83-#124-#11140

GEOPHYSICAL AND GEOCHEMICAL REPORT ON THE BELCH CLAIM GROUP REVELSTOKE MINING DIVISION FOR PREUSSAG CANADA LIMITED

GEOLOGICAL BRANCH ASSESSMENT REPORT

11,140

NTS 82M/8E, W
51°24'N; 118°14'W

F. Daley
Vancouver, B.C.
March 1983

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SUMMARY

From July to October 1982, Preussag Canada Limited conducted a ground geophysical and geochemical program on their Belch claims in the Standard Creek area 45km north of Revelstoke. The program was a follow-up to a May 1982 airborne EM and MAG survey over the same area. The purpose of the survey was to outline stratabound massive sulphide exploration targets.

Eighteen line km of VLF EM-16 were surveyed and 34 geochemical samples collected. Several ground conductors coincided with airborne anomalies. Geochem response over coincident geophysical anomalies was low.

No economic sulphide mineralization was found during the course of the 1982 program. Several airborne anomalies remain to be evaluated.

INTRODUCTION

a. Location

The Belch claim group lies 45km north of Revelstoke, B.C. within NTS 82M/8E, 8W. The claim group is centred at 51°24'N and 118°14'W and straddles the headwaters of Standard Creek, immediately north of Standard Peak. (Fig. 1). All claims are within the Revelstoke Mining Division.

Located in the Northern Selkirk Mountain the majority of the claim group is below tree-line, the exception being the very rugged eastern boundary of the Belch 5, 7 and 9 claims. Elevations range from 1100 to 2400m across moderate to steep slopes. Thick coniferous cover of fir, hemlock and cedar thins to sub-alpine scrub above 2000m elevation.

Snowfall is moderate to extreme from October to May, sometimes restricting access until late July. Moderate to heavy rainfalls typified the 1982 field season.

b. Access

As shown on the 1:50,000 government topographic map for NTS 82M/8 there is an old foot trail extending from Keystone Creek, around Keystone Peak and continuing south eastwards to Standard Peak. Local hikers report the trail is passable for its full length. The author found several sections of the trail but did not traverse its entire length.

The most practical means of access is by helicopter from the town of Revelstoke 45km to the south. Both Okanagan and Highland Helicopters maintain year-round bases in Revelstoke with Jet Ranger 206-B machines available for charter.

Field traverses are possible over most of the claim group with only local precipitous barriers.

c. History

Massive sulphide mineralization was first discovered in the Standard Peak area in 1896. Seven hundred metres of underground

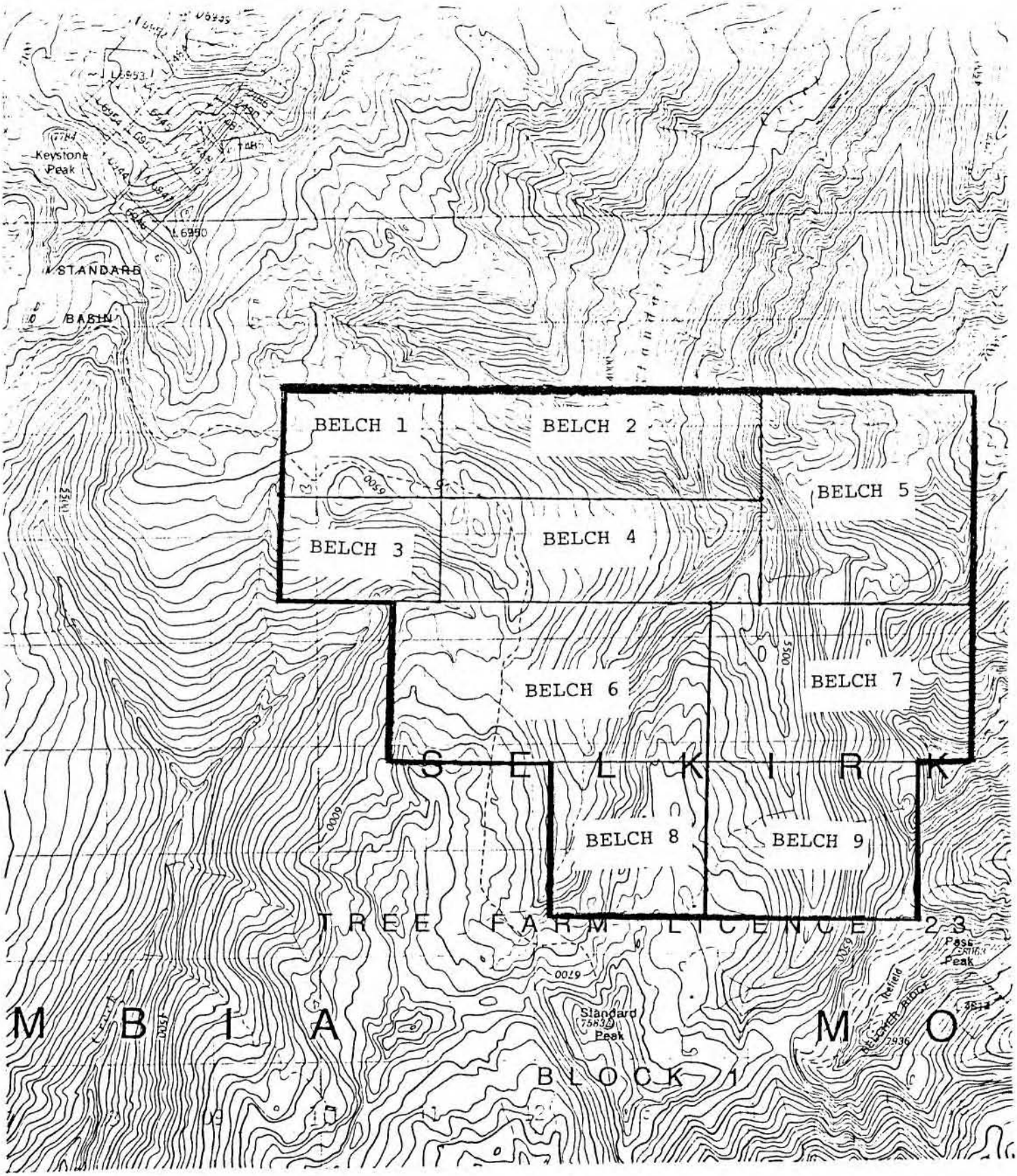

FIG. 1 Location of the BELCH Claim Group NTS 82M/8

scale 1:50,000

work was developed up until 1906. Minor intermittent exploration occurred until 1975 when Noranda, as a result of their 'Goldstream' discovery 30km further north, optioned and staked a large block of claims in the area, including the 'Standard' and 'Key' claim groups. Ensuing programs consisted of ground EM, soil geochem and drilling but were largely restricted to those areas above tree-line with good exposure and relatively good access. Three drill holes on the 'Standard' property, 500m south of Preussag's Belch claim group, intersected a Cu-Zn massive sulphide layer of .2-2.0m thickness in massive to phyllitic greenstone. There is no record of work in the immediate area since 1976.

Preussag Canada Limited staked the Belch 1-9 claims in July 1982 as a result of its May 1982 airborne MAG and EM survey in the Standard Creek area. The survey concentrated on areas along strike of mineralization but below tree-line and possibly not previously tested.

d. Present Program

As a follow-up to the 1982 airborne survey, Preussag conducted a ground geophysical and geochemical program covering significant airborne anomalies. The program ran intermittently from July 19 to October 17, 1982 and was supervised by F. Daley and K. Baldry. Although ground work was done on all claims, the majority of work was completed on the Belch 4, 6, 8 and 9 claims.

Geophysical Surveys

A total of 18.125 line km of grid was established in 4 areas on the Belch claim group. The grids are located as follows:

Grid A, Belch 8, 9 claims	7.025km
Grid B, Belch 9 claim	1.3km
Grid C, Belch 2, 4, 6 claims	8.2km
Grid D, Belch 5 claim	1.6km

All lines were blazed and flagged. Stations were established at 25m intervals using compass and chain and were all slope corrected. Survey lines were oriented approximately 060°. Tilt and quadrature readings were taken on a Geonics EM-16 machine, facing northwest and using Seattle, Wa. as the primary field.

Geochemical Surveys

Coincident with the ground geophysical survey, 10 silt and 24 soil samples were collected. All soil samples were from Grid A, silt samples are from Grids A and C. Samples were collected in Kraft paper envelopes, dried and shipped to Chemex Labs in Vancouver. Samples were analyzed for Cu, Pb, Zn, Ag. Results are given in parts per million in Appendix II and plotted on Figure 7.

RESULTS AND INTERPRETATION

a. Geology (Figure 2)

Outcrop on the claims below tree-line is rare. As the main part of the 1982 program was aimed at evaluating specific airborne geophysical anomalies, regional mapping traverses were not frequent. Based on limited 1982 mapping and previous investigations by others (Hoy 1979, Gibson 1976) the geology of the Belch claim group is summarized below.

A series of antiform-synform structures with east-dipping axial surfaces and north plunging fold axes repeats the metavolcanic and carbonate stratigraphy on the Belch claims. Carbonate and calcareous phyllites occupy the cores of the antiforms with massive to phyllitic greenstone and chlorite phyllite on the limbs.

Massive sulphide mineralization 500m south of the claims consists of a series of layers and lenses of massive pyrrhotite and pyrite with chalcopyrite and sphalerite within a distinct stratigraphic interval in the greenstones. Massive sulphides are repeated on both sides of the antiform and, on the east limb, can be traced intermittently along strike for 1500m.

b. Geophysical Surveys

Grid A

Two sub-parallel conductive responses were noted.

i. From line 9N-75W to line 16N-300E. The anomalous response is approximately 150m wide, extends for 700m along strike and remains open at both ends. There is an apparent east dip to the conductive source. Prospecting did not locate massive sulphide mineralization along this conductive trend. Graphitic phyllites found in the area registered zero resistivity on an ohmeter. The source may therefore be formational in nature. Also, the conductive trace is within a small gully and may represent a structural response. As a check, a small soil geochem survey was run across the conductor.

ii. Line 9N-525E to line 10N-600E and extending northwards off the grid. Again, the profiles indicate an easterly dip to the source. No surface mineralization was found along the trend. A moderate positive tilt response was recorded to the northwest of this anomaly (L.11N-550E to L.15N-750E). This response is a reflection of the topography across the sidehill.

Grid B

A narrow, strong conductive response from line 8N-1350E to line 10N-1375E. The anomaly appears to be open and strongest to the north and weakens to the south. Profiles suggest a near vertical or easterly dip to the source. Although no massive sulphide mineralization was found, outcrop is dominantly a brownish-black variably graphitic phyllite with 0-3% limonite bands after pyrite. The stratigraphy strikes north and dips east. The phyllites show infinite resistivity on the ohmeter and are likely the source of the moderate airborne anomaly.

Grid C

Overall, the response was very flat. The only significant response is seen on line 0-600W where a strong in-phase component was registered. This response was not repeated on adjacent lines. A weak localized conductive response may be represented on line 4N-175W. Quadrature response over the entire grid is consistently flat. Outcrop was rare and the source of the airborne anomalies remains undetermined. Silt samples from creeks draining the relatively moderate slope were collected but showed no significant metal content.

Grid D

The amount of background noise across the survey area did not allow for accurate definition of true conductive responses. Topography varied greatly across the area and may have affected the results. Outcrop in the area is dominantly black phyllite, variably siliceous with minor pyrite as disseminations parallel to foliation. No economic mineralization was noted.

c. Geochemical Surveys

Soil and silt samples were collected on parts of Grids A, C and D to cover coincident airborne and ground geophysical anomalies. Soil samples were taken from the B horizon. Silt samples from active creeks. All samples were analyzed for Cu, Pb, Zn and Ag.

No significant geochemical anomalies were delineated. (Fig. 7). All results are within background levels and do not appear to represent near surface mineralization.

APPENDIX I

ITEMIZED COST STATEMENT

1.	Wages July 19, 1983 - October 17, 1983	
	F. Daley 47 days @ $109.15/day	$ 5,158.25
	K. Baldry 56.5 days @ $91.25/day	5,155.63
2.	Food	
	a. Groceries (Revelstoke Co-Op)	380.74
	b. Meals	576.92
3.	Accommodation	812.42
4.	Transportation	
	a. Vehicle	
	Gas	217.99
	Lease 1500km @ .10¢/km	150.00
	b. Highland Helicopters, Revelstoke	9,006.49
5.	Geophysical Surveys	
	VLF Rental 56 days @ $45/day	2,520.00
6.	Geochemical Surveys	
	Chemex Labs, Vancouver	
	24 soil samples for Cu, Pb, Zn, Ag @ $14.75/sample)	501.61
	10 silt samples for Cu, Pb, Zn, Ag @ $14.75/sample)	
7.	Field Supplies	
	Revelstoke Co-Op	650.04
		$25,130.19

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 : PREUSSAG CANADA LIMITED

1322-510 WEST HASTINGS STREET
VANCOUVER, B.C.
V6B 1L8

ATTN: E.CALEY

CERT. # : A8213167-001-A
INVOICE # : 18213167
DATE : 8-SEP-82
P.O. # : NONE

Sample description	Prep code	Cu ppm	Pb ppm	Zn ppm	Ag ppm		
E.R.20C01T	201	70	42	145	0.2	--	--
E.R.20C02T	201	24	17	130	0.1	--	--
E.R.20C03T	201	52	30	180	0.5	--	--
E.R.20C04T	201	23	37	134	0.2	--	--
LO.'C'856 WT	201	39	20	127	0.3	--	--
'C'L20ON+700W T	201	46	18	95	0.2	--	--
L9N+550E L	201	35	47	99	0.2	--	--
L9N+600E L	201	11	12	26	0.2	--	--
L9N+650E L	201	96	27	133	0.1	--	--
L9N+650E T (SILT)	203	58	25	113	0.1	--	--
L9N+700E L	201	17	10	26	0.5	--	--
9N+750E L	201	41	18	79	0.2	--	--
9N+775E L	201	45	8	65	0.3	--	--
L9N+800E L	201	46	14	80	0.2	--	--
L9N+825E L	201	21	9	43	0.1	--	--
L9N+850E L	201	19	10	36	0.4	--	--
L10N+750E L	201	35	29	92	0.1	--	--
L10N+775E L	201	12	28	68	0.1	--	--
L10N+800E L	201	62	53	107	0.1	--	--
L10N+825E L	201	108	17	116	0.1	--	--
L10N+825E T (SILT)	201	56	14	146	0.1	--	--
L10N+850E L	201	64	18	95	0.1	--	--
L10N+875E L	201	28	18	59	0.2	--	--
L10N+900E L	201	48	17	70	0.1	--	--
L12N+ 0 L	201	31	29	76	0.1	--	--
L12N+50E L	201	20	17	57	0.1	--	--
L12N+75E L	201	68	19	132	0.1	--	--
L12N+125E L	201	40	15	76	0.2	--	--
L13N+ 50E L	201	19	12	46	0.1	--	--
L13N+100E L	201	45	17	112	0.2	--	--
L13N+125E L	201	52	19	122	0.1	--	--
L13N+175E L	201	31	10	75	0.1	--	--

Sample description	Prep code	Cu ppm	Pb ppm	Zn ppm	Ag ppm	AU-AA ppb	
B.L."C" 971 N T	201	69	28	109	0.3	10	--
B.C."C" 1100N T	201	43	23	99	0.4	<10	--

Certified by ..... Hart Bichler

CTA MEMBER CANADIAN TESTING ASSOCIATION

APPENDIX III

AUTHOR'S QUALIFICATIONS

I, Fred S. Daley, hereby declare that;

i. I obtained a B.Sc. degree in Geological Sciences from the University of British Columbia in 1975,

ii. I have been continuously employed in mineral exploration since that time,

iii. I have been employed as an Exploration Geologist with Preussag Canada Limited since January 1981,

iv. I supervised and personally participated in the surveys described in this report,

v. I am a member of the C.I.M.M. and the Cordilleran Section of the G.A.C.

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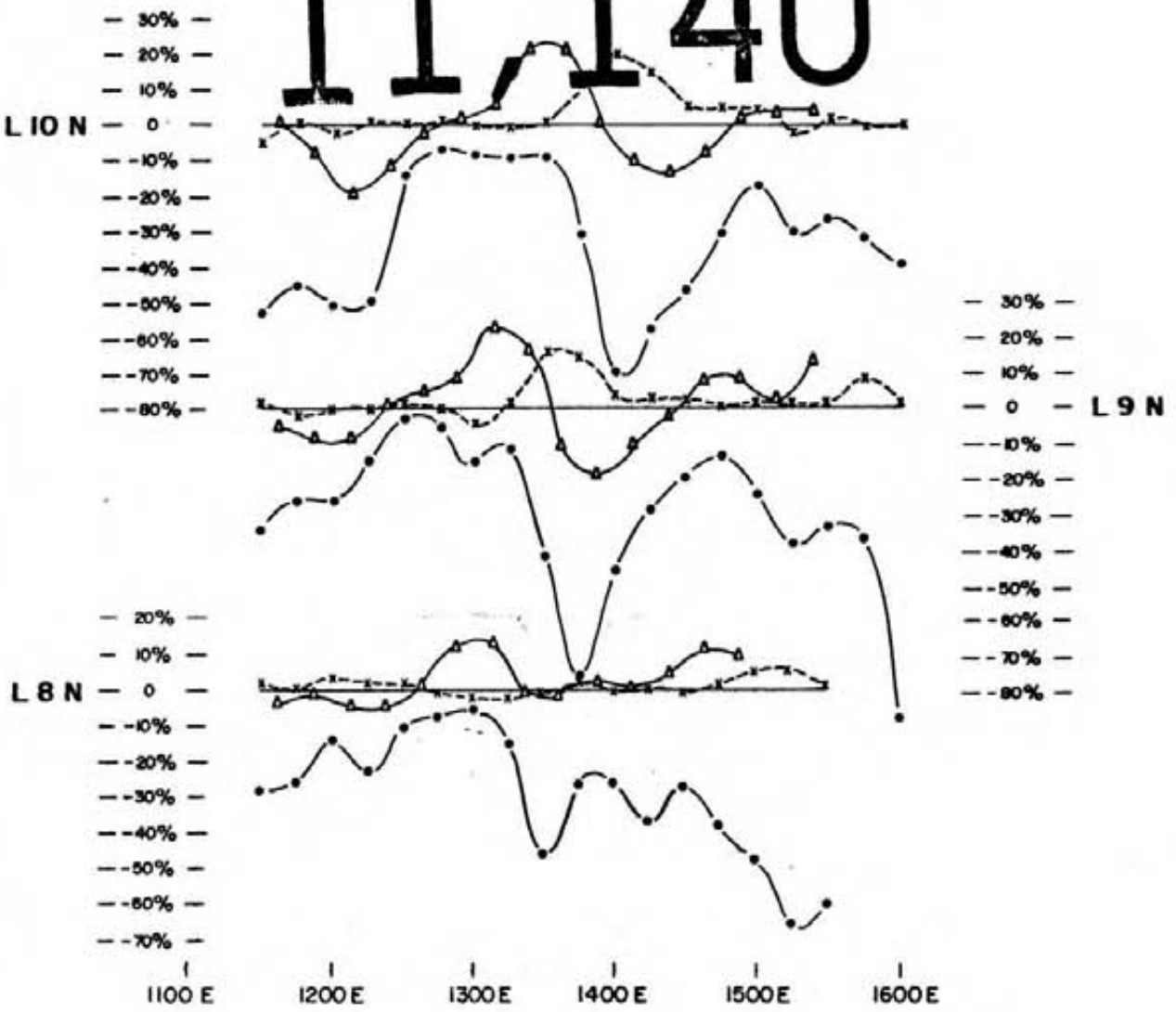

In Phase
Out of Phase
Fraser Filtered

FIGURE 4

PREUSSAG

BELCH CLAIMS
GRID B

VLF-EM 16 Profiles

100 0 100 200M

SCALE 1:5000

Feb'83

82/M/8

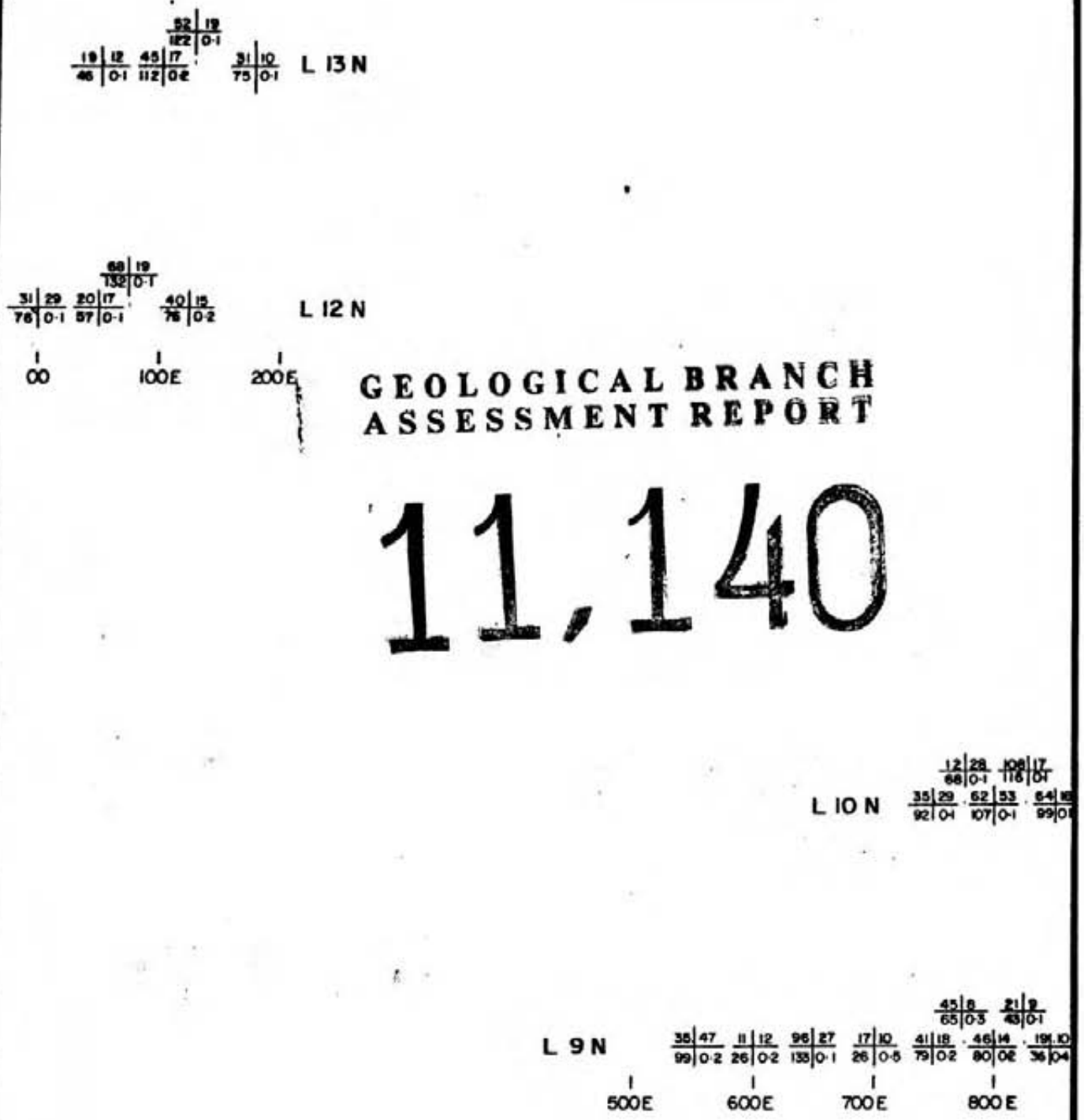

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FIGURE 7

PREUSSAG

BELCH CLAIMS

GRID A

Geochemical Survey

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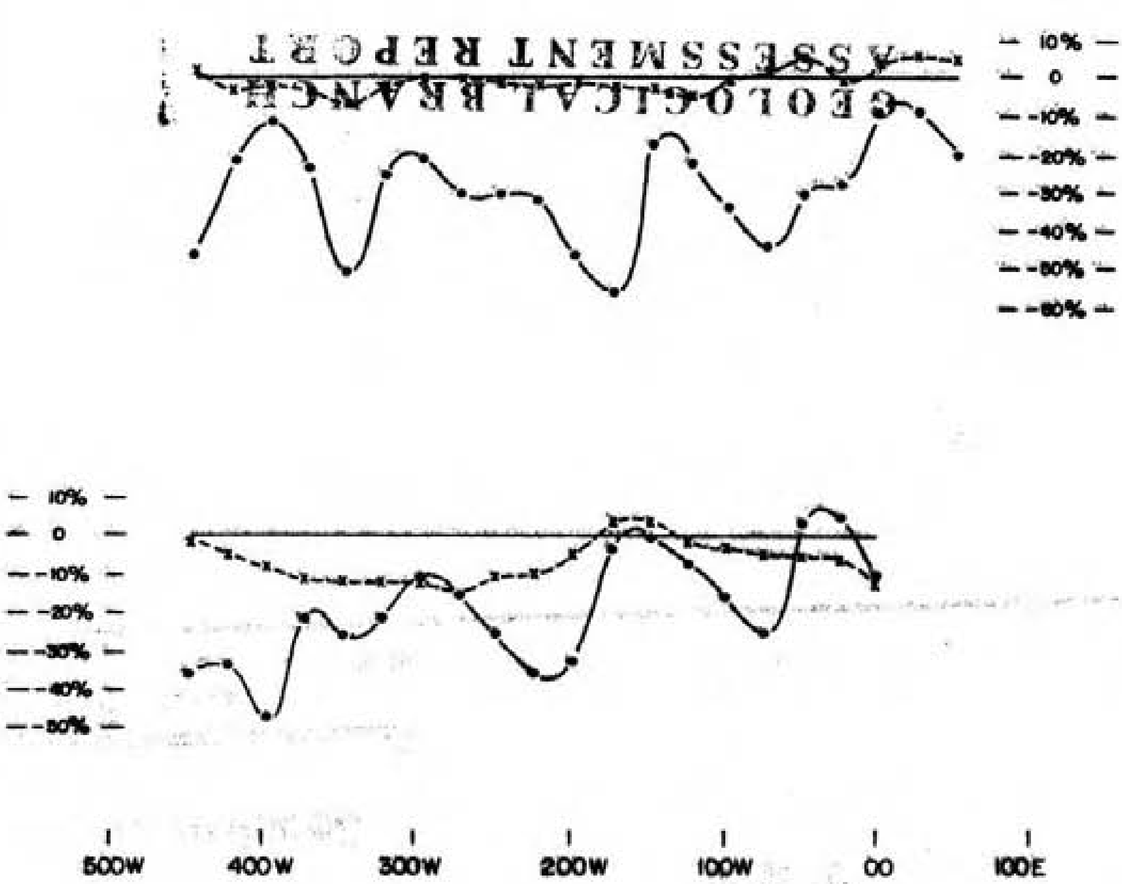

●—●—●—● In Phase
x---x---x---x Out of Phase

FIGURE 6

PREUSSAG

BELCH CLAIMS
GRID D

VLF-EM 16 Profiles

100 0 100 200M

SCALE 1:5000

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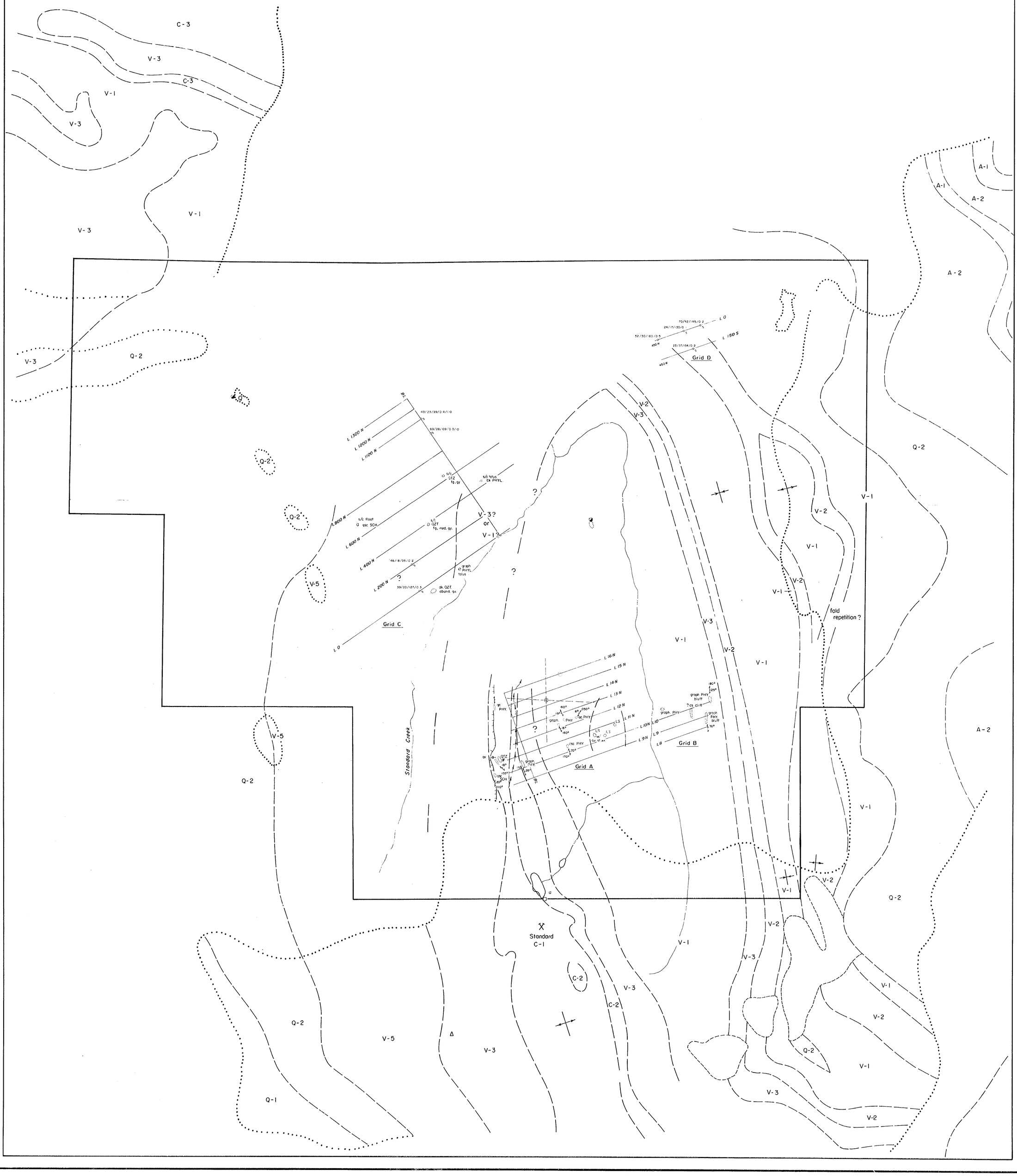

LEGEND

HAMILL GROUP

CARBONATE - PHYLLITE DIVISION (C)

- C-3 — Calcareous phyllite; minor dolomite, limestone, rusty weathering schist
- C-2 — Dolomite, limestone

METAVOLCANIC PHYLLITE DIVISION (V)

- V-5 — Light green quartz-chlorite phyllite, dark green chlorite phyllite; may also include unit V-3
- V-3 — Greenstone, massive to phyllitic, chlorite phyllite; minor talc-chlorite rock; calcareous phyllite, dolomite
- V-2 — Dolomite, limestone
- V-1 — Calcareous graphite phyllite, sericite phyllite; minor dolomite, limestone, chlorite phyllite

QUARTZITE SCHIST DIVISION (Q)

- Q-2 — Quartzite, psammite, quartz sericite phyllite; minor limy layers
- Q-1 — Dark graphite schist, micaceous schist

HORSETHIEF CREEK GROUP

- A-2 — Pelitic schist, graphite schist, calcareous phyllite; minor psammite, greenstone
- A-1 — Dolomite, limestone

(Höy, 1979)

°s Silt Sample ppm / ppb Cu / Pb / Zn / Ag / Au

Figure 2

PREUSSAG

STANDARD AREA

BELCH CLAIM GROUP

Geology Map
VLF-EM Grids

200 0 200 400 600 M.
Scale 1: 10,000

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82 / M / 8

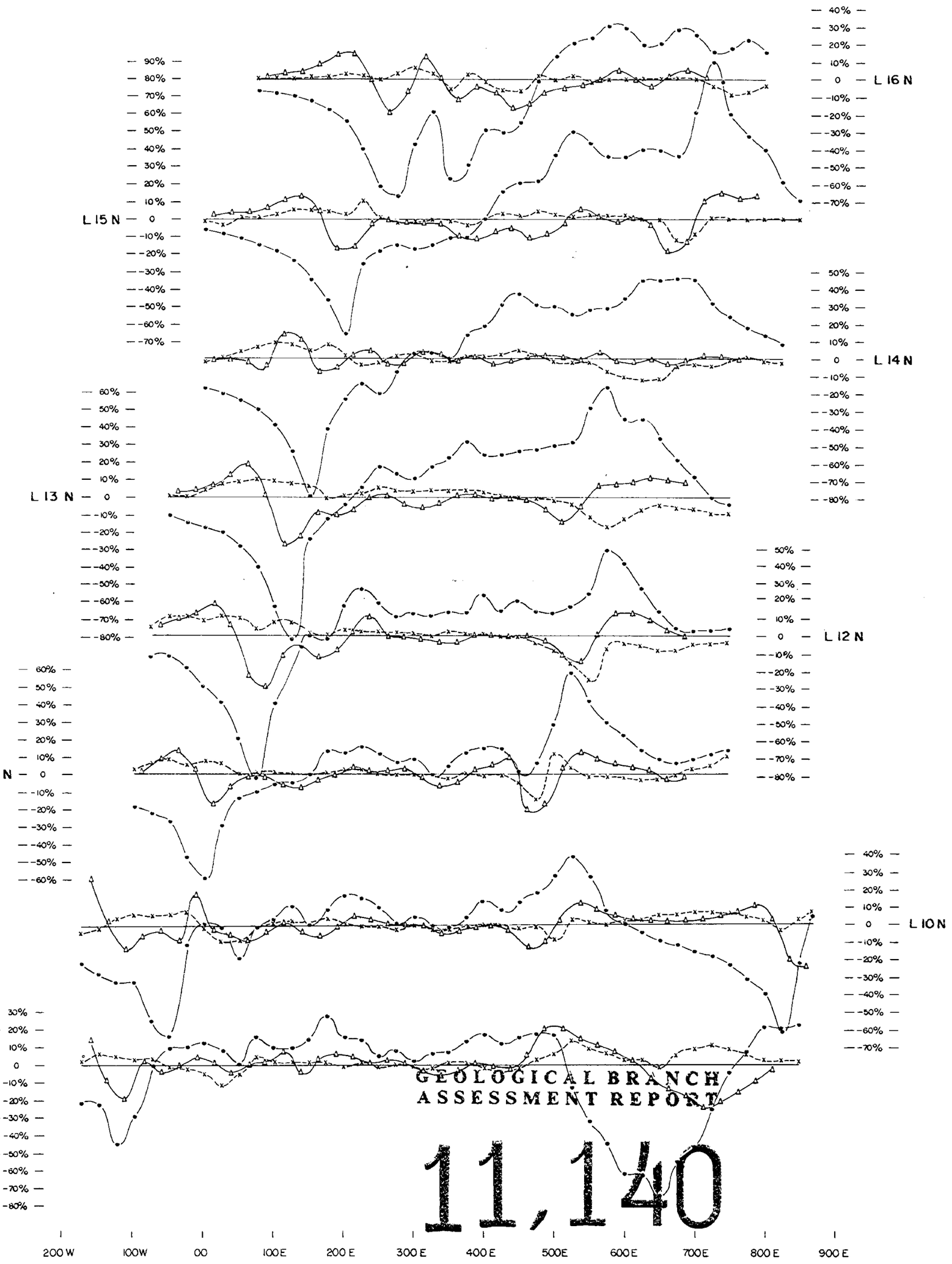

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FIGURE 3

PREUSSAG

BELCH CLAIMS

GRID A

VLF-EM 16 Profiles

100 0 100 200M

Feb.'83 SCALE 1:5000 82/M/8

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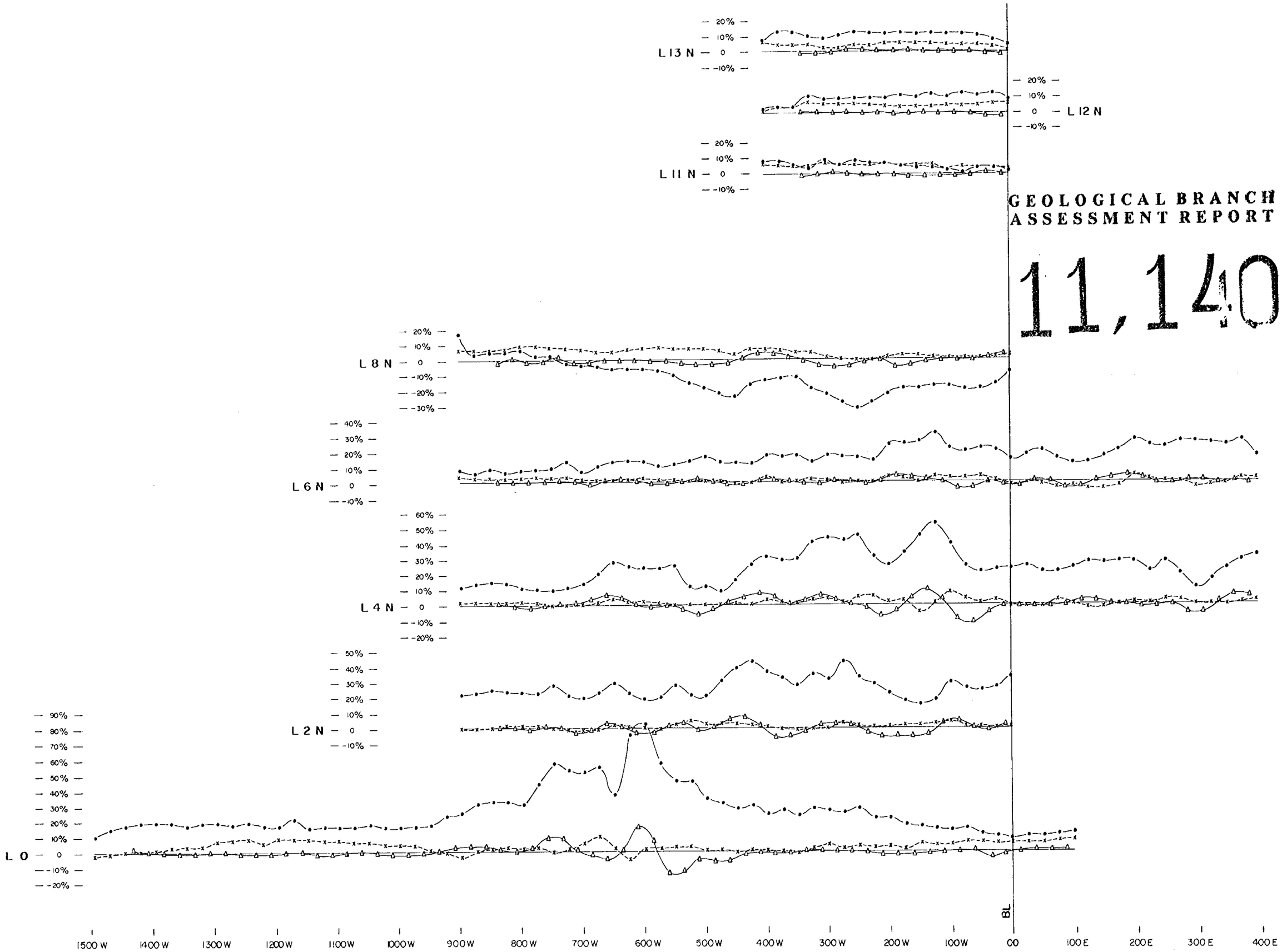

In Phase
Out of Phase
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PREUSSAG
BELCH CLAIMS
GRID C

VLF-EM 16 Profiles

100 0 100 200 M

Feb. '83 NTS 82/M/8

FIGURE 5