

MAP NO.:  
116 B 03

ASSESSMENT REPORT X  
PROSPECTUS  
CONFIDENTIAL X  
OPEN FILE

DOCUMENT NO: 093047  
MINING DISTRICT: Dawson  
TYPE OF WORK: Trenching, Geochemical  
Diamond Drilling etc.

REPORT FILED UNDER: Carmack Gold Corp.\Arbor Resources Inc.

DATE PERFORMED: May 1 - June 12, 1992

DATE FILED: September 22, 1992

LOCATION: LAT.: 64°01'N  
LONG.: 139°21'W

AREA: Trail Hill Area  
VALUE \$: 9,200.00

CLAIM NAME & NO.: HAWK, DAWSON, JAD, MOON, NIAN, ZIP, SNAKE, HARPO,  
POD, LAUREL.

\* DUE TO SIZE OF CLAIM BLOCK CHECK OWNERSHIP RECORDS FOR  
MOST ACCURATE RECORD OF CLAIM INFORMATION.

WORK DONE BY: J.D. Blanchflower P. Geo.

WORK DONE FOR: Carmack Gold Corp.\Arbor Resources Inc.

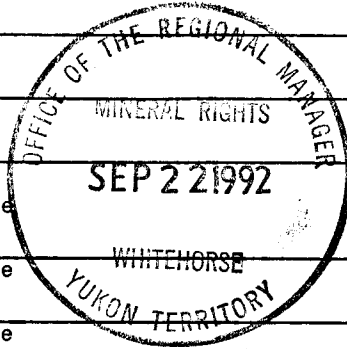
DATE TO GOOD STANDING:


REMARKS: # 116 B - Trail Hill Area.  
The company conducted an extensive exploration program in order to evaluate the potential of the property to host possible "epithermal" lode gold-silver mineralization. The program consisted of linecutting, magnetic and resistivity surveys, diamond drilling, detailed geological mapping, bulldozer trenching and lithochemical sampling. No significant mineralization was encountered anywhere on the property. The apparent epithermal-type alteration seen on the property was actually a paleoweathering product that was not mineralized and which died out at depth.



M.R. file no. <i>OTZ Pending</i>
R.M.M.R. file no.
Date forwarded <i>21 Sept 92</i>

TRANSMITTAL FORM



From Mining Recorder at: *Dawson*

To Regional Manager, Mineral Rights at Whitehorse, Y.T.

For action are:

NEW APPLICATION FOR PLACER LEASE TO PROSPECT Name \_\_\_\_\_

RENEWAL APPLICATION PLACER LEASE TO PROSPECT Name \_\_\_\_\_ Lease no. \_\_\_\_\_

AFFIDAVIT OF EXPENDITURE ON PLACER LEASE Name \_\_\_\_\_ Lease no. \_\_\_\_\_

SECURITY DEPOSIT

FINANCIAL ABILITY

ASSIGNMENT OF PLACER LEASE NO. From \_\_\_\_\_ To \_\_\_\_\_

GROUPING APPLICATION UNDER SEC. 52(2) PLACER MINING ACT. Owner \_\_\_\_\_

DIAMOND DRILL LOGS Claims \_\_\_\_\_ Claim sheet no. \_\_\_\_\_

QUARTZ ASSESSMENT REPORT Claims *Huron, Quinn, Zip, Snake, Hoopy, Prod Hawk - ad. Laurel* Claim sheet no. *116 B-03*

Type of report *Geological & Drilling* Submitted by *J.D. Blenc & Blower*

*Res. Sec. Dawson*  
*William Dawson*  
*Resource*  
*John Derrin*

Cls. work performed on *Hawk 157 & F88023 & ad 155* Y.A. 88021 \$req. for ren. application *9,200.-*

*Delier* *report value \$130834.50*

Signature \_\_\_\_\_

REPLY ACTION

Date returned \_\_\_\_\_

*Report Approved for (\$9,200.00.) amount requested*  
*Kohat Piddak Oct 22/92.*

**093047**

Signature \_\_\_\_\_

1150 126  
QUIGLEY



**GEOLOGICAL, GEOCHEMICAL, GEOPHYSICAL,  
TRENCHING and DIAMOND DRILLING REPORT**

on the

**TRAIL HILL PROPERTY**

Trail Hill Area, Dawson Mining District

Yukon Territory, Canada

Latitude: 64° 01' North      Longitude: 139° 21' West  
N.T.S. 116 B / 3

Mineral Claim Name	Grant Number	Date Granted	Expiry Date
HAWK 13	YA 88155	Aug. 14, 1986	Dec. 31, 1994
HAWK 14	YA 88156	Aug. 14, 1986	Dec. 31, 1994
HAWK 15	YB 40659	May 13, 1992	May 13, 1993
HAWK 155 to 166	YA 88021 to YA 88032	June 5, 1986	Dec. 31, 1994
DAWSON 201 to 204	YA 79463 to YA 79466		Dec. 31, 1994
DAWSON 207 to 210	YA 79469 to YA 79472		Dec. 31, 1994
DAWSON 213 to 216	YA 79475 to YA 79478		Dec. 31, 1995
DAWSON 219 to 222	YA 79481 to YA 79484		Dec. 31, 1995
DAWSON 225 to 228	YA 79487 to YA 79490		Dec. 31, 1994
DAWSON 231 to 234	YA 79493 to YA 79496		Dec. 31, 1994
DAWSON 237	YA 79499		Dec. 31, 1994
DAWSON 239	YA 79500		Dec. 31, 1994
DAWSON 240	YA 79501		Dec. 31, 1994
DAWSON 243	YA 79504		Dec. 31, 1994
DAWSON 245	YA 79505		Dec. 31, 1994
DAWSON 246	YA 79506		Dec. 31, 1994
JAD 1 FR	YB 40650	May 19, 1992	May 19, 1993
JAD 2 FR	YB 40651	May 19, 1992	May 19, 1993

Optionee:

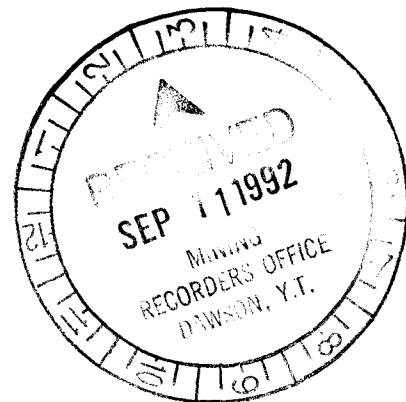
**ARBOR RESOURCES INC.**  
Suite 1000 - 675 West Hastings Street  
Vancouver, British Columbia V6B 1N6  
(604) 685-2222

Operator:

**CARMACK GOLD CORP.**  
Suite 101 - 9482 Williams Street  
Chilliwack, British Columbia V2P 5G1  
(604) 858-3989

Consultant:

**MINOREX CONSULTING LTD.**  
11967 - 83A Avenue  
Delta, British Columbia V4C 2K2  
(604) 596-8474



July 15, 1992

J.D. Blanchflower, P. Geo.  
Consulting Geologist

093047

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 \$ 4,200-

*Robert Debluk*

*for.* Regional Manager, Exploration and  
Geological Services for ~~Canada~~  
of Yukon Territory.

ADDENDUM

THIS REPORT COVERS THE ASSESSMENT WORK APPLIED TO THE FOLLOWING CLAIMS:

MOON 41-55	YA79711-725
NIAN 5,6,11,12	YA79915,916,921,922
ZIP 3,4	YA84430,431
SNAKE 3-33 (including 25A)	YA84563-594
HARPO	YA84624
POD 9-20	YB30103-114
HAWK 155-166	YA88021-032
HAWK 13,14	YA88155,156
JAD 1F,2F	YB40650,651
HAWK 15	YB40659
LAUREL	YA84620

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6	Ground Magnetics Survey Plan, 1:5,000 .....	In Pocket

## SUMMARY

The Trail Hill property is situated in the Klondike region in west-central Yukon Territory, Canada; approximately five kilometres southeast of the city of Dawson. It is located on the east side of Bonanza Creek, two kilometres south of its confluence with the Klondike River. Its geographic coordinates are 64° 01' North latitude by 139° 21' West longitude (N.T.S. 116 B/3).

The property is readily accessible via Highway No. 2 from the city of Dawson. Approximately 4 kilometres from Dawson, near the confluence of Bonanza Creek with the Klondike River, a gravel, all-weather road leads southeastward along the eastern side of Bonanza Creek through the HAWK 13 and 155, and the westernmost DAWSON claims. In addition, there are numerous seasonal gravel roads within the claim holdings, especially along the Bonanza Creek valley, that provide four-wheel vehicle access to most areas of exploration interest.

The Klondike region is situated within the Yukon Plateau physiographic region; between Ogilvie Mountains to the north and east and the Dawson Range to the southwest and south. It extends southeasterly from Dawson for 60 kilometres and it is approximately 30 kilometres wide. Elevations range from 320 metres (1,050 feet) at Dawson to 1,295 metres (4,048 feet) at the top of King Solomon Dome, the geographic centre of the region. The gold-producing streams of the region originate near King Solomon Dome and flow northwardly into the Klondike River, or southwardly into the Indian River; ultimately flowing into the Yukon River.

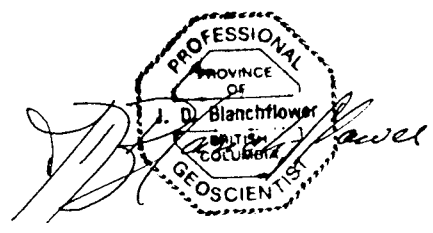
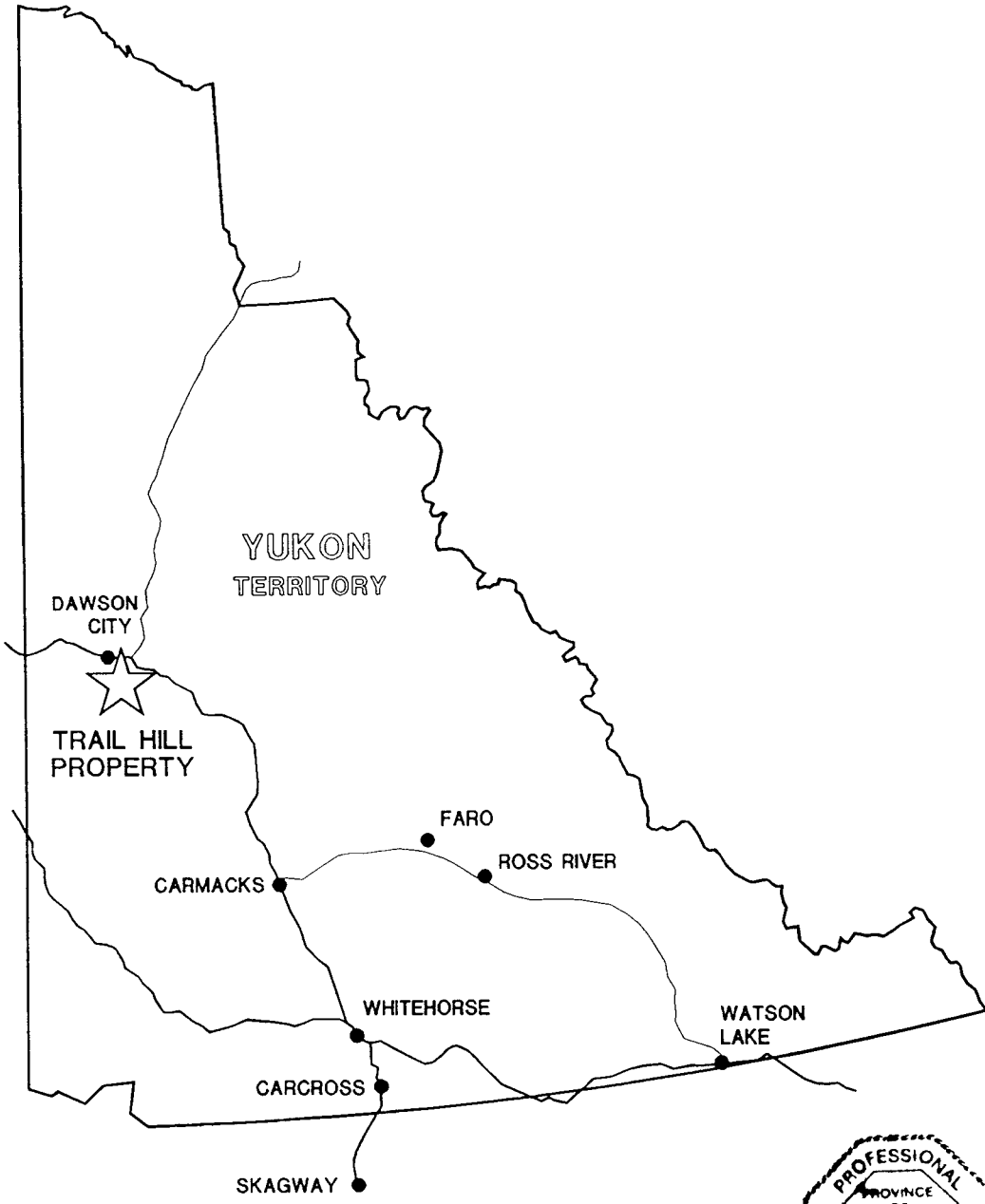
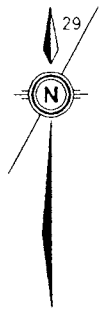
The climate is sub-arctic continental characterized by warm, usually dry, summers and long, very cold winters with moderate snowfalls, generally less than one metre. The mean annual temperature is -4.5° C; thus, most of the subsurface is permanently frozen to depths of up to 60 metres.

Most of the Klondike region is vegetated by scrub spruce, poplar and birch trees with a thin to moderate undergrowth of alder, willow, berry bushes, grasses and mosses. Bedrock exposures are rare, except in areas of extensive placer gold sluicing and steep drainages.

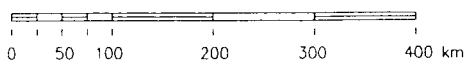
The subject property is comprised of 45 full and 2 fractional quartz mineral claims located in the Dawson Mining District, Yukon Territory. The claims are owned by Mr. Wayne Hawkes and Messrs. Michael and Jay Hughes, and subject to a 1990 option agreement between Mr. Hawkes, Messrs. Hughes and Arbor Resources Inc. In 1992, Carmack Gold Corp. negotiated a joint venture agreement with Arbor Resources Inc. whereby Carmack Gold Corp. became the operator of the property, subject to the terms of joint venture agreement.

There is no indication that the area now covered by the subject property was ever staked for its lode gold potential prior to 1979; however, it has been extensively mined by hydraulic methods for its placer gold occurrences probably during the post World War II era. In 1979 the area was staked as the G.C. claims and trenched in 1980 in conjunction with nearby placer work. In 1986, the area was restaked as the HAWK mineral claims and trenched in 1988.

In October and November, 1990, an Arbor Resources geologist carried out detailed geologic mapping on HAWK 155 and HAWK 156 quartz mining claims, and five reverse-circulation rotary holes, totalling 384 metres (1,263 feet), were drilled to test the economic significance of several clay alteration zones. The gold analytical results from the drill samples did not show any anomalous concentrations; however, anomalous arsenic, tungsten and thallium were detected.



TO ACCOMPANY REPORT BY J.D. BLANCHFLOWER, 1992



 <b>MINOREX CONSULTING LTD.</b> GEOLOGICAL CONSULTANTS, VANCOUVER, B.C.	
<b>CARMACK GOLD CORP.</b> CHILLIWACK, BRITISH COLUMBIA	
<b>LOCATION MAP</b>	
<b>TRAIL HILL PROPERTY</b> DAWSON MINING DISTRICT, YUKON, CANADA	
Drawn by: JAD : abbas consulting	Scale: As Shown
Date: June, 1992	Figure No.: 1

Following field work in 1991 Mr. F. Marshall Smith, P. Eng. recommended that Carmack Gold Corp. acquire operation of the subject property and carry out an integrated exploration program during the 1992 field season to assess its possible "epithermal" lode gold-silver potential.

The country rocks of the Klondike district have been grouped chronologically into six major lithologic units which are, in decreasing age, middle and upper Paleozoic Nasina Series, Klondike Series (Klondike Schist) and ultramafic intrusives, late Cretaceous to early Tertiary volcanic and volcanoclastic rocks, and late Tertiary intrusives.

All rocks have undergone upper greenschist to middle amphibolite grade metamorphism and at least four separate deformational events. The contact between the basal schist of the Klondike Series and graphitic schist of the Nasina Series is sheared. In addition, discordant bedding and cleavage in the underlying Nasina Series rocks suggests that the contact is a low angle thrust fault.

The field work of the 1992 exploration program was conducted between May 1st and June 12th. It included, in order of execution: 1) quartz mineral claim staking and surveying; 2) resistivity (dipole-dipole) surveying, totalling 10.89 line-kilometres; 3) HQ- and NQ-core diamond drilling of 8 holes totalling 623.32 metres (2,045 feet); 4) establishment of survey control grid with a 2.05 line-kilometre baseline and 13.4 line-kilometres of gridlines; 5) topographic surveying; 6) detailed geological mapping at a scale of 1:2,500; 7) bulldozer trenching totalling 700 metres; 8) lithogeochemical sampling (9 chip samples); and 9) ground magnetics surveying.

The property is underlain by foliated, dark grey to black carbonaceous quartz-muscovite ( $\pm$  sericite, chlorite) schist and carbonaceous quartzite; correlative with the older carbonaceous rocks of the middle Paleozoic Nasina Series. The carbonaceous schistose rocks are locally intruded by a small ultramafic sill or stock, and by much younger diabase and plagioclase-phyric dykes emplaced along northwesterly, northerly and northeasterly fault structures.

Within a central north-northwesterly trending dyke swarm at the Eureka zone there is a very late-stage fault infilled with a dyke breccia. At the Ghost zone, a similar dyke structure has been faulted and locally silicified. The late-stage dyke breccia or silicification has been traced intermittently along a strike length of 650 metres. However, the analytical results from the drill core and surface rock chip samples show that the late-stage faulting, dyke breccia and/or silicification are barren; without any indication of any significant precious, base metal, or pathfinder mineralization.

## RECOMMENDATIONS

It is the opinion of the writer that the present results do not warrant any further investigations. Thus, the property option agreement with Arbor Resources Inc. should be terminated.

## INTRODUCTION

**Carmack Gold Corp.** of Suite 101 - 9482 Williams Street, Chilliwack, British Columbia, Canada is the operator of the **TRAIL HILL** property which is situated in the Klondike area of the Dawson Mining District in west-central Yukon Territory, Canada. The claims which comprise this property are subject to a joint venture option agreement between Arbor Resources Inc. ("Arbor Resources"), a public resource company based in Vancouver, British Columbia, and Carmack Gold Corp. ("Carmack Gold").

During May and early June, 1992 Carmack Gold Corp. operated an exploration program on the subject property. This program comprised, in order of execution: claim surveying, resistivity (dipole-dipole) surveying, diamond drilling (HQ and NQ coring), linecutting, topographic surveying, geologic mapping, bulldozer trenching and ground magnetics surveying. It was conducted over those well-exposed areas north and south of Trail Hill, between Cripple Creek and Lovitt Gulch, that have had their overburden removed by previous placer gold operations.

The writer has prepared this report, on behalf of the directors of Carmack Gold Corp., to document the results of the 1992 exploration program. The writer, who is employed by Minorex Consulting Ltd. ("Minorex Consulting") of Delta, British Columbia, was present on the property from May 15th to June 12th, 1992, and responsible for: diamond drill supervision, core logging, detailed geologic mapping and supervising ground magnetics surveying, and program documentation.

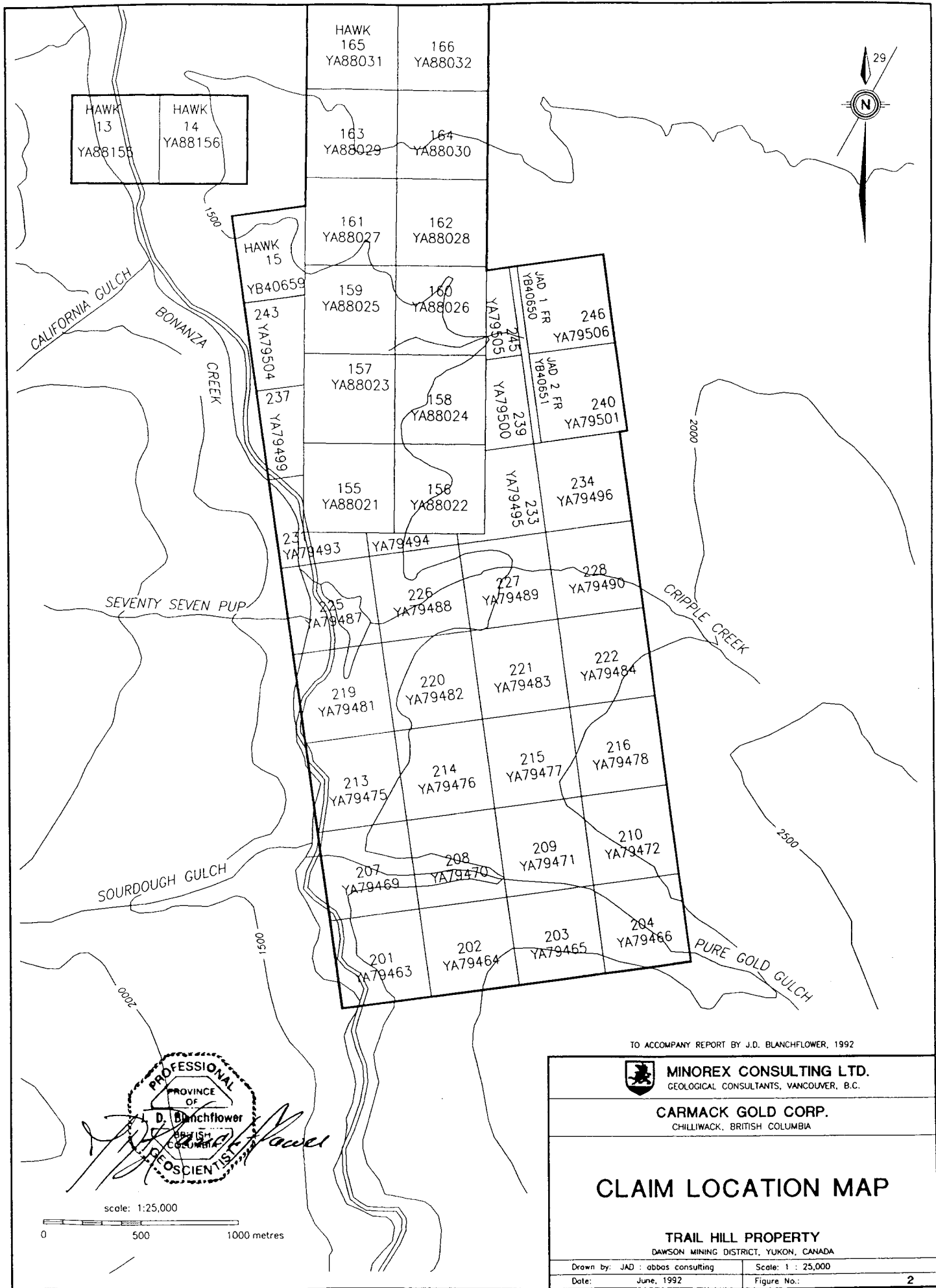
## General Description

### Location and Access

The Trail Hill property is situated in the Klondike region in west-central Yukon Territory, Canada; approximately five kilometres southeast of the city of Dawson. It is located on the east side of Bonanza Creek, two kilometres south of its confluence with the Klondike River. Its geographic coordinates are 64° 01' North latitude by 139° 21' West longitude (N.T.S. 116 B/3).

The city of Dawson is readily accessible via the all-weather, paved Highway No. 2 from the territorial capital city of Whitehorse in southcentral Yukon Territory. It is approximately 535 kilometres (333 miles) by road from Whitehorse to Dawson. Alternatively, there are regularly scheduled commercial flights by two airline companies from Whitehorse to Dawson, and connecting air services to southern Canada from Whitehorse.

The property is readily accessible by two- and four-wheel drive vehicles via Highway No. 2 southeastward from the city of Dawson. Approximately 4 kilometres from Dawson, near the confluence of Bonanza Creek with the Klondike River, a gravel, all-weather road leads southeastward along the eastern side of Bonanza Creek which services placer gold operations along its tributaries. Highway No. 2 passes north of the northern property boundary but the Bonanza Creek road crosses through the HAWK 13 and 155, and the westernmost DAWSON claims. In addition, there are numerous seasonal gravel roads within the claim holdings, especially along the Bonanza Creek valley, that provide four-wheel vehicle access to most areas of exploration interest.



TO ACCOMPANY REPORT BY J.D. BLANCHFLOWER, 1992



**MINOREX CONSULTING LTD.**  
GEOLOGICAL CONSULTANTS, VANCOUVER, B.C.

**CARMACK GOLD CORP.**  
CHILLIWACK, BRITISH COLUMBIA

# CLAIM LOCATION MAP

**TRAIL HILL PROPERTY**  
DAWSON MINING DISTRICT, YUKON, CANADA

Drawn by: JAD : abbas consulting

Scale: 1 : 25,000

Date: June, 1992

Figure No.:

## Physiography

The Klondike region is situated within the Yukon Plateau physiographic region; between Ogilvie Mountains to the north and east and the Dawson Range to the southwest and south. It is a upland peneplane that has been uplifted twice during its unglaciated history and now is a well-eroded plateau. The relief is low to moderate; in the order of 800 metres (2,650 feet). Broad hills and valleys near the confluences of most major rivers and creeks change upstream to a more youthful topography.

The region extends southeasterly from Dawson for 60 kilometres and it is approximately 30 kilometres wide. Elevations range from 320 metres (1,050 feet) at Dawson to 1,295 metres (4,048 feet) at the top of King Solomon Dome, the geographic centre of the region. The gold-producing streams of the region originate near King Solomon Dome and flow northwardly into the Klondike River, or southwardly into the Indian River; ultimately flowing into the Yukon River.

The climate is sub-arctic continental characterized by warm, usually dry, summers and long, very cold winters with moderate snowfalls, generally less than one metre. The mean annual temperature is  $-4.5^{\circ}\text{C}$ ; thus, most of the subsurface is permanently frozen to depths of up to 60 metres.

Most of the Klondike region is vegetated by scrub spruce, poplar and birch trees with a thin to moderate undergrowth of alder, willow, berry bushes, grasses and mosses. Bedrock exposures are rare, except in areas of extensive placer gold sluicing and steep drainages.

## Property Status and Ownership

The subject property is comprised of 45 full and 2 fractional quartz mineral claims located in the Dawson Mining District, Yukon Territory. A complete list of the subject claims and their pertinent claim data accompanies this report as Table I.

The claims are owned by Mr. Wayne Hawkes and Messrs. Michael and Jay Hughes, all of Dawson, Yukon, and subject to a 1990 option agreement between Mr. Hawkes, Messrs. Hughes and Arbor Resources Inc. (Gonzalez, 1991). This year Carmack Gold Corp. negotiated a joint venture agreement with Arbor Resources Inc. whereby Carmack Gold Corp. became the operator of the property, subject to the terms of joint venture agreement (Harvey, 1992).

## History

The infamous mining history of discovery, development, and subsequent mining of placer gold in the Klondike region has been documented by many authors and historians, and is therefore treated only briefly herein.

The earliest reported discovery of gold dates to the mid-1800's, but not until the phenomenally rich placer gold discovery on Bonanza Creek in August 1896 by a party consisting of George Carmacks, Skookum Jim, Tagish Charlie and Kate Carmacks was there much interest in the area. By mid-September, 1896 most of the Bonanza and Eldorado drainages had been staked. When word of the discovery reached the outside world, it produced the famous Klondike Stampede of 1897-98.

TABLE I

Claim Name	Grant Number	Date Granted	Expiry Date
HAWK 13	YA 88155	Aug. 14, 1986	Dec. 31, 1994
HAWK 14	YA 88156	Aug. 14, 1986	Dec. 31, 1994
HAWK 15	YB 40659	May 13, 1992	May 13, 1993
HAWK 155	YA 88021	June 5, 1986	Dec. 31, 1994
HAWK 156	YA 88022	June 5, 1986	Dec. 31, 1994
HAWK 157	YA 88023	June 5, 1986	Dec. 31, 1994
HAWK 158	YA 88024	June 5, 1986	Dec. 31, 1994
HAWK 159	YA 88025	June 5, 1986	Dec. 31, 1994
HAWK 160	YA 88026	June 5, 1986	Dec. 31, 1994
HAWK 161	YA 88027	June 5, 1986	Dec. 31, 1994
HAWK 162	YA 88028	June 5, 1986	Dec. 31, 1994
HAWK 163	YA 88029	June 5, 1986	Dec. 31, 1994
HAWK 164	YA 88030	June 5, 1986	Dec. 31, 1994
HAWK 165	YA 88031	June 5, 1986	Dec. 31, 1994
HAWK 166	YA 88032	June 5, 1986	Dec. 31, 1994
DAWSON 201	YA 79463		DEC. 31, 1995
DAWSON 202	YA 79464		Dec. 31, 1995
DAWSON 203	YA 79465		Dec. 31, 1995
DAWSON 204	YA 79466		Dec. 31, 1994
DAWSON 207	YA 79469		Dec. 31, 1994
DAWSON 208	YA 79470		Dec. 31, 1995
DAWSON 209	YA 79471		Dec. 31, 1994
DAWSON 210	YA 79472		Dec. 31, 1995
DAWSON 213	YA 79475		Dec. 31, 1995
DAWSON 214	YA 79476		Dec. 31, 1995
DAWSON 215	YA 79477		Dec. 31, 1995
DAWSON 216	YA 79478		Dec. 31, 1995
DAWSON 219	YA 79481		Dec. 31, 1995
DAWSON 220	YA 79482		Dec. 31, 1995
DAWSON 221	YA 79483		Dec. 31, 1996
DAWSON 222	YA 79484		Dec. 31, 1995
DAWSON 225	YA 79487		Dec. 31, 1994
DAWSON 226	YA 79488		Dec. 31, 1994
DAWSON 227	YA 79489		Dec. 31, 1994
DAWSON 228	YA 79490		Dec. 31, 1994
DAWSON 231	YA 79493		Dec. 31, 1994
DAWSON 232	YA 79494		Dec. 31, 1994
DAWSON 233	YA 79495		Dec. 31, 1994
DAWSON 234	YA 79496		Dec. 31, 1994
DAWSON 237	YA 79499		Dec. 31, 1994
DAWSON 239	YA 79500		Dec. 31, 1994
DAWSON 240	YA 79501		Dec. 31, 1994
DAWSON 243	YA 79504		Dec. 31, 1994
DAWSON 245	YA 79505		Dec. 31, 1994
DAWSON 246	YA 79506		Dec. 31, 1994
JAD 1 FR	YB 40650	May 19, 1992	May 19, 1993
JAD 2 FR	YB 40651	May 19, 1992	May 19, 1993

The mining history of the Klondike can be divided into four overlapping periods: 1) hand and primitive mining, 2) dredging, 3) dormant, and 4) renewed activity using highly mechanized mining techniques.

Hand and primitive mining methods lasted about nine years, from 1896 to 1905, and were undertaken usually by individuals or small groups of miners. Placer gold production during these early years has been estimated to be over 5.5 million ounces. This production was primarily by shaft sinking and drifting along bedrock or by open-cut mining. When water was available and the topography allowed the use of hydraulic operations, higher productivities were possible.

The first dredge was introduced in 1903, and although there were some non-production years during the start of this period, the last dredging operation ceased production in 1966. During the more than 60 years of dredging over 400 million yards of river and creek gravels were treated and more than 5.5 million ounces of gold recovered. Once dredging operations ended in 1966 there was a 10 to 12 year dormant period. During this time only a few hardy individuals intermittently worked their claims.

Interest and activity resumed in 1977 with deregulation of gold prices and the increase in price of gold from approximately US \$37.00 to over US \$100 per ounce. Today the Klondike area is still quite active; although there are no dredging operations. The current placer miners have introduced heavy mechanized equipment, and some operators easily surpass the earth moving capacity of the largest Klondike dredges. During the summer field season, small to quite large placer operations mine the few remaining virgin placer deposits, or rework the previously dredged channels.

Gold production to 1989 from the Cordillera province of Canada is reportedly over 35 million ounces of which over 12 million ounces were reportedly produced from the Klondike region. During the last few years, gold production from the Yukon Territory has been approaching 200,000 ounces per year of which the Klondike area yielded 75 per cent.

There is no indication that the area now covered by the subject property was ever staked for its lode gold potential prior to 1979; however, it has been extensively mined by hydraulic methods for its placer gold occurrences probably during the post World War II era. There are no government records of production from the area covered by the claims; however, considering the large area of disturbed ground, mining activity within the HAWK claim boundaries must have spanned many years. In 1979 the area was staked as the G.C. claims and trenched in 1980 in conjunction with nearby placer work. In 1986, the area was restaked as the HAWK quartz mineral claims and trenched in 1988.

In 1984, Arbor Resources Inc. and several corporately-related companies initiated a regional airborne geophysical survey over the northern portion of the Klondike mining camp. This survey outlined a number distinct areas of anomalously low magnetic and resistivity readings indicating that the country rocks hosted extensive, deeply-penetrating zones of hydrothermal alteration. In 1984 and 1985, regional geological mapping results from separate works by geologists employed by Arbor Resources Inc. and the Department of Indian and Northern Affairs confirmed the occurrence of a hydrothermally-altered zone trending from near the confluence of Bonanza Creek and Klondike River southward along the east side of Bonanza Creek. In October and November, 1990, an Arbor

Resources geologist carried out detailed geologic mapping on HAWK 155 and HAWK 156 quartz mining claims.

In November 1990, Arbor Resources drilled five reverse-circulation rotary holes, totalling 384 metres (1,263 feet), on the HAWK 155 and 156 quartz mining claims to test the mapped alteration zones and their near-surface economic potential (see Figure 5). The gold analytical results from the drill samples do not show any anomalous concentrations; however, anomalous arsenic (up to 1,358 ppm), tungsten (up to 27 ppm), and thallium (averaging approximately 15 ppm) were detected.

During the 1991 field season Mr. F. Marshall Smith, P. Eng. examined the subject property and a number of other altered zones along the Bonanza Creek drainage. He recommended that Carmack Gold Corp. acquire operation of the subject property and carry out an integrated exploration program during the 1992 field season to assess its possible "epithermal" lode gold-silver potential.

## **GEOLOGICAL SETTING**

### **Regional Geology**

The Klondike region is situated approximately 2 to 5 kilometres southwest of the Tintina Trench in the Yukon Cataclastic Complex. It covers an area that is approximately 60 kilometres long by 30 kilometres wide, or 1,800 square kilometres. Its regional geology is well documented by Geological Survey of Canada maps 1284A (1972) and Open File 1927 (1988), and by Debicki (1984). The following text is a summary of the current geological works by Debicki (1984) and Geological Survey of Canada (1988).

According to G.S.C. Open File 1927 (1988), the Dawson map area, which encompasses the Klondike, is underlain by greenschist to lower amphibolite facies metamorphic rocks of the Yukon-Tanana Terrane. These rocks have been divided into two main assemblages: 1) schists and gneisses derived from a variety of sedimentary and igneous protoliths and displaying a penetrative ductile deformation fabric; and 2) massive to brittlely sheared greenstone, diabase and serpentized harzburgite. The first assemblage has been further subdivided based on compositional, textural and limited isotopic age criteria. These include the rocks of the Nasina Series, Klondike Schist and Pelly Gneiss. Both the first and second assemblages are now recognized to be imbricated along low-angle brittle faults that may be thrust faults and tectonic slides along original stratigraphic contacts.

The country rocks of the Klondike district have been grouped chronologically into six major lithologic units which are, in decreasing age, middle and upper Paleozoic Nasina Series, Klondike Series (Klondike Schist) and ultramafic intrusives, late Cretaceous to early Tertiary volcanic and volcanoclastic rocks, and late Tertiary intrusives.

The Nasina Series represents the structurally lowest and probably comprises the oldest rocks in the Klondike district. These rocks are believed to be of middle Palaeozoic age - Late Devonian to Early Mississippian. The series is comprised of: graphitic quartz-muscovite ( $\pm$  biotite) schist, graphitic quartzite, chlorite ( $\pm$  biotite) schist, amphibolite, quartz and/or feldspar augen-bearing

quartz-muscovite schist and carbonaceous and/or siliceous marble. These rocks have been metamorphosed to upper greenschist and/or middle amphibolite facies.

Within the Nasina assemblage there are stocks, dykes and sills of serpentinite, serpentinitized harzburgite, carbonitized ultramafic rocks and talc-carbonate schist that may be middle to upper Paleozoic mafic and ultramafic intrusions emplaced prior to the low-angle thrust faulting which placed the Klondike Series over the Nasina Series rocks .

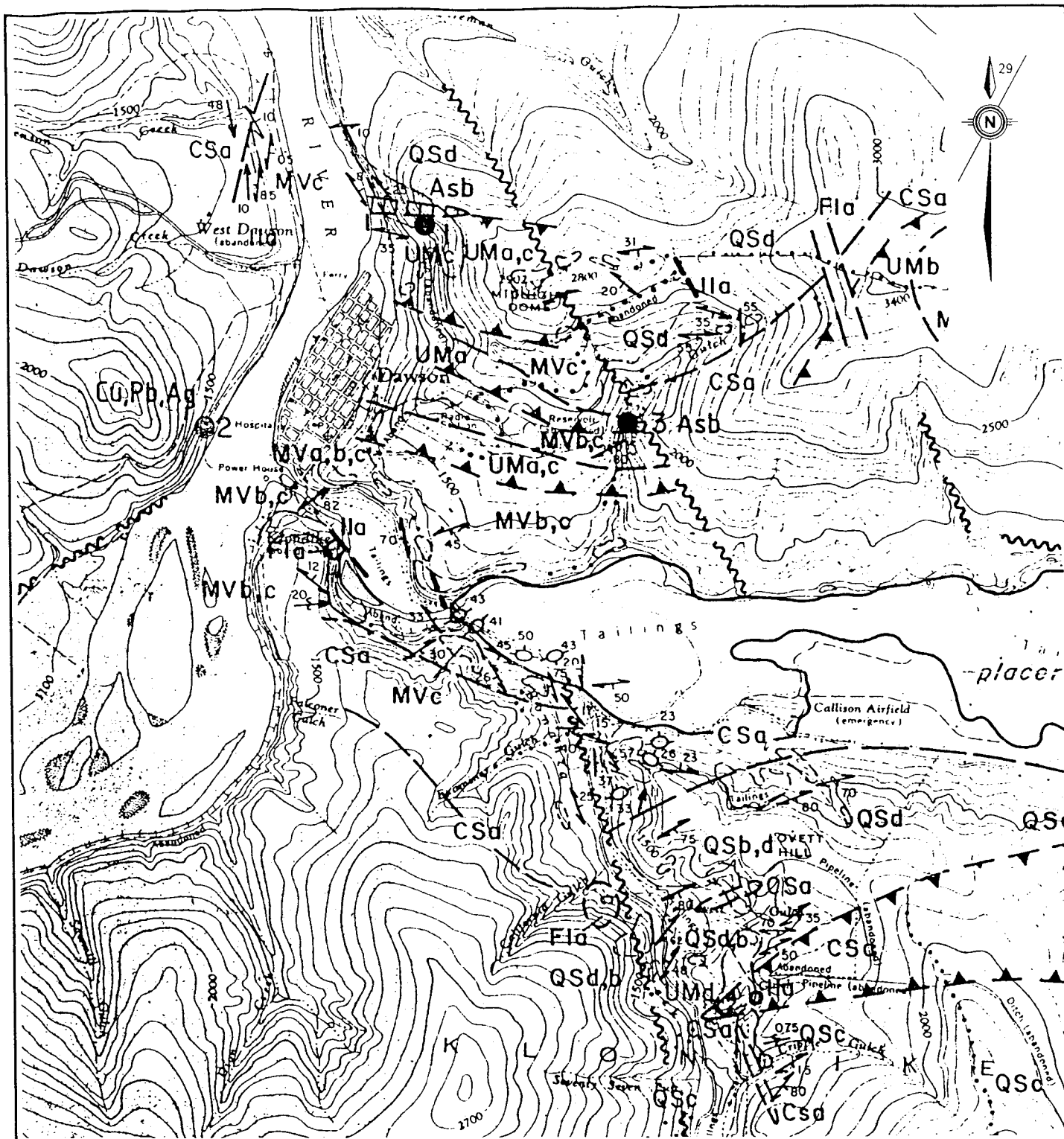
Most of the Klondike district is underlain by upper Paleozoic Klondike Series (Klondike Schists) rocks. These rocks are commonly leucocratic, quartz and/or feldspar augen-bearing quartz-muscovite (chlorite) schist, chloritic schist and minor graphitic quartz-muscovite schist and marble. The series is divided into two major lithologic groups, a quartz-plagioclase-mica schist with minor chlorite and quartz-potassium feldspar schist which is mica poor. Petrographically and chemically the mica-rich schists are metamorphosed sediments while the mica-poor schists are metamorphosed volcanics. Rocks of the Klondike Series have been dated at 260 to 280 Ma.

All rocks have undergone upper greenschist to middle amphibolite grade metamorphism and at least four separate deformational events. The contact between the basal schist of the Klondike Series and graphitic schist of the Nasina Series is sheared. In addition, discordant bedding and cleavage in the underlying Nasina Series rocks suggests that the contact is a low angle thrust fault.

Gently folded andesitic volcanics and volcanoclastics occur in the Last Chance Creek area, southwest of the subject property. According to G.S.C. Open File 1927 (1988) and Debicki (1984), these rocks are Late Cretaceous to Early Tertiary age.

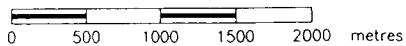
Early Tertiary to Quaternary intrusive rocks are not common in the Klondike district; generally they are confined to dykes infilling major fault structures and small stocks. These intrusives occur along Eldorado and Bonanza Creeks, and vary in composition from rhyolite to diabase. A large rhyolite porphyry stock crops out east of the confluence of Klondike River and Hunker Creek. This stock is reported to have been dated at 50 to 60 Ma (Gonzalez, 1991). In addition, within the property there are a number of diabasic and porphyritic dykes that intrude the Nasina Series country rocks along reactivated fault and shear structures. There is no reported date for these dykes but quartz-muscovite schist and quartz vein boulder clasts within a central diabase intrusive dyke breccia indicate that the intrusions may have been emplaced contemporaneously with the early deposition of the White Channel gravels in Quaternary or Recent time.

The placer gold deposits of the Klondike district are infamous and well documented by Bostock (1957). In addition to electrum, the placer gold deposits also yield minor wood tin, native copper and scheelite. However, none of the known precious and/or base metal occurrences in the district can account for even a portion of the recovered placer gold; despite extensive prospecting and a number of recent major exploration programs.



J.D. Blanchflower

scale: 1:50,000



TO ACCOMPANY REPORT BY J.D. BLANCHFLOWER, 1992



**MINOREX CONSULTING LTD.**  
 GEOLOGICAL CONSULTANTS, VANCOUVER, B.C.

**CARMACK GOLD CORP.**  
 CHILLIWACK, BRITISH COLUMBIA

**REGIONAL GEOLOGY MAP**  
 DIAND OPEN FILE, 1984

**TRAIL HILL PROPERTY**  
 DAWSON MINING DISTRICT, YUKON, CANADA

Drawn by: JAD : abbas consulting

Scale: 1 : 50,000

Date: June, 1992

Figure No.:

## - LEGEND -

### EARLY TERTIARY TO QUATERNARY

DD dark brown-grey to black diabase and/or plagioclase-phyric dyke

### LATE CRETACEOUS TO EARLY TERTIARY

11 INTERMEDIATE INTRUSIVE AND VOLCANIC ROCKS, AND ASSOCIATED  
SEDIMENTARY ROCKS:

11a massive dark grey weathering intrusive andesite

11a massive chocolate brown weathering extrusive andesite

11a andesitic lapilli tuff

11a siltstone, greywacke, and conglomerate

F1 FELSIC INTRUSIVE AND VOLCANIC ROCKS:

F1a light-coloured quartz-feldspar rhyolite porphyry

F1b tan-coloured latite and biotite-quartz latite porphyry

F1c latitic lapilli tuff

### LATE CRETACEOUS

#### ROCKS OF VARYING METAMORPHIC GRADE AND DEGREE OF DEFORMATION

##### FELSIC PLUTONIC ROCKS:

FP foliated equigranular biotite granodiorite

##### INTERMEDIATE PLUTONIC ROCKS:

IP strongly foliated chlorite metadiorite

##### MAFIC PLUTONIC ROCKS:

MP weakly to strongly foliated amphibolite

### MIDDLE AND UPPER PALEOZOIC

MV MAFIC METAVOLCANIC ROCKS:

MVa andesitic tuff

MVb massive andesitic greenstone

MVc foliated andesitic greenstone

Unit MV may in part be  
correlative with Unit MS

## - LEGEND -

### MS            MAFIC SCHISTOSE ROCKS:

- MSa            light to medium green and buff weathering  
                 quartz-chlorite schist to gneiss
- MSb            dark green weathering chlorite schist
- MSc            silvery green weathering actinolite-chlorite schist
- MSd            grey-brown weathering quartz-amphibole schist

### UM            ULTRAMAFIC ROCKS:

- UMa            massive dark green serpentinite
- UMb            foliated serpentinite
- UMc            foliated weakly altered serpentinite, with or without chrysotile  
                 veinlets
- UMd            foliated strongly altered serpentinite, including talc schist and  
                 listwanite
- UMe            coarsely crystalline white marble

### KLONDIKE SERIES

#### QS            QUARTZOFELDSPATHIC SCHISTOSE ROCKS:

- QSa            blocky weathering light grey to pinkish grey feldspar-quartz schist
- QSB            buff to pale green weathering well foliated muscovite-feldspar-  
                 quartz schist with quartz and feldspar porphyroclasts, and lithic  
                 fragments
- QSc            buff weathering well foliated muscovite-feldspar-quartz-schist with  
                 quartz porphyroclasts
- QSD            buff weathering well foliated muscovite-feldspar-quartz-schist
- QSe            light green weathering hornblende-muscovite-feldspar-quartz schist
- QSF            silvery-grey weathering sericite-quartz schist
- QSG            buff to khaki weathering massive muscovite-feldspar-quartz  
                 cataclasite
- QSH            pink and green banded muscovite-feldspar-quartz gneiss
- QSI            white to dark grey weathering well foliated feldspar-quartz  
                 mylonite with quartz porphyroclasts

### NASINA SERIES

#### CS            CARBONACEOUS SCHISTOSE ROCKS:

- CSa            massive to foliated dark grey to black carbonaceous quartzite  
                 and quartz-muscovite schist
- CSb            black carbonaceous marble

Geology by R.L. Debicki, K.J. Grapes and L. Walton, 1983  
and Geological Survey of Canada Open File 1927, 1988

## 1992 EXPLORATION PROGRAM

The purpose of the exploration program was to evaluate the possible "epithermal" lode gold-silver potential of the subject property and, more specifically, test the area centred on Trail Hill between Cripple Creek and Lovitt Gulch drainages. The overburden and surficial gravels in this area have been monitored, sluiced and removed by past placer gold mining operations; thus, the bedrock exposure can locally exceed 70 per cent.

The exploration program was conducted between May 1 and June 12, 1992. It included, in order of execution:

- 1) quartz mineral claim verification, staking and surveying;
- 2) resistivity (dipole-dipole) surveying with 11 profile lines at 165°-345° and 3 profile lines at 075°-255°, totalling 10.89 line-kilometres;
- 3) HQ- and NQ-core diamond drilling: 8 drill holes totalling 623.32 metres (2,045 feet), including one vertical and seven angle holes from six sites;
- 4) establishment of survey control grid with a 2.05 line-kilometre, cut, picketed and flagged baseline at 165°-345° and 50-metre station spacing, and 13.4 line-kilometres of cut, picketed and flagged grid lines at 50-metre intervals with 25-metre station spacing oriented 075°-255°;
- 5) topographic surveying;
- 6) detailed geological mapping at a scale of 1:2,500;
- 7) bulldozer trenching of silicified and/or fault structures on the Blue Bucket North, Eureka and Ghost zones, totalling approximately 700 metres;
- 8) lithochemical sampling of silicified and dyke breccia zones within the Ghost zone; and
- 9) ground magnetics survey over the area of the survey control grid.

The initial phases of the program were supervised and directed by Mr. F. Marshall Smith, P. Eng., a qualified consulting geologist and director of Carmack Gold Corp. Mr. John Devlin, an experienced prospector and geophysical operator employed by Abbas Consulting, was contracted by Carmack Gold Corp. to assist Mr. Smith and the writer with the drilling and surveying work, and carry out a survey of the quartz mineral claims under the supervision of Mr. F. Marshall Smith, P. Eng. During the first week of May, 1992 Messrs. Smith and Devlin drove to the city of Dawson from Vancouver, B.C. with most of the fragile survey equipment. Prior to their mobilization the hardy camp and field equipment was shipped to Dawson via a commercial transport company.

Mr. David Mark and the three-man geophysical crew of Geotronics Surveys Ltd. of Vancouver, B.C. drove to Dawson with the geophysical equipment and commenced the resistivity survey of the Trail Hill area. Due to the lack of an existing survey control grid the geophysical crew cut, picketed and labelled geophysical lines from the Troup zone northward to the Ghost zone.

The writer, an experienced and qualified consulting geologist and president of Minorex Consulting Ltd., was contracted by Carmack Gold Corp. to supervise the proposed diamond drilling work, log the resultant drill core, conduct a detailed geological survey of the Trail Hill area, and document the results of the program. He flew to Dawson, Y.T. on May 15th. During the following few days, prior to the arrival of the diamond drilling rig, equipment and crew, the writer conducted several reconnaissance traverses over the Trail Hill area, and inspected the regional bedrock geology at some of the local placer mining operations in the district.

E. Caron Diamond Drilling Ltd. of Whitehorse, Yukon was contracted to carry out the drilling using a skid-mounted, unitized Longyear Super 38 diamond drill rig and support equipment. The drilling contractor mobilized to the property on May 19th, and during the following ten days they completed the proposed first-stage drilling contract. On May 29 the drilling crew returned to Whitehorse and the drilling rig and equipment were removed from the property after June 12th.

Following the completion of the resistivity surveying, Mr. David Mark returned to Vancouver, B.C. on May 18th. The three-man field crew remained on site to establish the survey control grid. They completed their work on May 22nd and demobilized to Vancouver, B.C.

After the diamond drilling contract was fulfilled, Mr. F.M. Smith demobilized to Vancouver, B.C., and the writer and Mr. Devlin remained in Dawson to complete the program. Topographic and ground magnetic surveying, trenching supervision and lithogeochemical sampling were carried out by Mr. John Devlin, under the supervision of the writer. The writer mapped the geology of the Trail Hill area at a scale of 1:2,500. The subsequent bulldozer trenching and earlier drill rig moves were accomplished with the use of D-6, D-7 and D-9 bulldozers contracted to Carmack Gold Corp. by Mr. R. Nicholson, the owner of the placer claims in the vicinity.

All of the drill core and lithogeochemical samples were shipped to Min-En Laboratories of North Vancouver, B.C. for processing and analysis.

Upon completion of the field work and receipt of the analytical results, the writer prepared this report which documents the results of the exploration program. A Statement of Qualifications for the writer accompanies this report.

#### 1) Quartz Mineral Claim Survey

During early May, M. J. Devlin surveyed the central HAWK quartz mineral claims to insure that they were correctly located, documented and recorded. The located claim posts were surveyed to known topographic features using chain and compass surveying methods, and the results of this work were plotted using an on-site computer with AutoCAD computer software.

Most of the subject claim posts were located in the field at or very near their reported locations. This work also discovered two sections of open ground which were subsequently staked as the HAWK 15, JAD 1 Fr and JAD 2 Fr quartz mineral claims by Mr. J. Devlin for the joint venture partners. The results of this work are shown on Figures 2 and 4 of this report.

## 2) Survey Control Grid

Over a five-day period, from May 18th to May 22nd, the geophysical crew employed by Geotronics Survey Ltd. established a cut and/or flagged, picketed, and labelled survey control grid from Cripple Creek north to the White Channel cliffs of the Ghost zone.

Four off-set baselines, totalling 2.05 line-kilometres, were cut, picketed and labelled with embossed aluminum tags from gridline 4200 North to 5880 North. These baselines were oriented at 165°-345°, and survey stations were picketed, labelled and flagged at 50-metre intervals along these lines.

Gridlines were flagged, picketed and labelled at 50-metre intervals along the off-set baselines; oriented at 075°-255°. Every 50-metre survey station was picketed, labelled with embossed aluminum tags and flagged with orange and blue flagging. The intermediate 25-metre stations were flagged with orange and blue flagging but not labelled. A total of 13.4 line-kilometres of gridlines were established from grid coordinates 4200 North and 5850 North; extending west to east of the baseline from grid coordinates 4650 East to 5500 East.

The survey control grid has been plotted on Figures 4, 5 and 6 of this report. All of the geological, ground magnetic, lithochemical samples and drill hole data are referenced to the survey grid coordinates.

## 3) Topographic Survey

Mr. J. Devlin undertook a detailed altimeter survey of the control grid area following the completion of the diamond drilling work to provide topographic control. A Thommen altimeter was utilized for the survey and all of the elevations were referenced to the establish elevation of the Dawson airport.

Elevation readings were recorded at each of the survey stations within the survey control grid and along some of the peripheral access roads. Readings were collected at 1 to 2 hour periods and then adjusted to previously established base station elevations. Thus, all of the elevation readings were corrected for daily barometric variations.

Four-metre contour elevation results of the topographic survey have been plotted with the detailed geological results on Figure 5 of this report.

## 4) Trenching and Lithochemical Sampling

During and after the diamond drilling work bulldozer trenching was carried out on the Blue Bucket North, Eureka and Ghost zones. The trenching at the Blue Bucket North zone was undertaken to expose several narrow quartz-limonite (i.e. altered pyrite) veinlets that were reported to host gold mineralization. A 20-kilogram composite sample was collected of the quartz-limonite veinlet material and this sample was subsequently crushed, panned and later analyzed. No significant gold mineralization was reported from either the panning or analytical work.

The bulldozer trenching at the Eureka zone was undertaken to expose the surface trace of a dyke breccia structure that was later intersected by drill holes 92-05, 06, 07 and 08. Trenches were excavated from near the collar of

diamond drill hole 92-02 to the pad of diamond drill hole 92-04. No surface samples were collected from the trenches since the subsequent drilling along the structure provided much fresher, less contaminated samples of the structure.

Reconnaissance prospecting located a large boulder with intense quartz-calcite-limonite stockwork veining at the Ghost zone near grid coordinates 5750 North by 5200 East. This float boulder was considered interesting since it was situated very near a large, apparently "epithermal" clay alteration zone. Bulldozer trenches were excavated at the site of the float and along several of the nearby roads and sluice ditches. A total of seven trenches, along a strike length of 200 metres, exposed a silicified dyke structure infilling a northwesterly trending major fault.

Eight chip samples were collected from several sites along the silicified dyke structure. In addition, one chip sample was collected from a very graphitic horizon of the carbonaceous schistose host rocks to determine whether it might host carbon-fixative gold mineralization.

The lithogeochemical samples were collected, described, bagged and labelled by Mr J. Devlin and the writer. Rock sample locations were marked in the field by aluminum tags inscribed with the sample number and date. The samples were later delivered to Min-En Laboratories in North Vancouver, B.C. There, each sample was crushed and pulverized to approximately -120 mesh, and split into sample pulps and rejects. The sample rejects were stored for 30 days pending re-analysis.

The rock sample pulps were analyzed for gold (Au) plus 31 elements, including: silver (Ag), aluminum (Al), arsenic (As), boron (B), barium (Ba), beryllium (Be), bismuth (Bi), calcium (Ca), cadmium (Cd), cobalt (Co), copper (Cu), iron (Fe), potassium (K), lithium (Li), magnesium (Mg), manganese (Mn), molybdenum (Mo), sodium (Na), nickel (Ni), phosphorus (P), lead (Pb), antimony (Sb), strontium (Sr), thallium (Th), titanium (Ti), vanadium (V), zinc (Zn), gallium (Ga), tin (Sn), tungsten (W), and chrome (Cr). These analyses were conducted by professional assayers utilizing accepted inductively coupled argon plasma (ICP) analytical techniques for the 31-element analyses, and fire assay preparation and atomic absorption procedures for the gold analyses.

The trench and lithogeochemical sample locations have been plotted with the geological results on Figure 5 of this report. The lithogeochemical samples have been described in detail and these descriptions accompany this report as Appendix I. The Certificates of Assay, I.C.P. reports and analytical procedures accompany this report as Appendix III.

## 5) Geological Survey

The writer mapped the geology of the survey control grid area at a scale of 1:2,500 from June 1st to 11th. The lithology of the bedrock exposures was identified and structural, alteration and mineralization data were recorded. All structural attitudes were recorded and are reported using the "right-hand" rule (i.e. the dip plane is always right of recorded strike direction). The locations of the outcrops and their geological information were later plotted at a scale of 1:2,500 on a prepared topographic base map. See Figure 5 of this report for the detailed geological survey results.

## 6) Geophysical Surveys

### Ground Magnetism Survey

A ground magnetism survey was conducted by Mr. J. Devlin using a Scintrex proton magnetometer. Since there was no base station instrumentation available at the time geophysical traverses were "looped" and the recorded magnetic readings were corrected for diurnal variations using previously established base station site readings along several of the baselines. A base magnetic datum of 57,000 gammas was utilized for the survey. The results of the ground magnetism survey are plotted as Figure 6 of this report.

### Resistivity Survey

This survey was conducted and supervised by Mr. David Mark of Geotronics Surveys Ltd. Since a report on this survey and its results has yet to be submitted to Carmack Gold Corp. the writer will not discuss the details of this survey herein; however, the profile lines have been plotted on Figure 4.

## 7) Diamond Drilling

Based upon resistivity and prospecting results, diamond drill sites were proposed to test the subsurface lode gold-silver potential of the clay alteration zones and resistivity anomalies at the Blue Bucket and Eureka zones.

After diamond drill holes 92-01, 02, 03 and 04 had tested the most interesting geophysical targets at the Blue Bucket and Eureka zones bulldozer trenching exposed a dyke breccia occupying a fault zone trending southward from immediately west of the drill hole 92-02 collar to the site of drill hole 92-04. It was decided to concentrate the remaining drilling along trend of the dyke breccia. Thus, diamond drill holes 92-05 and 92-06 were drilled eastward to test the breccia just west of drill hole 92-02 and drill holes 92-07 and 92-08 were drilled westward to test it along its southerly trend.

Eight HQ- or NQ-core diamond drill holes were completed during the program, totalling 623.32 metres or 2,045 feet. The first HQ-core drill hole, DDH 92-01, was drilled vertically while the next four angle drill holes (i.e. DDH 92-02, 03, 04 and 05) were completed with NQ wireline equipment. Following the poor core recoveries of DDH 92-05, the last three angle drill holes were completed with HQ wireline drilling equipment.

The diamond drill core was logged after the interval blocks had been converted to metric measurements. Core recoveries were measured and the core boxes were permanently labelled with embossed aluminum tags. The tags identify the drill hole number, box number and core interval contained in each box. After the core had been processed, all of the boxes were moved to Arbor Resources' core storage facility at the Callison Industrial Park, situated on Highway 2 between the city of Dawson and its airport.

A total of forty-one samples were collected at various intervals from the core of drill holes 92-05, 06, 07 and 08. They were split from the core using a Longyear core splitter, bagged and labelled by Mr J. Devlin after the writer had logged the core. An assay tag was left in each core box at the location of each of the core samples.

TABLE I

## 1992 DIAMOND DRILL HOLE DATA

Trail Hill Property, Dawson Mining District, Yukon Territory, Canada

DDH No.	DATE		Core Type	Grid Coord.		Azimuth	Collar Dip	Length		Dip Depth (m)	Test Angle
	Start	Finish		Northing	Easting			metres	feet		
92-01	20-May	21-May	HQ	4850	5000		- 90°	87.48	287	87.48	- 85.5°
92-02	21-May	23-May	NQ	5335	5222	165°	- 70°	138.68	455	138.68	- 66.5°
92-03	23-May	24-May	NQ	5278	5166	165°	- 45°	68.58	225	68.58	- 45°
92-04	24-May	25-May	NQ	5147	5187	345°	- 45°	94.49	310	94.49	- 45°
92-05	25-May	26-May	NQ	5319	5191	075°	- 45°	53.04	174	53.04	- 45°
92-06	26-May	27-May	HQ	5319	5191	075°	- 60°	76.20	250	76.20	- 59°
92-07	27-May	28-May	HQ	5239	5194	255°	- 45°	45.11	148	45.11	- 45°
92-08	28-May	29-May	HQ	5239	5194	255°	- 60°	59.74	196	59.74	- 59°
<b>Total Footage:</b>								<b>623.32</b>	<b>2,045</b>		

The core samples were shipped to Min-En Laboratories in North Vancouver, B.C. There, each sample was crushed and pulverized to approximately -120 mesh, and split into sample pulps and rejects. The sample rejects were stored for 30 days pending re-analysis. The rock sample pulps were analyzed for gold (Au) plus 31 elements, including: silver, aluminum, arsenic, beryllium, boron, barium, bismuth, calcium, cadmium, cobalt, copper, iron, potassium, lithium, magnesium, manganese, molybdenum, sodium, nickel, phosphorus, lead, antimony, strontium, thallium, titanium, vanadium, zinc, gallium, tin, tungsten, and chrome. These analyses were conducted by professional assayers utilizing accepted inductively coupled argon plasma (ICP) analytical techniques for the 31-element analyses, and fire assay preparation and atomic absorption procedures for the gold analyses.

The diamond drill hole data have been tabulated as Table II of this report. Appendix II of this report contains the geologic drill logs and Appendix III contains the Certificate of Assay and I.C.P. report for the drill core samples. Figures 4 and 5 of this report show the locations of the diamond drill holes.

## DISCUSSION OF EXPLORATION RESULTS

The results of the program are not encouraging and do not warrant further investigative work.

### 1) Geological Survey

#### Lithology

The Trail Hill area is underlain by foliated, dark grey to black carbonaceous quartz-muscovite ( $\pm$  sericite, chlorite) schist and carbonaceous quartzite; correlative with the carbonaceous rocks of the middle Paleozoic Nasina Series. The carbonaceous schistose rocks are locally intruded by a small ultramafic sill or stock, and by much younger diabase and plagioclase-phyric dykes emplaced along northwesterly, northerly and northeasterly fault structures. Within a central north-northwesterly trending dyke swarm at the Eureka zone there is a very late-stage fault infilled with a dyke breccia. At the Ghost zone, a similar dyke structure has been faulted and locally silicified.

Paleoweathering of the Nasina Series carbonaceous schists has resulted in large zones of white to pale brown clay with highly altered schistose rock fragments in the regolith. Most of the clay zones which had been interpreted as "epithermal" alteration zones are, in fact, surficial weathering phenomena, probably dating to late Tertiary time when hot, humid climatic conditions prevailed. When several of the white clay "alteration" zones were trenched and drilled it was obvious from the results that the white clay regolith often ceased within 2 to 20 metres of the bedrock surface and graded into dark grey to black carbonaceous schists.

Often near Early Tertiary to Quaternary dyke structures the carbonaceous schists are pervasively altered to propylitic or argillic facies; resulting in a quartz-muscovite-sericite schist very similar in appearance to the overlying Klondike Series rocks. Recent geological works by Debicki (1984) and G.S.C. (1988) report the occurrence of Klondike Series quartzofeldspathic schist within the subject property but geological and drilling results show that carbonaceous Nasina Series rocks underlie this area.

At the Troup zone, near the southern end of the control grid, there is a carbonaceous quartzite unit interbedded with the carbonaceous quartz-muscovite schist sequence. This unit appears to be folded about a northeasterly trending and shallow plunging axis. Along its northern and eastern contacts there are remobilized quartz-limonite veinlets infilling shears cutting the quartzite.

One small deformed ultramafic intrusion was mapped within the carbonaceous schists along Trail Gulch. This intrusion occurs along the projected trend of a northeasterly fault. It has a 3-metre limonitic (after pyrite) exothermic alteration zone which has been later sheared and infilled by a diabase dyke. Mariposite is very common along foliation planes within the intrusion and chrysotile float has been found within 6 metres of the body. It is apparent from the penetrative deformation fabric of the intrusion that its emplacement predates the low-angle thrusting of the Klondike Series over the Nasina Series rocks.

Diabase and plagioclase  $\pm$  augite porphyry dykes infill a number of northwesterly to northeasterly trending shear and fault structures. These dykes locally form swarms that split and coalesce along their strike lengths. They have been displaced by later steeply-dipping shearing and faulting oriented 345° and 060°. This indicates that there has been very recent northwesterly transcurrent faulting postdating the emplacement of the dykes.

Surficial exposures of recently exposed diabasic and/or porphyritic dykes are commonly dark chocolate brown, massive, 10 centimetre to over 6-metre wide structures that are slightly more resistive to erosion than the country rocks. Weathered outcrops have a distinctive yellow-brown colour; quite different from the white to pale yellow coloured schistose rocks. At the Blue Bucket zone, the weathered surface has been recently scraped by a placer operation and one can walk along the exposed strike lengths of several dykes for 200 to 400 metres.

In drill core, the Early Tertiary to Quaternary dykes have black, aphanitic chilled margins, often with local sheared contacts, grading inward to augite and/or plagioclase porphyry cores. The augite phenocrysts range up to 1 cm. in diameter but usually average 2 to 4 mm. Their cores are often deuterically-altered to epidote, chlorite and iron carbonate. The plagioclase-rich porphyries have 2 to 5 mm. long by 1 mm. wide plagioclase laths surrounded by a medium to dark grey to black aphanitic groundmass. The diabasic dykes have been distinguished from the porphyritic varieties based upon their dark grey to black, aphanitic appearance; however, it is not uncommon for all three macroscopic varieties to occur within the same dyke body.

At the Eureka zone, a dyke breccia zone occupies a reactivated fault structure internal to a northerly trending augite-plagioclase porphyry and diabase dyke swarm. The zone is characterized by 1- to 30-centimetre, subangular to rounded clasts of quartz-muscovite schist, aplite and quartz vein material within an augite-plagioclase phyrlic to diabasic dyke matrix. The matrix is similar in composition to that of the dykes on both sides of the zone.

To the north, a similar zone occurs at the Ghost zone where two diabase dykes bound a weakly to moderately siliceous zone varying from 30 centimetres to 3 metres wide. This zone strikes at 142° and dips vertically. Invariably, the dyke or clastic breccia zone at the Eureka zone and the siliceous zone at the Ghost zone hosts ubiquitous fine-grained pyrite disseminations and fracture fillings ( $\leq$  1% of rock volume).

## Structure

According to Debicki (1984), a regional thrust fault occurs in the vicinity of Trail Hill which has thrust Klondike Series quartzofeldspathic rocks over the carbonaceous rocks of the Nasina Series. This structure was not identified on the property and it appears that the quartzofeldspathic rocks are more likely argillically-altered carbonaceous rocks beneath the now-eroded sole of the thrust fault in close proximity to major north-northwesterly faulting, dyking and local silicification.

The foliation and schistosity attitudes of the Nasina Series rocks are dominantly  $040^{\circ}$  to  $070^{\circ}$ , averaging  $060^{\circ}$ , and steeply dipping southeastwardly and northwestwardly (commonly  $-60^{\circ}$  to vertical). Minor fold structures at the Troup and Ghost zones indicate that schistose rocks have been folded about a number of northeasterly trending axial planes that have northeasterly trending and shallow plunging fold axes.

Based upon an apparent displacement of the dyke breccia zone between the Eureka and Ghost zones and rotation of foliation attitudes in schistose rocks on both sides of Trail Gulch, the writer has inferred two transcurrent faults underlie the Lovitt and Trail Gulches. These inferred structures are also reflected by smaller parasitic faults and shears cutting the schistose country rocks and younger dykes.

## Alteration

The Nasina Series rocks have all metamorphosed to upper greenschist facies. Near late-stage fault and dyke structures the carbonaceous schistose rocks appear to have been hydrothermally altered to propylitic or argillic facies. It is the writer's opinion that the superimposed alteration pattern may be reflecting thermal and, possibly, hydrothermal alteration related to low-angle thrust faulting.

None of the dykes have notable alteration selvages but they appear to have been emplaced within zones of widespread, weak to moderate argillic alteration.

## Mineralization

Pyrite commonly occurs as fracture fillings and disseminations hosted by quartzose schists. It is also pervasive within the diabasic and porphyritic dykes; especially within the dyke breccia zone. Subhedral to euhedral pyrite crystals range from less than 1 mm. to over 4 mm. in diameter.

One shear-hosted 30-centimetre wide quartz vein that was intersected by drill hole 92-06 (52.0 to 52.30 m.) hosts pyrite and minor galena mineralization but, aside from this one intercept, no other economic sulphide mineralization was observed during the program.

Limonite, goethite and hematite are common oxidation products of the pyritization. Limonite is common on surface with narrow quartz boudins parallel to the schistosity. Goethite and/or hematite commonly occur within shear and fault structures; especially those along intrusive contacts.

## 2) Geochemical Sampling Survey

### Lithogeochemical Sampling

The analytical results for the nine chip samples that were collected from the various trenches at the Ghost zone are very low to insignificant. The highest gold value (0.13 g.p.t. or 0.004 o.p.t.) was returned from sample 8603 which is a chip sample across 1.5 metres of a silicified and brecciated section between two unaltered diabase dykes. Most of the other gold values are less than 0.05 grams per ton (less than 0.001 o.p.t. gold). The 31-element I.C.P. results do not indicate the presence of any significant silver or base metal mineralization.

## 3) Geophysical Surveys

### Ground Magnetism Survey

The results of this survey are plotted as Figure 6 of this report. It appears that the majority of the exceptionally high magnetic readings can be attributed to partially or fully buried pipelines, scrap steel and other metallic junk left by previous placer operations. When these readings are eliminated or filtered from the database the magnetic relief is very low, but there is only a vague trend of magnetic susceptibilities correlative with known or inferred faults and/or dykes.

### Resistivity Survey

It appears that the results of the resistivity surveying were critically biased by the presence of carbonaceous Nasina Series country rocks. Furthermore, subsequent geologic mapping results show that most of the profile lines were conducted subparallel to dominant structural features, dyking and local quartz veining.

None of apparent "epithermal-type" vein structures from the resistivity pseudosections were intersected by any of the drill holes.

## 4) Diamond Drilling

Drill holes 92-01, 02, 03 and 04 tested the apparent "epithermal-type" vein structures at the Blue Bucket and Eureka zones which were detected by the resistivity surveying. These holes showed that the white to light grey clay alteration at surface is a paleoweathering product and that within 20 metres the country rocks are relatively fresh carbonaceous quartz-muscovite schist to weakly pyritic, upper greenschist altered quartz-sericite schist. Most often the altered schist occurred in close proximity to augite-plagioclase porphyry and/or diabase dykes. None of these holes intersected any structure worthy of sampling.

Drill holes 92-05, 06, 07 and 08 were collared to intersect a late-stage pyritic dyke breccia zone that was discovered by bulldozer trenching at the Eureka zone. The results of the core logging indicate that the dyke breccia occupies a reactivated fault structure internal to a northerly trending augite and/or plagioclase porphyry and diabase dyke swarm. The zone is characterized by subangular to rounded clasts of quartz-muscovite schist, aplite and quartz vein material (i.e. possibly White Channel boulders) within an augite-plagioclase

porphyritic to diabase dyke matrix. The matrix is apparently the same composition as that of the dykes on both sides of the zone. It appears that the zone was a fault chasm at the very early stages of the White Channel deposition. Late Tertiary to Recent dyking along the fault structure cemented the polymictic conglomerate as a dyke breccia.

Forty-one core samples were split from the cores of drill holes 92-05 to 08. The highest gold value of 0.006 o.p.t. (0.22 g.p.t.) was returned from sample 8581 which was cut from the interval of 35.0 to 37.0 metres in DDH 92-08. This interval is a well-fractured, pyritic and sheared section of dyke breccia with a variety of schistose and quartz vein material clasts.

None of the analytical results from the core sampling indicates the presence of any interesting precious or base metal mineralization.

## CONCLUSIONS

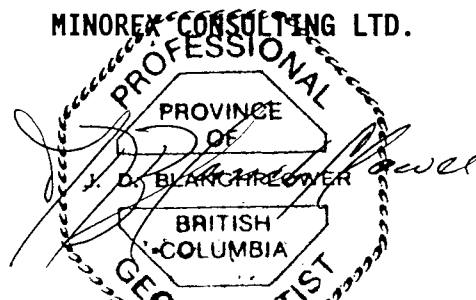
The property is underlain by foliated, dark grey to black carbonaceous quartz-muscovite ( $\pm$  sericite, chlorite) schist and carbonaceous quartzite; correlative with the carbonaceous rocks of the middle Paleozoic Nasina Series. The carbonaceous schists are locally intruded by a small ultramafic sill or stock, and by much younger diabase and plagioclase-phyric dykes emplaced along northwesterly, northerly and northeasterly fault structures.

Within a central north-northwesterly trending dyke swarm at the Eureka zone there is a very late-stage fault infilled with a dyke breccia. At the Ghost zone, a similar dyke structure has been faulted and locally silicified. The late-stage dyke breccia or silicification has been traced intermittently along a strike length of 650 metres. However, the analytical results from the drill core and surface rock chip samples show that the late-stage faulting, dyke breccia and/or silicification are barren; without any indication of any significant precious, base metal, or pathfinder mineralization.

It is the opinion of the writer that the present results do not warrant further investigation and the property option agreement should be terminated.

Submitted by,

MINOREX CONSULTING LTD.



J.D. Blanchflower, P. Geo.  
Consulting Geologist

## STATEMENT OF QUALIFICATIONS

I, **J. DOUGLAS BLANCHFLOWER**, of the Municipality of Delta, Province of British Columbia, DO HEREBY CERTIFY THAT:

- 1) I am a Consulting Geologist with a business office at 11967 - 83A Avenue, Delta, British Columbia, V4C 2K2; and President of Minorex Consulting Ltd.
- 2) I am a graduate in Economic Geology with a Bachelor of Science, Honours Geology degree from the University of British Columbia in 1971.
- 3) I am a Registered Professional Geoscientist of the Association of Professional Engineers and Geoscientists of British Columbia (No. 19086).
- 4) I am a Fellow of the Geological Association of Canada.
- 5) I have practised my profession as a geologist for the past twenty-one years.

Pre-Graduate field experience in Geology, Geochemistry and Geophysics (1966 to 1970).

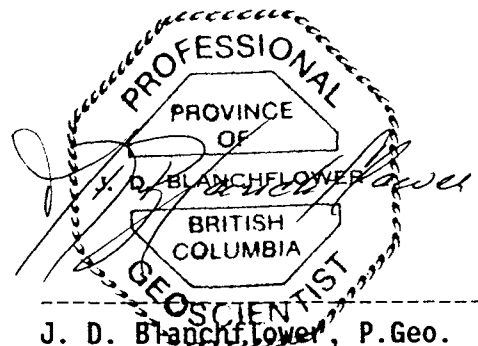
Three years as Geologist with the B. C. Ministry of Energy, Mines and Petroleum Resources (1970 to 1972).

Seven years as Exploration Geologist with Canadian Superior Exploration Limited (1972 to 1979).

Three years as Exploration Geologist with Sulpetro Minerals Limited (1979 to 1982).

Ten years as Consulting Geologist and President of Minorex Consulting Ltd. (1982 to 1992).

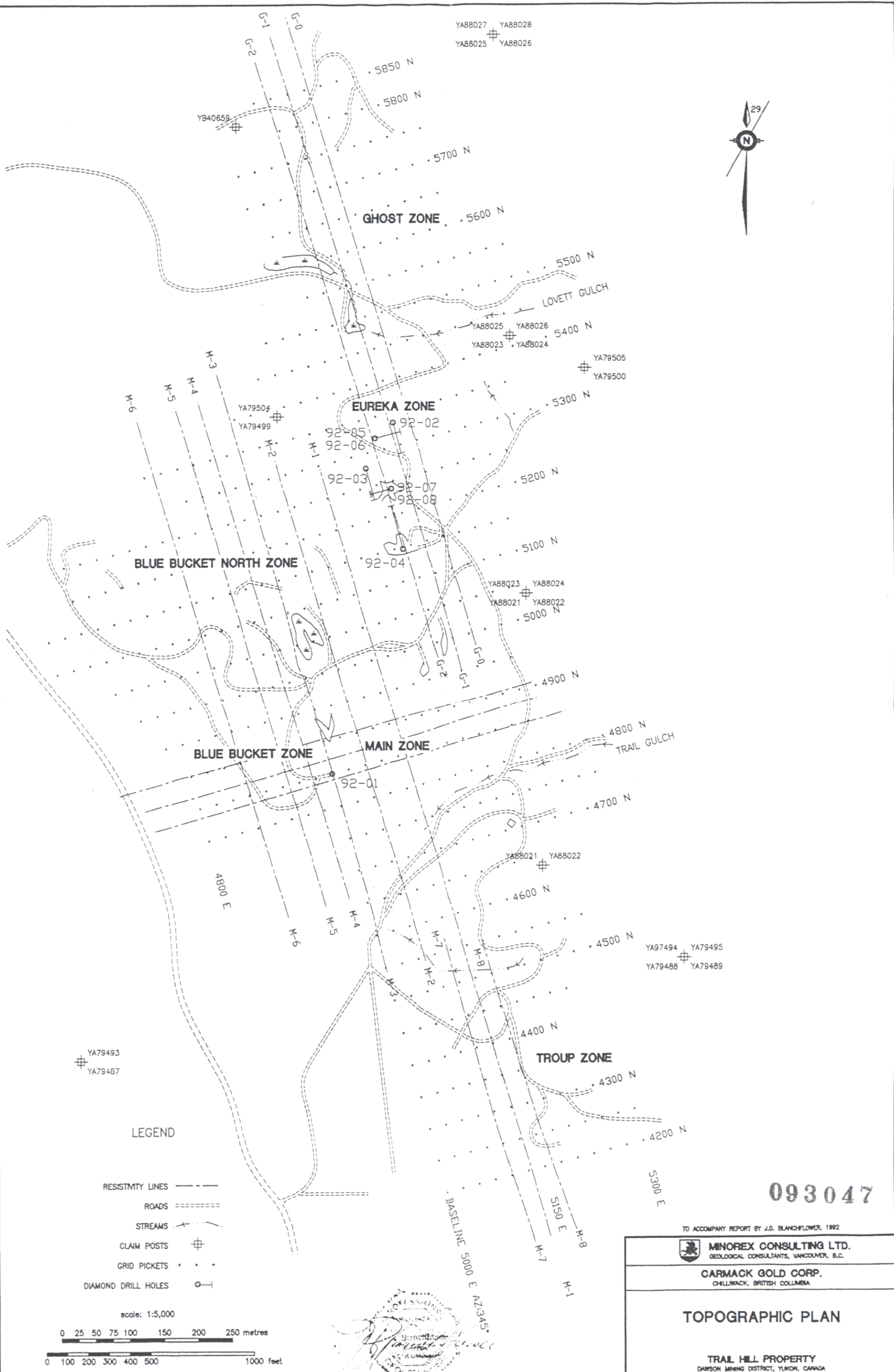
- 6) I own no direct, indirect or contingent interest in the subject claims, nor shares in or securities of **CARMACK GOLD CORP.**
- 7) I supervised the diamond drilling work, logged the drill core, conducted the detailed geological survey, supervised the ground magnetics and topographic surveys, and compiled and documented the results of the 1992 exploration program as this report.



Dated at Delta, British Columbia, this 15th day of July, 1992

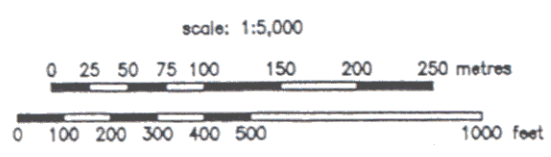
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- , 1985: Open File - Bedrock Geology and Mineralization of the Klondike Area (East), 115 O/9, 10, 11, 14, 15, 16 and 16 B/2, and 3: Exploration and Geological Sciences Division, Yukon; *Indian and Northern Affairs Canada*, Open File 1:50,000 Map.
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- Harvey, M., 1992: Personal communications.



**LEGEND**

- RESISTIVITY LINES ———
- ROADS - - - - -
- STREAMS ~~~~~
- CLAIM POSTS ⊕
- GRID PICKETS · · ·
- DIAMOND DRILL HOLES ○



TO ACCOMPANY REPORT BY J.D. BLANCHFLOWER, 1992

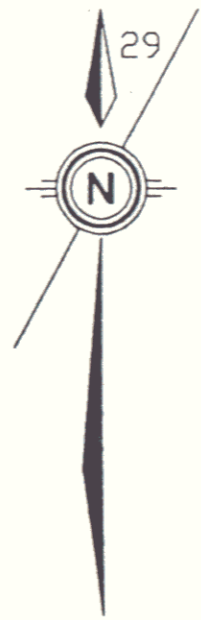
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GEOLOGICAL CONSULTANTS, VANCOUVER, B.C.

**CARMACK GOLD CORP.**  
CHILLWACK, BRITISH COLUMBIA

**TOPOGRAPHIC PLAN**

**TRAIL HILL PROPERTY**  
DAWSON MINING DISTRICT, YUKON, CANADA

Drawn by: JAD : abbas consulting	Scale: 1 : 5,000
Date: June, 1992	Figure No.: 4



— LEGEND —

EARLY TERTIARY TO QUATERNARY

- DD DBx dark grey-brown to black, diabase and plagioclase porphyry dyke breccia with apilite, quartz vein and quartz-muscovite schist clasts
- DD DD dark brown diabase dyke
- PID PID dark brown-grey to black plagioclase porphyry dyke

MIDDLE AND UPPER PALEOZOIC

- UM ULTRAMAFIC ROCKS:
  - UMd UMd foliated, strongly altered serpentinite, including talc schist and listwanite

NASINA SERIES

- CS CARBONACEOUS ROCKS:
  - CSa CSa foliated, dark grey to black, carbonaceous quartz-muscovite schist
  - CSb CSb massive, black carbonaceous marble
  - CSd CSd foliated, medium to dark grey-brown carbonaceous quartzite

After geology by R.L. Debicki, K.J. Gropes and L. Walton, 1983 and Geological Survey of Canada Open File 1927, 1988

— SYMBOLS —

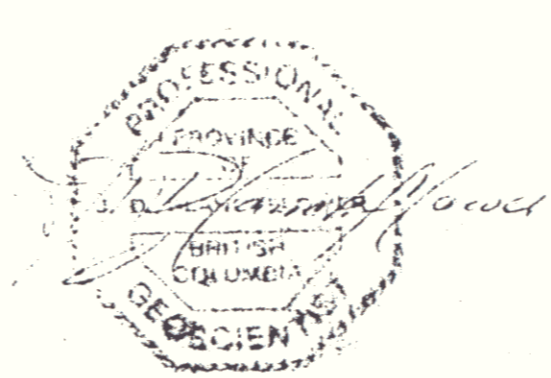
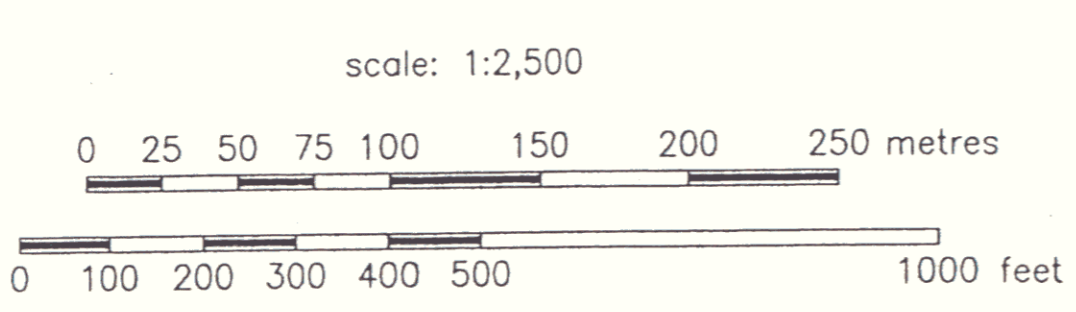
- Outcrop
- Geological contact (defined, assumed)
- ~ Fault (assumed, inferred)
- ↗ Schistosity, foliation (inclined, vertical)
- ↖ Jointing (inclined, vertical)
- ↗ Lincation (inclined)
- == Road (seasonal)
- Clearing
- == Trench
- ⊕ Quartz mineral claim post
- ⊕ Drill hole collar (diamond, percussion)
- ▲ Rock sample - chip sample
- ▨ Limonite, goethite and/or hematite alteration
- Quartz-calcite-limonite fracture filling or veining

— ABBREVIATIONS —

- ca Calcite      ga Galena      ms Sericite
- cl Chlorite    go Goethite    py Pyrite
- cp Chalcopyrite    ja Jarosite    qz Quartz
- cy Clay        li Limonite    qc Chalcedony
- ep Epidote      mg Magnetite    sp Sphalerite

— ROCK SAMPLE ANALYSES —

Sample No.	Width (m.)	Au (AA) g.p.t.	Ag p.p.m.	As p.p.m.	Cu p.p.m.	Pb p.p.m.	Sb p.p.m.	Zn p.p.m.
8601	3.0	0.05	1.0	30	14	13	1	14
8602	2.5	0.03	0.4	11	4	12	1	9
8603	1.5	0.13	0.1	11	4	7	1	7
8604	2.0	0.01	0.2	12	4	8	1	8
8605	0.3	0.01	0.1	9	7	7	1	17
8606	0.7	0.01	0.1	10	9	6	1	9
8607	0.6	0.01	0.1	1	5	3	1	120
8608	0.6	0.01	0.1	36	5	52	1	64
8609	2.0	0.01	0.1	15	3	14	2	10



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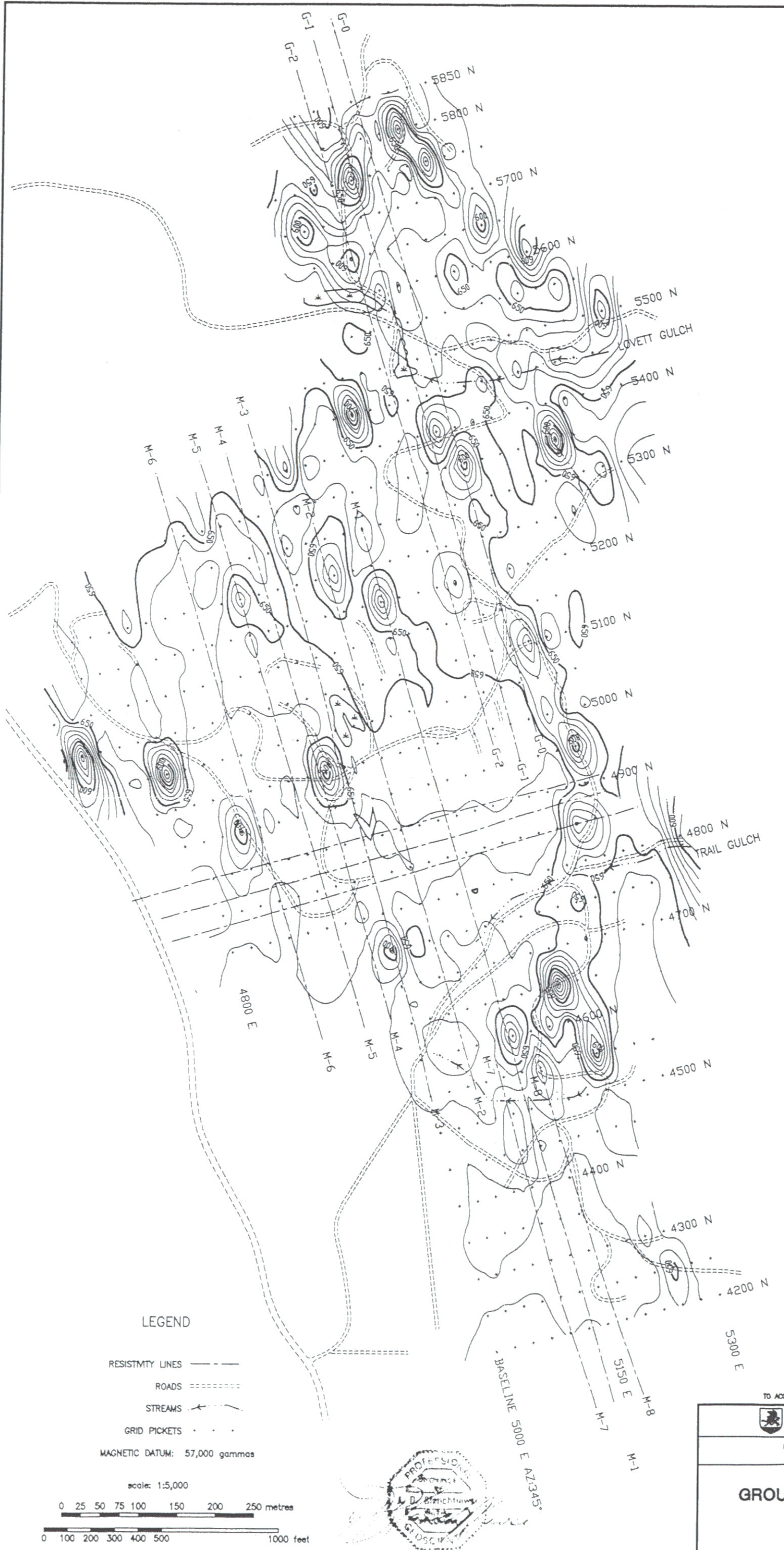
**CARMACK GOLD CORP.**  
CHILLIWACK, BRITISH COLUMBIA

**GEOLOGICAL PLAN**

**TRAIL HILL PROPERTY 093047**  
DAWSON MINING DISTRICT, YUKON, CANADA

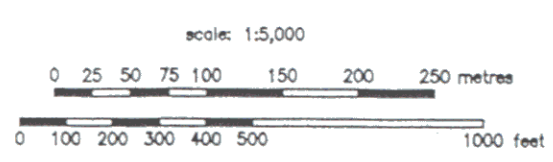
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Date: June, 1992      Figure No.: 5

459  
MAP# 116 B/C



LEGEND

- RESISTIVITY LINES ————
  - ROADS - - - - -
  - STREAMS ————
  - GRID PICKETS . . . . .
- MAGNETIC DATUM: 57,000 gammas



093047

TO ACCOMPANY REPORT BY J.D. BLANCHFLOWER, 1992

**MINOREX CONSULTING LTD.**  
GEOLOGICAL CONSULTANTS, VANCOUVER, B.C.

**CARMACK GOLD CORP.**  
CHILLIWACK, BRITISH COLUMBIA

**GROUND MAGNETOMETER SURVEY PLAN**

**TRAIL HILL PROPERTY**  
DAWSON MINING DISTRICT, YUKON, CANADA

Drawn by: JAO : abbas consulting	Scale: 1 : 5,000
Date: June, 1992	Figure No.:

**APPENDIX I**

Lithochemical Sample Descriptions

## Sample Number

## Sample Description

- 8601 5761 N. by 5198 E. - Chip sample across 3 metres of a limonitic, light green silicified shear bounded on both sides by dark brown diabase dykes. The silicified shear breccia zone has subangular to angular, less than 1 cm. to over 10 cm., argillically-altered breccia fragments of diabase dyke cut and surrounded by less than 1 cm. wide quartz-calcite-limonite veinlets. Often the veinlets have a lamellar appearance indicating repetitive brecciation and deposition of silica. Limonite is ubiquitous throughout the brecciated zone indicating pervasive pyrite mineralization. The eastern bounding dyke is 30 to 50 cm. wide and the western dyke is commonly 60 cm. wide. These dykes are often limonitic (oxidized pyrite) within 30 cm. the shear zone.
- 8602 5763 N. by 5197 E. - Chip sample across 2.5 metres of a limonitic, light green silicified shear bounded on both sides by dark brown diabase dykes. Same sample material and geologic setting as sample 8601 but located approximately 3 metres to the northwest.
- 8603 5765 N. by 5196 E. - Chip sample across 1.5 metres of a limonitic, light green silicified shear bounded on both sides by dark brown diabase dykes. Same sample material and geologic setting as sample 8601 but located approximately 6 metres to the northwest.
- 8604 5767 N. by 5195 E. - Chip sample across 2.0 metres of a limonitic, light green silicified shear bounded on both sides by dark brown diabase dykes. Same sample material and geologic setting as sample 8601 but located approximately 9 metres to the northwest.
- 8605 5800 N. by 5188 E. - Chip sample across 30 cm. of a limonitic, light green silicified shear bounded on both sides by dark brown diabase dykes. The silicified shear breccia zone has subangular to angular, less than 1 cm. to over 5 cm., argillically-altered breccia fragments of diabase dyke cut and surrounded by less than 1 cm. wide quartz-calcite-limonite veinlets. Limonite is ubiquitous throughout the brecciated zone indicating pervasive pyrite mineralization. Both bounding dykes are approximately 50 cm. wide. and often limonitic within 30 cm. the shear zone.
- 8606 5802 N. by 5186 E. - Chip sample across 70 cm. of a limonitic, light green silicified shear bounded on both sides by dark brown diabase dykes. Same sample material and geologic setting as sample 8605 but located approximately 2.5 metres to the northwest.
- 8607 5820 N. by 5185 E. - Chip sample across 60 cm. of a limonitic, light green silicified shear bounded on both sides by dark brown diabase dykes. The silicified shear breccia zone has subangular to angular, less than 1 cm. to over 5 cm., argillically-altered breccia fragments of diabase dyke cut and surrounded by less than 1 cm. wide quartz-calcite-limonite veinlets. Limonite is ubiquitous throughout the brecciated zone. The bounding dykes are 1 to 3 m. wide and limonitic within 30 cm. the shear zone.

**Sample Number****Sample Description**

- 8608 5680 N. by 5245 E. - Chip sample across 60 cm. of a limonitic, light green silicified shear bounded on both sides by dark brown diabase dykes. The silicified shear breccia zone has subangular to angular, less than 1 cm. to over 5 cm., argillically-altered breccia fragments of diabase dyke cut and surrounded by less than 1 cm. wide quartz-calcite-limonite veinlets. Limonite is ubiquitous throughout the brecciated zone indicating pervasive pyrite mineralization. Both bounding dykes are approximately 40 cm. wide. They are often limonitic (oxidized pyrite) within 10 cm. the shear zone.
- 8609 5650 N. by 5212 E. - Chip sample across a true width of 2 metres of a highly graphitic bed within carbonaceous quartz-muscovite schist. The bed trends 054° and dips -62° southeastward.

**APPENDIX II**

Geological Logs

for

Diamond Drill Holes 92-01 to 92-08

## MINOREX CONSULTING LTD

## DRILL LOG

DRILL HOLE No. 92 - 01

Geological Consultants and Exploration Management

<b>Property:</b> TRAIL HILL	<b>LOCATION MAP</b>	<b>Date Started:</b> May 20, 1992	<b>Grid Northing:</b> 4850
<b>Project No.:</b> P92-07		<b>Date Completed:</b> May 21, 1992	<b>Grid Easting:</b> 5000
<b>N.T.S.:</b> 116 B / 3		<b>Logged By:</b> J. D. Blanchflower	<b>Elevation:</b>
<b>Location:</b> Lat. 64° 01' North Long. 139° 21' West		<b>Date Logged:</b> May 21, 1992	<b>Depth</b> <b>Azimuth</b> <b>Dip</b>
<b>Drilled By:</b> E. Caron Diam. Drilling		<b>Core Size:</b> HQ	Collar                      -90°
<b>Hole Type:</b> Diamond Drill Hole		<b>Azimuth:</b> 87.48 m.                      -85.5°	<b>Recovery:</b> 90 %
		<b>Length:</b> 87.48 M. (287 ft.)	

INTERVAL (m.)		SECTION				DESCRIPTION	SAMPLE INTERVAL				ASSAY/ANALYTICAL RESULTS		
From	To	Rx	S	A	M		Sample	From	To	Length	Au(gpt)	Ag(ppm)	Cu(ppm)
0.00	3.05	OVB				Casing in Overburden							
3.05	3.66	OVB				Overburden							
3.66	18.14	CSa		A		Schist - light to medium brown, medium-grained, very fractured and foliated quartz-muscovite schist (carbonaceous schist). Subparallel to 20° to core axis schistosity. 6.8 to 8.2 m. - fault zone at 60°; fault gouge but no altered selvage 5.3 to 5.6 m - 90° shear zone 13.1 to 6 cm - white quartz vein with graphitic fragments 16.9 to 17.5 cm - shear zone from 30° to 60° to core axis Rock is moderately to well altered (mid-argillic) with ghosting of plagioclase crystals (pf > ms) and altered mafics to sericite (ms) and chlorite (cl). Fracturing is < 30 cm. apart; subparallel to 30°, 60° and 75° to core axis. Limonite ( li) is along subparallel and 75° to core axis fracturing. mn oxide is along 75° and 30° fractures at 14.3 m Pyrite casts (~3%) occur between 14.,2 and 16.4 m. Very little graphite was left in the schist (i.e. 3.66 to 3.8m) ~70% recovery from 12.8 to 14.17 m.							
18.14			S		li-he	Shear contact at 45° to core axis, with moderate limonite-hematite coatings between 18.0 and 18.9 m. and a graphitic section from 18.0 to 18.14 m.							
18.14	20.42	DD			he	Dyke - light to medium brown, earthy texture and aphanitic. Looks like a late-stage or very young dioritic to diabase dyke. Quite hematitic with 1 to 2 mm. pyrite (py) casts but no quartz (qz). 19.8 to 20.0 m - medium grey fault zone with gouge at 60° to core axis Fracturing is < 20 cm apart at 50°, subparallel, 60° and 85° to core axis.							
20.42			S		mn-li	Subparallel shear zone parallel to sharp intrusive contact < 10° to core axis. mn oxide along contact with local limonite.							

Geological Consultants and Exploration Management

INTERVAL (m.)		SECTION				DESCRIPTION	SAMPLE INTERVAL				ASSAY/ANALYTICAL RESULTS		
From	To	Rx	S	A	M		Sample	From	To	Length	Au(gpt)	Ag(ppm)	Cu(ppm)
20.42	22.56	CSa		A	li	Schist - light to medium grey-green, limonitic and argillically-altered quartz schist with subparallel to 15° to core axis schistosity. Intensely sheared from 22.0 to 22.56 subparallel to 80° to core axis with graphitic partings at 22.4 to 22.56 m. Local 1 cm fracture filling quartz veining ( ±limonite) - mesothermal quartz veining.							
22.56			S			Shear contact 30° to 80° to core axis							
22.56	24.70	PfD			li-he	Dyke - dark to medium red-brown, aphanitic to plagioclase porphyritic. 22.56 to 23.4 m. - dark brown, slightly limonitic, aphanitic dyke with chilled margin and 2 to 3 mm limonitic fracture fillings at 20° to 25° to c.a.  23.4 m - sharp change to plagioclase porphyry but same groundmass. Rock becomes more hematitic with 1 mm by 4 mm long, individual and clusters of plagioclase.  23.8 to 24.0 m - subparallel shearing with quartz schist and dyke wallrocks. on both sides of hematite-rich 1 cm shear.							
24.70			S			70° to core axis chilled margin contact of dyke with limonitic quartz schist (pyrite casts) - shearing at 30° to core axis							
24.70	25.10	CSa		A	li-mn	Schist - medium green, well fractured with 80° and 30°, 1 to 2 mm wide limonitic fracture fillings. Prominent mn oxide and hematite along 30° and 80° to core axis shear fractures. 24.9 m. - 1 cm quartz-limonite vein at 80° to core axis.							
25.10	25.30	PfD			li-he	Dyke - sheared section of brown plagioclase-porphyry with 25° hangingwall and 30° to core axis footwall shear contact. Local li-he fracture fillings.							
25.30			S			30° to core axis shear contact							
25.30	28.15	CSa		A	li-mn	Schist - light to medium grey-green, foliated and fractured quartz-muscovite schist with limonitic fracture coatings along shear fractures. Schistosity ~ 60° to 70° to core axis  27.15 to 27.44 m. - 0.3 m. section of red-brown aphanitic dyke with subparallel hangingwall shear contact and 45° to core axis footwall contact. No plagioclase phenocrysts, or chilled margins. Local mn oxide.							

Geological Consultants and Exploration Management

INTERVAL (m.)		SECTION				DESCRIPTION	SAMPLE INTERVAL				ASSAY/ANALYTICAL RESULTS		
From	To	Rx	S	A	M		Sample	From	To	Length	Au(gpt)	Ag(ppm)	Cu(ppm)
28.15			S			Fracturing with limonite at 70° and 30° to core axis. Dry shearing with slight chlorite alteration at 60° to core axis. No quartz veining.							
28.15	29.85	PfD			mn	30° to core axis with shear contact with 3 cm gouge zone Dyke - medium orange-brown, aphanitic to locally plagioclase porphyritic in grey section from 28.6 to 29.1 m. Local 1 to 3 mm. limonite fracture fillings at 45° to core axis. Shear zone 29.1 to 29.4 m; 30° to core axis Local mn oxide along 30° to core axis shear faces No pyrite casts							
29.85			I			70° to core axis intrusive contact with black chilled margin within dyke.							
29.85	30.30	CSa		A	li-mn	Schist - well fractured quartz-muscovite schist with limonite along 30° and 70° to core axis fractures. Local mn oxide along 30° to c.a. fractures. Similar to above section but more limonite and no quartz veining							
30.30			F			5 cm wide fault gouge zone with 45° to core axis footwall dyke contact.							
30.30	32.00	PfD			li-mn	Dyke - medium grey to orange-brown, aphanitic to plagioclase porphyritic. Fracturing at 15° to 60° to core axis with li ± mn oxide coatings. 30.3 to 30.85 m - grey-green section of dyke-like chilled margin grades into brown colour with 45°, 1 cm shear at contact 30.85 to 32.0 m - Orange-brown aphanitic to plagioclase-porphyry with with 1 to 4 mm individual plagioclase phenocrysts foliated at 5° to core axis.							
32.00			F			20° to core axis shear contact with 45° slickensides.							
32.00	35.40	CSa		A		Schist - light to medium grey-green, mottled quartz-muscovite schist with vague 70° to core axis foliation. 15°, 45° and 70° to core axis fracturing, ~ 15 cm apart. Most 15° and 30° fractures have li ± mn fracture filling. Rare 1 cm quartz veining at 32.7 m, 80° to core axis							
35.40	35.80		S		qz-li	50° to core axis shear zone with 3 cm quartz-limonite vein at 35.4 m.							

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INTERVAL (m.)		SECTION			DESCRIPTION	SAMPLE INTERVAL			ASSAY/ANALYTICAL RESULTS			
From	To	Rx	S	A		M	Sample	From	To	Length	Au(gpt)	Ag(ppm)
35.80	36.00	CSa		P		Schist - sheared choritic quartz-muscovite schist with shearing at 80° to c.a.						
36.00	36.20	VN			qz	White quartz vein - similar to vein between 35.4 m and 35.8 m						
36.20			F		qz	80° to core axis. Has 5 cm shear gouge with white quartz clasts						
36.20	58.30	CSa		P	mn	Schist - light to medium grey-green, chloritized quartz-muscovite schist. Well fractured with py casts and 1 to 3 mm. li ±mn fracture fillings. 36.88 m. - 5 cm at 30° to core axis shear zone, with no alteration. 40.3 to 40.6 m - 60° to core axis shear zone, minor limonite and no quartz. Quartz- rich banding at 42.1 m. 47.85 to 48.15 - 60° to 80° to core axis shear zone - graphitic-rich frags. Progressive decrease in fracturing from 5 to 10 cm to 30 cm apart. Mainly subparallel, 30 to 45° and 70 to 80° often with li ±mn fracture fillings. Rock has a mid argillic facies look with plagioclase ghosting but increased graphite and chlorite with depth.						
58.30	59.70	CSa		A		Schist - carbonaceous quartz schist with increased graphite ~ 10 to 20%. Vague 45° to core axis foliation. Local 1 to 3 mm. qz-ca-ms fracture fillings parallel to core axis. Increased sericitic alteration and decreased graphitic lamina with depth.						
59.70	72.24	CSa		P	li	Schist - light grey-green mottled to schistose quartz-muscovite schist. Well fractured with limonite along the fractures. Local graphitic section at 63.6 to 64.3 m. and 69.4 to 70.4 m. 64.9 to 65.5 - 30° to core axis shearing with more intense sericite alteration. Major fracturing at 45° and 80° filled with limonite. Rare quartz laminae are less than or equal to 5 mm. wide at 70° to c.a.						
72.24	78.20	CSa		A	he-li	Schist - light grey-green quartz-muscovite schist with local quartz-limonite ± orthoclase fracture filling veins. 72.24 to 73.76 m - Orange-brown, well fractured schist with subparallel to 45° to core axis, limonitic fracture fillings < 10 cm. apart. Local hematite ±mn coating fractures. 73.76 to 74.4 m - Zone of 1 to 20 cm wide quartz ±limonite, orthoclase veining from 50° to 70°, trace pyrite along fractures. 74.4 to 76.34 m - Sericitic quartz-muscovite schist with only minor quartz veining. 76.34 to 76.51 m - quartz-orthoclase-sericite veining 45° to core axis hosted by increasingly less altered (more graphitic) quartz-muscovite schist						

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INTERVAL (m.)		SECTION				DESCRIPTION	SAMPLE INTERVAL				ASSAY/ANALYTICAL RESULTS		
From	To	Rx	S	A	M		Sample	From	To	Length	Au(gpt)	Ag(ppm)	Cu(ppm)
78.20	81.00	CSa		P		Schist - light to medium grey, sericitic quartz-graphite schist with 45° and 90° to core axis foliation parallel to gradational contact It is weakly fractured; <10 cm apart, subparallel, 30° and 70° jointing.							
81.00	82.50	CSa		P		Gradational zone of grey to black quartz-graphite schist with 60° to core axis foliation. Poorly fractured with local 45° to core axis 1 to 3 mm quartz-calcite fracture fillings but no limonite. No ilmonite below 80.0 m.							
82.50	87.48	CSa		P		Schist - light to medium grey quartz-muscovite schist. Poorly fractured 45° to core axis (<30 cm. apart) with no limonite. 83.3 to 83.6 m - 30 cm white quartz vein at 80° to core axis 86.5 to 86.9 m - 40 cm white quartz vein at 70° to core axis Fracturing is at 30° to 40° to core axis, < 30 cm apart.							
87.48						End of Hole.							

**MINOREX CONSULTING LTD**

**DRILL LOG**

**DRILL HOLE No. 92 - 02**

Geological Consultants and Exploration Management

<b>Property:</b> TRAIL HILL	<b>LOCATION MAP</b>	<b>Date Started:</b> May 21, 1992	<b>Grid Northing:</b> 5335
<b>Project No.:</b> P92-07		<b>Date Completed:</b> May 23, 1992	<b>Grid Easting:</b> 5222
<b>N.T.S.:</b> 116 B / 3		<b>Logged By:</b> J. D. Blanchflower	<b>Elevation:</b>
<b>Location:</b> Lat. 64° 01' North Long. 139° 21' West		<b>Date Logged:</b> May 23, 1992	<b>Depth</b> <b>Azimuth</b> <b>Dip</b>
<b>Drilled By:</b> E. Caron Diam. Drilling		<b>Core Size:</b> NQ	Collar    165°    -70°
<b>Hole Type:</b> Diamond Drill Hole	<b>Azimuth:</b> 165°	138.68 m.    165°    -66.5°	<b>Recovery:</b> 90%
	<b>Length:</b> 138.68 m. (455 ft.)		

INTERVAL (m.)		SECTION				DESCRIPTION	SAMPLE INTERVAL			ASSAY/ANALYTICAL RESULTS		
From	To	Rx	S	A	M		Sample	From	To	Length	Au(gpt)	Ag(ppm)
0.00	3.05	OVB				Casing in Overburden						
3.05	6.10	OVB				Light brown clay (regolith).						
6.10	19.81	CSa		P		Light to medium green, very chloritic quartz-muscovite schist with pervasive chlorite-epidote alteration. Well fractured between 30° and 60° to core axis Schistosity varies locally from subparallel to 45° to core axis. No limonite or sericite along shears. No pyrite or quartz veining. Looks like highly sheared and epidotitic schist.						
19.81	30.48	CSa		P	mn-li	Same rock as above but with a more olive colour and more limonite with epidote-chlorite alteration. Increased local mn oxide along fractures and shear planes. Shearing following ~20 to 30° to core axis. ~22.0 m - 70° to core axis is a 2 cm shear zone. 23.88 m - 3 cm quartz silicified shear at 30° to core axis; possibly second quartz fracture filling.						
30.48		CSa		P	mn	Light to medium green, chloritic quartz-muscovite schist (like above) but with decreased limonite like 19.81 to 24.38 m. 26.8 to 27.3 m - Light green silicified zone with intense sericite alteration and minor quartz veining <= 1 cm wide. Foliation is subparallel to core axis to 20° to core axis. No limonite or mn after 30.48 m. Fracturing <= 30 cm apart, subparallel, 30°, 45°, and 80° to core axis.						
30.48	138.53	CSa		A	py	Light to medium grey-green, well foliated quartz-muscovite schist altered to mid to upper argillic facies with no limonite but local very fine-grained pyrite disseminations. No mn oxide along fractures. Local barren white mesothermal quartz veining < 1 to 2 cm. wide. 30.48 to 33.53 m - Well fractured, parallel to foliation which is subparallel to core axis to 40° to core axis, schistosity variable within 10 to 20 cm.						

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INTERVAL (m.)		SECTION				DESCRIPTION	SAMPLE INTERVAL			ASSAY/ANALYTICAL RESULTS			
From	To	Rx	S	A	M		Sample	From	To	Length	Au(gpt)	Ag(ppm)	Cu(ppm)
						<p>33.53 to 35.29 m - fractured <math>\pm 10</math> cm apart subparallel, <math>20^\circ</math> and <math>45^\circ</math> to core axis</p> <p>35.29 to 37.0 m - intensely fractured <math>\leq 5</math> cm apart, subparallel and <math>45^\circ</math> to core axis.</p> <p>44.81 to 48.16 m - intensely fractured <math>\leq 3</math> cm apart, subparallel and <math>60^\circ</math> to core axis, foliation varies from subparallel to <math>45^\circ</math> to core axis.</p> <p>55.7 to 57.45 m - slightly more quartz-rich and thicker laminae up to 1 cm wide but same rock as above.</p> <p>29.10 to 74.10 m - foliation is highly variable from parallel to <math>80^\circ</math> to core axis, unusually subparallel and <math>60^\circ</math> to core axis, and fracturing <math>\leq 30</math> cm, parallel to foliation.</p> <p>64.8 to 64.9 m - 10 cm white quartz lense, <math>50^\circ</math> to core axis parallel to foliation.</p> <p>It is the same grade of alteration all throughout, low to mid argillic.</p> <p>84.9 to 85.35 m - <math>45^\circ</math> to core axis shearing with no increased alteration, a shift in foliation to commonly <math>60^\circ</math> to <math>70^\circ</math> to core axis.</p> <p>94.3 to 101.10 m - fracturing <math>60^\circ</math> to core axis <math>\leq 10</math> cm apart, versus <math>\leq 30</math> cm.</p> <p>104.9 to 105.46 m - white quartz vein with minor chlorite, sericite fracture filling, <math>45^\circ</math> to core axis is a 3 cm shear hangingwall and footwall contact.</p> <p>113.0 to 113.6 m - white quartz vein with <math>70^\circ</math> to core axis sheared intrusive hangingwall contact and <math>50^\circ</math> to core axis sheared intrusive footwall contact.</p> <p>114.0 to 115.0 m - Three 10 cm white quartz (<math>\pm</math>sericite, chlorite) veins with <math>50^\circ</math> to core axis sheared intrusive contacts. The foliations vary widely from <math>45^\circ</math> to core axis to subparallel.</p> <p>115.0 to 119.0 m - Regular 10 to 15 cm apart <math>50^\circ</math> to core axis jointing cutting subparallel foliation.</p> <p>120.0 to 121.0 m - Slight increase in pyrite diss'ns to <math>\sim 0.5\%</math> and very fine-grained to fine-grained. No limonite alteration.</p> <p>Pyrite disseminations associated with <math>50^\circ</math> to core axis fracturing cutting subparallel to foliation.</p> <p>126.5 to 126.6 m - Three 1 to 2 cm white quartz veins <math>60^\circ</math> to core axis</p> <p>128.1 to 128.2 m - 10 cm <math>60^\circ</math> to core axis fault gouge zone</p> <p>130.75 to 137.3 m - Same quartz-muscovite schist but with hematite-rich laminae 1 mm to 5 mm thick, <math>45^\circ</math> to <math>60^\circ</math> to core axis foliation</p> <p>137.3 to 138.53 m - Same medium grey-green sericite alteration quartz-sericite schist as above with <math>30^\circ</math> to core axis foliation, 5 cm <math>60^\circ</math> to core axis gouge zone at 138.5 m.</p> <p>End of Hole.</p>							
138.53													

## MINOREX CONSULTING LTD

## DRILL LOG

DRILL HOLE No. 92 - 03

Geological Consultants and Exploration Management

<b>Property:</b>	TRAIL HILL	<b>LOCATION MAP</b>	<b>Date Started:</b>	May 23, 1992	<b>Grid Northing:</b>	5278	
<b>Project No.:</b>	P92-07		<b>Date Completed:</b>	May 24, 1992	<b>Grid Easting:</b>	5166	
<b>N.T.S.:</b>	116 B / 3		<b>Logged By:</b>	J. D. Blanchflower	<b>Elevation:</b>		
<b>Location:</b>	Lat. 64° 01' North Long. 139° 21' West		<b>Date Logged:</b>	May 24, 1992	<b>Depth</b>	<b>Azimuth</b>	<b>Dip</b>
<b>Drilled By:</b>	E. Caron Diam. Drilling		<b>Core Size:</b>	NQ	Collar	165°	-45°
<b>Hole Type:</b>	Diamond Drill Hole	<b>Azimuth:</b>	165°	68.58 m.	165°	-45°	
		<b>Length:</b>	68.58 m. (225 ft.)	<b>Recovery:</b>		90 %	

INTERVAL (m.)		SECTION				DESCRIPTION	SAMPLE INTERVAL				ASSAY/ANALYTICAL RESULTS		
From	To	Rx	S	A	M		Sample	From	To	Length	Au(gpt)	Ag(ppm)	Cu(ppm)
0.00	9.14	OVB				Casing in Overburden							
9.14	9.40	OVB				Clay-altered regolith with weathering and altered quartz-muscovite schist and white quartz vein pebbles of the White Channel gravels.							
9.40	31.95	CSa		A	li	Light to medium grey, limonitic and argillically-altered quartz-muscovite schist with moderate to intense sericite, chlorite alteration. Mottled quartz-plagioclase phenocrysts. Possible local secondary biotite along sericite-rich lamellae. Medium-grained and well foliated subparallel to 50° to core axis. 10.67 m - 3 cm white quartz vein material. Fractured parallel to foliation subparallel to 30° and 75° to 90° to core axis; usually with limonite along fractures: fracturing ~ 10 cm apart. 20.0 to 20.42 m - intense 90° to core axis shearing, gouge zone wavy subparallel foliation with limonitic subparallel to 20° fracturing and 90° to core axis. 22.7 to 23.9 m - 45° to core axis shearing, ~ 1 cm apart with moderate limonite parallel to foliation which is approximately 30 to 50° to core axis. There is << 0.5% pyrite casts altered to limonite. 26.0 to 27.43 m - Fine-grained schist with 50° to core axis foliation and 45° and 70° to core axis limonitic fractures. They are <= 20 cm apart. 27.43 to 31.95 m - Thicker banded quartz-muscovite with 30° to 50° to core axis foliation and parallel fractures ~ 5 to 20 cm apart. Decreased limonite fracture filling to weak limonite fracture filling.							
31.95				I		5 cm 45° to core axis sheared intrusive contact.							
31.95	37.35	DD			li-go	Dark brown and dark grey, aphanitic mafic dyke with v.f.g. to f.g. angite ± plagioclase phenocrysts. Locally it appears earthy to diabasic. Fracturing varies from 3 cm to 10 cm apart, normally 40 to 55° to core axis with lesser 70 to 80° to core axis fractures. No discernible foliation but a vague 45° to c.a. phenocrysts alignment. Most of the fractures are infilled with limonite, goethite ± siderite. Plagioclase and							

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INTERVAL (m.)		SECTION				DESCRIPTION	SAMPLE INTERVAL				ASSAY/ANALYTICAL RESULTS			
From	To	Rx	S	A	M		Sample	From	To	Length	Au(gpt)	Ag(ppm)	Cu(ppm)	
						augite phenos propylitically altered to weak epidote-chlorite. 32.0 to 33.75 m - Chilled dark grey dyke with 20° and 60° crosscutting limonite-hematite-specularite fracture filling. 33.75 m - 45° to core axis 5 cm shearing 33.75 to 36.13 m - Fine-grained diabase dyke is dark brown with fine-grained altered plagioclase and augite phenocrysts. Foliation limonite, goethite, siderite fracture fillings with few crosscutting fracture filling. 36.13 m - 45° to core axis 3 cm shear zone 36.13 to 36.27 m - Brecciated very fine-grained diabase dyke with 1 to 2 cm. schist fragments. 36.27 to 37.35 m - same as 33.75 to 36.13 with local 1 cm schist fragments at 36.3 m.								
37.35			S			40° to core axis sheared intrusive cut with 1 cm gouge.								
37.35	37.85	CSa		A	li	Light to medium grey, limonitic, foliated (45° to core axis) quartz schist, intensely fractured <math>\neq</math> 3 cm apart, subparallel, 45° to core axis and 90° to core axis.								
37.85						30° to core axis intrusive contact with 5 cm. goethite-siderite filling.								
37.85	53.40	DD			go	Dark brown, dark grey to black, aphanitic to slightly porphyritic diabase dyke. 37.85 to 44.96 m - Dark brown diabase dyke with limonite along joint surfaces. Goethite-siderite along 30° fracture filling < 5 cm. apart., 41.50 to 42.21 m - Well fractured 45° to core axis, <math>\neq</math> 3 cm apart 44.96 to 53.34 m - Fresh, dark grey to black, diabase dyke with no limonite. Blocky fractures 10 to 40 cm apart at 40° to core axis with carbonate fracture filling. 47.0 to 47.24 m - 20 cm shear gouge 60° to core axis. 51.74 to 53.40 m - Occasional 2 cm to 8 cm quartz-muscovite schist breccia fragments parallel to vague 40 to 45° to core axis foliation.								
53.40					l	10° intrusive contact with sharp hangingwall and 2 mm altered footwall rind, 10° to core axis contact crosscuts 45° to core axis fracturing.								
53.40	57.45	PfD				Dark grey, fresh, plagioclase-pophyry dyke with 1 to 4 mm individual and clustered plagioclase crystals. Appears to be younger than the diabase dykes above and below. Dark grey, very fine-grained to plagioclase±augite porphyry phenocrysts. Quite blocky jointing from 30 to 45° to core axis								

INTERVAL (m.)		SECTION				DESCRIPTION	SAMPLE INTERVAL			ASSAY/ANALYTICAL RESULTS			
From	To	Rx	S	A	M		Sample	From	To	Length	Au(gpt)	Ag(ppm)	Cu(ppm)
						54.30 m - 2 cm face-like quartz-calcium shear infilling with schistose breccia fragments. Appears to be late-stage low-temperature veining. 54.9 to 55.17 m - 30 cm shear gouge zone 60° to core axis 54.30 to 56.0 m - 1 to 3 mm wide quartz-calcite fracture filling 30° to core axis - like quartz-calcite fracture filling at 54.30; late-stage, quench veining. 57.30 to 57.45 m - chilled margin texture.							
57.45						30° to core axis fracturing intrusive contact							
57.45	68.58	DD				Dark grey to black, aphanitic to porphyritic augite-rich dyke. Augite phenos from 1 to 5 mm subrounded phenocrysts ±epidote, chlorite altered cores. Quite fresh (deuteric altered), blacky, massive dyke. Fracturing 10 to 40 cm apart 30 to 60° to core axis ~45 average. 58.5 m - 30 cm black 60° sheared sections 67.1 to 67.2 m - Three 1 cm 45° to 60° gouge zones with local calcite fracture fillings, 68.0 to 68.54 m, 1 to 3 mm quartz-calcite 30° to core axis fracture fillings like 54.30 to 56.0							
68.58						End of Hole							

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<b>Property:</b> TRAIL HILL	<b>LOCATION MAP</b>	<b>Date Started:</b> May 24, 1992	<b>Grid Northing:</b> 5147
<b>Project No.:</b> P92-07		<b>Date Completed:</b> May 25, 1992	<b>Grid Easting:</b> 5187
<b>N.T.S.:</b> 116 B / 3		<b>Logged By:</b> J. D. Blanchflower	<b>Elevation:</b>
<b>Location:</b> Lat. 64° 01' North Long. 139° 21' West		<b>Date Logged:</b> May 25, 1992	<b>Depth</b> <b>Azimuth</b> <b>Dip</b>
<b>Drilled By:</b> E. Caron Diam. Drilling		<b>Core Size:</b> NQ	Collar      345°      -45°
<b>Hole Type:</b> Diamond Drill Hole		<b>Azimuth:</b> 345°	94.49 m.      345°      -45°
	<b>Length:</b> 94.49 m. (310 ft.)	<b>Recovery:</b> 85%	

INTERVAL (m.)		SECTION				DESCRIPTION	SAMPLE INTERVAL				ASSAY/ANALYTICAL RESULTS		
From	To	Rx	S	A	M		Sample	From	To	Length	Au(gpt)	Ag(ppm)	Cu(ppm)
0.00	3.05	OVB				Casing in Overburden							
3.05	12.80	CSa				Light brown, weathered sericitically-altered quartz-muscovite schist and clay. Progressively more competent with depth. Fracturing $\leq$ 5 cm apart at 45°, 60° and 80° to core axis. Local weak limonite along wear fractures, mostly weathered contact.							
12.80			S			60° to core axis 1 cm shear zone, probably wider but serious washing 50% recovery.							
12.80	18.90	CSa		A	li	Light brown, limonitic, weathered, quartz-muscovite schist with constant 30° to core axis foliation and limonite-rich laminae. Fracturing parallel to foliation $\leq$ 10 cm apart. 15.4 to 15.55 m - intense 30° to 45° to core axis shearing limonite fracture filling $\leq$ 3 cm apart.							
18.90			I			Gradational 10 cm change to light green quartz-muscovite schist, base of intense weathering.							
18.90	51.00	CSa		A	li	Same quartz-muscovite schist as above but light green in colour with 30° to 45° to core axis foliation and $<0.5\%$ , 1 to 3 mm. Pyrite casts contain limonite along fracture surfaces parallel to foliation. 19.81 m - 10 cm 45° to core axis shear zone with 5 to 8 mm limonite-quartz breccia fragments. 20.16 to 22.6 m - intensely fractured 30° to 45° to core axis with limonite along junctions. 22.6 to 30.0 m - Foliated quartz-muscovite schist with prominent 2 to 8 mm pyrite casts altered to goethite, limonite and hematite. Foliation at 45° to 60° to core axis with fracturing $\leq$ 50 cm (~ 10 cm) 45° and 60° to core axis 30.0 to 30.1 m - 10 cm vuggy white quartz vein with goethite-limonite vugs 1 to 3 cm in diameter. Limonite along foliation laminae, 35° to 45° to core axis.							

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INTERVAL (m.)		SECTION				DESCRIPTION	SAMPLE INTERVAL				ASSAY/ANALYTICAL RESULTS		
From	To	Rx	S	A	M		Sample	From	To	Length	Au(gpt)	Ag(ppm)	Cu(ppm)
						30.5 to 30.9 m - goethite-cemented shear breccia with limonitic quartz-muscovite schist subangular fragments (<= 3 cm in diameter)							
						30.8 to 30.8 m - almost (80%) pure goethite with 1 cm subrounded quartz breccia fragments.							
						40° to core axis shear plane at 30.9 m							
						30.9 to 34.6 m - Foliated, pyritic ( to goethite) quartz-muscovite schist with 1 to 2 mm pyrite casts, goethite and 60 to 70° to core axis foliation							
						Fracturing <= 30 cm apart, usually 60° to core axis, no crosscutting							
						34.6 to 35.10 m - intense 75 to 80° to core axis shear with limonite fracture filling, no gouge.							
						36.58 to 37.0 m - 40° to core axis shear zone with goethite-rich gouges							
						38.3 to 38.5 m - intensely fractured 70° to core axis with goethite fracture filling.							
						38.5 to 39.0 m - quartz-muscovite schist with 1 to 5 mm pyrite casts							
						42.7 to 43.6 m - intensely sheared limonitic quartz schist 70° to core axis foliation is 70° to core axis with 40 to 50° to core axis fracturing.							
18.90	51.00	CSa		A	py-li	Light grey-green, sericitically-altered quartz-muscovite schist							
						43.6 to 51.0 m becoming progressively less limonitic with <= 0.5 to 1% Pyrite casts (1 to 2 mm) disseminations. limonite less often as fracture filling becomes parallel to 50° to core axis foliation.							
						Fracturing is <= 10 cm parallel to foliation 45 to 50° to core axis and 75 to 90° to core axis							
						Slightly more sifaceous section 1 to 3 cm wide throughout.							
51.00	94.49	CSa		A	li	Same quartz-muscovite schist with same moderate sericite-alteration but without 0.5 to 2% pyrite disseminations							
						51.0 to 51.75 m - intensely sheared 60° to core axis quartz-muscovite schist with very weak limonite.							
						54.3 to 54.4 m - 10 cm 45° to core axis white quartz-limonite vein.							
						55.1 to 55.2 m - 10 cm subparallel white quartz vein with minor limonite							
						57.9 to 58.0 m - 10 cm 90° to core axis quartz-muscovite shear zone							
						62.8 to 63.4 m - 40 to 50° to core axis shear zone, no alternation							
						64.92 to 65.1 m - 45° to core axis fault gouge zone with white clay							
						quartz-muscovite schist is foliated 40 to 60° to core axis with fracturing <= 10 cm apart at 45° and 60° to core axis							
						Minor limonite along shear planes but < 0.5% pyrite v.f.g. disseminations							
						76.0 to 76.3 m - White quartz lenses in intensely shear section at 60° to core axis.							

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INTERVAL (m.)		SECTION				DESCRIPTION	SAMPLE INTERVAL				ASSAY/ANALYTICAL RESULTS		
From	To	Rx	S	A	M		Sample	From	To	Length	Au(gpt)	Ag(ppm)	Cu(ppm)
94.49						81.65 m - F.g. pyrite disseminations along 40° to core axis fracture ~1% Foliation is 60° to core axis and 30° to core axis 88.0 to 88.4 m - Intense shearing 30° to core axis <math>\leq 1</math> cm apart 91.95 to 92.1 m - 1 cm quartz veining 45° to core axis 92.5 to 93.8 m - Intense shearing 30° to core axis <math>\leq 1</math> cm apart Same light green-grey foliated quartz-muscovite schist as in DDH 92-02 and 03 with mid argillic facies alternation and local pyrite disseminations associated with fracturing parallel to foliation.  End of Hole							

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DRILL LOG

DRILL HOLE No. 92 - 05

Geological Consultants and Exploration Management

<b>Property:</b> TRAIL HILL <b>Project No.:</b> P92-07 <b>N.T.S.:</b> 116 B / 3 <b>Location:</b> Lat. 64° 01' North Long. 139° 21' West <b>Drilled By:</b> E. Caron Diam. Drilling <b>Hole Type:</b> Diamond Drill Hole	<b>LOCATION MAP</b>	<b>Date Started:</b> May 25, 1992 <b>Date Completed:</b> May 26, 1992 <b>Logged By:</b> J. D. Blanchflower <b>Date Logged:</b> May 27, 1992 <b>Core Size:</b> NQ <b>Azimuth:</b> 075° <b>Length:</b> 53.04 m. (174 ft.)	<b>Grid Northing:</b> 5319 <b>Grid Easting:</b> 5191 <b>Elevation:</b> <b>Depth</b> <b>Azimuth</b> <b>Dip</b> Collar      075°      -45° 53.04 m.      075°      -45° <b>Recovery:</b> 46.90%
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INTERVAL (m.)		SECTION				DESCRIPTION	SAMPLE INTERVAL				ASSAY/ANALYTICAL RESULTS		
From	To	Rx	S	A	M		Sample	From	To	Length	Au(gpt)	Ag(ppm)	Cu(ppm)
0.00	3.05	OVB				Casing in Overburden							
3.05	14.10	DD			ii	Dark brown and dark grey, diabase dyke, well sheared and altered to clay-like consistency. Altered diabase dyke has intense argillic alternation 3.05 to 4.27 m - Olive brown clay (altered and weathered dyke) 4.27 to 10.4 m - Olive brown, weathered dyke, intensely sheared with clay texture. limonitic fracture filling <math>\leq 5\text{ cm}</math> apart at 60° to 80° to c.a. 1 to 3 mm wide 7.9 to 10.4 m - Intensely sheared 40° to 50° to core axis (clay) 10.4 to 11.35 m - Medium to dark grey, altered and weathered augite pphy dyke. The augite phenocryst range up to 5 mm and they have been argillically altered to sericite and clay (green clay phenocryst) Clay consistency of 2 mm quartz-calcite fracture filling at 45° to core axis at 10.95 m 11.35 to 12.19 m - Intensely sheared, olive green-brown augite pphy dyke like 4.27 to 10.4 m becoming more competent from 11.7 m. Local 70° to c.a. 1 to 3 mm limonitic shear fracture filling <math>\leq 5\text{ cm}</math> apart 12.19 to 13.40 m - Like 10.4 to 11.35 m but has milled subrounded, altered mafic and lithic fragments; milled fault zone 13.40 to 13.72 m - Clay gouge zone 45° to core axis with black v.f.g. alteration (mn oxide). 13.72 to 14.1 m - Section of milled altered dyke to 13.8 m and then altered augite porphyry dyke 10.67 to 11.35 m with 70° to core axis fracturing, no limonite.							
14.10	14.40	PfD				Dark grey, well sheared, aphanitic plagioclase-porphyry dyke with 1 mm plagioclase phenocryst in dark grey v.f.g. groundmass							
14.40			S			45° to core axis shear cut							
14.40	15.10	PfD				Same as 13.72 to 14.1 m: well sheared locally to clay gouge, varying to olive green colour from 15.0 to 15.1 m							

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INTERVAL (m.)		SECTION			DESCRIPTION	SAMPLE INTERVAL				ASSAY/ANALYTICAL RESULTS		
From	To	Rx	S	A		M	Sample	From	To	Length	Au(gpt)	Ag(ppm)
15.10			S									
15.10	23.77	CSa		P	li							
23.77			I									
23.77	25.90	DD		P								
25.90	27.43	DD		P								
27.43			S									
27.43	36.80	Brox			py-li	8551	27.43	29.00	1.57	0.02	0.2	52
						8552	29.00	31.00	2.00	0.01	0.5	19
						8553	31.00	33.00	2.00	0.01	0.5	16
						8554	33.00	35.00	2.00	0.01	0.7	21
						8555	35.00	37.00	2.00	0.01	0.9	21
36.80	38.40	Apt			py	8556	37.00	39.00	2.00	0.01	0.5	9

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INTERVAL (m.)		SECTION			DESCRIPTION	SAMPLE INTERVAL				ASSAY/ANALYTICAL RESULTS			
From	To	Rx	S	A		M	Sample	From	To	Length	Au(gpt)	Ag(ppm)	Cu(ppm)
38.40	44.30	Bnx			py	Intrusive breccia zone similar to 27.43 to 36.8 m.; intensely sheared and fractured with clay gouge zones at 39.62, 40.53, 43.28 and 44.20 m. Local epidote-calcite along fractures 40° to 60° to core axis Local fracturing at 40° to 60° to core axis Fine-grained pyrite disseminations hosted by quartz and dyke material.	8557	39.00	41.00	2.00	0.01	1	20
					qz	Quartz vein material is rounded 3 mm to angular 10 cm breccia fragments like quartz-rich zone above	8558	41.00	43.00	2.00	0.01	0.7	17
44.30	45.72	DD			py	Light brown, metasomatized dyke margin (similar to 25.90 to 27.43 m.). Poorly fractured except from 44.3 to 44.7 m which is sheared 50 to 60° to c.a. with dark green mafic dyke breccia fragments (<= 3 cm) in size This section has 1 to 3 cm, epidotized and silicified mafic dyke breccia fragments, subrounded to subangular like a metasomatized chilled margin Fracturing <= 30 cm apart 60° to core axis.							
45.72	49.15	PfD	I			Sharp 45° to core axis intrusive contact with fine-grained diabase dyke with 35 to 45° to core axis fracturing ±epidote, calcite, chlorite ±quartz fracture filling <= 3 mm wide; mainly light to dark green. Dyke becomes progressively darker from 48.0 m with depth Chilled margin 48.85 to 49.15 m very fine-grained and dark green Fracturing <= 30 cm (~10 cm) 35 to 45° to core axis and 75 to 80° to core axis No limonite or pyrite.							
49.15					I	Sheared intrusive contact at 30° to core axis							
49.15	53.04	CSa				Light to medium green, foliated quartz-muscovite schist with subparallel to 30° to core axis foliation 1 to 3 mm alternating quartz-plagioclase and sericite±epidote laminae Trace limonite-carbonate along 30° to core axis fracturing <= 30 cm apart. Intensely sheared at 49.6 to 49.95, 50.7 to 51.05, and 51.64 to 52.0 m No quartz veining							
53.04						End of hole.							

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**DRILL LOG**

**DRILL HOLE No. 92 - 06**

Geological Consultants and Exploration Management

<b>Property:</b>	TRAIL HILL	<b>LOCATION MAP</b>	<b>Date Started:</b>	May 26, 1992	<b>Grid Northing:</b>	5319	
<b>Project No.:</b>	P92-07		<b>Date Completed:</b>	May 27, 1992	<b>Grid Easting:</b>	5191	
<b>N.T.S.:</b>	116 B / 3		<b>Logged By:</b>	J. D. Blanchflower	<b>Elevation:</b>		
<b>Location:</b>	Lat. 64° 01' North Long. 139° 21' West		<b>Date Logged:</b>	May 27, 1992	<b>Depth</b>	<b>Azimuth</b>	<b>Dip</b>
<b>Drilled By:</b>	E. Caron Diam. Drilling		<b>Core Size:</b>	HQ	Collar	075°	-60°
<b>Hole Type:</b>	Diamond Drill Hole		<b>Azimuth:</b>	075°	76.20 m.	075°	-59°
		<b>Length:</b>	76.20 m. (250 ft.)	<b>Recovery:</b>		91%	

INTERVAL (m.)		SECTION				DESCRIPTION	SAMPLE INTERVAL				ASSAY/ANALYTICAL RESULTS		
From	To	Rx	S	A	M		Sample	From	To	Length	Au(gpt)	Ag(ppm)	Cu(ppm)
0.00	3.05	OVB				Casing in Overburden.							
3.05	3.35	DD			li	Dark olive brown, weathered diabase dyke; Augite phenocryst give granular texture to dyke. Dyke is medium green-brown to 3.2 m and dark green to 3.35 m. Has 1 to 2 cm subrounded white milky quartz pebbles (White Channel fm.)							
3.35	4.50	CSa		A	he	Light brown, weathered, intensely sheared quartz-muscovite schist Intensely sheared from 3.35 to 3.90 m and 4.20 to 4.50 m. Foliation is 70° to core axis Local hematite along mafic laminae and local 40° to core axis fracturing							
4.50	13.80	DD			P li	Medium to dark green, weathered aphanitic to augite-porphyry dyke 4.5 to 6.40 m - intensely weathered to medium to dark green clay. Local limonite along weathered fractures 70° to core axis ~ 10 to 30 cm apart. 6.40 to 7.11 m - intensely sheared with fragments <= 2 cm 11.3 to 12.5 m - intensely fractured 20 to 30° and 80° to core axis <= 5 cm apart 12.50 to 13.80 m - augite porphyry phenocrysts (~ 2 mm) become more distinct with epidote, chlorite ± calcite cores in a light to medium v.f.g. groundmass. Local goethite along fractures. Fracturing at 35 to 45° and 60 to 80° to core axis <= 5 cm apart.							
13.80			S			60° sheared intrusive contact with 2 cm chilled margin on footwall of plagioclase-porphyry dyke. No metasomatism in augite porphyry.							
13.80	26.75	PfD				Dark green-brown to grey-green, weathered to fresh augite to plagioclase porphyry dyke. Generally quite aphanitic but locally becomes porphyritic with altered augite and/or plagioclase phenocrysts; quite massive with no foliation. 13.80 to 18.70 m - Dominantly dark green-brown (weathered) with local augite pphy sections and poor fracturing subparallel to 10° and 60 to 80° to core axis - 5 cm to 30 cm apart							

Geological Consultants and Exploration Management

INTERVAL (m.)		SECTION				DESCRIPTION	SAMPLE INTERVAL				ASSAY/ANALYTICAL RESULTS		
From	To	Rx	S	A	M		Sample	From	To	Length	Au(gpt)	Ag(ppm)	Cu(ppm)
						Local epidote, chlorite ± calcite fracture filling. Intensely sheared from 15.24 to 15.6 m. 18.70 to 26.75 m - Dark grey-green, same dyke (unweathered) Same fracturing and fracture filling 21.7 m - 3 cm plagioclase-porphyry fracture filling 70° to core axis 23.0 to 26.75 m - modified with intense (8/10) epidote, chlorite altered mafic phenocrysts No limonite or quartz veining 26.36 to 26.75 m - chilled very fine-grained black margin							
26.75			I			25° to core axis intrusive contact							
26.75	39.50	CSa		A	py	Light green-grey, foliated quartz-muscovite schist (like in DDH 92-05) Foliated at 40 to 60° and fractured parallel to foliation and 80° to core axis Trace pyrite < 0.5% as v.f.g. disseminations, No quartz veining. 27.74 to 29.0 m - fractured subparallel, 45° and 80° to core axis 36.0 to 37.0 m - fractured subparallel, 45° and 80° to core axis 39.15 to 39.50 m - fractured subparallel, 45° and 80° to core axis							
39.50			I			Sheared intrusive contact							
39.50	41.30	DD				Dark green-grey, massive augite-plagioclase dyke ± porphyry augite dyke. Fractured at 10°, 45° and 60° to c.a., <math>\leq 10</math> cm apart, often infilled with 1 to 2 mm epidote, chlorite, calcite with 90° to core axis slickensides. to dip surface indicating strike slip shearing, Augite altered to epidote, chlorite and calcite. Dyke becomes more plagioclase-rich with depth							
41.30				S		10 cm shear contact							
41.30	51.00	Bnxx			py	Dark grey mottled, polymictic intrusive dyke breccia. The same matrix as dyke material as 39.50 to 44.30 m with a v.f.g. groundmass and 1 mm augite ± plagioclase phenocrysts. The breccia fragments range from 2 mm to > 30 cm; subrounded to angular; and vary from lamellar aplitic material, white quartz vein (White Channel) and silicified quartz-muscovite schist. Mafics are moderately altered to epidote, chlorite. Local very fine-grained to fine-grained pyrite disseminations <math>\leq 0.5\%</math>. Intensely fractured at 44.30 to 45.0 m, 60° to core axis Intensely fractured at 46.18 to 47.60 m, subparallel and 60° to core axis Fracturing usually 40°, 60° and subparallel <math>\leq 10</math> cm apart	8559	41.30	42.00	0.70	0.01	0.1	28
							8560	42.00	44.00	2.00	0.01	0.1	13
							8561	44.00	46.00	2.00	0.01	0.5	13
							8562	46.00	48.00	2.00	0.02	0.1	8
							8563	48.00	50.00	2.00	0.01	0.6	23
							8564	50.00	52.00	2.00	0.01	0.5	8

Geological Consultants and Exploration Management

INTERVAL (m.)		SECTION			DESCRIPTION	SAMPLE INTERVAL				ASSAY/ANALYTICAL RESULTS			
From	To	Rx	S	A		M	Sample	From	To	Length	Au(gpt)	Ag(ppm)	Cu(ppm)
51.00	52.00	Aplt			py	Lamellar quartz-plagioclase aplite with f.g. pyrite disseminations parallel to the lamellae. Many pyrite casts are light grey with 45° to c.a. foliation to banding.							
52.00	52.30	Vein			py-go	White quartz vein with minor disseminations of pyrite and galena near 52 m Has 10 to 15° to core axis fracturing with chlorite fracture filling.							
52.30	56.80	Brox			py	Same polymictic breccia as 41.30 to 51.0 m with quartz vein, sericite-quartz schist and aplite fragments in dark green plagioclase-augite dyke Fracturing 45° to core axis <math>\leq 30</math> cm	8565	52.00	54.00	2.00	0.01	0.7	21
							8566	54.00	56.00	2.00	0.01	0.6	21
							8567	56.00	56.80	0.80	0.02	0.1	23
56.80	60.66	DD			py-go	5 cm light green 40° to core axis shear zone/goethite gouge. Same rock as above with quartz vein and schist fragments but the fragments represent <math>\leq 10\%</math> of the rock volume and they are generally <math>< 1</math> cm wide Fracturing is poor with 45° to core axis fracturing 5 to 50 cm apart 59.6 to 60.5 m - lighter green chilled margin zone with <math>\leq 10</math> cm apart fracturing 40 to 50° to core axis 60.3 to 60.4 m - 5 mm to 1 cm square orthoclase phenocrysts with twinning 60.5 to 60.66 m - 15 cm 50° to core axis shear zone							
60.66	76.20	CSa		A		Light green, foliated quartz-muscovite schist, moderately to poorly fractured parallel to schistosity subparallel to 60° to core axis Foliation very variable; highly contorted Local fine-grained pyrite disseminations <math>< 0.5\%</math> throughout Fracturing 5 cm to 40 cm apart, subparallel to 60° to core axis 76.0 to 76.2 m - intense 40 to 60° to core axis shearing Consistent epidote, chlorite, sericite alteration - like all the other holes No distinct quartz veining or limonite							
76.20						End of Hole.							

## MINOREX CONSULTING LTD

## DRILL LOG

DRILL HOLE No. 92 - 07

Geological Consultants and Exploration Management

<b>Property:</b>	TRAIL HILL	<b>LOCATION MAP</b>	<b>Date Started:</b>	May 27, 1992	<b>Grid Northing:</b>	5239	
<b>Project No.:</b>	P92-07		<b>Date Completed:</b>	May 28, 1992	<b>Grid Easting:</b>	5194	
<b>N.T.S.:</b>	116 B / 3		<b>Logged By:</b>	J. D. Blanchflower	<b>Elevation:</b>		
<b>Location:</b>	Lat. 64° 01' North Long. 139° 21' West		<b>Date Logged:</b>	May 28, 1992	<b>Depth</b>	<b>Azimuth</b>	<b>Dip</b>
<b>Drilled By:</b>	E. Caron Diam. Drilling		<b>Core Size:</b>	HQ	Collar	255°	-45
<b>Hole Type:</b>	Diamond Drill Hole	<b>Azimuth:</b>	255°	45.11 m.	255°	-45	
		<b>Length:</b>	45.11 m. (148 ft.)	<b>Recovery:</b>		77.60%	

INTERVAL (m.)		SECTION				DESCRIPTION	SAMPLE INTERVAL				ASSAY/ANALYTICAL RESULTS		
From	To	Rx	S	A	M		Sample	From	To	Length	Au(gpt)	Ag(ppm)	Cu(ppm)
0.00	2.44	OVB				Casing in Overburden.							
2.44	15.40	CSa		A	li-go	Light to medium brown-grey, foliated quartz-muscovite schist with subparallel to 45° to core axis foliation. Well fractured parallel to foliation, usually <math>\leq 10</math> cm apart. Moderately limonitic along shear and fracture planes and associated with mafic-rich layers in schist. Varies from weathered clay to moderately weathered rock with depth. 2.44 to 6.5 m - very weathered, light brown schist, intensely broken and fractured with limonite ( $\pm$ goethite) partings. White quartz boudins and fracture filling at 8.0 and 9.3 to 9.6 m, parallel to foliation. Goethite fracture filling at 14.5 m, 60° to core axis. Sharp change in rock colour to more pervasive limonite at 15.40 m but intrusive/shear contact is indistinct							
15.40	22.56	CSa		A	li	Light to medium orange, sheared, limonitic quartz-muscovite schist; very indistinct with pervasive limonite but has schistose texture with quartz-rich lamellae. Fracturing parallel to foliation at subparallel, 30°, 45° plus 80° to core axis. 16.2 to 16.30 m - 10 cm 45° to core axis fault zone with <math>\leq 1</math> cm white quartz vein material clasts in orange-brown clay gouge. 19.0 to 19.5 m - intense 45° to core axis shearing <math>\leq 3</math> cm apart. 21.52 to 21.8 m - intense 30° to core axis shearing <math>\leq 3</math> cm apart							
22.56			S		qz-ca	Vague intrusive contact with 45° to core axis shearing and <math>\leq 1</math> cm white quartz-limonite vein material clasts							
22.56	24.10	DD			li	Light to medium orange-brown, weathered augite-porphry to diabase dyke. Pervasive intense limonitic alternation. Intensely fractured 22.56 to 23.0 m, 30 to 45° to core axis <math>\leq 5</math> cm apart. 23.2 m - 3 cm xenolith of subangular schist. Fracturing with limonite-goethite at 40° to core axis. 23.4 m - intense shearing 45° to core axis with clay gouge	8568	22.56	24.00	1.44	0.01	0.1	29

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INTERVAL (m.)		SECTION				DESCRIPTION	SAMPLE INTERVAL				ASSAY/ANALYTICAL RESULTS		
From	To	Rx	S	A	M		Sample	From	To	Length	Au(gpt)	Ag(ppm)	Cu(ppm)
24.10	29.10	DD			li	Light grey and medium orange-brown augite dyke with pervasive limonitic alteration 25.60 to 29.10 m. Well fractured 45° to core axis and locally sheared ~ 45° to c.a. Local white quartz-limonite pebbles in fault gouge. 24.10 to 27.2 m - sheared 45° to core axis with grey clay gouge zone 24.10 to 25.0 m (very poor recovery) with rounded quartz-limonite vein material. 27.90 to 28.50 m - intensely sheared with clay gouge 27.2 to 27.80 m - rock looks like schist xenolith in dyke matrix	8569	24.00	28.00		0.01	0.1	17
29.10			S		li	40° to core axis shear contact with hangingwall limonite fracture coating.							
29.10	35.10	Brox			py-li	Medium grey intrusive breccia with dark grey-green augite dyke material and white quartz (±calcite) vein, lamellar quartz-plagioclase aplitic material, argillic quartz-muscovite schist clasts. Clasts are angular to subrounded 1 to 5 cm in diameter. Clasts look like White Channel pebbles. 33.0 m - 5 cm section of white aplitic material Intense shearing 30.0 to 34.90 m with clay gouge zones at 33.8 and 34.8 m 40 to 50° to core axis. Weak limonite alteration 5 to 1 cm epidote-chlorite altered augite phenocrysts at 35.0 m.	8571	30.00	32.00	2.00	0.03	0.1	15
							8572	32.00	34.00	2.00	0.05	0.1	19
							8573	34.00	35.00	1.00	0.01	0.3	41
35.10			I			30° to core axis intrusive contact with 1 cm endoskarn (chlorite-rich) There is a 10 cm hangingwall zone with augite phenocrysts.							
35.10	44.10	CSa		A	py-li	Light to medium grey-green, foliated quartz-muscovite schist - fractured 5 to 20 cm apart parallel to schistosity. Mafic lamellae altered to epidote, chlorite ±sericite with limonite after pyrite disseminations (< 1%). 35.10 to 36.0 m - epidote-chlorite altered section with pervasive epidote-chlorite alteration of mafic rich lamellae and local 3 cm fracture filling augite-plagioclase dyking at 35.3 and 35.7 m. 40 to 45° to core axis. Local limonite fracture filling along shear and fracture planes. 36.0 to 44.1 m - Chloritic quartz-muscovite schist with limonite fracture filling and limonite altered pyrite casts <1% very f.g. casts. Foliation at 25 to 60° to core axis; increases with depth. Local quartz lamellae Fracturing 10 to 60° to core axis <= 5 cm average.	8574	35.00	37.00	2.00	0.01	0.5	17
44.10	45.11	PfD			py	Dark grey-green, intensely fractured, chilled margin of plagioclase-porphyry dyke. Rock is aphanitic with lath-like plagioclase crystals Intensely sheared 30° to core axis at 44.5 and 45.0 m Local f.g. pyrite dissnns/ fracture filling at 44.10 m. along 30° to 40° to c.a.							
45.11						End of Hole.							

## MINOREX CONSULTING LTD

## DRILL LOG

DRILL HOLE No. 92 - 08

Geological Consultants and Exploration Management

<b>Property:</b>	TRAIL HILL	<b>LOCATION MAP</b>	<b>Date Started:</b>	May 28 1992	<b>Grid Northing:</b>	5239	
<b>Project No.:</b>	P92-07		<b>Date Completed:</b>	May 29, 1992	<b>Grid Easting:</b>	5194	
<b>N.T.S.:</b>	116 B / 3		<b>Logged By:</b>	J. D. Blanchflower	<b>Elevation:</b>		
<b>Location:</b>	Lat. 64° 01' North Long. 139° 21' West		<b>Date Logged:</b>	May 30, 1992	<b>Depth</b>	<b>Azimuth</b>	<b>Dip</b>
<b>Drilled By:</b>	E. Caron Diam. Drilling		<b>Core Size:</b>	HQ	Collar	255°	-60°
<b>Hole Type:</b>	Diamond Drill Hole		<b>Azimuth:</b>	255°	59.74 m.45	255°	-59°
		<b>Length:</b>	59.74 m. (196 ft.)	<b>Recovery:</b>		78%	

INTERVAL (m.)		SECTION				DESCRIPTION	SAMPLE INTERVAL				ASSAY/ANALYTICAL RESULTS			
From	To	Rx	S	A	M		Sample	From	To	Length	Au(gpt)	Ag(ppm)	Cu(ppm)	
0.00	3.05	OVb				Casing in Overburden								
3.05	6.40	CSa		A	li	Heavily weathered quartz-muscovite schist; clay with schistose clasts and moderate limonite, mainly clay.								
6.40	23.10	CSa		A	li	Light or medium orange-brown to medium orange, moderately to intensely weathered and pervasively limonitic quartz-muscovite schist with vague to distinct 20 to 60° to core axis foliation. Ubiquitous limonite varying in intensity between shears. Fracturing parallel to schistosity <math>\leq 10</math> cm apart. 6.40 to 13.50 m - Light brown, weathered quartz-muscovite schist with subparallel to 30° to c.a. schistosity. At 7.7 m. - 2 mm. limonite-goethite fracture filling at 15° to core axis 13.5 to 17.0 m - Medium orange-brown quartz-muscovite schist with intense pervasive limonite alteration. Local 5 mm to 2 cm white quartz fracture filling 45 to 30° to core axis ~ 50 cm apart. Intense shear clay gouge zones at 13.8 to 14.0, 15.4 to 15.5, and 7.0 to 7.42 m. 17.0 to 23.86 m - Light brown, weathered and altered (chlorite±sericite) quartz-muscovite schist with schistosity subparallel to 60° to core axis. Has an altered intrusive look but there is a vague foliation. Mafic-rich lamellae is chlorite, limonite. Lighter brown colour than above with limonite dominantly along 25 to 35° to core axis shear fractures <math>\leq 20</math> cm apart. 22.86 to 23.10 m - shearing <math>\leq 1</math> cm apart, 30 to 40° to core axis with limonite±goethite fracture filling.								
23.10			S		li	1 cm 30° to core axis shear contact with schistose limonitic gouge.								
23.10	25.50	DD			li	Light green-grey, well altered aphanitic diabase intrusive. Very fine-grained but has a vague 45° to core axis foliation. Well fractured <math>\leq 10</math> cm apart 40 to 50° to core axis with intense shearing 23.5 to 23.77 m and 24.90 to 25.50 m subparallel to 90° to core axis.	8575	23.72	25.00	1.28	0.01	0.1	1	

Geological Consultants and Exploration Management

INTERVAL (m.)		SECTION				DESCRIPTION	SAMPLE INTERVAL				ASSAY/ANALYTICAL RESULTS		
From	To	Rx	S	A	M		Sample	From	To	Length	Au(gpt)	Ag(ppm)	Cu(ppm)
25.30			F		li	60° to core axis 10 cm clay gouge fault zone with limonite-rich clay gouge							
25.30	27.20	PfD			li	Mixed zone of plagioclase porphyry dyke and schist with intense shearing 25.30 to 26.0 m - mainly medium grey, fractured, aphanitic plagioclase-augite porphyry dyke with limonite along 60° to core axis fracturing <math>\leq 5</math> cm apart, intense shearing at 25.9 to 26.0 m. 26.0 to 26.85 m - intensely fractured, limonitic quartz-muscovite schist with limonite disseminations and fracture filling 40 to 60° to core axis. 26.85 to 27.20 m - sheared, olive grey-green augite dyke with several 45 to 60° to c.a. shearing with limonitic 5 cm clay gouge zone at 27.0 m 60° to core axis	8576	25.00	27.00	2.00	0.02	0.1	19
27.20	27.50	PfD	F		li	30 to 60° to c.a. clay gouge zone with limonitic schist and dyke fragments becoming more frequent plagioclase-rich dyke material with depth							
27.20	28.75	PfD		P		Medium to dark grey-green, chloritized plagioclase-augite porphyry dyke with a parallel 1 to 2 mm. chlorite-carbonate shear infilled fracture cut by 70 to 90° to core axis fracturing.  Augite phenocrysts altered to epidote, chlorite, calcite cores with 1 mm plagioclase laths altered weakly to sericite.							
28.75			I		li	30° intrusive contact with limonitic fracture fillings	8577	27.00	29.00	2.00	0.02	0.5	33
28.75	29.60	DD			li	Section similar to 23.10 to 25.50 m, probably intensely-altered schist, chloritized with limonite fracture fillings.							
29.60	29.80	DD			li	Mixed chloritized schist; dark green augite dyke with 30° to core axis foliation 29.8 m - 30° to core axis limonite-rich intrusive contact							
29.80	59.43	Brxx			py-li	Dark green-grey augite-plagioclase porphyry intrusive breccia with quartz-rich and schist clasts. 30.0 to 30.78 m - fault zone (10% recovery) with white aplitic clasts in augite-plagioclase porphyry dyke matrix. 31.7 to 32.5 m - dominantly aplite to fine-grained. plagioclase-quartz porphyry dyke with very fine-grained pyrite casts <math>\leq 1</math> % disseminations. 32.46 to 38.5 m - intrusive breccia with <math>\leq 30</math> cm white quartz, aplite and schist breccia fragments in green, chloritized plagioclase-augite dyke matrix. Fracturing 10 to 20°, 60 to 80° to core axis <math>\leq 10</math> cm apart	8578	29.00	31.00	2.00	0.02	0.1	15
							8579	31.00	33.00	2.00	0.03	0.4	12
							8580	33.00	35.00	2.00	0.03	0.3	25
							8581	35.00	37.00	2.00	0.22	0.6	27

Geological Consultants and Exploration Management

INTERVAL (m.)		SECTION				DESCRIPTION	SAMPLE INTERVAL			ASSAY/ANALYTICAL RESULTS			
From	To	Rx	S	A	M		Sample	From	To	Length	Au(gpt)	Ag(ppm)	Cu(ppm)
						Intense shearing 34.5 to 35.2, 35.6 to 36.2 m 30° to core axis	8582	37.00	39.00	2.00	0.15	0.2	21
						38.5 to 39.8 m - Light grey, f.g. aplitic clasts dominate with minor dyke matrix; very fine grained pyrite casts ~< 1% dissns	8583	39.00	41.00	2.00	0.02	0.1	15
						41.65 to 41.75 m - 10 cm fault gouge zone ~30° to core axis							
						41.7 to 42.25 m - quartz-eye aplite with 1 to 2 mm round quartz phenocrysts in lt. grey, aphanitic quartz-rich groundmass 15 to 30° to core axis facturing	8584	41.00	43.00	2.00	0.03	0.3	14
						43.9 to 44.2 m - limonitic shear zone from 30 to 60° to core axis limonite after pyrite with 2 cm gouge zone.	8585	43.00	45.00	2.00	0.02	0.1	15
						49.23 m - rock becomes less fractured <math>\leq</math> 40 cm apart at 40° and 60° to core axis.	8586	45.00	47.00	2.00	0.01	0.1	6
						49.2 to 49.3 m - ~ 1% pyrite fracture fillings and disseminations.	8587	47.00	49.00	2.00	0.02	0.1	15
						52.5 to 52.6 m - 5 to 10 cm 70° to core axis shear gouge zone with chlorite-altered gouge	8588	49.00	51.00	2.00	0.02	0.1	26
						53.8 to 54.3 m - dyke matrix becomes quite granular with plagioclase and chloritized augite phenocrysts.	8589	51.00	53.00	2.00	0.02	0.5	20
							8590	53.00	55.00	2.00	0.02	0.4	22
							8591	55.00	57.00	2.00	0.02	0.1	21
							8592	57.00	59.00	2.00	0.01	0.4	69
59.43	59.74	CSa		A	py	Dark green-grey, chloritized quartz-muscovite schist with 40 to 35° to core axis foliation. Local << 0.5% pyrite disseminations. Moderate chlorite-epidote alteration of the quartz-muscovite schist. May be a xexolith of schist in intrusive dyke breccia.							
59.74						End of Hole.							

**APPENDIX III**

Min-En Laboratories

Certificates of Assay and I.C.P. Reports

for the

Diamond Drill Core and Lithochemical Samples



**MIN  
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**VANCOUVER OFFICE:**  
705 WEST 15TH STREET  
NORTH VANCOUVER, B.C. CANADA V7M 1T2  
TELEPHONE (604) 980-5814 OR (604) 988-4524  
FAX (604) 980-9621

**SMITHERS LAB.:**  
3176 TATLOW ROAD  
SMITHERS, B.C. CANADA V0J 2N0  
TELEPHONE (604) 847-3004  
FAX (604) 847-3005

*Assay Certificate*

2V-0454-RA1

Company: **CARMACK GOLD CORP.**  
Project: **BONANZA (MINOREX CONSULTING)**  
Attn: **J. BLANCHFLOWER/M. HARVEY**

Date: **JUN-10-92**  
Copy 1, **CARMACK GOLD CORP., CHILLIWACK, B.C.**  
2, **MINOREX CONSULTING LTD., DELTA, B.C.**

*We hereby certify* the following Assay of 24 CORE samples submitted JUN-04-92 by J.D. BLANCHFLOWER.

Sample Number	%AU g/tonne	%AU oz/ton
8551	.02	.001
8552	.01	.001
8553	.01	.001
8554	.01	.001
8555	.01	.001
8556	.01	.001
8557	.01	.001
8558	.01	.001
8559	.01	.001
8560	.01	.001
8561	.01	.001
8562	.02	.001
8563	.01	.001
8564	.01	.001
8565	.01	.001
8566	.01	.001
8567	.02	.001
8568	.01	.001
8569	.01	.001
8570	.01	.001
8571	.03	.001
8572	.05	.001
8573	.01	.001
8574	.01	.001

\*1 ASSAY TON

Certified by Richard Sump

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**SMITHERS LAB.:**  
3176 TATLOW ROAD  
SMITHERS, B.C. CANADA V0J 2N0  
TELEPHONE (604) 847-3004  
FAX (604) 847-3005

Assay Certificate

2V-0454-RA2

Company: CARMACK GOLD CORP.  
Project: BONANZA (MINOREX CONSULTING)  
Attn: J. BLANCHFLOWER/M. HARVEY

Date: JUN-10-92  
Copy 1. CARMACK GOLD CORP., CHILLIWACK, B.C.  
2. MINOREX CONSULTING LTD., DELTA, B.C.

*He hereby certify* the following Assay of 18 CORE samples  
submitted JUN-04-92 by J.D. BLANCHFLOWER.

Sample Number	*AU g/tonne	*AU oz/ton
8575	.01	.001
8576	.02	.001
8577	.02	.001
8578	.02	.001
8579	.03	.001
8580	.03	.001
8581	.22	.006
8582	.15	.004
8583	.02	.001
8584	.03	.001
8585	.02	.001
8586	.01	.001
8587	.02	.001
8588	.02	.001
8589	.02	.001
8590	.02	.001
8591	.02	.001
8592	.01	.001

\*1 ASSAY TON

Certified by *Richard Gray*

MIN-EN LABORATORIES

COMP: CARMACK GOLD CORP.  
 PROJ: BONANZA (MINOREX CONSULTING)  
 ATTN: J.BLANCHFLOWER/M.HARVEY

MIN-EN LABS — ICP REPORT  
 705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2  
 (604)980-5814 OR (604)988-4524

FILE NO: 2V-0454-RJ1+2  
 DATE: 92/06/15  
 \* CORE \* (ACT:F31)

SAMPLE NUMBER	AG PPM	AL PPM	AS PPM	B PPM	BA PPM	BE PPM	BI PPM	CA PPM	CD PPM	CO PPM	CU PPM	FE PPM	K PPM	LI PPM	MG PPM	MN PPM	MO PPM	NA PPM	NI PPM	P PPM	PB PPM	SB PPM	SR PPM	TH PPM	TI PPM	V PPM	ZN PPM	GA PPM	SN PPM	W PPM	CR PPM
8551	.2	21100	1	8	580	1.7	10	5040	.1	5	52	9980	810	11	1520	75	1	120	3	1210	11	1	27	6	1533	48.0	29	1	1	4	84
8552	.5	21870	1	8	417	1.4	13	4340	.1	7	19	17140	620	9	1270	179	2	110	1	1060	12	1	18	3	2168	50.7	35	1	2	5	109
8553	.5	16270	1	5	657	1.0	8	3580	.1	4	16	12660	1320	8	1050	153	1	190	2	800	12	1	18	5	1343	37.0	23	1	1	4	81
8554	.7	20220	1	4	944	1.0	11	3710	.1	5	21	15810	1490	8	1520	228	1	180	1	740	18	1	24	6	1810	41.9	36	1	1	4	76
8555	.9	19750	1	3	878	.7	12	3640	.1	5	21	10460	950	7	1230	146	1	230	2	750	14	1	22	6	2006	40.2	34	1	2	4	83
8556	.5	8600	1	3	788	.2	5	1440	.1	3	9	5110	1580	3	320	63	3	350	1	330	10	1	17	8	971	17.2	16	1	2	5	124
8557	1.0	21330	1	4	1176	.4	15	4190	.1	7	20	12960	770	7	1280	167	1	250	5	1040	10	1	29	4	2565	54.0	37	1	2	7	154
8558	.7	22340	1	5	871	.4	13	4630	.1	6	17	12310	1120	8	2020	141	2	170	5	1160	11	1	23	4	2263	49.0	69	1	2	4	90
8559	.1	30350	1	6	226	1.0	4	6270	.1	20	28	16800	840	22	8770	53	2	230	38	1810	4	1	27	3	487	62.3	102	1	1	6	125
8560	.1	15880	1	4	384	.7	3	3910	.1	13	13	9660	1410	12	3730	39	4	200	20	1050	11	1	15	5	206	34.4	76	1	1	4	95
8561	.5	18580	1	5	500	.7	6	3220	.1	11	13	10960	1700	13	4320	103	4	210	16	750	11	1	13	5	1060	30.5	63	1	1	4	80
8562	.1	8050	1	4	1022	.5	2	1610	.1	5	8	6240	1990	5	1100	48	4	300	10	230	9	1	16	7	309	12.6	26	1	1	5	114
8563	.6	21460	1	5	1673	.7	9	5260	.1	18	23	17960	1740	14	8370	201	5	750	38	1110	11	1	32	6	1465	73.8	103	1	1	6	130
8564	.5	12010	1	2	678	.6	4	1980	.1	8	8	10250	1370	13	6320	133	5	520	15	370	69	1	12	7	436	18.7	88	4	1	6	134
8565	.7	19280	1	3	496	.2	13	8460	.1	22	21	21520	950	9	4700	485	3	1890	43	1120	9	1	44	2	2274	56.5	75	1	2	8	171
8566	.6	21760	1	5	361	.4	12	7440	.1	24	21	18180	880	10	4190	187	4	1270	34	1400	7	1	36	3	2245	58.7	74	1	2	7	162
8567	.1	24610	1	6	556	1.2	3	6370	.1	21	23	21930	1120	22	6950	56	3	270	28	1930	10	1	25	3	336	66.4	97	1	1	5	119
8568	.1	29390	1	9	337	2.7	3	6640	.1	10	29	52840	1340	36	11200	67	1	230	18	1410	20	1	56	3	126	87.3	102	1	1	5	121
8569	.1	26540	1	6	1413	1.2	7	4560	.1	7	17	21300	1020	24	4150	78	3	190	9	930	20	1	30	4	927	57.8	63	1	1	5	106
8570	.1	21950	1	5	613	1.0	5	3650	.1	6	13	19140	1390	19	4070	61	1	170	4	580	15	1	25	6	567	43.9	57	1	1	4	82
8571	.1	19900	1	5	553	.7	4	3670	.1	4	15	8660	830	10	1870	57	4	240	6	850	11	1	17	4	630	46.5	32	1	1	5	123
8572	.1	18830	1	8	517	.4	11	3610	.1	5	19	11950	520	8	1730	110	1	160	5	860	6	1	15	1	1817	52.2	33	1	1	5	128
8573	.3	33810	1	9	1963	.9	15	5700	.1	10	41	20260	360	10	2920	109	2	140	19	1630	8	1	27	1	2502	87.1	51	1	1	10	217
8574	.5	17750	1	3	568	1.0	3	1990	.1	6	17	10440	1760	20	9310	70	2	350	20	290	18	1	12	7	163	16.5	59	8	1	4	92
8575	.1	19040	1	7	509	.8	3	2750	.1	6	1	11370	1120	28	13530	55	1	250	8	170	19	1	23	9	20	5.7	54	1	1	2	41
8576	.1	24030	7	10	494	1.2	3	5370	.1	11	19	17750	930	22	8140	51	2	160	19	1200	25	1	31	5	427	46.9	92	1	1	3	71
8577	.5	34610	1	7	346	1.0	13	7920	1.0	37	33	19910	990	21	7050	120	2	150	86	2640	12	1	32	3	2201	66.4	218	1	1	4	85
8578	.1	23520	8	5	575	1.1	3	3740	.1	15	15	13950	1450	27	11880	97	4	240	41	890	21	1	16	6	275	31.4	137	4	1	6	143
8579	.4	14740	7	1	1055	.6	3	2840	.1	10	12	15180	770	13	8060	115	4	460	19	620	20	3	13	7	242	32.3	93	6	1	7	163
8580	.3	19760	9	1	686	.7	6	3870	.1	20	25	16550	690	12	5530	131	6	230	46	990	13	1	16	4	863	46.2	68	1	1	8	181
8581	.6	27360	112	2	2254	.9	7	5250	.1	21	27	19410	1600	17	10880	160	7	470	71	1370	16	1	29	6	1146	76.0	167	1	2	7	141
8582	.2	21720	116	2	2074	.9	5	3840	.1	17	21	12750	1290	13	6440	103	3	270	42	1000	14	1	18	6	531	55.4	109	1	1	6	133
8583	.1	15160	16	2	642	.5	4	3100	.1	16	15	12710	610	9	3160	86	4	380	43	760	10	1	10	5	637	36.4	61	1	1	7	158
8584	.3	19720	1	3	578	.8	5	3690	.1	17	14	13360	1220	13	5510	175	3	250	43	1000	38	1	12	6	721	41.1	118	1	1	5	124
8585	.1	20460	25	3	867	1.0	3	4110	.1	15	15	13640	1420	18	7530	96	2	320	30	1130	16	1	13	6	234	46.8	60	1	1	6	142
8586	.1	7330	10	1	244	.4	2	1530	.1	7	6	9040	510	7	2290	51	2	500	13	370	17	1	6	4	155	15.8	48	1	1	6	134
8587	.1	21190	2	4	790	1.0	3	3740	.1	17	15	13500	1790	18	7590	110	3	290	31	960	21	1	12	7	351	39.4	90	1	1	5	129
8588	.1	22040	17	3	833	1.0	3	4930	.1	20	26	17110	1160	17	7410	102	2	300	41	1350	13	1	13	5	397	48.7	92	1	1	5	126
8589	.5	24630	1	4	888	.5	11	5320	.1	30	20	19710	1200	15	7320	173	3	610	60	1240	9	1	19	4	1948	48.4	125	1	1	6	142
8590	.4	18260	1	4	867	.5	11	7140	.1	27	22	26350	640	8	4540	696	1	1240	50	1140	9	1	35	2	1989	52.9	90	1	1	6	132
8591	.1	16340	1	5	911	.7	11	8520	.1	20	21	35540	780	9	5360	915	2	1490	28	1220	8	1	43	2	2120	64.1	75	1	1	8	171
8592	.4	19920	1	5	743	.7	11	8140	.1	22	69	28250	960	10	6030	709	2	1440	90	1060	10	1	40	3	1785	54.5	84	1	1	7	162



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SMITHERS, B.C. CANADA V0J 2N0  
TELEPHONE (604) 847-3004  
FAX (604) 847-3005

*Assay Certificate*

2V-0545-RA1

Company: **MINOREX CONSULTING LTD.**  
Project: **BONANZA P92-07**  
Attn: **J. D. BLANCHFLOWER/M. HARVEY**

Date: **JUL-03-92**  
Copy 1. MINNOREX CONSULTING LTD., VANCOUVER, B.C

*We hereby certify* the following Assay of 9 ROCK samples  
submitted JUN-23-92 by J.D. BLANCHFLOWER.

Sample Number	AU-FIRE g/tonne	AU-FIRE oz/ton
08601	.05	.001
08602	.03	.001
08603	.13	.004
08604	.01	.001
08605	.01	.001
08606	.01	.001
08607	.01	.001
08608	.01	.001
08609	.01	.001

Certified by \_\_\_\_\_



## ADDENDUM

### STATEMENT OF COSTS

Consultant: Marshall Smith .....	\$ 21343.00
Consultant: Minorex .....	16784.30
Consultant: Abbas .....	2243.00
Assistant: John Devlin .....	7633.00
Geophysical Survey: Geotronics .....	24134.00
Drilling: Caron (2045 feet) .....	47022.22
Assaying: Min-En Labs .....	1052.08
Bulldozer Rental: Robert Nicholson .....	4023.20
House Rental .....	5500.00
Telephone .....	1100.00
	<hr/>
TOTAL	130834.50