MAP NO.: 115 G 14

ASSESSMENT REPORT X
PROSPECTUS
CONFIDENTIAL X
OPEN FILE

DOCUMENT NO: 093021
MINING DISTRICT: WHITEHORSE
TYPE OF WORK: SUMMARY

REPORT FILED UNDER: RON BURDAHL

DATE PERFORMED: APRIL 26, 1991

DATE FILED: APRIL 8, 1992

LOCATION: **LAT.:** 61°48'N

AREA: TINCUP LAKE

LONG.: 139°25'W

VALUE $: 3,900

CLAIM NAME & NO.:
JIB 1-8 (YB27696-703)
JSB 1-10 (YB27789-798)
OHK 1-8 (YB27799-806)
MPS 1-13 (YB27845-857)

WORK DONE BY: ROGER HULSTEIN

WORK DONE FOR: RON BERDAHL

DATE TO GOOD STANDING:

REMARKS: 115G 108 PROJECT AREA COVERS THRUST FAULT CONTACT BETWEEN ACCRETED WINDY-MCKINLEY TERRANE AND NISLING TERRANE. MINERALIZATION HAS BEEN LOCATED IN GRAPHITIC SHEAR ZONES, QUARTZ-CARBONATE VEINS, AND SILICIFIED SHALES. SULPHIDE MINERALIZATION CONSISTING OF GALENA AND SPHALERITE OCCURS IN QUARTZ-CARBONATE FLOAT. SHEAR ZONES ARE CLAY ALTERED WITH FORMATION OF MARIPOSITE. PYRITE OCCURS AS BLEBS. 221 ROCK, SOIL AND SILT SAMPLES WERE COLLECTED IN 1990. THIS REPORT IS A SUMMARY REPORT OF THE 1990 WORK.

Indian and Northern Affairs Canada
Affaires indiennes et du Nord Canada

M.R. file no.

R.M.M.R. file no.

Date forwarded March 1992
31

TRANSMITTAL FORM

From ▶ Mining Recorder at: Whitehorse

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

For action are:

- ☐ NEW APPLICATION FOR PLACER LEASE TO PROSPECT — Name
- ☐ RENEWAL APPLICATION PLACER LEASE TO PROSPECT — Name — Lease no.
- ☐ AFFIDAVIT OF EXPENDITURE ON PLACER LEASE — Name — Lease no.
- ☐ SECURITY DEPOSIT
- ☐ FINANCIAL ABILITY
- ☐ ASSIGNMENT OF PLACER LEASE NO. — From — To
- ☐ GROUPING APPLICATION UNDER SEC. 52(2) PLACER MINING ACT. — Owner
- ☐ DIAMOND DRILL LOGS — Claims — Claim sheet no.
- ☑ QUARTZ ASSESSMENT REPORT — Claims: MPS 1-13 — Claim sheet no.: 115-G-14
  - Type of report: Summary Report
  - Submitted by: Ron Berdahl
  - Cls. work performed on: JIB, JSB, OHK, MPS
  - $ req. for ren. application: 3900.00

OFFICE OF THE REGIONAL MANAGER MINERAL RIGHTS MAR 31 1992 WHITEHORSE YUKON TERRITORY

M Southwick
Signature

REPLY ACTION

Date returned

093021

Signature

76 (6-86)

SUMMARY REPORT ON THE TOSH PROJECT

Whitehorse M.D., Y.T.

Claims:

JIB 1-8	(YB27696-703)
JSB 1-10	(YB27789-798)
OHK 1-8	(YB27799-806)
MPS 1-13	(YB27845-457)

Location:

1. 265 km northwest of Whitehorse, Y.T.
2. NTS Sheet 115G/14
3. Latitude 61°48'
   Longitude 139°25'

For:

Mr. Ron Berdahl
P.O. Box 5664
Whitehorse, Yukon
Y1A 5L5

By:

Roger Hulstein, B.Sc., FGAC
Aurum Geological Consultants Inc.
P.O. Box 4367
Whitehorse, Yukon Territory
Y1A 3T5

April 26, 1991

TABLE OF CONTENTS

FIGURES

SUMMARY

The Tosh Project consists of 39 claims in four claim blocks located in the Ruby Range 265 kilometers northwest of Whitehorse, Yukon Territory. It is accessible by float plane or helicopter. The Alaska Highway passes within approximately 18 kilometers of the project area. The area became an attractive exploration area following the release of anomalous geochemical stream sediment data in 1986 by the Geological Survey of Canada.

The 1990 work program consisted of prospecting, geological mapping, and geochemical sampling, on a reconnaissance scale followed by claim staking. This work identified a previously unexplored area that is favorable for hosting gold deposits and possibly massive sulphide deposits.

The project area covers the thrust fault contact between the accreted Windy-McKinley Terrane and the Nisling Terrane, displaced ancestral North America continental margin. Rocks of the Windy McKinley Terrane consist of Devonian - Cretaceous White River Group quartz - chlorite - sericite schists, greenschist and limestone, former oceanic sedimentary and volcanic rocks. Nisling Terrane rocks consist of Cambrian - Devonian quartz biotite schists and quartz - feldspar - biotite gneiss. These rocks have been intruded by small bodies of Triassic diorite - granodiorite and a Tertiary alaskite body.

Mineralization has been found in; graphitic shear zones; quartz - carbonate veins; and silicified shales. The most significant mineralization discovered to date consists of quartz - carbonate veins and stockwork mineralized with pyrite and arsenopyrite in graphitic shear zones with mariposite alteration. Rocks in the shear zones are often strongly sericitized and clay altered. Float containing sphalerite and galena in quartz - carbonate veins have also been found on the properties. It is possible that the oceanic sediments and volcanics of the Windy McKinley Terrane are favorable host rocks for massive sulphide deposits.

Geochemical results include 6830 ppb gold from a grab rock sample collected from a mineralized graphitic shear zone located on Malachite Creek. A rock chip sample collected from the same zone returned 5347 ppb gold over a one meter width while an adjacent sample returned 808 ppb gold. Samples of siliceous shale collected on the JSB claims returned up to 1560 ppb gold. The majority of the samples anomalous in gold also returned anomalous values for silver, lead, zinc, cadmium and arsenic.

Anomalous gold values have been found in stream sediments and soil samples adjacent to known mineralization, however more exploration work is required to fully explain most anomalies. Large areas underlain by similar lithologies remain unexplored between and adjacent to the four separate claim blocks.

Based on the 1990 results, continued exploration consisting of a regional stream sediment survey, prospecting, geological mapping, geochemical sampling and additional claim staking is warranted and recommended.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF APPENDICES

INTRODUCTION

This report was prepared at the request of Mr. Ron Berdahl, owner of the four claim blocks that comprise the Tosh Project. Its purpose is to assess the economic potential of the properties, and adjacent area, through a summary of field work carried out in 1990, and from information obtained from published reports and maps.

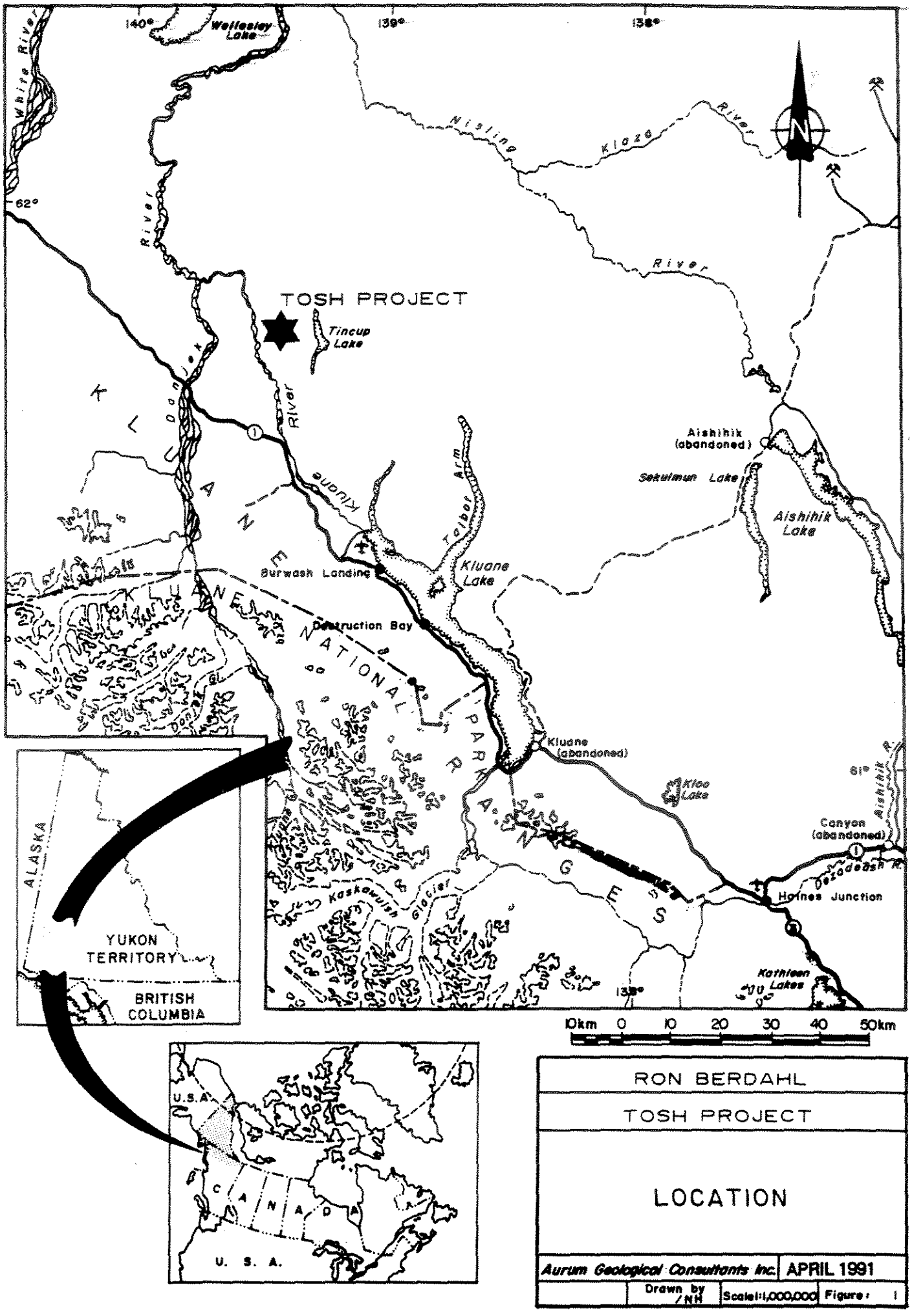
LOCATION AND ACCESS

The four separate claim blocks are located in the Ruby Range, 265 kilometers northwest of Whitehorse, Yukon Territory (Figure 1). The nearest all weather road, the Alaska Highway (#1), is located approximately 18 kilometers to the southwest of the properties. The greatest distance between the claim blocks is 13 kilometers in an east-west direction. Toshingermann Lakes are located in the approximate centre of the area of interest at 61°50'N latitude and 139°25'W longitude. The claims are located on NTS map sheets 115G/13 and 115G/14.

Access to the project area in 1990 was by float plane based at Mile 1118 on the Alaska Highway, located 20 kilometers to the south. Toshingermann Lakes, Kluane River and Tincup Lake were utilized as landing sites in 1990. Alternatively helicopters based in Haines Junction, 150 kilometers to the southeast could be used. According to the Department of Indian and Northern Affairs claim maps a tote road is found in the Kluane River valley adjacent to the JIB, JSB and OHK claim groups. However the tote road is in very poor condition and is presently overgrown and impassable.

PHYSIOGRAPHY, CLIMATE AND VEGETATION

The Tosh Project is located in the northwestern end of the Ruby Range, part of the Kluane Plateau (Geological Survey of Canada, map 1701A). Elevations in the area range from 670 to 1950 meters above sea level and topography is rugged to steep. Hills, local cliffs, and felsenmeer covered ridges are cut by glaciated valleys up to two kilometers wide. The northerly flowing Kluane River forms a broad braided river valley. Toshingermann and Tincup Lakes occupy similar broad glacial valleys.



RON BERDAHL			
TOSH PROJECT			
LOCATION			
Aurum Geological Consultants Inc.		APRIL 1991	
	Drawn by NH	Scale 1:1,000,000	Figure: 1

The climate in the Tosh Project area is variable, summers are warm and dry with afternoon rainstorms common, winters are cold. Precipitation amounts to about 30 cm annually.

Vegetation at this latitude is stunted except along stream valleys. White spruce is the common variety of coniferous tree; black spruce, poplar and balsam are widespread. Treeline is generally below 1220 meter (4000 feet) elevation. Scrub willow, alder and dwarf birch grow above treeline to about 1675 meter (5500 feet) elevation and above this only mosses, lichens and alpine flowers are found.

PROPERTY

The property consists of 39 unsurveyed two post mineral claims covering approximately 814 hectares (2005 acres), in four separate claim blocks, staked in accordance with the Yukon Quartz Mining Act (Figure 2). The claims were staked by Mr. Ron Berdahl between June 30 and September 7, 1990. Claim data are as follows:

CLAIM NAME	GRANT No.	DATE RECORDED	EXPIRY DATE
JIB 1-8	(YB27696-703)	July 23, 1990	July 23, 1991
JSB 1-10	(YB27789-798)	Aug. 14, 1991	Aug. 14, 1991
OHK 1-8	(YB27799-806)	Aug. 14, 1991	Aug. 14, 1991
MPS 1-13	(YB27845-457)	Sept.07, 1991	Sept.07, 1991

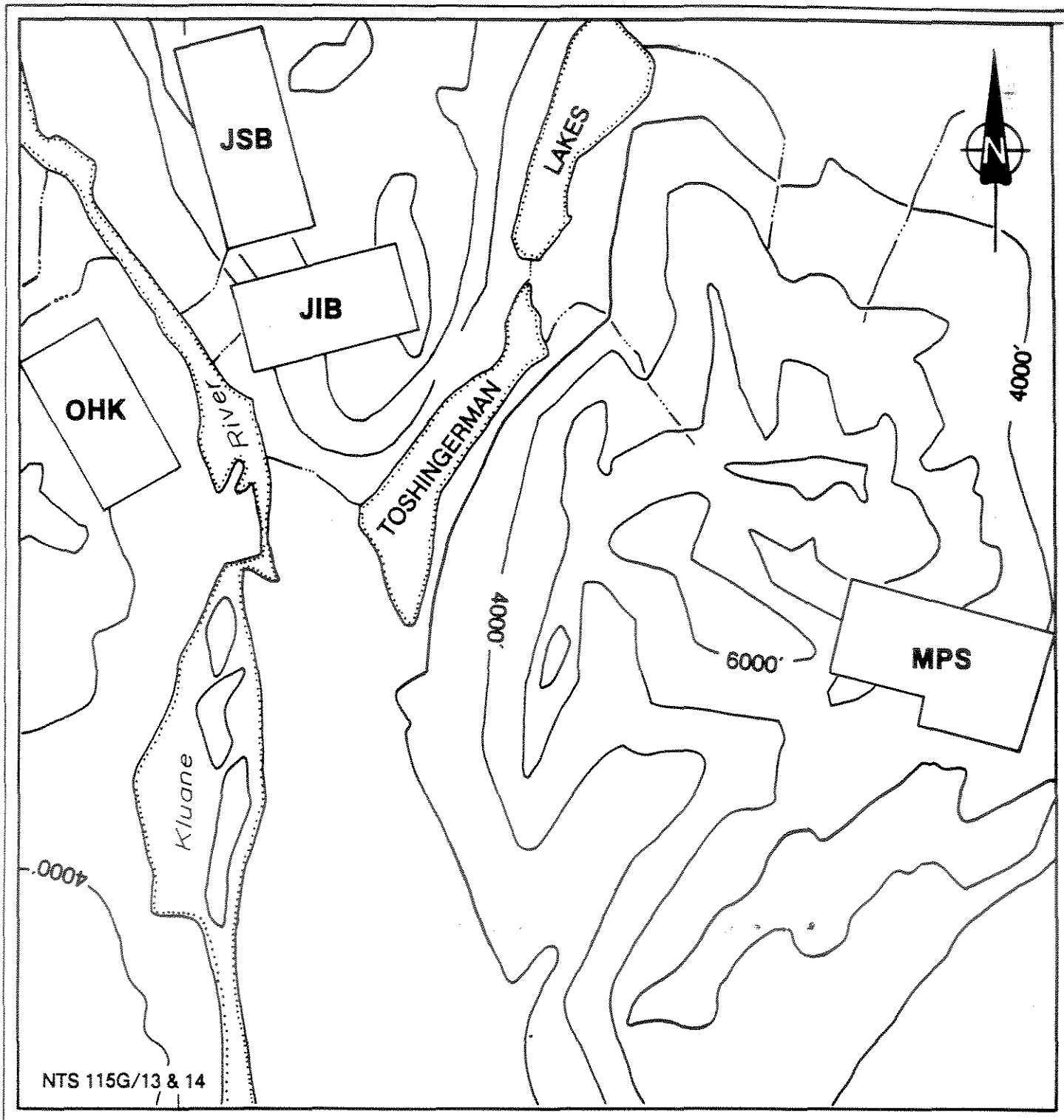
HISTORY

No records of mineral occurrences or prior staking in the Tosh project area exist prior to Ron Berdahl's 1990 discoveries. No signs of previous exploration work has been found on the properties to date. The nearest known mineral occurrence is of asbestos fibre in ultramafic rocks 10 kilometers to the south of the MPS Claims.

The mineral potential of the area came to Ron Berdahl's attention when he noted anomalous stream sediment geochemical data reported in Geological Survey of Canada Open File 1362. Ground follow-up work by Ron Berdahl located mineralized fault structures and skarns. The claims were staked based

on the mineralized structures and anomalous results from follow up soil and stream sediment sampling. Initial work was partly paid for by Noranda Exploration Company, Limited and Placer Dome Inc.

At present, there are no Native land claims, exploration companies or persons active in the area.



LEGEND

JIB — Claim Group and Name

creek

3500' elevation contour

Note: adapted from D.I.A.N.D. map sheet

0 1 2 3
Kilometres

RON BERDAHL

TOSH PROJECT

CLAIM MAP

Aurum Geological Consultants Inc. | **April 1991**

DRAWN BY NH | SCALE 1:60,000 | FIGURE : 2

GEOLOGY

Regional Geology

The Tosh project area is located within the accreted Windy McKinley Terrane (Wheeler and McFeely, 1987) part of the intermontane super terrane made up of terranes amalgamated by latest Triassic time and accreted to ancestral North America in the Jurassic. The terrane is composed of mixed Devonian to Cretaceous oceanic sedimentary and volcanic rocks cut by late Cretaceous to Tertiary intrusions. The Windy Mckinley Terrane is thrust over Cambrian - Devonian rocks of the Nisling Terrane. The Nisling Terrane is displaced ancestral North America continental margin. To the southwest the Windy Mckinley Terrane is bounded by the Shakwak Fault, a major fault believed to have at least 300 kilometers of relative (dextral ?) movement.

Property Geology

The oldest rocks exposed in the project area (Figure 3) are Cambrian - Devonian quartz-biotite schists, in places carrying garnet, quartz-feldspar-biotite gneiss, amphibolite and minor recrystallized limestone (map unit CDN). Rocks of this unit are exposed in a northwest trending belt approximately three kilometers wide between Tincup and Toshingermann Lakes and underlie the JIB and JSB claims, and all but the south corner of the MPS claims. Fault contacts have been mapped by Ron Berdahl along the southern contact of this unit on the MPS claims.

The most common rock unit found underlying the properties are Devonian - Cretaceous White River Group (map unit DKWR) quartz-chlorite-sericite schists, epidote-actinolite greenschist and limestone. According to Muller (1965) quartzite, slate, quartz-mica schist are found within the White River Group.

Recrystallized limestone bands and bodies of the White River Group (map unit DKWRc) are exposed within the White River schists and associated rocks. This unit is exposed in the central portion of the MPS claims and south of a Tertiary alaskite body located east of Tincup Lake.

The above units are intruded by small bodies of diorite - granodiorite (map

unit Tgd) that are probably part of the Ruby Range batholith exposed approximately 20 kilometers to the east.

The youngest rocks found on the property belong to a Tertiary high level alaskite body (map unit ETqB) exposed east of Tincup Lake. The alaskite is yellowish-orange and contains smoky quartz.

The dominant structural fabric parallels the northwest trend of the Cordillera. The deformation history of the metamorphic rocks is complex. Limestone beds serve as local marker units and sometimes display bedding features.

Northwest trending fault structures or shear zones, up to 15 meters wide or wider, have been traced by Ron Berdahl for over distances of 3000 to 5000 meters. These zones are commonly graphitic, and may include mariposite and argillic altered rocks, plus siderite and/or quartz-carbonate veining. Exposures of these recessive zones are generally restricted to steep slopes and stream cuts.

MINERALIZATION

Mineralization has been found in: graphite shear zones; quartz-carbonate veins cutting limestone; and silicified shales.

The most significant mineralization discovered to date is adjacent to Malachite Creek, on a steep west facing slope, on the JIB claims. Prospecting located quartz - carbonate veins and stockwork mineralized with pyrite and arsenopyrite in graphitic shear zones and zones of mariposite alteration. Locally mineralized rocks are limonite and manganese coated and stained. Rocks in the shear zones are often strongly sericitized and clay altered to the point where the original rock textures have been destroyed.

Similar mineralization hosted in graphitic shear zones has been located on the other claim groups. On the OHK claim group, pyritic, graphitic shear zones cut White River Group quartz - chlorite - sericite schist showing little adjacent alteration. Sphalerite, pyrite bearing float was found near a graphitic shear zone.

A strong graphitic shear zone and mariposite altered float are found on the JSB claims. Mineralization in this shear zone consists of pyrite blebs in white quartz in red clay. One area on the JSB claims contains rusty weathering quartz - biotite schist that is brecciated, silicified, sericitized and has a porous boxwork texture implying a weathered out sulphide matrix.

Mineralization on the MPS claim group is found in shear zones containing pyritic quartz veins and stockworks. The shears are presumed to form a lithological contact between White River Group rocks to the south and Nisling Terrane rocks on the north. The shear is filled with clay and fractured altered schist. A shear zone and adjacent mariposite alteration, exposed along Thirtytwo Creek, contains up to 5% pyrite. Within the MPS claim group float of non-mineralized epidote - garnet skarn were found adjacent to small diorite bodies in a faulted/sheared area.

East of Tincup Lake strong northwest trending, unmineralized strongly clay altered, shear/fault zones cut an alaskite body. Immediately south of the alaskite body a quartz carbonate vein up to 0.75 meters wide contains minor galena.

GEOCHEMISTRY

A total of 104 rock samples, 117 soil and stream sediment samples (221 samples of all types) were collected in the Tosh project area in 1990. All samples were analyzed for total gold and silver content and 29 additional elements by ICP analysis. Results are shown on Figure 3. A list of significant samples and analytical results are included in the appendices.

Rock Samples

Rock samples from a sulphide bearing shear zone on the JIB claims, exposed in Malachite Creek, returned the highest value for gold, 6830 ppb (sample #140036). A 0.75 meter chip sample of quartz carbonate vein containing minor galena, located east of Tincup Lake, returned the highest value for silver, 401.9 g/t, plus anomalous values for gold (899 ppb), lead (1.47%), and zinc (10.30%). Lead, cadmium, and zinc values are locally highly anomalous and correlate with samples anomalous for gold, silver and arsenic. Rock samples collected on the JSB claims returned values up to 3330 ppm lead, 24.9 ppm cadmium, and 2030 ppm zinc (sample #140029) plus anomalous values for gold (530 ppb), silver (8.8 ppm) and arsenic (23,074). Overall higher anomalous values appear to be related to increased sulphide content.

Numerous samples from graphitic shear zones on the JIB and JSB claims, containing variable amounts of sulphides, returned highly anomalous values. A rock chip sample (#139718) collected near sample #140036 (6830 ppb gold), on Malachite Creek, returned 5347 ppb gold, 2.7 ppm silver, and 3921 ppm arsenic over a 1.0 meter width. An adjacent sample (#R139719) returned 808 ppb gold, 8.5 ppm silver, and 5971 ppm arsenic over a 1.0 meter width. Approximately 700 meters downslope on the same creek a grab sample (#139722) returned 3706 ppb gold, 3.6 ppm silver and 4360 ppm arsenic. A sample (#140063) of rusty weathering grey-green siliceous intrusive(?), containing 3% pyrite as blebs, collected further downslope of the above grab sample, returned 620 ppb gold, 0.8 ppm silver and 4044 ppm arsenic.

Three rock samples collected on the JSB claims returned between 350 and 1560 ppb gold. Samples consisted of locally rusty weathering siliceous shales containing up to 10% combined pyrite and arsenopyrite. In addition to 1560 ppb gold sample #140060 returned 98.7 ppm silver and 2977 ppm arsenic.

Rock samples quartz vein material, containing pyrite +/- arsenopyrite, collected on the MPS claims returned up to 1294 ppb gold, 0.9 ppm silver, and 5120 ppm arsenic (#OG11-063) over a 0.30 width. Veins are located within or near strong northwest trending shear zones

Stream Sediment Samples

Regional stream sediment sampling on the JSB claims, by the Geological Survey of Canada (1986), returned anomalous values between the 95th and 98th percentile for silver, arsenic, lead, zinc, and antimony, out of a population of 1000 samples. Results included; up to 41 ppb gold, 0.5 ppm silver, 22 ppm arsenic, 20 ppm lead, 198 ppm zinc and 6.7 ppm antimony.

Highly anomalous stream sediment samples from streams draining the JIB, JSB and MPS claim blocks returned up to 302 ppb gold (#OG77 on the MPS claims). Anomalous stream sediment samples on the JSB and JIB claims are explained by mineralization found in 1990.

Soil samples

Soil samples returned anomalous values from samples collected in and over northwest trending shear zones on the MPS claims. Values ranged up to 45 ppb gold, 1.2 ppm silver and 243 ppm arsenic. Shear zone material consisted of fractured rocks and clay.

CONCLUSIONS AND RECOMMENDATIONS

Exploration carried out by R. Berdahl in 1990 has identified a new, previously unexplored, area that is favorable for hosting gold and possibly volcanogenic massive sulphide deposits. Although work has been directed towards exploring for gold deposits, it is thought that the oceanic sediments and volcanics of the Windy McKinley Terrane are potential host rocks for massive sulphide deposits.

The Tosh Project area covers the Windy McKinley - Nisling Terrane boundary. Strong shears, locally graphitic and mineralized, and intrusive bodies have been mapped along this boundary. Sulphide mineralization including galena, sphalerite, arsenopyrite, and pyrite is found in graphitic shears, quartz and quartz - carbonate veins and stockworks, and siliceous shales.

The most significant mineralization found to date is in or adjacent to north and northwest trending fault/shear zones that may be related to the thrust fault contact between the Windy McKinley - Nisling terranes.

Prospecting, mapping and geochemical sampling carried out in 1990 returned very encouraging results. Geochemical results include a chip sample of quartz - carbonate stockwork in sheared schist that returned up to 5347 ppm gold over a one meter width. Grab samples of siliceous shale returned 1560 ppb gold while a 0.76 meter wide chip sample of quartz - carbonate vein cutting limestone returned 899 ppb gold and 401.9 g/t silver. Samples of all types (rock, soil, stream sediment) anomalous in gold commonly returned anomalous values for silver, arsenic, lead, zinc and cadmium.

Further exploration work is required to fully explain and evaluate the known gold anomalies, plus explore the unexplored portions of the project area for gold and massive sulphide deposits. Therefore the following is recommended:

1. A regional stream sediment sampling program should be carried out over the Windy McKinley - Nisling Terrane boundary and the Windy McKinley Terrane.

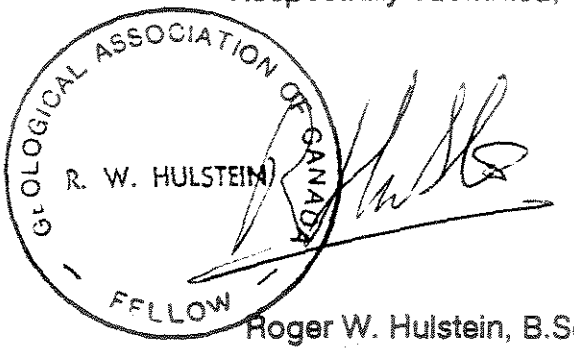
2. Exploration consisting of prospecting, geological mapping (1:5000 scale) and geochemical rock and soil geochemistry should be carried out on all four of the properties.

3. Known areas, or areas generated by recommendation #1, that have significant gold anomalies, or other anomalous elements, should be geologically mapped and geochemically sampled in detail (1:500 scale).

4. More claims should be staked to join the OHK, JIB, and JSB claim groups.

5. Any further work including additional claim staking, orthophoto map, grid establishment, trenching, etc., is contingent on results of the above work.

Respectfully submitted,



April 26, 1991

Roger W. Hulstein, B.Sc., FGAC

REFERENCES

Hornbrooke, E.H.W. and Fiske, P.W.B., 1986. Regional Stream Sediment and Water Geochemical Reconnaissance, 115F(E1/2) & 115G, Geol. Surv. Can., Open File 1362.

Muller, J.E. 1966. Kluane Lake Map Area-Area, Yukon Territory (115G, 115F East Half). Geol. Surv. Can., Mem. 340.

Wheeler, J.O. and McFeely, P., 1987. Tectonic Assemblage Map of the Canadian Cordillera and Adjacent parts of the United States of America, Geol. Surv. of Can., Open File 1565.

STATEMENT OF QUALIFICATIONS

I, ROGER W. HULSTEIN, hereby certify that:

1. I am a geologist with AURUM GEOLOGICAL CONSULTANTS INC., 412-675 West Hastings Street, Vancouver, British Columbia.

2. I am a graduate of Saint Mary's University, Halifax, with a degree in geology (B.Sc., 1981) and have been involved in geology and mineral exploration continuously since 1978.

3. I am a fellow of the Geological Association of Canada (F3572).

4. I have no direct or indirect interest in the properties of Ron Berdahl.

5. I am the author of this report on the Tosh Project, Whitehorse mining district, Yukon, which is based on my examination of private company data, field notes, reports and on referenced sources.

6. I have not made a personal examination of the properties, but I am familiar with the geology and mineral deposits of the area.

7. 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.

GEOLOGICAL ASSOCIATION OF CANADA
R. W. HULSTEIN
FELLOW

April 26, 1991 Roger Hulstein, B.Sc., FGAC

139°35'00"
61°55'00"
139-30-00
139-25-00
139-20-00
139-15-00
139°10'00"
61°55'00"
115G13
115G14
61-50-00
61°45'00"

KLUANE RIVER
TINGUP CREEK
Lakes
Tincup Lake
Toshingermann
BIRTH CREEK
CAMP CREEK
THIRTY TWO CREEK
2500
3000
3500
4000
4500
5000
5500
N
CDN
DKWR
DKWRc
ETqB
Tgd
Gp
M
Malachite
placer Au
JSB Claims
JIB Claims
OHK Claims
MPS Claims

LEGEND

TERTIARY

ETqB — Alaskite, felsic dykes

TRIASSIC

Tgd — Ruby Range batholith: Diorite, granodiori

DEVONIAN - CRETACEOUS

DKWR — White River Group (Windy Mckinley terran quartz - chlorite - sericite schist, epidote - actinolite greenschist; DKWRc, recrystalliz limestone bands.

CAMBRIAN - DEVONIAN

CDN — Nisling terrane: quartz - biotite schist, in places carrying garnet, quartz - feldspar - biotite gneiss, amphibolite, and limestone

Gp — Graphitic Zone

M — Mariposite Alteration

SYMBOLS

R139717/ 70, 4.3, 144
Sample Number | Arsenic ppm
Silver ppm
Gold ppb

Note: All two digit sample numbers preceded by 1400

× Rock Sample

⊙ Soil Sample

△ Silt Sample

Geological contact; Defined, Approxim

Fault; Defined, Approximate or Assum

+ mineral occurrence

geophysics grid

GEOLOGY AFTER: J.E. MULLER, 1965; J. R. BERDAHL, 1990 (

1000 0 1000 2000METRES

SCALE 1 : 25000

CONTOUR INTERVALS 500 FT.
GRID ZONE DESIGNATION 7V

093021

MAP # 115 G/14

405

RON BERDAHL — RON E
TOSH PROJECT — TOSH
GEOLOGY & GEOCHEMISTRY — GE
April 1991 / 3/98
NTS 115 I/13-14 — GEOC
Scale 1:25000
FIG 3

APPENDIX A

SIGNIFICANT GEOCHEMICAL RESULTS

SIGNIFICANT GEOCHEMICAL RESULTS

Sample No.	Type	Location & Description	Au ppb	Ag ppm	As ppm
140011 (OG1412)	Rock	Tosh; Rusty sericitized, pyritized, graphitic, sericitized rock	290	0.9	4063
140014 (OG1421)	Rock	Tosh; Rusty brecciated, quartz, vuggy, angular, fragments, limonite	164	8.4	1721
140015 (OG1422)	Rock	Tosh; Rusty, brecciated, banded siliceous sed.(?), porus matrix, sericitized.	610	13.3	679
140022 (OG1433)	Rock	Tosh; Angular chert fragments in rusty brown clay.	54	5.2	78
140029 (OG1443)	Rock	Tosh; Very rusty red clay surrounding quartz and massive sulfide pods, graphite to 15% on fractures	530	8.8	23,074
140030 (OG144)	Rock	Tosh; buff colored rock containing Mn & 1% pyrite. Muscovite quartz rock.	127	2.0	1009
140036 (OG149)	Rock	Tosh; siliceous grey-green fragments in brown rusty sandy clay. Fragments contain 1% pyrite & chlorite rims.	6830	7.2	16,455
140044 (OG1456)	Rock	Tosh; Rusty red coarse sand and mud mixture, pebbley, angular fragments.	2960	3.5	5761
140046 (OG1458)	Rock	Tosh; Rusty buff to brown quartz vein (?) with <1% sulfides.	63	0.3	356
140049 (OG1464)	Rock?	Tosh; rusty brown dirt.	80	3.0	267
140054 (OG1475)	Rock	Tosh; grey siliceous rock with buff rusty weathering rounded surface, contains 5-7% pyrite & arsenopyrite(?).	240	1.7	2619
140059 (OG1480)	Rock	Tosh; very rusty shales, crumbly, no fresh surfaces.	350	0.7	1258
140060 (OG1481)	Rock	Tosh; rusty grey siliceous shales with 5-10% pyrite and 1mm-2mm quartz stringers	1560	98.7	2977

Sample No.	Type	Location & Description	Au ppb	Ag ppm	As ppm
140063 (OG1486)	Rock	Tosh; rusty grey-green siliceous intrusive(?), 3% pyrite in blebs.	620	0.8	4044
140066 (OG1488)	Rock	Tosh; buff-brown rusty quartz with sericite on surfaces and clay altered white minerals.	210	0.1	1494
140068 (OG1491)	Rock?	Tosh; buff colored clay with quartz fragments.	200	2.7	1203
140069 (OG1492)	Rock	Tosh; angular fragmented chlorized rock with <1mm-5cm quartz clasts, soapy texture.	1010	4.7	4809
R139717	Rock	JIB; grey banded schist hosting qtz-carbonate stockwork. Limonite on fractures.	70	4.3	144
R139718	Rock chip (1.0m)	JIB; limonitic sheared schist hosting a strong quartz-carbonate stockwork as veinlets and veins <10cm thick containing trace pyrite.	5347	2.7	3921
R139719	Rock chip (1.0m)	JIB; same material as sample R139718 and collected immediately south.	808	8.5	5971
R139720	Rock float	JIB; collected in small pit in limonitic altered rock and soil. Located 7.0m below R139718.	67	1.1	485
R139721	Rock grab	JIB; high-grade specimen from sample site R139719. Strong quartz-carb stockwork containing minor sulfides in sheared schist.	691	1.3	2045
R139722	Rock	JIB; red disintegrated schist, containing grit to pebble size schist fragments.	3706	3.6	4360
R13723	Rock chip 1.0m	JIB; quartz-carbonate in schist	193	0.5	528
OG11-017	Rock chip 0.61m	Tincup; 3" quartz vein associated with a yellow to red alteration zone. Yellow qtz is brittle, no sulfides. Adjacent schist is yellow and silicified. Altered zone dips parallel with host sercitic schist.	239	0.9	402

Sample No.	Type	Location & Description	Au ppb	Ag ppm	As ppm
OG11-020	Rock chip 0.76m	Tincup; collected from 50' high limestone outcrop. One foot wide quartz-carb vein with 8' adjacent altered zones. Strike E-W, dips 90°.	899	401.9g/t	205
OG11-062	Rock chip 0.45m	Tincup; limestone/schist outcrop cut by vert. and horiz. qtz and qtz-carb veins; 1" qtz-carb vein with limonite and 18" altered red zone, 2-5% pyrite/arseno.	549	0.1	1620
OG11-063	Rock chip 0.30m	Tincup; collected 5' from OG11-062. Qtz vein with clasts of brecciated schist and calcite, approx. 5% very fine grained sulfides.	1294	0.9	5120
OG11-073	Rock chip 0.30m	Tincup; vertical quartz veins 2-3" wide in red decomposed schist.	935	<0.1	1420
OG11-075	Rock grab?	Tincup; rusty calcareous schist in decomposed schist with 5-10% sulfides.	115	0.6	283
140075 (OG141)	Silt	Tosh;	20	0.4	69
140076 (OG143)	Silt	Tosh;	10	0.6	72
140077 (OG146)	Silt	Tosh;	10	0.7	95
140080 (OG1413)	Silt	Tosh;	765	0.9	3326
140096 (OG1447)	Silt	Tosh;	100	2.3	256
140106 (OG1482)	Silt	Tosh;	120	2.4	553
140107 (OG1483)	Silt	Tosh;	25	3.5	147

Sample No.	Type	Location & Description	Au ppb	Ag ppm	As ppm
G11-052	Silt/ soil	MPS;	46	0.8	94
G11-054	Silt/ soil	MPS;	43	0.7	104
G11-057	Silt/ soil	MPS;	16	0.5	83
G11-058	Silt/ soil	MPS;	39	0.9	128
G11-059	Silt/ soil	MPS;	32	0.6	104
G11-060	Silt/ soil	MPS;	36	0.6	90
G11-061	Silt/ soil	MPS;	49	0.8	147
G11-067	Silt/ soil	MPS;	30	0.9	185
G11-072	Silt/ soil	MPS;	38	0.3	116
G11-076	Silt/ soil	MPS;	25	0.8	161
G11-077	Silt/ soil	MPS;	302	0.6	153
G11-080	Silt/ soil	MPS;	41	0.7	199
G11-082	Silt/ soil	MPS;	45	0.8	243
G11-084	Silt/ soil	MPS;	41	1.2	152
G11-093	Silt/ soil	MPS;	26	0.7	38

APPENDIX B

ANALYTICAL RESULTS

Northern Analytical Laboratories ltd.

1/2

September 25,1990

Work Order # 08390

Noranda Exploration Company Limited
201 - 107 Main St.
Whitehorse, Yukon
Y1A 2A7

File # 08390a

Project # 312 A/4

Assay Certificate for Samples Provided

Sample	ppb Au
R139715	20
R139716	16
R139717	70
R139718	5347
R139719	808
R139720	67
R139721	691
R139722	3706
R139723	193

Au -- 30g Fire Assay/AAS

Applied Science Technologists and Technicians of British Columbia
6982
GERALD F. HAYES
A.Sc.T.

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

GEOCHEMICAL ANALYSIS CERTIFICATE Toshingermann Lk. (JD)

Noranda Exploration Co. Ltd. PROJECT 9010-017 312 File # 90-5058

P.O. Box 2380, 1050 Davie, Vancouver BC V6B 3T5

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Hg ppb
R 139715	2	40	31	87	.4	62	12	604	4.06	67	5	ND	11	107	.3	8	2	16	1.43	.051	32	49	1.29	447	.01	2	.80	.02	.24	1	30
R 139716	2	29	27	75	.4	52	13	542	3.47	106	5	ND	10	186	.2	8	2	8	2.26	.054	29	31	1.18	311	.01	4	.52	.01	.25	1	50
R 139717	4	86	23	87	4.3	67	15	734	3.41	144	6	ND	4	336	.2	19	2	6	13.47	.190	8	28	.92	189	.01	2	.37	.01	.22	1	30
R 139718	2	35	82	183	2.7	33	12	519	2.96	3921	5	3	8	99	.2	19	2	5	1.28	.028	12	34	.57	179	.01	2	.34	.01	.20	1	100
R 139719	3	24	46	111	8.5	28	11	612	3.24	5971	5	ND	5	153	.3	21	2	7	2.37	.038	12	43	.79	167	.01	2	.35	.01	.18	1	20
R 139720	3	52	29	121	1.1	73	19	750	5.91	485	5	ND	9	137	1.1	8	2	24	2.60	.057	22	81	1.18	147	.01	2	1.25	.02	.22	1	130
R 139721	5	21	3	36	1.3	14	5	370	1.71	2045	5	ND	4	93	.2	12	2	2	1.43	.011	8	57	.63	81	.01	2	.22	.01	.13	1	30
R 139722	2	35	26	65	3.6	24	13	345	4.19	4360	5	3	11	71	.2	15	2	6	.68	.029	27	40	.21	208	.01	7	.41	.01	.24	1	40
R 139723	7	18	12	75	.5	44	12	349	3.51	528	5	ND	9	61	.2	8	2	13	.57	.035	22	79	.61	99	.01	3	.73	.02	.18	1	30
STANDARD C	18	63	40	132	7.3	70	31	1056	3.97	41	21	8	37	52	18.4	16	22	55	.44	.099	37	60	.91	181	.07	32	1.90	.06	.13	11	1300

ICP - .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.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM.
- SAMPLE TYPE: ROCK PULP HG ANALYSIS BY FLAMELESS AA.

DATE RECEIVED: OCT 4 1990 **DATE REPORT MAILED:** Oct 10/90. **SIGNED BY** C. Leong ..D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

R-A-1

GEOCHEMICAL ANALYSIS CERTIFICATE

Mt. Withers (KG) / Ron Berdal

Noranda Exploration Co. Ltd. PROJECT 9008-021 312 File # 90-3157 Page 1

P.O. Box 2380, 1050 Davie, Vancouver BC V6B 3T5

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb	Hg ppb	
R 140008	1	21	13	83	.2	41	12	412	4.14	35	5	ND	10	78	.2	6	2	7	2.43	.042	23	13	.41	79	.01	12	1.05	.01	.18	1	6	5	
R 140009	10	28	10	48	.4	32	6	106	1.64	14	7	ND	2	25	.2	2	2	35	.43	.124	7	19	.38	75	.02	5	.74	.01	.16	2	1	40	*
R 140010	3	52	6	69	.5	31	6	197	3.01	75	5	ND	12	23	.2	2	2	26	.26	.092	34	20	.48	150	.01	5	1.08	.01	.18	1	1	5	*
R 140011	2	76	16	151	.9	48	19	1202	5.19	4063	5	ND	5	197	1.4	3	2	16	2.06	.082	14	17	.84	122	.01	7	.65	.01	.20	1	290	5	
R 140012	1	42	2	98	.4	43	20	2810	6.31	87	5	ND	1	375	.5	6	3	26	6.18	.087	5	28	1.95	90	.01	6	.63	.01	.18	1	21	5	
R 140013	1	50	20	53	.1	36	15	556	3.54	41	5	ND	13	39	.2	2	3	8	.77	.048	25	20	.53	39	.01	2	.68	.02	.17	1	8	5	
R 140014	5	82	2197	173	8.4	17	5	135	6.59	1721	5	ND	7	155	12.4	55	3	19	.07	.136	10	23	.02	82	.01	3	.21	.03	.48	1	164	30	
R 140015	2	59	1050	90	13.3	8	1	56	2.37	679	5	ND	1	5	.8	8	2	4	.02	.033	7	5	.01	37	.01	7	.19	.01	.06	1	610	200	
R 140016	2	87	26	29	.3	32	13	355	3.15	15	5	ND	4	44	.2	2	2	25	2.16	.017	8	49	.65	105	.13	4	1.23	.08	.40	1	7	5	
R 140017	1	169	6	81	.5	64	18	449	5.21	5	5	ND	8	33	1.2	3	2	97	.77	.058	17	114	1.51	326	.29	3	2.19	.11	.91	1	6	5	
R 140018	2	180	10	37	.4	173	31	253	4.13	2	5	ND	2	59	.2	2	3	34	1.40	.130	7	98	.95	103	.19	4	1.46	.10	.21	1	3	5	
R 140019	3	5	4	8	.1	13	1	34	1.42	5	5	ND	1	1	.2	2	2	1	.02	.001	2	8	.01	5	.01	8	.01	.01	.01	1	1	60	
R 140020	5	114	44	676	.5	134	21	520	7.33	46	5	ND	15	45	1.9	2	4	24	.71	.195	40	19	.35	279	.01	3	1.85	.01	.19	1	3	10	
R 140021	3	55	8	111	.6	41	10	451	3.73	2	5	ND	7	41	.2	4	2	58	.73	.059	10	66	2.37	65	.17	7	2.86	.12	1.18	1	1	5	
R 140022	7	136	56	161	5.2	52	9	519	3.66	78	5	ND	2	27	1.7	4	5	10	.27	.017	8	8	.11	56	.01	4	.19	.01	.08	2	54	5	
R 140023	1	26	4	31	.2	909	48	907	2.38	2	5	ND	1	530	.2	6	2	12	14.30	.004	2	648	4.00	9	.01	4	.43	.01	.01	1	3	5	
R 140024	17	223	7	251	.6	98	41	1228	6.60	2	5	ND	5	33	2.1	2	2	34	.60	.149	15	22	.48	46	.04	2	1.24	.01	.24	1	1	20	*
R 140025	2	75	14	76	.4	48	10	339	2.49	2	5	ND	7	41	.2	2	2	6	.63	.073	13	20	.54	122	.01	2	.30	.01	.16	1	1	5	
R 140026	2	542	42	129	1.4	159	27	172	5.94	2	5	ND	8	12	.8	2	2	64	.24	.052	14	21	.80	20	.02	5	.92	.01	.49	1	2	5	
R 140027	2	19	4	23	.2	12	4	589	1.18	2	9	ND	1	108	.2	2	2	5	4.47	.017	9	9	.18	1213	.01	5	.17	.01	.06	1	1	5	*
R 140028	7	41	6	63	.2	21	2	52	1.40	2	5	ND	1	15	.2	2	2	33	.26	.097	4	16	.11	150	.01	8	.23	.01	.06	1	2	5	
R 140029	2	92	3330	2030	8.8	23	33	1630	6.51	23074	5	ND	1	76	24.8	17	3	4	1.23	.040	5	11	.41	36	.01	5	.10	.01	.06	1	530	150	
R 140030	1	12	25	42	2.0	31	10	801	3.76	1009	5	ND	8	185	.4	7	2	4	2.54	.048	7	13	.92	56	.01	7	.30	.01	.19	2	127	20	
R 140031	1	34	57	71	.4	1333	57	494	2.93	277	8	ND	1	296	.5	2	2	4	9.08	.006	2	245	8.27	17	.01	2	.12	.01	.02	1	17	20	
R 140032	1	7	13	27	.2	21	6	1022	3.40	34	5	ND	5	183	.3	5	3	3	5.47	.010	14	16	1.58	45	.01	5	.18	.01	.12	2	7	10	
R 140033	4	371	24	146	.1	61	9	1385	4.71	73	5	ND	1	12	.2	16	2	9	.16	.020	9	11	.12	148	.01	2	.13	.01	.03	1	3	680	*
R 140034	1	32	5	5	.1	768	37	549	1.93	3	5	ND	1	100	.2	2	2	3	3.70	.006	2	241	4.45	4	.01	2	.16	.01	.01	1	4	30	
R 140035	1	24	7	19	.1	929	47	258	2.52	5	5	ND	1	37	.2	2	2	26	1.74	.023	3	641	4.63	6	.01	2	1.44	.01	.01	1	3	5	
R 140036	1	18	14	58	7.2	45	12	607	3.60	16455	5	8	6	160	.4	20	2	3	2.20	.017	12	17	.95	62	.01	4	.27	.01	.15	1	6830	40	
R 140037	2	515	29	34	.6	226	23	347	4.23	19	5	ND	14	33	.2	5	2	33	.63	.107	31	34	1.70	102	.01	5	.68	.04	.22	2	8	5	*
R 140038	1	22	11	60	.3	453	25	631	4.11	119	5	ND	9	118	.2	27	3	6	1.87	.052	30	17	2.92	47	.01	4	.40	.02	.19	1	21	5	
R 140039	2	6	7	25	.1	83	8	470	2.18	102	5	ND	2	267	.2	23	2	7	2.86	.053	9	17	3.29	44	.01	2	.16	.01	.09	1	3	5	
R 140040	1	32	2	48	.1	906	46	280	3.63	21	5	ND	1	44	.5	11	2	14	.92	.018	3	477	13.43	19	.01	2	.73	.01	.04	1	6	5	
R 140041	1	12	2	50	.2	644	33	497	3.82	96	5	ND	2	133	.2	34	2	13	1.40	.022	7	340	10.99	20	.01	2	.56	.01	.06	1	4	5	
R 140042	1	5	17	142	.4	740	35	918	5.89	164	5	ND	4	311	.2	36	2	20	3.26	.231	45	32	2.05	478	.01	6	1.01	.03	.23	1	13	5	
R 140043	2	16	3	44	.1	31	8	190	2.32	22	5	ND	6	18	.2	4	2	6	.76	.012	13	16	.23	41	.01	5	.65	.01	.08	1	5	5	
STANDARD C/AU-R	18	59	45	133	7.0	73	31	1054	3.97	39	16	8	37	53	18.9	15	19	55	.51	.093	38	61	.89	180	.07	37	1.88	.06	.14	13	540	1600	

ICP - .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.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM.
- SAMPLE TYPE: Rock AU* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE. HG ANALYSIS BY FLAMELESS AA.

DATE RECEIVED: AUG 3 1990 **DATE REPORT MAILED:** Aug 10/90 **SIGNED BY.....** D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb	Hg ppb	
R 140044	1	33	31	81	3.5	37	15	487	4.66	5761	5	3	13	79	.2	10	2	6	.97	.029	28	10	.23	144	.01	8	.29	.01	.17	1	2960	30	
R 140045	2	86	9	90	.1	191	24	710	4.56	120	5	ND	12	130	.2	193	2	14	3.76	.047	9	121	1.46	61	.01	6	.91	.01	.23	1	14	20	
R 140046	3	79	2	56	.3	59	13	457	2.79	356	5	ND	6	110	.2	15	3	5	3.90	.054	8	11	.56	52	.01	5	.32	.01	.15	1	63	10	
R 140047	4	376	21	220	1.1	65	28	406	13.42	35	8	ND	2	21	.5	6	2	346	.19	.126	23	264	1.17	256	.03	2	3.35	.01	.14	1	1	10	*
R 140048	4	311	14	308	1.0	82	24	4598	10.84	56	5	ND	1	25	1.1	6	2	53	.54	.113	11	28	.38	42	.01	2	.49	.01	.06	1	19	5	*
R 140049	25	602	32	352	3.0	116	44	7267	22.15	267	5	ND	2	27	2.1	16	2	57	.11	.067	12	38	.12	313	.01	4	.75	.01	.16	1	80	5	*
R 140050	6	82	24	106	.8	52	18	99	3.85	35	6	ND	2	2	.7	6	2	7	.09	.036	6	7	.19	25	.01	7	.46	.01	.22	1	5	5	
R 140051	1	58	12	212	.9	16	45	818	7.84	12	5	ND	1	80	.8	6	4	230	4.00	.171	10	13	1.77	65	.13	3	2.09	.05	.33	1	5	10	
R 140052	4	296	21	726	1.4	198	39	2539	8.15	67	5	ND	2	10	4.4	29	2	149	.47	.147	16	65	.72	47	.06	2	1.53	.01	.22	1	10	5	*
R 140053	5	156	8	191	.7	71	13	8255	8.94	38	5	ND	1	122	1.4	10	2	43	2.85	.067	7	29	.85	140	.01	2	.27	.01	.08	1	8	5	*
R 140054	1	87	9	90	1.7	46	24	1211	7.25	2619	5	ND	1	282	.2	26	2	16	6.31	.123	2	15	2.65	70	.01	11	.43	.01	.24	1	240	5	
R 140055	8	90	21	71	1.1	20	4	1111	4.08	8	5	ND	9	16	.4	2	2	43	.26	.104	20	29	.70	138	.03	5	1.16	.01	.14	1	6	20	*
R 140056	2	346	45	125	10.2	91	20	1849	5.24	63	5	ND	5	105	1.1	10	2	17	4.02	.090	7	21	1.46	29	.01	8	.54	.01	.28	1	32	5	*
R 140057	1	537	20	192	2.6	165	14	210	9.56	2	5	ND	1	16	.2	2	2	471	.37	.156	7	309	.96	12	.10	3	1.60	.01	.56	1	4	5	*
R 140058	2	411	21	74	.6	143	43	257	8.57	5	5	ND	1	17	.3	4	2	76	1.01	.196	8	71	1.21	18	.17	2	2.07	.02	.73	1	1	5	*
R 140059	3	68	15	69	.7	35	38	3218	10.66	1258	5	ND	1	81	.2	8	2	29	1.30	.143	6	18	.40	182	.01	9	.45	.01	.16	1	350	5	
R 140060	3	264	589	131	98.7	46	8	142	17.85	2977	6	ND	1	8	1.8	178	2	9	.23	.045	2	7	.06	3	.01	6	.11	.01	.07	1	1560	80	
R 140061	2	118	20	47	.7	13	3	203	6.26	90	5	ND	1	12	.5	2	2	31	.04	.085	6	25	.23	72	.01	4	.82	.01	.34	1	25	5	
R 140062	14	35	16	29	.7	9	3	130	2.86	24	7	ND	3	19	.3	2	2	34	.12	.098	7	17	.30	87	.03	8	.42	.01	.24	1	1	5	*
R 140063	2	46	9	122	.8	268	38	850	6.55	4044	5	ND	4	230	.2	76	2	19	5.03	.085	5	83	2.07	72	.01	4	.60	.01	.20	1	620	30	
R 140064	1	81	31	93	.2	45	18	434	5.20	13	5	ND	7	81	.4	4	5	91	2.26	.068	14	65	1.85	190	.19	3	3.42	.15	1.13	1	11	5	
R 140065	1	34	21	94	.1	55	18	652	4.19	88	7	ND	11	141	.3	7	2	9	4.25	.051	24	16	.30	59	.01	9	.43	.01	.22	1	5	10	
R 140066	1	6	14	51	.1	38	9	902	4.62	1494	6	ND	4	312	.3	10	3	7	6.35	.169	12	17	2.30	53	.01	5	.40	.01	.16	1	210	10	
R 140067	1	24	12	45	.2	30	13	754	3.18	39	7	ND	1	343	.2	11	4	15	7.62	.060	9	16	1.97	44	.01	4	.30	.01	.13	2	3	5	
R 140068	1	31	27	73	2.7	68	16	472	3.71	1203	6	ND	9	162	.8	11	2	5	2.77	.040	17	14	.81	105	.01	4	.42	.01	.15	1	200	10	
R 140069	2	18	49	85	4.7	28	10	513	3.02	4809	5	ND	4	152	1.6	10	4	7	2.82	.042	11	16	.92	67	.01	5	.32	.01	.14	1	1010	20	
R 140070	1	43	19	52	.2	36	14	942	3.80	16	6	ND	5	110	.3	4	7	36	4.77	.043	14	38	1.11	132	.09	3	2.29	.20	.71	3	5	5	*
R 140071	2	93	26	251	1.4	65	18	569	5.30	13	6	ND	9	45	.6	5	3	65	1.37	.072	23	63	1.68	44	.12	4	2.46	.04	.80	1	1	5	*
R 140072	1	67	12	100	.1	57	25	513	4.58	2	6	ND	9	22	.2	2	2	40	.36	.034	23	38	1.43	46	.10	5	2.26	.10	.89	2	4	5	
R 140073	2	370	21	153	2.2	48	20	589	7.53	8	5	ND	2	7	.7	4	2	105	.18	.074	9	61	1.75	19	.21	2	2.72	.02	1.36	1	34	5	*
R 140074	1	26	2	31	.4	13	3	61	1.89	11	5	ND	1	64	.3	2	5	192	.25	.114	7	27	.35	384	.06	8	.81	.01	.19	1	7	40	
STANDARD C/AU-R	18	59	42	133	7.2	73	31	1053	3.97	41	17	8	37	53	18.4	15	21	55	.51	.095	38	60	.89	179	.07	39	1.88	.06	.14	11	570	1600	

ASSAY RECOMMENDED for As > 1%
Ag 730ppm

* Samples contain graphite, fire assay gold recommended.

GEOCHEMICAL ANALYSIS CERTIFICATE

Noranda Exploration Co. Ltd. PROJECT 9008-021 312 File # 90-3702 Page 1

P.O. Box 2380, 1050 Davie, Vancouver BC V6B 3T5

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Hg ppb
140075	3	67	17	188	.4	105	18	492	3.49	69	5	ND	4	234	1.5	2	2	45	4.07	.089	24	84	1.28	190	.08	2	1.56	.03	.23	2	50
140076	4	68	21	238	.6	125	20	481	3.99	72	6	ND	6	150	2.3	4	2	52	3.34	.108	27	99	1.45	238	.09	3	1.72	.02	.29	2	20
140077	5	88	19	291	.7	143	24	576	4.72	95	5	ND	5	151	3.2	3	5	60	3.29	.120	34	103	1.51	274	.10	6	1.87	.03	.31	1	30
140078	4	74	21	273	.6	121	21	510	4.12	50	5	ND	5	141	2.5	4	2	57	2.97	.110	30	90	1.39	237	.10	3	1.73	.03	.31	1	20
140079	1	39	11	99	.1	59	16	425	3.37	27	6	ND	4	141	1.0	2	2	48	2.46	.072	19	57	1.40	109	.12	3	1.82	.03	.23	1	20
140080	2	47	58	107	.9	43	12	846	4.69	3328	6	ND	3	126	.8	2	2	11	1.09	.056	11	8	.34	46	.01	5	.43	.01	.06	1	10
140081	1	34	5	105	.3	49	15	411	3.37	19	5	ND	5	184	.2	2	2	45	2.42	.067	18	51	1.06	91	.11	2	1.66	.03	.20	1	10
140082	1	29	7	90	.1	56	15	358	3.27	27	5	ND	4	71	.6	2	2	48	1.58	.070	18	55	1.38	96	.13	3	1.75	.03	.22	1	5
140083	1	36	8	88	.1	55	15	375	3.38	25	5	ND	3	88	.4	2	2	52	1.64	.073	19	58	1.36	112	.14	7	1.84	.04	.23	1	20
140084	1	34	13	86	.1	57	14	358	3.30	10	5	ND	3	206	.7	2	2	50	2.54	.063	16	59	1.44	111	.14	2	1.93	.04	.27	1	10
140085	1	14	2	44	.1	23	7	193	1.79	7	5	ND	2	27	.2	2	2	32	.42	.041	8	25	.48	54	.08	3	.81	.02	.09	1	5
140086	1	85	8	75	.3	68	17	417	3.01	21	5	ND	2	153	.2	2	2	37	2.94	.065	19	52	1.08	109	.09	8	1.60	.03	.20	1	40
140087	1	43	7	79	1.1	47	12	263	2.43	46	5	ND	1	150	.2	4	2	32	1.97	.048	13	37	.75	68	.08	4	1.14	.04	.17	1	20
140088	1	39	7	109	.2	50	11	425	2.61	25	5	ND	5	165	.8	2	2	44	4.60	.105	15	43	1.14	134	.10	2	1.19	.03	.16	1	5
140089	1	35	6	86	.1	50	12	430	2.47	16	5	ND	4	180	.3	2	2	41	5.19	.096	14	46	1.17	111	.10	6	1.23	.03	.17	1	5
140090	2	60	9	126	.4	76	16	506	3.31	25	5	ND	8	222	.8	2	2	49	5.96	.096	19	67	1.41	133	.11	4	1.65	.03	.26	1	5
140091	1	36	4	86	.2	45	11	421	2.28	15	5	ND	5	169	.8	2	2	39	4.89	.094	14	38	1.10	101	.09	5	1.08	.03	.14	1	20
140092	1	33	13	89	.2	48	12	451	2.49	16	6	ND	5	187	.7	2	4	43	5.24	.091	14	44	1.17	112	.11	3	1.19	.03	.16	1	10
140093	1	33	17	77	.1	46	10	409	2.37	16	5	ND	4	179	1.0	2	2	41	5.04	.092	14	43	1.15	79	.10	2	1.16	.03	.14	1	5
140094	1	23	4	83	.1	41	11	316	2.59	5	5	ND	2	51	.2	2	2	41	2.69	.071	12	44	1.96	94	.11	4	1.48	.04	.13	1	10
140095	1	40	7	129	.1	62	14	451	3.11	15	5	ND	4	99	1.0	2	2	53	2.72	.099	17	61	1.24	113	.13	5	1.58	.04	.18	1	5
140096	5	87	75	263	2.3	256	30	658	5.01	365	5	ND	5	95	2.1	14	3	48	1.84	.114	26	168	1.81	348	.07	2	1.77	.02	.21	1	30
140097	3	95	16	662	.4	103	19	681	3.93	36	5	ND	1	67	2.5	3	2	70	1.29	.130	13	72	1.38	564	.16	2	1.87	.03	.31	1	40
140098	2	102	7	778	.9	105	18	741	3.85	32	5	ND	1	91	2.6	2	2	67	2.75	.106	12	68	1.30	456	.15	4	1.87	.03	.30	1	30
140099	5	148	38	1027	.8	134	21	877	4.26	58	5	ND	1	86	2.8	8	5	71	1.52	.210	14	53	1.29	974	.14	3	1.80	.03	.30	2	50
140100	1	28	6	103	.1	40	12	362	2.90	2	5	ND	3	59	.4	2	2	44	1.45	.079	17	42	.99	246	.11	7	1.41	.03	.14	1	10
140101	1	23	2	86	.1	37	12	301	2.88	5	5	ND	3	43	.2	2	2	42	.82	.062	16	43	.92	147	.12	3	1.55	.03	.12	1	10
140102	1	35	4	107	.1	39	11	365	2.72	5	5	ND	3	70	.7	2	2	47	1.91	.094	15	37	1.03	296	.11	5	1.29	.03	.15	1	5
140103	1	49	8	126	.1	52	17	483	3.47	5	5	ND	3	52	.4	2	2	53	.97	.076	30	53	1.09	196	.13	4	1.97	.04	.16	1	30
140104	1	23	2	155	.1	23	3	91	.65	2	5	ND	1	19	.4	2	2	14	.22	.024	4	8	.14	161	.03	2	.28	.03	.03	1	5
140105	2	46	8	189	.3	49	17	2383	3.13	5	5	ND	1	58	2.7	2	2	55	1.11	.087	16	30	.67	345	.09	5	1.41	.03	.11	1	40
140106	4	101	81	523	2.6	97	24	867	4.77	553	5	ND	4	82	3.9	13	2	57	1.16	.148	15	35	1.02	215	.08	6	1.37	.02	.17	1	50
140107	5	103	196	900	3.5	97	23	990	4.28	347	5	ND	1	66	6.9	9	2	61	1.37	.150	14	45	1.08	653	.12	6	1.65	.03	.22	1	30
140108	1	47	15	110	.1	76	19	445	4.25	19	5	ND	6	313	.6	2	2	38	5.05	.084	24	76	1.19	76	.10	4	1.53	.02	.26	1	30
140109	1	65	18	140	.1	93	26	497	4.63	23	7	ND	7	147	.3	2	2	45	2.04	.060	33	130	1.85	101	.12	3	2.36	.02	.30	2	40
140110	1	68	10	120	.2	67	20	413	4.26	11	8	ND	8	57	.6	2	2	44	.98	.070	68	51	1.35	60	.10	6	2.07	.02	.22	1	50
STANDARD C	20	58	40	129	6.8	73	32	1051	3.96	39	20	7	38	52	18.5	15	18	56	.52	.094	38	58	.89	181	.07	34	1.88	.06	.14	11	1500

ICP - .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. THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM.
- SAMPLE TYPE: Pulp HG ANALYSIS BY FLAMELESS AA.

DATE RECEIVED: AUG 21 1990 DATE REPORT MAILED: Aug 24/90 SIGNED BY ..... D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Hg ppb
140111	1	28	4	113	.1	36	13	337	3.63	7	5	ND	2	283	.4	2	2	67	1.22	.056	16	45	.88	53	.13	4	1.22	.02	.16	1	20
140112	3	78	10	261	.2	84	20	609	3.60	24	5	ND	2	81	2.3	3	2	56	1.90	.102	17	54	1.09	572	.10	2	1.50	.03	.23	2	30
140113	2	84	4	223	.1	75	18	513	3.18	29	5	ND	1	73	1.6	2	2	54	1.33	.104	16	48	.91	585	.09	3	1.28	.03	.15	1	20
140114	1	82	8	99	.1	84	20	426	3.36	6	5	ND	2	68	.4	4	2	46	2.06	.088	21	88	1.29	112	.12	4	1.62	.03	.31	1	30
140115	2	42	8	83	.4	59	15	368	2.96	7	5	ND	5	139	1.8	4	2	38	2.52	.069	18	58	1.13	72	.08	4	1.28	.02	.18	1	10
140116	1	65	2	66	.1	108	18	326	2.96	4	5	ND	1	77	.2	4	2	42	1.94	.087	11	113	1.36	81	.10	2	1.42	.02	.18	1	20
140117	12	58	11	158	.1	86	16	428	3.20	2	5	ND	4	69	1.0	2	3	42	1.46	.072	22	80	1.08	129	.09	3	1.44	.02	.27	1	90
140118	1	56	13	236	.1	70	12	357	2.52	2	5	ND	1	56	1.3	2	2	37	1.20	.064	13	46	.85	974	.07	3	1.14	.02	.19	1	70
140119	1	48	4	133	.1	64	15	349	2.67	8	5	ND	2	109	.5	2	2	42	1.82	.084	12	63	1.00	248	.09	3	1.19	.03	.13	1	20
140120	1	48	7	150	.1	49	16	362	2.88	4	5	ND	2	37	.7	2	2	55	.82	.064	22	42	.77	193	.10	3	1.29	.03	.13	1	60
140121	1	49	5	138	.1	40	13	373	3.29	30	5	ND	3	47	.6	2	2	52	.96	.071	18	38	.85	202	.09	2	1.32	.03	.13	1	30
STANDARD C	19	63	40	132	7.3	73	31	1059	3.98	39	17	7	36	53	18.6	15	19	55	.60	.091	37	61	.89	179	.07	36	1.89	.06	.14	11	1600

NORANDA VANCOUVER LABORATORY

PROPERTY/LOCATION:MT. WITHERS CODE :9008-021

Project No. :312 A4 Sheet:1 of 1 Date rec'd:AUG 3
Material :47 SILTS Geol.:K.G. Date compl:AUG 22
Remarks :

Values in PPM, except where noted.

T.T. No.	SAMPLE No.		Au PPB	
33	140075		20	141
34	140076		10	143
35	140077		10	146
36	140078		5	
37	140079		5	
38	140080		765	1413
39	140081		5	
40	140082		5	
41	140083		5	
42	140084		5	
43	140085	-35 MESH	5	
44	140086		5	
45	140087	-35 MESH	5	
46	140088		5	
47	140089		5	
48	140090		5	
49	140091		5	
50	140092		5	
1Y	140093		5	
2	140094		5	
3	140095		5	
4	140096		100	1447
5	140097		5	
6	140098		5	
7	140099		5	
8	140100		5	
9	140101		5	
10	140102		5	
11	140103		5	
12	140104	-35 MESH	5	
13	140105		5	
14	140106		120	1482
15	140107		25	1483
16	140108		5	
17	140109		5	
18	140110		5	
19	140111		5	
20	140112		5	
21	140113		5	
22	140114		5	
23	140115		5	
24	140116		5	
25	140117		5	
26	140118		5	
27	140119		5	
28	140120		5	
29Y	140121		5	

Northern Analytical Laboratories ltd.

Tin Cup

145

August 24,1990

Work Order # 08313

Ron Berdahl

File # 08313a

Rx samples

Assay Certificate for Samples Provided

Sample	ppb Au	ppm Ag	ppm Cu	ppm Pb	ppm Zn	ppm As	ppm Sb
0 Ridge 104	20	0.1	349	20	77	207	21
OG11 - 001	32	<0.1	13	8	20	53	22
OG11 - 004	16	0.3	2	14	33	101	20
OG11 - 009	17	0.4	<1	1	8	38	19
OG11 - 010	29	0.9	143	75	105	69	46
OG11 - 017	239	0.9	30	18	57	402	30
OG11 - 020	899	>100	249	>10000	>10000	205	68
OG11 - 022	14	2.1	<1	20	275	93	38
OG11 - 023	23	4.9	37	99	511	21	9
OG11 - 024	26	0.9	7	4	80	11	29
OG11 - 025	43	1.0	34	<1	40	86	15
OG11 - 030	30	<0.1	12	<1	<1	4	12
OG11 - 033	37	0.3	81	3	49	103	37
OG11 - 044	24	0.3	141	<1	<1	23	18
OG11 - 045	34	0.3	68	10	43	78	35
OG11 - 046	22	<0.1	16	22	67	54	36
OG11 - 047	36	<0.1	14	13	24	72	68
OG11 - 048	23	<0.1	11	<1	40	67	41
OG11 - 049	33	<0.1	28	6	30	40	42
OG11 - 053	27	0.8	<1	21	84	283	54
OG11 - 055	38	<0.1	27	16	47	79	62
OG11 - 056	13	<0.1	5	10	21	71	55
#4 OG11 - 062	549	0.1	11	37	80	1620	40
#4 OG11 - 063	1294	0.9	11	43	59	5120	50
OG11 - 064	41	<0.1	12	1	32	176	68
OG11 - 065	35	<0.1	2	<1	37	101	47
OG11 - 066	31	0.2	13	4	43	104	63
OG11 - 068	14	<0.1	2	5	39	123	43
#4 OG11 - 073	935	<0.1	6	4	17	1420	35
#3 OG11 - 075	115	0.6	19	12	49	288	67

Au -- 15g Fire Assay/AAS
Metals -- Aqua Regia Digestion/AAS Geochem

30

Applied Science Technologists and Technicians of British Columbia
6992
GERALD F. HAYES
A.Sc.T.

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Tin Cup

2 of 6

Northern Analytical Laboratories ltd.

August 24,1990

Work Order # 08313

Ron Berdahl

File # 08313b

Rx samples

Assay Certificate for Samples Provided

Sample	ppb Au	ppm Ag	ppm Cu	ppm Pb	ppm Zn	ppm As	ppm Sb
0G11 - 075b fault	113	0.5	20	9	58	224	62
0G11 - 076	32	<0.1	38	7	55	61	23
0G11 - 079	41	<0.1	20	11	63	71	25
0G11 - 081 fault	40	<0.1	8	14	72	106	53
0G11 - 088 fault	16	<0.1	9	<1	78	119	29
0G11 - 104	<10	<0.1	101	<1	85	71	30

Au -- 15g Fire Assay/AAS
Metals -- Aqua Regia Digestion/AAS Geochem

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Northern Analytical Laboratories ltd

Tin Cup

346

August 24, 1990

Work Order # 08313

Ron Berdahl

File # 08313c

Rx Samples

Assay Certificate for Samples Provided

Sample	g/t Ag	% Pb	% Zn
OG11 - 020	401.9	1.47	10.30

Ag -- 1AT Fire Assay/Grav
Metals -- Aqua Regia Digestion/AAS Assay

Applied Science Technologists and Technicians of British Columbia
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Northern Analytical Laboratories ltd

Tin Cup

4/6

August 24,1990

Work Order # 08313

Ron Berdahl

File # 08313d

Stream Sedts / Soils

Assay Certificate for Samples Provided

Sample	ppb Au	ppm Ag	ppm Cu	ppm Pb	ppm Zn	ppm As	ppm Sb	
SOG11 - 002	<10	0.9	37	12	67	61	21	Apple Cirque
SOG11 - 003	<10	1.6	194	52	144	120	42	
SOG11 - 004	<10	1.5	87	21	70	132	65	
SOG11 - 005	<10	0.9	36	13	53	115	29	
SOG11 - 006	<10	0.8	21	8	32	62	37	
SOG11 - 007	<10	0.7	1	2	12	99	11	
SOG11 - 011	49	0.6	17	5	53	107	22	
SOG11 - 012	<10	0.6	25	5	58	121	27	
SOG11 - 013	<10	0.5	21	4	39	112	23	
SOG11 - 014	<10	0.4	18	4	28	48	14	
SOG11 - 015	<10	0.5	9	6	32	104	19	
SOG11 - 016	<10	1.0	18	11	28	93	39	
SOG11 - 018	<10	0.8	15	11	31	92	31	
SOG11 - 019	<10	0.8	16	16	33	98	36	
SOG11 - 021	13	1.2	56	18	78	83	41	
SOG11 - 026	<10	0.7	21	6	35	35	23	
SOG11 - 027	<10	0.4	12	4	10	17	27	
SOG11 - 028	<10	0.8	27	11	52	49	32	
SOG11 - 029	<10	0.8	26	15	54	41	29	
SOG11 - 031	<10	1.0	31	17	22	68	39	
SOG11 - 032	<10	0.4	33	12	59	75	28	
SOG11 - 034	<10	0.3	5	16	60	58	20	
SOG11 - 035	<10	0.4	7	12	33	90	45	
SOG11 - 036	<10	0.4	14	13	86	63	19	
SOG11 - 037	<10	0.7	50	19	142	84	22	
SOG11 - 038	17	0.5	13	14	51	72	23	
SOG11 - 039	<10	0.4	11	12	70	50	18	
SOG11 - 040	<10	0.2	2	11	50	55	12	
SOG11 - 041	<10	0.4	25	15	54	71	20	
SOG11 - 042	<10	0.3	22	14	57	81	24	

Au -- 15g Fire Assay/AAS
Metals -- Aqua Regia Digestion/AAS Geochem

Applied Science Technologists and Technicians of British Columbia
6992
GERALD F. HAYES
A.Sc.T.

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Northern Analytical Laboratories ltd

Tin Cup

576

115 GmF
Anomalies (90 percentile)
As - 15
Ag .3
Sb 1
Cd .5
Zn 123
Pb 14
Hg 55ppb

August 24, 1990 Work Order # 08313

Ron Berdahl File # 08313e

Strm Sed / Soils

Assay Certificate for Samples Provided

Sample	ppb Au	ppm Ag	ppm Cu	ppm Pb	ppm Zn	ppm As	ppm Sb
SOG11 - 043	<10	0.7	297	8	47	56	25
SOG11 - 050	<10	0.4	40	14	52	51	18
SOG11 - 051	<10	0.6	47	11	54	74	24
SOG11 - 052	46	0.8	47	18	83	94	27
SOG11 - 054	43	0.7	40	14	70	104	24
SOG11 - 057	16	0.5	32	10	65	83	25
SOG11 - 058	39	0.9	75	19	86	128	26
SOG11 - 059	32	0.6	53	14	64	104	21
SOG11 - 060	38	0.6	43	15	55	90	18
SOG11 - 061	49	0.8	48	19	84	147	29
SOG11 - 067	30	0.9	51	28	89	186	33
SOG11 - 069	<10	0.5	64	20	81	106	27
SOG11 - 070	<10	0.4	57	19	79	109	22
SOG11 - 071	<10	0.4	46	20	85	206	23
SOG11 - 072	38	0.3	63	14	47	116	24
SOG11 - 074	<10	0.5	52	15	62	127	20
SOG11 - 076	25	0.8	63	20	69	161	28
SOG11 - 077	302	0.6	33	14	54	153	27
SOG11 - 080	41	0.7	51	18	64	199	26
SOG11 - 082	46	0.8	47	17	81	243	24
SOG11 - 083	<10	0.9	29	16	65	77	19
SOG11 - 084	41	1.2	50	25	93	152	27
SOG11 - 085	<10	0.7	43	13	68	78	20
SOG11 - 086	<10	0.6	40	9	69	82	25
SOG11 - 087	<10	0.4	27	4	23	30	7
SOG11 - 089	<10	0.6	47	11	62	89	20
SOG11 - 090	<10	0.7	45	10	46	75	19
SOG11 - 091	<10	0.3	6	1	6	15	7
SOG11 - 092	<10	0.5	2	4	32	37	14
SOG11 - 093	26	0.7	12	11	73	38	13

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Northern Analytical Laboratories ltd

August 24,1990

Work Order # 08313

File # 08313f

Ron Berdahl
103 Platinum Road
Whitehorse, Yukon
Y1A 5M3

Assay Certificate for Samples Provided

Sample	ppb Au	ppm Ag	ppm Cu	ppm Pb	ppm Zn	ppm As	ppm Sb
SOG11 - 094	<10	0.4	6	.5	39	31	15
SOG11 - 095	<10	0.8	20	10	71	63	22
SOG11 - 096	<10	0.9	16	9	72	50	22
SOG11 - 097	<10	0.8	13	14	70	60	20
SOG11 - 098	<10	0.6	5	9	43	57	17
SOG11 - 099	20	0.9	26	13	49	69	28
SOG11 - 100	<10	0.5	27	7	26	50	15
SOG11 - 101	<10	0.9	24	11	58	58	18
SOG11 - 102	<10	0.8	14	12	52	60	14
SOG11 - 103	<10	0.8	25	12	49	59	21

Au -- 15g Fire Assay/AAS
Metals -- Aqua Regia Digestion/AAS Geochem

Applied Science Technologists and Technicians of British Columbia
6932
GERALD F. HAYES
A.Sc.T.

II. 1991 UPDATE:

During 1991 work transpired on four fronts in conjunction with the recommendations made in Aurum's TOSH REPORT (page 11 -12). Prospecting was carried out on the properties resulting in the discovery of a quartz carbonate shear structure of undetermined width on the JSB claims (see Report map and 1991 assay results). Noranda Ltd. conducted prospecting in September 1990 on the JIB claims. The prospector and an assistant were on the property from July 3 to the 14th.

More claims were staked to tie the OHK, JIB and JSB blocks together. Additionally 5.2 kilometers of geophysical baseline was cut on the claims as well as 9.6 kilometers of line with geophisical stations at 25 m.(see fig. I.). Finally Noranda Ltd. conducted a prospecting program on the MPS claims (see fig. II.).

III. STATEMENT OF COSTS;

a) JSB Claims	15 assays @ $20	$300
	Report Costs (partial)	800
	Baseline and Station Line for EM-16 survey : 6 man days @ 200/day	1200
		$2,300
b) JIB Claims	Transpotation: trip one helicopter Hns Jct	$700
	trip two - vehicle 640 km. and frieghter canoe down Kluane	200
	Noranda Geologist	150
	19 Assays @ 20	380
	Baseline for EM-16 survey @200/man day	200
		$1630
c) OHK Claims	Report Costs (partial)	$926
	Baseline and Station line for EM-16 survey : 4 man days @ 200/day	800
		$1,726
d) MPS Claims	see noranda cost statement	$4,400

Noranda Exploration Company, Limited
(no personal liability)
Suite 201 - 107 Main Street
Whitehorse, Yukon Territory
Y1A 2A7
noranda

Phone (403) 667-4805
Fax (403) 667-6623

March 20, 1992

Mr. R. Berdahl
P.O. Box 4664
Whitehorse, Yukon
Y1A 5L5

Dear Mr. Berdahl,

This letter is an outline of expenditures incurred by Noranda Exploration Co. Ltd. on your MPS claim block located on NTS 115 g/14 on August 27 and 28 1992.

Labour:	sampling crew of 3 for 2 days at $150/per day	$ 900.00
Air Charter:	return from Destruction Bay, Kluane Lake	1,070.00
Geochem:	53 soils @ $15./per sample	795.00
	37 rocks @ $20./per sample	740.00
Truck Rental:	3 days @ $50./per day	150.00
	TOTAL	$3,655.00

Sincerely yours,

Jesse L. Duke

Jesse L. Duke
Project Geologist

AMENDED STATEMENT OF EXPENSES

TOSH PROJECT ASSESSMENT REPORT

JSB JIB OHK MPS CLAIMS

	previous	amended
a) JSB	$2,300	$2,050
b) JIB	no change	
c) OHK	no change	
d) MPS	$4,400	$3,905

The above changes have been made to make up for a discrepancy between Noranda's estimated costs ($4400) and actual costs($3655). In order to meet the required assessment needs for the MPS a portion ($250) of the surplus assessment from JSB costs were transferred to the MPS. These costs relate to the Tosh Report that cover both properties.

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716

GEOCHEMICAL ANALYSIS CERTIFICATE T654 (JD) Yukon General

Noranda Exploration Co. Ltd. PROJECT 9108-014 312 File # 91-3134 Page 1

1050 Davie St., Vancouver BC V6E 1M4

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb	Hg ppb
~~44935~~	1	19184	2	291	29.4	56	71	259	25.29	59	5	3	6	31	4.6	24	12	151	.46	.031	308	21	.29	18	.13	3	1.00	.02	.04	1	2260	25
* 113051	3	172	7	47	1.6	36	9	275	3.11	1898	5	ND	7	42	.3	26	3	16	.94	.230	18	12	.16	58	.01	9	.43	.01	.23	1	310	30
* 113052	1	105	13	79	3.1	44	18	473	5.91	2763	5	ND	6	81	.7	16	2	20	.73	.123	16	33	.26	81	.01	8	.72	.01	.26	1	530	15
* 113053	1	42	25	12	2.6	106	12	3707	6.95	1004	5	ND	1	99	1.2	20	2	25	3.23	.137	2	15	1.31	35	.01	5	.29	.01	.17	1	340	10
113054	1	124	9	113	.8	55	32	1635	8.41	492	5	ND	1	372	2.4	13	2	62	9.81	.121	5	28	1.17	41	.01	2	1.24	.01	.24	1	180	25
* 113055	1	57	7	66	1.1	41	14	823	3.78	1809	5	ND	11	143	.6	10	2	5	3.20	.033	11	10	.96	96	.01	7	.40	.01	.28	1	170	10
* 113056	1	94	3	53	3.6	104	29	1436	6.22	2282	5	ND	1	436	1.6	23	2	23	9.46	.071	4	41	3.60	85	.01	8	.44	.01	.29	1	290	40
113057	1	19	8	18	.4	283	24	1304	4.08	50	5	ND	1	442	.9	6	2	10	9.03	.014	2	307	4.12	137	.01	2	.44	.01	.10	1	160	10
* 113058	1	92	12	111	3.8	99	29	2097	5.63	1936	5	ND	11	290	1.5	34	2	28	4.97	.204	14	40	1.87	124	.01	9	.69	.01	.33	1	350	20
* 113059	1	74	6	76	2.2	45	29	1098	6.68	4406	5	2	1	327	1.4	36	2	20	6.59	.089	4	13	2.64	64	.01	8	.46	.01	.28	1	1180	80
113060	1	105	12	89	5.6	83	35	2295	7.61	2741	5	ND	2	206	1.8	45	2	25	4.26	.134	5	25	1.65	66	.01	8	.71	.01	.36	1	370	25
* 113061	1	202	15	206	4.9	203	46	2291	9.00	2659	5	ND	2	295	2.4	58	2	30	7.62	.177	5	71	2.83	50	.01	7	.51	.01	.31	1	320	25
* 113063	1	108	8	130	5.3	124	38	2260	7.90	4394	5	ND	1	296	1.9	49	2	24	5.35	.101	6	22	2.02	208	.01	7	.51	.01	.28	1	560	25
STANDARD C/AU-R	17	59	36	133	7.2	73	33	1073	4.04	41	18	6	39	52	18.5	15	18	57	.49	.092	38	60	.87	182	.09	32	1.98	.06	.16	13	480	1400

ICP - .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.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM.
ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB
- SAMPLE TYPE: P1 ROCK P2 SOIL P3 SILT AU* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE. HG ANALYSIS BY FLAMELESS AA.

DATE RECEIVED: AUG 2 1991 DATE REPORT MAILED: Aug 9/91. SIGNED BY C. Leong ..D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

91 TOSH

DRY BASIN

113054 - 180, .8, 492

91 TOSH

AMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb	Hg ppb
13062	1	143	89	369	5.1	165	110	4420	25.52	2441	5	ND	2	102	2.2	2	2	38	1.89	.079	12	17	.93	92	.01	2	1.22	.01	.13	1	1600.0	55
13067	4	118	50	310	9.8	65	31	867	19.08	20829	5	3	13	85	3.0	49	2	13	.66	.081	21	4	.15	160	.01	2	.29	.01	.09	1	3140.0	10

91 TOSH

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb	Hg ppb
113064	1	32	10	102	.4	48	17	414	3.47	69	5	ND	4	160	.6	2	2	53	2.48	.074	20	54	1.02	96	.15	4	1.74	.04	.23	1	3.6	20
113065	1	38	6	81	.3	73	15	440	2.99	16	5	ND	3	87	.2	2	2	51	3.11	.096	15	73	1.28	151	.13	5	1.29	.04	.08	1	3.7	15
113066	1	49	11	213	.5	82	16	597	3.16	20	5	ND	2	104	1.1	2	2	39	4.58	.074	16	46	1.06	174	.08	6	1.31	.03	.07	1	31.2	75

91 TOSA

NORANDA VANCOUVER LABORATORY

Geochemical Analysis

Project Name & No.: MPS – 312 Geol.: J.D. **Date received:** SEP. 05 LAB CODE: 9109–039

Material: 53 SOILS Sheet: 1 of 2 **Date completed:** SEP. 20

Remarks: * Sample screened @ –35 MESH (0.5 mm)

¤ Organic, Δ Humus, S Sulfide

Au – 10.0 g sample digested with aqua–regia and determined by A.A. (D.L. 5 PPB)

ICP – 0.2 g sample digested with 3 ml $HClO_4/HNO_3$ (4:1) at 203 °C for 4 hours diluted to 11 ml with water. Leeman PS3000 ICP determined elemental contents.

N.B. The major oxide elements and Ba, Be, Ce, La, Li, Ga are rarely dissolved completely from geological materials with this acid dissolution method.

*Sb – Aqua Regia/ Tartaric acid /AA

T.T. No.	SAMPLE No.	Au ppb	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	La ppm	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P %	Pb ppm	Sb ppm	Sr ppm	Ti %	V ppm	Zn ppm
69	173901	5	0.2	2.75	22	230	0.8	5	1.24	0.2	65	17	40	44	3.50	0.56	28	22	0.82	618	1	0.17	36	0.07	9	1	64	0.19	72	85
70	173902 *	5	0.2	0.72	2	32	0.2	5	0.59	0.4	18	3	8	7	0.74	0.08	5	4	0.24	76	1	0.36	5	0.02	2	2	73	0.05	21	19
71	173903 *	5	0.2	0.59	2	17	0.2	5	0.42	0.4	10	2	4	3	0.53	0.06	2	2	0.18	50	1	0.39	3	0.01	2	2	70	0.04	17	13
72	173904	15	0.2	3.23	18	253	0.8	5	0.85	0.2	62	15	37	32	3.45	0.69	30	25	0.89	534	1	0.12	34	0.08	6	1	66	0.25	82	81
73	173905	5	0.2	3.02	20	274	0.8	5	0.84	0.2	52	16	33	45	3.21	0.68	24	23	0.76	640	1	0.26	35	0.08	8	1	58	0.18	80	87
74	173906 *	5	0.2	0.39	3	31	0.2	5	0.30	0.3	13	3	6	8	0.70	0.10	4	4	0.16	140	1	0.56	3	0.03	2	1	25	0.04	21	14
75	173907 *	5	0.2	0.80	6	84	0.3	5	0.61	0.6	30	6	11	24	1.04	0.14	10	5	0.23	316	1	0.40	9	0.04	2	1	48	0.06	28	36
76	173908 *	5	0.2	0.65	3	41	0.2	5	0.44	0.3	17	4	8	6	0.87	0.11	5	5	0.24	115	1	0.48	5	0.02	2	1	48	0.06	26	20
77	173909 *	5	0.2	0.62	5	35	0.2	5	0.45	0.4	17	3	7	7	0.71	0.10	5	4	0.20	91	1	0.42	4	0.02	2	1	52	0.05	21	19
78	173910 *	5	0.2	0.75	11	86	0.3	5	2.56	0.8	33	5	12	22	0.90	0.12	8	5	0.17	179	1	0.12	10	0.06	2	1	115	0.05	25	54
79	173911	5	0.2	1.98	24	173	0.7	5	2.92	0.5	59	13	29	51	2.59	0.36	23	15	0.50	527	2	0.07	27	0.10	8	4	138	0.13	60	74
80	173912	5	0.2	3.07	26	244	1.0	6	1.83	0.2	70	18	47	44	3.87	0.50	30	20	0.70	919	2	0.07	36	0.11	12	1	89	0.21	97	80
81	173913	5	0.2	2.08	12	191	0.7	5	2.52	0.2	51	13	33	36	2.71	0.29	18	14	0.53	584	2	0.08	27	0.10	7	6	81	0.17	73	82
82	173914 *	5	0.2	0.63	3	24	0.2	5	0.42	0.3	14	3	8	6	0.80	0.07	4	3	0.21	63	1	0.39	4	0.02	2	4	57	0.05	25	20
83	173915	5	0.2	1.86	19	136	0.6	5	2.30	0.3	53	10	23	57	2.39	0.27	21	13	0.41	469	2	0.11	22	0.11	4	6	185	0.13	59	100
84	173916	5	0.2	2.75	12	219	0.9	5	0.65	0.2	80	14	30	39	3.37	0.56	36	23	0.62	523	2	0.12	24	0.08	12	8	61	0.17	82	82
85	173917	5	0.2	2.51	14	247	0.7	5	0.62	0.2	46	18	35	34	3.52	0.43	20	18	0.68	1123	3	0.13	26	0.15	9	4	56	0.19	92	90
86	173918	5	0.2	3.21	16	237	1.1	5	0.57	0.2	89	23	36	61	3.71	0.55	39	25	0.75	739	2	0.20	36	0.10	13	4	57	0.18	86	114
87	173919 *¤	5	0.2	1.25	11	165	0.4	5	1.53	0.5	43	10	19	29	1.62	0.23	15	8	0.32	716	2	0.07	16	0.10	5	2	102	0.09	40	77
88	173920	160	0.8	7.50	360	444	2.7	6	0.97	0.2	126	22	27	42	4.86	2.32	62	44	0.67	716	1	0.17	44	0.08	34	2	181	0.07	101	114
89	173921	5	0.2	3.08	22	262	0.9	5	1.17	0.2	71	16	48	34	3.73	0.53	31	22	0.75	687	2	0.08	35	0.09	10	1	74	0.22	92	74
90	173922	5	0.2	2.06	23	154	0.8	6	5.38	0.4	52	14	32	34	2.40	10.14	20	15	0.86	441	2	0.11	27	0.10	8	4	155	0.12	59	71
91	173923	5	0.2	2.06	12	133	0.7	5	2.42	0.3	54	11	23	44	2.39	0.40	21	16	0.48	370	2	0.14	23	0.09	4	4	97	0.13	59	74
92	173924	5	0.4	2.50	19	191	0.8	5	2.52	0.5	58	14	28	41	2.61	0.57	23	20	0.54	532	1	0.11	28	0.09	21	1	104	0.12	59	92
93	173925	5	0.4	2.20	17	172	0.7	5	2.67	0.4	55	12	28	57	2.55	0.43	24	17	0.53	465	2	0.14	30	0.10	12	4	110	0.13	57	90
94	173926	5	0.2	2.81	27	226	0.8	5	2.50	0.2	69	18	34	49	3.87	0.60	28	24	1.08	859	2	0.14	38	0.10	13	1	101	0.20	82	110
95	173927	5	0.2	2.91	13	243	0.8	5	1.46	0.2	68	16	37	31	3.57	0.58	29	26	0.78	606	1	0.15	33	0.07	10	4	85	0.24	80	85
96	173928	5	0.2	2.51	15	229	0.7	5	1.37	0.2	58	14	31	32	2.89	0.52	24	22	0.65	620	1	0.24	26	0.08	9	4	72	0.17	65	83
97	173929	5	0.2	2.56	29	221	0.8	5	1.71	0.2	66	15	35	43	3.21	0.54	28	23	0.69	584	2	0.15	29	0.08	8	2	83	0.18	70	66
98	173930	5	0.2	3.34	33	218	0.9	5	0.50	0.2	71	17	40	30	4.27	0.89	34	30	0.94	568	1	0.08	40	0.07	9	1	47	0.19	74	85
99	173931	5	0.2	2.61	16	254	0.6	5	0.37	0.2	49	13	35	24	2.99	0.62	24	22	0.68	612	1	0.23	24	0.04	9	1	35	0.18	72	68
101	173932 *¤	5	0.2	1.51	10	145	0.4	5	0.35	0.4	27	8	26	21	1.90	0.36	13	12	0.41	256	1	0.27	16	0.06	4	1	36	0.12	49	73
102	173933 *	5	0.2	1.28	9	110	0.3	5	0.44	0.4	23	6	20	13	1.43	0.31	9	10	0.35	117	1	0.37	12	0.04	2	6	45	0.09	40	41
103	173935 *	5	0.2	1.36	18	109	0.3	5	0.67	0.4	33	7	21	18	1.65	0.34	13	11	0.41	132	1	0.25	16	0.06	4	4	62	0.10	40	60
104	173951	5	0.2	2.77	32	238	0.8	5	1.69	0.4	66	16	29	33	3.20	0.68	28	26	0.66	467	1	0.14	33	0.08	10	1	116	0.16	61	88

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716

GEOCHEMICAL ANALYSIS CERTIFICATE

MPS (JPD)

Noranda Exploration Co. Ltd. PROJECT 9109-039 312 File # 91-4182

1050 Davie St., Vancouver BC V6E 1M4

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb	Hg ppb
R173944	1	4	6	3	.1	1	1	196	.24	7	5	ND	1	1525	.2	2	2	1	33.81	.017	3	1	.14	3	.01	2	.02	.01	.01	1	3	5
R173946	1	15	3	96	.1	48	19	491	5.45	2	5	ND	19	15	.2	2	3	31	.13	.033	57	27	1.29	19	.01	2	2.08	.02	.12	1	4	5
R173947	1	39	8	116	.1	29	15	567	6.03	2	5	ND	21	6	.3	2	2	22	.07	.039	40	36	1.43	20	.01	2	2.68	.02	.12	1	3	15
R173948	1	14	7	59	.1	22	11	352	2.55	2	5	ND	8	114	.2	2	2	11	1.51	.039	17	14	.64	24	.04	2	1.26	.02	.09	1	1	5
R173949	1	5	3	4	.1	2	1	39	.15	5	5	ND	1	2319	.2	2	2	1	39.51	.014	2	1	.13	3	.01	2	.05	.01	.01	1	2	5
R173976	1	70	16	91	.2	57	18	443	4.56	7	5	ND	18	38	.3	2	2	30	.47	.023	35	44	1.44	72	.14	2	2.40	.02	.60	1	2	10
RE R173982	1	31	7	123	.1	56	23	785	6.64	3	5	ND	19	33	.3	2	2	37	.25	.040	44	43	1.37	38	.01	2	2.72	.02	.14	1	2	10
R173977	1	12	2	109	.1	10	20	738	5.98	2	5	ND	3	198	.9	2	2	79	2.05	.195	16	29	2.45	213	.20	2	3.59	.21	.14	1	2	10
R173978	1	26	17	43	.3	29	13	300	2.53	24	5	ND	11	426	.4	2	2	5	7.62	.033	15	9	.88	17	.01	2	.61	.01	.22	1	2	10
R173979	1	18	9	13	.1	4	3	551	.92	13	5	ND	1	763	.3	2	2	1	31.36	.011	4	1	.56	11	.01	2	.10	.01	.04	1	3	10
R173981	1	17	5	13	.3	3	2	194	.78	7	8	ND	3	2164	.2	2	2	3	29.96	.018	7	1	.29	14	.01	2	.15	.02	.04	1	1	5
R173982	1	30	7	113	.1	52	21	724	6.14	4	5	ND	17	30	.3	2	2	34	.23	.036	40	38	1.24	34	.01	2	2.47	.02	.13	1	1	5
R173983	2	41	35	68	.6	41	14	896	3.63	13	5	ND	15	54	1.1	2	2	27	1.22	.028	24	41	.74	30	.01	5	.95	.02	.16	1	2	5
R173984	1	51	10	70	.3	48	14	834	3.96	887	5	ND	9	130	.3	2	2	19	1.41	.032	13	36	1.08	25	.01	3	1.25	.03	.17	1	50	90
R173985	1	24	11	72	.1	47	14	480	3.94	63	5	ND	13	17	.2	2	2	16	.17	.032	29	32	.64	56	.03	3	1.11	.02	.34	1	1	15
R173987	2	41	13	75	.1	49	13	416	3.77	2	5	ND	13	11	.2	2	2	25	.18	.035	22	53	1.11	53	.06	2	1.71	.02	.36	1	1	5
R173988	1	6	2	60	.1	205	32	899	2.72	342	5	ND	3	226	.4	17	2	9	2.70	.043	7	74	2.70	13	.01	4	.34	.01	.12	1	5	10
R173989	1	24	6	39	.3	51	11	408	2.07	422	5	ND	9	85	.2	2	2	3	.77	.025	13	16	.74	16	.01	2	.20	.01	.12	1	129	5
R173990	1	14	7	59	.4	18	7	437	2.24	69	6	ND	3	664	.4	2	2	4	8.13	.028	4	7	1.12	12	.01	2	.23	.01	.08	1	2	10
R173991	1	17	10	30	.2	20	7	478	1.77	11	5	ND	1	1233	.3	2	2	10	17.10	.035	4	13	.63	20	.04	2	.35	.01	.12	1	1	10
R173992	1	29	7	64	.3	49	15	248	3.69	14	5	ND	19	23	.2	2	2	15	.16	.016	31	37	.95	44	.03	2	1.42	.02	.24	1	1	10
R173993	1	20	3	71	.2	29	12	270	3.22	3	5	ND	8	835	.4	2	2	12	8.48	.028	14	18	.89	55	.13	2	1.27	.02	.72	1	2	15
R174251	1	14	17	16	.6	8	3	213	1.11	424	5	ND	4	2305	.2	4	2	2	20.33	.020	5	2	.26	15	.01	2	.14	.01	.09	1	118	10
R174252	1	29	58	99	.1	18	9	518	2.15	13	5	ND	10	697	.6	2	2	2	11.60	.027	28	4	.96	13	.01	2	.26	.02	.12	1	1	5
R174253	1	2	8	6	.1	8	5	362	.97	16	5	ND	3	1608	.3	2	2	1	22.72	.030	13	1	.46	12	.01	2	.11	.01	.07	1	4	5
R174254	2	16	14	102	.3	41	25	592	5.77	60	5	ND	9	129	.7	2	2	54	1.63	.058	15	36	1.59	13	.01	2	2.37	.05	.08	1	23	10
R174255	1	72	8	111	.1	67	23	292	5.80	3	5	ND	14	28	.3	2	2	27	.33	.038	31	58	1.92	68	.14	2	3.00	.01	.80	1	3	5
R174256	1	31	7	24	.4	30	10	384	2.50	165	5	ND	9	882	.3	2	2	4	10.70	.046	9	4	.50	25	.01	3	.29	.01	.18	1	6	5
R174257	1	39	7	86	.1	45	17	256	4.64	6	5	ND	10	285	.5	2	2	27	3.69	.114	20	32	1.05	86	.19	2	1.51	.02	.97	1	2	10
R174258	1	34	11	65	.2	32	12	514	3.73	2	5	ND	11	523	.6	2	2	14	7.29	.057	21	26	1.01	26	.01	2	1.04	.02	.18	1	2	5
R174259	1	19	17	14	.2	10	4	401	1.06	7	5	ND	4	1512	.2	2	2	1	23.80	.028	13	2	.39	8	.01	2	.13	.01	.06	1	3	10
R174260	1	52	3	84	.2	32	26	569	5.17	5	5	ND	1	310	.7	2	2	92	4.16	.090	2	28	2.09	11	.19	2	2.75	.08	.08	1	1	10
R174261	6	109	21	72	.2	30	15	277	5.66	9	5	ND	22	21	.6	2	2	22	.20	.045	30	39	1.64	43	.01	3	2.20	.01	.22	1	4	10
R174262	2	25	8	17	.2	20	7	116	1.41	2	5	ND	4	67	.2	2	2	4	.74	.007	6	14	.30	17	.02	2	.54	.02	.08	1	1	5
R174263	1	46	15	59	.2	42	13	267	3.72	4	5	ND	12	21	.2	2	2	29	.28	.032	21	43	1.04	74	.14	2	1.66	.03	.50	1	5	5
R174264	1	8	9	13	.3	7	3	176	1.06	9	5	ND	4	1999	.2	2	2	1	23.78	.032	9	2	.40	13	.01	2	.18	.01	.08	1	1	5
R174265	1	14	13	103	.2	45	16	329	4.51	2	5	ND	11	179	.3	2	2	34	2.31	.044	22	55	1.83	114	.25	2	3.32	.13	1.28	1	2	10
R174266	1	16	8	42	.2	18	7	238	2.16	3	8	ND	8	1307	.3	2	2	6	14.34	.014	18	11	.57	15	.04	2	.83	.01	.14	1	4	5
STANDARD C/AU-R	19	56	39	132	7.3	74	33	1087	4.00	44	17	6	39	53	18.6	15	19	56	.47	.092	40	58	.90	185	.09	33	1.92	.06	.15	13	470	1500

ICP - .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.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM.
ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB
- SAMPLE TYPE: ROCK AU* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE. HG ANALYSIS BY FLAMELESS AA.
Samples beginning 'RE' are duplicate samples.

Sept 11/91. C. Leong

T.T. No.	SAMPLE No.	Au ppb	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	K %	La ppm	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P %	Pb ppm	Sr ppm	Ti %	V ppm	Zn ppm
105	173952	10	0.2	3.49	68	250	1.1	5	1.54	0.2	86	19	27	43	3.95	0.94	39	30	0.79	573	1	0.10	39	0.08	16	1	122	0.16	66	96
106	173953	25	0.2	4.29	100	267	1.3	5	1.54	0.2	94	20	24	42	3.91	1.14	43	38	0.80	604	2	0.12	40	0.08	16	1	136	0.12	66	101
107	173954	10	0.2	4.87	132	283	1.4	5	1.42	0.2	100	22	25	40	4.33	1.29	49	40	0.89	586	1	0.11	39	0.09	21	1	138	0.13	69	104
108	173955	15	0.2	3.07	97	198	1.0	5	2.04	0.4	69	19	24	65	3.07	0.81	32	26	0.61	471	1	0.22	36	0.09	24	1	98	0.12	58	80
109	173956	35	0.2	6.00	272	372	1.9	5	1.09	0.2	120	22	29	55	4.71	1.74	62	52	0.78	569	1	0.16	46	0.07	24	1	144	0.08	77	109
110	173957	80	0.2	6.03	383	401	2.2	5	1.19	0.2	133	25	30	66	4.95	1.75	66	51	0.76	676	1	0.17	49	0.08	31	1	159	0.07	78	100
111	173958	280	0.2	6.04	158	350	1.8	5	2.57	0.2	96	20	26	45	4.04	1.81	41	40	0.57	500	1	0.20	40	0.10	22	1	267	0.10	92	120
112	173959	55	0.2	6.39	72	371	3.0	5	0.26	0.2	173	31	25	97	5.99	1.44	114	52	0.98	1049	1	0.23	61	0.07	23	1	81	0.09	102	114
113	174201	5	0.2	3.48	21	220	0.8	5	0.55	0.2	62	21	39	35	4.46	0.78	31	35	1.08	528	1	0.09	44	0.08	10	1	44	0.23	84	98
114	174202	5	0.2	2.52	19	217	0.6	5	0.40	0.2	47	12	31	34	2.95	0.56	22	22	0.64	731	1	0.31	26	0.06	10	1	35	0.16	65	75
115	174203	10	0.2	3.61	72	313	1.0	5	0.88	0.2	73	18	34	44	4.06	0.95	34	30	0.85	774	2	0.14	42	0.08	28	1	62	0.19	80	107
116	174204	230	0.2	4.09	41	289	1.2	5	1.06	0.2	94	19	33	54	4.53	1.00	46	34	1.02	643	2	0.09	44	0.09	17	1	84	0.22	84	102
117	174205	35	0.2	3.51	37	237	1.1	5	1.50	0.2	88	19	24	47	3.98	0.81	42	28	0.89	729	1	0.11	34	0.09	16	1	89	0.20	72	98
118	174206	250	0.2	5.03	59	314	1.5	5	0.76	0.2	109	24	24	40	5.11	1.28	56	37	1.22	631	1	0.14	40	0.11	17	1	76	0.17	78	105
119	174207	470	0.2	6.16	420	397	2.5	6	1.06	0.2	116	27	24	48	4.78	1.73	58	32	0.91	639	2	0.19	42	0.09	34	1	82	0.13	83	107
120	174208	25	0.2	3.31	33	248	0.9	5	1.59	0.2	74	16	54	37	3.92	0.64	32	22	0.92	537	2	0.08	38	0.12	14	1	93	0.24	99	82
121	174209	250	0.2	5.39	252	325	2.1	5	1.93	0.2	130	25	29	59	5.47	1.50	63	37	0.55	832	1	0.13	45	0.12	34	1	241	0.09	91	101
122	174210	5	0.2	4.63	2568	263	1.7	5	6.65	0.2	113	26	22	61	6.93	20.26	53	21	0.34	242	2	0.13	54	0.10	55	20	681	0.06	53	208

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6
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GEOCHEMICAL ANALYSIS CERTIFICATE

Noranda Exploration Co. Ltd. PROJECT 9109-039 312 FILE # 91-4782 Page 1
1050 Davie St., Vancouver BC V6E 1M4

SAMPLE#	Hg ppb
P 173901	50
P 173902	5
P 173903	10
P 173904	25
P 173905	40
P 173906	10
P 173907	15
P 173908	5
P 173909	5
P 173910	45
P 173911	40
P 173912	55
P 173913	60
P 173914	5
P 173915	35
P 173916	60
P 173917	65
P 173918	15
P 173919	135
P 173920	15
P 173921	25
P 173922	30
P 173923	40
RE P 173919	135
P 173924	45
P 173925	50
P 173926	25
P 173927	25
P 173928	35
P 173929	30
P 173930	20
P 173931	30
P 173932	25
P 173933	25
P 173935	25
P 173951	30
P 173952	30
STANDARD C	1600

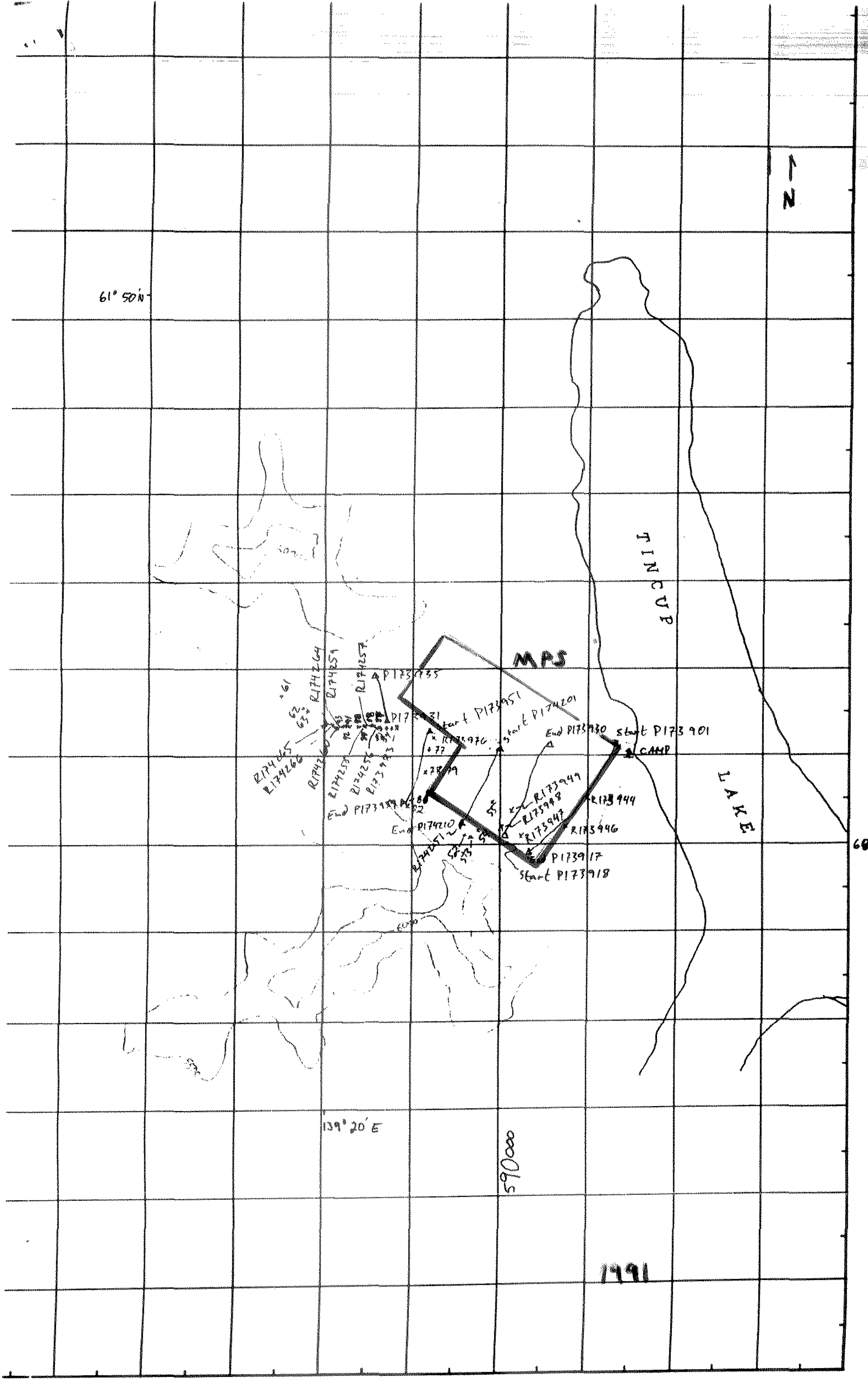
- SAMPLE TYPE: PULP HG ANALYSIS BY FLAMELESS AA.
Samples beginning 'RE' are duplicate samples.

DATE RECEIVED: SEP 27 1991 DATE REPORT MAILED: Oct 1/91

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

SAMPLE#	Hg ppb
P 173953	25
P 173954	30
P 173955	75
P 173956	75
P 173957	20
P 173958	50
P 173959	75
P 174201	20
P 174202	50
P 174203	35
P 174204	55
P 174205	30
P 174206	45
P 174207	30
P 174208	65
RE P 174204	60
P 174209	45
P 174210	75
STANDARD C	1600

Samples beginning 'RE' are duplicate samples.



No. of SAMPLES ________ SAMPLE No's. P173901-35, P174201-10, P
R173944, 46-49, R173976-79, 81-85, 87-93, R174251-66

PROJECT MPS ... DATES SAMPLED 22-08-91 - 28-08-91 COLLECTORS JDD CWM DR

SCALE 1=5000 N.T.S. No. 115 G/14 G.C.I. No. 65002