# GEOLOGICAL, GEOCHEMICAL, GEOPHYSICAL REPORT

ON THE

## TODD CREEK PROPERTY

( TOC 3 - 6 and 13 - 15 CLAIMS )

N.T.S. 104 A/04,05

SKEENA MINING DIVISION

Situated at coordinates: 56° 16' 40" N
129° 46' 00" W

NORANDA EXPLORATION COMPANY, LIMITED
( NO PERSONAL LIABILITY )



By: Robert J. Baerg
Lyndon Bradish

January, 1991

List of Figures

## 1.0 Summary

The Todd Creek copper-gold property is located on the eastern flank of the Coast mountains approximately 45 km north of Stewart, B.C. Mineralization consist of copper-gold bearing quartz/sulphide veins in Hazelton Group volcanics. To date, there are six main areas of interest main areas of interest have been located:

1. **South Zone** - north trending quartz-sulphide breccia veins cutting feldspar porphyry volcanics.
2. **North Zone** - northwest trending quartz-sulphide breccia veins cutting chlorite altered fine grained andesite flows.
3. **Fall Creek Zone** - northwest trending sulphide-carbonate-barite veins cutting silica-chlorite-sericite-pyrite altered andesitic tuffs.
4. **Virginia Creek** - felsic volcanic sequence ( Mt. Dilworth Formation ) with coincident Pb-Zn-Ag geochemical anomalies.
5. **Orange Mt.** - area of silica-sericite-pyrite altered felsic to intermediate volcanics with local barite-lead-zinc veins and local Pb-Zn-Ag geochemical anomalies.
6. **TOC 13-15** - andesitic flows and tuffs with local narrow Pb-Zn-Ag veins and geochemical anomalies.

Work on the Toc 3 to 6 and 13 to 15 claims consisted of recon mapping and sampling and an airborne EM-Mag survey. The ground work has identified several areas of felsic ( Mt. Dilworth ) volcanics with local base metal anomalies however no precious metal occurrences have been found associated with the felsic volcanics. The magnetic values generally have mapped the northerly trend to the stratigraphic package. Several prominent East-West breaks of unknown source are indicated by the magnetics. These are probably due to faults and/or fault controlled alteration.

The 1990 field program failed to identify any new and/or potential areas of precious metal mineralization. As a result no further work is reccommended at this time.

## 2.0 Introduction:

The Todd Creek property is located on the eastern side of the Coast Mountains of British Columbia, within the Skeena Mining Division. The property was staked to cover several Cu-Au occurrences which were discovered by Newmont Mining Corp. in 1959. 1990 fieldwork included drill testing the 1988 I.P. anomalies, extending the Fall Creek grid for mapping and reconnaissance geological mapping and geochemical sampling on the rest of the property.

## 3.0 History:

The South and North Zone showings were discovered in 1959 by prospectors Ole Olsen and Fred Hasselberg Jr., in the employ of Newmont Mining Corporation. Newmont conducted a limited trenching and drilling program on the zones in 1960 with inconclusive results.

In 1969, the South Zone showing was staked for Kerr Addison Mines by Wilf Christians. Kerr Addison, who recorded no work on the property, subsequently transferred title to Christians, who in turn sold the claims to C.S. Powney. During 1970-1972, several trenches were blasted and sampled. In 1981, J.R. Woodcock Consultants staked the North Zone and a large altered area further north. From 1981-1984, Woodcock and Riocanex conducted extensive geological and geochemical programs on their claims. In 1985, Woodcock dropped everything except two units, which they currently hold.

In 1986, Noranda Exploration Company Limited staked the TOC 1-10 to cover the known showings and gossans along Todd Creek. TOC 11 and 12 were added in 1986 and TOC 13-15 in 1987.

## 4.0 Location and Access:

The Todd Creek property is located in the Skeena Mining Division, approximately 45 km NNE of Stewart, B.C.(Figure #1). Highway #37A to Stewart passes 10 km to the south of the property. The property covers most of the western side of the Todd Creek valley and portions of the Todd Creek glacier. Access to the property has been via helicopter from Stewart, B.C.

5.0 Physiography & Vegetation:

The property lies on the eastern flank of the Coast Range Mountains. Relief in the area is variable from 885 meters in the valley bottom to 2075 meters on the highest summit. Todd Creek glacier and several valley glaciers occupy portions of TOC 11 and 12. The sides of the valley have extensive areas of bedrock exposure which commonly forms steep rock faces and cliffs. The valley has a thick cover of glacier outwash material. Vegetation on the property consists of young willow, poplar and alder in the valley bottom, grading up slope into local stands of fir, hemlock and spruce and higher up into alpine meadows and bare rock.

6.0 Claim Statistics:

The Todd Creek property consists of 12 modified grid claims (Figure #2), as listed below:

| NAME | UNITS | RECORD # | EXPIRY DATE |
|---|---|---|---|
| TOC 3 | 20 | 5305 | April 9, 1993 |
| TOC 4 | 20 | 5306 | April 9, 1995 |
| TOC 5 | 20 | 5307 | April 9, 1993 |
| TOC 6 | 20 | 5308 | April 9, 1995 |
| TOC 7 | 18 | 5309 | April 9, 1994 |
| TOC 8 | 18 | 5310 | April 9, 1994 |
| TOC 9 | 20 | 5311 | April 9, 1994 |
| TOC 10 | 20 | 5312 | April 9, 1994 |
| TOC 11 | 20 | 5518 | Sept 17, 1994 |
| TOC 12 | 16 | 5577 | Oct. 28, 1994 |
| TOC 13 | 20 | 5996 | Mar. 26, 1992 |
| TOC 14 | 20 | 5997 | Mar. 26, 1992 |
| TOC 15 | 20 | 5998 | Mar. 26, 1992 |

The 2 unit Todd claim in central TOC 7 is currently held by Woodcock Consulting.

The work described in this report will be filed for assessment credit on the TOC 3 to 6 and 13 to 15 claims.

## 7.0 Regional Geology:

The area has been mapped as being underlain by Lower Jurassic age Unuk River Formation volcanics and clastic sediments cut by numerous Jurassic and Tertiary age intrusive bodies ranging in size from narrow dykes and sills to large plutons. (Figure #3)

Reconnaissance property mapping indicates that the property is underlain by intermediate to felsic flows, tuffs, agglomerates and volcaniclastics with local areas of fine to coarse clastic sediments. Intermediate volcanics, andesite flows and agglomerates, predominate with lesser but significant amounts of rhyolite-dacite flows and volcaniclastics along the west side of the Todd Creek valley from TOC 9 to 11 and on the north side of Virginia Creek on TOC 3 and 4. The clastic sediments, which consist of siltstones, greywackes and conglomerates, occur on TOC 6 and to the east in the main Todd Creek valley. The stratigraphy generally trends north to northwest with moderate northeasterly dips.

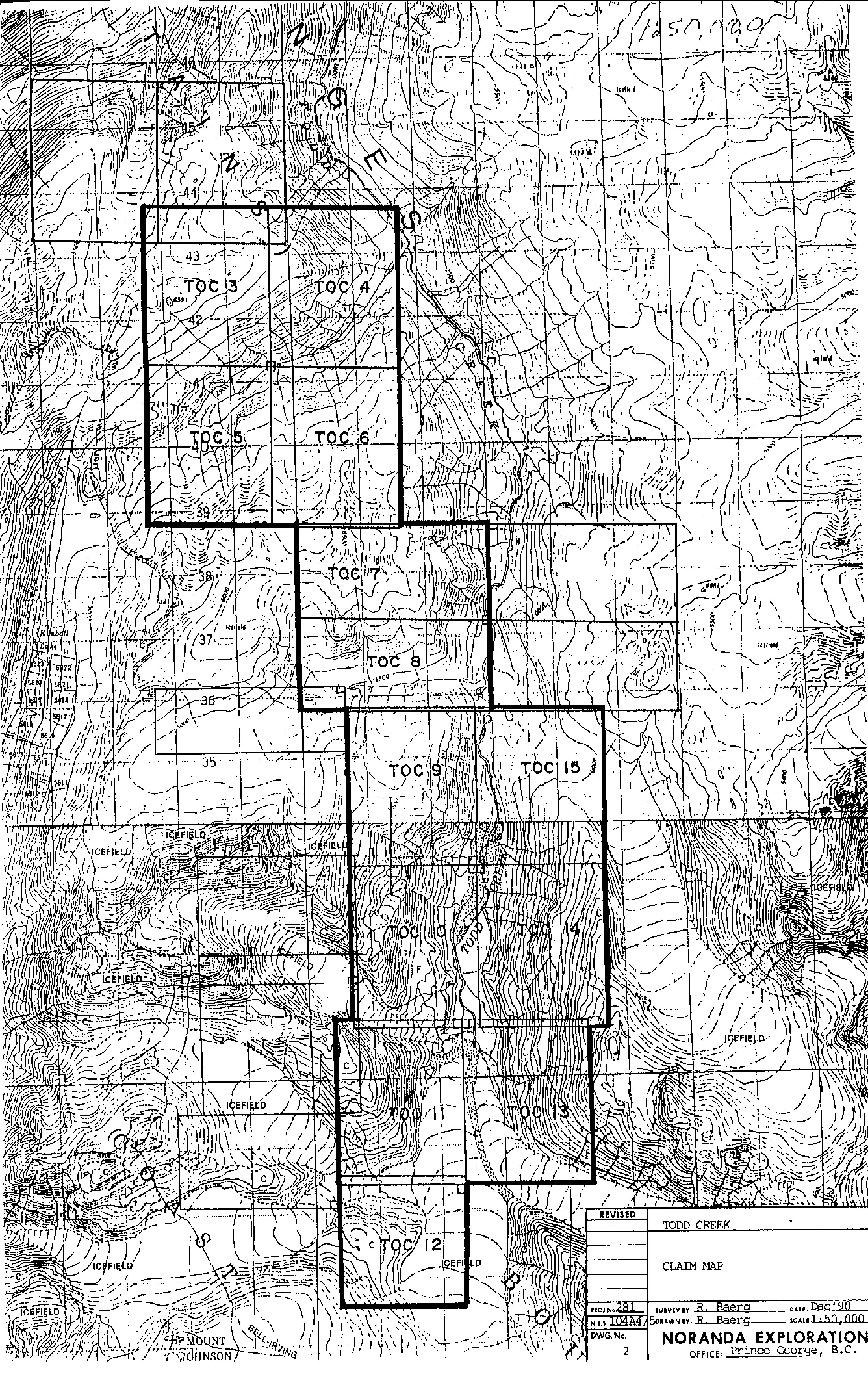
## 8.0 Field Program:

### 8.01 Virginia Creek Area

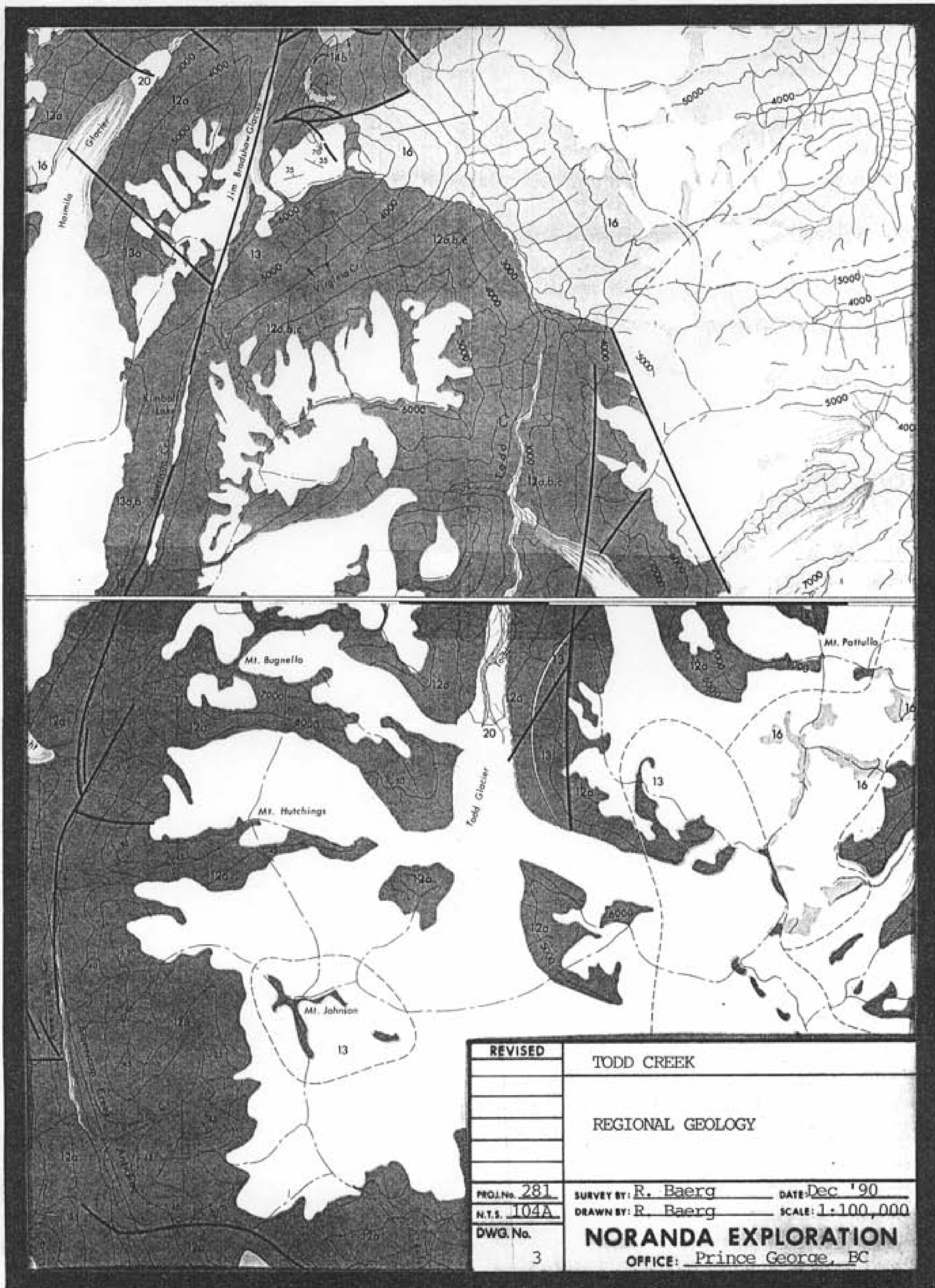
The Virginia Creek Area is located on TOC 3-5. 1990 field work consisted of recon mapping, silt, soil and rock sampling along ridge tops and elevation contours. A total of 5 traverses, RT 1-5, were completed (Figures 4 to 8).

8.01.01 Geology - Recon mapping indicates that the Virginia Creek area is underlain by a sequence of interbedded green-maroon andesite flows, breccias, volcaniclastics; siltstones, greywacke, limestone and rhyolite/dacite ash tuffs, lapilli tuffs, tuff breccia and feldspar crystal tuff. Each of these units is described below.

Andesite: Green to maroon in color and is usually fairly massive and thick bedded. Flows and breccias are generally porphyritic and locally contain sub-round to angular mono and heterlothic fragments up to 10 cm. The flows/breccias contain numerous bright red and white jasper veins and pods and locally abundant jasper vein fragments. Locally the jasper fragments form jasper conglomerate beds within the volcaniclastics.




| REVISED | TODD CREEK |
|---|---|
| | CLAIM MAP |
| PROJ No. 281 | SURVEY BY: R. Baerg DATE: Dec'90 |
| N.T.S. 104A4/5 | DRAWN BY: R. Baerg SCALE 1:50,000 |
| DWG. No. 2 | NORANDA EXPLORATION OFFICE: Prince George, B.C. |




| REVISED | TODD CREEK |
| --- | --- |
| | REGIONAL GEOLOGY |

PROJ.No. 281
N.T.S. 104A
DWG. No. 3

SURVEY BY: R. Baerg DATE: Dec '90
DRAWN BY: R. Baerg SCALE: 1:100,000

**NORANDA EXPLORATION**

OFFICE: Prince George, BC

Province of British Columbia
Ministry of Energy, Mines and Petroleum Resources

# GEOLOGY OF THE UNUK RIVER - SALMON RIVER - ANYOX MAP AREA

KILOMETRES 0 — 10 KILOMETRES

SCALE - 100 000

## LEGEND

### SEDIMENTARY AND VOLCANIC ROCKS

CENOZOIC

**QUATERNARY**

**RECENT**

[20] UNCONSOLIDATED DEPOSITS: RIVER FLOODPLAIN, ESTUARINE, RIVER CHANNEL AND TERRACES, ALLUVIAL FANS, DELTAS AND BEACHES, OUTWASH, GLACIAL LAKE SEDIMENTS, TILL, PEAT, LANDSLIDES, VOLCANIC ASH, HOTSPRING DEPOSITS

[19] BASALT FLOWS (a), CINDERS, ASH (b)

**PLEISTOCENE AND RECENT**

[18] BASALT FLOWS

MESOZOIC

**JURASSIC**

**HAZELTON GROUP**

**UPPER JURASSIC**

NASS FORMATION

[17] SILTSTONE, GREYWACKE, SANDSTONE, SOME CALCARENITE, ARGILLITE, CONGLOMERATE, MINOR LIMESTONE, MINOR COAL (INCLUDING EQUIVALENT SHALE, PHYLLITE, AND SCHIST)

**MIDDLE JURASSIC**

SALMON RIVER FORMATION

[16] SILTSTONE, GREYWACKE, SANDSTONE, SOME CALCARENITE, MINOR LIMESTONE, ARGILLITE, CONGLOMERATE, LITTORAL DEPOSITS

[15] RHYOLITE, RHYOLITE BRECCIA, CRYSTAL AND LITHIC TUFF

BETTY CREEK FORMATION

[14] PILLOW LAVA, BROKEN PILLOW BRECCIA (a); ANDESITIC AND BASALTIC FLOWS (b)

[13] GREEN, RED, PURPLE, AND BLACK VOLCANIC BRECCIA, CONGLOMERATE, SANDSTONE, AND SILTSTONE (a); CRYSTAL AND LITHIC TUFF (b); SILTSTONE (c); MINOR CHERT AND LIMESTONE (INCLUDES SOME LAVA (13d)) (e)

**LOWER JURASSIC**

UNUK RIVER FORMATION

[12] GREEN, RED, AND PURPLE VOLCANIC BRECCIA, CONGLOMERATE, SANDSTONE, AND SILTSTONE (a); CRYSTAL AND LITHIC TUFF (b); SANDSTONE (c); CONGLOMERATE (d); LIMESTONE (e); CHERT (f); MINOR COAL (g)

[11] PILLOW LAVA (a); VOLCANIC FLOWS (b)

**TRIASSIC**

**UPPER TRIASSIC**

**TAKLA GROUP (?)**

[10] SILTSTONE, SANDSTONE, CONGLOMERATE (a); VOLCANIC SILTSTONE, SANDSTONE, CONGLOMERATE (b); AND SOME BRECCIA (c); CRYSTAL AND LITHIC TUFF (d); LIMESTONE (e)

### PLUTONIC ROCKS

CENOZOIC

**OLIGOCENE AND YOUNGER**

[9] DYKES AND SILLS (SWARMS), DIORITE (a); QUARTZ DIORITE (b); GRANODIORITE (c); BASALT (d)

**EOCENE (STOCKS, ETC.) AND OLDER**

[8] QUARTZ DIORITE (a); GRANODIORITE (b); MONZONITE (c); QUARTZ MONZONITE (d); AUGITE DIORITE (e); FELDSPAR PORPHYRY (f)

[7] COAST PLUTONIC COMPLEX: GRANODIORITE (a); QUARTZ DIORITE (b); QUARTZ MONZONITE, SOME GRANITE (c); MIGMATITE - AGMATITE (d)

MESOZOIC

**JURASSIC**

MIDDLE JURASSIC AND YOUNGER ?

[6] GRANODIORITE (a); DIORITE (b); SYENODIORITE (c); MONZONITE (d); ALASKITE (e)

LOWER JURASSIC AND YOUNGER ?

[5] DIORITE (a); SYENOGABBRO (b); SYENITE (c)

**TRIASSIC**

UPPER TRIASSIC AND YOUNGER ?

[4] DIORITE (a); QUARTZ DIORITE (b); GRANODIORITE (c)

HORNBLENDE PREDOMINANT ............ H
BIOTITE PREDOMINANT ................ B

### METAMORPHIC ROCKS

**TERTIARY**

[3] HORNFELS (a); PHYLLITE, SCHIST (b); SOME GNEISS (c)

**JURASSIC**

[2] HORNFELS (a); PHYLLITE, SEMI-SCHIST, SCHIST (b); GNEISS (c); CATACLASITE, MYLONITE (d); TACTITE (e)

**TRIASSIC**

[1] SCHIST (a); GNEISS (b); CATACLASITE, MYLONITE (c)

HORNBLENDE OR AMPHIBOLE DEVELOPED ................ H
BIOTITE DEVELOPED ................................ B
POTASSIUM FELDSPAR DEVELOPED ..................... K

[ ] AREA UNMAPPED

### SYMBOLS

ADIT
ANTICLINE (NORMAL, OVERTURNED)
BEDDING (HORIZONTAL, INCLINED, VERTICAL, CONTORTED)
BOUNDARY MONUMENT
CONTOURS (INTERVAL 1,000 FEET)
FAULT (DEFINED, APPROXIMATE)
FAULT (THRUST)
FAULT MOVEMENT (APPARENT)
FOLD AXES, MINERAL LINEATION (HORIZONTAL, INCLINED)
FOSSIL LOCALITY
GEOLOGICAL CONTACT (DEFINED, APPROXIMATE)
GLACIAL STRIAE
GRAVEL, SAND, OR MUD
HEIGHT IN FEET ABOVE MEAN SEA LEVEL
INTERNATIONAL BOUNDARY
JOINT SYSTEM (INCLINED, VERTICAL)
MARSH
MINING PROPERTY
RIDGE TOP
SCHISTOSITY (INCLINED, VERTICAL)
SYNCLINE (NORMAL, OVERTURNED)
TUNNEL
VOLCANIC CONE

Compilation and geology by E. W. Grove, 1964 to 1970, with assistance by [illegible] and [illegible], 1966 and James E. Fyles, 1967. Geology of the Alice Arm area by N. C. Carter, 1964 to 1968.

This unit predominantly occurs on the north side of Virginia Creek and along the east facing slopes of Todd Creek. Bedding generally strike north-south with moderate east dips. On the east side of Todd Creek this same maroon unit was observed to be dipping moderately to the west, indicating that a synclinal feature occurs in the Todd Creek valley. The volcaniclastics variably contain green or red volcanic fragments with a minor tuffaceous component and they occur interbedded with the volcanic flows.

Sediments: Most of the clastic sediments observed occur on the south side of Virginia Creek, particularly to the southwest. They consist of bedded black siltstones and greywackes with local silty limestone and andesite flow interbeds. Individual beds range from several centimetres to 1 to 2 metres thick. Bedding trends from NE to NW with moderate easterly dips.

Rhyolite/Dacite: This unit consists of tan, pale green to white weathering tuffs, tuff breccia, lapilli tuff and feldspar crystal tuffs.

The ash tuffs consist of 1-5 mm finely laminated beds with the entire sequence reaching thicknesses of 50 to 100m. The layers are generally pale green and very fine grained with local tuff shards and fragments. This grades up section into an ash tuff breccia. The breccia consists of 5 mm to 50 cm angular blocks of laminated ash tuff in a fine tuff matrix. The blocks locally appear to have been rotated and milled. Stratigraphically above the breccia there is a fairly sharp contact with a light green lapilli tuff unit. The lapilli are quite spherical and range from 1-5 mm in size within a homogenous tuff matrix. As the unit weathers a very distinct green pebble gravel is produced. The sequence tuff-breccia-lapilli tuff is then repeated up section. This felsic package is best exposed along the ridge on the north side of Virginia Creek. Other exposures of felsic rocks generally did not show this sequence but usually consisted of massive tuff and/or crystal tuff. The crystal tuffs contain approximately 5%, 1 to 5 mm quartz and feldspar grains in a tuffaceous, locally bedded matrix. The quartz phenocrysts are generally anhedral while the feldspar grains range from anhedral to euhedral.

This unit attains a maximum thickness of 100 metres. The felsic unit appears to occur at or near the top of the Betty Creek Formation, the maroon volcanics and sediments, and thus appears to be correlative with the Mt. Dilworth Formation felsic sequence.

As a marker horizon, this unit indicates the presence of several fold structures in the Virginia Creek area: 1) a NE trending, NE plunging anticline along Virginia Creek; 2) a parallel NE trending, NE plunging syncline in north central TOC 3.

8.01.02 Geochemistry - Sampling on the recon traverses generally consisted of collecting soil samples at 100 metre intervals, silt samples where possible and rock samples of anything interesting. Total samples were as follows:

| Soil | Silt | Rock |
|---|---|---|
| 108 | 22 | 22 |

Each recon traverse will be discussed individually in regards to anomalous results.

RT-1 - This consisted of a traverse along a NNE trending ridge top in the northern TOC 3 claim (figure 7).

Results indicate an area in excess of 200 metres wide with moderate to highly anomalous Pb-Zn +/- Mo-Au values (#'s 51355-57). This anomalous area straddles a contact between andesitic volcaniclastics and rhyo-dacite flows.

RT-2 - This traverse follows the ENE trending ridge top which forms the north side of the Virginia Creek valley (Figure 5, 7).

The ridge area, particularly portions underlain by the felsic volcanics, shows elevated As in soil values. From sample #110774 east to the end of the traverse As values range from 41 to 499 ppm with local anomalous Ba, Ag, Cd, Pb, Zn, Mo values. Of particular note is sample #51249 which returned the highest values in Ag, As, Cu, Mo, Pb, Zn. Gold values were all 5 ppb.

RT-3 - This traverse is located southeast of RT-2 and follows the 4500 foot contour from the NW corner of TOC 5 to the NW corner of TOC 4 (Figures 5, 7, 8).

As for RT-2 this area shows elevated As values along the entire traverse. Within this area, from #110898 to 110939, a distance of 1.4 km, is a zone of elevated Ag (to 3.8 ppm), As (to 157 ppm), Ba (to 1053 ppm), Cd (to 3.4 ppm), Pb (to 142 ppm) and Zn (to 499 ppm). Gold values were all 5 ppb. Silt samples from the above zone also returned anomalous values in the same elements as well as Au (to 15 ppb).

RT-4 - Located downslope from RT-3 and follows the 3750' contour (Figure 5).

Virtually all the silt and soil sample results along the traverse returned moderately to highly anomalous Ag, As, Ba, Cd, Mn, Pb, and Zn values. One silt sample, #125052, returned 25 ppb gold. In particular the results from silt samples 125057 to 125065, a distance of 1 km, showed significantly elevated values in the above elements.

RT-5 - Located in the NE corner of TOC 6 (Figures 4, 6).

The soil samples returned high Mn values, slightly elevated Pb, As, Ba values, and local spotty anomalous Ag, Zn, Cd, Sb values. Gold values were all 5 ppb. Soil samples underlain by the felsic volcanics returned elevated Mn values, to 10255 ppm. A sample of the rhyolite, #125299, returned 200 ppm Pb with no visible sulphides.

Discussion - Due to extensive snow cover during the field program, some of the areas lack good geological information. The recon traverses on the north side of Virginia Creek, RT 1-4, have however, confirmed that there is a broad zone of elevated Ag, As, Pb, Zn, Cd, Ba silt-soil geochem values spatially associated with an area of felsic volcanics. It appears that the source(s) lies between RT-2 and RT-4 and more detailed sampling would be required to define it.

The RT-5 traverse straddles an inferred contact between felsic volcanics and andesite flows, volcaniclastics. Sample results also show generally elevated Pb-As-Ba values associated with the felsic rocks.

## 8.02 TOC 13-15

The TOC 13-15 claims are located on the east side of the Todd Creek valley (Figure 9). During 1988 portions of this area were prospected, the focus being several NE to N trending prominent linear features and an area of patchy quartz-sericite-pyrite altered trachyte(?) volcanics also known as the Knob Zone (described in the 1987 report.) A one day traverse in this area was completed during July 1990 as a follow up on several weak Pb +/- Zn-Ag-As anomalies located in 1988. Due to extensive snow cover, soil samples were collected at 100 metre intervals or where possible.

8.02.01 Geology - Due to extensive snow cover, very little new geological information was obtained. The TOC 13-15 claims appear to be underlain by an apparently thick sequence of fine grained, locally porphyritic, green to maroon andesitic volcanics. Weak chlorite +/- epidote alteration is ubiquitous, probably indicating an episode of lower greenschist facies regional metamorphism.

8.02.02 Mineralization - mineralization located to date during the 1988 and 1990 programs consisted of several very widely separated quartz-carbonate- galena+/- tetrahedrite veins to 50 cm wide.

8.02.03 Geochemistry - A total of 5 rock samples, and 17 soil samples were collected during the 1990 program.

The 1990 sampling indicates a slightly elevated Pb background with locally coincidental elevated Zn-Ba-Mn values. The strongest anomalies occur at the north end of the ridge in south central TOC 15. Sample #115659 was collected adjacent to a 15 cm wide mineralized vein represented by #125298. The vein contained approximately 8% galena and 2% pyrite and was hosted in a light green-grey andesite with little apparent alteration along the margins. Based on the 1988 and 1990 geochemistry, it is very possible that several more of these or similar types of veins occur toward the north end of the ridge.

### 8.05 Airborne Geophysics

During July and August a helicopter-borne EM-Mag survey was flown over the Todd Cr. property. Dighem Surveys and Processing Inc. of Mississauga, Ont. was contracted to conduct the survey. A copy of Dighem's report is included as Appendix VI.

A total of 515 km, at 100m line spacings, was flown. The purpose of the survey was to determine the relationships, if any, between the known mineralized zones and to test the felsic volcanic sequence for Eskay Creek-type massive sulphides.

The survey results were disappointing. In Virginia Creek the felsic volcanics and sediments are marked by magnetic lows and the andesitic volcanics by relative magnetic high trends. Other than magnetic trends and breaks little in the way of new information was gained from the survey.

## 9.0 Conclusions:

### 9.01 Virginia Creek Area:

The Virginia Creek area is underlain by a lower package of interbedded sediments and andesitic volcanics and volcaniclastics (Betty Creek Formation). The volcanic component appears to increase up-section. This is overlain by a thin, <100 m thick, package of rhyolite-dacite tuffs, ash tuffs, tuff breccias and lapilli tuffs. (Mt. Dilworth Formation). This in turn is overlain by a sediment/volcanic package (Salmon River Formation). There is evidence that the stratigraphy has been folded along NE and N trending fold axes.

Areas underlain by and/or spatial associated with the felsic unit have returned elevated Pb-As-Ba geochemistry. In particular on the north side of Virginia Creek large areas of anomalous Pb-Zn-Ag-As-Ba-Cd has been identified. The source of this anomaly has not been identified to date but the size of the anomalous area appears to indicate a wide distribution of mineralization. Gold values have been uniformly low, with only a couple of weak Au-in-silt anomalies on the western end of the anomaly. The felsic volcanics and sediments are generally indicated by magnetic and resistivity lows.

### 9.02 TOC 13-15:

Follow up on 1988 Pb-Zn-Ag geochem anomalies in 1990 lead to the discovery of narrow Pb-Zn-Ag vein mineralization at the north end of the ridge. 1990 soil sample results indicate the potential for additional similar veins in this area. Precious metal values were low.

This area is marked by moderate magnetics at the northern and southern ends and a broad, roughly E-W trending magnetic low in the center. It is unclear what the magnetic low represents.

## 10.0 Recommendations:

In light of the 1990 program results and the lack of targets which would be of interest to Noranda at this time, no further work is recommended.

## 11.0 References

Alldrick, D. J., (1983) Salmon River Project, Stewart, B.C., B.C.D.M. Paper 83-1

Baerg, R. J., (1987) Geological, Geochemical Report on the Todd Creek Property ( TOC 1-12 Claims). Assessment Report.

Baerg, R. J., (1988) Geological, Geochemical and Drilling Report on the Todd Creek Property ( TOC 3-15 Claims ). Assessment Report.

Baerg, R. J., (1989) Geological, Geochemical, Geophysical and Drilling Report on the Todd Creek Property (TOC 3-15 claims). Assessment Report.

Gorc, D., (1982) Todd Creek Property, B.C.D.M. Assessment Report # 10404.

Grove, E. W., (1982) Geology of the Unuk River-Salmon River-Anyox Map Area.

Hodgson, A. G., (1971) Geological Report on the Todd Group of Claims, B.C.D.M. Assessment Report #3428.

Osborne, T. C., (1960) Todd Creek Project, Newmont Mining Corp., Company Report.

Wong, T., (1989) Memo: Geophysical Surveys, Todd Creek - Fall Zone.

# APPENDIX I

## SUMMARY COST STATEMENT

CLAIM: **TOC 3 to 6**
TYPE OF REPORT: Geological, Geochemical
DATE: February 24, 1991

| | | |
|---|---|---|
| a) | **Geology/Engineering** | |
| | No. of days - 21 | |
| | Rate per day - $ 150.00 | |
| | Total Cost: | $ 3,150.00 |
| b) | **Geochemistry** (ICP plus Au) | |
| | Silt Samples 22 @ $ 12.00/sample | $ 264.00 |
| | Soil Samples 108 @ $ 12.00/sample | $ 1,296.00 |
| | Rock Samples 22 @ $ 15.00/sample | $ 330.00 |
| c) | **Transportation** | |
| | Helicopter 10hrs @ $ 670.00/hr | $ 6,700.00 |
| d) | **Supplies/Lodging** | |
| | 21 days @ $ 100.00/day | $ 2,100.00 |
| e) | **Camp Costs** | $ 3,000.00 |
| f) | Report | |
| | Drafting | $ 200.00 |
| | Writing | $ 400.00 |
| | Project Work Total | $ 17,440.00 |

APPENDIX I

SUMMARY COST STATEMENT

CLAIM: TOC 13 to 15
TYPE OF REPORT: Geological, Geochemical, Geophysical
DATE: February 24, 1991

| | | |
|---|---|---|
| a) | **Geology/Engineering**<br>No. of days - 2<br>Rate per day - $ 150.00<br>Total Cost: | $ 300.00 |
| b) | **Geochemistry** (ICP plus Au) | |
| | Soil Samples 17 @ $ 12.00/sample | $ 204.00 |
| | Rock Samples 5 @ $ 15.00/sample | $ 75.00 |
| c) | **Geophysics**<br>515km @ $ 50.00/km (magnetics only) | $ 25,750.00 |
| c) | **Transportation**<br>Helicopter 2hrs @ $ 670.00/hr | $ 1,340.00 |
| d) | **Supplies/Lodging**<br>2 days @ $ 100.00/day | $ 200.00 |
| e) | **Camp Costs** | $ 300.00 |
| f) | **Report** | |
| | Drafting | $ 100.00 |
| | Writing | $ 200.00 |
| | Project Work Total | $ 28,469.00 |

APPENDIX II

## STATEMENT OF QUALIFICATIONS

I, Robert J. Baerg of the city of Prince George, Province of British Columbia, do certify that:

1. I have been employed as a geologist by Noranda Exploration Company, Limited since May, 1984.
2. I am a graduate of the University of British Columbia with a Bachelor of Science (Honours) in Geology (1984).
3. I am an Associate Fellow of the Geological Association of Canada.
4. I am a member of the Canadian Institute of Mining and Metallurgy.
5. I supervised and assisted with the work described in this report.

Robert J. Baerg
Geologist
Noranda Exploration Company, Limited
(No Personal Liability)

STATEMENT OF QUALIFICATIONS

I, Lyndon Bradish of Vancouver, Province of British Columbia, do hereby certify that:

1. I am a Geophysicist residing at 1826 Trutch Street, Vancouver, B.C.

2. I am a graduate of the University of British Columbia with a B.Sc. (geophysics).

3. I am a member in good standing in the Society of Exploration Geophysicists, European Association of Exploration Geophysicists and the Prospector's and Developer's Association.

4. I presently hold the position of Regional Geophysicist with Noranda Exploration Company, Limited and have been in their employ since 1973.

L. Bradish.

APPENDIX III

**SAMPLING AND ANALYTICAL PROCEDURES**

SAMPLING PROCEDURE

Soil samples were collected from the "B" soil horizon, with the use of a grub hoe. The depth of the sample holes varied from 25 to 50 cm. The samples were placed in Kraft wet strength paper bags, dried and then shipped to Noranda Labs in Vancouver, B.C. for analysis.

# APPENDIX

## ANALYTICAL PROCEDURE

Soils, Silts, Rocks

The samples are dried and screened to -80 mesh. Rock samples are pulverized to -120 mesh. A 0.2 gram sample is digested with 3 ml of $HClO_4/HNO_3$ (4 to 1 ratio) at 203° C for four hours, and diluted to 11 ml with water. A Leeman PS 3000 is used to determine elemental contents by I.C.P. Note that the major oxide elements and Ba, Be, Ce, Ga, La and Li are rarely dissolved completely from geological materials with this acid dissolution method.

For Au analyses, a 10.0 gram sample of -80 mesh material is digested with aqua regia and determination made by A.A.

Heavy Mineral Concentrates

The entire concentrate is digested in aqua regia solution, and elemental concentrations of Au, Ag, Cu, Pb, and Zn are determined by A.A.

APPENDIX IV

## ROCK SAMPLE DESCRIPTIONS/ANALYSES

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. 104 A5

PROPERTY Todd Creek - Virginia Creek Traverse

DATE June 25/90

# ROCK SAMPLE REPORT

PROJECT: 281

| SAMPLE NO. | LOCATION & DESCRIPTION | % SULPHIDES | TYPE | WIDTH | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | SAMPLED BY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 110820 | - el. ~3880 ft. ~20m above starting point<br>- Andesitic volcanic<br>- a few small fsp. phenos.<br>- carbonate, minor silica alt. | 3 | Grab | — | | | | | | | | BP |
| 110821 | - el 3620 ft. ~275 m<br>- Andesitic volcanic<br>- porphyritic texture but very fine grained<br>- slight carb. alt. | tr | | | | | | | | | | BP |
| 110822 | - el 3650 ft. ~ 500 m<br>- Andesitic<br>- dark maroon to reddish<br>- sample contains some epidote - carbonate vein material (~2-3 cm wide)<br>- vesicular ~2% | — | | | | | | | | | | BP |
| 110823 | ~ 3900 ft. ~625 m<br>- f.g to medium grain Andesite<br>- moderate carbonate alt. | — | | | | | | | | | | BP |

G = GEOCHEM A = ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

PROPERTY Todd Creek - Virginia Creek

N.T.S. 104 A5

DATE June 25/90

PROJECT 281

## ROCK SAMPLE REPORT

| SAMPLE NO. | LOCATION & DESCRIPTION | % SULPHIDES | TYPE | WIDTH | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | SAMPLED BY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 110824 | el ~3930 ft ~650 m | / | | | | | | | | | | BP |
| | - sample taken from 10cm | | | | | | | | | | | |
| | wide vein of sheared Andesitic | | | | | | | | | | | |
| | rock | | | | | | | | | | | |
| | - qtz. stringers within vein | | | | | | | | | | | |
| | and host rock | | | | | | | | | | | |
| | - shear trends ~ 038/80°SE | | | | | | | | | | | |
| | | | | | | | | | | | | |
| 110825 | el ~ 3795 ft. ~ 1.11 Km | ~2 | | | | | | | | | | BP |
| | - black | | | | | | | | | | | |
| | - highly fractured, angular | | | | | | | | | | | |
| | volcanic rock | | | | | | | | | | | |
| | - banding / fracture set | | | | | | | | | | | |
| | 165°/50 E. | | | | | | | | | | | |
| | - slight carbonate content. | | | | | | | | | | | |
| | mostly in vienlets | | | | | | | | | | | |
| | - sulfides in concentrated | | | | | | | | | | | |
| | patches. | | | | | | | | | | | |
| | | | | | | | | | | | | |
| 110826 | - el 3700 ~ 1.40 Km. | – | | | | | | | | | | BP |
| | - soil sample | | | | | | | | | | | |
| | | – | | | | | | | | | | |
| 110827 | el 3705 ~ 1.55 km | | | | | | | | | | | BP |
| | - soil sample | | | | | | | | | | | |

G = GEOCHEM A = ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. 104 A5

PROPERTY Todd Creek

DATE June 25/90

## ROCK SAMPLE REPORT

PROJECT 281

| SAMPLE NO. | LOCATION & DESCRIPTION | % SULPHIDES | TYPE | WIDTH | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | SAMPLED BY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 110828 | el. 3820 ~ 1.68 Km | 4 | | | | | | | | | | BP |
| | - soil sample | | | | | | | | | | | |
| 110829 | el. 3910 ~ 1.65 km | | | | | | | | | | | BP |
| | - fsp. Andesite porph. | | | | | | | | | | | |
| | - some hornblende | | | | | | | | | | | |
| | - scattered sulfides ~ | | | | | | | | | | | |
| | fairly coarse grained. | | | | | | | | | | | |

G = GEOCHEM A = ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. 104A/4,5

PROPERTY North Ridge of Virginia Creek (TOC 3 claim)

DATE July 2, 90

# ROCK SAMPLE REPORT

PROJECT 281

| SAMPLE NO. | LOCATION & DESCRIPTION | % SULPHIDES | TYPE | WIDTH | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | SAMPLED BY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 125627 | - 50 m ~~South West~~ North East of helicopter dropoff above and to the North of Virginia Creek.<br>- silicious green andesite (in shear zone striking E/W); intensely fractured, altered to red/purple/orange<br>- elevation = 1750m | ? | Rock o/c | 10 cm | | | | | | | | Paul Turnbull |
| 125628 | - 178 m along traverse at elev = 1785 m<br>- silicious green/purple andesitic volcaniclastic<br>- near a local rusty band of alteration | ? | Rock o/c | 10 cm | | | | | | | | |
| 125629 | - 420m along traverse at elev. = 1785 m<br>- green rhyolite with lead grey stringers of specular hematite and 5 mm large pyrite cubes<br>- very sulfurous smell, but minimal gossan | 5 | Rock o/c | 10 cm | | | | | | | | |

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NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. ______

PROPERTY Todd Creek (Knob Zone)

DATE July 3/90

# ROCK SAMPLE REPORT

PROJECT 281

| SAMPLE NO. | LOCATION & DESCRIPTION | % SULPHIDES | TYPE | WIDTH | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | SAMPLED BY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 125298 | 700 meters southeast of (toe) Knob glacier at 1370m elevation. Outcrop was 1m², the rest was covered by overburden. Host was lite green, medium gr andesite vein was 10-20 cm wide. | ≃10 | pyrite galena | 15cm | | | | | | | | T. Rohill<br>S. Paterson |
| 125297 | 1000 meters southeast of toe of Knob glacier. Gossenous zone is 10m by 2m. Host is an altered andesitic volcanoclastic | ? | ? | ? | | | | | | | | |
| 125294 | 1700 meters southeast of toe of Knob glacier. Zone is 10m x 2m of gossen. Volcanoclastic andesite is the host | ≃4 | pyrite Chalco? | — | | | | | | | | |
| 125293 | 2300 meters southeast of toe of Knob glacier. Gossen zone is 5m by 3m at the toe of a talus slope. Host was volcano clastic andesite | ≃4 | pyrite chalco? | — | | | | | | | | |

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NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. ____

PROPERTY Todd Creek (Virginia Creek)

DATE July 2/90

# ROCK SAMPLE REPORT

PROJECT Todd Creek

| SAMPLE NO. | LOCATION & DESCRIPTION | % SULPHIDES | TYPE | WIDTH | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | SAMPLED BY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [illegible]5299 | Located at the 1520 meter elevation 2-3 Km from the joining of the Todd Creek and Virginia creek At an approximate south westerly direction. Outcrop is surrounded by snow and is roughly 20m by 15m in size. It is rhyolitic, light green in color and aphanitic. Gossenous zones are patchy over the entire outcrop | ? | ? | ? | | | | | | | | |
| 125294 | Located in the same general area at the 1660 contour and just NW of the glacier. Outcrop is "rusty" and covered with "rusty" rubble. the host rock is rhyolitic in comp with aphanitic grain size | ? | ? | ? | | | | | | | | |

G = GEOCHEM A = ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. 104B/5

PROPERTY Todd Cr (Virginia Cr

DATE June 24/90

## ROCK SAMPLE REPORT

PROJECT 281

| SAMPLE NO. | LOCATION & DESCRIPTION | % SULPHIDES | TYPE | WIDTH | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | SAMPLED BY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 110747 | Si+/- py alter Rhyolite tuffs, fine laminated | tr | grab | | | | | | | | | RB |
| 110748 | si+/- py alter hbl porphyry dacite | tr | grab | | | | | | | | | |
| 110749 | rhyolite - dacite tuff breccia with local vuggy qtz +/- barite veins, local rusty fractures | 0 | grab | | | | | | | | | |
| 110750 | si-py altered rhyolite dacite tuff breccia | tr | grab | | | | | | | | | |
| 110776 | finely laminated rhyolite tuff | 0 | grab | | | | | | | | | |
| 110777 | Rhyolite brecciated silicified abund. hairline vuggy qtz veins throughout | tr | grab | | | | | | | | | |
| 110778 | grey si-py altered rhyolite breccia, 1-2% dissem. py. | 1-2 | grab | float | | | | | | | | |

G = GEOCHEM A = ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. ______________

PROPERTY ______________________________ DATE ______________

# ROCK SAMPLE REPORT

PROJECT ______________

| SAMPLE NO. | LOCATION & DESCRIPTION | % SULPHIDES | TYPE | WIDTH | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | SAMPLED BY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 110777 | si-py altered rhyolite-dacite tuffs, 2-3% dissem and vein py. | | | | | | | | | | | |

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NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. 104 A/5

PROPERTY Todd Creek (Virginia Cr)

DATE June 28, ..

# ROCK SAMPLE REPORT

PROJECT 2801

| SAMPLE NO. | LOCATION & DESCRIPTION | % SULPHIDES | TYPE | WIDTH | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | SAMPLED BY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 110738 | Finely laminated rhyolite-dacite crystal tuffs, tr. magnetite. elev 6230' | 0 | grab | | | | | | | | | KB |
| 110739 | Jasper-qtz veins/pods in rhyodacite tuffs elev 6350' | 0 | grab | | | | | | | | | |
| 110740 | Rusty si-py altered felsic tuff, 3-5% fine grained py as irregular veins and patches. elev 6350' | 3-5 | grab | | | | | | | | | |
| 110741 | Carbonate-si-ep altered felsic tuff with abund vuggy qtz +/- barite veins elev 6350' | 0 | grab | | | | | | | | | |
| 110742 | 5 cm wide qtz-barite vein with minor ankerite and abund limonite. elev 6350' | 0 | grab | | | | | | | | | |
| 110743 | as for 110740, elev 6140' | | | | | | | | | | | |

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NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. ______

PROPERTY ______

DATE ______

## ROCK SAMPLE REPORT

PROJECT: ______

| SAMPLE NO. | LOCATION & DESCRIPTION | % SULPHIDES | TYPE | WIDTH | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | SAMPLED BY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 110744 | Rhyolite-dacite tuffs, lapilli tuff and breccia, locally silicified elev 6150' | 0 | grab | | | | | | | | | |
| 110745 | as for 110744, elev 6160' | 0 | grab | | | | | | | | | |
| 110746 | as for 110744, elev 6170' | 0 | grab | | | | | | | | | |

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NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. 104 A/5

PROPERTY Todd Creek (Virginia creek)

DATE June 28/90

# ROCK SAMPLE REPORT

PROJECT 281

| SAMPLE NO. | LOCATION & DESCRIPTION | % SULPHIDES | TYPE | WIDTH | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | SAMPLED BY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 110950 | approximatly 5.3 Km east from American creek at an elevation of 1430m green-grey in color with 10% qtz inclusions, phaneritic, hornblende is present (?) | ≅4 | pyrite | — | | | | | | | | T. Rehill D. Turnbull |
| 125079 | approximatly 6.8 Km east from American creek at an elevation of 1395m Outcrop is generally volcaniclastic Clasts range in size from 1.0 to 7.0 cm and are intermediate in composition Matrix is fine to medium grained and is also intermediate in composition | ? | ? | ? | | | | | | | | ↓ |
| 125080 | approximatly 7.1 Km east from American creek at an elevation of 1350m This outcrop is 200-300 m length and is "rusty". The fresh surface is red/grey in color, aphanitic with green porphy oclasts of qtz (?) | ≅4 | pyrite | ? | | | | | | | | T. Rehill D. Turnbull |

G = GEOCHEM A = ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. 104

PROPERTY Todd creek (Virginia Creek)

DATE June 27/90

# ROCK SAMPLE REPORT

PROJECT 281

| SAMPLE NO. | LOCATION & DESCRIPTION | % SULPHIDES | TYPE | WIDTH | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | G☐ A☐ | SAMPLED BY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 110926 | - sampled at approximately 2.23 Km East from American Creek at an elevation of 1360 m on the North side of Virginia Creek<br>- outcrop of rusty, orange/grey andesite with lead grey colored veins of sulfide, which is likely specular hematite | ≈5 | Rock O/C | 10cm | | | | | | | | Paul Turnbull + Trent Rehill |

G = GEOCHEM A = ASSAY

ACME AN. ·ICAL LABORATORIES LTD. 852 E. HASTINGS ST. ·OUVER B.C. V6A 1R6 PHONE(604)253-3158 FAX(6 )253-1716

# GEOCHEMICAL ANALYSIS CERTIFICATE

## Noranda Exploration Co. Ltd. PROJECT 9007-015 281 File # 90-2344

P.O. Box 2380, 1050 Davie St., 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 110726 | 4 | 168 | 24 | 515 | .7 | 3 | 4 | 2167 | 2.44 | 38 | 5 | ND | 1 | 384 | 4.1 | 12 | 2 | 14 | 2.62 | .004 | 9 | 3 | .02 | 450 | .01 | 5 | .05 | .01 | .03 | 1 | 9 |
| 110728 | 9 | 4511 | 95 | 156 | 7.4 | 2 | 9 | 455 | 8.92 | 582 | 5 | ND | 1 | 131 | .2 | 54 | 3 | 22 | .02 | .004 | 2 | 3 | .01 | 68 | .01 | 3 | .06 | .01 | .05 | 3 | 134 |
| 110729 | 5 | 42 | 6462 | 1139 | 70.8 | 4 | 3 | 408 | .71 | 32 | 5 | ND | 1 | 398 | 21.6 | 15 | 2 | 3 | .01 | .001 | 6 | 4 | .01 | 211 | .01 | 5 | .01 | .01 | .01 | 1 | 24 |
| 110730 | 2 | 60 | 7711 | 2586 | 68.2 | 1 | 3 | 573 | .94 | 40 | 5 | ND | 1 | 441 | 49.4 | 16 | 2 | 6 | .03 | .002 | 10 | 2 | .01 | 243 | .01 | 5 | .02 | .01 | .02 | 1 | 67 |
| 110731 | 3 | 45 | 5572 | 1802 | 75.1 | 4 | 1 | 237 | .42 | 18 | 5 | ND | 1 | 442 | 35.5 | 20 | 2 | 2 | .02 | .002 | 5 | 4 | .01 | 367 | .01 | 4 | .01 | .01 | .01 | 1 | 10 |
| 110732 | 9 | 48 | 71 | 18 | 1.8 | 5 | 4 | 221 | 19.28 | 66 | 8 | ND | 2 | 99 | .2 | 5 | 8 | 104 | .37 | .014 | 2 | 4 | .01 | 1570 | .01 | 12 | .07 | .01 | .02 | 2 | 55 |
| 110734 | 54 | 16 | 41 | 519 | 1.4 | 6 | 3 | 2420 | 10.74 | 6863 | 6 | ND | 1 | 161 | .8 | 205 | 4 | 11 | 4.48 | .014 | 4 | 6 | .15 | 31 | .01 | 3 | .22 | .01 | .04 | 1 | 4 |
| 110735 | 6 | 28 | 58 | 561 | 2.1 | 5 | 13 | 5878 | 11.18 | 2414 | 5 | ND | 1 | 48 | 19.8 | 72 | 2 | 66 | .94 | .036 | 5 | 5 | .43 | 26 | .01 | 8 | 1.29 | .01 | .07 | 1 | 7 |
| 110801 | 2 | 11 | 11 | 41 | .1 | 4 | 3 | 299 | 1.65 | 16 | 5 | ND | 6 | 38 | .2 | 2 | 2 | 5 | .11 | .063 | 19 | 5 | .01 | 245 | .01 | 7 | .29 | .01 | .28 | 1 | 5 |
| 110802 | 2 | 45 | 136 | 542 | 2.0 | 2 | 5 | 393 | 9.57 | 152 | 6 | ND | 4 | 11 | 1.3 | 10 | 2 | 32 | .03 | .049 | 9 | 3 | .01 | 230 | .01 | 10 | .34 | .01 | .31 | 1 | 13 |
| 110803 | 3 | 4 | 2 | 43 | .1 | 5 | 5 | 1017 | 2.57 | 8 | 5 | ND | 4 | 29 | .2 | 2 | 2 | 13 | .78 | .066 | 16 | 4 | .07 | 301 | .01 | 5 | .36 | .01 | .30 | 1 | 3 |
| 110804 | 29 | 5 | 45 | 62 | .3 | 1 | 1 | 35 | 2.58 | 91 | 5 | ND | 7 | 13 | .2 | 4 | 2 | 7 | .01 | .038 | 18 | 2 | .01 | 116 | .01 | 8 | .29 | .01 | .31 | 1 | 2 |
| 110805 | 1 | 8 | 4 | 24 | .1 | 2 | 4 | 1293 | 1.87 | 3 | 5 | ND | 4 | 70 | .2 | 2 | 2 | 22 | 2.91 | .066 | 21 | 3 | .04 | 267 | .04 | 7 | .40 | .01 | .32 | 1 | 2 |
| 110806 | 1 | 10 | 5 | 129 | .2 | 6 | 22 | 2764 | 5.51 | 14 | 5 | ND | 2 | 49 | .7 | 2 | 2 | 91 | 2.68 | .102 | 19 | 8 | .53 | 482 | .01 | 7 | 1.55 | .01 | .41 | 1 | 2 |
| 110807 | 1 | 21 | 4 | 111 | .1 | 10 | 18 | 1857 | 5.45 | 29 | 5 | ND | 2 | 81 | .4 | 4 | 2 | 36 | 3.04 | .116 | 18 | 16 | .36 | 169 | .01 | 10 | .77 | .01 | .46 | 1 | 2 |
| 110808 | 1 | 30 | 6 | 97 | .1 | 182 | 28 | 892 | 4.47 | 4 | 5 | ND | 3 | 325 | .3 | 2 | 2 | 94 | 3.24 | .080 | 13 | 204 | 4.15 | 918 | .01 | 3 | 2.90 | .07, | .10 | 1 | 3 |
| 110809 | 4 | 413 | 8 | 90 | .1 | 4 | 8 | 1564 | 4.98 | 12 | 5 | ND | 2 | 18 | .2 | 2 | 2 | 32 | .68 | .044 | 16 | 4 | .41 | 542 | .01 | 5 | 1.57 | .01 | .25 | 1 | 13 |
| 110810 | 1 | 59 | 5 | 98 | .1 | 5 | 8 | 814 | 5.46 | 23 | 5 | ND | 2 | 28 | .2 | 2 | 2 | 30 | .35 | .062 | 14 | 6 | .68 | 128 | .01 | 10 | 1.86 | .01 | .23 | 1 | 5 |
| 110811 | 2 | 15 | 22 | 90 | .3 | 5 | 13 | 451 | 5.61 | 28 | 5 | ND | 3 | 10 | .2 | 2 | 2 | 30 | .13 | .051 | 9 | 5 | .35 | 79 | .01 | 4 | 1.53 | .01 | .24 | 1 | 18 |
| 110812 | 2 | 1110 | 13 | 43 | 1.2 | 3 | 4 | 1081 | 2.87 | 18 | 5 | ND | 1 | 13 | .7 | 2 | 2 | 15 | 1.04 | .022 | 13 | 3 | .39 | 179 | .01 | 2 | .52 | .01 | .09 | 1 | 41 |
| 110813 | 4 | 12 | 6 | 35 | .1 | 8 | 6 | 1494 | 2.94 | 5 | 5 | ND | 1 | 10 | .2 | 2 | 2 | 13 | .23 | .029 | 5 | 8 | .11 | 222 | .01 | 4 | .43 | .01 | .13 | 1 | 9 |
| 110814 | 1 | 13 | 7 | 23 | .1 | 2 | 4 | 1232 | 1.96 | 2 | 5 | ND | 5 | 58 | .2 | 2 | 2 | 31 | 1.83 | .064 | 23 | 2 | .04 | 306 | .04 | 8 | .41 | .01 | .28 | 1 | 2 |
| STANDARD C/AU-R | 19 | 57 | 38 | 132 | 7.5 | 73 | 31 | 1024 | 4.02 | 42 | 15 | 7 | 39 | 52 | 18.6 | 16 | 19 | 60 | .51 | .096 | 40 | 59 | .94 | 184 | .09 | 36 | 1.97 | .06 | .14 | 11 | 480 |

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.

DATE RECEIVED: JUL 5 1990 DATE REPORT MAILED: July 12/90 SIGNED BY.........D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

✓ ASSAY RECOMMENDED

ACME ANA ICAL LABORATORIES LTD. 852 E. HASTINGS ST. V. OUVER B.C. V6A 1R6 PHONE(604)253-3158 FAX(6 253-1716

# GEOCHEMICAL ANALYSIS CERTIFICATE

**Noranda Exploration Co. Ltd. PROJECT 9007-015 281 File # 90-2821 Page 1**

P.O. Box 2380, 1050 Davie St., 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 110727 | 5 | [redacted] | 239 | 89 | 286 | 4.3 | 5 | 7 | 936 | 10.59 | 152 | 5 | ND | 4 | 18 | .2 | 51 | 3 | 52 | .03 | .120 | 15 | 8 | .09 | 535 | .03 | 2 | .71 | .01 | .18 | 1 |
| 110733 | 5 | [redacted] | 13 | 37 | 42 | .7 | 2 | 6 | 452 | 3.14 | 152 | 5 | ND | 5 | 168 | .2 | 7 | 2 | 21 | .31 | .219 | 8 | 1 | .06 | 438 | .01 | 6 | .58 | .01 | .34 | 1 |
| 110851 | 35 | 1 | 113 | 41 | 101 | .3 | 6 | 20 | 1560 | 6.57 | 29 | 5 | ND | 3 | 20 | .4 | 4 | 2 | 67 | .36 | .082 | 17 | 7 | .79 | 425 | .02 | 4 | 1.59 | .01 | .14 | 1 |
| 110852 | 25 | 1 | 69 | 18 | 94 | .3 | 8 | 23 | 1402 | 7.36 | 22 | 5 | ND | 3 | 24 | .6 | 4 | 2 | 72 | .44 | .134 | 19 | 8 | 1.36 | 311 | .02 | 5 | 2.02 | .01 | .14 | 1 |
| 110853 | 5 | 1 | 29 | 36 | 120 | .6 | 12 | 11 | 1214 | 3.84 | 27 | 5 | ND | 2 | 14 | .5 | 7 | 3 | 47 | .22 | .077 | 14 | 10 | .44 | 431 | .04 | 4 | 1.34 | .01 | .14 | 1 |
| 110854 | 5 | 2 | 34 | 28 | 72 | .9 | 5 | 5 | 336 | 3.42 | 20 | 5 | ND | 3 | 8 | .2 | 6 | 2 | 38 | .10 | .083 | 12 | 7 | .24 | 106 | .02 | 4 | 1.78 | .01 | .14 | 1 |
| 110855 | 10 | 1 | 11 | 14 | 43 | .4 | 2 | 4 | 553 | 1.54 | 10 | 5 | ND | 1 | 18 | .5 | 2 | 2 | 33 | .42 | .051 | 12 | 4 | .11 | 366 | .02 | 3 | .97 | .01 | .13 | 2 |
| 110856 | 5 | 2 | 19 | 81 | 98 | 1.0 | 4 | 10 | 2936 | 2.48 | 13 | 5 | ND | 2 | 26 | 1.6 | 5 | 2 | 31 | .67 | .129 | 17 | 6 | .13 | 1653 | .01 | 4 | 1.38 | .01 | .21 | 1 |
| 110857 | 5 | 1 | 14 | 30 | 65 | .5 | 7 | 5 | 499 | 6.04 | 41 | 5 | ND | 1 | 9 | .3 | 3 | 2 | 76 | .06 | .117 | 10 | 15 | .17 | 210 | .06 | 4 | 1.42 | .01 | .11 | 1 |
| 110858 | 5 | 2 | 26 | 144 | 167 | .4 | 4 | 9 | 3724 | 2.21 | 35 | 5 | ND | 1 | 43 | 2.6 | 2 | 2 | 28 | 1.11 | .247 | 26 | 4 | .13 | 957 | .01 | 3 | 1.43 | .01 | .14 | 1 |
| 110859 | 5 | 3 | 17 | 61 | 92 | .6 | 2 | 10 | 2534 | 1.97 | 9 | 5 | ND | 2 | 22 | 1.2 | 4 | 2 | 21 | .31 | .187 | 12 | 3 | .10 | 1641 | .01 | 5 | .96 | .01 | .21 | 1 |
| 110860 | 5 | 3 | 18 | 422 | 85 | 1.0 | 1 | 11 | 3093 | 1.94 | 14 | 5 | ND | 3 | 25 | .4 | 3 | 2 | 20 | .32 | .193 | 7 | 2 | .10 | 1026 | .01 | 4 | .77 | .01 | .22 | 1 |
| 110861 | 5 | 4 | 10 | 124 | 200 | .7 | 2 | 15 | 6342 | 1.82 | 9 | 5 | ND | 2 | 25 | 5.3 | 3 | 2 | 17 | .52 | .176 | 8 | 2 | .06 | 999 | .01 | 6 | .68 | .01 | .23 | 1 |
| 110863 | 5 | 1 | 22 | 86 | 231 | .7 | 3 | 10 | 2457 | 1.50 | 13 | 5 | ND | 4 | 45 | 2.1 | 3 | 3 | 11 | .94 | .106 | 22 | 3 | .11 | 794 | .01 | 6 | .64 | .01 | .27 | 1 |
| 110864 | 5 | 1 | 22 | 85 | 251 | .8 | 1 | 8 | 1797 | 1.90 | 11 | 5 | ND | 3 | 32 | 1.8 | 3 | 2 | 15 | .70 | .093 | 24 | 2 | .14 | 580 | .01 | 5 | .86 | .01 | .28 | 1 |
| 110865 | 10 | 2 | 25 | 111 | 311 | .6 | 1 | 12 | 3631 | 2.36 | 8 | 5 | ND | 3 | 38 | 3.1 | 2 | 2 | 13 | 1.11 | .110 | 18 | 1 | .15 | 616 | .01 | 6 | .76 | .01 | .26 | 1 |
| 110866 | 10 | 1 | 20 | 42 | 342 | .5 | 2 | 8 | 3747 | 2.38 | 5 | 5 | ND | 3 | 27 | 1.4 | 3 | 2 | 15 | .89 | .092 | 25 | 2 | .39 | 402 | .01 | 7 | .86 | .01 | .29 | 1 |
| 110867 | 20 | 2 | 34 | 192 | 380 | .9 | 3 | 15 | 4705 | 3.06 | 16 | 5 | ND | 2 | 24 | 3.9 | 3 | 2 | 19 | .67 | .121 | 38 | 2 | .14 | 882 | .01 | 5 | 1.09 | .01 | .24 | 1 |
| 110868 | 10 | 3 | 16 | 163 | 317 | .7 | 2 | 12 | 3012 | 2.72 | 18 | 5 | ND | 3 | 21 | 2.0 | 2 | 2 | 16 | .53 | .111 | 18 | 1 | .12 | 844 | .01 | 4 | .99 | .01 | .25 | 1 |
| 110869 | 5 | 3 | 18 | 59 | 112 | .7 | 1 | 14 | 4933 | 1.48 | 10 | 5 | ND | 2 | 14 | .7 | 2 | 2 | 18 | .32 | .295 | 11 | 1 | .05 | 317 | .01 | 3 | 1.03 | .01 | .18 | 1 |
| 110870 | 5 | 2 | 26 | 16 | 70 | .5 | 1 | 5 | 219 | 1.00 | 6 | 5 | ND | 3 | 11 | .2 | 3 | 2 | 16 | .08 | .037 | 17 | 1 | .02 | 373 | .01 | 7 | .36 | .01 | .21 | 2 |
| 110871 | 5 | 1 | 46 | 12 | 66 | .5 | 2 | 3 | 146 | .98 | 4 | 5 | ND | 1 | 13 | .2 | 2 | 2 | 5 | .33 | .113 | 4 | 1 | .04 | 184 | .01 | 4 | .26 | .01 | .08 | 1 |
| 110872 | 20 | 3 | 46 | 78 | 192 | .6 | 3 | 14 | 3487 | 3.49 | 32 | 5 | ND | 2 | 23 | 4.0 | 4 | 2 | 26 | .81 | .160 | 14 | 3 | .21 | 413 | .01 | 5 | .88 | .01 | .20 | 1 |
| 110873 | 25 | 4 | 86 | 146 | 233 | .7 | 2 | 16 | 3904 | 4.08 | 31 | 5 | ND | 3 | 18 | 3.8 | 4 | 2 | 29 | .64 | .198 | 22 | 2 | .18 | 483 | .01 | 4 | 1.10 | .01 | .22 | 1 |
| 110874 | 5 | 6 | 68 | 72 | 113 | 1.0 | 2 | 9 | 1900 | 3.41 | 24 | 5 | ND | 2 | 8 | .4 | 3 | 2 | 30 | .14 | .133 | 15 | 2 | .07 | 351 | .01 | 5 | .70 | .01 | .17 | 1 |
| 110875 | 5 | 5 | 41 | 146 | 307 | .7 | 2 | 21 | 7546 | 4.00 | 34 | 5 | ND | 2 | 31 | 2.0 | 3 | 2 | 32 | .87 | .246 | 15 | 2 | .11 | 1056 | .01 | 5 | 1.30 | .01 | .27 | 1 |
| 110876 | 10 | 4 | 69 | 174 | 268 | 2.1 | 2 | 23 | 4350 | 4.74 | 39 | 5 | ND | 5 | 6 | .9 | 5 | 2 | 31 | .09 | .110 | 19 | 2 | .17 | 390 | .01 | 3 | 2.20 | .01 | .16 | 1 |
| 110877 | 5 | 3 | 80 | 284 | 382 | 2.1 | 3 | 17 | 4138 | 3.53 | 50 | 5 | ND | 1 | 27 | 3.9 | 3 | 2 | 29 | .57 | .114 | 28 | 2 | .19 | 1771 | .01 | 5 | 1.09 | .01 | .18 | 1 |
| 110878 | 5 | 3 | 23 | 144 | 267 | .7 | 2 | 16 | 4009 | 1.71 | 12 | 5 | ND | 1 | 30 | 4.7 | 2 | 2 | 14 | .70 | .141 | 16 | 1 | .10 | 1042 | .01 | 4 | .60 | .01 | .19 | 1 |
| 110879 | 5 | 3 | 24 | 229 | 303 | 1.1 | 2 | 18 | 5409 | 2.28 | 14 | 5 | ND | 2 | 35 | 3.9 | 2 | 2 | 19 | .78 | .127 | 15 | 2 | .13 | 1419 | .01 | 4 | .78 | .01 | .21 | 1 |
| 110880 | 5 | 5 | 16 | 68 | 135 | .6 | 2 | 12 | 2371 | 3.75 | 6 | 5 | ND | 4 | 11 | .2 | 3 | 2 | 27 | .19 | .206 | 24 | 2 | .11 | 187 | .01 | 3 | 2.18 | .01 | .15 | 1 |
| 110881 | 5 | 2 | 18 | 63 | 165 | .1 | 2 | 11 | 1908 | 3.14 | 20 | 5 | ND | 1 | 64 | .7 | 3 | 2 | 26 | 1.40 | .149 | 40 | 3 | .14 | 523 | .01 | 4 | 1.58 | .01 | .13 | 1 |
| 110882 | 5 | 5 | 13 | 59 | 150 | .2 | 2 | 18 | 2229 | 3.36 | 39 | 5 | ND | 1 | 9 | .3 | 2 | 2 | 29 | .16 | .135 | 24 | 3 | .16 | 114 | .01 | 4 | 1.66 | .01 | .16 | 1 |
| 110884 | 5 | 4 | 22 | 51 | 153 | .2 | 4 | 17 | 2237 | 3.65 | 24 | 5 | ND | 1 | 23 | .6 | 2 | 2 | 31 | .49 | .226 | 16 | 4 | .21 | 179 | .02 | 5 | 1.59 | .01 | .15 | 1 |
| 110885 | 5 | 4 | 17 | 58 | 127 | .1 | 5 | 27 | 3168 | 4.32 | 54 | 5 | ND | 4 | 15 | .6 | 5 | 3 | 35 | .31 | .098 | 66 | 5 | .21 | 401 | .01 | 5 | 2.44 | .01 | .18 | 1 |
| 110886 | 5 | 3 | 36 | 16 | 65 | .5 | 2 | 5 | 307 | 1.50 | 7 | 5 | ND | 1 | 15 | .2 | 2 | 2 | 11 | .34 | .171 | 6 | 2 | .04 | 81 | .01 | 5 | .37 | .01 | .11 | 1 |
| 110887 | 5 | 2 | 27 | 13 | 52 | .3 | 2 | 4 | 170 | 1.33 | 5 | 5 | ND | 1 | 10 | .2 | 2 | 2 | 12 | .20 | .135 | 9 | 2 | .03 | 81 | .01 | 5 | .42 | .01 | .14 | 1 |
| STANDARD C | | 19 | 58 | 41 | 132 | 7.2 | 72 | 31 | 953 | 4.05 | 43 | 16 | 7 | 38 | 52 | 18.7 | 15 | 20 | 58 | .52 | .097 | 39 | 60 | .95 | 182 | .09 | 37 | 2.00 | .06 | .14 | 13 |

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: P1-P6 Soil Pulp P7 Silt Pulp

DATE RECEIVED: JUL 25 1990 DATE REPORT MAILED: July 27/90 SIGNED BY. C. Leong .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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 21150N 18975E | 3 | 25 | 14 | 93 | .2 | 5 | 17 | 1670 | 4.66 | 43 | 5 | ND | 3 | 27 | .2 | 2 | 2 | 46 | .46 | .118 | 21 | 4 | .62 | 446 | .02 | 7 | 1.69 | .01 | .10 | 1 |
| 21150N 19000E | 3 | 21 | 21 | 83 | .1 | 5 | 16 | 2146 | 4.51 | 32 | 5 | ND | 2 | 46 | .3 | 3 | 2 | 52 | .53 | .104 | 23 | 6 | .71 | 403 | .04 | 8 | 2.30 | .01 | .08 | 1 |
| 21150N 19025E | 4 | 31 | 18 | 119 | .2 | 8 | 23 | 2556 | 4.38 | 25 | 5 | ND | 2 | 33 | .5 | 3 | 2 | 51 | .32 | .145 | 21 | 7 | .65 | 324 | .07 | 7 | 3.87 | .01 | .07 | 1 |
| 21150N 19050E | 4 | 18 | 15 | 107 | .3 | 4 | 15 | 1870 | 4.12 | 15 | 5 | ND | 1 | 64 | .4 | 2 | 2 | 51 | .56 | .167 | 11 | 5 | .60 | 375 | .02 | 9 | 1.94 | .01 | .10 | 1 |
| 21150N 19075E | 5 | 25 | 24 | 126 | .4 | 6 | 25 | 4204 | 5.69 | 65 | 5 | ND | 1 | 70 | .8 | 2 | 2 | 60 | .88 | .167 | 19 | 8 | .36 | 606 | .05 | 5 | 3.45 | .01 | .09 | 1 |
| 21150N 19100E | 1 | 15 | 13 | 103 | .2 | 7 | 13 | 483 | 4.32 | 16 | 5 | ND | 2 | 45 | .2 | 3 | 2 | 68 | .58 | .050 | 10 | 7 | .85 | 253 | .08 | 5 | 2.23 | .01 | .08 | 1 |
| 21150N 19125E | 2 | 27 | 26 | 135 | .1 | 7 | 15 | 4639 | 5.15 | 17 | 5 | ND | 1 | 46 | .9 | 3 | 2 | 73 | .65 | .229 | 29 | 17 | .36 | 322 | .03 | 6 | 3.18 | .01 | .07 | 1 |
| 21150N 19150E | 9 | 35 | 24 | 135 | .4 | 6 | 22 | 3193 | 4.93 | 96 | 5 | ND | 1 | 70 | .8 | 2 | 2 | 51 | .66 | .133 | 28 | 6 | .47 | 417 | .02 | 5 | 2.40 | .01 | .09 | 1 |
| 21150N 19175E | 8 | 29 | 22 | 114 | .1 | 5 | 17 | 2060 | 5.46 | 79 | 5 | ND | 1 | 44 | .2 | 2 | 2 | 61 | .44 | .141 | 19 | 8 | .35 | 374 | .02 | 5 | 2.04 | .01 | .10 | 1 |
| 21150N 19200E | 2 | 22 | 16 | 118 | .1 | 6 | 14 | 2276 | 4.64 | 18 | 5 | ND | 1 | 112 | .4 | 2 | 2 | 53 | 1.19 | .157 | 31 | 7 | .46 | 631 | .04 | 6 | 2.43 | .01 | .10 | 1 |
| 21150N 19225E | 5 | 15 | 14 | 115 | .1 | 6 | 16 | 2462 | 4.60 | 32 | 5 | ND | 1 | 90 | .5 | 2 | 3 | 57 | .82 | .127 | 23 | 8 | .39 | 443 | .04 | 5 | 2.41 | .01 | .11 | 1 |
| 21150N 19250E | 19 | 27 | 33 | 156 | .7 | 7 | 20 | 4468 | 4.79 | 186 | 5 | ND | 1 | 95 | 2.5 | 2 | 3 | 50 | .79 | .161 | 26 | 7 | .40 | 496 | .02 | 5 | 1.99 | .01 | .11 | 1 |
| 21150N 19275E | 9 | 24 | 19 | 146 | .3 | 6 | 16 | 5349 | 4.74 | 78 | 5 | ND | 1 | 153 | .8 | 2 | 2 | 43 | 1.18 | .282 | 25 | 7 | .35 | 629 | .02 | 7 | 1.86 | .01 | .10 | 1 |
| 21150N 19300E | 8 | 24 | 14 | 141 | .4 | 5 | 15 | 3412 | 4.41 | 20 | 5 | ND | 1 | 64 | 1.3 | 2 | 2 | 58 | .59 | .125 | 15 | 10 | .33 | 573 | .04 | 6 | 1.42 | .01 | .11 | 1 |
| 21150N 19325E | 3 | 27 | 22 | 124 | .2 | 9 | 16 | 1757 | 4.32 | 25 | 5 | ND | 2 | 67 | .6 | 2 | 3 | 54 | .87 | .123 | 22 | 10 | .63 | 587 | .07 | 6 | 1.85 | .01 | .11 | 1 |
| 21150N 19350E | 3 | 24 | 22 | 109 | .2 | 7 | 15 | 1274 | 4.68 | 47 | 5 | ND | 3 | 50 | .4 | 2 | 2 | 59 | .61 | .108 | 25 | 8 | .60 | 399 | .06 | 7 | 1.96 | .01 | .10 | 1 |
| 21150N 19375E | 4 | 27 | 28 | 126 | .1 | 6 | 21 | 2126 | 5.01 | 208 | 5 | ND | 2 | 17 | .5 | 11 | 2 | 55 | .26 | .107 | 22 | 7 | .54 | 243 | .03 | 6 | 1.89 | .01 | .12 | 1 |
| 21150N 19400E | 3 | 29 | 20 | 133 | .3 | 6 | 21 | 2009 | 5.14 | 319 | 5 | ND | 3 | 26 | .7 | 17 | 2 | 53 | .40 | .093 | 21 | 6 | .58 | 324 | .05 | 7 | 1.71 | .01 | .11 | 1 |
| 21150N 19425E | 2 | 17 | 23 | 109 | .3 | 6 | 13 | 1420 | 4.62 | 43 | 5 | ND | 2 | 27 | .2 | 3 | 3 | 58 | .43 | .210 | 12 | 8 | .46 | 287 | .04 | 6 | 1.85 | .01 | .13 | 1 |
| 21150N 19450E | 10 | 17 | 19 | 65 | .3 | 2 | 6 | 635 | 4.04 | 16 | 5 | ND | 2 | 63 | .2 | 2 | 2 | 74 | .48 | .078 | 13 | 5 | .12 | 312 | .07 | 6 | .96 | .01 | .13 | 1 |
| 21150N 19475E | 10 | 20 | 17 | 111 | .1 | 6 | 15 | 2198 | 4.45 | 33 | 5 | ND | 3 | 49 | .8 | 3 | 2 | 52 | .55 | .095 | 32 | 6 | .54 | 365 | .04 | 6 | 1.96 | .01 | .11 | 1 |
| 21150N 19500E | 4 | 19 | 18 | 112 | .3 | 5 | 15 | 1738 | 4.51 | 56 | 5 | ND | 2 | 35 | .4 | 4 | 2 | 54 | .41 | .099 | 16 | 6 | .56 | 333 | .04 | 6 | 1.85 | .01 | .33 | 1 |
| 21150N 19525E | 4 | 28 | 23 | 129 | .2 | 6 | 20 | 1693 | 4.62 | 244 | 5 | ND | 3 | 24 | .8 | 15 | 2 | 49 | .33 | .089 | 25 | 6 | .53 | 327 | .04 | 6 | 1.82 | .01 | .12 | 1 |
| 21150N 19550E | 3 | 21 | 21 | 116 | .2 | 6 | 16 | 1511 | 4.61 | 98 | 5 | ND | 4 | 22 | .4 | 5 | 3 | 54 | .33 | .090 | 24 | 6 | .58 | 290 | .05 | 5 | 1.75 | .01 | .12 | 1 |
| 21150N 19625E | 7 | 34 | 51 | 163 | .5 | 5 | 17 | 1782 | 5.40 | 110 | 5 | ND | 4 | 21 | 1.5 | 5 | 3 | 42 | .31 | .074 | 33 | 6 | .39 | 653 | .02 | 5 | 1.75 | .01 | .11 | 1 |
| 21150N 19650E | 3 | 33 | 54 | 126 | .4 | 6 | 24 | 3141 | 4.57 | 46 | 5 | ND | 1 | 57 | 1.7 | 5 | 2 | 43 | .92 | .139 | 48 | 5 | .38 | 1761 | .02 | 7 | 1.42 | .01 | .10 | 1 |
| 21150N 19675E | 2 | 13 | 36 | 88 | .4 | 5 | 13 | 2008 | 3.91 | 27 | 5 | ND | 2 | 39 | .4 | 3 | 2 | 41 | .55 | .125 | 16 | 4 | .27 | 913 | .02 | 7 | 1.11 | .01 | .16 | 1 |
| 21150N 19700E | 2 | 13 | 28 | 114 | .3 | 4 | 13 | 1793 | 4.60 | 25 | 5 | ND | 1 | 32 | .2 | 2 | 2 | 43 | .47 | .130 | 20 | 5 | .34 | 366 | .02 | 6 | 1.67 | .01 | .11 | 1 |
| 21150N 19725E | 4 | 24 | 51 | 200 | .6 | 5 | 23 | 2917 | 4.49 | 33 | 5 | ND | 2 | 19 | 1.2 | 5 | 2 | 44 | .26 | .119 | 18 | 5 | .48 | 612 | .02 | 6 | 1.95 | .01 | .10 | 1 |
| 21150N 19750E | 2 | 14 | 38 | 117 | .9 | 3 | 11 | 1235 | 4.08 | 24 | 5 | ND | 2 | 31 | .2 | 2 | 2 | 45 | .39 | .186 | 14 | 5 | .13 | 688 | .02 | 5 | .99 | .01 | .12 | 1 |
| 21150N 19775E | 2 | 14 | 33 | 136 | .7 | 4 | 13 | 1837 | 4.74 | 12 | 5 | ND | 2 | 24 | .5 | 2 | 3 | 51 | .27 | .227 | 14 | 5 | .18 | 846 | .01 | 5 | 1.53 | .01 | .13 | 1 |
| 21150N 19800E | 3 | 14 | 33 | 179 | .6 | 4 | 19 | 3235 | 3.78 | 17 | 5 | ND | 2 | 49 | 3.5 | 2 | 2 | 48 | .83 | .181 | 11 | 4 | .10 | 1091 | .02 | 6 | .79 | .01 | .16 | 1 |
| 21150N 19825E | 2 | 12 | 29 | 168 | .5 | 4 | 18 | 4436 | 4.75 | 10 | 5 | ND | 2 | 38 | 1.1 | 2 | 2 | 53 | .68 | .187 | 13 | 5 | .16 | 971 | .02 | 6 | .92 | .01 | .17 | 1 |
| 21150N 19850E | 2 | 21 | 23 | 74 | 1.1 | 4 | 21 | 3313 | 4.64 | 31 | 5 | ND | 3 | 84 | 1.5 | 2 | 2 | 26 | 1.77 | .315 | 36 | 3 | .15 | 969 | .01 | 4 | 1.54 | .01 | .11 | 1 |
| 21150N 19875E | 1 | 13 | 21 | 118 | .8 | 4 | 12 | 1378 | 3.65 | 15 | 5 | ND | 3 | 61 | .6 | 3 | 2 | 41 | 1.29 | .189 | 30 | 6 | .35 | 820 | .02 | 6 | 1.56 | .01 | .11 | 1 |
| STANDARD C | 18 | 58 | 37 | 132 | 7.2 | 73 | 31 | 933 | 3.94 | 41 | 19 | 7 | 40 | 52 | 18.6 | 14 | 21 | 58 | .52 | .096 | 39 | 59 | .94 | 182 | .09 | 36 | 1.94 | .06 | .13 | 12 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 21150N 19900E | 3 | 17 | 44 | 115 | .5 | 3 | 7 | 694 | 3.90 | 36 | 5 | ND | 1 | 22 | .9 | 3 | 2 | 43 | .24 | .083 | 14 | 5 | .09 | 852 | .02 | 3 | .91 | .01 | .15 | 1 |
| 21150N 19925E | 2 | 23 | 41 | 144 | .6 | 6 | 13 | 1606 | 4.13 | 23 | 5 | ND | 1 | 30 | .7 | 3 | 2 | 48 | .38 | .074 | 13 | 6 | .41 | 544 | .04 | 3 | 1.34 | .01 | .13 | 1 |
| 21150N 19950E | 2 | 17 | 29 | 111 | .4 | 5 | 10 | 1286 | 3.38 | 22 | 5 | ND | 1 | 37 | 1.5 | 2 | 2 | 40 | .72 | .124 | 20 | 6 | .23 | 978 | .02 | 3 | 1.08 | .01 | .09 | 1 |
| 21150N 19975E | 3 | 16 | 47 | 111 | .8 | 4 | 10 | 1458 | 3.90 | 32 | 5 | ND | 1 | 23 | 1.7 | 2 | 2 | 48 | .29 | .157 | 23 | 5 | .12 | 1017 | .02 | 3 | 1.19 | .01 | .14 | 1 |
| 21150N 20000E | 3 | 19 | 30 | 134 | 1.0 | 6 | 9 | 1679 | 3.54 | 17 | 5 | ND | 1 | 37 | 1.2 | 2 | 2 | 39 | .76 | .318 | 29 | 7 | .27 | 1239 | .02 | 4 | 1.76 | .01 | .13 | 1 |
| 21150N 20025E | 2 | 20 | 31 | 79 | .6 | 4 | 9 | 867 | 5.92 | 25 | 5 | ND | 1 | 35 | .3 | 2 | 2 | 65 | .69 | .145 | 22 | 7 | .24 | 409 | .03 | 2 | 1.62 | .01 | .11 | 1 |
| 21150N 20050E | 2 | 19 | 33 | 111 | .2 | 4 | 11 | 917 | 5.70 | 22 | 5 | ND | 1 | 43 | .7 | 3 | 2 | 66 | .96 | .119 | 16 | 6 | .41 | 615 | .03 | 2 | 1.60 | .01 | .12 | 1 |
| 21150N 20075E | 3 | 21 | 17 | 59 | .2 | 4 | 10 | 598 | 3.02 | 7 | 5 | ND | 1 | 18 | .2 | 2 | 2 | 57 | .26 | .122 | 12 | 6 | .08 | 254 | .02 | 3 | .61 | .01 | .14 | 2 |
| 21150N 20100E | 8 | 27 | 29 | 83 | .7 | 4 | 18 | 1173 | 8.77 | 24 | 5 | ND | 1 | 42 | .8 | 2 | 2 | 78 | .76 | .181 | 12 | 8 | .42 | 273 | .02 | 2 | 2.24 | .01 | .12 | 1 |
| 21150N 20125E | 3 | 18 | 32 | 115 | .5 | 5 | 20 | 2550 | 5.82 | 16 | 5 | ND | 1 | 60 | 1.0 | 2 | 2 | 64 | 1.41 | .330 | 10 | 8 | .39 | 489 | .02 | 4 | 1.66 | .01 | .10 | 1 |
| 21150N 20150E | 3 | 20 | 19 | 77 | .4 | 4 | 18 | 1697 | 7.21 | 4 | 5 | ND | 1 | 18 | .5 | 2 | 2 | 112 | .27 | .223 | 8 | 6 | .27 | 224 | .02 | 2 | 1.50 | .01 | .14 | 1 |
| 21150N 20175E | 1 | 20 | 17 | 69 | .5 | 3 | 10 | 1572 | 4.05 | 8 | 5 | ND | 1 | 17 | .2 | 2 | 2 | 73 | .21 | .187 | 8 | 5 | .20 | 234 | .02 | 3 | .91 | .01 | .16 | 1 |
| 21150N 20200E | 1 | 19 | 14 | 98 | .1 | 4 | 18 | 2527 | 5.71 | 6 | 5 | ND | 1 | 13 | .3 | 2 | 2 | 80 | .19 | .212 | 23 | 5 | .72 | 206 | .03 | 4 | 2.56 | .01 | .11 | 1 |
| 21150N 20225E | 1 | 21 | 21 | 87 | .6 | 5 | 11 | 1511 | 7.55 | 9 | 5 | ND | 1 | 17 | .4 | 2 | 2 | 90 | .19 | .208 | 11 | 5 | .34 | 275 | .04 | 3 | 1.76 | .01 | .12 | 1 |
| 21150N 20250E | 2 | 38 | 23 | 98 | .8 | 6 | 26 | 2720 | 7.72 | 10 | 5 | ND | 1 | 7 | .6 | 2 | 2 | 83 | .06 | .138 | 24 | 6 | .81 | 129 | .04 | 4 | 3.68 | .01 | .09 | 1 |
| 21150N 20275E | 3 | 10 | 17 | 64 | .5 | 3 | 10 | 1432 | 4.86 | 12 | 5 | ND | 1 | 9 | .2 | 2 | 3 | 70 | .04 | .161 | 12 | 4 | .19 | 154 | .02 | 3 | 1.57 | .01 | .11 | 1 |
| 21150N 20300E | 3 | 21 | 14 | 53 | .5 | 3 | 8 | 726 | 6.24 | 10 | 5 | ND | 1 | 12 | .2 | 2 | 2 | 133 | .12 | .098 | 8 | 3 | .27 | 150 | .22 | 5 | 1.23 | .01 | .12 | 1 |
| 39000N 39550E | 1 | 20 | 12 | 106 | .1 | 4 | 13 | 1369 | 5.00 | 9 | 5 | ND | 2 | 42 | .5 | 2 | 2 | 69 | .68 | .112 | 13 | 5 | .66 | 430 | .07 | 23 | 1.33 | .01 | .09 | 1 |
| 39000N 39575E | 1 | 16 | 11 | 119 | .1 | 4 | 13 | 1169 | 4.61 | 17 | 5 | ND | 2 | 42 | .5 | 2 | 2 | 62 | .70 | .078 | 12 | 4 | .62 | 222 | .06 | 6 | 1.41 | .01 | .09 | 1 |
| 39000N 39600E | 1 | 24 | 17 | 108 | .1 | 4 | 14 | 1457 | 4.98 | 12 | 5 | ND | 3 | 24 | .3 | 2 | 2 | 67 | .59 | .103 | 15 | 5 | .72 | 477 | .07 | 16 | 1.50 | .01 | .09 | 1 |
| 39000N 39625E | 1 | 25 | 13 | 133 | .3 | 4 | 13 | 4448 | 5.15 | 31 | 5 | ND | 2 | 34 | .7 | 3 | 2 | 51 | .64 | .099 | 16 | 5 | .58 | 843 | .06 | 12 | 1.27 | .01 | .12 | 1 |
| 39000N 39650E | 1 | 13 | 16 | 101 | .1 | 4 | 13 | 964 | 4.84 | 41 | 9 | ND | 3 | 17 | .2 | 3 | 2 | 59 | .36 | .031 | 14 | 4 | .56 | 359 | .04 | 5 | 1.52 | .01 | .09 | 1 |
| 39000N 39675E | 1 | 28 | 18 | 96 | .1 | 3 | 13 | 1496 | 4.80 | 49 | 5 | ND | 3 | 29 | .4 | 2 | 2 | 59 | .54 | .045 | 13 | 5 | .56 | 261 | .06 | 4 | 1.35 | .01 | .09 | 1 |
| 39000N 39700E | 1 | 15 | 13 | 132 | .1 | 4 | 13 | 1306 | 4.76 | 27 | 5 | ND | 3 | 22 | .4 | 2 | 2 | 61 | .45 | .083 | 11 | 5 | .59 | 320 | .06 | 5 | 1.35 | .01 | .10 | 1 |
| 39000N 39725E | 1 | 12 | 20 | 103 | .2 | 4 | 12 | 717 | 4.12 | 12 | 5 | ND | 2 | 13 | .3 | 2 | 2 | 46 | .25 | .036 | 11 | 6 | .32 | 187 | .04 | 4 | 1.04 | .01 | .07 | 1 |
| 39000N 39750E | 20 2 | 130 | 39 | 178 | .4 | 7 | 13 | 1203 | 4.42 | 72 | 5 | ND | 3 | 39 | 1.2 | 15 | 2 | 42 | .68 | .107 | 20 | 6 | .38 | 823 | .05 | 9 | .92 | .01 | .11 | 1 |
| 39000N 39775E | 2 | 46 | 34 | 149 | .1 | 6 | 13 | 1041 | 4.61 | 51 | 5 | ND | 2 | 16 | .8 | 5 | 2 | 48 | .32 | .079 | 13 | 6 | .38 | 233 | .06 | 4 | .97 | .01 | .09 | 1 |
| 39000N 39800E | 2 | 165 | 35 | 153 | .2 | 6 | 17 | 1651 | 5.24 | 95 | 5 | ND | 2 | 14 | .9 | 7 | 2 | 44 | .27 | .109 | 14 | 7 | .42 | 235 | .04 | 4 | 1.15 | .01 | .10 | 1 |
| 39000N 39825E | 2 | 93 | 28 | 165 | .1 | 6 | 13 | 1180 | 5.00 | 28 | 5 | ND | 2 | 20 | .7 | 4 | 2 | 51 | .43 | .081 | 13 | 7 | .40 | 480 | .04 | 5 | 1.13 | .01 | .09 | 1 |
| 39000N 39850E | 20 2 | 99 | 35 | 195 | .4 | 8 | 13 | 1221 | 4.50 | 37 | 6 | ND | 2 | 26 | 1.4 | 5 | 2 | 43 | .71 | .087 | 18 | 8 | .44 | 468 | .04 | 11 | 1.30 | .01 | .11 | 1 |
| 39000N 39875E | 10 2 | 127 | 33 | 161 | .5 | 5 | 14 | 1461 | 5.02 | 55 | 5 | ND | 3 | 23 | 1.2 | 6 | 2 | 50 | .55 | .085 | 18 | 6 | .47 | 333 | .05 | 7 | 1.24 | .01 | .10 | 1 |
| 39000N 39900E | 2 | 45 | 22 | 147 | .2 | 6 | 12 | 1153 | 4.40 | 29 | 5 | ND | 2 | 16 | .7 | 5 | 2 | 47 | .32 | .058 | 13 | 6 | .42 | 293 | .05 | 4 | 1.06 | .01 | .08 | 1 |
| 39000N 39925E | 2 | 32 | 28 | 155 | .2 | 5 | 11 | 907 | 4.36 | 26 | 5 | ND | 1 | 17 | 1.1 | 4 | 2 | 54 | .38 | .079 | 13 | 7 | .40 | 238 | .03 | 6 | 1.28 | .01 | .09 | 1 |
| 39000N 39950E | 1 | 49 | 24 | 136 | .1 | 7 | 14 | 1657 | 4.77 | 28 | 5 | ND | 2 | 21 | .9 | 4 | 2 | 56 | .48 | .113 | 18 | 6 | .66 | 470 | .06 | 7 | 1.44 | .01 | .12 | 1 |
| 39000N 39975E | 40 1 | 25 | 24 | 92 | .1 | 4 | 12 | 901 | 4.15 | 20 | 5 | ND | 3 | 14 | .6 | 2 | 2 | 53 | .36 | .057 | 14 | 5 | .52 | 495 | .05 | 5 | 1.27 | .01 | .09 | 1 |
| 39000N 40025E | 1 | 33 | 15 | 125 | .1 | 4 | 16 | 1388 | 4.85 | 24 | 5 | ND | 2 | 22 | .8 | 3 | 2 | 72 | .62 | .084 | 16 | 5 | 1.09 | 327 | .09 | 10 | 1.79 | .02 | .13 | 1 |
| STANDARD C | 18 | 59 | 38 | 132 | 7.3 | 72 | 31 | 941 | 4.07 | 39 | 16 | 7 | 39 | 52 | 18.7 | 15 | 22 | 58 | .52 | .096 | 39 | 60 | .95 | 182 | .09 | 35 | 1.98 | .06 | .14 | 11 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 39000N 40050E | 1 | 27 | 20 | 113 | .1 | 4 | 14 | 1161 | 4.37 | 16 | 5 | ND | 3 | 24 | .6 | 2 | 2 | 65 | .60 | .091 | 16 | 5 | .87 | 374 | .09 | 10 | 1.41 | .02 | .15 | 1 |
| 39000N 40075E | 1 | 15 | 23 | 100 | .1 | 6 | 13 | 1243 | 3.88 | 21 | 5 | ND | 2 | 16 | .2 | 2 | 2 | 53 | .37 | .054 | 11 | 6 | .63 | 201 | .08 | 7 | 1.12 | .01 | .09 | 1 |
| 39000N 40100E | 1 | 15 | 24 | 119 | .1 | 6 | 15 | 1253 | 4.46 | 22 | 5 | ND | 3 | 22 | .3 | 2 | 2 | 66 | .49 | .075 | 13 | 6 | .77 | 229 | .09 | 9 | 1.36 | .02 | .11 | 1 |
| 39100N 39550E | 2 | 15 | 32 | 84 | .2 | 1 | 10 | 2095 | 2.72 | 15 | 5 | ND | 1 | 10 | .2 | 2 | 2 | 32 | .32 | .183 | 17 | 2 | .07 | 316 | .01 | 4 | .83 | .01 | .25 | 1 |
| 39100N 39575E | 4 | 18 | 14 | 63 | .3 | 2 | 7 | 408 | 2.20 | 9 | 9 | ND | 3 | 6 | .2 | 2 | 2 | 34 | .07 | .089 | 18 | 2 | .04 | 203 | .01 | 3 | .76 | .01 | .16 | 1 |
| 39100N 39600E | 1 | 6 | 10 | 41 | .3 | 1 | 3 | 106 | 1.45 | 3 | 8 | ND | 2 | 7 | .2 | 2 | 2 | 28 | .11 | .034 | 15 | 3 | .04 | 147 | .01 | 10 | .53 | .01 | .11 | 2 |
| 39100N 39625E | 1 | 11 | 7 | 34 | .1 | 1 | 3 | 82 | 1.31 | 2 | 5 | ND | 1 | 4 | .2 | 2 | 2 | 30 | .03 | .025 | 18 | 3 | .03 | 91 | .01 | 6 | .47 | .01 | .11 | 1 |
| 39100N 39650E | 1 | 10 | 4 | 54 | .2 | 2 | 4 | 95 | 2.15 | 7 | 7 | ND | 2 | 6 | .2 | 3 | 2 | 35 | .07 | .040 | 16 | 7 | .03 | 79 | .02 | 4 | .27 | .01 | .13 | 1 |
| 39100N 39675E | 3 | 9 | 16 | 85 | .1 | 2 | 7 | 1663 | 2.28 | 12 | 7 | ND | 3 | 9 | .2 | 2 | 2 | 22 | .15 | .068 | 14 | 3 | .04 | 260 | .01 | 4 | .39 | .01 | .15 | 1 |
| 39100N 39700E | 3 | 6 | 16 | 97 | .1 | 2 | 8 | 2334 | 2.03 | 10 | 5 | ND | 1 | 11 | 1.1 | 2 | 2 | 29 | .11 | .089 | 14 | 4 | .04 | 389 | .01 | 6 | .74 | .01 | .11 | 1 |
| 39100N 39725E | 15 | 5 | 94 | 195 | 1.1 | 3 | 31 | 15718 | 4.80 | 18 | 5 | ND | 3 | 13 | 1.4 | 2 | 2 | 30 | .27 | .161 | 13 | 4 | .04 | 369 | .01 | 6 | 1.19 | .01 | .12 | 1 |
| 39100N 39750E | 9 | 23 | 56 | 132 | .1 | 5 | 17 | 5292 | 4.67 | 50 | 5 | ND | 1 | 31 | 1.1 | 3 | 2 | 49 | .48 | .167 | 43 | 7 | .08 | 593 | .02 | 3 | 1.38 | .01 | .12 | 1 |
| 39100N 39775E | 2 | 115 | 35 | 274 | .7 | 5 | 11 | 3023 | 2.76 | 16 | 5 | ND | 1 | 137 | 5.5 | 2 | 2 | 21 | 2.60 | .372 | 90 | 6 | .11 | 1026 | .01 | 6 | 1.81 | .01 | .10 | 1 |
| 39100N 39800E | 8 | 148 | 97 | 363 | .4 | 7 | 22 | 6737 | 4.89 | 56 | 6 | ND | 2 | 62 | 4.0 | 2 | 2 | 38 | 1.06 | .358 | 70 | 11 | .18 | 608 | .03 | 5 | 3.23 | .01 | .10 | 1 |
| 39100N 39825E | 3 | 348 | 58 | 350 | 1.5 | 7 | 7 | 1753 | 1.48 | 20 | 7 | ND | 1 | 162 | 6.7 | 2 | 2 | 10 | 3.10 | .214 | 89 | 9 | .12 | 612 | .01 | 12 | 2.86 | .02 | .06 | 1 |
| 39100N 39850E | 1 | 4 | 4 | 145 | .2 | 1 | 1 | 42 | .38 | 2 | 5 | ND | 1 | 81 | 1.1 | 2 | 3 | 5 | 1.50 | .092 | 5 | 2 | .06 | 439 | .01 | 8 | .24 | .01 | .09 | 1 |
| 39100N 39875E | 3 | 79 | 38 | 471 | .1 | 4 | 11 | 3020 | 5.19 | 23 | 8 | ND | 3 | 35 | 2.6 | 2 | 2 | 41 | .73 | .256 | 47 | 7 | .14 | 595 | .01 | 4 | 3.16 | .01 | .14 | 1 |
| 39100N 39900E | 7 | 56 | 43 | 244 | .1 | 5 | 13 | 3810 | 4.76 | 25 | 6 | ND | 1 | 65 | 1.5 | 3 | 2 | 42 | .96 | .305 | 37 | 7 | .17 | 391 | .02 | 3 | 2.14 | .01 | .13 | 1 |
| 39100N 39925E | 5 | 88 | 23 | 113 | .3 | 4 | 8 | 1935 | 3.04 | 24 | 5 | ND | 1 | 93 | 1.4 | 2 | 2 | 49 | 1.54 | .288 | 32 | 6 | .22 | 392 | .02 | 5 | 1.89 | .01 | .08 | 1 |
| 39100N 39950E | 1 | 3 | 7 | 26 | .2 | 1 | 2 | 86 | 1.76 | 2 | 5 | ND | 1 | 11 | .2 | 2 | 2 | 53 | .11 | .016 | 11 | 3 | .06 | 70 | .03 | 8 | .75 | .01 | .09 | 1 |
| 39100N 39975E | 2 | 27 | 26 | 206 | .1 | 8 | 16 | 1713 | 5.03 | 27 | 5 | ND | 2 | 19 | .6 | 2 | 2 | 62 | .35 | .135 | 14 | 9 | .68 | 455 | .03 | 5 | 2.23 | .01 | .12 | 1 |
| 39100N 40025E | 1 | 22 | 25 | 123 | .1 | 5 | 15 | 1999 | 4.07 | 22 | 5 | ND | 2 | 23 | .9 | 2 | 2 | 52 | .58 | .111 | 15 | 5 | .58 | 474 | .04 | 9 | 1.32 | .01 | .10 | 1 |
| 39100N 40050E | Zo 1 | 24 | 19 | 117 | .1 | 4 | 14 | 1079 | 4.11 | 20 | 5 | ND | 3 | 40 | .5 | 2 | 2 | 57 | 1.53 | .090 | 15 | 4 | .65 | 408 | .08 | 8 | 1.25 | .02 | .18 | 1 |
| 39100N 40075E | 1 | 16 | 16 | 91 | .1 | 4 | 13 | 886 | 4.26 | 20 | 5 | ND | 3 | 17 | .2 | 2 | 2 | 62 | .43 | .074 | 14 | 4 | .68 | 156 | .10 | 7 | 1.17 | .01 | .10 | 1 |
| 39100N 40100E | 1 | 24 | 18 | 95 | .1 | 4 | 13 | 761 | 4.70 | 27 | 5 | ND | 3 | 21 | .3 | 2 | 2 | 72 | .49 | .081 | 13 | 5 | .79 | 190 | .10 | 9 | 1.36 | .01 | .10 | 1 |
| 39100N 40125E | 1 | 16 | 18 | 101 | .1 | 5 | 14 | 1059 | 4.55 | 20 | 5 | ND | 2 | 20 | .2 | 2 | 2 | 67 | .47 | .079 | 15 | 5 | .77 | 267 | .09 | 7 | 1.32 | .01 | .09 | 1 |
| 39300N 39550E | 1 | 6 | 18 | 47 | .4 | 1 | 3 | 1883 | 1.30 | 2 | 5 | ND | 1 | 12 | .2 | 2 | 2 | 29 | .21 | .125 | 15 | 2 | .03 | 378 | .01 | 3 | .81 | .01 | .20 | 2 |
| 39300N 39575E | 1 | 1 | 28 | 56 | .2 | 1 | 8 | 2447 | 2.48 | 7 | 5 | ND | 1 | 19 | .2 | 2 | 2 | 27 | .34 | .135 | 16 | 2 | .05 | 443 | .01 | 2 | .64 | .01 | .19 | 1 |
| 39300N 39600E | 1 | 8 | 21 | 128 | .1 | 4 | 16 | 9434 | 4.81 | 15 | 5 | ND | 4 | 54 | .8 | 2 | 2 | 33 | .90 | .192 | 67 | 3 | .28 | 2991 | .01 | 5 | 1.98 | .01 | .14 | 1 |
| 39300N 39625E | 75 1 | 18 | 35 | 85 | .2 | 1 | 11 | 2839 | 4.82 | 10 | 5 | ND | 1 | 14 | .2 | 2 | 2 | 20 | .33 | .199 | 16 | 2 | .06 | 504 | .01 | 3 | .69 | .01 | .16 | 1 |
| 39300N 39650E | 4 | 13 | 426 | 265 | 1.0 | 2 | 15 | 8156 | 2.99 | 29 | 5 | ND | 2 | 31 | 9.6 | 2 | 2 | 21 | .56 | .153 | 23 | 2 | .05 | 641 | .01 | 4 | .66 | .01 | .20 | 1 |
| 39300N 39675E | 4 | 34 | 120 | 518 | .5 | 4 | 11 | 4083 | 2.43 | 31 | 8 | ND | 3 | 81 | 10.7 | 3 | 2 | 19 | 1.35 | .216 | 45 | 5 | .09 | 556 | .01 | 4 | 1.00 | .01 | .15 | 1 |
| 39300N 39700E | 9 | 31 | 359 | 280 | 1.6 | 2 | 13 | 10792 | 1.89 | 15 | 5 | ND | 1 | 68 | 11.2 | 2 | 2 | 20 | 1.15 | .108 | 28 | 3 | .04 | 698 | .01 | 7 | .93 | .01 | .14 | 1 |
| 39300N 39725E | 3 | 24 | 9 | 500 | .7 | 3 | 5 | 3193 | .64 | 2 | 5 | ND | 1 | 203 | 9.0 | 3 | 2 | 7 | 4.22 | .150 | 11 | 2 | .13 | 738 | .01 | 11 | .38 | .01 | .11 | 1 |
| 39300N 39750E | 4 | 21 | 16 | 198 | .2 | 2 | 7 | 572 | 2.87 | 9 | 5 | ND | 1 | 68 | 1.0 | 2 | 2 | 42 | 1.02 | .121 | 11 | 3 | .06 | 608 | .01 | 4 | .78 | .01 | .16 | 1 |
| 39300N 39775E | 4 | 12 | 79 | 318 | .5 | 3 | 23 | 7339 | 2.86 | 5 | 5 | ND | 1 | 48 | 10.0 | 2 | 2 | 27 | .74 | .200 | 12 | 3 | .06 | 587 | .01 | 4 | .72 | .01 | .19 | 1 |
| STANDARD C | 19 | 57 | 36 | 132 | 7.3 | 73 | 31 | 940 | 4.02 | 40 | 23 | 7 | 39 | 52 | 18.7 | 15 | 20 | 60 | .52 | .097 | 40 | 60 | .95 | 183 | .09 | 37 | 1.99 | .06 | .14 | 11 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 39300N 39800E | 1 | 18 | 19 | 194 | .3 | 3 | 6 | 709 | 2.59 | 13 | 8 | ND | 1 | 48 | 1.8 | 3 | 3 | 41 | .91 | .085 | 21 | 6 | .08 | 326 | .02 | 2 | .78 | .01 | .12 | 1 |
| 39300N 39825E | 3 | 16 | 15 | 81 | .1 | 3 | 5 | 318 | 3.04 | 19 | 6 | ND | 1 | 24 | .2 | 3 | 2 | 62 | .35 | .044 | 13 | 7 | .04 | 178 | .02 | 4 | .51 | .01 | .10 | 1 |
| 39300N 39850E | 5 | 11 | 7 | 66 | .1 | 4 | 4 | 140 | 1.98 | 10 | 7 | ND | 2 | 19 | .2 | 2 | 2 | 35 | .19 | .042 | 16 | 6 | .05 | 710 | .01 | 4 | .59 | .01 | .10 | 1 |
| 39300N 39875E | 3 | 13 | 24 | 110 | .3 | 3 | 7 | 756 | 3.83 | 17 | 6 | ND | 1 | 15 | 1.1 | 3 | 2 | 53 | .16 | .079 | 17 | 4 | .05 | 145 | .02 | 3 | .59 | .01 | .12 | 1 |
| 39300N 39900E | 2 | 11 | 45 | 124 | .6 | 3 | 11 | 4177 | 2.78 | 12 | 5 | ND | 1 | 23 | 1.9 | 2 | 2 | 35 | .32 | .147 | 13 | 5 | .05 | 432 | .01 | 3 | .67 | .01 | .14 | 1 |
| 39300N 39925E | 1 | 20 | 45 | 81 | 1.5 | 3 | 9 | 1745 | 3.49 | 28 | 8 | ND | 1 | 8 | .2 | 3 | 2 | 40 | .06 | .238 | 12 | 7 | .08 | 173 | .01 | 3 | .87 | .01 | .13 | 1 |
| 39300N 39950E | 1 | 14 | 26 | 76 | .6 | 2 | 6 | 1327 | 1.89 | 14 | 9 | ND | 1 | 16 | .4 | 2 | 2 | 28 | .25 | .111 | 14 | 4 | .05 | 260 | .01 | 4 | .55 | .01 | .17 | 1 |
| 39300N 39975E | 3 | 44 | 9 | 63 | .2 | 3 | 2 | 108 | .34 | 2 | 9 | ND | 1 | 137 | 3.6 | 2 | 2 | 8 | 2.33 | .107 | 10 | 2 | .08 | 209 | .01 | 6 | .26 | .01 | .10 | 1 |
| 39300N 40000E | 1 | 9 | 21 | 33 | .2 | 2 | 2 | 44 | .60 | 2 | 9 | ND | 2 | 75 | .6 | 2 | 3 | 24 | 1.19 | .081 | 11 | 4 | .09 | 479 | .01 | 3 | .80 | .01 | .10 | 2 |
| 39500N 39750E | 7 | 26 | 106 | 400 | .9 | 7 | 39 | 7431 | 7.12 | 47 | 5 | ND | 2 | 37 | 10.8 | 5 | 2 | 17 | .66 | .364 | 19 | 6 | .06 | 559 | .01 | 5 | .88 | .01 | .16 | 1 |
| 39500N 39775E | 8 | 28 | 125 | 406 | .9 | 3 | 36 | 7891 | 6.53 | 45 | 5 | ND | 2 | 31 | 11.2 | 3 | 3 | 17 | .61 | .366 | 15 | 3 | .07 | 587 | .01 | 4 | .73 | .01 | .19 | 1 |
| 39500N 39800E | 8 | 21 | 121 | 361 | .9 | 3 | 28 | 6925 | 5.78 | 40 | 5 | ND | 2 | 32 | 7.3 | 3 | 2 | 17 | .58 | .269 | 13 | 2 | .05 | 704 | .01 | 7 | .51 | .01 | .17 | 1 |
| 39500N 39825E | 7 | 21 | 119 | 222 | 1.7 | 2 | 28 | 4935 | 5.24 | 52 | 5 | ND | 1 | 22 | 2.7 | 5 | 3 | 19 | .36 | .144 | 38 | 1 | .03 | 414 | .01 | 3 | .37 | .01 | .15 | 1 |
| 39500N 39850E | 7 | 23 | 135 | 292 | .9 | 3 | 29 | 6367 | 6.99 | 47 | 5 | ND | 2 | 28 | 5.6 | 5 | 3 | 19 | .25 | .257 | 13 | 3 | .03 | 596 | .01 | 2 | .51 | .01 | .20 | 1 |
| 39500N 39875E | 6 | 26 | 49 | 97 | .7 | 2 | 5 | 235 | 4.99 | 35 | 8 | ND | 2 | 27 | .2 | 4 | 2 | 20 | .10 | .142 | 14 | 2 | .02 | 339 | .01 | 7 | .26 | .01 | .25 | 1 |
| 39500N 39900E | 6 | 28 | 68 | 114 | 1.0 | 2 | 7 | 984 | 9.30 | 45 | 5 | ND | 3 | 40 | .3 | 5 | 2 | 21 | .27 | .640 | 13 | 2 | .03 | 453 | .01 | 3 | .57 | .01 | .32 | 1 |
| 39500N 39950E | 2 | 22 | 92 | 257 | 1.1 | 4 | 25 | 5409 | 3.51 | 52 | 5 | ND | 1 | 42 | 5.8 | 5 | 2 | 15 | .54 | .230 | 10 | 3 | .05 | 847 | .01 | 4 | .34 | .01 | .16 | 1 |
| 39500N 39975E | 4 | 23 | 161 | 407 | 1.5 | 5 | 32 | 5685 | 5.14 | 102 | 6 | ND | 2 | 41 | 9.9 | 7 | 2 | 20 | .43 | .229 | 16 | 2 | .05 | 1128 | .01 | 3 | .55 | .01 | .18 | 1 |
| 39500N 40000E | 3 | 25 | 135 | 206 | 2.0 | 3 | 25 | 4369 | 4.57 | 89 | 5 | ND | 2 | 37 | 2.3 | 6 | 2 | 18 | .27 | .248 | 11 | 2 | .03 | 817 | .01 | 4 | .46 | .01 | .18 | 1 |
| 39500N 40025E | 3 | 14 | 165 | 181 | 1.5 | 2 | 16 | 2348 | 5.10 | 85 | 5 | ND | 1 | 39 | .7 | 7 | 2 | 23 | .21 | .275 | 12 | 2 | .04 | 958 | .01 | 3 | .59 | .01 | .20 | 1 |
| 39500N 40050E | 4 | 28 | 229 | 232 | 1.9 | 2 | 10 | 1022 | 6.12 | 136 | 5 | ND | 3 | 34 | .5 | 12 | 3 | 25 | .05 | .291 | 12 | 2 | .02 | 492 | .01 | 3 | .49 | .01 | .19 | 1 |
| 39500N 40075E | 4 | 28 | 255 | 310 | 2.2 | 3 | 46 | 5873 | 5.75 | 124 | 5 | ND | 2 | 48 | 5.3 | 9 | 2 | 20 | .17 | .197 | 12 | 1 | .02 | 672 | .01 | 3 | .36 | .01 | .21 | 1 |
| 39500N 40100E | 4 | 27 | 237 | 276 | 2.6 | 2 | 22 | 1794 | 7.30 | 144 | 5 | ND | 4 | 34 | 1.4 | 11 | 2 | 22 | .03 | .256 | 13 | 2 | .03 | 483 | .01 | 3 | .85 | .01 | .19 | 1 |
| 39500N 40125E | 4 | 42 | 245 | 411 | 2.7 | 4 | 22 | 2802 | 6.82 | 145 | 6 | ND | 3 | 37 | 4.9 | 13 | 2 | 21 | .14 | .267 | 15 | 2 | .04 | 486 | .01 | 4 | .85 | .01 | .17 | 1 |
| 39500N 40150E | 3 | 25 | 190 | 152 | 1.4 | 2 | 10 | 2165 | 5.48 | 113 | 5 | ND | 2 | 32 | .5 | 7 | 2 | 27 | .09 | .219 | 15 | 2 | .03 | 676 | .01 | 2 | .80 | .01 | .17 | 1 |
| 39500N 40175E | 5 | 50 | 157 | 618 | 3.0 | 10 | 24 | 3310 | 4.35 | 91 | 8 | ND | 3 | 137 | 14.4 | 12 | 3 | 12 | 1.94 | .175 | 14 | 2 | .07 | 453 | .01 | 6 | .57 | .01 | .13 | 1 |
| 39500N 40200E | 10 | 42 | 241 | 500 | 2.8 | 7 | 44 | 5815 | 6.86 | 130 | 5 | ND | 3 | 58 | 17.3 | 12 | 3 | 22 | .56 | .182 | 24 | 4 | .07 | 654 | .01 | 2 | 1.02 | .01 | .13 | 1 |
| 39700N 39775E | 3 | 40 | 95 | 731 | 4.3 | 7 | 21 | 2400 | 6.11 | 64 | 7 | ND | 3 | 109 | 8.5 | 7 | 2 | 16 | 1.49 | .204 | 22 | 2 | .04 | 549 | .01 | 5 | .93 | .01 | .11 | 1 |
| 39700N 39800E | 1 | 18 | 25 | 141 | 1.6 | 2 | 2 | 120 | 1.25 | 8 | 9 | ND | 1 | 109 | .9 | 2 | 2 | 7 | 1.45 | .087 | 5 | 1 | .04 | 430 | .01 | 5 | .14 | .01 | .13 | 1 |
| 39700N 39825E | 1 | 26 | 6 | 110 | 3.8 | 2 | 1 | 368 | .28 | 2 | 5 | ND | 1 | 34 | .2 | 2 | 4 | 1 | .48 | .077 | 2 | 1 | .05 | 339 | .01 | 4 | .09 | .01 | .06 | 1 |
| 39700N 39850E | 2 | 26 | 35 | 124 | 1.6 | 4 | 5 | 515 | 2.43 | 27 | 6 | ND | 1 | 69 | 1.5 | 5 | 2 | 13 | .85 | .111 | 24 | 4 | .04 | 533 | .01 | 5 | .52 | .01 | .10 | 1 |
| 39700N 39875E | 1 | 43 | 87 | 149 | 1.7 | 2 | 8 | 898 | 4.54 | 38 | 5 | ND | 2 | 52 | .4 | 6 | 3 | 10 | .23 | .183 | 8 | 1 | .04 | 329 | .01 | 7 | .19 | .01 | .22 | 1 |
| 39700N 39900E | 2 | 32 | 42 | 142 | 2.4 | 2 | 5 | 466 | 2.21 | 16 | 8 | ND | 2 | 46 | .5 | 3 | 3 | 5 | .38 | .149 | 6 | 1 | .03 | 492 | .01 | 8 | .18 | .01 | .16 | 1 |
| 39700N 39925E | 1 | 39 | 73 | 150 | 3.1 | 2 | 6 | 555 | 4.25 | 33 | 5 | ND | 2 | 45 | .5 | 5 | 2 | 9 | .17 | .237 | 8 | 2 | .02 | 384 | .01 | 6 | .26 | .01 | .22 | 1 |
| 39700N 39950E | 2 | 46 | 176 | 197 | 2.6 | 2 | 42 | 7192 | 8.37 | 86 | 5 | ND | 4 | 77 | 1.1 | 11 | 2 | 22 | .04 | .276 | 14 | 2 | .01 | 119 | .01 | 3 | .56 | .01 | .34 | 1 |
| 39700N 39975E | 3 | 40 | 189 | 161 | 2.5 | 1 | 10 | 1322 | 8.12 | 92 | 5 | ND | 5 | 81 | .3 | 11 | 2 | 21 | .04 | .310 | 15 | 2 | .01 | 180 | .01 | 4 | .64 | .01 | .33 | 1 |
| STANDARD C | 18 | 61 | 41 | 132 | 7.2 | 72 | 31 | 1041 | 4.00 | 43 | 22 | 7 | 40 | 52 | 18.7 | 15 | 21 | 58 | .52 | .095 | 39 | 61 | .95 | 182 | .09 | 35 | 1.98 | .06 | .14 | 13 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 39700N 40000E | | 2 | 24 | 140 | 134 | 2.1 | 1 | 9 | 1289 | 6.41 | 67 | 5 | ND | 4 | 59 | .5 | 8 | 2 | 20 | .08 | .210 | 13 | 1 | .02 | 384 | .01 | 5 | .65 | .01 | .22 | 1 |
| 39700N 40025E | | 3 | 61 | 245 | 239 | 2.2 | 2 | 42 | 3146 | 8.04 | 83 | 5 | ND | 4 | 66 | .9 | 10 | 2 | 18 | .05 | .208 | 18 | 2 | .01 | 278 | .01 | 4 | 1.06 | .01 | .25 | 1 |
| 39700N 40050E | | 2 | 32 | 129 | 85 | 4.4 | 1 | 3 | 83 | 3.39 | 37 | 7 | ND | 4 | 40 | .3 | 5 | 2 | 15 | .15 | .183 | 39 | 2 | .02 | 812 | .01 | 3 | 1.03 | .01 | .10 | 2 |
| 39700N 40075E | | 2 | 83 | 105 | 130 | 2.9 | 2 | 5 | 265 | 5.97 | 64 | 5 | ND | 3 | 37 | .7 | 6 | 2 | 15 | .05 | .151 | 25 | 2 | .02 | 540 | .01 | 2 | 1.31 | .01 | .14 | 1 |
| 39700N 40100E | | 1 | 61 | 89 | 52 | 6.0 | 2 | 1 | 29 | .71 | 11 | 5 | ND | 1 | 14 | .4 | 2 | 2 | 8 | .06 | .168 | 36 | 3 | .05 | 635 | .01 | 4 | 1.92 | .01 | .08 | 2 |
| 39700N 40125E | | 3 | 168 | 320 | 77 | 5.6 | 2 | 14 | 537 | 15.08 | 331 | 6 | ND | 1 | 8 | 1.2 | 11 | 2 | 21 | .06 | .266 | 58 | 13 | .03 | 475 | .01 | 4 | 4.43 | .01 | .05 | 1 |
| 39700N 40150E | | 2 | 61 | 105 | 199 | 1.7 | 2 | 21 | 1525 | 5.36 | 48 | 5 | ND | 3 | 53 | 1.2 | 7 | 2 | 12 | .06 | .189 | 22 | 1 | .02 | 421 | .01 | 5 | .76 | .01 | .19 | 1 |
| 39700N 40175E | | 3 | 43 | 232 | 203 | 1.4 | 3 | 10 | 1751 | 6.73 | 121 | 5 | ND | 1 | 38 | .4 | 13 | 2 | 34 | .04 | .267 | 13 | 4 | .03 | 483 | .01 | 4 | .46 | .01 | .20 | 2 |
| 39700N 40200E | | 3 | 48 | 215 | 372 | 3.1 | 4 | 37 | 4340 | 6.68 | 125 | 5 | ND | 4 | 44 | 4.8 | 11 | 2 | 16 | .14 | .183 | 17 | 2 | .04 | 467 | .01 | 3 | .68 | .01 | .20 | 1 |
| 40000E 38600N | 10 | 1 | 29 | 23 | 104 | .1 | 4 | 13 | 1375 | 4.48 | 27 | 5 | ND | 4 | 24 | .6 | 2 | 2 | 58 | .69 | .097 | 16 | 5 | .93 | 305 | .06 | 14 | 1.47 | .01 | .08 | 1 |
| 40000E 38650N | 20 | 1 | 40 | 47 | 153 | .1 | 4 | 15 | 1713 | 5.38 | 32 | 5 | ND | 4 | 17 | 1.3 | 2 | 2 | 54 | .50 | .096 | 15 | 4 | .82 | 307 | .05 | 7 | 1.48 | .01 | .10 | 1 |
| 40000E 38700N | 45 | 1 | 38 | 22 | 106 | .1 | 5 | 15 | 1155 | 4.70 | 20 | 5 | ND | 4 | 19 | .7 | 2 | 2 | 56 | .44 | .082 | 12 | 5 | .73 | 294 | .07 | 5 | 1.30 | .01 | .08 | 1 |
| 40000E 38750N | 5 | 1 | 57 | 20 | 109 | .1 | 4 | 16 | 1333 | 5.03 | 29 | 5 | ND | 4 | 19 | .4 | 2 | 3 | 63 | .51 | .092 | 16 | 5 | .90 | 322 | .06 | 6 | 1.65 | .01 | .09 | 1 |
| 40000E 38800N | 60 | 1 | 40 | 26 | 125 | .1 | 4 | 16 | 1345 | 4.57 | 27 | 5 | ND | 4 | 21 | .8 | 2 | 2 | 54 | .48 | .086 | 12 | 4 | .67 | 368 | .05 | 10 | 1.36 | .01 | .08 | 1 |
| 40000E 38850N | 5 | 1 | 64 | 21 | 118 | .1 | 4 | 15 | 1356 | 4.67 | 32 | 5 | ND | 4 | 21 | .6 | 2 | 2 | 57 | .55 | .090 | 16 | 5 | .78 | 360 | .06 | 17 | 1.39 | .01 | .10 | 1 |
| 40000E 38900N | 10 | 1 | 46 | 27 | 115 | .1 | 4 | 16 | 1321 | 4.90 | 38 | 5 | ND | 5 | 17 | .5 | 2 | 2 | 53 | .35 | .073 | 15 | 4 | .62 | 410 | .03 | 6 | 1.33 | .01 | .13 | 1 |
| 40000E 38950N | 5 | 1 | 24 | 20 | 98 | .1 | 4 | 13 | 1129 | 4.44 | 27 | 5 | ND | 3 | 22 | .4 | 2 | 2 | 66 | .57 | .070 | 13 | 6 | .84 | 289 | .09 | 18 | 1.46 | .01 | .07 | 1 |
| 40000E 39000N | 5 | 1 | 17 | 23 | 113 | .1 | 4 | 15 | 1623 | 4.45 | 46 | 5 | ND | 3 | 18 | .4 | 2 | 2 | 54 | .48 | .072 | 12 | 5 | .63 | 291 | .05 | 6 | 1.31 | .01 | .07 | 1 |
| 40000E 39050N | 5 | 1 | 23 | 22 | 97 | .1 | 5 | 14 | 1188 | 4.56 | 27 | 5 | ND | 3 | 10 | .2 | 2 | 2 | 63 | .27 | .154 | 10 | 7 | .78 | 117 | .05 | 5 | 1.58 | .01 | .08 | 1 |
| 40000E 39100N | 5 | 1 | 38 | 24 | 127 | .1 | 5 | 16 | 1757 | 4.68 | 24 | 5 | ND | 3 | 17 | .9 | 2 | 2 | 57 | .38 | .101 | 11 | 7 | .76 | 310 | .05 | 4 | 1.45 | .01 | .08 | 1 |
| 40000E 39150N | 40 | 1 | 32 | 23 | 93 | .2 | 5 | 14 | 1022 | 4.99 | 31 | 5 | ND | 3 | 10 | .2 | 2 | 2 | 68 | .19 | .082 | 12 | 7 | .70 | 139 | .04 | 4 | 2.06 | .01 | .08 | 1 |
| 40000E 39200N | 5 | 1 | 15 | 28 | 48 | .3 | 3 | 6 | 295 | 8.35 | 25 | 5 | ND | 4 | 7 | .4 | 2 | 2 | 141 | .05 | .066 | 8 | 7 | .24 | 95 | .05 | 2 | 2.13 | .01 | .08 | 2 |
| STANDARD C | | 19 | 57 | 38 | 132 | 7.2 | 72 | 31 | 1032 | 4.03 | 42 | 15 | 7 | 40 | 52 | 18.7 | 15 | 19 | 59 | .52 | .097 | 40 | 59 | .94 | 183 | .09 | 36 | 1.97 | .06 | .13 | 11 |

**Noranda Exploration Co. Ltd.** PROJECT 9007-015 281 FILE # 90-2821 

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 125001 35 | 1 | 136 | 20 | 102 | .1 | 3 | 17 | 1348 | 5.49 | 15 | 5 | ND | 1 | 55 | 1.0 | 3 | 3 | 51 | 1.17 | .132 | 19 | 13 | .74 | 468 | .01 | 7 | 1.30 | .01 | .11 | 1 |
| 125002 15 | 1 | 153 | 23 | 105 | .1 | 5 | 17 | 809 | 5.76 | 17 | 5 | ND | 1 | 29 | .5 | 2 | 2 | 52 | .59 | .137 | 27 | 11 | .62 | 575 | .01 | 4 | 1.70 | .01 | .07 | 1 |
| 125003 40 | 1 | 102 | 33 | 115 | .1 | 8 | 11 | 1532 | 3.20 | 25 | 5 | ND | 1 | 29 | 1.8 | 2 | 2 | 30 | .71 | .127 | 20 | 6 | .31 | 437 | .01 | 2 | 1.29 | .01 | .10 | 1 |
| 125004 5 | 1 | 46 | 128 | 397 | .7 | 4 | 15 | 5016 | 2.59 | 15 | 5 | ND | 1 | 20 | 2.6 | 2 | 3 | 13 | .50 | .081 | 31 | 1 | .15 | 879 | .01 | 2 | .90 | .01 | .18 | 1 |
| 125005 45 | 2 | 30 | 121 | 376 | .4 | 3 | 12 | 3529 | 2.06 | 14 | 5 | ND | 1 | 46 | 3.8 | 2 | 3 | 13 | 1.04 | .105 | 26 | 1 | .13 | 786 | .01 | 3 | .69 | .01 | .15 | 1 |
| 125006 20 | 2 | 96 | 62 | 123 | .2 | 2 | 13 | 2078 | 3.83 | 33 | 5 | ND | 1 | 17 | .6 | 2 | 2 | 29 | .45 | .122 | 25 | 1 | .20 | 617 | .01 | 2 | 1.13 | .01 | .16 | 1 |
| 125007 | 2 | 78 | 164 | 311 | 1.3 | 5 | 16 | 4461 | 3.29 | 50 | 5 | ND | 1 | 31 | 3.0 | 3 | 2 | 24 | .62 | .096 | 24 | 3 | .18 | 1322 | .01 | 4 | .82 | .01 | .15 | 1 |
| 125008 | 3 | 16 | 49 | 211 | .1 | 2 | 12 | 2396 | 1.79 | 11 | 5 | ND | 1 | 71 | 2.2 | 2 | 2 | 15 | .91 | .117 | 22 | 2 | .15 | 377 | .01 | 2 | .86 | .01 | .14 | 1 |
| 125009 | 4 | 11 | 43 | 84 | .2 | 4 | 15 | 3188 | 1.95 | 14 | 5 | ND | 1 | 34 | 1.2 | 2 | 6 | 18 | .69 | .213 | 16 | 3 | .09 | 266 | .01 | 3 | .77 | .01 | .13 | 1 |
| 125012 | 2 | 16 | 32 | 127 | .4 | 6 | 14 | 2058 | 3.63 | 21 | 5 | ND | 1 | 29 | 1.5 | 3 | 5 | 42 | .44 | .102 | 19 | 5 | .29 | 804 | .02 | 2 | 1.22 | .01 | .09 | 1 |
| 125013 | 6 | 32 | 21 | 125 | .2 | 7 | 17 | 2762 | 3.80 | 77 | 5 | ND | 1 | 116 | 1.7 | 2 | 4 | 38 | 1.14 | .147 | 19 | 7 | .35 | 480 | .01 | 3 | 1.54 | .01 | .07 | 1 |
| 125014 | 2 | 45 | 49 | 269 | .2 | 4 | 8 | 1599 | 2.72 | 18 | 5 | ND | 1 | 69 | 4.6 | 2 | 2 | 23 | .86 | .093 | 21 | 3 | .12 | 391 | .01 | 2 | .72 | .01 | .09 | 1 |
| 125015 | 1 | 41 | 42 | 291 | .3 | 4 | 8 | 1544 | 1.86 | 11 | 5 | ND | 1 | 80 | 5.7 | 3 | 2 | 19 | 1.37 | .131 | 29 | 4 | .10 | 402 | .01 | 5 | .64 | .01 | .09 | 1 |
| STANDARD C | 18 | 59 | 42 | 130 | 7.3 | 72 | 31 | 1031 | 3.96 | 44 | 21 | 6 | 40 | 52 | 18.5 | 15 | 22 | 57 | .48 | .099 | 39 | 60 | .88 | 182 | .08 | 38 | 1.90 | .06 | .14 | 11 |

NORANDA EXPLORATION COMPANY, LIMITED

Silt Soil: Au 30 ICP/AR
Rx AA Au 30 ICP Acme

Central Card. District

Sheet 1 of 1

Lab Code 9007-015

# RECORD OF SAMPLE TRANSMITTAL

NORANDA EXPLORATION COMPANY, LIMITED
P.O. BOX 2380
1050 DAVIE STREET
VANCOUVER, B.C.
V6B 3T5

Date Shipped: June 25/90
Date Received: July 4/90
Shipped Via: Bus
No. of Cartons: 4
No. of Samples: 231
Geologist: R. Baerg
Date: June 25/90

MATERIAL:
☑ SOIL
☑ SILT
☑ ROCK

Project Todd Cr No. 281

| SAMPLE NOS./COORDS. FROM/LINE | TO/STATION | N.T.S. NOS. | G.C.I. NOS. | ADD ELEMENT | SAMPLE NOS./COORDS. FROM/LINE | TO/STATION | N.T.S. NOS. | G.C.I. NOS. | ADD ELEMENT |
|---|---|---|---|---|---|---|---|---|---|
| 40000E | 39200N ↓ 38600N | 50 m spacing | | (9) | 21150N | 18975E ↓ 20300E | 25m | | (52) |
| | | | | | N/S 19575, 19600E | | | | |
| 39700N | 39750E ↓ 40200E | | | (18) | 110857 | 110887 | Soils | | (35) |
| | N/S 39750E | | | | N/S 110862, 110883 | | | | |
| | | | | | 125001 | 125009 | Silt | | (11) |
| | | | | | 125012 | 125013 | " | | |
| 39100N | 40025E ↓ 40125E | 25 m spacing | | (5) | 110723 | 110733 | Soil | CBC 281 Soil Silt 9007-015 | (2) |
| | | | | | 110801 | 110805 | Rock | | (20) |
| 39000N | 40025E ↓ 40100E | | | (4) | 110726 | | Rock | | |
| | | | | | 110728 | 110732 | Rock | | |
| | | | | | 110806 | 110814 | Rock | extras* | |
| | | | | | 125014 | 125015 | Silt | | (2) |
| 39500N | 39750E ↓ 40200E | CBC 281 T 9007-015 | | (18) | 39300N | 39550E ↓ 40000E | 25m spacing | | (55) |
| | | | | | 39100N | 39550E ↓ 39975E | | | |
| | N/S 39725E | | | | 39000N | 39550E ↓ 39975E | ✓ | | |

ANALYTICAL INSTRUCTIONS
ALL SAMPLES: (Cu, Pb, Zn, Mo, Ag) ☐
(Cu, Pb, Zn, Mo, Ag) + ___ + ___ ☐
(Cu, Pb, Zn, Mo, Ag) + AS NOTED ☐

RESULTS TO: Prince George

SPECIAL INSTRUCTIONS OR REMARKS:
30 element ICP plus Au geochem.

* found extras
1. 110734 19400E-20850N
2. 110735 19015E-20850N

15057

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

Todd Cr.

RB AUG - 8 1990

## GEOCHEMICAL ANALYSIS CERTIFICATE

**Noranda Exploration Co. Ltd. PROJECT [redacted] File # 90-2976 Page 1**

P.O. Box 2380, 1050 Davie St., 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 125151 | 2 | 11 | 22 | 89 | .4 | 10 | 5 | 992 | 2.47 | 22 | 5 | ND | 1 | 34 | .2 | 2 | 2 | 34 | .63 | .079 | 16 | 13 | .32 | 329 | .02 | 3 | 1.91 | .01 | .11 | 1 |
| 115651 | 2 | 13 | 29 | 114 | .3 | 14 | 7 | 1094 | 4.03 | 19 | 5 | ND | 1 | 7 | .2 | 2 | 2 | 36 | .05 | .109 | 23 | 13 | .37 | 78 | .02 | 6 | 2.38 | .01 | .08 | 1 |
| 115652 | 5 | 25 | 58 | 132 | 1.1 | 5 | 10 | 3656 | 4.38 | 46 | 5 | ND | 5 | 22 | 1.5 | 15 | 2 | 36 | .29 | .087 | 35 | 5 | .26 | 1176 | .05 | 7 | 1.01 | .01 | .18 | 1 |
| 115653 | 3 | 16 | 42 | 144 | .2 | 11 | 10 | 5849 | 4.46 | 27 | 5 | ND | 1 | 12 | .9 | 2 | 2 | 38 | .07 | .113 | 42 | 8 | .42 | 281 | .04 | 4 | 2.14 | .01 | .13 | 1 |
| 115654 | 3 | 14 | 44 | 231 | .1 | 8 | 10 | 10255 | 6.02 | 41 | 5 | ND | 1 | 29 | 2.0 | 3 | 2 | 33 | .20 | .130 | 100 | 7 | .35 | 888 | .02 | 6 | 2.27 | .01 | .17 | 2 |
| 115655 | 2 | 22 | 36 | 128 | .2 | 11 | 11 | 2686 | 4.46 | 39 | 7 | ND | 2 | 13 | .3 | 2 | 2 | 44 | .17 | .073 | 39 | 9 | .55 | 221 | .08 | 7 | 2.17 | .01 | .13 | 1 |
| 115656 | 2 | 23 | 37 | 117 | .6 | 12 | 9 | 1587 | 4.20 | 43 | 5 | ND | 1 | 9 | 1.0 | 7 | 2 | 51 | .13 | .106 | 22 | 13 | .43 | 163 | .06 | 6 | 1.95 | .01 | .16 | 1 |
| 115657 | 2 | 9 | 85 | 120 | .4 | 3 | 8 | 1092 | 2.74 | 12 | 5 | ND | 2 | 28 | .3 | 2 | 3 | 62 | .06 | .107 | 18 | 7 | .14 | 1548 | .01 | 5 | 1.91 | .01 | .12 | 1 |
| 115658 | 1 | 8 | 84 | 101 | .2 | 6 | 7 | 1033 | 2.75 | 7 | 5 | ND | 2 | 12 | .3 | 2 | 3 | 51 | .21 | .071 | 17 | 8 | .19 | 699 | .01 | 6 | 1.85 | .01 | .12 | 1 |
| 115659 | 2 | 42 | 1043 | 299 | 4.3 | 9 | 17 | 5466 | 4.01 | 30 | 5 | ND | 1 | 41 | 2.1 | 2 | 2 | 40 | .92 | .205 | 29 | 8 | .26 | 1768 | .01 | 10 | 1.85 | .01 | .19 | 1 |
| 115660 | 5 | 10 | 23 | 136 | .3 | 9 | 11 | 3884 | 3.34 | 10 | 5 | ND | 1 | 43 | .2 | 2 | 4 | 39 | .51 | .219 | 12 | 9 | .44 | 441 | .01 | 2 | 1.98 | .01 | .14 | 1 |
| 115661 | 4 | 18 | 24 | 126 | .8 | 9 | 8 | 1096 | 3.95 | 16 | 5 | ND | 1 | 6 | .2 | 2 | 2 | 39 | .08 | .203 | 17 | 12 | .26 | 144 | .01 | 5 | 2.73 | .01 | .08 | 1 |
| 115662 | 3 | 32 | 95 | 245 | .3 | 19 | 13 | 1261 | 5.98 | 36 | 5 | ND | 3 | 9 | .5 | 2 | 2 | 55 | .10 | .142 | 14 | 19 | .58 | 205 | .01 | 5 | 3.80 | .01 | .11 | 1 |
| 115663 | 3 | 31 | 46 | 214 | .7 | 12 | 13 | 1990 | 5.08 | 33 | 8 | ND | 1 | 18 | .2 | 4 | 4 | 45 | .27 | .262 | 11 | 11 | .46 | 159 | .01 | 6 | 1.69 | .01 | .13 | 1 |
| 115664 | 5 | 23 | 34 | 179 | .2 | 12 | 13 | 1082 | 5.19 | 23 | 5 | ND | 1 | 35 | .7 | 2 | 2 | 67 | .43 | .123 | 14 | 12 | .91 | 161 | .04 | 9 | 2.25 | .02 | .13 | 1 |
| 115665 | 2 | 39 | 30 | 153 | .2 | 11 | 17 | 1018 | 5.86 | 11 | 5 | ND | 2 | 17 | .2 | 2 | 2 | 79 | .22 | .105 | 16 | 10 | 1.19 | 116 | .03 | 9 | 3.53 | .01 | .11 | 1 |
| 115666 | 3 | 16 | 29 | 89 | .2 | 6 | 9 | 489 | 4.88 | 11 | 5 | ND | 1 | 18 | .2 | 2 | 2 | 72 | .11 | .090 | 19 | 10 | .58 | 65 | .06 | 8 | 3.10 | .02 | .09 | 1 |
| 115667 | 2 | 24 | 53 | 203 | .1 | 6 | 13 | 3640 | 4.75 | 18 | 5 | ND | 1 | 32 | .6 | 2 | 2 | 49 | .61 | .162 | 34 | 5 | .55 | 886 | .01 | 7 | 2.69 | .01 | .15 | 1 |
| 115668 | 3 | 17 | 26 | 139 | .1 | 6 | 11 | 1754 | 3.86 | 21 | 5 | ND | 1 | 37 | .2 | 2 | 2 | 61 | .45 | .156 | 17 | 7 | .59 | 413 | .01 | 10 | 2.71 | .01 | .16 | 1 |
| 115669 | 2 | 33 | 36 | 123 | .1 | 10 | 15 | 1701 | 4.74 | 23 | 5 | ND | 1 | 57 | 1.1 | 2 | 2 | 70 | .57 | .097 | 19 | 9 | .82 | 388 | .05 | 10 | 3.34 | .01 | .14 | 1 |
| 115670 | 4 | 16 | 24 | 96 | .2 | 3 | 9 | 1329 | 4.02 | 18 | 5 | ND | 1 | 18 | .4 | 2 | 2 | 43 | .24 | .163 | 21 | 7 | .40 | 204 | .02 | 7 | 2.00 | .01 | .18 | 1 |
| 115671 | 1 | 98 | 34 | 242 | .1 | 15 | 24 | 10069 | 5.21 | 14 | 5 | ND | 1 | 24 | .5 | 2 | 2 | 72 | .27 | .263 | 42 | 15 | 1.43 | 1017 | .02 | 8 | 3.85 | .01 | .14 | 1 |
| 115672 | 2 | 34 | 34 | 127 | .2 | 8 | 14 | 2461 | 5.05 | 19 | 5 | ND | 2 | 16 | .8 | 2 | 2 | 50 | .27 | .149 | 32 | 8 | .65 | 222 | .04 | 7 | 2.23 | .01 | .15 | 1 |
| 115673 | 2 | 24 | 35 | 97 | .1 | 5 | 12 | 1346 | 5.12 | 18 | 6 | ND | 1 | 12 | .2 | 2 | 2 | 48 | .11 | .094 | 21 | 8 | .54 | 136 | .02 | 7 | 1.83 | .01 | .13 | 1 |
| 123218 | 1 | 27 | 31 | 101 | 1.2 | 1 | 11 | 5683 | 4.08 | 17 | 5 | ND | 1 | 14 | 1.7 | 5 | 2 | 36 | .71 | .097 | 45 | 2 | .65 | 767 | .10 | 8 | 1.48 | .01 | .31 | 1 |
| 123219 | 3 | 23 | 39 | 122 | .4 | 7 | 11 | 2101 | 4.72 | 55 | 5 | ND | 1 | 14 | .6 | 9 | 4 | 54 | .25 | .076 | 19 | 11 | .41 | 838 | .04 | 6 | 2.18 | .01 | .19 | 1 |
| 123220 | 1 | 31 | 30 | 105 | .1 | 7 | 13 | 2016 | 4.43 | 35 | 5 | ND | 2 | 15 | .8 | 2 | 2 | 55 | .74 | .069 | 22 | 6 | .54 | 342 | .27 | 13 | 1.43 | .01 | .23 | 1 |
| 123221 | 3 | 21 | 32 | 90 | .2 | 7 | 8 | 1423 | 4.04 | 27 | 5 | ND | 1 | 15 | .2 | 4 | 2 | 51 | .08 | .069 | 18 | 10 | .33 | 129 | .05 | 8 | 1.86 | .01 | .13 | 1 |
| 123222 | 3 | 22 | 36 | 91 | .4 | 9 | 8 | 1237 | 4.11 | 37 | 6 | ND | 1 | 11 | .6 | 5 | 2 | 44 | .10 | .079 | 27 | 10 | .38 | 238 | .04 | 4 | 2.04 | .01 | .12 | 1 |
| 123223 | 3 | 16 | 39 | 113 | .2 | 10 | 10 | 2120 | 4.48 | 35 | 5 | ND | 1 | 11 | .2 | 3 | 2 | 40 | .19 | .082 | 27 | 9 | .38 | 248 | .05 | 7 | 2.18 | .02 | .11 | 1 |
| 123224 | 2 | 23 | 48 | 147 | .2 | 12 | 11 | 3163 | 4.18 | 44 | 5 | ND | 1 | 16 | .7 | 3 | 2 | 43 | .35 | .123 | 51 | 9 | .51 | 1331 | .02 | 6 | 2.51 | .01 | .13 | 1 |
| 123225 | 4 | 16 | 36 | 95 | .3 | 7 | 7 | 1323 | 3.82 | 65 | 5 | ND | 1 | 7 | .2 | 5 | 2 | 36 | .07 | .106 | 22 | 9 | .22 | 242 | .03 | 6 | 2.07 | .01 | .10 | 1 |
| 51353 | 1 | 39 | 19 | 111 | .1 | 7 | 24 | 1816 | 6.61 | 16 | 5 | ND | 2 | 15 | .2 | 2 | 6 | 77 | .51 | .101 | 14 | 6 | .87 | 648 | .03 | 9 | 1.55 | .01 | .21 | 1 |
| 51354 | 1 | 69 | 17 | 92 | .1 | 8 | 19 | 1368 | 6.10 | 26 | 5 | ND | 4 | 19 | 1.3 | 3 | 2 | 125 | 1.11 | .107 | 15 | 12 | 2.47 | 210 | .43 | 13 | 2.59 | .01 | .27 | 1 |
| 51355 | 38 | 19 | 114 | 194 | .8 | 4 | 30 | 2295 | 3.20 | 493 | 5 | ND | 2 | 20 | .3 | 5 | 2 | 18 | .34 | .105 | 41 | 3 | .28 | 164 | .11 | 6 | 2.37 | .01 | .17 | 5 |
| 51356 | 5 | 24 | 53 | 114 | .1 | 12 | 13 | 1686 | 4.88 | 24 | 5 | ND | 1 | 25 | .5 | 2 | 5 | 56 | .37 | .110 | 26 | 9 | .74 | 90 | .15 | 3 | 3.23 | .01 | .08 | 1 |
| STANDARD C | 19 | 57 | 35 | 132 | 6.8 | 71 | 29 | 1033 | 3.99 | 39 | 19 | 7 | 39 | 53 | 18.4 | 13 | 20 | 55 | .56 | .092 | 38 | 57 | .94 | 181 | .07 | 35 | 1.98 | .06 | .14 | 14 |

RTS

RTS 2

RT1

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

**DATE RECEIVED:** JUL 30 1990 **DATE REPORT MAILED:** Aug 2/90 **SIGNED BY** C. Leong ..D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

# Noranda Exploration Co. Ltd. PROJECT 9007-031 281 FILE # 90-2976



| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 51357 | 8 | 31 | 51 | 133 | .1 | 13 | 11 | 1240 | 3.67 | 53 | 5 | ND | 1 | 22 | .9 | 2 | 4 | 44 | .52 | .146 | 18 | 15 | .56 | 61 | .12 | 10 | 3.10 | .01 | .09 | 1 |
| 51358 | 1 | 20 | 24 | 108 | .1 | 10 | 11 | 1745 | 4.05 | 25 | 5 | ND | 1 | 23 | .8 | 2 | 5 | 52 | .34 | .115 | 17 | 10 | .60 | 111 | .13 | 7 | 3.02 | .01 | .11 | 1 |
| 51359 | 2 | 16 | 28 | 121 | .1 | 6 | 9 | 2138 | 3.68 | 18 | 5 | ND | 1 | 18 | .8 | 2 | 4 | 51 | .16 | .095 | 15 | 8 | .42 | 139 | .08 | 7 | 2.71 | .01 | .09 | 1 |
| 51360 | 1 | 19 | 45 | 79 | .1 | 4 | 6 | 1186 | 2.29 | 18 | 5 | ND | 1 | 59 | .8 | 2 | 2 | 24 | 1.04 | .090 | 17 | 5 | .34 | 96 | .08 | 7 | 3.00 | .01 | .10 | 1 |
| 51361 | 1 | 25 | 16 | 96 | .1 | 9 | 10 | 1221 | 3.77 | 22 | 5 | ND | 3 | 26 | 1.5 | 2 | 5 | 44 | .50 | .128 | 26 | 8 | .69 | 143 | .19 | 2 | 2.17 | .04 | .11 | 1 |
| 51362 | 1 | 38 | 19 | 90 | .2 | 6 | 15 | 1415 | 4.51 | 25 | 5 | ND | 4 | 14 | 1.6 | 3 | 6 | 76 | 1.10 | .100 | 12 | 9 | .89 | 317 | .43 | 8 | 1.36 | .01 | .25 | 1 |
| 51363 | 1 | 13 | 17 | 48 | .1 | 6 | 5 | 752 | 2.72 | 9 | 5 | ND | 1 | 5 | .3 | 2 | 2 | 36 | .05 | .116 | 18 | 7 | .19 | 104 | .01 | 2 | 1.85 | .01 | .14 | 1 |
| 51364 | 1 | 6 | 17 | 40 | .1 | 2 | 5 | 1166 | 2.33 | 5 | 5 | ND | 1 | 5 | .4 | 2 | 2 | 33 | .04 | .068 | 19 | 5 | .21 | 117 | .02 | 2 | 1.29 | .01 | .12 | 1 |
| 51365 | 1 | 13 | 16 | 51 | .1 | 4 | 9 | 973 | 3.30 | 7 | 5 | ND | 4 | 9 | .5 | 2 | 2 | 48 | .23 | .062 | 29 | 8 | .42 | 141 | .04 | 2 | .92 | .01 | .11 | 1 |
| 51366 | 1 | 56 | 16 | 102 | .1 | 18 | 21 | 3018 | 5.45 | 9 | 5 | ND | 1 | 15 | 1.0 | 4 | 3 | 96 | .34 | .116 | 31 | 21 | 2.12 | 388 | .01 | 7 | 3.31 | .01 | .16 | 1 |
| 51367 | 1 | 369 | 20 | 77 | .3 | 6 | 24 | 3754 | 4.55 | 17 | 5 | ND | 1 | 20 | .8 | 2 | 2 | 58 | .41 | .112 | 40 | 11 | .73 | 1861 | .01 | 7 | 2.49 | .01 | .19 | 1 |
| 51368 | 1 | 31 | 23 | 82 | .1 | 8 | 14 | 2113 | 4.16 | 19 | 5 | ND | 2 | 18 | .8 | 2 | 2 | 54 | .37 | .113 | 43 | 11 | .58 | 671 | .01 | 2 | 2.32 | .01 | .15 | 1 |
| 51369 | 1 | 11 | 42 | 53 | .1 | 5 | 3 | 115 | 2.58 | 16 | 5 | ND | 1 | 5 | .2 | 2 | 2 | 55 | .03 | .082 | 15 | 5 | .17 | 77 | .01 | 2 | 2.62 | .01 | .09 | 1 |
| 51370 | 2 | 17 | 15 | 46 | .1 | 4 | 11 | 1258 | 3.05 | 15 | 5 | ND | 4 | 5 | .6 | 2 | 2 | 32 | .09 | .076 | 22 | 10 | .22 | 531 | .01 | 2 | 2.68 | .01 | .12 | 1 |
| 51371 | 2 | 41 | 34 | 131 | .1 | 12 | 18 | 1701 | 3.91 | 27 | 5 | ND | 1 | 8 | .5 | 2 | 2 | 51 | .10 | .100 | 23 | 12 | .54 | 140 | .02 | 2 | 2.25 | .01 | .10 | 1 |
| 51372 | 2 | 41 | 38 | 119 | .2 | 11 | 16 | 1648 | 4.54 | 29 | 5 | ND | 1 | 12 | 1.5 | 2 | 4 | 59 | .15 | .072 | 22 | 12 | .66 | 215 | .05 | 2 | 2.04 | .01 | .10 | 1 |
| 51373 | 1 | 33 | 21 | 78 | .1 | 7 | 15 | 1227 | 4.65 | 22 | 5 | ND | 1 | 7 | .7 | 2 | 2 | 54 | .07 | .100 | 17 | 10 | .66 | 140 | .02 | 2 | 2.71 | .01 | .08 | 1 |
| 51374 | 2 | 30 | 33 | 148 | .1 | 13 | 25 | 3522 | 3.41 | 28 | 5 | ND | 1 | 14 | .9 | 2 | 2 | 46 | .20 | .192 | 35 | 15 | .61 | 268 | .01 | 3 | 2.81 | .01 | .16 | 2 |
| 51375 | 1 | 58 | 37 | 91 | .3 | 13 | 28 | 1992 | 5.72 | 39 | 5 | ND | 1 | 23 | .8 | 4 | 2 | 83 | .57 | .103 | 22 | 15 | 1.29 | 133 | .06 | 2 | 2.40 | .02 | .10 | 1 |
| STANDARD C | 18 | 57 | 35 | 129 | 6.7 | 70 | 31 | 1038 | 3.75 | 42 | 19 | 6 | 38 | 52 | 18.8 | 11 | 21 | 56 | .54 | .095 | 38 | 58 | .89 | 180 | .07 | 31 | 1.89 | .06 | .14 | 12 |

NORANDA VANCOUVER LABORATORY

| | | |
|---|---|---|
| PERTY/LOCATION:TODD CREEK | | CODE :9007-031 |
| Project No. :281 | Sheet:1 of 1 | Date rec'd:JUL 9 |
| Material :54 SOILS | Geol.:R.B. | Date compl:AUG 1 |
| Remarks : 1 SILT | | |

Values in PPM, except where noted.

| .T. o. | | SAMPLE No. | | PPB Au |
|---|---|---|---|---|
| 3F | Silt | 125151 | | 5 |
| 74 | Soil | 115651 | | 5 |
| 75 | | 115652 | | 5 |
| 76 | | 115653 | | 5 |
| 77 | | 115654 | | 5 |
| 78 | | 115655 | | 5 |
| 79 | | 115656 | | 5 |
| 80 | | 115657 | | 5 |
| 81 | | 115658 | | 5 |
| 82 | | 115659 | | 5 |
| 83 | | 115660 | | 5 |
| 84 | | 115661 | | 5 |
| 85 | | 115662 | | 5 |
| 86 | | 115663 | | 5 |
| 87 | | 115664 | | 5 |
| 88 | | 115665 | | 5 |
| 89 | | 115666 | | 5 |
| 90 | | 115667 | | 5 |
| 91 | | 115668 | | 5 |
| 92 | | 115669 | | 5 |
| 93 | | 115670 | | 5 |
| 94 | | 115671 | | 5 |
| 95 | | 115672 | | 5 |
| 96 | | 115673 | | 5 |
| [illegible] | | 123218 | | 5 |
| | | 123219 | | 5 |
| 99 | | 123220 | | 5 |
| .00F | | 123221 | | 5 |
| 1C | | 123222 | | 5 |
| 2 | | 123223 | | 5 |
| 3 | | 123224 | | 5 |
| 4 | | 123225 | | 5 |
| 5 | | 51353 | -35 MESH | 5 |
| 6 | | 51354 | | 5 |
| 7 | | 51355 | | 5 |
| 8 | | 51356 | | 5 |
| 9 | | 51357 | | 20 |
| 10 | | 51358 | | 5 |
| 11 | | 51359 | | 5 |
| 12 | | 51360 | | 5 |
| 13 | | 51361 | | 5 |
| 14 | | 51362 | | 5 |
| 15 | | 51363 | | 5 |
| 16 | | 51364 | -35 MESH | 5 |
| 17 | | 51365 | | 5 |
| 18 | | 51366 | | 5 |
| 19 | | 51367 | | 5 |
| 20 | | 51368 | | 5 |
| 21 | | 51369 | | 5 |
| 22 | | 51370 | | 5 |
| 23 | | 51371 | | 5 |
| 24 | | 51372 | | 5 |
| 25 | | 51373 | | 5 |
| 26 | | 51374 | | 5 |
| 27C | Soil | 51375 | | 5 |

RECEIVED AUG - 7 1990

ICP to follow

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

## GEOCHEMICAL ANALYSIS CERTIFICATE

Todd Cr.

(RB) AUG - 8 1990

**Noranda Exploration Co. Ltd. PROJECT 9007-031-281** File # 90-2976 Page 1

P.O. Box 2380, 1050 Davie St., 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 125151 | 2 | 11 | 22 | 89 | .4 | 10 | 5 | 992 | 2.47 | 22 | 5 | ND | 1 | 34 | .2 | 2 | 2 | 34 | .63 | .079 | 16 | 13 | .32 | 329 | .02 | 3 | 1.91 | .01 | .11 | 1 |
| 115651 | 2 | 13 | 29 | 114 | .3 | 14 | 7 | 1094 | 4.03 | 19 | 5 | ND | 1 | 7 | .2 | 2 | 2 | 36 | .05 | .109 | 23 | 13 | .37 | 78 | .02 | 6 | 2.38 | .01 | .08 | 1 |
| 115652 | 5 | 25 | 58 | 132 | 1.1 | 5 | 10 | 3656 | 4.38 | 46 | 5 | ND | 5 | 22 | 1.5 | 15 | 2 | 36 | .29 | .087 | 35 | 5 | .26 | 1176 | .05 | 7 | 1.01 | .01 | .18 | 1 |
| 115653 | 3 | 16 | 42 | 144 | .2 | 11 | 10 | 5849 | 4.46 | 27 | 5 | ND | 1 | 12 | .9 | 2 | 2 | 38 | .07 | .113 | 42 | 8 | .42 | 281 | .04 | 4 | 2.14 | .01 | .13 | 1 |
| 115654 | 3 | 14 | 44 | 231 | .1 | 8 | 10 | 10255 | 6.02 | 41 | 5 | ND | 1 | 29 | 2.0 | 3 | 2 | 33 | .20 | .130 | 100 | 7 | .35 | 888 | .02 | 6 | 2.27 | .01 | .17 | 2 |
| 115655 | 2 | 22 | 36 | 128 | .2 | 11 | 11 | 2686 | 4.46 | 39 | 7 | ND | 2 | 13 | .3 | 2 | 2 | 44 | .17 | .073 | 39 | 9 | .55 | 221 | .08 | 7 | 2.17 | .01 | .13 | 1 |
| 115656 | 2 | 23 | 37 | 117 | .6 | 12 | 9 | 1587 | 4.20 | 43 | 5 | ND | 1 | 9 | 1.0 | 7 | 2 | 51 | .13 | .106 | 22 | 13 | .43 | 163 | .08 | 6 | 1.93 | .01 | .16 | 1 |
| 115657 | 2 | 9 | 85 | 120 | .4 | 3 | 8 | 1092 | 2.74 | 12 | 5 | ND | 2 | 28 | .3 | 2 | 3 | 62 | .06 | .107 | 18 | 7 | .14 | 1548 | .01 | 5 | 1.91 | .01 | .12 | 1 |
| 115658 | 1 | 8 | 84 | 101 | .2 | 6 | 7 | 1033 | 2.75 | 7 | 5 | ND | 2 | 12 | .3 | 2 | 3 | 51 | .21 | .071 | 17 | 8 | .19 | 699 | .01 | 6 | 1.85 | .01 | .12 | 1 |
| 115659 | 2 | 42 | 1043 | 299 | 4.3 | 9 | 17 | 5466 | 4.01 | 30 | 5 | ND | 1 | 41 | 2.1 | 2 | 2 | 40 | .92 | .205 | 29 | 8 | .26 | 1768 | .01 | 10 | 1.85 | .01 | .19 | 1 |
| 115660 | 5 | 10 | 23 | 136 | .3 | 9 | 11 | 3884 | 3.34 | 10 | 5 | ND | 1 | 43 | .2 | 2 | 4 | 39 | .51 | .219 | 12 | 9 | .44 | 441 | .01 | 2 | 1.98 | .01 | .14 | 1 |
| 115661 | 4 | 18 | 24 | 126 | .8 | 9 | 8 | 1096 | 3.95 | 16 | 5 | ND | 1 | 6 | .2 | 2 | 2 | 39 | .08 | .203 | 17 | 12 | .26 | 144 | .01 | 5 | 2.73 | .01 | .08 | 1 |
| 115662 | 3 | 32 | 95 | 245 | .3 | 19 | 13 | 1261 | 5.98 | 36 | 5 | ND | 3 | 9 | .5 | 2 | 2 | 55 | .10 | .142 | 14 | 19 | .58 | 205 | .01 | 5 | 3.80 | .01 | .11 | 1 |
| 115663 | 3 | 31 | 46 | 214 | .7 | 12 | 13 | 1990 | 5.08 | 33 | 8 | ND | 1 | 18 | .2 | 4 | 4 | 45 | .27 | .262 | 11 | 11 | .46 | 159 | .01 | 6 | 1.69 | .01 | .13 | 1 |
| 115664 | 5 | 23 | 34 | 179 | .2 | 12 | 13 | 1082 | 5.19 | 23 | 5 | ND | 1 | 35 | .7 | 2 | 2 | 67 | .43 | .123 | 14 | 12 | .91 | 161 | .04 | 9 | 2.25 | .02 | .13 | 1 |
| 115665 | 2 | 39 | 30 | 153 | .2 | 11 | 17 | 1018 | 5.86 | 11 | 5 | ND | 2 | 17 | .2 | 2 | 2 | 79 | .22 | .103 | 16 | 10 | 1.19 | 116 | .03 | 9 | 3.53 | .01 | .11 | 1 |
| 115666 | 3 | 16 | 29 | 89 | .2 | 6 | 9 | 489 | 4.88 | 11 | 5 | ND | 1 | 18 | .2 | 2 | 2 | 72 | .11 | .090 | 19 | 10 | .58 | 65 | .05 | 8 | 3.10 | .02 | .09 | 1 |
| 115667 | 2 | 24 | 53 | 203 | .1 | 6 | 13 | 3640 | 4.75 | 18 | 5 | ND | 1 | 32 | .6 | 2 | 2 | 49 | .61 | .162 | 34 | 5 | .55 | 886 | .01 | 7 | 2.69 | .01 | .15 | 1 |
| 115668 | 3 | 17 | 26 | 139 | .1 | 6 | 11 | 1754 | 3.86 | 21 | 5 | ND | 1 | 37 | .2 | 2 | 2 | 61 | .45 | .156 | 17 | 7 | .59 | 413 | .01 | 10 | 2.71 | .01 | .16 | 1 |
| 115669 | 2 | 33 | 36 | 123 | .1 | 10 | 15 | 1701 | 4.74 | 23 | 5 | ND | 1 | 57 | 1.1 | 2 | 2 | 70 | .57 | .097 | 19 | 9 | .82 | 388 | .05 | 10 | 3.34 | .01 | .14 | 1 |
| 115670 | 4 | 16 | 24 | 96 | .2 | 3 | 9 | 1329 | 4.02 | 18 | 5 | ND | 1 | 18 | .4 | 2 | 2 | 43 | .24 | .163 | 21 | 7 | .40 | 204 | .02 | 7 | 2.00 | .01 | .18 | 1 |
| 115671 | 1 | 96 | 34 | 242 | .1 | 15 | 24 | 10065 | 5.21 | 14 | 5 | ND | 1 | 24 | .5 | 2 | 2 | 72 | .27 | .263 | 42 | 15 | 1.43 | 1017 | .02 | 8 | 3.85 | .01 | .14 | 1 |
| 115672 | 2 | 34 | 34 | 127 | .2 | 8 | 14 | 2461 | 5.05 | 19 | 5 | ND | 2 | 16 | .8 | 2 | 2 | 50 | .27 | .149 | 32 | 8 | .65 | 222 | .04 | 7 | 2.23 | .01 | .15 | 1 |
| 115673 | 2 | 24 | 35 | 97 | .1 | 5 | 12 | 1346 | 5.12 | 18 | 6 | ND | 1 | 12 | .2 | 2 | 2 | 48 | .11 | .094 | 21 | 8 | .54 | 136 | .02 | 7 | 1.83 | .01 | .13 | 1 |
| 123218 | 1 | 27 | 31 | 101 | 1.2 | 1 | 11 | 5683 | 4.08 | 17 | 5 | ND | 1 | 14 | 1.7 | 5 | 2 | 36 | .71 | .097 | 45 | 2 | .65 | 767 | .10 | 8 | 1.48 | .01 | .31 | 1 |
| 123219 | 3 | 23 | 39 | 122 | .4 | 7 | 11 | 2101 | 4.72 | 55 | 5 | ND | 1 | 14 | .6 | 9 | 4 | 54 | .25 | .076 | 19 | 11 | .41 | 838 | .04 | 6 | 2.18 | .01 | .19 | 1 |
| 123220 | 1 | 31 | 30 | 105 | .1 | 7 | 13 | 2016 | 4.43 | 35 | 5 | ND | 2 | 15 | .8 | 2 | 2 | 55 | .74 | .069 | 22 | 6 | .54 | 342 | .27 | 13 | 1.43 | .01 | .23 | 1 |
| 123221 | 3 | 21 | 32 | 90 | .2 | 7 | 8 | 1423 | 4.04 | 27 | 5 | ND | 1 | 15 | .2 | 4 | 2 | 51 | .08 | .069 | 18 | 10 | .33 | 129 | .05 | 8 | 1.86 | .01 | .13 | 1 |
| 123222 | 3 | 22 | 36 | 91 | .4 | 9 | 8 | 1237 | 4.11 | 37 | 6 | ND | 1 | 11 | .6 | 5 | 2 | 44 | .10 | .079 | 27 | 10 | .38 | 238 | .04 | 4 | 2.04 | .01 | .12 | 1 |
| 123223 | 3 | 16 | 39 | 113 | .2 | 10 | 10 | 2120 | 4.48 | 35 | 5 | ND | 1 | 11 | .2 | 3 | 2 | 40 | .19 | .082 | 27 | 9 | .38 | 248 | .05 | 7 | 2.18 | .02 | .11 | 1 |
| 123224 | 2 | 23 | 48 | 147 | .2 | 12 | 11 | 3163 | 4.18 | 44 | 5 | ND | 1 | 16 | .7 | 3 | 2 | 43 | .35 | .123 | 51 | 9 | .51 | 1331 | .02 | 6 | 2.51 | .01 | .13 | 1 |
| 123225 | 4 | 16 | 36 | 95 | .3 | 7 | 7 | 1323 | 3.82 | 65 | 5 | ND | 1 | 7 | .2 | 5 | 2 | 36 | .07 | .106 | 22 | 9 | .22 | 242 | .03 | 6 | 2.07 | .01 | .10 | 1 |
| 51353 | 1 | 39 | 19 | 111 | .1 | 7 | 24 | 1816 | 6.61 | 16 | 5 | ND | 2 | 15 | .2 | 2 | 6 | 77 | .51 | .101 | 14 | 6 | .87 | 648 | .03 | 9 | 1.55 | .01 | .21 | 1 |
| 51354 | 1 | 69 | 17 | 92 | .1 | 8 | 19 | 1368 | 6.10 | 26 | 5 | ND | 4 | 19 | 1.3 | 3 | 2 | 125 | 1.11 | .107 | 15 | 12 | 2.47 | 210 | .43 | 13 | 2.59 | .01 | .27 | 1 |
| 51355 | 38 | 19 | 114 | 194 | .8 | 4 | 30 | 2295 | 3.20 | 493 | 5 | ND | 2 | 20 | .3 | 5 | 2 | 18 | .34 | .105 | 41 | 3 | .28 | 164 | .11 | 6 | 2.37 | .01 | .17 | 5 |
| 51356 | 5 | 24 | 53 | 114 | .1 | 12 | 13 | 1686 | 4.88 | 24 | 5 | ND | 1 | 25 | .5 | 2 | 5 | 56 | .37 | .110 | 26 | 9 | .74 | 90 | .15 | 3 | 3.23 | .01 | .08 | 1 |
| STANDARD C | 19 | 57 | 35 | 132 | 6.8 | 71 | 29 | 1033 | 3.99 | 39 | 19 | 7 | 39 | 53 | 18.4 | 13 | 20 | 55 | .56 | .092 | 38 | 57 | .94 | 181 | .07 | 35 | 1.98 | .06 | .14 | 14 |

Copy to Rob

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

**DATE RECEIVED:** JUL 30 1990 **DATE REPORT MAILED:** Aug 2/90 **SIGNED BY** C. Leong ..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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 51357 | 8 | 31 | 51 | 133 | .1 | 13 | 11 | 1240 | 3.67 | 53 | 5 | ND | 1 | 22 | .9 | 2 | 4 | 44 | .52 | .146 | 18 | 15 | .56 | 61 | .12 | 10 | 3.10 | .01 | .09 | 1 |
| 51358 | 1 | 20 | 24 | 108 | .1 | 10 | 11 | 1745 | 4.05 | 25 | 5 | ND | 1 | 23 | .8 | 2 | 5 | 52 | .34 | .115 | 17 | 10 | .60 | 111 | .13 | 7 | 3.02 | .01 | .11 | 1 |
| 51359 | 2 | 16 | 28 | 121 | .1 | 6 | 9 | 2138 | 3.68 | 18 | 5 | ND | 1 | 18 | .8 | 2 | 4 | 51 | .16 | .095 | 15 | 8 | .42 | 139 | .08 | 7 | 2.71 | .01 | .09 | 1 |
| 51360 | 1 | 19 | 45 | 79 | .1 | 4 | 6 | 1186 | 2.29 | 18 | 5 | ND | 1 | 59 | .8 | 2 | 2 | 24 | 1.04 | .090 | 17 | 5 | .34 | 96 | .08 | 7 | 3.00 | .01 | .10 | 1 |
| 51361 | 1 | 25 | 16 | 96 | .1 | 9 | 10 | 1221 | 3.77 | 22 | 5 | ND | 3 | 26 | 1.5 | 2 | 5 | 44 | .50 | .128 | 26 | 8 | .69 | 143 | .19 | 2 | 2.17 | .04 | .11 | 1 |
| 51362 | 1 | 38 | 19 | 90 | .2 | 6 | 15 | 1415 | 4.51 | 25 | 5 | ND | 4 | 14 | 1.6 | 3 | 6 | 76 | 1.10 | .100 | 12 | 9 | .89 | 317 | .43 | 8 | 1.36 | .01 | .25 | 1 |
| 51363 | 1 | 13 | 17 | 48 | .1 | 6 | 5 | 752 | 2.72 | 9 | 5 | ND | 1 | 5 | .3 | 2 | 2 | 36 | .05 | .116 | 18 | 7 | .19 | 104 | .01 | 2 | 1.85 | .01 | .14 | 1 |
| 51364 | 1 | 6 | 17 | 40 | .1 | 2 | 5 | 1166 | 2.33 | 5 | 5 | ND | 1 | 5 | .4 | 2 | 2 | 33 | .04 | .068 | 19 | 5 | .21 | 117 | .02 | 2 | 1.29 | .01 | .12 | 1 |
| 51365 | 1 | 13 | 16 | 51 | .1 | 4 | 9 | 973 | 3.30 | 7 | 5 | ND | 4 | 9 | .5 | 2 | 2 | 48 | .23 | .062 | 29 | 8 | .42 | 141 | .04 | 2 | .92 | .01 | .11 | 1 |
| 51366 | 1 | 56 | 16 | 102 | .1 | 18 | 21 | 3018 | 5.45 | 9 | 5 | ND | 1 | 15 | 1.0 | 4 | 3 | 96 | .34 | .116 | 31 | 21 | 2.12 | 388 | .01 | 7 | 3.31 | .01 | .16 | 1 |
| 51367 | 1 | 369 | 20 | 77 | .3 | 6 | 24 | 3754 | 4.55 | 17 | 5 | ND | 1 | 20 | .8 | 2 | 2 | 58 | .41 | .112 | 40 | 11 | .73 | 1861 | .01 | 7 | 2.49 | .01 | .19 | 1 |
| 51368 | 1 | 31 | 23 | 82 | .1 | 8 | 14 | 2113 | 4.16 | 19 | 5 | ND | 2 | 18 | .8 | 2 | 2 | 54 | .37 | .113 | 43 | 11 | .58 | 671 | .01 | 2 | 2.32 | .01 | .15 | 1 |
| 51369 | 1 | 11 | 42 | 53 | .1 | 5 | 3 | 115 | 2.58 | 16 | 5 | ND | 1 | 5 | .2 | 2 | 2 | 55 | .03 | .082 | 15 | 5 | .17 | 77 | .01 | 2 | 2.62 | .01 | .09 | 1 |
| 51370 | 2 | 17 | 15 | 46 | .1 | 4 | 11 | 1258 | 3.05 | 15 | 5 | ND | 4 | 5 | .6 | 2 | 2 | 32 | .09 | .076 | 22 | 10 | .22 | 531 | .01 | 2 | 2.68 | .01 | .12 | 1 |
| 51371 | 2 | 41 | 34 | 131 | .1 | 12 | 18 | 1701 | 3.91 | 27 | 5 | ND | 1 | 8 | .5 | 2 | 2 | 51 | .10 | .100 | 23 | 12 | .54 | 140 | .02 | 2 | 2.25 | .01 | .10 | 1 |
| 51372 | 2 | 41 | 38 | 119 | .2 | 11 | 16 | 1648 | 4.54 | 29 | 5 | ND | 1 | 12 | 1.5 | 2 | 4 | 59 | .15 | .072 | 22 | 12 | .66 | 215 | .03 | 2 | 2.04 | .01 | .10 | 1 |
| 51373 | 1 | 33 | 21 | 78 | .1 | 7 | 15 | 1227 | 4.65 | 22 | 5 | ND | 1 | 7 | .7 | 2 | 2 | 54 | .07 | .100 | 17 | 10 | .66 | 140 | .02 | 2 | 2.71 | .01 | .08 | 1 |
| 51374 | 2 | 30 | 33 | 148 | .1 | 13 | 25 | 3522 | 3.41 | 28 | 5 | ND | 1 | 14 | .9 | 2 | 2 | 46 | .20 | .192 | 35 | 15 | .61 | 268 | .01 | 3 | 2.81 | .01 | .16 | 2 |
| 51375 | 1 | 58 | 37 | 91 | .3 | 13 | 28 | 1992 | 5.72 | 39 | 5 | ND | 1 | 23 | .8 | 4 | 2 | 83 | .57 | .103 | 22 | 15 | 1.29 | 133 | .06 | 2 | 2.40 | .02 | .10 | 1 |
| STANDARD C | 18 | 57 | 35 | 129 | 6.7 | 70 | 31 | 1038 | 3.75 | 42 | 19 | 6 | 38 | 52 | 18.8 | 11 | 21 | 56 | .54 | .095 | 38 | 58 | .89 | 180 | .07 | 31 | 1.89 | .06 | .14 | 12 |

# NORANDA VANCOUVER LABORATORY
## Geochemical Analysis

AUG - 7 1990

Project Name & No.: [redacted] Geol.: R.B. Date rec'd: JULY 06 LAB CODE: [redacted]
Material: 148 SOILS, 36 SILTS Sheet: 1 of 5 Date compl: JULY 18
Remarks:

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 HClO4/HNO3 (4:1) at 203 deg. 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, Ga, La, Li are rarely dissolved completely from geological materials with acid dissolution methods.

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | SOIL 51176 | 5 | 0.2 | 4.08 | 43 | 292 | 1.1 | 2 | 0.13 | 0.7 | 46 | 10 | 10 | 22 | 3.38 | 3 | 0.95 | 20 | 22 | 0.46 | 888 | 2 | 0.02 | 8 | 0.12 | 16 | 31 | 0.11 | 91 | 91 |
| 3 | 51177 | 5 | 0.2 | 4.30 | 51 | 235 | 0.9 | 2 | 0.15 | 0.4 | 44 | 9 | 8 | 21 | 3.37 | 5 | 0.98 | 19 | 23 | 0.54 | 483 | 2 | 0.02 | 8 | 0.11 | 16 | 35 | 0.14 | 98 | 74 |
| 4 | 51178 | 5 | 0.2 | 4.18 | 49 | 303 | 1.2 | 3 | 0.19 | 0.7 | 45 | 10 | 10 | 18 | 3.63 | 10 | 1.13 | 17 | 26 | 0.52 | 746 | 3 | 0.02 | 8 | 0.15 | 17 | 30 | 0.18 | 101 | 97 |
| 5 | 51201 | 5 | 0.4 | 3.68 | 71 | 268 | 1.1 | 6 | 0.42 | 0.7 | 67 | 15 | 11 | 27 | 4.10 | 26 | 0.84 | 26 | 25 | 0.79 | 1271 | 3 | 0.03 | 11 | 0.16 | 26 | 47 | 0.30 | 101 | 106 |
| 6 | SOIL 51202 | 5 | 0.2 | 3.54 | 44 | 328 | 1.4 | 8 | 0.71 | 0.9 | 79 | 14 | 13 | 25 | 4.07 | 33 | 1.02 | 29 | 21 | 0.91 | 1350 | 2 | 0.03 | 11 | 0.15 | 17 | 63 | 0.35 | 104 | 103 |
| 7 | SOIL 51203 | 5 | 0.2 | 4.00 | 67 | 313 | 1.3 | 8 | 0.61 | 0.9 | 74 | 15 | 11 | 24 | 4.28 | 32 | 1.08 | 31 | 23 | 0.93 | 1111 | 2 | 0.03 | 11 | 0.14 | 22 | 62 | 0.34 | 110 | 106 |
| 8 | 51204 | 5 | 0.6 | 3.83 | 87 | 350 | 1.2 | 9 | 0.61 | 1.1 | 67 | 14 | 12 | 26 | 4.52 | 33 | 1.06 | 29 | 23 | 0.86 | 846 | 3 | 0.03 | 12 | 0.15 | 30 | 66 | 0.35 | 110 | 112 |
| 9 | 51205 | 5 | 0.4 | 4.71 | 84 | 599 | 1.5 | 5 | 0.37 | 0.6 | 55 | 12 | 3 | 14 | 3.12 | 10 | 1.92 | 29 | 57 | 0.84 | 1936 | 2 | 0.02 | 8 | 0.11 | 16 | 20 | 0.08 | 85 | 87 |
| 10 | 51206 | 5 | 0.2 | 4.10 | 52 | 478 | 1.5 | 7 | 0.74 | 1.0 | 70 | 14 | 13 | 26 | 4.33 | 30 | 1.00 | 29 | 29 | 0.90 | 1309 | 2 | 0.03 | 14 | 0.19 | 19 | 68 | 0.30 | 116 | 115 |
| 11 | SOIL 51207 | 5 | 0.2 | 3.68 | 71 | 304 | 1.5 | 7 | 0.60 | 0.9 | 66 | 14 | 14 | 27 | 4.23 | 30 | 0.98 | 27 | 21 | 0.85 | 895 | 3 | 0.03 | 11 | 0.15 | 18 | 63 | 0.36 | 106 | 99 |
| 12 | SOIL 51208 | 5 | 0.2 | 3.98 | 131 | 666 | 1.6 | 7 | 0.94 | 1.0 | 77 | 15 | 11 | 30 | 4.16 | 32 | 1.27 | 34 | 21 | 0.89 | 3272 | 3 | 0.03 | 11 | 0.16 | 22 | 69 | 0.34 | 103 | 116 |
| 13 | 51209 | 5 | 0.2 | 3.48 | 51 | 416 | 1.3 | 6 | 0.60 | 1.0 | 68 | 15 | 10 | 28 | 3.93 | 21 | 1.00 | 27 | 34 | 0.88 | 1518 | 2 | 0.03 | 16 | 0.13 | 22 | 62 | 0.27 | 108 | 136 |
| 14 | 51210 | 5 | 0.2 | 6.03 | 90 | 469 | 1.7 | 6 | 0.26 | 0.8 | 55 | 15 | 4 | 21 | 3.84 | 10 | 2.03 | 26 | 127 | 0.87 | 1603 | 2 | 0.02 | 11 | 0.09 | 18 | 19 | 0.08 | 111 | 102 |
| 15 | 51211 | 5 | 0.2 | 4.80 | 52 | 597 | 1.3 | 6 | 0.31 | 1.0 | 67 | 18 | 9 | 29 | 4.85 | 18 | 1.28 | 23 | 29 | 0.68 | 1151 | 2 | 0.04 | 14 | 0.14 | 18 | 112 | 0.19 | 147 | 119 |
| 16 | SOIL 51212 | 5 | 0.2 | 5.19 | 58 | 521 | 1.4 | 4 | 0.20 | 0.9 | 52 | 16 | 14 | 28 | 4.55 | 13 | 1.40 | 22 | 30 | 0.70 | 1250 | 2 | 0.04 | 12 | 0.16 | 23 | 109 | 0.19 | 150 | 100 |
| 17 | SOIL 51213 | 20 | 0.2 | 3.94 | 58 | 374 | 1.0 | 6 | 0.22 | 1.0 | 52 | 21 | 11 | 43 | 5.00 | 8 | 1.12 | 21 | 23 | 0.65 | 1165 | 2 | 0.03 | 12 | 0.13 | 23 | 41 | 0.13 | 134 | 105 |
| 18 | 51214 | 5 | 0.2 | 5.47 | 59 | 564 | 1.4 | 5 | 0.12 | 0.9 | 67 | 16 | 19 | 32 | 4.95 | 9 | 1.31 | 24 | 28 | 0.69 | 1406 | 2 | 0.03 | 12 | 0.15 | 24 | 30 | 0.14 | 140 | 104 |
| 19 | 51215 | 5 | 0.2 | 4.24 | 58 | 423 | 1.3 | 3 | 0.24 | 0.8 | 63 | 18 | 12 | 53 | 4.42 | 9 | 1.31 | 27 | 27 | 0.98 | 1615 | 1 | 0.02 | 11 | 0.10 | 19 | 28 | 0.13 | 136 | 95 |
| 20 | 51216 | 5 | 0.2 | 4.58 | 64 | 342 | 1.1 | 5 | 0.12 | 0.8 | 47 | 14 | 12 | 27 | 4.25 | 5 | 1.32 | 19 | 29 | 0.67 | 1123 | 2 | 0.02 | 10 | 0.14 | 19 | 23 | 0.10 | 125 | 97 |
| 21 | SOIL 51217 | 5 | 0.2 | 3.91 | 53 | 264 | 1.6 | 2 | 0.16 | 0.8 | 48 | 10 | 7 | 35 | 3.13 | 7 | 1.16 | 20 | 23 | 0.49 | 726 | 2 | 0.02 | 8 | 0.13 | 12 | 27 | 0.08 | 101 | 63 |
| 22 | SOIL 51218 | 5 | 0.2 | 4.41 | 67 | 271 | 1.2 | 4 | 0.08 | 0.8 | 57 | 12 | 4 | 28 | 4.02 | 8 | 1.34 | 18 | 28 | 0.45 | 1093 | 2 | 0.02 | 8 | 0.10 | 18 | 16 | 0.07 | 86 | 66 |
| 23 | 51219 | 10 | 0.2 | 6.76 | 157 | 288 | 1.6 | 15 | 0.15 | 1.4 | 64 | 26 | 3 | 77 | 5.41 | 19 | 3.01 | 28 | 15 | 0.56 | 951 | 4 | 0.02 | 10 | 0.13 | 31 | 9 | 0.03 | 116 | 48 |
| 24 | 51220 | 5 | 0.2 | 5.93 | 69 | 380 | 1.6 | 5 | 0.18 | 0.8 | 61 | 13 | 2 | 32 | 4.27 | 7 | 2.11 | 25 | 29 | 0.43 | 1150 | 3 | 0.02 | 7 | 0.15 | 13 | 12 | 0.03 | 118 | 61 |
| 25 | 51221 | 6 | 0.2 | 6.04 | 71 | 500 | 1.7 | 2 | 0.14 | 0.6 | 55 | 9 | 2 | 21 | 3.20 | 11 | 2.22 | 22 | 17 | 0.40 | 834 | 2 | 0.02 | 6 | 0.11 | 15 | 11 | 0.03 | 85 | 44 |
| 26 | SOIL 51222 | 5 | 0.2 | 5.67 | 106 | 421 | 1.7 | 6 | 0.12 | 1.1 | 56 | 18 | 5 | 68 | 4.78 | 12 | 1.57 | 25 | 30 | 0.49 | 1263 | 6 | 0.02 | 9 | 0.16 | 27 | 16 | 0.06 | 105 | 94 |
| 27 | SOIL 51223 | 5 | 0.2 | 7.46 | 66 | 600 | 2.2 | 11 | 0.22 | 1.0 | 71 | 15 | 3 | 23 | 3.86 | 25 | 3.19 | 34 | 24 | 0.69 | 1505 | 3 | 0.02 | 8 | 0.10 | 26 | 9 | 0.04 | 90 | 67 |
| 28 | 51224 | 5 | 0.4 | 7.31 | 135 | 1406 | 2.2 | 15 | 0.23 | 2.2 | 98 | 23 | 5 | 49 | 6.29 | 28 | 2.96 | 48 | 26 | 0.60 | 4555 | 12 | 0.03 | 12 | 0.14 | 46 | 24 | 0.03 | 135 | 131 |
| 29 | 51225 | 5 | 0.2 | 6.84 | 92 | 762 | 2.1 | 12 | 0.24 | 1.1 | 74 | 20 | 4 | 28 | 4.14 | 30 | 3.14 | 30 | 19 | 0.64 | 2365 | 5 | 0.02 | 9 | 0.09 | 32 | 14 | 0.02 | 81 | 63 |
| 30 | 51226 | 5 | 0.2 | 5.50 | 46 | 403 | 1.3 | 2 | 0.11 | 0.5 | 63 | 10 | 12 | 18 | 2.99 | 15 | 1.75 | 26 | 13 | 0.47 | 889 | 1 | 0.03 | 12 | 0.13 | 35 | 15 | 0.12 | 82 | 145 |
| 31 | SOIL 51227 | 5 | 0.2 | 4.91 | 41 | 547 | 1.8 | 2 | 0.19 | 0.6 | 42 | 6 | 1 | 11 | 1.82 | 4 | 2.51 | 21 | 5 | 0.38 | 380 | 1 | 0.01 | 4 | 0.06 | 15 | 8 | 0.02 | 45 | 69 |
| 32 | SOIL 51228 | 5 | 0.2 | 5.00 | 200 | 1021 | 2.6 | 2 | 0.28 | 4.3 | 68 | 29 | 3 | 14 | 2.12 | 5 | 2.12 | 37 | 14 | 0.56 | 1774 | 2 | 0.03 | 9 | 0.11 | 38 | 14 | 0.05 | 69 | 382 |
| 33 | 51229 | 5 | 0.6 | 3.85 | 65 | 336 | 1.1 | 5 | 0.56 | 0.8 | 67 | 13 | 8 | 30 | 3.74 | 21 | 1.20 | 28 | 19 | 0.77 | 733 | 1 | 0.03 | 11 | 0.12 | 25 | 66 | 0.23 | 93 | 110 |
| 34 | 51230 | 5 | 0.2 | 3.97 | 47 | 612 | 1.5 | 4 | 0.54 | 1.1 | 72 | 14 | 6 | 30 | 3.39 | 21 | 1.32 | 30 | 18 | 0.67 | 1700 | 1 | 0.02 | 10 | 0.13 | 33 | 46 | 0.20 | 82 | 116 |
| 35 | 51231 | 5 | 0.2 | 4.10 | 45 | 472 | 1.3 | 5 | 0.28 | 0.9 | 49 | 9 | 2 | 13 | 2.86 | 15 | 1.77 | 20 | 14 | 0.59 | 1245 | 1 | 0.02 | 6 | 0.07 | 28 | 21 | 0.10 | 57 | 116 |
| 36 | SOIL 51232 | 5 | 0.2 | 5.54 | 60 | 805 | 3.3 | 2 | 0.25 | 0.4 | 57 | 9 | 2 | 9 | 2.42 | 15 | 2.63 | 23 | 13 | 0.69 | 1089 | 2 | 0.02 | 6 | 0.08 | 31 | 25 | 0.10 | 34 | 88 |

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| T.T. No. | | SAMP 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 37 | SOIL | 51233 | 5 | 0.2 | 4.63 | 46 | 274 | 1.2 | 2 | 0.10 | 0.5 | 68 | 9 | 6 | 16 | 2.71 | 12 | 1.54 | 29 | 27 | 0.48 | 861 | 1 | 0.02 | 10 | 0.09 | 41 | 15 | 0.10 | 49 | 139 |
| 38 | | 51234 | 5 | 0.2 | 6.31 | 66 | 378 | 1.7 | 6 | 0.12 | 0.5 | 44 | 6 | 3 | 11 | 2.32 | 19 | 2.76 | 17 | 19 | 0.80 | 537 | 1 | 0.02 | 6 | 0.07 | 28 | 7 | 0.15 | 33 | 103 |
| 39 | | 51235 | 5 | 0.2 | 4.59 | 43 | 331 | 1.0 | 3 | 0.11 | 0.4 | 47 | 7 | 8 | 12 | 2.35 | 11 | 1.63 | 20 | 21 | 0.53 | 503 | 1 | 0.02 | 8 | 0.07 | 23 | 12 | 0.13 | 46 | 87 |
| 40 | | 51236 | 5 | 0.2 | 6.29 | 52 | 618 | 1.7 | 4 | 0.07 | 0.6 | 48 | 8 | 4 | 10 | 2.22 | 13 | 2.59 | 19 | 22 | 0.60 | 1332 | 1 | 0.02 | 7 | 0.07 | 63 | 7 | 0.11 | 45 | 148 |
| 41 | SOIL | 51237 | 5 | 0.4 | 5.36 | 40 | 438 | 1.4 | 2 | 0.09 | 0.2 | 37 | 7 | 5 | 12 | 2.49 | 3 | 1.60 | 18 | 18 | 0.59 | 726 | 2 | 0.02 | 7 | 0.07 | 25 | 16 | 0.13 | 51 | 101 |
| 42 | SOIL | 51238 | 5 | 0.2 | 6.26 | 47 | 343 | 1.9 | 5 | 0.22 | 1.0 | 46 | 17 | 4 | 28 | 4.37 | 16 | 2.31 | 22 | 20 | 0.52 | 1344 | 1 | 0.02 | 10 | 0.13 | 18 | 11 | 0.17 | 94 | 106 |
| 43 | | 51239 | 5 | 0.2 | 5.08 | 61 | 332 | 2.2 | 2 | 0.16 | 0.6 | 55 | 19 | 3 | 26 | 3.79 | 6 | 1.95 | 26 | 23 | 0.38 | 1387 | 1 | 0.02 | 10 | 0.10 | 29 | 13 | 0.07 | 107 | 130 |
| 44 | | 51240 | 5 | 0.2 | 4.33 | 35 | 182 | 1.4 | 2 | 0.14 | 0.2 | 47 | 10 | 6 | 22 | 2.70 | 7 | 1.36 | 23 | 14 | 0.36 | 534 | 1 | 0.03 | 12 | 0.10 | 19 | 12 | 0.13 | 77 | 99 |
| 45 | | 51241 | 5 | 0.2 | 5.97 | 45 | 428 | 1.4 | 2 | 0.36 | 0.3 | 43 | 11 | 1 | 22 | 3.12 | 10 | 2.43 | 21 | 12 | 0.30 | 997 | 1 | 0.02 | 6 | 0.13 | 15 | 14 | 0.18 | 65 | 76 |
| 46 | SOIL | 51242 | 5 | 0.2 | 5.49 | 45 | 265 | 1.2 | 2 | 0.12 | 0.4 | 56 | 12 | 9 | 25 | 3.45 | 7 | 1.51 | 27 | 20 | 0.41 | 978 | 1 | 0.03 | 14 | 0.12 | 27 | 15 | 0.15 | 83 | 112 |
| 47 | SOIL | 51243 | 5 | 0.2 | 6.43 | 61 | 311 | 1.7 | 2 | 0.13 | 0.6 | 50 | 18 | 8 | 31 | 3.82 | 8 | 2.12 | 21 | 24 | 0.50 | 1698 | 2 | 0.03 | 15 | 0.13 | 34 | 15 | 0.15 | 94 | 136 |
| 48 | | 51244 | 5 | 0.2 | 5.71 | 64 | 302 | 1.9 | 3 | 0.19 | 0.5 | 60 | 16 | 11 | 27 | 3.80 | 11 | 1.65 | 28 | 21 | 0.55 | 1834 | 2 | 0.04 | 16 | 0.15 | 133 | 15 | 0.16 | 91 | 136 |
| 49 | | 51245 | 5 | 0.2 | 6.60 | 72 | 410 | 1.9 | 2 | 0.19 | 0.5 | 44 | 17 | 3 | 27 | 3.05 | 4 | 2.65 | 20 | 17 | 0.39 | 1137 | 1 | 0.02 | 8 | 0.09 | 32 | 11 | 0.07 | 82 | 101 |
| 51 | | 51246 | 5 | 0.4 | 3.19 | 48 | 241 | 1.9 | 3 | 0.27 | 1.1 | 66 | 14 | 11 | 26 | 3.40 | 15 | 0.94 | 31 | 22 | 0.54 | 1105 | 3 | 0.03 | 14 | 0.13 | 31 | 37 | 0.18 | 87 | 114 |
| 52 | SOIL | 51247 | 5 | 2.0 | 3.56 | 63 | 302 | 1.2 | 6 | 0.53 | 0.7 | 68 | 17 | 16 | 36 | 4.30 | 29 | 0.97 | 29 | 21 | 0.77 | 1181 | 2 | 0.04 | 14 | 0.16 | 19 | 61 | 0.32 | 107 | 116 |
| 53 | SOIL | 51248 | 5 | 0.2 | 3.96 | 46 | 305 | 1.2 | 5 | 0.48 | 0.6 | 65 | 14 | 9 | 28 | 4.23 | 25 | 1.08 | 27 | 23 | 0.79 | 1064 | 2 | 0.04 | 13 | 0.15 | 25 | 56 | 0.28 | 107 | 118 |
| 54 | | 51249 | 5 | 8.2 | 3.86 | 499 | 460 | 1.2 | 6 | 0.13 | 1.7 | 101 | 23 | 10 | 92 | 5.69 | 16 | 0.97 | 87 | 77 | 0.39 | 656 | 10 | 0.03 | 15 | 0.20 | 261 | 64 | 0.11 | 80 | 231 |
| 55 | | 51250 | 5 | 0.6 | 4.15 | 124 | 307 | 1.0 | 6 | 0.21 | 0.8 | 69 | 14 | 12 | 31 | 4.48 | 22 | 1.01 | 34 | 64 | 0.68 | 852 | 6 | 0.03 | 12 | 0.14 | 56 | 43 | 0.25 | 100 | 137 |
| 56 | | 51351 | 5 | 0.2 | 6.20 | 121 | 473 | 2.1 | 6 | 0.16 | 0.8 | 70 | 21 | 2 | 73 | 4.23 | 11 | 2.65 | 35 | 27 | 0.63 | 1230 | 4 | 0.02 | 8 | 0.08 | 29 | 10 | 0.03 | 81 | 60 |
| 57 | SOIL | 51352 | 5 | 0.6 | 5.95 | 113 | 367 | 2.2 | 6 | 0.20 | 1.5 | 68 | 149 | 3 | 1660 | 4.31 | 9 | 2.49 | 35 | 29 | 0.64 | 1667 | 6 | 0.02 | 12 | 0.10 | 32 | 12 | 0.04 | 91 | 149 |
| 58 | SOIL | 110751 | 5 | 0.2 | 3.77 | 38 | 366 | 0.8 | 5 | 0.16 | 0.7 | 46 | 16 | 8 | 21 | 4.25 | 13 | 0.92 | 23 | 16 | 0.46 | 3123 | 2 | 0.02 | 7 | 0.22 | 15 | 25 | 0.20 | 114 | 84 |
| 59 | | 110752 | 5 | 0.8 | 3.64 | 44 | 190 | 0.7 | 3 | 0.20 | 0.5 | 59 | 11 | 9 | 18 | 3.81 | 9 | 0.65 | 18 | 22 | 0.54 | 658 | 1 | 0.02 | 7 | 0.07 | 15 | 41 | 0.16 | 92 | 93 |
| 60 | | 110753 | 5 | 0.2 | 2.88 | 32 | 101 | 0.7 | 4 | 0.08 | 0.8 | 47 | 5 | 15 | 11 | 4.32 | 21 | 0.31 | 20 | 8 | 0.23 | 991 | 4 | 0.05 | 6 | 0.14 | 12 | 11 | 0.19 | 59 | 67 |
| 61 | | 110754 | 5 | 0.6 | 2.78 | 38 | 148 | 0.8 | 2 | 0.11 | 0.5 | 31 | 6 | 8 | 13 | 3.22 | 2 | 0.43 | 13 | 16 | 0.34 | 1042 | 1 | 0.01 | 5 | 0.14 | 16 | 28 | 0.20 | 88 | 62 |
| 62 | SOIL | 110755 | 5 | 0.2 | 3.69 | 33 | 895 | 0.6 | 2 | 0.14 | 0.2 | 28 | 6 | 6 | 7 | 2.63 | 8 | 1.01 | 16 | 10 | 0.30 | 304 | 1 | 0.02 | 4 | 0.06 | 8 | 33 | 0.22 | 127 | 59 |
| 63 | SOIL | 110756 | 10 | 0.4 | 3.38 | 39 | 176 | 1.0 | 2 | 0.12 | 0.7 | 25 | 7 | 7 | 12 | 3.16 | 2 | 0.56 | 13 | 20 | 0.38 | 418 | 1 | 0.02 | 6 | 0.14 | 16 | 32 | 0.18 | 79 | 91 |
| 64 | | 110757 | 5 | 0.2 | 2.99 | 27 | 269 | 0.8 | 2 | 0.23 | 0.2 | 26 | 4 | 16 | 11 | 2.41 | 7 | 0.69 | 13 | 7 | 0.22 | 671 | 2 | 0.02 | 6 | 0.22 | 26 | 42 | 0.22 | 119 | 59 |
| 65 | | 110758 | 5 | 0.2 | 4.67 | 37 | 527 | 0.8 | 2 | 0.14 | 0.2 | 38 | 9 | 6 | 18 | 3.38 | 8 | 1.15 | 18 | 23 | 0.72 | 678 | 1 | 0.03 | 9 | 0.10 | 12 | 22 | 0.21 | 119 | 86 |
| 66 | | 110759 | 55 | 0.2 | 3.83 | 36 | 196 | 0.6 | 2 | 0.12 | 0.4 | 31 | 7 | 12 | 19 | 3.02 | 5 | 0.62 | 16 | 18 | 0.31 | 675 | 1 | 0.02 | 5 | 0.16 | 17 | 33 | 0.22 | 97 | 100 |
| 67 | SOIL | 110760 | 5 | 0.8 | 3.97 | 41 | 308 | 0.8 | 2 | 0.26 | 0.4 | 59 | 11 | 11 | 22 | 3.50 | 10 | 0.99 | 22 | 24 | 0.70 | 858 | 1 | 0.02 | 9 | 0.10 | 20 | 46 | 0.21 | 109 | 120 |
| 68 | SOIL | 110761 | 5 | 0.2 | 3.86 | 28 | 254 | 0.6 | 2 | 0.13 | 0.2 | 31 | 5 | 12 | 11 | 2.65 | 7 | 0.80 | 15 | 9 | 0.33 | 268 | 1 | 0.02 | 5 | 0.13 | 10 | 32 | 0.20 | 80 | 52 |
| 69 | | 110762 | 5 | 0.2 | 4.92 | 45 | 509 | 1.3 | 2 | 0.31 | 0.5 | 83 | 14 | 8 | 18 | 3.88 | 14 | 1.08 | 23 | 18 | 0.63 | 1909 | 1 | 0.03 | 8 | 0.12 | 20 | 60 | 0.22 | 101 | 93 |
| 70 | | 110763 | 5 | 0.2 | 4.25 | 38 | 342 | 0.7 | 3 | 0.21 | 0.7 | 34 | 7 | 13 | 12 | 4.24 | 20 | 1.02 | 17 | 8 | 0.36 | 613 | 1 | 0.02 | 6 | 0.15 | 15 | 57 | 0.33 | 125 | 64 |
| 71 | | 110764 | 5 | 0.4 | 4.33 | 39 | 394 | 1.2 | 3 | 0.40 | 0.7 | 66 | 11 | 9 | 20 | 3.63 | 23 | 1.17 | 25 | 16 | 0.64 | 997 | 2 | 0.03 | 9 | 0.16 | 22 | 65 | 0.25 | 100 | 106 |
| 72 | SOIL | 110765 | 5 | 0.2 | 5.05 | 40 | 385 | 1.6 | 4 | 0.30 | 0.8 | 61 | 10 | 10 | 21 | 3.62 | 22 | 1.05 | 24 | 22 | 0.66 | 626 | 1 | 0.03 | 9 | 0.18 | 16 | 57 | 0.28 | 110 | 82 |
| 73 | SOIL | 110766 | 5 | 0.4 | 6.49 | 35 | 1331 | 1.5 | 4 | 0.35 | 0.5 | 49 | 12 | 2 | 15 | 3.36 | 13 | 2.40 | 27 | 18 | 0.67 | 2170 | 1 | 0.03 | 7 | 0.09 | 21 | 19 | 0.14 | 109 | 102 |
| 74 | | 110767 | 5 | 0.4 | 5.76 | 44 | 1193 | 1.5 | 7 | 0.44 | 0.5 | 65 | 14 | 5 | 27 | 3.61 | 25 | 1.82 | 26 | 31 | 0.64 | 1762 | 1 | 0.03 | 9 | 0.16 | 33 | 53 | 0.23 | 111 | 112 |
| 75 | | 110768 | 5 | 0.2 | 5.09 | 38 | 567 | 1.6 | 5 | 0.44 | 0.5 | 62 | 14 | 4 | 29 | 3.83 | 22 | 1.83 | 29 | 33 | 0.79 | 1263 | 1 | 0.03 | 10 | 0.12 | 15 | 27 | 0.21 | 101 | 112 |
| 76 | | 110769 | 5 | 0.2 | 4.78 | 44 | 376 | 1.1 | 6 | 0.32 | 0.6 | 72 | 14 | 10 | 43 | 4.13 | 21 | 1.28 | 30 | 27 | 0.61 | 2038 | 1 | 0.03 | 13 | 0.15 | 25 | 56 | 0.22 | 125 | 114 |
| 77 | SOIL | 110770 | 5 | 0.2 | 5.15 | 44 | 411 | 1.1 | 2 | 0.19 | 0.3 | 69 | 12 | 8 | 22 | 3.29 | 14 | 1.66 | 30 | 18 | 0.62 | 1076 | 1 | 0.04 | 13 | 0.11 | 24 | 26 | 0.16 | 90 | 106 |
| 78 | SOIL | 110771 | 5 | 0.2 | 5.31 | 45 | 396 | 1.2 | 6 | 0.30 | 0.6 | 67 | 13 | 9 | 22 | 3.60 | 21 | 1.59 | 27 | 19 | 0.55 | 1363 | 2 | 0.03 | 12 | 0.16 | 29 | 43 | 0.21 | 89 | 117 |
| 79 | | 110772 | 5 | 0.2 | 5.61 | 37 | 432 | 1.3 | 3 | 0.19 | 0.4 | 63 | 11 | 12 | 18 | 2.71 | 11 | 1.94 | 29 | 13 | 0.45 | 1409 | 1 | 0.04 | 13 | 0.11 | 30 | 22 | 0.16 | 71 | 103 |
| 80 | | 110773 | 5 | 0.2 | 5.05 | 24 | 307 | 0.7 | 2 | 0.03 | 0.2 | 35 | 5 | 1 | 8 | 1.85 | 2 | 2.14 | 18 | 4 | 0.18 | 350 | 1 | 0.01 | 4 | 0.04 | 11 | 6 | 0.06 | 34 | 58 |
| 81 | SOIL | 110774 | 5 | 0.2 | 5.27 | 60 | 466 | 2.3 | 3 | 0.30 | 0.6 | 83 | 12 | 6 | 20 | 3.06 | 20 | 1.60 | 41 | 13 | 0.43 | 1195 | 3 | 0.03 | 13 | 0.10 | 38 | 30 | 0.17 | 73 | 108 |

| 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 % | a ppm | K % | La ppm | Li ppm | Mg % | Mn ppm | Mo ppm | Na % | Ni ppm | P % | Pb ppm | Sr ppm | Ti % | V ppm | Zn ppm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 82 | SOIL | 110776 | 5 | 0.2 | 5.25 | 42 | 540 | 1.7 | 2 | 0.16 | 0.2 | 37 | 6 | 1 | 7 | 1.85 | 4 | 2.55 | 18 | 5 | 0.45 | 346 | 1 | 0.02 | 4 | 0.08 | 19 | 7 | 0.04 | 51 | 67 |
| 83 | SOIL | 110826 | 5 | 0.8 | 3.90 | 88 | 315 | 1.2 | 5 | 0.19 | 1.0 | 47 | 12 | 5 | 17 | 4.19 | 8 | 1.14 | 16 | 58 | 0.46 | 2178 | 8 | 0.02 | 6 | 0.22 | 67 | 21 | 0.11 | 108 | 182 |
| 84 | | 110827 | 5 | 1.2 | 3.15 | 39 | 537 | 0.7 | 2 | 0.42 | 1.8 | 29 | 8 | 3 | 12 | 2.01 | 7 | 1.26 | 12 | 12 | 0.34 | 2133 | 5 | 0.02 | 4 | 0.16 | 56 | 25 | 0.10 | 87 | 170 |
| 85 | SOIL | 110828 | 5 | 0.4 | 3.65 | 62 | 372 | 0.9 | 2 | 0.28 | 1.0 | 35 | 12 | 6 | 16 | 4.16 | 6 | 1.11 | 14 | 24 | 0.40 | 1291 | 4 | 0.02 | 7 | 0.21 | 28 | 28 | 0.13 | 111 | 148 |
| 86 | SOIL | 110895 | 5 | 0.2 | 4.10 | 49 | 338 | 0.9 | 3 | 0.22 | 0.5 | 47 | 14 | 7 | 24 | 4.00 | 10 | 1.14 | 19 | 24 | 0.71 | 1363 | 2 | 0.02 | 8 | 0.09 | 22 | 37 | 0.18 | 126 | 126 |
| 87 | SOIL | 110896 | 5 | 0.2 | 3.00 | 23 | 429 | 0.8 | 2 | 1.01 | 0.4 | 38 | 8 | 4 | 7 | 2.50 | 13 | 1.16 | 16 | 7 | 0.47 | 598 | 1 | 0.02 | 6 | 0.17 | 8 | 24 | 0.14 | 91 | 71 |
| 88 | SOIL | 110897 | 5 | 0.4 | 4.05 | 37 | 757 | 0.9 | 2 | 0.43 | 0.4 | 43 | 7 | 6 | 14 | 2.64 | 9 | 1.17 | 23 | 23 | 0.43 | 760 | 1 | 0.03 | 6 | 0.12 | 21 | 30 | 0.14 | 100 | 128 |
| 89 | | 110898 | 5 | 1.2 | 3.55 | 46 | 371 | 1.0 | 2 | 0.20 | 0.7 | 40 | 12 | 7 | 19 | 3.43 | 7 | 1.00 | 19 | 22 | 0.44 | 2724 | 2 | 0.02 | 6 | 0.23 | 48 | 31 | 0.17 | 105 | 148 |
| 90 | | 110899 | 6 | 1.6 | 4.26 | 44 | 767 | 1.3 | 4 | 0.55 | 1.9 | 57 | 16 | 4 | 32 | 3.77 | 16 | 1.65 | 26 | 28 | 0.77 | 2512 | 2 | 0.02 | 7 | 0.10 | 66 | 43 | 0.17 | 131 | 223 |
| 91 | | 110900 | 8 | 0.8 | 3.38 | 40 | 386 | 1.8 | 7 | 0.43 | 1.7 | 44 | 19 | 6 | 25 | 3.55 | 23 | 1.15 | 18 | 24 | 0.84 | 2314 | 4 | 0.02 | 9 | 0.25 | 47 | 44 | 0.17 | 121 | 165 |
| 92 | SOIL | 110927 | 5 | 1.4 | 5.08 | 57 | 1063 | 1.3 | 7 | 0.60 | 1.1 | 63 | 12 | 4 | 41 | 3.56 | 25 | 1.64 | 35 | 25 | 0.72 | 1510 | 3 | 0.03 | 8 | 0.10 | 85 | 29 | 0.15 | 127 | 233 |
| 93 | SOIL | 110928 | 5 | 1.0 | 5.07 | 65 | 555 | 1.2 | 7 | 0.19 | 0.8 | 80 | 16 | 4 | 42 | 3.67 | 26 | 1.48 | 25 | 28 | 0.72 | 2600 | 3 | 0.02 | 8 | 0.11 | 76 | 30 | 0.21 | 128 | 215 |
| 94 | | 110929 | 5 | 0.8 | 3.24 | 49 | 327 | 0.8 | 2 | 0.25 | 0.8 | 46 | 11 | 6 | 20 | 3.32 | 12 | 0.69 | 17 | 19 | 0.49 | 1885 | 2 | 0.02 | 7 | 0.24 | 38 | 37 | 0.15 | 93 | 162 |
| 95 | | 110930 | 6 | 1.4 | 4.01 | 66 | 430 | 1.1 | 5 | 0.22 | 0.8 | 58 | 13 | 4 | 30 | 3.49 | 15 | 1.23 | 25 | 24 | 0.65 | 1694 | 2 | 0.02 | 7 | 0.07 | 112 | 27 | 0.15 | 106 | 232 |
| 96 | | 110931 | 5 | 0.8 | 4.60 | 167 | 632 | 1.3 | 5 | 0.26 | 1.2 | 63 | 14 | 5 | 33 | 3.75 | 18 | 1.48 | 33 | 62 | 0.73 | 1879 | 3 | 0.02 | 6 | 0.08 | 96 | 32 | 0.14 | 120 | 243 |
| 97 | SOIL | 110932 | 5 | 1.2 | 3.35 | 61 | 300 | 0.8 | 4 | 0.14 | 0.6 | 39 | 9 | 8 | 14 | 3.62 | 16 | 0.87 | 16 | 22 | 0.40 | 1636 | 2 | 0.03 | 7 | 0.22 | 32 | 28 | 0.18 | 95 | 142 |
| 98 | SOIL | 110933 | 6 | 3.8 | 4.46 | 74 | 639 | 1.3 | 5 | 0.34 | 1.0 | 74 | 10 | 6 | 28 | 3.45 | 22 | 1.51 | 23 | 24 | 0.52 | 1300 | 2 | 0.02 | 8 | 0.11 | 87 | 24 | 0.17 | 123 | 219 |
| 99 | | 110934 | 5 | 1.2 | 4.03 | 67 | 442 | 1.1 | 4 | 0.28 | 1.9 | 55 | 13 | 5 | 22 | 3.46 | 16 | 1.41 | 20 | 24 | 0.59 | 2606 | 2 | 0.02 | 7 | 0.13 | 74 | 21 | 0.14 | 109 | 215 |
| 101 | | 110935 | 6 | 1.2 | 4.16 | 39 | 500 | 0.9 | 2 | 0.22 | 2.1 | 28 | 12 | 4 | 13 | 3.26 | 14 | 1.41 | 14 | 16 | 0.36 | 2692 | 1 | 0.03 | 6 | 0.23 | 69 | 21 | 0.14 | 101 | 257 |
| 102 | | 110936 | 5 | 0.6 | 5.12 | 53 | 529 | 0.9 | 2 | 0.11 | 1.0 | 20 | 8 | 2 | 8 | 2.54 | 14 | 2.18 | 13 | 21 | 0.45 | 2575 | 4 | 0.02 | 4 | 0.16 | 33 | 14 | 0.12 | 116 | 176 |
| 103 | SOIL | 110937 | 5 | 0.8 | 5.70 | 60 | 729 | 1.7 | 2 | 0.22 | 2.8 | 50 | 15 | 3 | 19 | 3.27 | 20 | 1.99 | 25 | 34 | 0.51 | 3531 | 2 | 0.02 | 6 | 0.12 | 142 | 11 | 0.09 | 101 | 499 |
| 104 | SOIL | 110938 | 5 | 1.8 | 4.10 | 84 | 788 | 1.0 | 2 | 0.22 | 3.4 | 29 | 14 | 4 | 9 | 2.71 | 16 | 1.38 | 12 | 28 | 0.33 | 4032 | 5 | 0.02 | 5 | 0.15 | 117 | 17 | 0.08 | 78 | 253 |
| 105 | | 110939 | 5 | 0.4 | 5.33 | 118 | 422 | 1.3 | 2 | 0.11 | 1.6 | 37 | 14 | 5 | 13 | 3.80 | 17 | 1.89 | 18 | 43 | 0.54 | 1931 | 11 | 0.01 | 8 | 0.26 | 26 | 12 | 0.10 | 109 | 128 |
| 106 | | 110940 | 6 | 0.2 | 4.29 | 40 | 304 | 0.9 | 2 | 0.07 | 1.2 | 26 | 7 | 6 | 9 | 3.04 | 12 | 1.36 | 14 | 21 | 0.37 | 1724 | 1 | 0.02 | 6 | 0.21 | 24 | 16 | 0.12 | 78 | 111 |
| 107 | | 110941 | 5 | 0.4 | 4.04 | 42 | 423 | 1.0 | 2 | 0.15 | 1.0 | 29 | 7 | 4 | 9 | 2.42 | 13 | 1.38 | 14 | 31 | 0.41 | 1365 | 5 | 0.02 | 6 | 0.20 | 26 | 17 | 0.10 | 83 | 132 |
| 108 | SOIL | 110942 | 5 | 0.4 | 4.61 | 49 | 603 | 1.7 | 3 | 0.30 | 1.0 | 51 | 11 | 4 | 14 | 2.87 | 17 | 1.86 | 28 | 38 | 0.65 | 1122 | 2 | 0.03 | 8 | 0.07 | 25 | 30 | 0.12 | 81 | 97 |
| 109 | SOIL | 110943 | 5 | 0.2 | 4.82 | 89 | 447 | 1.4 | 4 | 0.70 | 1.7 | 56 | 17 | 20 | 26 | 3.76 | 23 | 1.73 | 22 | 60 | 1.07 | 2260 | 8 | 0.02 | 20 | 0.13 | 27 | 53 | 0.18 | 121 | 119 |
| 110 | | 110944 | 5 | 0.4 | 3.95 | 49 | 564 | 0.6 | 4 | 1.16 | 0.3 | 37 | 5 | 6 | 5 | 1.76 | 24 | 1.14 | 11 | 15 | 0.43 | 278 | 8 | 0.03 | 4 | 0.11 | 15 | 69 | 0.10 | 93 | 48 |
| 111 | | 110945 | 5 | 0.4 | 5.81 | 37 | 363 | 0.9 | 2 | 0.06 | 1.6 | 17 | 10 | 5 | 16 | 3.59 | 14 | 2.23 | 9 | 7 | 0.42 | 554 | 3 | 0.02 | 8 | 0.15 | 18 | 10 | 0.16 | 222 | 104 |
| 112 | | 110946 | 5 | 0.2 | 7.46 | 48 | 764 | 1.2 | 6 | 0.26 | 2.2 | 35 | 18 | 6 | 25 | 4.83 | 19 | 3.07 | 20 | 26 | 0.70 | 653 | 3 | 0.03 | 11 | 0.12 | 23 | 18 | 0.15 | 217 | 163 |
| 113 | SOIL | 110947 | 5 | 0.2 | 6.28 | 60 | 358 | 1.2 | 2 | 0.03 | 1.5 | 56 | 14 | 3 | 16 | 3.68 | 12 | 2.00 | 20 | 26 | 0.62 | 918 | 2 | 0.02 | 6 | 0.07 | 34 | 10 | 0.11 | 125 | 148 |
| 114 | SOIL | 110948 | 5 | 1.2 | 3.88 | 49 | 829 | 1.4 | 4 | 0.18 | 2.7 | 51 | 13 | 8 | 15 | 4.20 | 18 | 1.24 | 20 | 14 | 0.35 | 2833 | 2 | 0.03 | 8 | 0.28 | 49 | 17 | 0.14 | 124 | 213 |
| 115 | | 110949 | 5 | 0.8 | 4.12 | 38 | 498 | 0.7 | 2 | 0.07 | 1.5 | 24 | 11 | 6 | 14 | 3.81 | 12 | 1.86 | 11 | 5 | 0.38 | 2135 | 1 | 0.02 | 7 | 0.17 | 28 | 14 | 0.15 | 161 | 108 |
| 116 | | 123201 | 5 | 0.2 | 5.12 | 56 | 1139 | 1.1 | 7 | 0.36 | 1.7 | 45 | 18 | 5 | 38 | 4.56 | 20 | 1.84 | 24 | 47 | 1.04 | 1592 | 2 | 0.03 | 10 | 0.12 | 28 | 26 | 0.13 | 138 | 115 |
| 117 | | 123202 | 5 | 0.2 | 6.67 | 113 | 1028 | 1.9 | 5 | 0.32 | 1.8 | 52 | 16 | 4 | 24 | 3.60 | 20 | 2.91 | 26 | 31 | 0.84 | 1712 | 5 | 0.03 | 9 | 0.10 | 40 | 21 | 0.09 | 102 | 109 |
| 118 | SOIL | 123203 | 5 | 0.2 | 7.12 | 163 | 2034 | 2.1 | 5 | 0.14 | 3.2 | 71 | 27 | 7 | 31 | 4.64 | 20 | 2.42 | 32 | 39 | 0.53 | 9583 | 9 | 0.03 | 12 | 0.18 | 39 | 32 | 0.09 | 155 | 171 |
| 119 | SOIL | 123204 | 5 | 0.2 | 7.05 | 109 | 1246 | 1.9 | 6 | 0.36 | 2.0 | 54 | 18 | 6 | 27 | 3.98 | 21 | 2.66 | 23 | 45 | 0.84 | 3390 | 4 | 0.03 | 9 | 0.17 | 25 | 33 | 0.09 | 110 | 100 |
| 120 | | 123205 | 5 | 0.2 | 6.18 | 40 | 931 | 1.5 | 2 | 0.08 | 1.2 | 43 | 10 | 6 | 18 | 3.46 | 14 | 2.49 | 23 | 26 | 0.51 | 1560 | 2 | 0.03 | 6 | 0.12 | 18 | 15 | 0.09 | 119 | 84 |
| 121 | | 123206 | 5 | 0.2 | 5.12 | 44 | 907 | 1.9 | 3 | 0.24 | 1.0 | 43 | 11 | 4 | 17 | 2.73 | 17 | 2.02 | 25 | 34 | 0.55 | 1013 | 2 | 0.04 | 7 | 0.15 | 11 | 30 | 0.09 | 95 | 87 |
| 122 | | 123207 | 5 | 0.2 | 6.00 | 113 | 1248 | 2.0 | 5 | 0.49 | 2.1 | 66 | 22 | 4 | 29 | 3.79 | 24 | 2.09 | 34 | 46 | 0.61 | 2846 | 9 | 0.04 | 9 | 0.12 | 26 | 43 | 0.10 | 150 | 181 |
| 123 | SOIL | 123208 | 5 | 0.2 | 5.63 | 50 | 967 | 1.4 | 2 | 0.42 | 1.8 | 42 | 11 | 6 | 14 | 3.56 | 23 | 2.00 | 18 | 30 | 0.44 | 1448 | 7 | 0.04 | 7 | 0.17 | 12 | 50 | 0.11 | 113 | 84 |
| 124 | SOIL | 123209 | 5 | 0.2 | 6.20 | 94 | 931 | 1.6 | 2 | 0.14 | 1.3 | 54 | 14 | 6 | 17 | 3.55 | 17 | 1.97 | 24 | 81 | 0.51 | 1502 | 10 | 0.05 | 7 | 0.21 | 14 | 33 | 0.11 | 147 | 135 |
| 125 | SOIL | 123210 | 5 | 0.2 | 6.36 | 78 | 886 | 1.8 | 7 | 0.24 | 2.8 | 84 | 22 | 6 | 34 | 4.49 | 23 | 1.80 | 31 | 40 | 0.56 | 2628 | 7 | 0.07 | 11 | 0.28 | 21 | 29 | 0.11 | 152 | 146 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 126 SOIL | 123211 | 5 | 0.2 | 5.81 | 68 | 731 | 1.8 | 2 | 0.10 | 1.8 | 65 | 17 | 7 | 22 | 4.04 | 16 | 1.46 | 21 | 41 | 0.44 | 2020 | 6 | 0.05 | 6 | 0.31 | 14 | 25 | 0.11 | 163 | 117 |
| 127 | 123212 | 5 | 0.2 | 5.99 | 76 | 1021 | 1.8 | 3 | 0.22 | 2.0 | 60 | 21 | 5 | 28 | 4.13 | 21 | 1.88 | 27 | 46 | 0.63 | 2387 | 4 | 0.06 | 10 | 0.12 | 15 | 29 | 0.10 | 163 | 115 |
| 128 SOIL | 123213 | 5 | 0.2 | 6.12 | 59 | 1188 | 1.6 | 2 | 0.26 | 1.5 | 63 | 15 | 6 | 18 | 3.57 | 20 | 2.10 | 27 | 37 | 0.54 | 1733 | 3 | 0.05 | 9 | 0.11 | 12 | 30 | 0.08 | 114 | 103 |
| 129 SOIL | 123214 | 5 | 0.2 | 4.81 | 50 | 808 | 1.2 | 3 | 0.26 | 1.4 | 41 | 14 | 6 | 20 | 3.69 | 17 | 1.64 | 21 | 45 | 0.71 | 1417 | 2 | 0.04 | 6 | 0.11 | 14 | 23 | 0.10 | 120 | 98 |
| 130 | 123215 | 5 | 0.2 | 5.42 | 59 | 1035 | 1.3 | 5 | 0.38 | 1.3 | 41 | 18 | 7 | 24 | 3.71 | 20 | 1.84 | 22 | 45 | 0.65 | 1629 | 3 | 0.04 | 9 | 0.11 | 12 | 34 | 0.08 | 124 | 95 |
| 131 | 123216 | 5 | 0.2 | 4.61 | 61 | 917 | 1.4 | 3 | 0.37 | 2.4 | 35 | 20 | 7 | 21 | 4.18 | 18 | 1.40 | 16 | 26 | 0.33 | 6951 | 5 | 0.04 | 10 | 0.27 | 22 | 40 | 0.10 | 147 | 123 |
| 132 | 123217 | 5 | 0.2 | 4.31 | 63 | 918 | 1.2 | 3 | 0.67 | 1.3 | 43 | 14 | 4 | 24 | 3.29 | 20 | 1.53 | 21 | 38 | 0.56 | 1440 | 3 | 0.04 | 8 | 0.12 | 23 | 44 | 0.09 | 102 | 87 |
| 133 SOIL | 125081 | 5 | 0.2 | 4.00 | 49 | 277 | 1.3 | 2 | 0.23 | 1.2 | 50 | 12 | 6 | 22 | 3.62 | 14 | 1.21 | 22 | 25 | 0.63 | 1209 | 3 | 0.04 | 10 | 0.12 | 24 | 45 | 0.15 | 106 | 105 |
| 134 SOIL | 125082 | 5 | 0.2 | 3.96 | 62 | 287 | 1.2 | 3 | 0.24 | 1.3 | 54 | 13 | 8 | 28 | 3.62 | 15 | 1.13 | 25 | 24 | 0.68 | 944 | 3 | 0.03 | 12 | 0.09 | 29 | 48 | 0.16 | 103 | 106 |
| 135 SOIL | 125083 | 5 | 0.2 | 5.14 | 56 | 678 | 2.2 | 11 | 0.16 | 6.0 | 82 | 33 | 6 | 37 | 7.28 | 23 | 1.69 | 36 | 43 | 0.74 | 3602 | 8 | 0.02 | 16 | 0.19 | 47 | 23 | 0.09 | 212 | 272 |
| 136 | 125084 | 45 | 0.2 | 8.67 | 59 | 607 | 2.6 | 4 | 0.21 | 1.9 | 63 | 15 | 2 | 11 | 4.62 | 20 | 2.87 | 29 | 10 | 0.54 | 894 | 4 | 0.02 | 9 | 0.11 | 21 | 20 | 0.07 | 101 | 66 |
| 137 | 125085 | 5 | 0.2 | 5.67 | 56 | 362 | 1.6 | 3 | 0.07 | 1.3 | 61 | 16 | 6 | 113 | 4.30 | 13 | 2.01 | 22 | 27 | 0.71 | 1120 | 3 | 0.02 | 10 | 0.16 | 21 | 17 | 0.10 | 142 | 62 |
| 138 SOIL | 125086 | 5 | 0.2 | 5.67 | 47 | 606 | 2.1 | 2 | 0.16 | 1.3 | 58 | 9 | 4 | 10 | 3.84 | 16 | 2.29 | 30 | 17 | 0.51 | 838 | 2 | 0.02 | 8 | 0.12 | 16 | 19 | 0.07 | 93 | 58 |
| 139 SOIL | 125087 | 5 | 0.2 | 6.72 | 60 | 735 | 1.6 | 2 | 0.23 | 1.2 | 50 | 7 | 3 | 12 | 3.38 | 17 | 2.38 | 23 | 13 | 0.40 | 439 | 5 | 0.02 | 7 | 0.13 | 15 | 20 | 0.08 | 91 | 64 |
| 140 | 125089 | 5 | 0.2 | 4.38 | 38 | 403 | 0.7 | 2 | 0.10 | 0.5 | 31 | 5 | 4 | 8 | 2.22 | 10 | 1.67 | 17 | 6 | 0.29 | 316 | 1 | 0.02 | 4 | 0.11 | 32 | 28 | 0.12 | 86 | 70 |
| 141 | 125090 | 5 | 1.8 | 4.23 | 50 | 828 | 1.3 | 4 | 0.25 | 2.0 | 36 | 18 | 7 | 21 | 3.87 | 15 | 1.49 | 16 | 20 | 0.68 | 1689 | 3 | 0.02 | 9 | 0.14 | 58 | 29 | 0.16 | 130 | 128 |
| 142 | 125091 | 5 | 1.0 | 4.44 | 41 | 491 | 0.8 | 3 | 0.16 | 1.2 | 45 | 12 | 9 | 12 | 3.60 | 12 | 0.98 | 23 | 16 | 0.41 | 1117 | 2 | 0.04 | 8 | 0.18 | 68 | 42 | 0.24 | 101 | 88 |
| 143 SOIL | 125092 | 5 | 0.2 | 5.61 | 51 | 821 | 1.5 | 2 | 0.32 | 1.1 | 63 | 11 | 1 | 12 | 2.79 | 18 | 2.63 | 27 | 14 | 0.43 | 863 | 1 | 0.01 | 8 | 0.09 | 31 | 13 | 0.07 | 80 | 109 |
| 144 SOIL | 125093 | 5 | 0.2 | 5.38 | 48 | 369 | 1.0 | 2 | 0.12 | 1.0 | 42 | 10 | 5 | 12 | 3.34 | 12 | 1.81 | 23 | 14 | 0.52 | 732 | 1 | 0.03 | 7 | 0.10 | 26 | 26 | 0.17 | 95 | 100 |
| 145 | 125094 | 5 | 0.2 | 5.13 | 34 | 425 | 1.6 | 4 | 0.31 | 1.0 | 55 | 10 | 1 | 10 | 2.74 | 15 | 2.51 | 31 | 11 | 0.47 | 941 | 1 | 0.02 | 5 | 0.09 | 27 | 11 | 0.07 | 81 | 108 |
| 146 | 125095 | 5 | 1.0 | 4.93 | 74 | 828 | 1.3 | 5 | 0.39 | 2.0 | 53 | 20 | 4 | 28 | 4.25 | 18 | 2.16 | 26 | 27 | 1.01 | 1599 | 3 | 0.02 | 9 | 0.11 | 46 | 33 | 0.15 | 154 | 166 |
| 147 | 125096 | 5 | 1.0 | 4.91 | 54 | 771 | 1.4 | 5 | 0.33 | 1.6 | 65 | 15 | 4 | 21 | 3.43 | 18 | 1.71 | 38 | 23 | 0.58 | 2627 | 1 | 0.02 | 9 | 0.14 | 32 | 17 | 0.10 | 122 | 172 |
| 148 SOIL | 125097 | 5 | 0.2 | 4.63 | 40 | 599 | 0.7 | 2 | 0.04 | 0.9 | 29 | 9 | 4 | 15 | 3.00 | 11 | 1.34 | 15 | 13 | 0.42 | 1217 | 1 | 0.02 | 6 | 0.10 | 40 | 18 | 0.11 | 93 | 111 |
| 149 SOIL | 125098 | 5 | 0.2 | 4.69 | 39 | 631 | 0.7 | 3 | 0.07 | 1.1 | 25 | 7 | 6 | 14 | 3.30 | 14 | 1.75 | 13 | 8 | 0.48 | 653 | 1 | 0.02 | 8 | 0.14 | 29 | 12 | 0.15 | 120 | 92 |
| 151 | 125099 | 5 | 0.4 | 3.28 | 32 | 381 | 0.8 | 3 | 0.07 | 1.3 | 31 | 6 | 6 | 13 | 4.05 | 17 | 1.13 | 16 | 6 | 0.28 | 584 | 2 | 0.04 | 6 | 0.29 | 18 | 16 | 0.16 | 89 | 69 |
| 152 SOIL | 125100 | 5 | 0.8 | 5.27 | 53 | 707 | 0.9 | 7 | 0.24 | 2.4 | 48 | 21 | 6 | 32 | 4.78 | 21 | 2.04 | 14 | 16 | 0.68 | 5061 | 3 | 0.01 | 9 | 0.25 | 31 | 22 | 0.14 | 152 | 165 |
| 153 SILT | 125016 | 5 | 0.2 | 4.47 | 32 | 748 | 1.3 | 5 | 1.22 | 1.0 | 60 | 16 | 20 | 42 | 3.01 | 23 | 1.09 | 26 | 20 | 0.78 | 1265 | 2 | 0.08 | 23 | 0.16 | 14 | 156 | 0.13 | 117 | 100 |
| 154 SILT | 125017 | 5 | 0.2 | 5.44 | 40 | 788 | 1.4 | 7 | 0.76 | 1.3 | 61 | 19 | 22 | 39 | 3.94 | 23 | 1.53 | 24 | 23 | 1.12 | 1504 | 3 | 0.07 | 36 | 0.14 | 23 | 100 | 0.16 | 136 | 136 |
| 155 SILT | 125018 | 5 | 0.2 | 4.64 | 39 | 768 | 1.2 | 5 | 1.22 | 1.8 | 63 | 16 | 26 | 39 | 3.86 | 25 | 1.12 | 23 | 22 | 1.08 | 1148 | 3 | 0.08 | 33 | 0.16 | 21 | 140 | 0.21 | 137 | 144 |
| 156 | 125019 | 5 | 0.4 | 6.24 | 50 | 1369 | 1.6 | 5 | 0.71 | 3.2 | 66 | 17 | 9 | 44 | 4.20 | 27 | 2.04 | 26 | 24 | 0.91 | 1422 | 7 | 0.12 | 33 | 0.14 | 30 | 102 | 0.16 | 149 | 229 |
| 157 | 125020 | 5 | 0.4 | 6.22 | 56 | 933 | 1.3 | 6 | 0.83 | 2.3 | 53 | 14 | 13 | 27 | 4.07 | 26 | 1.52 | 23 | 24 | 0.87 | 1978 | 6 | 0.10 | 26 | 0.16 | 25 | 126 | 0.19 | 160 | 175 |
| 158 | 125021 | 15 | 0.8 | 4.34 | 44 | 504 | 1.1 | 4 | 0.39 | 1.2 | 55 | 11 | 7 | 28 | 3.66 | 17 | 1.21 | 22 | 28 | 0.73 | 872 | 2 | 0.03 | 8 | 0.12 | 95 | 41 | 0.16 | 117 | 154 |
| 159 SILT | 125022 | 8 | 1.6 | 5.97 | 47 | 1071 | 1.6 | 6 | 0.62 | 2.7 | 66 | 17 | 6 | 47 | 4.13 | 24 | 2.31 | 32 | 32 | 0.84 | 2896 | 2 | 0.03 | 9 | 0.12 | 72 | 48 | 0.18 | 145 | 260 |
| 160 SILT | 125023 | 5 | 2.0 | 7.40 | 97 | 1400 | 1.5 | 6 | 0.88 | 1.5 | 38 | 12 | 8 | 26 | 3.02 | 29 | 2.77 | 17 | 64 | 0.85 | 1299 | 3 | 0.03 | 7 | 0.14 | 60 | 80 | 0.07 | 115 | 383 |
| 161 | 125024 | 10 | 1.6 | 4.62 | 84 | 1138 | 1.3 | 2 | 1.17 | 1.5 | 31 | 7 | 7 | 15 | 1.59 | 23 | 1.41 | 18 | 40 | 0.42 | 1426 | 3 | 0.02 | 5 | 0.18 | 443 | 63 | 0.04 | 63 | 260 |
| 162 | 125025 | 5 | 0.6 | 6.03 | 111 | 1007 | 1.5 | 2 | 0.65 | 2.4 | 52 | 11 | 8 | 18 | 2.69 | 22 | 1.99 | 25 | 45 | 0.61 | 1785 | 7 | 0.02 | 8 | 0.12 | 29 | 44 | 0.07 | 86 | 257 |
| 163 | 125026 | 5 | 0.4 | 6.00 | 44 | 867 | 1.9 | 8 | 1.24 | 1.8 | 78 | 20 | 18 | 49 | 4.58 | 31 | 1.80 | 31 | 33 | 1.76 | 2086 | 3 | 0.05 | 26 | 0.17 | 24 | 228 | 0.22 | 164 | 117 |
| 164 SILT | 125027 | 5 | 0.4 | 4.46 | 35 | 581 | 1.2 | 9 | 2.22 | 1.7 | 69 | 17 | 16 | 31 | 4.59 | 22 | 0.97 | 25 | 22 | 1.18 | 1064 | 4 | 0.07 | 24 | 0.13 | 21 | 262 | 0.38 | 171 | 97 |
| 165 SILT | 125028 | 5 | 0.4 | 4.32 | 42 | 678 | 1.1 | 9 | 2.37 | 1.9 | 62 | 17 | 13 | 28 | 4.53 | 24 | 0.95 | 23 | 22 | 1.19 | 1023 | 3 | 0.10 | 23 | 0.12 | 22 | 249 | 0.35 | 164 | 96 |
| 166 | 125029 | 5 | 0.8 | 4.84 | 62 | 742 | 1.6 | 6 | 0.44 | 2.1 | 39 | 42 | 88 | 64 | 4.01 | 22 | 1.21 | 17 | 31 | 0.84 | 1602 | 3 | 0.05 | 109 | 0.20 | 27 | 65 | 0.10 | 111 | 187 |
| 167 | 125030 | 5 | 1.0 | 4.86 | 59 | 882 | 1.9 | 8 | 1.68 | 3.6 | 43 | 29 | 45 | 234 | 4.01 | 31 | 1.29 | 24 | 26 | 1.35 | 1568 | 4 | 0.06 | 144 | 0.14 | 33 | 269 | 0.13 | 135 | 403 |
| 168 | 125051 | 5 | 1.6 | 4.60 | 62 | 982 | 1.2 | 4 | 1.02 | 2.5 | 67 | 15 | 6 | 33 | 3.16 | 25 | 1.68 | 26 | 26 | 0.89 | 2846 | 4 | 0.03 | 9 | 0.14 | 93 | 85 | 0.14 | 116 | 248 |
| 169 SILT | 125052 | 25 | 0.8 | 4.76 | 58 | 813 | 1.2 | 4 | 0.68 | 2.0 | 53 | 16 | 7 | 32 | 4.19 | 20 | 1.83 | 25 | 39 | 0.86 | 1771 | 3 | 0.03 | 11 | 0.11 | 42 | 84 | 0.20 | 137 | 186 |

| T.T. No. | | SAMP 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 | 7–025 Fig. 5 of 5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 170 | SILT | 125053 | 5 | 0.8 | 4.98 | 78 | 1230 | 1.2 | 6 | 1.14 | 2.2 | 62 | 16 | 7 | 34 | 3.49 | 26 | 1.66 | 25 | 40 | 0.70 | 2793 | 4 | 0.03 | 9 | 0.16 | 72 | 111 | 0.15 | 134 | 220 | |
| 171 | | 125054 | 5 | 0.8 | 3.68 | 102 | 1081 | 1.5 | 14 | 0.65 | 6.7 | 60 | 34 | 11 | 28 | 6.41 | 31 | 1.40 | 29 | 24 | 0.55 | 16718 | 11 | 0.03 | 12 | 0.12 | 51 | 71 | 0.12 | 138 | 232 | |
| 172 | | 125055 | 5 | 0.6 | 1.98 | 87 | 884 | 1.1 | 2 | 1.18 | 3.6 | 46 | 9 | 8 | 20 | 2.41 | 22 | 0.86 | 23 | 15 | 0.31 | 1856 | 2 | 0.02 | 6 | 0.16 | 407 | 105 | 0.07 | 79 | 131 | |
| 173 | | 125056 | 5 | 0.4 | 4.44 | 123 | 866 | 1.8 | 3 | 0.60 | 3.3 | 58 | 20 | 8 | 18 | 3.35 | 20 | 1.36 | 29 | 48 | 0.63 | 4184 | 12 | 0.02 | 9 | 0.12 | 28 | 42 | 0.13 | 116 | 142 | |
| 174 | SILT | 125057 | 5 | 1.2 | 5.61 | 124 | 708 | 1.2 | 6 | 0.60 | 1.9 | 43 | 14 | 7 | 28 | 3.61 | 23 | 1.88 | 19 | 59 | 0.77 | 1165 | 5 | 0.03 | 9 | 0.11 | 53 | 45 | 0.14 | 140 | 227 | |
| 175 | SILT | 125058 | 5 | 3.6 | 5.64 | 80 | 1004 | 1.4 | 5 | 0.48 | 3.5 | 56 | 19 | 4 | 39 | 4.30 | 23 | 2.37 | 27 | 30 | 0.74 | 3034 | 3 | 0.03 | 9 | 0.11 | 113 | 35 | 0.18 | 134 | 361 | |
| 176 | | 125059 | 5 | 7.0 | 5.48 | 123 | 911 | 1.5 | 8 | 0.68 | 7.3 | 60 | 19 | 5 | 47 | 4.11 | 27 | 1.87 | 30 | 50 | 0.82 | 4333 | 4 | 0.03 | 10 | 0.11 | 262 | 63 | 0.16 | 142 | 558 | |
| 177 | | 125060 | 5 | 1.0 | 4.26 | 81 | 860 | 1.3 | 5 | 0.56 | 3.0 | 52 | 16 | 3 | 26 | 3.75 | 23 | 1.70 | 24 | 30 | 0.64 | 2733 | 2 | 0.02 | 7 | 0.11 | 80 | 44 | 0.13 | 117 | 313 | |
| 178 | | 125061 | 5 | 0.2 | 5.16 | 169 | 1003 | 1.2 | 4 | 0.70 | 1.9 | 51 | 13 | 6 | 14 | 3.91 | 26 | 1.69 | 23 | 31 | 0.58 | 2241 | 10 | 0.03 | 7 | 0.17 | 94 | 50 | 0.13 | 143 | 282 | |
| 179 | SILT | 125062 | 5 | 4.2 | 4.65 | 116 | 754 | 1.4 | 3 | 0.52 | 2.7 | 47 | 12 | 5 | 18 | 3.52 | 22 | 1.55 | 22 | 48 | 0.60 | 1439 | 5 | 0.02 | 7 | 0.13 | 140 | 43 | 0.13 | 123 | 431 | |
| 180 | SILT | 125063 | 5 | 1.4 | 2.48 | 188 | 1063 | 1.2 | 7 | 1.11 | 11.6 | 38 | 22 | 7 | 19 | 3.98 | 26 | 0.93 | 22 | 20 | 0.43 | 6161 | 13 | 0.03 | 7 | 0.15 | 60 | 72 | 0.07 | 98 | 378 | |
| 181 | | 125064 | 5 | 1.4 | 3.90 | 105 | 858 | 1.9 | 4 | 0.71 | 7.2 | 64 | 15 | 10 | 20 | 3.34 | 25 | 1.31 | 27 | 44 | 0.55 | 3446 | 7 | 0.03 | 8 | 0.12 | 64 | 44 | 0.07 | 103 | 349 | |
| 182 | | 125076 | 5 | 0.6 | 4.78 | 57 | 582 | 1.6 | 4 | 0.96 | 0.8 | 45 | 7 | 11 | 13 | 2.23 | 26 | 1.58 | 19 | 38 | 0.63 | 301 | 3 | 0.03 | 7 | 0.17 | 17 | 61 | 0.09 | 93 | 107 | |
| 183 | SILT | 125077 | 5 | 0.4 | 4.58 | 43 | 437 | 1.2 | 4 | 0.58 | 1.1 | 40 | 13 | 6 | 15 | 3.33 | 23 | 2.06 | 19 | 23 | 0.83 | 1083 | 2 | 0.02 | 7 | 0.13 | 18 | 34 | 0.12 | 114 | 132 | |
| 184 | SILT | 125078 | 5 | 0.4 | 5.94 | 61 | 854 | 1.4 | 2 | 0.40 | 2.0 | 49 | 14 | 3 | 17 | 3.11 | 22 | 2.31 | 23 | 23 | 0.63 | 1378 | 4 | 0.02 | 7 | 0.11 | 26 | 19 | 0.09 | 108 | 165 | |
| 185 | SILT | 125088 | 5 | 0.4 | 7.12 | 130 | 1330 | 2.0 | 6 | 0.65 | 2.8 | 70 | 24 | 5 | 28 | 4.36 | 26 | 2.48 | 33 | 46 | 0.70 | 2780 | 9 | 0.05 | 10 | 0.13 | 134 | 52 | 0.11 | 154 | 155 | |
| 186 | | 125126 | 5 | 0.4 | 3.73 | 37 | 590 | 0.9 | 7 | 2.78 | 1.3 | 44 | 14 | 5 | 22 | 3.95 | 24 | 1.06 | 17 | 37 | 1.14 | 967 | 1 | 0.04 | 8 | 0.09 | 19 | 103 | 0.17 | 132 | 82 | |
| 187 | | 125127 | 5 | 0.4 | 3.78 | 101 | 907 | 0.9 | 7 | 1.92 | 1.7 | 47 | 13 | 5 | 22 | 3.92 | 26 | 1.16 | 18 | 43 | 0.69 | 983 | 1 | 0.05 | 8 | 0.10 | 21 | 79 | 0.14 | 109 | 104 | |
| 188 | SILT | 125128 | 5 | 0.4 | 5.91 | 116 | 903 | 1.4 | 6 | 0.73 | 1.9 | 53 | 18 | 4 | 23 | 3.96 | 26 | 2.19 | 24 | 35 | 0.69 | 1495 | 7 | 0.04 | 9 | 0.12 | 27 | 63 | 0.11 | 142 | 109 | |

ACME ANA[illegible]TICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE(604)[illegible]

# GEOCHEMICAL [illegible]ALYSIS CERTIFICATE

**Noranda Exploration Co. Ltd. PROJECT 9007-031 281** File # 90-2402

P.O. Box 2380, 1050 Davie St., 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 125267 | 1 | 33 | 5 | 49 | .7 | 5 | 10 | 794 | 3.22 | 12 | 5 | ND | 3 | 53 | .2 | 2 | 2 | 43 | 3.52 | .078 | 8 | 3 | .10 | 837 | .02 | 17 | .68 | .02 | .22 | 1 | 5 |
| 125268 | 721 | 1 | 56 | 57 | .1 | 2 | 1 | 108 | 1.94 | 1050 | 5 | ND | 9 | 9 | .2 | 13 | 2 | 5 | .19 | .046 | 25 | 1 | .09 | 93 | .21 | 14 | .88 | .01 | .19 | 1 | 1 |
| 125269 | 2 | 5 | 6 | 76 | .2 | 5 | 4 | 677 | 2.37 | 7 | 5 | ND | 6 | 33 | .3 | 2 | 2 | 13 | 1.05 | .052 | 15 | 5 | .44 | 48 | .20 | 8 | 1.29 | .04 | .10 | 1 | 1 |
| 125270 | 4 | 11 | 3 | 15 | .4 | 6 | 2 | 290 | 1.62 | 2 | 5 | ND | 15 | 5 | .2 | 2 | 2 | 11 | .09 | .033 | 36 | 5 | .02 | 115 | .01 | 9 | .32 | .01 | .21 | 2 | 2 |
| 125271 | 325 | 123 | 223 | 118 | 4.8 | 9 | 9 | 162 | 2.13 | 18 | 10 | ND | 8 | 5 | .2 | 18 | 2 | 7 | .04 | .023 | 26 | 7 | .07 | 135 | .01 | 5 | .42 | .01 | .14 | 1 | 32 |
| 125272 | 3 | 4 | 5 | 9 | .4 | 7 | 2 | 652 | 1.75 | 2 | 5 | ND | 7 | 31 | .2 | 2 | 2 | 22 | 2.25 | .050 | 25 | 6 | .03 | 63 | .04 | 7 | .23 | .02 | .14 | 1 | 1 |
| 125273 | 6 | 12 | 23 | 16 | .9 | 5 | 5 | 257 | 3.43 | 19 | 5 | ND | 11 | 5 | .2 | 2 | 2 | 6 | .08 | .053 | 19 | 4 | .26 | 181 | .01 | 6 | .85 | .01 | .17 | 1 | 5 |
| 125274 | 2 | 60 | 31 | 84 | .5 | 4 | 11 | 127 | 2.62 | 16 | 5 | ND | 11 | 8 | .2 | 2 | 2 | 13 | .09 | .054 | 29 | 4 | .29 | 88 | .01 | 3 | .81 | .03 | .13 | 1 | 1 |
| 125275 | 1 | 7 | 7 | 52 | .8 | 6 | 9 | 962 | 4.96 | 6 | 5 | ND | 2 | 11 | .2 | 2 | 2 | 80 | .53 | .074 | 7 | 6 | 1.44 | 68 | .10 | 6 | 1.84 | .03 | .14 | 1 | 1 |
| 125284 | 2 | 1 | 7 | 55 | .3 | 6 | 1 | 1167 | 1.75 | 2 | 5 | ND | 2 | 17 | .2 | 2 | 2 | 3 | .38 | .048 | 40 | 6 | .03 | 46 | .02 | 3 | .32 | .05 | .15 | 1 | 1 |
| 125293 | 8 | 19 | 22 | 64 | .7 | 3 | 9 | 408 | 2.71 | 69 | 5 | ND | 2 | 30 | .2 | 2 | 2 | 5 | .18 | .064 | 14 | 2 | .04 | 290 | .01 | 8 | .32 | .01 | .16 | 1 | 1 |
| 125294 | 9 | 8 | 37 | 19 | 1.4 | 4 | 3 | 56 | 4.15 | 36 | 5 | ND | 7 | 12 | .2 | 4 | 2 | 8 | .06 | .068 | 17 | 4 | .04 | 72 | .01 | 3 | .34 | .02 | .17 | 1 | 56 |
| 125297 | 1 | 47 | 7 | 123 | .5 | 6 | 10 | 1441 | 3.95 | 19 | 5 | ND | 4 | 54 | .3 | 2 | 2 | 27 | 1.77 | .111 | 18 | 3 | .33 | 210 | .01 | 7 | 1.23 | .01 | .19 | 1 | 5 |
| 125298 | 19 | 414 | 31335 | 1107 | 78.1 | 11 | 53 | 1090 | 4.33 | 103 | 5 | ND | 1 | 141 | 53.6 | 18 | 2 | 4 | 2.25 | .041 | 8 | 3 | .02 | 16 | .01 | 3 | .19 | .01 | .14 | 1 | 4 |
| 125299 | 1 | 1 | 200 | 70 | .2 | 2 | 2 | 1058 | 2.46 | 2 | 5 | ND | 2 | 7 | .2 | 2 | 2 | 2 | .09 | .052 | 38 | 2 | .07 | 78 | .01 | 2 | .47 | .02 | .11 | 1 | 1 |
| STANDARD C/AU-R | 18 | 57 | 36 | 133 | 7.4 | 72 | 31 | 1043 | 4.11 | 39 | 17 | 7 | 40 | 52 | 18.7 | 15 | 19 | 60 | .52 | .095 | 40 | 61 | .96 | 183 | .09 | 37 | 2.01 | .06 | .14 | 13 | 480 |

MJ

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.

DATE RECEIVED: JUL 10 1990 DATE REPORT MAILED: July 14/90 SIGNED BY. C. Leong .D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

✓ ASSAY RECOMMENDED

RECEIVED JUL 31 1990

Silt & Soil to follow

Copy to Rob

PC

ACME AN[illegible]YTICAL LABORATORIES LTD. [illegible] E. HASTINGS ST. [illegible]

## GEOCHEMICAL [illegible]ALYSIS CERTIFICATE

**Noranda Exploration Co. Ltd. PROJECT 9007-025 281** File # 90-2333 Page 1

P.O. Box 2380, 1050 Davie St., 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 110736 | 3 | 3 | 14 | 40 | .1 | 8 | 2 | 178 | .97 | 2 | 5 | ND | 1 | 9 | .2 | 2 | 2 | 4 | .27 | .016 | 7 | 7 | .05 | 213 | .02 | 5 | .40 | .01 | .21 | 1 | 2 |
| 110737 | 7 | 19 | 5 | 82 | .3 | 5 | 20 | 625 | 7.67 | 15 | 5 | ND | 3 | 6 | .3 | 2 | 2 | 46 | .26 | .129 | 6 | 4 | 2.08 | 3 | .01 | 9 | 1.89 | .02 | .23 | 1 | 2 |
| 110738 | 18 | 3 | 9 | 9 | .2 | 2 | 1 | 311 | .88 | 2 | 5 | ND | 1 | 27 | .2 | 2 | 3 | 8 | 1.84 | .048 | 10 | 3 | .02 | 157 | .08 | 11 | .42 | .03 | .24 | 1 | 1 |
| 110739 | 6 | 10 | 35 | 79 | .3 | 6 | 9 | 536 | 7.34 | 101 | 5 | ND | 1 | 20 | .2 | 10 | 5 | 199 | .66 | .019 | 11 | 6 | .13 | 831 | .01 | 5 | .71 | .01 | .13 | 10 | 3 |
| 110740 | 59 | 29 | 118 | 14 | 2.2 | 2 | 13 | 52 | 7.74 | 2318 | 5 | ND | 2 | 5 | .2 | 111 | 2 | 22 | .07 | .021 | 4 | 2 | .02 | 10 | .01 | 6 | .30 | .01 | .22 | 1 | 3 |
| 110741 | 2 | 7 | 25 | 35 | .3 | 5 | 4 | 433 | 1.17 | 15 | 5 | ND | 1 | 58 | .2 | 4 | 2 | 4 | 2.13 | .032 | 12 | 5 | .03 | 655 | .01 | 6 | .30 | .01 | .17 | 1 | 2 |
| 110742 | 6 | 3 | 10 | 180 | .1 | 1 | 5 | 429 | 2.89 | 33 | 5 | ND | 1 | 62 | .2 | 8 | 2 | 6 | .03 | .012 | 5 | 4 | .01 | 1122 | .01 | 3 | .20 | .01 | .07 | 1 | 2 |
| 110743 | 94 | 16 | 174 | 58 | 3.8 | 6 | 4 | 27 | 2.58 | 739 | 5 | ND | 3 | 6 | .2 | 22 | 2 | 5 | .07 | .040 | 11 | 5 | .01 | 41 | .01 | 11 | .29 | .01 | .25 | 1 | 5 |
| 110744 | 5 | 3 | 17 | 37 | .2 | 5 | 2 | 332 | 1.27 | 91 | 5 | ND | 1 | 17 | .2 | 5 | 2 | 3 | .40 | .017 | 17 | 7 | .06 | 490 | .01 | 7 | .46 | .03 | .16 | 1 | 3 |
| 110745 | 3 | 3 | 22 | 27 | .1 | 8 | 2 | 421 | .87 | 3 | 5 | ND | 1 | 16 | .2 | 2 | 2 | 2 | .59 | .016 | 13 | 8 | .07 | 424 | .01 | 2 | .35 | .02 | .15 | 2 | 1 |
| 110746 | 2 | 4 | 14 | 40 | .1 | 3 | 2 | 859 | 1.04 | 10 | 5 | ND | 1 | 34 | .2 | 2 | 2 | 3 | 1.11 | .018 | 12 | 5 | .20 | 1814 | .02 | 2 | .51 | .01 | .14 | 1 | 4 |
| 110747 | 3 | 6 | 61 | 41 | .2 | 10 | 4 | 118 | 1.54 | 9 | 5 | ND | 2 | 4 | .2 | 2 | 2 | 3 | .04 | .020 | 8 | 7 | .01 | 286 | .01 | 8 | .23 | .01 | .18 | 1 | 2 |
| 110748 | 3 | 8 | 17 | 34 | .1 | 6 | 5 | 172 | 3.01 | 28 | 5 | ND | 2 | 7 | .2 | 2 | 2 | 33 | .16 | .065 | 9 | 8 | .06 | 126 | .01 | 10 | .82 | .01 | .20 | 2 | 2 |
| 110749 | 3 | 6 | 6 | 14 | .3 | 12 | 3 | 222 | .84 | 3 | 5 | ND | 2 | 14 | .2 | 2 | 2 | 3 | .18 | .022 | 11 | 9 | .01 | 611 | .01 | 10 | .25 | .01 | .18 | 1 | 6 |
| 110750 | 4 | 7 | 18 | 21 | .3 | 2 | 4 | 77 | 1.11 | 14 | 5 | ND | 1 | 3 | .2 | 3 | 2 | 4 | .05 | .020 | 12 | 5 | .02 | 154 | .01 | 10 | .41 | .01 | .20 | 2 | 4 |
| 110776 | 4 | 8 | 12 | 12 | .1 | 11 | 2 | 83 | 1.15 | 3 | 5 | ND | 2 | 4 | .2 | 2 | 2 | 3 | .04 | .019 | 8 | 8 | .01 | 207 | .01 | 6 | .21 | .01 | .18 | 2 | 2 |
| 110777 | 4 | 17 | 83 | 122 | 2.2 | 6 | 2 | 54 | 1.26 | 116 | 5 | ND | 2 | 18 | .3 | 8 | 2 | 3 | .01 | .022 | 13 | 7 | .01 | 318 | .01 | 9 | .21 | .01 | .18 | 1 | 5 |
| 110778 | 8 | 16 | 26 | 10 | 4.9 | 9 | 4 | 91 | 1.68 | 152 | 5 | ND | 2 | 24 | .2 | 8 | 2 | 10 | .06 | .037 | 11 | 9 | .01 | 308 | .01 | 3 | .35 | .01 | .21 | 1 | 2 |
| 110779 | 8 | 47 | 69 | 19 | 4.8 | 5 | 12 | 48 | 2.14 | 345 | 5 | ND | 1 | 53 | .2 | 19 | 2 | 6 | .07 | .045 | 10 | 4 | .01 | 28 | .01 | 4 | .28 | .01 | .19 | 2 | 3 |
| 110780 | 3 | 63 | 22 | 37 | .7 | 5 | 24 | 548 | 18.82 | 1257 | 5 | ND | 1 | 43 | 2.3 | 2 | 9 | 18 | 1.59 | .028 | 3 | 5 | 1.43 | 7 | .01 | 5 | 1.03 | .01 | .10 | 1 | 134 |
| 110815 | 4 | 11 | 16 | 47 | .1 | 6 | 7 | 684 | 2.70 | 10 | | | | | | | | 8 | 1.16 | .062 | 13 | 5 | .07 | 39 | .01 | 11 | .50 | .01 | .23 | 1 | 2 |
| 110816 | 1 | 12 | 2 | 71 | .1 | 3 | 7 | 892 | 2.65 | 2 | | | | | | | | 7 | .51 | .056 | 21 | 3 | .03 | 1395 | .01 | 11 | .46 | .01 | .31 | 1 | 3 |
| 110817 | 1 | 14 | 8 | 23 | .1 | 2 | 4 | 1002 | 2.00 | 2 | | | | | | | | 29 | 2.07 | .074 | 22 | 4 | .05 | 145 | .04 | 8 | .47 | .01 | .31 | 1 | 4 |
| 110818 | 3 | 13 | 13 | 65 | .2 | 6 | 12 | 617 | 6.78 | 26 | | | | | | | | 46 | .23 | .079 | 12 | 6 | .21 | 40 | .01 | 2 | 1.10 | .01 | .19 | 1 | 7 |
| 110819 | 3 | 2 | 7 | 106 | .1 | 5 | 7 | 1041 | 3.45 | 2 | | | | | | | | 27 | .47 | .084 | 24 | 6 | .23 | 140 | .01 | 7 | 1.33 | .01 | .36 | 1 | 2 |
| 110820 | 2 | 9 | 13 | 90 | .1 | 5 | 11 | 1327 | 6.31 | 420 | | | | | | | | 93 | .63 | .087 | 10 | 16 | 1.37 | 80 | .10 | 7 | 2.54 | .02 | .10 | 1 | 2 |
| 110821 | 1 | 17 | 9 | 101 | .6 | 9 | 15 | 880 | 6.37 | 88 | | | | | | | | 76 | .74 | .076 | 9 | 17 | 1.38 | 471 | .06 | 15 | 2.91 | .03 | .18 | 2 | 3 |
| 110822 | 1 | 2 | 2 | 148 | .1 | 4 | 21 | 1391 | 5.66 | 33 | | | | | | | | 132 | 1.81 | .061 | 5 | 5 | 2.37 | 88 | .24 | 9 | 1.88 | .02 | .10 | 1 | 4 |
| 110823 | 1 | 23 | 22 | 76 | .2 | 9 | 12 | 979 | 4.16 | 34 | | | | | | | | 63 | 1.93 | .071 | 10 | 15 | 1.60 | 260 | .16 | 11 | 2.13 | .02 | .24 | 1 | 2 |
| 110824 | 9 | 16 | 104 | 323 | .6 | 6 | 9 | 549 | 2.99 | 26 | | | | | | | | 18 | .22 | .069 | 9 | 5 | .77 | 174 | .01 | 18 | 1.70 | .01 | .25 | 1 | 4 |
| 110825 | 1 | 15 | 12 | 94 | .2 | 4 | 11 | 585 | 4.69 | 16 | 5 | ND | 1 | 17 | .2 | 3 | 2 | 46 | .37 | .041 | 11 | 4 | 1.33 | 211 | .19 | 24 | 2.61 | .01 | .29 | 1 | 8 |
| 110829 | 1 | 78 | 19 | 80 | .1 | 5 | 8 | 455 | 4.30 | 62 | 5 | ND | 2 | 16 | .2 | 10 | 4 | 32 | .16 | .056 | 20 | 4 | .86 | 106 | .01 | 2 | 1.62 | .03 | .16 | 2 | 2 |
| 110894 | 1 | 23 | 2 | 91 | .1 | 25 | 27 | 1262 | 5.63 | 10 | 5 | ND | 1 | 34 | 1.5 | 2 | 2 | 101 | 4.43 | .079 | 9 | 25 | 3.36 | 122 | .05 | 2 | 4.76 | .01 | .11 | 1 | 4 |
| 110926 RT-3 | 1 | 77 | 145 | 212 | .4 | 4 | 3 | 666 | 1.34 | 2 | 5 | ND | 2 | 21 | .8 | 2 | 2 | 7 | 1.70 | .038 | 14 | 3 | .04 | 394 | .01 | 9 | .43 | .02 | .23 | 1 | 3 |
| 110950 " | 1 | 9 | 8 | 84 | .1 | 5 | 7 | 712 | 2.84 | 7 | 5 | ND | 3 | 17 | .5 | 2 | 2 | 34 | .37 | .041 | 18 | 9 | 1.08 | 292 | .01 | 5 | 1.53 | .02 | .17 | 1 | 4 |
| STANDARD C/AU-R | 18 | 58 | 36 | 131 | 7.3 | 64 | 30 | 1023 | 4.00 | 42 | 21 | 7 | 36 | 47 | 17.3 | 15 | 22 | 57 | .52 | .096 | 36 | 55 | .93 | 173 | .07 | 36 | 1.92 | .06 | 14 | 12 | 480 |

Pan & silt & Soil to follow

RT4

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.

RECEIVED JUL 31 1990

**DATE RECEIVED:** JUL 6 1990 **DATE REPORT MAILED:** July 12/90 **SIGNED BY** C. L[illegible] D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

Copy to Rob

**Noranda Exploration Co. Ltd. PR. :CT 9007-025 281 FILE # 90-2333** 

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 125079 | 3 | 81 | 161 | 197 | 3.8 | 20 | 47 | 589 | 5.75 | 805 | 6 | ND | 2 | 7 | .6 | 28 | 2 | 53 | .13 | .069 | 6 | 4 | .40 | 25 | .01 | 6 | 1.45 | .01 | .20 | 1 | 2 |
| 125080 | 4 | 11 | 13 | 9 | .5 | 10 | 2 | 36 | 1.15 | 41 | 5 | ND | 4 | 7 | .2 | 2 | 2 | 5 | .05 | .027 | 7 | 7 | .01 | 284 | .01 | 2 | .20 | .01 | .17 | 1 | 2 |
| 125255 | 2 | 11 | 19 | 251 | .1 | 5 | 6 | 845 | 2.25 | 3 | 5 | ND | 4 | 50 | 1.2 | 2 | 2 | 12 | 2.80 | .058 | 19 | 3 | .10 | 166 | .01 | 7 | .54 | .02 | .24 | 1 | 1 |
| 125256 | 3 | 18 | 13 | 111 | .1 | 4 | 5 | 368 | 2.09 | 13 | 5 | ND | 4 | 36 | .5 | 3 | 2 | 13 | 1.35 | .064 | 20 | 4 | .39 | 293 | .05 | 7 | .92 | .01 | .22 | 1 | 2 |
| 125257 | 6 | 8 | 13 | 6 | .1 | 9 | 7 | 206 | 2.58 | 14 | 5 | ND | 11 | 5 | .2 | 3 | 2 | 7 | .05 | .037 | 22 | 5 | .15 | 160 | .01 | 6 | .62 | .01 | .20 | 1 | 8 |
| 125258 | 8 | 40 | 18 | 12 | .3 | 4 | 13 | 511 | 5.53 | 51 | 5 | ND | 3 | 17 | .2 | 2 | 2 | 25 | .59 | .154 | 28 | 2 | .34 | 79 | .01 | 4 | 1.27 | .01 | .18 | 1 | 8 |
| 125259 | 3 | 5 | 10 | 29 | .1 | 6 | 4 | 423 | 3.44 | 75 | 5 | ND | 3 | 56 | .5 | 2 | 2 | 39 | .77 | .054 | 19 | 5 | .98 | 418 | .01 | 7 | 1.14 | .03 | .12 | 1 | 3 |
| 125260 | 1 | 39 | 22 | 52 | .1 | 7 | 12 | 486 | 7.27 | 7 | 5 | ND | 2 | 13 | 1.2 | 2 | 2 | 64 | .51 | .153 | 8 | 4 | 1.17 | 25 | .36 | 4 | 1.74 | .01 | .18 | 2 | 4 |
| 125261 | 2 | 8 | 12 | 35 | .1 | 4 | 6 | 270 | 3.03 | 5 | 5 | ND | 8 | 10 | .2 | 2 | 3 | 19 | .15 | .064 | 22 | 4 | 1.01 | 215 | .01 | 2 | 1.37 | .02 | .18 | 1 | 3 |
| 125262 | 3 | 3 | 7 | 1 | .1 | 4 | 3 | 75 | 2.35 | 56 | 5 | ND | 11 | 13 | .2 | 2 | 2 | 6 | .16 | .038 | 30 | 3 | .03 | 93 | .01 | 5 | .28 | .01 | .22 | 1 | 3 |
| 125263 | 3 | 14 | 4 | 31 | .1 | 6 | 5 | 296 | 3.05 | 17 | 5 | ND | 4 | 35 | .2 | 2 | 2 | 49 | .58 | .119 | 27 | 4 | .98 | 383 | .01 | 2 | 1.53 | .02 | .13 | 1 | 3 |
| 125264 | 4 | 22 | 14 | 8 | .1 | 6 | 10 | 254 | 4.99 | 87 | 5 | ND | 8 | 18 | .4 | 2 | 2 | 46 | .24 | .088 | 23 | 6 | .93 | 143 | .01 | 9 | 1.31 | .03 | .09 | 1 | 2 |
| 125265 | 5 | 6 | 17 | 4 | .1 | 5 | 4 | 135 | 2.57 | 16 | 5 | ND | 11 | 5 | .2 | 2 | 2 | 13 | .02 | .044 | 17 | 3 | .02 | 271 | .01 | 4 | .32 | .01 | .18 | 1 | 1 |
| 125266 | 7 | 66 | 12 | 12 | .1 | 4 | 3 | 236 | 3.56 | 292 | 5 | ND | 8 | 23 | .2 | 10 | 2 | 17 | .60 | .041 | 21 | 4 | .40 | 104 | .01 | 2 | .82 | .02 | .09 | 1 | 4 |
| 125300 | 3 | 76 | 23 | 19 | .6 | 12 | 20 | 923 | 2.79 | 196 | 5 | ND | 3 | 106 | .2 | 3 | 2 | 11 | 3.64 | .052 | 13 | 3 | .22 | 74 | .01 | 10 | .66 | .01 | .16 | 1 | 7 |
| STANDARD C/AU-R | 18 | 58 | 35 | 133 | 7.2 | 69 | 30 | 1034 | 4.04 | 43 | 24 | 7 | 36 | 47 | 17.8 | 15 | 23 | 57 | .52 | .094 | 36 | 56 | .93 | 174 | .07 | 38 | 1.95 | .06 | .14 | 11 | 470 |

NORANDA EXPLORATION COMPANY, LIMITED

Sheet 1 of 1

Lab Code 9007-03

entral Cord District

Silt Soil: Au 30 ICP later

15 RX
74 soil
1 silt

# RECORD OF SAMPLE TRANSMITTAL

Rx: Au + 30 ICP Acme

NORANDA EXPLORATION COMPANY, LIMITED
P.O. BOX 2380
1050 DAVIE STREET
VANCOUVER, B.C.
V6B 3T5

MATERIAL:
- [ ] SOIL
- [ ] SILT
- [ ] ROCK

Date Shipped: July 4/90
Date Received: July 9/90
Shipped Via: Bansta
No. of Cartons: 1
No. of Samples: 70
Geologist: Rob Baerg
Date: July 3 1990

Project Todd Creek No. 281

| SAMPLE NOS./COORDS. FROM/LINE | TO/STATION | N.T.S. NOS. | G.C.I. NOS. | ADD ELEMENT | | | |
|---|---|---|---|---|---|---|---|
| 51363 → | 31375 | Soil (13) | | | | | |
| 123224 → | 123225 | (Soil) (2) | | | | | |
| 115651 → | 115656 | Soil (6) | | | | | |
| 115668 → | 115673 | Soil (6) | | | | | |
| 115662 → | 115667 | Soil (6) | | | | | |
| 115657 → | 115661 | Soil (5) | | | | | |
| 51353 → | 51362 | Soil (10) | | | | | |
| 123218 → | 123223 | Soil (6) | | | | | |
| | | | | | | | |
| ~~[illegible]~~ | | | | | | | |
| 125151 | | Silt (1) | | | | | |
| | | | | | | | |
| 125297 → | 125298 | Rock (2) | | | | | |
| 125293 → | 125294 | Rock (2) | | | | | |
| 125299 | | Rock (1) | | | | | |
| 125284 | | Rock (1) | | | | | |
| 125267 → | 125275 | Rock (9) | | | | | |

CBC 281

SOIL 9007-031

CBC 281
Soil/Silt 9007-031

ANALYTICAL INSTRUCTIONS

~~ALL SAMPLES: (Cu, Pb, Zn, Mo, Ag)~~ [ ]
~~(Cu, Pb, Zn, Mo, Ag) + ___ + ___~~ [ ]
~~(Cu, Pb, Zn, Mo, Ag) + AS NOTED~~ [ ]

RESULTS TO: Prince George

SPECIAL INSTRUCTIONS OR REMARKS:
30 element ICP + Au geochem for all samples

15000

NORANDA EXPLORATION COMPANY, LIMITED

Pan: Au BM
Silt Soil: Au 30icp later
Rx: Au+30 icp Acme

Sheet 1 of 1 (2 total)

Lab Code 9007-025

Central Cord District

12 pan
148 soil
36 silt
50 rx

# RECORD OF SAMPLE TRANSMITTAL


NORANDA EXPLORATION COMPANY, LIMITED
P.O. BOX 2380
1050 DAVIE STREET
VANCOUVER, B.C.
V6B 3T5


Date Shipped: June 30, 1990
Date Received: July 6, 1990
Shipped Via: Bandstra
No. of Cartons: 3 boxes (of 5 total)
No. of Samples: 188
Geologist: Rob Baerg
Date: June 30, 90

MATERIAL:
- [x] SOIL
- [x] SILT + pans
- [x] ROCK

Project Todd Creek No. 281

| SAMPLE NOS./COORDS. FROM/LINE | TO/STATION | N.T.S. NOS. | G.C.I. NOS. | ADD ELEMENT | SAMPLE NOS./COORDS. FROM/LINE | TO/STATION | N.T.S. NOS. | G.C.I. NOS. | ADD ELEMENT |
|---|---|---|---|---|---|---|---|---|---|
| 51176 → | 51178 | Soil (3) | ✓ | | | | | | |
| 51201 → | 51210 | Soil (10) | ✓ | | | | | | |
| 51226 → | 51250 | Soil (25) | ✓ | | | | | | |
| 110751 → | 110775 | Soil (25) | ✓ 114 | | | | | | |
| 110826 → | 110828 | Soil (3) | ✓ | | | | | | |
| 110895 → | 1108900 | Soil (6) | ✓ | | | | | | |
| 110927 → | 110949 | Soil (23) | ✓ | | | | | | |
| 125081 → | 125087 | Soil (7) | ✓ | | | | | | |
| 125089 → | 125100 | Soil (12) | ✓ | | | | | | |
| | | | | | | | | | |
| 125016 → | 125030 | Silt (15) | ✓ 32 | | | | | | |
| 125051 → | 125064 | Silt (14) | ✓ | | | | | | |
| 125076 → | 125078 | Silt (3) | ✓ | | | | | | |
| | | | | | | | | | |
| 110736 → | 110745 | Rock (10) | 33 | | | | | | |
| 110778, 110950, | 110076 | Rock (3) | | | | | | | |
| 110815 → | 110825 | Rock (11) | | | | | | | |
| 110829, | 110894 | Rock (2) | | | | | | | |
| 125079, | 125080 | Rock (2) | | | | | | | |
| 125255 → | 125259 | Rock (5) | | | | | | | |
| | | | | | | | | | |
| 125251 → | 125254 | Pan (4) | 9 | | | | | | |
| 125276 → | 125280 | Pan (5) | | | | | | | |

Soil, silt, rock: CBC 281 9007-025

ANALYTICAL INSTRUCTIONS

ALL SAMPLES: ~~(Cu, Pb, Zn, Mo, Ag)~~ ☐
~~(Cu, Pb, Zn, Mo, Ag) + ___ + ___~~ ☐
(Cu, Pb, Zn, Mo, Ag) + AS NOTED ☐

RESULTS TO: Prince George

SPECIAL INSTRUCTIONS OR REMARKS:
30 element ICP + Au Geochem for all samples

NORANDA EXPLORATION COMPANY, LIMITED

Central Cord. District

Sheet 1/2 of 1/2 (Total)

Lab Code

# RECORD OF SAMPLE TRANSMITTAL

NORANDA EXPLORATION COMPANY, LIMITED
P.O. BOX 2380
1050 DAVIE STREET
VANCOUVER, B.C.
V6B 3T5

MATERIAL:
☑ SOIL
☑ SILT + Pans
☑ ROCK

Date Shipped: July 2, 90
Date Received:
Shipped Via: Banstra
No. of Cartons: 2
No. of Samples: 58
Geologist: Rob Baerg
Date: July 1, 1990

Project Todd Creek No. 281

| SAMPLE NOS./COORDS. FROM/LINE | TO/STATION | N.T.S. NOS. | G.C.I. NOS. | ADD ELEMENT | | | | SAMPLE NOS./COORDS. FROM/LINE | TO/STATION | N.T.S. NOS. | G.C.I. NOS. | ADD ELEMENT | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 51351 → | 51352 | Soil (2) ✓ | | | | | | | | | | | | | |
| 51211 → | 51225 | Soil (15) ✓ | | | | | | | | | | | | | |
| 123201 → | 123217 | Soil (17) ✓ | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| 125126 → | 125128 | Silt (3) ✓ | | | | | | | | | | | | | |
| 125088 | | Silt (1) ✓ | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| 125281 → | 125283 | Pan (3) ✓ | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| 125260 → | 125266 | Rock (7) | | | | | | | | | | | | | |
| 125300 | | Rock (1) | | | | | | | | | | | | | |
| 110747 → | 110750 | Rock (4) | | | | | | | | | | | | | |
| 110776 → | 110777 | Rock (2) | | | | | | | | | | | | | |
| 110779 → | 110780 | Rock (2) | | | | | | | | | | | | | |
| 110926 | | Rock (1) | | | | | | | | | | | | | |

ANALYTICAL INSTRUCTIONS

~~ALL SAMPLES: (Cu, Pb, Zn, Mo, Ag)~~ ☐
~~(Cu, Pb, Zn, Mo, Ag) + ___ + ___~~ ☐
(Cu, Pb, Zn, Mo, Ag) + AS NOTED ☐

RESULTS TO: PRINCE GEORGE

SPECIAL INSTRUCTIONS OR REMARKS:
30 element ICP + Au for Geochem.. for all samples

## NORANDA VANCOUVER LABORATORY

PERTY/LOCATION:TODD CREEK — CODE :9007-025

Project No. :281 — Sheet:1 of 1 — Date rec'd:JUL 06
Material :12 PANS — Geol.:R.B. — Date compl:AUG 15
Remarks :

Values in PPM, except where noted.

| .T. No. | SAMPLE No. | wt. (g) | PPB Au | Cu | Zn | Pb | Ag |
|---|---|---|---|---|---|---|---|
| 1E | 125277 | 70.5 | 5 | 26 | 110 | 1 | 0.2 |
| 82 | 125251 | 53.5 | 5 | 22 | 90 | 2 | 0.2 |
| 83 | 125252 | 34.4 | 5 | 26 | 110 | 4 | 0.2 |
| 84 | 125253 | 45.0 | 180 | 22 | 70 | 2 | 0.4 |
| 85 | 125254 | 58.5 | 5 | 22 | 184 | 10 | 0.2 |
| 86 | 125280 | 43.5 | 800 | 38 | 160 | 4 | 0.6 |
| 87 | 125282 | 62.6 | 770 | 32 | 140 | 22 | 0.4 |
| 88 | 125276 | 33.5 | 5 | 28 | 120 | 1 | 0.2 |
| 89 | 125278 | 79.5 | 100 | 34 | 130 | 6 | 0.4 |
| 90 | 125279 | 40.9 | 5 | 60 | 280 | 6 | 0.2 |
| 91 | 125281D | 57.1 | 280 | 32 | 102 | 32 | 0.4 |
| 92 | 125283D | 75.9 | 5 | 34 | 140 | 14 | 0.2 |

.B. Pan-con: entire sample used for Au determination.
*Cu, Zn, Pb, Ag values obtained from Aqua Regia sol'n.



Copy to Rob.

APPENDIX V

**AEM (Dighem) Survey Report**

Report #1090B

# DIGHEM$^{IV}$ SURVEY

FOR

NORANDA EXPLORATION COMPANY, LIMITED

TODD CREEK PROJECT

BRITISH COLUMBIA

NTS 104A/4, 104A/5

DIGHEM SURVEYS & PROCESSING INC.
MISSISSAUGA, ONTARIO
December 3, 1990

Paul A. Smith
Geophysicist

A1090DEC.91R

## SUMMARY

This report describes the logistics and results of a DIGHEM$^{IV}$ airborne geophysical survey carried out for Noranda Exploration Company, Limited, over a property located in the Todd Creek area of British Columbia. Total coverage of the survey block amounted to 515 km. The survey was flown from July 28 to August 11, 1990.

The purpose of the survey was to detect zones of conductive mineralization and to provide information that could be used to map the geology and structure of the survey area. This was accomplished by using a DIGHEM$^{IV}$ multi-coil, multi-frequency electromagnetic system, supplemented by a high sensitivity Cesium magnetometer and a two-channel VLF receiver. The information from these sensors was processed to produce maps which display the magnetic and conductive properties of the survey area. An electronic navigation system, operating in the UHF band, ensured accurate positioning of the geophysical data with respect to the base maps in only a few portions of the survey block. Visual flight path recovery techniques were used in areas where transponder signals were blocked by topographic features.

The project area is underlain by highly resistive ground. Only a few of the anomalies detected by the survey have been attributed to possible bedrock conductors. Most of

these EM anomalies warrant further investigation using appropriate surface exploration techniques. Areas of interest may be assigned priorities on the basis of supporting geophysical, geochemical and/or geological information. After initial investigations have been carried out, it may be necessary to re-evaluate the remaining anomalies based on information acquired from the follow-up program.

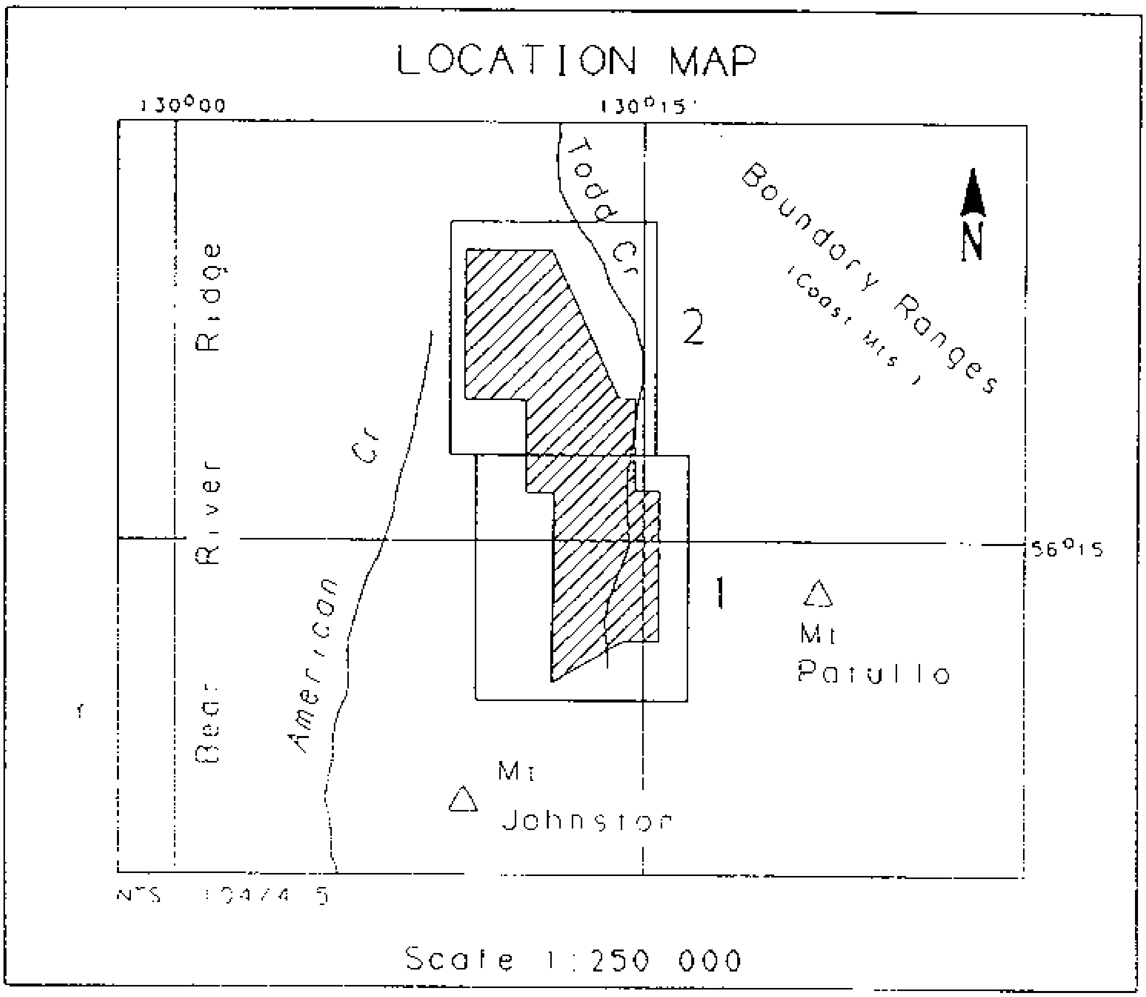


FIGURE 1

TODD CREEK PROPERTY

## CONTENTS

## INTRODUCTION

A DIGHEM$^{IV}$ electromagnetic/resistivity/magnetic/VLF survey was flown for Noranda Exploration Company, Limited from July 28 to August 11, 1990, over a survey block in central British Columbia. The property, designated the Todd Creek Project, is located in the Cambria Icefield, about 40 km northeast of Stewart. The property is situated on NTS map sheets 104A/4 and 104A/5, with its center near latitude 56°19'00"N/longitude 129°47'30"W.

Survey coverage consisted of approximately 515 line-km, including tie lines. Flight lines were flown east/west with a line separation of 100 metres.

The survey employed the DIGHEM$^{IV}$ electromagnetic system. Ancillary equipment consisted of a magnetometer, radar altimeter, video camera, analog and digital recorders, a VLF receiver and an electronic navigation system. Details on the survey equipment are given in Section 2.

The instrumentation was installed in an Aerospatiale AS350B turbine helicopter (Registration C-GNIX) which was provided by Questral Helicopters Ltd. The helicopter flew at an average airspeed of 120 km/h with an EM bird height of approximately 30 m.

Section 2 also provides details on the data channels, their respective sensitivities, and the navigation/flight path recovery procedure. Noise levels of less than 2 ppm are generally maintained for wind speeds up to 35 km/h. Higher winds may cause the system to be grounded because excessive bird swinging produces difficulties in flying the helicopter. The swinging results from the 5 $m^2$ of area which is presented by the bird to broadside gusts.

In some portions of the survey area, the extremely rugged topography forced the pilot to exceed normal terrain clearance for reasons of safety. It is possible that some weak conductors may have escaped detection in areas where the bird height exceeded 120 m. In difficult areas where near-vertical climbs were necessary, the forward speed of the helicopter was reduced to a level which permitted excessive bird swinging. This problem, combined with the severe stresses to which the bird was subjected, gave rise to aerodynamic noise levels which are slightly higher than normal. Where warranted, reflights were carried out to minimize these adverse effects.

# SURVEY EQUIPMENT

This section provides a brief description of the geophysical instruments used to acquire the survey data:

## Electromagnetic System

| | |
|---|---|
| Model: | DIGHEM IV |
| Type: | Towed bird, symmetric dipole configuration operated at a nominal survey altitude of 30 metres. Coil separation is 8 metres for 900 Hz and 7200 Hz, and 6.3 metres for the 56,000 Hz coil-pair. |
| Coil orientations/frequencies: | coaxial / 900 Hz<br>coplanar/ 900 Hz<br>coplanar/ 7,200 Hz<br>coplanar/56,000 Hz |
| Channels recorded: | 4 inphase channels<br>4 quadrature channels<br>2 monitor channels |
| Sensitivity: | 0.2 ppm at 900 Hz<br>0.4 ppm at 7,200 Hz<br>1.0 ppm at 56,000 Hz |
| Sample rate: | 10 per second |

The electromagnetic system utilizes a multi-coil coaxial/coplanar technique to energize conductors in different directions. The coaxial transmitter coil is vertical with its axis in the flight direction. The coplanar coils are horizontal. The secondary fields are sensed simultaneously by means of receiver coils which are maximum coupled to their respective transmitter coils. The system yields an inphase and a quadrature channel from each transmitter-receiver coil-pair.

Magnetometer

| | |
|---|---|
| Model: | Picodas 3340 |
| Type: | Optically pumped Cesium vapour |
| Sensitivity: | 0.01 nT |
| Sample rate: | 10 per second |

The magnetometer sensor is towed in a bird 15 m below the helicopter.

Magnetic Base Station

| | |
|---|---|
| Model: | Scintrex MP-3 |
| Type: | Digital recording proton precession |
| Sensitivity: | 0.10 nT |
| Sample rate: | 0.2 per second |

A digital recorder is operated in conjunction with the base station magnetometer to record the diurnal variations of the earth's magnetic field. The clock of the base station is synchronized with that of the airborne system to permit subsequent removal of diurnal drift.

## VLF System

| | | |
|---|---|---|
| Manufacturer: | Herz Industries Ltd. | |
| Type: | Totem-2A | |
| Sensitivity: | 0.1% | |
| Stations: | Seattle, Washington; | NLK, 24.8 kHz |
| | Lualualei, Hawaii; | NPM, 23.4 kHz |

The VLF receiver measures the total field and vertical quadrature components of the secondary VLF field. Signals from two separate transmitters can be measured simultaneously. The VLF sensor is towed in a bird 10 m below the helicopter.

## Radar Altimeter

| | |
|---|---|
| Manufacturer: | Honeywell/Sperry |
| Type: | AA 220 |
| Sensitivity: | 1 ft |

The radar altimeter measures the vertical distance between the helicopter and the ground. This information is used in the processing algorithm which determines conductor depth.

Analog Recorder

Manufacturer: RMS Instruments

Type: DGR33 dot-matrix graphics recorder

Resolution: 4x4 dots/mm

Speed: 1.5 mm/sec

The analog profiles were recorded on chart paper in the aircraft during the survey. Table 2-1 lists the geophysical data channels and the vertical scale of each profile.

Digital Data Acquisition System

Manufacturer: RMS Instruments

Type: DGR 33

Tape Deck: RMS TCR-12, 6400 bpi, tape cartridge recorder

The digital data were used to generate several computed parameters. Both measured and computed parameters were plotted as "multi-channel stacked profiles" during data processing. These parameters are shown in Table 2-2.

In Table 2-2, the log resistivity scale of 0.06 decade/mm means that the resistivity changes by an order of magnitude in 16.6 mm. The resistivities at 0, 33 and 67 mm up from the bottom of the digital profile are respectively 1, 100 and 10,000 ohm-m.

Table 2-1. The Analog Profiles

| Channel Name | Parameter | Scale units/mm | Designation on digital profile |
|---|---|---|---|
| 1X9I | coaxial inphase ( 900 Hz) | 2.5 ppm | CXI ( 900 Hz) |
| 1X9Q | coaxial quad ( 900 Hz) | 2.5 ppm | CXQ ( 900 Hz) |
| 3P9I | coplanar inphase ( 900 Hz) | 2.5 ppm | CPI ( 900 Hz) |
| 3P9Q | coplanar quad ( 900 Hz) | 2.5 ppm | CPQ ( 900 Hz) |
| 2P7I | coplanar inphase (7200 Hz) | 5 ppm | CPI (7200 Hz) |
| 2P7Q | coplanar quad (7200 Hz) | 5 ppm | CPQ (7200 Hz) |
| 4P5I | coplanar inphase(56000 Hz) | 10 ppm | CPI (56 kHz) |
| 4P5Q | coplanar quad (56000 Hz) | 10 ppm | CPQ (56 kHz) |
| ALTR | altimeter | 3 m | ALT |
| CMGC | magnetics, coarse | 25 nT | MAG |
| CMGF | magnetics, fine | 2.5 nT | |
| VF1T | VLF-total: primary stn. | 2% | |
| VF1Q | VLF-quad: primary stn. | 2% | |
| VF2T | VLF-total: secondary stn. | 2% | |
| VF2Q | VLF-quad: secondary stn. | 2% | |
| CXSP | coaxial sferics monitor | | CXS |
| CPSP | coplanar sferics monitor | | |
| CXPL | coaxial powerline monitor | | |
| CPPL | coplanar powerline monitor | | CPP |

Table 2-2. The Digital Profiles

| Channel Name (Freq) | Observed parameters | Scale units/mm |
|---|---|---|
| MAG | magnetics | 10 nT |
| ALT | bird height | 6 m |
| CXI ( 900 Hz) | vertical coaxial coil-pair inphase | 2 ppm |
| CXQ ( 900 Hz) | vertical coaxial coil-pair quadrature | 2 ppm |
| CPI ( 900 Hz) | horizontal coplanar coil-pair inphase | 2 ppm |
| CPQ ( 900 Hz) | horizontal coplanar coil-pair quadrature | 2 ppm |
| CPI (7200 Hz) | horizontal coplanar coil-pair inphase | 4 ppm |
| CPQ (7200 Hz) | horizontal coplanar coil-pair quadrature | 4 ppm |
| CPI (56 kHz) | horizontal coplanar coil-pair inphase | 10 ppm |
| CPQ (56 kHz) | horizontal coplanar coil-pair quadrature | 10 ppm |
| CXS | coaxial sferics monitor | |
| CPP | coplanar powerline monitor | |
| | Computed Parameters | |
| DFI ( 900 Hz) | difference function inphase from CXI and CPI | 2 ppm |
| DFQ ( 900 Hz) | difference function quadrature from CXQ and CPQ | 2 ppm |
| RES ( 900 Hz) | log resistivity | .06 decade |
| RES (7200 Hz) | log resistivity | .06 decade |
| RES (56 kHz) | log resistivity | .06 decade |
| DP ( 900 Hz) | apparent depth | 6 m |
| DP (7200 Hz) | apparent depth | 6 m |
| DP (56 kHz) | apparent depth | 6 m |
| CDT | conductance | 1 grade |

Tracking Camera

Type: Panasonic Video

Model: AG 2400/WVCD132

Fiducial numbers are recorded continuously and are displayed on the margin of each image. This procedure ensures accurate correlation of analog and digital data with respect to visible features on the ground.

Navigation System

Model: Del Norte 547

Type: UHF electronic positioning system

Sensitivity: 1 m

Sample rate: 2 per second

The navigation system uses ground based transponder stations which transmit distance information back to the helicopter. The ground stations are set up well away from the survey area and are positioned such that the signals cross the survey block at an angle between 30° and 150°. The onboard Central Processing Unit takes any two transponder distances and determines the helicopter position relative to these two ground stations in cartesian coordinates.

The cartesian coordinates are transformed to UTM coordinates during data processing. This is accomplished by correlating a number of prominent topographical locations with the navigational data points. The use of numerous visual tie points serves two purposes: to accurately relate the navigation data to the map sheet and to minimize location errors which might result from distortions in uncontrolled photomosaic base maps.

# PRODUCTS AND PROCESSING TECHNIQUES

The following products are available from the survey data. Those which are not part of the survey contract may be acquired later. Refer to Table 3-1 for a summary of the maps which accompany this report, some of which may be sent under separate cover. Most parameters can be displayed as contours, profiles, or in colour.

## Base Maps

Base maps of the survey area have been produced from published topographic maps. These provide a relatively accurate, distortion-free base which facilitates correlation of the navigation data to the UTM grid. Photomosaics are useful for visual reference and for subsequent flight path recovery, but usually contain scale distortions. Orthophotos are ideal, but their cost and the time required to produce them, usually precludes their use as base maps.

## Electromagnetic Anomalies

Anomalous electromagnetic responses are selected and analysed by computer to provide a preliminary electromagnetic anomaly map. This preliminary map is used, by the

Table 3-1 Plots Available from the Survey

| MAP PRODUCT | NO. OF SHEETS | ANOMALY MAP | PROFILES ON MAP | CONTOURS INK | CONTOURS COLOUR | SHADOW MAP |
|---|---|---|---|---|---|---|
| Electromagnetic Anomalies | 2 | 10,000 | N/A | N/A | N/A | N/A |
| Probable Bedrock Conductors | | - | N/A | N/A | N/A | N/A |
| Resistivity ( 900 Hz) | 2 | N/A | - | 10,000 | 10,000 | - |
| Resistivity ( 7,200 Hz) | 2 | N/A | - | 10,000 | 10,000 | - |
| Resistivity (56,000 Hz) | 2 | N/A | - | 10,000 | 10,000 | - |
| EM Magnetite | | N/A | - | - | - | - |
| Total Field Magnetics | 2 | N/A | - | 10,000 | 10,000 | - |
| Enhanced Magnetics | | N/A | - | - | - | - |
| 1st Vertical Derivative Magnetics | 2 | N/A | - | 10,000 | 10,000 | - |
| 2nd Vertical Derivative Magnetics | | N/A | - | - | - | - |
| Filtered Total Field VLF | 2 | N/A | - | 10,000 | 10,000 | - |
| VLF Profiles | | N/A | - | N/A | N/A | N/A |
| Electromagnetic Profiles( 900 Hz) | | N/A | - | N/A | N/A | N/A |
| Electromagnetic Profiles(7200 Hz) | | N/A | - | N/A | N/A | N/A |
| | | | | | | |
| Multi-channel stacked profiles | | Worksheet profiles | | | | - |
| | | Interpreted profiles | | | | 10,000 |

N/A Not available
\- Not required under terms of the survey contract
* Recommended
20,000 Scale of delivered map, i.e, 1:10,000

Notes:

- Inked contour maps are provided on transparent media and show flight lines, EM anomalies and suitable registration. Three paper prints of each map are supplied, in addition to three colour plots of each contour map.

geophysicist, in conjunction with the computer-generated digital profiles, to produce the final interpreted EM anomaly map. This map includes bedrock, surficial and cultural conductors. A map containing only bedrock conductors can be generated, if desired.

## Resistivity

The apparent resistivity in ohm-m may be generated from the inphase and quadrature EM components for any of the frequencies, using a pseudo-layer halfspace model. A resistivity map portrays all the EM information for that frequency over the entire survey area. This contrasts with the electromagnetic anomaly map which provides information only over interpreted conductors. The large dynamic range makes the resistivity parameter an excellent mapping tool.

## EM Magnetite

The apparent percent magnetite by weight is computed wherever magnetite produces a negative inphase EM response.

## Total Field Magnetics

The aeromagnetic data are corrected for diurnal variation using the magnetic base station data. The regional IGRF can be removed from the data, if requested.

## Enhanced Magnetics

The total field magnetic data are subjected to a processing algorithm. This algorithm enhances the response of magnetic bodies in the upper 500 m and attenuates the response of deeper bodies. The resulting enhanced magnetic map provides better definition and resolution of near-surface magnetic units. It also identifies weak magnetic features which may not be evident on the total field magnetic map. However, regional magnetic variations, and magnetic lows caused by remanence, are better defined on the total field magnetic map. The technique is described in more detail in Section 5.

## Magnetic Derivatives

The total field magnetic data may be subjected to a variety of filtering techniques to yield maps of the following:

- vertical gradient
- second vertical derivative
- magnetic susceptibility with reduction to the pole
- upward/downward continuations

All of these filtering techniques improve the recognition of near-surface magnetic bodies, with the exception of upward continuation. Any of these parameters can be produced on request. Dighem's proprietary enhanced magnetic technique is designed to provide a general "all-purpose" map, combining the more useful features of the above parameters.

VLF

The VLF data are digitally filtered to remove long wavelengths such as those caused by variations in the transmitted field strength.

Multi-channel Stacked Profiles

Distance-based profiles of the digitally recorded geophysical data are generated and plotted by computer. These profiles also contain the calculated parameters which are used in the interpretation process. These are produced as worksheets prior to interpretation, and can also be presented in the final corrected form after interpretation. The profiles display electromagnetic anomalies with their respective interpretive symbols. The differences between the worksheets and the final corrected form occur only with respect to the EM anomaly identifier.

Contour, Colour and Shadow Map Displays

The geophysical data are interpolated onto a regular grid using a modified Akima spline technique. The resulting grid is suitable for generating contour maps of excellent quality.

Colour maps are produced by interpolating the grid down to the pixel size. The parameter is then incremented with respect to specific amplitude ranges to provide colour "contour" maps. Colour maps of the total magnetic field are particularly useful in defining the lithology of the survey area.

Monochromatic shadow maps are generated by employing an artificial sun to cast shadows on a surface defined by the geophysical grid. There are many variations in the shadowing technique. These techniques may be applied to total field or enhanced magnetic data, magnetic derivatives, VLF, resistivity, etc. Of the various magnetic products, the shadow of the enhanced magnetic parameter is particularly suited for defining geological structures with crisper images and improved resolution.

# SURVEY RESULTS

## GENERAL DISCUSSION

The survey results are presented on 2 separate map sheets for each parameter at a scale of 1:10,000. Table 4-1 summarizes the EM responses in the survey area, with respect to conductance grade and interpretation.

### Magnetics

A Scintrex MP-3 proton precession magnetometer was operated at the survey base to record diurnal variations of the earth's magnetic field. The clock of the base station was synchronized with that of the airborne system to permit subsequent removal of diurnal drift.

The background magnetic levels have been adjusted to match the International Geomagnetic Reference Field (IGRF) for the survey area. The IGRF gradient across the survey block is left intact. This procedure ensures that the magnetic contours will match contours from any adjacent surveys which have been processed in a similar manner.

The total field magnetic data have been presented as contours on the base maps using a contour interval of 5 nT where gradients permit. The maps show the magnetic properties of the rock units underlying the survey area.

The total field magnetic data have been subjected to a processing algorithm to produce maps of the calculated first vertical derivative. This procedure enhances near-surface magnetic units and suppresses regional gradients. It also provides better definition and resolution of magnetic units and displays weak magnetic features which may not be clearly evident on the total field maps. Maps of the second vertical magnetic derivative can also be prepared from existing survey data, if requested.

There is some evidence on the magnetic maps which suggests that the survey area has been subjected to deformation and/or alteration. These structural complexities are evident on the contour maps as variations in magnetic intensity, irregular patterns, and as offsets or changes in strike direction. Some of the more prominent linear features are also evident on the topographic base maps.

The magnetic relief on the Todd Creek Project is moderate, ranging from a low of about 57,120 nT to a high of almost 58,000 nT on line 21081. The 57,500 nT contour outlines several irregularly-shaped units of moderate magnetic intensity which are interlayered with relatively non-magnetic units. The magnetic contours appear "smoother" in the areas covered by ice. The individual units which comprise the magnetic trends are more clearly defined on the vertical gradient maps. The latter product also identifies several faults, in addition to the geological contacts.

If a specific magnetic intensity can be assigned to the rock type which is believed to host the target mineralization, it may be possible to select areas of higher priority on the basis of the total field magnetic data. This is based on the assumption that the magnetite content of the host rocks will give rise to a limited range of contour values which will permit differentiation of various lithological units.

The magnetic results, in conjunction with the other geophysical parameters, should provide valuable information which can be used to effectively map the geology and structure in the survey area.

## BACKGROUND INFORMATION

This section provides background information on parameters which are available from the survey data. Those which have not been supplied as survey products may be generated later from raw data on the digital archive tape.

## ELECTROMAGNETICS

DIGHEM electromagnetic responses fall into two general classes, discrete and broad. The discrete class consists of sharp, well-defined anomalies from discrete conductors such as sulfide lenses and steeply dipping sheets of graphite and sulfides. The broad class consists of wide anomalies from conductors having a large horizontal surface such as flatly dipping graphite or sulfide sheets, saline water-saturated sedimentary formations, conductive overburden and rock, and geothermal zones. A vertical conductive slab with a width of 200 m would straddle these two classes.

The vertical sheet (half plane) is the most common model used for the analysis of discrete conductors. All anomalies plotted on the electromagnetic map are analyzed according to this model. The following section entitled **Discrete Conductor Analysis** describes this model in detail, including the effect of using it on anomalies caused by broad conductors such as conductive overburden.

The conductive earth (half space) model is suitable for broad conductors. Resistivity contour maps result from the use of this model. A later section entitled **Resistivity Mapping** describes the method further, including the effect of using it on anomalies caused by discrete conductors such as sulfide bodies.

Geometric interpretation

The geophysical interpreter attempts to determine the geometric shape and dip of the conductor. Figure 5-1 shows typical DIGHEM anomaly shapes which are used to guide the geometric interpretation.

Discrete conductor analysis

The EM anomalies appearing on the electromagnetic map are analyzed by computer to give the conductance (i.e., conductivity-thickness product) in siemens (mhos) of a vertical sheet model. This is done regardless of the interpreted geometric shape of the conductor. This is not an unreasonable procedure, because the computed conductance increases as the electrical quality of the conductor increases, regardless of its true shape. DIGHEM anomalies

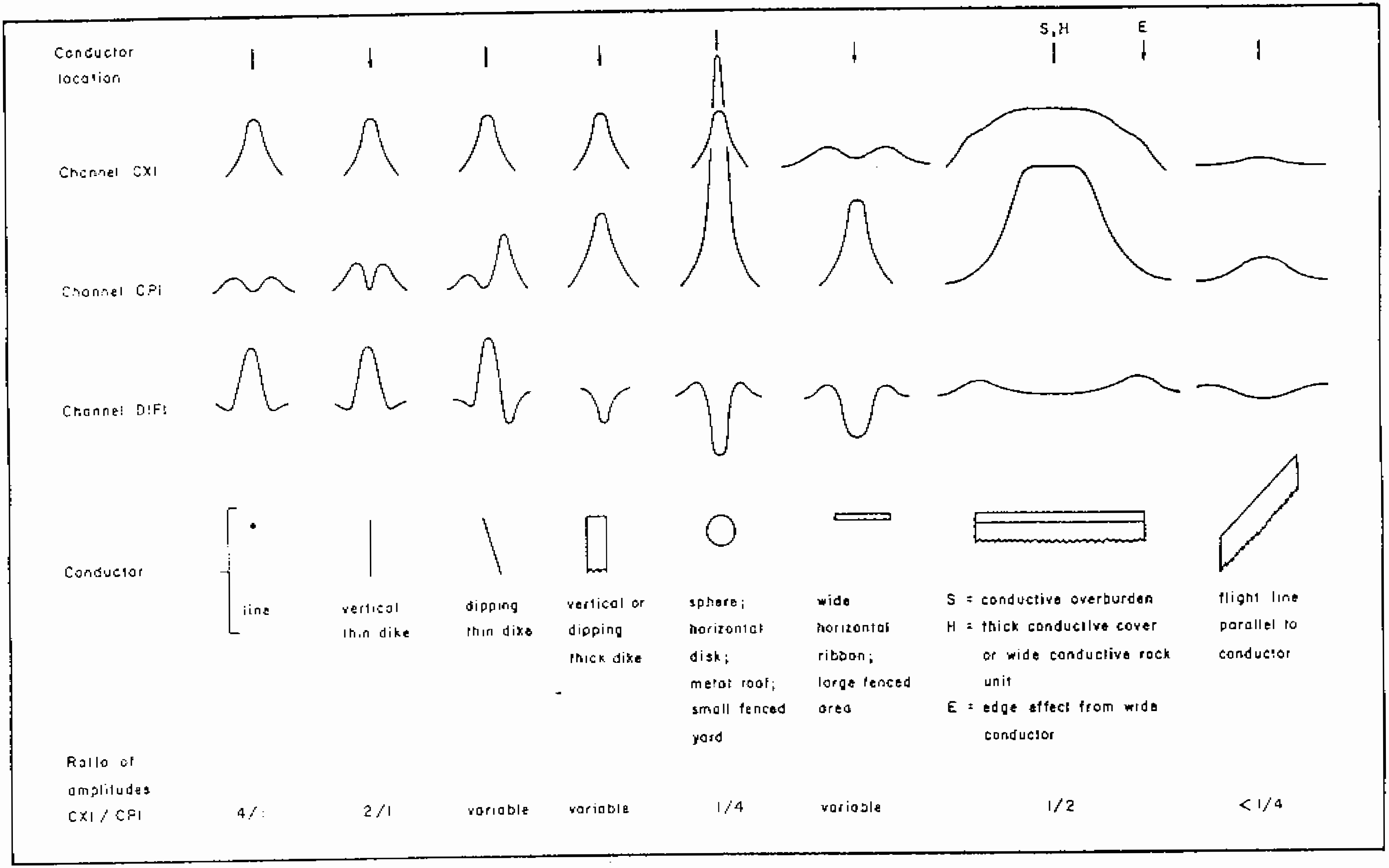


Fig 5-1 Typical DIGHEM anomaly shapes

are divided into seven grades of conductance, as shown in Table 5-1 below. The conductance in siemens (mhos) is the reciprocal of resistance in ohms.

Table 5-1. EM Anomaly Grades

| Anomaly Grade | siemens |
|---|---|
| 7 | > 100 |
| 6 | 50 - 100 |
| 5 | 20 - 50 |
| 4 | 10 - 20 |
| 3 | 5 - 10 |
| 2 | 1 - 5 |
| 1 | < 1 |

The conductance value is a geological parameter because it is a characteristic of the conductor alone. It generally is independent of frequency, flying height or depth of burial, apart from the averaging over a greater portion of the conductor as height increases. Small anomalies from deeply buried strong conductors are not confused with small anomalies from shallow weak conductors because the former will have larger conductance values.

Conductive overburden generally produces broad EM responses which may not be shown as anomalies on the EM maps. However, patchy conductive overburden in otherwise resistive areas can yield discrete anomalies with a conductance grade (cf. Table 5-1) of 1, 2 or even 3 for conducting clays which have resistivities as low as 50 ohm-m. In areas where ground resistivities are below 10 ohm-m, anomalies caused by weathering variations and similar causes can have any conductance grade. The anomaly shapes from the multiple coils often allow such conductors to be recognized, and these are indicated by the letters S, H, and sometimes E on the electromagnetic anomaly map (see EM map legend).

For bedrock conductors, the higher anomaly grades indicate increasingly higher conductances. Examples: DIGHEM's New Insco copper discovery (Noranda, Canada) yielded a grade 5 anomaly, as did the neighbouring copper-zinc Magusi River ore body; Mattabi (copper-zinc, Sturgeon Lake, Canada) and Whistle (nickel, Sudbury, Canada) gave grade 6; and DIGHEM's Montcalm nickel-copper discovery (Timmins, Canada) yielded a grade 7 anomaly. Graphite and sulfides can span all grades but, in any particular survey area, field work may show that the different grades indicate different types of conductors.

Strong conductors (i.e., grades 6 and 7) are characteristic of massive sulfides or graphite. Moderate conductors (grades 4 and 5) typically reflect graphite or sulfides of a less massive character, while weak bedrock conductors (grades 1 to 3) can signify poorly connected graphite or heavily disseminated sulfides. Grades 1 and 2 conductors may not respond to ground EM equipment using frequencies less than 2000 Hz.

The presence of sphalerite or gangue can result in ore deposits having weak to moderate conductances. As an example, the three million ton lead-zinc deposit of Restigouche Mining Corporation near Bathurst, Canada, yielded a well-defined grade 2 conductor. The 10 percent by volume of sphalerite occurs as a coating around the fine grained massive pyrite, thereby inhibiting electrical conduction.

Faults, fractures and shear zones may produce anomalies which typically have low conductances (e.g., grades 1 to 3). Conductive rock formations can yield anomalies of any conductance grade. The conductive materials in such rock formations can be salt water, weathered products such as clays, original depositional clays, and carbonaceous material.

On the interpreted electromagnetic map, a letter identifier and an interpretive symbol are plotted beside the EM grade symbol. The horizontal rows of dots, under the interpretive symbol, indicate the anomaly amplitude on the flight record. The vertical column of dots, under the anomaly letter, gives the estimated depth. In areas where anomalies are crowded, the letter identifiers, interpretive symbols and dots may be obliterated. The EM grade symbols, however, will always be discernible, and the obliterated information can be obtained from the anomaly listing appended to this report.

The purpose of indicating the anomaly amplitude by dots is to provide an estimate of the reliability of the conductance calculation. Thus, a conductance value obtained from a large ppm anomaly (3 or 4 dots) will tend to be accurate whereas one obtained from a small ppm anomaly (no dots) could be quite inaccurate. The absence of amplitude dots indicates that the anomaly from the coaxial coil-pair is 5 ppm or less on both the inphase and quadrature channels. Such small anomalies could reflect a weak conductor at the surface or a stronger conductor at depth. The conductance grade and depth estimate illustrates which of these possibilities fits the recorded data best.

Flight line deviations occasionally yield cases where two anomalies, having similar conductance values but dramatically different depth estimates, occur close together on the same conductor. Such examples illustrate the reliability of the conductance measurement while showing that the depth estimate can be unreliable. There are a number of factors which can produce an error in the depth estimate, including the averaging of topographic variations by the altimeter, overlying conductive overburden, and the location and attitude of the conductor relative to the flight line. Conductor location and attitude can provide an erroneous depth estimate because the stronger part of the conductor may be deeper or to one side of the flight line, or because it has a shallow dip. A heavy tree cover can also produce errors in depth estimates. This is because the depth estimate is computed as the distance of bird from conductor, minus the altimeter reading. The altimeter can lock onto the top of a dense forest canopy. This situation yields an erroneously large depth estimate but does not affect the conductance estimate.

Dip symbols are used to indicate the direction of dip of conductors. These symbols are used only when the anomaly shapes are unambiguous, which usually requires a fairly resistive environment.

A further interpretation is presented on the EM map by means of the line-to-line correlation of anomalies, which is based on a comparison of anomaly shapes on adjacent lines. This provides conductor axes which may define the geological structure over portions of the survey area. The absence of conductor axes in an area implies that anomalies could not be correlated from line to line with reasonable confidence.

DIGHEM electromagnetic maps are designed to provide a correct impression of conductor quality by means of the conductance grade symbols. The symbols can stand alone with geology when planning a follow-up program. The actual conductance values are printed in the attached anomaly list for those who wish quantitative data. The anomaly ppm and depth are indicated by inconspicuous dots which should not distract from the conductor patterns, while being helpful to those who wish this information. The map provides an interpretation of conductors in terms of length, strike and dip, geometric shape, conductance, depth, and thickness. The accuracy is comparable to an interpretation from a high quality ground EM survey having the same line spacing.

The attached EM anomaly list provides a tabulation of anomalies in ppm, conductance, and depth for the vertical sheet model. The EM anomaly list also shows the conductance and depth for a thin horizontal sheet (whole plane) model, but only the vertical sheet parameters appear on the EM map. The horizontal sheet model is suitable for a flatly dipping thin bedrock conductor such as a sulfide sheet having a thickness less than 10 m. The list also shows the resistivity and depth for a conductive earth (half space) model, which is suitable for thicker slabs such as thick conductive overburden. In the EM anomaly list, a depth value of zero for the conductive earth model, in an area of thick cover, warns that the anomaly may be caused by conductive overburden.

Since discrete bodies normally are the targets of EM surveys, local base (or zero) levels are used to compute local anomaly amplitudes. This contrasts with the use of true zero levels which are used to compute true EM amplitudes. Local anomaly amplitudes are shown in the EM anomaly list and these are used to compute the vertical sheet parameters of conductance and depth. Not shown in the EM anomaly list are the true amplitudes which are used to compute the horizontal sheet and conductive earth parameters.

Questionable Anomalies

DIGHEM maps may contain EM responses which are displayed as asterisks (*). These responses denote weak anomalies of indeterminate conductance, which may reflect one of the following: a weak conductor near the surface, a strong conductor at depth (e.g., 100 to 120 m below surface) or to one side of the flight line, or aerodynamic noise. Those responses that have the appearance of valid bedrock anomalies on the flight profiles are indicated by appropriate interpretive symbols (see EM map legend). The others probably do not warrant further investigation unless their locations are of considerable geological interest.

The thickness parameter

DIGHEM can provide an indication of the thickness of a steeply dipping conductor. The amplitude of the coplanar anomaly (e.g., CPI channel on the digital profile) increases relative to the coaxial anomaly (e.g., CXI) as the apparent thickness increases, i.e., the thickness in the horizontal plane. (The thickness is equal to the conductor width if the conductor dips at 90 degrees and strikes at right angles to the flight line.) This report refers to a conductor as thin when the thickness is likely to be less than 3 m, and thick when in excess of 10 m. Thick conductors are indicated on the EM map by parentheses "( )". For base metal exploration in steeply dipping geology, thick conductors can be high priority targets because many massive sulfide ore bodies are thick, whereas non-economic bedrock conductors are often thin. The system cannot sense the thickness when the strike of the conductor is subparallel to the flight line, when the conductor has a shallow dip, when the anomaly amplitudes are small, or when the resistivity of the environment is below 100 ohm-m.

Resistivity mapping

Areas of widespread conductivity are commonly encountered during surveys. In such areas, anomalies can be generated by decreases of only 5 m in survey altitude as well as by increases in conductivity. The typical flight record in conductive areas is characterized by inphase and quadrature channels which are continuously active. Local EM peaks reflect either increases in conductivity of the earth or decreases in survey altitude. For such conductive areas, apparent resistivity profiles and contour maps are necessary for the correct interpretation of the airborne data. The advantage of the resistivity parameter is that anomalies caused by altitude changes are virtually eliminated, so the resistivity data reflect only those anomalies caused by conductivity changes. The resistivity analysis also helps the interpreter to differentiate between conductive trends in the bedrock and those patterns typical of conductive overburden. For example, discrete conductors will generally appear as narrow lows on the contour map and broad conductors (e.g., overburden) will appear as wide lows.

The resistivity profiles and the resistivity contour maps present the apparent resistivity using the so-called pseudo-layer (or buried) half space model defined by Fraser (1978)[1]. This model consists of a resistive layer overlying

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[1] Resistivity mapping with an airborne multicoil electromagnetic system: Geophysics, v. 43, p.144-172

a conductive half space. The depth channels give the apparent depth below surface of the conductive material. The apparent depth is simply the apparent thickness of the overlying resistive layer. The apparent depth (or thickness) parameter will be positive when the upper layer is more resistive than the underlying material, in which case the apparent depth may be quite close to the true depth.

The apparent depth will be negative when the upper layer is more conductive than the underlying material, and will be zero when a homogeneous half space exists. The apparent depth parameter must be interpreted cautiously because it will contain any errors which may exist in the measured altitude of the EM bird (e.g., as caused by a dense tree cover). The inputs to the resistivity algorithm are the inphase and quadrature components of the coplanar coil-pair. The outputs are the apparent resistivity of the conductive half space (the source) and the sensor-source distance. The flying height is not an input variable, and the output resistivity and sensor-source distance are independent of the flying height. The apparent depth, discussed above, is simply the sensor-source distance minus the measured altitude or flying height. Consequently, errors in the measured altitude will affect the apparent depth parameter but not the apparent resistivity parameter.

The apparent depth parameter is a useful indicator of simple layering in areas lacking a heavy tree cover. The DIGHEM system has been flown for purposes of permafrost mapping, where positive apparent depths were used as a measure of permafrost thickness. However, little quantitative use has been made of negative apparent depths because the absolute value of the negative depth is not a measure of the thickness of the conductive upper layer and, therefore, is not meaningful physically. Qualitatively, a negative apparent depth estimate usually shows that the EM anomaly is caused by conductive overburden. Consequently, the apparent depth channel can be of significant help in distinguishing between overburden and bedrock conductors.

The resistivity map often yields more useful information on conductivity distributions than the EM map. In comparing the EM and resistivity maps, keep in mind the following:

(a) The resistivity map portrays the absolute value of the earth's resistivity, where resistivity = 1/conductivity.

(b) The EM map portrays anomalies in the earth's resistivity. An anomaly by definition is a change from the norm and so the EM map displays anomalies, (i) over narrow, conductive bodies and (ii) over the boundary zone between two wide formations of differing conductivity.

The resistivity map might be likened to a total field map and the EM map to a horizontal gradient in the direction of flight[2]. Because gradient maps are usually more sensitive than total field maps, the EM map therefore is to be preferred in resistive areas. However, in conductive areas, the absolute character of the resistivity map usually causes it to be more useful than the EM map.

Interpretation in conductive environments

Environments having background resistivities below 30 ohm-m cause all airborne EM systems to yield very large responses from the conductive ground. This usually prohibits the recognition of discrete bedrock conductors. However, DIGHEM data processing techniques produce three parameters which contribute significantly to the recognition of bedrock conductors. These are the inphase and quadrature difference channels (DIFI and DIFQ), and the resistivity and depth channels (RES and DP) for each coplanar frequency.

2 The gradient analogy is only valid with regard to the identification of anomalous locations.

The EM difference channels (DIFI and DIFQ) eliminate most of the responses from conductive ground, leaving responses from bedrock conductors, cultural features (e.g., telephone lines, fences, etc.) and edge effects. Edge effects often occur near the perimeter of broad conductive zones. This can be a source of geologic noise. While edge effects yield anomalies on the EM difference channels, they do not produce resistivity anomalies. Consequently, the resistivity channel aids in eliminating anomalies due to edge effects. On the other hand, resistivity anomalies will coincide with the most highly conductive sections of conductive ground, and this is another source of geologic noise. The recognition of a bedrock conductor in a conductive environment therefore is based on the anomalous responses of the two difference channels (DIFI and DIFQ) and the resistivity channels (RES). The most favourable situation is where anomalies coincide on all channels.

The DP channels, which give the apparent depth to the conductive material, also help to determine whether a conductive response arises from surficial material or from a conductive zone in the bedrock. When these channels ride above the zero level on the digital profiles (i.e., depth is negative), it implies that the EM and resistivity profiles are responding primarily to a conductive upper layer, i.e., conductive overburden. If the DP channels are below the zero level, it indicates that a resistive upper layer exists, and this usually implies the existence of a bedrock conductor. If the low frequency DP channel is below the zero level and the high frequency DP is above, this suggests that a bedrock conductor occurs beneath conductive cover.

The conductance channel CDT identifies discrete conductors which have been selected by computer for appraisal by the geophysicist. Some of these automatically selected anomalies on channel CDT are discarded by the geophysicist. The automatic selection algorithm is intentionally oversensitive to assure that no meaningful responses are missed. The interpreter then classifies the anomalies according to their source and eliminates those that are not substantiated by the data, such as those arising from geologic or aerodynamic noise.

Reduction of geologic noise

Geologic noise refers to unwanted geophysical responses. For purposes of airborne EM surveying, geologic noise refers to EM responses caused by conductive overburden and magnetic permeability. It was mentioned previously that the EM difference channels (i.e., channel DIFI for inphase and DIFQ for quadrature) tend to eliminate the response of conductive overburden. This marked a unique development in airborne EM technology, as DIGHEM is the only EM system which yields channels having an exceptionally high degree of immunity to conductive overburden.

Magnetite produces a form of geological noise on the inphase channels of all EM systems. Rocks containing less than 1% magnetite can yield negative inphase anomalies caused by magnetic permeability. When magnetite is widely distributed throughout a survey area, the inphase EM channels may continuously rise and fall, reflecting variations in the magnetite percentage, flying height, and overburden thickness. This can lead to difficulties in recognizing deeply buried bedrock conductors, particularly if conductive overburden also exists. However, the response of broadly distributed magnetite generally vanishes on the inphase difference channel DIFI. This feature can be a significant aid in the recognition of conductors which occur in rocks containing accessory magnetite.

EM magnetite mapping

The information content of DIGHEM data consists of a combination of conductive eddy current responses and magnetic permeability responses. The secondary field resulting from conductive eddy current flow is frequency-dependent and consists of both inphase and quadrature components, which are positive in sign. On the other hand, the secondary field resulting from magnetic permeability is independent of frequency and consists of only an inphase component which is negative in sign. When magnetic permeability manifests itself by decreasing the measured amount of positive inphase, its presence may be difficult to recognize. However, when it manifests itself by yielding a negative inphase anomaly (e.g., in the absence of eddy current flow), its presence is assured. In this latter case, the negative component can be used to estimate the percent magnetite content.

A magnetite mapping technique was developed for the coplanar coil-pair of DIGHEM. The technique yields a channel (designated FEO) which displays apparent weight percent magnetite according to a homogeneous half space model.[3] The method can be complementary to magnetometer mapping in certain cases. Compared to magnetometry, it is far less sensitive but is more able to resolve closely spaced magnetite zones, as well as providing an estimate of the amount of magnetite in the rock. The method is sensitive to 1/4% magnetite by weight when the EM sensor is at a height of 30 m above a magnetitic half space. It can individually resolve steep dipping narrow magnetite-rich bands which are

[3] Refer to Fraser, 1981, Magnetite mapping with a multi-coil airborne electromagnetic system: Geophysics, v. 46, p. 1579-1594.

separated by 60 m. Unlike magnetometry, the EM magnetite method is unaffected by remanent magnetism or magnetic latitude.

The EM magnetite mapping technique provides estimates of magnetite content which are usually correct within a factor of 2 when the magnetite is fairly uniformly distributed. EM magnetite maps can be generated when magnetic permeability is evident as negative inphase responses on the data profiles.

Like magnetometry, the EM magnetite method maps only bedrock features, provided that the overburden is characterized by a general lack of magnetite. This contrasts with resistivity mapping which portrays the combined effect of bedrock and overburden.

Recognition of culture

Cultural responses include all EM anomalies caused by man-made metallic objects. Such anomalies may be caused by inductive coupling or current gathering. The concern of the interpreter is to recognize when an EM response is due to culture. Points of consideration used by the interpreter, when coaxial and coplanar coil-pairs are operated at a common frequency, are as follows:

1. Channel CPS monitors 60 Hz radiation. An anomaly on this channel shows that the conductor is radiating power. Such an indication is normally a guarantee that the conductor is cultural. However, care must be taken to ensure that the conductor is not a geologic body which strikes across a power line, carrying leakage currents.

2. A flight which crosses a "line" (e.g., fence, telephone line, etc.) yields a center-peaked coaxial anomaly and an m-shaped coplanar anomaly.[4] When the flight crosses the cultural line at a high angle of intersection, the amplitude ratio of coaxial/coplanar response is 4. Such an EM anomaly can only be caused by a line. The geologic body which yields anomalies most closely resembling a line is the vertically dipping thin dike. Such a body, however, yields an amplitude ratio of 2 rather than 4. Consequently, an m-shaped coplanar anomaly with a CXI/CPI amplitude ratio of 4 is virtually a guarantee that the source is a cultural line.

3. A flight which crosses a sphere or horizontal disk yields center-peaked coaxial and coplanar anomalies with a CXI/CPI amplitude ratio (i.e., coaxial/coplanar) of

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[4] See Figure 5-1 presented earlier.

1/4. In the absence of geologic bodies of this geometry, the most likely conductor is a metal roof or small fenced yard.[5] Anomalies of this type are virtually certain to be cultural if they occur in an area of culture.

4. A flight which crosses a horizontal rectangular body or wide ribbon yields an m-shaped coaxial anomaly and a center-peaked coplanar anomaly. In the absence of geologic bodies of this geometry, the most likely conductor is a large fenced area.[5] Anomalies of this type are virtually certain to be cultural if they occur in an area of culture.

5. EM anomalies which coincide with culture, as seen on the camera film or video display, are usually caused by culture. However, care is taken with such coincidences because a geologic conductor could occur beneath a fence, for example. In this example, the fence would be expected to yield an m-shaped coplanar anomaly as in case #2 above. If, instead, a center-peaked coplanar anomaly occurred, there would be concern that a thick

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[5] It is a characteristic of EM that geometrically similar anomalies are obtained from: (1) a planar conductor, and (2) a wire which forms a loop having dimensions identical to the perimeter of the equivalent planar conductor.

geologic conductor coincided with the cultural line.

6. The above description of anomaly shapes is valid when the culture is not conductively coupled to the environment. In this case, the anomalies arise from inductive coupling to the EM transmitter. However, when the environment is quite conductive (e.g., less than 100 ohm-m at 900 Hz), the cultural conductor may be conductively coupled to the environment. In this latter case, the anomaly shapes tend to be governed by current gathering. Current gathering can completely distort the anomaly shapes, thereby complicating the identification of cultural anomalies. In such circumstances, the interpreter can only rely on the radiation channel CPS and on the camera film or video records.

## MAGNETICS

The existence of a magnetic correlation with an EM anomaly is indicated directly on the EM map. In some geological environments, an EM anomaly with magnetic correlation has a greater likelihood of being produced by sulfides than one that is non-magnetic. However, sulfide ore bodies may be non-magnetic (e.g., the Kidd Creek deposit near Timmins, Canada) as well as magnetic (e.g., the Mattabi deposit near Sturgeon Lake, Canada).

The magnetometer data are digitally recorded in the aircraft to an accuracy of one nT (i.e., one gamma) for proton magnetometers, and 0.01 nT for cesium magnetometers. The digital tape is processed by computer to yield a total field magnetic contour map. When warranted, the magnetic data may also be treated mathematically to enhance the magnetic response of the near-surface geology, and an enhanced magnetic contour map is then produced. The response of the enhancement operator in the frequency domain is illustrated in Figure 5-2. This figure shows that the passband components of the airborne data are amplified 20 times by the enhancement operator. This means, for example, that a 100 nT anomaly on the enhanced map reflects a 5 nT anomaly for the passband components of the airborne data.

The enhanced map, which bears a resemblance to a downward continuation map, is produced by the digital bandpass filtering of the total field data. The enhancement is equivalent to continuing the field downward to a level (above the source) which is 1/20th of the actual sensor-source distance.

Because the enhanced magnetic map bears a resemblance to a ground magnetic map, it simplifies the recognition of trends in the rock strata and the interpretation of geological structure. It defines the near-surface local geology while de-emphasizing deep-seated regional features. It primarily has application when the magnetic rock units are steeply dipping and the earth's field dips in excess of 60 degrees.

Any of a number of filter operators may be applied to the magnetic data, to yield vertical derivatives, continuations, magnetic susceptibility, etc. These may be displayed in contour, colour or shadow.

## VLF

VLF transmitters produce high frequency uniform electromagnetic fields. However, VLF anomalies are not EM anomalies in the conventional sense. EM anomalies primarily reflect eddy currents flowing in conductors which have been energized inductively by the primary field. In contrast, VLF anomalies primarily reflect current gathering, which is a non-inductive phenomenon. The primary field sets up currents which flow weakly in rock and overburden, and these tend to collect in low resistivity zones. Such zones may be due to massive sulfides, shears, river valleys and even unconformities.

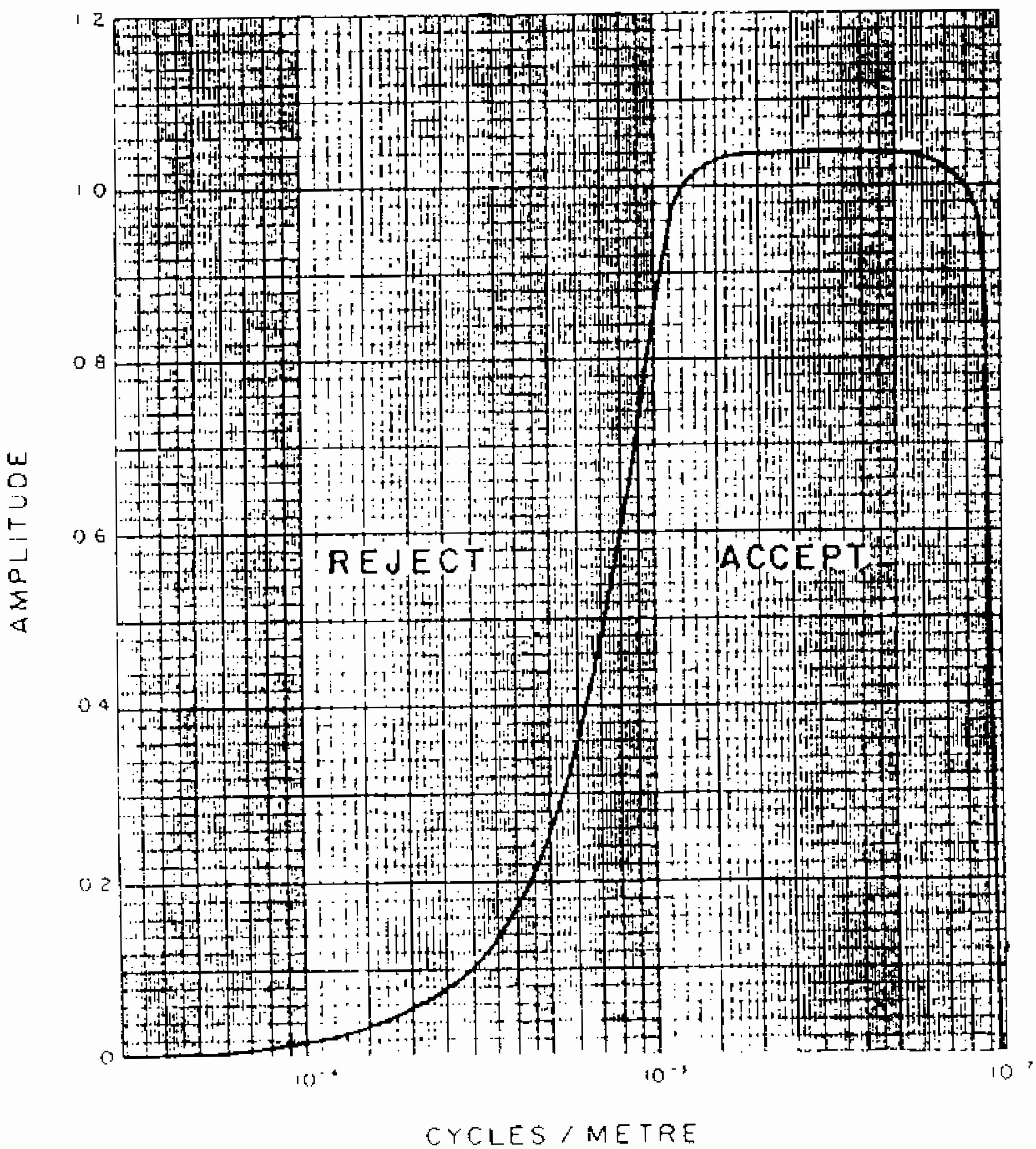



Fig. 5-3 Frequency response of VLF operator.

The VLF field is horizontal. Because of this, the method is quite sensitive to the angle of coupling between the conductor and the transmitted VLF field. Conductors which strike towards the VLF station will usually yield a stronger response than conductors which are nearly orthogonal to it.

The Herz Industries Ltd. Totem VLF-electromagnetometer measures the total field and vertical quadrature components. Both of these components are digitally recorded in the aircraft with a sensitivity of 0.1 percent. The total field yields peaks over VLF current concentrations whereas the quadrature component tends to yield crossovers. Both appear as traces on the profile records. The total field data are filtered digitally and displayed as contours to facilitate the recognition of trends, in the rock strata and the interpretation of geologic structure.

The response of the VLF total field filter operator in the frequency domain (Figure 5-3) is basically similar to that used to produce the enhanced magnetic map (Figure 5-2). The two filters are identical along the abscissa but different along the ordinant. The VLF filter removes long wavelengths such as those which reflect regional and wave transmission variations. The filter sharpens short wavelength responses such as those which reflect local geological variations.

## CONCLUSIONS AND RECOMMENDATIONS

This report provides a very brief description of the survey results and describes the equipment, procedures and logistics of the survey over the Todd Creek project.

No strong bedrock conductors, which are typical of massive sulphide responses, were identified in the survey area. However, the survey was successful in locating a few weak or poorly defined conductors of limited strike extent, which may warrant additional work. The various maps included with this report display the magnetic and conductive properties of the survey area. It is recommended that the survey results be reviewed in detail, in conjunction with all available geophysical, geological and geochemical information. Particular reference should be made to the computer generated data profiles which clearly define the characteristics of the individual anomalies.

Most anomalies in the Todd Creek area have been given an "S?" designation. Many have been attributed to conductive overburden or deep weathering, and several appear to be associated with magnetite-rich rock units. Others coincide with VLF anomalies, resistivity gradients, and/or magnetic gradients, which may reflect faults or shears. Such structural breaks are considered to be of particular interest as they may have influenced mineral deposition within the survey area.

The interpreted bedrock conductors defined by the survey should be subjected to further investigation, using appropriate surface exploration techniques. Resistivity anomalies are also considered to be potential areas of interest. Anomalies which are currently considered to be of moderately low priority may require upgrading if follow-up results are favourable.

It is also recommended that image processing of existing geophysical data be considered, in order to extract the maximum amount of information from the survey results. Current software and imaging techniques often provide valuable information on structure and lithology, which may not be clearly evident on the contour and colour maps. These techniques can yield images which define subtle, but significant, structural details.

Respectfully submitted,
**DIGHEM SURVEYS & PROCESSING INC.**

Paul A. Smith
Geophysicist

PAS/sdp

A1090BDEC.91R

## APPENDIX A

## LIST OF PERSONNEL

The following personnel were involved in the acquisition, processing, interpretation and presentation of data, relating to a DIGHEM$^{IV}$ airborne geophysical survey carried out for Noranda Exploration Company, Limited, over the Todd Creek property, B.C.

| | |
|---|---|
| Steve Kilty | Vice President, Operations |
| Dave Pritchard | Survey Operations Supervisor |
| Phil Miles | Senior Geophysical Operator |
| Luke Kukovica | Pilot (Questral Helicopters Ltd.) |
| Gordon Smith | Data Processing Supervisor |
| Paul A. Smith | Interpretation Geophysicist |
| Reinhard Zimmerman | Drafting Supervisor |
| Lyn Vanderstarren | Draftsperson (CAD) |
| Susan Pothiah | Word Processing Operator |
| Albina Tonello | Secretary/Expeditor |

The survey consisted of 555 km of coverage, flown from July 28 to August 11, 1990.

All personnel are employees of Dighem Surveys & Processing Inc., except for the pilot who is an employee of Questral Helicopters Ltd.

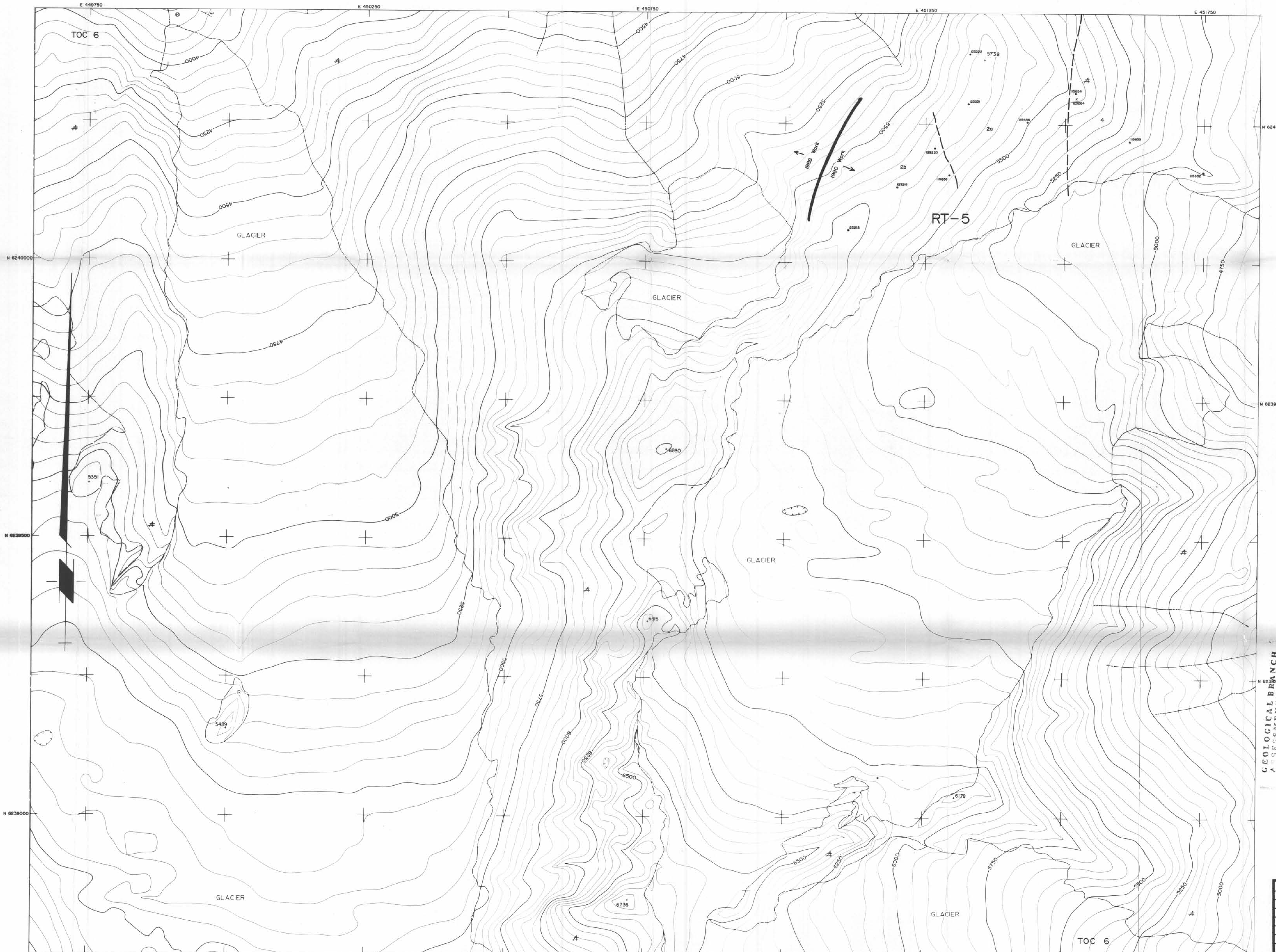
DIGHEM SURVEYS & PROCESSING INC.

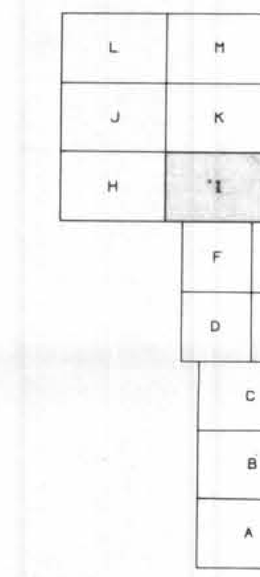
Paul A. Smith
Geophysicist

PAS/sdp

Ref: Report #1090B

A1090DEC.91R




1990 Soil Sample Results

| SAMPLE | Au ppb | Ag ppm | As ppm | Ba ppm | Cd ppm | Cu ppm | Mo ppm | Pb ppm | Zn ppm | Sb ppm |
|---|---|---|---|---|---|---|---|---|---|---|
| 115652 | 5 | 1.1 | 46 | 1176 | 1.5 | 25 | 5 | 58 | 132 | 15 |
| 115653 | 5 | 0.2 | 27 | 281 | 0.9 | 16 | 1 | 42 | 144 | 2 |
| 115654 | 5 | 0.1 | 41 | 888 | 2 | 14 | 3 | 44 | 231 | 3 |
| 115655 | 5 | 0.3 | 39 | 221 | 0.3 | 22 | 2 | 36 | 128 | 2 |
| 115656 | 5 | 0.6 | 42 | 362 | 1 | 21 | 2 | 37 | 117 | 7 |
| 123218 | 5 | 1.1 | 17 | 767 | 1.7 | 27 | 1 | 21 | 101 | 5 |
| 123219 | 5 | 0.4 | 55 | 836 | 0.6 | 23 | 3 | 39 | 122 | 9 |
| 123220 | 5 | 0.1 | 35 | 382 | 0.8 | 31 | 1 | 30 | 105 | 2 |
| 123221 | 5 | 0.2 | 27 | 139 | 0.3 | 21 | 3 | 22 | 90 | 4 |
| 123222 | 5 | 0.4 | 37 | 338 | 0.6 | 22 | 3 | 36 | 91 | 5 |

1990 Rock Sample Results

| SAMPLE # | Mo ppm | Cu ppm | Pb ppm | Zn ppm | Ag ppm | As ppm | Cd ppm | Sb ppm | Ba ppm | Au ppb |
|---|---|---|---|---|---|---|---|---|---|---|
| 125284 | 2 | 1 | 7 | 55 | 0.2 | 2 | 0.2 | 2 | 46 | 1 |

## LEGEND

Rock Types

1 Feldspar Porphyry, pale brown
- 1a. quartz-pyrite altered
- 1b. quartz-sericite pyrite altered

2
- 2a. dark green, maroon, grey andesite flows, agglomerate, tuff, breccia
- 2b. black siltstone, minor silty limestone, greywacke, volcaniclastics

3 Light grey-green feldspar porphyry flows, tuff and tuff breccia

4 Rhyolite, massive, breccia, lapilli tuff, ash tuff, locally quartz-sericite-pyrite altered

5 Dark green, grey hornblende porphyry intrusive dykes, magnetic

6 Quartz-pyrite +/- sericite altered zone

Abbreviations

| | | | |
|---|---|---|---|
| ba | barite | mal | malachite |
| bn | bornite | py | pyrite |
| cal | calcite | q | quartz |
| chl | chlorite | sc | sericite |
| cpy | chalcopyrite | sp | sphalerite |
| gn | galena | stk. wk. | stock work |
| hem | hematite | Tt | tetrahedrite |

Symbols

- Outcrop Area
- Mineralized Vein
- Glacial Till
- Icefield
- Strike & Dip
- Fault
- D.D.H. Location
- Geological Contact: defined, inferred, assumed
- Trench or Chip Sample Line
- Rock Sample Location
- Float Sample Location
- Soil Sample Location
- Silt Sample Location
- Pan / Silt Sample Location



0 50 100 150 200 metres
SCALE 1:2,500

REVISED

# TODD CREEK

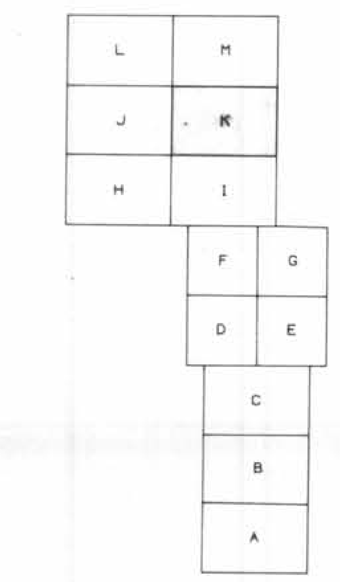
Virginia Creek Area
Geology, Sample Locations

PROJ. No. 281
N.T.S. 104A/4,5
DWG. No. Fig. 4

SURVEY BY:
DATE:
DRAWN BY: P.J.L.
SCALE: 1:2,500

NORANDA EXPLORATION
OFFICE PRINCE GEORGE, B.C.

RT-2
RT-3
RT-4
TOC 3
TOC 5
GLACIER
3-4 lapilli tuff
4 ash tuff
Felsic tuff Volcaniclastics
Andesite Flows Volc. Bx.
Green / Purple Andesite
B/L 10,000 N Az 085°
1990 Silt Sample Results
1990 Rock Sample Results
LEGEND
Rock Types
1 Feldspar Porphyry, pale brown
1a. quartz-pyrite altered
1b. quartz-sericite pyrite altered
2
2a. dark green, maroon, grey andesite flows, agglomerate, tuff, breccia
2b. black siltstone, minor silty limestone, greywacke, volcaniclastics
3 Light grey-green feldspar porphyry flows, tuff and tuff breccia
4 Rhyolite, massive, breccia, lapilli tuff, ash tuff, locally quartz-sericite-pyrite altered
5 Dark green, grey hornblende porphyry intrusive dykes, magnetic
6 Quartz-pyrite +/- sericite altered zone
Abbreviations
ba - barite
bn - bornite
cal - calcite
chl - chlorite
cpy - chalcopyrite
gn - galena
hem - hematite
mal - malachite
py - pyrite
q - quartz
sc - sericite
sp - sphalerite
stk. wk. - stock work
Tt - tetrahedrite
Symbols
Outcrop Area
Mineralized Vein
Glacial Till
Icefield
Strike & Dip
Fault
D.D.H. Location
Geological Contact: defined, inferred, assumed
Trench or Chip Sample Line
Rock Sample Location
Float Sample Location
Soil Sample Location
Silt Sample Location
Pan / Silt Sample Location
GEOLOGICAL BRANCH ASSESSMENT REPORT
21,097
REVISED
TODD CREEK
Virginia Creek Area
Geology, Sample Locations
PROJ. No. 281
N.T.S. 104A/4,5
DWG. No. Fig. 5
SURVEY BY
DRAWN BY P.J.L.
DATE
SCALE 1:2,500
NORANDA EXPLORATION
OFFICE PRINCE GEORGE, B.C.
0 50 100 150 200 metres
SCALE 1:2,500


## LEGEND

Rock Types

1 Feldspar Porphyry, pale brown
- 1a. quartz-pyrite altered
- 1b. quartz-sericite pyrite altered

2
- 2a. dark green, maroon, grey andesite flows, agglomerate, tuff, breccia
- 2b. black siltstone, minor silty limestone, greywacke, volcaniclastics

3 Light grey-green feldspar porphyry flows, tuff and tuff breccia

4 Rhyolite, massive, breccia, lapilli tuff, ash tuff, locally quartz-sericite-pyrite altered

5 Dark green, grey hornblende porphyry intrusive dykes, magnetic

6 Quartz-pyrite '/, sericite altered zone

Abbreviations

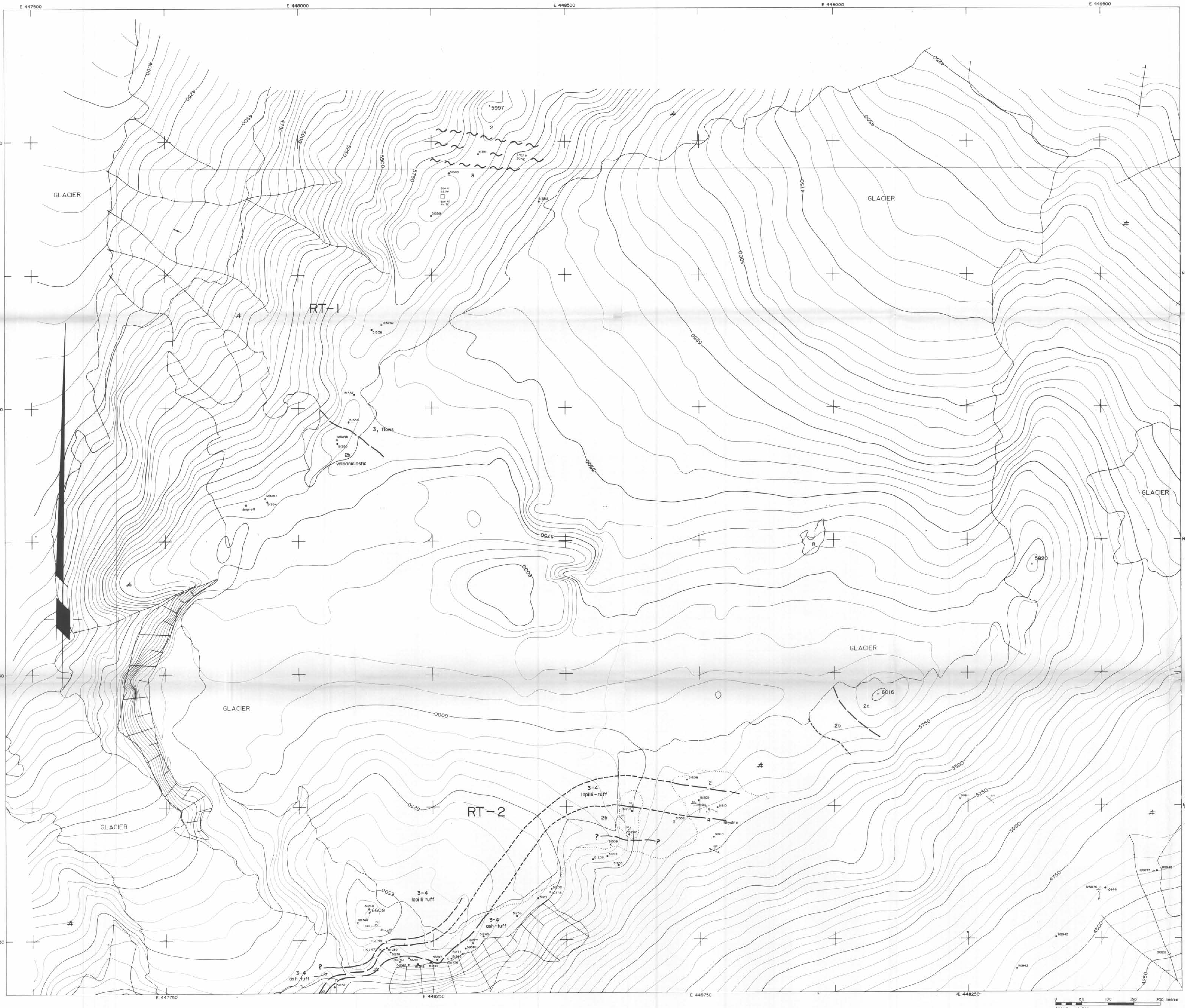
| | | | |
|---|---|---|---|
| ba - | barite | mal - | malachite |
| bn - | bornite | py - | pyrite |
| cal - | calcite | q - | quartz |
| chl - | chlorite | sc - | sericite |
| cpy - | chalcopyrite | sp - | sphalerite |
| gn - | galena | stk. wk. - | stock work |
| hem - | hematite | Tt - | tetrahedrite |

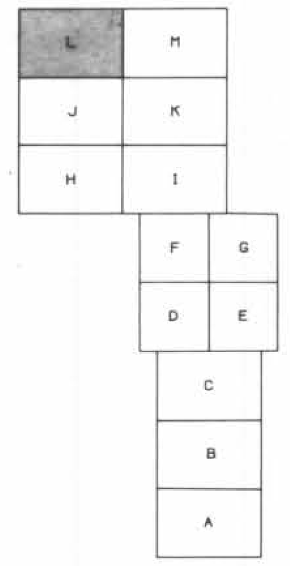
Symbols

- Outcrop Area
- Mineralized Vein
- Glacial Till
- Icefield
- Strike & Dip
- Fault
- D.D.H. Location
- Geological Contact: defined, inferred, assumed
- Trench or Chip Sample Line
- Rock Sample Location
- Float Sample Location
- Soil Sample Location
- Silt Sample Location
- Pan / Silt Sample Location

GEOLOGICAL BRANCH
ASSESSMENT REPORT
21,097

| REVISED | TODD CREEK |
|---|---|
| | Virginia Creek Area<br>Geology, Sample Locations |
| PROJ. No. 281<br>N.T.S. 104A / 4,5 | SURVEY BY: DATE:<br>DRAWN BY: P.J.L. SCALE: 1:2,500 |
| DWG. No. Fig. 6 | NORANDA EXPLORATION<br>OFFICE PRINCE GEORGE, B.C. |




1990 Soil Sample Results

| SAMPLE | Au ppb | Ag ppm | As ppm | Ba ppm | Cd ppm | Cu ppm | Mo ppm | Pb ppm | Zn ppm |
|---|---|---|---|---|---|---|---|---|---|
| 51354 | 5 | 0.1 | 26 | 210 | 1.3 | 69 | 1 | 17 | 92 |
| 51355 | 5 | 0.9 | 493 | 164 | 0.3 | 19 | 38 | 114 | 194 |
| 51356 | 5 | 0.1 | 24 | 90 | 0.5 | 24 | 5 | 53 | 114 |
| 51357 | 20 | 0.1 | 53 | 61 | 0.9 | 31 | 8 | 51 | 133 |
| 51358 | 5 | 0.1 | 25 | 111 | 0.8 | 20 | 1 | 24 | 108 |
| 51359 | 5 | 0.1 | 18 | 129 | 0.8 | 18 | 2 | 28 | 121 |
| 51360 | 5 | 0.1 | 18 | 96 | 0.8 | 19 | 1 | 45 | 79 |
| 51361 | 5 | 0.1 | 22 | 143 | 1.5 | 25 | 1 | 16 | 96 |
| 51362 | 5 | 0.2 | 25 | 317 | 1.6 | 38 | 1 | 19 | 90 |
| 51201 | 5 | 0.4 | 71 | 288 | 0.7 | 27 | 3 | 28 | 106 |
| 51202 | 5 | 0.2 | 44 | 328 | 0.9 | 25 | 2 | 17 | 103 |
| 51203 | 5 | 0.2 | 57 | 313 | 0.9 | 24 | 2 | 22 | 106 |
| 51204 | 5 | 0.6 | 87 | 350 | 1.1 | 26 | 3 | 30 | 112 |
| 51205 | 5 | 0.4 | 84 | 599 | 0.6 | 14 | 2 | 16 | 87 |
| 51206 | 5 | 0.2 | 52 | 476 | 1.0 | 26 | 2 | 19 | 155 |
| 51207 | 5 | 0.2 | 71 | 308 | 0.9 | 27 | 3 | 18 | 99 |
| 51208 | 5 | 0.2 | 121 | 666 | 1.0 | 30 | 3 | 22 | 116 |
| 51209 | 5 | 0.2 | 51 | 416 | 1.0 | 28 | 2 | 22 | 138 |
| 51210 | 5 | 0.2 | 90 | 469 | 0.9 | 21 | 2 | 18 | 102 |
| 51232 | 5 | 0.2 | 50 | 805 | 0.4 | 9 | 2 | 31 | 88 |
| 51235 | 5 | 0.2 | 43 | 331 | 0.4 | 12 | 1 | 23 | 87 |
| 51236 | 5 | 0.3 | 52 | 618 | 0.6 | 10 | 1 | 63 | 149 |
| 51237 | 5 | 0.4 | 40 | 435 | 0.2 | 13 | 2 | 25 | 101 |
| 51238 | 5 | 0.3 | 47 | 343 | 1.0 | 28 | 1 | 18 | 106 |
| 51239 | 5 | 0.2 | 61 | 332 | 0.8 | 25 | 1 | 29 | 130 |
| 51240 | 5 | 0.2 | 35 | 182 | 0.2 | 22 | 1 | 19 | 99 |
| 51241 | 5 | 0.2 | 45 | 826 | 0.3 | 22 | 1 | 15 | 75 |
| 51242 | 5 | 0.1 | 45 | 265 | 0.4 | 25 | 1 | 27 | 112 |
| 51243 | 5 | 0.2 | 41 | 311 | 0.6 | 31 | 2 | 34 | 136 |
| 51244 | 5 | 0.2 | 54 | 302 | 0.9 | 27 | 2 | 33 | 136 |
| 51245 | 5 | 0.3 | 72 | 410 | 0.5 | 27 | 1 | 32 | 101 |
| 51246 | 5 | 0.4 | 46 | 241 | 1.1 | 25 | 3 | 31 | 114 |
| 51247 | 5 | 1.0 | 63 | 302 | 0.7 | 36 | 2 | 19 | 116 |
| 51248 | 5 | 0.2 | 46 | 305 | 0.6 | 26 | 2 | 25 | 119 |
| 51249 | 5 | 0.2 | 499 | 460 | 1.7 | 92 | 10 | 251 | 231 |
| 51250 | 5 | 0.8 | 124 | 307 | 0.4 | 11 | 1 | 58 | 137 |

1990 Rock Sample Results

| SAMPLE # | Mo ppm | Cu ppm | Pb ppm | Zn ppm | Ag ppm | As ppm | Cd ppm | Sb ppm | Ba ppm | Au ppb |
|---|---|---|---|---|---|---|---|---|---|---|
| 110747 | 7 | 6 | 61 | 41 | 0.2 | 9 | 0.2 | 2 | 286 | 2 |
| 110748 | 3 | 8 | 17 | 34 | 0.1 | 28 | 0.2 | 2 | 128 | 2 |
| 110749 | 3 | 6 | 5 | 14 | 0.7 | 1 | 0.2 | 2 | 611 | 6 |
| 110750 | 6 | 7 | 18 | 21 | 0.3 | 14 | 0.2 | 3 | 154 | 4 |
| 125267 | 1 | 33 | 5 | 49 | 0.7 | 12 | 0.2 | 2 | 837 | 5 |
| 125268 | 121 | 1 | 56 | 57 | 0.1 | 1050 | 0.2 | 13 | 93 | 1 |
| 125269 | 2 | 5 | 6 | 76 | 0.2 | 7 | 0.3 | 2 | 48 | 1 |

## LEGEND

Rock Types

1 Feldspar Porphyry, pale brown
- 1a. quartz-pyrite altered
- 1b. quartz-sericite pyrite altered

2
- 2a. dark green, maroon, grey andesite flows, agglomerate, tuff, breccia
- 2b. black siltstone, minor silty limestone, greywacke, volcaniclastics

3 Light grey-green feldspar porphyry flows, tuff and tuff breccia

4 Rhyolite, massive, breccia, lapilli tuff, ash tuff, locally quartz-sericite-pyrite altered

5 Dark green, grey hornblende porphyry intrusive dykes, magnetic

6 Quartz-pyrite +/- sericite altered zone

Abbreviations

| | | | |
|---|---|---|---|
| ba - barite | | mal - malachite | |
| bn - bornite | | py - pyrite | |
| cal - calcite | | q - quartz | |
| chl - chlorite | | sc - sericite | |
| cpy - chalcopyrite | | sp - sphalerite | |
| gn - galena | | stk. wk. - stock work | |
| hem - hematite | | Tt - tetrahedrite | |

Symbols

- Outcrop Area
- Mineralized Vein
- Glacial Till
- Icefield
- Strike & Dip
- Fault
- D.D.H. Location
- Geological Contact: defined, inferred, assumed
- Trench or Chip Sample Line
- Rock Sample Location
- Float Sample Location
- Soil Sample Location
- Silt Sample Location
- Pan / Silt Sample Location



REVISED

# TODD CREEK

Virginia Creek Area

Geology, Sample Locations

PROJ. No. 281
N.T.S. 104A/4,5
DWG. No. Fig. 7

SURVEY BY
DRAWN BY P.J.L.
DATE
SCALE 1:2,500

NORANDA EXPLORATION
OFFICE PRINCE GEORGE, B.C.

E 449750
E 450250
E 450750
E 451250
E 451750
N 6243750
N 6243500
N 6243250
N 6243000
N 6242750
N 6242250
E 450000
E 450500
E 451000
E 451500
TOC 4
RT - 3
GLACIER
SNOW
Altered Rhyolite
Qtz / Jasper veins in Andesite
Purple / Green Andesite
Andesitic Volcaniclastic
vesicular basalt
Andesite / Rhyolite talus
1988 Samples
Tbr
Br
2a
2b
GEOLOGICAL BRANCH
ASSESSMENT REPORT
21,097
LEGEND
Rock Types
1 Feldspar Porphyry, pale brown
1a. quartz-pyrite altered
1b. quartz-sericite pyrite altered
2
2a. dark green, maroon, grey andesite flows, agglomerate, tuff, breccia
2b. black siltstone, minor silty limestone, greywacke, volcaniclastics
3 Light grey-green feldspar porphyry flows, tuff and tuff breccia
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gn - galena
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py - pyrite
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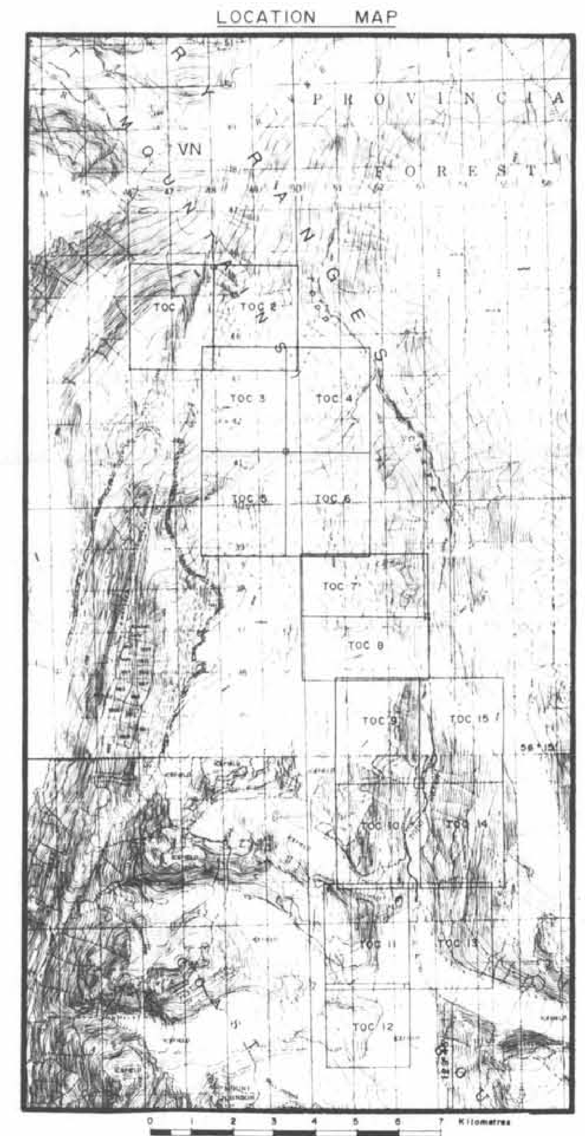
sp - sphalerite
stk. wk. - stock work
Tt - tetrahedrite
Symbols
Outcrop Area
Mineralized Vein
Glacial Till
Icefield
Strike & Dip
Fault
D.D.H. Location
Geological Contact: defined, inferred, assumed
Trench or Chip Sample Line
Rock Sample Location
Float Sample Location
Soil Sample Location
Silt Sample Location
Pan / Silt Sample Location
SCALE 1:2,500
200 metres
REVISED
TODD CREEK
Virginia Creek Area
Geology, Sample Locations
PROJ. No. 281
N.T.S. 104 A/4,5
DWG No
Fig. 8
SURVEY BY
DATE:
DRAWN BY P.J.L.
SCALE 1:2,500
NORANDA EXPLORATION
OFFICE PRINCE GEORGE, B.C.


LOCATION MAP




SCALE 1 : 100,000

## LEGEND

### ROCK TYPES

| | |
|---|---|
| 1 | Feldspar Porphyry, pale brown, Ia-quartz-pyrite altered, Ib-quartz-sericite pyrite altered |
| 2 | Dark green, maroon grey andesite flows, agglomerate tuff, breccia |
| 3 | Light grey-green feldspar porphyry flows, tuff and tuff breccia |
| 4 | Rhyolite, massive, breccia, lapilli tuff, locally quartz-sericite-pyrite altered |
| 5 | Dark green hornblende porphyry intrusive |
| 6 | Quartz - pyrite +/- sericite altered mineralized zone |

| | | | |
|---|---|---|---|
| ba | barite | q | quartz |
| bn | bornite | sc | sericite |
| cal | calcite | sp | sphalerite |
| chl | chlorite | stk wk | stock work |
| cpy | chalcopyrite | Tt | tetrahedrite |
| gn | galena | | |
| hem | hematite | | |
| mal | malachite | | |
| py | pyrite | | |

### SYMBOLS

- Outcrop area
- Geologic contact defined, inferred
- Mineralized vein
- x, ⊗ Rock, float sample
- 41821 Silt sample
- Glacial till
- Icefield
- Trench or chip sample line
- Strike and dip
- Fault
- D.D.H. Location
- Silt and Pan sample
- Cliff, steep canyon
- Soil Geochem survey grid Cu(ppm) / Au(ppb) 31/10

MAP SHEET INDEX

4 2 3 1

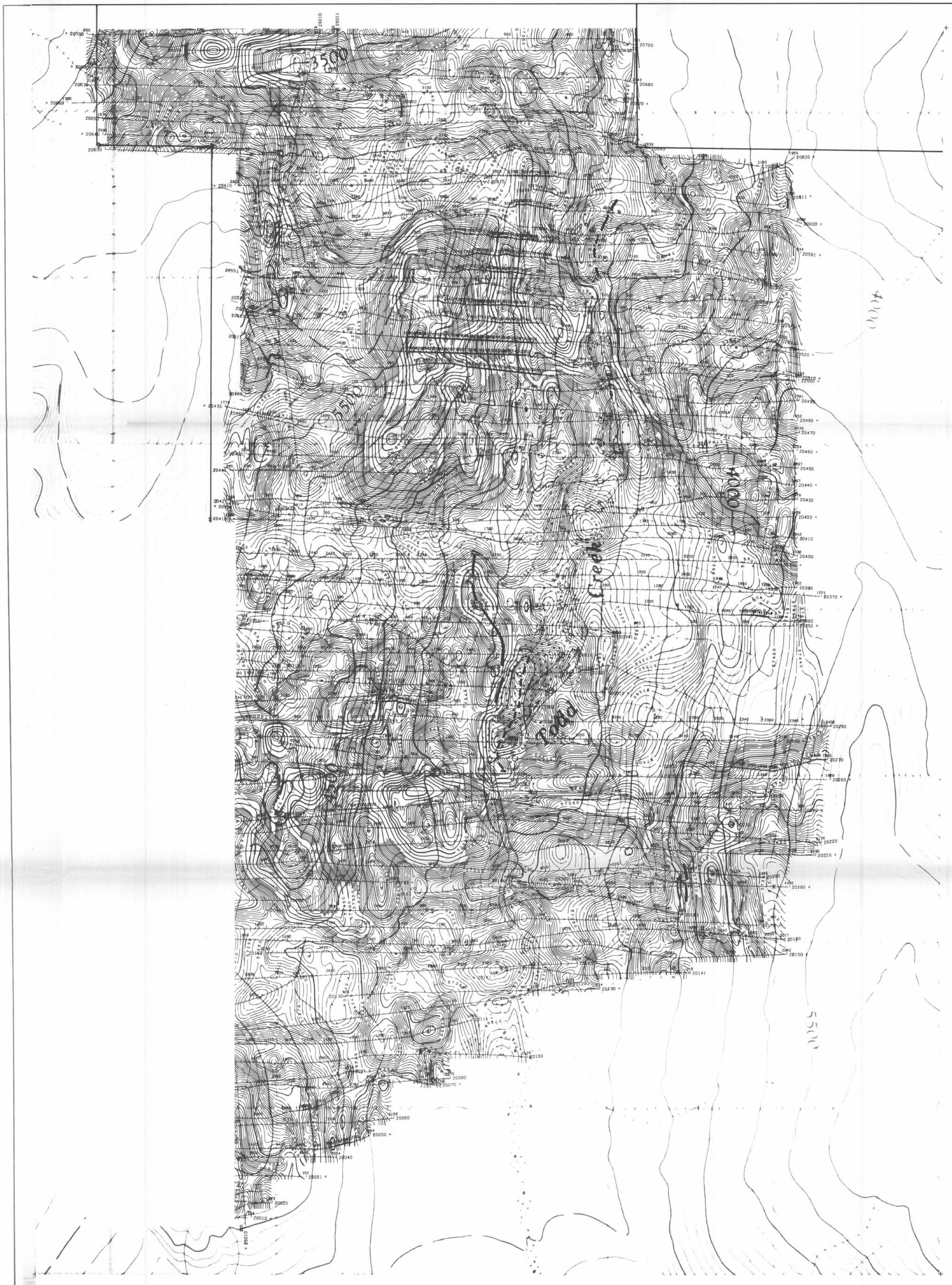


For Analytical Results refer to: January 1989 Report

NOTE Topography based on photocopy enlargement of N.T.S. 1:50,000 scale map 104A/4,5

0 100 200 300 400 500m
SCALE 1:5,000

| REVISED | |
|---|---|
| | TODD CREEK |
| | TOC 14-15 GEOLOGY MAP WITH SOIL, SILT, PAN SAMPLE LOCATIONS |
| PROJ. No. 281 | SURVEY BY: CH, RB — DATE: JULY, 1988 |
| N.T.S. 104A/4,5 | DRAWN BY: SKB — SCALE: 1:5000 |
| DWG. No. FIG. 9 | NORANDA EXPLORATION<br>OFFICE: PRINCE GEORGE, B.C. |




## EM LEGEND

| Grade | Anomaly | Conductance |
|---|---|---|
| 7 | ● | ≥100 siemens |
| 6 | ◕ | 50-100 siemens |
| 5 | ◒ | 20-50 siemens |
| 4 | ⊕ | 10-20 siemens |
| 3 | ⊕ | 5-10 siemens |
| 2 | ○ | 1-5 siemens |
| 1 | ◌ | <1 siemens |
| - | ✳ | Questionable anomaly |

Anomaly identifier
Interpretive symbol
Depth is greater than
: 15 m
: 30 m
: 45 m
: 60 m
Inphase and Quadrature of coaxial coil is greater than
. 5 ppm
.. 10 ppm
... 15 ppm
.... 20 ppm

| Interpretive symbol | Conductor ("model") |
|---|---|
| B. | Bedrock conductor |
| D. | Narrow bedrock conductor ("thin dike") |
| S. | Conductive cover ("horizontal thin sheet") |
| H. | Broad conductive rock unit, deep conductive weathering, thick conductive cover ("half space") |
| E. | Edge of broad conductor ("edge of half space") |
| L. | Culture, e.g. power line, building, fence |

## FLIGHT LINES WITH EM ANOMALIES

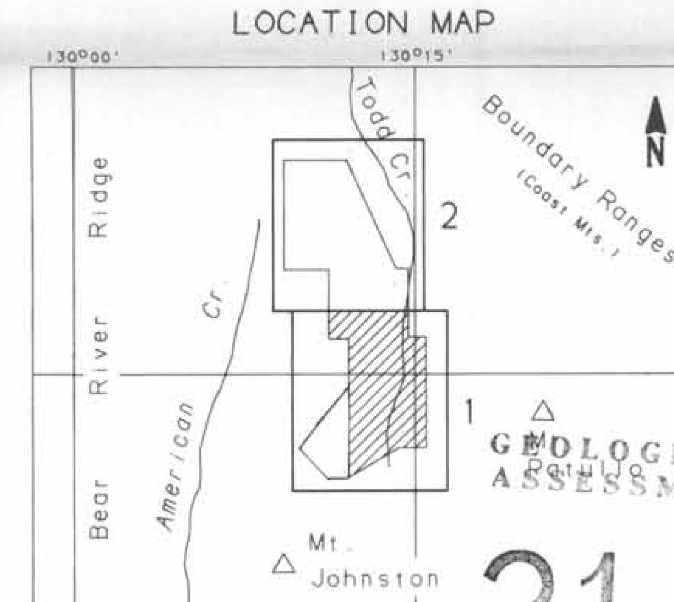
13010
13020
Flight direction
Flight line number
11020
Reflight Number
Line Number
Area Number
Fiducials identified on profiles
Dip direction
EM anomaly (see EM legend)
Conductor axis (on EM maps only)
Arcs indicate the conductor has a thickness > 10m
Magnetic correlation in nT (gammas)

## CONTOUR INTERVALS

| | |
|---|---|
| ———— | 250nT |
| ———— | 50nT |
| ———— | 10nT |
| — — — | 5nT |
| (oval) | magnetic low |

Magnetic inclination within the survey area: 74 degrees

## LOCATION MAP




NTS: 104A/4.5

Scale 1:250,000



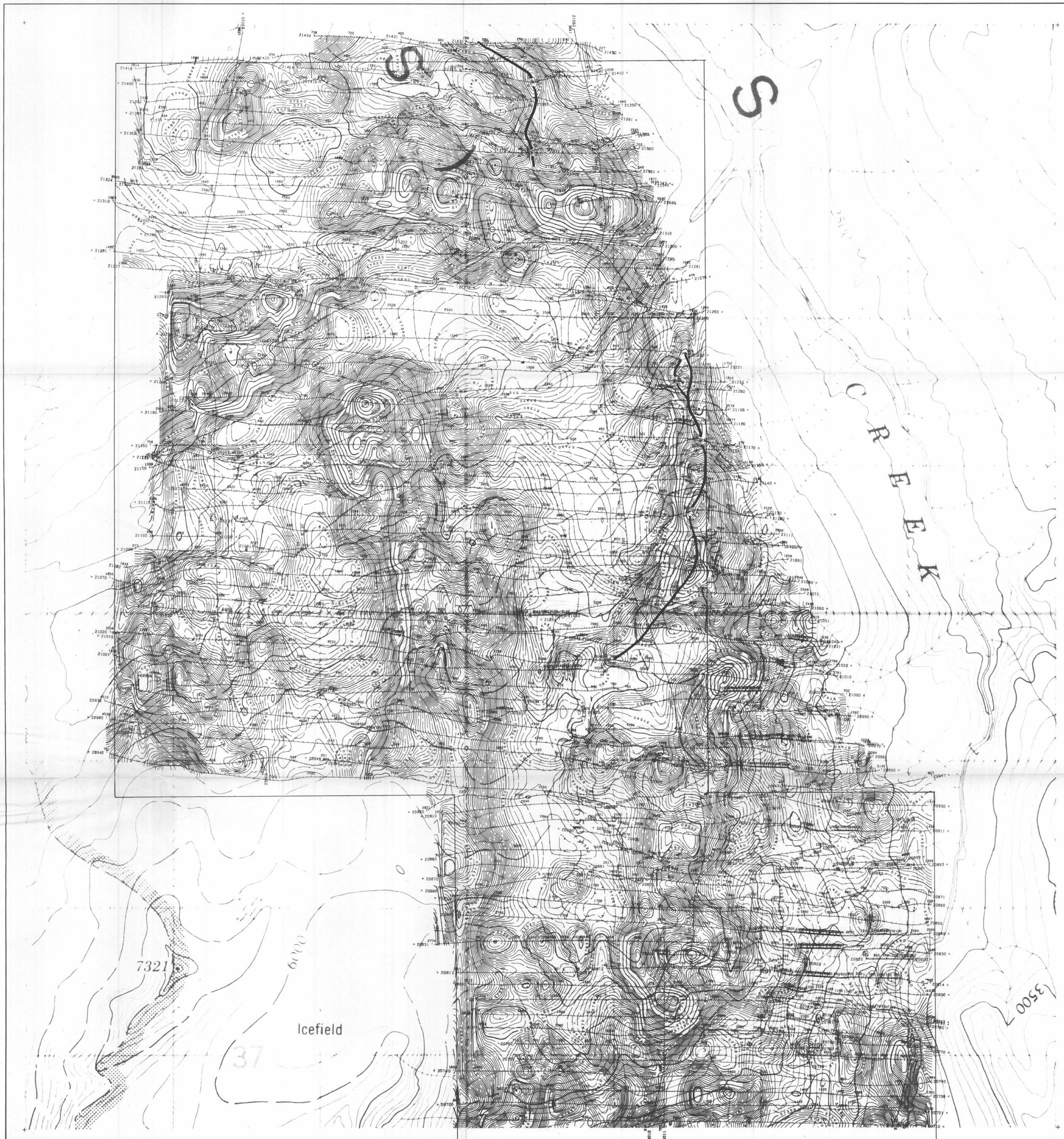
# NORANDA EXPLORATION COMPANY LTD.
## TODD CREEK PROJECT
# TOTAL FIELD MAGNETICS

| | | |
|---|---|---|
| SYSTEM: DIGHEM™ SURVEY | NTS: 104A/4.5 | GEOPHYSICIST: |
| DATE: July 1990 | JOB: 1090 | SHEET: 1 |

DIGHEM SURVEYS & PROCESSING INC.

0 0.5 1.0 Km
0 0.5 Mi
Scale 1:10,000

Dighem




## EM LEGEND

| Grade | Anomaly | Conductance |
|---|---|---|
| 7 | ● | ≥100 siemens |
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| 3 | ⊕ | 5-10 siemens |
| 2 | ○ | 1-5 siemens |
| 1 | ◌ | <1 siemens |
| - | ✳ | Questionable anomaly |

Anomaly identifier
Interpretive symbol
Depth is greater than
- 15 m
- 30 m
- 45 m
- 60 m

Inphase and Quadrature of coaxial coil is greater than
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- 10 ppm
- 15 ppm
- 20 ppm

| Interpretive symbol | Conductor ('model') |
|---|---|
| B | Bedrock conductor |
| D | Narrow bedrock conductor ('thin dike') |
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| H | Broad conductive rock unit, deep conductive weathering, thick conductive cover ('half space') |
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| L | Culture, e.g. power line, building, fence |

## FLIGHT LINES WITH EM ANOMALIES

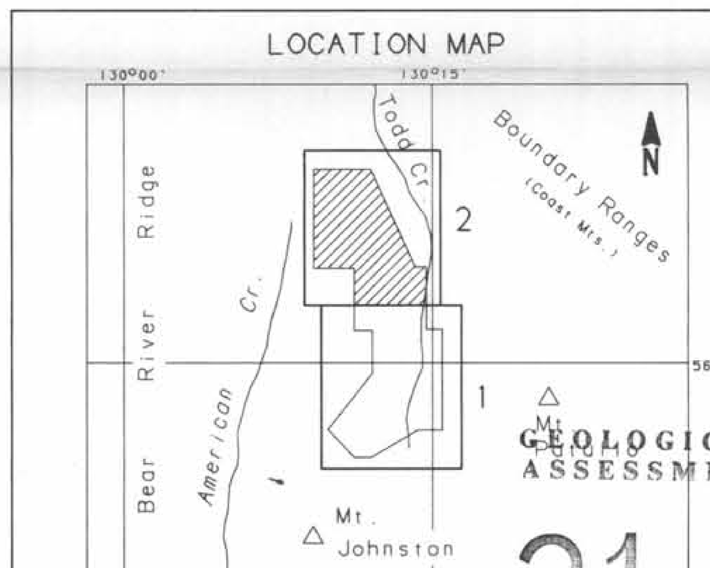
13010
13020
- Flight direction
- Flight line number
  11020
  - Reflight Number
  - Line Number
  - Area Number
- Fiducials identified on profiles
- Dip direction
- EM anomaly (see EM legend)
- Conductor axis (on EM maps only)
- Arcs indicate the conductor has a thickness > 10m
- Magnetic correlation in nT (gammas)

## CONTOUR INTERVALS

- 250nT
- 50nT
- 10nT
- 5nT
- magnetic low

Magnetic inclination within the survey area: 74 degrees

## LOCATION MAP




NTS: 104A/4,5

Scale 1:250,000

GEOLOGICAL BRANCH
ASSESSMENT REPORT

21,097

# NORANDA EXPLORATION COMPANY LTD.

## TODD CREEK PROJECT

# TOTAL FIELD MAGNETICS

| SYSTEM: DIGHEM™ SURVEY | NTS: 104A/4,5 | GEOPHYSICIST: |
|---|---|---|
| DATE: July 1990 | JOB: 1090 | SHEET: 2 |

DIGHEM SURVEYS & PROCESSING INC.

0 — 0.5 — 1.0 Km
0 — 0.5 Mi
Scale 1:10,000

Dighem