LOG NO: 0810 RD.
ACTION:

FILE NO:

REPORT ON GEOLOGICAL AND GEOCHEMICAL SURVEYS PERFORMED ON THE HEART CLAIM GROUP

(HEART CLAIMS 7, 8, 9, 10, 11)

VICTORIA MINING DIVISION

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

Latitude 48°30'N Longitude 124°00'W

FILMED

GEOLOGICAL BRANCH
ASSESSMENT REPORT

18,955

D.R. Bull
May, 1989

TABLE OF CONTENTS

	PAGE
SUMMARY	1
INTRODUCTION	
LOCATION AND ACCESS	4
PHYSIOGRAPHY, CLIMATE & VEGETATION	4 & 6
CLAIMS AND OWNERSHIP	6
PREVIOUS WORK	6 & 7
ECONOMIC POTENTIAL	7
WORK PERFORMED	7
PERSONNEL	7
METHODS	8 & 9
PRODUCTION	9
REGIONAL GEOLOGY	9 & 10
PROPERTY GEOLOGY: Lithology Structure Quartz Veins & Mineralization	10 - 13
RESULTS & INTERPRETATION	13 & 14
CONCLUSIONS AND RECOMMENDATIONS	14 & 15

APPENDICES

Appendix I: Rock Geochemistry
Appendix II: Pan and Silt Geochemistry
Appendix III: Analytical Techniques
Appendix IV: Statement of Costs
Appendix V: Statement of Qualifications

LIST OF FIGURES

			PAGE
Figure 1 :	Project Location	1:2,000,000	2
Figure 2 :	Claim Map	1:50,000	5
Figure 3 :	Regional Geology	1:100,000	8a
Figure 4 :	Property Geology	1:5,000	In Pocket
Figure 5a:	Rock, Silt & Pan Results Au-As-Ag	1:5,000	In Pocket
Figure 5b:	Rock, Silt & Pan Results Cu-Zn-Pb	1:5,000	In Pocket

SUMMARY

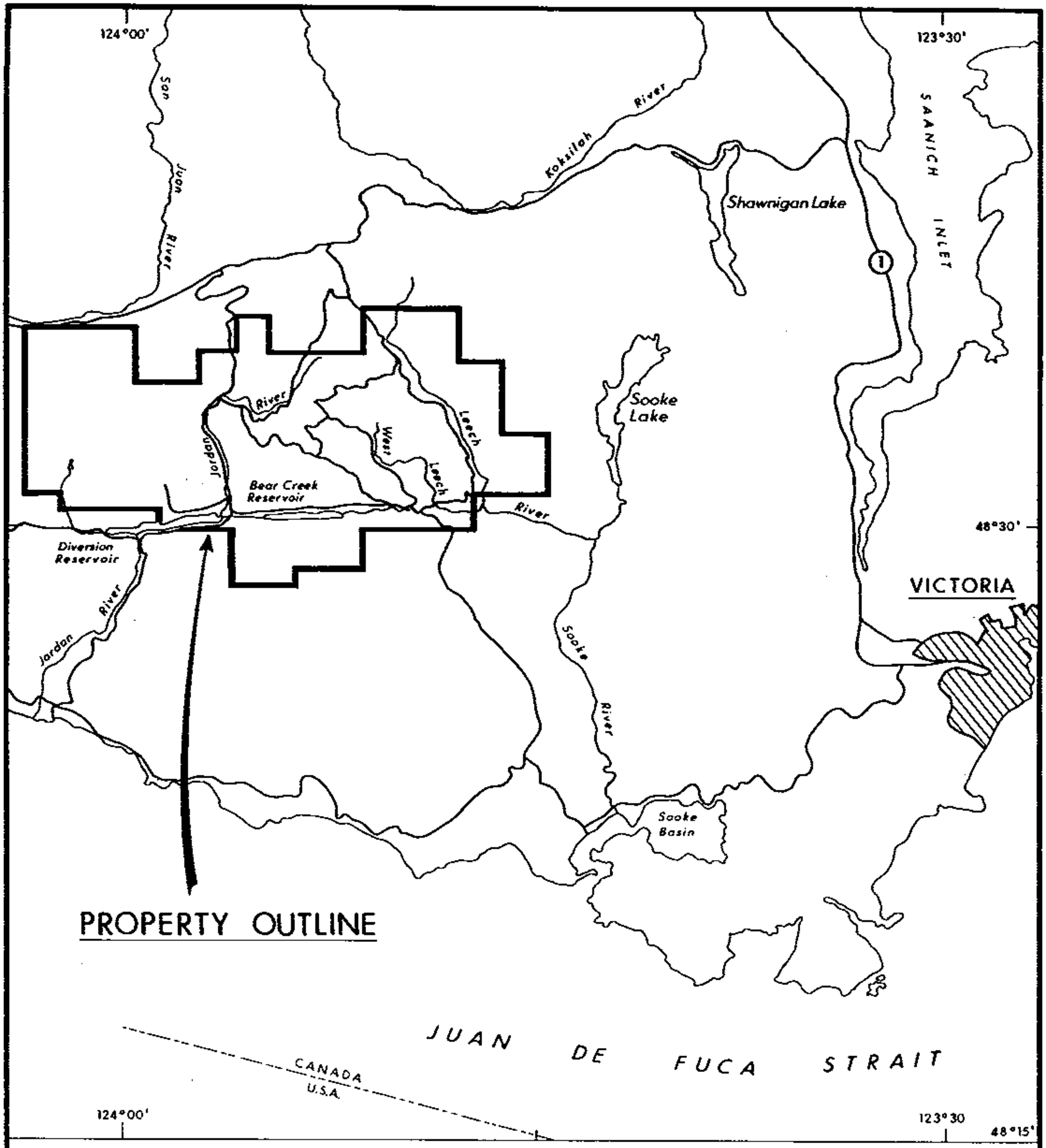
During April 1989, a property - reconnaissance style exploration programme was carried out on the Heart claim group.

Due to snow cover at higher levels, only those areas below 1000 metres elevation could be worked at that time. The work programme consisted of geological mapping, prospecting, and rock and stream sediment sampling for geochemical analysis.

The area covered is underlain by the metamorphosed arenaceous and pelitic sediments and volcanics of the Leech River Formation. quartz veins and veinlets, believed to be the result of metamorphic sweats, are pervasive throughout all rock types mapped. Some of the quartz veins contained minor amounts of pyrite and pyrrhotite.

The results of rock and stream sediment sampling returned only background values for base metals and silver. However, 5 heavy mineral concentrate (pan) samples returned anomalous values for gold.

A programme of geological mapping, prospecting and sampling is recommended for the high ground in the centre and the eastern part of the Heart group, from which the gold bearing streams drain.



REVISED	BEAU PRE - VALENTINE
	PROPERTY LOCATION
PROJ.No. 120	SURVEY BY: R.W. DATE: JUNE 1989
N.T.S. 92B/5,12	DRAWN BY: J. Serwin SCALE: 1:250,000
DWG. No. 1	NORANDA EXPLORATION OFFICE: VANCOUVER

LOCATION AND ACCESS

The Heart Group is located approximately 50 km west of Victoria. The property is accessible by logging roads from Sooke and from Shawnigan Lake.

The distance by road from Sooke to the north part of the Heart Group is approximately 45 km. The distance by logging roads from Shawnigan Lake is approximately 30 km. for this reason, the work described in this report was carried out using the Shawnigan Lake settlement as a base.

The logging road access is shown on the claim map, Figure 2.

PHYSIOGRAPHY, CLIMATE & VEGETATION

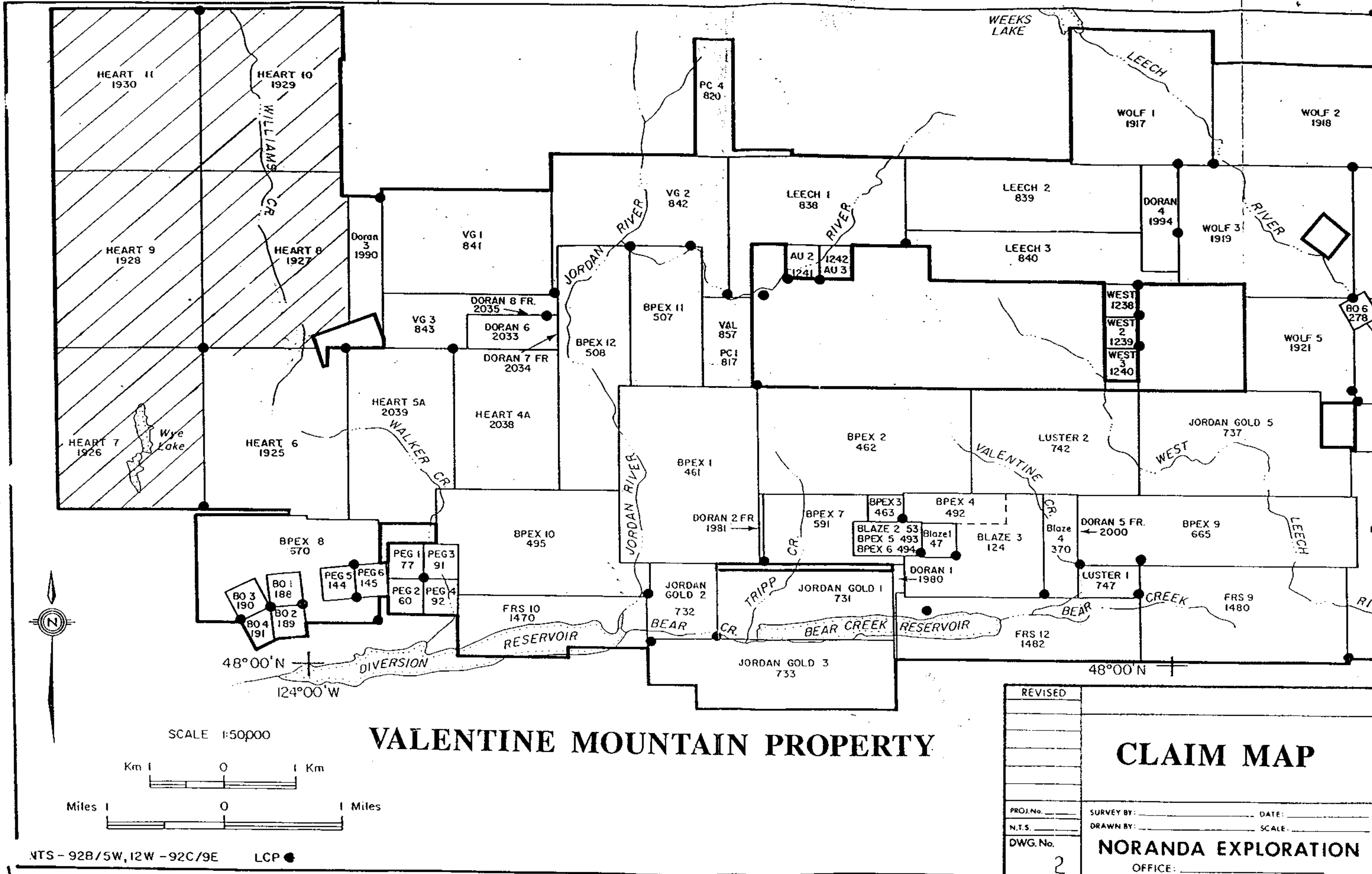
The Heart Group lies within the Vancouver Island mountains in the southern part of the Insular Belt.

The physiography consists of a high plateau upland which has been deeply dissected by steep creek valleys, running northward into the San Juan.

Elevations within the claim group vary between 75 m in the San Juan Valley to 975 m in the High Plateaus. Topography ranges from moderate to precipitous.

This terrain consists of high, relatively flat topped plateau areas incised with steep river valleys, is the result of renewed uplift and dissection of a previously existing peneplain erosion surface.

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 at higher elevations. 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 above the 500 m elevation cannot begin before mid-April, and above 800 m not before mid-May.


WEEKS LAKE
HEART 11 1930
HEART 10 1929
WILLIAMS CR.
HEART 9 1928
HEART 8 1927
HEART 7 1926
Wye Lake
HEART 6 1925
Doran 3 1990
VG 1 841
VG 2 842
VG 3 843
PC 4 820
LEECH 1 838
LEECH 2 839
LEECH 3 840
LEECH
WOLF 1 1917
WOLF 2 1918
DORAN 4 1994
WOLF 3 1919
RIVER
AU 2 1241
1242 AU 3
WEST 1 1238
WEST 2 1239
WEST 3 1240
BO 6 278
WOLF 5 1921
DORAN 8 FR. 2035
DORAN 6 2033
DORAN 7 FR 2034
JORDAN RIVER
BPEX 11 507
BPEX 12 508
VAL 857
PC 1 817
HEART 5A 2039
HEART 4A 2038
WALKER CR.
BPEX 1 461
BPEX 2 462
LUSTER 2 742
JORDAN GOLD 5 737
VALENTINE CR.
WEST
BPEX 8 570
BPEX 10 495
DORAN 2 FR 1981
BPEX 7 591
BPEX 3 463
BPEX 4 492
BLAZE 2 53
BPEX 5 493
BPEX 6 494
Blaze 1 47
BLAZE 3 124
Blaze 4 370
DORAN 5 FR. 2000
BPEX 9 665
LEECH
PEG 1 77
PEG 3 91
PEG 2 60
PEG 4 92
PEG 5 144
PEG 6 145
BO 1 188
BO 3 190
BO 2 189
BO 4 191
FRS 10 1470
JORDAN GOLD 2 732
TRIPP CR.
JORDAN GOLD 1 731
DORAN 1 1980
LUSTER 1 747
FRS 9 1480
BEAR CREEK
BEAR CR.
BEAR CREEK RESERVOIR
RESERVOIR
DIVERSION
FRS 12 1482
JORDAN GOLD 3 733
48°00'N
124°00'W
48°00'N
N
SCALE 1:50,000
Km 1 0 1 Km
Miles 1 0 1 Miles
NTS - 92B/5W, 12W - 92C/9E
LCP
VALENTINE MOUNTAIN PROPERTY
REVISED
CLAIM MAP
PROJ. No.
N.T.S.
DWG. No. 2
SURVEY BY:
DATE:
DRAWN BY:
SCALE:
NORANDA EXPLORATION
OFFICE:

Vegetation in the area consists of mature coastal forest of cedar, hemlock and douglas fir. Much of the northern part of the Heart claim group has been clear-cut logged within the last 5 years.

Whilst this logging activity has provided excellent access and road cut outcrop exposures, the hillsides and creek valleys are covered with waste timber, often to a depth of several feet. This condition make cross-country traverses slow and laborious. Soil sampling in these conditions would be very difficult and production rates would be well below average.

CLAIMS AND OWNERSHIP

The Heart group consists of the following claims.

Name	Record #	Units	Old Due Date	New Due Date
Heart 7	1926	20	May 6, 1989	
8	1927	20	May 6, 1989	
9	1928	20	May 6, 1989	
10	1929	20	May 6, 1989	
11	1930	20	May 6, 1989	

All interest in the claims has been transferred to Noranda Exploration Company, Limited (no personal liability), subject to the terms and conditions of the option agreement with Beau-Pre Explorations Ltd. and Valentine Gold Corp.

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 (Figure 1).

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

Previous work on the Heart group has been restricted to a few pan concentrate, silt, and rock samples, taken by Valentine Gold Corp. in 1987. None of the samples returned anomalous values.

ECONOMIC POTENTIAL

Results of heavy mineral concentrate (pan) sampling from several main drainages have returned anomalous gold values.

This indicates that gold mineralization probably exists in the upland areas in the central and eastern parts of the Heart group, from which these creeks drain.

Since these upland areas have yet to be explored, the source of the gold is unknown at this time.

It is possible that gold mineralization exists in these upland areas, within quartz veins and/or within the metamorphosed rocks of the Leech River Formation.

Economic potential will depend upon whether or not such mineralization occurs and, if so, in mineable tonnages and grades.

WORK PERFORMED

From 14th. to 26th. April 1989 a reconnaissance style exploration programme was carried out on the northern half of the Heart claim group.

The programme consisted of geological mapping, hand trenching and rock, pan and silt sampling for geochemical analysis.

PERSONNEL

The following personnel were involved in the programme:

Dennis R. Bull (Project Geologist), T. McIntyre (Party Chief), C.D. Frew (Geologist), J. McQuorquodal (Geologist), D. Dempsey, S. Louden, Carol Nepton (Fieldmen).

METHODS

GEOLOGICAL MAPPING AND ROCK SAMPLING

Geological mapping was carried out along the extensive network of logging roads and in the major creek valleys.

Lithology, metamorphism, structure, quartz veining and mineralization were recorded in detail. Control for the geological mapping was maintained by the use of air photo enlargements (1:5,000) supplemented by hip chain and altimeter measurements.

Rock samples for geochemical analysis were taken from quartz vein material and wallrock, within the metasediments and metavolcanics.

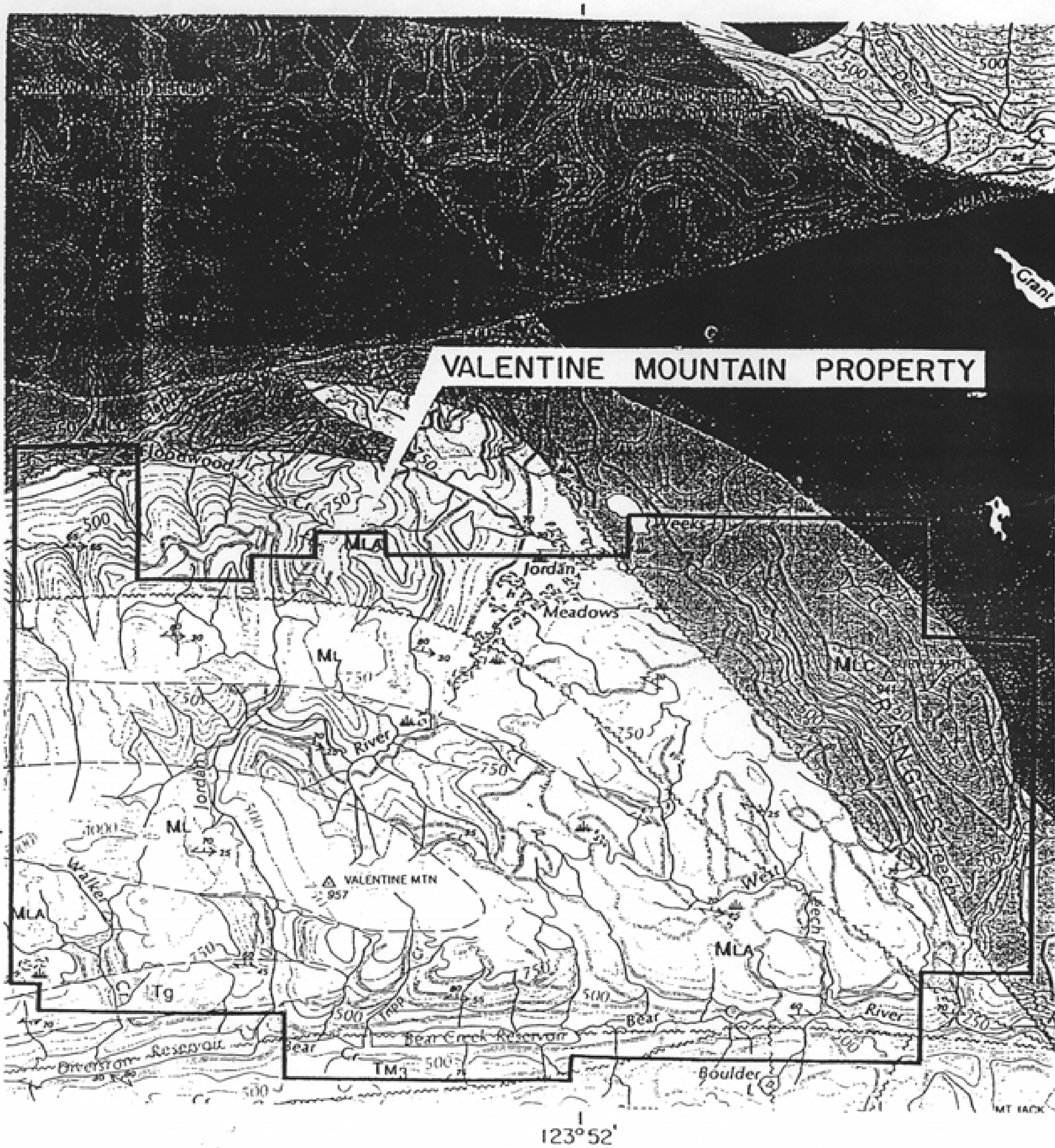
The majority of rock samples collected were chip samples across the widths of quartz veins, with chip samples of bounding wallrock taken separately. Where necessary hand trenching of outcrops was done in order to fully expose quartz veins otherwise partially covered by overburden.

Rock samples weighing approximately 2 kg each were placed in 6 ml plastic bags with sample identification numbers and shipped to Acme Analytical Laboratories, Vancouver for analysis.

STREAM SEDIMENT SAMPLING

Heavy mineral concentrate (pan) and silt sample pairs were taken from several locations on all of the major creeks draining the north part of the Heart group. The steep topography and spring runoff caused difficulty in collection of both pan and silt samples, as a result, daily production of the stream sediment samples was low. Pan samples were collected by sieving sufficient gravel to fill a gold pan with -6 mesh material. This was then panned down to a final volume of approximately 20 ml and placed in a plastic bag with a sample identification number.

Silt samples were collected at as many sites as possible. Silt samples approximately 1 kg in weight were placed in Kraft paper bags together with a sample identification number. The silt samples were partially air dried prior to shipment to Noranda's Vancouver Laboratory.



REGIONAL GEOLOGY
VALENTINE MOUNTAIN PROPERTY

FIGURE 3

GEOLOGY LEGEND

CENOZOIC

TERTIARY

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*

MESOZOIC

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*

JURASSIC

BONANZA GROUP

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

PALEOZOIC

PENNSYLVANIAN AND MISSISSIPPIAN

PSS — *SEDIMENT-SILL UNIT: argillite, greywacke, chert, diabase sills*

LOWER PALEOZOIC (OR YOUNGER?)

WARK GNEISS: massive and gneissic metadiorite, metagrabbro, amphibolite

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

Geology by J. E. Muller, 1970, 1980

LOCATION OF RECENT LOGGING ROADS

Two mandays were spent mapping in logging roads which postdate the air photographs used. this was done using compass, hip chain and altimeter together with topographic features.

PRODUCTION

Logging road geological mapping	22.5 km
Creek valley geological mapping	12 km
Logging road topographic mapping	3 km
Area covered by geological mapping	12.5 sq.km
Rock samples	100
Heavy mineral concentrates (pan) samples	20
Silt samples	21

REGIONAL GEOLOGY

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

The Leach 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 Leach 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). D-Ar dating indicates that the metamorphism and deformation occurred in early Tertiary time (Fairchild, 1982).

The rocks of the Leach 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.

PROPERTY GEOLOGY

The geology of the north and east part of the Heart group is shown in Figure 4.

From surficial mapping, the property is underlain by continuous sequences of meta-sandstones, metapelipes 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 east-west and dip within 15° north or south of vertical.

AMPHIBOLITE

This unit accounts for less than 5% of the outcrop mapped. It occurs in beds generally 1 to 3 m thick with one exposed bed in Williams Creek 40 m thick.

In fresh surface it 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 costs up to 10 mm long, the amphibole having disappeared due to retrograde metamorphism. (iii) Lapilli Tuff; fine to medium grained with fragments of feldspar, quartz and mafic minerals. Medium chloritic green colour, moderately seristose, slightly to moderately fissile. (iv) Volcanic Flows and Volcanic Breccia: medium to bright chloritic green colour in fresh surface, weathering to medium green-grey. Fine to medium grained, composed of feldspar, minor quartz and chlorite. Schistose and slightly fissile, with sericite on foliation surfaces.

The volcanic breccias consist of sub-angular to sub-rounded pebble to small cobble sized fragments of chloritic green volcanic in a fine grained chloritic green volcanic matrix.

METAPELITES

The metapelite unit accounts for approximately 50% of the outcrop mapped. It occurs as interbeds of metasiltstone and metamudstones from less than 0.5 m to greater than 20 metres thick. The metapelites themselves are interbedded with the metasandstone unit described below.

The metapelites are subdivided into the following sub-units:

i) **Metasiltstone:** 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). In a few localities, fine garnet porphyroblasts were observed within the schist (biotite-garnet schist). Sericite coatings were often observed on foliation.

ii) **Phyllite:** Believed to have originally been a mudstone, the phyllites are extremely fine grained and vary in colour from medium grey to black (carbonaceous) in some localities and light grey to medium brown in others.

The phyllites are extremely fissile, with abundant sericite and minor biotite on cleavage surfaces.

METASANDSTONE

The metasandstone unit accounts for approximately 45% of the outcrop mapped. It 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 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.

META GREYWACKS (Biotite Schist)

Fine to medium grained and is composed of feldspar, lithic fragments, quartz and clay minerals. Biotite is common.

This unit is quite schistose, with bands of light and dark minerals (feldspar-quartz and biotite) 1~3 mm wide. Biotite and sericite form coatings on cleavage surfaces. It is only slightly fissile and quite hard to break, due to recrystallization during regional metamorphism.

In several locations, particularly in the valley of Williams Creek the schistose nature of this unit gives it a woodgrain appearance, hence the name "Woodgrain Sandstone".

STRUCTURE

Wherever observed, structural features were measured and noted.

The most predominant and pervasive structural feature observed during the mapping programme was the foliation, in the form of co-planar schistosity and cleavage. Original bedding within and between the various sedimentary rock types was also noted.

These foliation features strike approximately east-west and dip steeply north or south of vertical. In general bedding, schistosity and cleavage are approximately co-planar.

Some minor parasitic folds were observed within the metapelites. These were visible as small "S" of "Z" folds within schist layers and quartz veinlets.

The sizes of the parasitic folds vary between 1 cm and 5 cm across.

QUARTZ VEINS AND MINERALIZATION

Quartz veins and veinlets occur throughout the rocks of the area mapped. They vary in size from 5 mm to 2 metres and are generally white milky "bull" quartz, with occasional subhedral crystals. Rusty weathering products were frequently observed, although sulfide mineralization was rare. Occasionally, small amounts of fine grained pyrite and lesser amounts of pyrrhotite were observed on fracture coatings. The sulfide mineralization was not observed to exceed 5% 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°. Only rarely were quartz veinlets observed within the phyllites. In such cases, the veinlets occur parallel to foliation cleavage.

Within the amphibolite unit, quartz vein material occurs in

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 being the result of hydrothermal activity.

The phyllites contain very little quartz vein material, due to the lack of available silica in this rock type. The quartz veins sub-parallel the cleavage, since this foliation provided the path of least resistance.

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 more quartz veins than the phyllites, but far less 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 30~45° to stress direction was subsequently filled with quartz probably of metamorphic origin.

RESULTS & INTERPRETATION

Rock Geochemistry

The results of rock sampling are shown in Appendix I and on samples maps; Figures 5a and 5b.

As may be seen from the results, only background values for gold, silver, and base metals were returned. This supports the theory that the quartz vein material sampled is of metamorphic, rather than hydrothermal origin.

Stream Sediment Geochemistry

The results of silt and heavy mineral concentrate (pan) sampling are shown in Appendix II and on sample maps; Figures 5a and 5b.

Whilst only background values were returned for base metals and silver, 5 pan samples returned anomalous gold values. These results were as follows:

Sample	Au (ppb)	Location
H-59460	230	Waterslide Creek, 80 metres upstream from junction with Achtriachtan Creek.
H-59473	190	No Name Creek, 150 metres upstream from junction with Williams Creek.
H-80413	1500	Williams Creek, 150 metres upstream from San Juan main logging road.
H-80414	5900	Cedar Creek, 100 metres upstream from San Juan main logging road.
H-80422	470	Cedar Creek, 100 metres upstream from San Juan main logging road.

These anomalous results indicate that gold bearing structures probably exist on the higher ground towards the centre of the Heart group. At the time this work was done, the upper elevations of the property were still under snow cover of 2 to 5 metres.

CONCLUSIONS AND RECOMMENDATIONS

The Heart group is underlain by rocks of the Leech River Formation. These consist of pelitic, arenaceous and volcanic rocks which have been regionally deformed into broad east-west trending folds and metamorphosed up to garnet staurolite grade.

Quartz veins and veinlets from <1 cm up to 2 metres occur within all units, but contain only minor sulfide (pyrite, pyrrhotite) mineralization. These quartz veins are probably the product of metamorphisms rather than hydrothermal activity.

Results of rock, and stream sediment sampling returned only background values for base metals and silver. However, five heavy mineral concentrate (pan) samples returned anomalous values for gold. These samples were taken from creeks draining the high ground in the centre of the Heart group and to the east.

Due to heavy snow cover at the time of the work programme described in this report, no follow up could be done immediately.

It is recommended that the anomalous gold in pan samples be followed up by heavy mineral concentrate sampling of the creeks upstream and by prospecting the upland areas from which these creeks drain.

This work should be performed between the months of June and October when the upland areas are free of snow.

APPENDIX I

ROCK GEOCHEMISTRY

Valentine (TMc)

HEART GROUP

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

GEOCHEMICAL ANALYSIS CERTIFICATE

Rocks

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: P1-3 ROCK P4-SILT AU* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

DATE RECEIVED: MAY 1 1989 DATE REPORT MAILED: May 9/89 SIGNED BY. C. Leong ..D.TOYE. C.LEONG. J.WANG; CERTIFIED B.C. ASSAYERS

NORANDA EXPLORATION CO. LTD. PROJECT 8905-002 120 File # 89-0951 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
R 43417	1	37	5	65	.1	15	5	209	2.90	10	6	ND	4	8	1	2	2	37	.10	.035	4	21	.51	124	.11	5	1.25	.03	.46	1	1
R 55178	2	5	8	15	.2	9	2	147	.36	2	6	ND	1	4	1	2	3	7	.05	.020	2	44	.13	14	.01	5	.29	.03	.01	1	1
R 55179	2	11	2	19	.2	13	3	121	.95	115	5	ND	2	9	1	2	2	10	.08	.023	2	10	.18	9	.01	4	.41	.01	.04	1	1
R 55180	2	16	5	3	.2	11	2	110	1.76	4	6	ND	1	3	1	3	2	33	.02	.009	2	9	.27	78	.05	5	.70	.01	.29	1	1
R 55181	3	7	4	3	.2	13	2	61	.86	2	6	ND	2	1	1	2	2	12	.04	.018	2	33	.15	32	.02	4	.32	.01	.11	1	3
R 55183	1	10	2	11	.1	9	2	99	.95	2	5	ND	1	12	1	2	2	14	.03	.068	2	30	.22	45	.03	5	.50	.01	.13	1	1
R 55184	6	47	2	30	.1	30	6	245	3.32	2	5	ND	1	6	1	2	2	24	.23	.023	2	39	.43	85	.09	5	.63	.03	.22	22	1
R 55185	2	6	2	3	.1	10	1	64	.35	2	5	ND	1	21	1	2	2	4	.11	.005	2	11	.05	20	.02	4	.20	.03	.03	1	4
R 55186	2	13	3	25	.1	14	3	160	1.45	3	5	ND	2	36	1	2	2	25	.26	.039	2	26	.29	54	.04	4	1.16	.02	.22	2	1
R 55187	2	11	3	12	.1	10	2	51	.91	2	5	ND	1	6	1	2	2	7	.02	.011	2	42	.09	10	.01	5	.28	.01	.33	1	1
R 55188	1	20	5	116	.1	28	10	317	5.06	8	5	ND	4	17	1	2	2	46	.10	.059	9	36	1.30	35	.08	5	2.43	.01	.27	1	1
R 55189	2	12	6	27	.1	8	2	94	1.56	3	5	ND	2	10	1	3	2	15	.04	.022	3	14	.26	21	.13	5	.51	.02	.10	1	2
R 55190	1	19	7	58	.2	15	6	252	2.55	4	5	ND	3	15	1	3	2	35	.16	.062	4	42	.76	111	.10	6	1.32	.02	.60	1	1
R 55191	1	13	5	70	.2	24	12	496	2.92	3	5	ND	2	38	1	2	2	68	1.19	.047	4	46	1.42	552	.17	4	1.95	.02	.76	1	1
R 55192	2	8	2	4	.1	6	1	47	.50	4	5	ND	2	24	1	2	2	7	.23	.012	2	7	.04	13	.01	5	.26	.01	.03	1	3
R 55193	2	83	6	92	.1	29	13	280	3.31	7	5	ND	4	11	1	2	2	88	.15	.062	6	57	1.60	375	.17	4	2.18	.03	.85	1	1
R 55194	3	32	6	85	.2	26	9	233	3.21	3	5	ND	6	11	1	2	2	55	.11	.043	7	42	1.04	134	.11	4	1.75	.02	.54	1	1
R 55195	1	13	4	29	.1	9	2	110	1.57	4	5	ND	1	6	1	2	2	17	.05	.024	3	60	.34	43	.04	4	.74	.01	.14	1	1
R 55196	2	17	4	43	.1	14	4	128	1.62	3	5	ND	2	6	1	2	2	30	.07	.039	2	18	.43	33	.04	4	.78	.01	.14	1	3
R 55197	1	28	7	83	.1	28	12	405	3.54	19	5	ND	3	30	1	2	2	67	.27	.055	4	49	1.56	286	.19	5	2.28	.02	.75	1	1
R 55198	1	31	5	74	.2	32	11	384	3.16	8	5	ND	2	47	1	2	2	55	.41	.048	2	41	1.12	189	.15	5	2.17	.02	.52	1	1
R 55199	1	24	9	75	.2	21	10	260	3.00	39	6	ND	6	13	1	2	2	39	.15	.050	6	52	.96	123	.11	5	1.62	.02	.49	1	3
R 55200	1	29	6	70	.1	21	8	347	2.93	6	8	ND	4	27	1	2	2	41	.45	.049	5	34	1.05	101	.09	5	1.61	.02	.37	1	2
R 59251	2	4	2	6	.1	9	1	56	.47	4	5	ND	1	5	1	2	2	4	.05	.008	2	9	.08	25	.01	4	.22	.02	.02	1	1
R 59252	3	6	3	11	.1	11	2	75	.69	5	5	ND	1	8	1	2	2	13	.06	.013	2	12	.15	28	.02	4	.37	.01	.04	1	1
R 59253	2	13	2	9	.1	8	1	133	.78	2	6	ND	1	11	1	2	2	13	.07	.010	2	52	.18	25	.01	3	.35	.01	.04	1	1
R 59254	2	83	15	144	.2	37	17	588	5.11	12	5	ND	6	56	1	2	3	99	.65	.092	11	59	2.20	125	.03	2	2.58	.02	.31	1	1
R 59255	1	31	9	64	.1	25	12	266	3.51	23	5	ND	4	73	1	3	2	70	1.37	.051	7	57	1.20	182	.04	2	3.54	.03	.37	1	1
R 59256	2	25	5	28	.1	15	3	114	1.42	17	5	ND	1	10	1	2	2	23	.08	.032	2	14	.42	71	.02	4	.84	.03	.06	1	1
R 59257	1	10	3	15	.1	11	2	108	1.01	3	5	ND	1	3	1	2	2	11	.02	.013	2	43	.19	28	.02	4	.40	.01	.06	1	1
R 59258	4	5	2	4	.1	11	1	48	.86	2	5	ND	1	2	1	2	2	3	.01	.007	2	10	.03	5	.01	5	.09	.01	.01	1	1
R 59259	1	21	4	30	.1	9	2	136	1.54	2	8	ND	1	15	1	2	2	28	.14	.049	2	16	.41	103	.06	5	.84	.03	.30	1	1
R 59260	2	53	7	67	.1	28	9	267	2.29	2	6	ND	3	44	1	2	2	45	.35	.046	3	27	.84	117	.10	5	1.44	.03	.70	1	1
R 59261	2	3	2	4	.1	6	1	36	.44	2	5	ND	1	3	1	2	2	4	.01	.005	2	42	.05	9	.01	5	.11	.01	.03	1	2
R 59262	2	35	6	60	.1	24	7	557	2.80	43	5	ND	2	22	1	2	2	65	.20	.021	4	56	.84	62	.04	4	1.77	.02	.17	1	2
R 59263	2	7	2	7	.1	10	2	64	.50	2	5	ND	1	1	1	2	2	5	.01	.004	2	3	.05	7	.01	3	.13	.01	.01	1	1
STD C/AU-R	18	63	43	133	6.8	74	31	1027	4.04	44	22	8	40	51	20	16	20	60	.51	.092	42	55	.90	185	.07	34	1.93	.06	.13	12	485

(Chain Rd)

Rocks

NORANDA EXPLORATION CO. LTD. PROJECT 8905-002 120 FILE # 89-0951

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 59264	3	25	2	27	.2	13	2	179	1.25	2	5	ND	1	21	1	2	2	12	.10	.022	2	9	.33	7	.01	5	.49	.02	.02	1	2
R 59265	1	5	2	5	.1	11	1	75	.46	3	5	ND	1	3	1	2	2	5	.06	.011	2	10	.07	14	.02	5	.13	.01	.02	1	1
R 59266	1	19	4	41	.2	15	5	290	1.76	4	5	ND	2	25	1	2	2	35	.53	.072	3	25	.62	165	.11	6	.59	.03	.37	1	2
R 59267	2	3	2	1	.1	5	1	27	.21	2	5	ND	1	8	1	2	2	1	.33	.005	2	6	.02	26	.01	5	.06	.01	.02	1	2
R 59268	5	27	2	57	.1	21	6	113	1.63	2	5	ND	2	8	1	2	2	23	.04	.022	5	15	.50	97	.06	7	.83	.02	.49	1	2
R 59270	3	46	4	50	.3	19	6	278	2.40	2	5	ND	2	7	1	2	3	47	.15	.026	3	27	.63	227	.19	5	1.18	.02	.63	1	2
R 59272	3	6	2	5	.1	12	3	96	.43	3	5	ND	1	6	1	2	2	2	.07	.029	2	3	.03	10	.01	5	.19	.01	.03	1	1
R 59273	1	51	9	125	.1	30	15	413	4.39	7	8	ND	5	17	1	2	4	72	.27	.051	6	47	1.50	241	.18	5	2.56	.02	.98	1	1
R 59274	1	47	8	92	.1	19	9	377	3.60	9	5	ND	6	29	1	2	3	60	.46	.074	13	41	1.47	178	.12	5	2.22	.01	.51	1	1
R 59275	3	12	5	32	.1	12	2	97	1.50	3	5	ND	2	9	1	2	2	19	.07	.033	6	20	.32	24	.02	7	.66	.01	.06	1	1
R 59276	2	28	12	82	.2	20	7	223	2.99	5	5	ND	8	7	1	3	2	34	.05	.038	16	28	.74	47	.02	5	1.53	.01	.17	1	1
R 59278	2	23	6	77	.1	24	10	369	2.63	2	5	ND	4	9	1	2	3	73	.05	.036	8	42	.94	112	.11	5	2.13	.02	.22	1	2
R 59279	2	22	12	43	.1	28	7	296	1.46	12	5	ND	2	5	1	2	2	20	.04	.022	5	14	.35	26	.02	4	.75	.01	.05	2	9
R 59280	1	38	9	101	.1	26	14	379	3.54	15	6	ND	4	18	1	2	4	85	.37	.063	7	49	1.43	432	.18	5	2.29	.04	1.04	1	7
R 59281	1	4	2	10	.1	5	1	51	.35	4	5	ND	1	1	1	2	2	7	.01	.005	2	5	.08	21	.01	5	.13	.01	.04	1	2
R 59282	2	13	4	28	.3	15	4	147	1.23	2	5	ND	1	10	1	2	2	29	.19	.027	2	25	.45	95	.05	7	.62	.02	.18	1	5
R 59401	2	16	2	15	.1	31	8	292	2.20	15	5	ND	1	1	1	2	2	21	.02	.012	2	39	.56	3	.03	5	.72	.01	.01	1	6
R 59402	2	13	2	6	.1	20	5	190	.56	10	5	ND	1	1	1	2	2	7	.01	.015	2	22	.23	2	.02	4	.46	.01	.01	1	4
R 59403	2	25	9	54	.2	29	9	249	2.15	8	5	ND	3	5	1	2	2	19	.03	.032	7	29	.54	32	.02	5	1.15	.01	.06	1	2
R 59404	2	32	12	72	.1	46	23	347	2.74	17	5	ND	2	6	1	2	2	24	.05	.044	6	22	.72	37	.03	5	1.38	.01	.07	1	2
R 59405	2	7	2	8	.1	12	2	46	.50	2	5	ND	1	1	1	2	2	4	.01	.012	2	8	.04	8	.01	5	.19	.01	.01	1	1
R 59406	2	23	10	51	.1	25	6	190	2.22	11	5	ND	1	9	1	2	2	21	.04	.061	8	31	.58	35	.04	6	1.21	.01	.08	1	1
R 59407	2	30	6	41	.1	24	8	209	1.84	5	5	ND	1	6	1	2	3	19	.04	.032	5	29	.56	81	.04	5	.96	.01	.15	2	1
R 59408	2	26	7	55	.3	23	8	259	2.44	7	6	ND	3	22	1	2	2	34	.09	.035	5	25	.84	89	.09	5	1.51	.02	.22	1	2
R 59409	2	30	9	49	.2	25	10	235	2.19	9	5	ND	2	32	1	2	4	27	.13	.030	5	21	.69	122	.13	5	1.23	.02	.30	1	1
R 59410	2	43	11	72	.2	48	20	333	2.26	7	5	ND	3	9	1	3	3	21	.06	.036	3	19	.50	64	.05	5	1.19	.02	.14	1	2
R 59411	2	22	9	72	.2	50	15	218	2.81	5	5	ND	1	5	1	2	2	18	.04	.037	3	18	.47	44	.03	6	.97	.01	.09	1	1
R 59412	2	25	7	62	.1	26	9	229	2.68	3	5	ND	1	7	1	2	4	31	.07	.032	5	20	.56	67	.07	5	1.16	.01	.19	1	1
R 59413	2	18	5	38	.1	20	5	170	1.59	5	5	ND	1	5	1	2	2	13	.02	.023	4	18	.39	43	.03	4	.94	.01	.06	1	1
R 59414	1	20	7	53	.1	26	8	218	2.35	6	5	ND	3	13	1	2	2	31	.13	.041	7	25	.76	110	.10	5	1.41	.02	.32	1	2
R 59415	1	38	7	67	.3	21	9	250	2.63	5	5	ND	2	14	1	2	2	41	.14	.040	5	27	.92	149	.12	5	1.46	.02	.42	2	1
R 59416	3	13	6	35	.2	13	4	174	1.63	6	5	ND	1	7	1	2	2	29	.05	.019	5	19	.41	79	.06	5	.71	.02	.28	1	1
R 59418	2	31	7	71	.1	31	9	357	2.56	7	5	ND	3	34	1	2	2	28	.16	.049	6	35	.87	47	.05	6	1.40	.01	.15	1	1
R 59419	2	9	2	13	.1	11	4	79	.99	4	5	ND	1	6	1	2	2	5	.02	.014	2	8	.06	13	.01	5	.21	.01	.02	1	1
R 59420	2	28	9	135	.1	37	13	385	5.50	8	5	ND	5	15	1	2	2	51	.12	.065	20	44	1.32	61	.07	6	2.66	.01	.26	2	1
R 59455	1	106	4	48	.2	35	15	794	2.65	15	5	ND	1	193	1	2	2	44	8.92	.060	2	48	.64	118	.09	5	1.21	.01	.35	1	1
R 59456	1	83	6	127	.1	82	32	706	5.72	25	5	ND	2	26	1	2	2	115	1.38	.096	4	153	1.59	133	.17	4	2.94	.02	.46	1	2
STD C/AU-R	18	62	43	141	7.1	72	32	1053	3.99	42	20	8	40	53	20	16	19	60	.51	.097	39	60	.93	185	.08	37	1.97	.06	.16	13	510

Rocks

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 59457	2	21	6	5	.3	10	2	103	.78	3	5	ND	3	16	1	2	2	5	.16	.022	2	7	.10	35	.01	7	.36	.01	.15	1	2
R 59458	2	6	2	5	.3	10	1	242	.49	2	5	ND	3	2	1	2	2	3	.03	.004	2	48	.03	6	.01	8	.08	.01	.06	1	1
R 59474	1	16	10	45	.4	17	7	577	2.26	7	5	ND	7	65	1	2	2	20	.91	.033	9	16	.70	40	.02	7	1.15	.03	.12	1	3
R 59475	2	20	15	45	.3	23	5	356	2.09	2	5	ND	4	108	1	2	2	15	1.25	.026	3	19	.60	24	.02	7	1.03	.01	.09	1	5
R 59476	1	96	6	46	.2	83	21	727	2.63	2	5	ND	3	53	1	2	2	43	6.10	.016	2	112	1.97	2	.05	6	2.16	.01	.06	1	4
R 59576	3	17	2	15	.3	16	4	122	1.03	4	8	ND	4	4	1	2	2	12	.07	.007	2	12	.19	24	.02	9	.38	.01	.14	1	1
R 59579	1	102	6	158	.1	90	34	547	6.16	4	5	ND	5	70	1	2	3	54	1.67	.109	2	127	1.79	14	.18	7	3.29	.02	.17	1	5
R 80353	1	34	9	68	.2	34	11	612	3.01	6	5	ND	5	20	1	2	2	31	.20	.049	11	26	.19	55	.05	7	1.62	.02	.24	1	2
R 80354	2	69	13	120	.1	54	15	1677	6.28	18	5	ND	7	18	1	2	2	47	.17	.063	10	39	1.23	87	.06	7	2.30	.01	.27	1	3
R 80355	3	16	8	24	.1	27	6	479	1.22	3	5	ND	2	7	1	2	2	8	.06	.017	5	13	.23	23	.01	9	.44	.02	.07	1	5
R 80356	2	16	11	7	.2	9	2	77	.62	2	5	ND	2	2	1	2	2	7	.06	.006	2	44	.11	15	.02	8	.23	.01	.08	1	3
R 80357	3	37	8	68	.1	50	8	222	3.72	10	5	ND	3	6	1	2	2	14	.04	.048	7	21	.48	20	.02	7	1.08	.01	.06	1	2
R 80358	1	53	13	104	.1	61	17	326	3.65	17	5	ND	4	10	1	2	2	25	.07	.063	37	26	.91	35	.03	7	1.79	.01	.13	1	3
R 80359	1	11	11	50	.2	21	7	263	2.45	17	5	ND	8	17	1	2	2	23	.13	.034	16	29	.77	77	.06	8	1.44	.03	.30	1	3
R 80360	1	12	14	43	.3	15	5	233	1.88	2	5	ND	8	11	1	2	2	14	.07	.028	10	29	.54	39	.03	7	1.09	.02	.15	1	4
R 80361	2	147	16	79	.1	39	14	429	7.96	36	5	ND	9	8	1	2	3	42	.02	.075	8	29	1.19	90	.05	6	3.16	.01	.30	1	4
R 80362	1	37	9	64	.1	12	4	192	2.83	6	5	ND	5	12	1	2	2	35	.03	.044	7	27	.96	52	.05	6	1.70	.03	.18	1	4
R 80363	2	13	12	55	.2	22	9	365	2.62	9	5	ND	5	16	1	2	3	29	.16	.046	8	19	1.09	41	.03	7	1.62	.03	.14	1	4
R 80364	1	63	15	106	.1	65	23	444	4.24	9	5	ND	8	15	1	2	3	38	.09	.070	17	55	1.24	59	.06	7	2.89	.01	.24	1	6
R 80369	1	16	6	41	.1	15	6	244	2.04	4	5	ND	4	14	1	2	2	22	.15	.032	6	16	.61	84	.07	7	1.08	.02	.29	1	1
R 80370	2	36	10	72	.1	32	10	316	3.48	7	5	ND	5	11	1	2	3	30	.09	.048	8	26	.91	58	.06	2	1.68	.01	.28	1	2
R 80371	1	8	13	13	.3	7	2	918	.67	2	5	ND	4	1134	1	2	2	5	13.57	.009	2	15	.12	12	.01	7	.21	.01	.11	2	2
R 80372	2	49	12	92	.1	67	21	521	3.81	7	5	ND	5	18	1	2	2	35	.20	.049	8	33	1.11	51	.06	2	1.96	.01	.22	1	2
R 80373	1	44	16	101	.1	54	22	339	5.89	23	5	ND	8	6	1	2	3	29	.02	.075	13	27	.93	40	.02	6	2.14	.01	.13	1	1
R 80374	2	8	2	4	.4	12	2	87	.48	2	5	ND	2	23	1	2	2	3	.06	.010	2	9	.04	15	.01	11	.12	.01	.06	1	2
R 80375	2	6	2	5	.1	7	2	103	.48	2	5	ND	1	26	1	2	2	5	.26	.003	2	40	.09	18	.01	9	.18	.01	.06	1	3
R 80412	2	23	16	40	.2	21	5	1192	1.86	12	5	ND	4	458	1	2	2	12	6.19	.028	6	14	.45	21	.01	6	.86	.01	.10	1	2
R 80423	2	24	11	31	.2	26	9	842	1.47	7	5	ND	2	10	1	2	2	9	.12	.024	3	14	.32	23	.02	8	.62	.01	.07	1	1
STD C/AU-R	18	63	42	132	6.7	74	31	1026	4.17	39	18	7	40	52	18	14	23	61	.50	.088	40	53	.93	181	.07	34	2.06	.06	.16	13	510

NORANDA EXPLORATION COMPANY, LIMITED

PROJECT # 120

N.T.S. 92C/9

LAB REPORT #

DATE April '89

PROJECT BEAU PRE VALENTINE (HEART 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
R55196	Tributary Ck from west into Williams Ck 3m x 0.5m rusty qtz vein in Meta Pelite Schist.	N.V.	Chip	3 x 0.5	17	4	43	0.1	3	1		D.R. Bull
R55197	Logging road WC 20 on west side of Williams Ck. Meta Pelite Schist with rusty, vuggy qtz veinlets.	N.V.	Chip	1	28	7	83	0.1	19	1		"
R55198	10m north of above location, Meta Pelite with rusty, vuggy qtz veinlets 5-50mm wide.	N.V.	Chip	0.6	31	5	74	0.2	8	1		"
R55199	15m north of above location, Meta Pelite Schist with vuggy, rusty qtz veinlets & lenses.	N.V.	Chip	1.2	24	9	75	0.2	89	3		"
R55200	Logging road WC 20 on west side of Williams Ck. interbedded metasandstone & meta pelites with qtz veinlets, rusty.	N.V.	Chip	8	29	6	70	0.1	6	2		"
R59401	West of Williams Ck. Schistose Amphibolite tuff with qtz veinlets ≤8cm wide vuggy, white qtz.	N.V.	Grab	-	16	2	16	0.1	15	6		"
R59402	2nd Amphibolite Bed with 15cm wide qtz vein.	N.V.	Grab	-	13	2	6	0.1	10	4		"

NORANDA EXPLORATION COMPANY, LIMITED

PROJECT # 120

N.T.S. 92C/9

LAB REPORT #

DATE April '89

PROJECT BEAU PRE VALENTINE (HEART 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
R59403	Unmarked logging road on hill-slope west side of Williams Ck. valley Meta Pelites with semi-vuggy, rusty qtz veinlets ≤3cm wide.	N.V.	Chip	4	25	9	54	0.2	8	2		D.R. Bull
R59404	On same road 3m section of Meta Pelites with rusty qtz vein-lets.	N.V.	Chip	3	32	12	71	0.1	17	2		"
R59405	On same road 2m section of Meta Pelites with rusty qtz vein-lets.	N.V.	Chip	2	7	2	8	0.1	3	1		"
R59406	On same road 5m section of Meta Pelites with rusty qtz vein-lets.	N.V.	Chip	5	23	10	51	0.1	11	1		"
R59407	Unmarked logging road on hill-slope west side of William Ck. Valley. Meta Pelites with rusty, vuggy qtz veinlets.	N.V.	Chip	2	30	6	41	0.1	5	1		"
R59408	On same road. Meta Pelites with rusty vuggy qtz veinlets.	N.V.	Chip	2.5	26	7	55	0.3	7	3		"
R59409	Metapelites with rusty qtz vein-lets.	N.V.	Chip	1.5	30	9	49	0.2	9	1		"
R59410	Metapelites with rusty qtz vein-lets.	N.V.	Chip	1.5	43	11	72	0.2	7	2		"

NORANDA EXPLORATION COMPANY, LIMITED

PROJECT # 120 N.T.S. 92C/9

LAB REPORT # DATE April '89

PROJECT BEAU PRE VALENTINE (HEART 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
R59411	Metapelites with rusty qtz vein -lets.	N.V.	Chip	5	22	9	72	0.2	5	1		D.R. Bull
R59412	Metapelites with rusty qtz vein -lets.	N.V.	Chip	8	25	7	62	0.1	3	1		"
R59413	Metapelites with rusty qtz vein -lets.	N.V.	Chip	1	18	5	38	0.1	5	1		"
R59414	Metapelites with rusty qtz vein -lets.	N.V.	Chip	1	20	7	63	0.1	6	1		"
R59415	Metapelites with rusty qtz vein -lets.	N.V.	Chip	4	38	7	67	0.3	5	1		"
	NOTE: The outcrop sampled by R59403 - R59415 is a series of interbedded Meta Pelites within massive to Schistose Meta Sandstones. The Meta Pelites have undergone ductile to brittle deformation and are shot through with quartz veinlets 5mm to 120mm wide. The qtz veinlets range from white massive "bull" quartz to vuggy subhedral rusty quartz. The sandstones are far less deformed and contain only minor amounts of quartz vein material (white bull quartz).											
R59418	Lower logging road on west side of Williams Ck. Quartz vein-lets within Meta Pelites.	N.V.	Chip	5	31	7	71	0.1	7	1		"
R59474	In Williams Ck., quartz vein-lets within Metasandstone & Meta Silstone.	N.V.	Chip	1	16	10	45	0.4	7	3		"

NORANDA EXPLORATION COMPANY, LIMITED

PROJECT # 120

N.T.S. 92C/9

LAB REPORT #

DATE April '89

PROJECT BEAU PRE VALENTINE (HEART 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
R59475	In Williams Ck. Quartz veinlets in Meta Pelite Schist.	N.V.	Chip	1.5	20	15	45	0.3	2	5		D.R. Bull
R59476	In Williams Ck. ~100m upstream from Suspension Bridge. Quartz veinlets within Meta-Amphibolite Schist.	N.V.	Chip	1.5	96	6	46	0.2	2	4		"
R59419	Logging road WC 20 on east side of Williams Ck., same location as R55187 rusty quartz vein (bull qtz).	N.V.	Chip	2.5	9	2	13	0.1	4	1		"
R80353	Fires of Hell Road. Milky white qtz; vuggy in Phyllite 1st chip.	≤1 Py	Chip	1.5	34	9	68	0.2	6	2		McIntyre
R80354	Fires of Hell Road. Qtz stringers & veins total width 3.5m. 2nd chip.	<1 Py	Chip	1.5	69	13	120	0.1	18	3		Frew
R80355	Fires of Hell Road. Qtz vein (same as above) 2m chip along strike 272 84N.	-	Chip	2.0	16	8	24	0.1	3	5		McIntyre
R55178	Fires of Hell Road. Qtz vein within minor Sericite. Appin Creek.	-	Chip	0.20	5	8	15	0.2	2	1		McIntyre

NORANDA EXPLORATION COMPANY, LIMITED

PROJECT # 120 N.T.S. 92C/9

LAB REPORT # DATE April '89

PROJECT BEAU PRE VALENTINE (HEART 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
R80356	Fires of Hell Road. Qtz vein.	-	Chip	0.90	16	11	7	0.2	2	3		McIntyre
R55179	Fires of Hell Road. Qtz altera -tion (Head water Williams Cr.- water truck) vein, milky white qtz with limonite stain.	-	Chip	0.08	11	2	19	0.2	115	1		McIntyre
R55180	Winch Road. Qtz vein, Fe stain minor Py along wall rock.	<1 Py	Grab	0.07	16	5	8	0.2	4	1		McIntyre
R55181	Achtriachtan Creek. 152m up-stream. Host Bio, Gar Schist.	-	Grab	0.10	7	4	3	0.2	2	3		McIntyre
R55183	Achallader Creek, 550m eleva-tion. Qtz vein, limonite stain -ing 1m chip along strike, host B, Q, Sch.	-	Chip	0.10	10	2	11	0.1	2	1		McIntyre
R55184	Achallader Cr., 660m elevation 3cm. Qtz str, Fe stain, finely crystalline qtz, in Amph.	-	Chip 1m along strike	0.03	47	2	20	0.1	2	1		McIntyre
R55185	Achallader Cr., 660m elevation, parallel qtz vein, host amphi-bolite.	-	Chip 1m along strike	0.10	6	2	3	0.1	2	4		McIntyre
R55186	Achallader Cr., 40m upstream from 480m Elevation Bridge Qtz stringer in Bio, Qtz Schist	-	Chip	1.0	19	3	25	0.1	3	1		McIntyre

NORANDA EXPLORATION COMPANY, LIMITED

PROJECT # 120

LAB REPORT #

N.T.S. 92C/9

DATE April '89

PROJECT BEAU PRE VALENTINE (HEART 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
R59251	Lomond Creek. 98m upstream Qtz vein 3-4cm moderately crystalline.	-	Chip 1m chip along strike		4	2	6	0.1	4	1		McIntyre
R59252	Lomond Creek. Qtz vein along strike of contact. Qtz Bio-Schist of S.S.	-	Chip 1m	0.12	6	3	11	0.1	5	1		McIntyre
R59253	Achallader Rd. Qtz vein, milky white & crystal qtz. 1m along strike.	-	Chip	0.20	13	2	9	0.1	2	1		McIntyre
R59254	Achallader Rd. Phyllite Foot-wall. Sample below R59253.	-	Chip	0.25	83	15	144	0.2	12	1		McIntyre
R59255	Achallader Road. Alteration zone within metasandstone. Feox, & minor qtz, clays.	-	Grab	0.20	31	9	64	0.1	23	1		McIntyre
R59256	Achallader Rd. Qtz str., vuggy subhedral crystals, FeOx stain, 1m chip along strike.	-	Chip	0.07	25	5	28	0.1	17	1		McIntyre
R59257	Achallader Rd. Qtz string Phyllite, milky white Fe Ox. 1m chip along strike.	-	Chip	0.07	10	3	15	0.1	3	1		McIntyre
R59258	Achallader Rd. Qtz vein, pinches & swells in Phyllite.	-	Chip	2 cm 0.29	6	2	4	0.1	2	1		McIntyre

NORANDA EXPLORATION COMPANY, LIMITED

PROJECT # 120

LAB REPORT #

N.T.S. 92C/9

DATE April '89

PROJECT BEAU PRE VALENTINE (HEART 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
R59259	Achallader Rd. Stringers of qtz over 1.0m, vuggy FeOx; chip perpendicular to strike.	-	Chip	1.0	31	4	30	0.1	2	1		McIntyre
R59260	Achallader Rd. Qtz str in metasandstone. FeOx, chlorite, 1m chip, marcasite?	1	Chip	1.0	53	7	67	0.1	3	1		McIntyre
R59261	Achallader Rd. Qtz vein, bull qtz in meta sandstone.	-	Chip	0.50	3	2	4	0.1	2	2		McIntyre
R80357	Phyllite Creek & Main Access Road Crossing, located in west bank of road. Sample is limonite-rich interbedded quartz and phyllite, quartz is clear-white and vuggy. Entire zone shows secondary silicification, mineralization in traces of pyrite.	Trace	Chip	0.5	37	8	68	0.1	10	2		Drew
R80358	Main Access Road, 66 meters north of sample R80357, again located in west bank of road. Sample is rusty/limonitic inter-bedded quartz and phyllite as in above sample. However, this sample is taken in an area of intense, small scale (i.e. 10cm	Nil	Panel	0.5x0.5	51	13	104	0.1	17	3		Frew

NORANDA EXPLORATION COMPANY, LIMITED

PROJECT # 120

LAB REPORT #

N.T.S. 92C/9

DATE April '89

PROJECT BEAU PRE VALENTINE (HEART 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
R80358(con't)	across) "S"-folding.											
R80359	700m elevation, located in road on ridge between Cedar Creek & Phyllite Creek. Sample is pale grey quartz and metasandstone with thin (<1mm) phyllite lamellae and traces of disseminated pyrite.	Trace	Chip	0.3	11	11	50	0.2	17	3		Frew
R80360	Same location as R80359. It's a quartz vein in contact with R80359 and incorporating various-sized clasts of same. Quartz is rusty, white to black in places with occasional vugs and traces of disseminated pyrite.	Trace	Chip	0.3	12	14	43	0.3	2	4		Frew
R80361	750m elevation, on road which travels northwest from upper reaches of Phyllite Creek. Sample is a strong hematitic/ limonitic alteration of phyllite at contact with metasandstone.	None visible	Panel	0.2x0.5	147	16	79	0.1	36	4		Frew
R80362	Same location, extremely rusty interbedded phyllite and quartz	None visible	Chip	1.0	37	9	64	0.1	6	4		Frew

NORANDA EXPLORATION COMPANY, LIMITED

PROJECT # 120 | N.T.S. 92C/9

LAB REPORT # ____ | DATE April '89

PROJECT BEAU PRE VALENTINE (HEART 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
R80362(con't)	Quartz is clear-white, extremely vuggy and coplanar with foliation.											
R80363	Same location. Clear-white extremely vuggy quartz in meta-sandstone, no staining, qtz is coplanar with contact orientation (274/73).	Nil	Chip	0.3	13	12	55	0.2	9	4		Frew
R80364	120m northwest along road from Samples R80361, 62, 63. Sample is stained, altered vuggy qtz vein hosted in an "S" fold in biotite-rich phyllite. Fold axial plane orientation is 255/90.	None visible	Chip	0.5	63	15	106	0.1	9	4		Frew
R80369	775m elevation on road paralleling topography on west slope of Cedar Creek approximately 145m from intersection on ridge between Cedar Ck. and Phyllite Ck. Sample is in a white qtz "stockwork" (quartz veins run both parallel and perpendicular to foliation 266/82.	Nil	Panel	0.5x0.5	16	6	41	0.1	4	1		Frew

NORANDA EXPLORATION COMPANY, LIMITED

PROJECT # 120

N.T.S. 92C/9

LAB REPORT #

DATE April '89

PROJECT BEAU PRE VALENTINE (HEART 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
R80370	Same road as R80369, 30m north along road from R80369. Rusty, vuggy quartz plus phyllite located in small scale (10cm wide) "S" fold. Fold axis orientation: 267/67.	None visible	Chip	1.0	36	10	72	0.1	7	2		Frew
R80371	Main road near Cedar Creek crossing, located on west branch of road. Coarse clear quartz in a coarse white calcite matrix, "veins" of amphibole and chlorite throughout. Blebs of massive pyrite and chalcopyrite up to 1cm found along contact with phyllite, small amount of disseminated pyrrhotite located within amphi-bole/chlorite.	Trace	Panel	1x 0.05 x 0.05	8	13	13	0.3	2	2		Frew
R80372	217m north of R80371 on same road. Complex quartz veining hosted in an "S" folded portion of phyllite. Zone is rusty, quartz is clear-white and extremely vuggy. Sample includes both quartz and phyllite host.	Trace	Panel	0.75 x 0.75	49	12	92	0.1	7	2		Frew

NORANDA EXPLORATION COMPANY, LIMITED

PROJECT # 120

N.T.S. 92C/9

LAB REPORT #

DATE April '89

PROJECT BEAU PRE VALENTINE (HEART 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
R80373	305m north of R80371. Quartz vein/clay alteration cutting across principal foliation within phyllite/petitic meta-silt package. Zone is intensely altered to limonite and hematite.	None visible	Panel	0.1x0.5	44	16	101	0.1	23	1		Frew
R59455	Cedar Creek, 425m elevation. White quartz within phyllite amphibolite. Chlorite/amphibole veinlets within quartz host blebs of massive pyrrhotite as well there are blebs of pyrrhotite & chalcopyrite upto 1mm within quartz.	≤ 1	Panel	0.1x0.5	106	4	48	0.2	15	1		Frew
R59456	Same location as R59455. Sample of phyllite amphibolite wall rock. Abundant quartz, biotite and pyrrhotite hosted within foliation.	1-2	Chip	0.5	83	6	127	0.1	25	2		Dempsey
R59457	Cedar Creek, 440m elevation. White-clear vuggy quartz with abundant coarse euhedral muscovite/sericite in vugs. Vein is up to 0.1m wide and crosscuts	Nil	Panel	0.1x0.4	21	6	9	0.3	3	2		Dempsey

NORANDA EXPLORATION COMPANY, LIMITED

PROJECT # 120

N.T.S. 92C/9

LAB REPORT # ____________

DATE April '89

PROJECT BEAU PRE VALENTINE (HEART 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
R59457(con't)	foliation in phyllite at an orientation of 040/62.											
R59458	Cedar Creek, 475m elevation. White quartz trending perpendicular to predominant metamorphic fabric at an orientation of 000/90. Sample is a grab because it is located under water and is hard to reach. Contains a trace of molybdenite (?).	Trace	Grab	1	6	2	5	0.3	2	1		Dempsey
R80412	125m below Williams Ck. Suspension Bridge. Phyllite (Meta Pelite) with qtz veinlets 5-150mm.	N.V.	Composite Grab	1.5	21	16	40	0.2	12	2		D.R. Bull
R55187	Logging Road WC 20 on east side of Williams Ck. 1.5m quartz vein in metasiltstones.	N.V.	Chip	1.5	11	3	12	0.1	2	1		D.R. Bull
R55188	At above location, metasiltstone wallrock.	N.V.	Chip	1.5	20	6	116	0.1	8	1		D.R. Bull
R55189	Williams Ck. Qtz veinlets 5-100mm wide in feldspathic meta sandstone.	N.V.	Composite Grab	1	12	6	27	0.1	3	2		D.R. Bull
R55190	Williams Ck. Qtz veinlets 5-75mm wide in "woodgrain"	N.V.	Composite	2	19	7	58	0.2	4	1		D.R. Bull

NORANDA EXPLORATION COMPANY, LIMITED

PROJECT # 120

N.T.S. 92C/9

LAB REPORT #

DATE April '89

PROJECT BEAU PRE VALENTINE (HEART 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
R55190(con't)	meta sandstone.		Grab									
R55191	0.5m wide fault gouge & fault breccia material in splay fault off east side of Williams Ck.	N.V.	Chip	2x0.5	33	5	70	0.2	8	1		D.R. Bull
R55192	Logging road WC 20 on west side of Williams Ck. 0.5m qtz vein between metasandstone & meta pelites.	N.V.	Chip	0.5	8	2	4	0.1	4	3		D.R. Bull
R55193	At above location, 0.5m wall rock on either side of qtz vein	N.V.	Chip	2 x 0.05 1	83	6	82	0.1	7	1		D.R. Bull
R55194	Tributary Ck. from west into Williams Ck. Meta Pelites with qtz veinlets 5-80mm wide.	N.V.	Chip	3	32	6	85	0.2	5	1		D.R. Bull
R49417	Same location as above, Meta Pelite wallrock.	N.V.	Chip	2x0.5 1	17	5	65	0.1	10	1		D.R. Bull
R55195	Rusty qtz veinlets 10-150mm wide in Meta Pelite. Loggging road WC 20 west of Williams Ck.	N.V.	Chip	2.5	10	4	29	0.1	4	1		D.R. Bull

NORANDA EXPLORATION COMPANY, LIMITED

PROJECT # 120

N.T.S. 92C/9

LAB REPORT #

DATE April '89

PROJECT BEAU PRE VALENTINE (HEART 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
R59262	Winch Rd. North (WC-23) Boudinage Structure Qtz in Meta Pelite.	-	Grab	0.30	35	6	60	0.1	45	2		McIntyre
R59263	Winch Rd North. (WC-23) Qtz vein in Phyllite. 1m chip along strike.	-	Chip	0.40	7	2	7	0.1	1	1		McIntyre
R59264	Winch Rd North (WC-23) Qtz vein (pinches & swells) 2cm - 30cm. <1% Marcosite.	≤1	Chip	0.30	29	2	27	0.2	2	2		McIntyre
R59265	WC-24. Qtz vein milky white qtz & crystal qtz.	-	Chip	0.09	5	2	5	0.1	3	1		McIntyre
R59266	WC 24. Multiple qtz stringers Muscovite, chlorite & minor FeOx.	-	Chip	2	19	4	41	0.2	4	2		McIntyre
R59267	Williams Cr. 2+31m Qtz vein FeOx milky white qtz.	-	Chip	0.08	3	2	1	0.1	2	2		McIntyre
R59268	Tay Creek, 445m elevation, Qtz vein FeOx, Chl, vgy, druse qtz <1% Po.	<1	Chip	0.04	27	2	57	0.1	2	2		McIntyre
R59270	Tay Creek, 460m elevation. Qtz vein, Fe Ox, minor Chl, clays 1% Po. 3m chip along strike.	1% Po	Chip	0.12	46	4	50	0.3	2	2		McIntyre Dempsey

NORANDA EXPLORATION COMPANY, LIMITED

PROJECT # 120

LAB REPORT #

N.T.S. 92C/9

DATE April '89

PROJECT BEAU PRE VALENTINE (HEART 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
R80374	Cedar Creek, 30m upstream from road crossing. Clear-white rusty quartz vein crosscutting foliation at an orientation of 153/81.	None visible	Panel	1.0x0.3	8	2	4	0.4	2	2		Frew
R80375	Cedar Creek, 55m upstream from road, 10m up west bank from creek. Sample consists of clear-white barren quartz taken from several intersections of quartz veins; orientation of veins are 153/81 and 270/84.	Nil	Grab	-	6	2	5	0.1	2	3		Frew
R59576	Same location as R80375. Sample is rusty clear-white quartz with minor limonite, vein is trending @ 270/84.	None visible	Chip	0.6	17	2	15	0.3	4	1		Frew

NORANDA EXPLORATION COMPANY, LIMITED

PROJECT # 120 N.T.S. 92C/9

LAB REPORT # ______ DATE April '89

PROJECT BEAU PRE VALENTINE (HEART 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
R59273	Achallader Rd. Wall rock - footwall - Parallel to qtz vein (R59261) Phyllitic metasand-stone.	-	Chip	0.50	51	9	125	0.1	7	1		McIntyre
R59274	Achallader Rd. Hanging wall composed of Bx metasandstone with qtz matrix.	-	Chip	0.50	47	8	92	0.1	8	1		McIntyre
R59275	Wye Lake Rd. Qtz vein <1%Py in 1m chip along strike.	<1%	Chip	0.08	12	5	32	0.1	3	1		McIntyre
R59276	Wye Lake Rd. Footwall of Phyllite (0.25m X 1.0m).	-	Chip	0.25	26	12	82	0.2	5	1		McIntyre
R59278	Wye Lake Rd. Footwall & hang-ing wall (0.5m X 0.5m).	-	Chip	0.50	23	6	77	0.1	2	2		McIntyre
R59279	Wye Lake Rd. Vuggy qtz vein in phyllite (0.10m X 1.0m).	-	Chip	0.10	22	12	43	0.1	12	9		McIntyre
R59579	Cedar Creek, 215m elevation. Sample is amphibolite with abundant quartz and epidote in veins up to 20cm wide.	Trace	Chip	5.0	102	6	158	0.1	4	5		Louden & Frew

NORANDA EXPLORATION COMPANY, LIMITED

PROJECT # 120

N.T.S. 92C/9

LAB REPORT #

DATE April '89

PROJECT BEAU PRE VALENTINE (HEART 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
R59579(con't)	Sulphides are pyrite with traces of chalcopyrite and pyrrhotite.											
R59280	Achallader Cr. Qtz vein & Chl Muscovite 1.0m X 0.10m.	-	Chip	0.10	38	9	101	0.1	16	7		McIntyre Dempsey
R59281	Achallader Cr. Qtz stringer 1.0m X 0.03.	-	Chip	0.03	4	2	10	0.1	4	2		McIntyre Dempsey
R59282	Achallader Cr. Qtz vein with minor sericite 1.0m X 0.15m.	-	Chip	0.15	13	4	28	0.3	2	9		McIntyre Dempsey

APPENDIX II

PAN & SILT GEOCHEMISTRY

SILTS

NORANDA EXPLORATION CO. LTD. PROJECT 8905-002 120 FILE # 89-0951

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
S 55182	1	34	8	74	.2	37	12	419	3.02	2	5	ND	3	23	1	2	3	76	.40	.041	6	68	1.13	182	.15	6	2.29	.02	.56	1	5
S 59271	1	43	9	94	.1	33	18	522	3.74	11	5	ND	1	18	1	2	2	86	.22	.051	7	56	1.33	212	.15	6	2.59	.01	.74	1	2
S 59272	1	27	12	63	.2	25	14	439	3.14	2	5	ND	5	11	1	2	2	77	.13	.038	7	52	.96	170	.13	5	2.51	.01	.36	1	4
S 59451	1	35	6	64	.1	28	10	310	2.95	2	5	ND	3	14	1	2	2	70	.19	.036	6	50	1.00	175	.14	7	2.25	.01	.34	1	3
S 59453	1	44	7	80	.1	35	14	465	3.54	10	5	ND	5	12	1	2	2	79	.15	.043	7	55	1.17	174	.14	7	2.46	.01	.36	1	3
S 59462	1	29	8	92	.1	25	12	457	3.71	2	5	ND	7	36	1	2	2	78	.36	.041	4	48	1.39	157	.19	10	2.43	.02	.37	1	5
S 59464	1	41	13	86	.1	38	17	596	3.00	2	5	ND	1	27	1	2	2	70	.44	.055	6	63	.97	170	.13	7	2.49	.02	.30	2	5
S 59466	1	32	9	76	.1	28	12	402	3.26	3	5	ND	3	13	1	2	2	76	.18	.036	5	52	1.15	193	.15	5	2.37	.01	.38	1	4
S 59468	1	38	9	78	.1	30	13	389	3.47	4	5	ND	4	12	1	2	3	80	.15	.038	6	55	1.19	200	.16	5	2.65	.01	.40	1	5
S 59470	1	32	11	84	.1	27	12	403	3.38	6	5	ND	3	16	1	2	3	67	.18	.040	5	44	1.14	169	.15	3	2.33	.01	.39	1	3
S 59472	1	29	6	71	.1	22	11	369	3.20	6	5	ND	6	15	1	2	2	61	.18	.042	5	39	1.07	168	.15	7	2.08	.01	.41	1	3
S 59577	1	52	17	114	.1	53	20	755	3.63	15	5	ND	5	38	1	2	2	39	.29	.059	12	32	.94	48	.05	2	2.53	.01	.09	1	4
S 59578	1	32	12	87	.1	29	13	416	3.41	4	5	ND	5	17	1	2	3	67	.18	.039	6	45	1.15	171	.15	8	2.38	.01	.38	1	1
S 80365	1	46	12	94	.1	38	15	485	3.52	7	5	ND	4	16	1	2	2	61	.10	.044	7	44	1.19	109	.12	6	3.05	.01	.32	1	3
S 80366	1	48	12	91	.1	38	14	405	3.56	7	5	ND	5	12	1	2	2	60	.08	.039	8	42	1.12	99	.12	4	2.70	.01	.30	1	2
S 80367	1	50	10	92	.1	40	15	458	3.54	5	5	ND	5	17	1	2	2	57	.11	.044	8	42	1.12	92	.11	2	2.82	.01	.28	1	2
S 80368	1	52	12	98	.3	44	15	509	3.48	9	5	ND	7	20	1	2	2	52	.16	.049	8	41	1.07	74	.09	2	2.64	.01	.24	1	3
S 80369	1	40	10	118	.1	29	18	600	4.34	26	5	ND	3	37	1	2	2	88	.42	.051	4	58	1.51	257	.16	5	2.47	.01	.45	1	3
S 80415	1	40	12	95	.1	37	14	451	3.32	5	5	ND	1	23	1	2	2	53	.24	.043	6	40	1.00	106	.09	2	2.43	.01	.22	1	3
S 80417	1	49	17	137	.1	56	18	365	3.76	15	5	ND	5	33	1	2	2	40	.33	.065	10	36	1.01	54	.04	2	2.59	.01	.11	1	5
S 80419	1	42	14	88	.1	44	15	770	3.41	16	5	ND	5	23	1	2	2	31	.21	.051	10	29	.95	31	.04	2	1.98	.01	.05	1	1
S 80421	1	50	14	107	.1	50	16	555	3.72	7	5	ND	6	20	1	2	3	57	.21	.049	8	47	1.20	92	.09	5	2.69	.01	.26	1	2
STD C/AU-S	17	61	43	132	6.7	73	30	1019	3.96	37	21	7	39	52	17	15	20	61	.51	.087	39	57	.88	178	.07	31	1.96	.06	.14	12	51

NORANDA VANCOUVER LABORATORY

PROPERTY/LOCATION:VALENTINE CODE :8905-002

Project No. :120 Sheet:1 of 1 Date rec'd:APR.28
Material :19 PANS Geol.:T.Mc. Date compl:MAY.04
Remarks :

Values in PPM, except where noted.

T.T. No.		SAMPLE No.	wt. (g)	PPB Au	Cu	Zn	Pb	Ag
1	H	59452	52.6	10	26	42	1	0.2
2		59454	49.3	10	24	62	1	0.2
3		59459	118.9	10	30	86	1	0.2
4		59460	43.3	230	26	64	1	0.2
5		59461	106.5	10	30	64	1	0.2
6		59463	49.5	10	22	56	1	0.2
7		59465	79.6	10	42	78	1	0.2
8		59467	88.1	10	38	102	1	0.2
9		59469	88.7	10	30	74	1	0.2
10		59471	85.7	10	28	82	1	0.2
11		59473	173.7	190	30	88	1	0.2
12		80413	151.9	1500	34	84	1	0.2
13		80414	33.1	5900	20	46	1	0.4
14		80416	53.1	70	30	96	1	0.2
15		80418	40.9	40	32	70	2	0.2
16		80420	40.3	10	30	78	1	0.2
17		80422	79.3	470	26	100	1	0.2
18		80424	64.6	10	32	104	1	0.2
19	H	80425	60.7	20	30	84	1	0.2

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

APPENDIX III

ANALYTICAL TECHNIQUES

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

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

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

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

Group 2 - Geochemical Analysis by Specific Extraction and Instrumental Techniques

Element	Method	Detection	Price
Barium	0.100 gram samples are fused with .6 gm $LiBO_2$ dissolved in 50 mls 5% HNO_3 and analysed by ICP. (other whole rock elements are also determined)	10 ppm	$4.00
Boron	.5 g/Na_2O_2 fustion - 50ml in 20% HCl	2 ppm	4.00
Carbon	LECO (total as C or CO_2)	.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 Na_2O_2 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 NH_4I. 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% HNO_3 - Dilute to 10 ml - graphite AA	.1 ppm	4.00
Tungsten	.50 gram samples are fused with Na_2O_2 dissolved in 20 ml H_2O, 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 $LiBO_2$ and are dissolved in 100 mls 5% HNO_3.

SiO_2, Al_2O_3, Fe_2O_3, CaO, MgO, Na_2O, K_2O, MnO, TiO_2, P_2O_5, Cr_2O_5, 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

APPENDIX IV

STATEMENT OF COSTS

STATEMENT OF COSTS

The costs being applied for the assessment covered by this report are as follows:

Work performed from April 14-26, 1989. Geological mapping & prospecting traverses on logging roads and creeks. Collection & analysis of rock, silt and pan samples. Mapping in roads post-dating airphotos.

WAGES:

Project Geologist	13 days @ $175/day.......	$ 2,275.00
Party Chief	13 days @ $145/day.......	$ 1,885.00
Field Geologist	13 days @ $135/day.......	$ 1,755.00
Fieldman	9 days @ $100/day.......	$ 900.00
Fieldman	7 days @ $100/day.......	$ 700.00
Junior Fieldman	6 days @ $ 75/day.......	$ 450.00
TOTAL WAGES:		**$ 7,965.00**

Food & Accommodation 61 mandays @ $33/day	$ 2,013.00
Transportation 2 trucks + gas 13 days/day	$ 1,612.00
Geological Analysis 141 samples @ $15/sample	$ 2,115.00
Miscellaneous Expenses & Field Supplies	$ 145.00

REPORT WRITING:	Author.........................	$ 525.00
	Drafting.......................	$ 250.00
	Typing.........................	$ 100.00
		$ 875.00
	TOTAL:	**$14,725.00**

APPENDIX V

STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

****

I, Dennis R. Bull of the Municipality of Surrey, Province of British Columbia, do hereby certify that:

1. I am a Geologist residing at 12918 - 64th. Avenue, Surrey, B.C.

2. I graduated from the University of Alberta in 1986 with a BSc (Honours) degree in Geology.

3. I have worked in Mineral Exploration since 1974 and have practised my profession as a Geologist since May, 1987.

4. I am presently a Geologist with Noranda Exploration Company, Limited.

Dennis R. Bull


Phyllite
Plymouth Creek
Cedar Creek
Williams Creek
No Name Creek
Tay Creek
Achallader Creek
Achnnachran
LEGEND
TRIASSIC TO CRETACEOUS LEECH RIVER
3 METAPELITE : Meta Madstone ; Phyllites ; Meta Siltstones ; Biotite Schist ; Biotite Garnet Schist.
2 METASANDSTONE : Quartzo - Feldspathic Meta Sandstone ; Meta Greywacke.
1 AMPHIBOLITE : Amphibole Bearing ; Chloritic ; Intermediate Volcanic Flows & Tuffs ; Phyllitic Amphibolite.
SYMBOLS
75° 085° Bedding (Strike & Dip)
68° 095° Foliation (Strike & Dip)
48° 090° Quartz Vein (Strike & Dip)
Fault (Approximate)
80° 085° Fault (Defined ; Strike & Dip)
Geological Contact ; Defined , Assumed .
50° 085° Joints (Strike & Dip)
GEOLOGICAL BRANCH
ASSESSMENT REPORT
18,955
Metres 150 0 150 300 450 Metres
REVISED
BEAUPRE - VALENTINE
HEART GROUP
GEOLOGY
PROJ.No. 0120
N.T.S. 92B/12
DWG.No. 4
SURVEY BY: D.R.BULL
DRAWN BY: P.J.ARTHUR
DATE: May/89
SCALE: 1:5000
NORANDA EXPLORATION
OFFICE: Vancouver

GEOLOGICAL BRANCH
ASSESSMENT REPORT

18,955

REVISED	VALENTINE - HEART GROUP
	REGIONAL GEOCHEMISTRY SAMPLE LOCATIONS / RESULTS
PROJ.No. 120 N.T.S. 92B/12	SURVEY BY: D.R.BULL DATE: JULY 1989 DRAWN BY: P.J.ARTHUR SCALE: 1:5000
DWG.No. 5a	NORANDA EXPLORATION OFFICE: Vancouver


124° 02' 00"
124° 00' 00"
426500 E
5381500 N
48° 35' 00"
48° 33' 00"
5376000 N
423000 E
Phyllite
Plymouth Creek
Cedar Creek
Creek
Williams Creek
No Name Creek
Tay Creek
Achtrachtan Creek
Achallader Creek
200
400
600
800
GEOLOGICAL BRANCH
ASSESSMENT REPORT
18,955
Metres 150 0 150 300 450 Metres
SILT ROCK TALUS FINE +OTHER
SOIL PAN CONC WATER
NMBR/CU/ZN/PB
ALL VALUES IN PPM
NA - NOT ANALYSED
IS - INSUFFICIENT SAMPLE
REVISED
VALENTINE - HEART GROUP
REGIONAL GEOCHEMISTRY
SAMPLE LOCATIONS / RESULTS
PROJ.No. 0120
N.T.S. 92B/12
DWG.No. 5b
SURVEY BY: D.R.BULL
DRAWN BY: P.J.ARTHUR
DATE: JULY /89
SCALE: 1:5000
NORANDA EXPLORATION
OFFICE: Vancouver