

MAP NO.: ASSESSMENT REPORT X
105 F 15,16 PROSPECTUS
CONFIDENTIAL X
OPEN FILE

DOCUMENT NO: 093018
MINING DISTRICT: WATSON LAKE
TYPE OF WORK: GEOCHEMICAL, GEOLOGICAL
GEOPHYSICAL

REPORT FILED UNDER: ALLEN CARLOS

DATE PERFORMED: JUNE 20 - SEPT 15, 1991

DATE FILED: APRIL 21, 1992

LOCATION: LAT.: 61°53'N

AREA: LAPIE RIVER/TINTINA TRENCH

LONG.: 132°34'W

VALUE \$: 7,500

CLAIM NAME & NO.: BLACKHAWK 1-24 (YB33936-YB33959)
BLACKHAWK 25-50 (YB33970-YB33998)

WORK DONE BY: ALLEN CARLOS

WORK DONE FOR: ALLEN CARLOS

DATE TO GOOD STANDING:

REMARKS: 105F 125 NEW OCCURRENCE CLAIMS ARE UNDERLAIN BY CAMBO-ORD FINE CLASTICS AND CARBONATES ALONG THE WESTERN MARGIN OF THE TINTINA TRENCH. A PAN SAMPLE FROM SOIL RETURNED >63,000PPB. SOURCE IS NOT KNOWN. ONE OUTCROP IN THE AREA EXHIBITS SILICIFICATION. A VLF SURVEY WAS CARRIED OUT REVEALING A LARGE ANOMALY ADJACENT TO THE PAN SAMPLE. TILL COVER MAKES IT DIFFICULT TO DETERMINE THE CAUSE OF THE ANOMALY.



GEOLOGICAL, GEOPHYSICAL
and GEOCHEMICAL REPORT
ON
BLACKHAWK 1-50 MINERAL CLAIMS

Watson Lake Mining District
N.S.T. 105-F-15 & 16
Latitude 61°53.5'
Longitude 132°34'

093018

by
ALLEN CARLOS
June 20 - Sept. 15, 1991

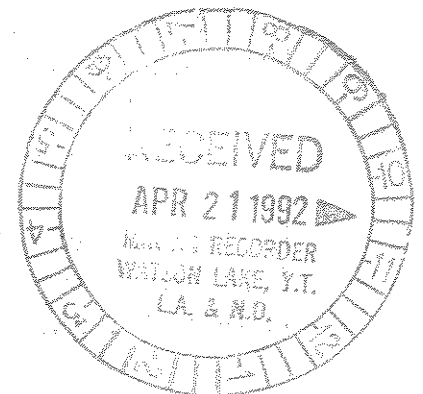


TABLE OF CONTENTS

	<u>PAGE</u>
INTRODUCTION	1
PROPERTY, ACCESS & LOCATION	1
HISTORY	2
GEOLOGICAL & STRUCTURAL SETTING	2
1991 PROGRAM	3
PROPERTY GEOLOGY, ALTERATION & MINERALIZATION	3
GEOCHEMISTRY	4
GEOPHYSICS	4
CONCLUSIONS & RECOMMENDATIONS	5

APPENDICES

- I ANALYTICAL CERTIFICATES
- II PETROGRAPHIC REPORT ON HIGH GOLD CONC.
- III REFERENCES
- IV SUMMARY OF EXPENDITURES

ILLUSTRATIONS

FIGURES

- I LOCATION IN TEXT
- II CLAIMS IN TEXT
- III COMPILATION MAP IN POCKET
- IV COMPILATION MAP IN POCKET

INTRODUCTION

The BlackHawk claims were staked in the spring of 1991 following preliminary prospecting and concentrate sampling conducted in 1990.

It was believed that this sector could possibly be an up ice source of the placer gold in the Lapie River which begins at and occurs downstream of the rivers juncture with the South Canal road. The initial traverse located what I believed to be a secondary silicification of the phyllites, together with a limonitic zone occurring proximal to a recessive, till covered area. Noting that sulphides appeared totally leached, a concentrate sample was taken of the rusty, broken up bedrock containing minor till. Analysis of conc. C-13 gave high Au (17,588 ppb) and somewhat anomalous indicator element values. Rock geo-chem for Au in the underlying limonitic phyllites was non-anomalous. A second concentrate sample taken some-time later, of which the total aliquot (15.18 grams) was assayed for Au only, gave a result of 63,430 ppb. No visible gold was observed in the pan concentrate.

PROPERTY, ACCESS AND LOCATION (Fig.1&2)

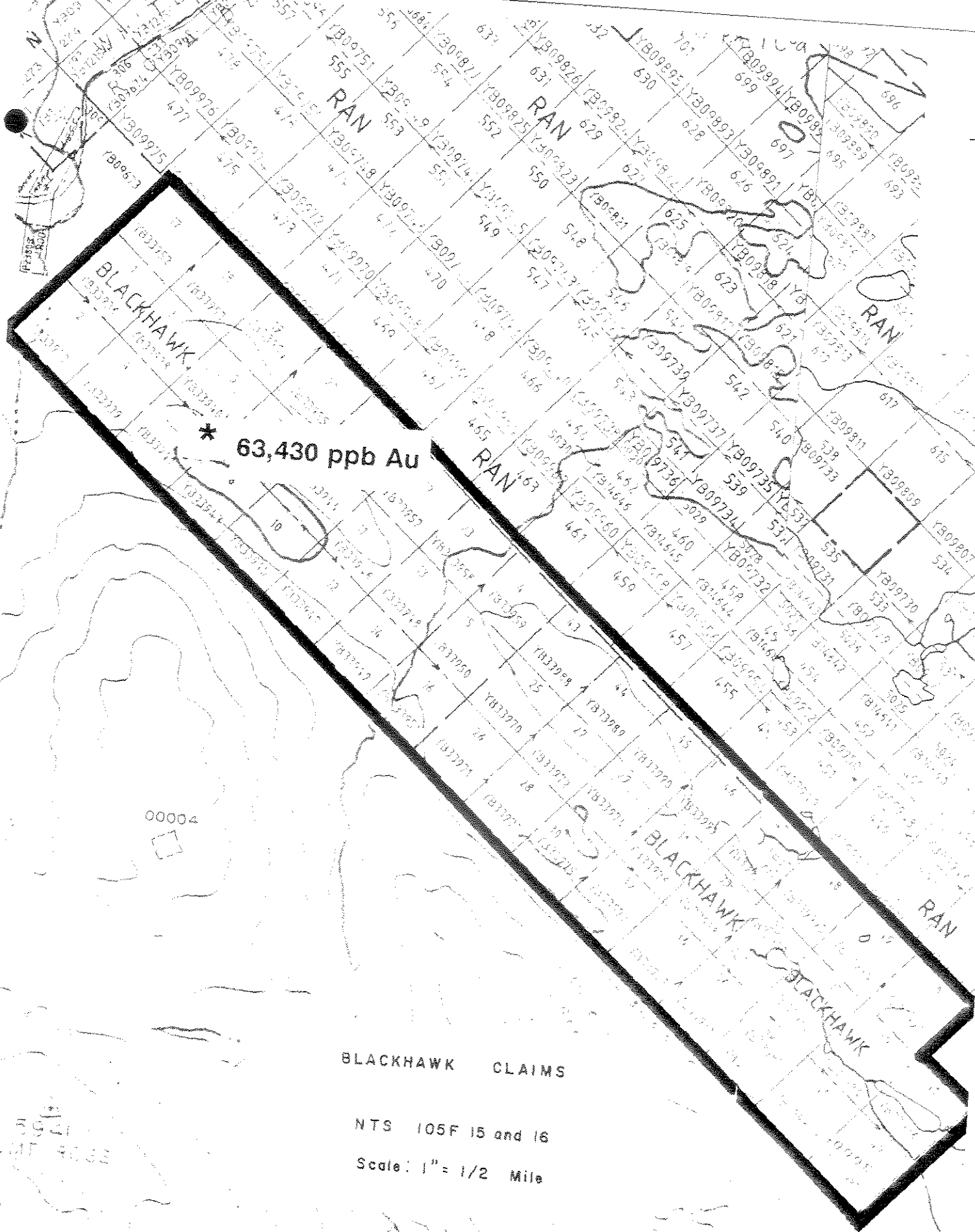
The BlackHawk property consists of 50 full sized mineral claims located in the Watson Lake Mining District as follows:

<u>Claim Name</u>	<u>Grant No.</u>	<u>Record Date</u>
BlackHawk 1-24	YB33936-YB33959	May 17, 1991
BlackHawk 25-50	YB33970-YB33995	June 18, 1991

The holder of the above claims is ALLEN CARLOS of 275 Alsek Road, Whitehorse Yukon.

The property is located along the western margin of the Tintina Trench 12 km southwest of the Ross River and 24 km southeast of the Grew Creek gold discovery (N.T.S. 105F/15 & 16). Access is by vehicle along the South Canal road from which a 2.2 km long and 3 m wide trail has been slashed to the discovery site.

The claims cover the lowlands immediately northeast of the steep Pelly Mountain front.



BLACKHAWK CLAIMS

NTS 105F 15 and 16

Scale: 1" = 1/2 Mile

Figure 2

HISTORY

The BlackHawk claims lie within an extensive claim block (Tom claims) which was explored by St. Joe Explorations Ltd. in 1978. St. Joe carried out a program of geological mapping, rock, silt, and soil sampling. Geochemical samples were run for lead, zinc and copper. This work is documented in a report by D.A.R. Hendry and D.C. Miller dated October 10, 1978.

In 1988 INTERNATIONAL RHODES RESOURCES LTD. performed work beyond their southern claim boundary into the northern portion of the now present BlackHawk claims. This work consisted of airborne geophysical surveys, remote sensing, geological mapping and rock geochemistry. This program is documented in a report by J.L. LeBel and W. Raven dated November 10, 1988.

GEOLOGICAL AND STRUCTURAL SETTING

The BlackHawk property lies along the western margin of the Tintina Trench within rocks of the Pelly Cassiar Platform. Templeman-Kluit shows the claims to be underlain by Upper Cambrian and Ordovician resistant, brown-weathering, thinly interbedded shale, calcareous siltstone and argillaceous limestone; metamorphosed to biotite phyllite, tremolite calcite quartzite and impure marble. Folding due to northeasterly directed reverse faults has rippled the units around northwest-southeast trending axial planes. The strike is roughly southeastward, dipping both northeasterly and southwesterly due to folding parallelling the strike.

Fault movement along the Tintina is believed to have begun in the late Cretaceous, with block faulting that created the trench occurring during the late Miocene to Pliocene age. In this section of the Tintina structure, it is believed that the Platform rocks are in contact with a graben structure comprising Tertiary volcanics, host to the Grew Creek deposit.

1991 PROGRAM

The general ground prospecting program (Fig.4) was initiated to better understand the geology and geochemistry of the area and to relate it to units in the immediate vicinity of the high gold concentrate sample. As well, detailed prospecting, rock geochemistry and geophysics was applied locally (Fig.3) in an attempt to determine the reason for the high gold values in concentrate sample C-13.

To facilitate access, a 2.2 km long A.T.V. trail was slashed from the South Canal road to the discovery site.

PROPERTY GEOLOGY, ALTERATION AND MINERALIZATION

Fig.3 & 4 detail the property geology and alteration. In the area of the high gold sample a series of silicified, originally calcareous phyllites are locally exposed along northwest - southeast ridge crests. Well developed foliations give a strong NW/SE (130°) strike with 60° - 85° SW dips.

At the C-13 pit zone - the calcareous phyllites are rusty weathering (leached of sulphides other than for a few remaining tiny pyrite grains), silicified, and locally host minor veinlets and limonitic filled vugs. Altered as above, a more carbonaceous section with a distinct rusty orange limonite and occasional nodular calcareous coatings trends across foliation. On close examination, minor malachite was noted along a tiny quartz veinlet within this carbonaceous section.

GEOCHEMISTRY

A total of 2 silts, 3 concentrates, and 29 rock samples were collected on the BlackHawk. Sample data are shown on Figs. 3 & 4.

Results of previous soil sampling for Zn by St. Joe are plotted on Fig. 4. Silt 23 and 24 were taken from a small creek draining an anomalous Zn soil anomaly and show elevated Zn plus detectable gold. In the general area of the high gold concentrate, sample work by INTERNATIONAL RHODES has determined anomalous Strontium and Barium. Locally, the C-13 pit zone is erratically anomalous in As, Sb, Ag, Mo, Cu, Pb, Zn, Cd, Ni, P, V, and Ba, with the highest gold at 45 ppb. R38-located 60 ft. east of the pit zone carried the highest gold rock geochem value at 233 ppb.

Due to low gold rock assay values in bedrock underlying high gold values obtained from concentrated regolith, a concern was expressed about the possibility of nugget effect in the bedrock assays. To cover this consideration a bulk leach extractable gold (BLEG) was performed on 42.3 lbs. of altered bedrock from the C-13 pit zone. Results gave a value of 5.2 ppb Au.

It was hoped the nature of the gold in the high concentrate sample could be determined. To this end a conc. sample was obtained from a similar weight of material as C-13 (approx. 125 lbs.) and sent to Vancouver Petrographics. No gold was found. To Mr. Payne's questions "was last years sample representative of the material" and "was last years assay accurate", I reply. Concentrating 125 lbs. of material is an effective method of countering a representivity problem. Much more problematic is the practice of scattering a few grains of concentrate onto a slide and hoping to find some gold. Secondly, assays were done on 2 separately obtained concentrates, each geochemically high in gold. As a consequence a 3rd similarly derived conc. sample should produce equivalent high gold assays.

GEOPHYSICS

To aid in the possible understanding of the high gold conc. value a local V.L.F. survey was undertaken. Results are plotted in the Fraser Filter method on Fig. 3. Unfortunately, the anomalous zones cannot be explained at present because of the persistent till cover. The V.L.F. anomaly immediately south of the C-13 pit zone (high Au conc.) dips steeply to the south and trends along the strong foliation observed locally. Due to slope conditions in the vicinity, its relative intensity as plotted has been diminished rather than enhanced, thereby reflecting a strong conductor.

Evidence for possible shearing in a northwesterly direction along the axis of the above conductor is found firstly in the parallel-
ing strong foliation observed locally and secondly in the C-13 pit
zone 80 ft. away where local abrupt changes in foliation direction
occur. Combined geophysical, structural, geochemical and alteration
evidence therefore point to the possibility of a mineralized shear
zone, hosting carbonaceous material, trending along the axis of
this V.L.F. conductor.

A test with a fluxgate magnetometer over the grid gave no
responsive trends. As a result the data has not been plotted.

CONCLUSIONS AND RECOMMENDATIONS

The high gold concentrate sample obtained from the C-13 pit
zone is as yet unexplained. It is possible the gold was smeared
along the bedrock surface from a local source by the last ice movement,
thereby producing the high gold concentrate values obtained from
regolith overlying altered but gold deficient bedrock.

Despite being obtained from a concentrate, gold values such
as this cannot be ignored. Further work is recommended, its mode
dependent on funding.



Geology: 2b, 2a and 3 (see fig. 4)

MODE:

ROCK GEOCHEM C-13 PIT ZONE: 1. Au+8 (Ag,Pb,Cu,Zn,Mo,As,Sb,Hg) } anomalous indicators only
 rusty, sil'd: Carbonaceous = C }
 2. Au + 31 element ICP }
 3. Au only }

NO.	Au ppb	+
Au+8 R19	< 5	Ag 1.2, Pb 41
Au+8 R19	< 5	Ag 1.2
Au+8 C R19	22	Ag 3.0, Mo 31, Cu 181, Pb 29, Zn 884, Sb 8.8
Au+8 C R20	< 5	Ag 0.9, Cu 96 (at surface)
Au only R1819	16	(qtz. boudin)
31 ICP C 27961	35	Ag 3.0, As 20, Cu 160, Mo 26, Pb 61, Zn 880, Cd 12, Ni 110, P 6100, V 740
31 ICP C 27962	10	As 10, Cu 110, Zn 310, Cd 6, P 1100, V 180
31 ICP 27963	< 5	Pb 230
31 ICP 27964	10	
31 ICP 27965	45	
31 ICP C 27966	5	As 10, Mo 28, Zn 510, Cd 9, Ni 65, P 650, V 420, Ba 600
31 ICP 27967	5	(qtz. boudin)

093018

(397) MAP# 105 F/15,16

FIG. 3

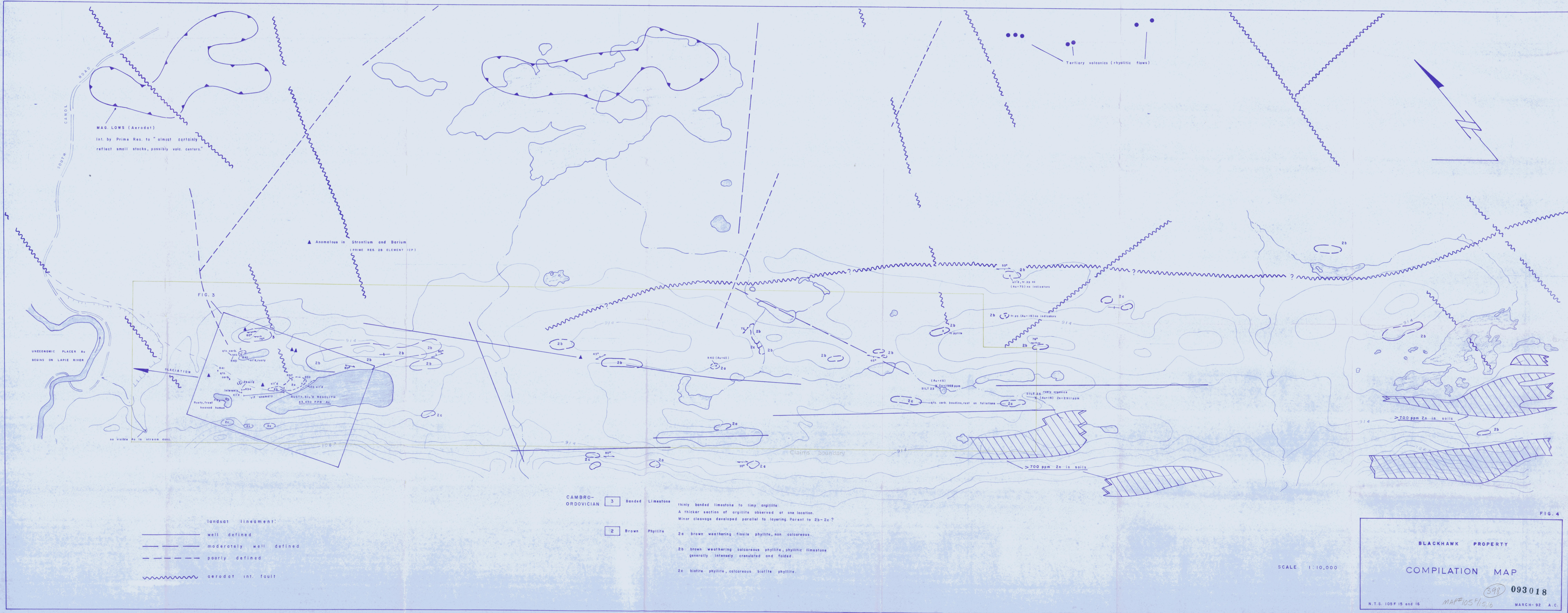
BLACKHAWK (Au prospect)

COMPILATION
 V.L.F. FRASER FILTER
 GEOLOGY and ALTERATION
 ROCK and CONCENTRATE GEO-CHEM.

N.T.S. 105 F-15
 LAT. 61° 53.5'
 LONG. 132° 34'

SCALE: 1" = 200 ft.

JUNE '91



MAQ. LOWS (Aerodat)
 Int. by Prime Res. to "almost certainly
 reflect small stocks, possibly volc. centers."

▲ Anomalous in Strontium and Barium
 (PRIME RES. 2B ELEMENT (CP))

FIG. 3



landform lineament:
 ——— well defined
 - - - - - moderately well defined
 - - - - - poorly defined
 ~~~~~ aerodat int. fault

CAMBRO-ORDOVICIAN

|   |                  |                                                                                                                                                                                                                     |
|---|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3 | Banded Limestone | thinly banded limestone to limy argillite.<br>A thicker section of argillite observed at one location.<br>Minor cleavage developed parallel to layering. Parent to 2b-2c?                                           |
| 2 | Brown Phyllite   | 2a brown weathering fissile phyllite, non calcareous.<br>2b brown weathering calcareous phyllite, phyllitic limestone generally intensely crumpled and folded.<br>2c biotite phyllite, calcareous biotite phyllite. |

SCALE 1:10,000

BLACKHAWK PROPERTY

COMPILATION MAP

398 093018

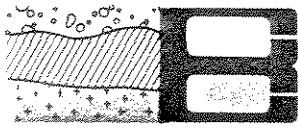
N.T.S. 105 F 15 and 16 MAP# 105 F 15, 16 MARCH-92 A.C.

FIG. 4

APPENDIX I

ANALYTICAL CERTIFICATES





REPORT: 090-75165.6

DATE PRINTED: 27-AUG-90

PROJECT: NONE GIVEN

PAGE: 1

| SAMPLE<br>NUMBER | ELEMENT<br>UNITS | Au<br>OPT |
|------------------|------------------|-----------|
| 02 013           |                  | 0.513     |



Bondar-Clegg & Company Ltd.  
 130 Pemberton Ave.  
 North Vancouver, B.C.  
 V7P 2R5  
 (604) 985-0681 Telex 04-352667



Certificate  
 of Analysis

A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

REPORT: V90-36279.4 ( COMPLETE )

REFERENCE INFO:

CLIENT: MR. A. CARLOS  
 PROJECT: NONE GIVEN

SUBMITTED BY: A. CARLOS  
 DATE PRINTED: 16-OCT-90

| ORDER | ELEMENT | NUMBER OF ANALYSES | LOWER DETECTION LIMIT | EXTRACTION | METHOD     |
|-------|---------|--------------------|-----------------------|------------|------------|
| 1     | Au Gold | 1                  | 0.002 OPT             |            | Fire Assay |

| SAMPLE TYPES           | NUMBER | SIZE FRACTIONS | NUMBER | SAMPLE PREPARATIONS | NUMBER |
|------------------------|--------|----------------|--------|---------------------|--------|
| C CONCENTRATE (PAN/HM) | 1      | 2 -150         | 1      | AS RECEIVED, NO SP  | 1      |

NOTES: - indicates SEE REMARKS

REMARKS: TOTAL SAMPLE WT = 15.18 GRAMS  
 TOTAL AU IN SAMPLE IN MGS = 0.963.

REPORT COPIES TO: C/O BONDAR-CLEGG LTD.

INVOICE TO: C/O BONDAR-CLEGG LTD.









A DIVISION OF INSTITUTE OF INSPECTION & TESTING SERVICES

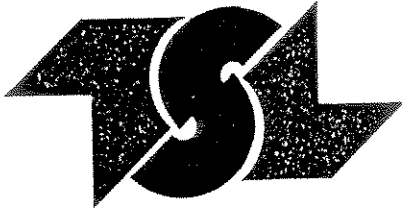
DATE PRINTED: 8-OCT-91

REPORT: V91 01381.0 ( COMPLETE )

PROJECT: NONF GTVEN

PAGE 3

| SAMPLE NUMBER | ELEMENT UNITS | Au PPR | Ag PPM | Cu PPM | Pb PPM | Zn PPM | Mo PPM | As PPM | Sb PPM | Hg PPM |
|---------------|---------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| S24           |               | 9      | 1.3    | 67     | 12     | 2911   | 7      | 26.0   | 5.7    | 0.107  |
| Duplicate     |               | 14     | 1.3    | 67     | 11     | 2884   | 7      | 32.0   | 5.5    | 0.106  |



# TSL LABORATORIES

2 - 302 - 48th STREET, EAST  
SASKATOON, SASKATCHEWAN  
S7K 6A4

☎ (306) 931-1033 FAX: (306) 242-4717

## CERTIFICATE OF ANALYSIS

SAMPLE(S) FROM Prime Exploration Ltd.  
10th Floor-Box 10  
808 West Hastings Street  
Vancouver, B.C. V6C 2X6

REPORT No.  
S3463

SAMPLE(S) OF Rock

INVOICE #: 18457  
P.O.: R3548

L. Haynes  
Project BLACKHAWK\Azimuth

REMARKS: Azimuth Geological Inc.

|       | Au<br>ppb |
|-------|-----------|
| 27960 | 25        |
| 27961 | 35        |
| 27962 | 10        |
| 27963 | <5        |
| 27964 | 10        |
| 27965 | 45        |
| 27966 | 5         |
| 27967 | 5         |
| 27968 | 15        |
| 27969 | 35        |

COPIES TO: J. Foster  
INVOICE TO: Prime - Vancouver

Sep 27/91

SIGNED

Page 1 of 1

For enquiries on this report, please contact Customer Service Department.  
Samples, Pulps and Rejects discarded two months from the date of this report.



PRIME EXPLORATION LTD.

10th Floor Box 10  
808 West Hastings St.  
PROJ:BLACKHAWK AZIMUTH  
S3463

T S L LABORATORIES  
2-302-48TH STREET, SASKATOON, SASKATCHEWAN S7K 6A4  
PHONE #: (306) 931 - 1033 FAX #: (306) 242 - 4717

REPORT No. : M9862  
Page No. : 1 of 1  
File No. : OC01MA  
Date : OCT-02-1991

I.C.A.P. PLASMA SCAN

Aqua-Regia Digestion

| SAMPLE # | Ag<br>ppm | Al<br>% | As<br>ppm | B<br>ppm | Ba<br>ppm | Be<br>ppm | Bi<br>ppm | Ca<br>% | Cd<br>ppm | Co<br>ppm | Cr<br>ppm | Cu<br>ppm | Fe<br>% | K<br>% | Mg<br>% | Mn<br>ppm | Mo<br>ppm | Na<br>% | Ni<br>ppm | P<br>ppm | Pb<br>ppm | Sb<br>ppm | Sc<br>ppm | Sn<br>ppm | Sr<br>ppm | Ti<br>ppm | V<br>ppm | W<br>ppm | Y<br>ppm | Zn<br>ppm | Zr<br>ppm |
|----------|-----------|---------|-----------|----------|-----------|-----------|-----------|---------|-----------|-----------|-----------|-----------|---------|--------|---------|-----------|-----------|---------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|----------|----------|-----------|-----------|
| 27960    | < 1       | 0.79    | < 5       | < 10     | 82        | < 1       | < 5       | 1.4     | 4         | 2         | 51        | 130       | 1.0     | 0.76   | 0.68    | 77        | 14        | < 0.01  | 39        | 2200     | 45        | < 5       | 2         | < 10      | 14        | 280       | 190      | < 10     | 10       | 510       | 2         |
| 27961    | 3         | 0.55    | 20        | < 10     | 130       | < 1       | < 5       | 1.7     | 12        | 3         | 97        | 160       | 1.6     | 0.62   | 0.15    | 76        | 26        | < 0.01  | 110       | 6100     | 61        | < 5       | 2         | < 10      | 35        | 180       | 740      | < 10     | 23       | 880       | 4         |
| 27962    | 1         | 0.25    | 10        | < 10     | 170       | < 1       | < 5       | 5.1     | 6         | 3         | 49        | 110       | 1.4     | 0.26   | 0.41    | 110       | 12        | < 0.01  | 55        | 1100     | 23        | < 5       | 2         | < 10      | 52        | 42        | 180      | < 10     | 12       | 310       | 2         |
| 27963    | 2         | 0.22    | < 5       | < 10     | 110       | < 1       | < 5       | 0.47    | < 1       | < 1       | 63        | 46        | 1.3     | 0.21   | 0.11    | 35        | 4         | < 0.01  | 15        | 450      | 230       | < 5       | 2         | < 10      | 11        | 150       | 39       | < 10     | 5        | 99        | 2         |
| 27964    | < 1       | 0.19    | < 5       | < 10     | 83        | < 1       | < 5       | 0.09    | < 1       | 1         | 59        | 49        | 1.3     | 0.24   | 0.03    | 21        | < 2       | < 0.01  | 23        | 320      | 34        | < 5       | 1         | < 10      | 5         | 25        | 18       | < 10     | 3        | 89        | 2         |
| 27965    | < 1       | 0.20    | < 5       | < 10     | 77        | < 1       | < 5       | 0.04    | < 1       | 2         | 69        | 68        | 1.9     | 0.25   | 0.03    | 40        | < 2       | < 0.01  | 25        | 250      | 22        | < 5       | < 1       | < 10      | 4         | 23        | 10       | < 10     | 3        | 130       | 1         |
| 27966    | 2         | 0.28    | 10        | < 10     | 600       | < 1       | < 5       | 1.1     | 9         | 2         | 89        | 82        | 1.7     | 0.38   | 0.15    | 68        | 28        | < 0.01  | 65        | 650      | 25        | < 5       | 1         | < 10      | 30        | 89        | 420      | < 10     | 6        | 510       | 3         |
| 27967    | < 1       | 0.06    | < 5       | < 10     | 56        | < 1       | < 5       | 0.55    | 1         | 1         | 130       | 27        | 0.66    | 0.08   | 0.05    | 63        | 2         | < 0.01  | 16        | 98       | 11        | < 5       | < 1       | < 10      | 10        | 14        | 32       | < 10     | 3        | 78        | 2         |
| 27968    | < 1       | 0.18    | 15        | < 10     | 140       | < 1       | < 5       | 0.36    | < 1       | 3         | 46        | 69        | 1.9     | 0.25   | 0.06    | 25        | < 2       | < 0.01  | 18        | 140      | 9         | < 5       | < 1       | < 10      | 17        | 12        | 8        | < 10     | 2        | 86        | < 1       |
| 27969    | < 1       | 0.10    | < 5       | < 10     | 38        | < 1       | 10        | 0.11    | < 1       | 1         | 130       | 19        | 0.44    | 0.12   | 0.10    | 27        | < 2       | < 0.01  | 5         | 190      | 3         | < 5       | < 1       | < 10      | 8         | 35        | 5        | < 10     | < 1      | 67        | 2         |

A .5 gm sample is digested with 2 ml of 3:1 HCL/HNO3  
at 95 C for 90 min and diluted to 10 ml with DI H2O  
This method is partial for many oxide materials

SIGNED : 



## GEOCHEMICAL ANALYSIS CERTIFICATE



Allen Carlos FILE # 91-5150

275 Alsek Road, Whitehorse YT Y1A 4T1

SAMPLE#

AU# SAMPLE

ppb Kg

R19 TRENCH

5.2 19.2

AU# - 19.2 KG SAMPLE LEACHED WITH .1 % CYANIDE SOLUTION FOR 24 HOURS/ GRAPHITE AA FINISH.  
- SAMPLE TYPE: ROCK

DATE RECEIVED: OCT 18 1991

DATE REPORT MAILED: Nov 13/91.

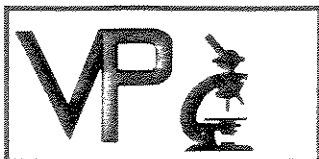
SIGNED BY.....*C. Leung*.....D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

42.3 lb. bulk leach of rock from C-13 Sec. (63,430 ppb Au in panned regolith)

APPENDIX II

PETROGRAPHIC REPORT ON HIGH GOLD

CONCENTRATE SAMPLE



# Vancouver Petrographics Ltd.

JAMES VINNELL, Manager  
JOHN G. PAYNE, Ph.D. Geologist  
CRAIG LEITCH, Ph.D. Geologist  
JEFF HARRIS, Ph.D. Geologist  
KEN E. NORTHCOTE, Ph.D. Geologist

P.O. BOX 39  
8080 GLOVER ROAD,  
FORT LANGLEY, B.C.  
VOX 1J0  
PHONE (604) 888-1323  
FAX. (604) 888-3642

Report for: Allen Carlos,  
275 Alsek Road,  
Whitehorse, Yukon, Y1A 4T1

Job 190  
May 1991

Sample: Sand Concentrate (What causes the high Au content?)

## Summary:

Two polished sections were prepared and analysed. When no gold was encountered in these, six additional polished sections were prepared and examined.

The concentrate contains abundant grains of pyrite, generally slightly to strongly altered to hematite/limonite, and much less abundant particles of magnetite and ilmenite. Some pyrite grains are euhedral to subhedral in outline, indicating that the material has not been moved far from its source. A few pyrite grains contain inclusions of pyrrhotite and/or chalcopyrite.

No native gold particles or inclusions were seen. No other mineral species was identified which might contain gold, e.g., gold tellurides. If the gold assay of 1.85 oz/ton of the similar sample done last year is representative of this sample, it is improbable that no free grains or inclusions of native gold were seen in the eight sections or were reported in the concentrate. Other factors which should be examined are: 1) was last year's sample representative of this material; and 2) was last year's assay accurate.

Given that native gold does occur in this material, it is speculated that it might occur in one of the following modes:

1) as free grains, which might be expected to range from fine sand size down to fine silt. The nugget effect probably would be important in sampling.

2) as inclusions in pyrite. Pyrite contains inclusions of pyrrhotite and less chalcopyrite, both as blebs and lenses. In some other environments, native gold forms blebs associated with those of chalcopyrite and pyrrhotite. In pyrite grains altered to hematite or limonite, such grains of native gold would be expected to remain in place, and to be visible in the polished section.

3) as cryptocrystalline particles in limonite and limonite/hematite (after pyrite). This mode of occurrence is considered to be much less probable than the previous two modes.

**Sample: Sand Concentrate**

Pyrite is most common as single grains averaging 0.1-0.2 mm in size, with a few up to 0.3 mm across. Many pyrite grains are euhedral to subhedral in outline, indicating that the material has not been moved far from its source. One pyrite grain contains an elongate lens up to 0.12 mm long and several much smaller nearby blebs of chalcopyrite. A few other pyrite grains contain one or two inclusions from 0.005-0.02 mm in size of pyrrhotite and/or chalcopyrite. Pyrite grains are altered slightly to completely to hematite or hematite/limonite, with alteration generally proceeding from the rim towards the center and along widely spaced fractures. A few of the pyrite grains which are altered strongly to hematite contain a few to abundant ragged, equant relic patches of pyrite averaging 0.005-0.01 mm in size. One pyrite grain which is altered completely to hematite contains two irregular inclusions 0.005 mm in size of what appears to be chalcopyrite and/or pyrrhotite. Pyrite also forms a few aggregates with quartz and sericite/limonite, in which grain size averages 0.03-0.07 mm. Pyrite occurs in a few intergrowths with quartz as anhedral to euhedral, fresh grains averaging 0.01-0.02 mm in size enclosed in quartz grains; these pyrite grains were protected by the quartz from weathering to iron oxides.

One silicate grain contains three lensy inclusions from 0.02-0.05 mm long of pyrrhotite.

Numerous particles are of cryptocrystalline limonite and limonite/hematite. Most of these range from orange and reddish orange to opaque. A few are deep red in color. These probably are mainly after pyrite; however, some of the ones of cryptocrystalline limonite may represent transported and reprecipitated Fe-oxide.

Grey metallic heavy minerals include magnetite (magnetic) and ilmenite (non-magnetic) and minor ilmenite-hematite.

Magnetite forms isotropic, euhedral, equant grains averaging 0.07-0.12 mm in size. A few grains are altered slightly to hematite in elongate patches along their margins.

Ilmenite forms euhedral to subhedral, commonly slightly elongate grains averaging 0.05-0.1 mm in size. Ilmenite is slightly to moderately anisotropic. One ilmenite grain contains abundant subrounded blebs of pyrrhotite averaging 0.003-0.005 mm in size, and another ilmenite grain contains a rounded inclusion 0.0025 mm across of pyrrhotite.

A few grains are of hematite-ilmenite intergrowths, containing plates of strongly anisotropic ilmenite in much less anisotropic hematite.

*John G. Payne*  
John G. Payne  
(604)-986-2928

## APPENDIX III

### RERERENCES

Templeman-Kluit, D., et al, 1977: Compilation of the Geology of Quiet Lake (105F) and Finlayson Lake (105G). G.S.C. Open File 486.

D.C. Miller and D.A.R. Hendry, 1978: Geological and Geochemical report on the Tom claims, Yukon.

J.L. LeBel, et al, 1988: Report on the Grew Creek property for International Rhodes Resources Ltd.

APPENDIX IV

Summary of Expenditures/Work performed

(a) Prospecting

15 days of prospecting the claim  
area in a detailed manner

\$150.00 per day x 15 days

\$2250.00

(b) Trail Slashing

5 days chain saw work plus  
help from my young sons

\$250.00 per day x 5 days

\$1250.00

(c) Geophysical Survey

5 days of field work together with use  
of own instruments & support vehicle

\$275.00 per day x 5 days

\$1375.00

(d) Geochemical Analysis

\$1043.09

(e) Incidental Expenses

- gas & oil                   \$350.00  
- groceries                   \$251.80  
- flagging, survey  
  thread, etc.               \$150.00

\$ 751.80

(f) Drafting

Calculations, drafting & report:

\$100.00 per day x 10 days

\$1000.00

(g) Printing and Secretary

\$ 123.35

TOTAL WORK PERFORMED ON BLACKHAWK CLAIMS  
valued at:

\$7793.24

I, A. CARLOS, hereby swear that the work performed and monies spent  
as per this Appendix IV are correct and true.

Date:

April 10 22

A. CARLOS