PRELIMINARY REPORT ON

THE "ARROWSTONE PROJECT" by:

JAMES F. BRISTOW, P. Eng.

FOR

IRON RIVER RESOURCES LIMITED

(My)

Α

PRELIMINARY

REPORT

ON

THE MER, MOW 1, MOW 3 AND MAR 2 CLAIMS
"ARROWSTONE PROJECT"

DEADMAN RIVER VALLEY, BRITISH COLUMBIA

KAMLOOPS MINING DIVISION
LATITUDE 51 02'N LONGITUDE 120 53'W
NTS 92P / 2W

FOR

IRON RIVER RESOURCES LIMITED VANCOUVER, B.C.

BY:

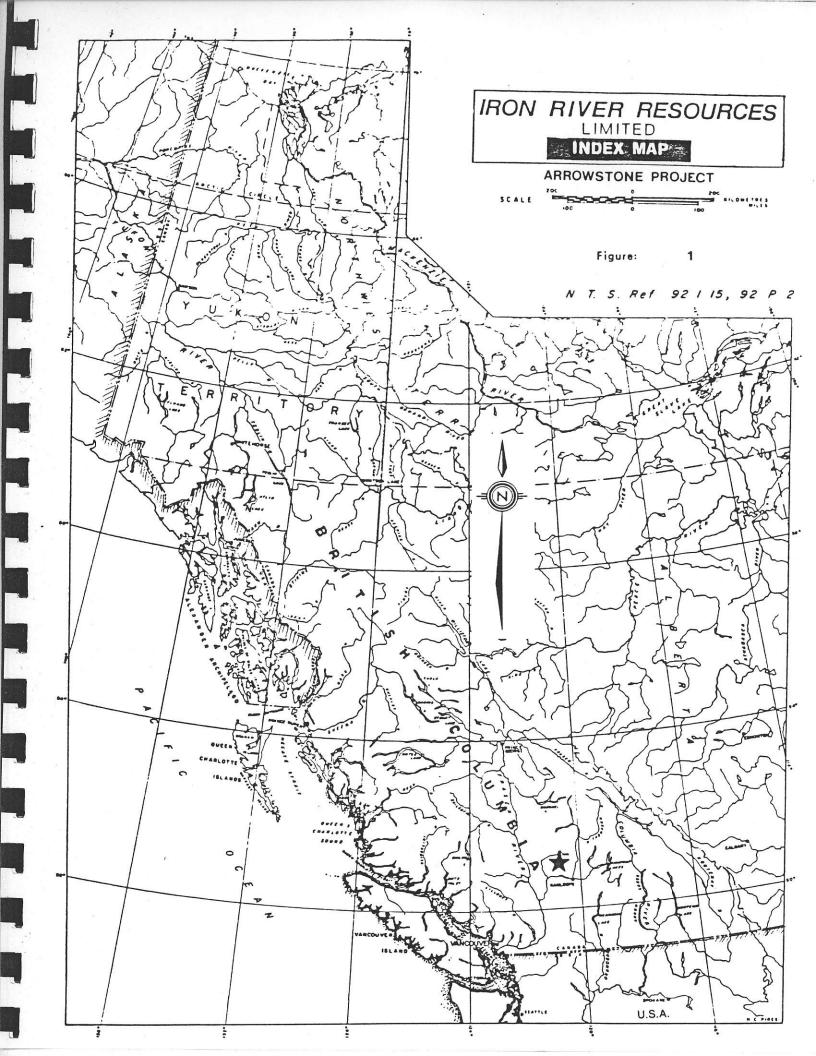
JAMES F. BRISTOW, P.Eng.

TABLE OF CONTENTS

Index Map (Figure 1)							Page
Terms of Reference		•	•	•	•		1
Summary, Conclusions and	d Reco	mmendat	ions	•			1
Cost Estimate .		•	•	•	•		2
Location and Access		•	•	•	•		4
Topography and Climate .		•	•	•			4
Location Map (Figure 2)		•	•	•			5
History			•	•			6
Property Status		•		•			7
Claim Map (Figure 3) .		•	•	••		•	8
GEOLOGY		•					9
Regional Geology		•	•				9
Local Geology .			•		•		9
Geology Map (Figure	4) .				•		10
Structures		•	•	•	•		12
Mineralization		•	•	•	•		12
Acknowledgements		•	•	•	•	•	15
References		•	•	•	•		16
Qualifications and Certi	ificat	ion .	•			٠.	17

APPENDICES

I Assay Certificates



PRELIMINARY

REPORT

ON

THE MER, MOW 1, MOW 3 AND MAR 2 CLAIMS
THE ARROWSTONE PROJECT
DEADMAN RIVER VALLEY, BRITISH COLUMBIA.

TERMS OF REFERENCE

James F. Bristow, P.Eng. was contracted to prepare a report outlining a two-phase exploration program for the further evaluation of the claims comprising the ARROWSTONE PROJECT (Figure 1).

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The Arrowstone Project is located 30 km north of Savona. British Columbia in the Mowich Lake region of the Deadman River Valley. The claims are underlain by faulted and fractured, moderate to steeply dipping Nicola Group Volcanic and Sedimentary rocks. The Nicola Group is uncomformably overlain by Miocene non-marine sediments of the Deadman River Formation which in turn are overlain by Tertiary plateau lavas. Locally these rocks are intruded by both acidic and basic stocks and dykes.

The claims comprising the Arrowstone Project exhibit structures, alteration, mineral development and mineralization that yields high base and precious metal values which indicates the presence of a deep seated "plumbing" system.

This environment has mine making potential and warrants further evaluation.

Two distinct exploration possibilities are currently recognized on the property;

Showing I

High grade malachite coated chalcocite "fragments" are exposed in a slump structure of highly altered, sheared, and serpentinized ultrabasic rock. This showing is located on the west bank of the Deadman River 300 metres southsouthwest of Mowich Lake.

Showing II

Chalcopyrite filled amygdules are hosted in a sheared augite porphyry located approximately 800 metres southeast of the south end of Mowich Lake.

The high grade tenor of the copper mineralization in Showing I plus it's contained precious metal content make it an obvious prime exploration target.

It is recommended that a two phase exploration program be conducted on Showing I with a total cost (if fully implemented) of \$182,250.00. June 15 468

COST ESTIMATE

The following two-stage exploration program is recommended for the further evaluation of Showing I.

PHASE I (Trenching, Sampling, Grid Preparation and E.M. Survey)

- (a) Trenching (establish boundaries of mineralization at Showing I) Equipment rental with operator (8 days @ \$900.00 per day) \$7,200.00
- (b) Sampling (includes collection & shipping etc.) \$1,600.00
- (c) Photogeological Study (identify photolinaments \$4,000.00 & slump structures)

(d)	Establish 20 kilometers of Grid (20km @ \$150 per km)	\$3,000.00
(e)	•	43,000,00
	showing I (20 km @ \$150.00 per km)	\$3,000.00
(f)	Supervision & Report	\$4,600.00
(g)	Contingencies (25%)	\$5,850.00
ATOT	L.	\$29,250.00
PHAS	P TT	
(a)	Trenching (equipment Rental with	
(a)	operator) 10 days @ \$900 per day	* 0 000 00
(b)	•	\$9,000.00
(0)	Total cost including supervision samp	14
	and assaying (1500 metres @ \$60.00 pe	J
	and assaying (1500 metres & 500.00 pe	\$90,000.00
(c)	Petrographic Study	
(d)	•	\$4,000.00
• •	Metallurgical Testing and Assaying	\$15,000.00
(e)	Supervision, Geological Mapping and	A17 000 00
	Report Preparation	\$15,000.00
(f)	Contingencies (15 %)	\$20,000.00
TOTA	L	\$153,000.00
GRAN	D TOTAL	\$182,250.00

The segments of the above programme are conditional on obtaining progressively positive results.

June 18 1988

LOCATION AND ACCESS

Iron River Resources Limited's Arrowstone Project is located in the Mowich lake region of the Deadman River Valley. Access is 30 km by paved and good all-weather gravel road north from Savona, B.C. Logging roads provide access to various parts of the property. Kamloops, the major outfitting centre in the area is 56 km to the southeast. (Figure 2)

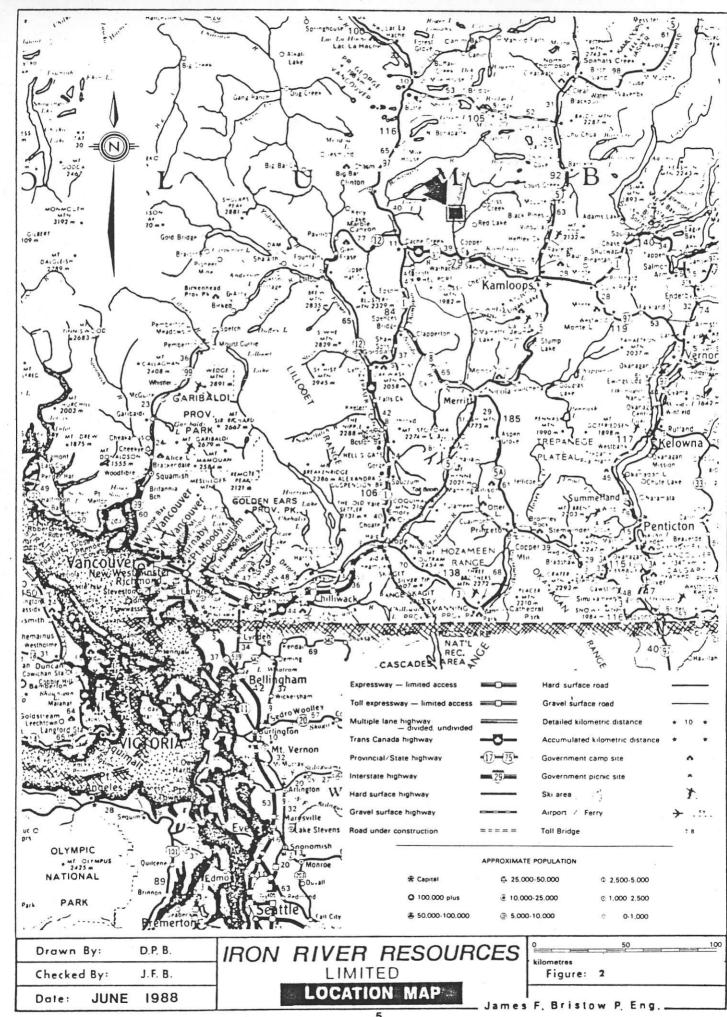
TOPOGRAPHY AND CLIMATE

Deadman River Valley is a relatively narrow and moderately steep sided valley. The valley is incised by the Deadman River which provides year round water for the region. Topography on the claims is moderate to rugged, with elevations ranging from 650 m to 1200 m.

Outcrop is best along cliffs, creeks and road cuts, and relatively poor elsewhere.

The claims are forested mainly by stands of pine, partially logged in some areas. Underbrush is relatively absent except in clear cut or burned areas.

The climate is typical of the interior Plateau. Most precipitation occurs as snow during the cold winter months. Snow free exploration work can usually be conducted from April to mid-November.



HISTORY

The following chronological history has been compiled from the readily obtainable literature on the Deadman River area.

The earliest reference known to the writer is contained in the Index to Annual Reports of the Minister of Mines (1874 to 1936) and is dated 1879. It appears that the area has seen sporadic and at times intense exploration activity since the late 1870's.

The major producer in the area, the Vidette Mine discovered in approximately 1930, reportedly produced 54190 tons grading 0.551 oz/ton gold, 0.86 oz/ton silver and .09% copper from narrow continuous veins. This mine operated between 1931 and 1940.

Very old claim posts were seen on the Mow 1 claim but no reference to early work was found in the literature.

Recent work on the property was conducted by the following Companies, Engineers and /or Prospectors:

1980	Michael Dickens	Prospecting & Geochemical
		Survey.
1983	N.L. Tribe	Preliminary Evaluation
		Report.
1983	Canamax Resources	Report on Prospecting,
		Geochemical, Magnetometer
		and I.P. Surveys.
1984	Northair Mines Ltd.	Geological Report

The writer is not aware of any recent detailed work having been conducted on the property.

PROPERTY STATUS

The Mar #2, Mer, Mow 1 and Mow 3 claims optioned by Iron River Resources Limited. of Vancouver, British Columbia consists of four contiguous metric claims totalling seventy-two units. The property statistics, as shown on the G forms of the Ministry of Energy, Mines, and Petroleum Resources (1) are as follows:

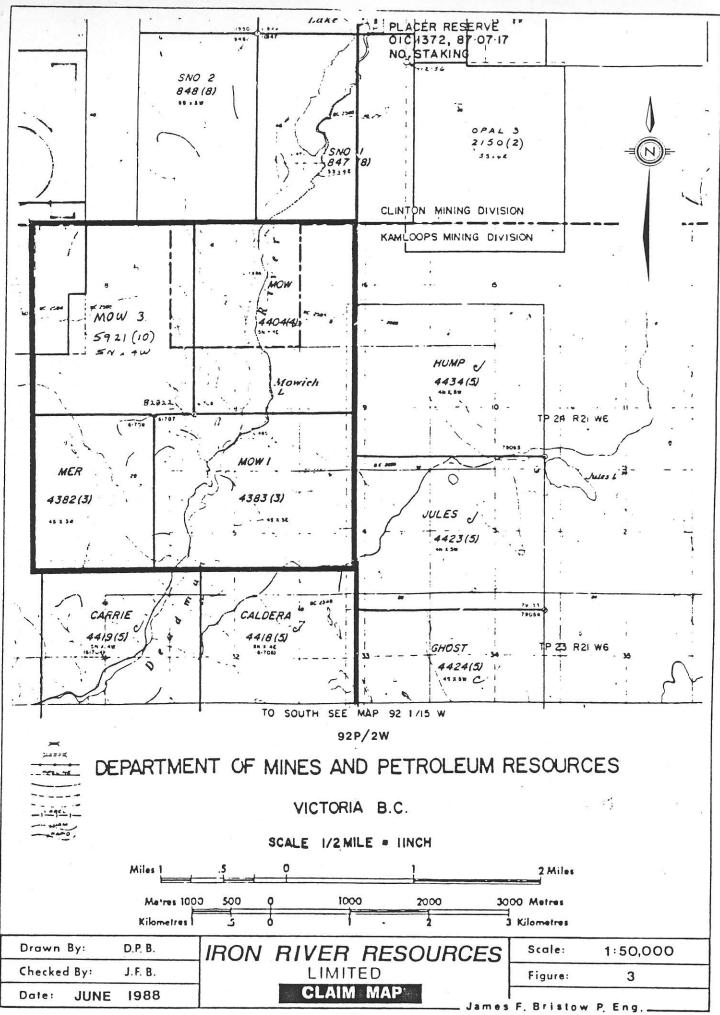
Claim Name	Units	Record Date	Record	No. Valid to*
			,	
Mar #2	. 20	Apr.27,1988	7620	Apr.27,1989
Mer	12	Mar.23,1983	4382	Mar.23,1989
Mow 1	20	Mar.23,1983	4383	Mar.23,1989
Mow 3	20	Oct.25,1984	5921	Oct.25,1988

Claim map 92P / 2W shows the relative position of these claims.

Legal status of the claims is beyond the scope of this report. The Legal Corner Posts (L.C.P.) and claim lines were not verified by the author.

(1) Personal communication with Claim Recorders office Kamloops, British Columbia. June 6, 1988.

James & Bristo



GEOLOGY

REGIONAL GEOLOGY (Figure 4)

The Mowich Lake property (Arrowstone Project) is located in the southern segment of the geological zone known as the Quesnel Trough; a northerly trending belt, up to 45 kilometers wide, of Upper Triassic age Nicola Group volcanic and sedimentary rocks.

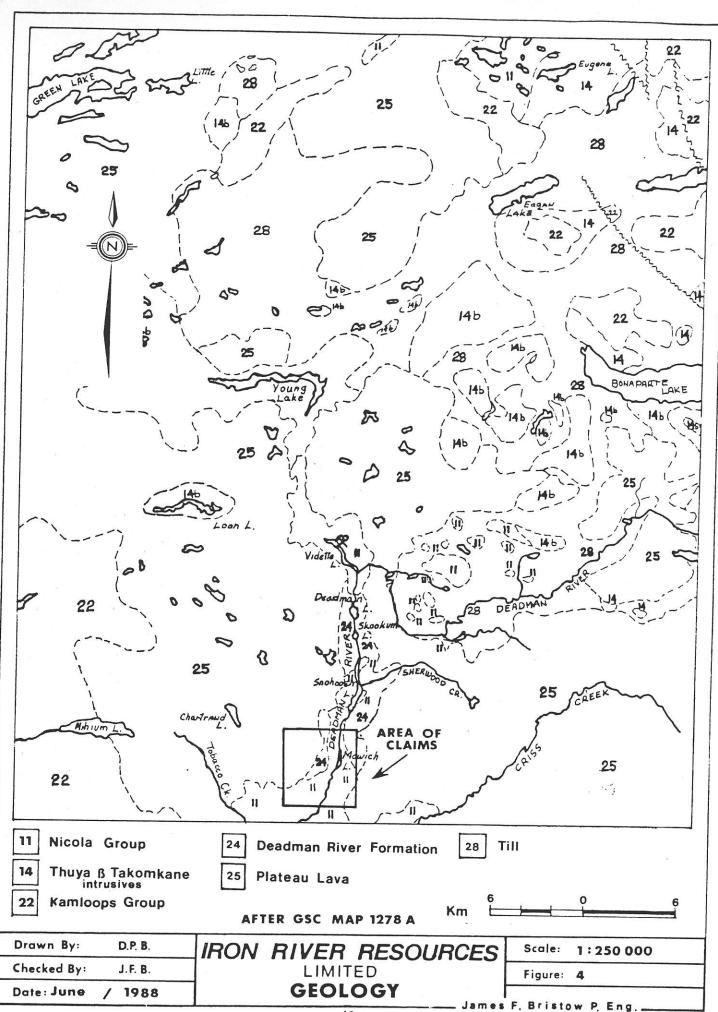
The Quesnel Trough units lie between Permian and older volcanics and sediments to the east and Permian Cache Creek limestones to the west. The Nicola Group has been intruded by Triassic / Jurassic age intrusives of the Thuya and Takomkane batholiths and younger Cretaceous alkaline to calc-alkaline stocks.

The region is covered by a thin layer of Miocene siliceous ashes and tuffs (Deadman River Formation) and by Eocene plateau basalt.

LOCAL GEOLOGY

The Nicola rocks underlying the Mowich property have been partially exposed by erosion of the plateau basalt and Deadman River Formation along the Deadman River Valley. This recent erosional window traverses the centre of the property in a North-South direction exposing a section of Nicola Group rocks between the younger formations along the properties East and West margins.

A brief description of the rock types (after Vanderpoll 1984) exposed in the immediate area of the claims is as follows;



10.

NICOLA GROUP SEDIMENTS

- (a) Argillite generally massive to poorly bedded with occasional thin bedded siltstones.
- (b) Greywacke interbedded with argillites and composed of subangular grains less than 1mm and black to grey in colour depending on the quartz and feldspar content.
- (c) Limestone, Chert, Quartzite and Conglomerate occur in minor amounts with argillite and greywacke.

NICOLA GROUP VOLCANICS

- (a) Polymictic Breccia a distinctive maroon to green colour, composed of fragments to 0.5 metres of sediments, syenodiorites, volcanic andesites and augite porphyry in an andesite groundmass. Hematite and epidote alteration is common.
- (b) Andesite Breccia occurs only along the east side of Mowich Lake and consists of rounded to angular clasts to 20 cm of fine grained, light green andesite and augite porphyry with minor limestone. The groundmass is tuffaceous andesite and carbonate.
 - (c) Augite Porphyry appears to be a flow rock forming the top of the Nicola Formation. It is massive, dark grey green, aphanitic groundmass with up to 8% phenocrysts of augite crystals to 5mm. It can contain up to 10% amygdaloidal material in brecciated areas.

INTRUSIVE ROCKS

The intrusive outcrops mapped by Vanderpoll all occur to the west of the Deadman River. They are reportedly diorite and syenite in composition with a maximum indicated surface exposure size of 300 metres. $_{11}$

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TERTIARY

- (a) Deadman River Formation this formation unconformably overlies the Nicola Group Rocks. It is composed of Miocene age non-marine tuffs, ashes and arkoses with minor conglomerates and agglomerates. The arkose unit is poorly consolidated and believed to be quite thin. The tuff is white to yellow in colour, fine grained and in at least one area 30 metres thick.
- (b) Plateau Basalt Probably of Eocene age, dark grey to brown in colour and often vesicular.

STRUCTURES

The Nicola Group rocks strike northerly with moderate to steep dips to the east and west. Mapping to date suggests there is no repetition due to folding. The Deadman River Valley is believed to be underlain by a major fault with possible left lateral movement in the order of 600 metres. Several apparent northwest-southeast faults have been recognized with some suggestion of accompanying block faulting.

Quartz-carbonate veining in the Nicola and Deadman River formations indicate a hydrothermal system was operating in the post-Tertiary period. Serpentinite, ankerite and mariposite alteration found on the property are further evidence of the presence of a deep seated "plumbing" system.

MINERALIZATION

Two showings of specific interest were seen by the writer during his examinations of the property.

12 James F. Bristow P. Eng.

SHOWING I - Chalcocite mineralization is exposed in a small pit near the top of the west bank of the Deadman River. The pit is located approximately 75 metres southwest of the road bridge and 300 metres south-southwest of the southern end of Mowich Lake.

Mineralization consists of angular to subangular fragments of malachite coated chalcocite up to 6 cm in diameter. These "fragments" occur in a highly altered, sheared, slumped, and serpentinized grey-green ultrabasic rock. This structure is capped by a beige "mud flow" of glacial till. The mud flow is a recent feature which has caused curved timber growth and which can be traced up slope for considerable distance.

Only trace amounts of copper mineralization were seen in the irregular base of the till.

Two 25 pound bulk samples (samples 3 and 4) of highly altered material were assayed for gold, silver and copper.

Five samples of the malachite coated chalcocite, fragments were also assayed for gold, silver and copper (samples 5 to 9). The assay results are tabulated below;

TABLE I

Sample No.	Sample Type	Gold	Silver	Copper
(Kral No.)		oz/ton	oz/ton	percent
3	bulk	.011	.11	0.98
4	11	.029	.17	1.12
	le Th. T			
Average	Jone 15. 1988	0.020	0.14	1.05

				
Sample No.	Sample Type	Gold	Silver	Copper
(Kral No.)	_	oz/ton	oz/ton	percent
5	selected	. 274	9.52	63.8
6	fragments	.162	8.22	56.7
7	11	. 539	8.10	56.9
8	***	.144	7.99	55.2
9	••	.130	8.52	57.8
Average		. 250	8.47	58.08

The erratic gold values are to be expected because the samples were found to contain coarse gold.

SHOWING II - This showing is located approximately 800 metres southeast of the south end of Mowich Lake on the Mow 1 claim. It is exposed by a network of pits and trenches which test an area roughly 50 by 150 metres.

Mineralization appears to be confined to near vertical, 3 to 4 metre wide shear zone striking approximately 120 Azimuth. Host for the mineralization is believed to be Nicola formation amygdaloidal augite porphyry. The most important primary mineral is chalcopyrite in amygdale fillings. Spotty spectacular secondary copper mineralization has developed along fractures. Listed in decreasing abundance these minerals are malachite, azurite

cuprite and native copper. Two grab samples of well mineralized amygdaloidal porphyry gave the following values.

Sample No. Sample Type Gold Silver Copper Kral No. oz/ton oz/ton percent 1 .002 grab .08 3.85 2 grab .006 .11 1.10

Average .004 .095 2.48

Previous work in the area included limited Induced Polarization (I.P.) Surveys over the area of Showing II with negative results. The number II showing was interpreted as being a very thin mineralized flow top which could extend to the east beneath the plateau basalts.

The I.P. Survey did show an open ended anomaly centred 350 metres northwest of the number II showing. This area is mapped as being overlain by Deadman River formation. The source of the anomaly is indicated to be at considerable depth.

ACKNOWLEDGEMENTS

Michael Dickens, Prospector and Dan P. Berkshire, President of Iron River Resources Limited. for making available their bibliographies on the mineral prospects in the Deadman River Area.

W.S. Pentland, Geologist / Director Iron River Resources Limited. for his technical help in the preparation of this report.

Any errors or omissions are the sole responsibility of the author.

Respectfully Submitted

James F. Bristow, P.Eng.

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REFERENCES

- Geological Survey of Canada, G.S.C., Memoir 363,
 Geology of Bonaparte Lake Map Area, R.B. Campbell and
 H.W. Tipper (1971)
 Map 1278A Bonaparte Lake.
- Ministry of Energy, Mines and Petroleum Resources:
 (I) 1983, pp.357 Exploration in British Columbia
 (II) 1984, pp.256 " " " "
- 3. Ministry of Energy, Mines and Petroleum Resources, Assessment Report No.'s 08342, 08430, 12022, and 13432.
- 4. Read, P. Petrography of Nicola Group Rocks South of Mowich Lake, Deadman River, Southern British Columbia.
- Roth, J. Report on the IP/Resistivity Surveys,
 Kamloops Copper, (Internal report by Canamax), 1975
- 6. Ministry of Energy, Mines and Petroleum Resources, Resource Data Section, <u>Minfile 092P-156</u>
- 7. Vanderpoll, Wim; 1983 Property Report Mowich Lake Property (Internal report by Canamax 1984)

In addition to the above, the following miscellaneous maps were utilized:

Claim Map 92P / 2W

Topographic Map, Criss Creek 1:50 000 92P / 2 (1978)

QUALIFICATIONS AND CERTIFICATIONS

- I, James F. Bristow, of 9610 Thomas Place, in the municipality of Richmond, Province of British Columbia, hereby certify as follows:
 - I am a graduate of the University of British Columbia with a B.A. Degree (Geology and Physics).
 - 2. I am a member of the Canadian Institute of Mining Metallurgy, the Geological Society of South Africa and the Association of Exploration Geochemists.
 - 3. I am a Professional Engineer registered in the Province of British Columbia.
 - 4. I have actively practiced my profession in mineral exploration and mining since my graduation in 1957.
 - 5. That this report is based on an examination of the property April 18 & 19, and May 5,6,& 19. 1988, on data gathered by myself or someone working directly under my supervision and on my personal analysis of the reports and other data referred to in the text.
 - 6. That I have no interest, either direct or indirect, in the property or securities of Iron River Resources Limited, nor do I expect to receive any.
 - 7. That I consent to the use of this report, in or in connections with, prospectus, or a statement of material facts relating to the raising of funds for this project.

Dated at Richmond, British Columbia this 15 day of June 1988

James F. Bristow, P.Eng

APPENDICES



KAMLOOPS RESEARCH & ASSAY LABORATORY LTD.

B.C. LICENSED ASSAYERS GEOCHEMICAL ANALYSTS METALLURGISTS

912 - 1 LAVAL CRESCENT — KAMLOOPS, B C V2C 5P5 PHONE (604) 372-2784 — TELEX: 048-8320

CERTIFICATE OF ASSAY

10	Iron River Resources 600 - 890 West Pender Str Vancouver, B.C. V6C 1J9						Date!	e No <u>K 8849</u> May 13, 1988	
	hereby certify that the following	ng are the result	s of assays mad	de by us upon	the herein i	described _		samples	
Franko	M _{et} /Ke ₃ f	Au	Ag	Cu	·				
		azs/ton	ozs/ton	percent					
1. 2. 3. 4. 5. 6. 7. 8. 9.	45807 45808 45809 45810 45811 45812 45813 45814 45815 L means "less than" * Sample has been scr	.002 .006 * .011 .029 * .274 .162 * .539 .144 .138	.08 .11 .17 9.52 8.22 8.10 7.99 8.52	3.85 1.10 .98 1.12 63.8 56.7 56.9 55.2 57.8	gold.	See Below			ESS F. BRISTON RITION CONELLA

NOTE Rejects retained three weeks Pulps retained three months unless otherwise arranged

Bregodernet Assayor Process of British Columbia



KAMLOOPS RESEARCH & ASSAY LABORATORY LTD.

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PHONE (604) 372-2784 -- TELEX. 048-8320

CERTIFICATE OF ASSAY

10	Iron River Resources	·· <u>·</u>	.			Certificate No	K 8849 - 2
-						Date	
31	hereby certify marmoron	owing are the resul	ts of assays,mad	fe by us upon the he	rein described 🔔 .	5.	.jmples
Frai No	Atania	% Weight	Au	Comb Au			
3.	45809 -100 mesh 45809 +100 mesh	99.73 .27	.006	.011			
5.	45811 -100 mesh 45811 +100 mesh	99.93 .07	.268 8.62	.274			
7.	45813 -100 mesh 45813 +100 mesh	99.74 .26	.412 49.7	.539			SESSIO.
							JANES F. BRIS
	·						DOINES
٠.							

NOTE Rejects retained three weeks Pulps retained three months, unless otherwise arranged Down A Blandel