

CONTENTS

	<u>Page</u>
SUMMARY	1
INTRODUCTION	2
Location	2
Previous Work	2
DIAMOND DRILLING	3
DRILL LOGS	Following Page 5
DISCUSSION	6
DIAGRAM: Section along Line 4N from 9E to 15E	Following Page 8
CONCLUSIONS	9
RECOMMENDATIONS	11
SUMMARY OF COSTS	13
Invoice Supporting Drilling Costs	Following Page 13

MAPS AND CHARTS

DUB II Development Map showing Location of Drill Holes.
Drill Hole Profiles for DDH 66-1, 2, 3, 4, 5, and 5-A.

ATLAS EXPLORATIONS LIMITED

(N. P. L.)

330 MARINE BUILDING
355 BURRARD STREET
VANCOUVER 1, B. C.

SUMMARY

During October and November of 1966 a diamond drill program, during the course of which 5 holes were drilled, was carried out by Atlas Explorations Limited on the DUB claims in a cirque north of Fire Lake, Y. T.

A magnetite rich horizon averaging about .5% copper was encountered in three of the holes. This is thought to be a flat lying band of gneissic and/or schistose rock replacing the quartz-chlorite schist which underlies the floor of the cirque.

Although assay values are not high, not all anomalous areas have been tested and no control for the mineralization has yet been found. Further drilling is recommended on untested geophysical anomalies and to determine the relationship between the mineralization and an overlying unit of mica and sericite schists.

INTRODUCTION

Location

The DUB property is situated north and east of Fire Lake, Yukon, on claim sheets 105 G-1 and 2 and consists of 167 contiguous claims. It is held by Atlas Explorations Limited of 355 Burrard Street, Vancouver, B.C., in whose interest it was staked during the spring and summer of 1966.

Previous Work

During March and April of 1966 a regional airborne EM and Mag Survey was carried out for Atlas Explorations by Lockwood Survey Corporation of Toronto, Ontario. This work outlined a number of interesting geophysical anomalies, one of which has been called the DUB II anomaly. Situated in a cirque about three miles north of the mid-part of Fire Lake, the DUB II anomaly consists of a southeasterly trending zone of high magnetic and electromagnetic values. It had been examined during the summer of 1960 by Cassiar Asbestos Corporation who made geophysical and geological surveys of the area, but during July of 1966 a new grid was cut and a second study was undertaken by Atlas Explorations. A grid was cut using a 7600 foot base line striking at 340° with cross lines every 800 feet except in the anomalous area where 400' and 200' spacings were used.

Geophysical surveys using a Crone EM unit and a Jalander Magnetometer, a copper-lead-zinc geochemical soil sampling survey, and geological mapping were all carried out.

Good copper geochemical values in stream and soils were detected and the magnetometer and EM anomalies located by Cassiar were reaffirmed and, in some cases, extended. Geological mapping indicated that the anomaly was caused by a sulphide bearing horizon associated with an area of quartz-chlorite schist. As favourable but inconclusive results had been obtained from the Cassiar drill program in 1960, it was decided to expand upon these and test previously unexplored areas with another drill program in the fall of 1966.

DIAMOND DRILLING

During September 1966 a contract was let with A. Arsenault Diamond Drilling of Vancouver and a BBS-1 wire line diamond drill was moved to the property. A camp was erected in the cirque north of Fire Lake and drilling began on October 4th, 1966.

A total of 1934 feet was drilled by mid-November 1966 when cold weather forced the termination of the project. Five holes were completed, although six were started. Hole 66-5 was lost when the casing was broken

while still in overburden.

Drill core is stored in a rack located about 200 feet west of the base line at about 1+00 N.

The drill and camp was moved to the site from Fire Lake by helicopter. In addition, all supply trips and all but two drill moves were done by helicopter chartered from Ross River.

Pertinent information on each hole is given below:

DDH 66-1 was located at 4+00 N, 9+50 E and reached a depth of 615 feet. Sulphide mineralization was encountered in the interval between 31 and 55 feet. Average grade was Cu .225, Au Tr., Ag .22 oz/ton over 24 feet. Highest copper values fell in the 9 foot interval between 31 and 40 feet. Average grade here was .76% Cu.

DDH 66-2 was located at 4+00 N, 14+70 E and went to a depth of 397 feet without encountering any significant mineralization.

DDH 66-3 was located at 7+00 S, 11+50 E and is 223 feet deep. Sulphides were encountered in the 41 foot interval between 53 and 94 feet. Average grades were Cu .81%, Au .005 oz/ton, Ag .15 oz/ton. Additional mineralization occurs over 10 feet from 121 to 131 feet where grades were Cu .69%, Au Tr., Ag .12 oz/ton, and over the 8 foot interval between 157 and 165 feet where grades were Cu Tr., Au Tr.,

Ag .13 oz/ton.

DDH 66-4 was located at 4+00 S, 5+50 E and reached a depth of 413 feet without encountering mineralization. Casing was left in this hole in case additional stratigraphic information justifies deepening it.

DDH 66-5 was drilled at 4+00 N 12+00 E to a depth of 52 feet where it was stopped and lost by a break in the casing while still in overburden.

DDH 66-5A was drilled from the same setup as DDH 66-5 and reached an ultimate depth of 234 feet. Mineralization occurs over 14 feet between 53 and 67 feet and grades Cu Tr., Au Tr., Ag .18 oz/ton; over 5 feet between 75 and 80 feet grading Cu Tr., Au Tr., Ag .20 oz/ton; over 2 feet between 87 and 89 feet grading Cu Tr., Au Tr., Ag 12 oz/ton; over 2 feet between 117 and 119 feet grading Cu Tr., Au Tr., Ag .18 oz/ton; over three feet between 135 and 138 feet grading a trace of Cu Au and Ag; over 19 feet between 140 and 159 feet with an average grade of Cu Tr., Au Tr., and Ag .13 oz/ton.

DRILL LOGS

66 3

DIAMOND DRILL RECORD,

HOLE NO. _____

PROPERTY _____

DUB 2

66-3

SHEET NUMBER 1SECTION FROM 0' TO 86'STARTED October 22, 1966

LATITUDE _____

DATUM 7S 11+50ECOMPLETED October 25, 1966.

DEPARTURE _____

BEARING _____

ULTIMATE DEPTH 233'

ELEVATION _____

DIP 90°

PROPOSED DEPTH _____

DEPTH FEET	CORE RECOV	DESCRIPTION	CORE SAMPLE NO.	FOOTAGE	CORE ASSAYS				SLUDGE SAMPLE NO.	FOOTAGE	AG.
					AG.	CU.	PPM Au.	ZN.			
0 - 46	Nil	Overburden.									
46-53	95%	Banded grey green quartz-chlorite schist. Some disseminated pyrite in siliceous bands. Schistosity at 80° to 90° to core axis.									
53-65	95%	Banded magnetite bearing quartzite. Fine grained and containing up to 15% disseminated sulphides. Magnetite tends to form dark grey bands and comprises about 25 to 30% of rock. Sulphides are pyrite, pyrrhotite, and chalcopyrite (1%).	Y-106	6	0.18	0.48	Tr.				
			Y-107	6	0.16	0.46	0.005				
65-86	100%	Light grey, fine grained quartzite. Similar to above but with less magnetite (10%) and indistinct, possibly relict,	Y-108	5	0.10	0.72	0.005				
			Y 109	5	0.10	0.76	0.005				
			Y 110	5	0.18	1.12	0.01				

DIAMOND DRILL RECORD,

66 5A
HOLE NO. _____
66-5A

PROPERTY _____

DUB 2

SHEET NUMBER 1

SECTION FROM 0' TO 80'

STARTED November 6, 1966

LATITUDE _____

DATUM 4n 12E

COMPLETED November 8, 1966

DEPARTURE _____

BEARING _____

ULTIMATE DEPTH 234'

ELEVATION _____

DIP 90°

PROPOSED DEPTH _____

DEPTH FEET	CORE RECOV	DESCRIPTION	CORE SAMPLE NO.	FOOTAGE	CORE ASSAYS				SLUDGE SAMPLE NO.	FOOTAGE	AG.
					AG.	CU.	PPX XX Au.	ZN.			
0-53	0%	Overburden.									
53-67	20%	Grey and green banded magnetic quartz-chlorite-magnetite schist with very sparse disseminated sulphides; less than 1%, including a few patches of chalcopyrite. Core angle: 45°. (Note: This material resembles that near the bottom of the mineralized horizon in DDH 66-1.)	Y-118	14	.18	Tr.	Tr.				
67-75	30%	Green chlorite-quartz schist. Core angle 0° from 67' to 70'; contorted from 70' to 75'.									
75-80	50%	Indistinctly banded quartz-chlorite schist with from 1 to 2 percent disseminated	Y-119	5	.20	Tr.	Tr.				

DIAMOND DRILL RECORD,

HOLE NO. _____

66-5A

PROPERTY _____

DUB 2

SHEET NUMBER 4

SECTION FROM 135 TO 159

STARTED November 6, 1966

LATITUDE _____

DATUM 4N 12E

COMPLETED November 8, 1966.

DEPARTURE _____

BEARING _____

ULTIMATE DEPTH 234'

ELEVATION _____

DIP 90°

PROPOSED DEPTH _____

DEPTH FEET	CORE RECOV	DESCRIPTION	CORE SAMPLE NO.	FOOTAGE	CORE ASSAYS				SLUDGE SAMPLE NO.	FOOTAGE	AG.
					AG.	CU.	PPxAu.	ZN.			
135-138	80%	Quartz-chlorite schist with 5% disseminated pyrrhotite and minor amounts of pyrite and chalcopyrite. Quartz content 60% to 70%. Rock is magnetic and core angle is 45° to 50°.	Y-122	3	Tr.	Tr.	Tr.				
138-140	100%	Green chlorite schist. Schistosity at 10° to core axis.									
140-159	90%	Chlorite-quartz-magnetite schist with up to 10% disseminated sulphide; mainly pyrrhotite but possibly 1% chalcopyrite. Sulphides closely related to white quartz bands and/or fragments notably at 148', and from 152' to 153' where they occur on borders of quartz.	Y-123	5	.16	Tr.	Tr.				
			Y 124	5	.18	Tr.	Tr.				
			Y125	5	.10	Tr.	Tr.				
			Y126	4	.08	Tr.	Tr.				

DISCUSSION

Drilling to date suggests that the mineralized horizon, a magnetite-quartz-biotite schist accompanied by a zone of massive pyrite both containing chalcopyrite, is a shallow, nearly flat lying body of variable thickness but with a maximum of 41 feet through.

It has been reasonably well established that areas of high magnetics are underlain by subcropping or very nearly subcropping magnetite-quartz-biotite schist. Only one hole in the current program, 66-3, drilled completely through the magnetite bearing rock. Holes 66-1 encountered it immediately under the overburden and indicates that it is over 30 feet through at this point and hole 66-5A cut 14 feet of it in the same position. None of the holes drilled in 1966 encountered the zone of massive pyrite which is exposed in the trenched area and in some of the drill core from the earlier program.

The mineralized zones in holes 66-1, 66-3 and 66-5A are all underlain by the light to medium green, fine grained chlorite-quartz schist which they probably replace. The schist is invariably composed mainly of quartz and chlorite with only minor amounts of accessory minerals. Among the latter are: sulphides; pyrite, pyrrhotite, and a little chalcopyrite all of which occur disseminated or in veinlets in contorted zones; magnetite, which is generally disseminated; brownish mica, possibly phlogopite; white

mica or sericite; biotite; epidote; and very small isolated amounts of carbonate. These rarely exceed about 10% of the total volume.

The schist is generally well bedded although some crenulations and folds are present. The infrequent occurrence of what appears to be fault gouge as well as intervals of poor core recovery suggest the presence of shear zones and faults. Minor concentrations of pyrrhotite and pyrite tend to occur in the disturbed areas but no good metal values were found.

Hole 66-4 was the only one drilled during the program that did not intersect the chlorite schist. It was spotted just west of the strong part of a magnetic anomaly to test the possibility of the copper bearing zones extending westward at depth. It seems to have successfully eliminated this possibility as it never encountered significant mineralization. Throughout most of its length it cuts quartz-mica schists and sericite schists resembling those of Unit 3 on the geological map of the area.¹ These could, however, belong to the more poorly exposed Unit 1 on the same map. In any case a sharp break is suggested between holes 66-3 and 66-4 and this may delineate the western limit of the mineralized zone.

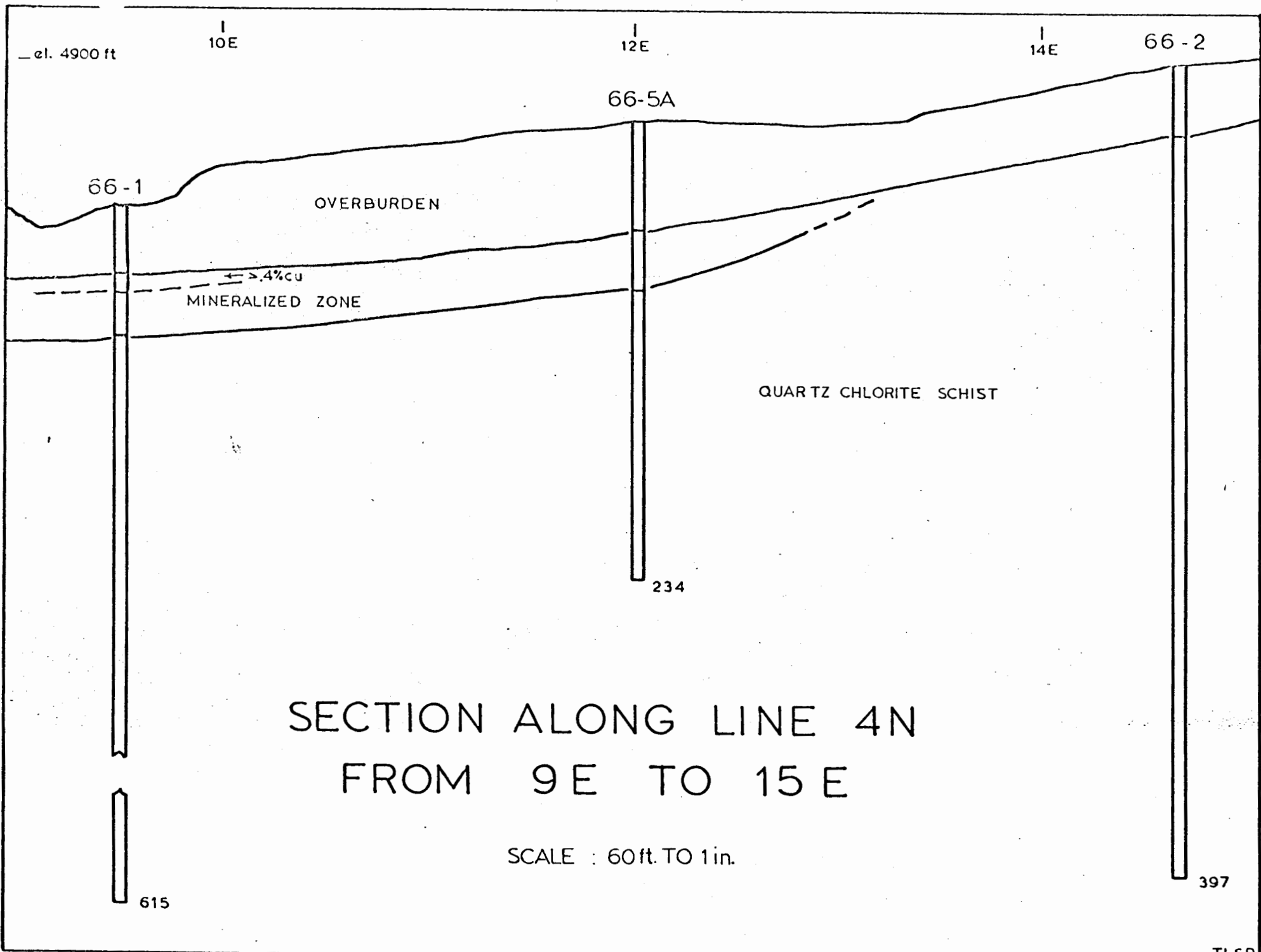
Geological evidence suggests that the copper mineralization occurs within the chlorite schist horizon

1. Sadlier-Brown, T.L.: The Geology of the DUB Mineral Claims. Atlas Explorations Limited, Unpublished Report, July 1966.

but near, possibly immediately under, Unit 3. This relationship is illustrated all along the upper part of the south fork of the creek where sulphides have been found in trenches, pits, and drill holes just north of the contact with the mica schists that form the south wall of the cirque. If hole 66-4 is actually cutting Unit 3 then it is on the down dropped west side of a fault between holes 66-3 and 66-4 and the possibility of mineralization at greater depth exists.

If further evidence is found to support this hypothesis hole 66-4 should be deepened in an attempt to prove it. The casing has been left in the hole to facilitate further work should it be considered necessary. At the time hole 66-4 was being drilled it was felt that too little was known to justify drilling beyond the depth where a westerly dipping extension might occur and the hole was terminated at 413 feet.

Hole 66-5A was drilled between 66-1 which encountered sulphides at 31 feet, and hole 66-2, which was unmineralized in an attempt to establish a section and an attitude on the sulphide bearing horizon. Mineralization was encountered in an interval of poor core recovery (20%) between 53 and 67 feet, just below the overburden. The resulting section indicates that the band dips to the west here and that consequently all of DDH 66-2 is below the



mineralization (see diagram).

CONCLUSIONS

Results from the diamond drilling in the DUB II area indicate that the magnetic and electromagnetic anomalies are caused by a zone of nearly flat lying gneissic and schistose rock composed of magnetite-quartz and either biotite, hornblende or both, with a few accessory minerals including sulphides. An overlying horizon of massive pyrite and pyrite-rich quartzite, which gives good EM response, was not encountered by any of the holes drilled during this program. It is, however, exposed in trenches and was found in core from the Cassiar Drill Project of 1960.

The only mineralization approaching ore grade occurs either in the pyrite or the magnetite bearing rocks. The average grade of the latter is .56% copper, .17% silver and a trace of gold and the maximum copper value encountered was 1.9% over 6 feet in hole 3. Sulphide minerals present are chalcopyrite, pyrite and pyrrhotite although the latter usually occurs in the underlying chlorite schist and only seldom in the magnetite zone.

Of the three holes which encountered the magnetite bearing horizon, only one, DDH 66-3 appears to have passed through its full thickness so no accurate idea of its vertical dimensions can be formed. In hole 66-3 it is 41 feet through.

Holes 66-1 and 66-5A both encountered it immediately below the overburden and cut through 30 feet and 14 feet of it respectively. Previous drilling by Cassiar was similarly inconclusive in this respect as most of the holes for which information is available encountered the zone upon hitting bedrock. Some idea as to the thickness of the mineralized rocks may be gained from the following table which includes the results of the present drill program as well as those determined from relogging the Cassiar drill results.

<u>Hole Number</u>	<u>Thickness of Mineralized Horizon Encountered (feet)</u>
66-1	>30
66-3	41
66-5A	>14
D	>20
E1	>6
E2	21
F	3
G	>38
O	>25
P(?)	>37
1 (e zone)	>25
3-1	>18
3-2	>17
6-2	>25
7	>12
10	>12
13	>18
15	>13
19	>31
22	>9

All results indicate that the magnetite bearing rock is immediately underlain by quartz chlorite schist (Unit 2 on the geological map). Although folds, crenulations and evidence for faulting were observed in the chlorite schist, the mineralized rocks are relatively undisturbed.

No definite control for the mineralization has been determined from the results of the drilling. The sulphides do, however, appear to replace the quartz-chlorite schist and may be related in some way to the contact between the overlying mica and sericite schists.

An abrupt change in rock types between holes 66-3 and 66-4 suggest the presence of a fault which would occur in the vicinity of the west limit of the geophysical anomaly.

RECOMMENDATIONS

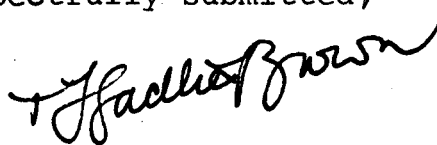
Further diamond drilling should be carried out with two distinct objectives; (1) to test all known geophysical anomalies and, (2) to determine the factors controlling known mineralization and test for possible extensions which were not detected by geophysics.

Objective 1 could probably be adequately carried out with a light drill capable of drilling to about 200 feet as all strong geophysical anomalies drilled so far have been associated with mineralization near the surface. Areas recommended for testing are centred around 10+00 N, 6+00 E,

and 13+00 S, 27+00 E. In addition to these some areas which have already been drilled by Cassiar should be drilled again for re-evaluation. These are roughly centred about 6+00 S 17+00 E; 4+00 S, 9+00 E; 8+00 S, 11+00 E.

Objective 2 would probably best be carried out by a larger drill although a light unit might be useful for some areas. The possibility that the mineralization lies below the lower contact of Unit 3 (the mica and sericite schists and phyllites forming the south wall of the cirque) should be tested by drilling through Unit 3, possibly near the eastern end of line 12S. The heavy drill should also be used for drilling off the strongest parts of the geophysical anomalies where interpretation suggests deeper extensions of known mineralization.

Respectfully submitted,



T. L. Sadlier-Brown,
Geologist,
Atlas Explorations Limited.

SUMMARY OF COSTS

Diamond Drilling (including camp costs, etc.) See invoice.	\$ 26,372.91
Salary, 1 geologist @ \$40/diem for 54 days	2,160.00
Wages: Labour @ \$20/diem for 15 days	300.00
Transportation: Helicopter approx. 51 hrs. @ \$130/hr. average	6,633.36
Fixed wing approx. 63 hrs. @ \$75/hr.	4,716.27
	<hr/>
	\$ 40,182.54
	<hr/>

AFFIDAVIT SUPPORTING SUMMARY OF COSTS:


I, T. L. Sadlier-Brown, Geologist, Atlas Explorations Limited, of Ross River, Yukon Territory, do hereby state that to the best of my knowledge and belief the statement of costs as presented in the report "Diamond Drilling the DUB Mineral Claims" is both correct and true.



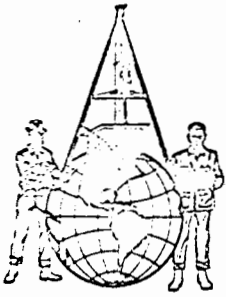
T. L. Sadlier-Brown



Date



A Commissioner of Oaths in and for the Yukon Territory.



A. ARSENAULT DIAMOND DRILLING LTD.

4853 MAIN STREET, VANCOUVER 10, B.C.
TELEPHONE TRINITY 9-5701

November 30th, 1966.

IN ACCOUNT WITH

Atlas Explorations Limited,
330 Marine Building,
355 Burrard Street,
VANCOUVER, B.C.

S U M M A R Y

	Item	1	Mobilization	\$1,026.00	← (216.00)
		2	Hole No. 1	5,871.75	
		3	Hole No. 2	4,158.00	
		4	Hole No. 3	2,544.00	
		5	Hole No. 4	4,048.00	— (36.00)
		6	Hole No. 5 - 5A	5,497.16	
		7	Board & Lodging	3,480.00	
		8	Cement etc.	1,045.40	
			OUR ACCOUNT	<u>\$27,670.31</u>	252.00 <u>\$27,418.31</u>

*655
626
check
032
034*

NOTE

*48 hours for Camp construction on Sept 30
8 hours set up oil staves Oct 28*

*less 1045.40
(752.00)
26,372.91*

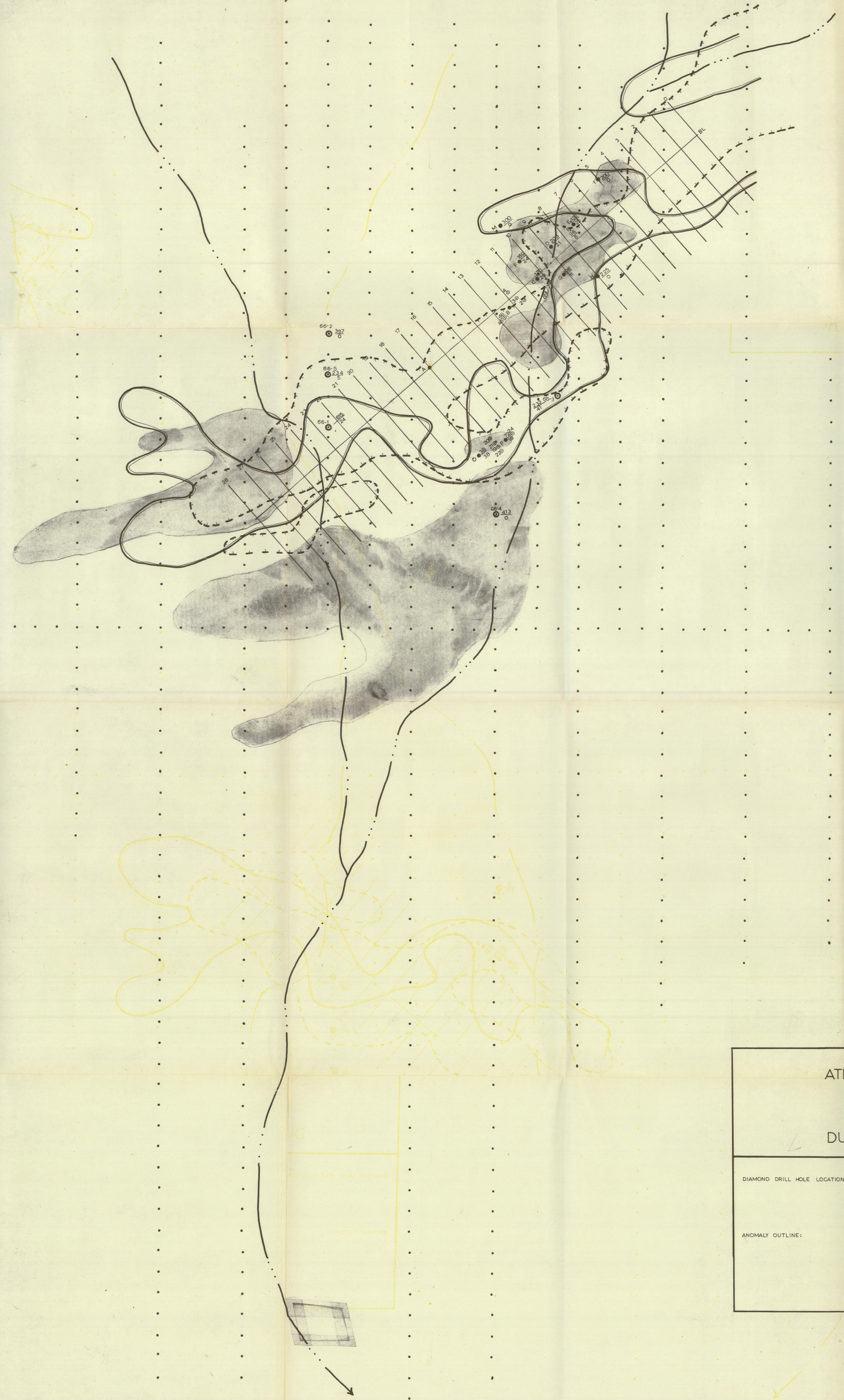
Drilling equipment is on Company's property and there will be no standby charge or rental charges for a period of 90 days or until March 1, 1967.

[Handwritten signatures and initials]

20N 16N 12N 8N 6N 4N 2N 0 2S 4S 6S 8S 10S 12S 16S 20S 24S

ATLAS EXPLORATIONS LTD.
ROSS RIVER Y.T.
DUB MINERAL CLAIMS
FYRE LAKE AREA
DUB 2 DEVELOPMENT MAP

ATLAS EXPLORATIONS LTD.



ATLAS EXPLORATIONS LTD.
ROSS RIVER Y.T.
DUB MINERAL CLAIMS
FYRE LAKE AREA
DUB 2 DEVELOPMENT MAP

- DIAMOND DRILL HOLE LOCATION:
- 66-1 ATLAS 300 depth of hole
 - F CASSIAR 25 mineralized interval
 - ⊙ 10 CASSIAR (Packsack hole)
- ANOMALY OUTLINE:
- MAG OUTLINE (above 500 f)
 - EM OUTLINE (above -3 degrees high freq)
 - GEOCHEM (above 200 ppm Cu)

D.D.H-66-1

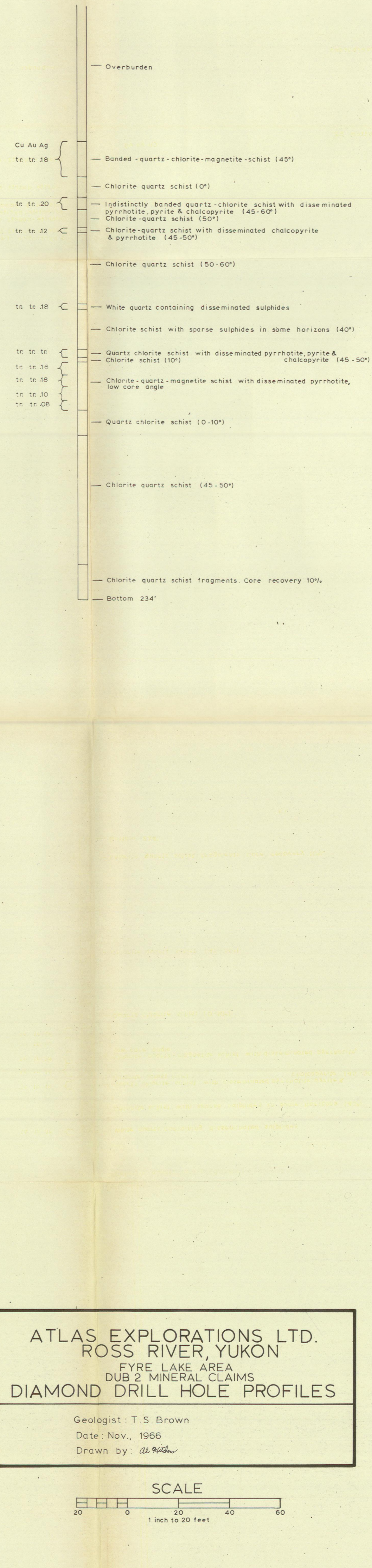
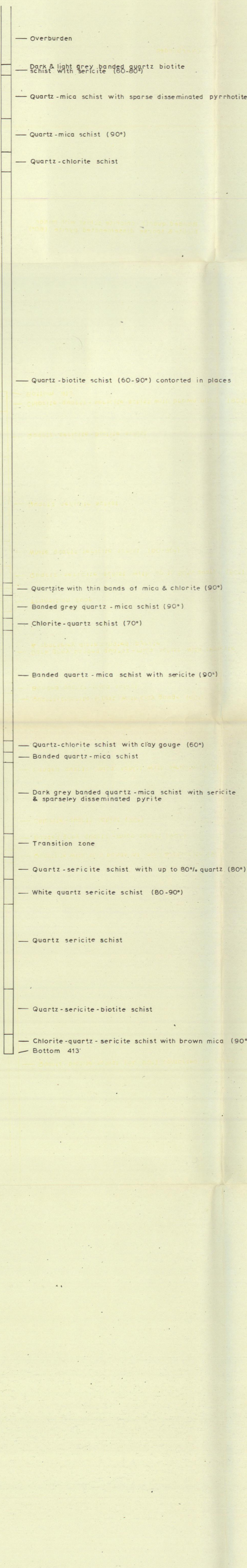
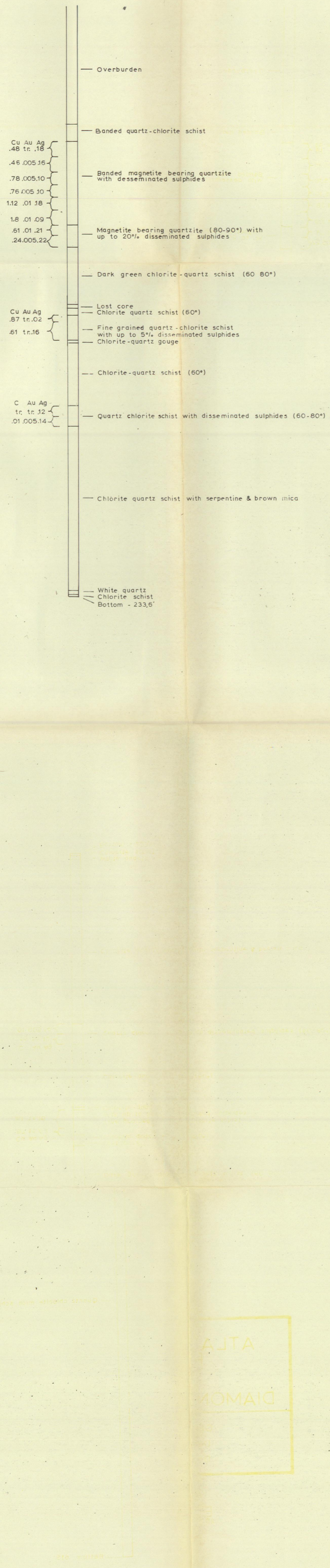
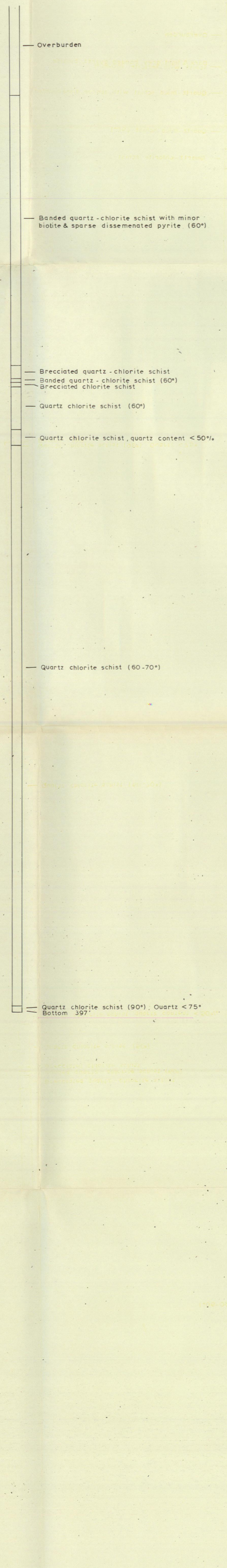
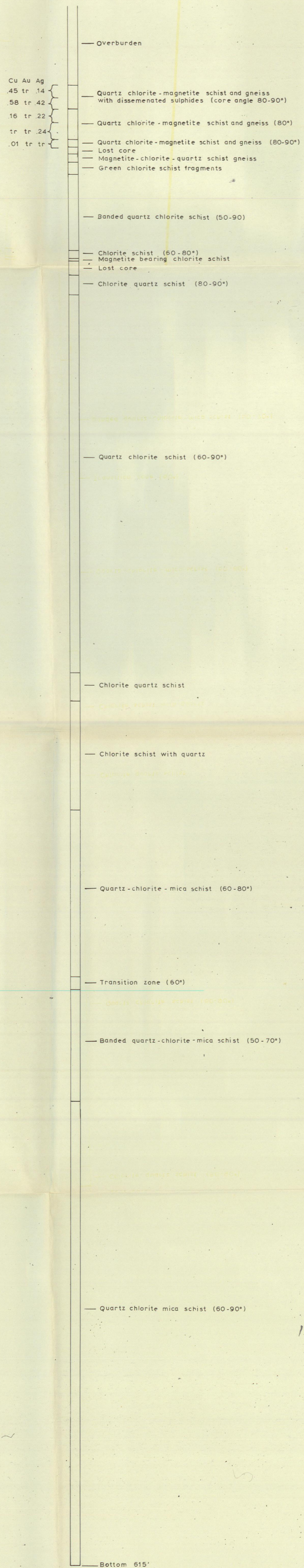
D.D.H-66-2

D.D.H-66-3

D.D.H-66-4

D.D.H-66-5

D.D.H-66-5A



ATLAS
DIAMOND

ATLAS EXPLORATIONS LTD.
ROSS RIVER, YUKON
FYRE LAKE AREA
DUB 2 MINERAL CLAIMS
DIAMOND DRILL HOLE PROFILES

Geologist: T. S. Brown
Date: Nov., 1966
Drawn by: *U.S. Brown*

