

093 885



**ASSESSMENT REPORT
TRENCHING & DIAMOND DRILLING
ON THE
AZ CLAIMS**

093 885

**Whitehorse Mining District
May 19 to June 10, 1998**

Location: 45 km South of Beaver Creek, Yukon
NTS 115 F-15
Latitude 61° 59' 40" N
Longitude 140° 54' W

Claims: AZ 1-8 (YB26305-YB26312)
AZ 9-72 (YB35932-YB35995)

For: **Liberty Mineral Exploration Inc.**
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Y1A 4V2

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August 27, 1998

200.000

200.000

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 \$ _____.

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

SUMMARY

Aurum Geological Consultants Inc., was retained by Liberty Minerals Exploration Inc., to provide geological supervision for a diamond drill program on the AZ property located in the northwest quadrant of Canyon Creek map area NTS 115F-15. The property is a Precious Metal Enriched Skarn (PME Skarn) exploration target. The property was first staked by Mr. Ron Berdahl in 1988 after he found a mineralized outcrop of calcic skarn containing coarse chalcopyrite and magnetite.

The property was subsequently optioned by Noranda Exploration Company Ltd., who completed gridding, mapping, soil sampling and magnetometer and IP surveys before drilling three diamond drill holes in 1993. DDH 93-1 intersected skarn mineralization with the best result being 2 m of 0.19% copper and 187 ppb gold.

Liberty Mineral Exploration Inc., optioned the property and obtained a listing on the Alberta stock exchange. A detailed magnetometer survey was completed over the main showing in 1997 which greatly enhanced the magnetic anomaly definition and was used to plan the 1998 drill program. The 1998 exploration program consisted of hand and blast trenching and 339.26 m of BW thin wall core drilling.

The results of this program have greatly extended the area underlain by skarn mineral assemblages. There is both garnet silicate skarn and pyroxene magnetite skarn assemblages present in the area of the main showing. An unexposed hornblende quartz diorite intrusion was intersected in DDH 98-6 which provided the heat and fluid for skarn development.

The best value from the 1998 drill program was from DDH 98-5 where an assay interval of 1.52 m between 82.91 and 84.43 m returned an analyses of 2184 ppm copper and 0.007 oz/ton gold from a coarse pyroxene-magnetite skarn.

Despite the fact that economic grades were not located in the drill program, the AZ property has a geochemical signature, terrane affinity, igneous petrogenesis and chemical classification and is within the age bracket associated with PME enriched skarns found in the Canadian Cordillera and specifically within the Wrangellia Terrane.

Skarns are very difficult targets to properly assess and there is still potential to locate significant mineralization on the AZ property. On a regional scale, the area should be assessed for its porphyry copper-gold potential.

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INTRODUCTION

This report was prepared at the request of the directors of Liberty Mineral Exploration Inc. This report is based on the authors' knowledge of the property and area gained from mapping, sampling and core logging on the property between May 19 to June 20, 1998, the data collected during this period is presented in this report. Regional geology and metallogeny are based on referenced public and private reports.

Between May 20-22, three days were spent trenching and sampling the main magnetic anomalies on the 1997 grid (See Power, 1997) to help identify drill targets, and preparing two diamond drill pads.

A Hydracore 28 drill was mobilized to the first pad on June 5 and drilling was completed and the drill demobilized on June 18, 1998. A total of 339.26 metres of thin wall NQ coring was completed in 4 drill holes from two drill pads. The crew were lodged at the 1202 Motor Inn and crews were flown to and from the property daily by a 206 Jet Ranger on contract from Heli Dynamics Ltd. All core was logged on site and the core was stored on the property.

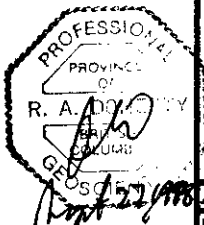
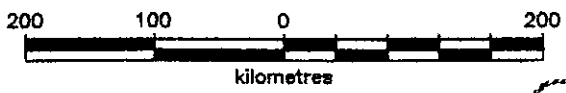
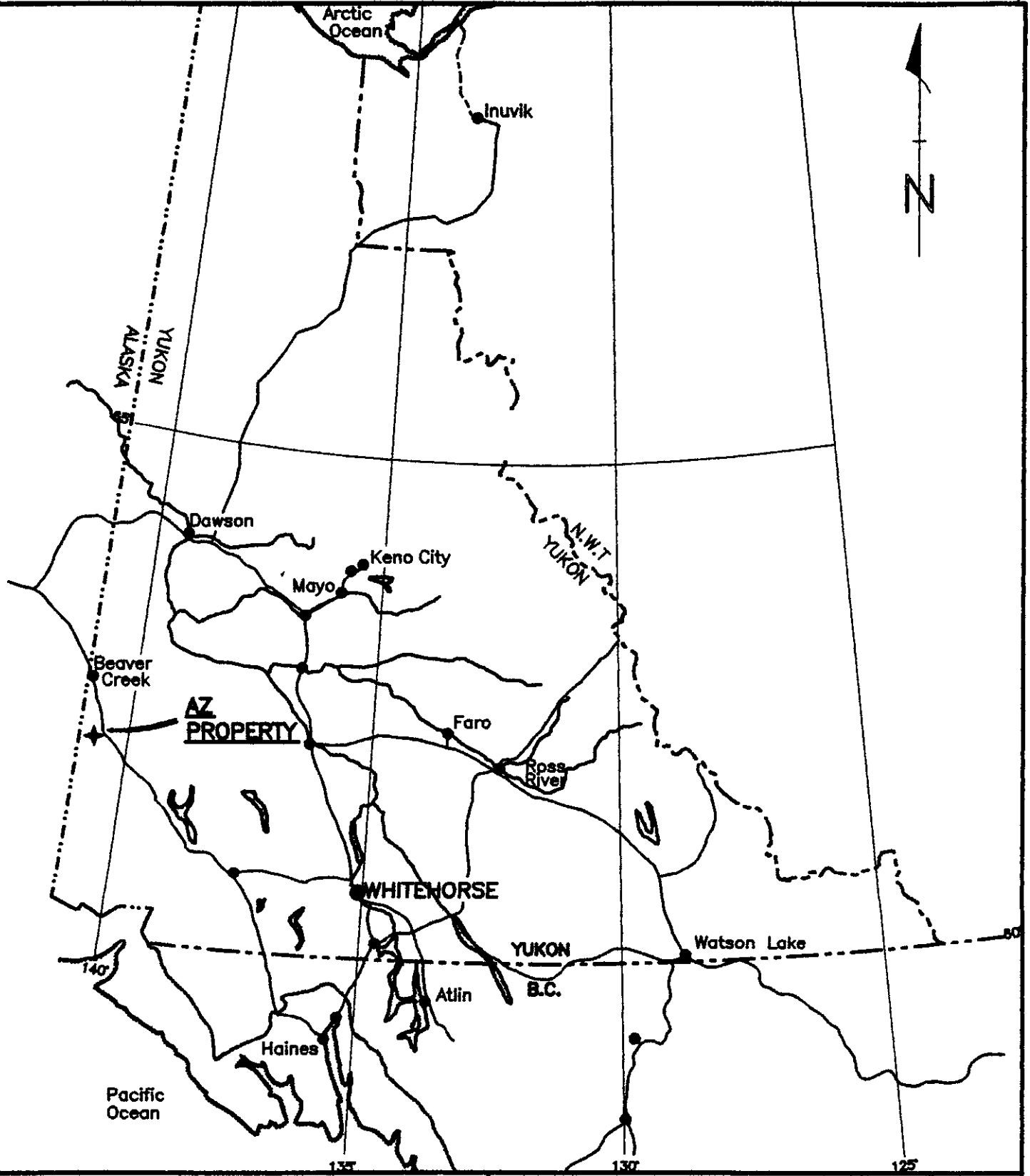
Location and Access

The AZ Claims are located in the Kluane Ranges of the Nutzotin Mountains, five kilometres east of the Yukon Alaska boundary. The drill site is on the west side of Hump Mountain at an elevation of 3600 feet, three kilometres north of Tchawsahmon Lake. A point at the centre of the property is located at geographic coordinates of 61° 59' north latitude and 140° 54' west longitude on NTS map area 115 F-15 (Figures 1 and 2).

Access to the property is by helicopter. The closest point to the property for slinging purposes is the Sand Pete gravel pit located on the west side of the Alaska Highway at Km 1895, approximately 12 km north of the White River bridge. The gravel pit provides an excellent site for slinging drill equipment. The property is 16 km southeast of the Sand Pete gravel pit. A round trip with a sling load requires approximately 25 minutes of helicopter time.

The property can also be accessed by hiking 22 km of tote trail and horse trails up Sand Pete creek and over to the Beaver River and to Tchawsahmon Creek below Hump Mountain. Part of this route can be used by a four wheel drive vehicle.

Water for drilling purposes was pumped from a small lake on Tchawsahmon Creek to the drill sites, a lift of approximately 650 feet.



LIBERTY MINERAL EXPLORATION INC.

AZ PROPERTY
WHITEHORSE MINING DISTRICT

PROPERTY
LOCATION
MAP

drawn by: JC
scale: 1:6,000,000
figure: 1
date: JUNE, 1998
NTS: 115
Librum Geological Consultants Inc.

Property

The AZ claims consists of 72 contiguous un-surveyed two post quartz claims (Figure 2), covering approximately 1480 hectares (3,657 acres). The claims are located in the northwest quadrant of the Canyon City, NTS map sheet 115F/15. The claims were staked in accordance with the Yukon Quartz Mining Act and are all within the Whitehorse Mining District. Current claim data are as follows:

TABLE I: AZ Property Claim Data

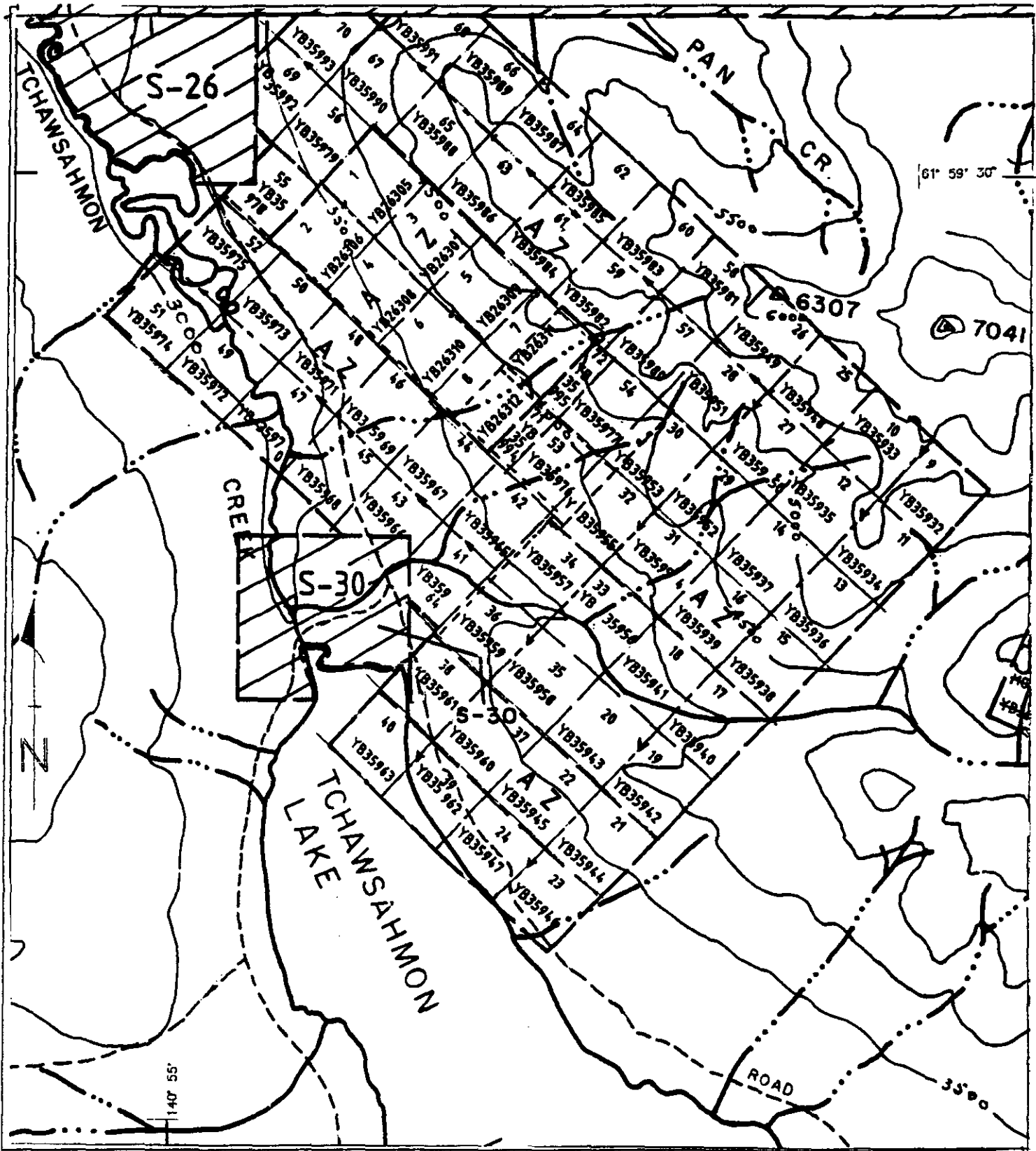
CLAIM NAME	GRANT NUMBERS	MINING DISTRICT	EXPIRY DATE *
AZ 1-8	YB26305-YB26312	Whitehorse	08/06/2005
AZ 9-13	YB35932-YB35936	Whitehorse	11/06/2003
AZ 14	YB35937	Whitehorse	11/06/2004
AZ 15	YB35938	Whitehorse	11/06/2003
AZ 16	YB35939	Whitehorse	11/06/2004
AZ 17-72	YB35940-YB35995	Whitehorse	11/06/2003

* subject to approval of 1998 assessment work

The claims are 100% owned by Liberty Mineral Exploration Inc., subject to an option agreement with Mr. Ron Berdahl, and are shown on Quartz Claim Sheet 115 F/15.

Two small (120 hectare) site specific land claims withdrawn under the White River First Nation land claim are shown on the claim map adjacent to the AZ 55 & 69 claims and the AZ 41 & 43 claims.

All diamond drilling was completed on the AZ 3 and AZ 4 claims (YB26307-26308).



Legend



LIBERTY MINERAL EXPLORATION INC	
AZ 1-72	
WHITEHORSE MINING DISTRICT	
CLAIM MAP	
Aurum Geological Consultants Inc.	Date: JUNE, 1998
NTS: 1:15F/15	Drawn: JC Scale: 1:30000 Figure: 2

History

The AZ claims (Yukon Minfile 115F 051) were first staked by Mr. Ron Berdahl after he located outcrops of chalcopyrite and magnetite rich calcic skarn on the west side of Hump Mountain at approximately 3600 feet elevation. The AZ 1-8 were staked in June 1988, and limited prospecting, soil sampling and hand trenching was completed by Mr. Berdahl.

In February of 1991 Noranda Exploration Company Ltd., optioned the claims from Mr. Berdahl and added the AZ 9-72 claims, completed 43 line km of flagged grid. A soil geochemical survey was completed with samples collected at 50 m spacing on 100 m spaced grid lines. A total field magnetic survey and was completed over the same grid and anomalous areas were later investigated by an IP survey. (Davidson, 1996). Sampling of the discovery outcrop returned an average of 10% Cu, 126.5 g/t Ag and 7.08 g/t Au from four samples (Duke, 1993).

In May and June of 1993 Noranda completed 232 m of core diamond drilling in four holes which were drilled to locate the source of the mineralization located at the discovery outcrop and on other magnetic highs and IP chargeability anomalies on the property. The best results from the 1993 drill program was 0.19% Cu and 187 ppb Au between 18 and 20 m in DDH AZ-93-1. The results of the Noranda drill program are discussed in (Duke, 1993 and Davidson, 1996).

Physiography, Climate and Vegetation

An interior continental climate with moderate to low precipitation (30 cm annually), warm summers and cold winters typifies the area. Permafrost is present on the steeper north and east facing slopes. The property is normally snow free from mid May to late September. Relief on the property is just over 4000 feet (1220 metres), with the highest point on the property at 7041 feet (2145 metres) and the lowest at 2955 feet on Tchawsahmon Creek. Tree line extends to 4500 feet and westerly facing slopes are thickly forested with White Spruce, Birch, and locally Alder thickets where the ground is more moist.

Water for drilling purposes was pumped from a small lake that is part of Tchawsahmon Creek over a distance of 700 metres with a rise of approximately 200 metres.

GEOLOGY

Regional Geology

The AZ property is within the accreted terranes that lie west of the Denali fault (Figure 3). The area is underlain mostly by lithologies assigned to the Wrangellia and Alexander terranes and younger overlap assemblages and intrusions. The Wrangellia and Alexander terranes are composed of oceanic assemblages of Paleozoic and Mesozoic age which were joined during the Pennsylvanian and accreted to North America in Middle or Late Cretaceous time, (Bremner, 1994). Cretaceous aged Kluane Ranges Intrusions and younger Tertiary extrusive basalt and andesite flows cross-cut the older lithologies.

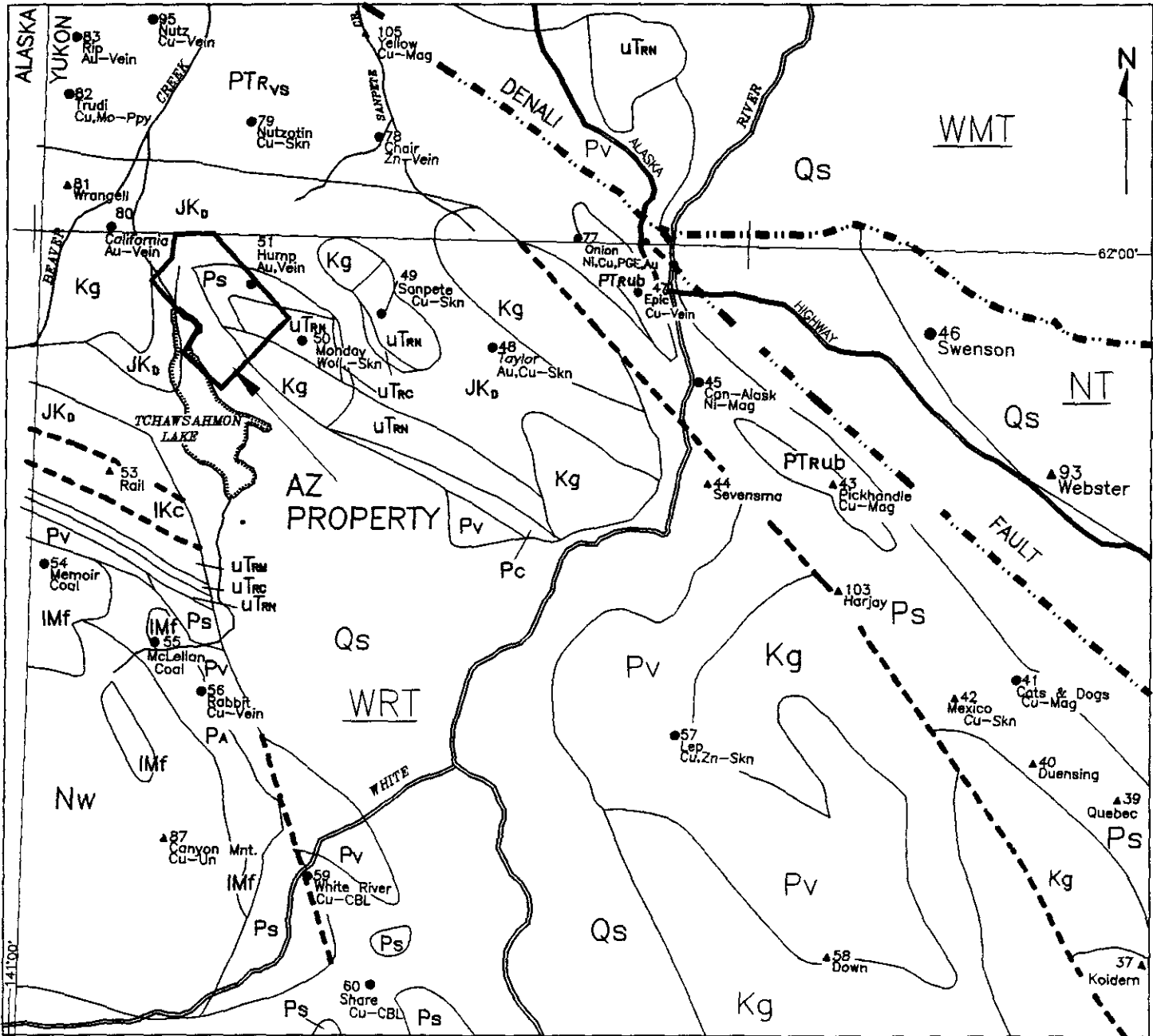
The oldest exposed rocks in this area of the Yukon southwest of the Denali fault are the Permian Skolai Group which includes the lower Station Creek Formation (Pv) and the Hansen Creek Formation (Pc, Ps). The Station Creek Formation comprises island-arc volcanics and volcanoclastics which include pyroclastics, massive volcanic breccia and agglomerate grading upwards into lithic vitric tuff and well bedded pale green and white siliceous tuff. The Hansen Creek Formation comprises marine sediments with a basal bioclastic limestone, calcarenite and local basal conglomerate overlain by thin bedded siliceous argillite, siltstone, minor greywacke and conglomerate. Locally there are thin basaltic flows, breccia and tuff. The basement to the Station Creek Formation is not exposed but is assumed to be oceanic crust (Campbell and Dodds, 1982). The Skolai group is overlain by the Upper Triassic Nikolai Greenstones which include dark grey and green amygdaloidal basalt and andesite flows, locally interbedded with maroon tuff and breccia, and rare maroon and green shale and thin bedded bioclastic limestone. Overlying the Nikolai greenstones are the Upper Triassic Chitistone and Nazina limestones and the McCarthy Formation argillaceous limestones and argillite. The Skolai Group, Nikolai Greenstones, and Chitistone and Nazina limestones and The McCarthy Formation are of island-arc provenance and form the Wrangellia terrane.

Wrangellia terrane lithologies are overlapped by younger submarine and subaerial sediments and lava flows which include the Dezadeash Group flysh, Chisana Formation basalts, Amphitheatre Formation and Wrangell Lavas (See Table II).

Cretaceous and younger intrusions into Wrangellia include the Cretaceous Kluane Ranges Intrusions, of granodiorite and quartz diorite composition and the Miocene Wrangell Intrusions of hornblende-biotite rhyolite composition.

Valleys are commonly covered by a considerable thickness of unconsolidated glacial till and fluvial sediments.

TABLE II TABLE OF FORMATIONS (See Figure 3. After GSC Open File 829)Quaternary**Qs** Sand, silt, clay gravel. Unconsolidated glacial materialMiocene**Nw** Wrangell lavas: Basalt, andesite flows, acid flows and pyroclastics**IMf** Wrangell Intrusions: Hbl-bio rhyolite dacite and trachytePaleocene**P_A** Amphitheatre Formation: Sandstone, conglomerate, siltstone, coalCretaceous**IKc** Chisana Formation: Basalt, andesite flows and pyroclastics**Kg** Coast Plutonic Complex: Biotite-hornblende granodiorite, Quartz dioriteJurassic-Cretaceous**JK_D** Dezadeash Group: greywacke, sandstone, siltstone, shale, argillite, conglomerateUpper Triassic**uTRM** McCarthy Formation: argillaceous limestone, argillite**uTRc** Chitistone and Nazina Limestones: light grey limestone, limestone breccia, well bedded limestoneMiddle Triassic**uTRn** Nikolai Greenstone: Flow basalts, greenstone, mafic and ultramafic sillsPermian and/or Triassic**PTRub** Peridotite and dunitePaleozoic and/or Mesozoic**PTR_{Vs}** meta basic volcanicsPennsylvanian-Permian**Ps** Hansen Creek Formation: Siltstone, argillite, greywacke, limestone, chert**Pc** Hansen Creek Formation: Bioclastic limestone, calcarenite, basal conglomerate**Pv** Station Creek Formation: Pyroclastics, massive volcanic breccia and agglomerate



LITHOLOGIES

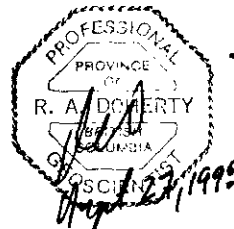
- Quaternary
Qs Sand, silt, clay, gravel. Unconsolidated glacial material.
- Miocene
Nw Wrangell lavas: basalt, andesite flows, acid flows and pyroclastics
IMf Wrangell intrusions: Hbl-bio rhyolite, dacite and trachyte
- Paleocene
PA Amphitheatre Formation: Sandstone, conglomerate, siltstone, coal
- Cretaceous
IKc Chisana Formation: Basalt, andesite flows and pyroclastics
Kg Klusne Range Intrusions: Bio-hbl granodiorite, quartz diorite
- Jurassic and Cretaceous
JK_D Dezadeash Group: greywacke, sandstone, siltstone, shale, argillite, conglomerate
- Upper Triassic
uTrn McCarthy Formation: argillaceous limestone, argillite
uTrc Chitistone and Nazina Limestones: light grey limestone, limestone breccia, well bedded limestone
- Middle Triassic
uTrn Nikolai Greenstone: Flow basalts, greenstone, mafic and ultramafic sills
- Permian and/or Triassic
PTRub Peridotite and dunite
- Paleozoic and/or Mesozoic
PTR_v meta basic volcanics
- Pennsylvanian - Permian
Ps Hansen Creek Formation: Siltstone, argillite, greywacke, limestone, chert
Pc Hansen Creek Formation: Bioclastic limestone, calcarenite, basal conglomerate
Pv Station Creek Formation: Pyroclastics, massive volcanic breccia and agglomerate

TERRANE CODE

- WRT WRANGELLIA
- NT NISLING
- WMT WINDY-MCKINLEY

SYMBOLS

- GEOLOGICAL CONTACT
- FAULT
- GEOLOGICAL TERRANE BOUNDARY
- MINERAL OCCURRENCE**
- MINFILE REF. NO.
- OCCURRENCE NAME
- DEPOSIT CLASSIFICATION



LIBERTY MINERAL EXPLORATION INC.

AZ 1-72
YUKON TERRITORY

REGIONAL GEOLOGY

MODIFIED AFTER GSC O.F. 829

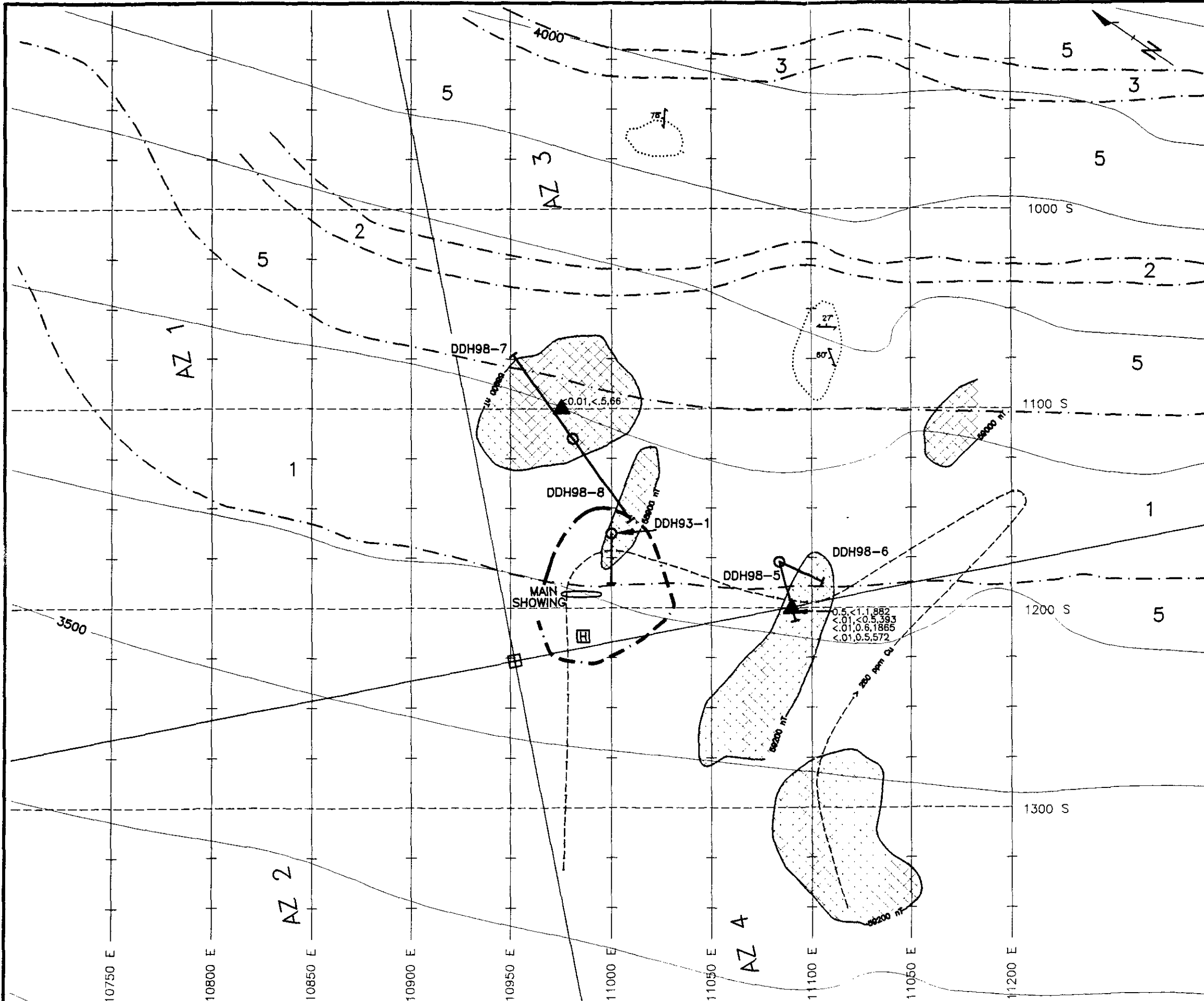
PROPERTY GEOLOGY

Outcrop exposures on the AZ property are confined to the ridge tops and a few gullies. Most of the property geology mapped by Noranda personnel is based on outcrops exposed in Frying Pan Creek on the northwest side of the property which were then extrapolated along strike based on limited outcrop exposure. The predominant lithology exposed on the property is massive and amygdaloidal grey and green basalt flows of the Nikolai Greenstones. Inter-bedded with the basalt flows are thin limestone beds that are normally less than 5 m wide and are probably part of the Nikolai Greenstone. Bedding attitudes in the Nikolai Greenstones conform to the regional northwest trend with moderate to steep northeast dips.

Diamond drilling in 1993 in Holes AZ-93-2, 3, & 4 intersected volcanoclastics and sediments that most likely represent the underlying Station Creek and Hansen Creek Formations.

The only intrusive rocks mapped on the property outcrop at the southeast end of the claims where Noranda mapped granodiorite and at the south end of the grid above Tchawsahmon Creek.

The location of drill holes around the main showing, trench sample locations, property geology, magnetic anomalies, and soil geochemical anomalies are shown in Figure 4.



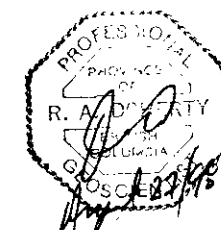
LEGEND

LITHOLOGIES

- MIDDLE TRIASSIC TO PERMIAN
- 5 BASALT TO ANDESITE
 - 3 MIDDLE LIMESTONE UNIT
 - 2 LOWER LIMESTONE UNIT
 - 1 INTERBEDDED SHALE, VOLCANICS AND LIMESTONE

SYMBOLS

- CONTOUR LINE (100 ft INTERVAL)
- ⊞ CLAIM POSTS
- CLAIM LINE
- - - SOIL GEOCHEMICAL CONTOUR—Cu
- ▨ MAGNETIC ANOMALY (1997) (VALUE SHOWN)
- - - AREA OF Cu—Au SKARN FLOAT
- ⊙ DIAMOND DRILL HOLE LOCATION AND HORIZONTAL TRACE
- ⊞ HELICOPTER PAD
- - - GEOLOGICAL CONTACT, ASSUMED
- ⋯ OUTCROP BOUNDARY
- ↗ FOLIATION
- ▲ <math>< 0.001, < 0.3, 121</math> 1998 TRENCH SAMPLE ASSAY VALUES
 Au, Ag, Cu
 gm/t ppm ppm



GEOLOGY MODIFIED AFTER DUKE, 1992
LIBERTY MINERAL EXPLORATION INC.

WHITEHORSE MINING DISTRICT, YUKON TERRITORY

**PROPERTY GEOLOGY,
 TRENCH SAMPLE, AND
 DDH LOCATION MAP**

1998 TRENCHING AND DIAMOND DRILL PROGRAM

Introduction

A crew was mobilized to the AZ property on May 19, 1998 to complete trenching over selected coincident magnetic and geochemical anomalies in an attempt to better define drill targets. Two hand dug and blasted pits were excavated and samples collected for analyses at grid locations 1200S 11090E and 1100S 10975E. Diamond drill pads were cleared and log frames were constructed at two proposed drill sites. This work was completed by May 22 and the crew demobilized to Whitehorse.

A diamond drill was mobilized to the property on June 4, 1998 and drilling commenced on DDH 98-5 on June 6. A total of 339.26 m of thin wall NQ core was drilled in four drill holes all within the AZ 3 and AZ 4 claims. All drill core is stored at the drill site in covered boxes. The drilling was completed on June 17 and the drill and crew were demobilized on June 18. Approximately \$51,985.00 was expended between May 19 and June 10 to apply the maximum amount of assessment to the claims.

Trenching

Two hand dug and blasted trenches were excavated and bedrock and float samples were collected and analyzed. The following descriptions are from hand specimens collected at the indicated trench site. Analytical results for gold silver and copper are plotted on Figure 4

1200S 11090E A PYROXENE-MAGNETITE SKARN

Dark black and light grey to white, mottled and coarsely oophitic textured pyroxene - quartz, magnetite skarn. Pyrite, chalcopyrite, magnetite and quartz are poikilitically included in oophitic pyroxenes. Rocks are Fe-oxide coated and an early mineral phase is replaced by hematite. Malachite and azurite are common as coatings on fractures and associated with the hematite. Total copper sulphide minerals are generally < 1%. This sample returned 882 ppm Cu and 0.05 gm/t Au.

1200S 11090E B GARNET-SILICATE SKARN

Light pink to flesh colored often coarse grained quartz, calcite, garnet, epidote, diopside skarn. No magnetite and less than 0.025% sulphides. Analyses returned 393 ppm Cu and <0.01 gm/t Au.

1200S 11090E C PYROXENE-MAGNETITE SKARN

Same as sample 1200S 11090E A. This sample returned 1865 ppm Cu and <0.01 gm/t Au.

1200S 11090E D FINE GRAINED GREEN ALTERED VOLCANICS ?

A fine grained silicified green rock with veins and pockets of garnet epidote and calcite. Disseminated sulphides include, pyrite and chalcopyrite. No magnetite. Analyses returned 572 ppm Cu and <0.01 gm/t Au.

1100S 10975E BIOTITE CHLORITE QUARTS HORNFELS.

A dark grey friable and fractured metavolcanic or sedimentary rock consisting of a granular hornfelsed texture of quartz, biotite and chlorite. Minor pyrite and chalcopyrite. This sample returned 66 ppm Cu and <0.01 gm/t Au.

The results of this sampling seemed to indicate that the pyroxene-magnetite skarn returned the higher gold and copper values. It also seemed reasonable to target the magnetic highs to further drill test the skarn occurrence.

Diamond Drilling

A total of 339.26 m were drilled in four drill holes from two drill pads between June 7 to 17, 1998. Drill crews and geological staff were transported daily from Beaver creek to the property by helicopter supplied by Heli Dynamics Ltd. Table III listing drill hole data follows:

Table III: Diamond Drill Hole Data

HOLE #	EAST	SOUTH	AZM	DIP	LENGTH	DEPTH	ADVANCE
98-5	11084E	1177S	220°	-70°	89.00 m	84 m	30 m
98-6	11084E	1177S	170°	-60°	47.24 m	41 m	23 m
98-7	10980E	1115S	020°	-60°	102.72 m	49 m	51 m
98-8	10980E	1115S	200°	-60°	100.30 m	46 m	50 m

Drill sections showing sampled core intervals and analytical results for gold, silver and copper are shown in Figures 5,6, and 7. Drill logs are found in Appendix A and analytical certificates in Appendix B.

DDH 98-5 (11084E 1177S), -70° @ 220° Azimuth

Drill hole 98-5 was collared to test a 1000 nT magnetic high with strike of 85° and apparent moderate south dip. This magnetic high is just within the northeast (up-slope) 100 ppm copper in soil contour. The linear shape of this magnetic anomaly suggested that it could be caused by a fault structure.

Hole 98-5 intersected 89 m of mixed garnet silicate skarn and pyroxene magnetite skarn hosted in a probable amygdaloidal basalt protolith. The garnet silicate skarn consists

of honey-yellow brown garnet with quartz and rare calcite and epidote. Sulphides are rarely present at more than trace levels. The pyroxene magnetite skarn consists of coarsely oophitic dark green pyroxenes with quartz and magnetite poikilitically included in the pyroxenes. Sulphides consist of pyrite as disseminations and grains of chalcopyrite. Sulphide grain size tends to increase in more coarse grained pyroxene-magnetite skarn. Chalcopyrite is more common in the PYX-MT skarn but rarely exceeds 1%.

The low sulphide content is reflected in the analytical results. The best analytical result was 2184 ppm Cu, 0.007 oz/ton Au and 1.6 ppm Ag. Iron and calcium values from the analyses are in the 2-10% range with iron returning higher values from the Pyx-Mt skarn.

Occasional zones of coarse banded skarn were noted at between 20 to 45 degrees to core axis which indicate a relatively steep dip.

A small 0.6 m wide fault gouge was intersected at 75.29 m. Late quartz and calcite veins are present throughout the hole.

DDH 98-6 (11084E 1177S), -60° @ 170° Azimuth

Hole 98-6 was drilled at a 50° angle northward from 98-5 to test the same magnetic high and postulated fault structure. This hole intersected similar but more coarse grained skarn lithologies from 4 m to 32.61 m and then intersected a coarse grained hornblende-quartz diorite and alaskite. The highest copper values of 816 and 689 ppm Cu were from Pyx-Mt skarn. The best gold value was 0.002 oz/ton Au.

Hole 98-5 probably cut skarn along the margin of the hornblende-quartz diorite whereas hole 98-6 cut through the skarn and into the intrusion. There was little evidence of hornfels at the intrusive contact and some of the coarse grained Pyx-Mt skarn may be endoskarn.

DDH 98-7 (10980E 1115S), -60° @ 020° Azimuth

DDH 98-7 was collared to test a symmetrical magnetic high centered about 1100S 10980E. The hole was drilled to a depth of 102.72 m and intersected medium to fine grained basalt and amygdaloidal basalt with very minor skarn and one hornblende granite dike. Very sparse sulphide minerals were noted and only three small sections of core were sampled for analyses. The best copper value was 51 ppm Cu.

Occasionally amygdules that were originally filled with quartz-calcite were filled with a skarn assemblage of garnet, epidote, quartz, and calcite. Sections of core were strongly magnetic which may account for the magnetic high.

DDH 98-8 (10980E 1115S), -60° @ 200° Azimuth

DDH 98-8 was drilled upslope of and parallel to DDH AZ-93-1 which intersected skarn mineralization consisting of garnet-epidote skarn with magnetite and chalcopyrite. Hole 98-8 intersected weak skarn zones within amygdaloidal basalts.

Discussion

The best developed skarn assemblage intersected in the 1998 drill program was from DDH's 98-5 and 98-6 which are some 100 m south and slightly downslope of the main showing. Both holes also intersected significant pyroxene-magnetite skarn and Hole 98-5 returned the highest copper and gold geochemical analyses. Hole 98-6 also intersected a coarse grained hornblende quartz diorite intrusive and it is the author's opinion that the trace of hole 98-5 was probably very close to the same intrusive body but did not intersect it.

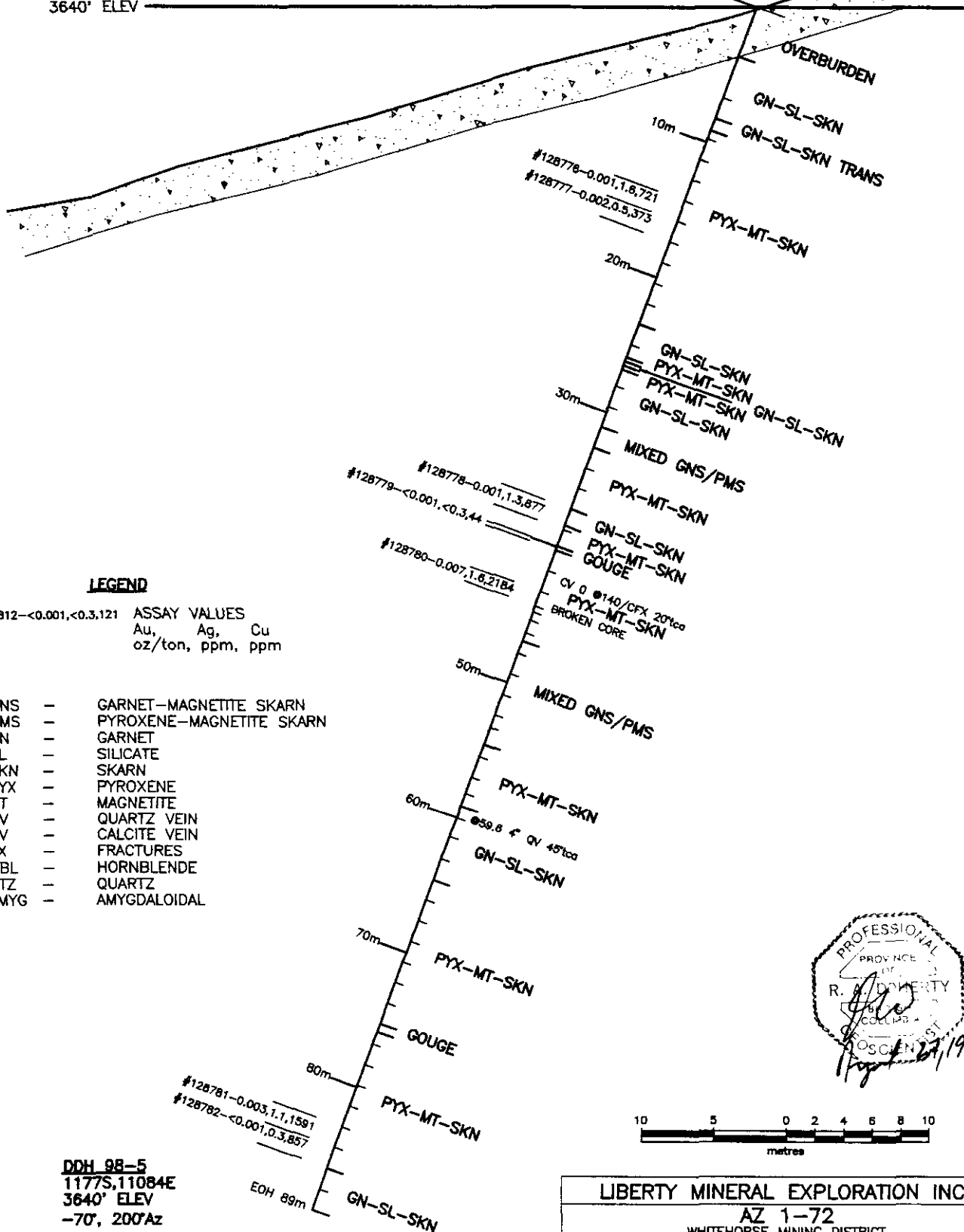
Hole 98-8 which was drilled upslope and some 40 m behind DDH AZ-93-1 failed to intersect any significant skarn assemblage or copper sulphides. Based on this evidence it is possible that the main showing outcrop does not dip east into Hump mountain but rather plunges to the south toward Holes 98-5 and 98-6 and the hornblende-quartz diorite intrusion.

Most skarn appears to have developed in a calcium rich basalt protolith. No evidence of limestone lenses were noted in any drill holes.

The diorite at the end of DDH AZ-93-1 is probably just a small dike. Similar dikes were intersected in 98-7 & 8.

3640' ELEV

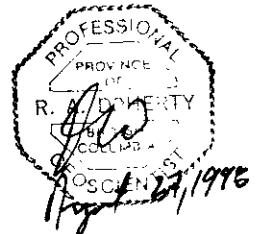
LOOKING WEST



LEGEND

#128812-<0.001,<0.3,121 ASSAY VALUES
 Au, Ag, Cu
 oz/ton, ppm, ppm

- GNS - GARNET-MAGNETITE SKARN
- PMS - PYROXENE-MAGNETITE SKARN
- GN - GARNET
- SL - SILICATE
- SKN - SKARN
- PYX - PYROXENE
- MT - MAGNETITE
- QV - QUARTZ VEIN
- CV - CALCITE VEIN
- FX - FRACTURES
- HBL - HORNBLLENDE
- QTZ - QUARTZ
- AMYG - AMYGDALOIDAL

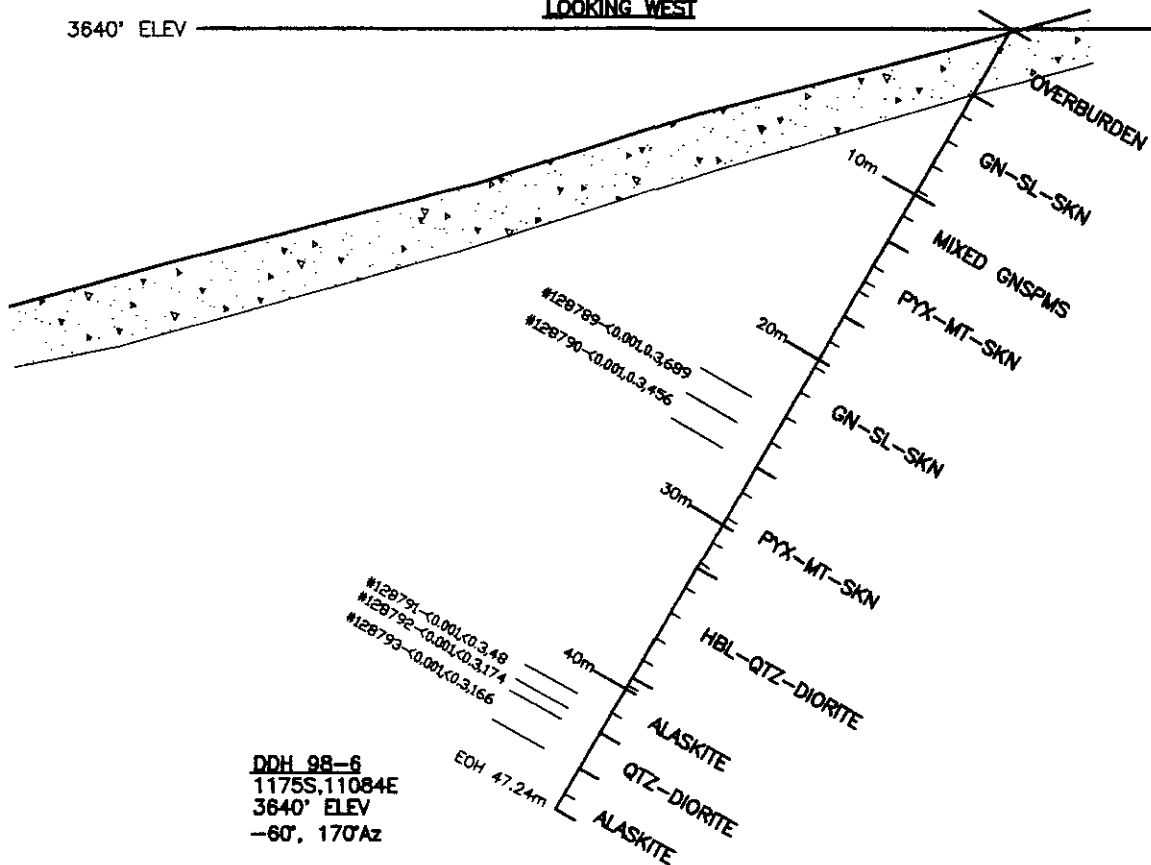


DDH 98-5
 1177S, 11084E
 3640' ELEV
 -70°, 200'Az

LIBERTY MINERAL EXPLORATION INC.	
AZ 1-72 WHITEHORSE MINING DISTRICT	
DDH98-5 SECTION	
Aurum Geological Consultants Inc.	Date: JUNE, 1998
NTS: 1:15F/15	Drawn: JC
Scale: 1:400	Figure: 5

3640' ELEV

LOOKING WEST

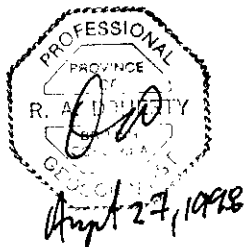
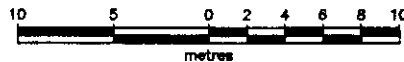


DDH 98-6
1175S, 11084E
3640' ELEV
-60°, 170°Az

LEGEND

#128812 - <math><0.001, <0.3, 121</math> ASSAY VALUES
Au, Ag, Cu
oz/ton, ppm, ppm

- GNS - GARNET-MAGNETITE SKARN
- PMS - PYROXENE-MAGNETITE SKARN
- GN - GARNET
- SL - SILICATE
- SKN - SKARN
- PYX - PYROXENE
- MT - MAGNETITE
- QV - QUARTZ VEIN
- CV - CALCITE VEIN
- FX - FRACTURES
- HBL - HORNBLLENDE
- QTZ - QUARTZ
- AMYG - AMYGDALOIDAL



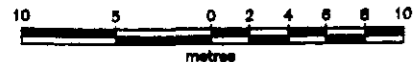
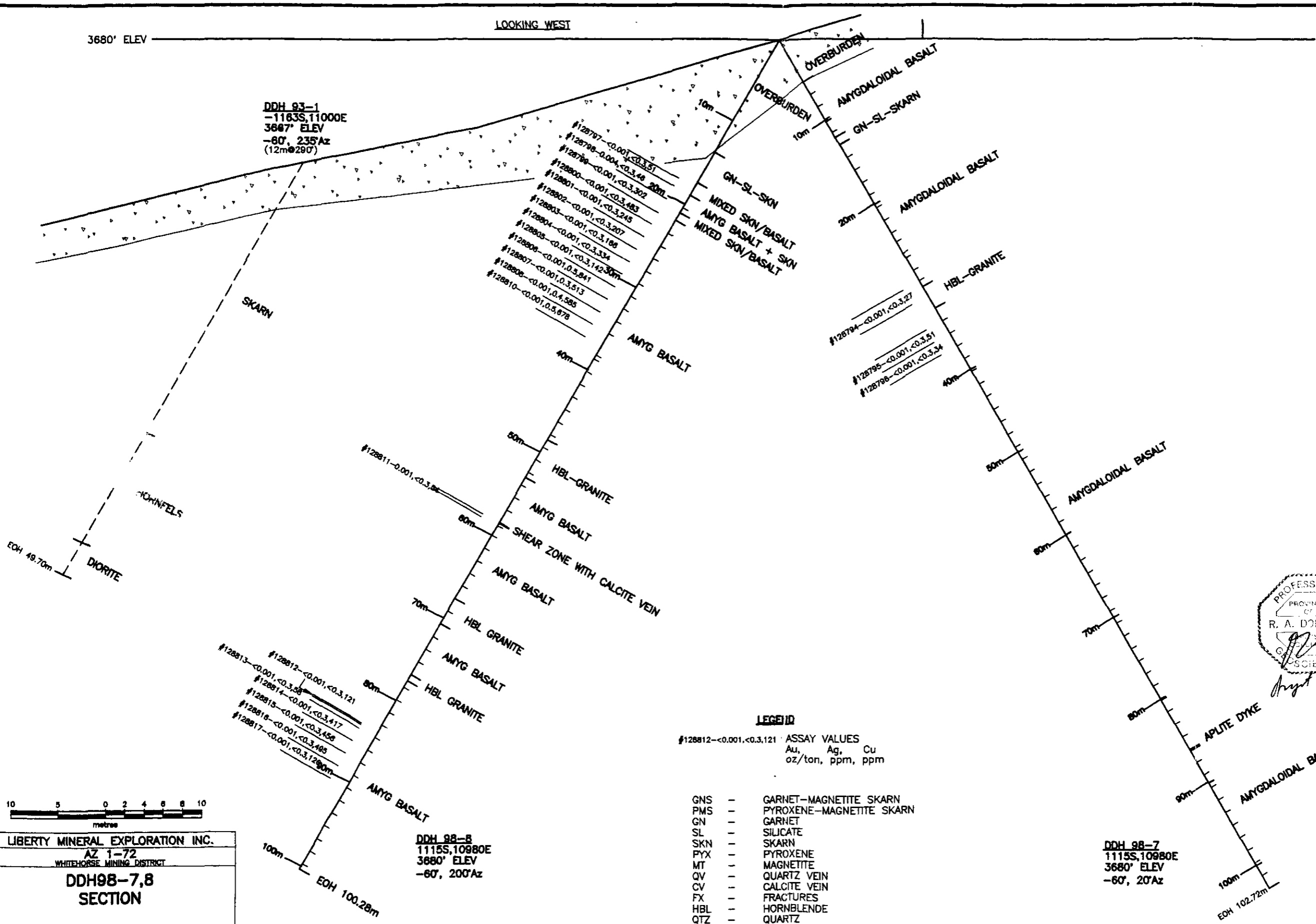
LIBERTY MINERAL EXPLORATION INC.
AZ 1-72
WHITEHORSE MINING DISTRICT
DDH98-6
SECTION

Argentum Geological Consultants Inc. Date: JUNE, 1998
NTS: 1:15E/15 Drawn: JC Scale: 1:400 Figure: 6

LOOKING WEST

3680' ELEV

DDH 93-1
-1163S, 11000E
3687' ELEV
-60°, 235°Az
(12m@290°)



LIBERTY MINERAL EXPLORATION INC.
AZ 1-72
WHITEHORSE MINING DISTRICT
**DDH98-7,8
SECTION**

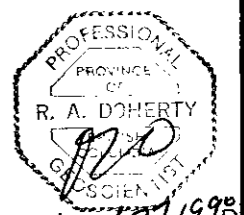
DDH 98-8
1115S, 10880E
3680' ELEV
-60°, 200°Az

DDH 98-7
1115S, 10980E
3680' ELEV
-60°, 20°Az

LEGEND

#128812-<0.001,<0.3,121 ASSAY VALUES
Au, Ag, Cu
oz/ton, ppm, ppm

- GNS - GARNET-MAGNETITE SKARN
- PMS - PYROXENE-MAGNETITE SKARN
- GN - GARNET
- SL - SILICATE
- SKN - SKARN
- PYX - PYROXENE
- MT - MAGNETITE
- QV - QUARTZ VEIN
- CV - CALCITE VEIN
- FX - FRACTURES
- HBL - HORNBLLENDE
- QTZ - QUARTZ
- AMYG - AMYGDALOIDAL



CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The AZ property has a geochemical signature, terrane affinity, igneous petrogenesis and chemical classification and is within the age bracket associated with PME enriched skarns found in the Canadian Cordillera and specifically within the Wrangellia Terrane.

There is little evidence to postulate a Kennecott style deposit at the AZ property. The Kennecott deposits located 120 km Southwest of the AZ are replacement deposits at the Nicolai basalt Chertstone Limestone contact. Ore consisted of dominantly chalcocite but covellite, azurite, malachite, enargite, bornite, chalcopyrite, and calcanthite occurred. Only trace amounts of gold are reported from the Kennecott deposit, (Heiner et al., 1971).

Noranda's DDH 93-1 did not stop in intrusive but most probably in a diorite dike. The dikes in holes 93-1 and 98-7 & 8 are distinct from Hbl-Plag-Qtz intrusives in DDH 98-6.

DDH 98-5 did not intersect the Hbl-Plag-Qtz diorite that was intersected in DDH 98-6. However it is the author's opinion that the trace of hole 98-5 was very close to the intrusive contact.

The known area underlain by skarn mineralogy has increased and the discovery outcrop is considered to be in place.

The hypothesis that the gold was partitioned to the chalcopyrite-magnetite rich skarn has not been disproved but the corollary that the gold is associated with magnetic highs is somewhat diminished.

The best developed skarn assemblage and highest copper and gold values are from holes 98-5 and 98-6. This area also host proportionally more pyroxene-magnetite skarn than garnet-silicate skarn.

Recommendations

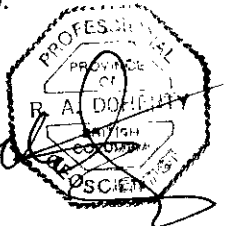

Petrographic, mineral chemistry, and major element whole rock analyses of core samples from the AZ property should be undertaken to determine if the skarn mineral chemistry is within the fields of PME skarns. The large oophitic pyroxenes would suit this analytical technique. This could greatly enhance exploration strategy on the property and the area in general.

The area between holes 98-5 and hole 98-6 & 7 remains untested and could contain a mineralized zone. The magnetic high in the area southeast of DDH's 98-5 & 6 remains untested.

On a regional level the area around the AZ claims may have potential for additional skarn mineralization and porphyry copper mineral occurrences.

Respectfully submitted

R. Allan Doherty, P. Geo.



Joseph A. J. Clarke



August 27, 1998

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STATEMENT OF QUALIFICATIONS

I, R. Allan Doherty, with business address:
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205 - 100 Main Street
P.O. Box 4367
Whitehorse, Yukon
Y1A 3T5

1. I am a geologist with AURUM GEOLOGICAL CONSULTANTS INC., 205 - 100 Main Street, P.O. Box 4367, Whitehorse, Yukon.
2. I am a graduate of the University of New Brunswick, with a degree in geology (Hons.B.Sc., 1977) and that I attended graduate school at Memorial University of Newfoundland (1978-81). I have been involved in geological mapping and mineral exploration continuously since then.
3. I am a member of the Association of Professional Engineers and Geoscientists of the Province of British Columbia, Registration No. 20564.
4. I supervised the 1998 drill program on the AZ property and this report is based on this work completed between May 19-June 20th, 1998 and on referenced sources.
5. I have no direct or indirect interests in the properties or securities owned by Liberty Mineral Exploration Inc. nor do I expect to receive any.
6. I consent to the use of this report by Liberty Mineral Exploration Inc., 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.

August 27, 1998


R. Allan Doherty, P. Geo.

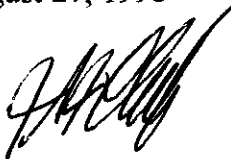


STATEMENT OF QUALIFICATIONS

I, Joseph A. J. Clarke, with business address:
Aurum Geological Consultants Inc.
205 - 100 Main Street
P.O. Box 4367
Whitehorse, Yukon
Y1A 3T5

1. I am a geological technician with AURUM GEOLOGICAL CONSULTANTS INC., 205 - 100 Main Street, P.O. Box 4367, Whitehorse, Yukon.
2. I am a graduate of the Haileybury School of Mines, with a diploma Mining Engineering Technology (1985). I have been involved in mining and mineral exploration continuously since then.
3. I assisted in the 1998 drill program on the AZ property and this report is based on this work completed between May 19-June 20th, 1998 and on referenced sources.
5. I have no direct or indirect interests in the properties or securities owned by Liberty Mineral Exploration Inc. nor do I expect to receive any.
6. I consent to the use of this report by Liberty Mineral Exploration Inc., 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.

August 27, 1998



Joseph A. J. Clarke

STATEMENT OF COSTS

1998 Assessment Work Valuation; AZ 1-72 Claims, 115 F 15. Value of work completed between May 19 to June 10, 1998.

A. Field Work Personnel

Joe Clarke Mining Engineering Technician May 19-22, June 3-11, 1998, 13 days @ \$300/day	\$ 3,900.00
R. Allan Doherty, P. Geo. May 19-22, June 3-11, 1998, 13 days @ \$400/day	\$ 5,200.00
Bruce MacLean, May 19-22, 1998, 4 days @ \$400/day	\$ 1,600.00

B. Drilling & Helicopter Costs

Advanced Diamond Drilling Ltd. 126 m BTW core	\$14,085.00
Helicopter Heli Dynamics Ltd 31.5 hrs @ \$800/hr.	\$25,200.00

C. Report Costs

Report Writing and Reprographics	\$ 2,000.00
TOTAL ASSESSMENT VALUE	\$51,985.00

APPENDIX A

1998 DRILL LOGS

HOLES DDH 98-5 through DDH98-8

DDH98-5

Coordinates 1177S 11084E Azm 220° Dip -70°

METERS

FROM	TO	REC	RQD	LITHOLOGY	STRUC
0.00	3.66	3.66		OVERBURDEN	
3.66	8.23	4.57	65	0 GN-SL-SKARN Grey-green quartz-garnet skarn, Mal & Az and Fe-oxide on fractures, non magnetic, fine grained with occ. coarser garnet-qtz-calcite bands. Rare vein qtz-calcite 80° to ca. rare epidote, Py to 0.025%. At 8.22 m disseminated molybdenum.	QCV 80
8.23	9.14	0.91	77	0 GN-SL-SKARN TRANS TO PYX-MT-SKARN Darker grey-green coloured, Pyx and Mt locally, Py to 1%, Cpy <0.25%, hematite on oxide surfaces	
9.14	23.47	14.33	100	0.65 PYX-MT-SKARN Black and grey spotted skarn, Pyx to > 1cm in fg groundmass areas of core with >> qtz and lighter colour. no calcite. Py >1%, Cpy <0.025% Blood red hematite, coarser to end of interval. Fx @ 10° & 45° ca 11.28 FX @ 45 deg ca 17.37 FX @ 45 deg ca 17.67 >>20% Qtz, lighter grey 18.9 Fx @ 45 deg & 20 deg ca 21.95 CV @ 30 deg ca 22.25-22.86 patches of reddish garnet 23.47 QV @ 25 deg ca. Orange calcite	FX 45
23.47	25.91	2.44	75	0.4 GN-SL-SKARN Fine grained grey and pinkish red mottled skarn, non-magnetic, minor calcite, trace sulphides.	
25.91	26.21	0.30	76	0.25 PYX-MT-SKARN	
26.21	29.57	3.36	76	0.25 GN-SL-SKARN Mottled pink-grey and dark grey skarn, garnet and qtz rich. Banding @ 20 deg ca at 26.97	
29.57	32.61	3.04	100	0.79 MIXED GN-SL & PYX-MT SKARN Mottled gray and dark-grey silicate and pyroxene-magnetite skarn. Some very thin qtz veins with Py @ 25 deg ca Non-magnetic, trace sulphides	QV 45
32.61	37.19	4.58	93	0.6 PYX-MT-SKARN. Dark grey pyroxene-magnetite skarn. Py <1%, trace Cpy.	
37.19	38.40	1.22	100	0.96 GN-SL-SKARN Mottled pink-grey and dark grey skarn, garnet and qtz rich. Some coarse Cpy @ 37.19-37.49 m.	
38.40	39.93	1.53	100	0.96 PYX-MT-SKARN as above. Lt-grey qtz vn @40 deg ca at 39.01	VN 40
39.93	40.23	0.30	100	0 GOUGE Yellow clay gouge, upper and lower contacts indistinct	
40.23	46.94	6.71	100	0.33 PYX-MT-SKARN as above	

AZ 98-5 ASSAY LOG

ASSAY	ASSAY *	METERS	METERS	Au	Ag	Cu	As	Bi	Te
TAG	FROM	TO	INTERVAL	oz/ton	ppm	ppm	ppm	ppm	
128776	14.33	15.85	1.52	0.001	1.6	721	18	10	
128777	15.85	17.37	1.52	0.002	0.5	373	4	6	
128778	37.19	38.71	1.52	0.001	1.3	877	<2	8	
128782	39.93	40.23	0.30	0.001	0.3	857	8	4	
128779	43.28	44.35	1.07	<.001	<.3	44	10	5	
128780	82.91	84.43	1.52	0.007	1.6	2184	18	12	
128781	84.43	85.95	1.52	0.003	1.1	1591	9	13	

DDH98-6

Coordinates 1177S 11084E AZM: 170° Dip -60°

METERS

FROM	TO	REC	RQD	LITHOLOGY	FRAC/CA
0.00	3.96			OVERBURDEN	
3.96	5.18	65	0	GN-SL-SKARN Light pink-brown garnet-quartz skarn, minor epidote and calcite. Non-magnetic, trace Py, Fe-Oxides, malachite and Azurite on fractures @ 8.23 m Diss Py to 3%, trace Cpy, green qtz.	
9.75	11.28	95	28	MIXED GNS/PMS Light green colored mixed Garnet-Silica and Pyroxene skarn. Coarse Pyx @ 10.1 m, magnetite with Pyx. Blebby Py to 2%. Tr Cpy.	
11.28	17.37	86	0.1	PYX-MT-SKARN Dark grey-green Pyroxene-Magnetite skarn, med. grained Blotchy texture, some epidote, diss Py < 25%, Tr Cpy.	
17.37	26.52	91	0.56	GN-SL-SKARN Light to dark green transition zone from PMS. Qtz >> Gn. @20.7 m banding at 30 deg ca, minor epidote @21.9-23.4 Fractures parallel to ca @ 24.3-24.6 Azurite on fractures 0 deg >> 45 deg ca	
26.52	32.61	100	0.32	PYX-MT-SKARN Dark grey-green Pyroxene-Magnetite skarn, med. grained Magnetic, patches silicified, trace calcite, Py to 0.5%, Tr Cpy. @26.67 banding at 20 deg ca. @ 27.12 epidote patches @ 28.9 small Coarse Hbl-Plag pegmatite @ 31.85-32.0 Very broken core, Diss Py to 2-3%	BD 20
32.61	39.32	95	0.3	HBL-QTZ-DIORITE Coarse to very cg., dark grey to light grey and black Hbl-Plagioclase and quartz Hornblende-quartz-diorite. Good Hbl sections. Hbl to 1.5 cm by .5 cm. Coarsly pegmatitic in places. At 33.5 m quartz and calcite coated fractures 10 deg to ca. @ 38.1 m fractures 20 deg ca	
39.32	42.67	100	0.75	ALASKITE Light green med grained quartz and feldspar Alaskite. No mafic minerals. Graphic intergrowth of Qtz and feldspar. Trace Py. Fe-oxides on fracture parallel to ca. @ 42.0-42.36 yellow calcite veins in brecciated non-magnetic zone.	
42.67	44.81	100	0.68	QTZ-DIORITE Dark green grey very coarse grained and oophitic textured Hornblende-Plagioclase and Quartz diorite. Minor epidote and trace Cpy. No calcite or other alteration minerals. Strongly magnetic.	
44.81	47.24	100	0.86	ALASKITE Light green med grained quartz and feldspar Alaskite.	

AZ 98-6 ASSAY

ASSAY TAG	ASSAY FROM	METERS TO	METERS INTERVAL	Au Oz/Ton	Ag ppm	Cu ppm	As ppm	Bi ppm	Te ppm
128783	6.71	8.23	1.52	<.001	<.3	816	<2	<3	
128784	8.23	9.75	1.52	0.002	<.3	233	3	<3	
128785	9.75	11.28	1.52	0.001	<.3	328	<2	<3	
128786	11.28	12.80	1.52	0.001	<.3	331	<2	<3	
128787	12.80	14.33	1.52	0.001	0.3	333	3	<3	
128788	14.33	15.24	0.91	0.001	0.5	580	7	<3	
128789	23.47	24.99	1.52	<.001	0.3	689	<2	<3	
128790	24.99	26.52	1.52	<.001	<.3	456	<2	<3	
128791	41.45	42.37	0.91	<.001	<.3	48	<2	4	
128792	42.37	43.04	0.67	<.001	<.3	174	4	<3	
128793	43.04	44.81	1.77	<.001	<.3	166	<2	<3	

DDH98-7

COORDINATES 1115S 10980E ELEVATION 3680'
AZM: 020° Dip -60°

METERS

FROM TO

REC

RQD

LITHOLOGY

FRAC/CA

FROM	TO	REC	RQD	LITHOLOGY	FRAC/CA
0.00	5.18			OVERBURDEN	
5.18	11.89	65	0.15	AMYGDALOIDAL BASALT Medium to fine grained light to medium green basalt. Calcite -chlorite filled amygdules. Py to 0.5%, tr Cpy, sulphides common in amygdules. Some patchy brecciation with qtz-epidote -magnetite infilling brecciated basalt. Amygdules with white to green colour zoning. @ 9.14 m mm orange calcite veinlets @10.97 m A 3 mm rusty qtz & Py vein 20 deg ca. Malachite on fractures	
11.89	12.50	91	0.36	GN-SL-SKARN Pinkish brownQtz-Garnet skarn, fg. Amygdules still visible. Py <0.5%, tr Cpy. Minor epidote. Calcite vn @ 35 deg ca. 1 cm thick.	
12.50	29.26	90	0.08	AMYGDALOIDAL BASALT Medium to fine grained light to medium green colored amygdaloidal basalt. Amygdules elongated filled with quartz-calcite chlorite and some epidote. 15.24 m A 1 cm calcite vein 45 deg ca. 17.6 m calcite coated fractures 15 deg ca 18.2 m Thin (mm) calcite vein 45 deg ca 21.9 m 15 cm of skarn with calcite vein 45 deg ca. 26.5-28.0 very magnetic. 27.4 Amygdules filled with Qtz-epidote-magnetite and trace of Cpy. At 28.65 m patches of skarn in the amygdules.	
29.26	32.61	100	0.8	HBL-GRANITE Light grey, med gr,Hbl-Qtz-Feldspar granite. Pyrite to 0.5% associated with hbl phenos. Upper contact 90 deg ca, LC 85 deg ca. both contacts sharp. Some calcite veins and diss calcite in matrix.	
32.61	85.95	100	0.55	AMYGDALOIDAL BASALT Blotchy textured light to dark green amygdaloidal basalt Felted patchy actinolite present in patches between 35.6-37.1 m. Some amygdules are filled with garnet-quartz-epidote and calcite. 35.3 m calcite coated fractures @ 20-25 deg ca 36.27 m A 4 mm qtz vein 10 deg ca. 37.7 m calcite vn (mm) 15 deg ca 39.9-40.2 m Qtz garnet ep, chl filled amygdules 55.0 m 1 cm calcite vein 30 deg ca 60.30 m silver green amphibole actinolite. 68.42 m ribboned calcite vein (mm) 85 deg ca 68.88 m 2cm clay gouge with calcite veins 90 deg ca 72.54 m 15 cm shear quartz calcite veins and clay @ 60 deg ca	
85.95	86.11	98	0.5	APLITE DYKE Small fg quartz aplite dike.	
86.11	102.72	98	0.5	AMYGDALOIDAL BASALT as above.	

AZ 98-7 ASSAY

ASSAY	ASSAY	METERS	METERS	Au	Ag	Cu	As	Bi	Te
TAG	FROM	TO	INTERVAL	Oz/Ton	ppm	ppm	ppm	ppm	ppm
128794	29.26	31.09	1.83	<.001	<.3	27	<2	<3	0.5
128795	34.14	35.66	1.52	<.001	<.3	51	4	<3	0.2
128796	35.66	37.19	1.52	<.001	<.3	34	7	<3	0.5

DDH98-8

COORDINATES 1115S 10980E ELEVATION 3680'

AZM: 200° Dip -60°

METERS

FROM TO	REC	RQD	LITHOLOGY	FRAC/CA
0.00	13.72		OVERBURDEN (casing to 14.63 m)	
13.72	17.37	50	0.1 GN-SL-SKARN Weak Garnet-Silicate skarn in amygdaloidal basalt. Fine grained light brown-red. Fe-oxide stain, trace Cpy. 13.72-14.02 very broken.	
17.37	21.95	90	0.13 MIXED SKARN/BASALT Mixed skarn and amygdaloidal basalt. 17.7-17.98 lt red brn skarn 17.98-18.44 Amygdaloidal basalt 18.44-19.05 lt red-brn skarn 20.42 Calcite vn on slip surface 25 deg ca. Gn-qtz-calcite in amygdules 21.03-21.95 Light apple green (sericite ?) alteration. Calcite 1-2%, Py 1%	
21.95	48.46		AMYGDALOIDAL BASALT Med to dark green fine grained amygdaloidal basalt. Amygdules at 30 deg to 45 deg ca. Amygdules filled with qtz-calcite and minor epidote, sulphides. Areas of auto brecciated basalt with light grey green breccia matrix, commonly magnetic. Pyrite as clots to 1% locally. Trace Cpy.	
48.46	53.04		HBL-GRANITE Light grey fine grained hornblende granite. Some disseminated pyrite < 0.25%. Patchy CaCO ₃ alteration, some thin carbonate veins	
53.04	67.67		AMYGDALOIDAL BASALT Same as above 58.60-58.90 m Small shear zone with calcite veining @ 45 deg ca 60.65 m Weak banding & shearing @ 30 deg ca 62.17 m Grey-green ribboned quartz vein with 1% Pyrite 63.39 m Malachite on fractures, diss Cpy to <0.05% 66.14-67.66 m Patchy amygdules and felted actinolite patches 69.49 m Quartz-calcite veining @ 45 deg ca.	BD,SH 30
67.67	70.71		HBL GRANITE As above, rare CaCO ₃ alteration	
70.71	76.81		AMYGDALOIDAL BASALT as above with a few v narrow granite dykes Small calcite veins @ 45 deg ca	
76.81	77.57		HBL GRANITE As above, calcite filled crackle bx at lower contact.	
77.57	100.28		AMYGDALOIDAL BASALT Same as above 83.82 m A 2 cm wispy calcite vein with hematite @ 45 deg ca. 85.03 m Epidote patches and in amygdules. 87.17 Magnetite in grey black auto brecciated basalt 87.46-90.52 m Fine grained felted actinolite in patches. Soft, trace CaCO ₃ and trace Py.	

DDH98-8

COORDINATES 1115S 10980E ELEVATION 3680'

AZM: 200° Dip -60°

METERS

FROM TO

REC

RQD

LITHOLOGY

FRAC/CA

88.0 - 88.69 Blebs of Cpy <0.025% in amygdules, no CaCo₃

AZ 89-8 ASSAY

ASSAY TAG	ASSAY FROM	METERS TO	METERS INTERVAL	Au Oz/Ton	Ag ppm	Cu ppm	As ppm	Bi ppm	Te ppm
128797	17.98	18.90	0.91	<.001	<.3	51	<2	3	0.2
128798	18.90	20.42	1.52	0.004	<.3	46	4	<3	0.3
128799	20.42	22.10	1.68	<.001	<.3	302	3	<3	0.3
128800	22.10	23.47	1.37	<.001	<.3	483	6	<3	<.2
128801	23.47	24.99	1.52	<.001	<.3	245	<2	<3	0.2
128802	24.99	26.52	1.52	<.001	<.3	207	<2	<3	<.2
128803	26.52	28.04	1.52	<.001	<.3	186	7	<3	<.2
128804	28.04	29.57	1.52	<.001	<.3	334	2	<3	<.2
128805	29.57	31.09	1.52	<.001	<.3	142	2	<3	0.2
128806	31.09	32.61	1.52	<.001	0.5	841	7	<3	<.2
128807	32.61	34.14	1.52	<.001	0.3	513	2	<3	<.2
128808	34.14	35.66	1.52	<.001	0.5	585	3	<3	0.5
128810	35.66	37.19	1.52	<.001	0.5	678	<2	<3	<.2
128811	58.60	58.90	0.30	0.001	<.3	54	6	<3	0.5
128812	83.82	83.97	0.15	<.001	<.3	121	<2	<3	<.2
128813	83.97	84.43	0.46	<.001	<.3	58	<2	<3	0.2
128814	84.43	85.95	1.52	<.001	<.3	417	<2	<3	<.2
128815	85.95	87.48	1.52	<.001	<.3	456	<2	<3	<.2
128816	87.48	89.00	1.52	<.001	<.3	495	<2	<3	<.2
128817	89.00	90.53	1.52	<.001	<.3	126	<2	<3	<.2

APPENDIX B
ACME ANALYTICAL LABORATORIES LTD
Certificates of Analyses

Files
9801922
9802199
9802267
9802340
9801922R
9802199R



(ISO 9002 Accredited Co.)

GEOCHEMICAL ANALYSIS CERTIFICATE

Aurum Geological Consultants Inc. PROJECT 14 File # 9801922

P.O. Box 4367, Whitehorse YT Y1A 3T5 Submitted by: Al Doherty

SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Sn	Y	Nb	Be	Sc
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
1100S 10975E	<2	66	<5	93	<.5	54	37	1937	7.75	<5	<10	<4	<2	180	.8	5	<5	343	4.02	.080	12	113	5.47	118	.47	7.66	3.03	.47	<4	10	2	24	<2	<1	39
1200S 11090E A	<2	882	<5	73	1.1	14	47	1405	6.49	<5	<10	<4	<2	493	1.0	<5	<5	575	10.26	.021	12	4	3.30	104	.68	9.97	.96	.43	<4	69	<2	17	<2	<1	30
1200S 11090E B	<2	393	<5	39	<.5	12	5	3202	13.97	7	<10	<4	3	10	1.0	<5	<5	81	21.04	.026	17	14	.56	9	.07	2.61	.02	.01	89	17	<2	26	2	<1	2
1200S 11090E C	<2	1865	<5	102	.6	70	47	1304	7.49	<5	<10	<4	<2	460	1.4	8	<5	371	7.97	.042	14	74	4.65	140	.51	9.50	1.53	.47	<4	19	2	14	<2	<1	30
1200S 11090E D	8	572	12	171	.5	44	41	4844	7.99	6	<10	<4	3	23	1.2	5	<5	99	15.78	.045	15	387	4.20	166	.15	1.91	.08	.08	<4	21	<2	13	<2	<1	15
RE 1200S 11090E D	7	574	<5	152	.6	45	40	4987	8.28	6	<10	<4	<2	23	1.3	<5	<5	100	16.42	.047	12	390	4.37	44	.15	1.96	.08	.09	<4	23	2	14	<2	<1	15
STANDARD CT3	25	61	39	181	5.3	39	12	931	3.97	57	20	<4	25	238	23.5	24	23	129	1.57	.098	28	252	.92	1037	.37	7.57	1.81	1.88	30	45	20	17	17	4	10
STANDARD G-2	<2	5	19	55	<.5	7	5	728	2.36	<5	<10	<4	8	776	<.4	<5	7	54	2.88	.094	30	68	.69	1028	.24	8.97	2.67	2.94	<4	8	<2	19	18	1	6

ICP - .250 GRAM SAMPLE IS DIGESTED WITH 10ML HClO4-HNO3-HCL-HF AT 200 DEG. C TO FUMING AND IS DILUTED TO 10 ML WITH DILUTED AQUA REGIA. THIS LEACH IS PARTIAL FOR MAGNETITE, CHROMITE, BARITE, OXIDES OF AL, ZR & MN AND MASSIVE SULFIDE SAMPLES. AS, CR, SB, AU SUBJECT TO LOSS BY VOLATILIZATION DURING HClO4 FUMING.

- SAMPLE TYPE: ROCK Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: MAY 29 1998 DATE REPORT MAILED: *June 2/98* SIGNED BY: *C. Leong* ..D. TOYE, C.LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

GEOCHEMICAL ANALYSIS CERTIFICATE



Aurum Geological Consultants Inc. PROJECT 14 File # 9802199

P.O. Box 4367, Whitehorse YT Y1A 3T5 Submitted by: A. Doherty

SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Tl	Hg	Au**
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	%	%	%	%	ppm	ppm	ppm	oz/t
128776	1	721	50	52	1.6	11	41	321	5.46	18	<8	<2	<2	559	<.2	<3	10	293	7.63	<.001	<1	3	.62	24	.22	<3	9.76	.81	.09	<2	<5	2	.001
128777	1	373	7	31	.5	9	28	290	3.46	4	<8	<2	<2	495	<.2	<3	6	226	7.72	.003	<1	2	.58	17	.24	3	9.51	.64	.10	3	<5	2	.002
128778	1	877	25	49	1.3	11	18	251	1.76	<2	<8	<2	<2	449	<.2	<3	8	214	8.76	.001	1	3	.40	12	.18	3	10.34	.41	.05	<2	<5	1	.001
128779	1	44	4	46	<.3	32	30	442	4.25	10	<8	<2	<2	363	<.2	<3	5	147	6.07	.016	1	63	1.77	30	.10	4	7.69	.44	.10	<2	<5	1	<.001
RE 128779	1	42	<3	46	<.3	30	29	422	4.14	5	<8	<2	<2	351	<.2	<3	<3	143	5.82	.013	1	63	1.71	28	.09	3	7.42	.43	.10	<2	<5	1	<.001
128780	<1	2184	9	73	1.6	45	39	389	9.13	18	<8	<2	<2	347	<.2	<3	12	493	5.21	<.001	<1	39	1.42	34	.25	4	6.83	.44	.27	<2	<5	1	.007
128781	1	1591	3	51	1.1	18	31	621	4.54	9	<8	<2	<2	314	<.2	<3	13	286	6.31	<.001	<1	4	.95	24	.23	<3	6.45	.38	.17	2	<5	2	.003
128782	3	857	5	75	.3	41	38	993	3.01	8	<8	<2	<2	209	<.2	<3	4	163	9.55	.007	2	4	1.00	13	.02	7	4.86	.17	.15	<2	<5	<1	<.001

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL.
ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB
- SAMPLE TYPE: CORE AU** BY FIRE ASSAY FROM 1 A.T. SAMPLE.
Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: JUN 15 1998 DATE REPORT MAILED: *Jun 18/98* SIGNED BY: *[Signature]* D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS



GEOCHEMICAL ANALYSIS CERTIFICATE

Aurum Geological Consultants Inc. PROJECT LIBERTY MINERALS AZ File # 9802267
 P.O. Box 4367, Whitehorse YT Y1A 3T5 Submitted by: Al Doherty

SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Tl	Hg	Au**
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	%	%	%	%	ppm	ppm	ppm	oz/t
128783	3	816	<3	105	<3	42	32	1680	3.26	<2	<8	<2	<2	24	.8	<3	<3	121	7.86	.047	3	11	.49	7	.12	<3	1.58	.01	.01	<2	<5	<1	<.001
128784	4	233	<3	40	<3	17	33	1180	2.91	3	<8	<2	<2	61	.5	<3	<3	79	6.19	.043	3	11	.40	8	.10	<3	1.51	.05	.05	3	<5	<1	.002
128785	53	328	<3	25	<3	17	19	791	3.10	<2	<8	<2	<2	115	.7	<3	<3	96	5.08	.042	2	12	.33	5	.11	<3	2.47	.19	.04	6	<5	1	.001
128786	2	331	<3	42	<3	14	15	469	1.44	<2	<8	<2	<2	305	.6	<3	<3	131	6.02	.017	2	3	.77	17	.23	<3	7.07	.51	.08	2	<5	1	.001
128787	1	333	<3	38	.3	15	24	299	3.79	3	<8	<2	<2	505	.4	<3	<3	218	6.03	.006	2	4	.50	18	.14	<3	8.28	.96	.06	<2	<5	1	.001
128788	1	580	<3	43	.5	15	33	319	3.35	7	<8	<2	<2	478	1.1	<3	<3	194	5.70	.008	1	4	.59	23	.14	<3	7.82	.95	.07	<2	<5	<1	.001
128789	1	689	<3	44	.3	16	24	299	4.64	<2	<8	<2	<2	428	1.4	<3	<3	363	5.77	.009	1	4	.59	15	.16	<3	8.04	.74	.07	<2	<5	<1	.001
128790	1	456	<3	37	.3	17	26	318	5.07	<2	<8	<2	<2	466	.7	<3	<3	347	6.12	.011	1	4	.69	20	.14	<3	8.79	.82	.07	<2	<5	<1	.001
RE 128790	1	450	<3	35	<3	15	26	318	5.08	2	<8	<2	<2	465	1.2	<3	<3	348	6.11	.012	1	3	.69	18	.14	<3	8.69	.81	.07	2	<5	2	.002
RRE 128790	1	479	<3	37	.3	15	26	312	5.21	<2	<8	<2	<2	467	1.2	<3	3	348	6.07	.010	1	2	.69	15	.14	<3	8.67	.82	.07	<2	<5	<1	.001
128791	50	48	<3	16	<3	7	8	1101	1.73	<2	<8	<2	2	20	<.2	<3	4	54	6.11	.028	4	16	.16	<1	.09	<3	1.34	.01	<.01	3	<5	<1	<.001
128792	7	174	<3	61	<3	115	51	889	5.70	4	<8	<2	<2	43	.7	<3	<3	207	2.48	.020	1	103	2.47	12	.23	<3	1.89	.22	.05	<2	<5	<1	<.001
128793	2	166	<3	34	<3	37	20	364	2.91	<2	<8	<2	<2	286	.4	<3	<3	169	4.62	.029	3	35	1.00	12	.13	3	5.79	.49	.08	<2	<5	1	.001
STANDARD C3/AU-1	26	69	32	174	5.2	37	11	792	3.33	54	18	2	22	31	23.6	16	20	81	.56	.088	18	174	.61	157	.09	17	1.97	.04	.16	16	<5	<1	.100
STANDARD G-2	1	5	<3	42	<3	8	4	497	1.84	<2	<8	<2	4	68	.2	<3	<3	37	.59	.089	7	68	.56	210	.12	<3	.91	.07	.44	2	<5	<1	<.001

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
 THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL.
 ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB
 - SAMPLE TYPE: CORE AU** BY FIRE ASSAY FROM 1 A.T. SAMPLE.
Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: JUN 17 1998 DATE REPORT MAILED: *June 26/98* SIGNED BY: *C. Leong* D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

(ISO 9002 Accredited Co.)



GEOCHEMICAL ICP ANALYSIS

Aurum Geological Consultants Inc. PROJECT 14 File # 9801922R2
P.O. Box 4367, Whitehorse YT Y1A 3T5



SAMPLE#	Te ppm
1100S 10975E	<.2
1200S 11090E A	<.2
1200S 11090E B	<.2
1200S 11090E C	<.2
1200S 11090E D	.3
RE 1200S 11090E D	<.2

.500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 deg.C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
ANALYSIS BY HYDRIDE ICP. -
- SAMPLE TYPE: ROCK PULP Samples beginning 'RE' are Reruns and 'RRE' are Rejected Reruns.

DATE RECEIVED: JUN 22 1998 DATE REPORT MAILED: *June 26/98* SIGNED BY: *C. Long* D. TOYE, C.LEONG, J. WANG; CERTIFIED B.C. ASSAYERS



GEOCHEMICAL ICP ANALYSIS



Aurum Geological Consultants Inc. PROJECT 14 File # 9802199R
P.O. Box 4367, Whitehorse YT Y1A 3T5

SAMPLE#	Te ppm
128776	.3
128777	.4
128778	.7
128779	.3
RE 128779	.2
128780	.2
128781	.3
128782	.6
STANDARD C3	1.1
STANDARD G-2	.5

.500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 deg.C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.

ANALYSIS BY HYDRIDE ICP. -

- SAMPLE TYPE: CORE PULP Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: JUN 22 1998 DATE REPORT MAILED: *June 26/98* SIGNED BY: *C. Leong* D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS