SAWYER CONSULTANTS INC.

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REPORT ON THE

1979 DRILLING PROGRAM ON THE

ARSENAULT CLAIMS COPPER PROSPECT

JENNINGS RIVER AREA

ATLIN MINING DIVISION, B.C.

for

REBEL DEVELOPMENTS LTD.

NOVEMBER 26th, 1979

090939

1-425 HOWE STREET, VANCOUVER, B.C. V6C 2A9 TELEPHONE (604) 684-5433

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INTRODUCTION

This report is prepared at the request of Mr. Armand J. Arsenault, President of Rebel Developments Ltd. A previous report by Sawyer Consultants Inc. on the Arsenault Claims Copper Prospect prepared for Rebel Developments Ltd. in June 1977 (amended November 1978) recommended the completion of a 3000 ft. drilling program for 1979. One thousand four hundred sixty feet of the 3000 ft. of BQ wire line drilling were completed in one vertical drill hole designed to cut a copper sulphide rich folded metavolcanic-sediment package. The targets were originally outlined and developed by P. F. Lewis in 1972 while working for Bolivar Mining Corporation, a subsidiary of Cyprus Mines Corporation. Further details regarding the property, history, and regional geology are contained in previous reports by Lewis and Sawyer.

This report describes the work program completed in September/October 1979 and includes written and graphic logs. The conclusions drawn from the results of this work have been related to the previous geological investigations and relevant theory of ore genesis as it pertains to further exploration efforts. Recommendations for further work, with cost estimates, are included.

SUMMARY

Previous prospecting, mapping, geophysics and drilling on the Top Copper Prospect (Arsenault Copper Claims) have been outlined in earlier reports by J. B. P. Sawyer and P. F. Lewis. The targets that were outlined were partially tested by vertically drilling 1460 ft. of BQ core at grid coordinates 85E/80N (DDH 79-2). Arctic Diamond Drilling Ltd. of Whitehorse were contracted by Rebel Developments Ltd. to complete the job. The program provided proof of the existence of copper (gold) mineralization at depth concentrating in major fold cores (F1) in the melanocratic, actinolitic, chloritic D unit of Lewis.

DDH 79-2 confirms the extension of the copper rich horizon zone 3000 ft. to the south of the West Ridge region. The predicted F1 fold closures within the copper rich sections were also in evidence and chalcopyrite mineralization appears to be richer within the vicinity of these closures. Two distinct horizons were intersected. Both are thought to be repetitions of the same zone that outcrops on surface at the West Ridge. Intersection 845'-855' consisted of banded sulphide rich chlorite, actinolite meta tuff. The section 845'-850' assayed a maximum of 0.75% Cu and 0.01 oz./ton Au. The section 850'-854'/6" assayed a maximum 0.19% Cu and 0.004 oz./ton Au. The second intersection from 1033'-1055' consisted of similar rock type and returned the four maximum assays as follows:

	Cu %	Au oz./ton
1033'-1038'	0.33	0.003
1038'-1043'	0.25	0.004
1047'-1050'	0.28	0.002
1050'-1055'	0.31	0.002

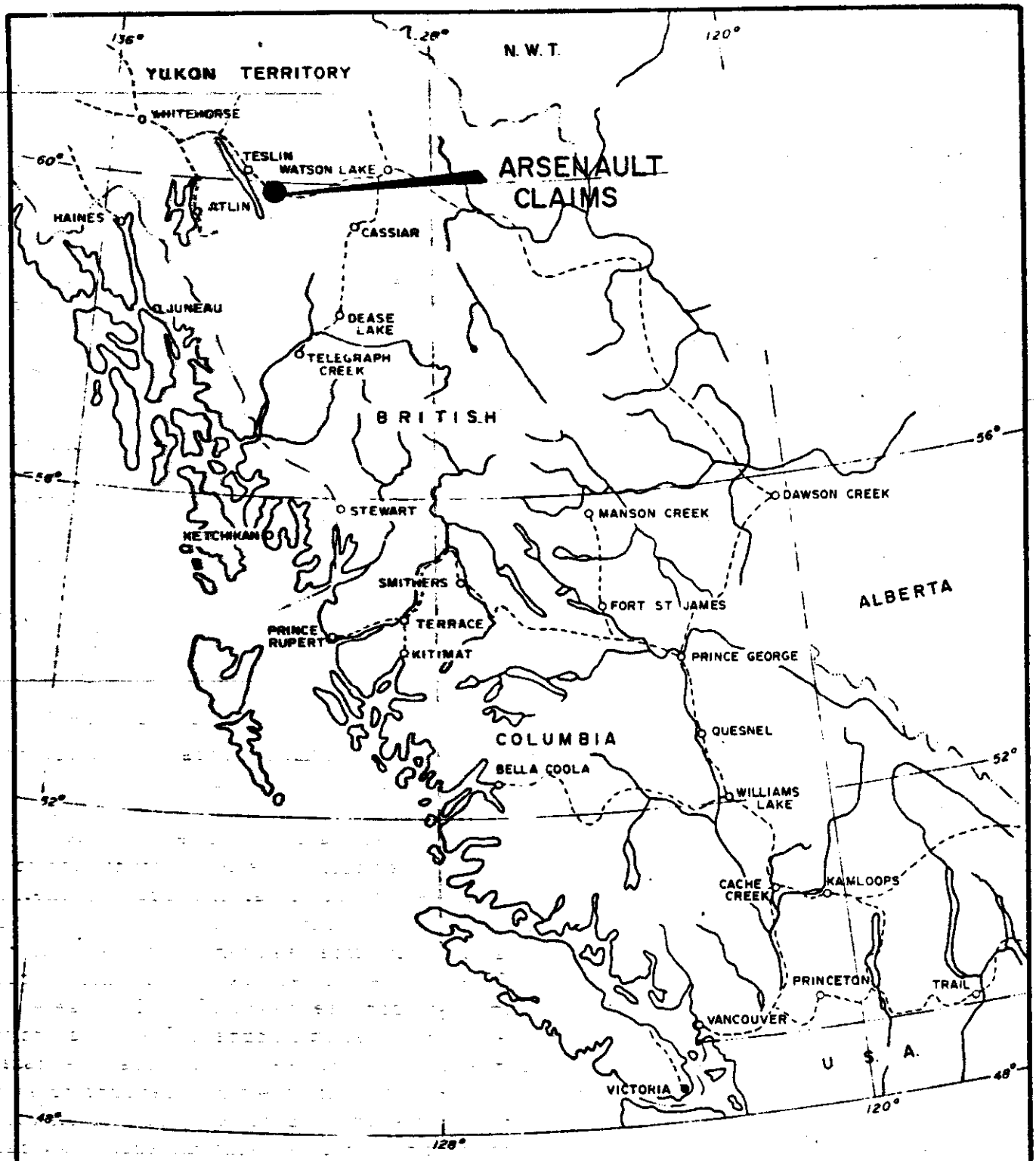
One chlorite carbonate vein shear in a quartz feldspar dyke at 1166'-1168' was run essentially to test gold values with negative results.

Due to the proximity to the Dupont tin discoveries to the north several tin assays were taken both from recent drill cores and from those 1972 cores that are still present at the camp site but no significant values were obtained.

It is proposed that further deep drilling along the fold hinge in the direction of the proposed DDH 79-1 and between DDH 79-2 and the West Ridge be completed in order to help complete the subsurface structural picture and find the highest concentration of copper (gold) mineralization.

Future programs will require numerous deep holes of at least 1200 ft. of BQ wire line drilling at each proposed location. Initially DDH 79-2 should be completed in order to test the northwesterly extension of the D lithology hinge and the continuity of copper values. The projected cost of this hole and an additional 4500 ft. of drilling for 1980 is $195,800.00.

The camp, equipment, and drill have been winterized and left on site in preparation for this further work.



REBEL DEVELOPMENTS LTD.

ARSENAULT CLAIMS ATLIN M. D.

BRITISH COLUMBIA

GENERAL LOCATION SKETCH

SCALE: 1" = 125 MILES

Figure: 1

PROPERTY AND OWNERSHIP

The property now consists of three claims each comprised of 20 units for a total of 60 units staked by the AGDL Syndicate on the 22nd, 23rd, and 24th of May 1977. They were recorded at the District Recording Office in Atlin on May 31, 1977. Figure 2 shows the configuration of these claims.

Rebel Developments Ltd. acquired the claims from the AGDL Syndicate by purchase, and hold 100% interest in them.

Claim	No. of Units	Tag No.	Record No.	Staked	Recorded	Expiry Date
Arsenault #1	20	19266	213	May 22, 1977	May 31, 1977	May 31, 1980
Arsenault #2	20	19267	214	May 23, 1977	May 31, 1977	May 31, 1980
Arsenault #3	20	19268	215	May 24, 1977	May 31, 1977	May 31, 1980

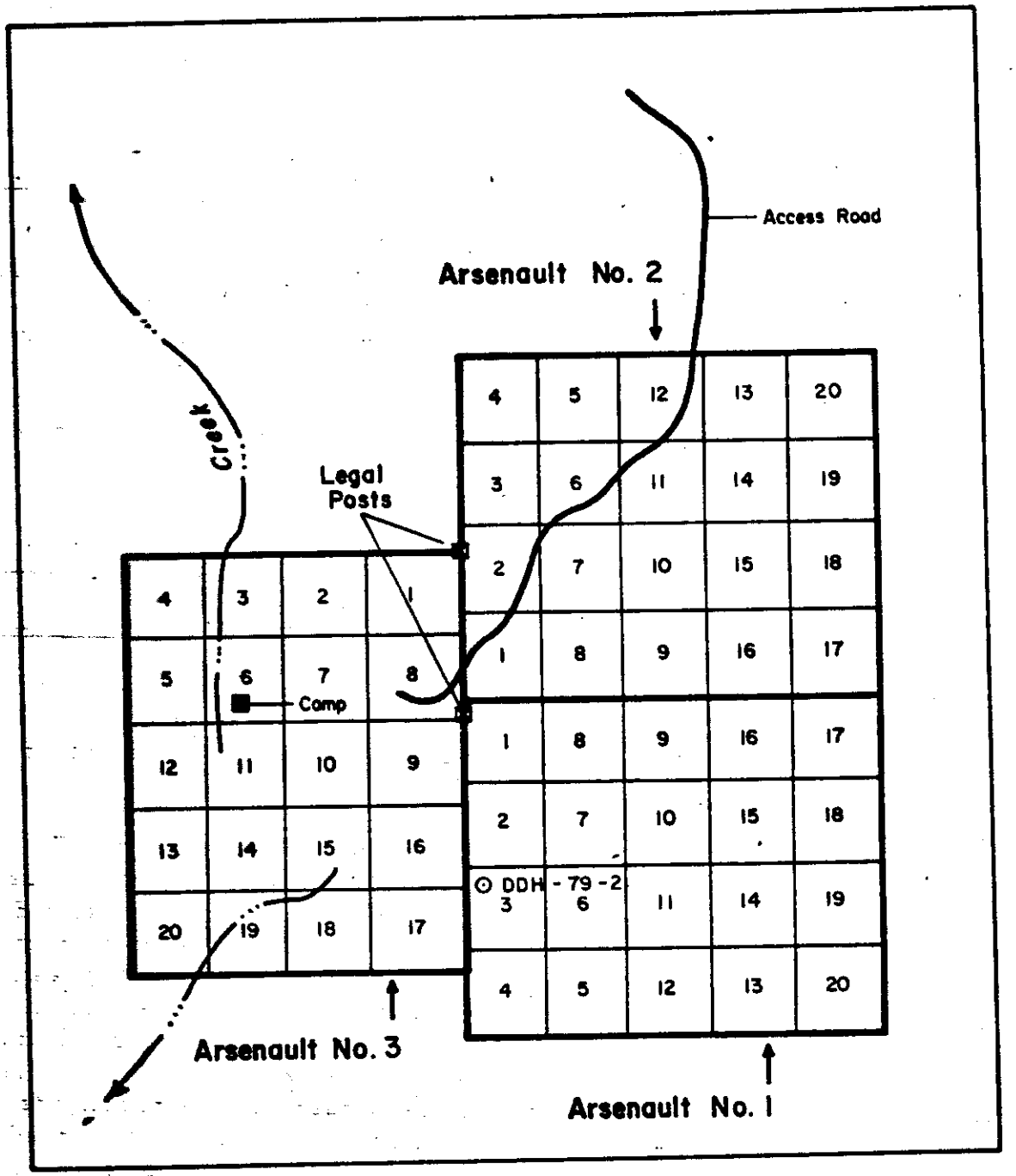
Map Ref. 104/O, Atlin Mining Division.

LOCATION AND ACCESS

The property lies in the northwestern corner of NTS Map Sheet 104/O, Jennings River, approximately at 59°48'N, 131°42'W. The claims lie about 7 miles (11.5 km) south of the Alaska Highway at Mile 753 approximately.

At the present time access to the property is by helicopter, track vehicle or on foot from the Alaska Highway. Helicopter charter service is available in Whitehorse, approximately 165 miles (267 km) to the west by road, and in Watson Lake, which is about 118 miles (191 km) to the east along the highway. Teslin, at Mile 804, is the nearest settlement of any size on the highway and other nearest supply points are at Morley River (Mile 777) to the west, and Rancheria (Mile 710) to the east. In 1971 an access road was made from the south bank of the Swift River, at Mile 753 approximately, into the northern part of the property, for a distance of about 10 miles (16 km). The road was passable only to four-wheel drive or tracked vehicle at the time, and has deterioriated in the seven years since its last use. A bridge crossing the Swift River was made at the time the road was made but this has long since been destroyed and washed away. Replacement of the bridge, or use of a boat would be necessary, particularly in the early part of the season when the water is high and the river extremely fast-flowing, to gain access to the road leading to the property. In late July and August when the water is low it is possible to cross the Swift River near the old bridge crossing with a tractor.

For the purposes of completing the 1979 drilling program a Flextrack Nodwell was used in order to bring supplies and drill equipment to the camp site.



REBEL DEVELOPMENTS LTD.

ARSENAULT CLAIMS SKETCH

SWIFT LAKE AREA

ATLIN MINING DIVISION, B. C.

SCALE 1" = 1000 Metres 1" = 3300 Feet

Travel time from the camp to the Alaska Highway was approximately 1.5 to 2.0 hours. Helicopter charter was available through Terr-Air at Swift River although this is only temporary due to Dupont's nearby activity.

Figures 1, 2, and 3 of this report give general and specific property locations.

HISTORY

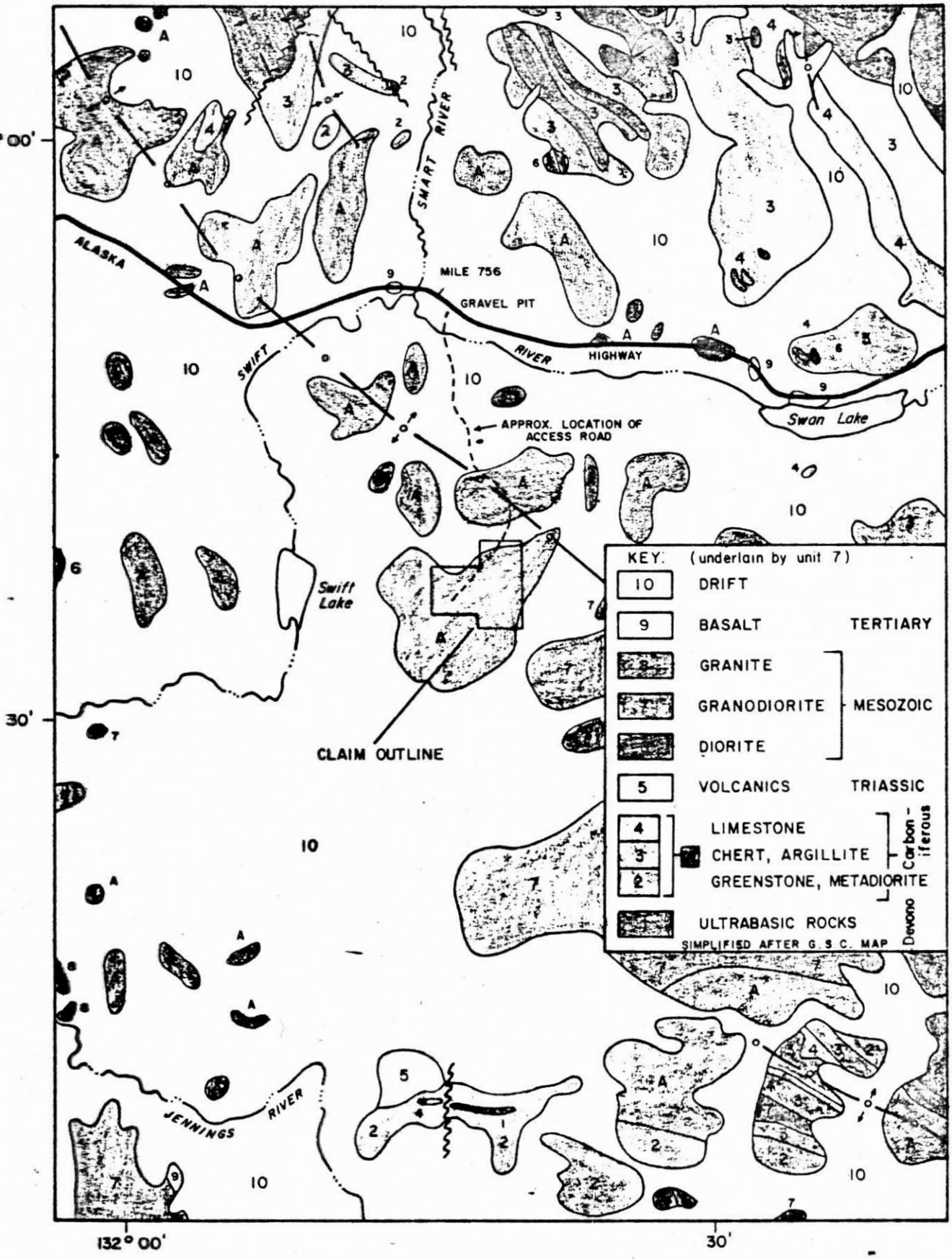
Prospecting and detailed exploration work in the area date back to the original discovery of the prospect by Wilf McKinnon in the 1940's. Since that time K. J. Springer, Bolivar Exploration Corporation Ltd., and Rebel Developments Ltd. have carried out geological, geophysical, and diamond drilling programs on the prospect and surrounding area. Details of the history and previous work have been outlined by J.B.P. Sawyer of Sawyer Consultants Inc. in a report for Rebel Developments Ltd. (1978).

GEOLOGY

Regional Geology (from Sawyer, 1978)

The Jennings River map sheet, 104/O, was mapped by H. Gabrielse of the Geological Survey of Canada in the period 1965 to 1967, and the results of this work are shown on Geological Map 18-1968, Jennings River, at a scale of 1:250,000.

The northwestern corner of the Jennings River map sheet, in which the Arsenault claims lie, is shown on Gabrielse's map as being underlain by rocks of the Big Salmon Complex, bounded to the south and southeast mainly by granitic rocks of the Simpson Peak Batholith and to the east by carboniferous sediments and metasediments. The Big Salmon Complex is a mixed assemblage of sediments and metasediments of Carboniferous, probably mainly Mississippian age, which, as Gabrielse points out, are part of a regionally metamorphosed belt of rocks bounded to the west by the Teslin lineament and extending northward into the Teslin and Laberge map areas where it is mapped as Yukon Group of uncertain age. Gabrielse has described the rocks of the Big Salmon Complex on the Jennings River sheet as comprising "quartz-albite-mica gneiss, albite-actinolite schist, quartz-chlorite-epidote-albite gneiss, metachert, limestone, skarn, hornfels and dolomite which are at least in part correlative with the Mississippian volcanic and sedimentary rocks of the Sylvester Group (map unit 7, Jennings River)." To the south of the property this belt of metamorphosed rocks is also continuous to the east of the Teslin lineament as the Oblique Creek Group which s lithologically identical to the Big Salmon Complex except that the grade of metamorphism is generally lower and the age of the metamorphism probably younger.



REBEL DEVELOPMENTS LTD.
ARSENAULT CLAIMS COPPER PROSPECT
JENNINGS RIVER AREA, B.C.
CLAIMS, ACCESS ROAD AND REGIONAL GEOLOGY
SCALE 1: 250,000

Figure: 3

Further south this belt can also be traced into the Cry Lake map area. Lewis has summarized the following features as being common to the above rock groups.

"1. They are, where stratigraphic control has been found, dated as Carboniferous.

2. They have suffered an early Mesozoic metamorphism.

3. They have been affected by at least two major phases of deformation, broadly synchronous with metamorphism.

4. They are intruded by middle to late Mesozoic acidic plutons.

5. The succession is typical of deposition in an oceanic environment, onto igneous oceanic basement, as is characterized by the succession in all the above groups as follows:

Limestones
Cherts, argillites and metamorphic derivatives
Greenstones
Metadiorites
Peridotites."

It is of some interest probably to note here that one of the largest and oldest copper mines in Japan, the Besshi Mine, which has been in operation since the year 1690, and up to the early 1960's, had an ore production in the neighbourhood of 30 million tons, is in a geological setting which has many similarities of rock type, metamorphism, and structure with the rocks in the northwestern corner of the Jennings River map sheet. The ore deposits of the Besshi Mine, which are essentially a massive cupriferous pyrite ore consisting of minute grains of pyrite firmly cemented by chalcopyrite, and an intercalated banded ore consisting of magnetite-chlorite-quartz schist interbedded with layers of pyrite and chalcopyrite, are part of the Sambegawa System which consists essentially of graphitic schists, chlorite-amphibole schist, and thin layers of sericite piedmontite-quartz schist. The ore deposit has a strike length of more than 1000 metres, extends over 2500 metres down dip, and is up to 8 metres thick. The orebody plunges to the southeast in a direction coincident with the plunge of lineation in the country rocks. From descriptions of the literature and observations in the Jennings River area many of the similarities of rock type and associated sulphide mineralization are quite striking, even down to the occurrence of piedmontite schists flanking the mineralized zones. This similarity lends weight to the contention that the geological environment which occurs in the area of the present Rebel Developments Ltd. property has considerable potential for development of ore deposits of major dimensions.

Local and Drill Hole Geology

DDH 79-2 was drilled in what, at surface, is suggested as unit AB (Lewis) as quartzite and garnet mica schist, which overlies and is part of the southwestern limits of an anticlinorium of metamorphosed oceanic sediments, and volcanics of Garboniferous age. The western boundary of the claim group approximates the contact with a Mesozoic granodiorite mass of the Simpson Peak Batholith. The hole was drilled adjacent to the fault contact between the 1 and 3 structural domains within domain 3 (see Figure 4).

The volcanic sediment pile has a gentle southwesterly plunge within which there are numerous F1 and F2 fold hinges and potential sulphide targets. There is also a prevalent quartz feldspar porphyry dyke system that strikes approximately north-south and at the drill hole is portrayed in subsurface as a dyke swarm. A major north-south trending fault has also been interpreted from air photo and magnetometer work (Lewis). Both of these features appear to have been important in the emplacement of strong local silicification in the vicinity of DDH 79-2. The silica overprint has destroyed much of the classic rock type characteristics that have previously been utilized by Lewis in distinguishing units.

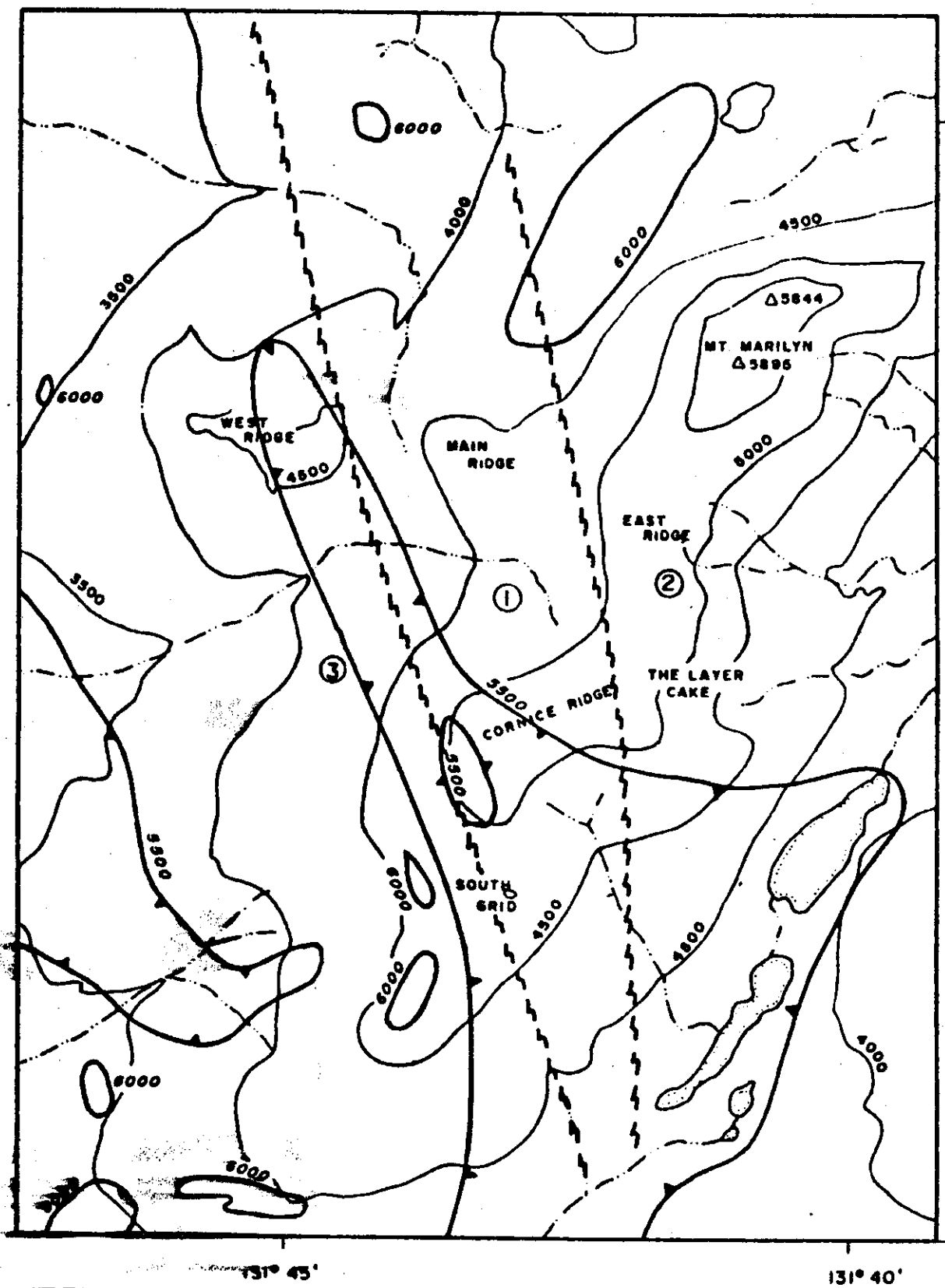
The hole was collared in the centre of a broad valley that is filled with more than 200 ft. of angular rubble and clay. Resistivity values from Walcott's induced polarization survey indicate a resistivity low into the second dipole separation. It is expected that this overburden deepens to the north and DDH 79-2 was drilled on the southern edge of a deeper rubble filled valley. The deviation of the drilled hole is interpreted as having been probably caused by a deflection along this lip to the north.

Three basic bedrock units were encountered. Southwesterly dipping AB and B lithologies overlie and underlie the greenstone D units within which are the massive sulphide intersections. Unit R, the quartz feldspar porphyry, is represented in one to ten foot dykes throughout the sequence. These units are described by Lewis as follows:

Unit AB - Interbanded muscovite schists, with biotite and garnet porphyroblasts (Unit A), and quartzites. Banding may be on the scale of inches, and the rock resembles a metamorphosed ribbon-chert argillite sequence, or on the scale of tens of feet. The quartzites are commonly rusty weathering after pyrite and/or pyrrhotite.

Unit B - Quartzite, often white, and massive, but more usually with a good muscovite parting. Pure quartzites seem to overlie Units AB and M (meta intrusives and volcanics) and thus the latter units may be diachronous. Trace quantities of manganese epidote? give the quartzites a pink? tinge, and are associated with thin layers of oxide and manganese garnet.

Unit D - Actinolite bearing rocks of very variable habit including actinolite quartzites and banded leucocratic gneisses, actinolite - chlorite schists,



PRESENT CLAIMS AREA - JENNINGS RIVER MAP SHEET, B.C.

GENERAL DATA

Scale: 1:50,000

Total Magnetic Intensity Contours, approx. 5500, & 6500 gammas

Major Faults

Structural Domains ①, ②, ③

Figure 4

actinolite - epidote skarns (including garnet - epidote - quartz skarns) and melanocratic actinolitic gneisses. Unit Dc distinguishes the leococratic varieties from the rest where differentiated. This unit appears to be the initially copper rich horizon and is thought to be a metavolcanic, probably initially a tuff. Sub unit Dm has been added in this report to distinguish the mineralized mafic horizon.

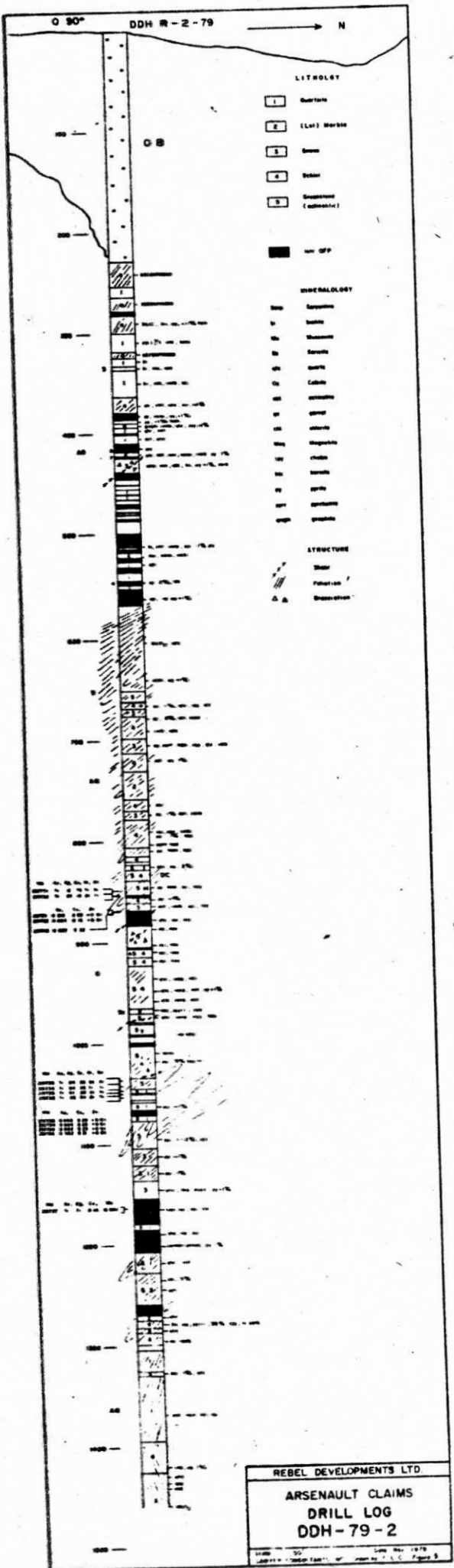
Unit R - Quartz feldspar porphyry, always altered but probably originally rhyodacite in composition. A very continuous northeast trending dyke from one to fifty(?) feet wide passes through the Main Ridge and can be correlated with the molybdenum soil survey anomalies (copper values do not show this correlation). Varieties of this unit have a medium grained matrix and could be termed porphyritic microgranite. One occurrence shows a strongly crenulated schistosity and is pre-tectonic.

There are two deformation stages in the stratigraphic section that have contributed to the folded sulphide zones. The F1 folds are broad, flat-lying, fairly tightly packed with a wave length of 500'-1000' and an amplitude of 3000'-4000'. There are numerous other F2 folds within this larger system that have 20'-50' wave lengths and amplitudes of 50'-100'. The F1 deformation was thought to be the major tectonic feature that is responsible for concentration of copper sulphides in the hinge line. F2 closures in DDH 79-2 provide excellent evidence of chalcopyrite mineralization concentration in the D horizon near the F1 hinge. The southwesterly limit of this broad fold was drilled by DDH 79-2 as the irregular hinge is indicated as probably being between 650' and 1100'.

Within the larger synform two mineralized zones of bedded pyrite, chalcopyrite, and pyrrhotite were intersected. Both are thought to be the same mafic D horizon and are clear evidence of F2 fold closures. Other mafic D horizon intersections that were not folded were rich in pyrrhotite and pyrite but lacking in chalcopyrite, i.e. 1200', 970'. Well mineralized sections included (see Figure 5):

		Cu %	Au oz./ton	Ag oz./ton	Ni %	Sn %	Zn %
845'-850'	5'	0.75 (0.69)	Tr (0.010)	0.12	Tr	Tr	<0.01
850'-854.5'	4.5'	0.19 (0.16)	Tr (0.004)	0.04	0.01	Tr	<0.01

The second mineralized zone from 1033'-1055' is massive sulphides but for 4 ft. from 1043'-1047' of poorly mineralized quartz feldspar porphyry dyke. Four samples of this Dm zone ran as follows:


0 90°
DDH R-2-79
N
LITHOLOGY
1
2
3
4
5
MINERALOGY
STRUCTURE
REBEL DEVELOPMENTS LTD.
ARSENAULT CLAIMS
DRILL LOG
DDH-79-2

		Cu %	Au oz./ton	Ag oz./ton	Ni %	Sn %	Zn %
1033'-1038'	5'	0.33	Tr	0.04	0.01	Tr	
		(0.29)	(0.003)				<0.01
1039'-1043'	4'	0.25	Tr	0.04	Tr	Tr	
		(0.23)	(0.004)				<0.01
1047'-1050'	3'	0.28	Tr	0.01	0.01	Tr	
		(0.25)	(0.002)				<0.01
1050'-1055'	5'	0.34	Tr	0.06	0.01	Tr	
		(0.31)	(0.002)				<0.01

Note: Values in brackets are re-runs.

These intersections provide the best mineralization in DDH 79-2 and proof of the existence and concentration of copper sulphides in the fold hinges.

Other types of copper mineralization encountered by Lewis include:

(a) Finely disseminated in association with pyrite and pyrrhotite in mafic varieties of Unit D, the actinolite - epidote gneiss, especially where hybridized with stratigraphically overlying limy rocks.

(b) As coarser disseminations in andradite - epidote - actinolite - calcite - quartz skarns where mafic dykes cut the Unit D - Unit F contact.

(c) As blebs in vein quartz, which may be pre-metamorphic and pre-deformation, or a later post-tectonic remobilization of copper into tensional fissures.

(d) As dispersed fine disseminations in leucocratic actinolite gneiss, quartzites, and calcareous mica schists, probably due to metamorphic re-distribution.

Type (a) is expressed in the Dm units cut by 79-2 but chalcopyrite has been tectonically remobilized into the bands parallel to schistosity. Additional remobilization has occurred into fractures within Dm as well as the quartz feldspar porphyry dykes, and other units.

Blebs of chalcopyrite were also in evidence in coarse inclusions in quartz carbonate actinolite veins and skarn assemblages. Very minor type (d) disseminations were also encountered. Only type (a) mineralization provides economic and geologic potential to date.

A near vertical vein-shear zone in the quartz feldspar porphyry dyke from 1166'-1168' was run basically for precious metals and returned 0.14% Cu, Trace Au and Ag, and 0.001% Mo.

A mineralized section of quartz porphyroblastic gneiss with remobilized vein and disseminated sulphides adjacent to the massive Dm zone was assayed; 866'-871' ran 0.22% Cu and 0.002 oz./ton Au.

CONCLUSIONS

The 1979 drilling program on the Arsenault claims provided substantial evidence proving the existence of broadly folded metasediments and volcanics with mineralized horizons of low grade copper and anomalous gold values. The possible occurrences of tin similar to neighbouring deposits in similar rock type was proven not to exist in the sulphide rich zones of the stratigraphic section.

The southwesterly extent of a large, flat-lying, slightly overturned, fold was intersected by DDH 79-2. Within the intersection a number of types of sulphides were cut ranging from massive banded sulphides to vein and shear zone concentrations, and disseminated chalcopyrite in schists. The massive sulphides provide good evidence for future economic potential. Due to lack of funds the proposed DDH 79-1 northwest of 79-2 was not drilled. From the results in DDH 79-2 it can be expected that the geophysical and geological interpretations from 1971 and 1972 are logical and correct and that further intersections of cupriferous massive sulphides can be found in DDH 79-1 and in the area between DDH 79-2 and DDH 79-1.

Unexpected overburden problems encountered in DDH 79-2 can be expected to be greater up to 800 ft. north of DDH 79-2. However, these problems can be anticipated and appropriate equipment can be made available at the drill site.

These overburden problems are not expected to be encountered in DDH 79-1 and drilling of this hole will give an indication of the hinge strike length of mineralization. The nature and size of an economic body of this type of mineralization will be difficult to locate especially at depths of 1000 ft. The structural deformation that is evident in both 1979 and previous work suggests that targets will not be obvious from surface work but will require careful interpretation of structure and chemistry of this stratigraphic section.

There is good potential for the discovery of a copper (gold) massive sulphide body on the Arsenault claim group. Further work will require deep diamond drill holes into the hinge line of the folded, mineralized Dm zone.

RECOMMENDATIONS

(1) Funds and planning should be made available for further drilling along the mineralized trend. Cost estimates are provided for three additional holes of 1500 ft. each between DDH 79-1 and DDH 79-2.

(2) Drilling of DDH 79-1 is the prime recommendation for a 1980 program.

(3) Further drilling on the property will be required completely to define this type of massive sulphide target at depth. The number and depth of holes necessary will require considerable expenditure although some advantage is to be gained by the presence of the camp and drill equipment on site. Because of the large expenditure required it is recommended that Rebel Developments Ltd. should negotiate a farm-out or joint venture arrangement with other groups or investors.

(4) The exact location of these holes will be dependent upon the results of DDH 79-1.

ESTIMATED COSTS
(for completion of DDH 79-1)

Set up camp - 2 days	$ 300.00	
Groceries and supplies - 130 man days @ $15.00	1,950.00	
Transportation		
Nodwell - 40 hours @ $60.00	2,400.00	
Helicopter - 10 hours @ $345.00	3,450.00	
Diamond Drilling - DDH 79-1 - 1500' @ $22.00	33,000.00	
Assaying	250.00	
Supervision, consulting - 22 days @ $250.00	5,500.00	
Engineering, report and data preparation, assessment filing	2,000.00	
Contingency @ 10%	5,000.00	
	$53,850.00	
carried forward		$ 53,850.00

brought forward		$ 53,850.00

ESTIMATED COSTS
(additional 4500 ft. drilling)

Groceries and supplies - 360 man days @ $15.00	$ 5,400.00	
Transportation		
Nodwell - 50 hours @ $60.00	3,000.00	
Helicopter - 10 hours @ $345.00	3,450.00	
Diamond Drilling - 4500' @ $22.00	99,000.00	
Assaying	1,000.00	
Supervision, consulting - 60 days @ $250.00	15,000.00	
Engineering report and data preparation, assessment filing (excluding DDH 79-1)	2,000.00	
Contingency	13,100.00	
	$141,950.00	
		141,950.00
Total Estimated Costs		$195,800.00

Respectfully submitted,

SAWYER CONSULTANTS INC.

T. E. Gregory Hawkins

J. E. P. Sawyer, P. Eng.

CERTIFICATE

I, T. E. Gregory Hawkins, do hereby certify:

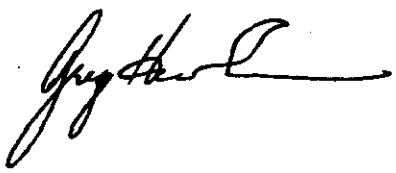
(1) That I am a consulting geologist with business office at 1 - 425 Howe Street, Vancouver, B. C., V6C 2A9.

(2) That I am a graduate in geology of The University of Alberta, Edmonton (B. Sc. 1973), and of McGill University, Montreal (M. Sc. 1979).

(3) That I have practised within the geological profession for the past eleven years.

(4) That the information, opinions and recommendations in the attached report are based on personal observations on the Arsenault Claims in September and October 1979, and from general reference material.

(5) That I own no interest in the shares or securities of Rebel Developments Ltd., nor in the Arsenault Claims, nor do I expect to receive any such interest.



T. E. Gregory Hawkins

Dated at Vancouver, British Columbia, this 26th day of November, 1979.

CERTIFICATE

I, J.B.P. Sawyer, DO HEREBY CERTIFY:

(1) That I am a consulting geologist with business office at 1 - 425 Howe Street, Vancouver, B.C., V6C 2A9, and President of Sawyer Consultants Ltd.

(2) That I am a graduate in geology of Manchester University (B.Sc. - 1953) and of the Universkty of Western Ontario (M.Sc. - 1957).

(3) That I am a Registered Professional Engineer (geological) in the Association of Professional Engineers of the Province of British Columbia, and a Registered Chartered Engineer with the Council of Engineering Professionals, London.

(4) That I am a Fellow of the Geological Assocation of Canada, a Member of the Canadian Institute of Mining & Metallurgy, a Fellow of the Geological Society of London, and Fellow of the Institution of Mining & Metallurgy, London.

(5) That I have practised my profession as a geologist for the past twenty-six years.

(6) That I have knowledge of the Arsenault property from supervising work on the area of the present Arsenault claims in 1966 and 1967, for Bolivar Mining Corporation Ltd. in the period 1970-'73, and on personal visits on the property and from drill core in 1979.

(7) That I own no interest in the Arsenault 1-3 claims nor in the shares or securities of Rebel Developments Ltd., nor do I expect to receive any such interest.

J.B.P. Sawyer, P.Eng.

Dated at Vancouver, British Columbia, this 26th day of November, 1979.

LIST OF REFERENCES

Lewis, P.F. (1971): Summary Report on Exploration Activities, 1971, Internal Report for Bolivar Mining Corp. Ltd.

Sawyer, J.B.P. (1978): Report on the Arsenault Claims Copper Prospect, Jennings River Area, Atlin Mining Division, B.C.

Walcott, P.E. (1970) (1972): A Geophysical Report of Magnetic and IP Surveys on the Top Claim Group, Internal Report for Bolivar Mining Corp. Ltd.

APPENDIX A

Copies of Assay Certificates

DATE. OCTOBER 9, 1979

FILE NO. 617-6

ASSAY CERTIFICATE

WHITEHORSE ASSAY OFFICE LTD.
BOX 4518 WHITEHORSE Y. T.
PHONE 667 2694 Y1A 2R8

SAMPLE RECEIVED FROM REPEL DEVELOPMENT

SAMPLE NO.	GOLD Oz. Per Ton	SILVER Oz. Per Ton	COPPER %	NICKEL %	TIN %			
25731	TR	.12	.75	TR	TR			
25732	TR	.04	.19	.01	TR			
25733	TR	.04	.33	.01	TR			
25734	TR	.04	.25	TR	TR			
35	TR	.01	.28	.01	TR			
36	TR	.06	.34	.01	TR			

ASSAYER. A. Hayland Jr GEO. STALDING

DATE OCTOBER 15, 1979

FILE NO. 624-1

ASSAY CERTIFICATE

WHITEHORSE ASSAY OFFICE LTD.
BOX 4518 WHITEHORSE Y. T.
PHONE 667 2694 Y1A 2R8

SAMPLE RECEIVED FROM REBEL DEVELOPMENT (MR. A. ARSENAULT)

SAMPLE NO.	GOLD Oz. Per Ton	SILVER Oz. Per Ton	COPPER %	TOTAL Mo % Mo				
25737	TR	TR	.14	.001				

ASSAYER L. Hayden for GEO. SPALDING

To: Sa[illegible]r Consultants, Inc.

PAGE No. 1

#1 - 425 Howe Street
Vancouver, B.C. V6C 2A9

REPORT NO. A7 - 1313

DATE: October 2[illegible] 79

BONDAR-CLEGG & [illegible]MPANY LTD.

CERTIFICATE OF ASSAY

Samples submitted: October 16, 1979
Results completed: October 23, 1979

I hereby certify that the following are the results of assays made by us upon the herein described pulp samples.

MARKED	GOLD		SILVER		Cu	Zn						
	Ounces per Ton	Grams per Metric Ton	Ounces per Ton	Grams per Metric Ton	Percent	Percent	Percent	Percent	Percent	Percent	Percent	
25731	0.010				0.69	<0.01						
25732	0.004				0.16	<0.01						
25733	0.003				0.29	<0.01						
25734	0.004				0.23	<0.01						
25735	0.002				0.25	<0.01						
25736	0.002				0.31	<0.01						

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

Registered Assayer, Province of British Columbia

APPENDIX A - (iiii)

To: S ier Consultants, Inc.

PAGE No 1

#1 - 5 Howe Street
Vancouver, B.C.
V6C 2A9

REPORT NO. 9 - 1529

DATE: Nover 23, 1979

Samples submitted: November 19, 1979
Results completed: November 23, 1979

BONDAR-CLEGG COMPANY LTD.

CERTIFICATE OF ASSAY

I hereby certify that the following are the results of assays made by us upon the herein described core samples.

MARKED	GOLD		SILVER		Cu							
	Ounces per Ton	Grams per Metric Ton	Ounces per Ton	Grams per Metric Ton	Percent	Percent	Percent	Percent	Percent	Percent	Percent	
25743	0.002				0.22							

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

Registered Assayer, Province of British Columbia

APPENDIX A - (iv)

Diamond Drill Record

COLLAR: 85E, 80N
ELEVATION 4300'
LOGGED BY G. Hawkins
DATE LOGGED Sept. 23/79
MAP REFERENCE NO

HOLE SURVEY		
FOOTAGE	AZIMUTH	DIP
0'		90°
300'		90°
500'	~0 (?)	82°
868		79.5°
1343		73.5°
1460		67.7°

COMPANY NAME Rebel Developments Ltd.
PROPERTY NAME Arsenault Claims
DRILLING CONTRACTOR Arctic Diamond Drilling Ltd.
ASSAYER Yukon Assay Office/Bondar-Clegg & Co. Ltd.
PURPOSE OF HOLE Test fold zone for sulphides

HOLE NO. R-2-79
CLAIM NAME/No. Arsenault 3
COMMENCED Sept. 15, 1979
FINISHED Oct. 3, 1979
PROJECT NO

FROM	TO	RECOVY	DESCRIPTION	SAMPLE FROM	SAMPLE TO	SAMPLE WIDTH	SAMPLE NO.	ASSAYS
0	231	20%	Overburden --mixed angular fragments in mud, sand matrix.					
231	254	95%	Highly decomposed muddy biotite, quartz chlorite, tremolite schist, Schistosity at 70° to core axis. Minor limonite staining. 251-254' - more solidified bedrock, increased chlorite biotite.					
254	265	100%	White massive quartzite with hematite limonite disseminated staining. Less bleached towards bottom. Giving dioritized appearance.					
265	278		Highly decomposed biotite schist at 80° to core axis.					
278	279		Competent silicified "greenstone". Epidote chlorite flooded. Remnant bedding planes at 10° to core axis.					
279	280	99%	Biotite schist, decomposed.					
280	281		Silicified "greenstone".					

J. R. P. Sawyer, P. Eng.

Diamond Drill Record

COLLAR:	HOLE SURVEY		
	FOOTAGE	AZIMUTH	DIP
ELEVATION			
LOGGED BY			
DATE LOGGED			
MAP REFERENCE NO.	METHOD:		

COMPANY NAME
PROPERTY NAME
DRILLING CONTRACTOR
ASSAYER
PURPOSE OF HOLE

HOLE NO. R-2-79
CLAIM NAME/No. Arsenault 3
COMMENCED
FINISHED
PROJECT NO.

FROM	TO	RECOVY	DESCRIPTION	SAMPLE FROM	SAMPLE TO	SAMPLE WIDTH	SAMPLE NO.	ASSAYS
281	300		Varying silicification in biotite schist.					
			All decomposed with very minor pyrite.					
			Some hematite staining.					
300	318		Schistose white-grey/green quartzite with rusty muddy fracture					
			filling.					
			There appear to be a number of fold closures within the					
			quartzite unit, i.e. at 313'.					
			Increase light green coloration chlorite(?) and vugginess (316').					
			Surface leaching and oxidation.					
318	324	20%	Rotten biotite schist.					
324	333	100%	Gneissic biotite quartzite.					
			330' - fold closure.					
			More massive quartzite towards bottom.					
333	336	100%	Fine grained quartz biotite muscovite					
			gneiss - grey when fresh; weathers to brown in leached zones.					

J. B. P. Sanger, P. Eng.

Diamond Drill Record

COLLAR:	HOLE SURVEY		
	FOOTAGE	AZIMUTH	DIP
ELEVATION			
LOGGED BY			
DATE LOGGED			
MAP REFERENCE NO.	METHOD		

COMPANY NAME
PROPERTY NAME
DRILLING CONTRACTOR
ASSAYER
PURPOSE OF HOLE

HOLE NO. R-2-79
CLAIM NAME/No. Arsenault 3
COMMENCED
FINISHED
PROJECT NO

FROM	TO	RECOVY	DESCRIPTION	SAMPLE FROM	SAMPLE TO	SAMPLE WIDTH	SAMPLE NO.	ASSAYS
336	364	100%	White - grey massive quartzite.					
			Occasional impure zones of acicular radiating crystals, idocrase(?),					
			carbonate, epidote and bands of chlorite biotite.					
			Minor rust coloration in mafic bands.					
			351' - 1" quartz vein.					
			Increase in mafics towards bottom.					
			361/6-362' - biotite schist zone.					
364	378		Silicified, fine grained grey, biotite grossularite garnet, schist.					
			Very minor pyrite.					
			373-376' - quartz veining with pyrite, chlorite and black					
			metallic mineral(?).					
378	386		Quartz feldspar porphyry dyke - probable source of silicification.					
			386/6' - quartz veins and bleaching with epidote serpentine					
			fractures, minor pyrite.					
386	390		Quartzite, minor quartz veins and hematite after pyrite(?).					
390	394		Black, carbonaceous, graphitic schist.					

J. B. P. Sawyer, P. Eng.

Diamond Drill Record

COLLAR:	HOLE SURVEY		
	FOOTAGE	AZIMUTH	DIP
ELEVATION			
LOGGED BY			
DATE LOGGED			
MAP REFERENCE NO.	METHOD:		

COMPANY NAME
PROPERTY NAME
DRILLING CONTRACTOR
ASSAYER
PURPOSE OF HOLE

HOLE NO. R-2-79
CLAIM NAME/No. Arsenault 3
COMMENCED
FINISHED
PROJECT NO

FROM	TO	RECOVY	DESCRIPTION	SAMPLE FROM	SAMPLE TO	SAMPLE WIDTH	SAMPLE NO	ASSAYS
390	394 (cont.)		392' - quartz veining, minor pyrite.					
394	400		Silicified "greenstone" gneiss.					
400	402		Black carbonaceous schist.					
402	410		Silicified "greenstone" gneiss.					
410	418		415-416' - minor gneissic "greenstone" interband.					
			Massive silicified quartz feldspar porphyry dyke.					
418	422		Quartz, chlorite, sericite schist, grey banded with up to 2%					
			pyrite.					
			Evidence of isoclinal folding.					
			Serpentinized in some zones talc(?).					
			Minor carbonate veining with pyrite.					
422	424		Quartz feldspar porphyry.					
			Massive dolerite dyke with silicification, bleaching at bottom.					

J. R. P. Sawyer, P. Eng.

Diamond Drill Record

COLLAR:	HOLE SURVEY		
	FOOTAGE	AZIMUTH	DIP
ELEVATION			
LOGGED BY			
DATE LOGGED			
MAP REFERENCE NO.	METHOD:		

COMPANY NAME
PROPERTY NAME
DRILLING CONTRACTOR
ASSAYER
PURPOSE OF HOLE

HOLE NO. R-2-79
CLAIM NAME/No. Arsenault 3
COMMENCED
FINISHED
PROJECT NO.

FROM	TO	RECOVY	DESCRIPTION	SAMPLE FROM	SAMPLE TO	SAMPLE WIDTH	SAMPLE NO.	ASSAYS
422	424	(cont.)	Very minor pyrite.					
424	438		Continuing metasediment gneiss. Black "marbled" to grey-green, talc, sericite, quartz, biotite with minor pyrite. Occasional fracture at 30° to core axis with pyrite on face. 427-427/6' - Brecciated fault zone at 20°. Pyrite with quartz carbonate veining.					
438	567		Interbanded quartz feldspar porphyry dykes (QFP) and silicified meta quartzites and schist. 438-439' - QFP. 439-439/6' - Muscovite, chlorite schist. 439/6-442' - QFP. 442-443' - Silicified fine grained gneiss. 443-443/6' - QFP. 443/6-445' - Gneiss as above. 445-447' - QFP with one pyrite, epidote, quartz vein at 10°. 447-447/6' - Muscovite schist. 447/6-449' - Gneiss, pyrite <1%. 449-450' - QFP.					

J. B. P. Sanger, P. Eng.

Diamond Drill Record

COLLAR:	HOLE SURVEY		
	FOOTAGE	AZIMUTH	DIP
ELEVATION			
LOGGED BY			
DATE LOGGED			
MAP REFERENCE NO.	METHOD		

COMPANY NAME
PROPERTY NAME
DRILLING CONTRACTOR
ASSAYER
PURPOSE OF HOLE

HOLE NO. B-2-79
CLAIM NAME/No. Arsenault 3
COMMENCED
FINISHED
PROJECT NO

FROM	TO	RECOVY	DESCRIPTION	SAMPLE FROM	SAMPLE TO	SAMPLE WIDTH	SAMPLE NO	ASSAYS
438	567	(cont.)	450-451' - Gneiss, pyrite <1%.					
			451-451/6' - QFP.					
			451/6-453' - Gneiss pyrite <1%.					
			453-453/6'- Muscovite schist.					
			453/6-455' - Gneiss pyrite <1%.					
			455'-458' - Black marbled quartz gneiss.					
			458-461' - White siliceous gneiss.					
			461-461/6' - QFP.					
			461/6-465' - Green gneiss pyrite 3%.					
			465-466' - Silicified, epidote QFP.					
			466-469' - Gneiss.					
			469-473' - Quartz vein into QFP. Limonitic vuggs, epidote.					
			473-475' - Gneissic "greenstone".					
			475-476' - Bleached, silicified, epidote QFP.					
			476-477/6' - Silicified gneiss, pyrite 2%.					
			477/6-478/6' - QFP.					
			478/6-479' - Dark grey gneiss.					
			479-479/6' - QFP.					
			479/6-481' - Gneiss.					
			481-483' - QFP, epidote.					

J. B. P. Sawyer, P. Eng.

Diamond Drill Record

COLLAR:	HOLE SURVEY		
	FOOTAGE	AZIMUTH	DIP
ELEVATION			
LOGGED BY			
DATE LOGGED			
MAP REFERENCE NO.	METHOD:		

COMPANY NAME
PROPERTY NAME
DRILLING CONTRACTOR
ASSAYER
PURPOSE OF HOLE

HOLE NO. R-2-79
CLAIM NAME/No. Arsenault 3
COMMENCED
FINISHED
PROJECT NO

FROM	TO	RECOVY	DESCRIPTION	SAMPLE FROM	SAMPLE TO	SAMPLE WIDTH	SAMPLE NO.	ASSAYS
438	567	(cont.)	483-485/6' - Gneiss, pyrite 1%.					
			485/6-487/6' - QFP.					
			487/6-500' - Silicified gneiss, pyrite <1%, grading into massive green quartzite.					
			500-507' - QFP, grey metallic vein (specularite?) with epidote at 10°.					
			507-508/6' - Rear vertical contact with biotite, talc, chlorite schist.					
			508/6-509' - QFP.					
			509-510' - Biotite, talc, chlorite schists, pyrite <1%, minor quartz veining.					
			510-511' - Quartzite.					
			511-516' - QFP, minor silicified quartzite bands.					
			516-521' - talcose, muscovite schist. Carbonate veins at 10°.					
			521-524' - QFP.					
			524-530' - Quartzite.					
			530-535' - QFP, minor silicified quartzite bands.					
			535-543' - Massive buff quartzite with high angle fractures and veining.					
			543-544' - Vertical fold closure, contact with pyrite 2% in black schist.					

J. R. P. Sawyer, P. Eng.

Diamond Drill Record

COLLAR:	HOLE SURVEY		
	FOOTAGE	AZIMUTH	DIP
ELEVATION			
LOGGED BY			
DATE LOGGED			
MAP REFERENCE NO.	METHOD:		

COMPANY NAME
PROPERTY NAME
DRILLING CONTRACTOR
ASSAYER
PURPOSE OF HOLE

HOLE NO. R-2-79
CLAIM NAME/No. Arsenault 3
COMMENCED
FINISHED
PROJECT NO.

FROM	TO	RECOVY	DESCRIPTION	SAMPLE FROM	SAMPLE TO	SAMPLE WIDTH	SAMPLE NO.	ASSAYS
438	567	(cont.)	544-547' - QFP.					
			547-551' - Quartzite with quarts stringers.					
			2" dark biotite schist in middle.					
			551-557' - QFP.					
			557-558' - Quartzite.					
			558-567' - QFP.					
567	652		Quartzite.					
			601' - 2" of 1% MoS_2 in pyritiferous quartz vein.					
			Increasing pyrite up to >1% in decreasing silicification.					
			Increasing gneissic texture and mafic biotite, chlorite,					
			serpentine, decreased epidote.					
			Schistosity at 80° to core axis.					
			626' - 2" QFP, 3% pyrite at contacts with silicification.					
			645' - 1" band of actinolite bearing dark pyritiferous Dc (P.F. Lewis)					
			in fold nose. Heavy carbonate on either side of fold flanks.					
652	663		Quartz veined carbonate actinolite Dm. Epidote vein at 665'					
			with very minor chalcopyrite.					
			666-667' - Coarse quartz, carbonate actinolite vein. Pyrite 3%.					

J. R. P. Sawyer, P. Eng.
CONSULTING GEOLOGIST

Diamond Drill Record

COLLAR:	HOLE SURVEY		
	FOOTAGE	AZIMUTH	DIP
ELEVATION			
LOGGED BY			
DATE LOGGED			
MAP REFERENCE NO.	METHOD:		

COMPANY NAME
PROPERTY NAME
DRILLING CONTRACTOR
ASSAYER
PURPOSE OF HOLE

HOLE NO. R-2-79
CLAIM NAME/No. Arsenault 3
COMMENCED
FINISHED
PROJECT NO.

FROM	TO	RECOVY	DESCRIPTION	SAMPLE FROM	SAMPLE TO	SAMPLE WIDTH	SAMPLE NO.	ASSAYS
663	668/6		Light biotite, muscovite quarts schist, pyrite 1%. Carbonate, quarts epidote veins parallel to schistosity and 10° off core axis.					
668/6	676		Varying dark actinolitic carboniferous pyrite (2-3%) rich gneiss. 673' - Fold closure of above with chlorite-biotite gneiss of AB (P.F. Lewis) with related pyrite in Dm. Pyrite concentration appears to be lithologically controlled rather than structurally.					
676	685		Light grey-green gneiss (chlorite, quartz, grey muscovite) epidote, carbonate quartz vein, pyrite <1%.					
685	698		Impure carbonaceous schist. Minor crystalline $CaCo_3$ bands (marble?). Coarse biotite chlorite books form knots in schistose sections. Quartz porphyroblasts ~1cm.					
698	714		Dark greenstone, pyrite, pyrrhotite, chalcopyrite, quartz veins. 793-796' - Marbled quartz chlorite gneiss. 700-708' - Massive pyrrhotite and pyrite, trace chalcopyrite.					

J. R. P. Sayer, P. Eng.

Diamond Drill Record

PAGE 4 OF 4

COLLAR	HOLE SURVEY		
	FOOTAGE	AZIMUTH	DIP
ELEVATION			
LOGGED BY			
DATE LOGGED			
MAP REFERENCE NO.	METHOD:		

COMPANY NAME
PROPERTY NAME
DRILLING CONTRACTOR
ASSAYER
PURPOSE OF HOLE

HOLE NO. R-2-79
CLAIM NAME/No. Arsenault 3
COMMENCED
FINISHED
PROJECT NO

FROM	TO	RECOVY	DESCRIPTION	SAMPLE FROM	SAMPLE TO	SAMPLE WIDTH	SAMPLE NO.	ASSAYS
698	714	(cont.)	Marbled pink-green chalcopyrite black marble (?)					
714	731		Biotite muscovite actinolite schist with quartz porphyroblasts.					
			Grades into more leucocratic muscovite variety.					
			Pyrite (pyrrhotite; chalcopyrite tr.) 1% -2%.					
731	758		Marbled more quartzose gneiss with minor actinolite, carbonate					
			pyrite, chalcopyrite veins and 1% pyrite disseminated.					
			743-744' Dm pyrite 5%. (743-753 mislatch)					
			743-753' - variable quartz and light marble bands.					
758	770		Grandational change into actinolite biotite feldspar, quartz					
			porphyry schist, pyrite 1%.					
			764-765' - QFP dyke.					
770	778		Marbled quartzose gneiss muscovite.					
778	806		Biotite muscovite, actinolite, quartz porphyry schist.					
			Pyrite 1%.					
			781' - coarse actinolite, calcite, epidote vein. Very minor chalcopyrite.					

J. R. P. Sawyer, P. Eng.

Diamond Drill Record

COLLAR:	HOLE SURVEY		
	FOOTAGE	AZIMUTH	DIP
ELEVATION			
LOGGED BY			
DATE LOGGED			
MAP REFERENCE NO	METHOD:		

COMPANY NAME
PROPERTY NAME
DRILLING CONTRACTOR
ASSAYER
PURPOSE OF HOLE

HOLE NO. B-2-79
CLAIM NAME/No. Arsenault 3
COMMENCED
FINISHED
PROJECT NO

FROM	TO	RECOVY	DESCRIPTION	SAMPLE FROM	SAMPLE TO	SAMPLE WIDTH	SAMPLE NO	ASSAYS Cu %	Au oz/ton	Ag oz/ton	Ni %	Sn %	Zn %
806	815		Increased pink marbled quartz gneiss to 811'.										
			Near vertical beds of pyrrhotite, chalcopyrite up to 0.75%,										
			6" probable fold hinge with Dm core; greyish crystalline marble										
			sections.										
815	820		Quartz porphyroblastic, biotite, actinolite, epidote, schist.										
820	822		Light grey crystalline marble.										
822	827		Grey-green biotite, actinolite gneiss. Pyrite <1%, grading into										
			marbled quartz gneiss.										
827	838		Medium grained biotite quartz muscovite grey-green actinolite										
			schist. Pyrrhotite 1%.										
838	855		Dm marbled mixture; pyrite, pyrrhotite, chalcopyrite, 20% dark	845	850	5'	25731	0.75	Tr	0.12	Tr	Tr	
			sulphide Dm bands 854', 845-855',	Re-run			"	0.69	0.010				<0.01
			852-855' - QFP dyke.	850	854/6	4'6"	25732	0.19	Tr	0.04	0.01	Tr	
			Dyke appears to recrystallize banded chalcopyrite pyrrhotite to	Re-run			"	0.16	0.004				<0.01
			coarse crystalline. Dyke itself is fractured and filled with										

J. B. P. Sawyer, P. Eng.

Diamond Drill Record

COLLAR:	HOLE SURVEY		
	FOOTAGE	AZIMUTH	DIP
ELEVATION			
LOGGED BY			
DATE LOGGED			
MAP REFERENCE NO.	METHOD:		

COMPANY NAME
PROPERTY NAME
DRILLING CONTRACTOR
ASSAYER
PURPOSE OF HOLE

HOLE NO. R-2-79
CLAIM NAME/No. Arseneault 3
COMMENCED
FINISHED
PROJECT NO

FROM	TO	RECOVY	DESCRIPTION	SAMPLE FROM	SAMPLE TO	SAMPLE WIDTH	SAMPLE NO	ASSAYS Cu %	ASSAYS Au oz/ton
838	855	(cont.)	coarse pyrrhotite.						
			Minor carbonate veins in silicified QFP are mineralized with						
			chalcopyrite but not pyrrhotite.						
855	861		Coarse grained gneissic metasediment.						
			Coarse pyrrhotite vein at 856°; disseminated pyrite 1%.						
855	861								
861	868		Fine grained green-grey gneiss; carbonate veins with						
			chalcopyrite, pyrite.						
868	884		QFP, fractured and quartz veined with accompanying sparse	866	871	5'	25743	0.22	0.002
			pyrite, chalcopyrite mineralization at 868-870', 873',						
			877/6-879/6' - fault breccia with (chalcopyrite) pyrite, (2%), 10%.						
884	915		Contact zone with silicified metasediments, quartzite(?).						
			Pyrite 20%, chalcopyrite 3% for 1' at contact.						
			907/6' - 6" QFP siliceous dark grey.						
			909-912' - 6" QFP siliceous dark grey.						
			Associated pyrite, chalcopyrite mineralization at contacts.						
			914-915' - QFP.						

J. B. P. Sawyer, P. Eng.
CONSULTING GEOLOGIST

Diamond Drill Record

COLLAR:	HOLE SURVEY		
	FOOTAGE	AZIMUTH	DIP
ELEVATION			
LOGGED BY			
DATE LOGGED			
MAP REFERENCE NO.	METHOD:		

COMPANY NAME
PROPERTY NAME
DRILLING CONTRACTOR
ASSAYER
PURPOSE OF HOLE

HOLE NO. R-2-79
CLAIM NAME/No. Arseanault 9
COMMENCED
FINISHED
PROJECT NO

FROM	TO	RECOVY	DESCRIPTION	SAMPLE FROM	SAMPLE TO	SAMPLE WIDTH	SAMPLE NO.	ASSAYS
915	923		Silicified grey-green biotite chlorite gneiss.					
			920-921' - 2" dyke and contact phases with pyrite, chalcopyrite.					
923	965		Serpenterized, silicified, quartz, epidote veined gneiss.					
			Coarse serpentine quartz veins with pyrite <1%, trace chalcopyrite.					
			Brecciation at 15° off core axis.					
965	970		Greenstone, pyrite, pyrrhotite, chalcopyrite, 10%, 5%, <1%.					
970	979		Grey-green actinolitic quartzite. Brecciated.					
			970' - quartz serpentine chalcopyrite vein 2".					
			975' - breccia shear zone(?).					
			Very fine grained blue to grey dissemination pyrrhotite, hematite, bornite(?).					
979	982		Grey-green actinolitic quartzite.					
982	991		Fine grained "greenstone" pyrite (chalcopyrite) 2%, <0.8%, increasing silicification.					

J. R. P. Sawyer, P. Eng.

Diamond Drill Record

COLLAR:	HOLE SURVEY		
	FOOTAGE	AZIMUTH	DIP
ELEVATION			
LOGGED BY			
DATE LOGGED			
MAP REFERENCE NO.	METHOD:		

COMPANY NAME
PROPERTY NAME
DRILLING CONTRACTOR
ASSAYER
PURPOSE OF HOLE

HOLE NO. R-2-79
CLAIM NAME/No. Arsenault 3
COMMENCED
FINISHED
PROJECT NO

FROM	TO	RECOVY	DESCRIPTION	SAMPLE FROM	SAMPLE TO	SAMPLE WIDTH	SAMPLE NO	ASSAYS Cu %	Au oz/ton	Ag oz/ton	Ni %	Sn %	Zn %
991	994		Fresh massive QFP.										
994	997		Contact zone brecciated "greenstone".										
			Pyrite, pyrrhotite, chalcopyrite; 10%, 5%, <1%.										
997	1003		"Marbled" quartz breccia gneiss. Pyrite 1%, quartzose.										
1003	1007		QFP fresh, minor silicification. Pyrite <1%.										
1007	1033		Silicified quartzite gneiss.										
			1008-1110' - serpentinized brecciated quartz veins. Pyrite 3%,										
			chalcopyrite trace.										
			Occasional coarse porphyroblasts of serpentine.										
			Epidote fault gouge contact.										
1033	1043		Massive greenstone sulphides.										
			Pyrrhotite, pyrite, chalcopyrite; 80%, 1%, 1%.	1033	1038	5'	25733	0.33	Tr	0.04	0.01	Tr	
			Quartz veinlets carry best chalcopyrite.	Re-run			"	0.29	0.003				<0.01
				1038	1043	5'	25734	0.25	Tr	0.04	Tr	Tr	
1043	1047		Silicified, quartzite gneiss.	Re-run			"	0.23	0.004				<0.01

J. R. P. Sawyer, P. Eng.
CONSULTING GEOLOGIST

Diamond Drill Record

COLLAR:	HOLE SURVEY		
	FOOTAGE	AZIMUTH	DIP
ELEVATION			
LOGGED BY			
DATE LOGGED			
MAP REFERENCE NO.	METHOD:		

COMPANY NAME
PROPERTY NAME
DRILLING CONTRACTOR
ASSAYER
PURPOSE OF HOLE

HOLE NO R-2-79
CLAIM NAME/No. Arsenault 3
COMMENCED
FINISHED
PROJECT NO

FROM	TO	RECOVY	DESCRIPTION	SAMPLE FROM	SAMPLE TO	SAMPLE WIDTH	SAMPLE NO	ASSAYS Cu %	Au oz/ton	Ag oz/ton	Ni %	Sn %	Zn %
1047	1057		Greenstone massive sulphides	1047	1050	3'	25735	0.28	Tr	0.01	0.01	Tr	
			1047-1048' - Highly brecciated, veined quartzite with pyrite,	Re-run			"	0.25	0.002				<0.01
			chalcopyrite.	1050	1055	5'	25736	0.34	Tr	0.06	0.01	Tr	
			Pyrrhotite 50%, pyrite 10%, chalcopyrite 1%.	Re-run			"	0.31	0.002				<0.01
			1049-1051' - Porphyritic diabase dyke(?).										
			Decreased pyrrhotite but good chalcopyrite in veins.										
			Minor epidote contact at 10° to core axis.										
			1054-1055' - Best chalcopyrite mineralization in fold crest, other										
			sulphides appear to align near to core axis.										
			1055-1057' - Porphyritic diabase dyke (6") and breccia zone.										
1057	1066		Disseminated pyrite in silicified metasediment quartzite(?).										
1066	1071		QFP silicified minor pyrite epidote veins.										
1071	1077		Gneissic to massive QFP contact remelt zone(?).										
1085	1103		Highly siliceous gneissic quartzite. Pyrite <1% up to 3%.										
			Fold hinge section from 80° to vertical to 60° at 1085'.										

R. P. Sawyer, P. Eng.

Diamond Drill Record

COLLAR:

HOLE SURVEY		
FOOTAGE	AZIMUTH	DIP
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ELEVATION

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DRILLING CONTRACTOR

ASSAYER

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HOLE NO. R-2-79

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FROM	TO	RECOVY	DESCRIPTION	SAMPLE FROM	SAMPLE TO	SAMPLE WIDTH	SAMPLE NO	ASSAYS Cu %	Au oz/ton	Ag oz/ton	Mo %
1103	1121		Coarse grey gneiss; pyrite <1%. Veins and fractures at 10° and parallel to foliation at 50°.								
1121	1136/6		Highly silicified blue-grey quartzite gneiss. Pyrite 1% parallel to foliation.								
1136/6	1153		Massive medium grained quartz muscovite gneiss. Pyrite <1%.								
1153	1207		Coarse grained gneissic massive QFP; contact and intrusive phases. Occasional silicified gneissic bands.								
			1166 -1168' - Pyrite, chalcopyrite, chloritic vein parallel to core axis.	1166	1168	2'	25737	0.14	Tr	Tr	0.001
			1179 - 1184' - Gneissic quartzite; silicified.								
			1190' - Fractured and veined quartz epidote. Pyrite 10%.								
			Increasing marbled quartzite gneiss with pyritic to 1207'; contact phase.								
1207	1228		Silicified green-grey quartzite gneiss into marbled and more schistose D; decreased pyrite.								

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FROM	TO	RECOVY	DESCRIPTION	SAMPLE FROM	SAMPLE TO	SAMPLE WIDTH	SAMPLE NO	ASSAYS						
1207	1228	(cont.)	1212-1214' - Mottled quartz porphyroblastic gneiss (silicified).											
			1214-1218' - Schistose biotite fold hinge.											
			10% pyrite in fold structure.											
			1222-1227' - Mottled silicified quartz porphyroblastic gneiss.											
1228	1258		Dark grey-green silicified metasediments, fine grained pyrite											
			varying to 1%.											
			Small gneissic bands.											
			1233' - 6" band pyrite 5% in greenstone											
			1234' - " " " "											
1258	1269		Gneissic grey porphyry QFP and mottled gneissic band.											
			1258' - 6" pyrite, chalcopyrite 10% in carbonaceous band.											
1269	1282		Actinolitic sequence black marbled quartz rich gneiss into											
			carbonate and silicified quartz porphyroblastic gneiss.											
			1274 -1282' - Dark pyrite, pyrrhotite, 30% greenstone Dm;											
			chalcopyrite trace in carbonate vein.											
1282	1297		Epidote, actinolite, recrystalline and skarn with pyrite,											

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FROM	TO	RECOVY	DESCRIPTION	SAMPLE FROM	SAMPLE TO	SAMPLE WIDTH	SAMPLE NO	ASSAYS
1282	1297	(cont.)	mixed greenstone.					
			Porphyry diabase dyke at 1291-1292'.					
			Heavy epidote and other skarn minerals.					
1297	1325		Heavy silicification and white quartzite into grey gneissic with foliation at 70°.					
			Mixed heavy quartz (quartzite) bands.					
1325	1328		Heavy silicification and white quartzite into grey gneissic with foliation at 20°.					
			Mixed heavy quartz (quartzite) bands.					
1328	1338		Coarse grey-blue quartz porphyroblastic gneiss (pyrite 1%) - massive.					
1338	1393		Coarse grey-blue quartz porphyroblastic gneiss (pyrite 1%) - massive.					
			1367-1370' - heavy white quartzite band with epidote, actinolite secondary.					

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FROM	TO	RECOVY	DESCRIPTION	SAMPLE FROM	SAMPLE TO	SAMPLE WIDTH	SAMPLE NO.	ASSAYS
1393	1460		Massive dark grey silicic metasediments.					
End of Hole			1412' - increasing silicification. Coarse grained.					
			1416' - foliation parallel to core axis, chloritic foliation,					
			pyrite 1%.					
			Into biotite, chlorite porphyroblasts in fine grained gneiss.					
			1425' - back to massive grey silicic gneiss.					
			1436' - small chalcopyrite vein.					
			1460' - increasing silica, MoS_2 vein.					

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