GEOLOGICAL AND GEOCHEMICAL SURVEYS

PERFORMED ON THE

LITTLE HEART CLAIM GROUP

Heart 4A (2038), Heart 5A (2039)
Heart 6 (1925), Heart 7 (1926)
Doran 3 (1990), Doran 6 (2033)
Doran 7Fr(2034), Doran 8Fr(2035)

VICTORIA MINING DIVISION

N.T.S. 92B/12, 92C/9

Latitude 48°31'45" Longitude 124°00'

Authors : Joan E. McCorquodale
R.G. Wilson

Date : August 31, 1989

Owner : Beau-Pre Exploration Ltd.
Valentine Gold Corp.

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

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SUMMARY

The Little Heart claim group comprises a portion of the Valentine project property. It was examined as part of a regional property exploration programme conducted during the 1989 Valentine project.

The Little Heart claim group is underlain by interbedded metamorphosed mudstones and sandstones with occasional intercalated intermediate to basic volcanic derived amphibolites.

Two soil grids were emplaced, the Walker Creek grid and the Wye Lake grid of 1.2 km of line and 3.2 km of line respectively. With each grid the crosslines ran north-south 200 m apart and soil samples collected every 50 m. The grids were situated over airborne magnetic features and coincidental aerial photograph interpreted features. These areas were geologically mapped, prospected and geochemically rock, pan and silt sampled. The area surrounding the grids was prospected.

The surface expression of a moderate size fault within the Walker Creek grid was discovered. It has been interpreted as a splay fault off the deep rooted Leech River thrust fault, which is located to the south.

A total of 108 soils, 24 rocks, 2 pan concentrates and 2 silts were analyzed for 30 element ICP plus Atomic Absorption Au. Geochemical results did not return any significant elevated gold values. A single soil sample which initially analyzed 750 ppb Au was re-analyzed and returned a value of 5 ppb. Follow-up samples collected in a 25 m pattern surrounding the original sample returned only background values. Results of other elements are at or near normal background levels.

1.0 INTRODUCTION

1.1 Location and Access

The Little Heart Group lies approximately 26 km northwest of the township of Sooke, B.C. (Figure 1 and 2). The property is accessed from Sooke via the Butler Main logging road. From the west end of Butler Main, the eastern portion of the property can be accessed via Walker Main. Jordan Main and J-40 accesses the central portion and access to the west requires a 1 kilometre hike from the central area of the property. Travel time from Sooke is approximately 45 minutes.

1.2 Physiography

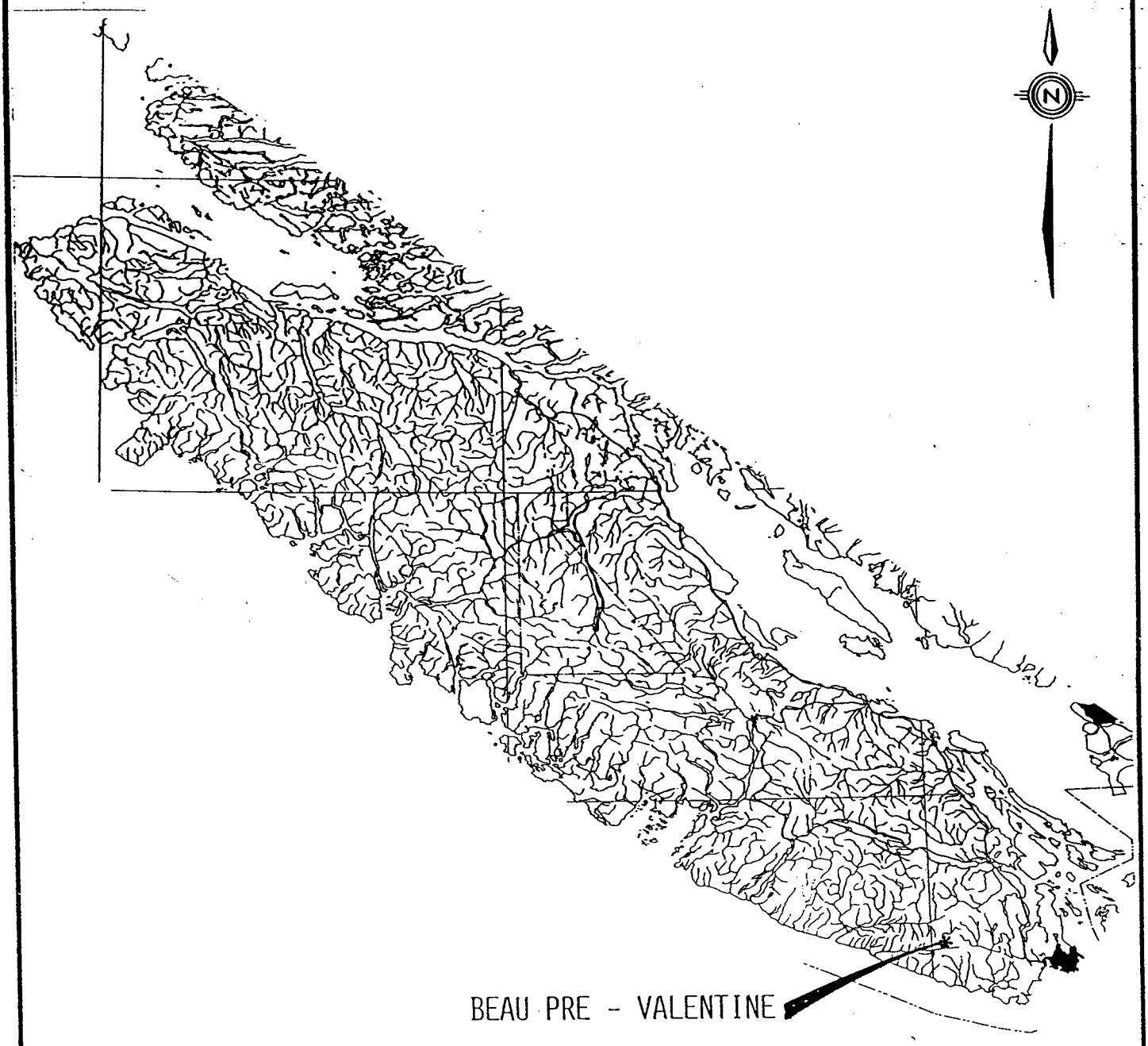
The Little Heart Group lies within the Vancouver Island Mountain Range in the southern portion of the Insular Belt.

The group is situated on the San Juan Ridge and the physiography consists of several moderately sloped knolls. Elevation ranges from 650 m, along incised creeks, to 1000 m on the ridge top.

The Little Heart Group is thinly covered by glacial material with a moderate amount of outcrop.

The climate in this part of Vancouver Island is generally mild. Heavy precipitation occurs mainly during the winter months, from November to March, with considerable accumulation of snow. The spring, summer and fall are a mixture of cool wet days and warm sunny days in approximately equal proportions. Due to the amount of snow which falls during the winter, work cannot begin before the end of May.

The vegetation in the area consists predominantly of mature timber; cedar, hemlock, douglas fir, with sparse underbrush. Approximately 25% of the group has been clear cut logged and recently re-planted.

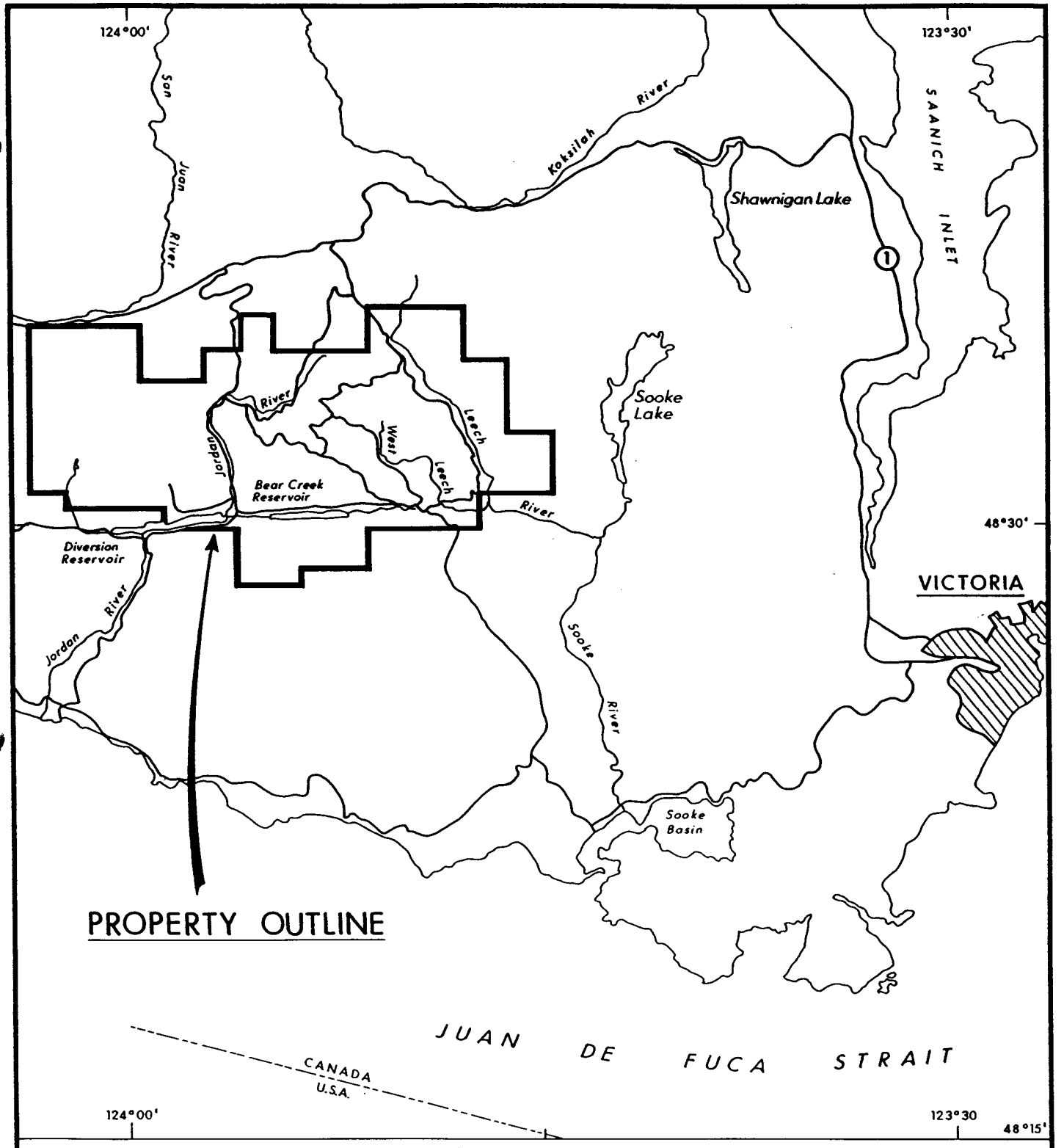


BEAU PRE - VALENTINE

PROJECT LOCATION

REVISED	BEAU PRE VALENTINE
	PROJECT LOCATION
PROJ.No. 120	SURVEY BY: _____ DATE: June 89
N.T.S. 92B/0	DRAWN BY: rgw SCALE: 1:2.5mi-k.
DWG. No. 1	NORANDA EXPLORATION
	OFFICE: VANCOUVER BC

NO. 774


124°00'
123°30'
San Juan River
Koksilah River
Shawnigan Lake
SAANICH INLET
1
Sooke Lake
River
Jordan
West Leech
Leech River
Bear Creek Reservoir
48°30'
Diversion Reservoir
Jordan River
VICTORIA
Sooke River
Sooke Basin
PROPERTY OUTLINE
JUAN DE FUCA STRAIT
CANADA
U.S.A.
124°00'
123°30
48°15'
Km. 5 2.5 0 5 Km.
REVISED
BEAU PRE - VALENTINE
PROPERTY LOCATION
PROJ. No. 120
N.T.S. 928/5,12
DWG. No. 2
SURVEY BY: R.W.
DRAWN BY: J. Serwin
DATE: JUNE 1989
SCALE: 1:250,000
NORANDA EXPLORATION
OFFICE: VANCOUVER
VANCAL 11927

1.3 Claims and Ownership

The Little Heart Group (Figures 3 & 3a) consists of the following claims:

TABLE 1: List of Claims

Name	Record #	Units	Due Date
Heart 4A	2038	12	Nov. 02, 1990
Heart 5A	2039	15	Nov. 02, 1990
Heart 6	1925	20	May 06, 1990
Heart 7	1926	20	May 06, 1990
Doran 3	1990	10	July 27, 1990
Doran 6	2033	3	Oct. 28, 1990
Doran 7 Fr.	2034	1	Oct. 28, 1990
Doran 8 Fr.	2035	1	Oct. 28, 1990

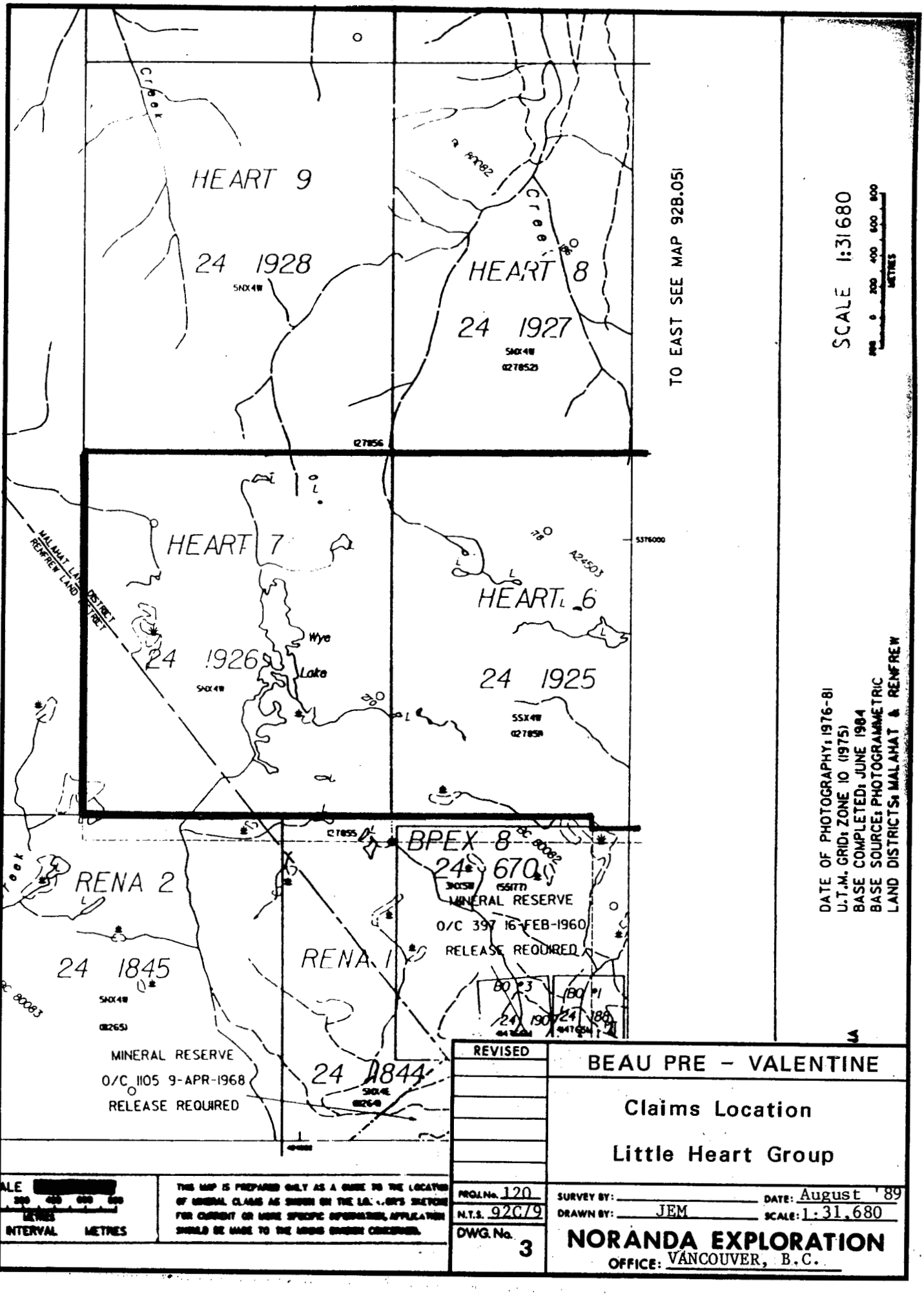
The Little Heart claim group straddles 124°00' longitude line separating NTS maps 92B/12 and 92C/09. The Ministry of Energy Mines and Petroeum Resources publish claim maps at different scales for these two NTS mapsheets. Therefore the western claim boundaries are shown at 1:31,680 scale (Figure 3), and the eastern claims are shown at 1:50,000 scale (Figure 3a).

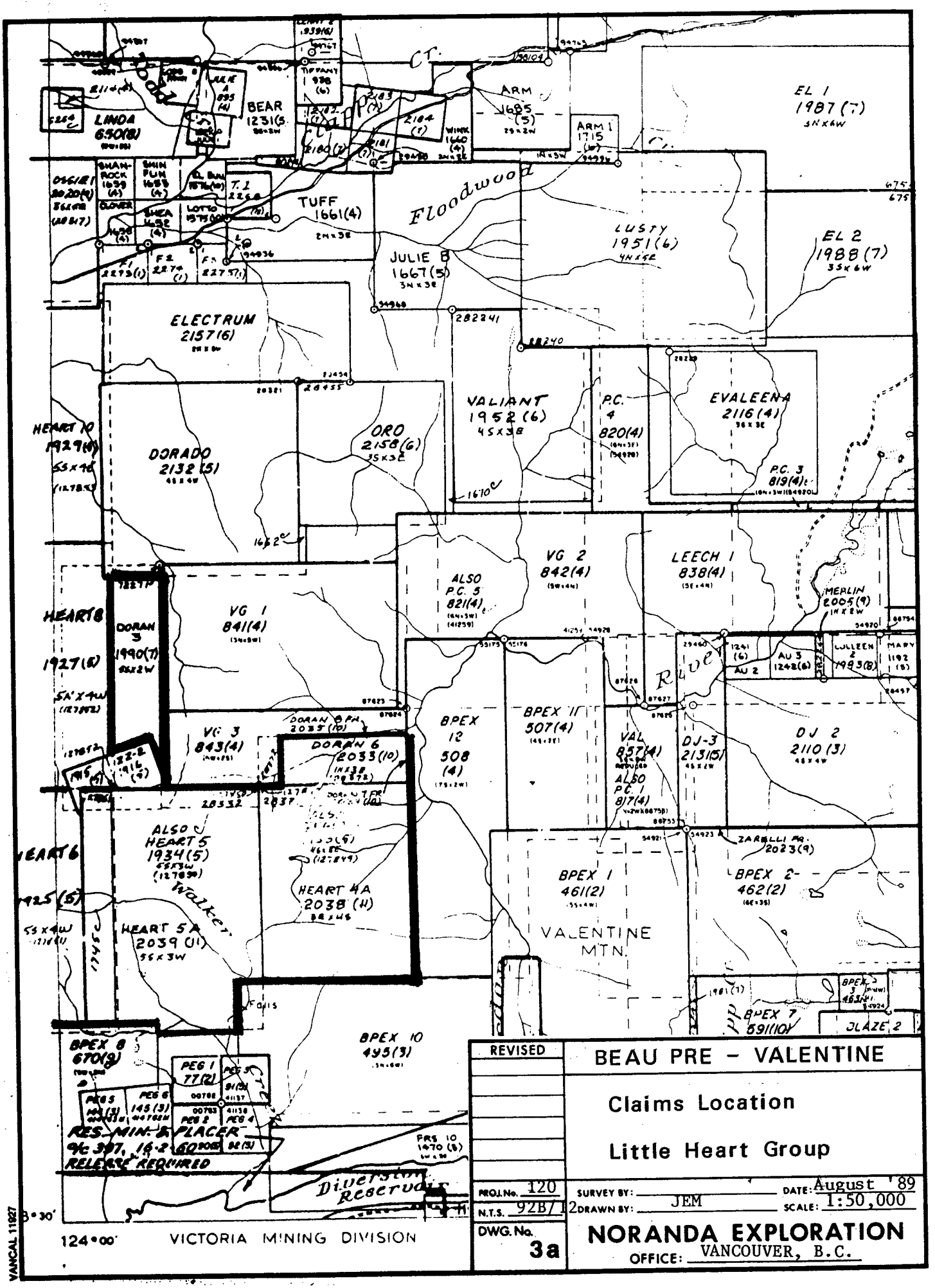
All interest in the Little Heart Group of claims have been transferred for administrative purposes to Noranda Exploration Company, Limited (no personal liability), as stated in the option agreement between Noranda, Beau-Pre Explorations Ltd. and Valentine Gold Corporation. These claims are subject to a former agreement between Valentine Gold Corp., and Beau-Pre Explorations Ltd.

1.4 Previous Work

The discovery of placer gold in the Leech River in 1864 led to a major but short lived gold rush in the area. Subsequently, many of the streams flowing across the "Leech River Schists" have been shown to contain fine placer gold.

In 1976 native gold was found in narrow quartz veins on Valentine Mountain, approximately 42 km west of Victoria.


HEART 9
24 1928
HEART 8
24 1927
HEART 7
24 1926
HEART 6
24 1925
RENA 2
24 1845
RENA 1
24 1844
BPEX 8
24 670
MINERAL RESERVE
O/C 397 16-FEB-1960
RELEASE REQUIRED
MINERAL RESERVE
O/C 1105 9-APR-1968
RELEASE REQUIRED
Wye
Lake
Creek
TO EAST SEE MAP 928.051
SCALE 1:31680
DATE OF PHOTOGRAPHY: 1976-81
U.T.M. GRID: ZONE 10 (1975)
BASE COMPLETED: JUNE 1984
BASE SOURCE: PHOTOGRAMMETRIC
LAND DISTRICTS: MALAHAT & RENFREW
REVISED
BEAU PRE - VALENTINE
Claims Location
Little Heart Group
PROJ. No. 120
N.T.S. 92C/9
DWG. No. 3
SURVEY BY:
DRAWN BY: JEM
DATE: August '89
SCALE: 1:31,680
NORANDA EXPLORATION
OFFICE: VANCOUVER, B.C.
THIS MAP IS PREPARED ONLY AS A GUIDE TO THE LOCATION OF MINERAL CLAIMS AS SHOWN ON THE LAND SURVEY SKETCHES FOR CURRENT OR MORE SPECIFIC INFORMATION, APPLICATION SHOULD BE MADE TO THE MINING DIVISION CONCERNED.
INTERVAL METRES
VANCAL 11927



REVISED	BEAU PRE - VALENTINE
	Claims Location
	Little Heart Group
PROJ. No. 120	SURVEY BY: JEM DATE: August '89
N.T.S. 92B/12	DRAWN BY: SCALE: 1:50,000
DWG. No. 3a	NORANDA EXPLORATION
	OFFICE: VANCOUVER, B.C.

VANCAL 11927

Since then over 85 other occurrences of native gold within quartz veins have been found within the metasedimentary rocks of the Leech River complex.

Recent work on the Little Heart Group comprises of a few rock and pan concentrate samples and a grid of 10.9 km with lines 100 m apart and 2 soil samples spaced at 20 m, completed by Valentine Gold Corp. in 1987. The soil grid results did not show any grouped elevated gold values. Three pan concentrate samples returned Au values of 119, 109 and 930 ppb. The rock samples had no elevated gold values.

In 1987 a Dighem aerial magnetic survey was flown over the property. One block was 263 line km of nearly north-south lines, and a smaller block of nearly east-west lines were flown superimposed on the first block, in order to register suspected east-west features.

No historical work is reported.

1.5 Work Performed

A total of 35 mandays were spent from June 2, 1989 to August 25, 1989 on a reconnaissance exploration programme on the Little Heart Group. A total of $9,633.40 in exploration expenditures was incurred during the above mentioned period.

The programme consisted of the emplacement of two soil grids situated on airborne magnetic features. The Wye Lake grid consists of 4.2 km of line, and the Walker Creek grid has 1.6 km of line. Both soil grids were designed with north-south crosslines, 200 metres apart and soil samples collected every 50 metres. The grid areas were geologically mapped, prospected and geochemically rock, pan and silt sampled. The area surrounding the grids were prospected. A total of 108 soils, 24 rocks, 2 pan concentrates and 2 silts were analyzed for 30 element ICP plus Atomic Absorption Au.

1.6 Personnel

The work carried out on the Little Heart Group was performed by J. McCorquodale (Detailed Property Party Chief), D. Sharpe (Geologist), A.I. Saunders, D. Dempsey, D. Caldicott and R.B. Singh (Fieldmen). Project supervision and airphoto interpretation was performed by R.G. Wilson (Project Geologist).

2.0 METHODS

2.1 Geological Mapping

Geological mapping coincident with geochemical rock sampling was carried out within the Wye Lake grid and Walker Creek grid along roads, and creeks. Mapping was conducted at a scale of 1:5,000 over a total area of 1.5 square kilometres.

The geological mapping was carried out with a view to identifying lithology, metamorphism, structure, mineralization and quartz veining.

2.2 Geochemical Sampling

In most cases rock chip samples were taken of the quartz veins with a separate sample taken of the wall rock. The samples of the quartz vein material were taken, for a distance of 1.0 m, along it's strike length. Samples of the wall rock were taken for a distance of 0.5 m perpendicular to the strike of the quartz vein. Occasionally samples were taken of the vein only. These chip samples were across the vein for a representative strike length.

Rock samples, each weighing approximately 2 kg, were placed in 6 ml plastic bags, along with a sample tag number and shipped to Acme Analytical Laboratory in Vancouver for analysis.

Soil samples were taken along north-south grid crosslines. These lines were spaced 200 m apart with stations established every 50 m. Samples weighing approximately 1 kg each were placed in Kraft paper bags, given a sample number, then air dried prior to shipment to Noranda's Vancouver laboratory.

In addition, two pan and coincident silt samples were taken in the central portion of the property. Pan samples were obtained by sieving stream sediment down to -6 mesh and panning this to a final volume of approximately 20 ml. Silt samples weighing approximately 1 kg were obtained from the same location as the pan sample. Both were given a sample number, partially air dried, then shipped to Noranda's Vancouver laboratory.

Appendix I contains descriptions of analytical techniques of analyzing used by Noranda's lab (Au analysis for stream sediments and soils) and Acme's lab (ICP + Au analysis for rocks, stream sediments and soils). Appendix II contains rock sample lithologic descriptions, and Appendix III contains the laboratory analysis certificates of results.

3.0 GEOLOGY

3.1 Regional Geology

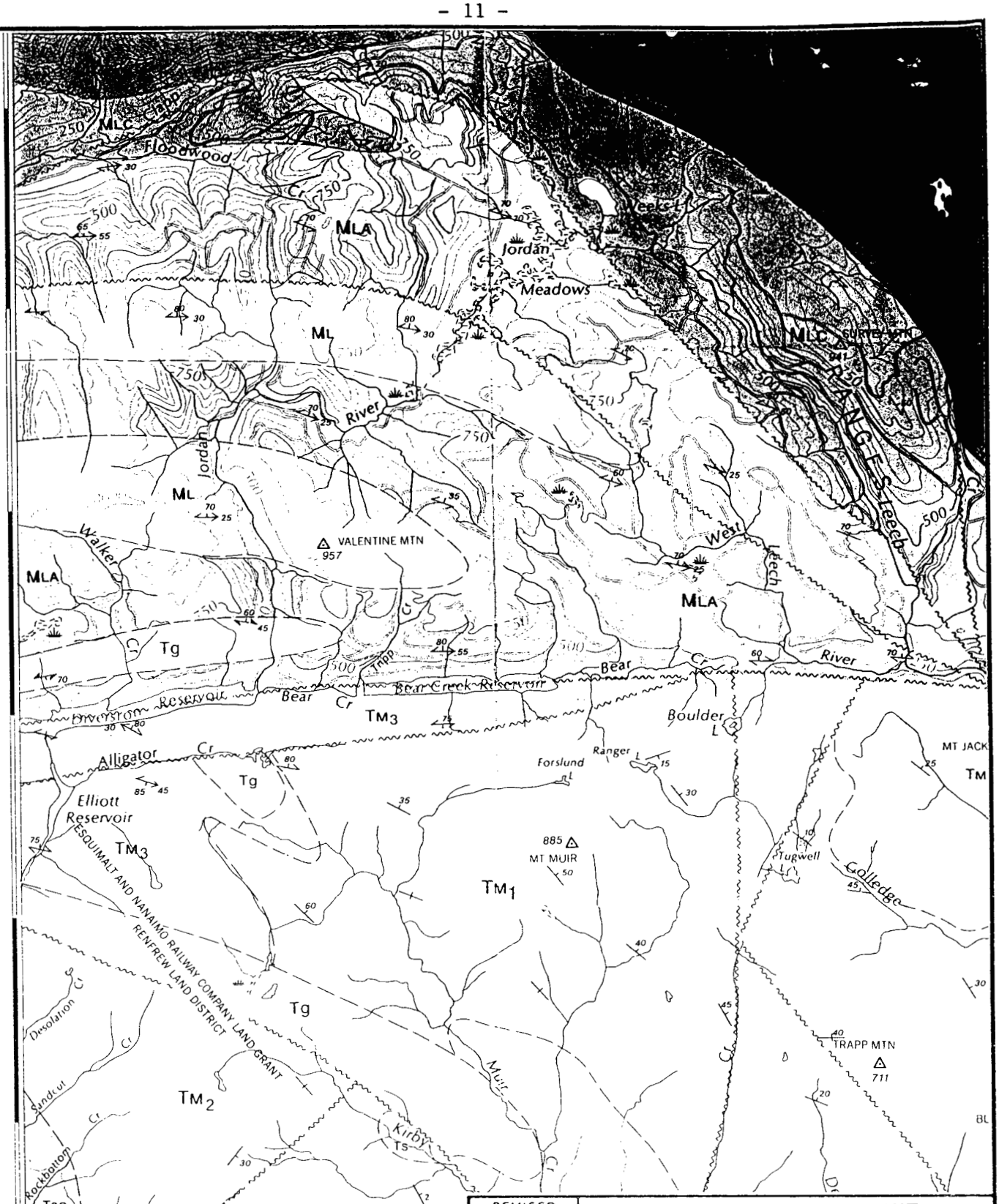
Regionally, the area is underlain by the metamorphosed pelitic, arenaceous, and volcanic rocks of the Leech River Formation (figure 4). Together, these make up the Leach River Block.

The Leech River Block is a discrete geotectonic unit (terrane) separated along its northern edge by the San Juan Fault Zone from early Jurassic Bonanza volcanics. The southern edge of the Leach River Block is separated from Eocene Metchosin Group volcanics by the Leach River Fault Zone. To the east the Leach River Block is separated from the Wark Diorite and the Colquitz Gneiss by the Cragg Creek Fault (Fairchild, 1979).

The area outlined by these fault zones is a narrow east-west trending block which extends from Port Renfrew on the west coast to Langford, near Victoria, on the east coast of Vancouver Island. The block is approximately 75 km long east-west and varies in width from 7-12 km in the west to less than 2 km in the east.

The Leech River Formation consists of metamorphosed arenites, pelites and volcanics as well as granitoid intrusive bodies. The age of deposition of these sediments, by Rb-Sr method is late Jurassic to Cretaceous (Fairchild, 1982). K-Ar dating indicates that the metamorphism and deformation occurred in early Tertiary time (Fairchild, 1982).

The rocks of the Leech River Formation have undergone regional progressive metamorphism from green schist up to amphibolite facies, and have been deformed into tight overturned megascopic folds whose axes trend approximately east-west and plunge easterly. A pervasive axial planar cleavage exists which strikes approximately east-west and dips within 15° north or south of vertical.



REVISED	BEAU PRE - VALENTINE
	REGIONAL GEOLOGY
PROJ No 120	SURVEY BY ____ DATE June 1989
NTS 92B12	DRAWN BY rgw SCALE 1:100,000
DWG. No 4	NORANDA EXPLORATION
	OFFICE VANCOUVER, BC

VANCAL 11927

LEGEND

CENOZOIC

QUATERNARY
RECENT

Q — *Recent sediments*

Qc — *CAPILANO SEDIMENTS: sand, gravel, silt, clay*

Qv — *VASHON DRIFT: gravel, sand, till*

Qq — *QUADRA 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: T_{M1}: pillow basalt, breccia, tuff; T_{M2}: mainly basaltic lava; T_{M3}: schistose metavolcanic rock*

TSG — *SOOKE GABBRO: mainly gabbro*

MESOZOIC

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*

KC — *COMOX FORMATION: sandstone, conglomerate; minor siltstone, shale*

JURASSIC AND CRETACEOUS
UPPER JURASSIC AND LOWER CRETACEOUS

JKs — *SPIEDEN FORMATION: conglomerate, sandstone, siltstone*

Geological boundary, (approximate)
Fault, (approximate)
Anticlinal axis
Synclinal axis
Bedding, (inclined, vertical, overturned)
Foliation (inclined, vertical, with plunge of lineation)
Gneissosity, (inclined, vertical)

TRIASSIC TO CRETACEOUS
LEECH RIVER FORMATION (MLC to ML)

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*

BONANZA GROUP

JB — *Basaltic to rhyolitic tuff, breccia, flows, minor argillite, greywacke*

TRIASSIC AND/OR JURASSIC

TJO — *ORCAS FORMATION (San Juan Island): ribbon chert, minor tuff, breccia, lava*

TRIASSIC
UPPER TRIASSIC

TH — *HARO FORMATION (San Juan island): volcaniclastic sandstone, breccia, argillite*

VANCOUVER GROUP

TK — *KARMUTSEN FORMATION: pillow basalt, breccia tuff, minor flows*

PERMIAN AND/OR TRIASSIC

PV — *Unnammed volcanics (San Juan Island, Saanich Peninsula) basaltic to dacitic lava, breccia, tuff; minor limestone*

PL — *Limestone*

PENNSYLVANIAN AND PERMIAN
SICKER GROUP (PN, PM, PSS, PB)

PB — *BUTTLE LAKE FORMATION: limestone, greywacke, argillite*

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*

PN — *NITINAT FORMATION: pillow lava and breccia of augite (uralite) porphyry, basic tuff, chlorite-actinolite schist*

LOWER PALEOZOIC (OR YOUNGER?)

PC — *COLQUITZ GNEISS: quartz-feldspar gneiss*

PGW — *WARK GNEISS: massive and gneissic metadiorite, metagrabbro, amphibolite*

PALEOZOIC

Geology by J. E. Muller, 1970, 1980

Compilation by J. E. Muller, 1979, 1980

Geological cartography by the Geological Survey of Canada

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

FIGURE 4a

3.2 Property Geology

The geological map is shown on Figure 5.

Results of geological mapping show the property to be underlain by continuous sequences of meta-sandstones, metapelites and minor metavolcanics (amphibolites) of the Leach River Formation. These have undergone regional metamorphism and been deformed into large scale tight folds whose axial planes trend approximately north-west and dip on average 74° to the north.

The 1987 Dighem aerial magnetic survey data was filtered and re-interpreted by Noranda Exploration's in-house geophysicist, Lyndon Bradish. The new interpretation has revealed a circular magnetic feature centered approximately on L.108+00E/213+00N (Wye Lake Grid) and is 150 m in diameter. Also two intersecting magnetic breaks interpreted as faults (Bradish, 1989) are located at approximately L.106+00E/216+00N (Wye Lake Grid) and L.130+00E/213+00N (Walker Creek Grid). The east-west trend to these magnetic breaks and to a lesser degree the NW-SE trend is confirmed by aerial photographic interpretation. The intersection of these faults and the magnetic circular feature was targeted and the Wye Lake and Walker Creek soil grids emplaced.

3.2.1 AMPHIBOLITE (Unit 1)

The amphibolite unit occurs in beds which are generally 1 to 3 m thick. In fresh surface this unit varies from a pale grey-green to strong, bright chloritic green colour, and weathers pale to medium green. Several varieties of amphibolites were observed during mapping: (i) Ash Tuff; very fine grained, pale green in colour, moderately fissile, with sericite coatings on cleavage surfaces. (ii) Ash/Crystal Tuff; very fine grained matrix with approximately 10% amphibole clasts up to 10 mm long, the amphibole have gone to chlorite due to retrograde metamorphism.

3.2.2 METASANDSTONE (Unit 2)

The metasandstone unit occurs as interbeds within the metapelites. The metasandstone may be divided into two major sub units, the protoliths of which are believed to have been quartzo-feldspathic sandstone and greywackes. The sub-units have been termed massive metasandstone and greywacke in field mapping.

i) Greywacke (Unit 2a): This rock type is fine to medium grained and medium to dark grey in colour. They consist of poorly sorted sub-angular lithic and feldspathic fragments, with less than 25% quartz.

ii) Massive Metasandstone (Unit 2b): The quartzo-feldspathic sandstone is fine to medium grained. Colour in fresh surface is generally light grey although in some localities it is dark grey to black. In weathered surface it is grey to buff coloured. This unit is massive and very prominent. No bedding was observed except in contact with other units. It displays only minor schistosity and is centrally not fissile. The quartz-feldspar grains of which it is composed are elongated in the plane of foliation. Disseminated biotite, up to 5% is common. This unit is very hard to break as it has been at least partially recrystallized.

3.2.3 METAPELITE (Unit 3)

The metapelite unit occurs as interbeds of metasiltstone and metamudstones with varying metamorphic grade from less than 0.5 m to greater than 20 metres thick. The metapelites themselves are interbedded with the metasandstone unit described below. They often display a cataclastic texture and are denoted by a "j" subscript (eg. Unit 3ej).

The metapelites are subdivided into the following sub-units:

i) **Biotite Schist (Unit 3b):** These are fine grained, medium grey to black in colour and are composed of quartz and biotite which occur as light and dark bands 1~3 mm across (biotite schist). A strong to moderate schistosity is present.

ii) **Biotite-garnet-schist (Unit 3c):** Same as Unit 3b with porphyroblasts of euhedral almandine coloured garnets, ranging in size from less than 1 mm to 5 mm, averaging 1~2 mm.

iii) **Biotite-garnet-staurolite schist (Unit 3d):** Same as Unit 3c with porphyroblasts of euhedral staurolite often cruciform, dark brown to black ranging in size from less than 1 mm to 10 mm, averaging 6~8 mm. Order of metamorphic minerals does not imply relative modal occurrence.

iv) **Biotite-garnet-staurolite-andalusite schist (Unit 3e):** Same as 3d with porphyroblasts of subeuhedral to anhedral andalusite (chiastolite) 2~8 cm in length. Andalusite weathers medium to dark grey, fresh surface is light pink. Order of metamorphic minerals does not imply relative modal occurrence.

3.3 Structure

Wherever observed, structural features were measured and noted.

The most predominant structural feature observed during the mapping programme was the foliation, in the form of co-planar schistosity and cleavage. These foliation features generally strike east-west and dip north.

Minor parasitic folds were observed within the metapelites. These were visible as small chevron type folds within schist layers and quartz veinlets. The sizes of the parasitic folds vary between 1 cm and 30 cm across.

A major fault is exposed in a creek 100 metres north of Walker Creek within the Walker Creek grid. The fault breccia, gouge and associated silicification of the wall rocks is 4 metres wide and has been named the Walker Creek Fault. Dr. Chris Yorath (Geological Survey of Canada, pers. comm. 1989) interpreted the fault to be a splay fault off the deep rooted Leech River thrust fault. The Walker Creek fault contains up to 2% pyrite, and has been rock sampled in several locations with no anomalous results.

The metapelite unit displays sub-pervasive cataclastic texture, which indicates intense mechanical forces causing crushing and angular tectonic breccia to develop.

3.4 Quartz Veins and Mineralization

Limited quartz veins and veinlets occur throughout the rocks of the area mapped. They vary in size from 0.5 mm to 8 cm and are generally white milky "bull" quartz, limonite and sulfide mineralization was rare. The quantity of quartz veins and quartz float observed on the Little Heart claim group was less than other areas of the property. Occasionally small amounts of fine grained pyrite and lesser amounts of pyrrhotite were observed on fracture coatings and shear zones. The sulfide mineralization was not observed to exceed 1% of any quartz vein material, and was generally far less.

The majority of the quartz veins occur within the meta siltstones, where they generally parallel the schistosity. In the metasandstones, quartz veinlets 5 mm to 10 cm wide cross-cut the sandstone beds at angles of between 30° and 45°.

Within the amphibolite unit, quartz vein material occurs in veinlets 5 mm to 5 cm wide at angles of 0° to 45° to foliation.

The variations in the quartz veining between the various lithological units is believed to reflect the nature of the units themselves, and suggests that the quartz vein material is of metamorphic origin (sweats) rather than the result of hydrothermal activity.

The metasiltstones contain the majority of the quartz vein material since they contained the available silica. The quartz veins in this unit occur mostly parallel to foliation, since this provided the path of least resistance.

The metasandstones and amphibolites contain less quartz veins than the metasiltstones. In most cases the quartz veins cross-cut the sandstones and amphibolites at angles of between 30° and 45°. The reason for these phenomena is as follows: Whilst these rock units contained ample silica for the sweating of material to form quartz veins, their massive, competent nature did not allow passage of silica bearing fluids until the tectonic stresses were sufficient to cause brittle deformation ie. breakage. This fracturing at 3-~45° to stress direction was subsequently filled with quartz of metamorphic origin.

3.5 Airphoto Interpretation

To aid in the geologic interpretation of the Wye Lake and Walker Creek grids, a photogeological study was completed using two scales of aerial photography. The airphotos employed for this study are shown in Table 2 and the interpretation is presented as Figures 9 and 10.

TABLE 2: Wye Lake/Walker Creek Grid Airphotos

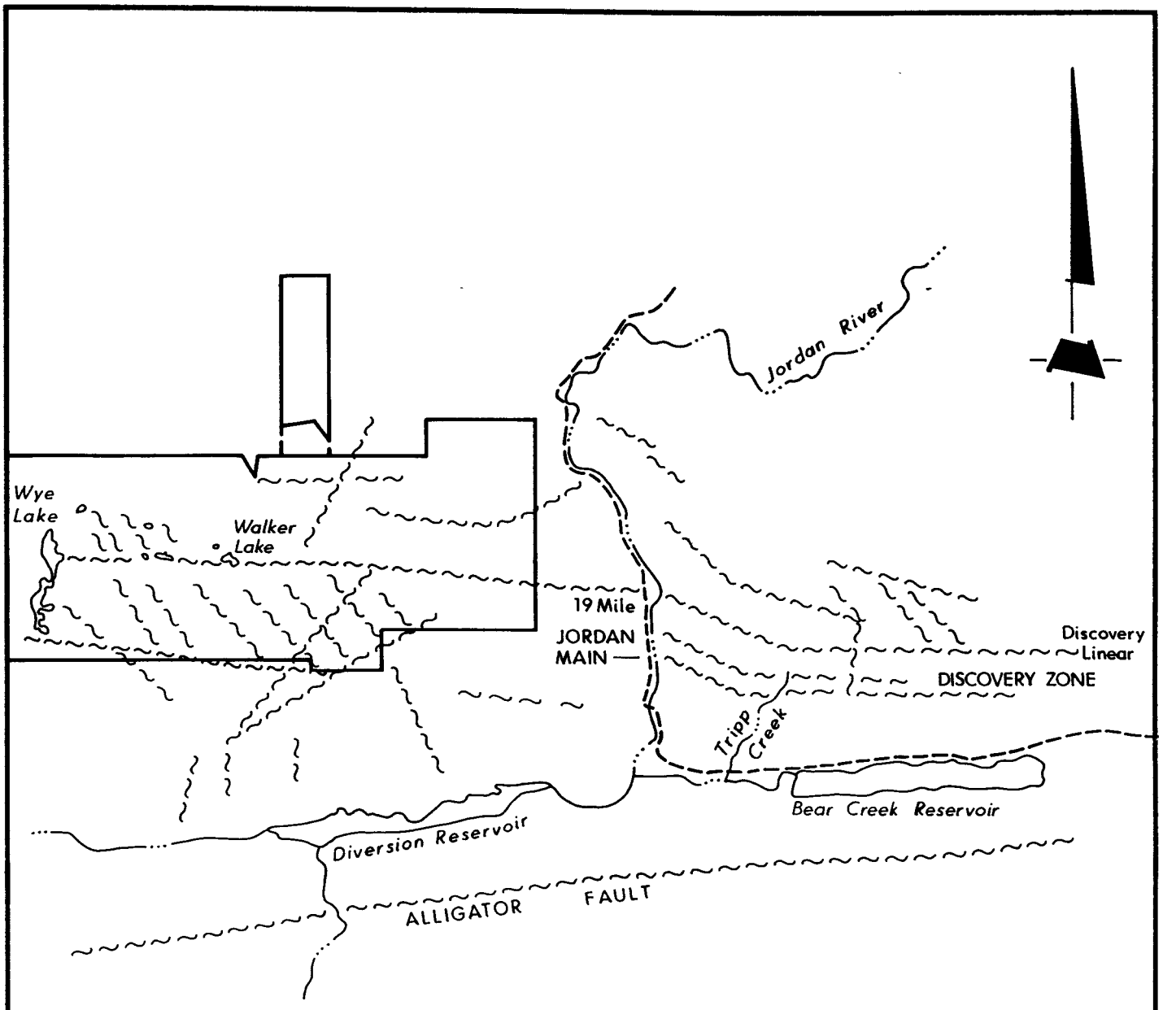
Airphoto Line	Photo #	Scale
BC84031	110	Approx: 1:22,880
	111	
	112	
BC87024	117	Approx: 1:72,580
	118	
	119	

Two airphoto scales were employed to investigate regional and local structural features. Regional structural trends are more apparent from the smaller scale 1:72,580 airphotos whereas in large scale 1:22,880 airphotos gross regional trends are lost but local features such as bedding planes are more apparent.

The area investigated comprises a narrow belt on strike to the west of the Valentine property's Discovery Zone. This belt was examined regionally (1:72,580) from Valentine Creek in the east to Wye Lake in the west (13 km) and from Alligator Fault in the south to the NW end of Valentine Mtn. in the north (6 km). Local examination (1:22,880) was completed from Walker Creek in the east to Wye Lake in the west (4 km) and from the north and south boundaries of the Heart 5A, 6 and 7 claims (2.5 km).

Regionally the area is dominated by two sets of structural trends. Major east-west trending linears are virtually continuous from Valentine Creek to Wye Lake. Secondary NNW and NNE structures are seen discontinuously between the E-W structures.

A major E-W linear across the Discovery Zone (Discovery Linear) is cut by a linear trending NW from the headwaters of the creek west of Tripp Creek. A possible continuation of the Discovery Linear exists from 19 mile on the Jordan Main Road west to Wye Lake. Both linears exhibit a straight strike across rolling topography indicative of vertical dips. Other parallel E-W structures are present but are not as continuous as the Discovery Linear.

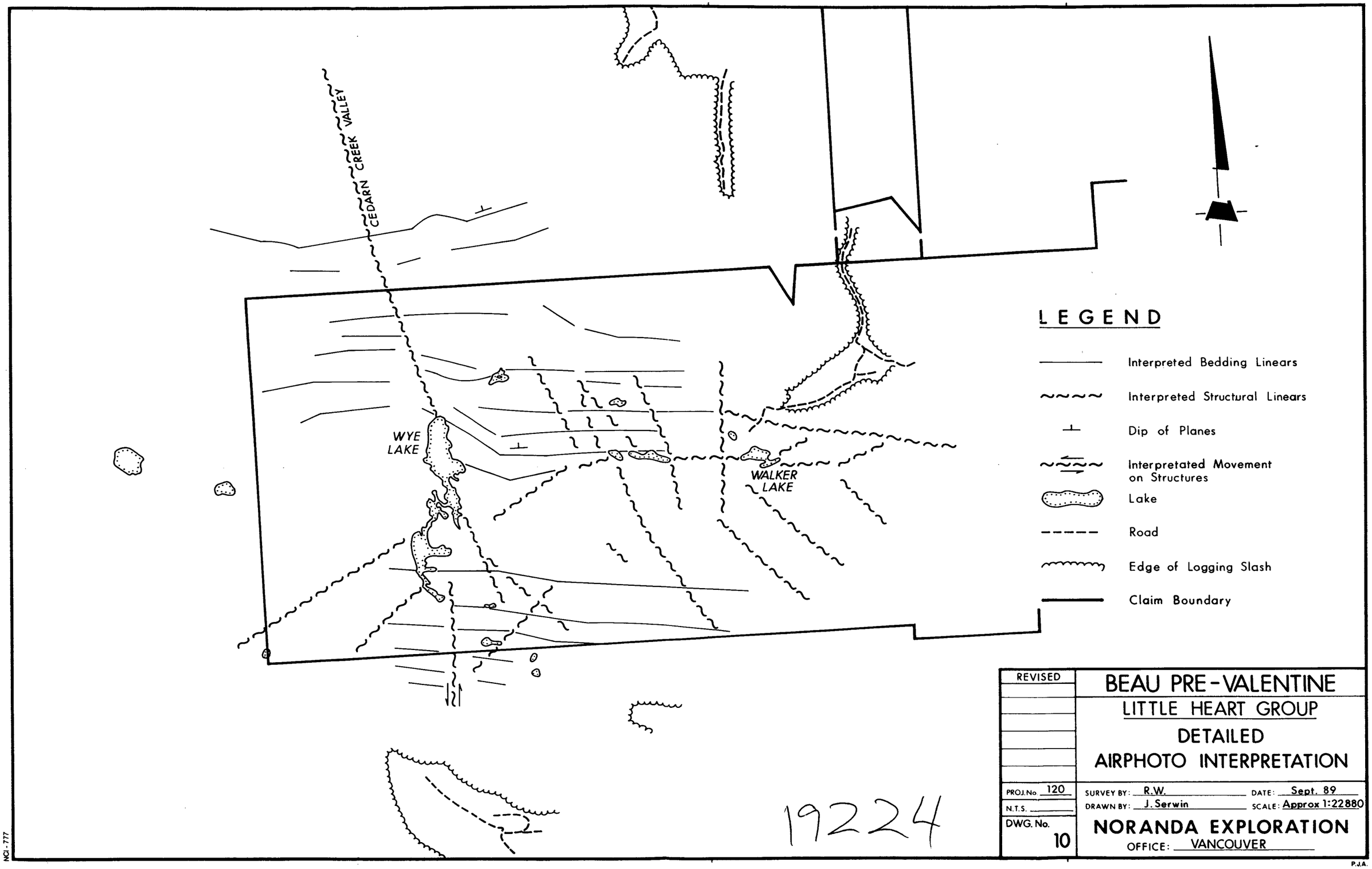


LEGEND

- Interpretated Structural Linears
- River
- Road
- Claim Boundary

REVISED	BEAU PRE-VALENTINE LITTLE HEART GROUP REGIONAL AIRPHOTO INTERPRETATION
PROJ. No. 120	SURVEY BY: R.W. DATE: Sept. 1989
N.T.S.	DRAWN BY: J. Serwin SCALE: 1:72,580
DWG. No. 9	NORANDA EXPLORATION OFFICE: VANCOUVER

NCI-774



19224

REVISED	BEAU PRE-VALENTINE
	LITTLE HEART GROUP
	DETAILED
	AIRPHOTO INTERPRETATION
PROJ.No 120	SURVEY BY: R.W. DATE: Sept. 89
N.T.S.	DRAWN BY: J. Serwin SCALE: Approx 1:22880
DWG. No. 10	NORANDA EXPLORATION
	OFFICE: VANCOUVER

NQ-777

P.J.A.

Discontinuously seen between E-W structures are NNW and NNE linears. The NNW trends are common while the NNE directions are rare. NNW trends occur at regular intervals and often end at E-W structures. One interpretation is that they represent gash or tension structures between two strike slip faults. A dextral movement on the E-W structures is therefore implied by the tension gashes. If this were the case the gashes would represent potential open space type exploration targets.

Locally the study area exhibits strong generally east-west structures and apparent bedding with weaker, discontinuous NW to NNW structures. All features show mildly chaotic trends and continuity indicative of a complex geological package. Evidence of folding is not clearly obvious in airphoto structures although a rounded feature east of Wye Lake may represent a W-NW trending, south verging antiformal overfold.

East-west trends are the most prominent features seen and are interpreted to represent both bedding planes and structural zones. Bedding planes, which are seen as parallel, discontinuous linears, appear to have a moderate northerly dip. They are most apparent north of Wye Lake becoming less obvious to the east. On strike facies changes could account for such variability in surface expressions.

Structural features are seen as more prominent, continuous linears often containing small aligned lakes. Their straight directions regardless of topography demonstrate vertical dips. Bifurcation into splay structures is seen on the main structure west of Walker Lake. The main structure ends abruptly at Wye Lake and may be cut off by a major NNW structure passing through Wye Lake and down Cedarn Creek to the north.

The majority of the remaining NW and NNW structures are less continuous, often bounded by E-W linears. They may represent either tension gash type structures between E-W structures or brittle to ductile deformation styles across changing lithology.

Generally no displacement is apparent across photo structures except possible sinistral motion seen on a north trending fault south of Wye Lake. The amount of displacement on this fault is not clearly obvious but must be at least 100 m.

The airphoto geology of the Wye Lake - Walker Creek area is that of an E-W package of north dipping strata which has possibly been complexed by a west plunging antiformal overfold which is verging to the south. The strata are further disrupted by E-W striking, vertically dipping structures (fractures, shears or faults) and a conjugate set of vertically dipping NW and rarer NE structures (fractures, shears or faults). A possible set of NW tension fractures exists between two E-W structures implies dextral motion on the E-W features. Open space development might be expected on any tension fractures developed and therefore represents potential exploration target areas.

4.0 GEOCHEMISTRY

Geochemical sample locations (Figure 6) and results (Au & As Figure 7, Cu, Zn, Pb, Ag Figure 8) are shown on plan at 1:5,000 scale. Results of other ICP elements from Appendix III have not been plotted.

4.1 Rock Samples

Rock samples obtained from quartz veins and quartz microveining within the metasandstone and phyllite units revealed no significant Au values. The only assay value appreciably above background value was R.58768 which returned 34 ppb Au, and 2 ppm As. This sample was taken from an aplitic sill and includes the wall rock (amphibolite).

4.2 Soil Samples

Soil samples gave a few spot Au highs. These occurred within the Walker Creek grid. Line 130+00E, Station 215+50N returned 750 ppb. This sample was re-run and produced a background value. This was followed up by "fill-in" soil samples spaced 25 metres on either side of Station 215+50N. In addition the area was prospected and rock sampled. These follow-up samples returned non-anomalous values. Four soil samples on L.128+00E returned sub-anomalous (10~15 ppb Au) values and do not reflect any significant pattern. The Wye Lake soil grid returned no anomalous values.

Results of other elements are at or near background values with no anomalies recognized.

4.3 Heavy Mineral Concentrate Samples

Heavy mineral concentrates (pan samples) and silt samples returned background gold values. The Little Heart group is situated on top of the San Juan Ridge and therefore has a limited number of developed creeks in which to sample.

5.0 INTERPRETATION

The Little Heart claim group is underlain by interbedded metamorphosed mudstones and sandstones with occasional intercalated intermediate to basic volcanic derived amphibolites.

The Wye Lake soil grid of 4.2 km of line was situated over a magnetic circular feature and the intersection of two geophysically interpreted faults. Prospecting, geological mapping, soil and rock sampling did not reveal any anomalous or interesting areas. The surface geology proximal to the magnetic circular feature did not explain the geophysical target.

The Walker Creek soil grid of 1.6 km of line was situated over the intersection of two geophysically interpreted faults, and coincidental aerial photograph interpreted fault. The field ground work revealed the surface expression of what is interpreted as a splay fault off the deep rooted Leech River thrust fault. This newly discovered fault named the Walker Creek fault contains up to 2% disseminated pyrite. The fault zone, hangingwall and footwall has been rock sampled several times without favourable results.

Generally, there was less quartz veining and quartz float observed within this area, compared to that of the claim groups to the east. Due to the relative lack of quartz veining and anomalous sample results this area appears to show limited economic potential.

6.0 BIBLIOGRAPHY

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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 MIBK 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

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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 1/2 lb to -100 mesh (98%)	3.00
Cr	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
Germanium	0.1 ppm
Selenium	0.1 ppm
Tellurium	0.1 ppm

First Element $4.75 All Elements $5.50

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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Group 2 - Geochemical Analysis by Specific Extraction and Instrumental Techniques

Element	Method	Detection	Price
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 fustion - 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

Element	Method	Detection	Price
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

Element	Detection	Analysis	Price
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

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Regular Assay

Aluminum	(Al)	$ 7.00	Moisture	(H2O)	$ 5.00
Antimony	(Sb)	7.00	Molybdenum	(Mo)	7.00
Arsenic	(As)	7.00	Molybdenum Sulfide	(MoS2)	9.00
Barium	(Ba)	7.00	Niobium	(Nb)	10.00
Bismuth	(Bi)	7.00	Nickel	(Ni)	7.00
Boron	(B)	7.00	Nickel (Non-sulfide)		9.00
Cadmium	(Cd)	7.00	Palladium	(Pd)	10.00
Calcium	(Ca)	7.00	Phosphorus	(P)	7.00
Carbon (Total)	(C)	9.00	Platinum	(Pt)	10.00
Carbon (Graphitic)*		10.00	Potassium	(K)	7.00
Carbon plus Sulfur	(Total)*	11.00	Rhodium	(Rh)	10.00
Cerium	(Ce)	10.00	Rubidium	(Rb)	7.00
Chromium	(Cr)	7.00	Selenium	(Se)	10.00
Cesium	(Cs)	10.00	Silica	(SiO2)	7.00
Cobalt	(Co)	7.00	Silver	(Ag)	7.00
Copper	(Cu)	7.00	Silver (Fire Assay)		8.50
Copper (non-sulfide)*		8.00	Sodium	(Na)	7.00
Europium	(Eu)	20.00	Specific Gravity*	(SG)	7.00
Fluorine	(F)	7.00	Strontium	(Sr)	7.00
Gallium	(Ga)	7.00	Sulfur (Total)*	(S)	9.00
Germanium	(Ge)	7.00	Sulfur (Sulfate)	(S)	10.00
Gold	(Au)	7.00	Tantalum	(Ta)	7.00
Gold (Fire Assay)		8.50	Tellurium	(Te)	10.00
Gold plus Silver (Fire Assay)		12.00	Thallium	(Tl)	10.00
Indium	(In)	7.00	Thorium*	(Th)	7.00
Iron (Total)	(Fe)	7.00	Tin	(Sn)	7.00
Iron (Ferrous)*		10.00	Titanium	(Ti)	7.00
Lanthanum	(La)	7.00	Tungsten	(W)	7.00
Lithium	(Li)	7.00	Uranium	(U)	7.00
Lead	(Pb)	7.00	Vanadium	(V)	7.00
Loss on Ignition	(LOI)	2.00	Yttrium	(Y)	7.00
Magnesium	(Mg)	7.00	Zinc	(Zn)	7.00
Manganese	(Mn)	7.00	Zirconium*	(Zr)	7.00
Mercury*	(Hg)	7.00			

* Minimum 5 samples per batch

Other elements by Mass Spec. on request.

Multi-Element Assay Price

Arsenic, Antimony, Bismuth, Cadmium, Cobalt, Copper, Gold, Iron, Lead, Manganese, Molybdenum, Nickel, Silver, Thorium, Uranium, Zinc.

Price : First element $7.00 Each Additional $3.00 All 16 elements $22.00

Whole Rock Assay Prices

SiO2, Al2O3, Fe2O3, CaO, MgO, Na2O, K2O, MnO, TiO2, P2O5, Cr2O3, LOI.

Price : First oxide $7.00 Each Additional $3.50 All 12 $9.00

Volume Discounts Available.

Special Fire Assay Prices

Gold (1/2 A/T)	$ 8.50
Gold + Silver (1/2 A/T)	$12.00
Gold (1 A/T)	$10.00
Gold - native + 100 mesh	$ 6.00
Gold, Silver, Platinum, Palladium, Rhodium (1/2 A/T)	$22.00
Placer conc. for total precious metal or Gold + return of bead	$15.00

APPENDIX II

ROCK SAMPLE DESCRIPTIONS

NORANDA EXPLORATION COMPANY, LIMITED

PROJECT # 120

LAB REPORT # _____

N.T.S. 92B/12;92C/9

DATE June/July'89

PROJECT BEAU PRE VALENTINE (WYE LAKE GRID)

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
R11613	Metasandstone/Greywacke with quartz stringers & local hematite staining. Also include 0.4m of 3cm quartz vein. No v.s. Between L110E and L108E approx. 212+50N. Wye Lake Grid.	-	Grab		16	4	50	0.2	13	6		McCorquodale
R11614	Biotite rich metasandstone with hematite staining. No visible sulphides L104/215+00N. Wye Lake.	-	Grab		23	8	59	0.1	6	3		McCorquodale
R44477	Located at 104+00E 217+05N. Random grab of aphanitic fine grained quartz diorite sill, trending 280° dipping 61° N. Approx. 35-40cm wide. Appears barren of sulphides. Wall rock is quartz sweat rich metasandstone and is included in sample	0	Grab		23	13	60	0.1	106	6		Sharpe
R44478	Located at 104+00E 213+30N. Grab of 15cm wide quartz vein (trending 82° dip 84°S). Wall rock is amphibolite and is included in sample.	0	Grab		9	2	13	0.1	4	7		Sharpe

NORANDA EXPLORATION COMPANY, LIMITED

PROJECT # 120

LAB REPORT # _____

N.T.S. 92C/9

DATE June/July'89

PROJECT BEAU PRE VALENTINE (WYE LAKE GRID)

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
R44479	Located at 67m downstream along creek from L106+00E/210+75N. Grab sample of quartz vein from 12cm to 2cm wide, 292°/69°. Jointed at 177°/64°, left lateral movement of 1-7cm. Vein is gossanous and vuggy, and does not define a plain. Wall rock is siliceous biotite-schist and is included in sample.	0	Grab		9	11	56	0.2	21	3		Sharpe
R44480	10m up stream from L106E 216+50N. Grab of 2-7cm quartz vein, trending 103° vertical dip. Vuggy and gossanous. Wall rock is clean metasand-stone and is included in sample	0	Grab		21	10	47	0.1	6	1		Sharpe
R58765	Biotite garnet staurolite schist with a boudinized quartz vein. No visible sulphides. Grab sample.	-	Grab		19	9	27	0.1	2	1		McCorquo-dale

NORANDA EXPLORATION COMPANY, LIMITED

PROJECT # 120

LAB REPORT # _____

N.T.S. 92B/12

DATE June'89

PROJECT BEAU PRE VALENTINE (WALKER CREEK GRID)

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
R44481	Sampled across strike of re-crystallized limestone and biotite rich amphibolite 2-3% visible sulphides (pyrite) with the amphibolite proximal to limestone bed.	2-3	Chip	1.5	10	6	35	0.1	9	1		Sharpe
R44482	5cm wide quartz vein hosted by amphibolite no visible sulphides. Chip along strike of vein 0.5m and includes wall rock.	-	Chip	0.5	70	5	34	0.1	3	5		Sharpe
R58766	4-5cm wide fault gouge with up to 3% visible sulphides (pyrite) quartz sweats parallel fault. Sampled 1m across wall rock and fault material.	<3	Chip	1	75	13	93	0.1	3	1		McCorquodale
R58767	Metasandstone with hematitic staining, 15-20% biotite, no visible sulphides L128+00E.	-	Grab		36	9	49	0.1	3	1		McCorquodale
R58768	Aplitic sill with phenocrysts of rhondonite(?) <1% very fine grained disseminated pyrite sill is 3m wide. Grab sample includes sill and amphibolite wall rock.	<1	Grab		8	3	19	0.1	2	34		McCorquodale

NORANDA EXPLORATION COMPANY, LIMITED

PROJECT # 120

LAB REPORT # _____

N.T.S. 92B/12

DATE June'89

PROJECT BEAU PRE VALENTINE (WALKER CREEK GRID)

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
R58769	Aplitic sill cut by 3cm wide quartz vein with 1% pyrite. Grab sample of float. 66m east of L128+00E and 213+75N.	1	Grab		65	7	14	0.3	2	6		McCorquo-dale
R11602	Brecciated pegmatite with quartz matrix. Clasts are feld-spathic with coarse grained serecite crystals. Road blast material north shore of Walker lake - grab sample 1% v.f.g. disseminated sulphides.	1	Grab		4	3	14	0.1	2	7		McCorquo-dale
R11603	Silicified Amphibolite with local rusty orange weathering paralleling foliation 2-3% f.g. disseminated pyrite grab sample.	2-3	Grab		335	2	28	0.1	2	3		McCorquo-dale
R11604	Hangers wall of Walker Creek fault - intensely silicified amphibolite with blue grey clear qtz veining. 3-5% disseminated sulphides pyrite. 5-7% unsilicified but deformed Amphibolite with secondary biotite grab sample.	3-5	Grab		50	5	21	0.1	2	7		McCorquo-dale
R11605	Fault breccia sampled across 25cm includes angular clasts of intensely silicified amphibo-				21	7	26	0.1	2	6		McCorquo-dale

NORANDA EXPLORATION COMPANY, LIMITED

PROJECT # 120

LAB REPORT # _____

N.T.S. 92B/12

DATE June'89

PROJECT BEAU PRE VALENTINE (WALKER CREEK GRID)

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
R11605(con't)	lite. 1-2% v.f.g. disseminated sulphides within the clasts.											
R11606	Footwall sampled across 2m intensely silicified amphibolite. 1-3% v.f.g. disseminated py+Aspy grading into deformed amphibolite with less silicification.				15	5	46	0.1	2	4		McCorquodale
R11607	Quartz Vein in Amphibolite N-S trending milky quartz no v.s. 15-20cm wide grab sample.				12	2	14	0.1	2	4		McCorquodale
R11610	Sampled across strike of interbeds of recrystallized limestone and bi-rich amphibolite. V.S. proximal to contact of two rock types (pyrite).	5-7	Chip	1.5	74	2	43	0.2	2	1		McCorquodale
R11611	Quartz vein 0.5m from Walker Creek fault. Blue grey clear quartz, 5cm wide no v.s. host rock intensely silicified amphibolite. 2m chip sample along vein includes wall rock.	-	Chip	2	29	4	9	0.1	2	5		McCorquodale
R11612	Grab sample of silicified amphibolite with v.s. (pyrite). Rusty zone doesn't appear to be continuous. Sample collected	5-10	Grab		967	4	33	0.5	2	3		McCorquodale

NORANDA EXPLORATION COMPANY, LIMITED

PROJECT # 120

LAB REPORT # _____

N.T.S. 92B/12

DATE June'89

PROJECT BEAU PRE VALENTINE (WALKER CREEK GRID)

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
R11612(con't)	5m away from Walker Creek fault within the Hanging Wall.											
R11615	Intensely silicified hanging wall 2-3% v.s. (pyrite) porphyoblasts of rhondonite? W.S. + F.S. - beige Walker Creek grid.	2-3	Grab		23	3	22	0.1	6	1		McCorquo-dale
R11616	3m chip sample across Walker Creek fault; fault breccia and gouge. 3-4% v.s. py and minor cpy within the fault breccia clasts - Walker Creek grid.	3-4	Chip	3	35	10	30	0.1	4	10		McCorquo-dale

APPENDIX III

ANALYSIS CERTIFICATES

NORANDA VANCOUVER LABORATORY

PROPERTY/LOCATION:VALENTINE CODE : 8906-042

Project No. : 120 Sheet:1 of 2 Date rec'd:JUN13
Material :102 SOILS Geol.:J.M. Date compl:JUN27
Remarks :

Values in PPM, except where noted.

T.T. No.	SAMPLE No.		Ag	As	PPB Au
18	10400E-21200N	WYE LK	0.1	8	5
19	21250		0.1	4	5
20	21300		0.1	2	5
21	21400		0.1	2	5
22	21450		0.1	1	5
23	21500		0.1	1	5
24	21550		0.1	10	5
25	21600		0.1	6	5
26	21650		0.1	6	5
27	21700		0.1	4	5
28	10400E-21750N		0.1	2	5
29	10600E-20950N		0.1	2	5
30	21000		0.1	4	5
31	21100		0.1	1	5
32	21150		0.1	1	5
33	21200		0.1	1	5
34	21250		0.1	1	5
35	21300		0.1	1	5
36	21350		0.1	1	5
37	21400		0.1	1	5
38	21450		0.1	1	5
39	21500		0.1	1	5
40	21550		0.1	1	5
41	21600		0.1	1	5
42	21650		0.1	1	5
43	21700		0.1	4	5
44	10600E-21750N		0.1	1	5
45	10800E-20950N		0.1	1	5
46	21000		0.1	1	5
47	21050		0.1	1	5
48	21100		0.1	1	5
49	21150		0.1	1	5
50	21200		0.6	1	5
51	21250		0.1	1	5
52	21300		0.1	1	5
53	21350		0.1	1	5
54	21400		0.1	1	5
55	21450		0.1	1	5
56	21500		0.1	1	5
57	21550		0.1	1	5
58	21600		0.1	1	5
59	21650		0.1	1	5
60	21700		0.1	1	5
61	10800E-21750N		0.1	1	5
62	11000E-20950N		0.1	1	5
63	21000		0.1	1	5
64	21050		0.1	1	5
65	11000E-21100N	WYE LK	0.1	1	5

69... RK RM TM. TM. DF

T.T. No.	SAMPLE No.		Ag	As	PPB Au	8906-042 Pg. 2 of 2
66	11000E-2115ON		0.1	1	5	
67	21200		0.1	1	5	
68	21250		0.4	2	5	
69	21300		0.1	1	5	
70	21350		0.1	1	5	
71	21400		0.1	1	5	
72	21500		0.1	2	5	
73	21550		0.1	2	5	
74	21600		0.1	1	5	
75	21650		0.1	1	5	
76	21700		0.1	1	5	
77	11000E-2175ON		0.1	1	5	
78	11200E-2095ON		0.1	1	5	
79	21000		0.1	1	5	
80	21050		0.2	1	5	
81	21100		0.1	1	5	
82	21150		0.1	1	5	
83	21200		0.1	1	5	
84	21250		0.1	1	5	
85	21300		0.1	1	5	
86	21400		0.1	1	5	
87	21450		0.1	1	5	
88	21500		0.1	1	5	
89	21550		0.1	1	5	
90	21600		0.1	1	5	
91	21650		0.1	1	5	
92	21700		0.3	1	5	
93	11200E-2175ON	WYE LK	0.2	1	5	
94	12800E-2115ON	WLKR LK	0.3	1	5	
95	21200		0.1	1	10	
96	21250		0.2	1	10	
97	21300		0.1	4	10	
98	21350		0.1	6	5	
99	21400		0.1	14	15	
100	CHECK NL-6		1.0	88	-	
101	21450		0.2	1	5	
102	21500		0.2	4	5	
103	12800E-2155ON		0.1	1	5	
104	13000E-2115ON		0.1	1	5	
105	21200		0.1	1	5	
106	21250		0.1	1	5	
107	21300		0.1	1	5	
108	21350		0.1	1	5	
109	21400		0.1	2	5	
110	21450		0.1	1	5	
111	21500		0.1	1	5	R.R Au
112	13000E-2155ON		0.1	4	750	5
113	13200E-2115ON		0.2	4	5	
114	21200		0.1	4	5	
115	21250		0.1	2	5	
116	21300		0.1	1	5	
117	21350		0.1	1	5	
118	21400		0.1	1	5	
119	21450		0.1	1	5	
120	21500		0.1	1	5	
121	21550	WLKR LK	0.2	1	5	

rerun July 11 '89: 5, 5, 5

Valentine (JMc) 8907-022

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

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: P1 SOIL P2 ROCK AU* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

DATE RECEIVED: JUL 5 1989 DATE REPORT MAILED: July 10/89 SIGNED BY. C. Leong ..D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

NORANDA EXPLORATION CO. LTD. PROJECT 8907-022 120 File # 89-1951 Page 1

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
L 126E 21425N	1	19	10	56	.1	19	9	216	3.47	8	5	ND	1	6	1	2	2	78	.09	.019	5	47	.91	82	.19	5	2.11	.01	.19	1	1
L 130E 21325N	1	79	3	62	.1	46	12	293	3.77	9	5	ND	3	8	1	2	2	90	.13	.041	7	96	1.09	95	.18	2	4.42	.02	.19	1	3
L 132E 21325N	1	9	11	33	.2	5	1	11	.13	5	5	ND	1	58	1	2	2	2	.61	.061	2	2	.12	80	.01	6	.23	.01	.05	2	2
L 132E 21275N	1	7	12	21	.1	9	3	81	2.15	4	5	ND	1	4	1	2	2	80	.05	.012	4	27	.32	25	.23	3	1.11	.01	.06	1	2

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
L1300E 21575N	1	22	9	49	.2	12	1	135	7.21	2	5	ND	3	3	1	2	2	139	.04	.029	4	69	.44	36	.32	5	2.08	.01	.08	1	1
L1300E 21525N	1	11	8	24	.2	6	1	69	3.75	2	5	ND	2	3	1	2	3	115	.04	.012	3	30	.19	16	.25	3	.71	.01	.03	1	1

Valentine (JMC) 8906-047

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

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

DATE RECEIVED: JUN 15 1989 DATE REPORT MAILED: June 20/89 SIGNED BY. C. Leong .D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

NORANDA EXPLORATION CO. LTD. PROJECT 8906-047 120 File # 89-1535

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
R 44477	1	23	12	60	.1	14	6	307	2.14	135	5	ND	1	15	1	24	2	46	.20	.040	6	34	.59	208	.11	13	1.56	.05	.75	1	6
R 44478	1	9	2	13	.1	22	6	130	1.07	4	5	ND	1	11	1	2	2	30	.49	.014	2	49	.54	26	.07	6	.74	.05	.06	1	7
R 44479	1	5	11	56	.2	20	8	310	2.79	21	5	ND	1	36	1	3	2	66	.30	.033	6	41	.35	308	.16	7	2.13	.08	.34	1	3
R 44480	1	21	10	47	.1	14	7	361	2.35	6	5	ND	2	79	1	2	2	58	.92	.035	5	35	.74	261	.16	5	2.56	.11	.71	1	1
R 44481	2	10	6	35	.1	35	10	637	2.13	6	5	ND	1	29	1	3	2	61	1.41	.084	2	42	.62	24	.15	2	1.13	.10	.07	1	1
R 44482	1	70	5	34	.1	12	5	275	1.94	3	5	ND	4	5	1	2	2	53	.07	.016	9	31	.59	226	.14	7	1.12	.04	.62	3	5
R 58765	1	19	9	27	.1	16	6	274	3.03	2	5	ND	3	5	1	2	2	78	.10	.045	8	53	1.07	201	.13	4	1.87	.03	.77	4	1
R 58766	1	75	13	93	.1	91	29	539	5.30	3	5	ND	1	108	1	2	3	115	.65	.081	2	182	2.28	159	.14	4	3.20	.05	.33	1	1
R 58767	1	36	9	49	.1	29	10	456	3.03	3	5	ND	1	38	1	2	2	77	.72	.055	3	50	.95	314	.21	4	2.07	.11	.70	1	1
R 58768	1	8	3	19	.1	4	1	80	.40	2	5	ND	1	2	1	2	2	1	.05	.017	5	4	.04	28	.01	5	.36	.03	.11	3	34
R 58769	1	65	7	14	.2	3	1	65	.53	2	5	ND	2	3	1	2	2	2	.04	.011	4	3	.01	22	.01	10	.27	.03	.09	4	6
STD C/AU-R	18	62	38	132	6.5	73	31	957	4.16	43	17	7	38	52	17	15	19	59	.51	.090	39	56	.86	180	.07	32	1.95	.06	.13	12	490

NORANDA EXPLORATION CO. LTD. PROJECT 8906-069 120 FILE # 89-1589

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
11602	1	4	3	14	.1	3	1	158	.13	2	6	ND	1	4	1	2	3	1	.08	.024	2	2	.01	9	.01	2	.26	.02	.12	2	7
11603	1	335	2	28	.1	69	16	234	2.19	2	5	ND	1	118	1	2	2	53	2.32	.068	2	55	.49	39	.19	2	2.64	.23	.07	1	3
11604	1	50	5	21	.1	17	4	181	.94	2	5	ND	1	12	1	2	3	18	.44	.015	3	25	.22	35	.05	2	.74	.03	.17	2	7
11605	1	21	7	26	.1	5	1	151	.60	2	5	ND	1	6	1	2	2	4	.12	.017	6	6	.19	27	.01	4	.62	.02	.14	3	6
11606	1	15	5	46	.1	40	11	416	2.14	2	5	ND	1	22	1	2	3	51	.66	.026	4	70	.63	35	.14	4	1.22	.05	.14	1	4
11607	1	12	2	14	.1	28	6	542	1.12	2	5	ND	1	1	1	2	2	24	.05	.009	2	29	.54	8	.04	3	.72	.01	.01	5	4
11610	1	74	2	43	.2	36	8	307	1.75	2	5	ND	1	150	1	2	2	42	13.31	.053	2	40	.54	103	.11	5	.98	.04	.52	3	1
11611	1	29	4	9	.1	5	1	157	.39	2	5	ND	1	8	1	2	2	2	.52	.014	2	8	.06	15	.01	4	.25	.02	.06	3	5
11612	1	967	4	33	.5	125	31	242	3.50	2	5	ND	1	111	1	2	3	63	2.04	.072	2	66	.39	32	.19	4	2.24	.20	.06	1	3
STD C/AU-R	17	58	37	132	6.6	67	30	1038	4.07	39	20	7	37	49	18	15	22	59	.48	.087	39	53	.83	178	.07	37	1.87	.06	.13	11	520

NORANDA EXPLORATION CO. LTD. PROJECT 8907-022 120 FILE # 89-1951

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
11613	1	16	4	50	.2	18	8	345	2.57	13	5	ND	3	29	1	2	2	62	.28	.036	5	40	.92	321	.15	2	2.07	.06	.69	1	6
11614	2	23	6	59	.1	14	7	367	3.18	6	5	ND	5	14	1	2	2	71	.18	.053	10	43	1.02	237	.21	4	1.78	.04	.80	2	3
11615	1	23	3	22	.1	4	1	76	.39	6	5	ND	1	3	1	2	2	1	.07	.018	5	3	.02	20	.01	7	.26	.03	.07	1	1
11616	1	35	10	30	.1	38	6	148	1.39	4	5	ND	2	4	1	2	2	21	.10	.023	5	51	.51	48	.05	3	1.21	.02	.15	3	10

NORANDA VANCOUVER LABORATORY

PROPERTY/LOCATION:VALENTINE CODE :8906-069

Project No. :120 Sheet:1 of 1 Date rec'd:JUN19
Material :2 PANS Geol.:J.C. Date compl:JUL12
Remarks :

Values in PPM, except where noted.

T.T. No.	SAMPLE No.	Wt (g)	PPB Au	Cu	Zn	Pb	Ag
1	H44483	23.6	10	34	38	2	0.1
2	H11608	74.3	10	64	82	1	0.1

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

13 July RK RW DP

Valentine Walker Cr Grid 2 (JMe) 8906-069

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

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: P1 SILT P2 ROCK AU* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

DATE RECEIVED: JUN 19 1989 DATE REPORT MAILED: June 22/89. SIGNED BY. C. Leong ..D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

NORANDA EXPLORATION CO. LTD. PROJECT 8906-069 120 File # 89-1589 Page 1

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
11609	1	53	4	67	.1	50	17	618	3.09	5	5	ND	1	22	1	3	2	72	.50	.048	5	91	1.25	133	.16	2	2.41	.05	.38	1	5
44484	1	59	9	92	.1	42	15	641	2.40	4	5	ND	1	16	1	4	2	51	.41	.034	4	69	.81	83	.13	2	2.15	.03	.33	1	2

APPENDIX IV

STATEMENT OF COSTS

STATEMENT OF COSTS
FOR THE LITTLE HEART GROUP
(FIELD COSTS)

1.	WAGES: June 2, 1989 to August 25, 1989 *		
	JEM.	11 mandays x $140 manday	$ 1,540.00
	DCS.	6 mandays x $117/manday	$ 702.00
	AIS.	5 mandays x $190/manday	$ 950.00
	DWD.	1 mandays x $104/manday	$ 104.00
	RBS	4 mandays x $112/manday	$ 448.00
	DDLC.	4 mandays x $ 74/manday	$ 296.00
	RGW.	4 mandays x $220/manday	$ 880.00
		35 mandays	$ 4,920.00
2.	ACCOMMODATION: June 2, 1989 to August 25, 1989		
	Camp Rental	12 days x $5.00/day	$ 60.00
	House Rental	19 days x $7.33/day	$ 139.27
			$ 199.27
3.	GROCERIES	31 days x $11.45/day	$ 354.95
4.	TRUCK	4 days x $42.00/day	$ 168.00
		12 days x $39.00/day	$ 468.00
			$ 636.00
5.	GAS	16 days x $11.33/day	$ 181.28
6.	OFFICE SUPPLIES (FIELD)		$ 115.00
7.	TRUCK/TIRE REPAIR		$ 40.08
8.	SHIPPING		$ 40.55
11.	ANALYSES		$ 1,747.10
12.	AUTHOR, DRAFTING (AUTOCAD), TYPING		$ 1,420.00
		TOTAL:	$ 9,633.40

* A minimum $1,000.00 in exploration expenditures was performed on the Little Heart Group between July 27 and August 25, 1989.

GEOCHEMICAL ANALYSIS COSTS
FOR THE
LITTLE HEART GROUP

1. SOILS*

108 x $6.25/sample analyzing by ICP for 30 elements. (Acme)		$675.00
108 x $1.50/sample data processing Noranda		$162.00
102 x $3.50/sample analyzed by AA for Au	(Noranda)	
102 x $1.60/sample handling & preparation	(Noranda)	
102 x $4.10/sample		$418.20
6 x $4.50/sample analyzed by AA for Au	(Acme)	
6 x $2.40/sample handling & preparation	(Acme)	
6 x $6.90/sample		$ 41.40
	TOTAL:	$1,296.60

2. ROCKS *

24 x $ 3.50/sample crushing & pulverizing	
24 x $ 4.50/sample analyzing by AA for Au	
24 x $ 6.25/sample analyzing by ICP for 30 element	
24 x $ 1.10/sample data processing	
24 x $ 1.60/sample handling	
24 x $16.85	$ 404.40

3. SILTS *

2 x $6.25/sample analyzed by ICP for 30 element (Acme)	
2 x $1.50/sample data processing	
2 x $4.50/sample analyzed by AA for Au	
2 x $2.40/sample handling & preparation	
2 x $14.64	$ 29.30

4. PAN CONCENTRATES

2 x $ 5.00/sample analyzed by AA for Au	
2 x $ 1.60/sample handling and 1st. element (Cu by AA)	
2 x $ 1.80/sample analyzed by AA for Pb, Zn, Ag	
2 x $ 8.40/sample	$ 16.80
TOTAL:	$1,747.10

* Analysis by 30 element I.C.P.: 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, Joan E. McCorquodale of the City of Vancouver, Province of British Columbia, do hereby certify that:

1. I m a geologist residing at 2809 Adanac Street, Vancouver B.C.

2. I graduated from the University of Alberta in 1988 with a BSc degree (specialization) in geology.

3. I have worked in mineral exploration and government geology since 1985.

4. I have been employed as a geologist for Noranda Exploration Company, Limited (no personal liability) from May 1988 to the present.

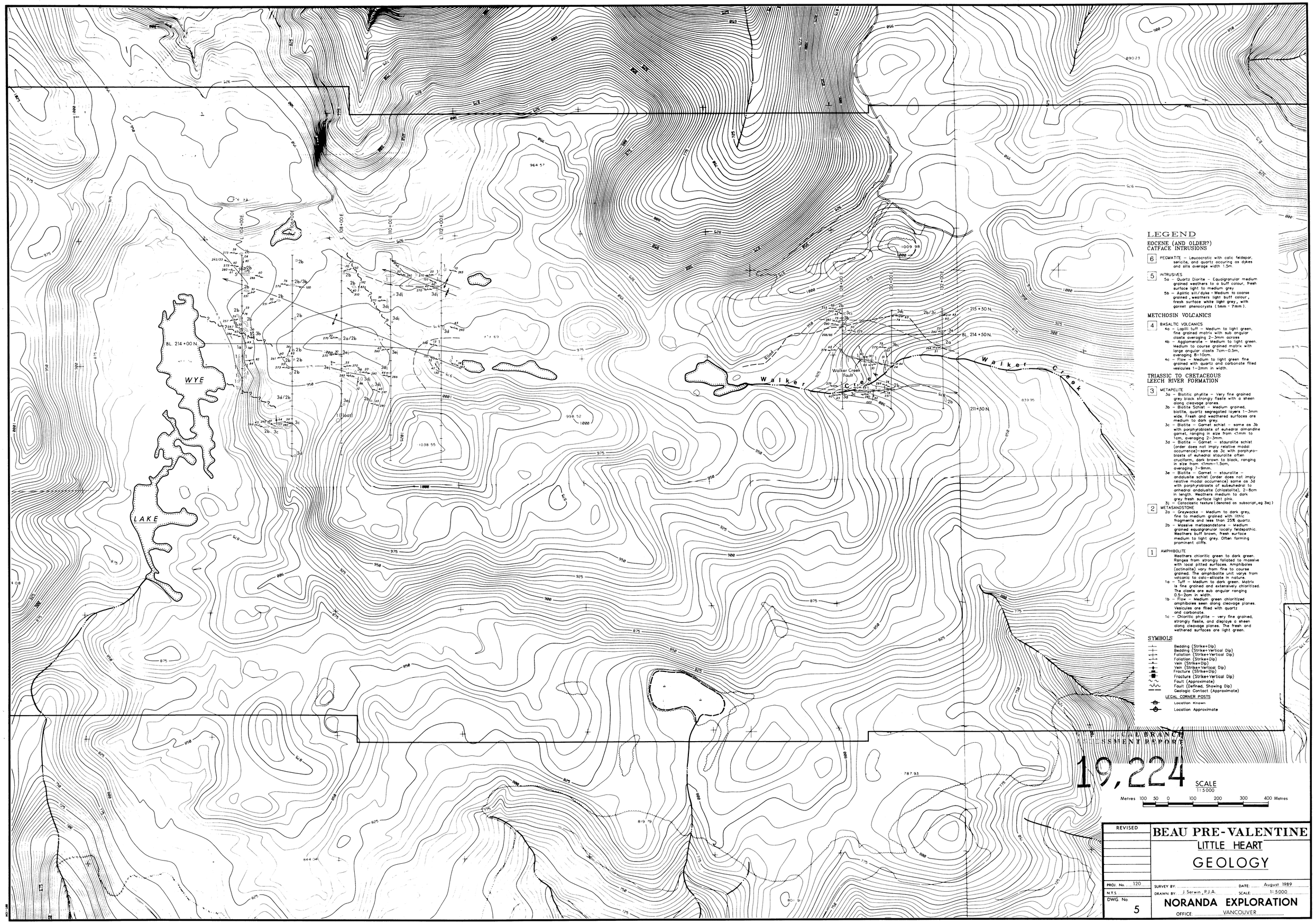
Joan E. McCorquodale

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



LEGEND

EOCENE (AND OLDER?) CATFACE INTRUSIONS

6 PEGMATITE – Leucocratic with calic feldspar, sericite, and quartz occuring 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.
- 5b – Aplitic silt/dyke – Medium to coarse grained, weathers light buff colour, fresh surface white light grey, with garnet phenocrysts (1mm – 7mm).

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 course 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 3c 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 subeuhedral to anhedral andalusite (chiastolite), 2–8cm in length. Weathers medium to dark grey fresh surface light pink.
- 3j – Cataclastic texture (denoted as subscript, eg 3ej)

2 METASANDSTONE
- 2a – Greywacke – Medium to dark grey, fine to medium grained with lithic fragments and less than 25% quartz.
- 2b – Massive metasandstone – Medium grained equigranular locally feldspathic. Weathers buff brown, fresh surface medium to light grey. Often forming prominent cliffs.

1 AMPHIBOLITE
Weathers chloritic green to dark green. Ranges from strongly foliated to massive with local pitted surfaces. Amphiboles (actinolite) vary from fine to course grained. The amphibolite unit varys from volcanic to calc–silicate in nature.
- 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. Vesicules are filled with quartz and carbonate.
- 1c – Chloritic phyllite – very fine grained, strongly flasile, and displays a sheen along cleavage planes. The fresh and wethered 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

SCALE 1:5000

Metres 100 50 0 100 200 300 400 Metres

REVISED	BEAU PRE-VALENTINE
	LITTLE HEART
	GEOLOGY
PROJ. No. 120	SURVEY BY: DATE: August 1989
N.T.S.	DRAWN BY: J. Serwin, P.J.A. SCALE: 1:5000
DWG No. 5	NORANDA EXPLORATION
	OFFICE VANCOUVER

WYE LAKE GRID

WALKER LAKE GRID

Wye Lake

Walker Creek

964.57

979.69

998.52

1038.55

1009.98

890.23

839.95

787.87

784.01

844.04

819.79

801.91

787.93

855.74

1000E 1040E 1060E 1080E 1100E 1120E 1280E 1300E

21800N 21600N 21450N BASELINE 90° 21400N 21200N 21000N

1,224

SCALE
1:5000

Metres 100 50 0 100 200 300 400 Metres

REVISED	BEAU PRE-VALENTINE
	LITTLE HEART
	SAMPLE LOCATIONS
PROJ. No. 120	SURVEY BY: DATE: August 1989
N.T.S.	DRAWN BY: J. Serwin SCALE: 1:5000
DWG. No. 6	NORANDA EXPLORATION
	OFFICE: VANCOUVER

WYE LAKE GRID

WALKER LAKE GRID

Wye Lake

Walker Creek

21800N
21680N
21560N
21400N BASELINE 90°
21450N BASELINE 90°
21400N
21280N

10400E
10520E
10640E
10760E
10880E
11000E
11120E
11240E
13360E
13480E
13600E

SCALE
1:5000
Metres 100 50 0 100 200 300 400 Metres

GEOLOGICAL BRANCH
ASSESSMENT REPORT

REVISED	**BEAU PRE-VALENTINE**
	AU IN PPB, AS IN PPM
PROJ. No. 120	SURVEY BY: ..... DATE: August 1989
N.T.S.	DRAWN BY: J. Serwin SCALE: 1:5000
DWG. No. 7	**NORANDA EXPLORATION**
	OFFICE: VANCOUVER


WYE LAKE GRID
10400E
10600E
10800E
11000E
11200E
21800N
21600N
Wye
Lake
21200N
21000N
21400N BASELINE 90°
(Ag only Analysed)
21400N BASELINE 90°
WALKER LAKE GRID
12800E
13000E
13200E
21600N
21450N BASELINE 90°
21400N
21200N
Walker
Walker Creek
(Ag only Analysed)
SOIL
ROCK
TALUS FINE
OTHER
SOIL
PAN CONC
WATER
19,224
ALL VALUES IN PPM
NA - NOT ANALYSED
IS - INSUFFICIENT SAMPLE
SCALE
1:5000
Metres 100 50 0 100 200 300 400 Metres
REVISED
BEAU PRE-VALENTINE
CU, PB, ZN, AG IN PPM
PROJ. No. 120
N.T.S.
DWG. No. 8
SURVEY BY:
DRAWN BY: J.S.
DATE: August 1989
SCALE: 1:5000
NORANDA EXPLORATION
OFFICE: VANCOUVER