

ASSESSMENT REPORT  
Geological Mapping and Geochemical Sampling

GLENLIVET 1-46 CLAIMS  
(YA 75077 - YA 75122)

Whitehorse Mining District  
NTS 105-D-3

Latitude: 60°03'N  
Longitude: 135°17'W

091482

August 7th to 13th 1983

*[Faint, illegible handwritten notes and stamps in the lower right quadrant.]*

R. Hulstein  
Agip Canada Ltd.  
September 1983



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This report has been examined by  
the Geological Division Unit  
under Section 53 (4) Yukon Quartz  
Mining Act and is offered as  
representation to the amount  
of \$ 8,800-

*Plattner*

*for* Regional Director, Geological  
Centre, Whitehorse, Yukon Territory  
of Yukon Territory.

R. Hubert  
Agip Canada Ltd.  
September 1983

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## 1. INTRODUCTION

### 1.1 General

The GLENLIVET property consists of the GLENLIVET 1-46 quartz claims located near the south end of the west arm of Bennet Lake in southwestern Yukon (see Figure 1).

The claims were recorded on September 9th 1982.

This report describes surface work carried out on the claims, performed between August 7th and 13th 1983.

### 1.2 Location and Access

The GLENLIVET property is situated in southwestern Yukon at 60°03' north latitude and 135°17' west longitude (NTS map sheet 105-D-3). Whitehorse is 77 km by air to the north.

A good road (Annie Lake Road) leads from Whitehorse to within 14 miles of the property. Access in 1983 was by helicopter based out of Whitehorse.

The property is bounded by Crozier Creek on the north and Macauley Creek on the east side.

### 1.3 Physiography and Vegetation

The area of interest lies between 1300 and 2100 metres above sea level. Topography is mountainous with sharp rugged peaks and serrated ridges with glacial cirques, U-shaped valleys and hanging valleys.

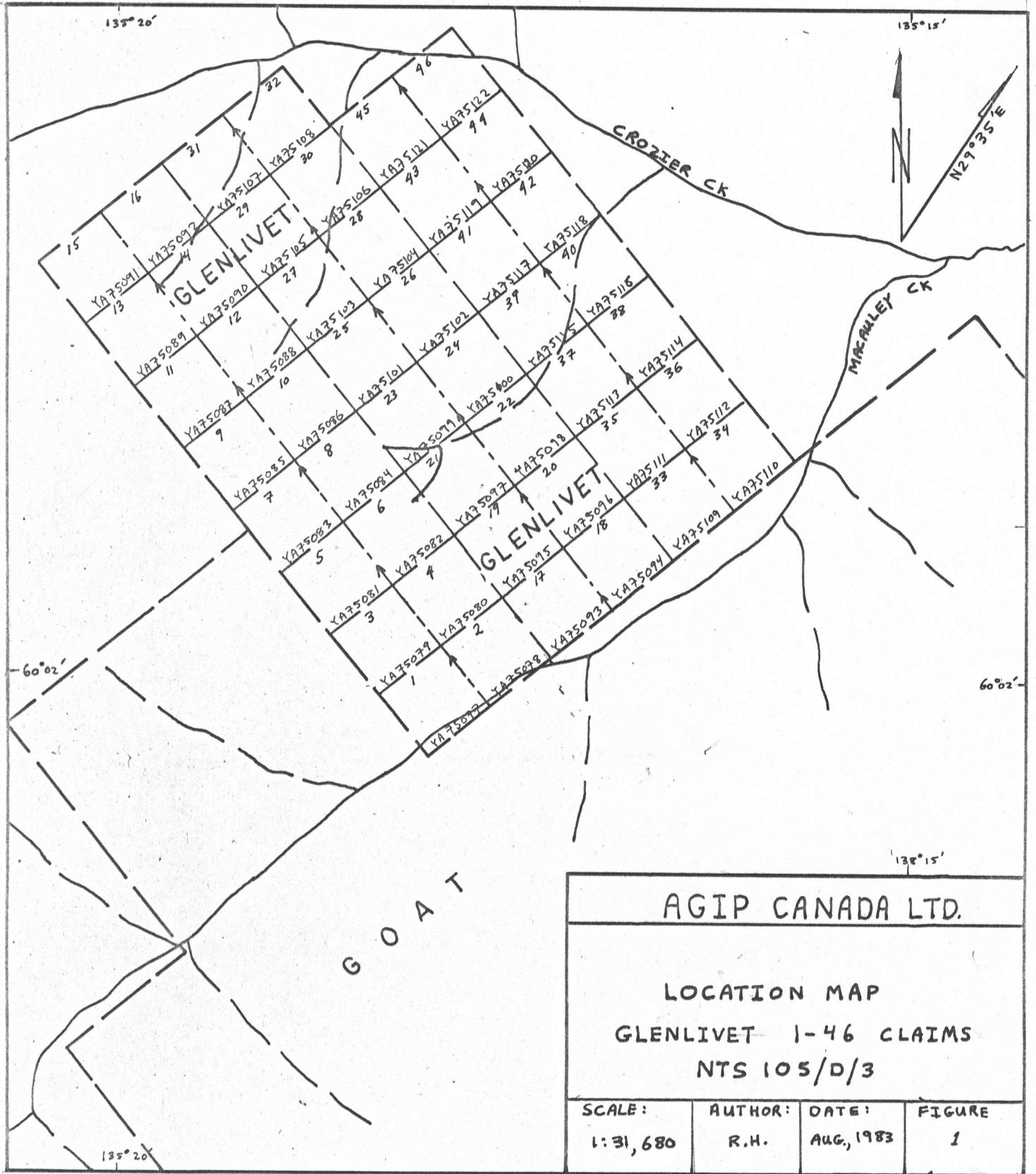
Vegetation is sparse above 1300 metres. Lower valleys are forested with white spruce and alders. Most of the property is barren and consists predominantly of outcrop and felsenmeer. A stagnant rock glacier occupies the central cirque on the property.

## 2. GEOLOGY

### 2.1 General Geology

The GLENLIVET property covers part of the northern portion of the Bennet Lake cauldron subsidence complex consisting of Skukum Group felsic to intermediate volcanics of Eocene age (Lambert, 1974).

The complex is considered part of the Sloko Volcanic Province which extends through north central British Columbia into southern Yukon. The Sloko Province is also thought to be equivalent in part to the Mt. Nansen Group in west central Yukon.



AGIP CANADA LTD.			
LOCATION MAP			
GLENLIVET 1-46 CLAIMS			
NTS 105/D/3			
SCALE:	AUTHOR:	DATE:	FIGURE
1:31,680	R.H.	AUG, 1983	1

Within the Bennet Lake cauldron the Skukum volcanics are unconformable over a basement consisting of Late Precambrian or Lower Paleozoic Yukon Group metasediments intruded by Cretaceous granitic rocks of the Coast Plutonic Belt.

## 2.2 Geology of the GLENLIVET Claims

The GLENLIVET 1-46 claims overlie the eastern portion of the Crozier sub-area as defined by Lambert (1974). This area is underlain for the most part by the Crozier breccias and the Crozier tuffs and lavas (see Figure 2). The Crozier tuffs and lavas conformably overlie the Crozier breccias which in turn overlie the Macauley Creek Formation and the Partridge Lake Formation, the basal unit of the complex. These units are cut and overlain by local rhyolite, dacite, andesite basalt, lavas, sills, tuff dykes and equivalent breccias (Lambert, 1974).

The Partridge Lake formation is exposed on the south side of the property; this is the lowermost unit and consists of pale greenish-grey, non- to partly-welded tuffs. This unit is very similar to the Macauley Creek Formation and consists of local flows, breccias, epiclastic breccias and conglomerates.

The Macauley Creek Formation outcrops on the southeast side of the property forming the base of the ridge along Macauley Creek. On the claim group, the Macauley Creek Formation consists of dark to medium greenish-grey, moderately to densely welded ignimbrite.

The Crozier breccias consist mainly of very coarse epiclastic breccias and conglomerates with minor sandstone, siltstone and tuff.

Crozier tuffs and lavas are made up of interbedded lavas, tuffs including rare limy tuffs, and minor epiclastic rocks.

The white weathering rhyolite and dacite (see Figure 2, unit 15) that cuts and overlies the Macauley Creek and Crozier formations is part of the eruptive centre that occurs on the property (Lambert, 1974). At the northeast end of the property (Figure 2, area A), the rhyolite weathers a brilliant scarlet and bright orange due to oxidation of disseminated pyrite.

During the property examination, three areas (Figure 2, A-C) were examined which might be related to epithermal mineralization. One is area A mentioned above. The red and orange "gossan" contains disseminated pyrite, is silicified in patches as well as having minor quartz veining and weak clay alteration along fracture surfaces.

Area B is a shear or possible fault lineament trending  $170^{\circ}$ . Along this lineament strong argillic alteration is found with 1-2 mm wide quartz veining containing disseminated galena and pyrite. The alteration and mineralization extends for 150 metres with a probable width of 2-3 metres. Along strike, the lineament dies out in fractured rhyolite with minor pyritization and quartz veining.

Area C is located on the south end of the northeast trending ridge parallel to Macauley Creek. Here, 2-4 cm wide quartz veining with minor calcite, limonite and fluorite is found in weakly altered rhyolite.

### 2.3 Structure

The GLENLIVET property is located between the margins of two nested calderas. On the ridge north of Crozier Creek is the outer ring dyke while Crozier Creek valley is the inner side of the ring fracture system (Lambert, 1974).

Volcanic units exhibit variable strike and dip with the dip almost always less than 30°. Steeper dips are often local and probably caused by deposition on steep paleotopography.

Faulting as well as shearing and jointing generally trend north to northwest and rarely northeast. The argillic alteration on the lineament at area B (Figure 2) might be due to a set of cross-cutting north and northeast trending faults or shears.

## 3. GEOCHEMISTRY

### 3.1 Soil Geochemistry

Soil samples were taken at the base of talus slopes at 100-200 metre intervals or greater depending on the amount of soil available. All talus slopes in the cirques and valleys were sampled this way except for the northwest corner of the property.

A total of 76 soil samples were collected and analyzed for gold and silver (see Figure 3).

Highest values for gold were from area A where one sample carried 330 ppb gold while other samples in the area were between 10 and 90 ppb gold. Silver is slightly anomalous in the same area, with values up to 1.4 ppm.

Soil and one silt samples taken below and in the vicinity of area B have up to 1.0 ppm silver and less than 5 ppb gold.

Area C returned very low values: < 5 ppb gold and 0.5 ppm silver.

A single soil sample (# 30419) in the southeast corner of the property carried 3.4 ppm silver and 15 ppb gold.

### 3.2 Rock Geochemistry

A total of 35 rock grab samples were collected in 1983 and analyzed for gold and silver (see Figure 3). All gold values were less than 5 ppb except for one sample taken at area B which returned 70 ppb gold and

1.3 ppm silver. Another sample on the same mineralized lineament returned less than 5 ppb gold but 29.0 ppm silver.

The scarlet-orange weathering rhyolite at area A carried silver values up to 1.7 ppm. This is not really considered anomalous as background silver is very high.

Samples from area C of quartz, calcite, fluorite veining were not anomalous.

4. DISCUSSION

Results from the soil and rock sampling are overall disappointing although minor gold and silver anomalies were found.

However, the GLENLIVET 1-46 claims still possess potential for the occurrence of epithermal gold deposits. The rock samples with 29 ppm silver and 70 ppb gold from area B and the soil sample with 330 ppb gold from area A are positive indicators of such deposits.

In addition, quartz calcite veining in float, plus "bleached" and silicified andesite outcrop, point to hydrothermal activity.

5. REFERENCE

LAMBERT, M.B., 1974: The Bennet Lake Cauldron Subsidence Complex, British Columbia and Yukon Territory; Geol.Surv.Can., Bull. 227.

## APPENDIX A

### Analytical Methods

Silt and soil samples are dried and sieved to minus 80 mesh. Rock samples are crushed and pulverised to approximately 100 mesh. A split of the pulverised material is analyzed.

Silver is analyzed by standard atomic absorption techniques after digestion with aqua regia. Silver analyses require a background correction and values greater than 4.0 ppm are repeated using a nitric acid digestion.

Gold analyses are by fire assay techniques using a 10 g sample. After preparation of the lead bead, the bead is dissolved in acid and the gold content determined by atomic absorption spectrophotometry.

APPENDIX B

Statement of Costs

1. LABOUR (August 7-13, 1983)

R. Robertson - Senior Geologist:	½ day @ \$225/day	\$ 112.50
R. Hulstein - Project Geologist:	7 days @ \$110/day	770.00
J. Haase - Senior Assistant:	7 days @ \$105/day	735.00
R. Arthur - Senior Assistant:	7 days @ \$105/day	735.00
P. Sarjeant - Intermediate Assistant:	7 days @ \$ 90/day	630.00
		<hr/>
		\$2,982.50
		=====

2. HELICOPTER

Bell 206-B helicopter chartered from Terr-Air Rotary,  
Whitehorse:

6.6 hours @ \$470/hour	\$3,102.00
Fuel and oil	400.95
	<hr/>
	\$3,502.95
	=====

3. ANALYTICAL

Analyses by Bondar-Clegg and Co., Vancouver:

35 rock samples @ \$10.37 each	\$ 362.95
76 soil samples @ \$8.37 each	636.12
1 silt sample @ \$8.37	8.37
Freight and computer data transmission costs - estimated at	58.00
	<hr/>
	\$1,065.44
	=====

4. CAMP FOOD, EQUIPMENT AND SUPPLY COSTS

Food estimated at \$20/man day - 28.5 man days	\$ 570.00
Camp and field equipment and supply costs estimated at \$10/man day - 28.5 man days	285.00
	<hr/>
	\$ 855.00
	=====

5. MAP AND REPORT PREPARATION

R. Hulstein - 3 days @ \$110/day map and report preparation	\$ 330.00
Map reproduction and secretarial costs (estimated)	115.00
	<hr/>
<u>TOTAL COSTS = \$8,850.89</u>	\$ 445.00
	=====

APPENDIX C

Statement of Qualifications

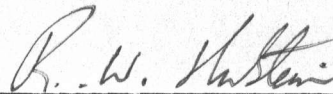
I, ROGER WILLIAM HULSTEIN, of the City of Vancouver in the Province of British Columbia, HEREBY CERTIFY:

THAT I am a geologist employed by Agip Canada Ltd.  
AND THAT I performed the work described in this report;

THAT I obtained a Bachelor of Science degree in Geology from Saint Mary's University, Halifax, N.S. in 1981;

THAT I have been engaged in mineral exploration on a full and part time basis for the past five years, of which two have been on a full time basis in the Yukon Territory.

SIGNED at Whitehorse in the Yukon Territory this 6<sup>TH</sup> day of September 1983.



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Roger W. Hulstein



**LEGEND**

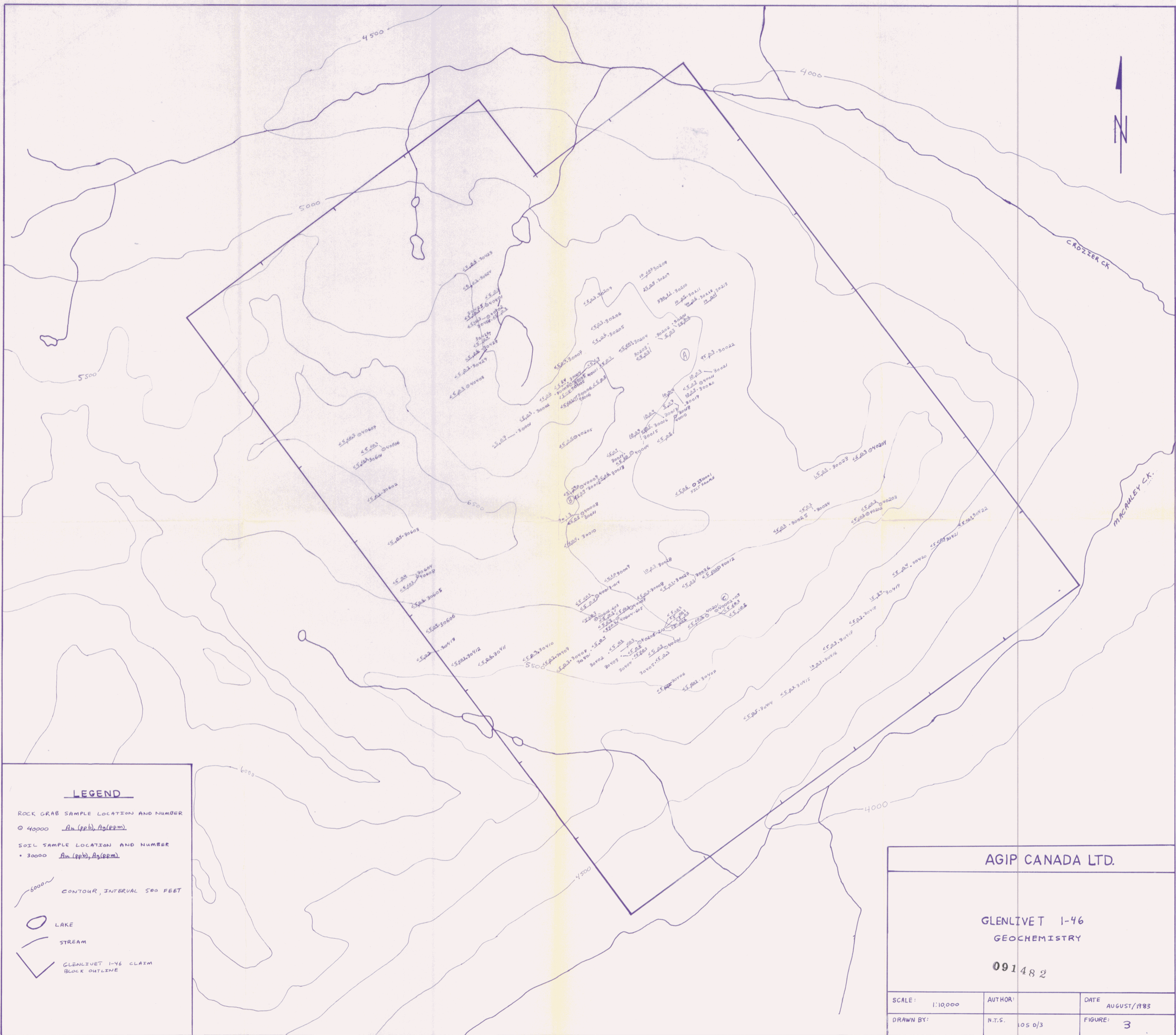
- QUATERNARY**
- PLEISTOCENE AND RECENT**
- 17 Colluvium and undifferentiated surficial deposits
- 16 Glacial deposits; moraine sand, gravel
- 16a - Glacial ice
- TERTIARY**
- EOCENE**
- 15 Undifferentiated rhyolite, dacite, andesite, basalt and tuff dykes, sills and lavas
- 15a - Rhyolite
- 15b - Andesite to andesitic basalt
- 15c - Tuff dykes
- 12 Crozier tuffs and lavas: tuff and ignimbrite
- 12a - Rhyolite lavas
- 12b - Siltstone, grit
- 12c - Volcanic breccia
- 11 Crozier breccias: volcanic and granitic fragments breccias with minor sandstone and tuffs
- 11a - Siltstone
- 8 Macaulay Creek formation
- 8b - Ignimbrite, densely welded, minor tuff, volcanic breccia and lavas
- 5 Partridge Lake formation: undifferentiated tuff, minor lavas, volcanic breccia and granitic breccia; may contain part of Macaulay Creek formation (partly welded tuff) near Macaulay Creek valley
- UPPER CRETACEOUS OR LOWER TERTIARY**
- 2 2a - Hornblende and biotite-hornblende granodiorite
- 2b - Biotite and hornblende-biotite granodiorite
- PALEOZOIC**
- 1 YUKON GROUP: quartzite, mica-quartz schist, mica (or hornblende) quartz-feldspar gneiss, altered gneissic quartz diorite; minor marble

NOTE: - Geology modified after Lambert 1974  
 - Unit #'s are from Lambert; missing units and #'s (i.e. #13) do not outcrop in the area

**SYMBOLS**

- Creeks and lake
- Claim boundary
- Bedding: inclined / vertical
- Foliation: inclined
- Outcrop boundary
- Geological boundary (defined/approximate/assumed)
- Fault (defined/approximate/assumed)
- VQC Veining: quartz and calcite
- VQ Veining: quartz
- S11 Siliceous
- Jp Jasper
- Fl Fluorite
- Hem Hematite
- Py Pyrite
- Ga Galena
- (A) - (C) Areas noted in report

	PROJECT NO.	400640
	SCALE	1:10,000
TITLE:	NTS:	105-0-3
GLENLIVET 1-46	SURVEYED BY:	
GEOLOGY	DRAWN BY:	
PROJECT 400640	APPROVED BY:	
091482	DATE	SEPT. 6/83
	FIGURE	2



**LEGEND**

ROCK GRAB SAMPLE LOCATION AND NUMBER

○ 40000 Au (ppb), Ag (ppm)

SOIL SAMPLE LOCATION AND NUMBER

• 30000 Au (ppb), Ag (ppm)

6000  
CONTOUR, INTERVAL 500 FEET

○ LAKE

— STREAM

□ GLENLIVET 1-46 CLAIM BLOCK OUTLINE

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GLENLIVET 1-46  
GEOCHEMISTRY

091482

SCALE: 1:10,000	AUTHOR: N.T.S.	DATE: AUGUST/1983
DRAWN BY: 105 0/3		FIGURE: 3