS

• REGISTERED ASSAYERS

## CERTIFICATE OF ANALYSIS

TO : MUTUAL RESOURCES  
 704-1199 WEST HASTINGS STREET,  
 VANCOUVER, B.C.

CERT. # : A8010750-001-A  
 INVOICE # : 39980  
 DATE : 29-OCT-80

*1750.10*

Sample Description	Prep Code	Ag ppm	As ppm	Au - (AA) ppb	Hg ppb		
122 15 AT 1+00 0+00	202	0.1	2	N.S.S.	N.S.S.	--	--
AT 1+00 0+50	202	0.1	5	<10	160	--	--
AT 1+00 1+00	202	0.1	2	N.S.S.	N.S.S.	--	--
AT 1+00 1+50	202	0.1	11	10	220	--	--
AT 1+00 2+00	202	0.1	5	<10	210	--	--
AT 1+00 2+50	202	0.1	9	<10	280	--	--
AT 1+00 3+00	202	0.1	11	N.S.S.	N.S.S.	--	--
AT 1+00 3+50	202	0.1	9	<10	220	--	--
AT 1+00 4+00	202	0.1	12	<10	210	--	--
AT 1+00 4+50	202	0.1	12	<10	80	--	--
AT 1+00 5+00	202	0.1	10	<10	90	--	--
AT 1+00 5+50	202	0.1	9	<10	100	--	--
AT 1+00 6+00	202	0.1	19	<10	140	--	--
AT 1+00 6+50	202	0.1	5	<10	N.S.S.	--	--
AT 1+00 7+00	202	0.2	5	N.S.S.	210	--	--
AT 1+00 7+50	202	0.1	7	<10	N.S.S.	--	--
AT 1+00 8+00	202	0.1	9	<10	180	--	--
AT 1+00 8+50	202	0.1	5	<10	N.S.S.	--	--
AT 1+00 9+00	202	0.1	10	<10	200	--	--
22 25 AT 2+00 0+00	202	0.1	6	<10	100	--	--
AT 2+00 0+50	202	0.1	10	<10	110	--	--
AT 2+00 1+00	202	0.1	12	<10	170	--	--
AT 2+00 1+50	202	0.1	7	<10	190	--	--
AT 2+00 2+00	202	0.2	9	<10	140	--	--
AT 2+00 2+50	202	0.1	1	N.S.S.	N.S.S.	--	--
AT 2+00 3+00	202	0.1	12	<10	60	--	--
AT 2+00 3+50	202	0.1	10	<10	80	--	--
AT 2+00 4+00	202	0.1	2	N.S.S.	N.S.S.	--	--
AT 2+00 4+50	202	0.1	4	N.S.S.	N.S.S.	--	--
AT 2+00 5+00	202	0.1	18	N.S.S.	130	--	--
AT 2+00 5+50	202	0.1	32	N.S.S.	130	--	--
AT 2+00 6+00	202	0.1	9	<10	90	--	--
AT 2+00 6+50	202	0.1	4	<10	90	--	--
AT 2+00 7+00	202	0.1	3	N.S.S.	80	--	--
AT 2+00 7+50	202	0.1	7	<10	N.S.S.	--	--
AT 2+00 8+00	202	0.4	12	<10	130	--	--
AT 2+00 8+50	202	0.2	14	<10	110	--	--
AT 2+00 9+00	202	0.1	14	10	170	--	--
33 AT 3+00 0+00	202	0.1	3	10	140	--	--
AT 3+00 0+50	202	0.1	5	<10	120	--	--

*Hartmann*

Certified by .....





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212 BROOKSBANK AVE  
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 CANADA V7J 2C1  
 TELEPHONE: (604)984-0221  
 TELEX: 043-52597

• ANALYTICAL CHEMISTS

• GEOCHEMISTS

• REGISTERED ASSAYERS

## CERTIFICATE OF ANALYSIS

Client: MUTUAL RESOURCES  
 904-1199 WEST HASTINGS STREET,  
 VANCOUVER, B.C.

CERT. # : A8010750-002-A  
 INVOICE # : 39980  
 DATE : 29-OCT-80

Sample description	Prep code	Ag ppm	As ppm	Au -(AA) ppb	Hg ppb		
AT 3+00 1+00	202	0.1	12	<10	110	--	--
AT 3+00 1+50	202	0.2	12	<10	150	--	--
AT 3+00 2+00	202	0.1	17	<10	N.S.S.	--	--
AT 3+00 2+50	202	0.1	6	<10	90	--	--
AT 3+00 3+00	202	0.1	8	N.S.S.	N.S.S.	--	--
AT 3+00 3+50	202	0.1	2	N.S.S.	120	--	--
AT 3+00 4+00	202	0.1	4	N.S.S.	210	--	--
AT 3+00 4+50	202	0.1	12	20	170	--	--
AT 3+00 5+00	202	0.1	12	<10	180	--	--
AT 3+00 5+50	202	0.1	8	<10	130	--	--
AT 3+00 6+00	202	0.1	12	<10	110	--	--
AT 3+00 6+50	202	0.1	6	<10	90	--	--
AT 3+00 7+00	202	0.1	2	N.S.S.	N.S.S.	--	--
AT 3+00 7+50	202	0.1	2	N.S.S.	150	--	--
AT 3+00 8+00	202	0.1	3	N.S.S.	130	--	--
AT 3+00 8+50	202	0.1	14	10	70	--	--
AT 3+00 9+00	202	0.1	7	10	100	--	--
AT 4+00 0+00	202	0.1	10	<10	140	--	--
AT 4+00 0+50	202	0.2	11	<10	210	--	--
AT 4+00 1+00	202	0.1	2	N.S.S.	190	--	--
AT 4+00 1+50	202	0.1	2	N.S.S.	N.S.S.	--	--
AT 4+00 2+00	202	0.1	14	N.S.S.	170	--	--
AT 4+00 2+50	202	0.1	1	N.S.S.	N.S.S.	--	--
AT 4+00 3+00	202	0.1	7	N.S.S.	110	--	--
AT 4+00 3+50	202	0.1	5	20	110	--	--
AT 4+00 4+00	202	0.1	7	<10	90	--	--
AT 4+00 4+50	202	0.1	14	<10	260	--	--
AT 4+00 5+00	202	0.1	11	<10	190	--	--
AT 4+00 5+50	202	0.1	4	<10	490	--	--
AT 4+00 6+00	202	0.1	7	<10	240	--	--
AT 4+00 6+50	202	0.1	6	<10	280	--	--
AT 4+00 7+00	202	0.1	25	<10	230	--	--
AT 4+00 7+50	202	0.1	17	<10	210	--	--
AT 4+00 8+00	202	0.1	17	<10	170	--	--
AT 4+00 8+50	202	0.1	22	<10	230	--	--
AT 4+00 9+00	202	0.1	14	<10	150	--	--
AT 5+00 0+00	202	0.1	11	<10	190	--	--
AT 5+00 0+50	202	0.1	12	<10	110	--	--
AT 5+00 2+00	202	0.1	6	<10	160	--	--
AT 5+00 2+50	202	0.1	11	<10	130	--	--

Certified by *Howie Biddle*





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 TELEX: 043-52597

• ANALYTICAL CHEMISTS

• GEOCHEMISTS

• REGISTERED ASSAYERS

## CERTIFICATE OF ANALYSIS

TO : MUTUAL RESOURCES  
 904-1199 WEST HASTINGS STREET,  
 VANCOUVER, B.C.

CERT. # : A8010750-003-A  
 INVOICE # : 39980  
 DATE : 29-OCT-80

Sample description	Prep code	Ag ppm	As ppm	Au -(AA) ppb	Hg ppb		
L2 AT 5+00 3+00	202	0.1	11	<10	110	--	--
5 AT 5+00 3+50	202	0.1	11	<10	140	--	--
AT 5+00 4+00	202	0.1	9	<10	230	--	--
AT 5+00 4+50	202	0.1	11	<10	210	--	--
AT 5+00 5+00	202	0.1	12	<10	160	--	--
AT 5+00 5+50	202	0.1	5	<10	440	--	--
AT 5+00 6+00	202	0.1	12	<10	6200	--	--
AT 5+00 6+50	202	0.1	7	<10	210	--	--
AT 5+00 7+00	202	0.1	11	10	330	--	--
AT 5+00 7+50	202	0.1	7	<10	230	--	--
AT 5+00 8+00	202	0.1	10	10	300	--	--
AT 5+00 8+50	202	0.1	7	<10	190	--	--
AT 5+00 9+00	202	0.1	8	<10	240	--	--
N AT 1+00N 4+50	202	0.1	11	<10	90	--	--
N AT 1+00N 5+00	202	0.1	7	10	100	--	--
AT 1+00N 5+50	202	0.1	5	<10	70	--	--
AT 1+00N 6+00	202	0.1	14	10	70	--	--
AT 1+00N 8+00	202	0.2	7	<10	180	--	--
AT 1+00N 8+50	202	0.1	9	<10	100	--	--
L2 N AT 2+00N 0+00	202	0.1	9	<10	150	--	--
N AT 2+00N 0+50	202	0.1	10	<10	70	--	--
AT 2+00N 1+00	202	0.1	1	N.S.S.	N.S.S.	--	--
AT 2+00N 1+50	202	0.1	9	<10	60	--	--
AT 2+00N 2+00	202	0.1	1	N.S.S.	150	--	--
AT 2+00N 2+50	202	0.1	1	N.S.S.	170	--	--
AT 2+00N 3+00	202	0.1	15	<10	140	--	--
AT 2+00N 3+50	202	0.1	9	<10	230	--	--
AT 2+00N 4+00	202	0.1	9	<10	200	--	--
AT 2+00N 4+50	202	0.1	2	<10	N.S.S.	--	--
L2-NAT 1+00 4+50	202	0.1	8	<10	170	--	--
L1 BRE 0+00E	202	0.1	10	<10	260	--	--
of BRE 0+50E	202	0.1	21	<10	210	--	--
from BRE 1+00E	202	0.1	19	<10	160	--	--
BRE 1+50E	202	0.1	19	10	200	--	--
BRE 2+00E	202	0.2	15	<10	750	--	--
BRE 2+50E	202	0.1	15	<10	190	--	--
BRE 3+00E	202	0.1	12	<10	180	--	--
BRE 3+50E	202	0.1	15	<10	170	--	--
BRE 4+00E	202	0.2	14	<10	130	--	--
BRE 4+50E	202	0.1	14	<10	170	--	--

*Handwritten signature: Hans Biddle*

Certified by .....



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212 BROOKSBANK AVE.  
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CANADA V7J 2C1

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TELEPHONE: (604)984-0221  
TELEX: 043-52597

## CERTIFICATE OF ANALYSIS

TO : MUTUAL SOURCES  
904-111 WEST HASTINGS STREET,  
VANCOUVER, B.C.

CERT. # : A8010750-004-A  
INVOICE # : 39980  
DATE : 29-OCT-80

Sample Description	Prtn	Ag	As	Au -(AA)	Hg		
	ppm	ppm	ppm	ppb	ppb		
3RE 5+00E	202	0.1	11	<10	190	--	--
3RE 5+50E	202	0.1	15	<10	170	--	--
3RE 6+00E	202	0.1	19	<10	180	--	--
3RE 6+30E	202	0.1	10	<10	150	--	--
3RE 7+00E	202	0.1	13	<10	120	--	--
3RE 7+50E	202	0.2	17	<10	140	--	--
3RE 8+00E	202	0.1	16	<10	210	--	--
3RE 8+50E	202	0.1	17	<10	140	--	--
3RE 9+00E	202	0.1	16	<10	110	--	--



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Certified by *Walt Bille*





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## CERTIFICATE OF ANALYSIS

TO : MUTUAL RESOURCES  
 904-1199 WEST HASTINGS STREET,  
 VANCOUVER, B.C.

CERT. # : A8010868-001-A  
 INVOICE # : 40280  
 DATE : 06-NOV-80  
 P.O. # : NONE

Sample description	Prep code	Ag ppm	As ppm	Au -(AA) ppb	Hg ppb		
5 BL 1S L1-0+00	202	0.1	9	<10	140	--	--
BL 1S L1-0+50	202	0.1	9	<10	110	--	--
BL 1S L1-1+00	202	0.1	2	<10	150	--	--
BL 1S L1-1+50	202	0.1	9	<10	180	--	--
BL 1S L1-3+00	202	0.1	10	<10	180	--	--
BL 1S L1-3+50	202	0.1	11	<10	490	--	--
BL 1S L1-4+00	202	0.1	5	<10	140	--	--
BL 1S L1-5+50	202	0.1	3	<10	170	--	--
BL 1S L1-6+00	202	0.1	5	<10	230	--	--
BL 1S L1-6+50	202	0.1	7	<10	480	--	--
BL 1S L1-7+00	202	0.1	5	<10	150	--	--
BL 1S L1-7+50	202	0.1	1	<10	240	--	--
BL 1S L1-8+00	202	0.1	1	<10	N.S.S.	--	--
BL 1S L1-8+50	202	0.1	3	<10	410	--	--
BL 1S L1-9+00	202	0.1	4	<10	300	--	--
2S BL 1S L2-0+00	202	0.1	6	<10	510	--	--
BL 1S L2-0+50	202	0.1	9	<10	270	--	--
BL 1S L2-1+00	202	0.1	3	<10	230	--	--
BL 1S L2-1+50	202	0.1	1	<10	290	--	--
BL 1S L2-2+00	202	0.1	2	10	220	--	--
BL 1S L2-2+50	202	0.1	9	20	260	--	--
BL 1S L2-3+50	202	0.1	1	N.S.S.	1400	--	--
BL 1S L2-4+00	202	0.1	4	<10	210	--	--
BL 1S L2-4+50	202	0.1	4	<10	120	--	--
BL 1S L2-5+00	202	0.1	3	10	310	--	--
BL 1S L2-5+50	202	0.1	6	<10	180	--	--
BL 1S L2-6+00	202	0.1	4	<10	210	--	--
BL 1S L2-6+50	202	0.1	2	<10	310	--	--
BL 1S L2-7+00	202	0.1	5	<10	170	--	--
BL 1S L2-7+50	202	0.1	9	10	160	--	--
BL 1S L2-8+00	202	0.1	9	<10	250	--	--
BL 1S L2-8+50	202	0.1	6	<10	150	--	--
BL 1S L2-9+00	202	0.1	5	<10	100	--	--
AT 1+00 L2-0+00	202	0.1	7	<10	140	--	--
AT 1+00 L2-0+50	202	0.1	10	<10	150	--	--
AT 1+00 L2-1+00	202	0.1	1	N.S.S.	160	--	--
AT 1+00 L2-1+50	202	0.1	17	<10	180	--	--
L-2 AT 1+00 L2-2+00	202	0.1	1	<10	N.S.S.	--	--
AT 1+00 L2-2+50	202	0.1	3	<10	120	--	--
AT 1+00 L2-3+00	202	0.1	3	10	130	--	--

Certified by *J. McPhay*



MEMBER  
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212 BROOKSBANK AVE.  
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 TELEPHONE: (604)984-0221  
 TELEX: 043-52597

• ANALYTICAL CHEMISTS

• GEOCHEMISTS

• REGISTERED ASSAYERS

## CERTIFICATE OF ANALYSIS

TO : MUTUAL RESOURCES  
 904-1199 WEST HASTINGS STREET,  
 VANCOUVER, B.C.

CERT. # : A8010868-002-A  
 INVOICE # : 40280  
 DATE : 06-NOV-80  
 P.O. # : NONE

Sample description	Prep code	Ag ppm	As ppm	Au -(AA) ppb	Hg ppb		
AT 1+00 L2-3+50	202	0.1	9	<10	120	--	--
AT 1+00 L2-4+00	202	0.2	2	N.S.S.	130	--	--
3L2 AT 2+00 L2-5+00	202	0.1	14	<10	110	--	--
2N AT 2+00 L2-5+50	202	0.1	12	<10	160	--	--
AT 2+00 L2-6+00	202	0.1	11	<10	150	--	--
AT 2+00 L2-7+00	202	0.2	9	<10	180	--	--
AT 2+00 L2-7+50	202	0.1	10	<10	210	--	--
AT 2+00 L2-8+00	202	0.1	12	10	200	--	--
AT 2+00 L2-8+50	202	0.1	7	<10	240	--	--
AT 2+00 L2-9+00	202	0.2	6	<10	280	--	--
3N AT 3+00N L3-0+00	202	0.1	7	<10	100	--	--
AT 3+00N L3-0+50	202	0.1	11	<10	250	--	--
AT 3+00N L3-1+00	202	0.1	9	<10	210	--	--
AT 3+00N L3-1+50	202	0.1	11	<10	170	--	--
AT 3+00N L3-2+00	202	0.1	11	<10	180	--	--
AT 3+00N L3-2+50	202	0.1	5	<10	160	--	--
AT 3+00N L3-3+00	202	0.1	7	10	110	--	--
AT 3+00N L3-3+50	202	0.1	15	<10	90	--	--
AT 3+00N L3-4+00	202	0.1	5	<10	120	--	--
AT 3+00N L3-4+50	202	0.1	9	<10	140	--	--
AT 3+00N L3-5+00	202	0.1	5	<10	130	--	--
AT 3+00N L3-5+50	202	0.1	12	<10	90	--	--
AT 3+00N L3-6+50	202	0.1	10	<10	80	--	--
AT 3+00N L3-7+00	202	0.1	9	<10	90	--	--
AT 3+00N L3-7+50	202	0.1	9	<10	70	--	--
AT 3+00N L3-8+00	202	0.1	5	<10	180	--	--
AT 3+00N L3-8+50	202	0.1	6	<10	190	--	--
AT 3+00N L3-9+00	202	0.1	11	<10	190	--	--
4N AT 4+00N L4-0+00	202	0.2	4	<10	200	--	--
AT 4+00N L4-0+50	202	0.1	9	<10	120	--	--
AT 4+00N L4-1+00	202	0.1	9	<10	140	--	--
AT 4+00N L4-1+50	202	0.1	11	<10	190	--	--
AT 4+00N L4-2+00	202	0.1	10	<10	230	--	--
AT 4+00N L4-2+50	202	0.1	6	<10	210	--	--
AT 4+00N L4-3+00	202	0.1	5	<10	140	--	--
AT 4+00N L4-3+50	202	0.1	14	<10	160	--	--
AT 4+00N L4-4+00	202	0.1	10	<10	190	--	--
BRE 2N L6-5+00	202	0.1	15	<10	160	--	--
BRE 2N L6-6+00	202	0.1	14	<10	790	--	--
N BRE 2N L7-1+50	202	0.1	16	<10	230	--	--

Certified by *J. McHay*



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TELEX: 043-52597

• ANALYTICAL CHEMISTS

• GEOCHEMISTS

• REGISTERED ASSAYERS

## CERTIFICATE OF ANALYSIS

TO: MUTUAL RESOURCES  
904-1199 WEST HASTINGS STREET,  
VANCOUVER, B.C.

CERT. # : A8010868-003-A  
INVOICE # : 40280  
DATE : 06-NOV-80  
P.O. # : NONE

Sample # description	Prep code	Ag ppm	As ppm	Au -(AA) ppb	Hg ppb		
BRE 2N L7-2+00	202	0.1	17	<10	180	--	--
BRE 2N L7-2+50	202	0.1	15	<10	140	--	--



Certified by *J. McKay*



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• ANALYTICAL CHEMISTS

• GEOCHEMISTS

• REGISTERED ASSAYERS

## CERTIFICATE OF ANALYSIS

CLIENT: MUTUAL RESOURCES  
 934-1199 WEST HASTINGS STREET,  
 VANCOUVER, B.C.

CERT. # : A8010882-001-A  
 INVOICE # : 40444  
 DATE : 14-NOV-80  
 P.O. # : NONE

Sample description	Prep code	Ag ppm	As ppm	Au -(AA) ppb	Hg ppb		
BL 1N-L1-0+00	202	0.1	9	<10	120	--	--
BL 1N-L1-0+50	202	0.1	6	<10	70	--	--
BL 1N-L1-1+00	202	0.1	3	N.S.S.	110	--	--
BL 1N-L1-1+50	202	0.1	7	<10	40	--	--
BL 1N-L1-2+00	202	0.1	3	N.S.S.	40	--	--
BL 1N-L1-2+50	202	0.1	10	<10	60	--	--
BL 1N-L1-3+00	202	0.1	7	N.S.S.	100	--	--
BL 1N-L1-3+50	202	0.1	5	<10	50	--	--
BL 1N-L1-4+00	202	0.1	6	120	70	--	--
BL 1N-L1-5+00	202	0.1	23	<10	140	--	--
BL 1N-L1-5+50	202	0.1	4	<10	190	--	--
BL 1N-L1-6+00	202	0.1	5	<10	110	--	--
BL 1N-L1-6+50	202	0.1	10	<10	160	--	--
BL 1N-L1-7+00	202	0.2	2	N.S.S.	240	--	--
BL 1N-L1-7+50	202	0.1	6	<10	90	--	--
BL 1N-L1-8+00	202	0.1	7	<10	130	--	--
BL 1N-L1-8+50	202	0.1	10	<10	140	--	--
BL 1N-L1-9+00	202	0.1	10	<10	120	--	--
BL 1N-L2-0+00	202	0.1	11	<10	170	--	--
BL 1N-L2-0+50	202	0.1	6	<10	160	--	--
BL 1N-L2-1+00	202	0.1	4	N.S.S.	120	--	--
BL 1N-L2-1+50	202	0.1	5	N.S.S.	130	--	--
BL 1N-L2-2+00	202	0.1	11	<10	110	--	--
BL 1N-L2-2+50	202	0.1	10	<10	110	--	--
BL 1N-L2-3+00	202	0.1	10	<10	60	--	--
BL 1N-L2-3+50	202	0.1	7	<10	120	--	--
BL 1N-L2-4+00	202	0.1	9	<10	100	--	--
BL 1N-L2-5+00	202	0.1	14	<10	80	--	--
BL 1N-L2-5+50	202	0.1	5	N.S.S.	120	--	--
BL 1N-L2-6+00	202	0.1	2	<10	70	--	--
BL 1N-L2-6+50	202	0.1	12	10	190	--	--
BL 1N-L2-7+00	202	0.1	14	<10	180	--	--
BL 1N-L2-7+50	202	0.1	11	N.S.S.	120	--	--
BL 1N-L2-8+00	202	0.1	6	<10	160	--	--
BL 1N-L2-8+50	202	0.1	14	<10	90	--	--
BL 1N-L2-9+00	202	0.1	11	<10	130	--	--
BL 1N-L3-0+00	202	0.1	5	<10	130	--	--
BL 1N-L3-0+50	202	0.1	6	<10	30	--	--
BL 1N-L3-1+00	202	0.1	5	<10	100	--	--
BL 1N-L3-1+50	202	0.1	2	N.S.S.	100	--	--

Certified by *Harold Bickler*



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 TELEX: 043-52597

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• GEOCHEMISTS

• REGISTERED ASSAYERS

## CERTIFICATE OF ANALYSIS

TO : MUTUAL RESOURCES  
 904-1199 WEST HASTINGS STREET,  
 VANCOUVER, B.C.

CERT. # : A8010882-002-A  
 INVOICE # : 40444  
 DATE : 14-NOV-80  
 P.O. # : NONE

Sample description	Prep code	Ag ppm	As ppm	AU -(AA) ppb	Hg ppb		
BL 1N-L3-2+00	202	0.1	9	<10	100	--	--
BL 1N-L3-2+50	202	0.1	14	<10	230	--	--
BL 1N-L3-3+00	202	0.1	6	<10	110	--	--
BL 1N-L3-3+50	202	0.1	7	<10	150	--	--
BL 1N-L3-4+00	202	0.1	22	<10	260	--	--
BL 1N-L3-5+00	202	0.1	15	<10	180	--	--
BL 1N-L3-5+50	202	0.1	7	<10	170	--	--
BL 1N-L3-6+00	202	0.2	10	<10	320	--	--
BL 1N-L3-6+50	202	0.1	7	<10	130	--	--
BL 1N-L3-7+00	202	0.1	3	<10	150	--	--
BL 1N-L3-7+50	202	0.2	9	<10	500	--	--
BL 1N-L3-8+00	202	0.1	6	<10	180	--	--
BL 1N-L3-8+50	202	0.1	14	<10	160	--	--
BL 1N-L3-9+00	202	0.1	10	<10	200	--	--
N <sup>-</sup> BL 1N-L4-0+00	202	0.1	4	N.S.S.	180	--	--
BL 1N-L4-0+50	202	0.1	6	<10	110	--	--
BL 1N-L4-1+00	202	0.1	5	<10	90	--	--
BL 1N-L4-1+50	202	0.1	11	<10	100	--	--
BL 1N-L4-2+00	202	0.1	11	<10	160	--	--
BL 1N-L4-2+50	202	0.1	6	<10	470	--	--
BL 1N-L4-3+00	202	0.1	9	<10	130	--	--
BL 1N-L4-3+50	202	0.1	7	<10	770	--	--
BL 1N-L4-4+00	202	0.1	5	<10	210	--	--
BL 1N-L4-5+00	202	0.1	5	<10	210	--	--
BL 1N-L4-5+50	202	0.1	10	<10	210	--	--
BL 1N-L4-6+00	202	0.1	4	<10	220	--	--
BL 1N-L4-6+50	202	0.1	5	<10	140	--	--
BL 1N-L4-7+00	202	0.1	9	<10	170	--	--
BL 1N-L4-7+50	202	0.1	4	<10	140	--	--
BL 1N-L4-8+00	202	0.1	11	<10	150	--	--
BL 1N-L4-8+50	202	0.1	6	<10	90	--	--
N <sup>-</sup> BL 1N-L4-9+00	202	0.1	5	<10	130	--	--
BL 1N-L5-0+00	202	0.1	4	<10	230	--	--
BL 1N-L5-0+50	202	0.1	16	<10	1500	--	--
BL 1N-L5-1+00	202	0.1	11	<10	300	--	--
BL 1N-L5-1+50	202	0.1	11	<10	410	--	--
BL 1N-L5-2+00	202	0.1	5	<10	330	--	--
BL 1N-L5-2+50	202	0.1	5	<10	130	--	--
BL 1N-L5-3+00	202	0.1	4	<10	120	--	--
BL 1N-L5-3+50	202	0.1	4	<10	220	--	--

*Frank Bickler*

Certified by .....





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TELEX: 043-52597

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## CERTIFICATE OF ANALYSIS

CLIENT: MUTUAL RESOURCES  
904-1199 WEST HASTINGS STREET,  
VANCOUVER, B.C.

CERT. # : A8010382-003-A  
INVOICE # : 40444  
DATE : 14-NOV-80  
P.O. # : NONE

Sample description	Prep code	Ag ppm	As ppm	Au -(AA) ppb	Hg ppb		
1 BL 1N-L5-4+00	202	0.1	6	<10	210	--	--
3L 1N-L5-5+00	202	0.1	6	N.S.S.	170	--	--
3L 1N-L5-5+50	202	0.1	9	<10	260	--	--
3L 1N-L5-6+00	202	0.1	11	<10	220	--	--
3L 1N-L5-6+50	202	0.1	10	<10	330	--	--
3L 1N-L5-7+00	202	0.1	5	<10	160	--	--
3L 1N-L5-7+50	202	0.1	7	<10	150	--	--
3L 1N-L5-8+00	202	0.1	16	<10	290	--	--
3L 1N-L5-9+00	202	0.1	22	<10	220	--	--
3L 1N-L5-0+00	202	0.1	12	N.S.S.	260	--	--
3L 1N-L5-0+50	202	0.1	20	<10	200	--	--
3L 1N-L5-1+00	202	0.1	14	<10	160	--	--
3L 1N-L5-1+50	202	0.1	7	<10	170	--	--
3L 1N-L5-2+00	202	0.1	11	<10	190	--	--
3L 1N-L5-2+50	202	0.1	19	<10	250	--	--
3L 1N-L5-3+00	202	0.1	11	N.S.S.	200	--	--
3L 1N-L5-3+50	202	0.1	14	<10	250	--	--
3L 1N-L5-4+00	202	0.1	5	<10	210	--	--
3L 1N-L5-5+00	202	0.1	12	<10	190	--	--
3L 1N-L5-5+50	202	0.1	11	<10	250	--	--
3L 1N-L5-6+00	202	0.1	17	<10	230	--	--
3L 1N-L5-6+50	202	0.1	11	<10	310	--	--
3L 1N-L5-7+00	202	0.1	19	<10	300	--	--
3L 1N-L5-7+50	202	0.1	19	<10	270	--	--
3L 1N-L5-8+00	202	0.1	20	<10	200	--	--
3L 1N-L5-8+50	202	0.2	20	<10	240	--	--
3L 1N-L5-9+00	202	0.1	20	<10	240	--	--
3L 1N-L7-0+00	202	0.1	7	N.S.S.	180	--	--
3L 1N-L7-0+50	202	0.1	16	<10	270	--	--
3L 1N-L7-1+00	202	0.1	16	<10	170	--	--
3L 1N-L7-1+50	202	0.1	17	<10	200	--	--
3L 1N-L7-2+00	202	0.1	16	<10	180	--	--
3L 1N-L7-2+50	202	0.1	16	<10	410	--	--
3L 1N-L7-3+00A	202	0.1	16	<10	200	--	--
3L 1N-L7-3+00B	202	0.1	22	<10	230	--	--
3L 1N-L7-3+50A	202	0.1	17	<10	200	--	--
3L 1N-L7-3+50B	202	0.1	17	<10	190	--	--
3L 1N-L7-4+00	202	0.1	17	<10	200	--	--
3L 1N-L7-5+00	202	0.1	20	<10	200	--	--
3L 1N-L3-0+00	202	0.1	20	<10	210	--	--

*Hart Bisher*

Certified by .....





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212 BROOKSBANK AVE.  
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 TELEX: 043-52597

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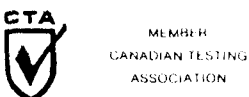
## CERTIFICATE OF ANALYSIS

TO : MUTUAL RESOURCES  
 904-1199 WEST HASTINGS STREET,  
 VANCOUVER, B.C.

CERT. # : 48010832-004-A  
 INVOICE # : 40444  
 DATE : 14-NOV-80  
 P.O. # : NONE

Sample description	Prep code	Ag ppm	As ppm	Au -(AA) ppm	Hg ppm		
BL 1N-L3-0+50	202	0.1	15	<10	180	--	--
BL 1N-L3-1+00	202	0.1	19	<10	250	--	--
BL 1N-L3-1+50	202	0.1	16	<10	190	--	--
BL 1N-L3-2+00	202	0.1	15	<10	130	--	--
BL 1N-L3-2+50	202	0.1	19	<10	220	--	--
BL 1N-L3-4+00	202	0.1	16	<10	170	--	--
<i>L3</i> BL 3N-L3-0+00	202	0.1	15	<10	170	--	--
<i>3N</i> BL 3N-L3-0+50	202	0.1	9	<10	130	--	--
BL 3N-L3-1+00	202	N.S.S.	N.S.S.	N.S.S.	N.S.S.	--	--
BL 3N-L3-1+50	202	0.1	16	<10	260	--	--
BL 3N-L3-2+00	202	0.1	14	<10	220	--	--
BL 3N-L3-2+50	202	0.1	16	<10	190	--	--
BL 3N-L3-3+00	202	0.1	15	<10	210	--	--
BL 3N-L3-3+50	202	0.1	17	<10	300	--	--
BL 3N-L3-4+00	202	0.1	23	<10	270	--	--
BL 3N-L3-5+00	202	0.1	20	<10	270	--	--
BL 3N-L3-5+50	202	0.1	14	<10	260	--	--
BL 3N-L3-6+00	202	0.1	16	<10	250	--	--
BL 3N-L3-6+50	202	0.1	19	<10	250	--	--
BL 3N-L3-7+00	202	0.1	19	<10	270	--	--
BL 3N-L3-7+50	202	0.1	20	<10	270	--	--
BL 3N-L3-8+00	202	0.1	20	<10	210	--	--
BL 3N-L3-8+50	202	0.1	17	<10	230	--	--
<i>FN</i> BL 3N-L3-9+00	202	0.1	20	<10	190	--	--
<i>FN</i> BL 3N-L4-0+00	202	0.1	7	<10	130	--	--
BL 3N-L4-0+50	202	0.1	7	<10	130	--	--
BL 3N-L4-1+00	202	0.1	7	<10	250	--	--
BL 3N-L4-1+50	202	0.1	3	<10	210	--	--
BL 3N-L4-2+00	202	0.1	15	<10	190	--	--
BL 3N-L4-2+50	202	0.1	15	<10	190	--	--
BL 3N-L4-3+00	202	0.1	14	<10	220	--	--
BL 3N-L4-3+50	202	0.1	20	<10	230	--	--
BL 3N-L4-4+00	202	0.1	19	<10	230	--	--
BL 3N-L4-4+50	202	0.1	17	<10	240	--	--
BL 3N-L4-5+00	202	0.1	16	<10	200	--	--
BL 3N-L4-5+50	202	0.1	15	<10	240	--	--
BL 3N-L4-6+00	202	0.1	17	<10	250	--	--
BL 3N-L4-6+50	202	0.1	17	<10	250	--	--
BL 3N-L4-7+00	202	0.1	22	<10	150	--	--
BL 3N-L4-7+50	202	0.1	22	<10	160	--	--
BL 3N-L4-8+00	202	0.1	17	<10	170	--	--

Certified by *Robert Bickler*





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 TELEPHONE: (604)984-0221  
 TELEX: 043-52597

• ANALYTICAL CHEMISTS

• GEOCHEMISTS

• REGISTERED ASSAYERS

## CERTIFICATE OF ANALYSIS

TO : MUTUAL RESOURCES  
 904-1199 WEST HASTINGS STREET,  
 VANCOUVER, B.C.

CERT. # : A8010832-005-A  
 INVOICE # : 40444  
 DATE : 14-NOV-80  
 P.O. # : NONE

	Sample description	Prep code	Ag ppm	As ppm	Au (AA) ppm	Hg ppm		
23	BL 3N-L4-0+50	202	0.1	15	<10	160	--	--
	BL 3N-L4-1+50	202	0.1	15	<10	140	--	--
5N	BL 3N-L4-3+50	202	0.1	16	<10	120	--	--
	BL 3N-L4-3+50	202	0.1	15	<10	160	--	--
	BL 3N-L4-4+00	202	0.1	16	<10	130	--	--
	BL 3N-L4-5+00	202	0.1	3	<10	180	--	--
122	AT 2+00N-L4-0+50	202	0.1	0	<10	100	--	--
4N	AT 2+00N-L4-0+50	202	0.1	2	<10	140	--	--
	AT 2+00N-L4-1+00	202	0.1	4	<10	110	--	--
	AT 2+00N-L4-2+50	202	0.1	7	<10	130	--	--
	AT 2+00N-L4-3+00	202	0.1	12	<10	160	--	--
	AT 2+00N-L4-4+50	202	0.1	11	<10	190	--	--
	AT 2+00N-L4-5+00	202	0.1	14	<10	230	--	--
	AT 2+00N-L4-6+50	202	0.1	17	<10	200	--	--
	AT 2+00N-L4-7+00	202	0.1	16	<10	130	--	--
121	AT 2+00N-L4-8+00	202	0.1	10	<10	160	--	--
5N	AT 2+00N-L4-9+00	202	0.1	9	<10	210	--	--
	AT 2+00N-L4-0+50	202	0.1	4	<10	90	--	--
	AT 2+00N-L4-1+00	202	0.1	10	<10	140	--	--
	AT 2+00N-L4-2+50	202	0.1	4	<10	260	--	--
	AT 2+00N-L4-3+00	202	0.1	11	<10	170	--	--
	AT 2+00N-L4-4+50	202	0.1	22	<10	200	--	--
	AT 2+00N-L4-5+00	202	0.1	12	<10	170	--	--
	AT 2+00N-L4-6+50	202	0.1	12	<10	200	--	--
	AT 2+00N-L4-7+00	202	0.1	17	<10	230	--	--
123	AT 3N-L1-0+00	202	0.1	19	<10	200	--	--
IN	AT 3N-L1-0+50	202	0.1	6	<10	140	--	--
	AT 3N-L1-1+00	202	0.1	11	<10	210	--	--
	AT 3N-L1-1+50	202	0.1	15	<10	180	--	--
	AT 3N-L1-2+00	202	0.1	14	<10	200	--	--
	AT 3N-L1-2+50	202	0.1	12	<10	210	--	--
	AT 3N-L1-3+00	202	0.1	16	<10	180	--	--
	AT 3N-L1-3+50	202	0.1	12	<10	180	--	--
	AT 3N-L1-4+00	202	0.1	16	<10	180	--	--
	AT 3N-L1-5+00	202	0.1	19	<10	250	--	--
	AT 3N-L1-5+50	202	0.1	16	<10	200	--	--
	AT 3N-L1-6+00	202	0.1	12	<10	160	--	--
	AT 3N-L1-6+50	202	0.1	14	<10	180	--	--
	AT 3N-L1-7+00	202	0.1	27	<10	180	--	--
	AT 3N-L1-7+50	202	0.1	17	<10	180	--	--

Certified by *Hart Bichler*



MEMBER  
 CANADIAN TESTING  
 ASSOCIATION





# CHEMEX LABS LTD.

212 BROOKSBANK AVE  
 NORTH VANCOUVER, B.C.  
 CANADA V7J 2C1  
 TELEPHONE (604)984-0221  
 TELEX 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS
-------------------------

TO : MUTUAL RESOURCES  
 904-1199 WEST HASTINGS STREET,  
 VANCOUVER, B.C.

CERT. # : A8010882-006-A  
 INVOICE # : 40444  
 DATE : 14-NOV-80  
 P.O. # : NONE

Sample description	Prep code	Ag ppm	As ppm	AU -(AA) ppb	Hg ppb		
BL3 AT 3N-L1-8+00	202	0.1	15	<10	140	--	--
1N AT 3N-L1-9+50	202	0.1	16	<10	170	--	--
AT 3N-L1-9+00	202	0.1	22	<10	160	--	--
2N AT 3N-L2-0+50	202	0.1	11	<10	150	--	--
AT 3N-L2-1+50	202	0.1	7	<10	190	--	--
AT 3N-L2-2+00	202	0.1	12	<10	180	--	--
AT 3N-L2-2+50	202	0.1	15	<10	170	--	--
AT 3N-L2-3+00	202	0.1	15	<10	260	--	--
AT 3N-L2-3+50	202	0.1	17	<10	150	--	--
AT 3N-L2-4+00	202	0.1	19	<10	190	--	--
AT 3N-L2-5+00	202	0.1	17	<10	170	--	--
AT 3N-L2-5+50	202	0.1	19	<10	210	--	--
AT 3N-L2-6+00	202	0.1	19	<10	220	--	--
AT 3N-L2-6+50	202	0.1	22	<10	200	--	--
AT 3N-L2-7+00	202	0.1	29	<10	180	--	--
AT 3N-L2-7+50	202	0.1	19	<10	130	--	--
AT 3N-L2-8+00	202	0.1	25	<10	130	--	--
AT 3N-L2-8+50	202	0.1	22	<10	200	--	--
AT 3N-L2-9+00	202	0.1	19	<10	140	--	--
BL2 BR2 2N-L5-0+00	202	0.1	9	<10	N.S.S.	--	--
5N BR2 2N-L5-0+50	202	0.1	9	<10	60	--	--
BR2 2N-L5-1+00	202	0.1	10	<10	140	--	--
BR2 2N-L5-1+50	202	0.1	20	<10	130	--	--
BR2 2N-L5-2+00	202	0.1	19	<10	120	--	--
BR2 2N-L5-2+50	202	0.1	23	<10	150	--	--
BR2 2N-L5-3+00	202	0.1	24	<10	160	--	--
BR2 2N-L5-3+50	202	0.1	12	<10	160	--	--
BR2 2N-L6-0+00	202	0.1	11	<10	90	--	--
6N BR2 2N-L6-0+50	202	0.1	19	<10	170	--	--
BR2 2N-L6-1+00	202	0.1	22	<10	150	--	--
BR2 2N-L6-1+50	202	0.1	17	<10	140	--	--
BR2 2N-L6-2+00	202	0.1	16	<10	130	--	--
BR2 2N-L6-2+50	202	0.1	22	N.S.S.	200	--	--
BR2 2N-L6-3+00	202	0.1	19	<10	190	--	--
BR2 2N-L6-3+50	202	0.1	19	<10	170	--	--
BR2 2N-L6-4+00	202	0.1	19	<10	130	--	--
BR2 2N-L6-0+50	202	0.1	16	<10	170	--	--
7N BR2 2N-L7-0+00	202	0.1	24	<10	160	--	--
BR2 2N-L7-0+50	202	0.1	23	<10	170	--	--
BR2 2N-L7-1+00	202	0.1	22	<10	150	--	--

Certified by *Hart Bickler*





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TELEPHONE: (604)984-0221  
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

## CERTIFICATE OF ANALYSIS

TO : MTDORLE - SURFIS  
904-1177 WEST HASTINGS STREET,  
VANCOUVER, B.C.

CERT. # : A8010882-007-A  
INVOICE # : 40444  
DATE : 14-NOV-80  
P.O. # : NONE

Sample description	Prep code	Ag ppm	As ppm	Au -(AA) ppb	Hg ppb		
BL 2 BRE 24-L7-3+00	202	0.1	15	<10	120	--	--
7N BRE 24-L7-3+50	202	0.1	10	<10	120	--	--
BRE 24-L7-4+00	202	0.1	15	<10	120	--	--
BL 2 BL 10-L1-3+00	202	0.1	10	<10	140	--	--



MEMBER  
CANADIAN TESTING  
ASSOCIATION

Certified by *Hart Bickler*

SABRE MODEL 27 VLF-EM RECEIVER

The model 27 EM unit was designed originally for a large Canadian mining company to overcome the deficiencies inherent in existing units.

The instrument is so stable and selective that completely reliable measurements can be made on distant stations without interference from nearby powerful transmitters. Stability and selectivity are especially important when making field-strength measurements, which are now being emphasized as a means of locating conductors.

This EM receiver is very compact, requires no earphones or loudspeakers and is housed in a heavy scotch saddle leather case. All of these features add up to make an ideal one-man EM unit of unexcelled electrical performance and mechanical ruggedness.

SPECIFICATIONS -

Source of Primary Field - VLF radio stations (12 to 24 KHz.)

Number of Stations - 4, selected by switch; Cutler, Main on 17.8 KHz. and Seattle, Washington on 18.6 KBz. are standard, leaving 2 other stations that can be selected by the user.

Types of Measurement

1. Dip angle in degrees, read on a meter-type inclinometer with a range of  $\pm 60^\circ$  and an accuracy of  $\pm \frac{1}{2}^\circ$ .
2. Field strength, read on a meter and a precision digital dial with an accuracy exceeding 1%.
3. Out of phase component, read on the field strength meter as a residual reading when measuring the dip angle.

## VLF-EM OPERATING INSTRUCTIONS

The equipment is operated in the usual way as follows:

1. With the instrument held horizontal in front of you, turn around until a null appears on the field strength meter. You should now be facing the station.
2. With the receiver still facing the station, lift it to the vertical position and rotate it slightly in the vertical plane to your right or left until the best null appears on the field strength meter. Record the angle on the inclinometer at which the null appears. This is the DIP ANGLE (Positive or negative).
3. Return the instrument to the horizontal plane and turn around until the field strength meter is at its maximum reading. Set this maximum reading at 100 on the meter and record the reading on the gain control dial. This is the Field Strength Reading.
4. Repeat steps 1, 2 and 3 at each station.
5. To test the batteries turn the power switch on and push the test button. The field strength meter should read above the red mark. Battery life is approximately 200 hours and if the instrument is turned off between readings, the batteries should last for an entire season.

NOTE: An alternative way of measuring field strength is as follows:

Proceed as in step 3, setting the meter to 100. Now push the field strength button (marked FS) and the meter will read 50. (If it doesn't, adjust the gain control slightly). Leave the Gain Control setting where it is and take comparative Field Strength readings at each station by pressing the Field Strength button and recording the meter reading, which will vary from its Base Station Reading as you pass over conductive zones.

*PREFERRED METHOD* →

SABRE MODEL 27 VLF-EM RECEIVER - (Continued)

Dimensions and Weight

Approx.  $9\frac{1}{2}$ " x  $2\frac{1}{2}$ " x  $8\frac{1}{2}$ "; Weighs 5 lbs.

Batteries

8 alkaline penlite cells. The instrument will run continuously on 1 set of batteries for over 200 hours; So that in normal on-off use, the batteries will last all season. The battery condition under load is shown by pushing a button and reading voltage on the field strength meter.

### SELECTION OF STATIONS:

The stations are selected by the switch on the control panel, with the following abbreviations being used;

C = Cutler, Maine.	Frequency = 17.8 Khz.
S = Seattle, Wash.	Frequency = 18.6 Khz.
A = Annapolis, Md.	Frequency = 21.4 Khz.
H = Hawaii.	Frequency = 23.4 Khz.

The two most useful stations are Cutler and Seattle and these will be used almost exclusively. Note that Seattle is off the air for several hours on Thursdays for maintenance (between 10 A.M. and 2 P.M. usually). Cutler is off the air for the same length of time every Friday.

If Equipment fails to operate:

- (a) Check that station is transmitting (see above). If one station appears to be dead, check another one to see if it is operating normally.
- (b) Check batteries. If they read low or the reading begins to drop after the test button is held down for a few seconds, replace them. Note also that there are 8 batteries in the instrument and they cannot be individually checked by the test button. If the batteries have been in the unit for a long time it is possible that one is dead or very weak but that the total voltage indicated by the test button is near normal. It is cheap insurance to instal new batteries before starting a big survey.
- (c) If unit still fails to operate check that battery connectors are tight, then check wiring of battery connectors for breaks or damage.

DETAILED  
OPERATING INSTRUCTIONS  
SABRE VLF-EM RECEIVER

INTRODUCTION:

The VLF-EM method utilizes electromagnetic field transmitted from radio stations in the 15-25 K Hz range. The signals are propagated with the magnetic component of the field being horizontal in undisturbed areas.

Conductivity contrasts in the earth create secondary fields, producing a vertical component and changes in the field strength or amplitude. These conductive areas may be located, and to a degree, evaluated by measuring the various parameters of this electromagnetic field.

The Sabre VLF-EM receiver is tuned to receive any 4 transmitter stations: usually C-Cutler Maine, S-Seattle, H-Hawaii and P-Panama.

The station used in the survey should be selected so that the direction of the signal is roughly perpendicular to the direction of the grid lines which, in turn, should be laid out perpendicular to the regional strike.

MEASUREMENTS:

The Sabre VLF-EM receiver can be used to measure the following characteristics of the VLF field.

- (a) Tilt angle of resultant field;
- (b) Field strength of (a) horizontal component of field  
(b) vertical component of field

Field Procedure

The following procedure should be followed to measure the dip angle of null and the field strength of the horizontal component of the VLF field.

Initial Field Strength Adjustment

Adjust the gain control to provide a suitable relative field strength measurement, as follows:-

(a) hold receiver in horizontal position (meter faces horizontal) and rotate in a horizontal plane until a null is indicated on the F.S. meter; rotate 90° in this horizontal plane (F.S. meter reads maximum)

(b) adjust gain control so that the F.S. meter reads 100

(c) record gain control setting (000 to 999).  
Close guard over gain control and do not readjust unless a major field strength occurs.

The above procedure should be carried out at the beginning of each day's survey and checked during the day.

#### Dip Angle Measurement Procedure

1. Hold receiver in horizontal position and rotate in the horizontal plane until a null is observed. This aligns receiver in the field and the operator should be facing southerly or easterly depending on transmitter location.

2. Bring receiver up to the vertical position (meter faces vertical) and rotate the receiver in the vertical plane perpendicular to the transmitter direction until a null or minimum reading is observed on the field strength meter.

3. Hold the receiver in this field strength null position and read the inclinometer in degrees. Record this dip angle of null along with sign (+ or -).

#### Horizontal Field Strength Measurement Procedure

1. Return receiver to the horizontal position.  
2. Reestablish null bearing in horizontal plane.  
3. Rotate receiver 90° in the horizontal plane.  
4. Depress <sup>F.S.</sup>~~damp~~ push button switch and observe field strength meter reading for sufficient time to obtain an average F.S. meter reading. (depressed <sup>F.S.</sup>~~damp~~ switch slows needle action and reduces meter reading by half. The reading will normally range around 50).

5. Record F.S. reading.



Filtering Technique For VLF-EM Dip Angle Data

The standard profile method of presenting dip angle data may be difficult to interpret. A filtering technique, described by D.C. Fraser 1969 (Geophysics, V.34 No. 6, P. 958-967) enables the data to be presented on a plan map with conductive areas defined by contours.

The following explains the calculation:-

<u>Line</u>	<u>Station</u>	<u>Null</u>	<u>Filter</u>
8N	0 E	+ 3	
	1 E	+ 4	
	2 E	+ 4	
	3 E	+ 6	
	4 E	+ 7	
	5 E	+ 9	
	6 E	+ 12	
	7 E	+ 16	
	8 E	+ 2	
	9 E	- 4	
	11 E	- 6	
	12 E	- 1	
		+3+4= +7	
		+4+4= +8	
		+4+6= +10	
		+13	
		+16	
		+21	
		+28	
		+18	
		-2	
		-14	
		-16	
		-7	
		+7-(+10)= -3	
		+8-(+13)= -5	
		+10-(+16)= -6	
		-8	
		-12	
		+3	
		+30	
		+32	
		+14	
		-14-(-7)= -7	

Fig. 1 is an example of a field sheet showing null angle reading, filtered reading and relative field strength. Fig. 2 shows the field sheet with filter card overlaid. The small window in the side of the card shows the four readings used to calculate the filtered reading, and an arrow showing that the filter reading is to be plotted between station 8E and 9E as indicated in fig. 1. The card is moved down the field sheet, one reading at a time as a guide while carrying out the filtering procedure. Throughout the survey care must be taken to ensure that the filtered data has the correct sign. The positive values only are plotted and contoured while for negative values, only the negative sign is plotted.

Crone suggests in instructions for the Radem VLF-EM, the use of N-S or E-W notation instead of (+ or -) signs, however for filtering a sign must be substituted.

The following convention may be used to ensure the correct sign of filtered data and provide a consistent crossover pattern when studying the profiled null angle data.

1. When taking a reading, always face southerly, on east-west lines, and always face easterly on north-south lines.

2. Record data on field sheets (top to bottom) as follows: on N-S lines record from south to north  
: on E-W lines record from west to east

3. Plot and profile dip angle data on plan maps facing map north or map west.

The above convention will provide correct data regardless of the property location relative to the transmitter being used.

J.T. WALKER

MAY 17, 1974

Station - 024 VLF-EM SURVEY

PROPERTY G.I.T.S. TRANS SCOTTLE PAGE 1  
 OPERATOR \_\_\_\_\_ INSTR. S28215 DATE JUN 4/74

Line	Sta.	Null	Filter	F. S.	
8N	0E	+3		50	
(	1E	+4	-3	50	
	2E	+4	-5	52	
	3E	+6	-6	52	
	4E	+7	-8	52	
(	5E	+9	-12	52	
	6E	+12	+3	52	
	7E	+16	+20	60	
	8E	+2	+32	65	X OVER
	9E	-4	+14	62	
	10E	-10	-7	50	
	11E	-6	-10	48	
	12E	-1	+4	48	
	13E	+2	-5	50	
	14E	+4	-1	50	
(	15E	+4	+6	50	
	16E	+4	+10	55	X OVER
	17E	-2	+1	55	
(	18E	0	-2	50	
	19E	+1			
	20E	-1			
(					

Fig. 1 Example of Field Sheet

Filter - 024 VLF-EM SURVEY

PROPERTY G.I.T.S. TRANS SEATTLE PAGE 1  
 CLATOR \_\_\_\_\_ INSTR. 5025 DATE 11/4/74

						Filter	F. S.
							50
							50
FILTER CARD						-3	52
						-5	52
						-6	52
						-8	52
						-12	52
						+3	52
				+ a	+16	+20	60
				+ b	+2	+32	65
FILTERED READING $(a+b) - (c+d)$				>	-4	+14	62
				- c	-10	-7	50
				- d		-18	48
$(+16+2) - (-4+(-10)) =$ $(+18) - (-14) = +32$						-14	48
						-6	60
						+4	50
						+5	50
						+10	55
						+1	52
						-2	50

Fig. 2 Field Sheet with Filter Card Overlaid



AIRBORNE SURVEYS LTD.

512 - 625 Howe St., Vancouver, B.C.  
Canada V6C 2T6Phone (604) 683-3934  
Telex 04-51309

November 27, 1980

Mr. Bob Beaton  
Silver Standard Mines Ltd.  
1199 West Hastings Street  
Vancouver, B.C.

Dear Bob:

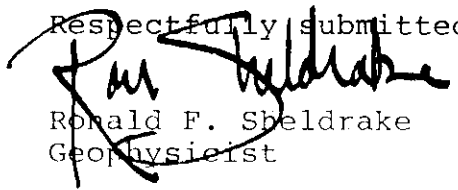
Re: Queen Charlotte Islands  
Geophysical Survey

The VLF electromagnetometer survey over the southern BRE claims (11-16, 19-24, 29, 30) has not identified any conductors that would be convincingly identifiable as targets for mineralization. Further, the nature of the data suggests that the VLF - e.m. system is not mapping formational units or rock types, and that the responses are due to changes in near surface conductivities (overburden). No estimate of overburden thicknesses can be made from the geophysical data.

The data over the Consolidated Cinola ground is rather sparse to convincingly identify any structural features other than, possibly, the magnetic (and conductive) feature at the south western ends of the three lines. The magnetic method may be the most suitable exploration tool in this environment; but care must be taken in acquiring data to about 2 gammas precision, since the susceptibility changes will most likely be subtle (contour pattern) and of low amplitude.

There is a likelihood that I will be undertaking a helicopter electromagnetometer (low frequency, 918 hertz) and magnetometer survey in the general area of your claims, early in 1981. I will be able to advise you on completion of that work, of the viability of these geophysical systems in that environment.

Respectfully submitted

  
Ronald F. Sheldrake  
Geophysicist



October 31, 1980

Mr. Bob Beaton  
Silver Standard Mines Ltd.  
1199 West Hastings Street  
Vancouver, B. C.

Dear Bob:

Further to your request to submit a brief report on the VLF work done in the Queen Charlotte Island area, I would like to make the following comments:

1. The three zones that were surveyed are outlined on FIGURE I.
2. The Sabre VLF magnetometer was used for the survey. It is a high-frequency e.m. device suitable for mapping and location of conductors; however, it is limited in depth penetration and target discrimination.
3. Not all of the data has been plotted but from what has been done I can make the following comments:

FIGURE II - Consolidated Cinola Area do

There were 3 short traverses run over this area, on which there were about 17 anomalies. Because of the large number of anomalies, and their apparent coincidence with streams, swamps, and deep overburden, it appears that the VLF responses do not arise from subsurface geological horizons, but are rather, responses due to surface features.

There could be an exception, however. It is noted that "drilled area" is a relatively resistive area flanked with anomalies on each side. If this feature is not due to a thinning of the overburden in that area (which is my guess), it might be mappable further northwards.

FIGURE III - Mutual Resources Ltd.

The four short traverses taken in this area indicate a large number of anomalies, that are for the most part not convincingly

...2/

correlatable. From the character of these responses, it appears that the responses are due to surface features.

FIGURE IV - South Road - North Road

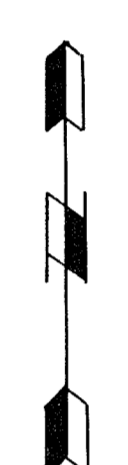
The same comments apply to these traverses except that there seems to be a change in character to the VLF data east of station 2500 on the North Road and east of station 700 on the South Road. This indicates a change in rock type perhaps, at any rate, the feature will be confirmed when the remainder of the data taken in that area is compiled.

Respectfully submitted,

A handwritten signature in cursive script, reading "Ron Sheldrake". The signature is written in black ink and is positioned above the typed name.

Ronald F. Sheldrake  
Geophysicist

RFS:nb



MUTUAL RESOURCES

BRE PROJECT  
QUEEN CHARLOTTE  
ISLANDS  
NTS 103 F/8E. 9E

scale 0 500m

GRIDS MAP  
(Fig. 3)

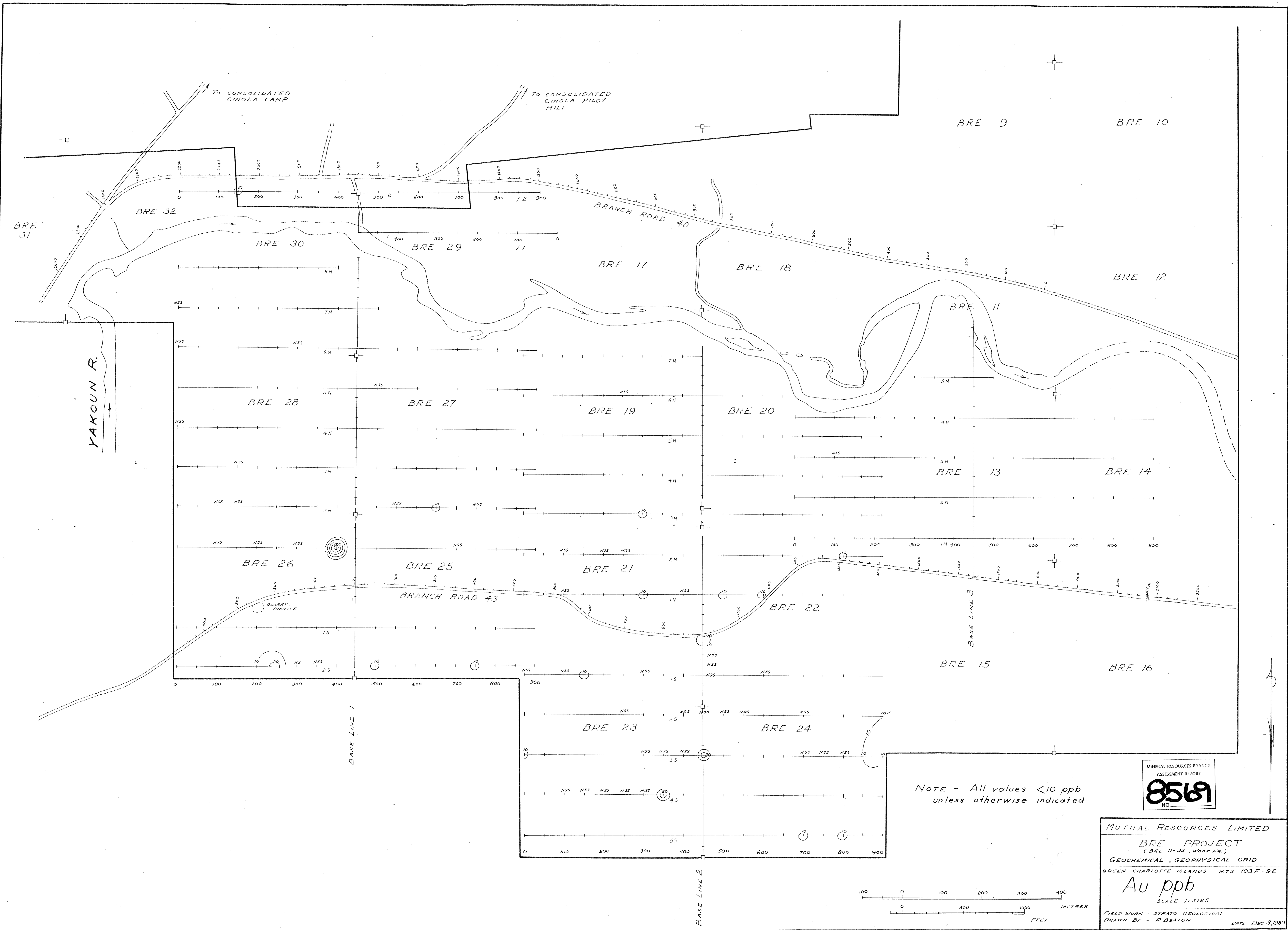
To Accompany a report by R. Beaton  
Dated Dec/80

Drawn by  
J. Smith

MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**8569**  
NO.

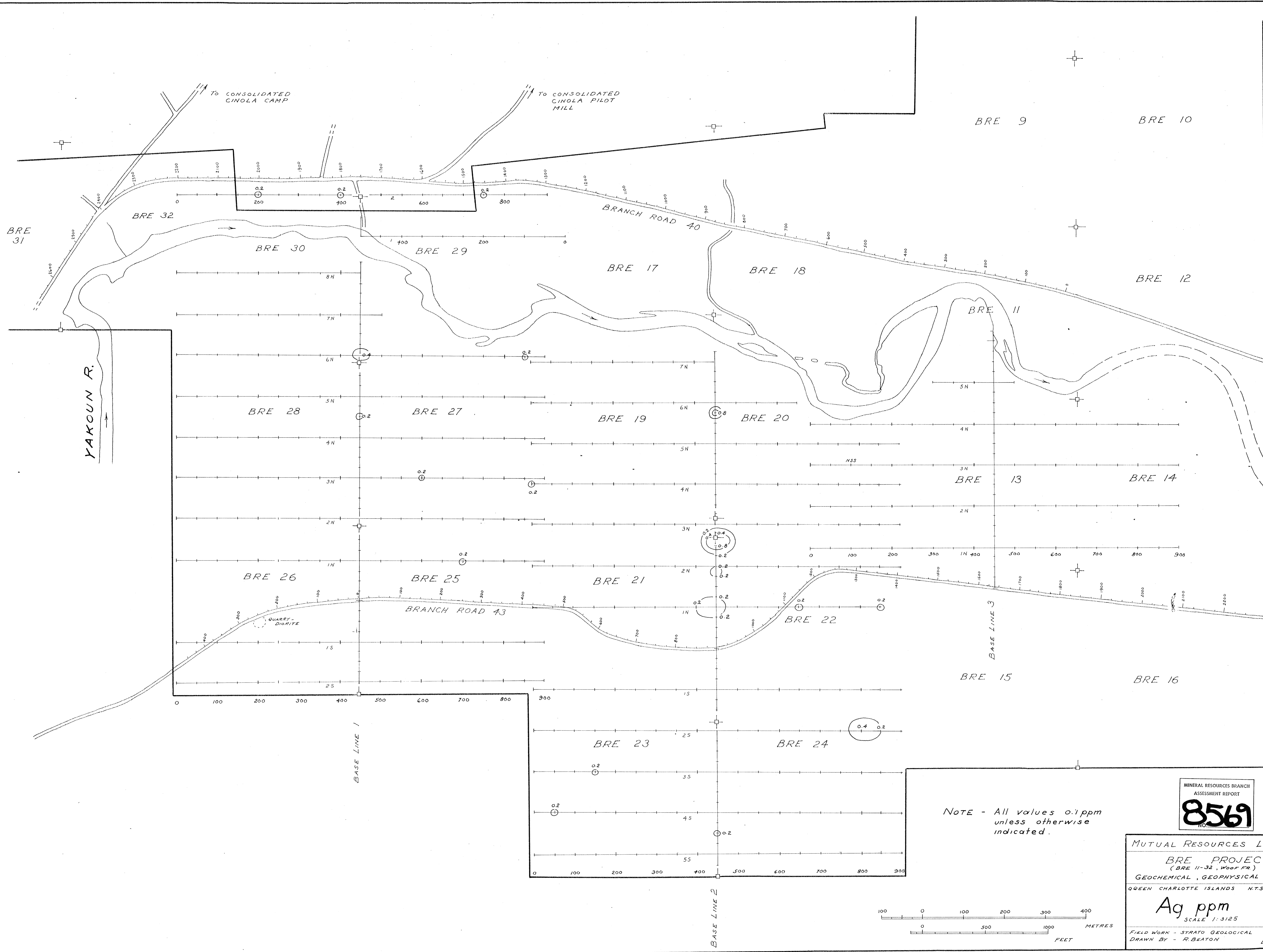
Fig. 3





MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**8569**  
NO.

MUTUAL RESOURCES LIMITED  
BRE PROJECT  
(BRE 11-32, WOOD FR.)  
GEOCHEMICAL, GEOPHYSICAL GRID  
QUEEN CHARLOTTE ISLANDS N.T.S. 103F-9E  
**Au ppb**  
SCALE 1:3125  
FIELD WORK - STRATO GEOLOGICAL  
DRAWN BY - R. BEATON DATE DEC 3, 1980



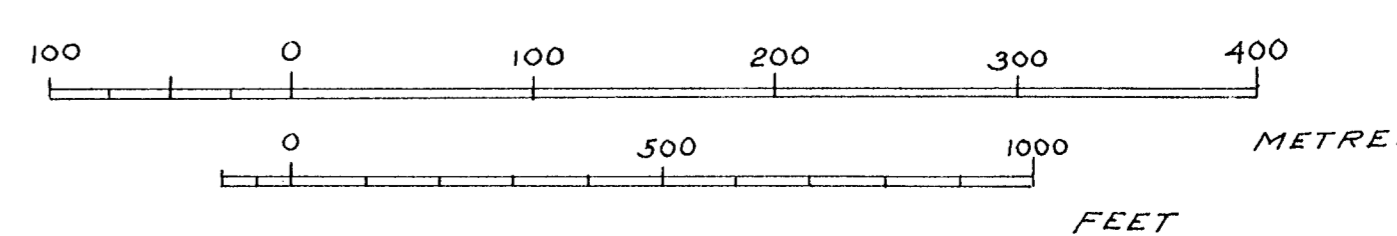
NOTE - All values 0.1ppm unless otherwise indicated.

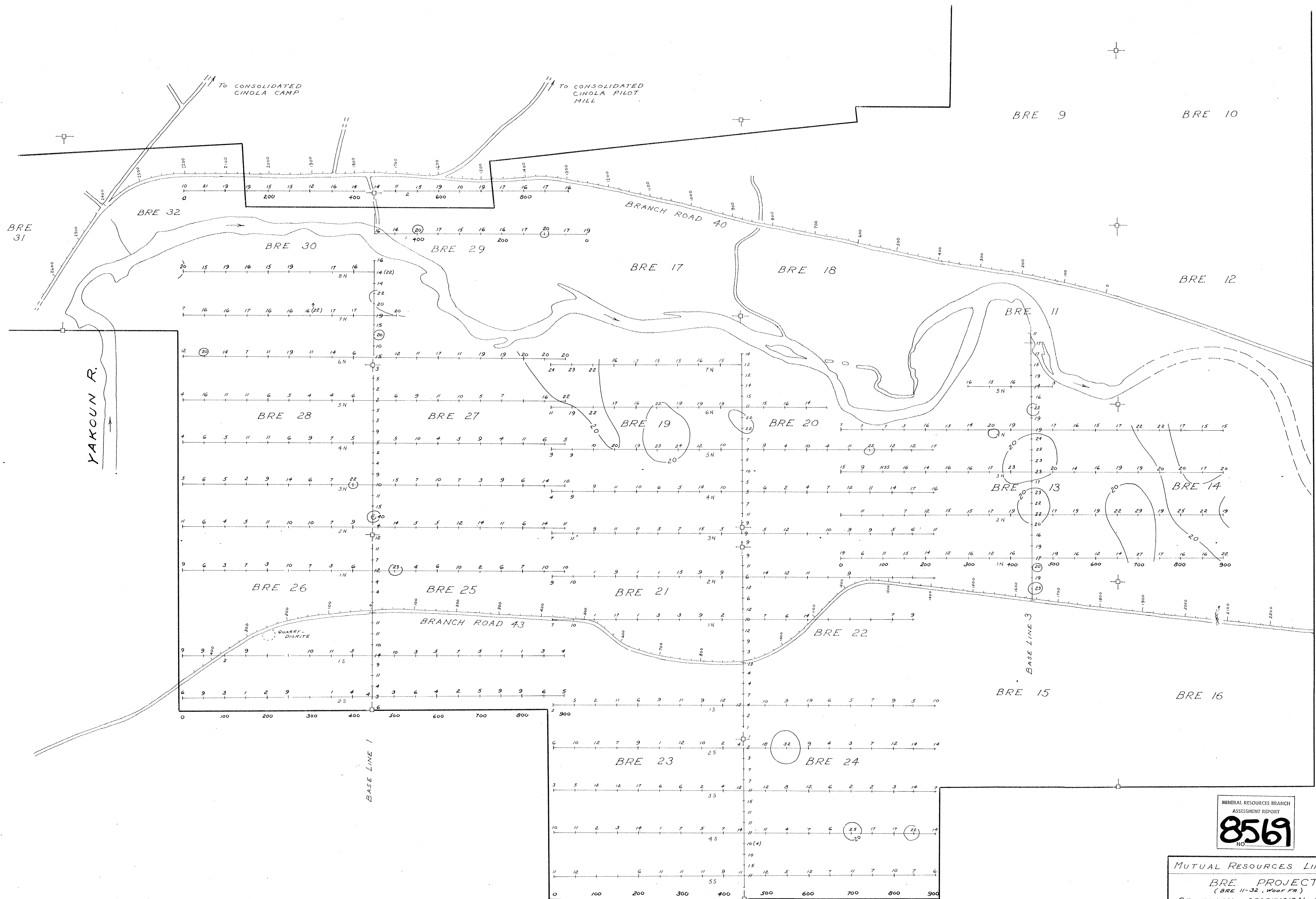
MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**8569**  
NO.

MUTUAL RESOURCES LIMITED  
BRE PROJECT  
(BRE 11-32, WOOLF FR)  
GEOCHEMICAL, GEOPHYSICAL GRID  
QUEEN CHARLOTTE ISLANDS MTS. 103F-9E

Ag ppm  
SCALE 1:3125

FIELD WORK - STRATO GEOLOGICAL  
DRAWN BY - R. BEATON DATE DEC 3, 1980



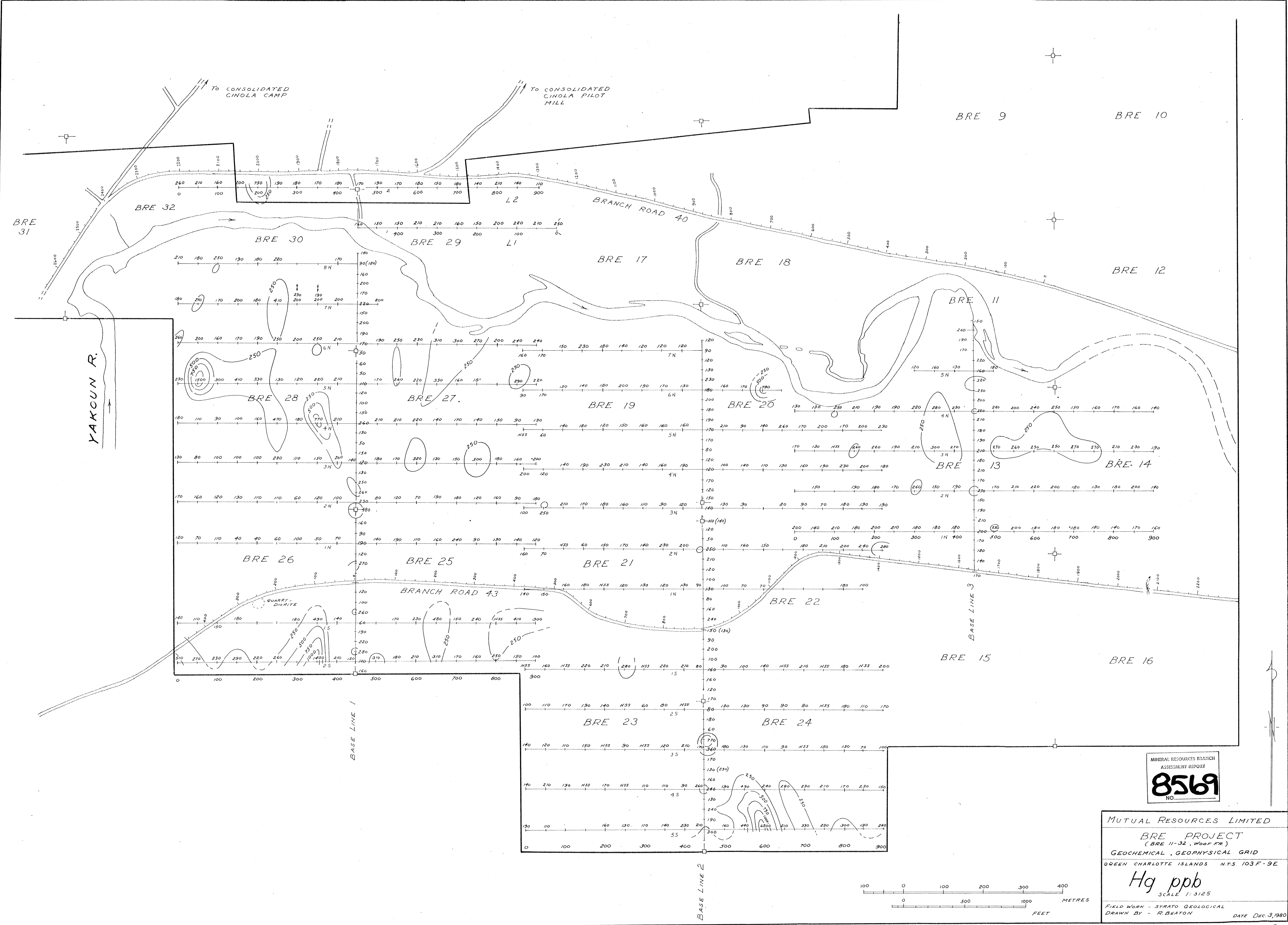


MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**8569**  
NO.

MUTUAL RESOURCES LIMITED  
BRE PROJECT  
(BRE 11-32, Wool FR.)  
GEOCHEMICAL, GEOPHYSICAL GRID  
QUEEN CHARLOTTE ISLANDS N.T.S. 103F-9E

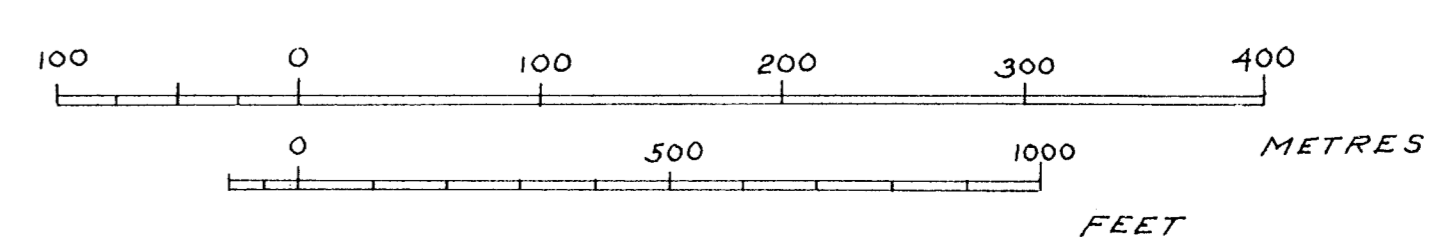
As ppm  
SCALE 1:3125

FIELD WORK - STRATO GEOLOGICAL  
DRAWN BY - R. BEATON DATE DEC 3, 1980

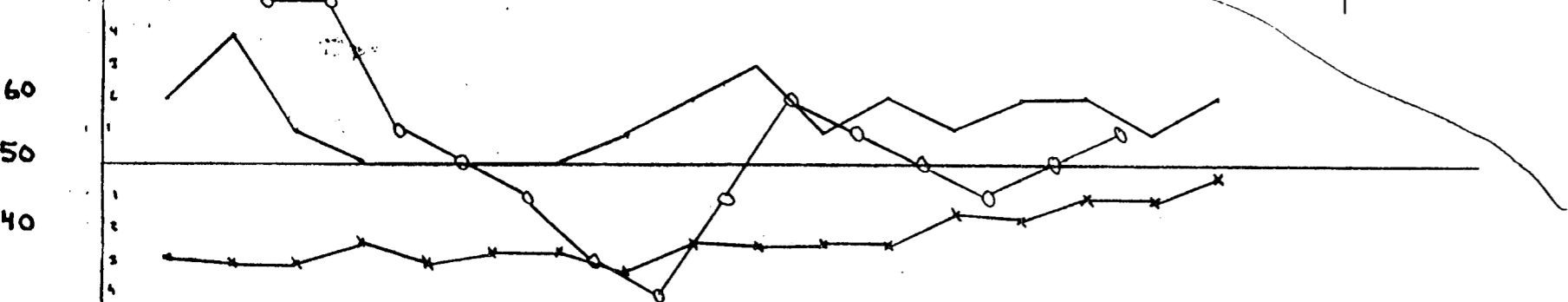


MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**8569**  
NO.

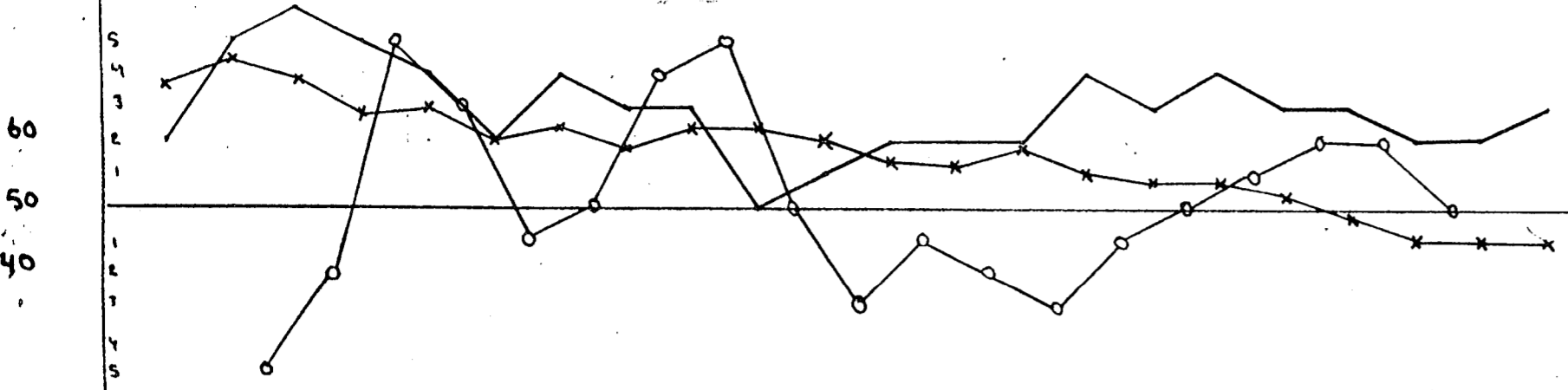
MUTUAL RESOURCES LIMITED  
BRE PROJECT  
(BRE 11-32, Wool FR)  
GEOCHEMICAL, GEOPHYSICAL GRID  
QUEEN CHARLOTTE ISLANDS N.T.S. 103F-9E  
**Hg ppb**  
SCALE 1:3125  
FIELD WORK - STRATO GEOLOGICAL  
DRAWN BY - R. BEATON DATE DEC 3, 1980



8 NORTH



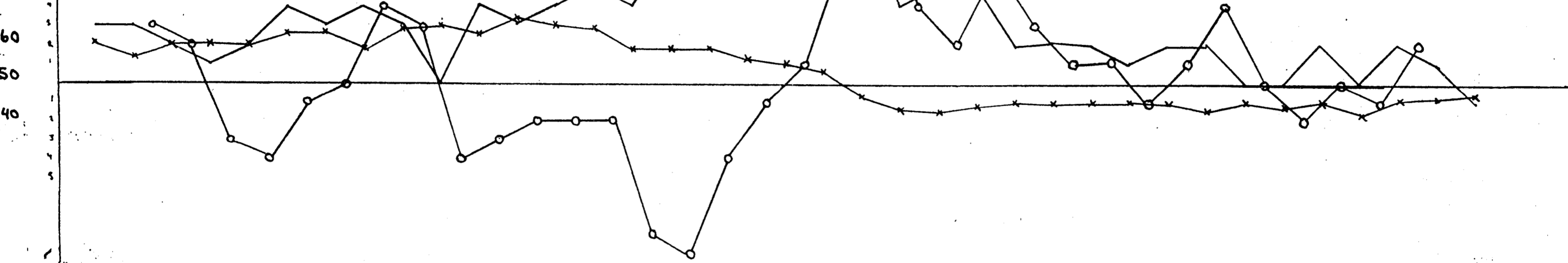
7 NORTH



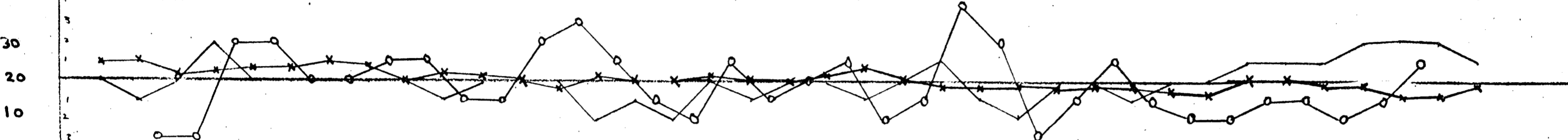
MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**8569**  
NO.

MUTUAL RESOURCES	
BRE PROJECT	
QUEEN CHARLOTTE ISLANDS	
NTS 103 F/BE. 9E	
scale	0 100m
<i>Sabre VLF - EM</i>	
PLATE 3	
<i>Base Line NO 1</i>	
To Accompany a report by <i>R. Beaton</i>	
Dated: <i>Dec. / 80</i>	
Drawn by	<i>J. Smith</i>
STRATON GEOLOGICAL	

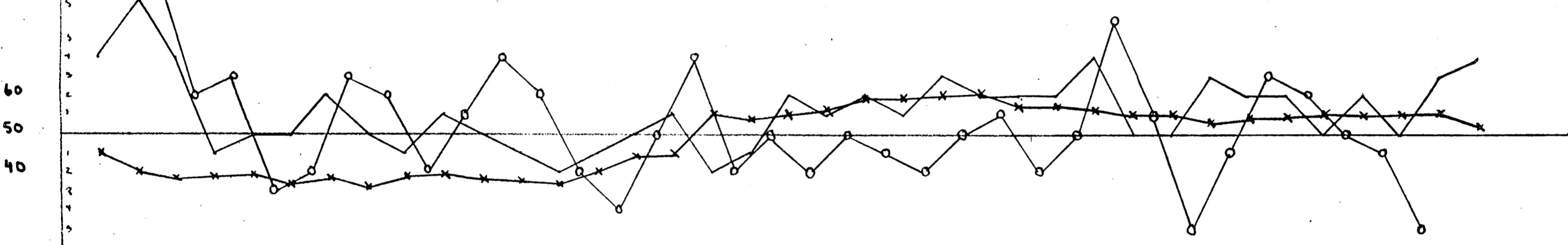
6 NORTH



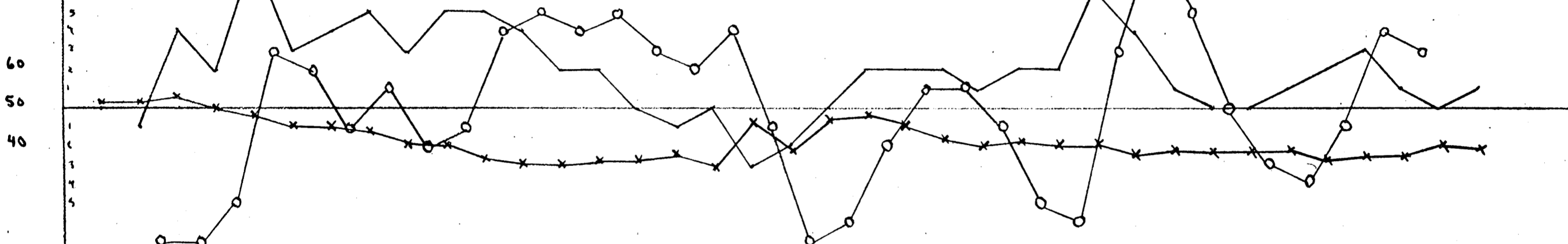
5 NORTH



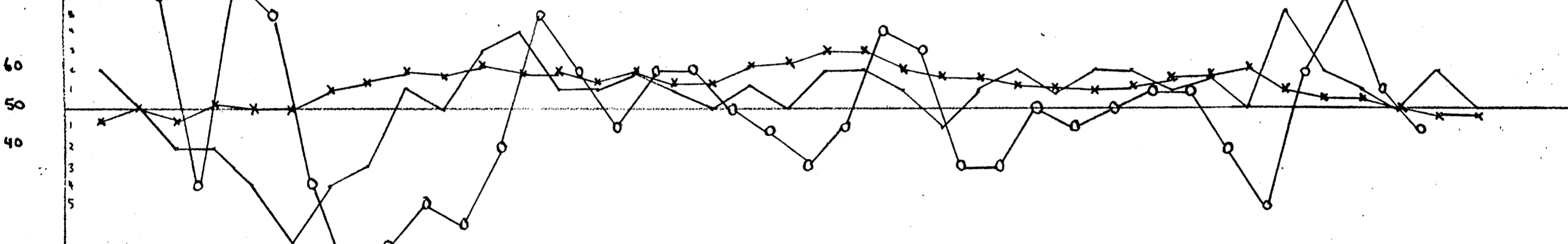
4 NORTH



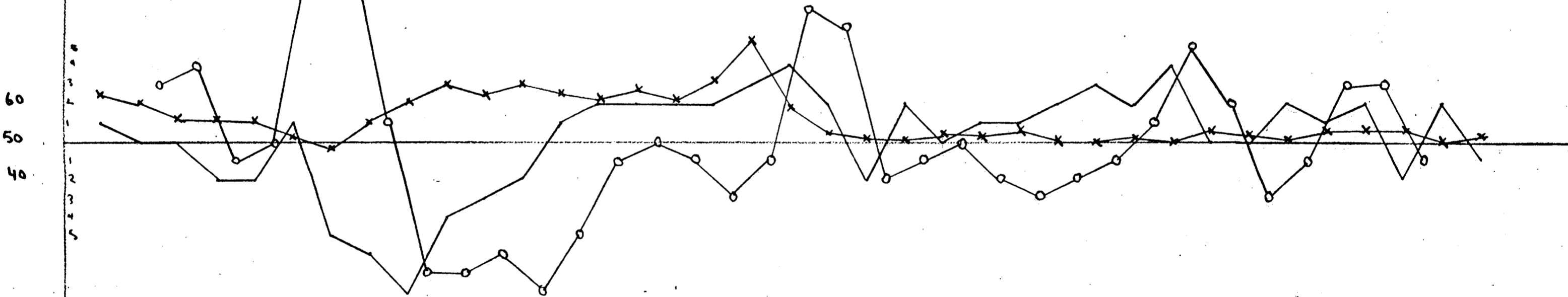
3 NORTH



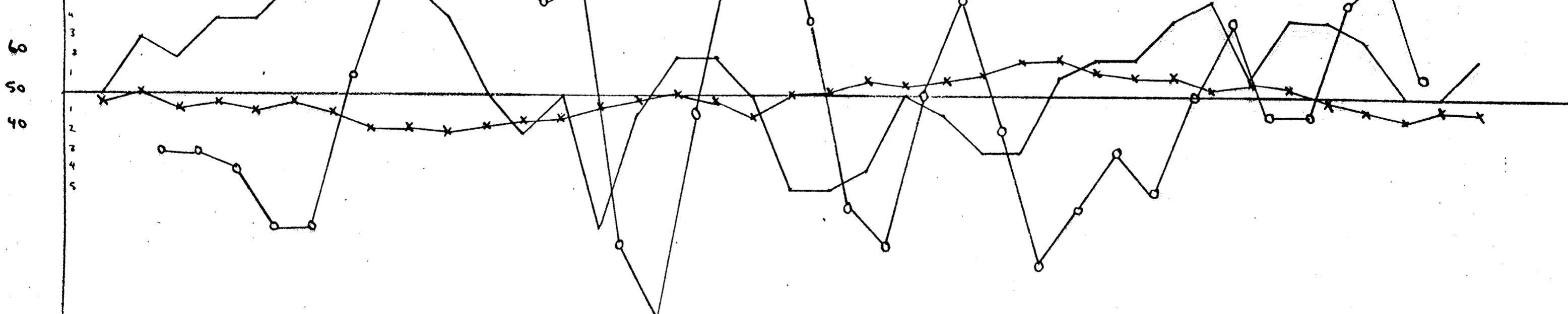
2 NORTH



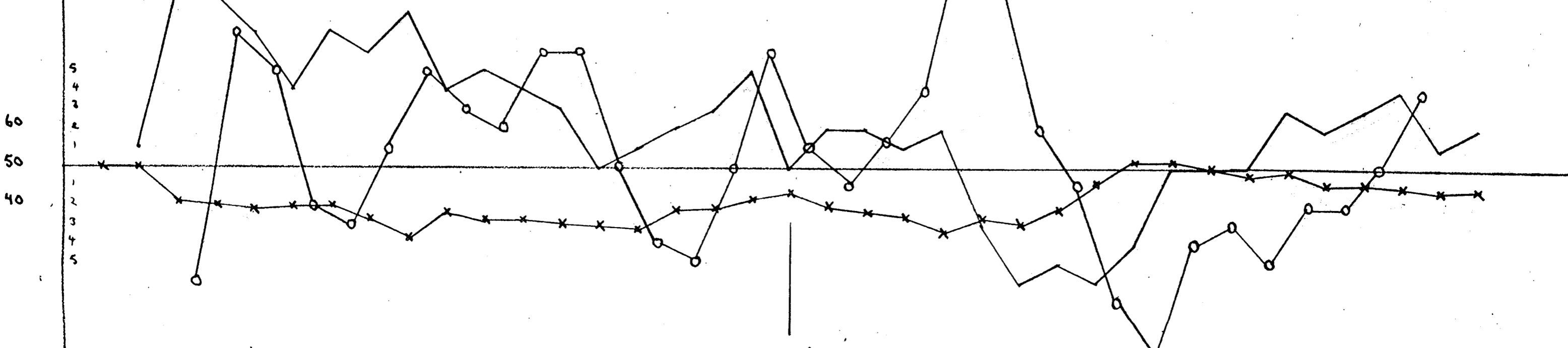
1 NORTH



1 SOUTH



2 SOUTH



BRE 25, 26, 27, 28, 29, 30. CLAIMS

Base Line  
No 1

*Fig 8 No 1*

WEST 400 300 200 100 0 100 200 300 400 EAST

0 0 0 0 -1 +2 +2 +2 +2 0 0 0 0 0 0 0 0 -1 -2 -2 0 0 0 0 0 -2 -3 -2 -1 0 0 -1 0 -3 +1 +2 +1

-2 -2 -2 -2 -2 0 +2 0 0 0 0 0 -1 -4 -2 -1 -3 -2 0 0 0 0

+2 +4 +1 0 0 0 0 +1 +2 +3 +1 +2 +1 +2 +2 +1 +2

+2 +5 +6 +5 +4 +2 +4 +3 +3 0 +1 +2 +2 +2 +4 +3 +4 +3 +3 +2 +2 +3

+3 +3 +2 +1 +2 +4 +3 +4 +3 0 +4 +3 +4 +5 +4 +7 +10 +10 +11 +10 +10 +4 +5 +5 +2 +2 +2 +1 +2 +2 0 0 +2 0 +2 +1 -1

0 -1 0 +2 0 0 0 0 0 -1 0 0 0 -2 -1 -2 0 -1 0 0 -1 0 +1 -1 -2 0 0 -1 0 0 +1 +1 +1 +2 +2 +2 +1

+4 +7 +4 -1 0 0 +2 0 -1 +1 0 -1 -2 -1 0 +1 -2 -1 +2 +1 +2 +1 +3 +2 +2 +2 +4 0 0 +3 +2 +2 0 +2 0 +3 +4

0 -1 +4 +2 +8 +3 +4 +5 +3 +5 +5 +4 +2 +2 0 -1 0 -3 -2 0 +2 +2 +2 +1 +2 +2 +6 +4 +1 0 0 +1 +2 +3 +1 0 +1

+2 0 -2 -2 -4 -7 -4 -3 +1 0 +3 +4 +1 +1 +2 +1 0 +1 0 +2 +2 +1 -1 +1 +2 +1 +2 +2 +1 +2 0 +5 +2 +1 0 +2 0

+1 0 0 -2 -2 +1 -5 -6 -8 -4 -3 -2 +1 +2 +2 +2 +2 +3 +4 +2 -2 +2 0 +1 +1 +2 +3 +2 +4 0 0 +2 +1 +2 -2 +2 -1

0 +3 +2 +4 +4 +6 +9 +8 +6 +4 0 -2 0 -7 -1 +2 +2 0 -5 -5 -4 0 -1 -3 -3 +1 +2 +2 +4 +5 +1 +4 +4 +3 0 0 +2

0 +1 +9 +9 +7 +4 +7 +6 +8 +4 +5 +4 +3 0 +1 +2 +3 +5 0 +2 +2 +1 +2 -3 -6 -5 -6 -4 0 0 0 +3 +2 +3 +4 +1 +2



MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**8569**  
NO.

DIP

MUTUAL RESOURCES
BRE PROJECT
QUEEN CHARLOTTE ISLANDS
NTS 1:3 F.B.E. 91
scale 0 100m
PLATE 3
Base line NO 1
Sqbre VLF EM
Accompany a report by R. Beaton
Dated Dec/80
Drawn by J. Smith
STRATON GEOLOGICAL

Fig 8 No 2

WEST 400 300 200 100 0 100 200 300 400 EAST

45 44 40 40 40 40 42 43 45 45 45 45 45 45 47 45 47 50 50 50 50 50 50 50 53 52 50 51 52 50 50 50 50 50 50 50 50 50 50 50

85 85 87 85 75 65 55 60 57 57 55 59 60 60 60 55 45 47 50 50 50

36 35 35 38 35 37 37 34 38 37 37 37 43 42 45 45 48

68 73 69 64 65 60 62 59 62 62 60 57 56 59 55 54 54 52 49 45 45 45

61 57 60 60 60 63 63 59 64 65 63 67 65 64 58 58 58 56 55 53 47 43 43 44 45 45 45 45 45 43 45 44 45 42 46 46 47

25 25 21 22 23 23 25 24 20 22 21 20 18 21 20 20 21 20 20 21 23 20 19 18 19 18 19 19 18 17 20 20 19 19 16 16 19

35 30 28 28 29 27 28 26 29 29 28 28 27 30 34 35 45 44 45 46 48 49 50 50 47 47 46 45 45 43 44 44 45 45 45 45 45 42

52 52 53 50 48 45 45 44 40 40 37 35 35 36 36 37 34 47 38 47 48 45 42 40 41 40 40 38 38 38 38 39 36 37 37 40 39

47 50 47 51 50 50 55 57 60 58 62 59 60 57 60 57 57 62 63 65 65 60 59 58 57 56 55 56 58 59 61 55 53 53 50 48 48

63 62 57 57 57 52 48 55 61 65 63 65 63 62 64 61 66 77 58 53 51 51 53 52 53 50 50 51 50 53 52 51 53 53 53 50 52

48 50 47 48 46 48 45 41 42 40 42 43 43 47 49 50 49 44 50 51 54 53 54 56 59 60 57 55 55 52 53 52 49 46 44 47 47

50 50 41 40 39 40 40 37 32 38 37 37 35 35 34 34 39 42 43 40 38 37 33 37 35 39 46 52 52 50 48 49 46 46 45 44 44



FIELD

MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**8569**  
NO.

MUTUAL RESOURCES
BRE PROJECT QUEEN CHARLOTTE ISLANDS NTS 103 F/BE, 9E
scale 0 100m
PLATE 3 Base Line - NO 1 Sabre VLF EM
To Accompany a report by R. Beaton Dated Dec/80
Drawn by J. Smith
STRATON GEOLOGICAL

WEST 400 300 200 100 0 100 200 300 400 EAST

0 +1 +3 -1 -7 -4 +2 +4 +2 0 0 0 0 0 +1 +3 +3 -1 -4 -2 0 0 +2 +5 +3 +2 -4 -3 0 +1 +2 +1 -6 -5

0 0 -2 -6 -4 +2 +2 0 +1 +5 +5 -2 -2 +2 -2 -5 0 0

+5 +5 +1 0 -1 -3 -4 -1 +2 +1 0 -1 0 +1

-5 -2 +5 +3 -1 0 +4 +5 0 -3 -1 -2 -3 -1 0 +1 +2 +2 0

+3 +2 -3 -4 -1 0 +4 +3 -4 -3 -2 -2 -2 -8 -9 -4 -1 +1 +7 +11 +4 +2 +6 +3 +1 +1 -1 +1 +4 0 -2 0 -1 +2

-3 -3 +2 +2 0 0 +1 +1 -1 -1 +2 +3 +1 -1 -2 +1 -1 0 +1 -2 -1 +4 +2 -3 -1 +1 -1 -2 -2 -1 -1 -2 -1 +1

+8 +2 +3 -3 -2 +3 +2 -2 +1 +4 +2 -2 -4 0 +4 -2 0 -2 0 -1 -2 0 +1 -2 0 +6 +1 -5 -1 +3 +2 0 -1 -5

-7 -7 -5 +3 +2 -1 +1 -2 -1 +4 +5 +4 +5 +3 +2 +4 -1 -7 -6 -2 +1 +1 -1 -5 -6 +3 +9 15 0 -3 -4 -1 +4 +3

+6 -4 +7 +5 -4 -9 -8 -5 -6 -2 +5 +2 -1 +2 +2 0 -1 -3 -1 +4 +3 -3 -3 0 -1 0 +1 +1 -2 -5 +2 +6 +1 -1

+3 +4 -1 0 +10 +10 +1 -7 -7 -6 -8 -5 -1 0 -1 -3 -1 +7 +6 -2 -1 0 -2 -3 -2 -1 +1 +5 +2 -3 -1 +3 +3 -1

-3 -3 -4 -7 -7 +1 +7 +12 +12 +6 +5 +6 -8 -12 -1 +9 +12 +4 -6 -8 0 +5 -2 -9 -6 -3 -5 0 +4 -2 -2 15 +7 +1

-17 -6 +7 +5 -2 -3 +1 +5 +3 +2 +6 +6 0 -4 -5 0 +6 +1 -1 +1 +4 +12 +10 +2 -1 -7 -10 -4 -3 -5 -2 -2 0 +4



MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**8569**  
NO.

MUTUAL RESOURCES
BRE PROJECT QUEEN CHARLOTTE ISLANDS NTS 103 F/BE, 9E
scale  100m
PLATE 3 Base Line -NO 1 Subre VLF EM
To Accompany a report by <i>R. Beaton</i> Dated <i>Dec/80</i>
Drawn by <i>J. Smith</i>

FILTER

Fig. 8 No. 4



WEST 400 300 200 100 0 100 200 300 400 EAST

-1 -1 -1 +1 -1 -2 +2 +2 0 0 0 +3 +3 -4 -7

+3 0 -1 +5 +6 +2 -1 -1 -1 -1 +3 +3 -2 -3 +1 +5 +2 0 0 -1 -2 -3 0 +3

+4 0 0 -1 0 +4 +4 +2 +2 -1 -3 -3 -3 0 +2 +2 +2 +2 0 -1 0 -2 -5 -3 +1 +1 0 +1 +4 +4 +2 +4 +3 -2

0 +1 +1 +2 +2 -1 -3 0 +2 +1 -2 0 +2 -1 0 -1 -4 0 +3 0 0 +1 +1 +1 -2 0 +2 -5 -7 +2 +7 +3 +1 +3

+5 0 +2 +5 +4 0 -4 -5 0 +1 -2 -1 +1 +2 0 -3 -3 +2 +3 0 0 -2 -2 -1 +3 +6 -1 -7 -6 +1 +3 +1 +1 -2

+1 +1 0 -1 -1 +1 +1 -2 -2 +1 0 -1 -1 -1 0 0 +3 +6 +1 -3 -1 0 -1 0 -1 -1 0 0 0 +1 +2 +1 -1 -1

+1 -1 0 0 -2 +1 +1 -3 -1 +3 +2 0 0 0 -2 -6 -4 +3 +5 +2 +2 +3 -1 -2 0 0 -3 -3 +1 +3 +1 -2 -3 -1

+1 +1 0 -1 -2 +5 +5 -5 -3 -2 -2 0 -1 0 +3 +5 +1 0 0 -1 +1 0 0 +4 +3 -2 -3 -1 -1 -1 +2 +2 -2 -2

-3 0 +3 -1 0 +6 +5 0 -4 -3 +1 -2 -1 +2 -1 -3 -3 +2 +5 +4 +3 +3 +5 +7 +6 -2 -6 -4 -5 -2 0 -2 0 +1

+5 +3 0 -2 -1 0 +1 +1 -1 -1 -1 +2 +1 -2 -2 +1 -1 -3 +4 +9 +1 -7 -6 -4 -4 +1 +4 +3 +4 +4 0 0 -2 -2

+1 -2 -2 -2 0 +2 +2 +1 0 0 0 0 0 -1 +1 +1 +1 -1 -3 -3 +1 +5 +1 -4 -2 -1 0 +1 0 +2 +3 +1 -2 -4

-2 +1 +1 -2 -4 0 +6 +2 -5 -3 0 +2 +3 -1 -3 +1 +3 -1 -3 +1 +2 0 -1 -2 -1 0 0 -1 -1 0 0 0 0 0



MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**8569**  
NO.

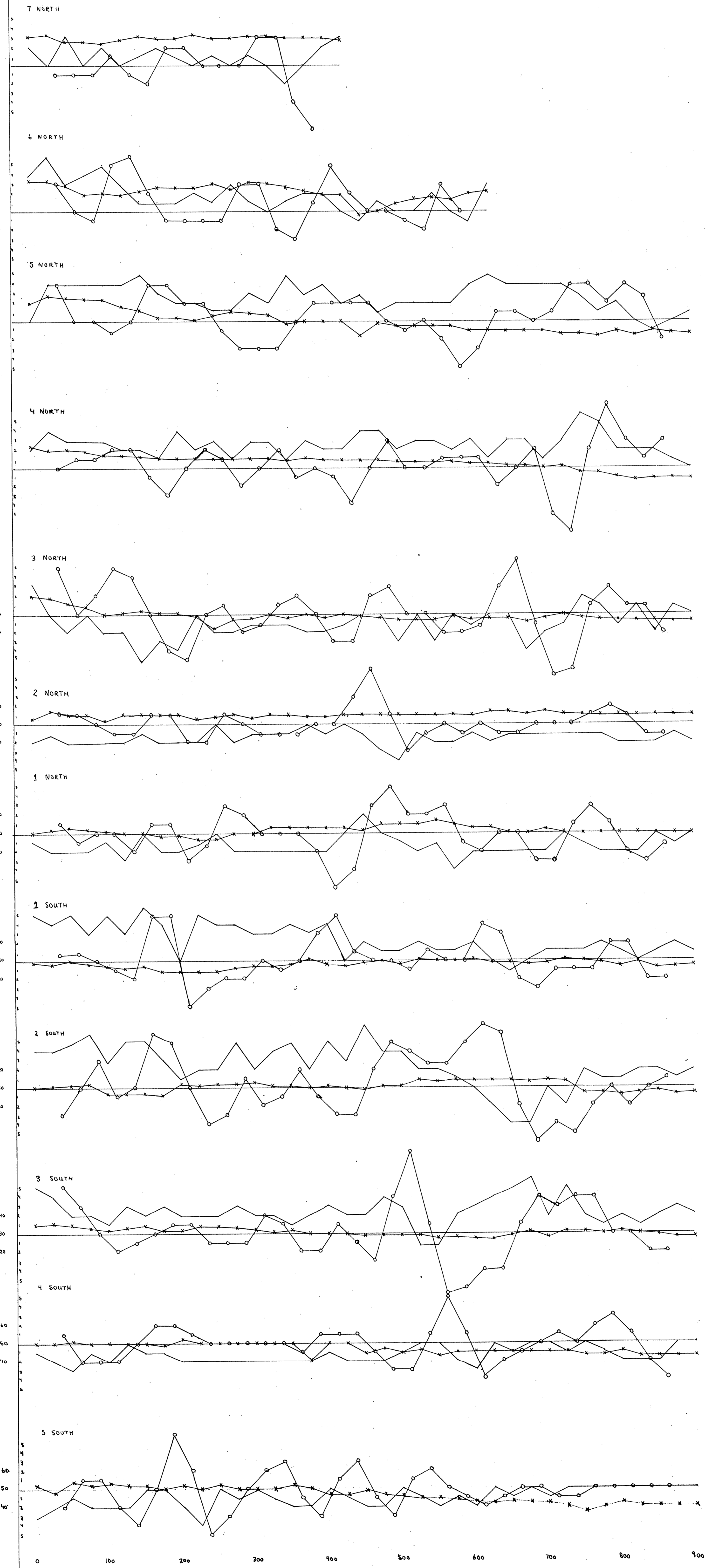
FILTER

MUTUAL RESOURCES
BRE PROJECT QUEEN CHARLOTTE ISLANDS N°S 103 F/BE, 9F
scale 0 100m
PLATE 3 Base Line NO 2 Sabre VLF EM
To Accompany report by R. Beaton Date Dec./80
Drawn by J. Smith
STRATIGRAPHY GEOLOGICAL

Fig. 9 No 4

MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**8569**  
NO.

MUTUAL RESOURCES
BRE PROJECT QUEEN CHARLOTTE ISLANDS NTS 103 P/B. 9E
scale 0 100m
SABRE VLF EM
PLATE 3
Base Line NO 2
To Accompany a report by R. Beaton Dated Dec/80
Drawn by J. Smith
STRATIGRAPHICAL



BRE 19, 20, 21, 22, 23, 24. CLAIMS

WEST 400 300 200 100 0 100 200 300 400 EAST

+2 0 +3 0 +2 0 +1 +2 +1 0 +1 0 +1 0 -2 0 +2 +3

+4 +6 +3 +4 +5 +3 +1 +1 +1 +2 +1 +3 +1 0 +1 +2 +2 0 -1 +1 0 0 +2 0 -1 +3

0 +4 +4 +4 +4 +4 +5 +3 +2 +2 +1 +1 +3 +2 +5 +3 +4 +2 +3 +1 +2 +2 +2 +2 +4 +5 +4 +4 +4 +3 +1 +2 0 -1 0 +1

+2 +4 +3 +3 +3 +2 +2 +1 +4 +2 +3 +1 +3 +3 +1 +3 +2 +2 +4 +4 +2 +3 +3 +2 +3 +1 +3 +3 +1 +3 +6 +5 +2 +2 +2 +1 0

+3 0 -2 0 -2 -2 -5 -3 -4 0 -2 -2 -1 -1 -1 -2 -2 -1 0 0 -3 0 -3 0 -1 0 0 -4 -2 -1 +2 +1 -1 +1 -2 +1 0

-2 -1 -2 -2 -2 -2 -1 -2 -2 -2 0 -2 -1 -1 -1 0 -1 0 -1 -3 -4 -1 -2 -2 -1 -2 -1 -1 -1 -1 -1 -1 -2 -2 -2 -1 -2

-1 -2 -2 -2 -1 -3 0 -2 -2 -1 0 -2 -2 -2 -2 -2 -2 0 +2 0 -1 -2 -1 -4 -2 -2 -2 -2 -2 0 -1 -2 -2 -2 0 -1 0

+5 +4 +5 +3 +5 +3 +6 +4 0 +5 +4 +4 +3 +3 +4 +3 +4 0 +2 +1 +1 +2 +1 +1 +2 0 -1 0 +1 +1 +1 +2 +1 0 +1 +2 +1

+4 +4 +5 +6 +3 +5 +5 +3 +1 +2 +2 +5 +2 +4 +5 +2 +5 +3 +7 +4 +4 +2 +2 +1 0 -2 -4 -4 0 -2 +2 +1 +1 +2 +2 +1 +2

+5 +4 +2 +2 +1 +3 +2 +3 +2 +2 +2 +3 +2 +2 +1 +2 +3 +2 +2 +4 +3 -1 -1 +2 +3 +4 +5 +6 +2 +5 +2 +1 +2 +1 +2 +3 +2

-1 -2 -3 -1 -2 0 -1 -1 -2 -2 -2 -2 -2 -2 -2 -1 -2 -2 -2 -1 0 0 -2 -3 0 -1 0 0 -1 0 -1 -2 -2 -2 0 0

-3 -2 -1 -2 -2 -2 0 0 -2 -4 0 -1 0 -1 -2 -2 0 -1 -2 -2 0 -1 -2 -1 -2 0 -1 0 -1 0 0 0 0 0 0 0 0



DIP

MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**8569**  
NO.

MUTUAL RESOURCES
BRE PROJECT QUEEN CHARLOTTE ISLANDS NTS 103 F/BE, BE
scale 0 100m PLATE 3 Base Line - NO 2 Sabre VLF EM
To Accompany a report by R. Beaton Dated Dec/86
Drawn by J. Smith
STRATON GEOLOGICAL

WEST 400 300 200 100 0 100 200 300 400 EAST

76 77 73 73 72 74 76 75 75 77 75 75 76 76 75 75 75 74

77 77 74 69 70 69 71 73 73 73 75 72 76 75 72 71 69 69 58 60 64 66 87 66 70 71

60 64 63 62 62 58 56 52 52 51 53 55 54 53 49 50 80 50 42 49 48 48 48 48 45 45 45 45 45 43 43 42 43 42 45 43 43

62 60 60 59 57 57 56 55 55 55 55 55 55 55 54 55 54 54 54 54 53 53 53 53 52 52 51 51 50 51 47 47 45 43 44 44 44

60 59 56 54 50 51 52 51 51 49 42 47 48 50 48 50 48 50 49 48 47 47 47 49 48 48 48 46 48 50 48 47 47 47 47 47 47

33 37 35 35 32 35 35 35 35 33 34 35 33 35 35 34 34 35 35 35 35 35 35 35 37 37 35 37 35 35 35 35 35 35 35 35

30 32 33 32 31 30 30 28 29 27 27 30 30 33 33 33 33 33 32 35 35 35 37 35 33 33 30 30 32 30 30 30 30 30 30 30

29 28 30 28 27 26 27 24 24 24 24 26 27 27 28 31 28 27 29 30 28 31 30 30 31 29 29 28 29 31 30 29 27 29 26 26 27

30 31 31 32 27 27 27 26 32 31 32 32 33 31 31 30 31 30 29 31 31 34 33 34 34 34 34 33 34 33 27 27 26 27 28 26 27

35 36 35 33 32 33 34 32 32 34 34 33 32 31 32 30 30 30 29 29 29 29 27 28 27 27 29 31 28 31 31 30 32 30 29 28 28

50 50 51 50 50 50 50 49 52 50 50 50 50 50 50 40 50 50 44 47 45 46 43 45 45 45 45 45 45 45 43 43 45 42 42 42 42

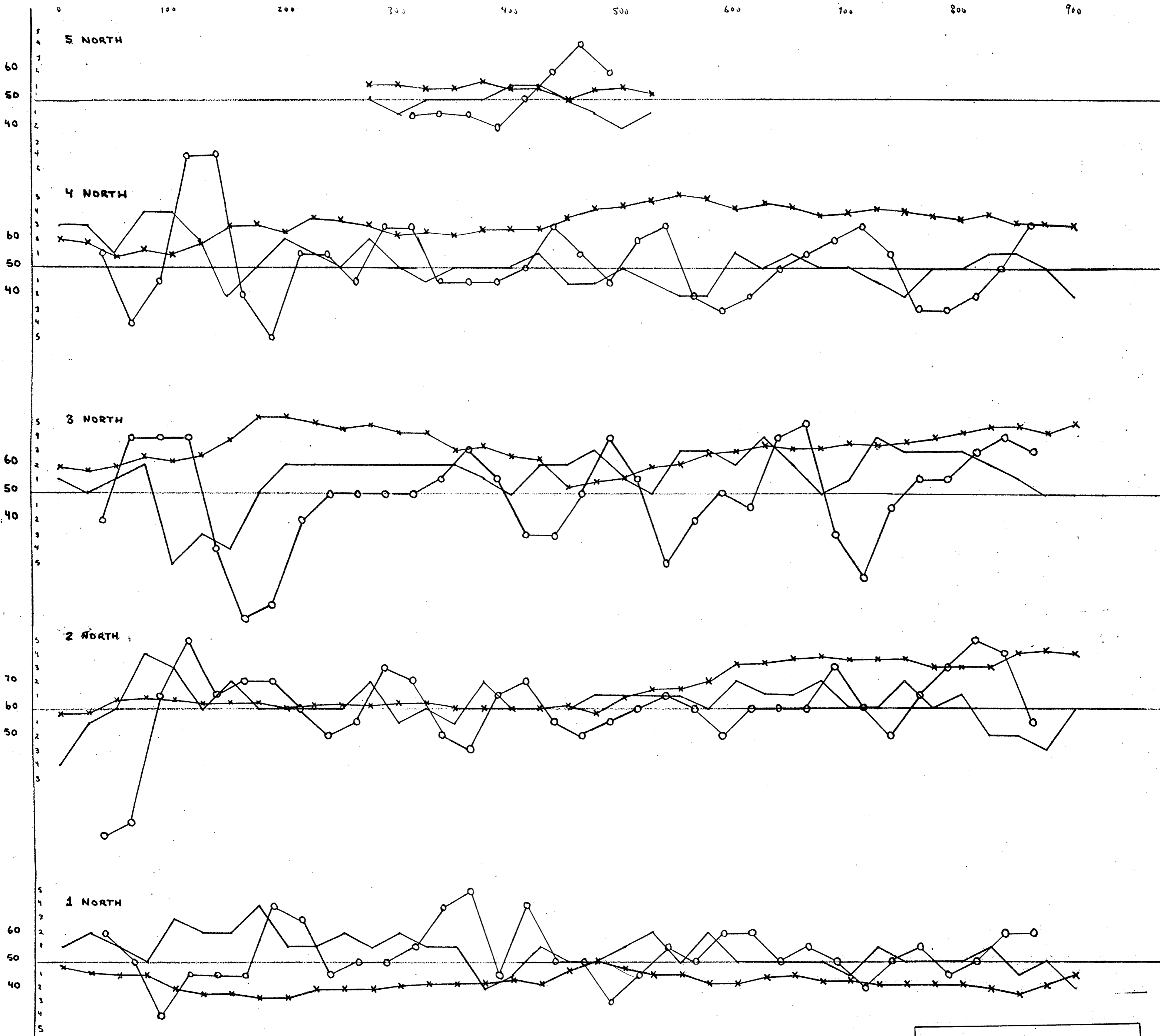
52 48 54 52 53 52 52 50 52 50 50 50 52 50 50 50 52 50 47 47 49 47 46 45 45 44 43 42 43 42 42 40 37 40 42 40 40 40 40



FIELD

MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**8569**  
NO.

MUTUAL RESOURCES
BRE PROJECT QUEEN CHARLOTTE ISLANDS NTS 1:50,000
scale 0 100m
PLATE 3 Base Line NO 2 Sabre VLF EM
To Accompany a report by R. Beaton Dated Dec/80
Drawn by J. Smith



BRE 11, 12, 13, 14, 15, 16 CLAIMS

MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**8569**  
NO.

MUTUAL RESOURCES	
BRE PROJECT	
QUEEN CHARLOTTE ISLANDS	
NTS 103 F/BE, 9E	
scale	0  100m
PLATE 3	
Base Line - NO 3	
SABRE VLF EM	
To Accompany a report by R. Beaton	
Dated: Dec/80	
Drawn by	STRATIGRAPHIC GEOLOGICAL
J. Smith	

Fig. 10 No. 1

WEST 400 300 200 100 0 100 200 300 400 EAST

0 -1 0 0 0 +1 +1 0 -1 -2 -1

+3 +3 +1 +4 +4 +2 -2 0 +2 +1 0 +2 0 -1 0 0 0 +1 -1 -1 0 -1 -2 -2 +1 0 +1 0 0 -1 -2 0 0 +1 +1 0 -2

+1 0 +1 +2 -5 -3 -4 0 +2 +2 +2 +2 +2 +2 +2 +1 0 +2 +2 +3 +1 0 +3 +3 +2 +4 +2 0 +1 +4 +3 +3 +3 +2 +1 0 0

-4 -1 0 +4 +3 0 +2 0 0 0 0 +2 -1 0 -1 +2 0 0 0 +1 +1 +1 +1 0 +2 +1 +1 +2 0 0 +2 0 +1 -2 -2 -3 0

+1 +2 +1 0 +3 +2 +2 +4 +1 +1 +2 +1 +2 +1 +1 -2 -1 +1 0 0 +1 +2 0 +2 0 0 0 0 -1 +1 0 0 0 +1 -1 0 -2



DIP

MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**8569**  
NO.

MUTUAL RESOURCES	
BRE PROJECT	
QUEEN CHARLOTTE ISLANDS	
NTS 1:03 F/3E, 9E	
Scale	0 100 m
PLATE 3	
Base Line - NO 3	
Sobre VLF EM	
To Accompany a report by R. Beaton	
Dated: Dec/80	
Drawn by	J. Smith

Fig. 10 No. 2

WEST 400 300 200 100 0 100 200 300 400 EAST

56 56 54 54 56 54 54 50 53 54 52

60 59 54 57 55 58 65 66 63 68 67 66 62 63 62 64 64 64 67 71 72 74 76 75 72 74 72 68 70 71 70 69 68 69 67 67 65

59 58 59 63 62 63 69 77 77 75 73 74 72 72 65 67 63 62 52 54 55 59 60 64 65 67 66 66 68 67 68 70 72 74 74 72 75

59 59 63 64 63 62 62 62 60 61 61 61 62 62 60 60 60 60 61 58 64 67 67 70 77 77 78 79 78 78 78 75 75 75 80 81 80

48 46 45 45 40 38 38 37 37 40 40 40 41 42 42 42 43 42 47 50 48 45 45 42 42 44 45 45 43 42 42 42 42 40 38 41 45



FIELD

MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**8569**  
NO.

MUTUAL RESOURCES
BRE PROJECT
QUEEN CHARLOTTE ISLANDS
NTS 1:100,000
PLATE 3
Base Line - NO 3
Sabre VLF EM
To Accompany a report by R. Beaton
Dated Dec./80
Drawn by J. Smith
STRATON GEOLOGICAL

Fig. 10 No. 3

WEST 400

300

200

100

0

100

200

300

400 EAST

-1 -1 -1 -2 0 +2 +4 +2

+1 -4 -1 +8 +8 -2 -5 +1 +1 -1 +3 +3 -1 -1 -1 0 +3 +1 -1 +2 +3 -2 -3 -2 0 +1 +2 +3 +1 -3 -3 -2 0 +3

-2 +4 +4 +4 -4 -9 -8 -2 0 0 0 0 +1 +3 +1 -3 -3 0 +4 +1 -5 -2 0 -1 +4 +5 -3 -6 -1 +1 +1 +3 +4 +3

-9 -8 +1 +5 +1 +2 +2 0 -2 -1 +3 +2 -2 -3 +1 +2 -1 -2 -1 0 +1 0 -2 0 0 0 +3 0 -2 +1 +3 +5 +4 -1

+2 0 -4 -1 -1 -1 +4 +3 -1 0 0 +1 +4 +5 -1 +4 0 0 -3 -1 +1 0 +2 +2 0 +1 0 -2 0 +1 -1 0 +2 +2



MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**8569**  
NO.

MUTUAL RESOURCES  
3RE PROJECT  
QUEEN CHARLOTTE ISLANDS  
NTS 103 F. BE. 9E  
scale 0 100m  
PLATE 3  
Base Line NO. 3  
Sabre VLF EM  
In Accompany a report by R. Beaton  
Dated Dec/80  
Drawn By R. Smith  
STRAC GEOLOGICA

FILTER

Fig. 10 No. 4



900

800

700

600

500

400

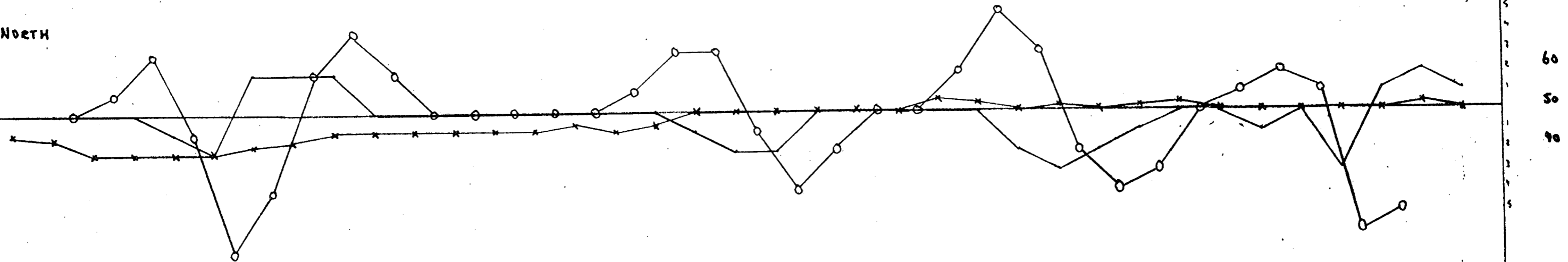
300

200

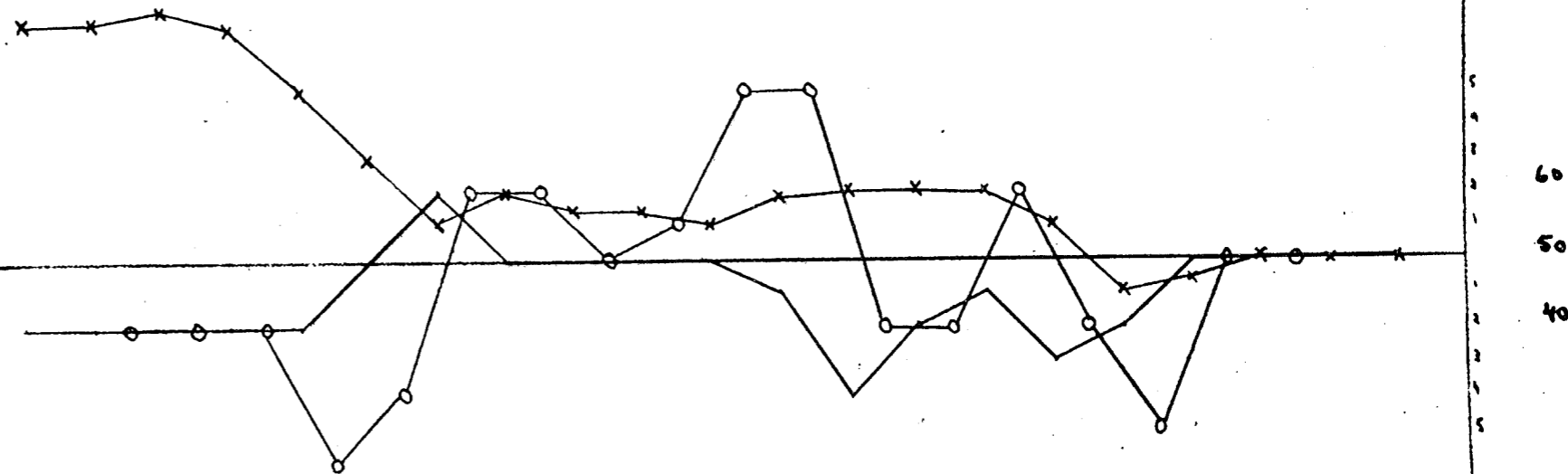
100

0

2 NORTH



1 NORTH



MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**8569**  
NO.

BRE 29, 30.

Profiles.  
BL 1  
N. of Yakoun R.

Fig. 11

MUTUAL RESOURCES

BRE PROJECT  
QUEEN CHARLOTTE ISLANDS  
NTS 103 F/BE, 9E

scale 0 100m

PLATE 3

Base Line - NO 1  
SABRE VLF EM

To Accompany a report by R. Beaton  
Dated: Dec/80

Drawn by  
J. Smith

MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**8569**  
NO.

MUTUAL RESOURCES  
BRE PROJECT  
QUEEN CHARLOTTE ISLANDS  
NTS 103 F/BE. 9E

Scale 0 100 m

Sabre VLF EM

To accompany a report by R. Beaton  
Dated Dec/80

Drawn by J. Smith  
STREATH GEOLOGICAL

ROADS  
CROSS SECTIONS

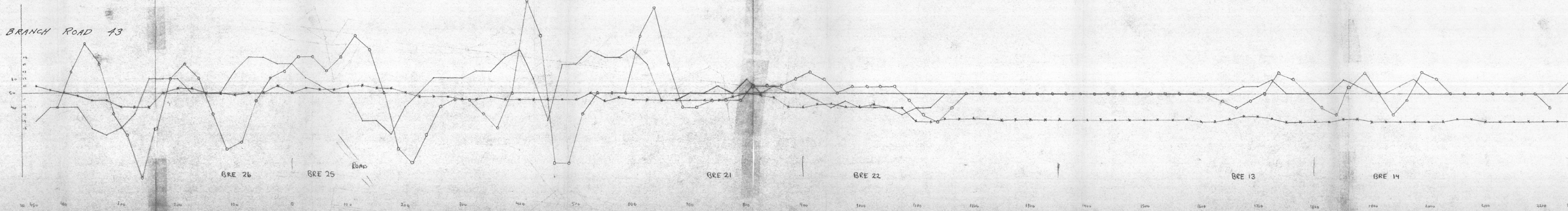
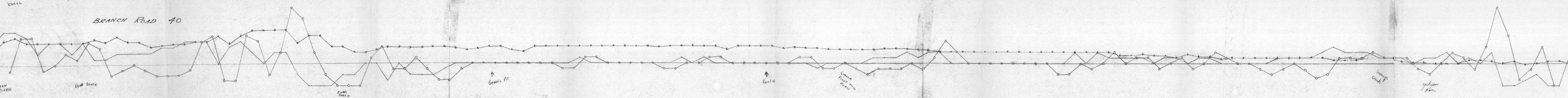
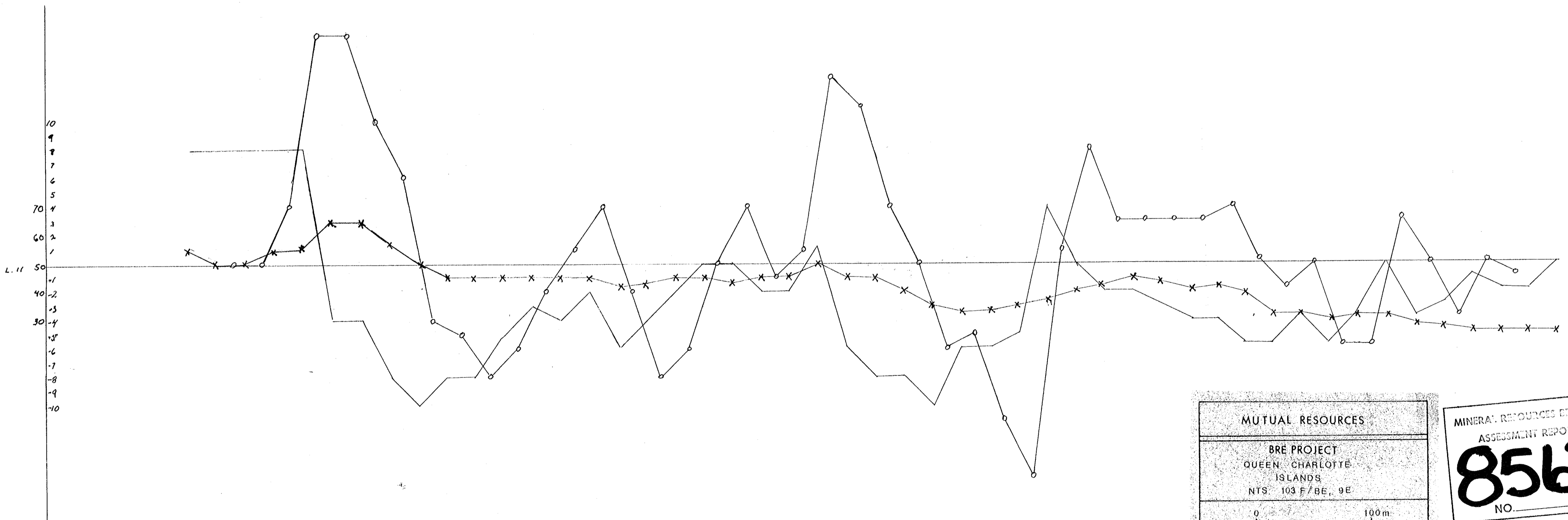
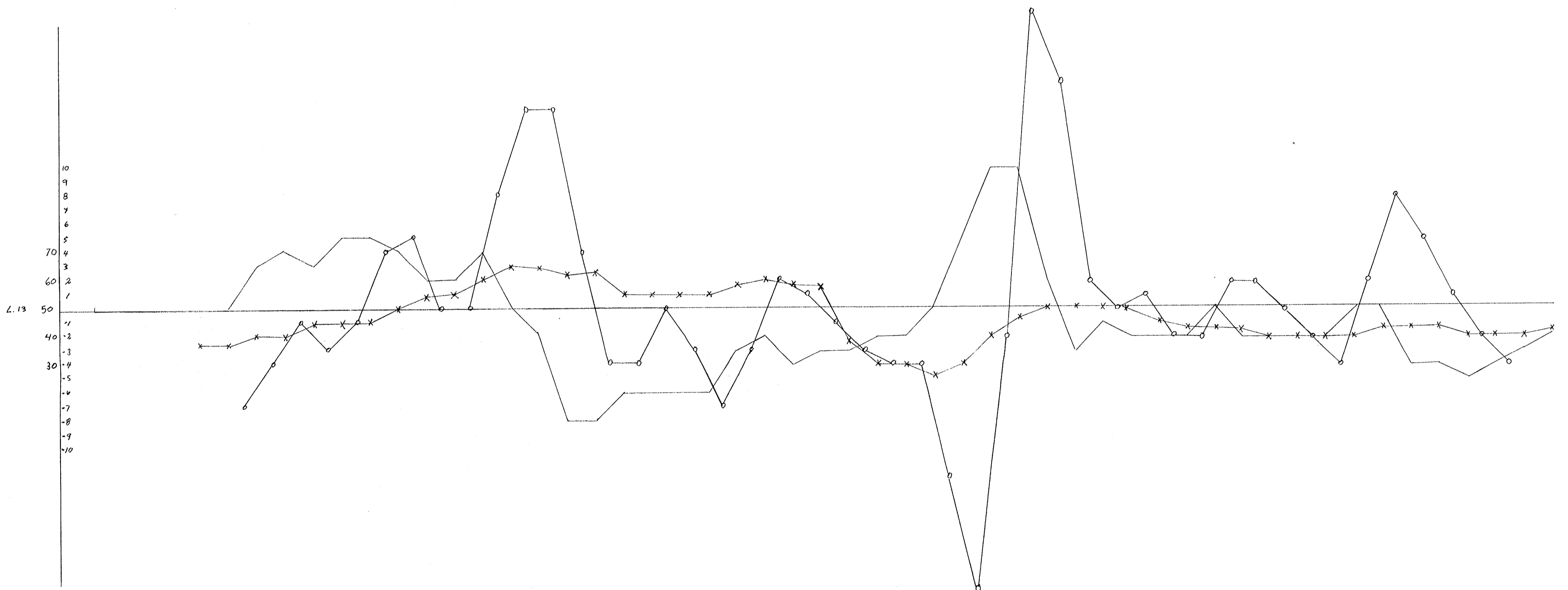
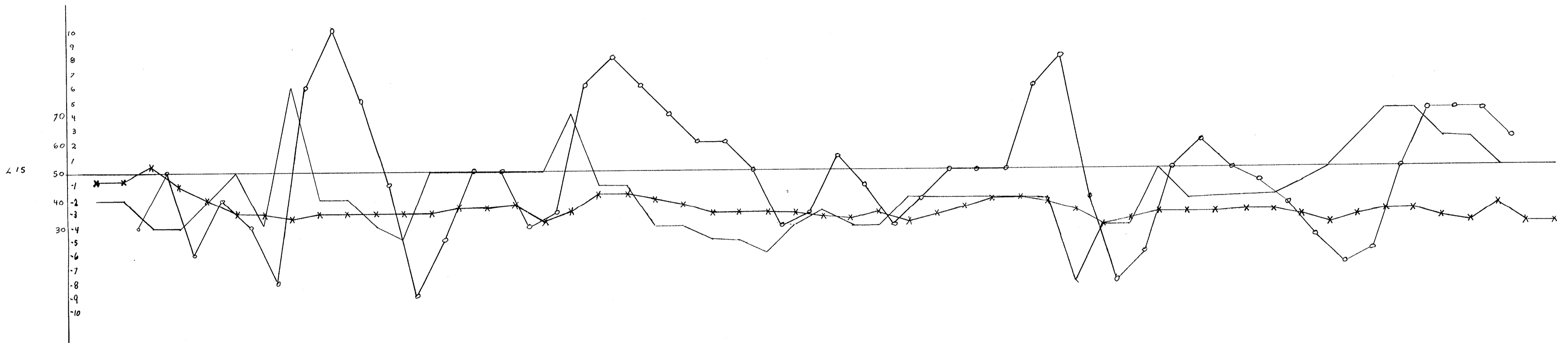


Fig. 12

W 800 700 600 500 400 300 200 100 0 100 200 300 400 500 E



—x— Field Strength  
 — Dip Angle  
 —o— Fraser Filter Dip Angle

CROSS SECTIONS CONSOL. CINOLA TEST LINES

MUTUAL RESOURCES  
 BRE PROJECT  
 QUEEN CHARLOTTE ISLANDS  
 NTS: 103 F/BE, 9E

scale: 0 100m

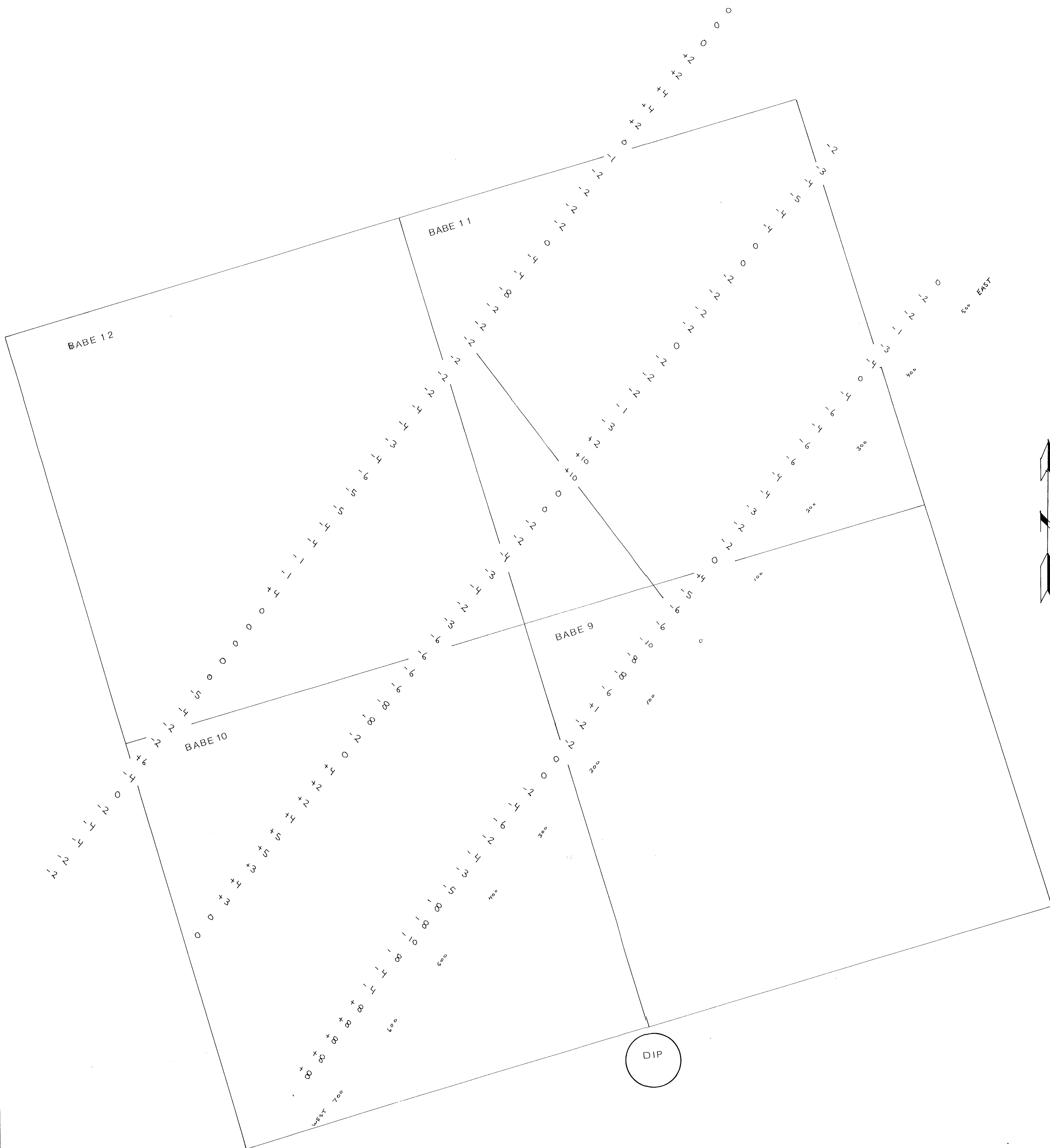
Sabre VLF EM

To Accompany a report by R. Beaton  
 Dated: Dec/80

Drawn by J. Smith

MINERAL RESOURCES BRANCH  
 ASSESSMENT REPORT  
**8569**  
 NO.

PLATE 2



MINERAL RESOURCES BRANCH  
 ASSESSMENT REPORT  
**8569**  
 NO.

MUTUAL RESOURCES

BRE PROJECT  
 QUEEN CHARLOTTE ISLANDS  
 NTS 103 F/BE. 9E

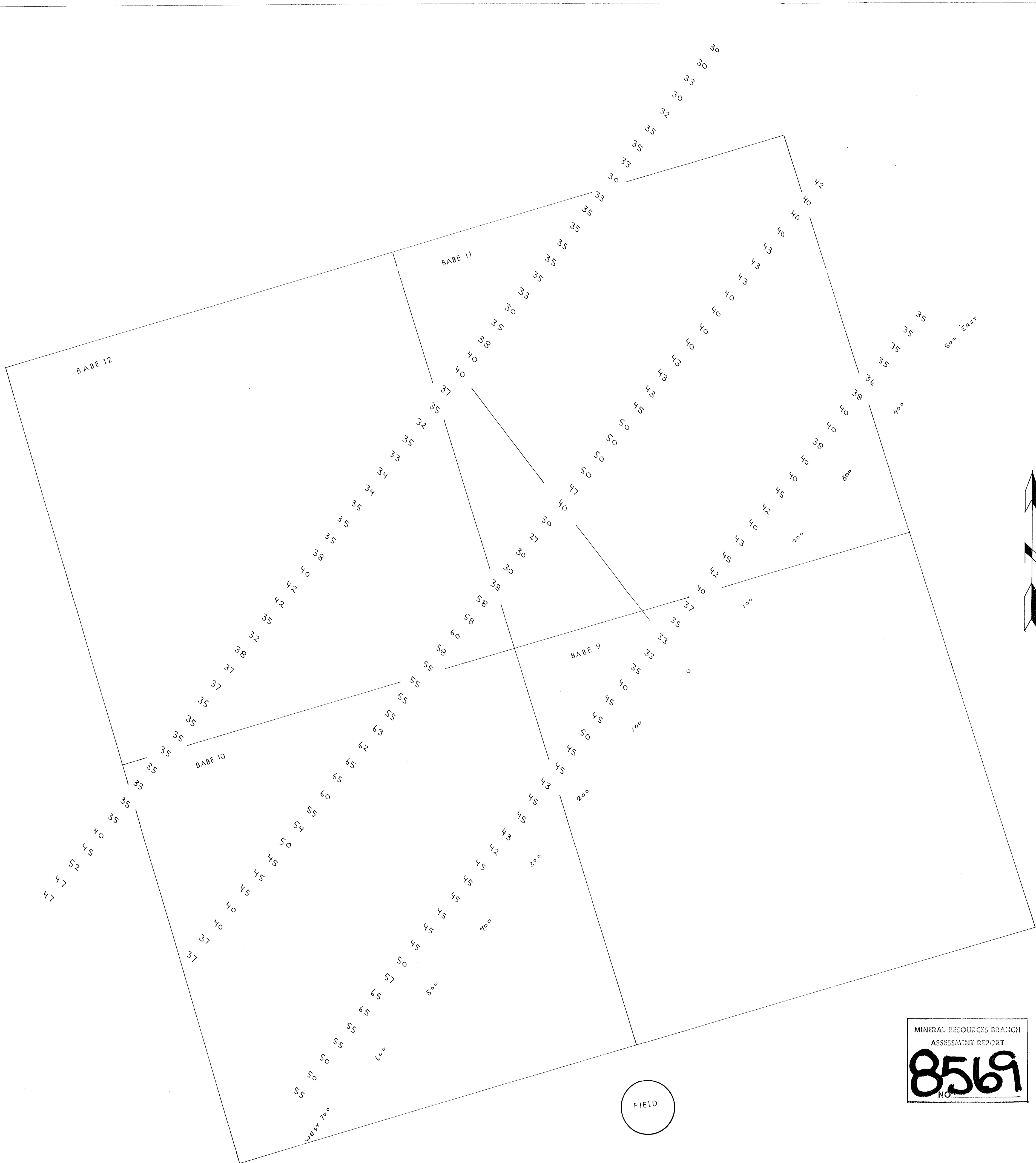
Scale 0 100m

PLATE 2  
*Sabre VLF EM*

To Accompany a report by *R. Beaton*  
 Dated *Dec/80*

Drawn by *J. Smith*

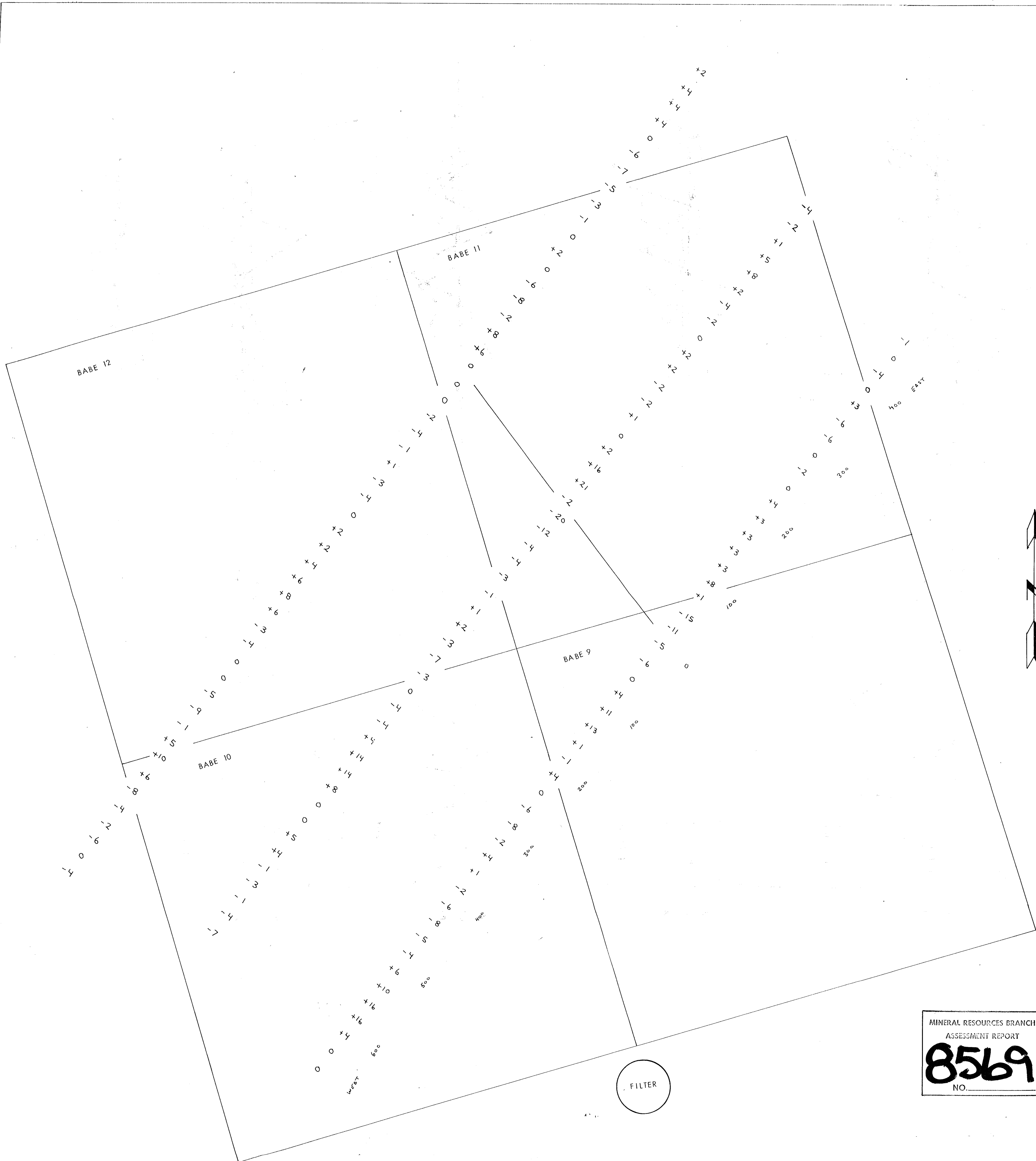
CONSOL CINOLA TEST LINES




CONSOL. CINOLA TEST LINES

MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**8569**  
NO.

MUTUAL RESOURCES	
BRE PROJECT QUEEN CHARLOTTE ISLANDS NTS 103 F / BE, 9E	
scale	0 100m
PLATE 2 Sabre VLF EM	
To Accompany a report by R. Beaton Dated Dec/80	
Drawn by J. Smith	STRATIGEOLOGICAL



MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**8569**  
NO. \_\_\_\_\_

MUTUAL RESOURCES	
BRE PROJECT QUEEN CHARLOTTE ISLANDS NTS 103 F/BE. 9E	
scale	0 ————— 100 m
PLATE 2 <i>Sabre VLF EM</i>	
To Accompany a report by <i>R. Beaton</i> Dated <i>Dec. /80</i>	
Drawn by <i>J. Smith</i>	 STRATIGEOLOGICAL

CONSOL. CINOLA TEST LINES

Fig. 13 No. 4



MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**8569**  
NO. \_\_\_\_\_

MUTUAL RESOURCES	
BRE PROJECT	
QUEEN CHARLOTTE ISLANDS	
NTS 103 F/BE, 9E	
scale 0  100m	
* PLATE 2	
Sabre VLF - EM Grid	
<b>MAGNETIC VALUES</b>	
To Accompany a report by R. Beaton	
Dated Dec/80	
Drawn by	
J. Smith	STRATIGRAPHIC GEOLOGICAL

plotted  
53780 gamma.s.  
Sabre Fluxgate Magnetometer.  
vert. comp. of field  
[CONSOL. CINOLA TEST LINES]

Fig. 14

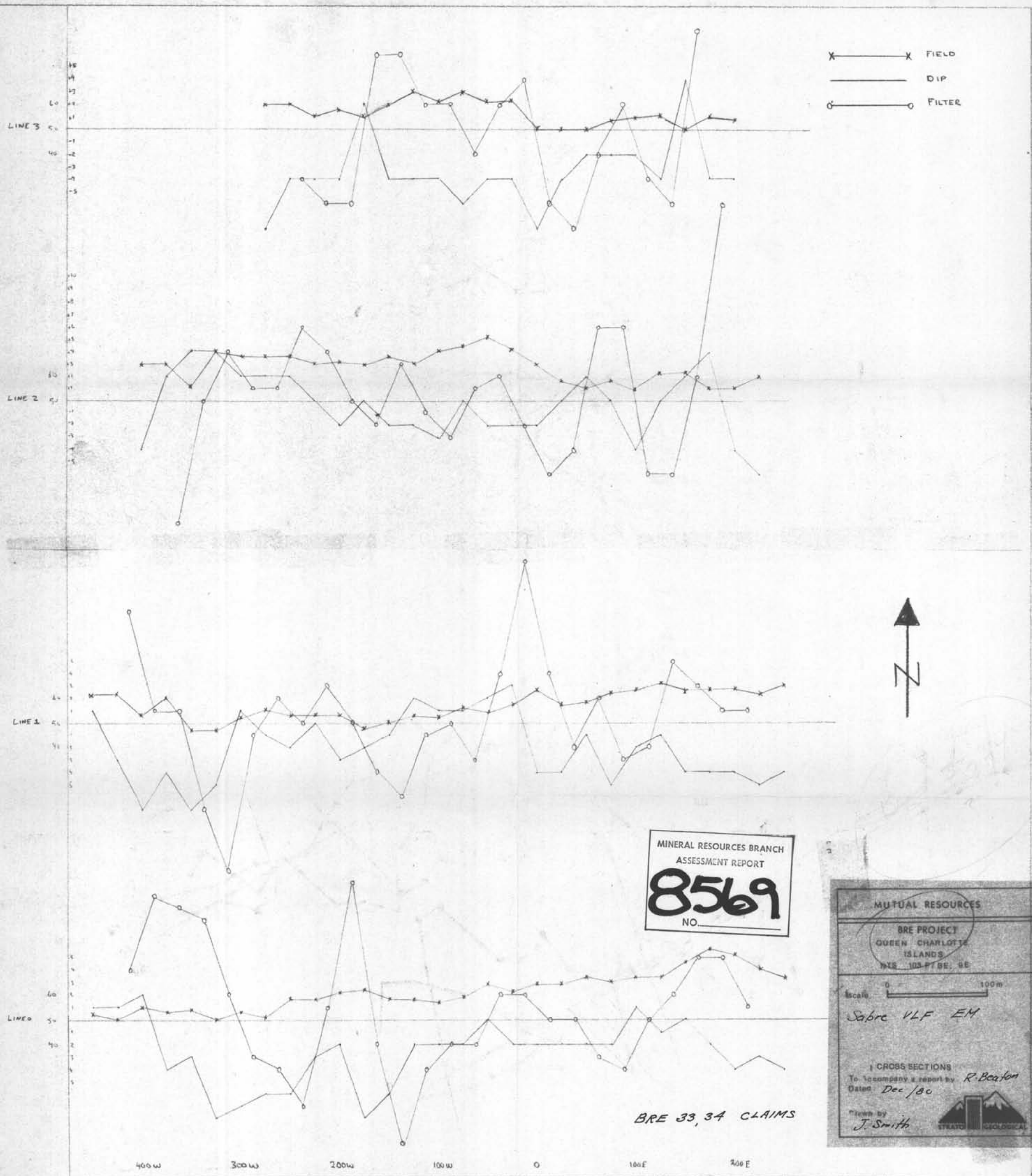
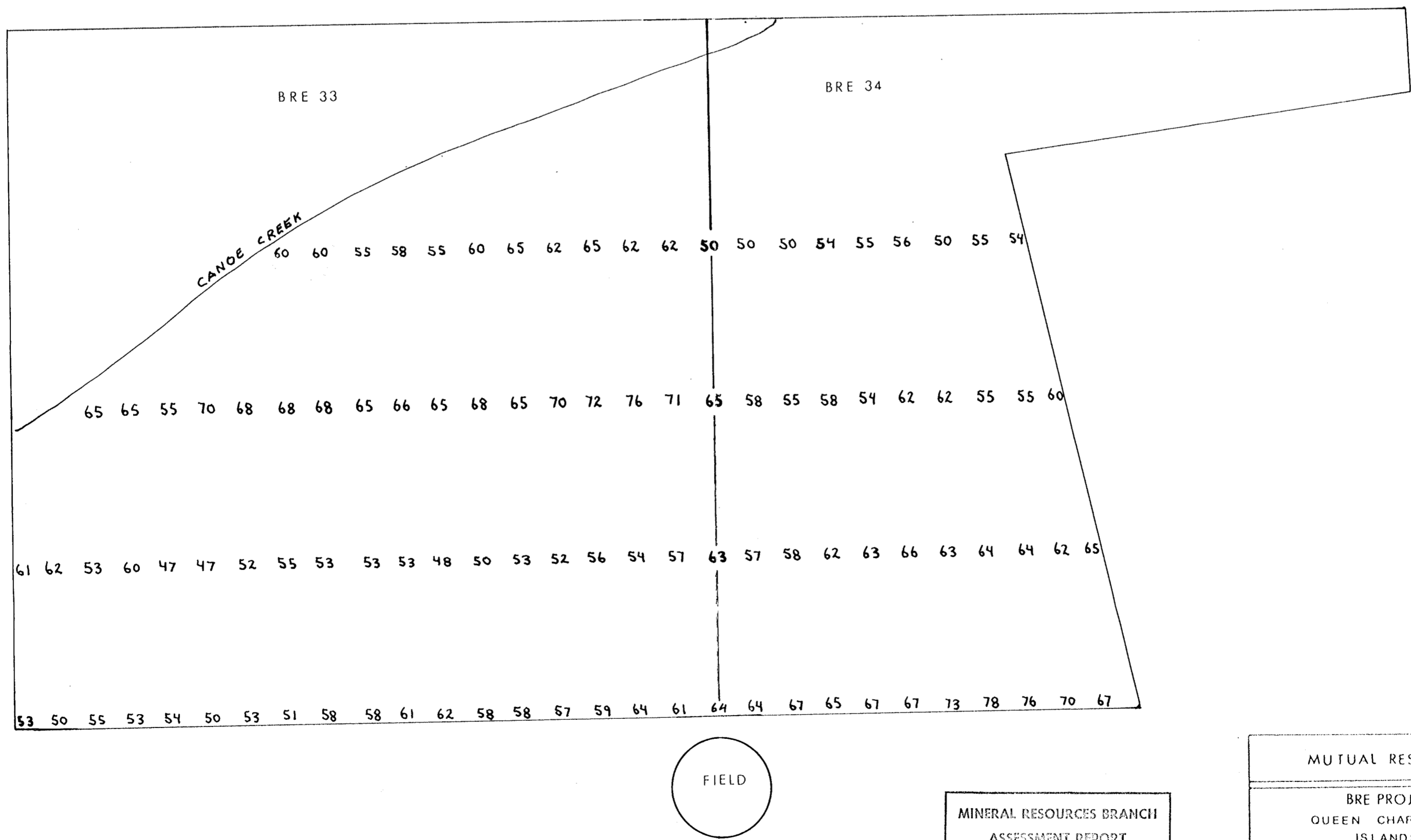
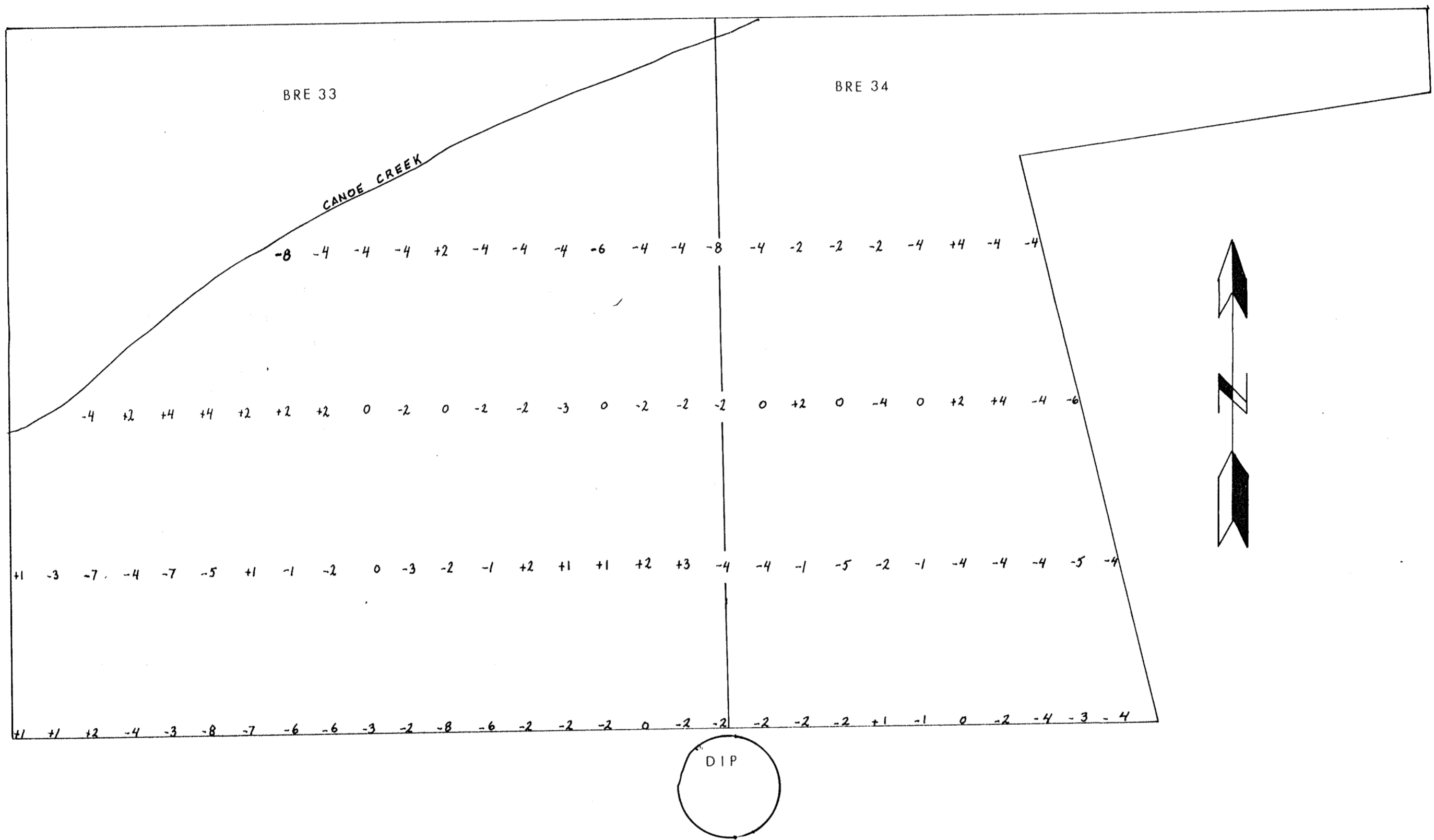
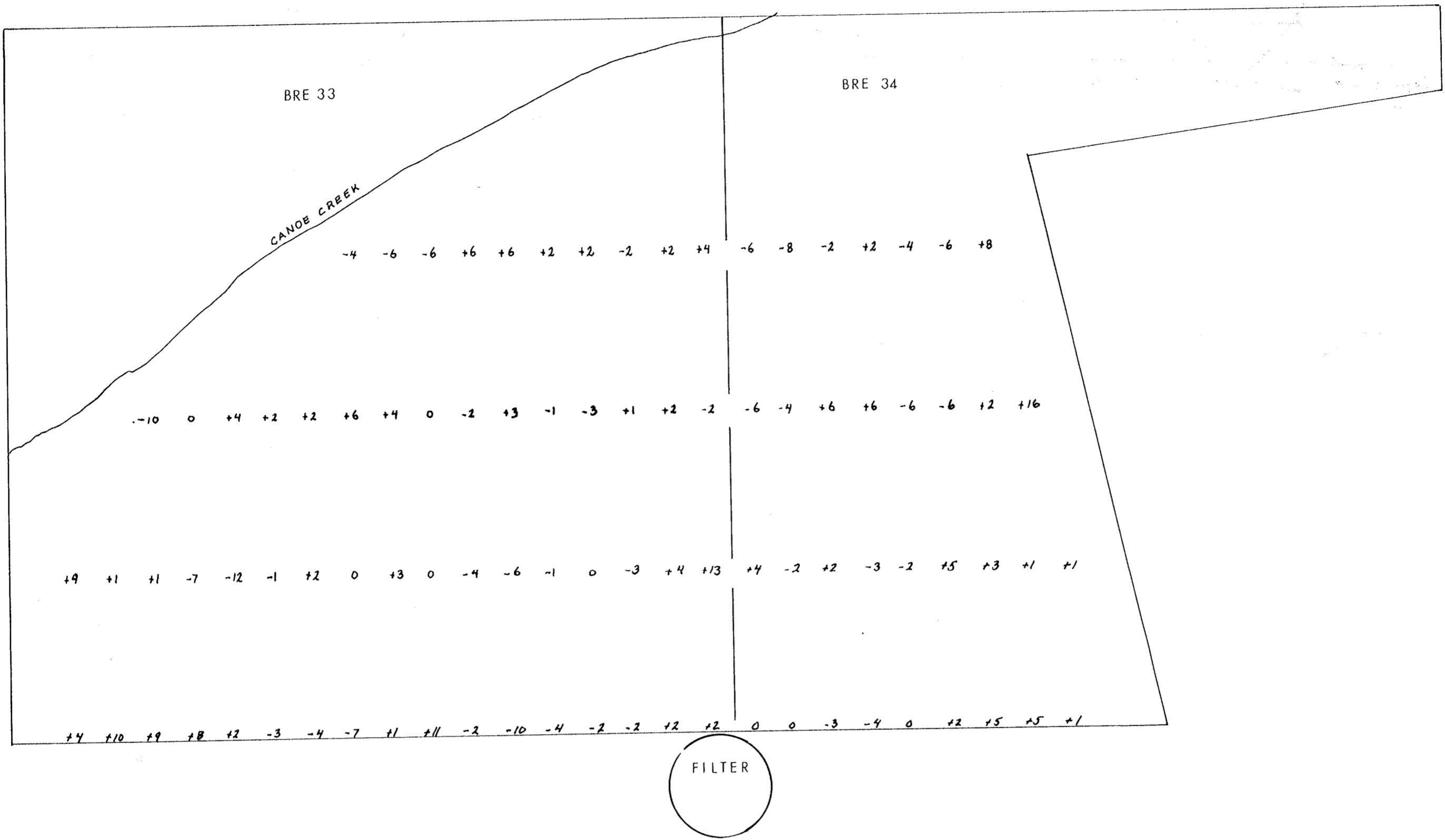


Fig. 15 No. 1



WEST 400 300 200 100 0 100 200 300 400 EAST



MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**8569**  
NO.

BRE 33, 34 CLAIMS

MUTUAL RESOURCES

BRE PROJECT  
QUEEN CHARLOTTE ISLANDS  
NTS 103 F/BE, 9E

scale 0 100m

PLATE 1  
Sabre VLF EM

To Accompany a report by R. Beaton  
Dated Dec/80

Drawn by J. Smith