

MAP NO. 105 D 3      ASSESSMENT REPORT X      DOCUMENT NO.: 091979  
PROSPECTUS      MINING DISTRICT: Whitehorse  
CONFIDENTIAL X      TYPE OF WORK: Geochemistry, Blast Trenching  
OPEN FILE

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REPORT FILED UNDER: Pacific Trans- Ocean Resources Ltd.

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DATE PERFORMED: August 1987      DATE FILED: November 1987

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LOCATION: LAT.: 60°03'N      AREA: Bennett Lake  
LONG.: 135°17'W      VALUE \$: 4,600.00

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CLAIM NAME & NO.: GLENLIVET 1-46 YA75077-75122

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WORK DONE BY: T. Garagan (Aurum Geological Consultants Inc.)

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WORK DONE FOR: Pacific Trans-Ocean Resources Ltd.

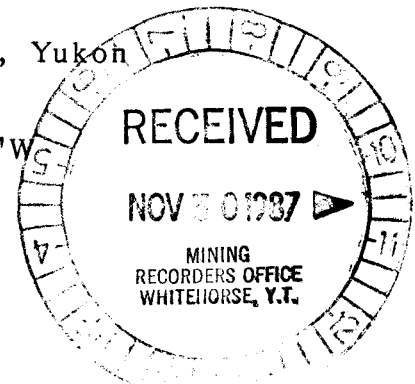
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DATE TO GOOD STANDING	REMARKS: #129 GLENLIVET

**GEOCHEMICAL and TRENCHING  
REPORT  
on the  
GLENLIVET 1 to 46 CLAIMS**

Whitehorse Mining District

Location: 1. Bennett Lake Area, Yukon  
2. 105D/3  
3. Latitude: 60 03'N  
Longitude: 135 17'W



FOR:  
PACIFIC TRANS-OCEAN RESOURCES LTD.  
# 1500 10250-101 Street  
Edmonton, Alberta  
T5J 3P4

BY:  
TOM GARAGAN; B.Sc, FGAC  
AURUM GEOLOGICAL CONSULTANTS INC.  
604-675 West Hastings Street,  
Vancouver, B.C., V6B 4W3

November 9, 1987

09 1979

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 \$ 4 600 .

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

## Summary

The GLENLIVET claims consist of 46 contiguous claims located in 105D-3 of the Whitehorse Mining District, Yukon. The property is located 75 kilometers south of Whitehorse and 20 kilometers southeast of the Mt. Skukum gold-silver deposit.

The GLENLIVET property is located in the northeast corner of the Tertiary Bennett Lake caldera complex. The claims are underlain by rhyolite and andesite subaerial volcanics which are cut by numerous rhyolite dykes and plugs. Later faults related to caldera collapse cut all units on the property. Several of the faults have associated clay alteration zones with some quartz, fluorite and gypsum veining. The After-Eight and Scarlet zones are the most significant of these zones.

Exploration consisted of soil sampling in the Scarlet zone and the digging, drilling and blasting of 6 trenches in the Scarlet zone (trench 4), After-Eight zone (trench 1) and across an unnamed gypsum bearing fault. Several soil samples collected in the Scarlet zone contained anomalous precious metal values up to 210 ppb gold and 3.13 ppm silver. The source of this anomaly is not known, but may be related to northwest trending faults located northeast of the trenches. Samples collected in the trenches contained background precious metal values.

The results of the soil sampling warrant a short followup program of rock sampling, mapping and trenching. The cost of this program would be approximately \$ 17,600.00.

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## **INTRODUCTION**

This report was prepared at the request of Mr. E. Stewart of Pacific Trans-Ocean Resources Ltd. and describes the exploration work carried out on the GLENLIVET claims during the 1987 field season. Exploration consisting of talus fine sampling and trenching was done under the supervision of Aurum Geological Consultants Inc. between August 6 and August 29, 1987.

## **LOCATION and ACCESS**

The GLENLIVET claims are located near the junction of Crozier and MacAuley Creeks, 75 kilometers south of Whitehorse and 5 kilometers west of the West Arm of Bennett Lake (figure 1). The claims are situated 20 kilometers southeast of the Mt. Skukum gold deposit and 35 kilometers west of the historic Montana Mountain gold-silver mining camp. The Ridge Au-Ag occurrence is located 2 kilometers south of the claims. The latitude and the longitude of the property is 60 03'N and 135 17'W.

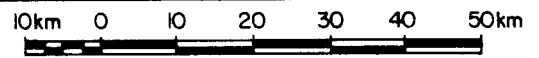
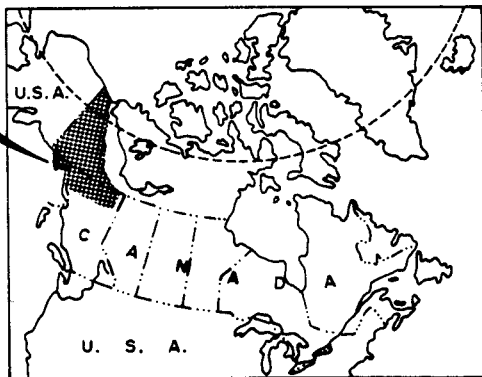
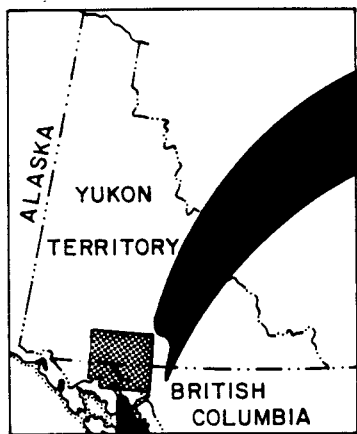
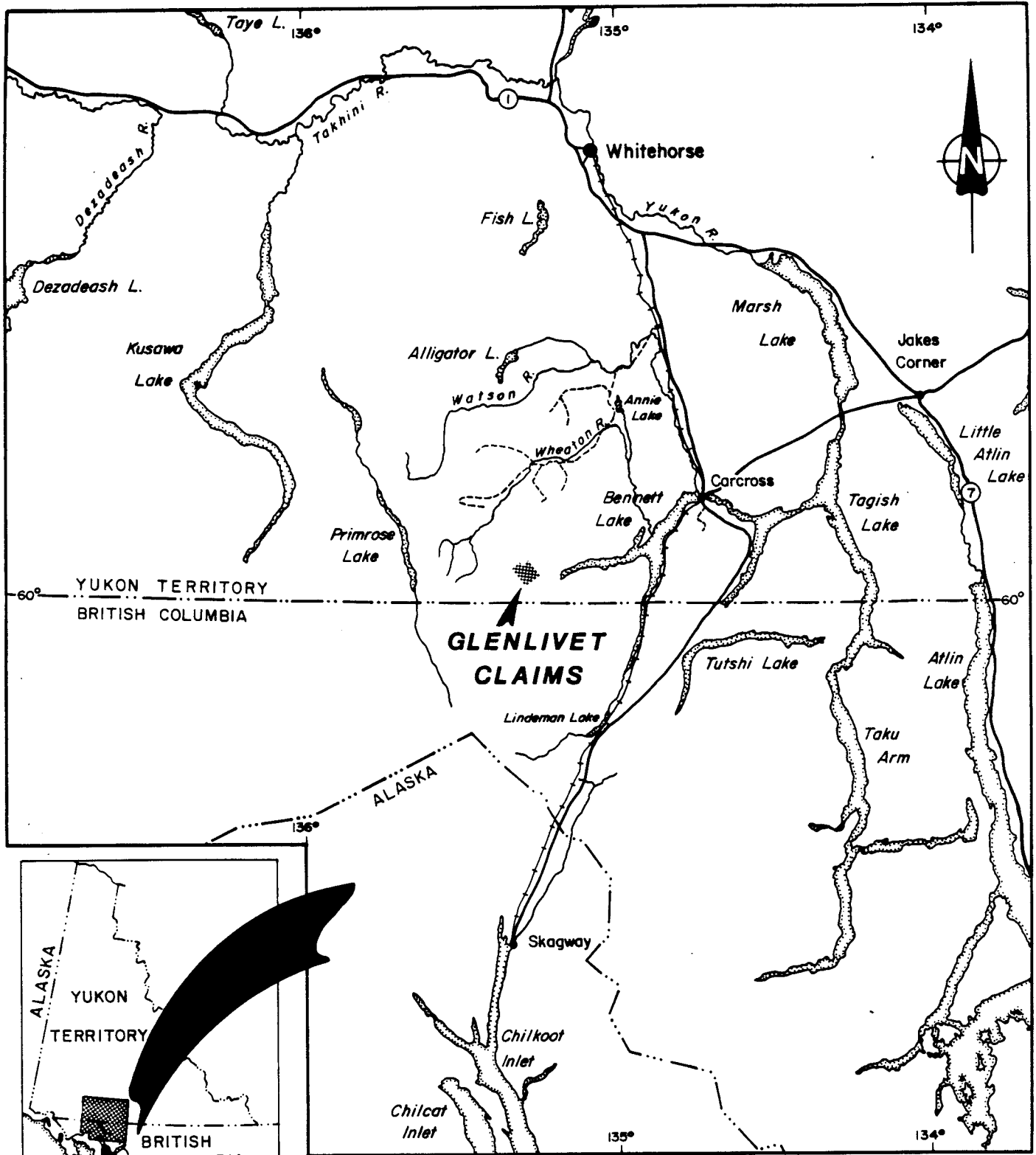
Access to the property is via helicopter from Whitehorse or from a seasonal base located near the Mt. Skukum millsite. The nearest road is the Annie Lake road which leads from the Klondike Highway to the Mt. Skukum millsite. The road passes within 18 kilometers of the property.

## **CLIMATE, TOPOGRAPHY and VEGETATION**

The climate in the Wheaton River and Bennett Lake area is variable, with cool windy summers and long cold winters. Precipitation is light (approximately 40cm annually), with moderate snowfalls during the winter months. The area is susceptible to periodic high winds from moist Pacific systems rising over the Coast Mountains. Boat travel on Bennett Lake can be dangerous during periods of high wind. The exploration season extends from early June to October.

The topography of the property consists of steep cliffs, talus slopes and alpine cirques. The southeast and northeast sides of the claims are bordered by the east flowing Crozier and MacAuley creeks. Elevations vary between 1070 meters in MacAuley creek to 2100 meters on the northwest side of the claims.

Most of the property is above tree line and vegetation consists of alpine grasses and some stumped willow. Pine and fir trees are located within the creek valley.

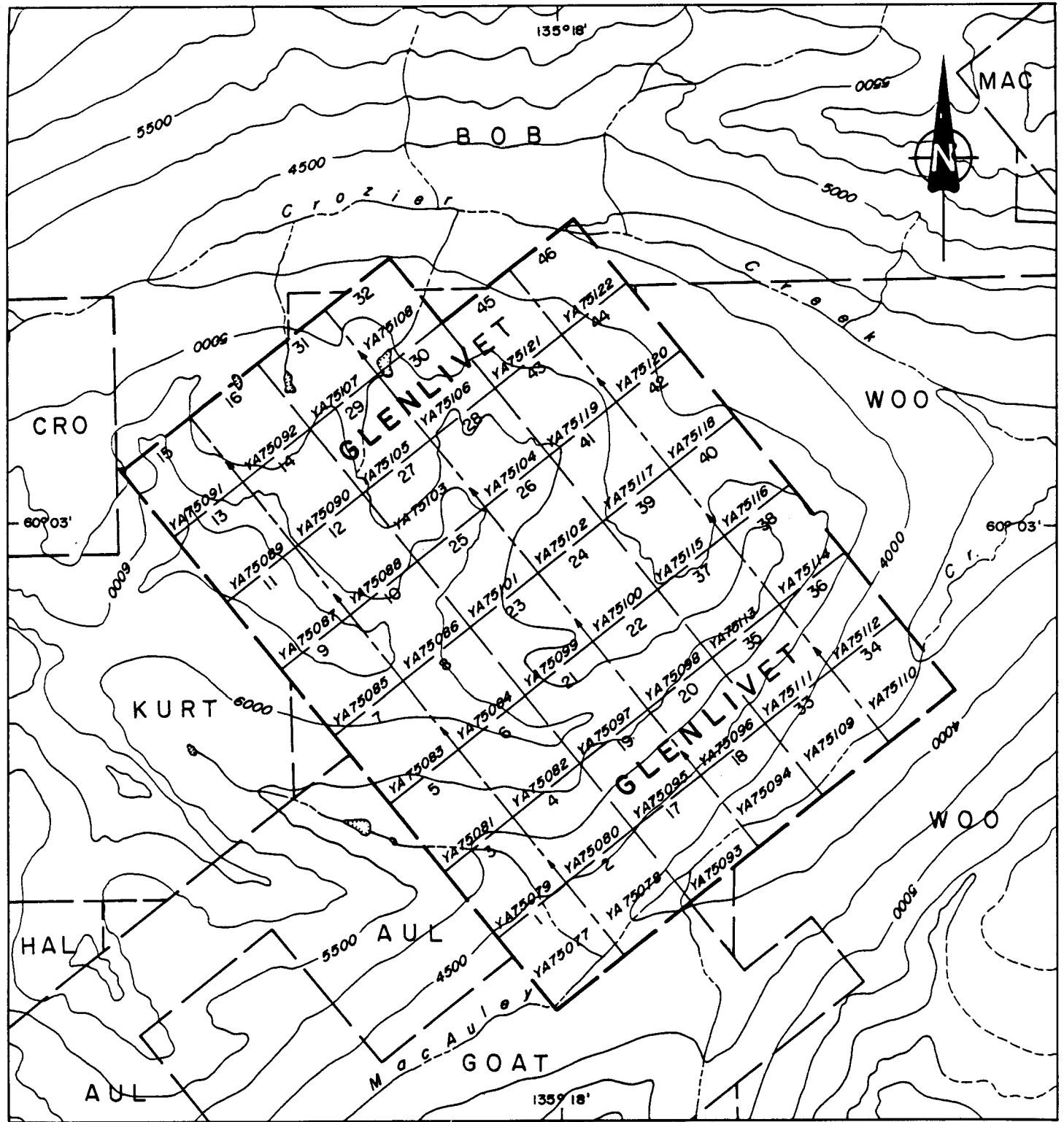


TRANS - OCEAN RESOURCES LTD.  
 GLENLIVET CLAIMS

**LOCATION**

Aurum Geological Consultants Inc. SEPTEMBER, 1987

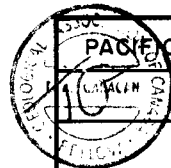
Drawn by NH Scale 1:1,000,000 FIGURE : 1



**LEGEND**

- claim boundary
- claim number
- tag number
- creek
- pond
- 5000 - elevation contour : interval 500ft.

Note: adapted from D.I.A.N.D. Quartz and Placer map sheet 105 D-3



TRANS-OCEAN RESOURCES LTD.  
GLENLIVET CLAIMS

**CLAIM LOCATION**

## CLAIM STATUS

The GLENLIVET claims consist of 46 contiguous claims located in 105D-3 of the Whitehorse Mining District. The claim status is listed below and the claim distribution is shown in figure 2.

<u>Claim Name</u>	<u>Grant Numbers</u>	<u>Expiry Date*</u>
GLENLIVET 1-46	YA75077-122	Sept 10, 1988

\* subject to approval by the Mining Recorder.

The claims are owned by AGIP Canada Ltd. of Calgary, Alberta and are held under an option agreement with Pacific Trans-Ocean Resources Ltd. of Edmonton, Alberta.

## HISTORY

The first recorded staking in the Wheaton River and Bennett Lake district occurred in 1893 when Frank Corwin and Thomas Rickman located several claims on Carbon Hill, Chieftain Hill, Idaho Hill and possibly Gold Hill. The men died shortly after without disclosing the location of their claims (Cairnes, 1912). Exploration resumed in 1905 with the discovery of silver-gold bearing veins on Montana mountain in 1905 and free gold and tellurides on Gold Hill in 1906. Exploration, development and some mining has continued intermittently since then. Activity in the area has increased recently with the temporary opening of the Venus mine (United Keno Hill Mines Ltd.) in 1980-81 and the discovery of the Mt. Skukum gold deposit (164,000 tons at 0.73 oz/ton Au and 0.63 oz/ton Ag: Total Erickson 1985 Annual report) in 1981-1983. Mining of the Mt. Skukum deposit commenced in the spring of 1986 at the rate of 300 tons per day.

The GLENLIVET claims were staked by AGIP Canada Ltd. in September 1982 and were optioned to Kerr Addison in 1984. Exploration carried out by AGIP in 1983 and 1984 and by Kerr Addison in 1985 and 1986 consisted of geological mapping, prospecting, geochemical sampling and some trenching. Kerr Addison dropped their option at the end of 1986. Pacific Trans-Ocean Resources Ltd. optioned the claims in 1987 and carried out the program described within this report.

## REGIONAL GEOLOGY

The GLENLIVET claims are located within the Tertiary Bennett Lake caldera near the eastern margin of the Coast Plutonic Complex. The regional geology has been well described by Cairnes

(1912), Wheeler (1961) and Lambert (1974) and is only summarized here.

The Coast Plutonic Complex consists of Cretaceous granitoid rocks which intrude and underlie low grade metamorphosed sediments and volcanics of the Mesozoic Whitehorse-Nechako Trough and quartzites, schists and gneisses of the late PreCambrian Early Paleozoic Yukon group. The upper most unit in the Trough consists of conglomerate belonging to the U. Jurassic to L. Cretaceous Tantalus formation. This is overlain by subaerial intermediate volcanics of the L. Cretaceous Mt. Nanson group.

Subaerial andesite and rhyolite flows and pyroclastics of the Tertiary Skukum group, occur in 2 isolated areas in the region. The 2 isolated areas: Mt. Skukum and Bennett Lake, have been interpreted to represent paleovolcanic centers (Lambert, 1974, Dorherty pers comm, 1982 and Pride, 1985). A well developed ring fracture and dyke system is associated with the Bennett Lake caldera (Lambert, 1974). Several late stage rhyolite and andesite dykes and plugs related to the volcanics, cut the Skukum group volcanics and underlying rocks.

The regional structural trend is northwest. Later Tertiary structures trend predominantly north, northeast and eastward.

## PROPERTY GEOLOGY

Very little geological mapping was carried out on the property during the 1987 season. The following is summarized from Lambert (1974) and from Kerr Addison's work (Pautler, 1986).

The GLENLIVET property is underlain by Tertiary volcanics which unconformably overlie Cretaceous granodiorite and Yukon group metasediments. The volcanics form part of the northeastern side of the Bennett Lake caldera complex.

The granodiorite is medium grained and contains 10-20% biotite and hornblende. It outcrops at lower elevations, in the center, eastern and northern parts of the property and is highly fractured and hematitized near the volcanic contact. Yukon group metasediments consist of quartzite, phyllite and gneiss. They occur in isolated exposures in the northern part of the claims.

According to Lambert (1974) the claims are underlain by five distinct volcanic units. The lowermost unit consists of andesite and dacite tuff, lapilli tuff and breccia. These are overlain by rhyodacite welded tuffs. Andesite breccia and tuffs with associated epiclastics overlie the rhyodacite. The uppermost unit consists of a mixture of rhyolite and andesite tuffs with

some rhyolite flows. The volcanics are intruded by rusty weathering rhyolite (locally spherulitic) dykes, plugs and sills. The rhyolite plugs weather to form large gossan areas (eg. Scarlet zone).

Several northwest and north-south trending faults cut all units on the property. The faults have been interpreted by Lambert (op cit) to be related to an eruptive center located west of the claims.

## **MINERALIZATION and ALTERATION**

There are two main zones of veining and alteration on the property. The After-Eight zone (trench 87-5 and Kerr Addison trenches 1 & 2) consists of a 100 to 150 meter long zone of intense clay alteration with minor pyritization and silicification associated with a north trending fault. Several veinlets of quartz and calcite with trace galena, fluorite and malachite occur within the zone. The fault is reported by Pautler (1986) to trend south towards the Ridge Au-Ag showing.

The Scarlet zone consists of a large (approx 600 by 600 meters) bright orange-red weathering pyritized and sericitized rhyolite plug with associated dykes. The plug is cut by several north and northwest trending faults with associated clay gouge and quartz and chalcedony stringers. Most of the vein zones are small with no economic potential.

Several other fault zones on the property contain narrow zones of argillic alteration with gypsum (eg. trench 6) and fluorite veining.

## **EXPLORATION**

### **Introduction**

Exploration on the GLENLIVET claims consisted of the blasting and digging of 6 trenches and the running of 3 talus fine lines through the Scarlet zone. A total of 56 soil samples and 29 rock samples were collected on the property. All the samples were analysed for gold and silver by Barringer-Magenta of Calgary, Alberta. The results and analytical methods are given in Appendix A and the sample locations and results are plotted in figures 3 to 6.

## Soil Geochemistry

A total of 52 talus fine samples were collected on three contour lines in the Scarlet zone. The samples were taken at 50 meter intervals. The purpose of the sampling was to relocate the gold soil geochemical anomaly (up to 2350 ppb gold, figure 4) found by Kerr Addison (Pautler, 1986). The sample locations and results are shown in figure 3.

Five consecutive samples collected on the lower line contain 96 to 210 ppb gold and 0.6 to 3.13 ppm silver. One sample in the next line directly uphill from the five anomalous samples contained 152 ppb gold and 0.36 ppm silver. The anomalous soil samples occur northeast of the Scarlet zone trenches at the east end of the Scarlet zone gossan. The source of this anomaly is not known, but maybe related to northwest trending faults mapped by Lambert (1974) in this area.

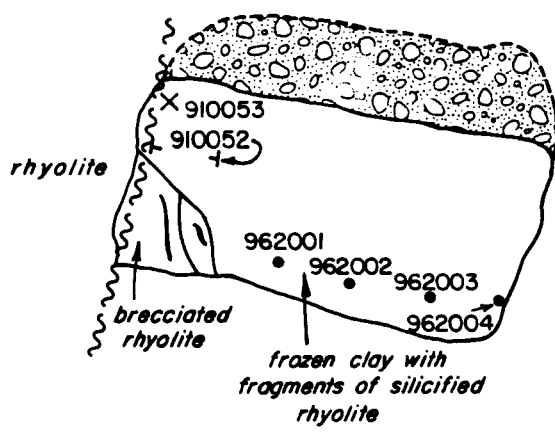
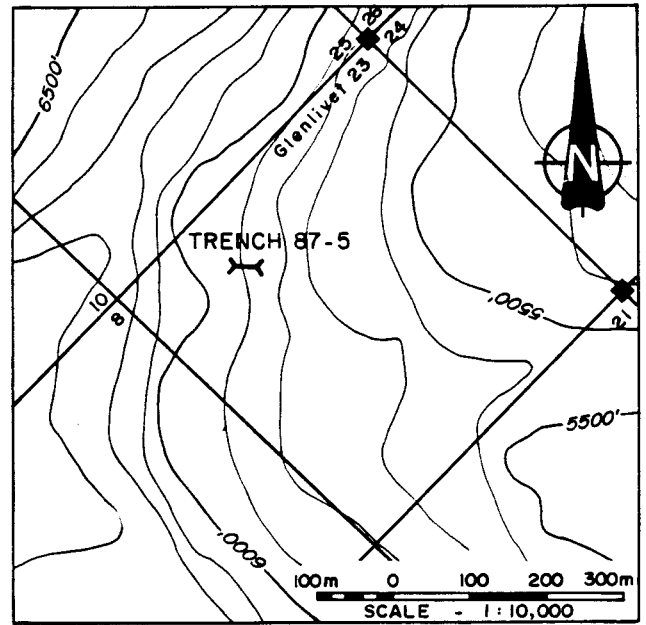
## Trenching

A total of 6 trenches were excavated on the GLENLIVET claims. Four of the trenches were drilled and blasted by M.J. Moreau Enterprises Ltd. and 2 of the trenches were hand dug by Aurum personnel. A total of 26 rock samples and 43 soil samples were collected from the trenches. The trench locations are shown in figure 3 and the trench diagrams, sample locations and results are shown in figures 4 to 6.

Four trenches were dug across sericitized, chalcedony veined and fractured rhyolite in the Scarlet zone. The trenches were located uphill from the plotted location of Kerr Addison's (Pautler, 1986) Scarlet zone soil anomaly (sample flags could not be located). A total of 23 rock and talus (prepared as rock) samples were collected in two of the trenches (figure 4). The results are at, or near background levels indicating a different source area for the soil geochemical anomaly.

One trench was drilled and blasted across the After-Eight zone. Outcrop of faulted, brecciated and silicified rhyolite and subcrop of frozen clay gouge with fragments of silicified rhyolite were exposed in the trench. The zone of fracturing, clay gouge and silicification is at least 4.5 meters wide. Three rock samples and four soil samples were collected from the trench (figure 5). The geochemical results were low and no veining was located in this trench.

The sixth trench was located across a gypsum veined (trace) and clay altered fault zone on a ridge southeast of the After-Eight-zone (figure 6). The fault zone is at least 2.0 meters wide. No samples were collected from this trench.

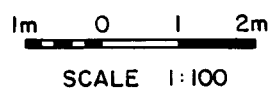


X 7-920107



LEGEND

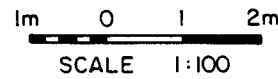
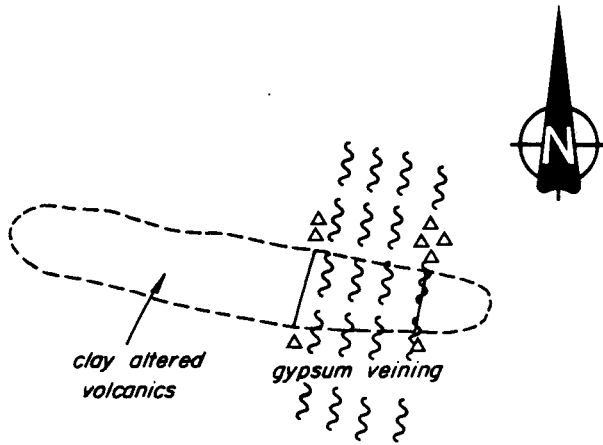
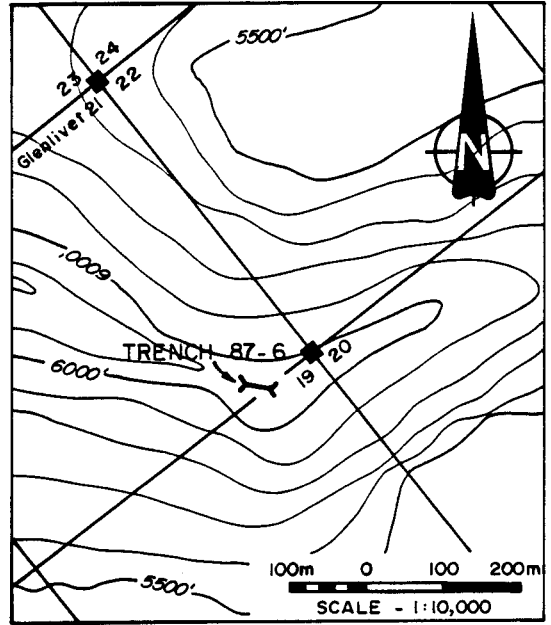
- clay gouge
- soil sample
- rock chip sample
- grab sample



SAMPLE NO.	SAMPLE TYPE	Au(ppb)	Ag (ppm)
910052	1.5m chip	2.0	0.9
910053	grab	3.0	0.6
962001	soil	10.0	1.08
962002	soil	3.0	1.1
962003	soil	2.0	1.12
962004	soil	3.0	0.69
7-920107	grab	3.0	0.79

Volume: 5m X 1.5m X 2.5m = 18.75 cubic metres

PACIFIC TRANS-OCEAN RESOURCES LTD.			
GLENLIVET CLAIMS			
AFTER-8 ZONE TRENCH 87-5			
Aurum Geological Consultants Inc.			SEPTEMBER, 1987
NTS 105 D/3	DRAWN BY TAG / NH	SCALE 1:100	FIGURE : 5



Volume : 6 m X 1.5 m X 1.5 m = 13.5 cubic metres

PACIFIC TRANS - OCEAN RESOURCES LTD.			
GLENLIVET CLAIMS			
TRENCH 87-6			
Aurum Geological Consultants Inc.			SEPTEMBER, 1987
NTS 105 D/3	DRAWN BY TAG / NH	SCALE 1:100	FIGURE : 6

## CONCLUSIONS AND RECOMMENDATIONS

The GLENLIVET claims are underlain by Tertiary rhyolite and andesite volcanics of the Bennett Lake caldera complex. The volcanics are intruded by several rhyolite plugs and dykes. Several north-south and northwest trending faults cut all units on the property. Many of the faults have associated clay alteration zones with some quartz, fluorite and gypsum veining. The After-Eight and Scarlet zones appear to be the most significant of these alteration zones.

The After-Eight zone consists of a 100 to 150 meter long zone of intense clay alteration and silicification with some quartz and calcite veins. The zone occurs within a prominent north-south fault which maybe the northern extension of the structure hosting the Ridge Ag-Au prospect. The After-Eight zone appears to be sparsely mineralized (trace galena) and does not warrant further exploration.

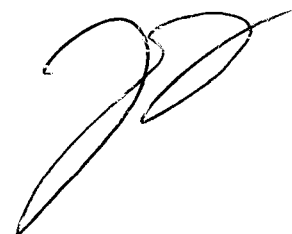
The Scarlet zone consists of a 600 meter by 600 meter deep red to orange weathering sericitized rhyolite plug cut by northwest and north-south trending faults. Several small quartz-chalcedony veins and breccias occur throughout the plug. These veins do not appear to be mineralized. Soil samples taken at the northeast side of the Scarlet zone contain anomalous precious metal values up to 210 ppb gold and 3.13 ppm silver. The source of the anomaly maybe related to northwest trending faults occurring in this area.

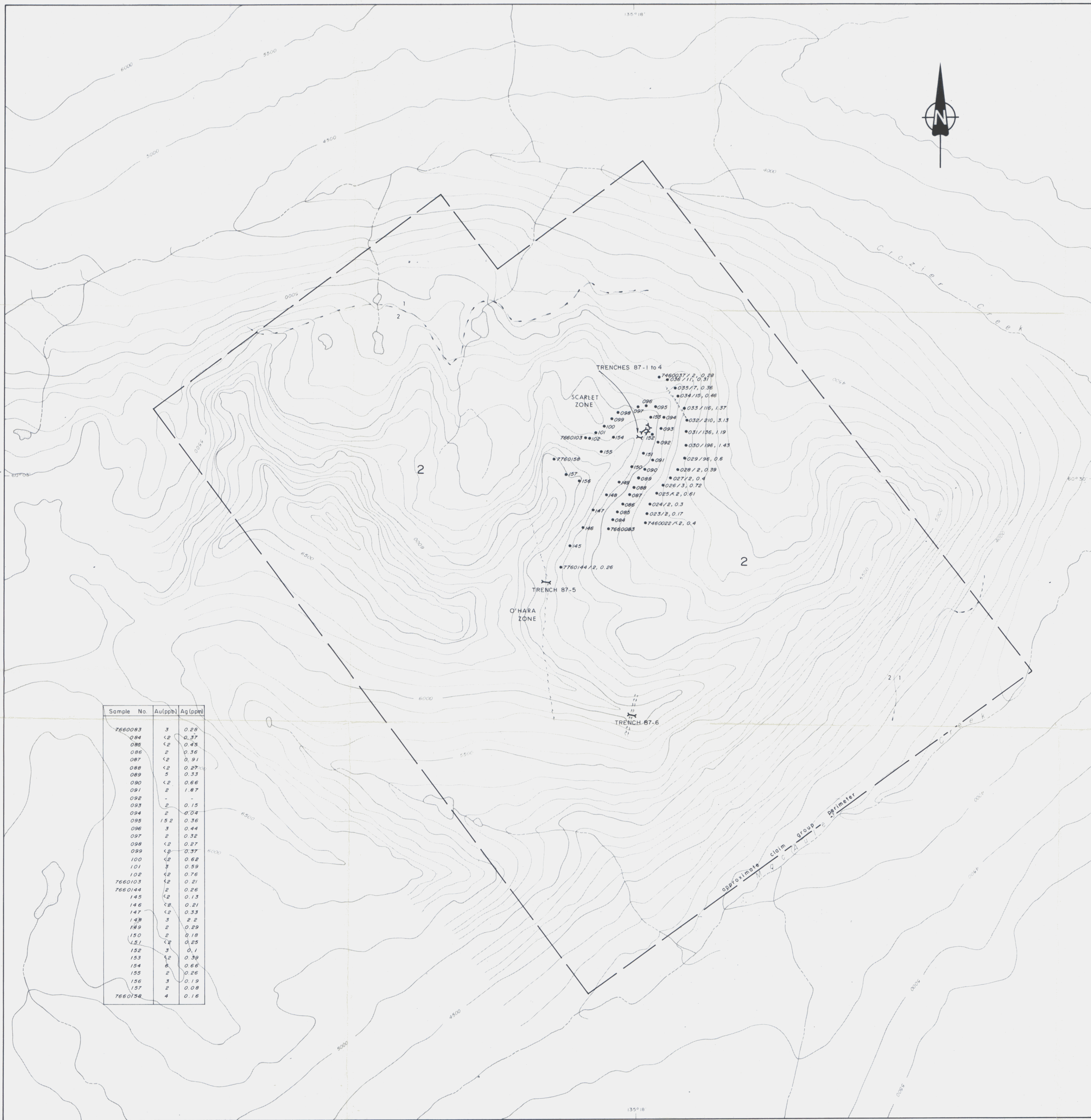
The results of the soil sampling warrant a short followup program of rock sampling, mapping and trenching to locate the source of the gold-silver anomalies. The following budget is envisaged for this project.

Geology:	\$ 1,000.00
Geochemistry:	\$ 500.00
Trenching:	\$ 5,000.00
Helicopter:	\$ 7,500.00
Camp Costs:	\$ 1,000.00
Data Compilation & Report writing:	\$ <u>1,000.00</u>
Subtotal:	\$ 16,000.00
Contingency 10%	\$ <u>1,600.00</u>
Total Budget:	\$ 17,600.00

## REFERENCES

- Cairnes, D.D., 1912: Wheaton District, Yukon Territory, G.S.C. Memoir 31.
- Lambert, M.B., 1974: The Bennett Lake Cauldron Subsidence Complex, British Columbia and Yukon Territory, G.S.C. Bulletin 227.
- Pautler, J., 1986: Geological and Geochemical Report on the GLENLIVET claims, 105D/3, Kerr Addison Mines Ltd. Company and Assessment Report.
- Pride, M.J., 1985: Preliminary Geological Map of the Mt. Skukum Volcanic Complex, 105D 2,3,4,5. Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, O.F. 1:25,000 scale map
- Wheeler, J.O., 1961: Whitehorse Map Area, Yukon Territory, 105D. Memoir 312.

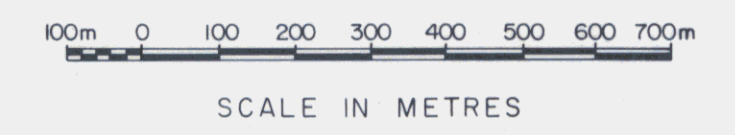




**LEGEND**

- Tertiary Skukum group
  - 2 Rhyolite, Dacite, Andesite
  - Cretaceous
  - 1 granodiorite
  - geological contact (defined, assumed)
  - - - - - fault
  - 7660022 / 2, 0.4 talus fine sample / Au in ppb, Ag in ppm
  - ✕ trench location
  - lake, creek
  - 6000 elevation contour: interval 100 ft.
- Note: claims location and base from Kerr Addison, 1986

Sample No.	Au(ppb)	Ag(ppm)
7660083	3	0.28
084	<2	0.37
085	<2	0.43
086	2	0.36
087	<2	0.91
088	<2	0.27
089	3	0.33
090	<2	0.66
091	2	1.87
092	-	-
093	2	0.15
094	2	0.04
095	15.2	0.36
096	3	0.44
097	2	0.32
098	<2	0.27
099	<2	0.37
100	<2	0.62
101	3	0.59
102	<2	0.76
7660103	<2	0.21
7660144	2	0.26
145	<2	0.13
146	<2	0.21
147	<2	0.33
148	3	2.2
149	2	0.29
150	2	0.18
151	<2	0.25
152	3	0.1
153	12	0.39
154	6	0.66
155	2	0.26
156	3	0.19
157	2	0.08
7660158	4	0.16



PACIFIC TRANS - OCEAN RESOURCES LTD.

GLENLIVET CLAIMS

091979

**Au-Ag TALUS FINES GEOCHEMISTRY & TRENCH LOCATIONS**

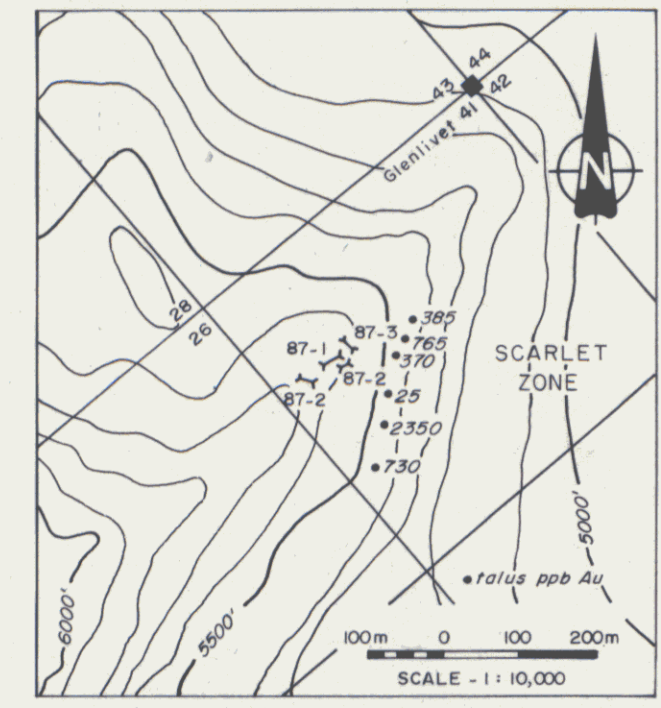
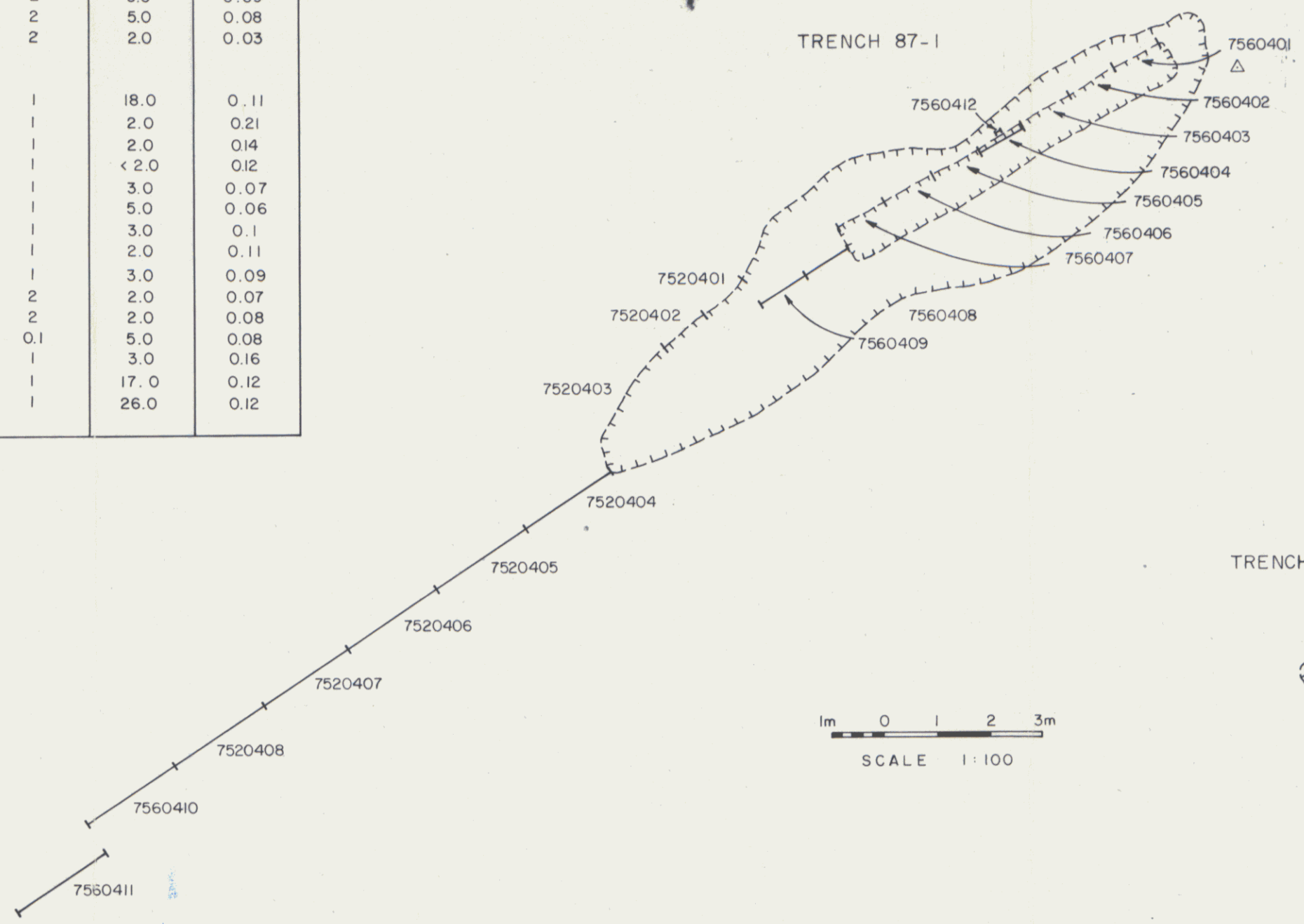
(1178)

Aurum Geological Consultants Inc. NOVEMBER, 1987

NTS 105 D/3 DRAWN BY TAB/NH SCALE 1:10,000 FIGURE 3

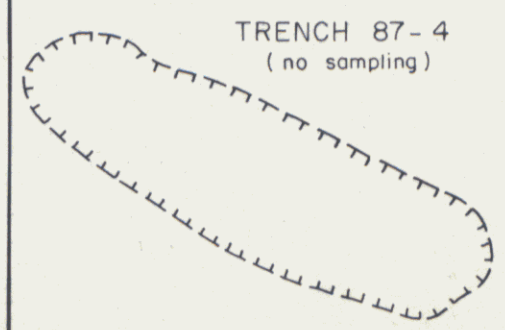
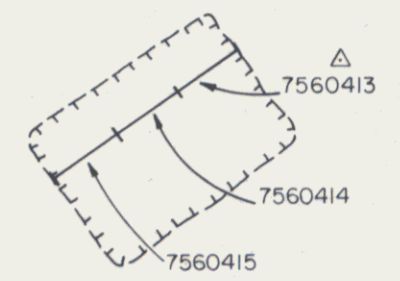
SAMPLE NO.	WIDTH (m)	Au (ppb)	Ag (ppm)
CHIP SAMPLE			
7520401	1	43.0	0.12
7520402	1	2.0	0.07
7520403	2	4.0	0.06
7520404	2	10.0	0.08
7520405	2	5.0	0.05
7520406	2	5.0	0.09
7520407	2	5.0	0.08
7520408	2	2.0	0.03
TALUS SAMPLE			
7560401	1	18.0	0.11
7560402	1	2.0	0.21
7560403	1	2.0	0.14
7560404	1	< 2.0	0.12
7560405	1	3.0	0.07
7560406	1	5.0	0.06
7560407	1	3.0	0.1
7560408	1	2.0	0.11
7560409	1	3.0	0.09
7560410	2	2.0	0.07
7560411	2	2.0	0.08
7560412	0.1	5.0	0.08
7560413	1	3.0	0.16
7560414	1	17.0	0.12
7560415	1	26.0	0.12

TRENCH 87-3  
(no sampling)




INDEX PLAN  
(based on November 1986 geochemistry)

TRENCH 87-2



TRENCH 87-4  
(no sampling)

VOLUME : TRENCH 87-1 ; 13m X 2m X 1.5m = 39 cubic metres  
 TRENCH 87-2 ; 2m X 2.5m X 1.5m = 7.5 cubic metres  
 TRENCH 87-3 ; 5m X 1.5m X 1m = 7.5 cubic metres  
 TRENCH 87-4 ; 6m X 1.5m X 0.5m = 13.5 cubic metres


 PACIFIC TRANS OCEAN RESOURCES LTD.  
 GLENLIVET CLAIMS  
**091979**  
 SCARLET ZONE  
 TRENCHES 87-1 to 4  
 GEOCHEMISTRY ASSAY PLAN  
 1177  
 Aurum Geological Consultants Inc. SEPTEMBER, 1987  
 NTS 105 D/3 DRAWN BY BMF / NH SCALE 1:100 FIGURE : 4

**APPENDIX A  
ANALYTICAL METHODS AND RESULTS**



4200B - 10 STREET N.E.  
CALGARY, ALBERTA  
T2E 6K3  
PHONE: (403) 250-1901

November 10, 1987

Mr. Tom Garagan,  
Aurum Consultants Ltd.,  
#4, 707 - 3 Ave. N.W.,  
Calgary, Alberta

Dear Tom,

Enclosed please find summaries of the methods used for the analysis of your rock and soil samples submitted during 1987.

If you have any questions, or require further information, please do not hesitate to contact me.

Yours truly,  
BARRINGER MAGENTA LABORATORIES (ALBERTA) LTD.



C. Douglas Read,  
President

CDR/lf

#### ANALYSIS OF ARSENIC:

A 0.500 gram aliquot of sample is leached in 6M HCl and the final volume adjusted. The arsine gas is passed through a lead acetate scrubber and complexed with silver DDC in chloroform, which is then measured on a Spectronic 88 Colorimeter with freshly prepared standards.

The detection limit is 1ppm.

For rock samples, the sample is decomposed with pyrosulphate fusion prior to leaching in HCl.

#### ANALYSIS OF MERCURY:

A 0.200 gram sample is digested in nitric and sulphuric acids for 3½ hours. After cooling and adjusting the final volume, an aliquot is removed and added to stannous chloride. The mercury vapor evolved is measured on a Varian Techtron atomic absorption spectrometer.

The detection limit is 5 ppb.

#### ANALYSIS OF ANTIMONY

A 0.500 gram aliquot of sample is leached in 8M HCl and the final volume adjusted. A portion of solution is removed and the antimony is extracted with methyl iso-butyl ketone. The antimony is measured by atomic absorption with freshly prepared standards.

The detection limit is 5 ppm.

For rock samples, the sample is decomposed with a pyrosulfate fusion prior to leaching with HCl.

#### GEOCHEMICAL ANALYSIS OF GOLD AND SILVER BY FIRE ASSAY AND ATOMIC ABSORPTION

(The detection limit for gold is 2 ppb)

A one assay-ton (29.16 grams) sample is mixed with the standard charge and an aliquot of known concentration of palladium. The palladium acts as an inquart to enhance the collection of small amounts of gold. Following cupellation, the dore bead is completely dissolved in aqua regia. The gold is extracted into methyl isobutyl ketone (MIBK) and subsequently analysed by atomic absorption spectrophotometry (A.A.S.)

Silver may be determined by direct aspiration of the solution by A.A.S. prior to the extraction stage.

The detection limit for silver is 10 ppb.

### ANALYSIS OF LEAD

A 0.250 gram sample is digested in nitric and perchloric acids for 4 hours. After diluting to a final volume, the solution is analysed for lead by atomic absorption spectrometry. The detection limit is 1 ppm.

## CONVENTIONAL GRAVIMETRIC ASSAY OF GOLD AND SILVER

(The detection limit for gold is 0.003 ounces per ton)

1. Flux by adding 77 grams of general flux to 30 gram crucible.
2. Roll sample with rolling cloth 20 times.
3. Weigh 1 A.T. (29.166 grams)
4. Mix charge.
5. Add 1ml AgNO<sub>3</sub> solution to charge.  
(1 ml AgNO<sub>3</sub> solution contains 2 mg of Ag)
6. Cover mixed charge with borax or flux.
7. Fuse charge for 35-40 minutes in gas furnace at 900°C.
8. Pour charge into mould and cool.
9. Remove all slag from lead button with hammer (pound lead square).
10. Preheat cupel (bone ash cupel) in electric furnace for about 15 to 20 minutes. Then put lead square into cupel. The cupellation temperature should be 850°C.
11. After cupellation is complete, remove from furnace and transfer dore (the gold and silver bead) to a porcelain parting cup (size 00 Coors porcelain crucible.)
12. Flatten and clean core by using hammer.
13. Weigh dore on gold balance.
14. Subtract dore weight of blank from sample dore weight.
15. Fill porcelain cup containing dore with 10 ml parting acid ( 1 part HNO<sub>3</sub>:5 parts distilled water) and heat over low temperature hot plate until parting action has ceased (about 15 minutes at 85°C).
16. Decant off parting acid and wash gold with distilled water three times.
17. Dry the crucible and gold on hot plate.
18. The crucible is then heated to a bright red in an open flame

to anneal the gold. When complete, the gold will be gold coloured.

19. Weigh the gold on a gold balance.
20. The difference in weight is the silver assay and the final weight is the gold assay.

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AUTHORITY: T. GARAGAN

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WHITEHORSE, YUKON,

ATTN: T. GARAGAN

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C O P Y

PROJECT: GLENLIVET

WORK ORDER: 4272D-87  
\*\*\* FINAL REPORT \*\*\*

**GEOCHEMICAL LABORATORY REPORT**

**SAMPLE TYPE: ROCK**

S A M P L E N U M B E R	FIRE ASSAY	FIRE ASSAY
	AU PPB	AG PPM
7920107	3.0	0.79

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C O P Y  
PROJECT: GLENLIVET

WORK ORDER: 4272D-87  
\*\*\* FINAL REPORT \*\*\*

**GEOCHEMICAL LABORATORY REPORT**

**SAMPLE TYPE: SOIL**

S A M P L E N U M B E R	FIRE ASSAY	FIRE ASSAY
	AU PPB	AG PPM
7660083	3.0	0.28
7660084	<2.0	0.37
7660085	<2.0	0.45
7660086	2.0	0.36
7660087	<2.0	0.91
7660088	<2.0	0.27
7660089	5.0	0.33
7660090	<2.0	0.66
7660091	2.0	1.87
7660092	IS	IS
7660093	2.0	0.15
7660094	2.0	0.04
7660095	152.0	0.36
7660096	3.0	0.44
7660097	2.0	0.32
7660098	<2.0	0.27
7660099	<2.0	0.37
7660100	<2.0	0.62
7660101	3.0	0.59
7660102	<2.0	0.76
7660103	<2.0	0.21
7760144	2.0	0.26
7760145	<2.0	0.13
7760146	<2.0	0.21
7760147	<2.0	0.33
7760148	3.0	2.2
7760149	2.0	0.29
7760150	2.0	0.18
7760151	<2.0	0.25
7760152	3.0	0.1

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PROJECT: GLENLIVET

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\*\*\* FINAL REPORT \*\*\*

**GEOCHEMICAL LABORATORY REPORT**

**SAMPLE TYPE: SOIL**

S A M P L E N U M B E R	FIRE ASSAY	FIRE ASSAY
	AU PPB	AG PPM
7760153	<2.0	0.37
7760154	6.0	0.66
7760155	2.0	0.26
7760156	3.0	0.19
7760157	2.0	0.08
7760158	4.0	0.16
7460022	<2.0	0.4
7460023	2.0	0.17
7460024	2.0	0.3
7460025	<2.0	0.61
7460026	3.0	0.72
7460027	2.0	0.4
7460028	2.0	0.39
7460029	96.0	0.6
7460030	196.0	1.43
7460031	136.0	1.19
7460032	210.0	3.13
7460033	116.0	1.37
7460034	15.0	0.46
7460035	7.0	0.36
7460036	11.0	0.31
7460037	2.0	0.28

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PROJECT: GLENLIVET

WORK ORDER: 4260D-87

\*\*\* FINAL REPORT \*\*\*

**GEOCHEMICAL LABORATORY REPORT**

**SAMPLE TYPE: ROCK**

S A M P L E N U M B E R	FIRE ASSAY	FIRE ASSAY
	AU PPB	AG PPM
756401	18.0	0.11
756402	2.0	0.21
756403	2.0	0.14
756404	<2.0	0.12
756405	3.0	0.07
756406	5.0	0.06
756407	3.0	0.1
756408	2.0	0.11
756409	3.0	0.09
756410	2.0	0.07
756411	2.0	0.08
756412	5.0	0.08
756413	3.0	0.16
756414	17.0	0.12
756415	26.0	0.12
7520401	43.0	0.12
7520402	2.0	0.07
7520403	4.0	0.06
7520404	10.0	0.08
7520405	5.0	0.05
7520406	5.0	0.09
7520407	5.0	0.08
7520408	2.0	0.03
7520409	2.0	0.06
7520410	3.0	0.06
7520411	3.0	0.08

? location

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PROJECT: GLENLIVET

WORK ORDER: 4279D-87

\*\*\* FINAL REPORT \*\*\*

**GEOCHEMICAL LABORATORY REPORT**

SAMPLE TYPE: ROCK

S A M P L E N U M B E R	FIRE ASSAY	FIRE ASSAY
	AU PPB	AG PPM
7910052	2.0	0.9
7910053	3.0	0.6

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**GEOCHEMICAL LABORATORY REPORT**

SAMPLE TYPE: SOIL

S A M P L E N U M B E R	FIRE ASSAY	FIRE ASSAY
	AU PPB	AG PPM
7962001	10.0	1.08
7962002	3.0	1.1
7962003	2.0	1.12
7962004	3.0	0.69

SIGNED: \_\_\_\_\_

*C. Douglas Read*  
C. Douglas Read,  
LABORATORY MANAGER

CC's TO:  
AURUM GEOLOGICAL CONSULT  
WHITEHORSE, YUKON  
T. GARAGAN

PACIFIC TRANS OCEAN RES.  
EDMONTON, ALBERTA  
E.B. STEWART

FOOTNOTES:

P=QUESTIONABLE PRECISION; \* = INTERFERENCE; TR=TRACE; ND=NOT DETECTED;  
IS=INSUFFICIENT SAMPLE; NA=NOT ANALYZED; MS=MISSING SAMPLE  
ADVANCED TECHNIQUES AND INSTRUMENTATION FOR THE EARTH SCIENCES

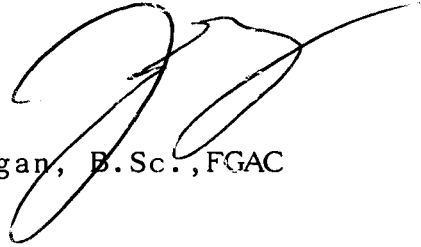
**APPENDIX B  
STATEMENT OF QUALIFICATIONS**

## STATEMENT OF QUALIFICATIONS

I, THOMAS GARAGAN, hereby certify that:

1. I am a geologist with Aurum Geological Consultants Inc. of 604 675 West Hastings Street, Vancouver, B.C. and I caused to be performed the work described in this report.
2. I obtained a Bachelor of Science degree with Honours in Geology from the University of Ottawa, Ontario, in 1980.
3. I am a fellow of the Geological Association of Canada (F3819) and a member of the Mineralogical Association of Canada and the Yukon Professional Geoscientists Society.
4. I have been engaged in mineral exploration and geological survey mapping on a full and part time basis for 9 years, of which 6 have been spent on mineral exploration programs in the Yukon Territory.
5. I have no interest in the claims nor do I expect to obtain any.
6. I consent to the use of this report in a company report or statement, provided that no portion is used out of context in such a manner as to convey a meaning differing materially from that set out in the whole.

DATED at Calgary, Alta., this 19<sup>th</sup> day of November 1987.

  
Thomas Garagan, B.Sc., FGAC

**APPENDIX C  
STATEMENT OF COSTS**

**STATEMENT of COSTS  
Glenlivet Trenching**

\* Note: Trenches 1 to 4 are in GLENLIVET 41, trench 5, in GLENLIVET 23 and trench 6 in GLENLIVET 21. All costs are prorated accordingly.

1. Labour:

T.Garagan: project supervision, mapping of trenches 3 to 6, report writing. August 23, & 24: Glenlivet 21, 23 & 41  
2 days @ \$225/day \$ 450.00

B.Fraser: mapping and sampling of trenches 1 & 2: Glenlivet 41  
August 11  
1 day @ \$200/day \$ 200.00

total labour costs : \$ 650.00 \$ 650.00

- 1a. Labour costs for Trenches 1 to 4, Glenlivet #41 T.G.(450/4 x2) + B.F.(200) = \$425  
1b. Labour costs for Trench 5, Glenlivet #23 T.G.(450/4) = \$112.50  
1c. Labour costs for Trench 6, Glenlivet #21 T.G.(450/4) = \$112.50

2. Trenching Costs

Trenches 87-3 to 6 (4 trenches)

Invoice August 26, 1987 to August 29, 1987: M.J. Moreau Enterprises Ltd. to Aurum Geological Consultants Inc:

12 mandays @ \$250/day (3 man crew)	\$ 3,000.00
3 mandays @ \$250/day (M.J. Moreau)	750.00
4 days @ \$50/day (equipment)	200.00
Blasting Supplies	<u>886.00</u>
<b>Total</b>	<b>4,836.00</b>

\$ 4,836.00/4 trenches = \$ 1,209.00 per trench

Trenches 87-1 & 2 (2 trenches)

Hand dug by D.McVicar & D.Patterson, Aurum Geological Consultant employees, between August 9 and 11:

6 mandays @ \$110/person/day (2 man crew)	\$ 660.00
---	-----------

- |   |             |
|---|-------------|
| 2a. Total costs Trenches 1, 2, 3 & 4: Glenlivet #41 | \$ 3,078.00 |
| 2b. Total costs Trench #5: Glenlivet #23            | 1,209.00    |
| 2c. Total costs Trench #6: Glenlivet #21            | 1,209.00    |

### 3. Geochemistry

3a. Trenches 1 to 4, Glenlivet #41		
26 rock samples sent to Barringer-Magenta for Au-Ag analyses		
26 samples @ \$13.65/sample:		\$ 354.90
3b. Trench 5, Glenlivet #23		
3 rock samples and 4 soil samples sent to Barringer-Magenta for Au-Ag analyses.		
3 rock samples @ \$13.65/sample:	40.95	
4 soil samples @ \$10.50/sample:	<u>42.00</u>	
Total for Trench 5	\$ 82.95	\$ 82.95

### 4. Helicopter:

August 9 to 11, 26 to 29: Crowsnest Air Ltd. on casual charter from Whitehorse, Y.T.

August 26 to 29, Trenches 3 to 6: Glenlivet 21, 23 & 41		
6 hrs @ \$500/hr	\$ 3,000.00	
plus fuel @ \$.65/lt @ 114 lt/hr	444.60	
plus oil @\$2.60/hr	<u>15.60</u>	
	3,460.20	or 865.05/trench

August 9 to 11, Trenches 1 & 2: Glenlivet #41		
4.5 hrs @ \$500/hr	\$ 2,250.00	
plus fuel @ \$.65/lt @ 114 lt/hr	333.45	
plus oil @\$2.60/hr	<u>11.70</u>	
	2,595.15	

4a. Total helicopter costs Trenches 1-4 Glenlivet #41:	\$ 4,325.25
4b. Total helicopter costs Trenches 5 Glenlivet #23:	865.05
4c. Total helicopter costs Trenches 6 Glenlivet #21:	865.05

### 5. Camp Costs:

Billed to Pacific Trans-Ocean Resources Ltd by Aurum  
24 mandays @ \$50/manday

5a. Trenches 1 to 4: Glenlivet #41		
15.5 mandays @ \$50/manday:		\$ 775.00
5b. Trench 5: Glenlivet #23		
4.25 mandays @ \$50/manday:		212.50
5c. Trench 6: Glenlivet #21		
4.25 mandays @ \$50/manday:		212.50

Total Actual Costs of Assessment

a. Glenlivet #41, Trenches 1-4 (1a+2a+3a+4a+5a)=	\$ 8,958.15
b. Glenlivet #23, Trench 5 (1b+2b+3b+4b+5b)=	\$ 2,482.00
c. Glenlivet #21, Trench 6 (1c+2c+4c+5c)=	\$ 2,399.05

**Total Costs** applied for assessment on Form C  
dated September 10, 1987

a. Glenlivet # 41 Trenches 1-4	\$ 3,078.00
b. Glenlivet # 23 Trench 5	1,209.00
c. Glenlivet # 21 Trench 6	<u>1,209.00</u>
<b>Total Costs</b>	<b>\$ 5,496.00</b>