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ARCHER, CATHRO & ASSOCIATES LTD.

CONSULTING GEOLOGICAL ENGINEERS

P.O. BOX 1051
WHITEHORSE, YUKON

REPORT ON

AIRBORNE GEOPHYSICAL SURVEY

GEOCHEMICAL SURVEY

AND

GEOLOGICAL SURVEY

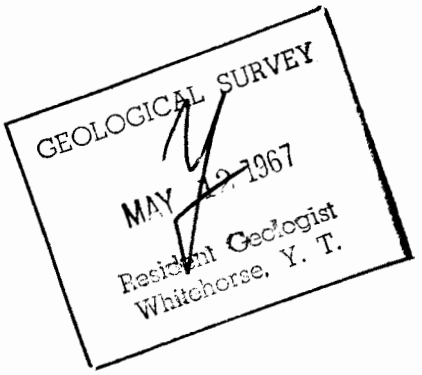
"X" CLAIM GROUP

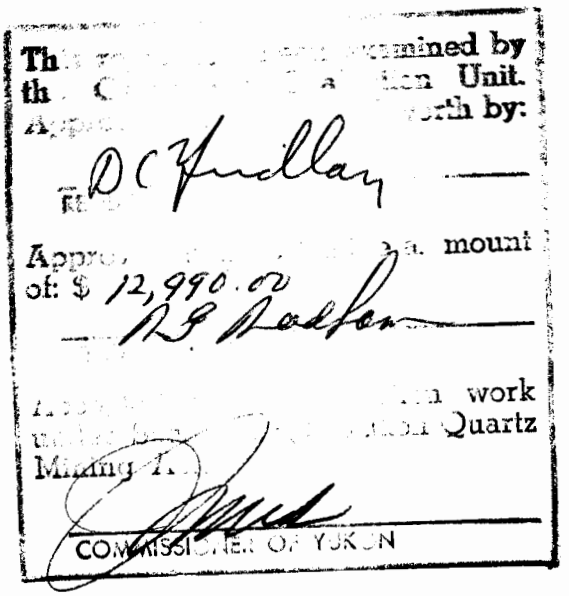
Anvil-Vangorda District

Claim Sheet 105-k-6

for

ACTION EXPLORATIONS LTD.





R.J. Cathro, P. Eng.

June 1- Aug. 31, 1966

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INTRODUCTION

During the 1966 field season, an airborne geophysical survey and conbined geochemical and geological survey was conducted on the "X" claim group of Action Explorations Ltd. under the direct supervision of the writer.

This contiguous group of 96 claims is situated on a long spur on the north flank of Mt. Mye, in claim sheet 105-k-6. It adjoins the Jaye Exploration Bin group on the east and the Jet claims of Giant Yellowknife Mines Ltd. on the west. The property is only accessible by helicopter or on foot and it lies mostly above timberline.

The exploration techniques used in this program were patterned after the successful approach developed in this district by Dynasty Explorations Ltd. and were selected to quickly pinpoint any mineralized zones present on the property.

AIRBORNE GEOPHYSICAL SURVEY

A conbined magnetometer (Mag) and electromagnetometer (EM) survey was conducted under contract by Lockwood Survey Corp. Ltd., on July 5, 1966. The equipment was mounted in a Bell 204 B turbine helicopter on charter from Okanagan Helicopters Ltd. A total of 67 line-miles was surveyed.

. . 2.

The survey equipment consisted of a continuous-reading Gulf magnetometer and EM coils with a primary current of 400 cycles per second, which were mounted in a bird which was towed beneath the aircraft by a 100 foot long cable. An air-photo mosaic of the claim group was used for navigation and a continuous strip photo record of the flight path was made. The aircraft was kept as close as possible to a mean terrain clearance of 200 feet by means of a radio altimeter and this was recorded on an APN tape. The mean terrain clearance of the bird was thus about 100 feet. The survey recording equipment and camera were mounted in the cabin of the helicopter and produced graphical tape records of the Mag, EM and elevation profiles. Flight lines were spaced at 1000 foot intervals.

A preliminary plot of the Mag and EM data was made in the field, on contract, by Explorations Geophysics (Yukon) Ltd., and interpreted by Dr. D.W. Smellie, consulting geophysicist, of that firm. The preliminary plotting and interpretation, which was based on uncorrected data, was made to detect top priority anomalies which required immediate follow-up before the end of the summer. It was anticipated that final data reduction by Lockwood would take some time and it was not received until December. The results of this survey are shown in Figures 5 and 6.

. . . 3.

GEOLOGICAL & GEOCHEMICAL SURVEY

The property encompasses a prominent ridge on the northeastern side of Mount Mye. The highest point on the ridge is a little over 6500 feet above sea level. The western side of the ridge is very steep and drops to an elevation of less than 5000 feet within the limits of the property. The slopes on the northern and eastern sides of the ridge are more gentle.

Pleistocene alpine glaciation has been intense and the creek valleys on the north, east and west sides of the ridge are thickly covered by glacial debris. Outcrop is abundant on the property except in the valleys and on the lower part of the steep slopes which are covered by talus and rock glaciers.

Details of the geological mapping are shown on Figure 7. Most of the claims are underlain by Mississippian schists (or their metamorphic equivalent), the favourable rock sequence in the district. Granodiorite is found along the southern edge of the claim group. Ths schist formation dips 30 degrees to the north and strikes eastwest and appears to form a flat lying roof pendant over the granodiorite. A fairly continuous horizon of graphite schist about 500 feet in width, was traced across the northern part of the property.

Geochemical sampling was conducted along claim base lines

. . 4.

at intervals of 400 feet. A number of cross-traverses were made at the south end of the property with a similar sample interval. A total of 290 samples were collected and analyzed.

Control for the sampling was provided by aerial photographs, tape and compass. Sample locations were marked with platic flagging. Sampling was done with a mattock grub-hoe and wherever possible the B 1 horizon was sampled. In a few cases permafrost prevented the taking of an ideal sample, free from organic matter or volcanic ash. However, since geochemical targets in this district are large and the spacing of the samples was fairly close, it is felt that nothing significant has been missed.

The samples were collected in individual small kraft bags and sent to Atlas Testing Labs, Edmonton, for analysis. Analysis consisted of hot agua regia extraction of heavy metal ions from the screened and dried sample, and metal content determination by atomic absorption. All samples were analyzed for copper, lead anc zinc. Figures 2, 3 and 4 show the plotted values for copper, lead and zinc respectively.

SUMMARY & CONCLUSIONS

An area of approximately 1 square mile on the southern part of the property was found to be highly anomalous in

lead and zinc and weakly anomalous in copper. The arithmetic average for lead values in parts per million (p.p.m.) in this area is 241 ppm. These are extremely high values and are about 10 times background in the Anvil-Vangorda district. No significant mineralization was located in the course of geological mapping. The area of high geochemical response was carefully prospected but no evidence of mineralization was found. A narrow vein containing sphalerite mineralization, located near the boundary of Jet 79 claims (owned by Giant Yellowknife Mines Ltd.), was reported by the Giant Yellowknife field crew but was not seen by the writer.

The geochemically anomalous area on the south end of the property definitely requires further investigation. As most of this area is within the Anvil batholith, there is no chance of finding a Vangorda type replacement ore body. However, the source of the anomalies could be narrow vein-type deposits of argeniferous galena and sphalerite. Exploration of ~~lead~~ lead anomalies of this magnitude in other areas of the Yukon ~~have proven~~ has successfully ~~in~~ located silver lead vein type deposits where there was otherwise no indication of mineralization, even where outcrop was abundant.

The strongest and most continuous electromagnetic conductor is almost certainly due to graphite schist. No geochemical anomlies were found associated with this conductor or the weak conductor in the northwest corner and further

exploration work is not recommended. The good quality conductors found in the northeast corner of the property merit further investigation as they lie, for the most part, downhill from the reconnaisance geochemical survey. One line of soil samp es taken just uphill from the conductors in the northeast corner showed scattered weakly anomalous values for lead and zinc.

Respectfully submitted,
ARCHER, CATHRO & ASSOC. LTD.

R.J. Cathro, P. Eng.

RJC:ps

Appendix I

AFFIDAVIT

I, Robert J. Cathro, Consulting Engineer (Geological) of Whitehorse, agent for Action Exploration Ltd., have compiled the statement of costs presented in Appendix II of this report, and do hereby make oath and say:

That to the best of my knowledge and belief, the statement of costs as presented is a true and accurate representation of expenditures, to be applied as assessment work on the "X" mineral claims.

R. J. Cathro, P. Eng.

Sworn and subscribed to at Whitehorse this 23 day of March 1967.

A Commissioner for taking Affidavits in and for the Yukon Territory.

Appendix II

STATEMENT OF COSTS

A. Airborne Geophysical Survey- 67 line-miles (LM)

1. Helicopter rental & fuel	$765.00	
2. Crew accomodation @ avg. cost/LM	155.00	
3. Prelim. plotting & interp. @ $3.00/LM plus drafting supplies	205.00	
4. Air photos, mosaic preparation	61.00	
5. Management @ $3.00/claim	288.00	
6. " expenses- travel, office	94.00	
7. Equipment rental (Lockwood)	505.00	
8. Data reduction (Lockwood)	1015.00	
Sub-total		$3,088.00

B. Geological and Geochemical Survey

1. Aircraft charter- G.N.A., Klondike, Okanagan, C.P.A.	2388.00	
2. Camp rental & supplies, expediting	1887.00	
3. Wages- 128 man-days	3126.00	
4. Geochem. analysis- 290 samples @ $1.95 plus freight	579.00	
5. Office expenses	272.00	
6. Supervision, reports	1650.00	
Sub-total		9,902.00
Total		$12,990.00

Appendix III

PERSONNEL ENGAGED IN 1966 FIELD WORK

A. Geophysical Survey

T.R. Gurr	pilot	Okanagan Helicopters, Vancouver
H. Andau	operator	Lockwood Survey Corp., Toronto,
D. Gamble	technician	Expl. Geophysics (Yukon) Ltd.
D. Smellie	geophysicist	" " " "
R. Cathro	Geol. engineer.	Archer, Cathro & Assoc. Ltd.

B. Geological and Geochemical Survey

F.M. Smith	Student geologist	Archer, Cathro, & Assoc. Ltd.
D.A. Lyman	" "	" " "
J. Litsenburger	" "	" " "
R. McGechaen	soil sampler	" " "
J. Dickson	" "	" " "
P. Turner	" "	" " "
B. Smaill	" "	" " "
J. McPherson	" "	" " "
R. VanVugt	" "	" " "
N. Pelletier	Cook	" " "
M. Hommes	draftsman	" " "
R. Cathro	consult. engineer	" " "

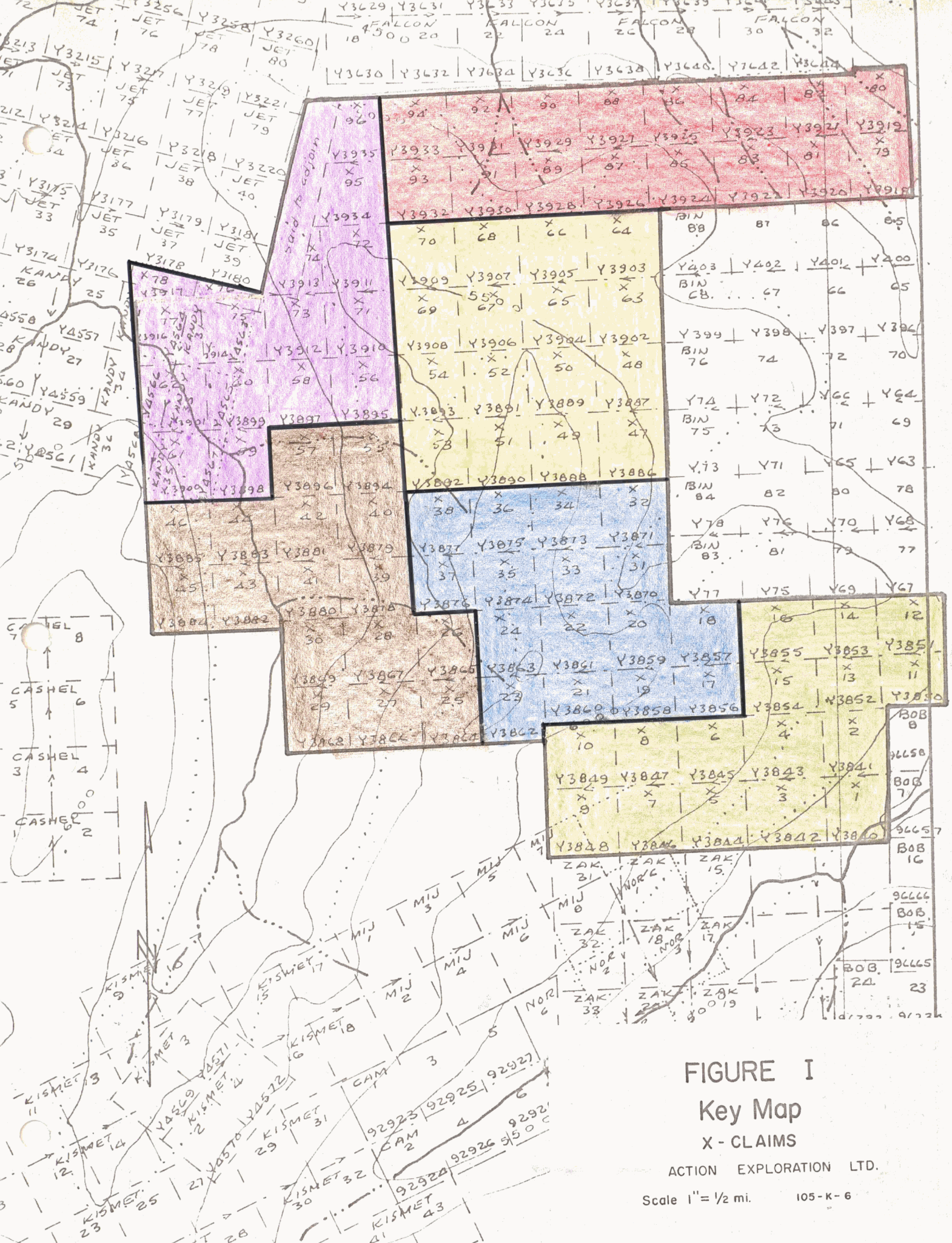


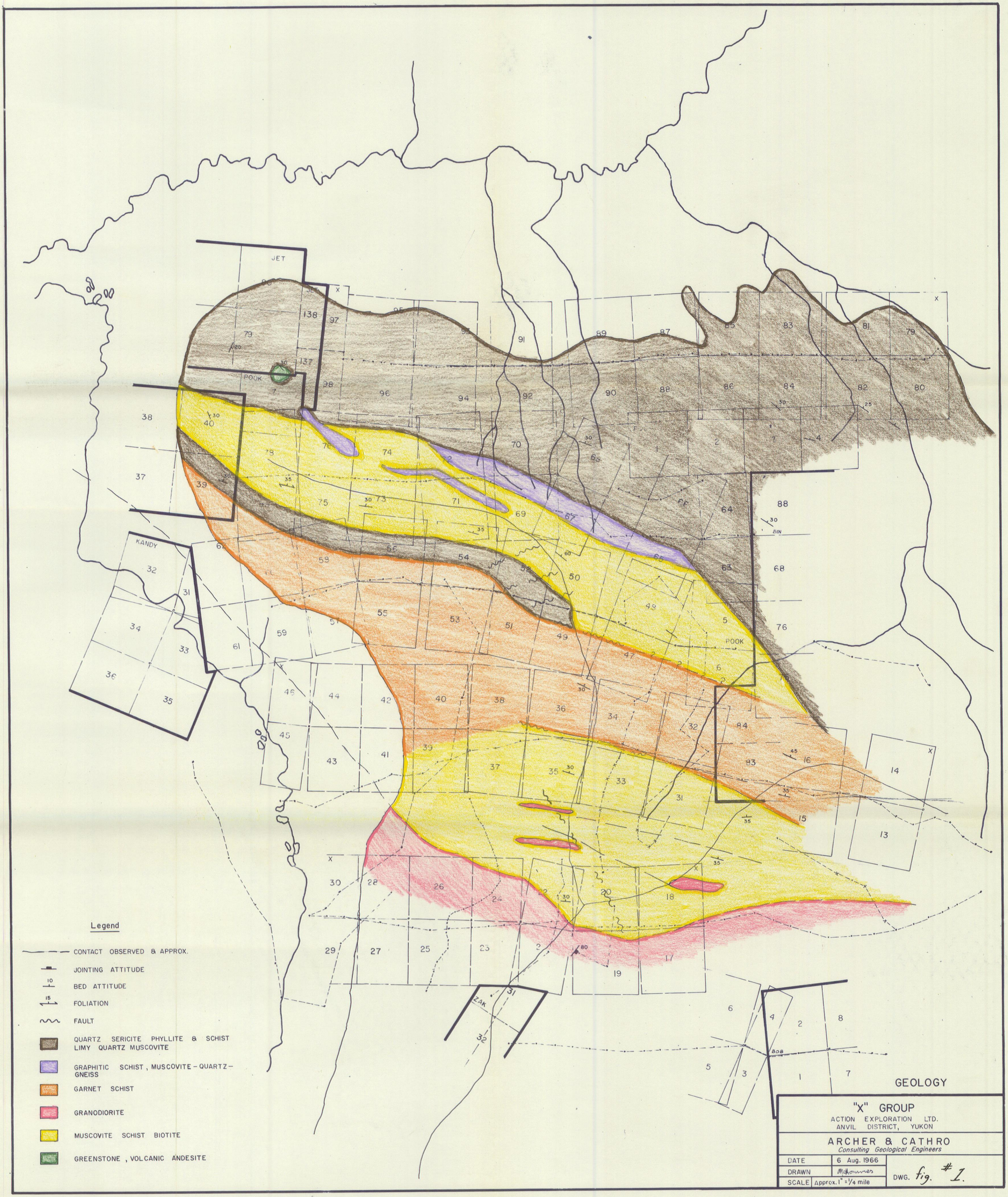
FIGURE I

Key Map

X - CLAIMS

ACTION EXPLORATION LTD.

Scale 1" = ½ mi. 105-K-6



GEOLOGY

"X" GROUP
ACTION EXPLORATION LTD.
ANVIL DISTRICT, YUKON

ARCHER & CATHRO
Consulting Geological Engineers

DATE	6 Aug. 1966
DRAWN	Mckonnes
SCALE	Approx. 1" = 1/4 mile

DWG. fig. #1.

Legend

- · — Soil
- X — Silt
- 50 – 99 PPM
- 100 – 149 PPM
- 150 + PPM

GEOCHEMICAL SAMPLING
Lead PPM hot extraction

"X" GROUP
ACTION EXPLORATION LTD.
ANVIL DISTRICT, YUKON

ARCHER & CATHRO
Consulting Geological Engineers

DATE	6 Aug. 1966
DRAWN	McKinnes
SCALE	Approx. 1" = 1/4 mile

DWG. fig #2

JET
80
79
138
137
JET
X
97
95
93
91
89
87
85
83
81
79
X
POOK
7
98
96
94
92
90
88
86
84
82
80
JET
38
40
37
39
78
76
74
72
70
68
1
2
3
4
POOK
77
75
73
71
69
67
66
64
88
BIN
KANDY
32
31
62
60
58
56
54
52
50
65
63
68
34
33
36
35
61
59
57
55
53
51
49
48
5
76
POOK
47
6
75
X
46
44
42
40
38
36
34
32
84
45
43
41
39
37
35
33
83
16
14
31
15
13
X
30
28
26
24
22
20
18
29
27
25
23
21
19
17
ZAK
31
32
6
4
2
8
5
3
1

Legend

• – Soil
X – Silt

100 – 149 PPM
150 – 299 PPM
300 + PPM

GEOCHEMICAL SAMPLING
Zinc PPM hot extraction

"X" GROUP
ACTION EXPLORATION LTD.
ANVIL DISTRICT, YUKON

ARCHER & CATHRO
Consulting Geological Engineers

DATE	6 Aug. 1966	DWG. fig #3.
DRAWN	McKinnes	
SCALE	Approx. 1" = 1/4 mile	

Legend

- • — Soil
- X — Silt
- 50 – 99 PPM
- 100 – 199 PPM
- 200 + PPM

GEOCHEMICAL SAMPLING
Copper PPM hot extraction

"X" GROUP
ACTION EXPLORATION LTD.
ANVIL DISTRICT, YUKON

ARCHER & CATHRO
Consulting Geological Engineers

DATE	6 Aug. 1966
DRAWN	M.Hommes
SCALE	Approx. 1" = 1/4 mile

DWG. fig. # 4.

ACTION EXPLORATION LIMITED

AIRBORNE GEOPHYSICAL SURVEY

CONTOUR INTERVAL ..... 20 GAMMA
MEAN FLIGHT LINE SPACING ..... 1000 FEET
MEAN TERRAIN CLEARANCE ..... 200 FEET
500 GAMMA CONTOUR .....
100 GAMMA CONTOUR .....
20 GAMMA CONTOUR .....
MAGNETIC LOW .....
FIDUCIAL POINTS 03690
FLIGHT LINES .....

X GROUP

YUKON TERRITORY

SCALE

1000 FEET 0 1000 2000 3000 4000 5000 FEET

1 Inch to 1320 Feet
(Approx.)

AEROMAGNETIC MAP

#5

Flown and Compiled by
LOCKWOOD SURVEY CORPORATION LIMITED
TORONTO, CANADA
1966