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8/85

ROY PROSPECT GEOLOGICAL REPORT

ROY NO. 1 CLAIM (2771)
DON FRACTION CLAIM (2778)

VANCOUVER MINING DIVISION

NTS 92G/10 W

49° 37' 122° 58.5'

Owner: Anaconda Canada
Operator: Corporation Falconbridge Copper

Author: H. L. Gibson

September 4, 1984

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

12,839

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INTRODUCTION

Location and Access

The Roy Prospect, within the Indian River claim group, is located approximately 17 km east of Britannia Beach (Figure 1). The prospect occurs at an elevation of 600 m and is most easily accessible by helicopter or alternatively via a dirt road from Squamish and a 3.2 km hike along logging roads. The road from the head of Indian Arm to the claim group is in excellent repair and in conjunction with water taxi service provides ready access to the property from North Vancouver.

Property History & Ownership

The Indian River claims are the eastern portion of Anaconda Canada's Indian River - Furry Creek property which consists of 310 crown granted claims, 6 reverted crown granted claims and 7 staked claims. Prior to Anaconda's acquisition of the property in 1962 the claim group belonged to Britannia Mining and Smelting Co. Ltd. and along with the Britannia claims covered an area extending from Britannia Beach to 2 km east of Indian River. Corporation Falconbridge Copper acquired the Indian River - Furry Creek property through an option agreement with Anaconda Canada in June/1984 and has since conducted geologic assessment and exploration of the property.

Work Completed

The Vancouver watershed historically divided the Indian River - Furry Creek claim group into two areas and exploration of each area has been conducted separately. In the Indian River area exploration, consisting of geologic mapping, sampling and diamond drilling, has focussed on the Roy Prospect and London Slide area.

From July 26th to August 1st, 1984 Corporation Falconbridge Copper mapped and sampled an area (200X300m) immediately surrounding the Roy

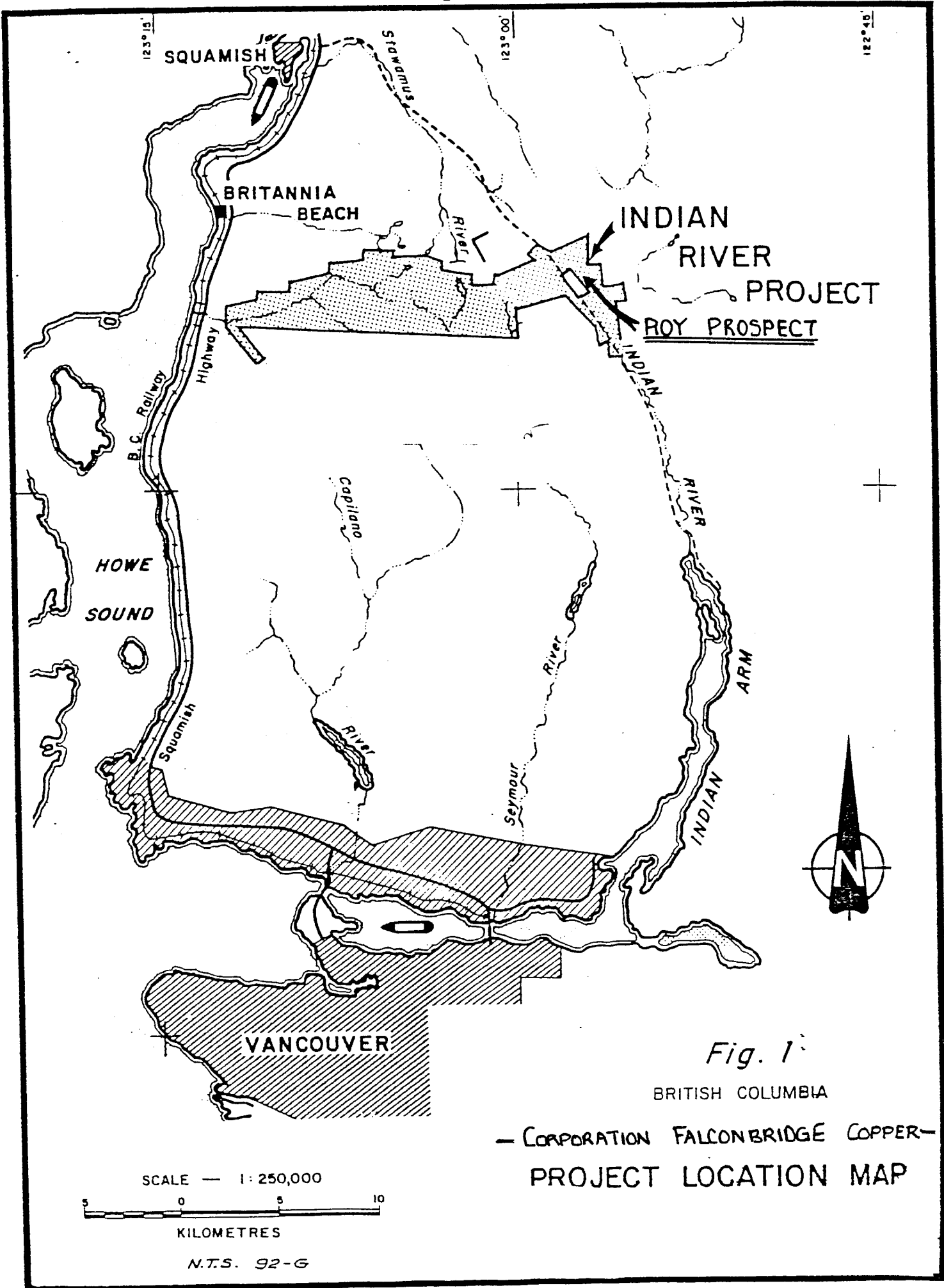


Fig. 1

BRITISH COLUMBIA

- CORPORATION FALCONBRIDGE COPPER-
PROJECT LOCATION MAP

SCALE — 1:250,000



KILOMETRES

N.T.S. 92-G

Prospect (Roy No. 1 claim 2771). Mapping was conducted at a scale of 1:1000 with control established using a 5 km chained grid (Figure 2) with 50 m line spacing in conjunction with 1:1000 topographic maps. Eighty-five whole-rock samples were collected at approximately 20m intervals for geological analysis. Six channel samples across chalcopyrite vein mineralization at the Roy Prospect were collected for assay.

Also, fifty-three whole rock samples were collected at approximately 10m intervals for geochemical analysis on the Don Fraction Mineral claims (2778).

REGIONAL GEOLOGY

The Indian River claims are underlain by meta volcanic/sedimentary rocks of the Britannia - Indian River Pendant; one of many northwest - trending volcano-sedimentary belts within the Coast Plutonic complex (Roddick, 1965). The Britannia - Indian River Pendant, on the basis of correlation with the Gambier Group (Payne, et al. 1980), is interpreted as Jurassic - Cretaceous in age.

The Coast Plutonic complex comprise pre, syn and post tectonic plutons of granitic to gabbro composition. It's contacts with the Britannia - Indian River pendant are not well defined.

GEOLOGY OF THE ROY PROSPECT AREA

The Indian River claims are underlain by a volcano-sedimentary sequence composed of rhyolite flows, dacitic/andesitic pyroclastic rocks and volcanoclastic sediments. In the Roy Prospect area volcanic stratigraphy strikes northwest - southeast, dips moderately to steeply northeast and tops to the north. The stratigraphic succession underlying the Roy Prospect area consists of flow-banded/massive rhyolite and dacitic pyroclastic rocks overlain in turn by andesitic pyroclastic/volcanoclastic rocks and massive to flow-banded rhyolite (Figure 3).

Numerous dykes, typically of fine-grained feldspar phyric and aphyric andesite, feldspar phyric dacite and flow-banded rhyolite, cross-cut stratigraphy. A fine- to coarse-grained quartz-diorite body containing numerous xenoliths of pyritized/sericitized volcanic rock transects stratigraphy in the

northwest corner of the map area (Figure 3). All rocks have been metamorphosed to lower-greenschist grade and fragmental/clastic rocks have been classified according to the classification of Fisher, 1966 (Figure 4).

Description of Map Units

Map Unit 1 consists of white to buff weathering massive and flow-banded aphyric and aphanitic rhyolite (field term). Flow banded rhyolite consists of alternating light-gray, dark-gray and white lensoidal, discontinuous bands that range in thickness from <0.5 cm to >10 cm and are often contorted and less-commonly flow brecciated. Quartz-amygdaloidal spherulitic zones within massive rhyolite are exposed along the lower logging road.

Chalcopyrite/pyrite mineralization occurs as disseminations and stringers in a chloritized rhyolitic outcrop 25 m east of the Roy Prospect. The chalcopyrite "vein" mineralization is shallow dipping and similar to the Roy Prospect except for the formers lower grade and narrower width.

Map Unit 2 comprises dacitic (field term) crystal tuffs, crystal lithic tuffs, lapilli tuffs and tuff breccias that differ only in the percentage of feldspar crystals and size of fragments. Crystal tuffs are composed mainly of feldspar (albite?) crystals and < 5% mafic lapilli size fragments in a siliceous, light green "dacitic" matrix; crystal-lithic tuffs are identical but contain 5-10% mafic lapilli. Lapilli tuffs contain 20-30% fine mafic lapilli (0.5 - 1.5cm) in a "granular" weakly feldspar phyric dacitic matrix whereas tuff-breccias contain blocky feldspar porphyritic andesite fragments (0.5 - 30 cm) and < 5% felsic lapilli in a gray-white siliceous matrix.

The dacitic breccias are poor - moderately well sorted (wrt size) and thick bedded to massive. Discontinuous lenses of bedded, graded, cherty ash-sized felsic sediment/tuff occur within the breccias east & west of the Roy showing.

Chalcopyrite/pyrite vein mineralization at the Roy showing occurs within chloritized dacitic lapilli tuffs and tuff breccias.

Map Unit 3 consists of andesitic lapilli tuffs, lapillistone tuffs and tuff breccias. Tuff breccias at the base of the unit consists of blocky, angular,

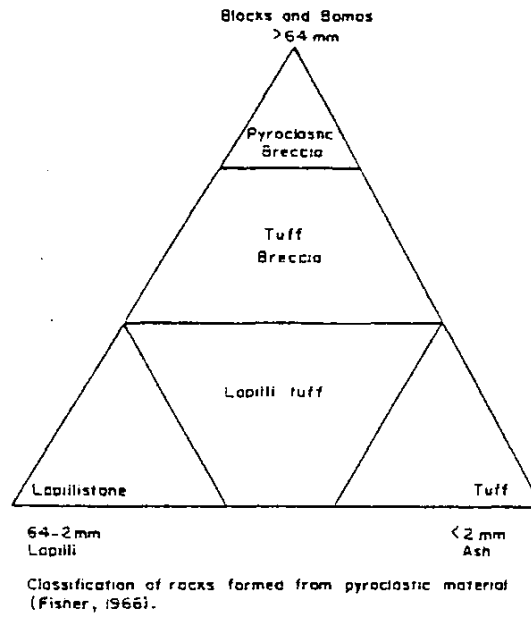


Fig. 4

Classification of Volcaniclastic Rocks (Fisher; 1961, 1966)

densely packed feldspar porphyritic andesite fragments in a siliceous, mauve vein-network matrix. Lapilli tuffs and lapillistone tuffs consist of mafic lapilli and mixed mafic/felsic lapilli respectively with the latter occurring towards the top of the unit. Significant mineralization/ alteration were not encountered within this unit.

Map Unit 4 comprises massive and flow-banded rhyolite identical to Unit 1 except that former contains (<1%) subangular fragments of feldspar porphyritic andesite (<1cm - 6cm). Significant areas of alteration/mineralization were not recognized within this unit.

ROY PROSPECT

Chalcopyrite/pyrite mineralization at the Roy Prospect occurs as sheet-like shallow dipping veins of massive chalcopyrite stringers up to 12cm wide, disseminated chalcopyrite/pyrite, black chlorite, disrupted quartz veins and fragments of wallrock. The chalcopyrite-rich veins range up to 0.5m thick and occur as discrete patches along the slope of the outcrop. The patches are interpreted as a single, discordant, shallow, southeast dipping (approx. 40°) vein or set of parallel veins (Figure 3). The disconformable nature of the veins, mineral assemblage, association with chlorite veins and attendant strong chlorite alteration of surrounding dacitic wall rocks are characteristics typical of stringer mineralization/alteration associated with volcanogenic massive sulphide deposits.

CONCLUSIONS

Massive and flow-banded rhyolite of Map Units 1 and 4 are identical and the stratigraphic succession hosting the Roy Prospect is interpreted to represent a section through a composite, subaqueous rhyolite lava dome. The two rhyolitic flows (Units 1 & 4) are separated by a wedge of proximal dacitic pyroclastic rocks in part ash flows, with minor "exhalite" and by andesitic pyroclastic and mixed felsic/mafic fragmental volcanoclastic rocks.

Chalcopyrite-rich veins and chlorite alteration at the Roy Prospect occurs within the dacitic pyroclastic unit above the lower rhyolitic flow. The

vein mineralization is interpreted to be analogous to stringer sulphides associated with volcanogenic massive sulphide deposits.

REFERENCES

- FISHER, R. V., 1966, Rocks composed of volcanic fragments and their classification, *Earth Sci. Review*, vol. 1, p. 287-298.
- PAYNE, J. G., BRATT, J. A. and STONE, B. G., 1980, Deformed Mesozoic volcanogenic Cu-Zn sulphide deposits in the Britannia District, B. C., *Econ. Geology*, vol. 75, p. 700-721.
- RODDICK, J. A., 1965, Vancouver North, Coquitlam, and Pitt Lake map areas, B. C. Can. Geol. Surv. Mem. 335, 276 p.

ITEMIZED COST STATEMENTS

a) Personnel Costs

7 days (July 26 to Aug 1/84), at

H. L. Gibson	\$200/day for 7 days = \$1400.00
K. M. McColl	\$150/day for 7 days = \$1050.00
L. Knuckey	\$100/day for 7 days = \$ 700.00
P. Postuk	\$100/day for 7 days = \$ 700.00

\$3850.00

b) Food Cost @ \$30/man/day \$ 840.00

c) Transportation Cost

Truck Costs - 2 four-wheel drive trucks	
@ \$50/day each	\$ 700.00
Helicopter cost - 1 day/3 persons	\$ 567.80

d) Report

1 day H. L. Gibson - write report	\$ 200.00
1 day draftsman - draft map	\$ 200.00

TOTAL \$6357.80

STATEMENT OF QUALIFICATIONS

I, Harold L. Gibson hereby certify that:

- 1) I hold an Honours Bachelor of Science Degree and a Master of Science Degree from Queen's University, Kingston, Ontario and Carleton University, Ottawa, Ontario.
- 2) I am an Associate member of the Geological Association of Canada.
- 3) I have practiced my profession in exploration continuously since graduation.
- 4) I have based conclusions contained in this report on knowledge of the area, my previous experience and the results of the fieldwork conducted on the property.



Harold L. Gibson, M.Sc.

Delta, British Columbia

APPENDIX I DETAILED WORK BREAKDOWN/MAN DAYS

1. Establish Grids
 - a) Roy Prospect area - 5km grid
3 days - 4 people HLG, KMM, IK, PP

2. Sampling
 - a) Roy Prospect
2.5 days - 2 people - IK, PP, 85 samples (whole rock), 6 channel samples.
 - b) London Porphyry
1.5 days - 2 people - IK, PP, 53 samples.

3. Geologic Mapping
 - a) Roy Prospect
5 days - 2 people HLG/KMM.

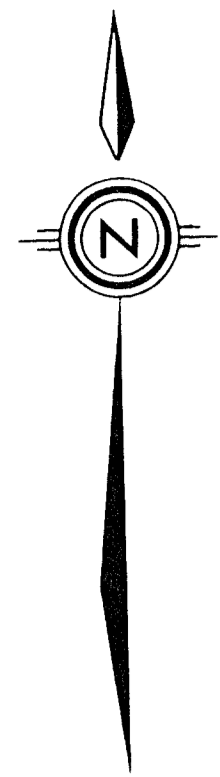
APPENDIX II SAMPLES FOR GEOCHEMICAL ANALYSIS AND ASSAY

A) Roy Grid Samples
 #RS84001 to RS84038 - 38 samples
 #RS84101 to RS84147 - 47 samples
 85

B) Roy Channel Samples
 A, B, C, D, E, F - 6 samples

C) London Grid Samples
 #IR84001 to IR84029 - 29 samples
 #IR84101 to IR84124 - 24 samples
 53

144 samples in total.



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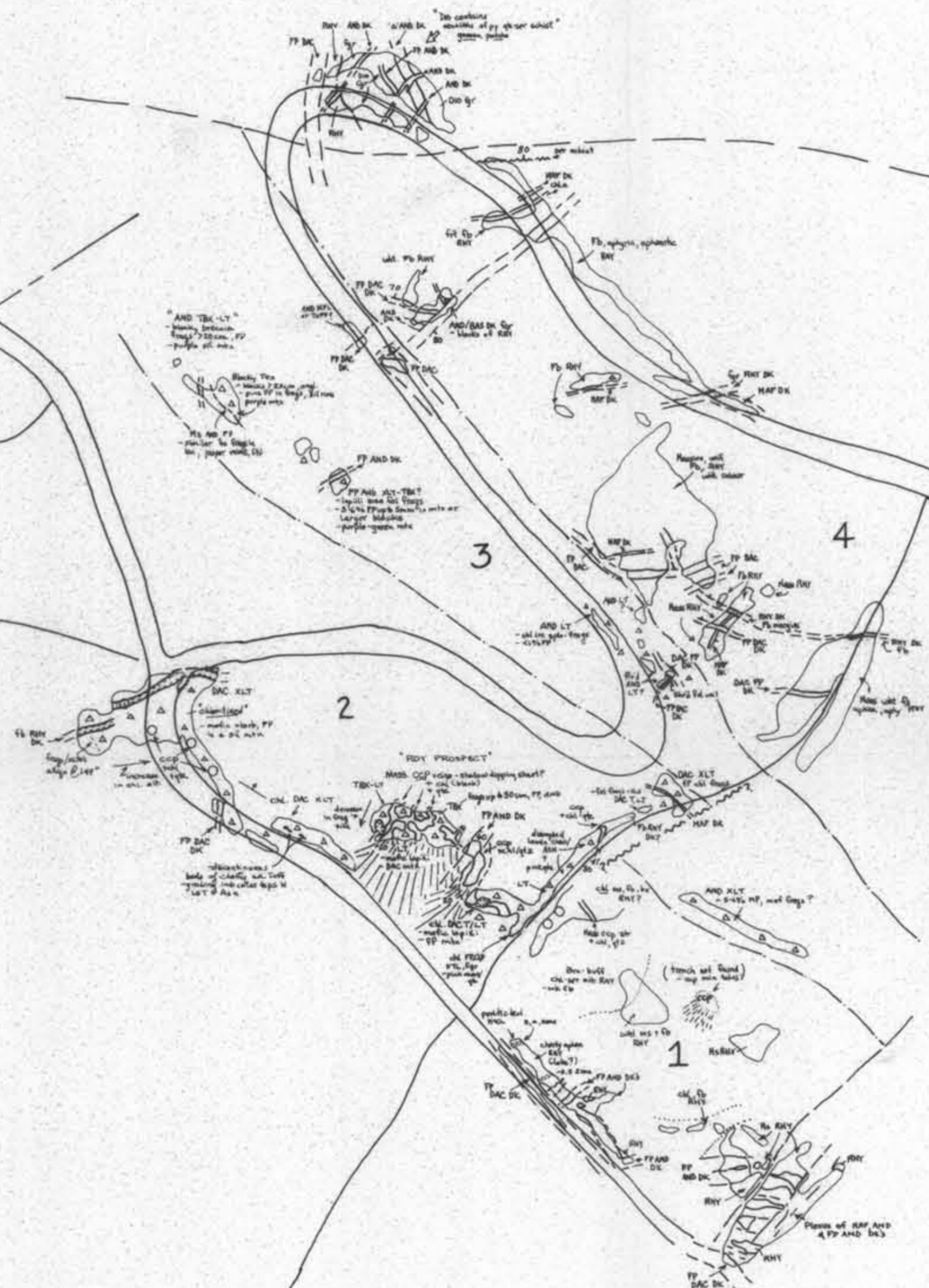
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INDIAN RIVER PROJECT	
LINECUTTING MAP	
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FALCONBRIDGE LTD.

DON FRACTION 2778

ROY No. 1 2771
BOW FRACTION 2774



LEGEND
- GEOLOGY -

4	Flowbanded and Massive Rhyolite
3	Andesitic Pyroclastic/Volcaniclastic Rocks
2	Dacitic Pyroclastic Rocks
1	Flowbanded And Massive Rhyolite

- SYMBOLS -

▲	Breccia	○	Outcrop
—	Bedding	⊖	Trench/pit
—	Foliation	—	Road
—	Conformable Contact	—	Stream
—	Intrusive Contact	—	Claim Boundary
—	Fault	○	Drill Hole

- ABBREVIATIONS -

Dio	diorite	frrd	fractured
Rhy	rhyolite	Shr'd	sheared
Dac	dacite	mtx	matrix
And	andesite	chl	chlorite
Hycl	hyaloclastic	ser	sericite
Tbx	tuff Breccia	sil	siliceous
Lst	lapillistone	qtz	quartz
Lt	lapillituff	ccp	chalcopyrite
T	tuff	py	pyrite
Xtl	crystal Tuff	FP	Feldspar Porphyritic
Dk	dyke	QP	Quartz Porphyritic
Fl	flow	MP	Mafic Phenocrysts
Maf	mafic	a	amygdules
Fei	felsic	s	spherulite
Fb	flowbanded	spt	spotted
fgr	finegrained	wht	white
wk	weak	brn	brown
Mass/ Ms	Massive		

CORPORATION FALCONBRIDGE COPPER

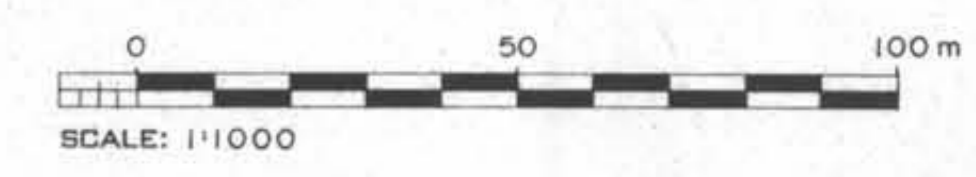
ANACONDA PROJECT

INDIAN RIVER

GEOLOGY OF THE ROY PROSPECT

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