ARCHER, CATHRO
& ASSOCIATES (1981) LIMITED
CONSULTING GEOLOGICAL ENGINEERS

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GEOLOGICAL AND GEOCHEMICAL REPORT

on the

STODDART PROPERTY

(EYM 1F, 2-16, 17F-18F, 19-81 and ACK 1-39 Claims)

located at

Latitude 62°20'N; Longitude 137°10'W

on

NTS Mapsheet 115I/6

W. Douglas Eaton, B.A., B.Sc.

Work done during the periods June 11 to 17

and August 15 to 30, 1985

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This report has been examined by the Geological Evaluation Unit under Section 53 (4) Yukon Quartz Mining Act and is allowed as representation work in the amount of $ 3,000.

20 JUNE 1986

Regional Manager, Exploration and Geological Services for Commissioner of Yukon Territory.

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INTRODUCTION

The EYM and ACK claims are located between the Big Creek properties (Revenue and Nucleus) to the west and the Mt. Freegold properties (Antoniuk, LaForma, etc.) to the east, and were staked to cover an area of favourable geology plus two previously identified soil gold anomalies. The 1985 Freegold Venture (FV) program consisted of geological mapping, grid soil sampling and minor reconnaissance chip sampling. The work on the ACK claims was done in June from the FV claim staking camp at the Revenue airstrip while the EYM exploration was done in August from a road-accessible tent camp on the property. All work was supervised by the author. Appendix I contains the author's Statement of Qualifications while Appendix II lists personnel who worked on the claims.

PROPERTY, LOCATION AND ACCESS

The Stoddart property consists of 81 EYM and 39 ACK mineral claims which form an irregular contiguous block as shown on Figure F1 on the following page. The claims are registered in the name of Archer, Cathro & Associates (1981) Limited with the Whitehorse Mining Recorder as follows.

Claim Name	Grant Number	Expiry Date
ACK 1-39	YA91836-YA91874	June 19, 1986
EYM 1F	YA86872	June 19, 1986
EYM 2-16	YA86873-YA86887	June 19, 1986
EYM 17F-18F	YA86888-YA86889	June 19, 1986
EYM 19-46	YA86890-YA86917	June 19, 1986
EYM 47-81	YA91801-YA91835	June 19, 1985

The western half of the ACK claims fall within the Nat Joint Venture (Nat) area of interest. Four claims held by an individual from Whitehorse are situated near the centre of the Stoddart property and have precedence over the FV claims.

The property is located at latitude 62 20'N and longitude 137 10'W on NTS map sheet 115I/6, some 54 km northwest of Carmacks. Access in 1985 was by truck using the Freegold Road and a network of four-wheel drive trails on the property, as shown on Figure F2 in the pocket.

BIG CREEK

NUCLEUS

HAPPY

NAT(JV)
area of influence

REVENUE, OPTIONED
TO NORDAC

EMY

KEN

EMY

STODDART
CREEK

ACK

ACK

NAT(JV)
area of influence

ELEPHANT

EMY

SEYMOUR
CREEK

RAG

BOW CREEK

CABAGE

VINDICATOR

EXCELSIOR

GREENSTONE

62°18'

137° 13'

N

SCALE – 1 Inch = 1/2 Mile (1:31,680)

500 0 500 1000 1500 2000 2500 3000 Metres

1/2 0 1/2 1 1 1/2 2 Miles

FIGURE F1

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

CLAIM MAP

STODDART CREEK PROPERTY

FREEGOLD VENTURE

091823

PREVIOUS WORK

Exploration has been done in this area since the early 1900's when placer gold was discovered in Seymour Creek. Hardrock exploration has been conducted by many individuals and companies since 1930 when F. Guder discovered gold in veins on Mt. Freegold, 1 km southeast of the Stoddart property. Mineral occurrences on adjacent properties east of Seymour Creek include numerous gold-bearing quartz veins (the most significant of which is the LaForma Vein which was briefly mined in 1939-40 and 1965-66); silver-lead veins; a gold-bearing stockwork on the Antoniuk property which Permian Resources Ltd. and Nordac Mining Corporation optioned and explored in 1985; and, a small low grade porphyry copper deposit with associated gold values which Yukon Revenue acquired in 1985. The major occurrences on the west side of Seymour Creek are gold zones on the Revenue and Nucleus properties. A silver-lead vein is rumoured to occur on the four Ken claims which are surrounded by EYM claims.

The southwestern portion of the EYM claims covers ground previously staked as the Seymour claims by Arctic Red Resources in 1981. Soil geochemistry conducted that year outlined a series of linear gold anomalies, called the Northwest Zone.

The northeastern part of the EYM claim block was previously staked by Montana Minerals as the Son claims in 1970 and by the Carmacks Syndicate (Castlemaine, Welcome North, W.M. Bath and Ventures West Capital) in 1974.

Both groups explored for porphyry copper deposits using grid soil geochemistry and magnetic surveys. Their work outlined the Castle Zone which consists of weak copper mineralization associated with argillically altered intrusive rocks.

Archer, Cathro managed the Dawson Range and Klotassin Joint Ventures which conducted reconnaissance exploration in the area during the early to mid-1970's. Dawson Range JV stream sediment samples returned strongly anomalous arsenic values (exceeding 500 ppm) and scattered high gold values (up to 170 ppb) from tributaries on the east side of Seymour Creek. Several Klotassin JV soil sample splits were analyzed for gold by FV prior to the field season. Most returned background values but three samples from the Castle Zone returned moderate to strongly anomalous values up to 110 ppb.

The ACK claims on the west side of Seymour Creek were staked in June, 1985 when claims held by Shakwak Exploration Company Limited lapsed. There is no reported mineralization on the claims but they occupy strategically located ground between the EYM claims and the Revenue property.

PHYSIOGRAPHY AND GEOMORPHOLOGY

The property straddles Seymour Creek and is bounded on the east by Stoddart Creek. It covers gentle north- and west-facing slopes on a ridge extending west from Mt. Freegold and south-, east- and north-facing slopes on a ridge separating the Seymour Creek and Big Creek drainages. Local elevations range from 640 m in the Seymour Creek Valley to 1220 m on the crest of the western ridge.

Although the area escaped Pleistocene continental glaciation, a glaciofluvial outwash terrace blankets the northern half of the low ridge separating Seymour and Stoddart Creeks. Soils elsewhere on the property are locally derived except for the volcanic ash layer which ranges from a few centimetres to 2 m in thickness. South- and east-facing slopes are generally steep and well drained with 0 to 3 cm of A horizon organics, 0 to 20 cm of ash, 10 to 30 cm of B horizon soil and greater than 100 cm of C horizon decomposed bedrock. North- and west-facing slopes are gentle and permanently frozen with 10 to 30 cm of A horizon organics, 0 to 20 cm of ash, 10 to 30 cm of B horizon soil and over 100 cm of C horizon decomposed bedrock.

Most of the property is below treeline and typical vegetation consists of spruce, poplar and grasses on south- and east-facing slopes with stunted black spruce and thick moss on north- and west-facing slopes.

GEOLOGY AND MINERALIZATION

Figure B2 in the pocket illustrates the geology of the entire property while Figure F2, also in the pocket, is an outcrop map of the area on the east side of Seymour Creek.

The oldest rocks are Paleozoic or older Pelly Gneiss (Psn) schist and gneiss which are scattered across the property and occur as large rafts or roof pendants in younger plutons. Two phases of plutonic rocks are present, Jurassic Big Creek Syenite (Jy) and Mid-Cretaceous Casino Granodiorite (Kgd). The syenites are coarse grained and often porphyritic containing orthoclase and hornblende phenocrysts which are up to 3 cm long and occasionally display strong alignment. Granodiorites are typically equigranular and coarse grained, and contain biotite as well as hornblende. Mid-Cretaceous, light gray to cream weathering quartz porphyry and quartz-feldspar porphyry dykes (Kqp and Kqfp) cut all of the older rocks.

Alteration and/or mineralization occurs locally in all units except the syenite.

The schists are often pyritic, commonly exhibit manganese, hematite or limonite stain and contain gray, vuggy quartz veins up to 45 cm wide which parallel foliation. A sample consisting of several pieces of limonitic schist and vein float taken from an old hand trench on the east side of Seymour Creek returned 766 ppb Au, as shown on Figure F2.

Granodiorite is usually unaltered but two areas of interest do occur within it. At the Castle Zone a 400 m in diameter area exhibits pervasive kaolinization and silicification which grades outward into propylitic alteration. Quartz veins with traces of chalcopyrite occur in a halo

surrounding the intensely altered core. The altered rocks are bounded on the east and west by north-flowing creeks which may be fault zones. The second target is a 5 m wide pyritic and limonitic shear zone exposed in an isolated outcrop on the floor of the Seymour Creek Valley near the northern edge of the property. The zone tends 080 degrees and dips 85 degrees toward the south. A chip sample taken across it assayed 103 ppb Au.

Most porphyry dykes are relatively unaltered except for one brecciated and quartz-veined outcrop on the south edge of the claim block. Several specimens of brecciated and unbrecciated porphyry from various parts of the property were analyzed for gold but all returned less than 10 ppb.

The Big Creek Fault projects onto the property from the west and appears to be offset to the north by two subparallel north-trending faults, one running down Seymour Creek and the other 1500 m to the west. If this interpretation is correct, the Big Creek Fault extends up Stoddart Creek rather than crossing Mt. Freegold. The fault traces are recessive and can only be inferred by connecting lineation and drainages.

GEOCHEMICAL SAMPLING

General

The 1985 grid soil sampling covered all claims on the east side of Seymour Creek (EYM grid) and about 50 percent of the claims on the west side (ACK grid). Sample density was generally low but was increased in areas where earlier reconnaissance sampling returned anomalous results. On the ACK grid, samples were taken at 100 m intervals on lines spaced 200 m apart using two baselines which followed the claim lines, for survey control. Most sampling on the EYM grid was done at 100 m intervals on lines spaced 200 m apart but the spacing was tightened around the Northwest and Castle Zones to 100 m intervals on lines 100 m apart. Survey control on the EYM grid was provided by two baselines oriented at 030 degrees along the claim lines and a third at 120 degrees parallel to Seymour Creek. The area covering Arctic Red's 1981 Northwest Zone grid was not resampled as the results and sample splits were available for use by FV. All baselines were marked with 1 m lath pickets every 100 m, while soil sample locations are indicated by 0.5 m lath pickets bearing aluminum tags inscribed with the sample number and grid coordinates.

A total of 725 soil samples plus 22 rock and chip samples were collected by FV and sent to Chemex Labs Ltd. in North Vancouver. The soils were screened to -35 mesh, crushed and geochemically analyzed for gold using a fire assay preparation and neutron activation analysis. The rocks were crushed, ring pulverized to -100 mesh and analyzed by the same technique as the soils. In November 1985, 707 of the FV and Arctic Red soil sample splits from the Northwest Zone and surrounding EYM grids were submitted for 30 element ICP analysis.

Results

Figure B3 in the pocket shows general gold soil geochemical response on the property while Figures F2 to 7 inclusive illustrate soil geochemical data from the EYM grid for gold, silver, arsenic, lead, zinc and copper, respectively. Background values are low on both the ACK and EYM grids, averaging about 5 ppb Au, 0.2 ppm Ag, 15 ppm As, 15 ppm Pb, 50 ppm Zn and 20 ppm Cu. Anomalous values generally coincide and are clustered in three general areas, two of which were covered by the ICP analyses. Table 1 below lists maximum values obtained from each area for the various metals.

Anomaly	Au ppb	Ag ppm	As ppm	Pb ppm	Zn ppm	Cu ppm
Northwest	844	11.0	2550	282	510	165
Castle	214	2.0	260	180	440	142
ACK	74	NA	NA	NA	NA	NA

The largest and most intense anomaly is the Northwest Zone on the east side of Seymour Creek. This target consists of six west-northwest trending linear zones that are aligned subparallel to foliation in the schists and a feldspar porphyry dyke which intrudes the schists. The linear zones were defined by Arctic Red and FV sampling and occur in an area 1500 m across and up to 2000 m long. Direct comparison of Arctic Red and FV results is difficult as Arctic Red samples were screened to -80 mesh rather than -35 mesh and therefore should have produced slightly higher values on average. Although this generally appears to be true, the highest single soil value (844 ppb Au) was returned by a 1985 FV sample. The highest rock assay (760 ppb Au) came from a collection of limonitic schist and quartz vein chips taken from float in an old hand trench within this anomaly. The Northwest Zone truncates along the approximate contact between the Pelly Gneiss schist and granodiorite

to the north, but this relationship may be coincidental as this line also marks the transition from predominantly locally derived soils to the glaciofluvial terrace. Old stream sediment samples from creeks draining the terrace were anomalous in arsenic but not gold, while those to the south in the Northwest Zone were anomalous for both metals.

The second anomaly is a 700 by 600 m subcircular target that coincides with the silicified and argillically altered Castle Zone. The anomalous values in this target are more erratically distributed than those in the Northwest Zone.

The third anomaly, for which no ICP results are available, lies on the west side of Seymour Creek. It consists of weak to moderately anomalous gold values up to 74 ppb which appear to form linear zones. However, the sample density is too low to reliably determine the extent and orientation of the zones and little is known about the underlying geology. Sampling by Nordac Mining Corporation on the adjacent Revenue property has outlined gold anomalies which trend off that property onto the ACK claims.

DISCUSSION AND CONCLUSIONS

Exploration by FV and others on the Stoddart property has outlined two excellent multi-element geochemical anomalies on the east side of Seymour Creek and a third weaker anomaly on the largely untested west side of the creek. In addition, anomalous arsenic values were obtained from stream sediments taken from creeks draining a glaciofluvial terrace in the northern part of the property, suggesting that mineralization causing the largest, most intense anomaly (the Northwest Zone) may extend under the glaciofluvial cover.

Bedrock exposure on the property is poor, however available information indicates that a variety of favourable geological features are present, including a silicified and argillically altered zone (Castle Zone), quartz veins associated with limonitic schists cut by a porphyry dyke (Northwest Zone) and a broad limonitic shear zone which returned anomalous gold values. The geological setting is complicated by major recessive weathering faults including the Big Creek Fault and two north-trending faults that appear to offset it. These structures should have provided good ground preparation for mineralizing fluids.

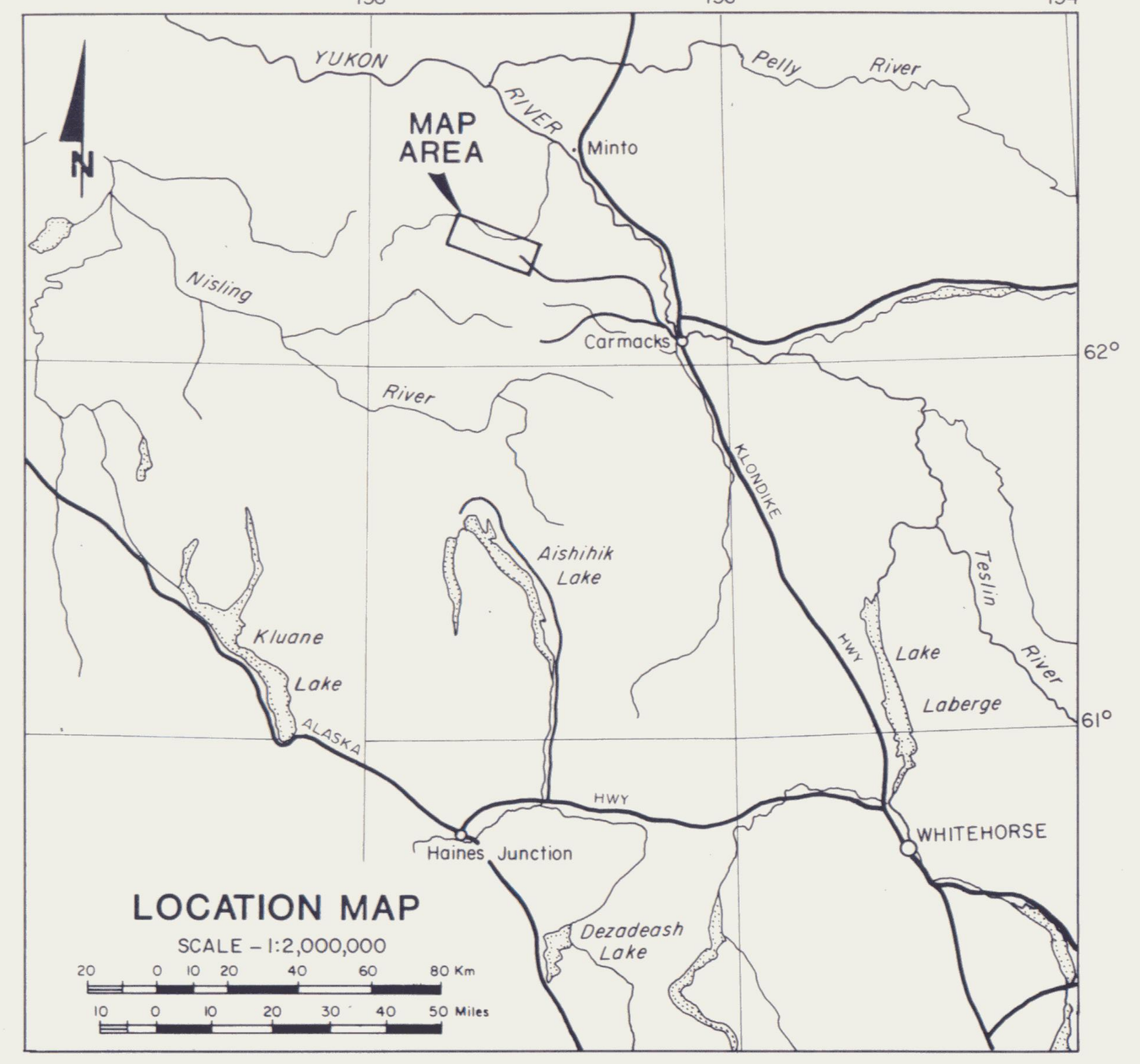
Other factors favouring further exploration of the Stoddart property are its road-accessibility and close proximity to other gold deposits that have been, or are currently being, explored by other groups, including Antoniuk (Permian/Nordac option from Rayrock), Revenue (Nordac option from Yukon Revenue) and Nucleus (Nat).

Respectfully submitted,

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

W.D. Eaton, B.A.,B.Sc.

/mc



LEGEND

RECENT

Qfl	Glaciofluvial outwash

CRETACEOUS

uKct	Interbedded quartzite, sandy tuff and conglomerate
Kmn	Andesite
Kqfp	Quartz feldspar porphyry, grades to quartz porphyry (Kqp), feldspar porphyry (Kfp) and feldspar-biotite-hornblende porphyry (Kfbhp)
Kmg	Microgranite
Kgd	Casino Granodiorite
Kg	Coffee Creek Granite

JURASSIC

Jy	Big Creek Syenite

PALEOZOIC OR OLDER

IPsn	Pelly Gneiss: schist with lesser gneiss, amphibolites and quartzites
IPpn	Selwyn Gneiss: hornblende-biotite-chlorite gneiss

Approximate geological contact
Fault
Outcrop
Phyllitic and/or argillitic alteration zone
Road, trail
Air strip (W - winter use only)
Property boundary
NAT JV area of influence
⊗ Cu Mineral occurrence and metal (f - float)

Figure B2

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

GEOLOGICAL COMPILATION

BIG CREEK AREA

FREEGOLD VENTURE

SCALE – 1:20,000

500 0 200 500 1000 1500 Metres

1/2 1/4 0 1/4 1/2 1 Miles

Revised March 1986

To accompany report dated December, 1985

091823

Figure B3

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

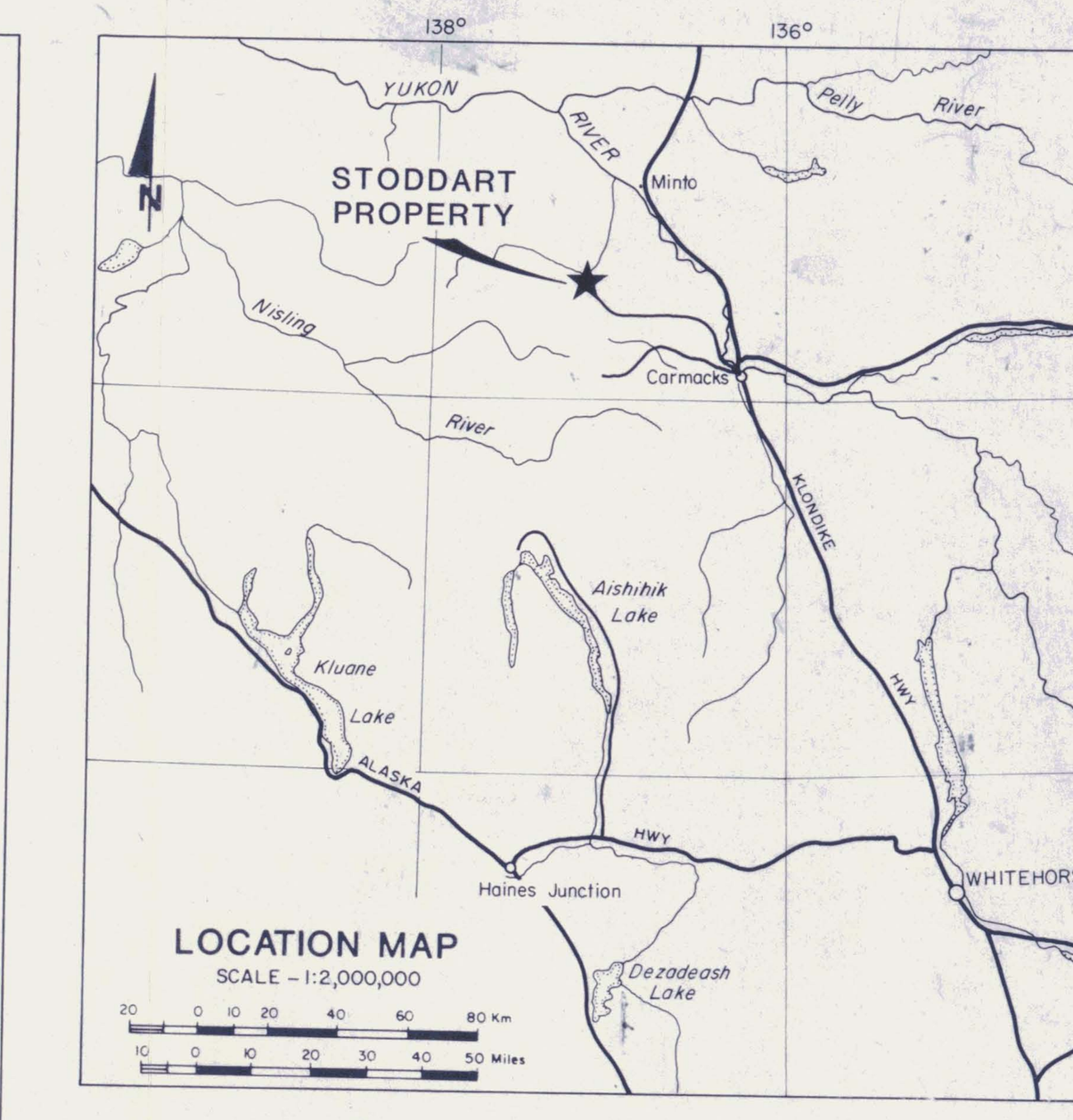
GEOCHEMICAL COMPILATION

BIG CREEK AREA

FREEGOLD VENTURE

SCALE - 1:20,000

091823



LEGEND

CRETACEOUS

Kmn	Andesite dykes
Kmnr	Quartz feldspar porphyry dykes and plugs
Kgd	Casino Granodiorite
Kg	Coffee Creek Granite

JURASSIC

Jy	Big Creek Syenite

PALEOZOIC OR OLDER

IPsn	Pelly Gneiss: Undifferentiated schists, gneisses, anphibolites, marbles and/or quartzites

SYMBOLS

Limit of outcrop

Shear with attitude

Geological contact: known, approximate

Reconnaissance chip sample location with gold value in ppb

Grab rock sample location with gold value in ppb

Soil sample location with gold value in ppb

25 Soil contour

Old hand trench

4 wheel-drive road

X 0.5, 100, 30 — 1972 DRJV Stream sediment sample location with Ag, As and Au values in ppm, ppm and ppb, respectively

Figure F2

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

GEOLOGY AND GOLD GEOCHEMISTRY

STODDART PROPERTY

FREEGOLD VENTURE

SCALE 1:5000

[illegible]

Revised March 1986

To accompany report dated December 1985

091823

137°10'

62°20'

Creek

Seymour

2500

3000

3500

3600

3700

3800

4000

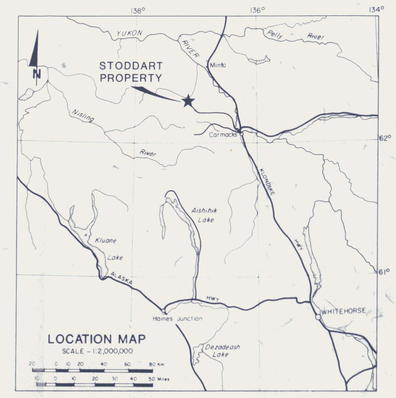


FIGURE F3

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

SILVER GEOCHEMISTRY

STODDART PROPERTY

FREEGOLD VENTURE

SCALE 1:5000

100 0 50 100 200 300 400 Metres

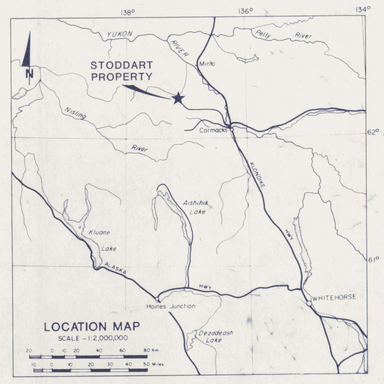
100 0 50 100 200 300 400 Yards

To accompany report dated Revised March/84 December

091823

137°10'

62°20'



Creek

Seymour

2500

3000

3500

4000

137°10'

62°20'

FIGURE F4

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

ARSENIC GEOCHEMISTRY

STODDART PROPERTY

FREEGOLD VENTURE

SCALE 1:5000

100 0 50 100 200 300 400 Metres

400 0 50 100 200 300 400 Yards

Revised March, 1982

To accompany report dated December

091823

137°10'

62°20'

Creek

Seymour

2500

3000

3500

3800

4000

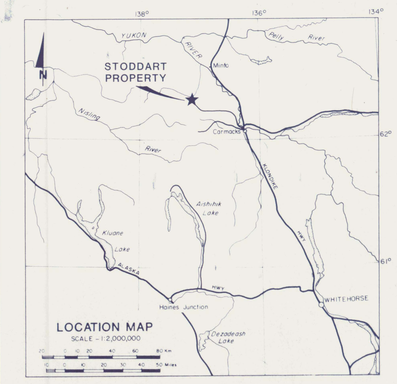


FIGURE F5

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

LEAD GEOCHEMISTRY

STODDART PROPERTY

FREEGOLD VENTURE

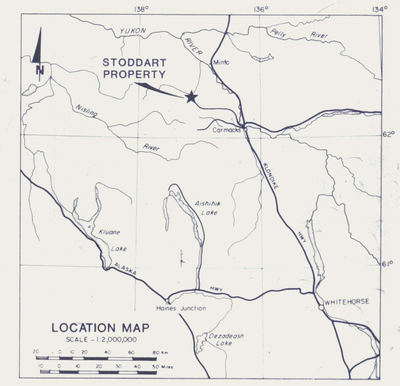
SCALE 1:5000

100 0 50 100 200 300 400 Metres

100 0 50 100 200 300 400 Yards

To accompany report dated December

091823



137°10'

62°20'

Creek

Seymour

2500

3000

3100

3200

3300

3400

3500

3600

4000

FIGURE F6

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

ZINC GEOCHEMISTRY

STODDART PROPERTY

FREEGOLD VENTURE

SCALE 1:5000

100 0 50 100 200 300 400 Metres

100 0 50 100 200 300 400 Yards

Revised March, 1984

To accompany report dated December

091823

137°10'

62°20'

Creek

Seymour

2500

3000

3500

3400

3600

3700

3800

3900

4000

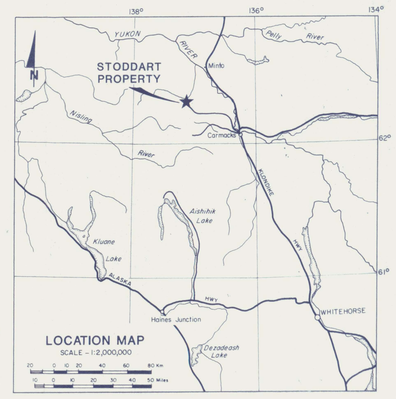


FIGURE F7

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

COPPER GEOCHEMISTRY

STODDART PROPERTY

FREEGOLD VENTURE

SCALE 1:5000

100 0 50 100 200 300 400 Metres

100 0 50 100 200 300 400 Yards

Drawn March 1984

To accompany report dated December

091823

APPENDIX I

Author's Statement of Qualifications

STATEMENT OF QUALIFICATIONS

I, W. Douglas Eaton, geologist, with business addresses in Whitehorse, Yukon Territory and Vancouver, British Columbia, and residential address in Burnaby, British Columbia, do hereby declare:

1. I graduated from the University of British Columbia in 1980 with a B.Sc.

2. From 1971 to the present, I have been actively engaged in mineral exploration in British Columbia and Yukon Territory and on June 1, 1981, became a partner in Archer, Cathro & Associates (1981) Limited.

3. I have personally participated in or supervised the field work reported herein and have interpreted all data resulting from this work.

W. Douglas Eaton, B.A., B.Sc.

APPENDIX II

List of Personnel

LIST OF PERSONNEL - STODDART PROPERTY

DATES WORKED: June 11 to July 17 and August 15 to 30, 1985

NAME	ADDRESS	POSITION
C. Greig	5620 Kings Road, Vancouver, B.C.	Geologist
W. Halleran	Box 793, Fort St. James, B.C.	Geologist
M. Walls	913 - 9th Street S., Cranbrook, B.C.	Geologist
T. Becker	78 Oberlin Avenue, Red Deer, Alberta	Student
S. Boyce	Box 414, Westport, Ontario	Student
D. Lister	2355 West 6th Avenue, Vancouver, B.C.	Student
T. Mundle	#8-2104 West 37th Avenue, Vancouver, B.C.	Student
B. Sinclair	#606 - 2020 Belwood Avenue, Burnaby, B.C.	Student
M. Stasiuk	8080 Spires Road, Richmond, B.C.	Student
B. Wengzynowski	c/o Elvin's Equipment, Whitehorse, Yukon	Student