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GEOLOGICAL AND GEOCHEMICAL SURVEY

ON THE MET GROUP OF CLAIMS

VICTORIA MINING DIVISION

N.T.S. 92B/5 & 92B/12

MET 1 (2144), MET 2 (2137) JORDAN GOLD 3 (733)

Latitude 48°30' Longitude 123°53'

GEOLOGICAL BRANCH
ASSESSMENT REPORT

18,993

Owner : Beau Pre Explorations Limited
Valentine Gold Corporation

Operator : Noranda Exploration Company, Limited (no personal liability)

Authors : Terence J. McIntyre
R.G. Wilson

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SUMMARY

The Met/Jordan group of claims lie approximately 18 km northwest of the township of Sooke, B.C. The group, comprising 50 units, is accessed from Sooke via the Butler main logging road and numerous branches off the main line which are generally in good condition.

A reconnaissance programme was carried out on the claim group from April 19 to May 22, 1989, and entailed geological mapping, prospecting and rock and soil geochemical sampling.

North-south compassed traverse lines were established 400 metres apart with stations every 50 metres. These traverse lines were then geologically mapped, at a scale of 1:5,000, and soil sampled. Continuous rock chip samples were taken along the strike of quartz veins, across the width of the aplite dyke, and across mineralized zones.

The geology of the claim group, north of the Bear Creek Reservoir, consists of the Leech River Formation which comprises metasandstone, metapelites, and amphibolite. South of the Bear Creek Reservoir is the Eocene Metchosin Volcanics typified by andesitic tuff, lapilli tuff, agglomerate or flow. Cutting the Metchosin Volcanics is an east-west trending, south dipping finely crystalline, aplite dyke approximately 25 metres in width.

Throughout the Leech River Formation occur quartz veins, stringers, and sweats, however, visible sulfides within the quartz veins are rare.

The Metchosin Volcanics contain quartz stringers, epidote stringers and the occasional quartz stockwork. Sulfides, which take the form of pyrite, chalcopyrite and pyrrhotite and minor bornite, occur as fracture filling and as fine disseminations throughout the andesite tuff, and, to a lesser extent, the aplite dyke.

Overall the amount of sulfides on the Met group was found to be sparse with the exception of localized sulfide mineralization near the contact with the aplite dyke, and at the intersection of joint planes.

Results obtained from grab samples during the initial prospecting survey returned values of 1.4% and 0.4% Cu. These results came from areas in close proximity to the dyke, and further geochemical surveys were carried out over these areas.

Continuous rock chip samples taken across quartz veins, the aplite dyke, and across mineralized zones failed to produce significant Au or Cu values.

The results of the soil sampling along traverse 1 and traverse 2 produced highs of 170 ppb and 55 ppb Au respectively. Background soil Au values are approximately 5 ppb.

1.0 INTRODUCTION

1.1 Location and Access

The Met group lies approximately 18 km northwest of the township of Sooke, B.C. (Figures 1 & 2). The property is accessed from Sooke via the Butler main logging road as far as the Bear Creek Reservoir. From this point there is good access to the various areas within the claim group via logging roads which are generally in good condition.

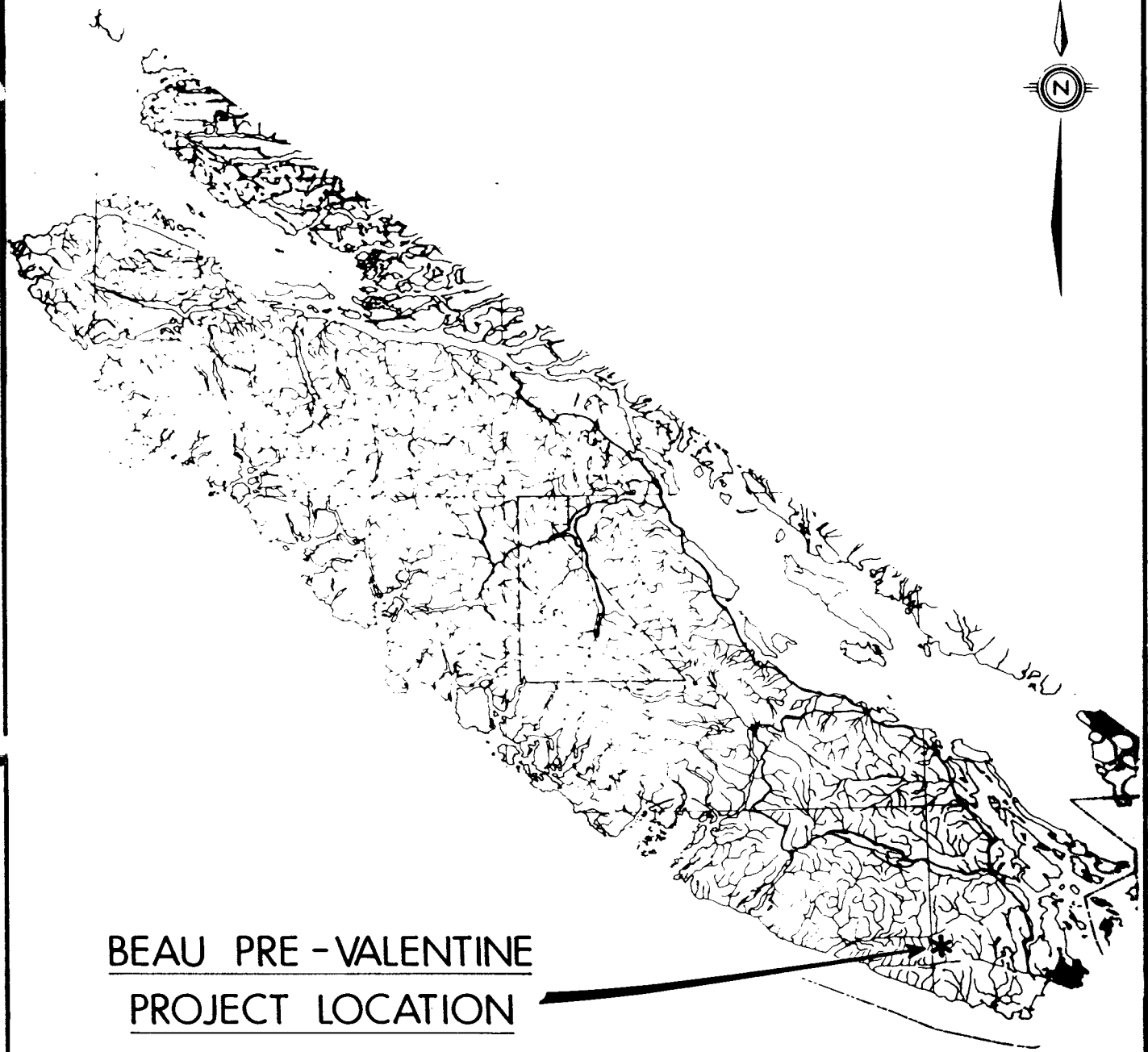
1.2 Physiography

The Met group lies within the Vancouver Island Ranges in the southern portion of the Insular Mountains.

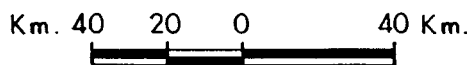
The physiography is composed of gently rolling mountain tops to the south of the claim group which drops steeply into the Bear Creek Reservoir, going north, and rises gently again to the north of the claim group. Elevations range from 778 metres in the south to 406 metres at the reservoir.

The climate of the southern Vancouver Island is quite mild. The fall, winter and spring months are typified by heavy precipitation which can result in a considerable snow pack at elevations greater than 600 metres. Below this elevation work can proceed almost year round, however, above this elevation the snow pack remains until May and June. The summer months are hot and dry with up to six weeks of forest closure annually due to forest fire hazard.

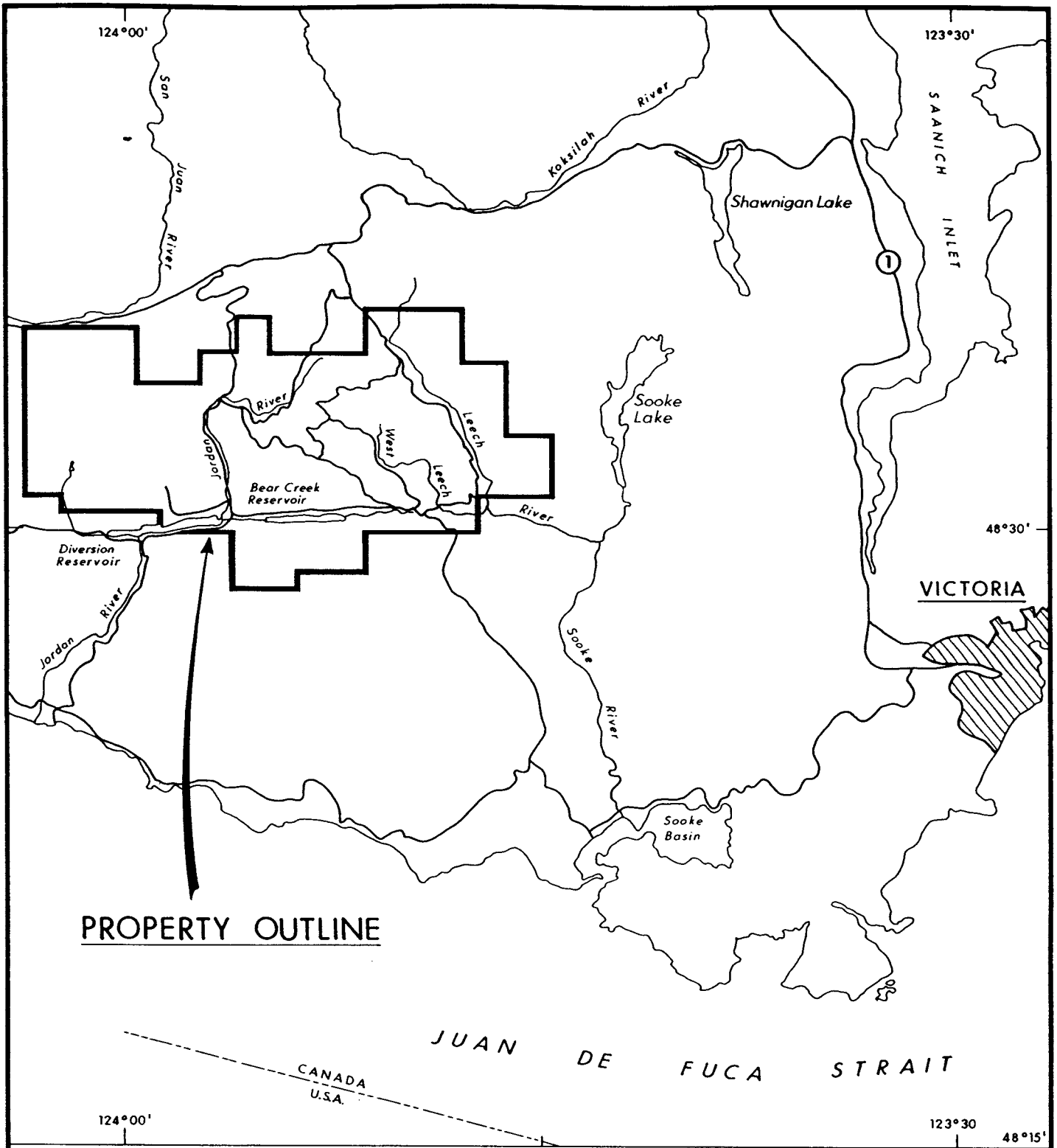
Most of the claim group has been clear cut logged and there is a profusion of second growth in various stages of maturation. Above the 700 metre elevation there are stands of mature timber interspaced with huckleberry bushes.



BEAU PRE - VALENTINE
PROJECT LOCATION



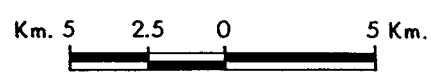
REVISED	BEAU PRE - VALENTINE	
	<u>PROJECT LOCATION</u>	
PROJ No <u>120</u>	SURVEY BY <u>R.W.</u>	DATE <u>JULY 1989</u>
N.T.S. <u>928/C</u>	DRAWN BY <u>J.S.</u>	SCALE <u>1:2,000,000</u>
DWG No <u>1</u>	NORANDA EXPLORATION OFFICE <u>VANCOUVER</u>	



PROPERTY OUTLINE

JUAN DE FUCA STRAIT

CANADA
U.S.A.



VANCAL 11927

REVISED	BEAU PRE - VALENTINE	
	<u>PROPERTY LOCATION</u>	
PROJ. No. 120	SURVEY BY: R.W.	DATE: JUNE 1989
N.T.S. 928/5,12	DRAWN BY: J. Serwin	SCALE: 1:250,000
DWG. No. 2	NORANDA EXPLORATION	
	OFFICE: VANCOUVER	

1.3 Claims and Ownership

The Met group is made up of the following claims (Figure 3):

Name	Record #	Units	Previous Due Date	New Expiry Due Date
Jordan Gold 3	0733	14	Dec. 24/89	1990
Met 1	2144	18	June 1/89	1991
Met 2	2137	18	May 31/89	1991

=====
All interest in the Met group of claims have been transferred for administrative purposes to Noranda Exploration Company, Limited (no personal liability), as stated in an option agreement between Noranda, Beau-Pre Explorations Ltd., and Valentine Gold Corporation.

1.4 Previous Work

Discovery of placer gold in the Leech river gave rise to a gold rush in 1864 to 1865. A tent city with a population of upwards of 4,000 people sprang up at the confluence of the Leech and Sooke Rivers. Placer gold and nuggets ranging from ½ to 1 ounce were reported, however, a bedrock source was not found. Total value of the placer gold recovered in this area, in 1866 dollars, is estimated between \$100,000 and \$200,000.

In 1966 Mr. Fred Zorelli discovered native gold in a piece of quartz float on Valentine Mountain. In 1976 Bob Beaupre discovered native gold in a narrow quartz vein called the "A" Vein and began an exploration programme from 1976 to 1983. The programme, centred on Valentine Mountain, involved soil geochemical surveys, trenching, bulk sampling, geological mapping, and drilling. In 1985 Falconbridge Limited conducted a trenching and sampling programme. In 1987 Valentine Gold Corporation conducted bulk sampling and a regional exploration programme on the property.

The work performed on the Met group in 1987 consisted of stream sediment sampling, geochemical rock and soil sampling, geological mapping, and an EM geophysical survey.

1.5 Work Performed

A total of 29 mandays were spent on a reconnaissance style exploration programme from April 19 to May 22, 1989 on the Met claim group.

The programme comprised geological mapping, prospecting, and rock and soil geochemical sampling. A total of 49 rocks and 98 soils were taken. Of this total, 16 mandays were spent and 17 rock samples were taken on a prospecting survey from April 19 to April 26, 1989. The costs of this survey are included in the reconnaissance programme. The soil samples were analyzed by Acme Analytical Laboratories and by Noranda's Vancouver laboratory. The rock samples were analyzed entirely by Acme Analytical Laboratories.

1.6 Personnel

The work was carried out on the claim group by T. McIntyre (Regional Property Crew Chief), B. Singh, B. Northcote (Geological Assistants), S. Loudon, D. Dempsey, and I. Saunders (Fieldmen), K. Lovang, and J. Lovang (Prospectors).

2.0 METHODS

2.1 Prospecting

Prospecting of the Met group was carried out in the initial part of the programme. Grab rock samples were obtained by the prospectors of gossanous outcrops, sulfide mineralization, and siliceous zones near an aplite dyke. Rock sample locations were then plotted on a 1:5,000 scale topographic map (Figures 6a & 6b).

The results of this initial survey produced Cu anomalies in the vicinity of the aplite dyke. These areas became the focus of attention during the reconnaissance exploration programme.

2.2 Geological Mapping

Geological mapping coincident with geochemical sampling was carried out along north-south compassed traverses, and up creeks. The mapping, at a scale of 1:5,000, was carried out with a view to identifying lithology, metamorphism, structure, mineralization, quartz veining and alteration.

2.3 Geochemical Sampling

Continuous rock chip samples were taken along the strike of quartz veins, and across the width of mineralized zones within the Metchosin volcanics. To sample zones of sulfide mineralization continuous rock chip sampling was employed in order to produce a more representative geochemical result. Sample widths varied from 0.30 m to 1.0 m with one 4.0 metre sample taken across the dyke. Continuous rock chip samples were taken across the width of the aplite dyke, the hanging wall and footwall, as well as across the width of zones containing disseminated sulfide mineralization. Rock samples collected on the Met group, each weighing approximately 2 kg, were placed in 6 ml plastic bags and shipped to Acme Analytical Laboratories Limited in Vancouver for analysis.

The samples were dried, sieved to -80 mesh, and subjected to a 95°C solution of 3:1:2 - HCl:HNO₃:H₂O for a period of 1 hour. The samples were analyzed using the 30-element ICP (inductively coupled argon plasma) method and geochemically analyzed for Au by Atomic Absorption determination.

Soil samples were taken along north-south compassed traverse lines, placed perpendicular to the strike of the dyke. Each line is 400 metres apart with soil stations established every 50 metres. Samples, weighing approximately 1 kg each, were taken in the B Horizon at an approximate depth of 30 cm, placed into Kraft paper bags, and partially air dried prior to shipment to Noranda's Vancouver laboratory.

Analysis was carried out by Acme Analytical Laboratories Limited using the 30-element ICP method used for rock samples. Noranda's Vancouver laboratory conducted the analysis of Au in soil samples using Atomic Absorption determination. See Appendix I for Noranda's and Acme's laboratory analytical techniques.

The first set of soil samples from Traverse 1, 2 and 3 were analyzed by Noranda's Vancouver laboratory and produced background Au values. These same samples were analyzed by Acme Analytical Laboratories and produced anomalous Au values. Additional re-runs of these samples by Acme Analytical Laboratories seemed to verify the original Noranda laboratory results, thereby raising the suspicion that Acme's first anomalous run was due to contamination. Detail follow-up 25 metre spaced soil samples over the apparent anomaly produced only background Au values, and served to confirm this suspicion.

Sample type and location, designated by symbol, and sample numbers are displayed on Figures 6a and 6b.

3.0 GEOLOGY

3.1 Regional Geology

The southern portion of Vancouver Island is composed of a series of volcanics and sediments, of Mesozoic to Cenozoic Age, which have subsequently been deformed and faulted into a structurally complex stratigraphic sequence (Figure 4).

This stratigraphic sequence is represented by the Bonanza Volcanics, Leech River Formation, Metchosin Volcanics, and the Colquitz Gneiss and Wark Diorite.

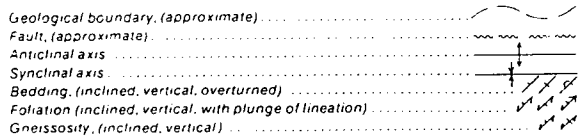
At the centre of this sequence is the discrete geotectonic Leech River Formation (Grove, 1984). It is a fault bounded complex package of sediments and volcanics which have undergone regional metamorphism to produce metasandstones, metapelites and amphibolites. The metapelites range from phyllite, to biotite schist through to biotite-garnet-staurolite-andalusite-schist depending upon metamorphic grade. These units have been subsequently intruded by Tertiary granitic and quartz diorite sills.

The age of the Leech River Formation is somewhere between Late Jurassic to Early Cretaceous (Fairchild, 1982). It is thought originally to have been sediments from a Pacific rim trench which have subsequently been deformed and faulted to produce a major, east-west trending, east plunging anticline.

LEGEND

CENOZOIC	QUATERNARY RECENT	Q	Recent sediments
		Qc	CAPILANO SEDIMENTS: sand, gravel, silt, clay
		Qv	VASHON DRIFT: gravel, sand, till
		Qq	OUADRA SEDIMENTS: sand, gravel (includes some older beds)
	TERTIARY OLIGOCENE AND/OR MIOCENE	Ts	SOOKE FORMATION: conglomerate, sandstone, shale
	EOCENE (AND OLDER?)	Tg	CATFACE INTRUSIONS: quartz diorite, agmatite
		Tm	METCHOSIN VOLCANICS: TM ₁ : pillow basalt, breccia, tuff; TM ₂ : mainly basaltic lava; TM ₃ : schistose metavolcanic rock
		Tsg	SOOKE GABBRO: mainly gabbro
	CRETACEOUS UPPER CRETACEOUS NANAIMO GROUP (Kc to KGA)	KGA	GABRIOLA FORMATION: sandstone, conglomerate; minor siltstone, shale
		Ks	SPRAY FORMATION: shale, siltstone; minor sandstone
	Kg	GEOFFREY FORMATION: sandstone, conglomerate; minor siltstone, shale	
	Kn	NORTHUMBERLAND FORMATION: shale, siltstone; minor sandstone	
	Kdc	DE COURCY FORMATION: sandstone, conglomerate; minor siltstone, shale	
	Kcd	CEDAR DISTRICT FORMATION: shale, siltstone; minor sandstone	
	KEP	EXTENSION-PROTECTION FORMATION: sandstone, conglomerate; minor siltstone, shale	
	KH	HASLAM FORMATION: shale, siltstone; minor sandstone	
	PKC	COMOX FORMATION: sandstone, conglomerate; minor siltstone, shale	
MESOZOIC	JURASSIC AND CRETACEOUS UPPER JURASSIC AND LOWER CRETACEOUS	JKS	SPIEDEN FORMATION: conglomerate, sandstone, siltstone

TRIASSIC TO CRETACEOUS	ML	LEECH RIVER FORMATION (MLC to ML) METAGREYWACKE UNIT: metagreywacke, meta-arkose, quartz-feldspar-biotite schist
	MLA	ARGILLITE-METAGREYWACKE UNIT: thinly bedded greywacke and argillite, slate, phyllite, quartz-biotite schist
	MLC	CHERT-ARGILLITE-VOLCANIC UNIT: ribbon chert, cherty argillite, metarhyolite, metabasalt, chlorite schist
	Mc	CONSTITUTION FORMATION (San Juan Island): thinly bedded greywacke, argillite and chert
JURASSIC LOWER TO MIDDLE JURASSIC	Jg	ISLAND INTRUSIONS: granodiorite, quartz diorite
	B	BONANZA GROUP Basaltic to rhyolitic tuff, breccia, flows, minor argillite, greywacke
TRIASSIC AND/OR JURASSIC	JJo	ORCAS FORMATION (San Juan Island): ribbon chert, minor tuff, breccia, lava
TRIASSIC UPPER TRIASSIC	TH	HARO FORMATION (San Juan Island): volcaniclastic sandstone, breccia, argillite
	V	VANCOUVER GROUP KARMUTSEN FORMATION: pillow basalt, breccia tuff, minor flows
PERMIAN AND/OR TRIASSIC	PI	Unnamed volcanics (San Juan Island, Saanich Peninsula): basaltic to dacitic lava, breccia, tuff; minor limestone
	Pb	BUTLE LAKE FORMATION: limestone, greywacke, argillite
PENNSYLVANIAN AND PERMIAN	Pn, Pm, Pss, Pb	SICKER GROUP (Pn, Pm, Pss, Pb)
PENNSYLVANIAN AND MISSISSIPPIAN	Pss	SEDIMENT-SILL UNIT: argillite, greywacke, chert, diabase sills
LOWER DEVONIAN AND OLDER	PG	SALTSPRING INTRUSIONS: metagranodiorite, metaquartz porphyry, quartz sericite schist
	PM	MYRA FORMATION: well bedded silicic tuff and breccia, argillite, rhyodacite in flows and domes, minor basic tuff; quartz-sericite schist, phyllite, massive sulphides
	N	NITINAT FORMATION: pillow lava and breccia of augite (uralite) porphyry, basic tuff, chlorite-actinolite schist
LOWER PALEOZOIC (OR YOUNGER?)	PG	COLQUITZ GNEISS: quartz-feldspar gneiss
	W	WARK GNEISS: massive and gneissic metadiorite, metagabbro, amphibolite



Geology by J. E. Muller, 1970, 1980
 Compilation by J.E. Muller, 1979, 1980

Geological cartography by the Geological Survey of Canada

FIGURE 4a

Any revisions or additional geological information known to the user would be welcomed by the Geological Survey of Canada

South of the Leech River Formation, separated by the Leech River Fault, lie the Metchosin Volcanics a sequence of basaltic lavas, aquagene breccia, and pyroclastics of Eocene age.

North of the Leech River Formation, separated by the San Juan Fault lie the Karmutsen and Bonanza volcanics. These are represented by massive andesite and dacite tuffs, and flows, and are Paleozoic to Jurassic in age.

To the east, separated by the Survey Mountain Fault, lie the Colquitz Gneiss, Wark Diorite and metavolcanic units. These are considered to be basement rocks (Muller, 1977) and Paleozoic to Mesozoic in age.

3.2 Property Geology

The geology of the Met group consists of the Leech River Formation metasedimentary rocks to the north in contact with, along the Leech River Fault, the Metchosin Volcanics to the south (Figure 5). The Leech River Formation within this claim group is composed of metasandstone, metapelites, and amphibolite.

The metasandstone is a fine to medium grained quartz-feldspathic sandstone. In fresh surface it is medium to light grey, weathering to a buff brown colour. The unit is massive and often forms prominent cliffs. In some locations it exhibits minor schistosity and occurs as minor laminations within the phyllite.

The metapelites are represented by the phyllite, and by the biotite-garnet-schist to biotite-garnet-staurolite-andalusite-schist. The mineralogical composition of the metapelites is dependent upon metamorphic grade.

There are two types of phyllite present on the property. One formed from low grade metamorphism and second from retrograde metamorphism (Wingert, 1984). The latter, a retrograde phyllite is found along the Leech River Fault.

The phyllite unit is a very fine grained biotitic phyllite. It is strongly fissile, grey-black in colour and exhibits a micaceous sheen along cleavage planes.

The schist are fine to medium grained with biotite, and quartz segregated layers 1-3 mm in width. In fresh and weathered surfaces they are medium to dark grey in colour.

The highest metamorphic grade of the schists is the biotite-garnet-staurolite-andalusite-schist. These schists are found predominantly on Valentine Mountain and west across the Jordan River. Biotite-garnet-schists occur in zones between the biotite-garnet-staurolite-andalusite-schist and the lower metamorphic grade phyllites.

The main constitute minerals of the schists are biotite, garnet, staurolite, andalusite, and quartz with minor amounts of chlorite, muscovite and tourmaline. Garnet is common in the mineralogical composition of the schists, and occurs as porphyroblasts of euhedral almandine garnet ranging in size from <1 mm to 1 cm and averaging 2-3 mm.

Staurolite is also porphyroblastic as is the andalusite. The staurolite, dark brown to black in colour, is euhedral cruciform in shape and ranges in size from <1 mm to 1.5 cm and averages 7-9 mm. Andalusite (chiastolite) occurs as subhedral to anhedral crystals 2 cm to 8 cm in length and in colour light pink in fresh surface weathering to medium to dark grey.

The order of minerals does not imply relative model occurrence, but rather it implies metamorphic grade.

The amphibolite unit occurs as layers or lamina within the metapelites and metasandstone units. Originally intercalated porphyritic basalt and crystal tuff (Grove, 1984) the amphibolite unit varies dependent upon metamorphic grade from upper green schist facies to amphibolite facies (Wingert, 1984).

The lower grade amphibolite is a fine grained schistose rock with fine grained actinolite crystals apparent on foliation surfaces. The higher grade amphibolite is composed of alternating bands of fine grained acicular actinolite, hornblende, and quartz-feldspar-epidote. The amphibolite unit varies from a chloritic green colour to alternating bands of dark green and white minerals.

South of the Bear Creek Reservoir is the Eocene Metchosin Volcanic unit. It is represented on this claim group as an andesitic tuff, lapilli tuff, agglomerate or flow.

The tuff is fine grained, medium to light green in colour, with in some locations, subangular lapilli averaging 2-3 mm in width. The agglomerate is composed of large subangular clasts ranging in size from 7 cm to 0.5 m, averaging 8 to 10 cm in width, in a medium to coarse grained matrix. The andesite flow is medium to light green in colour, with quartz and carbonate filled vesicles averaging 1 to 2 mm in width.

Within this Metchosin Volcanic unit occurs an east-west trending, south dipping, aplite dyke. The dyke is variable but approximately 25 metres in width. It is white to light green in colour, finely crystalline and quartz rich. Mineralization within the dyke amounts to a trace of pyrite and pyrrhotite.

The Leech River Fault is an east-west trending thrust fault cutting the claim group approximately through the Bear Creek and Diversion Reservoirs.

3.3 Mineralization and Alteration

Quartz veins, quartz stringers, and quartz sweats occur throughout the metasedimentary rocks. The volcanic unit contains fewer quartz veins as a generality, but is typically weakly to moderately epidotized and chloritized with sparse localized pyrite mineralization.

Within the metasedimentary rocks the quartz veins range from 5 mm to 0.10 m and are composed of a white bull quartz to semi-translucent quartz with subhedral to anhedral crystals. Sulfide mineralization is a rare occurrence although the quartz veins generally show limonitic or hematitic staining. Visible sulfides within quartz veins are a trace of pyrite and/or pyrrhotite.

The Metchosin volcanic unit is typified by quartz stringers, epidote stringers and the occasional quartz stockwork. The sulfides, which take the form of pyrite, chalcopyrite, pyrrhotite and minor bornite, occur as fracture filling and as fine disseminations throughout the andesite tuff, and, to a lesser extent, the aplite dyke. The mineralization occurs in greater quantity near the contact with the dyke, and at the intersection of joint planes. With the exception of a few localized areas sulfide mineralization is sparse.

4.0 PROSPECTING REPORT

A total of 16 mandays were spent prospecting the Met group from April 19-26, 1989. Seventeen rock samples were collected and analyzed for 30 element ICP plus Atomic Absorption Au.

Prospecting consisted of foot traverses along logging roads and prominent rock ridges. Mineralized float and/or road fill was sampled and the source outcrop in some cases was located. The majority of rock samples were collected directly from outcrop.

Mineralization consisted of pyrite, chalcopyrite, and minor bornite. Erratic and non-pervasive mineralization was seen in gabbro dykes and the Metchosin volcanics. The volcanics are light to dark green and locally siliceous. The dykes are grey-black in colour and are 2-10 metres wide. No persistent mineralization was found over mappable lengths/widths.

5.0 GEOCHEMICAL RESULTS

Sample location and type, designated by symbol, and sample numbers are displayed on Figures 6a and 6b. Results for Au and As are displayed on Figures 7a and 7b, and results for Cu, Zn, Pb and Ag are displayed on Figures 8a and 8b. Analysis certificates for all elements are contained within Appendices IV.

Results of the initial prospecting survey produced values of 1.4% Cu and 107 ppb Au (R.59208), 1.4% Cu and 260 ppb Au (R.59212), and 0.4% Cu and 35 ppb Au (R.59204). These results provided areas to focus on for further geochemical surveys.

Soil geochemical lines were established over these areas and soil samples were taken every 50 metres. Continuous rock chip sampling was employed to test the Au and Cu potential of zones containing sulfide mineralization.

Results of the continuous rock chip sampling failed to produce significant Au or Cu values (Appendix IV). Soil geochemical traverse lines with the exception of traverses 1 and 2, managed to produce only spot highs ranging from 10 ppb to 43 ppb Au. Background soil Au values are approximately 5 ppb (Figures 7a and 7b).

Soil samples taken from the last 150 metres, at the northern limit, of Traverse 1 produced values of 5 ppb, 15 ppb, 170 ppb, and 5 ppb Au. Samples taken from a 250 metre stretch in the centre of Traverse 2 produced values of 10 ppb, 10 ppb, 5 ppb, 55 ppb, 15 ppb, and 5 ppb Au (Figures 7a and 7b). Results of the soil geochemical traverse lines did not yield significant Au or Cu values.

6.0 CONCLUSIONS

The geology of the Met group consists of the Leech River Formation metasedimentary rocks, to the north, in contact with, along the Leech River Fault, the Metchosin volcanics to the south. The Leech River Formation is composed of metasandstone, metapelites and amphibolite.

The Eocene Metchosin volcanics occur south of the Bear Creek reservoir. It is composed of andesitic tuff, lapilli tuff, agglomerate or flow. Within this unit is an east-west trending, south dipping, aplite dyke.

Quartz veins, quartz stringers and quartz sweats occur throughout the metasedimentary rocks. The Metchosin volcanic unit contains fewer quartz veins as a generality, but is typically weakly to moderately epidotized and chloritized with sparse localized sulfide mineralization.

The sulfides, which take the form of pyrite, chalcopyrite, pyrrhotite and minor bornite occur as fracture filling and as fine disseminations throughout the andesite tuff, and, to a lesser extent, the aplite dyke. The mineralization occurs in greater quantity near the contact with the dyke and at the intersection of joint planes.

Grab rock samples were taken during the initial prospecting survey. Results of these produced values of 1.4% and 0.4% Cu and provided areas to centre on for further reconnaissance exploration.

Soil geochemical traverse lines were established perpendicular to the strike of the dyke and soil samples were taken every 50 metres. Continuous rock chip samples were taken across the width of the aplite dyke, the hangingwall and footwall, and across zones of disseminated sulfide mineralization.

Results of the continuous rock chip sampling and soil geochemical sampling failed to produce significant Au or Cu values.

7.0 REFERENCES

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APPENDIX I
ANALYTICAL METHOD DESCRIPTIONS FOR
GEOCHEMICAL ASSESSMENT REPORTS

ANALYTICAL METHOD DESCRIPTIONS FOR GEOCHEMICAL ASSESSMENT REPORTS

The methods listed are presently applied to analyses geological materials by the Noranda Geochemical Laboratory at Vancouver.

Preparation of Samples:

Sediments and soils are dried at approximately 80°C and sieved with a 80 mesh nylon screen. The -80 mesh (0.18 mm) fraction is used for geochemical analysis.

Rock specimens are pulverized to -120 mesh (0.13 mm). Heavy mineral fractions (panned samples * from constant volume), are analysed in its entirety, when it is to be determined for gold without further sample preparation.

Analysis of Samples:

Decomposition of a 0.200 g sample is done with concentrated perchloric and nitric acid (3:1), digested for 5 hours at reflux temperature. Pulps of rock or core are weighed out at 0.4 g and chemical quantities are doubled relative to the above noted method for digestion.

The concentrations of Ag, Cd, Co, Cu, Fe, Mn, Mo, Ni, Pb, V and Zn can be determined directly from the digest (dissolution) with a conventional atomic absorption spectrometric procedure. A Varian-Techtron, Model AA-5 or Model AA-475 is used to measure elemental concentrations.

Elements Requiring Specific Decomposition Method:

Antimony - Sb: 0.2 g sample is attacked with 3.3 ml of 6% tartaric acid, 1.5 ml conc. hydrochloric acid and 0.5 ml of conc. nitric acid, then heated in a water bath for 3 hours at 95°C. Sb is determined directly from the dissolution with an AA-475 equipped with electrodeless discharge lamp (EDL).

Arsenic - As: 0.2 - 0.3 g sample is digested with 1.5 ml of perchloric 70% and 0.5 ml of conc. nitric acid. A Varian AA-475 equipped with an As-EDL is used to measure arsenic content in the digest.

Barium - Ba: 0.1 g sample digested overnight with conc. perchloric, nitric and hydrofluoric acid; Potassium chloride added to prevent ionization. Atomic absorption using a nitrous oxide-acetylene flame determines Ba from the aqueous solution.

Bismuth - Bi: 0.2 - 0.3 g is digested with 2.0 ml of perchloric 70% and 1.0 ml of conc. nitric acid. Bismuth is determined directly from the digest with an AA-475 complete with EDL.

Gold - Au: 10.0 g sample is digested with aqua regia (1 part nitric and 3 parts hydrochloric acid). Gold is extracted with MlBK from the aqueous solution. AA is used to determine Au.

Magnesium - Mg: 0.05 - 0.10 g sample is digested with 4 ml perchloric/nitric acid (3:1). An aliquot is taken to reduce the concentration to within the range of atomic absorption. The AA-475 with the use of a nitrous oxide flame determines Mg from the aqueous solution.

Tungsten - W: 1.0 g sample sintered with a carbonate flux and thereafter leached with water. The leachate is treated with potassium thiocyanate. The yellow tungsten thiocyanate is extracted into tri-n-butyl phosphate. This permits colourimetric comparison with standards to measure tungsten concentration.

Uranium - U: An aliquot from a perchloric-nitric decomposition, usually from the multi-element digestion, is buffered. The aqueous solution is exposed to laser light, and the luminescence of the uranyl ion is quantitatively measured on the UA-3 (Scintrex).

N.B.: If additional elemental determinations are required on panned samples, state this at the time of sample submission. Requests after gold determinations would be futile.

LOWEST VALUES REPORTED IN PPM:

Ag - 0.2	Mn - 20	Zn - 1	Au - 0.01
Cd - 0.2	Mo - 1	Sb - 1	W - 2
Co - 1	Ni - 1	As - 1	U - 0.1
Cu - 1	Pb - 1	Ba - 10	
Fe - 100	V - 10	Bi - 1	

EJvL/ie

ACME ANALYTICAL LABORATORIES LTD.

Assaying & Trace Analysis
852 E. Hastings St., Vancouver, B.C. V6A 1R6
Telephone: 253-3158

GEOCHEMICAL LABORATORY METHODOLOGY & PRICES - 1989

Sample Preparation

S80	Soils or silts up to 2 lbs drying at 60 deg.C and sieving 30 gms -80 mesh (other size on request)	\$.85
SJ	Saving part or all reject	.45
S20R	Soils or silts - drying at 60 deg.C and sieving -20 mesh & pulverizing (other mesh size on request.)	2.00
SP	Soils or silts - drying at 60 deg.C pulverizing (approx . 100 gms)	1.50
RP100	Rocks or cores - crushing to -3/16" up to 10 lbs, then pulverizing	3.00
Cr	1/2 lb to -100 mesh (98%) Surcharge crushing over 10 lbs	.25/lb
2PX	Surcharge for pulverizing over 1/2 lb	1.00/lb
RPS100	Same as RP100 except sieving to -100 mesh and saving +100 mesh (200gms)	3.75
RPS100 1/2	Same as above except pulverizing 1/2 the reject - additional	1.00/lb
RPS100 A	Same as above except pulverizing all the reject - additional	1.00/lb
OP	Compositing pulps - each pulp Mixing & pulverizing composite.	.50 1.50
HM	Heavy mineral separation - S.G.2.96 + wash -20 mesh	12.00
V1	Drying vegetation and pulverizing 50 gms to -80 mesh	3.00
V2	Ashing up to 1 lb wet vegetation at 475 deg.C	2.00
H1	Special Handling	17.00/hr

Sample Storage

Rejects - Approx. 2 lbs of rock or total core are stored for three months and discarded unless claimed.

Pulps are retained for one year and discarded unless claimed.

Additional storage - for 3 years \$10.00/1.2 cu.ft. box
or 15 cents/sample pulp
or 5 cents/sample soil

Supplies

Soil Envelopes	4" x 6"	\$125.00/thousand
Soil Envelopes	4" x 6" with gusset	\$140.00/thousand Plastic
Bags	7" x 13" 4 ml	\$10.00/hundred
Plastic Bags	12" x 20" 6 ml	\$ 20.00/hundred
Ties		\$ 2.00/hundred
Assay Tags		N/C
10% HCl		\$ 5.00/liter
Dropping bottles		\$ 1.00/each
Zn Test	A & B	\$ 12.00/each liter

Conversion Factors

1 Troy oz = 31.10 g
1 oz/ton = 34.3 ppm = 34.3 g/tonne = 34,300 ppb
1 % = 10,000 ppm



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GEOCHEMICAL ANALYSES - Rocks and Soils

Group 1 Digestion

.50 gram sample is digested with 3 mls 3-1-2 HCl-HNO3-H2O at 95 deg.C for one hour and is diluted to 10 ml with water. This leach is near total for base metals, partial for rock forming elements and very slight for refractory elements. Solubility limits Ag, Pb, Sb, Bi, W for high grade samples.

Group 1A - Analysis by Atomic Absorption.

Element	Detection	Element	Detection	Element	Detection
Antimony*	2 ppm	Copper	1 ppm	Molybdenum	1 ppm
Bismuth*	2 ppm	Iron	0.01 %	Nickel	1 ppm
Cadmium*	0.1 ppm	Lead	2 ppm	Silver	0.1 ppm
Chromium	1 ppm	Lithium	2 ppm	Vanadium	2 ppm
Cobalt	1 ppm	Manganese	5 ppm	Zinc	2 ppm

First Element \$2.25 Subsequent Element \$1.00

Group 1B - Hydride generation of volatile elements and analysis by ICP.
This technique is unsuitable for sample grading over .5% Ni or Cu.
Cu Massive Sulphide.

Element	Detection		
Arsenic	0.1 ppm		
Antimony	0.1 ppm		
Bismuth	0.1 ppm	First Element	\$4.75
Germanium	0.1 ppm	All Elements	\$5.50
Selenium	0.1 ppm		
Tellurium	0.1 ppm		

Group 1C - Hg Detection limit - 5 ppb Price \$2.50

Hg in the solutions are determined by cold vapour AA using a F & J scientific Hg assembly. The aliquots of the extract are added to a stannous chloride/hydrochloric acid solution. The reduced Hg is swept out of the solution and passed into the Hg cell where it is measured by AA.

Group 1D - ICP Analysis

Element	Detection
Ag	0.1 ppm
Cd, Co, Cr, Cu, Mn, Mo, Ni, Sr, Zn	1 ppm
As, Au, B, Ba, Bi, La, Pb, Sb, Th, V, W	2 ppm
U	5 ppm
Al, Ca, Fe, K, Mg, Na, P, Ti	0.01 %
Any 2 elements	\$3.25
5 elements	4.50
10 elements	5.50
All 30 elements	6.25

Group 1E - Analysis by ICP/MS

Element	Detection
Ga, Ge	1 ppm
Au, Bi, Cd, Hg, In, Ir, Os, Re, Rh, Sb, Te, Th, Tl, U	0.1 ppm
All Elements	15.00 (minimum 20 samples per batch or \$15.00 surcharge)

Hydro Geochemical Analysis

Natural water for mineral exploration

26 element ICP - Mo, Cu, Pb, Zn, Ag, Co, Ni, Mn, Fe, As, Sr, Cd, V, Ca, P, Li, Cr, Mg, Ti, B, Al, Na, K, Ce, Be, Si \$8.00

F by Specific Ion Electrode	- detection	20 ppb	\$3.75
U by UA3	- detection	.01 ppb	5.00
pH	-	.1 pH	1.50
Au	- detection	.001 ppb	4.00

* Minimum 20 samples or \$5.00 surcharge for ICP or AA and \$15.00 surcharge for ICP/MS. All prices are in Canadian Dollars



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Assaying & Trace Analysis

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Telephone: 253-3158

Group 2 - Geochemical Analysis by Specific Extraction and Instrumental Techniques

<u>Element</u>	<u>Method</u>	<u>Detection</u>	<u>Price</u>
Barium	0.100 gram samples are fused with .6 gm LiBO2 dissolved in 50 mls 5% HNO3 and analysed by ICP. (other whole rock elements are also determined)	10 ppm	\$4.00
Boron	.5 g/Na2O2 fusion - 50ml in 20% HCl	2 ppm	4.00
Carbon	LECO (total as C or CO2)	.01 %	5.75
Carbon+Sulfur	Both by LECO	.01 %	6.50
Carbon (Graphite)	HCl leach before LECO	.01 %	8.00
Chromium	0.50 gram samples are fused with 1 gm Na2O2 dissolved in 50 ml 20% HCl, analysed ICP.	5 ppm	4.00
Fluorine	0.25 gram samples are fused with NaOH; leached solution is adjusted for pH and analysed by specific ion electrode.	10 ppm	4.50
Sulphur	LECO (Total as S)	.01 %	5.50
Sulphur insoluble	LECO (After 5% HCl leach)	.01 %	8.00
Tin	1.00 gram samples are fused with NH4I. The sublimed Iodine is leached with 5 ml 10% HCl, and analysed by Atomic Absorption.	1 ppm	4.00
Tl	.50 gram digested with 50% HNO3 - Dilute to 10 ml - graphite AA	.1 ppm	4.00
Tungsten	.50 gram samples are fused with Na2O2 dissolved in 20 ml H2O, analysed by ICP.	1 ppm	4.00

Group 3 - Geochemical Noble Metals

<u>Element</u>	<u>Method</u>	<u>Detection</u>	<u>Price</u>
Au*	10.0 gram samples are ignited at 600 deg.C, digested with hot aqua regia, extracted by MIBK, analysed by graphite furnace AA.	1 ppb	\$ 4.50
Au** Pd,Pt,Rh	10.0 gram samples are fused with a Ag inquart with fire assay fluxes. After cupulation, the dore bead is dissolved and analysed by AA or ICP/MS.	1 ppb 2 ppb	6.00 - first element 2.50 - per additional 10.00 - for All 4
	Larger samples - 20 gms add \$1.50 30 gms add \$2.50		

Group 4A - Geochemical Whole Rock Assay

0.200 gram samples are fused with LiBO2 and are dissolved in 100 mls 5% HNO3. SiO2, Al2O3, Fe2O3, CaO, MgO, Na2O, K2O, MnO, TiO2, P2O5, Cr2O5, LOI + Ba by ICP.

Price: \$3.75 first metal \$1.00 each additional \$9.00 for All.

Group 4B - Trace elements

<u>Element</u>	<u>Detection</u>	<u>Analysis</u>	<u>Price</u>
Co,Cu,Ni,Zn,Sr	10 ppm	ICP	\$3.75 first element or
Ce,Nb,Ta,Y,Zr	20 ppm	ICP	\$1.00 additional to 4A
			\$6.00 for All.

Group 4C - analysis by ICP/MS.

Be, Rb, Y, Zr, Nb, Sn, Cs, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Hf, Ta, W, Th, U

Detection: 1 to 5 ppm Price : \$20.00 for All.

* Minimum 20 samples or \$5.00 surcharge for ICP or AA and \$15.00 surcharge for ICP/MS. All prices are in Canadian Dollars

APPENDIX II
ROCK SAMPLE DESCRIPTIONS

NORANDA EXPLORATION COMPANY, LIMITED

PROJECT # 120

N.T.S. 92B/5,12

LAB REPORT # _____

DATE May, 1989

PROJECT BEAU PRE VALENTINE (MET GROUP)

ROCK SAMPLE REPORT

SAMPLE NO.	LOCATION & DESCRIPTION	% Sulph.	TYPE	WIDTH (m)	Cu	Pb	Zn	Ag	As	Au		SAMPLED BY
					ppm	ppm	ppm	ppm	ppm	ppb		
R59304	Met 2. Lapelli Cr., 2+28m. Andesite hanging wall, 1-2% Py, Tr Aspy.	2	Chip	0.50	158	3	27	0.3	5	1		McIntyre
R59305	Met 2. Lapelli Cr., 2+28m. Aplite Dyke, Tr Py, Tr Aspy? finely disseminated. 1/2m chip perpendicular to strike.	Tr.	Chip	0.50	243	7	74	0.1	2	2		McIntyre
R59646	Met 2. Trav 2. 9+50N, 1+18E. Aplite dyke, str lim, hem, Mn stain. Py, Aspy 0.5% vol mm pyrite Qtz stringers, also stringers of sulphide. Southern contact of Dyke, True width.	<1	Chip Channel	1.00	14	8	41	0.2	6	1		Singh
R59647	Northern extension of R59646. 0.5m of channel's supergene alteration w/ concentrated py. The rest is as R59646, True width.	1	Chip Channel	1.00	9	5	17	0.4	7	2		Singh
R59648	Northern extension of R59647. Moderate to strongly silicified stronger limonite + hematitic staining, disseminated Py throughout 0.5% vol pyrite Qtz stringers, also stringers of concentrated sulphides. True width.	1	Chip Channel	1.00	4	9	25	0.3	8	4		Singh

NORANDA EXPLORATION COMPANY, LIMITED

PROJECT # 120

N.T.S. 92B/5,12

LAB REPORT # _____

DATE May, 1989

PROJECT BEAU PRE VALENTINE (MET GROUP)

ROCK SAMPLE REPORT

SAMPLE NO.	LOCATION & DESCRIPTION	% Sulph.	TYPE	WIDTH (m)	Cu	Pb	Zn	Ag	As	Au	SAMPLED BY
					ppm	ppm	ppm	ppm	ppm	ppb	
R59649	Northern extension of R59648, same as R59648 but less limonite + hematite, but more silicification. True width.	1	Chip Channel	1.00	3	7	46	0.3	7	1	Singh
R58922	Met 1 Dyke - Aplite - Tr Py.	Tr	Chip	1.0	13	2	8	0.1	2	1	Dempsey
R58923	Met 1 Wall rock - Hanging wall Andesite - silicified.	Tr	Chip	1.0	2	4	21	0.3	2	2	Dempsey
R59643	Met 2, Trav 2 10+89N 10m west of Trav 2. Qtz lense, str limonitic stain, supergene alt. 1-2mm py, stringers of Aspy, mag.	1-2	Channel	0.75	35	7	65	0.1	2	1	Singh
R59644	Met 2, Trav 2 8+40N 80m east of Trav 2. Strgly alt meta-volc, strong surfacial limonitic + Mn stain, supergene alt, sulphides are concentrated in stringers.	<1	Channel	1.50	238	5	143	0.1	4	4	Singh
R59645	Met 2, Trav 2 8+41N 80m east of Trav 2, same as R59644 (northern extension).	1	Channel	1.50	219	5	150	0.1	6	3	Singh
R59302	Met/7+50m Trav 1, 10m east. Rusty seep, intersection of 2 joint planes. Andesite.	2	Chip	0.30	17	7	129	0.1	2	8	McIntyre
R59303	Met/8+50m Trav 1, 15m east. Andesite wall rock (Footwall)	2	Chip	0.50	333	6	130	0.1	2	3	McIntyre

NORANDA EXPLORATION COMPANY, LIMITED

PROJECT # 120

N.T.S. 92B/5,12

LAB REPORT # _____

DATE May, 1989

PROJECT BEAU PRE VALENTINE (MET GROUP)

ROCK SAMPLE REPORT

SAMPLE NO.	LOCATION & DESCRIPTION	% Sulph.	TYPE	WIDTH (m)	Cu	Pb	Zn	Ag	As	Au	SAMPLED BY
					ppm	ppm	ppm	ppm	ppm	ppb	
R59303(con't)	along side Aplite dyke.										
R58602	Met/1150m Trav. 3 20m east. Siliceous dyke in andesite. Disseminated Py.	1	Chip	4.0	114	4	36	0.1	3	1	Northcote
R63226	Silicified Metchosin Volcanics. Sample taken across the creek from Valentine's BC-1 grid showing. Malachite ± bornite. Grab sample shear zone not as prominent as the showing. W.S. + F.S. dark green Mag staining along fracture planes.				2606	7	106	0.9	9	440	McCorquodale, Bull & Wilson
R59204	Py & Cpy in Metchosin Volcanics				4193	4	218	1.4	7	35	K & J Lovang
R59205	Py & Cpy in Metchosin Volcanics				2136	3	181	1.0	6	32	K & J Lovang
R59206	Py & slight Cpy. At contacts Metchosin Volcanics & intrusive (Dyke) - (Both volcanics & intrusives got included in sample				3454	2	234	1.2	3	35	K & J Lovang
R59207	Py in somewhat silicified Metchosin Volcanics.				72	9	89	0.1	6	7	K & J Lovang
R59208	Good Cpy some Py in Metchosin Volcanics.				13878	2	261	2.1	5	107	K & J Lovang
R59209	Py in Metchosin Volcanics.				883	12	103	0.8	10	40	K & J Lovang

NORANDA EXPLORATION COMPANY, LIMITED

PROJECT # 120

N.T.S. 92B/5,12

LAB REPORT # _____

DATE May, 1989

PROJECT BEAU PRE VALENTINE (MET GROUP)

ROCK SAMPLE REPORT

SAMPLE NO.	LOCATION & DESCRIPTION	% Sulph.	TYPE	WIDTH (m)	Cu ppm	Pb ppm	Zn ppm	Ag ppm	As ppm	Au ppb		SAMPLED BY
R59210	Py in Metchosin Volcanics.				733	9	81	0.1	5	5		K & J Lovang
R59211	Good Py in quartz. Quartz in the Metchosin Volcanics.				506	17	62	2.2	12	58		K & J Lovang
R59212	Cpy & Py in intrusive (Dyke).				14440	12	155	3.5	2	260		K & J Lovang
R59213	Py in Metchosin Volcanics & quartz stringers.				229	8	33	0.1	14	46		K & J Lovang
R59214	Py & Cpy in Metchosin Volcanics				848	2	119	0.3	7	8		K & J Lovang
R59215	Py in Metchosin Volcanics (sheared zone).				118	7	125	0.4	9	1		K & J Lovang
R59216	Quartz stringers with Py in black shale - (rock not in place, used as road fill).				86	17	104	0.2	22	3		K & J Lovang
R59217	Py in Metchosin Volcanics.				539	2	53	0.2	8	10		K & J Lovang
R59218	Po, Py & Cpy in Metchosin Volcanics.				954	2	67	0.4	12	15		K & J Lovang
R59219	Py in Metchosin Volcanics.				261	4	34	0.1	5	3		K & J Lovang
R59220	Oxidized zone (10' wide) next to intrusive (dyke). Very rusty, the odd Cu-stain.				61	5	96	0.2	2848	3		K & J Lovang
R59221	Quartz stringers across 4'. Pyritized.				29	7	65	0.1	5	3		K & J Lovang

APPENDIX III
ANALYSIS CERTIFICATES

Valentic (KL)

8905-004

GEOCHEMICAL ANALYSIS CERTIFICATE

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 PB 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: MAY 2 1989 DATE REPORT MAILED: May 8/89 SIGNED BY: C. Long, D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

NORANDA EXPLORATION CO. LTD. PROJECT 8905-004 120 File # 89-0953

SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Au*
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	%	PPM	PPM	%	PPM	%	PPM	%	%	%	PPM	PPB
R 59184	2	304	5	26	.1	141	23	8242	2.84	5	5	ND	1	69	1	4	2	49	2.22	.379	8	18	.26	50	.06	2	1.91	.04	.02	2	2
R 59185	2	969	2	17	.5	46	30	202	3.38	5	5	ND	1	197	1	3	2	26	2.83	.128	2	10	.16	6	.23	4	2.37	.09	.01	11	7
R 59186	1	555	11	25	.7	252	55	12270	6.69	12	5	ND	1	138	2	2	2	36	15.38	.289	13	4	.11	5	.01	2	.56	.01	.01	2	10
R 59204	1	4193	4	218	1.4	25	39	657	5.67	7	5	ND	1	11	2	3	12	132	1.21	.046	2	22	1.20	28	.20	3	2.01	.09	.31	4	35
R 59205	1	2136	3	181	1.0	27	39	1029	5.77	6	5	ND	1	16	1	2	11	125	1.49	.059	2	17	1.05	22	.20	2	1.91	.08	.20	3	32
R 59206	2	3454	2	234	1.2	12	32	358	4.16	3	5	ND	1	8	2	3	2	95	.90	.061	2	7	.66	9	.24	6	1.03	.08	.07	3	35
R 59207	2	72	9	89	.1	16	44	611	5.62	6	5	ND	1	25	1	2	2	38	.89	.030	4	10	1.24	4	.19	2	1.77	.01	.01	1	7
R 59208	1	13878	2	261	2.1	15	54	311	5.25	5	5	ND	1	6	3	2	11	147	.80	.055	2	6	.67	34	.25	2	1.08	.06	.37	3	107
R 59209	1	883	12	103	.8	15	31	786	8.06	10	5	ND	1	3	2	2	2	183	.55	.061	2	21	2.10	1	.31	2	3.10	.02	.01	1	40
R 59210	1	733	9	81	.1	21	47	560	5.79	5	5	ND	1	4	1	2	2	146	.79	.085	3	9	1.38	2	.29	2	1.96	.03	.01	1	5
R 59211	1	506	17	62	2.2	9	214	364	9.42	12	5	ND	1	1	1	3	7	108	.04	.011	2	24	.70	3	.04	2	1.23	.01	.01	1	58
R 59212	12	14440	12	155	3.5	6	42	140	3.09	2	5	ND	6	4	2	2	2	9	.17	.027	24	3	.17	7	.09	2	.57	.04	.04	3	260
R 59213	4	229	8	33	.1	22	65	212	6.47	14	5	ND	1	11	2	2	2	131	.95	.051	2	22	.38	2	.40	2	.91	.02	.01	1	46
R 59214	1	848	2	119	.3	29	45	718	7.82	7	5	ND	1	9	2	2	2	167	1.13	.067	2	30	1.75	2	.34	2	2.68	.06	.02	1	8
R 59215	8	118	7	125	.4	52	37	1122	8.39	9	5	ND	1	4	3	2	2	138	.94	.123	2	47	3.79	11	.59	2	5.17	.01	.07	1	1
R 59216	1	86	17	104	.2	54	21	723	5.47	22	5	ND	2	26	1	3	2	78	1.57	.070	9	51	1.55	17	.01	2	2.55	.02	.05	1	3
R 59217	1	539	2	53	.2	29	66	485	5.67	8	5	ND	1	7	1	2	2	155	1.13	.077	2	21	1.09	2	.22	2	1.62	.06	.03	1	10
R 59218	1	954	2	67	.4	27	50	523	5.68	12	5	ND	1	13	2	2	2	118	2.34	.075	2	27	1.10	3	.34	2	1.48	.04	.04	1	15
R 59219	1	261	4	34	.1	20	41	302	4.84	5	5	ND	1	11	2	2	2	112	1.12	.070	2	31	.72	18	.35	2	.93	.04	.08	1	3
R 59220	3	61	5	96	.2	39	37	437	10.27	2848	5	ND	1	2	1	205	2	194	.21	.065	6	36	.18	2	.01	4	.59	.01	.02	1	3
R 59221	2	29	7	65	.1	16	9	389	2.60	5	5	ND	1	13	1	2	2	72	.55	.039	6	34	1.13	257	.19	2	1.56	.05	.73	1	3
R 59222	17	744	2	49	.2	156	34	7835	4.01	35	5	ND	1	57	1	3	2	73	1.65	.222	9	22	.41	94	.07	2	1.86	.03	.07	2	4
R 59223	1	1044	8	52	.3	216	30	8887	11.46	15	5	ND	1	17	1	2	2	300	2.65	.620	14	37	.38	17	.07	2	1.30	.08	.03	2	3
R 59224	2	488	2	39	.6	59	42	415	4.81	7	5	ND	1	35	1	2	2	36	1.32	.088	2	61	.27	5	.16	14	1.09	.12	.07	3	3
R 59225	3	4607	10	37	1.2	338	81	5405	10.60	13	5	ND	1	21	1	2	2	49	1.93	.424	15	14	.22	17	.04	2	1.07	.01	.04	5	4
R 63226	1	2606	7	106	.9	92	36	1081	8.24	9	5	ND	1	7	1	2	2	166	.38	.135	11	119	3.97	2	.04	2	4.28	.02	.03	2	440
STD C/AU-R	18	60	38	132	7.0	73	30	928	3.67	36	19	7	36	49	17	18	21	56	.45	.086	36	54	.85	173	.06	33	1.78	.06	.13	12	515

ASSAY REQUIRED FOR CORRECT RESULT

8905-004

NORANDA VANCOUVER LABORATORY

PROPERTY/LOCATION: VALENTINE - MET GROUP

CODE : 8905-025

Project No. : 120

Sheet: 1 of 2

Date rec'd: MAY. 25

Material : 73 SOILS

Geol.: T. Mc.

Date compl: MAY. 31

Remarks :

Values in PPM, except where noted.

T. T. No.	SAMPLE No.	PPB Au
64	58843	5
65	58844	5
66	58845 Organic?	5
67	58846	5
68	58847	5
69	58848	10
70	58849	5
71	58850	5
72	58851	5
73	58852	5
74	58853	70
75	58854	5
76	58855	5
77	58856	5
78	58857	5
79	58858	5
80	58859	10
81	58860	5
82	58861	5
83	58862	5
84	58863	5
85	58864	15
86	58865	170
87	58866	5
88	58867	10
89	58868	5
90	58869	5
91	58870	10
92	58871	10
93	58872	5
94	58873	55
95	58874	15
96	58875	5
97	58876	15
98	58877	25
99	58878	20
100	58879	5
1	58880	5
2	58881	5
3	58882	5
4	58883	5
5	58884	5
6	58885	5
7	58886	5
8	58887	5
9	58888	5
10	58901	5
11	58902	5

14/1/68 BX RW JRC EP

T. T.
No.

SAMPLE
No.

PPB
Au_{9/105}

12
Acme

120
2

120
3

T. T. No.	SAMPLE No.	PPB Au _{9/105}	Acme	120 2	120 3
12	58905	5			
13	58906	5	03/06	12/06	
14	58907	5			
15	58908	5	1120	9	6
16	58909	5	31	2	1
17	58911	5	3	1	1
18	58912	5	5	9	1
19	58913	5	3	1	1
20	58914	5	129	6	6
21	58916	5	67	40	4
22	58917	5	5	19	1
23	58918	5	7	1	1
24	58919	5	370	28	3
25	58920	5			
26	58921	5			
27	59557	5			
28	59558	5			
29	59559	5			
30	59560	50			
31	59561	5			
32	59562	5			
33	59563	20			
34	59564	5			
35	59565	10			
36	59566	5			

ACME ANALYTICAL LABORATORIES LTD.

DATE RECEIVED: JUN 6 1989

852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6

PHONE (604) 253-3158 FAX (604) 253-1716 DATE REPORT MAILED: *June 12/89*

GEOCHEMICAL ANALYSIS CERTIFICATE

AU* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

- SAMPLE TYPE: SOIL PULP

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

NORANDA EXPLORATION CO. LTD. PROJECT 8905-025 120 FILE # 89-1277R

SAMPLE#	AU* ppb	AU* ppb
58908	9	6
58909	2	-
58911	1	-
58912	9	-
58913	1	-
58914	6	6
58916	40	4
58917	19	-
58918	1	-
58919	28	3

N.B.

These samples are reanalysed because the 1st set of Au results by Acme (June 2) appeared anomalous, whereas the first run by NL (May 31) was merely background values for Au. The additional reruns (June 12) seem to verify the first run by NL, and therefore one suspects contamination with the first Acme run (June 2). In discussing this with Acme, we concurred the high probability of contamination, particularly as all the high Au values occurred on the one set of June 2 only. Hardly the random occurrence one should expect with the non-uniformity of Au distribution in these soils as some of the reruns demonstrated.

ef.

GEOCHEMICAL ANALYSIS CERTIFICATE

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 PB 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: SOIL PULP AU* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

DATE RECEIVED: MAY 31 1989 DATE REPORT MAILED: June 2/89 SIGNED BY: C. Long, D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

NORANDA EXPLORATION CO. LTD. PROJECT 8905-025 120 File # 89-1277 Page 1

Table with columns: SAMPLE#, Mo, Cu, Pb, Zn, Ag, Ni, Co, Mn, Fe, As, U, Au, Th, Sr, Cd, Sb, Si, V, Ca, P, La, Cr, Mg, Ba, Ti, B, Al, Na, K, W, Au*, and PPM. Rows list various sample numbers and their corresponding element concentrations in PPM.

8905-025

SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Am	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Au*
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	%	PPM	PPM	%	PPM	%	PPM	%	%	%	PPM	PPB
58879	1	130	11	56	.3	22	9	336	5.64	6	5	ND	2	11	1	2	2	151	.29	.043	6	55	.91	23	.23	2	2.65	.01	.05	1	6
58880	1	50	13	60	.7	18	8	325	4.61	9	5	ND	3	14	1	2	2	107	.25	.038	6	54	.80	28	.29	5	3.50	.01	.05	3	2
58881	1	17	7	29	.2	6	3	119	3.37	4	5	ND	1	13	1	2	2	109	.23	.016	5	28	.25	9	.20	7	1.54	.01	.01	1	25
58882	1	21	12	57	.1	9	42	812	4.51	2	5	ND	1	12	1	2	2	82	.24	.021	5	29	.26	13	.18	5	1.80	.01	.03	1	2
58883	1	53	12	67	.7	46	14	411	5.21	7	5	ND	1	17	1	2	4	165	.89	.024	3	86	1.83	28	.40	2	2.09	.06	.08	1	5
58884	1	19	8	32	.1	7	4	127	4.65	2	5	ND	1	14	1	2	2	146	.26	.021	6	32	.38	8	.35	2	1.58	.01	.02	1	1
58885	1	4	5	11	.1	1	1	74	1.53	2	5	ND	1	10	1	2	2	54	.21	.005	5	11	.06	4	.12	3	.41	.01	.02	1	5
58886	1	94	9	39	.2	6	8	205	4.41	2	5	ND	1	8	1	2	2	160	.50	.022	2	11	.42	8	.39	2	1.26	.01	.02	1	6
58887	1	65	17	40	.4	10	4	107	4.40	8	5	ND	3	6	1	4	2	73	.17	.053	4	90	.29	13	.17	7	7.80	.01	.04	3	2
58888	1	12	10	28	.1	6	4	130	2.89	2	5	ND	1	14	1	2	2	106	.42	.023	3	27	.36	7	.29	3	1.06	.01	.03	1	7
58901	1	40	11	44	.1	12	6	208	4.50	4	5	ND	1	11	1	2	2	142	.35	.023	4	44	.49	10	.33	6	2.03	.01	.02	1	2
58902	1	19	9	23	.2	4	3	110	4.70	2	5	ND	1	12	1	2	2	169	.35	.010	4	22	.16	8	.38	2	1.08	.01	.01	1	3
58905	1	29	10	42	.1	8	5	151	4.67	2	5	ND	1	10	1	2	2	120	.26	.027	4	24	.31	10	.25	2	1.62	.01	.03	1	1
58906	1	69	9	51	.3	7	19	442	4.99	8	5	ND	1	8	1	2	2	38	.14	.085	6	24	.06	13	.08	5	3.55	.01	.05	1	5
58907	1	11	7	22	.3	4	3	97	1.99	2	5	ND	1	6	1	2	2	115	.21	.007	4	14	.23	9	.31	9	.71	.01	.03	1	2
58908	1	40	11	60	.1	11	6	185	4.58	2	5	ND	1	9	1	2	2	115	.27	.028	4	42	.48	16	.24	2	2.88	.01	.03	1	1120
58909	1	20	9	52	.1	9	5	147	5.19	6	5	ND	1	6	1	2	2	177	.13	.025	5	39	.54	20	.34	2	1.81	.01	.04	1	31
58911	1	73	12	63	.3	18	8	229	5.08	7	5	ND	2	8	1	2	2	105	.16	.037	4	54	.82	19	.22	6	3.54	.01	.05	1	13
58912	1	45	13	55	.4	12	5	143	7.48	8	5	ND	3	8	1	2	2	152	.16	.037	5	61	.47	14	.22	7	3.33	.01	.04	2	5
58913	1	115	14	56	.2	16	6	160	5.97	10	5	ND	3	6	1	2	2	110	.13	.043	5	62	.58	20	.17	6	5.94	.01	.05	1	3
58914	1	20	8	26	.3	4	3	112	3.39	7	5	ND	2	7	1	2	2	113	.18	.021	5	17	.20	9	.26	2	1.14	.01	.03	2	129
58916	1	32	9	37	.2	10	4	130	4.43	5	5	ND	2	8	1	2	2	127	.17	.028	6	36	.40	14	.17	2	1.95	.01	.04	1	67
58917	1	5	7	27	.2	2	3	121	1.31	2	5	ND	1	7	1	2	2	88	.24	.010	5	15	.08	4	.21	3	.36	.01	.02	1	5
58918	1	89	13	81	.7	21	8	220	5.64	10	5	ND	3	9	1	2	2	130	.23	.034	5	66	.80	15	.25	3	3.43	.01	.04	1	7
58919	1	43	8	45	.1	18	8	196	4.30	3	5	ND	1	10	1	2	2	112	.23	.019	5	42	.78	9	.22	3	1.76	.01	.01	1	370
58920	1	39	8	40	.1	16	7	197	4.17	4	5	ND	1	10	1	2	2	110	.25	.021	6	39	.72	8	.22	6	1.68	.01	.02	1	6
58921	1	273	14	90	.4	46	18	406	5.58	8	5	ND	3	8	1	3	2	110	.15	.031	5	98	1.62	25	.24	6	5.22	.01	.04	1	8
59557	1	49	12	55	.2	18	7	235	4.92	11	5	ND	3	9	1	2	2	110	.16	.044	5	59	.69	22	.20	8	4.02	.01	.03	1	3
59558	1	5	8	18	.2	3	2	87	2.63	4	5	ND	1	10	1	2	2	112	.21	.012	6	17	.12	4	.18	2	.72	.01	.01	1	3
59559	1	66	14	62	.1	28	9	270	3.72	11	5	ND	3	9	1	2	2	66	.15	.024	5	55	.93	25	.17	9	4.16	.01	.03	1	16
59560	2	90	8	67	.3	20	8	227	5.95	10	5	ND	3	8	1	2	2	120	.18	.049	5	82	.73	26	.28	7	4.43	.01	.06	4	3
59561	1	44	8	50	.2	13	6	173	4.84	11	5	ND	2	9	1	2	2	122	.17	.027	6	47	.60	24	.23	2	2.57	.01	.04	1	1
59562	1	5	7	14	.1	2	2	63	1.70	2	5	ND	1	15	1	2	2	143	.34	.011	6	16	.05	5	.29	3	.64	.01	.01	1	5
59563	4	85	14	63	.1	20	9	380	4.51	9	5	ND	1	11	1	2	2	81	.23	.070	5	42	.79	25	.16	4	2.78	.01	.03	1	12
59564	1	36	8	44	.1	19	8	277	3.92	5	5	ND	1	13	1	2	2	99	.34	.033	5	46	.88	15	.25	2	2.00	.01	.03	1	2
59565	1	263	13	40	.1	13	5	124	3.23	3	5	ND	1	9	1	2	2	77	.21	.076	6	44	.41	18	.14	2	4.37	.01	.02	1	7
59566	1	82	13	46	.2	20	9	239	4.27	4	5	ND	1	9	1	2	2	130	.35	.026	4	64	.69	11	.28	2	1.93	.01	.02	1	1
STD C/AU-S	18	63	39	132	7.4	72	30	1008	4.07	44	20	8	38	52	18	18	21	61	.51	.096	39	54	.90	181	.07	35	1.87	.06	.14	13	49

Contamination?
R.R. @
Acme
05/6

GEOCHEMICAL ANALYSIS CERTIFICATE

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 NG 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: MAY 25 1989 DATE REPORT MAILED: *May 30/89* SIGNED BY: *C. Leong* D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

NORANDA EXPLORATION CO. LTD. PROJECT 8905-025 120 File # 89-1214

SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	St	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Tl	B	Al	Na	K	W	Au*
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	%	PPM	PPM	%	PPM	%	PPM	%	%	%	PPM	PPM
R 58602	1	114	4	36	.1	5	5	243	1.95	3	5	ND	5	4	1	2	2	9	.18	.023	15	3	.27	7	.07	3	.90	.04	.01	1	1
R 58922	1	13	2	8	.1	2	1	82	.49	2	5	ND	9	3	1	2	2	7	.17	.015	4	2	.12	3	.08	2	.31	.05	.01	1	1
R 58923	1	2	4	21	.3	5	3	244	1.20	2	5	ND	2	6	1	3	2	62	.90	.030	3	9	.36	5	.30	2	.65	.05	.05	2	2
R 59302	1	17	7	129	.1	28	37	507	9.52	2	5	ND	1	16	2	2	2	119	.84	.043	2	38	1.22	8	.38	2	1.69	.03	.01	1	8
R 59303	48	333	6	130	.1	39	25	765	6.43	2	5	ND	1	7	1	2	2	110	.76	.050	2	99	1.81	55	.25	4	2.95	.05	.60	1	3
R 59304	16	158	3	27	.3	6	6	203	1.60	5	5	ND	6	5	1	2	2	14	.19	.016	9	3	.36	4	.07	2	.73	.04	.01	2	1
R 59305	2	243	7	74	.1	33	13	473	5.24	2	5	ND	1	20	1	2	2	95	1.65	.068	2	71	1.06	32	.28	3	2.43	.13	.31	1	2
R 59643	6	35	7	65	.1	25	17	418	8.00	2	5	ND	1	1	1	2	3	95	.09	.038	2	51	1.29	31	.30	2	1.69	.01	.10	1	1
R 59644	1	238	5	143	.1	12	31	1049	7.55	4	5	ND	1	8	1	4	2	134	.69	.051	2	35	2.20	3	.32	2	3.31	.02	.02	1	4
R 59645	1	219	5	150	.1	21	24	1008	8.09	6	5	ND	1	10	1	4	2	133	.87	.056	2	36	2.01	4	.35	2	3.13	.02	.01	1	3
R 59646	3	14	8	41	.2	4	6	294	4.60	6	5	ND	2	18	1	2	2	16	.54	.038	6	5	.63	4	.25	4	1.44	.03	.03	1	1
R 59647	3	9	5	17	.4	2	5	122	4.54	7	5	ND	4	19	1	4	3	6	.45	.024	6	2	.22	5	.19	3	.76	.04	.06	1	2
R 59648	4	4	9	25	.3	2	2	174	5.12	8	5	ND	4	20	1	2	2	4	.54	.034	6	2	.33	3	.21	3	1.13	.03	.03	1	4
R 59649	2	3	7	46	.3	1	3	380	3.13	7	5	ND	1	26	1	4	2	3	.84	.033	7	1	.74	3	.22	3	1.57	.03	.02	1	1
STD C/AU-R	17	60	41	131	6.9	74	29	950	3.83	39	22	6	37	52	17	14	21	59	.52	.087	38	55	.88	181	.07	32	1.89	.06	.13	13	520

Valentine MET 2 (TMO)

8906-100

GEOCHEMICAL ANALYSIS CERTIFICATE

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: Soil -80 Mesh AU* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

DATE RECEIVED: JUN 26 1989 DATE REPORT MAILED: June 29/89 SIGNED BY: C. Long D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

NORANDA EXPLORATION CO. LTD. PROJECT 8906-100 120 File # 89-1728

Table with columns: SAMPLE#, Mo, Cu, Pb, Zn, Ag, Ni, Co, Mn, Fe, As, U, Au, Th, Sr, Cd, Sb, Bi, V, Ca, P, La, Cr, Mg, Ba, Tl, E, Al, Na, K, W, Au*, and Au*. Rows include sample IDs like P58351, P58352, P58353, P58354, P58355, P58356, P58357, P58358, P58359, P58360, P58375, P58377, P58379, P58379, P58380, P58381, P58382, P58383, P58384, P58385, P58386, P58387, P58388, P58389, P58390, and STD C/AU-S.

8906-100

APPENDIX IV
STATEMENT OF COSTS

MET GROUP
COST STATEMENT

WAGES:

T. McI.	3 mandays	x \$140.00	
J. McC.	1 manday	x \$140.00	
S.L.	3 mandays	x \$104.00	
D.D.	3 mandays	x \$104.00	
I.S.	1 manday	x \$190.00	
B.S.	4 mandays	x \$112.00	
B.N.	1 manday	x \$124.00	
K.L.	8 mandays	x \$200.00	
J.L.	8 mandays	x \$ 75.00	
		-----	\$4,146.00
			=====

ACCOMMODATIONS:

April	19-26	(8 days @ \$32.37/day)	
May	19-22	(4 days @ \$13.99/day)	
June	19	(1 day @ \$14.29/day)	\$ 329.24
			=====

GROCERIES:

April	19-26	(8 days @ \$21.58/day)	
May	19-22	(4 days @ \$45.35/day)	
June	19	(1 day @ \$25.02/day)	\$ 379.07
			=====

TRUCK:

April	19-26	(8 days x \$39/day)	
May	19-22	(4 days x \$17/day)	
June	19	(1 day x \$42/day)	\$ 422.00
			=====

GAS:

April	19-26	(8 days @ \$ 7.11/day)	
May	19-22	(4 days @ \$15.44/day)	
June	19	(1 day @ \$ 9.37/day)	\$ 128.00
			=====

OFFICE SUPPLIES: \$ 9.72
=====

TRUCK/TIRE REPAIR \$ 11.37
=====

MISCELLANEOUS: \$ 29.37
=====

SHIPPING:

April 19-22 (0)
May 19-22 (5 boxes 31.65)
June 19 (1 box 6.33)
\$ 37.98
=====

FIELD EQUIPMENT: \$ 20.77
=====

* GEOCHEMICAL ANALYSIS: \$ 2,120.15
=====

REPORT WRITE-UP AND PREPARATION

Author \$600.00
Drafting \$600.00
Typing \$200.00
\$ 1,400.00
=====

TOTAL COSTS: \$ 9,034.13
=====

GEOCHEMICAL ANALYSIS

COSTS FOR THE MET/JORDAN GROUP

* Soils - Noranda Laboratory

\$ 6.25/sample analysis by ICP for 30 elements
\$ 3.50/sample analysis by AA for Au
\$ 1.60/sample drying & sieving
\$ 1.50/sample data processing

\$12.85/sample x 73 samples \$ 938.05
=====

* Soils - Acme Analytical Laboratories

\$ 6.25/sample analysis by ICP for 30 elements
\$ 4.50/sample analysis by AA for Au
\$ 2.40/sample handling & preparation
\$ 1.50/sample data processing

\$14.65/sample x 25 samples \$ 366.25
=====

* Rocks

\$ 3.00/sample crushing & pulverizing
\$ 6.25/sample analysis by ICP for 30 elements
\$ 3.50/sample analysis by AA for Au
\$ 2.40/sample handling & preparation
\$ 1.50/sample data processing

\$16.65/sample x 49 samples \$ 815.85
=====

TOTAL COST OF ANALYSIS: \$2,120.15
=====

* Analysis by 30 element ICP: Mo, Cu, Pb, Zn, Ag, Ni, Co, Mn, Fe, As, U, Au, Th, Sr, Cd, Sb, Bi, V, Ca, P, La, Cr, Mg, Ba, Ti, B, Al, Na, K, W.

APPENDIX V
AUTHORS QUALIFICATIONS

STATEMENT OF QUALIFICATIONS


I, Kolbjorn Lovang, of the City of Vancouver, in the Province of British Columbia, do hereby certify that:

1. I am a prospector residing at 3235 School Avenue, Vancouver, British Columbia, V5R 5N4.
2. I am a graduate (1954) of the Prospector's and Developers Association prospecting course.
3. I have been a prospector and geophysical operator since 1955 with the following companies:

1955-57: Asarco - Highland Valley, B.C., Prospecting, Mag, E.M.
1957-62: Hans Lundbertg Geophysics - B.C.; E.M. and Mag.
1963-69: Plateau Metals - B.C.; Prospecting
1970-73: El Paso Mining - B.C.; Prospecting
1974-75: Domage Campbell - Sask., Ont.; Prospecting
1976-89: Noranda Exploration - B.C., Man., N.W.T.; Prospecting.
4. I have no direct interest or indirect interest in the property which is the subject of this report.

Dated at Vancouver

this 25th day of September, 1989


Kol Lovang, Prospector

PROSPECTING REPORT

A total of 16 mandays were spent prospecting the Met group from April 19-26, 1989. Seventeen rock samples were collected and analyzed for 30 element ICP plus Atomic Absorption Au.

Prospecting consisted of foot traverses along logging roads and prominent rock ridges. Mineralized float and/or road fill was sampled and the source outcrop in some cases was located. The majority of rock samples were collected directly from outcrop.

Mineralization consisted of pyrite, chalcopyrite, and minor bornite. Erratic and non-pervasive mineralization was seen in gabbro dykes and the Metchosin volcanics. The volcanics are light to dark green and locally siliceous. The dykes are grey-black in colour and are 2-10 metres wide. No persistent mineralization was found over mappable lengths/widths.



Kallebjorn Larang


AUTHORS QUALIFICATIONS

I, Terence J. McIntyre of 894 Pacific Drive, Delta, Province of British Columbia, do hereby certify that:

- I have been employed as a Geologist for Noranda Exploration Company, Limited (no personal liability) from the spring of 1987 to the present.

- I graduated from the Montana College of Mineral Science and Technology in 1986 with a BSc degree in geological engineering.

- I have worked in mineral exploration and in mines since 1983.



Terence J. McIntyre

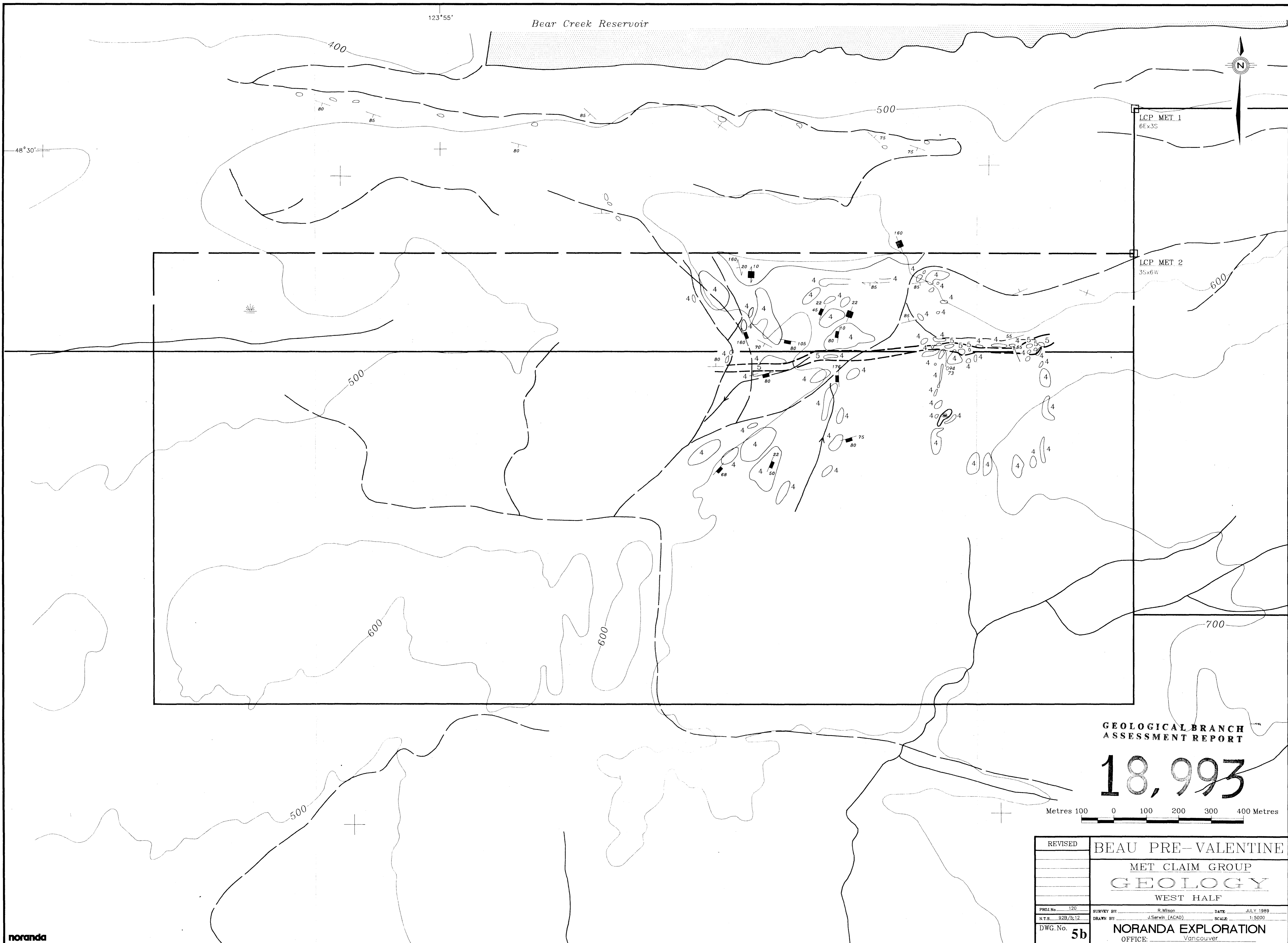
AUTHORS QUALIFICATIONS

I, Robert G. Wilson of the City of Vancouver, Province of British Columbia, do hereby certify that:

- I am a geologist residing at 3328 West 15th. Avenue, Vancouver B.C.
- I graduated from the University of British Columbia in 1976 with a BSc degree in Geology.
- I have worked in mineral exploration since 1973 and have practiced my profession as a geologist since 1976.
- I am presently a Project Geologist with Noranda Exploration Company, Limited (no personal liability).
- I am a member of the Geological Association of Canada (Cordillera Division).
- I supervised this project and have reviewed the findings presented within this report.



Rob Wilson
Project Geologist

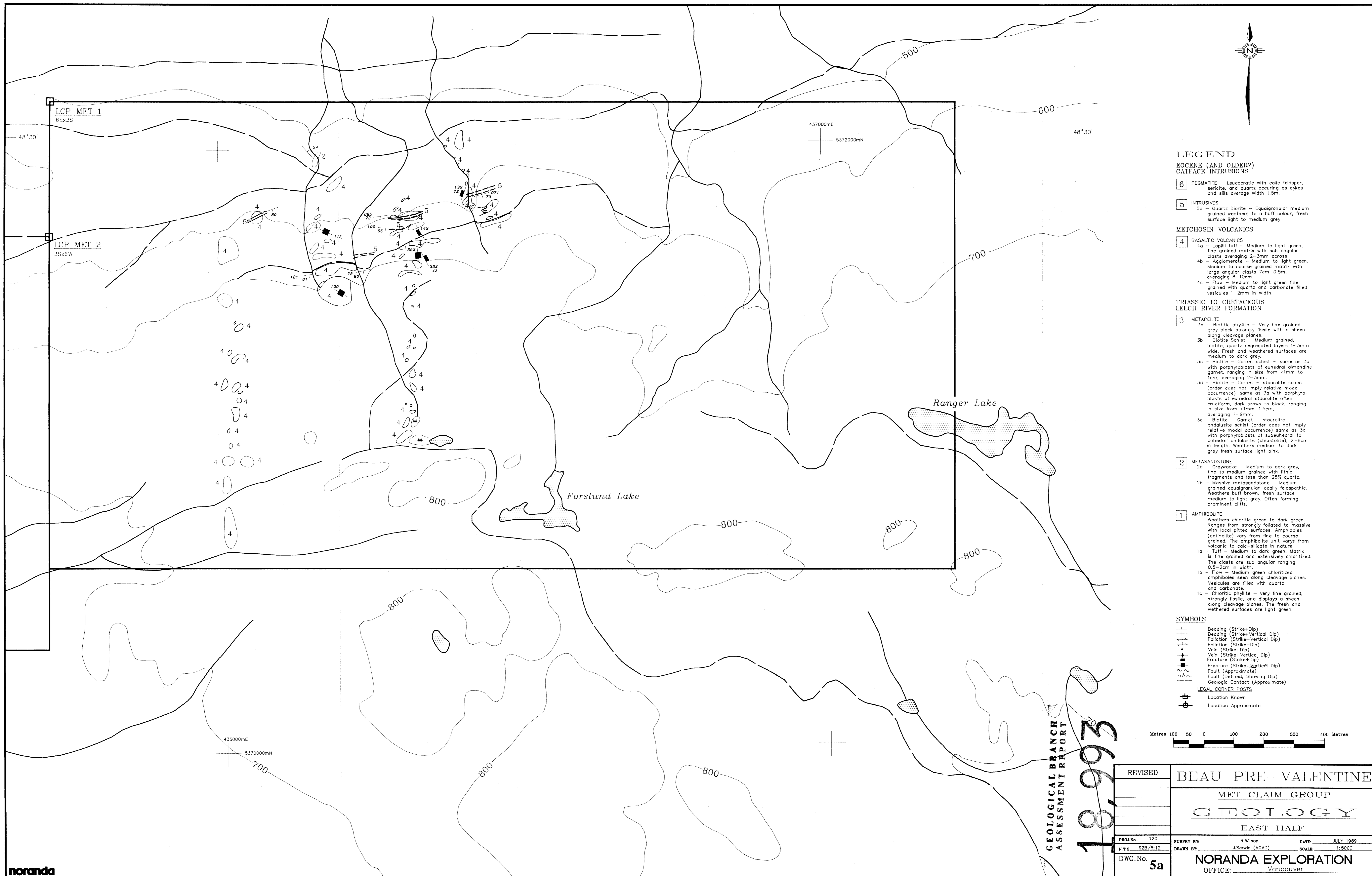


GEOLOGICAL BRANCH
ASSESSMENT REPORT

18,993

Metres 100 0 100 200 300 400 Metres

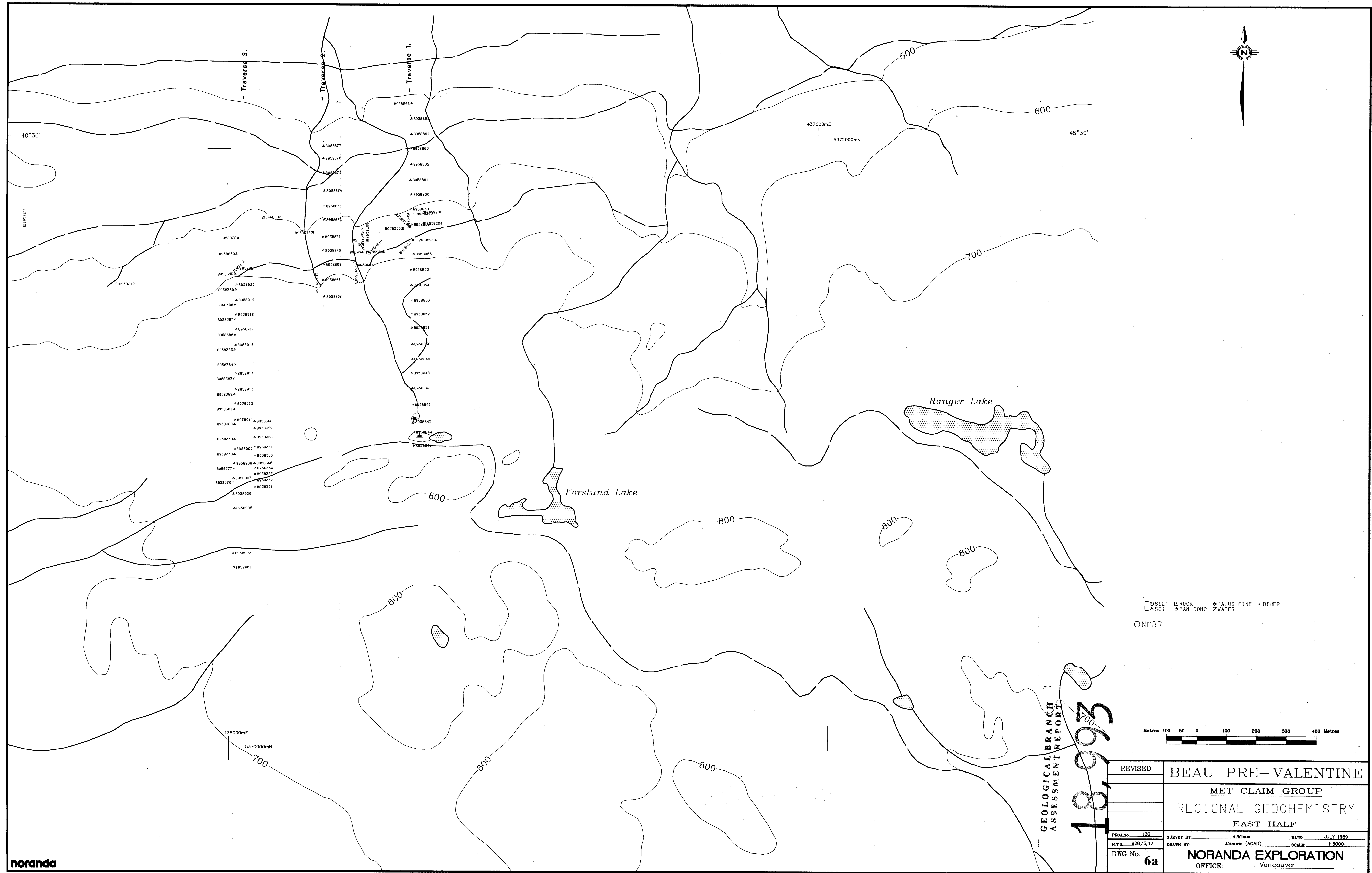
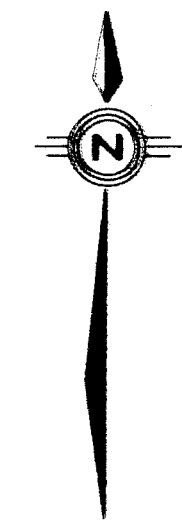
REVISED	BEAU PRE-VALENTINE		
	MET CLAIM GROUP		
	GEOLOGY		
	WEST HALF		
PROJ. No. 120	SURVEY BY: R. Wilson	DATE: JULY 1989	
N.T.S. 928/S/12	DRAWN BY: J. Serwin (ACAD)	SCALE: 1:5000	
DWG. No. 5b	NORANDA EXPLORATION		
	OFFICE: Vancouver		



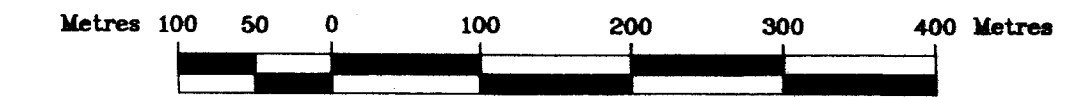
- LEGEND**
- EOCENE (AND OLDER?) CATFACE INTRUSIONS**
- 6 PEGMATITE - Leucocratic with calcic feldspar, sericite, and quartz occurring as dykes and sills average width 1.5m.
 - 5 INTRUSIVES
 - 5a - Quartz Diorite - Equigranular medium grained weathers to a buff colour, fresh surface light to medium grey.
- METCHOSIN VOLCANICS**
- 4 BASALTIC VOLCANICS
 - 4a - Lapilli tuff - Medium to light green, fine grained matrix with sub angular clasts averaging 2-3mm across.
 - 4b - Agglomerate - Medium to light green. Medium to coarse grained matrix with large angular clasts 7cm-0.5m, averaging 8-10cm.
 - 4c - Flow - Medium to light green fine grained with quartz and carbonate filled vesicles 1-2mm in width.
- TRIASSIC TO CRETACEOUS LEECH RIVER FORMATION**
- 3 METAPELITE
 - 3a - Biotitic phyllite - Very fine grained grey black strongly fissile with a sheen along cleavage planes.
 - 3b - Biotite Schist - Medium grained, biotite quartz segregated layers 1-3mm wide. Fresh and weathered surfaces are medium to dark grey.
 - 3c - Biotite - Garnet schist - same as 3b with porphyroblasts of euhedral almandine garnet, ranging in size from <1mm to 1cm, averaging 2-3mm.
 - 3d - Biotite - Garnet - staurolite schist (order does not imply relative modal occurrence) same as 3a with porphyroblasts of euhedral staurolite often cruciform, dark brown to black, ranging in size from <1mm-1.5cm, averaging 7-9mm.
 - 3e - Biotite - Garnet - staurolite - andalusite schist (order does not imply relative modal occurrence) same as 3d with porphyroblasts of subhedral to anhedral andalusite (chiastolite), 2-8cm in length. Weathers medium to dark grey fresh surface light pink.
 - 2 METASANDSTONE
 - 2a - Greywacke - Medium to dark grey, fine to medium grained with lithic fragments and less than 25% quartz.
 - 2b - Massive metasediment - Medium grained equigranular locally feldspathic. Weathers buff brown, fresh surface medium to light grey. Often forming prominent cliffs.
 - 1 AMPHIBOLITE
 - 1a - Tuff - Medium to dark green. Matrix is fine grained and extensively chloritized. The clasts are sub angular ranging 0.5-2cm in width.
 - 1b - Flow - Medium green chloritized amphiboles seen along cleavage planes. Vesicles are filled with quartz and carbonate.
 - 1c - Chloritic phyllite - very fine grained, strongly fissile, and displays a sheen along cleavage planes. The fresh and weathered surfaces are light green.
- SYMBOLS**
- Bedding (Strike+Dip)
 - Bedding (Strike+Vertical Dip)
 - Foliation (Strike+Vertical Dip)
 - Foliation (Strike+Dip)
 - Vein (Strike+Dip)
 - Vein (Strike+Vertical Dip)
 - Fracture (Strike+Dip)
 - Fracture (Strike+Vertical Dip)
 - Fault (Approximate)
 - Fault (Defined, Showing Dip)
 - Geologic Contact (Approximate)
- LEGAL CORNER POSTS**
- Location Known
 - Location Approximate

GEOLOGICAL BRANCH
 ASSESSMENT REPORT
 18,993

REVISED	BEAU PRE-VALENTINE	
	MET CLAIM GROUP	
	GEOLOGY	
	EAST HALF	
PROJ. No. 120	SURVEY BY: R. Wilson	DATE: JULY 1989
N.T.S. 92B/5/12	DRAWN BY: J. Serwin (ACAD)	SCALE: 1:5000
DWG. No. 5a	NORANDA EXPLORATION	
	OFFICE: Vancouver	



□ SILT □ ROCK □ TALUS FINE + OTHER
 ▲ SOIL ◊ PAN CONC ✕ WATER
 ○ NMBR



GEOLOGICAL BRANCH ASSESSMENT REPORT

18,993

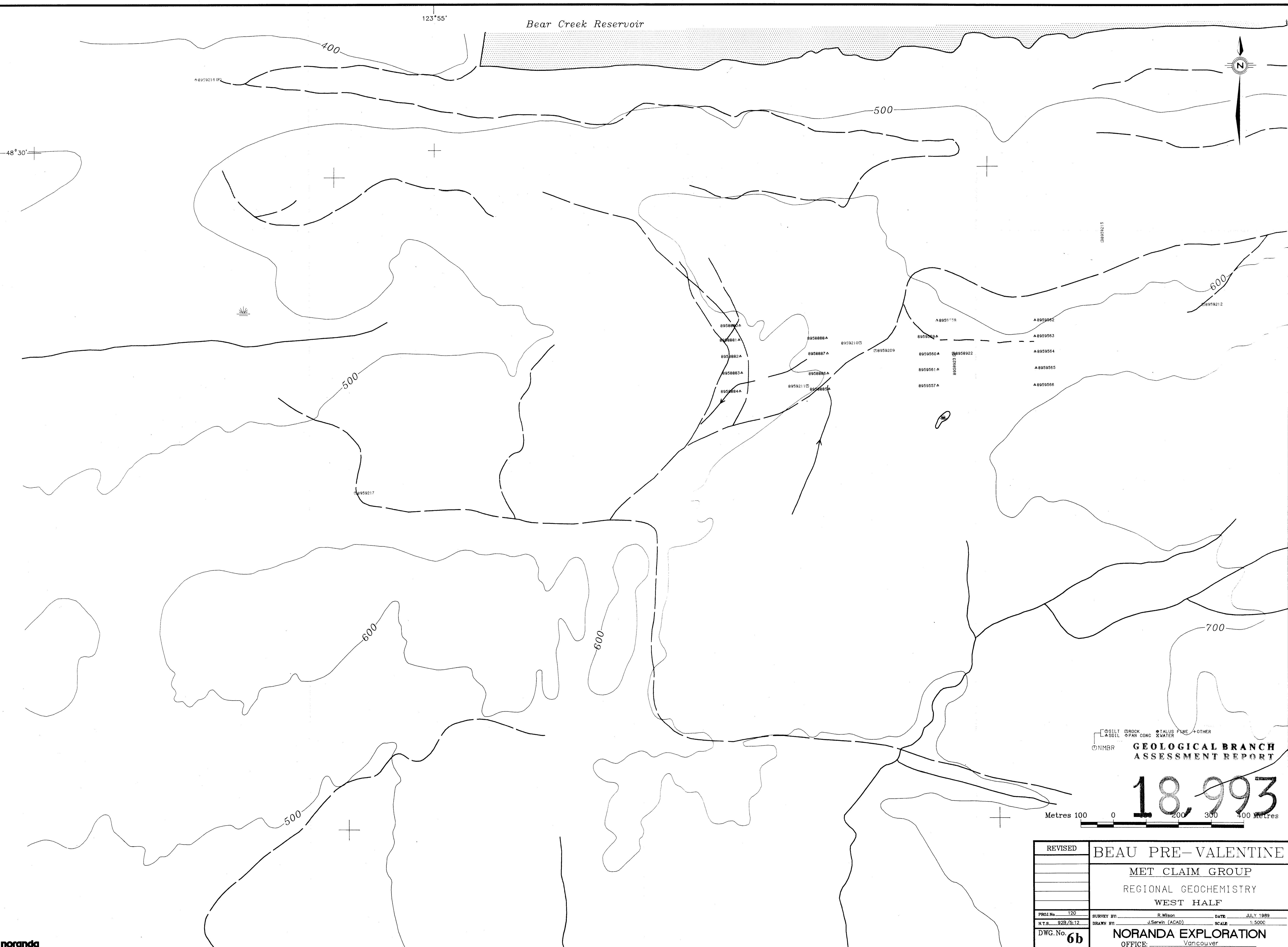
REVISED	BEAU PRE-VALENTINE		
	MET CLAIM GROUP		
	REGIONAL GEOCHEMISTRY		
	EAST HALF		
PROJ. No. 120	SURVEY BY: R. Wilson	DATE: JULY 1989	
N.T.S. 92B/5.12	DRAWN BY: J. Serwin (ACAD)	SCALE: 1:5000	
DWG. No. 6a	NORANDA EXPLORATION		
	OFFICE: Vancouver		

123°55'

Bear Creek Reservoir



48°30'

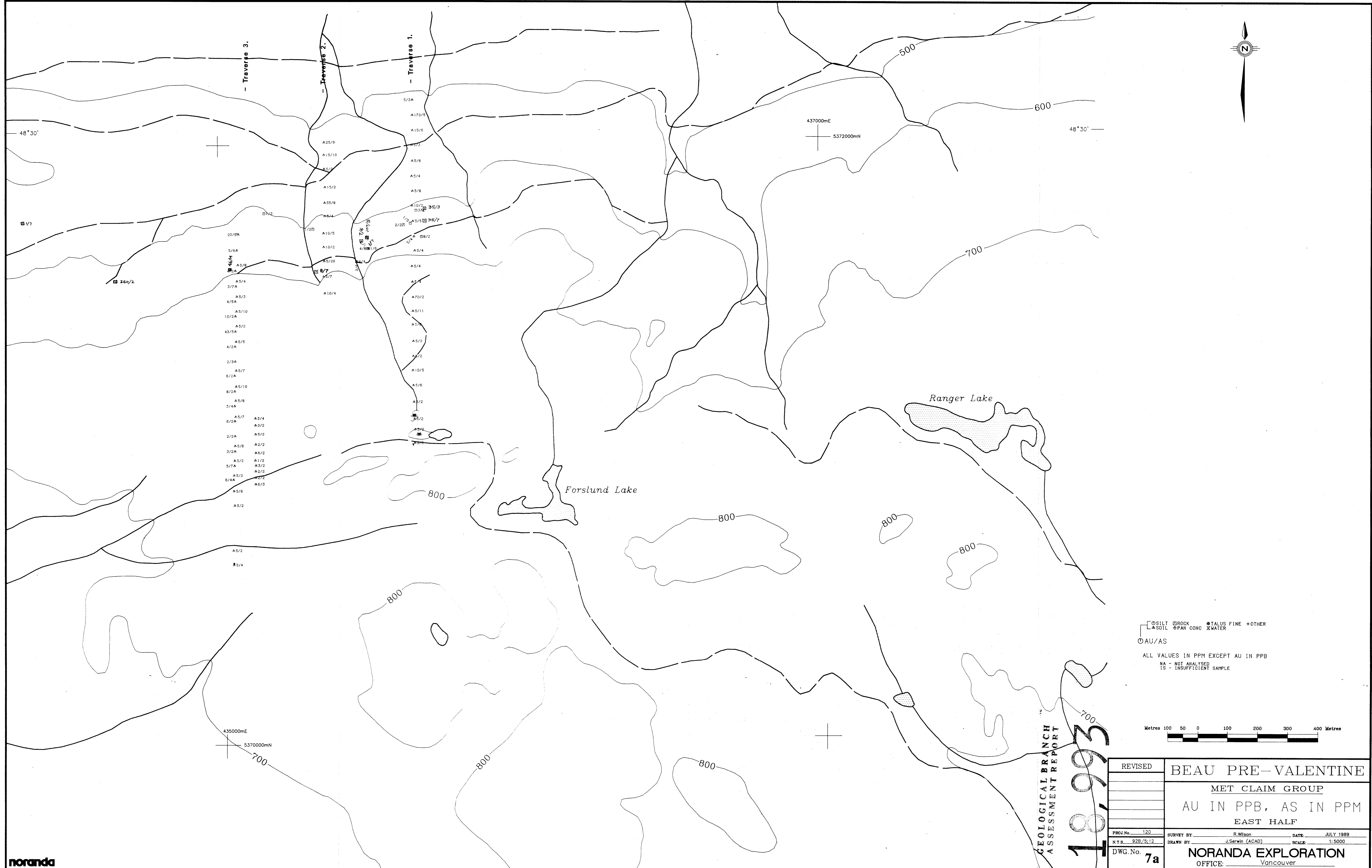


○ SILT □ ROCK ⊙ TALUS PINE △ OTHER
△ SOIL ⊙ PAN CONC ⊙ WATER

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

18,993
Metres 100 0 200 300 400 metres

REVISED	BEAU PRE-VALENTINE		
	MET CLAIM GROUP		
	REGIONAL GEOCHEMISTRY		
	WEST HALF		
PROJ. No. 120	SURVEY BY: R. Wilson	DATE: JULY 1989	
N.T.S. 928/5.12	DRAWN BY: J. Serwin (ACAD)	SCALE: 1:5000	
DWG. No. 6b	NORANDA EXPLORATION OFFICE: Vancouver		



□ SOIL □ ROCK ♦ TALUS FINE + OTHER
 △ SOIL ○ PAN CONC ✕ WATER
 ○ AU/AS
 ALL VALUES IN PPM EXCEPT AU IN PPB
 NA - NOT ANALYSED
 IS - INSUFFICIENT SAMPLE

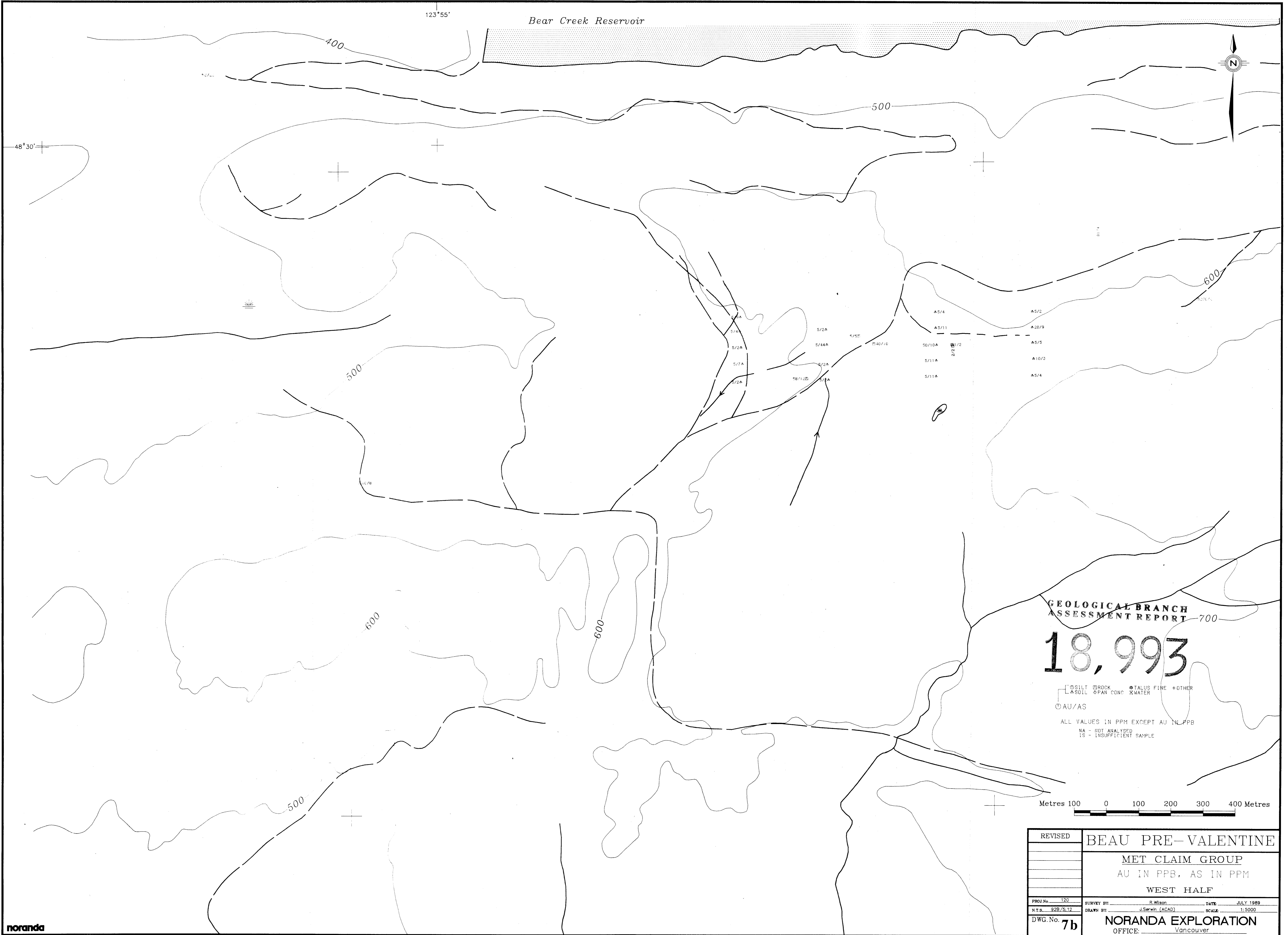


GEOLOGICAL BRANCH ASSESSMENT REPORT

18,993

noranda

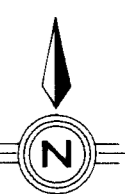
REVISED	BEAU PRE-VALENTINE		
	MET CLAIM GROUP		
	AU IN PPB, AS IN PPM		
	EAST HALF		
PROJ. No. 120	SURVEY BY: R. Wilson	DATE: JULY 1989	
N.T.S. 92B/S.12	DRAWN BY: J. Serwin (ACAD)	SCALE: 1:5000	
DWG. No. 7a	NORANDA EXPLORATION		
	OFFICE: Vancouver		



123°55'

Bear Creek Reservoir

48°30'



GEOLOGICAL BRANCH
ASSESSMENT REPORT

18,993

SILT ROCK TALUS FINE + OTHER
 SOIL PAN CONC WATER
 AU/AS

ALL VALUES IN PPM EXCEPT AU IN PPB
 NA - NOT ANALYSED
 IS - INSUFFICIENT SAMPLE

Metres 100 0 100 200 300 400 Metres

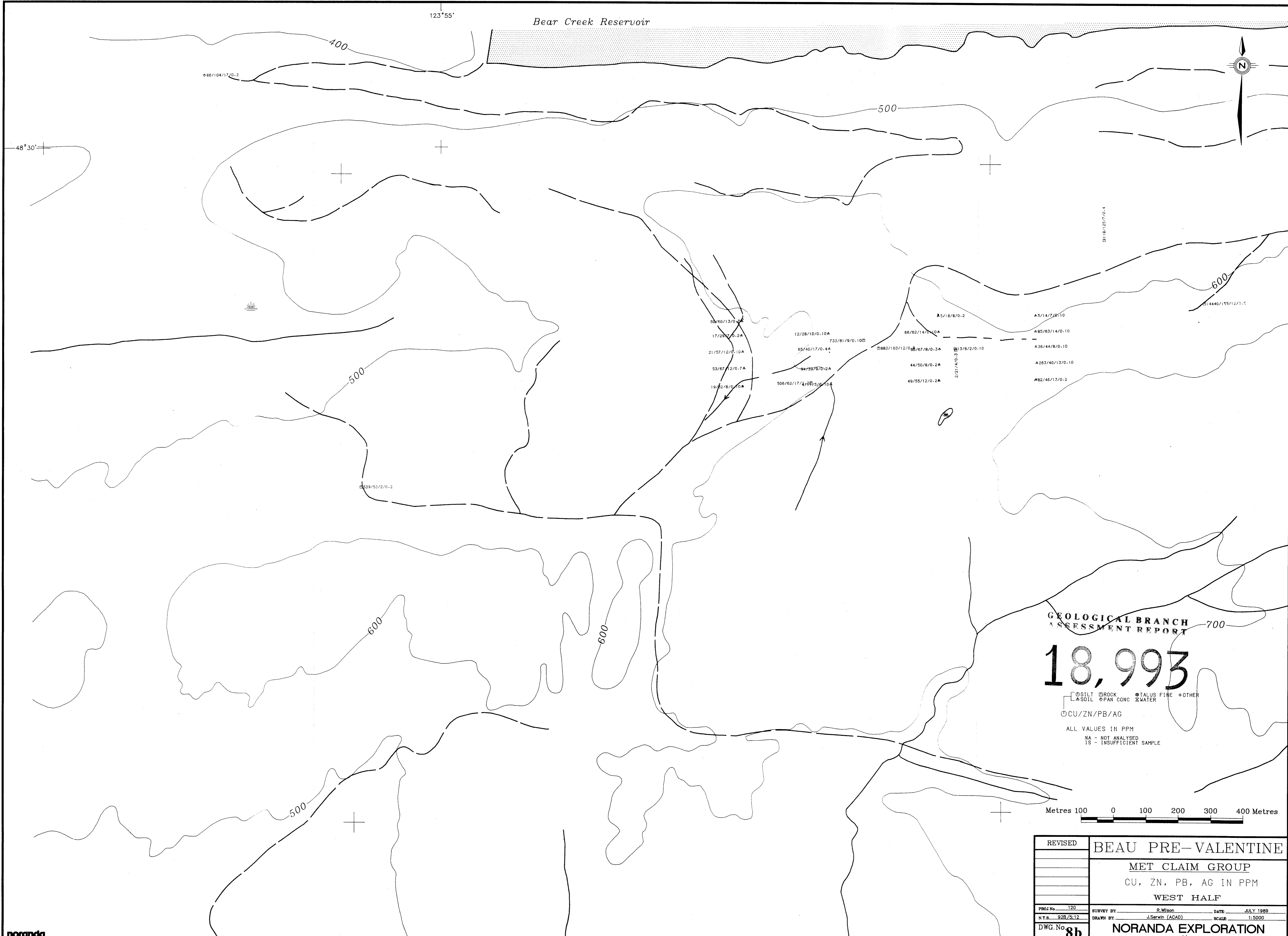
REVISED	BEAU PRE-VALENTINE		
	MET CLAIM GROUP		
	AU IN PPB, AS IN PPM		
	WEST HALF		
PROJ. No. 120	SURVEY BY: R. Wilson	DATE:	JULY 1989
N.T.S. 928/S.12	DRAWN BY: J. Serwin (ACAD)	SCALE:	1:5000
DWG. No. 7b	NORANDA EXPLORATION		
	OFFICE: Vancouver		

123°55'

Bear Creek Reservoir



48°30'



GEOLOGICAL BRANCH
ASSESSMENT REPORT

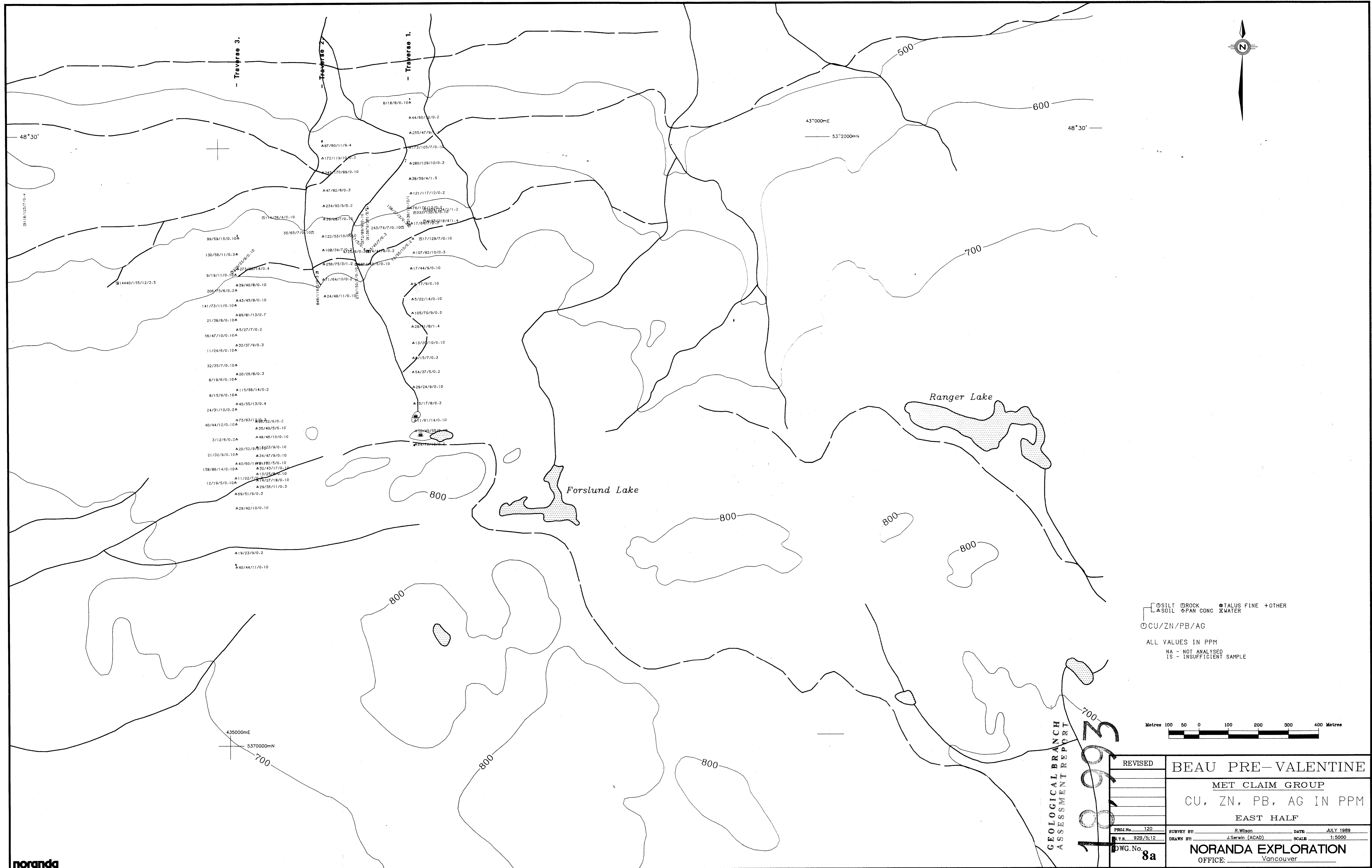
18,993

□ SILT □ ROCK □ TALUS FINE + OTHER
▲ SOIL ○ PAN CONC Σ WATER
○ CU / ZN / PB / AG

ALL VALUES IN PPM
NA - NOT ANALYSED
IS - INSUFFICIENT SAMPLE

Metres 100 0 100 200 300 400 Metres

REVISED	BEAU PRE-VALENTINE		
	MET CLAIM GROUP		
	CU, ZN, PB, AG IN PPM		
	WEST HALF		
PROJ. No. 120	SURVEY BY: R. Wilson	DATE: JULY 1989	
N.T.S. 92B/S.12	DRAWN BY: J. Serwin (ACAD)	SCALE: 1:5000	
DWG. No. 8b	NORANDA EXPLORATION		
	OFFICE: Vancouver		

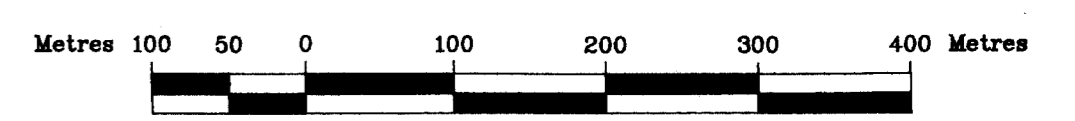


noranda

GEOLOGICAL BRANCH ASSESSMENT REPORT

10993

SILT ROCK TALUS FINE + OTHER
 SOIL PAN CONC WATER
 CU/ZN/PB/AG
 ALL VALUES IN PPM
 NA - NOT ANALYSED
 IS - INSUFFICIENT SAMPLE



REVISED	BEAU PRE-VALENTINE		
	MET CLAIM GROUP		
	CU, ZN, PB, AG IN PPM		
	EAST HALF		
PROJ. No. 120	SURVEY BY: R. Wilson	DATE: JULY 1989	
DWG. No. 8a	DRAWN BY: J. Serwin (ACAD)	SCALE: 1:5000	
NORANDA EXPLORATION			
OFFICE: Vancouver			