

INTERIM REPORT
on the
Diamond Drilling Program
on
Rex Mineral Claim Group
Whitehorse Mining District
Yukon Territory

Respectfully Submitted:



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January 14, 1969

Carroll Oilfield Enterprises Ltd

TABLE OF CONTENTS

Certificate	Front of Report
Letter of Permission	Front of Report
Introduction	1
Summary of Drill Hole Results	2
Conclusions and Recommendations	4
Core Descriptions	6
Figure I	Map Envelope Back of Report
Figure II	Map Envelope Back of Report

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INTRODUCTION

Following a report on the subject properties by Eagle Geophysics of Vancouver, B. C. and the recommendations included in the report, a diamond drilling program was initiated to investigate at depth a fairly extensive area around and underlying Polar Lake. Surface showings, structural relationships and limited geophysical data indicated this area to be favourable to a commercial deposit of copper sulfides.

Very generally these features consisted of (1) Outcropping diorite-carbonate contacts (2) An outcropping shear on the south side of the lake along a contact, strongly leached by hydro-thermal solutions. (3) Fairly steep (50° to 55°) northwest dips on the Lewes River limestones, (Upper Triassic), on the west side of the lake. This latter feature indicates that the limestones, originally overlying the Cretaceous intrusives, were removed by erosion along the less competent sheared and mineralized zone in which Polar Lake now lies. Strong skarn development and included limestone fragments in the altered diorite on the east side of the lake lend some support to this assumption. (4) Spotty but fairly good sulfide mineralization with malachite and azurite occurrences associated with the limestone intrusive contact, the shear zone and the altered and skarny diorite on the east side of the lake. A high grade but small "pocket" of molybdenite was also found near the intrusive-limestone contact on the west side of the lake. (5) A magnetometer high on the north-east shore of the lake and another near the center of the southeast sector of the lake. Magnetite and copper sulfides are often found in close association in this general area.

Four diamond drill holes with a total of 1490' of core were drilled to investigate the outlined features and Fig. No. 1, a plan of the Polar Lake area in the northwest quarter of Rex # 19 claim, (Claim N. Y 11688, Mineral Claim Sheet 105-D-11), locates these holes, their bearing and dip, and is a rough plot of the above features. Fig. 2 is a generalized sketched cross-section of the Polar Lake area showing my interpretation of surface and sub-surface data so far obtained.

During the drilling of the exploratory holes numerous small boulders in loosely consolidated overburden, varying from 42' to 183' in thickness (southeast corner of the lake, Hole #4, to the northwest corner of the lake, Hole #1) plus shear zones in the bedrock, filled with completely decomposed diorite, under pressure, caused a great deal of trouble and necessitated the relocation and final abandonment of the first three holes before the desired depth (at least 700') was reached. It is now felt that these difficulties can be successfully handled and with the use of good drilling practice plus the experience gained in the first three holes, no further problems should be encountered.

SUMMARY OF DRILL HOLE RESULTS

Hole No. 1, after penetrating 183' of overburden and 39' of limestone, intersected a 3' section of skarn mineralization with associated copper sulfides which assayed .55% copper. A shear with "sand" under pressure prevented further coring in this hole. The core descriptions for Hole # 1 were included in Peter Walcott's report submitted in Oct. 1968.

Hole No. 2, was stopped in a "sand" seam at 315' after penetrating several sections with interesting but non-commercial sulfide and skarn development and 30' of rock, called, in the core descriptions, "Quartz monzomite" but which may be a strongly altered meta-sediment. This rock type is identical to that capping the Arctic Chief ore body on New Imperial Mines property.

Holes No. 3 and 3A, encountered several interesting sections of non-commercial sulfide mineralizations and a total of 10' of chalcopyrite, malachite

and minor chalcocite mineralization assaying between .77 and 1.15% copper. It is very possible that these holes penetrated an edge or upper margin of an extensive area of sulfide mineralization of commercial grade, as the type of mineralization encountered is identical to much of the ore contained in New Imperial Mines reserves. Both of these holes were stopped in "sand" seams.

Hole No. 4, was located to intersect the magnetically anomalous area under the south east shore of the lake. Good skarn development with sparse sulfides were intersected in the first 90' of the hole and several thin "sand" seams were encountered. Unless a thick section of totally unpromising "bull" diorite is intersected, it is proposed to take this hole to a depth of at least 700' to fully investigate the anomaly.

Conclusions and Recommendations

Surface and subsurface data indicate the presence of a shear zone approximately 500' wide striking N40°W, of undetermined length, trending through the Rex Claims group. Polar Lake in the northwest quarter of Mineral Claim Rex 19 lies along the northeast flank of this zone. Inclusions or "horses" of altered limestone, quartzite and greywacke occur within the shear zone, surrounded by younger intrusive rock. Sub to commercial grade copper mineralization has been encountered in the drill holes intersecting this complex.

The main limestone-intrusive contact outcrops and subcrops just west of the west shore of Polar Lake dipping to the northwest, and there is evidence to indicate that originally, (immediate post-intrusive), it was superimposed on the Lake Area.

Copper mineralization within the Whitehorse Copper belt has resulted from interaction between ascending mineralizing solutions associated with the Cretaceous intrusive and Lewes River (Triassic) sediments. Copper ore bodies have been found in altered diorite up to 500' distant from the limestone contact, with areas of strong shearing being a favoured environment for copper mineralization in this area.

On completion of D. D. H. #4 and correlation of the core data it is respectfully recommended that a further hole be drilled, using the lake ice as a platform, near the intersection of Eagle Geophysics survey lines 3+00S and 23+00W, bearing N100°W, Dip 60°, to a depth of at least 700' to investigate the limestone-intrusive contact below an area of fairly good surface copper shows. Further drill locations will depend on the results of this hole, but, as the initial three drill holes did not reach their proposed depths, I strongly recommend that the original targets be penetrated by further drilling.

In addition, an exploratory hole is recommended to be drilled from a location just south of the easterly most adit, about 500' South and east of the lake, with a bearing N110°W and a dip of -60°, to depth of 700', to investigate the possibility of copper mineralization along the contact in this area. Copper sulfides were noted by Mr. L. Siega on the face of one of the adits during his examination of the property.

CORE DESCRIPTIONS

REX CLAIM GROUP

Polar Lake Area

Whitehorse Mining District Yukon Territory

D. D. H. #2 (Polar Lake)	Dip: -71°
Depth: 0-315'	Brg: 035°T
Rec. 88%	Location: 5+80S, 23+57W
0-71' Overburden	(Eagle geophysics Survey)

- 71'-113' Quartz monzonite, dark grey to greenish-grey, fine to medium crystalline. Very sparsely scattered fine crystalline inclusions of magnetite and chalcopyrite throughout. Numerous oblique fractures filled with brown and cream-white calcite and a few partially open fractures lined with calcite and limonite.
- 113-175 Quartz monzonite, greenish-grey, fine crystalline, slightly calcareous. Sparsely scattered chalcopyrite and pyrite grains. Numerous vertical and oblique fractures partially filled with calcite and few small pyrite crystals. Sparse epidote and chlorite.
- 175-230 Quartz-hornblende diorite, dark greenish grey to dark grey, fine to medium crystalline, slightly calcareous. Sparse fine crystalline chalcopyrite and pyrite throughout. Filled and partially filled fractures as above. Sparse epidote.
- 230-276 Quartz-monzonite, dark greenish-grey, medium crystalline. Very sparse chalcopyrite.
- 276-280 Quartz-hornblende diorite, dark greenish-grey, medium crystalline. Very sparse chalcopyrite. Fairly abundant biotite.

285-315 Quartz monzonite, dark grey to greenish-grey, fine crystalline. Sparse chalcopyrite grains throughout. Few thin stringers of quartz-hornblende diorite cut core at oblique angles. Interval becomes more coarse crystalline and friable towards base of core. N.B. Hole was stopped in a "sand seam" which appears to consist of strongly altered, decomposed, soft diorite along a shear.

D. D. H. #3 (Polar Lake)

Recovery: 85%

Depth: 417'

Location: 206' in a N43°E direction from Eagle geophysics survey post 5+00S, 23+00W.

Dip: -90°

0-87 Overburden

- 87-96' Quartzite, creamy-white, fine to cryptocrystalline with intercalated thin lenses (sills?) of quartz-hornblende diorite. N. B. May still be in boulders overlying bedrock through this interval.
- 96'-269' Quartz-hornblende diorite, mottled black, grey and greenish-grey, fine to medium crystalline. Scattered small crystal inclusions of magnetite and specular hematite and very sparsely scattered small pyrite and chalcopyrite crystals. Few inclusions and blebs of epidote. Interval is slightly calcareous, friable in part, becoming more compact at 149'. Numerous oblique, open and partially open calcite and limonite lined fractures throughout. Strongly shattered and partially decomposed over the following intervals: 185'-190', 194'-203', 217'-22', 222'-274'. The diorite becomes lighter in colour and is very soft friable from 249' to 252'.
- 269'-315' Quartz monzonite, greenish-grey, fine crystalline, slightly calcareous. Sparse small blebs and patches of epidote and chlorite. Sparsely disseminated grains of chalcopyrite and bornite in top 2'. Few thin stringers of diorite throughout.
- 315'-361'5" Quartz-hornblende diorite, as in 96' to 269' interval. Numerous very thin fractures or shear planes, most at an angle of 45° to 50° to the core axis, partially open with a skim of epidote, kaolin, chlorite and limonite on fracture surfaces. From 334' to

340', in an interval of very strong oblique and vertical fracturing, the diorite is strongly altered, soft, and kaolinitic. Diorite becomes more "skarny" with increasing amounts of epidote and chlorite in basal 3'.

361'5"-367'2" Quartz monzonite, dark grey and brown mottled, fine crystalline, strongly altered and containing fairly abundant skarn minerals, malachite, limonite with sparse bornite and chalcocite. Scattered talc patches. Sparse muscovite and calcite stringers.

Sample No. F951-Assayed-

367'2"-392'7" Quartz-hornblende diorite, dark grey, medium crystalline. Slightly calcareous and as above in 196' - 269' interval very sparse small chalcopyrite grains throughout.

392'7"-398' Limestone, grey, medium crystalline, siliceous, dolomitic. Strong patchy talc development, scattered skarn mineralization (mainly chlorite and epidote). Fair to good patchy chalcopyrite mineralization.

-Sample Assayed-

398' "-417' Quartz-hornblende diorite, grey, medium crystalline. Calcareous. Very sparse chalcopyrite grains and skarn minerals. Interval becomes very soft and shattered at 402'. Poor recovery from this depth to 417'. Encountered "sand seam" (probably a shear zone containing decomposed diorite) at 417'. High pressure in shear zone forced "sand" up the drill rods. Could not case through this zone and therefore lost the hole.

D. D. H. #3A (Polar Lake)

Dip: -90° (Measured by HF1 etch test at 300' and at 590' (T. D.)

Survey: within $1/2^{\circ}$ of vertical on both measurements.

This hole was collared at 160' in Hole #3 when trying to run back in with rods and core barrel. Bit took off into wall of Hole #3 which must have been a few degrees off vertical.

160'-269' 10" Quartz-hornblende-diorite, dark grey, black and white mottled, medium crystalline. Sparsely scattered small magnetite grains throughout. Trace andradite garnet. Numerous oblique (45° - 55°) open to partially open fractures with some skarn development (epidote, chlorite, actinolite) on fracture faces. Slightly calcareous. Sparsely scattered small crystals and fine crystal disseminations of pyrite and rare chalcopyrite throughout. Interval becomes darker and greenish from 268'. Chalcopyrite and pyrite disseminations slightly more abundant from 258'. Interval soft, shattered and altered through the following sections.
174'-176', 222'-224', 250' -257'.

269'10"-315'4" Quartz monzonite, dark greyish-green, fine crystalline. Numerous random thin laths of hornblende giving the appearance of a "graphic granite" in places. Very calcareous with numerous "limy" inclusions and small blebs and patches of epidote. Abundant irregular short vertical and oblique calcite filled fractures.

315'4"-366' Quartz-hornblende diorite, dark grey, black and white mottled, medium crystalline. Few inclusions of overlying monzonite facies in top 2'.

Very similar to 160' - 269'10" interval except for a lack of biotite (prevalent in 160' - 269'10" interval) and an increase in chlorite. All sulfides are very sparse. Slight increase in skarn mineralization (chlorite and andradite garnet) at 357'. From 357' interval becomes slightly coarser crystalline and sucrosic.

366'-367'8" Diorite, dark grey and brown mottled, medium crystalline, strongly altered, soft, porous and vuggy. Fairly abundant malchite, chlorite, chalcopyrite, rare chalcocite.

367'8"-395'7" Quartz-hornblende diorite, black, grey and white mottled medium crystalline. Very similar to 315'4" - 366' interval but more abundant epidote and actinolite. Few very small crystals of bornite.

395'7"-399'7" Limestone, grey, medium crystalline, siliceous, dolomitic with intercalated altered diorite. Patchy talc development. Fair to good skarn mineralization. Good chalcopyrite mineralization with sparse bornite and chalcopyrite.

-Sample No. F913-Assayed-

399'7"-418' Quartz-hornblende diorite, black, greenish grey and white mottled, medium crystalline, Scattered small crystals and fine disseminations of pyrite and chalcopyrite throughout. Fairly strong skarn development. From 404' to 420' interval is soft, friable and kaolinitic with short 1"-2" compact unaltered sections. Abundant skarn mineralization on partially open vertical and oblique fracture planes throughout interval.

- 418'-430' Quartz-hornblende diorite, greyish white, green and black mottled, strongly altered. Very calcareous with small inclusions of siliceous, dolomitic limestone. Abundant skarn minerals, mainly chlorite, epidote and actinolite. Scattered chalcopyrite disseminations with pyrite. Soft, kaolinitic. Vertical and oblique partially open fractures throughout with slickensides on most vertical fracture planes and chalcopyrite "smeared" across a number of slickensided surfaces
- Sample No. 952 F-
- 430'-439' Quartz-hornblende diorite, similar to above interval but not as highly altered and with less skarn and sulfides. Soft shattered interval from 432' - 439'.
- 439'-440' Clay, dark greenish grey, arenaceous, soft, calcareous. Contains numerous small altered diorite fragments.
- 440'-488' Greywacke, very dark greenish-grey, fine grained, calcareous. Sparsely scattered small crystals and disseminations of chalcopyrite and pyrite. Numerous oblique and vertical fractures filled with white calcite and quartz. Few small inclusions of quartz-hornblende diorite and a one foot "sill" of diorite from 472' to 473. One 5' diorite "sill" from 473'6" to 478'6" containing few small greywacke inclusions. A 2" interval at 484' consists of quartz stringers in a very limy-argillaceous matrix. Strong chalcopyrite and pyrite mineralization over this short interval.
- 488'-490' Quartz-hornblende diorite, as in 430-439' interval.

490'-504'8"

Quartzite, light green to white, fine to medium crystalline, slightly calcareous. Sparse epidote. Good, vuggy porosity over a 4" interval at 492' with good skarn development. Very sparse pyrite. One thin diorite section at 497'. Interval becomes more dioritic at 502' grading into underlying diorite.

504'8"-523'

Quartz-hornblende diorite, light grey to white and black mottled, medium crystalline, calcareous. Very similar to 488' - 490' interval. Very sparsely scattered sulfides. One 2' interval from 514' - 516' has the appearance of a hornblende porphery or intraformational breccia.

523-590'

Quartz monzonite, dark greenish-grey, fine crystalline. Sparse epidote. Very sparsely scattered sulfide crystals. Calcareous. Numerous stringers and "sills" of quartz-hornblende diorite from 573' to 588. "Sand seam" encountered at 588'. Under high pressure as at 417' in #3 hole. Could not case through and lost hole.

D. D. H. #4 (Polar Lake)

Dip: -50°

Brg: N23°4

0-42' Overburden

Location: 79' in a N10°E direction
from D. D. H. #3

42-95' Quartz-hornblende diorite, greenish grey and black mottled, medium crystalline. Fair scarn development (epidote and chlorite). Numerous thin soft friable intervals of altered diorite. Few small inclusions of greywacke. Very sparsely scattered pyrite and chalcopyrite crystals. Numerous oblique and partially open fractures. Core recovery over this interval, was approximately 60%.

COST ESTIMATES FOR DIAMOND DRILLING PROGRAM

REX CLAIMS GROUP

The following cost estimates are based on the drilling recommendations outlined above, current equipment, labour and drilling costs and experience gained in supervising the drilling of the first four holes.

Footage required to be drilled in the second phase of the exploration program is as follows:

	DDH #4	-	Deepen to 700'	-	440'
Proposed	DDH #5	-	Estimated Depth 700'	-	700'
Proposed	DDH #6	-	Estimated Depth 700'	-	700'
Redrill	Hole #3	-	Estimated Depth 1000'	-	410'*

* Proposed to use non-coring bit to previous total depth in Hole # 3A of 590'. Cost of this operation is estimated to be \$7.00/foot.

All costs are based on 700' holes with 100' of overburden cased plus an additional 200' of BX casing and 200' of AX casing needed to case through sloughing hole and "sand seams" to reach total depth.

Casing costs are based on the following prices (personal communication with P. Clunk, Purchasing Agent, Inspiration Limited, Edmonton), landed on the drill site:

NX casing	\$6.50/foot
BX casing	5.00/foot
AX casing	3.00/foot

Costs involved in driving casing, maintaining water supply, crew maintenance and transportation, etc, are based on contractual agreements with the drilling contractor and past experience.

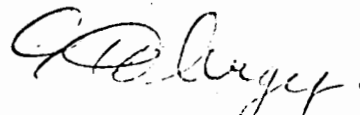
All costs, where possible, have been broken down to a footage drilled basis.

Basic coring cost (contract)	\$9.00/ft.
Casing (tangible & intangible)	4.00/ft.
Crew costs	1.10/ft.
Rig moving	.80/ft.
Mobilization and demobilization	.50/ft.
Assaying	.06/ft.
Water Supply	.30/ft.
Supervision (includes transportation)	3.95/ft.
	<hr/>
TOTAL	\$19.71/ft.

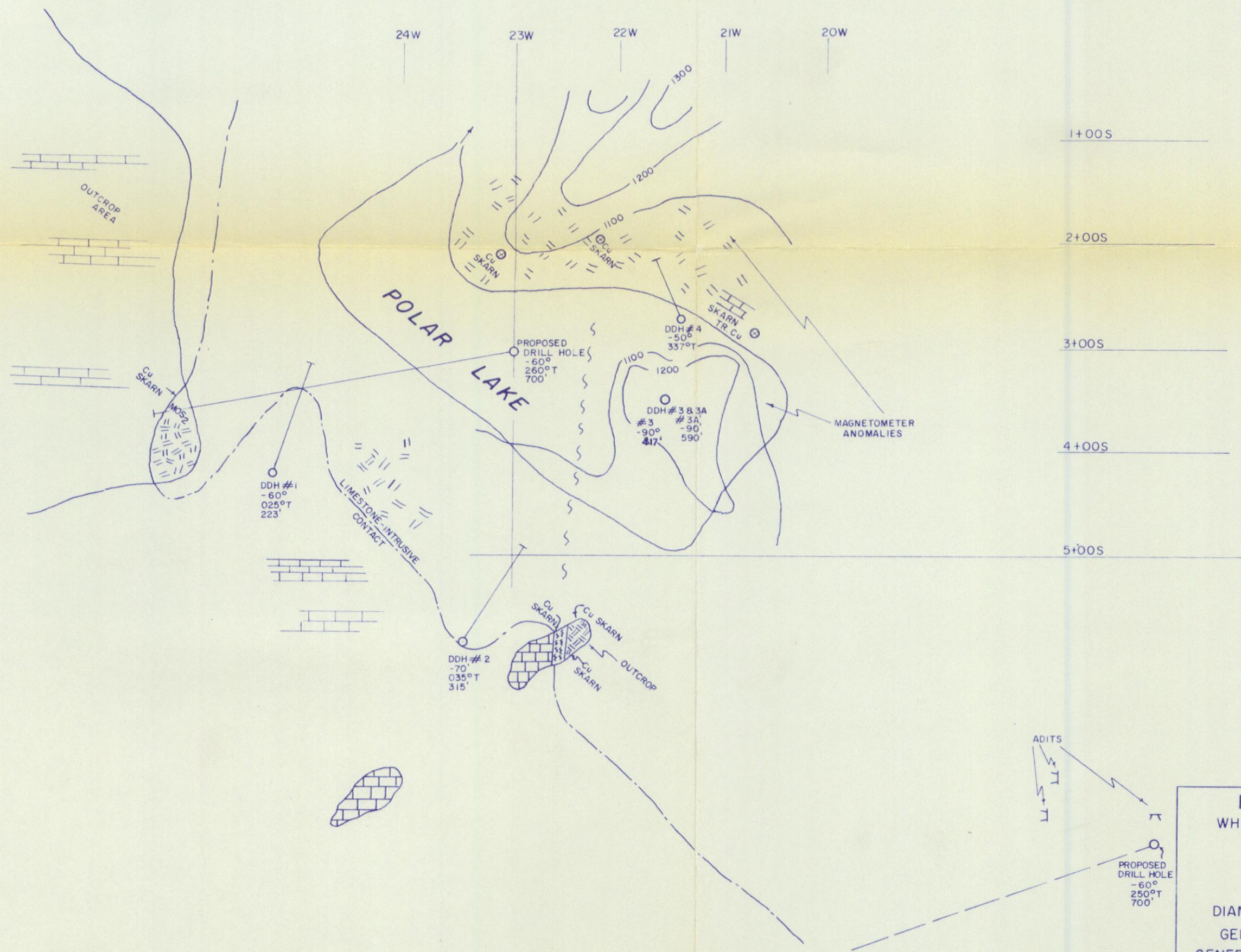
Footage to drilled: 2250' @ \$19.71/ft.	\$44,347.50
Plus 590' non-coring (DDH#7) @ \$7.00/ft.	4,130.00
Plus 600' BX casing. for DDH #7 @ 5.00/ft.	<u>3,000.00</u>
Sub-total	\$51,477.50
Plus 10% for exigencies	<u>5,100.00</u>
Total for proposed drilling program	<u><u>\$56,577.50</u></u>

Respectfully Submitted:

G.H. ARGY, P. Geol.



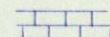

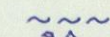
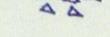
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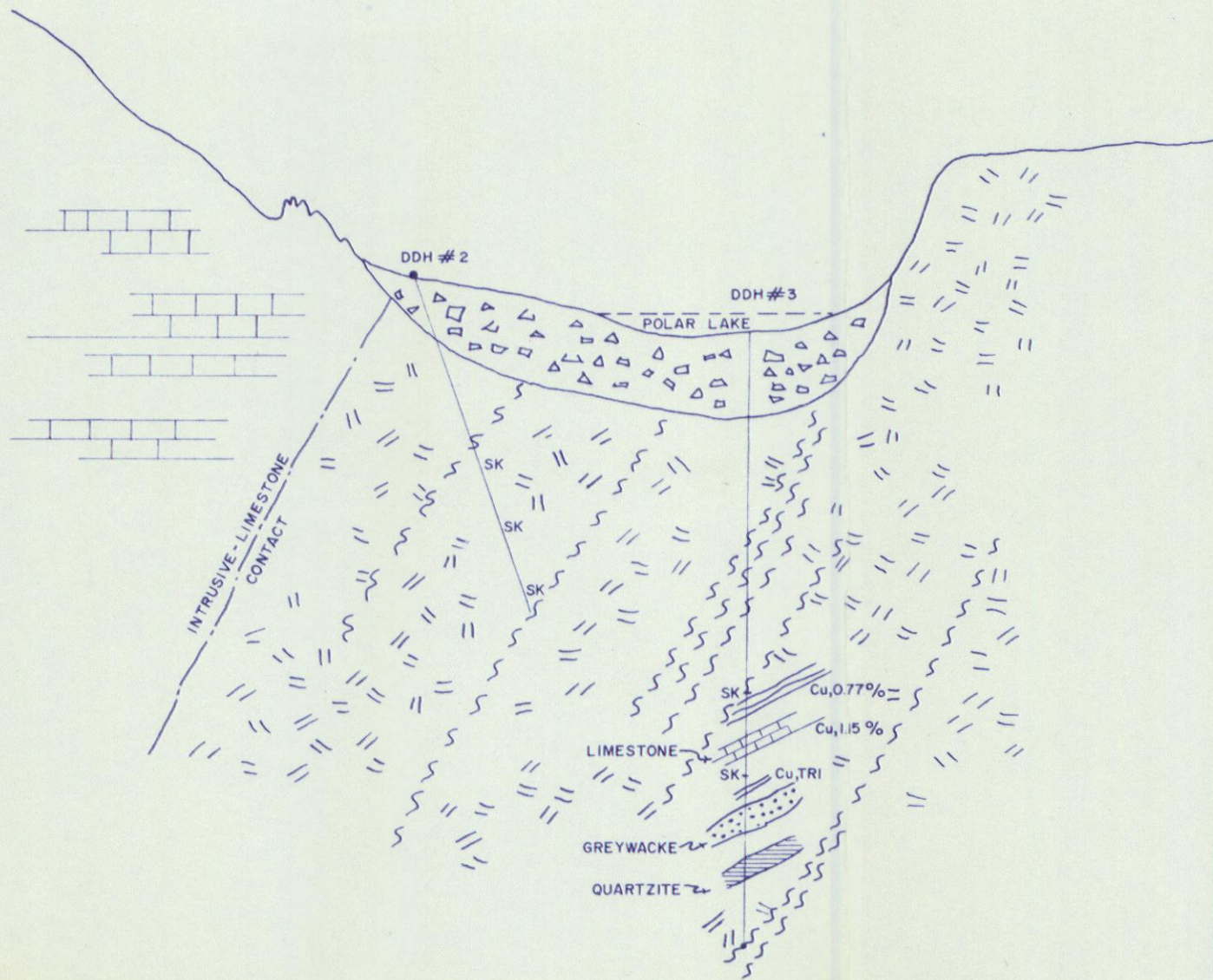


REX CLAIM GROUP
 WHITEHORSE MINING DISTRICT,
 YUKON TERR.
 POLAR LAKE AREA
FIG. 1
 DIAMOND DRILL HOLE LOCATIONS
 GENERAL GEOLOGIC SETTING
 GENERALIZED MAGNETOMETER DATA
 SCALE: 1" = 100'
 JAN. /69

FIG.2

LEGEND

	—————	LIMESTONE
	—————	DIORITE
	—————	SHEAR
	—————	OVERBURDEN
SK	—————	SKARN



REX CLAIM GROUP
POLAR LAKE AREA
DIAGRAMATIC CROSS SECTION

SCALE : \cong 1" = 150'

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APPROXIMATE LOCATION:
 SOUTH EAST END OF POLAR LAKE