

LOG NO: 0626	RD.
ACTION:	
FILE NO:	

Assessment Report for Diamond Drilling
on the
Dusty Mac Property

NTS 82E/5

Latitude: 49° 20'
Longitude: 119° 32'

Osoyoos Mining Division

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VANCOUVER, B.C.

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

20,078

Minnova Inc.
Vancouver, B.C.

Graeme Evans
May 23, 1990

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1.0 Introduction

1.1 Location, Access and Terrain

The Dusty Mac property is located in the Okanagan Valley approximately 250 km east of Vancouver. The property is situated 19 km south of Penticton at the southern end of Skaha Lake and 1.5 km east of Okanagan Falls. The co-ordinates of the property are longitude $119^{\circ} 32'$ and latitude $49^{\circ} 20'$.

The open pit and waste dumps are situated behind a large bluff locally referred to as Peach Cliff.

The village of Okanagan Falls is situated on Highway 97, approximately 5 km south of the Highway 3A - 91 junction.

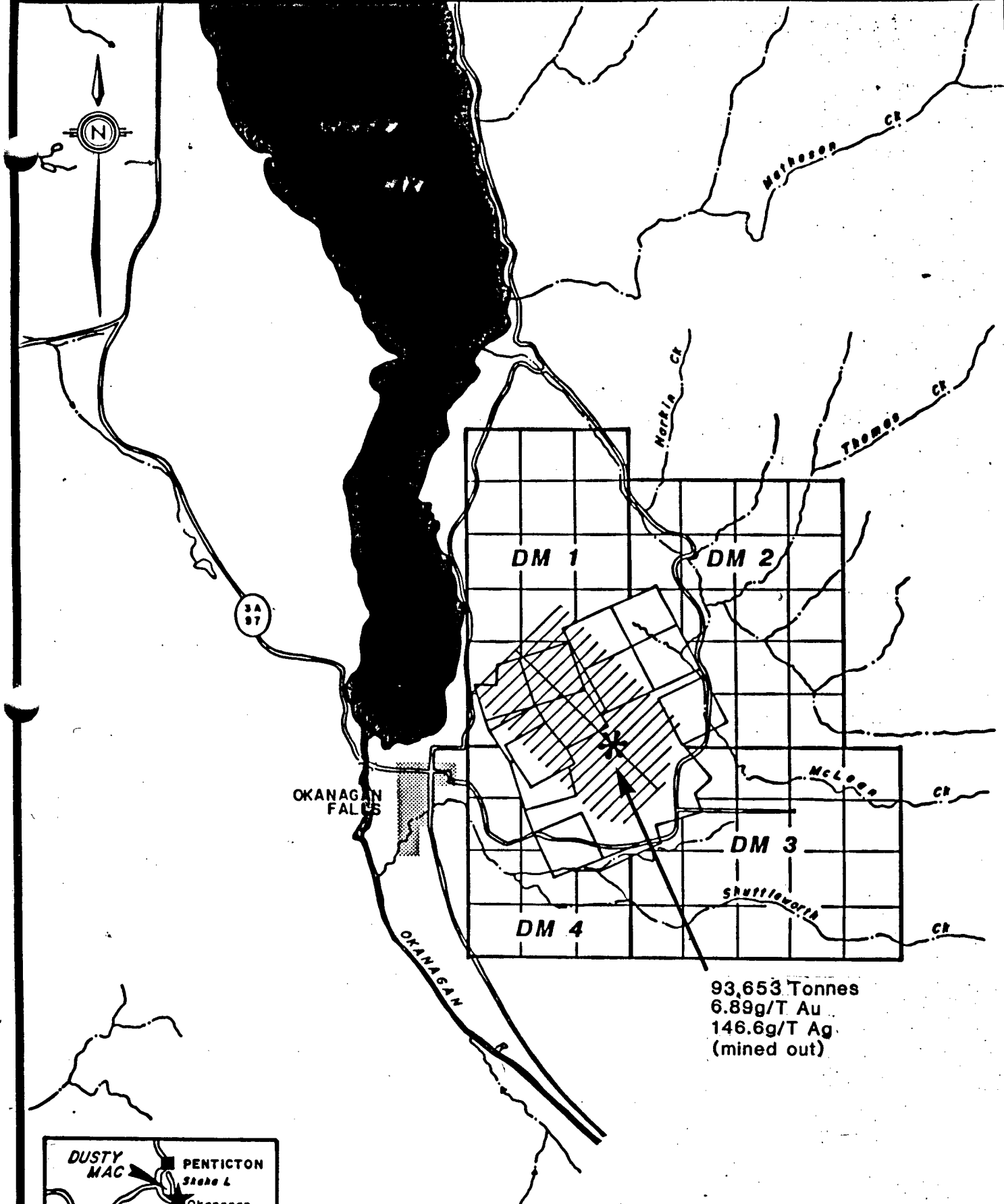
A paved two lane road, parallels Shuttleworth Creek east of Okanagan Falls, circles Peach Cliff to a point within 500 meters of the open pit.

Penticton is a modern community and a principal supplier for the area where all services are available including air and road.

The property lies in the Okanagan valley and has rolling hills with relief ranging from 350 to 800 meters on the eastern side of the property. The property has an arid environment with sparse forest cover of pine, with sagebrush and creosote brushland common. The only present use is cattle grazing on a seasonal basis.

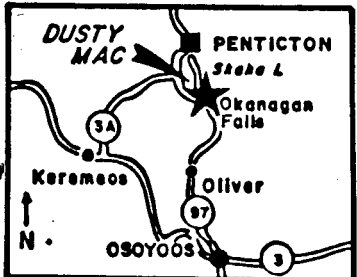
1.2 Property and Ownership

Late in 1987, the Dusty Mac property was optioned by Minnova Inc. from Dusty Mac Mines Ltd. Ownership of the property was transferred to Minnova Inc. from Dusty Mac Mines Ltd. as part of the option agreement.



OKANAGAN
FALCS

93,653 Tonnes
6.89g/T Au
146.6g/T Ag
(mined out)



**DUSTY MAC OPTION
GRID LOCATION
82E/5**



MINNOVA

FIG. 1

1.3 Claim Status

<u>CLAIM NAME</u>	<u>RECORD #</u>	<u>EXPIRY DATE</u>
Au 2 Fr.	24347	97/01/17
Au 5 Fr.	24349	97/01/17
Au 6 Fr.	24350	97/01/17
Au 7 Fr.	24351	97/01/17
Au 9 Fr.	24353	97/01/17
Au 10 Fr.	24354	97/01/17
Au 11 Fr.	24355	97/01/17
At Last	19501	*97/04/13
JG 1	21688	97/01/25
JG 2	21689	97/01/25
JG 3	21690	97/01/25
JG 4	21691	97/01/25
JG 8	21695	97/01/25
JG 10	21697	97/01/25
JG 11	21698	97/01/25
JG 12	21699	97/01/25
JG 13	22403	*95/06/28
JG 14	22425	*95/07/03
Prod. Lease	Lot 4079-S	89/04/09

The Production Lease P-3 (Lot 4079-S) consists of the following claims:

Au 1 Fr.	24346
Au 3 Fr.	24348
J Gus 1	22468
J Gus 3	22532
JG 5	21692
JG 7	21694
JG 9	21696
JOE 1	22689
HUNT 7 Fr.	24289
HUNT 22 Fr.	24305
CLAIRE 1 Fr.	30580

<u>CLAIM NAME</u>	<u>UNITS</u>	<u>RECORD #</u>	<u>EXPIRY DATE</u>
DM-1	18	2013	*93/05/04
DM-2	20	2014	*93/05/04
DM-3	20	2015	*93/05/04
DM-4	12	2016	*93/05/04

*Expiry Date will be revised with the acceptance of this report

1.4 History and Past Production

The exploration history of the Dusty Mac property dates back to the turn of the century as witnessed by four short adits and several open cuts at the western end of the property overlooking Okanagan Falls. The adits were driven on quartz veins which are sparsely mineralized with chalcopyrite and pyrite.

Interest in the area was revived in 1966 when native silver was discovered in quartz veins on the property. The first recent claims were staked the same year and in 1968 Dusty Mac Mines Ltd. acquired the property.

An exploration program was conducted by Cannon Engineering Ltd., and later by Cannon-Hicks Associates Ltd. in the late 1968 and 1969 under the direction of Dusty Mac Mines. The work included surface trenching, geological mapping, diamond and percussion drilling, and a limited underground program. The program outlined 61,485 tonnes grading 7.88 g/tonne Au and 170.4 g/tonne Ag.

In 1970, the property was optioned to Noranda Exploration Ltd. which carried out a diamond drilling program. The program failed to add significant tonnage to the known reserves.

In 1973, Dusty Mac Mines carried out an extensive percussion drilling program of 1635.5 m

Ore reserves based on 3319 m of diamond drilling in 76 holes and 4642 m in 221 percussion holes were estimated in October, 1974 to be 120,280 tonnes grading 7.06 g/tonne Au and 123.4 g/tonne Ag, plus 21,521 tonnes indicated grading 4.59 g/tonne Au and 57.59 g/tonne Ag.

In April, 1975 an agreement was reached for custom milling the ore at the Dankoe mill. Production started August 1, 1975 and ceased in June, 1976. The orebody was mined by open pit at 318 tonnes per day. The total ore milled was 93,653 tonnes grading 6.89 g/tonne Au and 146.59 g/tonne Ag. Total production was 581,551 g Au, 10,180.367 g Ag, 2,880 kg Cu and 1,527 kg Pb.

Milling was completed June 9, 1976 and reclamation of the mine area was finished on September 21, 1976.

Further property exploration was carried out in 1976 by Amadeus Consultants Ltd. The program consisted of geochemical soil sampling and percussion drilling over favourable structures. A total of 153 percussion holes were drilled for an aggregate of 5981m.

Canex Placer Ltd. conducted 1.5 line miles of IP in June, 1976 under a data sharing arrangement with Dusty Mac. The results were not encouraging.

Scintrex Pty Ltd. conducted a Rapid Reconnaissance Magnetic Induced Polarization survey (RRMIP) in October, 1981. Results were inconclusive.

The Dusty Mac property remained idle until 1984 when Esso Minerals conducted a surface sampling and mapping program in the vicinity of the open pit and to the northwest, encompassing previously known mineralized areas. In 1985, Esso drilled 18 reverse circulation drill holes and three diamond drill holes for a total of 1518.3 m.

In 1987, Minnova Inc. optioned the property from Dusty Mac Mines Ltd.

1.4 Work Done in 1989 (drilling)

In 1989 from May 18 to June 27, 13 diamond drill holes were completed, for a total of 3244 meters. The drill holes were logged and select sections of drill core were split and sent to Min-En Labs of North Vancouver. Thirty-four samples were assayed for Cu, Pb, Zn, Ag, Au, 457 samples were analyzed geochemically for Cu, Pb, Zn, Ag, Au and 127 samples were analyzed for their lithochemistry.

2.0 Geology

2.1 Regional Geology

The Dusty Mac property lies on the eastern margin of an Eocene sequence of rocks known as the White Lake Basin. The White Lake Basin consists of volcanic and sedimentary units up to 2500m thick, which are fault bounded and underlain by Mesozoic and older rocks. The White Lake Basin forms a topographic low and is truncated by early gravity faults. The units generally dip to the east and are folded and faulted in a style very similar to structures on the Dusty Mac property.

The sequence within the White Lake Basin consists of a basal unit called the Springbrook Formation, a polymictic conglomerate, which is overlain by the Marron Formation, dominantly andesite, trachyte and phonolitic lava flows. At a later date rhyodacite domes formed the discontinuous belts known as the Marama Formation. This sequence is overlain and interbedded with a more quiescent period of andesite lahars and lacustrine sediments known as the White Lake Formation, forming in topographic low areas. The final unit is the Skaha Formation which is an erosional unit consisting of landslides and fanglomerate beds.

2.2 Dusty Mac Property Geology

The Dusty Mac property consists of a Tertiary (Eocene) sequence of volcanic and sedimentary rocks forming a broad syncline to the east of Okanagan Falls. This sequence of Tertiary rocks adjoins the main White Lake Basin and is bounded on the west by the Okanagan Fault. The Tertiary rocks are bounded to the east by the McLean Creek fault and to the south by the Shuttleworth Creek Fault.

The Marama Formation is a very distinctive unit exposed along the west side of the property. It is a buff colored dacite to rhyolite unit, commonly with good flow banding. The western bluffs are believed to be a series of sub-aerial domes forming along a rift (possibly the Okanagan fault). These domes have peripheral flows extending off to the east for several hundred meters. Previous workers (Church, Melnyck) believe the White Lake Formation, unconformably overlies the Marama Formation, but information to date suggests that the dacite domes were active during deposition of the Lower White Lake units. Flows of Marama dacites exist between lahar units with primary mixing with andesite visible.

Typically the dacites have a fine grained felsic (buff-red-green) matrix with 10-20% 1-2 mm plagioclase phenocrysts. Occasionally 1-3 mm quartz phenocrysts are seen. Another common feature is pervasive hematite alteration between Marama dacites and lahars of the White Lake Formation. This is probably a primary alteration feature of the flows in a sub-aerial environment.

The White Lake Formation consists of lower andesite lahars and flows interfingered with sediments and overlain by a more dominant sediment package. Esso divided the package into an upper and lower lahar as well as White Lake sediments. The lower lahar consists of angular to subrounded assorted fragments of andesite. Fragments vary markedly in composition with debris consisting of 1 to 80cm angular blocks of andesite which can be massive, plagioclase phyric and pyroxene phyric. The matrix is an assortment of fine grained andesite with a mixture of siltstone and sandstone. The only distinction between the upper and lower lahar is the presence of Marama dacite fragments. This is a valid subdivision which indicates proximity to the Marama but rather than a time stratigraphic divider it is more of a volcanic facies change.

Within the lower lahar volcanically derived sediments (conglomerate, sandstone and siltstone with minor coal beds) exist in small discontinuous beds. There are also occasional andesite flows likely of small lateral extent and these are either plagioclase or pyroxene phyrlic (pyroxene dominant).

The upper lahar is a transitional unit which is compositionally identical to the lower lahar except dacite fragments are absent. The unit was formed in a lower energy environment and accordingly has more andesite flows and thicker sediment beds. Thick (50+ m) plagioclase phyrlic andesite flows are common near the base of the upper lahar while coarse sandstone beds with graphitic shales and rare coal seams become more abundant at the top.

The White Lake sediments both overlie and show a lateral facies change with the upper lahar. They consist of reworked unsorted volcanic rock in large aprons of tuff-breccia with conglomerate, sandstone, siltstone and shale beds. The tuff-breccia unit is a thick, unsorted sequence of angular polymictic fragments of vesiculated volcanics and various rounded sedimentary pebbles and cobbles (chert and sandstone). Exotic fragments include zeolites, dacite, and shale fossil prints. This unit is matrix supported with volcanically derived sandstone and a graphitic component. The thickest sediment packages can be found in this unit.

These are dominantly sandstone with lesser siltstone and shale beds, the beds being up to 50+ m in thickness. The arkosic sandstones and shales commonly have carbonaceous plant fossils and exhibit cross bedding, slump features and other lacustrine depositional features. Occasional lahar units are found in the sediments but are probably limited to paleotopographic channels.

Structure

The Eocene rocks on the property are bounded by gravity? faults along Shuttleworth Creek and McLean Creek. Paleozoic gneisses form prominent hills around the Eocene rocks which are on the downdropped sides of the faults. Rocks in the southern and western portions of the property strike $140-170^\circ$ and dip $25-50^\circ$ to the northeast while rocks in the northeastern portion strike 090° and dip $20-40^\circ$ to the south. This forms a broad syncline which has a near vertical axial plane trending 135° and which plunges to the southeast.

The bedding generally dips to the east but this may be largely due to structural accommodation of folding by fault rotation. Drill hole and surface information has identified reverse faults parallel to the axial plane ($135^\circ + 20^\circ / 90^\circ + 10^\circ$) with the western side of the fault downdropped. Displacement maybe as much as 150 m and these structures provide good hydrothermal conduits and possible structural traps to enhance episodic boiling. Simultaneously with this reverse faulting is fold accommodation by flex-slip along bedding planes. This is clearly seen in the pit area and on many contacts in the drill holes but displacement is unknown. These structures pre-date mineralizing solutions and provide good conduits.

These faults are commonly splayed and sinuoidal and may control ore deposition. The pit area may be an example as the main fracture pattern is $010^\circ + 10^\circ / 90^\circ + 10^\circ$ and curves to $135^\circ / 80^\circ$ E only 100m to the north of the pit. This arcuate trend may have controlled the ore as is common in other epithermal systems.

Main Okanagan faults are a later event and (Church) postulates they are produced by a stress regime in a 010° direction. Resulting cleavage directions from the conjugate set would ideally be 040° and 130° with near vertical dips and right lateral motion along the Okanagan fault systems trending approximately 130° . This motion can be seen on the property

particularly in the pit area, with fault motion displaying right lateral movement. The motion on the 040° trending faults as seen on line 7+00N have a left lateral motion. These faults may be re-activated older structures and this strike slip motion has an effect on mineralized structures, which must predate this stress regime.

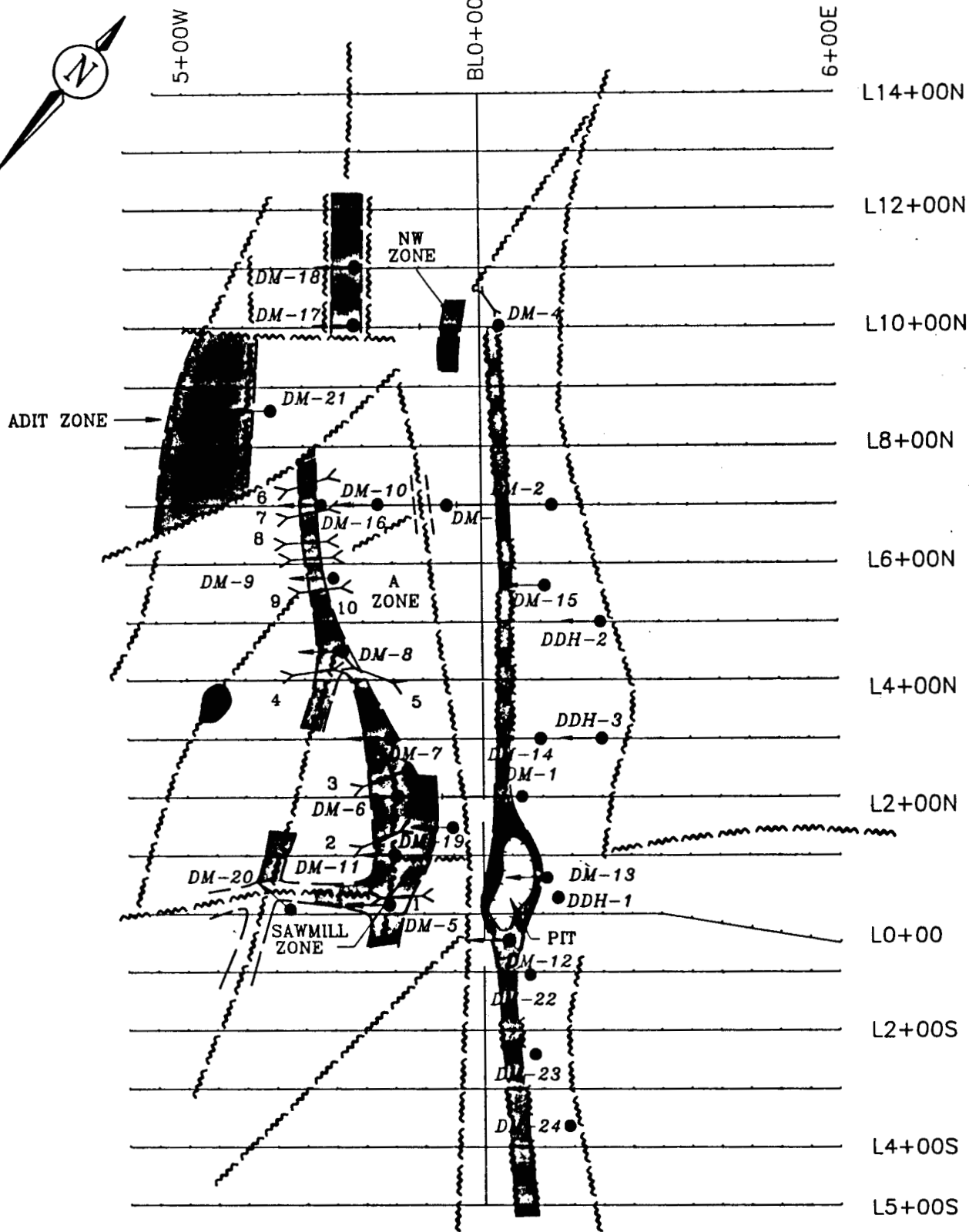
3.0 1989 Diamond Drilling







During the year thirteen diamond drill holes were completed (DM 12-24) for a total of 3244 meters. Significant intersections are summarized at the end of this section. Five main areas of interest were drilled namely the A Zone, Adit Zone, Chalcedony Zone, Sawmill Zone as well as the main Pit structure. These are briefly summarized below. These zones are mineralized and highly altered fault zones. Alteration consists of a distal propylitic facies (chlorite, epidote) and more intense central alteration assemblages consisting of combinations of sericitic, argillic and potassic alteration. These inner envelopes are generally well foliated and have 2-15% disseminated pyrite present. Various forms of multi-episodic silicification is present in these fault zones. Silicification varies from discrete laminated chalcedony veins to quartz breccia bodies and pervasive wallrock silicification. Commonly silicification has the following minerals present pyrite, chalcopyrite, galena, sphalerite, tetrahedrite and fluorite.

In 1989 split core samples of these alteration zones were collected and sent to Min-En Labs in North Vancouver. Thirty-four samples were assayed for Cu, Pb, Zn, Ag, Au while another 457 samples were analyzed by an ICP process for Cu, Pb, Zn, Ag and atomic absorption for Au. As well another 127 samples were analyzed for a lithochemical package to study the alteration assemblage. This package includes ICP analysis for Al_2O_3 , BaT, CaO, Fe_2O_3 , K_2O , MgO, Na_2O , P_2O_5 , SiO_2 , TiO_2 , Ag, As, Ba, Cu, Pb, Sb, Zn and Atomic Absorption for Au.

A Zone

DM-16 was drilled below the A Zone showing to test the zone at depth. No economic mineralization was intersected in the drill hole.



-  Mineralization
-  Alteration Zone
-  Fault
-  1988 Trench location
-  DM (MINNOVA 1988,1989)
-  DDH (ESSO 1986)

DUSTY MAC PROPERTY
STRUCTURE & MINERALIZATION
WITH DRILL HOLE LOCATIONS

Adit Zone

The large quartz breccia zone and low angle quartz veins were tested with DM-21. Quartz breccias and alteration within fault zones were intersected with anomalous silver and base metal values but only low gold values. Visually and chemically these zones are identical to ore zones in the Dusty Mac pit but are lacking the gold values. This perhaps is a barren zone within the epithermal system.

Chalcedony Zone

A large area in the northwest portion of the grid has laminated and brecciated chalcedonic quartz veins averaging a consistent 1.15 g/t Au and 6.3 g/t Ag on surface. In 1989 two holes (DM 17, 18) tested below this zone. Near vertical fault zones with clay-chlorite alteration and minor silicification were intersected below the surface showings. Visually these zones were

not unusual, yet values as high as 7.73 g/t Au and 7.4 g/t Ag over 1.5 meters were obtained in these alteration zones and further drilling is required. It also emphasizes that the precious metal values are erratic and not always in silicified zones but can be found in several types of alteration.

Sawmill Zone

In 1989, two holes (DM-19, 20) tested structures in the Sawmill Zone at depth. One of the main targets in the 1989 program was to test the porous lower Marama units at depth. This horizon hosts much of the mineralization on the Vault property. The 1989 drilling discovered that the Marama dacites lie unconformably on basement gneisses with no lower Marama or Marron volcanics present. Fault controlled alteration was encountered at depth in both holes but carried no significant mineralization. The upper portion of the Sawmill Zone was intersected in the upper zone of DM-19 with anomalous gold and silver values.

Main Pit Fault

This large northwest trending mineralized fault structure was tested in 1989 with several drill holes (DM-12 - 15, 22-24). Wide zones of alteration were consistently intersected over a strike length of 1.1 km and to a depth of at least 250 m below the surface. Argillic and sericitic envelopes regularly surround silicified cores with multi-episodic quartz breccias and quartz stockwork. This fault zone ranges in true width from 20 meters to in excess of 100 meters with pervasive alteration and 2-15% disseminated sulphides. DM-15 and DM-20 encountered felsic mica (phlogopite?) bearing dykes in the cores of fault zones which appear to be related to surrounding silicification. These may be related to the heat source for the epithermal system at Dusty Mac. This is only speculation at this point but these dykes are very

similar in appearance to Scatter Creek rhyodacitic dykes which occur near the deposits in the Republic district of Washington. This structure is open along strike and at depth with anomalous gold and silver values throughout. Nineteen eighty-nine mapping of the pit area and the A Zone indicate that the quartz breccia bodies are structurally controlled at fault intersections and these should be focused on during future work. This includes the pit itself where DM-12 intersected 20 meters of mineralized quartz breccia, near the surface that was not previously recognized due to the fact it is a near vertical zone and previous drilling was vertical.

Table 1

DUSTY MAC 1989 DRILL INTERSECTIONS

Hole	From	To	Interval	Au(g/t)	Ag(g/t)	Host
DM-12	9.0	13.5	4.50	0.20	2.30	Qtz Bx
	13.5	18.8	5.30	1.84	22.30	Qtz Bx
	18.8	22.1	3.30	0.51	15.90	Qtz Bx
	23.6	25.1	1.50	0.65	25.60	Qtz Bx
	27.8	29.0	1.20	3.73	90.30	Qtz Bx
	108.8	111.8	3.00	0.45	2.00	And
DM-13	25.4	28.4	3.00	0.42	10.20	Clay Alt'n
	42.2	52.7	10.50	0.07	3.70	Talc & Clay Alt'n
	212.4	216.2	3.80	0.24	1.20	Silicification
	226.7	228.2	1.50	1.20	2.60	Qtz Bx
DM-14	135.1	136.7	1.60	0.50	0.90	Silicification
DM-15	39.7	42.7	3.00	0.19	2.20	Clay Alt'n
	111.5	113.0	1.50	0.75	1.30	Silicification
	122.7	127.2	4.50	0.38	5.60	Qtz veinlets
	188.6	193.1	4.50	0.28	2.60	Qtz veinlets
	197.6	199.1	1.50	0.40	8.40	Qtz veinlets
	215.7	217.2	1.50	0.77	1.40	Qtz veinlets
DM-17	15.9	18.9	3.00	0.27	1.40	Clay Alt'n
	18.9	20.4	1.50	7.73	7.40	Clay & Chl. Alt'n
	28.5	30.5	3.00	0.27	2.20	Qtz vein
	35.0	36.4	1.40	3.18	2.10	Silicification
	41.9	44.1	2.20	0.20	0.70	Clay Alt'n
	67.1	69.2	2.10	0.23	2.50	Clay Alt'n
DM-18	28.0	32.0	4.00	0.33	2.80	Clay Alt'n
	36.6	38.2	1.60	0.11	2.60	Clay Alt'n

DUSTY MAC 1989 DRILL INTERSECTIONS(cont)

Hole	From	To	Interval	Au(g/t)	Ag(g/t)	Host
DM-19	26.4	28.3	1.90	0.22	0.80	Clay Alt'n
	30.1	31.6	1.50	1.63	2.70	Qtz-Carb Vein
	53.7	58.6	4.90	0.59	1.80	Clay-Chl Alt'n
	66.8	68.4	1.60	0.26	1.20	Clay alt'n
	414.2	415.7	1.50	0.22	0.80	Carbonate Vein
DM-21	43.7	49.5	5.80	0.03	5.10	Qtz Bx
	78.7	80.2	1.50	0.16	0.60	Clay-Chl Alt'n
	98.5	100.0	1.50	0.19	1.10	Clay Alt'n
DM-22	23.0	24.6	1.60	1.41	14.50	QV Frag
	39.6	42.5	2.90	0.21	1.70	QV Frag
	135.7	137.2	1.50	0.25	1.70	Clay-Chl Alt'n
	138.7	140.2	1.50	0.24	0.90	Clay-Chl Alt'n
DM-23	27.4	28.9	1.50	0.13	2.70	QV frag mineralized
	34.1	34.8	0.70	0.25	0.30	Qtz Bx
	70.7	80.7	11.50	0.18	4.70	Qtz Bx
	93.2	94.7	1.50	0.11	1.20	Qtz Bx
	97.9	99.4	1.50	0.11	1.00	Qtz Bx

4.0 Summary and Conclusions

1. Large epithermal mineralized zones exist in northwest trending fault structures. This mineralization is hosted in Eocene rocks of the Marama and White Lake formations.
2. Generally mineralization is found in the various forms of silicification but can be hosted in peripheral alteration as well as in this sericite-adularia type epithermal system.
3. A major roughly flat-lying unconformity exists with underlying basement gneisses approximately 400 meters below the present day surface.
4. Mineralization is present in all areas tested and the potential for both low grade - high tonnage and high grade "Bonanza" lodes is very promising on the Dusty Mac property.

5.0 Recommendations

I recommend further drilling be carried out on the main structures defined in the 1989 drill program. A particular emphasis should be placed on locating fault intersections with the major structures as well as bedding plane - fault junctions. The most promising structure at this time is the large northwest trending "pit" structure. Also drilling should test the west-east trending structures.

6.0 Itemized Cost Statement

May 15 - July 5, 1989

1. Personnel

Geologist	G. Evans	31 days @ \$300/day	\$9300.00
Geologist	R. Holder	20 days @ \$250/day	5000.00
Assistant	K. Lee	16 days @ \$150/day	2400.00
Assistant	B. Watts	15 days @ \$150/day	2250.00

		subtotal	\$18,950.00

2. Drilling

Frontier Drilling Ltd., Langley, B.C.

Coring (3244 m @ \$52.29/m)	\$169,628.76
Casing and material left in hole	2780.00
Supplies and services	320.00

subtotal	\$172,728.76

3. Analytical Costs

457 geochem. samples @ \$15/sample (drill core)	\$6855.00
127 litho samples @ \$30/sample	3810.00
34 assay samples @ \$25/sample	850.00

subtotal	\$11,515.00

4. Transportation and Accommodation

Truck 51 days @ \$50/day	\$2550.00
Fuel and supplies	300.00
Room and Board 82 man days @ \$35/day	2870.00

subtotal	\$5720.00

5. Report

3 days G. Evans @ \$300/day	\$900.00
Drafting 1 day @ \$150/day	150.00
Typing and materials	100.00

subtotal	\$1150.00


	=====
TOTAL	\$209,963.76

7.0 Certificate of Qualifications

I, Graeme W. Evans certify that:

1. I am an exploration Geologist residing at 6291 Arlington St., Vancouver, B.C.
2. I have a BSc. (Geol) from the University of British Columbia (1983).
3. I have practised my profession since 1983.
4. I personally carried out or supervised the work reported herein.

Date: June 04 / 1990


Graeme W. Evans

Appendix I

Diamond Drill Logs

HOLE NUMBER: DM-12

MINNOVA INC.
DRILL HOLE RECORD

IMPERIAL UNITS: METRIC UNITS: X

PROJECT NAME: DUSTY MAC
PROJECT NUMBER: 627
CLAIM NUMBER: 24348
LOCATION:

PLOTTING COORDS GRID:
NORTH: 42.00S
EAST: 38.00E
ELEV: 468.00

ALTERNATE COORDS GRID:
NORTH: 0+42S
EAST: 0+38E
ELEV: 468.00

COLLAR DIP: -45° 0' 0"
LENGTH OF THE HOLE: 151.50m
START DEPTH: 0.00m
FINAL DEPTH: 151.50m

COLLAR GRID AZIMUTH: 270° 0' 0"

COLLAR ASTRONOMIC AZIMUTH: 225° 0' 0"

DATE STARTED: May 18, 1989
DATE COMPLETED: May 20, 1989
DATE LOGGED: May 21, 1989

COLLAR SURVEY: NO
MULTISHOT SURVEY: NO
ROD LOG: NO

PULSE EM SURVEY: NO
PLUGGED: YES
HOLE SIZE: NO

CONTRACTOR: Frontier
CASING: 15' LIH
CORE STORAGE: Okanagan Falls

PURPOSE: To test the S extension of the DM pit and fault structures.

DIRECTIONAL DATA:

Depth (m)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments	Depth (m)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments
66.10	-	-45° 0'	ACID	OK		
91.40	-	-44° 0'	ACID	OK		
127.10	-	-44° 0'	ACID	OK		
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HOLE NUMBER: DM-12

DRILL HOLE RECORD

LOGGED BY: Graeme Evans

PAGE: 1

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 4.60	«casing»					
4.60 TO 29.00	«Qtz Bx» in Fp And Flow	<p>Colour: medium green matrix with white and black quartz vein fragments Grain Size: Andesite -fine grained, quartz vein fragments - aphanitic {4.6 - 9.0} Fgr Chloritic And. Matrix w/ occas. 1-2 mm FP xtal brecciated in a fault zone. Approx «30% QV Frags» + veinlets.</p> <p>{9.0 - 15.8} «50+% QV Frags» Complex bx w/ silic'd And. Ang. 0.5 - 2.0 cm Frags QV often laminated w/ gry + wht bands. All x-cut by qtz veinlets.</p> <p>{15.8 - 20.6} «80% qtz Frags» in a silic'd matrix - matrix is generally mod to dk gry w/ sulphides - qtz frags ang 0.5 - 3.0 cm some laminated wht and gry - some vuggy late stage qtz veinlets</p> <p>{20.6 - 29.0} - strongly silic'd FP Flow w/ «40 - 50% QV Frags» subrounded wht + gry - 2 stages of late stage laminated qtz veinlets can be seen x-cutting matrix and each other at rt angles and @ 45 deg to CA - matrix heavily milled in fault zone @45deg to CA - contact is a blk matrix strong qtz bx zone @45 deg to CA (20 cm)</p> <p>Faults and Breccias @ 4.6 - 9.0m Brx Zone and Veinlets @ 9.0 - 15.8m (avg) Quartz Breccia Fault @ 15.8 - 20.6m</p>	<p>45 45 45</p>	<p>4.6 - 9.0 m. Ang 0.5 - 2.0 cm wht QV frags. - bleaching around frags. - late stage qtz veinlets - some milky wht + gry frags - some soft lt grn talc patches</p> <p>9.0 - 15.8 m. - matrix of bx either lt grn or blk w/ sulphides - some FP's and matrix alt'd to a lt apple grn - some talc alt'n to matrix - tr fluorite (grn, in veinlets)</p> <p>15.8 - 20.6 m - fp and. frags pottasic alt'd? (pink) - green talc? alt'n mod pervasive in matrix - pervasive bleaching & silicification</p> <p>20.6 - 29.0 - pervasive strong silic'n - bands of lt grn talc alteration</p>	<p>{4.6 - 9.0} «tr - 0.5% dissem py»</p> <p>{9.0 - 15.8} Avg«4-5% py» - dissem 1-2% py fgr in matrix - 0.5% in QV's laminated fgr 1-2% py @ selvages on late stage qtz veinlets - minor hematite on veinlets - tr lt sp? dissem</p> <p>{15.8 - 20.6} - avg «5% py» vfgr blk pyrite in matrix and occas rimming QV frags - some fgr blk tet? 0.5 - 1.0%</p> <p>{20.6 - 29.0} - avg «10% py» vfgr py dissem in matrix - tr dissem lt sp - tr small fgr cpy clots rimmed w/ tet in QV frags and laminated QV's - fine native Ag? @ 28.0 m - @ 28.0 m 0.5 - 1.0% cpy</p>	<p>good recovery (98-99%)</p> <p>15.8 - 20.6 - qtz bx clearly controlled by fault zones @ 45 deg to CA - bx zones concentrated and frag size decreases in the strongest faults & increase in intensity</p>

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
29.00 TO 67.30	«Fp And. Flow»	Colour: light green to light grey Grain Size: Fine grained - fgr matrix of Andesite - large, well developed plag. xtals 2-4 mm - commonly exhibits internal fl-bx with subrounded frags 1-4 cm - some px xtals 1-2 mm, 1-2% 65.2 - 67.3 - Basal Fl-Bx w/ arg & silt in matrix w/subrounded 1-5 cm And Frags of various types		- pervasive-wk-mod bleaching - plag alt'd to a lt green - 1-2% Qtz-carb veinlets @45 deg to CA	- avg 2-3% fgr dissem py in the matrix 65.2 - 67.3 - avg 5% py fgr dissem in the matrix	
67.30 TO 70.00	«Argillite» & «Sandstone»	Colour: Dark black to medium grey Grain Size: Fine to medium grained Finely laminated argillite and siltstone Bedding @ 67.3 - 70.0m	70	2% 1-3mm carb veinlets in tension frct	tr dissem py	
70.00 TO 75.10	«Andesite» «Lahar»	Colour: dark green, black Grain Size: fine grained - matrix both andesite and sediments (arg, silt) mixed together - ang. 0.5 - 4.0 cm fragments of various andesite units (Px rich, FP rich and fgr And) Quartz veinlets @ 70.0 - 75.1m	45	- 1-2% Qtz veinlets @45 deg to CA - occas QV frag (lamin) 1-2 cm ang.	tr dissem py in matrix	
75.10 TO 80.10	«Sandstone» «conglomerate»	Colour: Dark grey Grain Size: medium grained - a chaotic sandstone unit w/ a mgr matrix w/ some arg and andesite - subrounded 1 cm frags of fgr And. - some mod graphitic fract. Bedding @ 75.1 - 80.1m	70	1-2% 1-3 mm carbonate veinlets	tr dissem py	
80.10 TO 131.40	«Andesite» lapilli «tuff»	Colour: Medium Green Grain Size: Fine Grained - fgr Andesite matrix w/subrounded frags 0.5-1.0cm - frags generally fgr FP or Px rich but some pale (Marama Dacite) frags as well - fabric well developed in matrix and frag alignment @ 45 deg to CA - some felsic looking frags amygdaloidal and		- in general, 1-2% carb veinlets 1-3 mm in tension fract 95.1 - 101.3 - Healed Fault Zone - clay matrix - unit bleached, 4% Qtz veinlets	{95.1 - 101.3} - Zone avgs «7-8% py» v fgr dissem py	{95.1 - 101.3} «Healed Fault Zone» - fabric 30-60 deg to CA - clay alt'd matrix

HOLE NUMBER: DM-12

MINNOVA INC.
DRILL HOLE RECORD

DATE: 22-March-1990

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		abundance increases down the hole		97.8 - 98.1 - milky QV w/ wallrock frags w/grn talc patches & leucoxene? xtals {130.1 - 131.4} - rock becomes bleached - «20% qtz veinlets» and ang qtz vein frags (lt gry)	{130.1 - 131.4} - «avg 3-4% py» dissem in the matrix	{131.4 - 131.6} - «fault gouge» w/ clay
131.40 TO 140.00	«Sandstone» & «Conglomerate»	Colour: Medium grey to black Grain Size: Medium Grained Mixture of sst, congl, and graphitic argillite - congl up to 4 cm rounded And frags - sst well bedded - Arg w/ occas 2 cm coal seam Bedding @ 131.4 - 140.0m (avg)	85	1% 1-2 mm carb veinlets	tr - 1% dissem py	
140.00 TO 151.50	«And.Lahar» E.O.M.	Colour: Medium Green Grain Size: Fine Grained - fgr And matrix w/ sub ang FP & Px frags 1-4 cm - some felsic (Marama?) frags		1-2% qtz veinlets 1-5 mm & some hem alt'd frags		

HOLE NUMBER: DM-12

DRILL HOLE RECORD

LOGGED BY: Graeme Evans

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HOLE NUMBER: DM-12

ASSAY SHEET

DATE: 22-March-1990

Sample	From (m)	To (m)	Length (m)	ASSAYS					GEOCHEMICAL					COMMENTS
				Cu %	Pb %	Zn %	Ag g/t	Au g/t	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb	
BCD19401	4.60	6.10	1.50						117	48	69	9.6	100	
BCD19402	6.10	7.60	1.50						27	34	102	1.5	13	
BCD19403	7.60	9.00	1.40						22	25	68	2.4	89	
BCD19404	9.00	10.50	1.50	0.002	0.01	0.01	1.9	0.23						
BCD19405	10.50	12.00	1.50	0.002	0.01	0.01	1.8	0.18						
BCD19406	12.00	13.50	1.50	0.001	0.01	0.01	3.3	0.19						
BCD19407	13.50	14.90	1.40	0.002	0.01	0.01	20.4	1.28						
BCD19408	14.90	15.80	0.90	0.001	0.02	0.01	59.7	3.01						
BCD19409	15.80	17.30	1.50	0.001	0.01	0.01	18.2	1.70						
BCD19410	17.30	18.80	1.50	0.001	0.01	0.01	5.9	1.80						
BCD19411	18.80	20.60	1.80	0.001	0.01	0.01	22.3	0.59						
BCD19412	20.60	22.10	1.50	0.002	0.01	0.01	8.2	0.38						
BCD19413	22.10	23.60	1.50	0.001	0.01	0.01	2.0	0.02						
BCD19414	23.60	25.10	1.50	0.016	0.01	0.02	25.6	0.65						
BCD19415	25.10	26.60	1.50	0.004	0.01	0.01	2.7	0.02						
BCD19416	26.60	27.80	1.20	0.005	0.01	0.01	2.4	0.01						
BCD19417	27.80	29.00	1.20	0.008	0.01	0.02	90.3	3.73						
BCD19423	95.10	96.60	1.50						21	36	61	1.6	34	
BCD19424	96.60	98.10	1.50						12	22	46	1.3	117	
BCD19426	99.60	101.30	1.70						23	33	77	1.3	15	
BCD19429	130.10	131.40	1.30						13	27	52	1	20	

HOLE NUMBER: DM-12

ASSAY SHEET

HOLE NUMBER: DM-12

GEOCHEM. SHEET

DATE: 22-March-1990

Sample	From (m)	To (m)	Length (m)	AL2O3 %	BAT %	CAO %	FE2O3 %	K2O %	MGO %	MNO %	NA2O %	P2O5 %	SiO2 %	TiO2 %	S %	TOTAL %	Ag ppm	As ppm	Ba ppm	Cu ppm	Pb ppm	Sb ppm	Zn ppm	Au ppb
BCD19409	15.80	17.30	1.50	8.79	0.096	0.01	2.78	5.17	0.38	0.02	0.06	0.01	79.43	0.38	0.58	97.69	16	58	18	17	24	1	11	1190
BCD19414	23.60	25.10	1.50	12.7	0.132	0.23	3.87	7.01	0.87	0.04	0.04	0.1	69.96	0.54	1.76	97.25	39.4	10	21	200	73	1	130	760
BCD19418	35.00	38.00	3.00	17.34	0.173	0.97	3.54	9.12	0.68	0.09	2.54	0.06	62.6	0.54	0.12	97.78	0.5	7	29	11	36	1	44	10
BCD19419	45.00	48.00	3.00	18.65	0.239	1.76	3.75	7.27	1	0.09	4.09	0.2	58.44	0.67	0.15	96.31	1.1	9	39	18	41	1	44	15
BCD19420	57.00	60.00	3.00	18.48	0.254	3.61	5.58	4.97	2.64	0.18	4.5	0.41	53.69	0.77	0.82	95.9	1.1	8	381	22	51	3	78	5
BCD19421	84.40	87.40	3.00	15.37	0.133	3.44	6.81	5.21	3.53	0.12	0.15	0.42	58.54	0.9	0.04	94.66	1.2	20	229	20	49	4	77	5
BCD19425	98.10	99.60	1.50	11.94	0.102	1.55	3.77	6.72	1.28	0.04	0.08	0.07	71	0.5	1.82	98.88	2	164	28	10	29	2	44	10
BCD19427	108.80	111.80	3.00	12.8	0.075	3.92	4.89	4.75	2.85	0.08	0.05	0.23	64.46	0.62	0.29	95.01	1.8	12	30	14	41	3	60	445
BCD19428	121.00	124.00	3.00	13.89	0.15	4.82	4.94	5.79	2.41	0.1	0.4	0.22	61.36	0.63	0.66	95.36	1.6	17	42	19	44	4	64	50
BCD19430	145.40	148.40	3.00	15.49	0.115	1.56	6.04	5.21	2.45	0.09	0.24	0.34	62.92	0.88	0.48	95.82	1	22	55	26	52	3	67	5

HOLE NUMBER: DM-12

GEOCHEM. SHEET

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HOLE NUMBER: DM-13

MINNOVA INC.
DRILL HOLE RECORD

IMPERIAL UNITS: METRIC UNITS: X

PROJECT NAME: DUSTY MAC
PROJECT NUMBER: 627
CLAIM NUMBER: 21696
LOCATION:

PLOTTING COORDS GRID:
NORTH: 50.00N
EAST: 105.00E
ELEV: 472.00

ALTERNATE COORDS GRID:
NORTH: 0+50N
EAST: 1+ 5E
ELEV: 472.00

COLLAR DIP: -75° 0' 0"
LENGTH OF THE HOLE: 413.60m
START DEPTH: 0.00m
FINAL DEPTH: 413.60m

COLLAR GRID AZIMUTH: 270° 0' 0"

COLLAR ASTRONOMIC AZIMUTH: 225° 0' 0"

DATE STARTED: May 20, 1989
DATE COMPLETED: May 26, 1989
DATE LOGGED: May 26, 1989

COLLAR SURVEY: NO
MULTISHOT SURVEY: NO
RQD LOG: NO

PULSE EM SURVEY: NO
PLUGGED: NO
HOLE SIZE: NO

CONTRACTOR: Frontier
CASING: 10" LIH
CORE STORAGE: Okanagan Falls

PURPOSE: To test under the DM pit for the lower Haramis horizon.

DIRECTIONAL DATA:

Depth (m)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments	Depth (m)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments
91.70	.	-78° 0'	ACID	OK		.	.	.	.	.
182.00	.	-76° 0'	ACID	OK		.	.	.	.	.
227.70	.	-77° 0'	ACID	OK		.	.	.	.	.
265.80	.	-77° 0'	ACID	OK		
285.60	.	-78° 0'	ACID	OK		
337.40	.	-80° 0'	ACID	OK		
380.10	.	-79° 0'	ACID	OK		
410.60	.	-79° 0'	ACID	OK		
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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 3.00	«casing»					
3.00 TO 30.00	«Andesite» «Lahar»	Colour: medium green Grain Size: fine grained - andesite lahar w/ fgr matrix - frags sub-ang dominant FP frags w/ some fgr and px rich frags Bedding @ 18.0m	60	Generally 1% qtz veinlets {25.4 - 30.0} «mod bleaching & wk clay alt'ns» around a fault zone @ 25.5 - 30.0 m	tr dissem py	
30.00 TO 36.20	«siltstone» & «argillite»	Colour: Dark grey to black Grain Size: medium to fine grained - finely laminated siltstone - argillite quite graphitic Bedding @ 30.2m	60	1% carb veinlets		{35.7 - 36.2} «Fault» along bedding plane?
36.20 TO 59.30	«Altered fault zone» DM Horizon	Colour: Medium Green Grain Size: Fine Grained - host appears to be a Fp And Flow in a strong fault bx - generally a strong fabric in matrix @45deg to CA - Ang Frags 0.5 - 5.0 cm; 80% alt'd FP And; 5% Arg ; 5% felsic or Silic'd Frags; 5% qtz frags. Fault @ 36.2 - 59.3m	45	- intense «talc alt'ns» to matrix w/some clay and graphitic fault zones - pervasive «bleaching & some silic'ns» of frags - rare hematite frags	- generally tr dissem py - occas 10-20 cm patch w/5% very fine dissem py	
59.30 TO 66.70	«FP And. Flow»	Colour: Medium Green Grain Size: Fine Grained - Fine grained Andesite matrix - Coarse grained plag crystals 1-3mm		1-2% carb veinlets		
66.70 TO 95.40	Bleached «Altered Fp Flow in Fault Zone»	Colour: light green Grain Size: fine grained - host is Fp And. Flow - 50% clay fault gouge @45 deg to CA - 88.7 - 89.9 m; slickensides w/ arg ground into matrix of the fault - arg. frags silic'd in a clay matrix		- rock pervasively «bleached w/ minor silic.» - commonly the «fault gouge is talc alt'd» - occas late qtz veinlets @ 50 deg to CA. 0.5%	- «avg 1% fgr py» dissem	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		Fault @ 66.7 - 95.4m	45			
95.40 TO 149.90	«Fp And Flow»	Colour: Medium Green - fgr chloritic And Matrix w/ 1-3 mm FP - occas Tuffaceous bands 114.0 - 149.9 - the matrix becomes a darker grey Bedding @ 114.0m	45	{95.4 - 114.0} «1% qtz veinlets» 114.0 - 149.9 - turns to 2% epidote veinlets; 1% calcite veinlets; overprint 1% leucoxene xtals	tr py dissem	
149.90 TO 181.80	«Andesite Lahar»	Colour: Medium Green Grain Size: Fine Grained various ang And frags; ang 0.5 - 4.0 cm dia. - 30% fgr And, 30% FP rich, 30% px rich, 10% chert or felsic frags in matrix - matrix has black arg 159.0 - 180.0 Bed of Arg & Siltstone Bedding @ 159.5m	50	- 1-2% qtz veinlets - some frags alt'd to a lt green - minor leucoxene xtals	- tr dissem py - occas py rich fragment	
181.80 TO 185.00	«Argillite» & «Sandstone»	Colour: Black to Light Green Grain Size: Fine to coarse grained Finely laminated graphitic arg w/ est and congl w/ Andesite and felsic rounded pebbles 3-5 mm in dia. @ 182.0m	70	1% qtz-carb veinlets along tension frac.		
185.00 TO 206.40	«Andesite Lahar» «Lapilli Tuff»	Colour: Dark Green Grain Size: Fine to Medium Grained - strong sediment component in matrix w/both argillite and siltstone w/ occas bedding - frags sub-ang 0.5-3.0 cm mainly fgr And frags w/ occas px and FP rich frags - occas Arg.lamination Bedding @ 193.0m 205.7m	45 50	{186.5 - 191.2} - «1% qtz veinlets» in tension gashes - has 2-3% white subang Qv Frags {191.2 - 206.2} - «avg 1% qtz veinlets» along fract	{186.5 - 191.2} - avg «0.5% py» dissem in matrix - 0.5% py frags {203.3 - 206.4} - «avg 5% py» vfgr in the matrix	{186.5 - 191.2} «fault zone w/clay gouge» @45 deg to CA some gouge @25 deg.

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
206.40 TO 216.20	«Altered Andesite Lahar»	Colour: Light Green Grain Size: Fine Grained - Andesite Lahar bleached and pervasive silic'n to a pale grn colour - 5% ang laminated wht QV frags 0.5 - 3.0 cm		- minor talc alt'n in the matrix - several 5-20cm mottled gry carb veins - occas leucoxene xtal	«avg 1% dissem py» and occas py frag	
216.20 TO 230.20	«Fault Zone w/ alter'n»	Colour: Medium Green Grain Size: Fine Grained - strongly developed fabric in fgr clay gouge - has 20% milky blue QV frags and 20% And frags (ang 0.5 - 5.0 cm) Fault Fabric @ 216.2 - 230.2m varies from to	30 45	- matrix «chlorite and talc alt'n» - feldspars sometimes alt'd to apple grn color - 1% white quartz veinlet overprint	- generally «5% fgr dissem py» in the matrix - occas 1-2 cm fgr py fragments	
230.20 TO 260.80	«Andesite Lahar»	Colour: Dark Green Grain Size: Fine to Medium Green Matrix has a strong sediment component and is quite dark. - frags subrounded 0.3mm - 4cm; 50% fgr And; 20% FP rich; 20% px rich; 5-10% silic or QV frags? - hematite content increasing - 259.0 - 260.8; wedge of Marama Dacite (evidence of fault uplift) Bedding @ 247.4m	45	1-2% carb; veinlets in fract. (late)	generally tr dissem py	
260.80 TO 270.40	«Fault Zone w/ Alt'n»	Colour: Medium Green Grain Size: Fine Grained - fault shows uplift on upper side w/ wedges of Marama - clay gouge quite pronounced - 15% subrounded 3mm - 1cm bluish milky QV frags Fault @ 260.8 - 270.4m varies from to	15 20	- «weak, pervasive bleaching» - 1% carb veinlet overprint in fract	average «5% dissem py» in matrix	only 80% core recovery
270.40 TO 281.30	«Andesite Lahar (Lower)»	Colour: Medium Green Grain Size: Fine Grained - same Lahar as above the fault, but 20-30% of the fragments are Marama Dacite. - matrix has a strong sediment component - frags subrounded 0.5 - 6.0 cm		- 2% qtz-carb veinlets in fract - some FP's alt'd a pink color-potassic - weakly bleached	- tr dissem py in matrix	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
281.30 TO 294.00	«Marama Dacite»	<p>Colour: Light Brown to Red Grain Size: Fine Grained</p> <ul style="list-style-type: none"> - gradational contact w/ gradual increase of Marama in matrix, and fragmentals <p>281.3 - 286.6</p> <ul style="list-style-type: none"> - flow top bx w/ matrix strongly hem alt'd w/ brn fgr occas flow banded 3mm - 4cm ang Dacite frag <p>286.6 - 294.0</p> <ul style="list-style-type: none"> - more massive Marama fl-bx w/ partially absorbed fragments 1-2 cm 		<p>{281.3 - 286.6}</p> <ul style="list-style-type: none"> - «2% qtz vnlts» in fract - strong hem alt'n - occas frag is alt'd an apple green talc or grn mica <p>{286.6 - 294.0}</p> <ul style="list-style-type: none"> - lt brn w/ minor «lt grn talc alt'n» - «1% qtz veinlets» 	tr dissem py	
294.00 TO 299.80	«Marama Ash & Sediment»	<p>Colour: Medium Green Grain Size: Fine to Medium Grained</p> <ul style="list-style-type: none"> - a fgr chloritic matrix w/ marama ash and subrounded Marama frags (0.5 cm) occas arg frags - 299.2 - 299.8; argillite bed w/ rounded Marama and FP rich And frags - 299.8: fault contact <p>Bedding @ 299.4m</p>	45	avg 2% qtz-carb veinlets along fract	tr dissem py	
299.80 TO 390.70	«Marama Dacite Flow and Flow Breccia»	<p>Colour: Light Brown to Medium Green Grain Size: Fine Grained</p> <p>{299.8 - 308.2}</p> <ul style="list-style-type: none"> - «Marama Fl Top Bx» ang lt brn fl banded frags (2mm - 6cm) in a red hematite matrix - occas QV frag +/- lamin in fl-bx appear primary <p>{308.2 - 315.5}</p> <ul style="list-style-type: none"> - «flow banded» lt brn Marama Dacite - bleached brown w/ minor hematite <p>{315.5 - 348.0}</p> <ul style="list-style-type: none"> - «gr massive» fgr 1mm FP and mafic phenos - faint Fl band - occas bleached patch near faults @ 45 deg to CA 0.3 - 1.0 m <p>{348.0 - 358.5}</p> <ul style="list-style-type: none"> - «autobreccia?» w/ matrix very hematite rich, dark - frags 0.5 - 3.0 subrounded 		<p>{299.8 - 308.2}</p> <ul style="list-style-type: none"> - «5% qtz» and creamy «veinlets» along tension fract <p>308.2 - 315.5 avg 3% qtz veinlets</p> <p>3% qtz-carb veinlets</p>	<ul style="list-style-type: none"> - tr py rimming frags - minor hematite on fract 	<p>{358.5 - 360.0}</p> <ul style="list-style-type: none"> - «fault zone» w/ clay gouge 25-30 deg to CA - weak bleaching

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		{360.0 - 368.5} «massive marama» {368.5 - 372.3} «Fl-Bx?» - mgr w/ rounded Marama 3mm-4cm in a chl matrix {372.3 - 378.5} - «massive FP flow», weakly bleached {378.5 - 380.3} - «Tuffaceous unit» w/ pale 1-4 cm FP rich Marama frags in a fgr gry matrix {380.3 - 385.7} - «massive FP flow» w/ increasing alt'n to the contact. {389.6 - 390.7} - «gneiss contact unconformity» Flow Bending @ 308.2 - 315.5m Fabric @ 378.5 - 380.3m Contact @ 389.6 - 390.7m	35 60 70	{360.0 - 368.5} - lt pink color while FP's - «pottassic alt'n» {368.5 - 372.3} - soft yellow «talc? veinlets» @ 60-70 deg to CA - minor carb veinlets {378.5 - 380.3} - matrix «quite silic'd w/ 10% talc» or seric veinlets - minor hematite on frags - occas grn mica {380.3 - 385.7} - FP flow becoming progressively more «silic'd and pottassic alt'd» {385.7 - 389.6} - FP's disappeared. Pink pottassic alt'n but more siliceous - «5% qtz veinlets» - «1% chl veinlets» 389.6 - 390.0 - fgr gry laminated tuff or mylonite @ 90 deg to CA {390.0 - 390.7} - «strong hem & silic bx contact»	{378.5 - 380.3} - «avg 5+ X py» very fgr, in matrix	
390.70 TO 413.60	«Gneiss» E.O.H.	Colour: Medium Grey Grain Size: Medium Grained Generally mgr bands of alternating chlorite and feldspar qtz-bands. Gneissosity @ 45 deg to CA		{390.7 - 395.8} - «rock is strongly silic» w/minor hematite and some pale yellow veinlets (5%) as above - also some pottassic alt'n - QV's semitransparent lt blue-orange 395.8 - 413.6 - 5-8X 10-30 cm pink semitransparent QV's @ 30-45 deg to CA	tr py in QV's	

HOLE NUMBER: DM-13

ASSAY SHEET

DATE: 22-March-1990

Sample	From (m)	To (m)	Length (m)	ASSAYS					GEOCHEMICAL					COMMENTS
				Cu %	Pb %	Zn %	Ag g/t	Au g/t	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb	
8CD19453	26.90	28.40	1.50						48	29	73	19.3	690	
8CD19454	36.20	37.70	1.50						14	26	52	2.2	16	
8CD19456	39.20	40.70	1.50						6	21	16	1.4	8	
8CD19457	40.70	42.20	1.50						8	25	24	3	21	
8CD19458	42.20	43.70	1.50						8	35	12	4.8	46	
8CD19460	45.20	46.70	1.50						6	44	14	3.2	16	
8CD19461	46.70	48.20	1.50						13	31	34	3.6	92	
8CD19462	48.20	49.70	1.50						14	30	35	2.8	128	
8CD19463	49.70	51.20	1.50						10	37	18	4.2	55	
8CD19464	51.20	52.70	1.50						12	46	16	4.2	98	
8CD19465	52.70	54.20	1.50						7	41	14	2.1	33	
8CD19467	55.70	57.20	1.50						10	34	38	1	3	
8CD19468	57.20	59.30	2.10						10	26	30	1	2	
8CD19469	66.70	68.20	1.50						10	32	48	1.4	9	
8CD19470	68.20	69.70	1.50						8	20	29	1.3	10	
8CD19472	71.20	72.70	1.50						11	39	102	0.6	4	
8CD19473	72.70	74.20	1.50						8	26	100	0.7	1	
8CD19474	74.20	75.70	1.50						7	42	60	0.6	2	
8CD19475	75.70	77.20	1.50						9	38	98	0.5	2	
8CD19476	77.20	78.70	1.50						11	33	74	0.6	3	
8CD19477	78.70	80.20	1.50						8	25	44	0.6	7	
8CD19479	81.70	83.20	1.50						9	21	40	1.4	3	
8CD19480	83.20	84.70	1.50						8	26	41	1.5	2	
8CD19481	84.70	86.20	1.50						10	26	63	0.8	2	
8CD19483	87.70	89.20	1.50						8	29	70	1.1	1	
8CD19484	89.20	90.70	1.50						7	19	33	1	2	
8CD19485	90.70	92.70	2.00						8	17	25	1.6	4	
8CD19489	186.50	188.00	1.50						34	37	88	1.4	2	
8CD19490	188.00	189.50	1.50						28	23	84	1	1	
8CD19491	189.50	191.20	1.70						22	26	90	0.8	5	
8CD19492	203.30	204.80	1.50						28	25	65	1	2	
8CD19493	204.80	206.40	1.60						20	23	62	1	2	
8CD19494	206.40	207.90	1.50						18	24	56	1	37	
8CD19496	209.40	210.90	1.50						17	23	50	1.2	8	
8CD19497	210.90	212.40	1.50						12	21	46	1	32	
8CD19498	212.40	213.90	1.50						16	25	46	1.3	240	
8CD19499	213.90	216.20	2.30						20	17	48	1.2	253	
8CD19500	216.20	217.70	1.50						22	25	55	1.6	37	

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ASSAY SHEET

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DATE: 22-March-1990

Sample	From (m)	To (m)	Length (m)	Cu %	Pb %	Zn %	Ag g/t	Au g/t	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb
BCD19502	219.20	220.70	1.50						30	22	68	1.3	37
BCD19503	220.70	222.20	1.50						26	25	66	1.6	3
BCD19504	222.20	223.70	1.50						28	30	76	1.2	2
BCD19505	223.70	225.20	1.50						30	25	94	1	2
BCD19507	226.70	228.20	1.50				1.22		32	26	62	2.6	1200
BCD19508	228.20	229.70	1.50						45	24	80	1.2	38
BCD19510	260.80	262.30	1.50						23	26	71	1	16
BCD19511	262.30	263.80	1.50						24	27	70	1	10
BCD19512	263.80	265.30	1.50						20	26	62	1	10
BCD19513	265.30	266.80	1.50						24	33	52	1.4	9
BCD19514	266.80	268.30	1.50						16	29	67	0.8	3
BCD19515	268.30	270.40	2.10						25	25	66	0.8	2
BCD19521	357.00	358.50	1.50						36	12	39	0.4	1
BCD19525	378.50	380.30	1.80						29	31	82	0.8	1
BCD19553	389.60	390.70	1.10						29	15	66	0.8	2
BCD19554	390.70	392.20	1.50						20	15	70	0.6	1
BCD19555	392.20	393.70	1.50						59	10	69	0.6	1
BCD19556	393.70	395.80	2.10						15	8	36	0.3	2

HOLE NUMBER: DM-13

ASSAY SHEET

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HOLE NUMBER: DM-13

GEOCHEM. SHEET

DATE: 22-March-1990

Sample	From (m)	To (m)	Length (m)	AL2O3 %	BAT %	CAO %	FE2O3 %	K2O %	MGO %	MNO %	NA2O %	P2O5 %	SiO2 %	TiO2 %	S %	TOTAL %	Ag ppm	As ppm	Ba ppm	Cu ppm	Pb ppm	Sb ppm	Zn ppm	Au ppb
BCD19451	11.30	14.30	3.00	16.82	0.199	3.45	4.45	5.45	1.89	0.1	3.43	0.27	57.87	0.7	0.54	95.16	2.2	6	120	21	54	6	94	10
BCD19452	25.40	26.90	1.50	15.55	0.173	5.03	4.45	4.99	1.75	0.1	2.77	0.25	56.44	0.7	0.59	92.8	1.1	7	78	19	27	3	62	155
BCD19455	37.70	39.20	1.50	18.46	0.109	0.85	3.65	6.12	1.34	0.03	0.64	0.18	62.54	0.72	0.72	95.37	1.8	13	35	16	18	2	38	25
BCD19459	43.70	45.20	1.50	18.76	0.105	1.45	4.92	5.74	1.2	0.03	0.49	0.18	61.05	0.54	0.46	94.93	2.8	4	39	6	57	2	20	70
BCD19466	54.20	55.70	1.50	22.21	0.087	0.63	3.39	7.1	1.1	0.02	0.55	0.14	58.73	0.6	0.5	95.07	2.2	8	39	5	26	1	15	5
BCD19471	69.70	71.20	1.50	16.79	0.165	1.22	4.03	7.1	0.88	0.07	2.8	0.13	61.89	0.57	0.23	95.86	0.8	9	29	9	19	2	73	5
BCD19478	80.20	81.70	1.50	16.1	0.149	1.35	4.08	8.92	0.79	0.12	1.32	0.06	62.03	0.5	0.43	95.86	0.5	11	34	13	34	2	80	10
BCD19482	86.20	87.70	1.50	16.95	0.148	1.1	3.7	7.2	0.77	0.1	3.09	0.11	61.82	0.53	0.46	95.96	0.3	1	23	8	28	1	86	5
BCD19486	99.70	102.70	3.00	17.97	0.18	2.75	3.95	8.05	1.36	0.12	2.45	0.15	58.76	0.56	0.14	96.45	1	10	87	10	39	4	108	5
BCD19487	133.20	136.20	3.00	15.25	0.192	5.07	3.31	5.01	0.95	0.06	2.33	0.09	62.47	0.52	1.33	96.58	1.6	6	72	14	30	5	39	10
BCD19488	160.60	163.60	3.00	14.76	0.148	2.82	4.72	5.69	2.19	0.09	1.93	0.19	61.58	0.69	0.14	94.94	1	10	99	17	29	5	65	5
BCD19495	207.90	209.40	1.50	11.58	0.049	4.18	4.11	2.83	3.56	0.1	0.58	0.2	65.65	0.58	0.07	93.49	0.9	18	31	13	31	6	59	5
BCD19501	217.70	219.20	1.50	11.5	0.074	6.35	4.26	3.95	3.05	0.09	0.07	0.22	61.72	0.57	1.3	93.16	1.6	31	41	25	34	7	58	5
BCD19506	225.20	226.70	1.50	16.7	0.147	4.2	6.85	4.57	3.86	0.18	0.45	0.39	54.93	0.99	0.46	93.73	0.8	23	58	25	41	9	91	10
BCD19509	236.80	239.80	3.00	15.5	0.12	1.52	5.77	4.77	2.26	0.09	1.33	0.16	63.02	0.77	0.04	95.36	1.7	12	49	24	29	4	72	80
BCD19516	283.70	285.20	1.50	14.37	0.143	4.59	5.22	3.19	2.6	0.09	2.92	0.2	54.64	0.66	0.05	88.66	0.4	12	218	20	25	4	61	5
BCD19517	288.70	290.20	1.50	14.59	0.055	3.28	2.64	2.29	0.82	0.04	4.88	0.01	64.74	0.35	0.06	93.73	0.1	4	29	21	4	1	42	5
BCD19518	301.00	302.50	1.50	15.63	0.094	3.37	2.85	3.06	0.51	0.03	4.68	0.01	64.22	0.37	0.03	94.85	0.5	2	131	34	1	1	41	10
BCD19519	320.50	322.00	1.50	15.56	0.098	3.28	2.93	3.21	0.79	0.05	4.36	0.01	65.69	0.38	0.02	96.39	0.3	1	85	40	3	1	51	5
BCD19520	355.50	357.00	1.50	15.51	0.105	2.59	2.9	3.15	0.68	0.05	4.81	0.01	65.4	0.37	0.02	95.59	0.3	1	176	37	2	2	43	5
BCD19522	358.50	360.00	1.50	15.78	0.109	1.74	2.97	3.52	1.16	0.05	3.66	0.01	65.62	0.38	0.03	95.02	0.5	1	330	46	7	1	37	10
BCD19523	360.00	361.50	1.50	13.46	0.094	2.63	2.22	2.71	0.79	0.05	3.78	0.01	68.34	0.25	0.02	94.35	0.1	2	219	24	8	1	42	5
BCD19524	368.50	370.00	1.50	15.91	0.11	4.54	5.97	3.76	3.88	0.11	0.33	0.28	55.32	0.78	0.04	91.04	0.4	16	138	24	41	6	69	5
BCD19551	385.70	387.70	2.00	14.32	0.082	2.78	2.38	3.23	0.75	0.05	3.53	0.01	67.65	0.29	0.02	95.09	0.1	1	114	17	4	1	36	5
BCD19552	387.70	389.60	1.90	14.58	0.073	3.19	2.5	3.06	0.85	0.05	3.7	0.01	66.01	0.29	0.03	94.33	0.8	4	150	17	5	1	41	5

HOLE NUMBER: DM-13

GEOCHEM. SHEET

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MINNOVA INC.
DRILL HOLE RECORD

HOLE NUMBER: DM-14

IMPERIAL UNITS:

METRIC UNITS: X

PROJECT NAME: DUSTY MAC
PROJECT NUMBER: 627
CLAIM NUMBER: 21690
LOCATION:

PLOTTING COORDS GRID:
NORTH: 300.00N
EAST: 100.00E
ELEV: 458.00

ALTERNATE COORDS GRID:
NORTH: 3+ 0N
EAST: 1+ 0E
ELEV: 458.00

COLLAR DIP: -45° 0' 0"
LENGTH OF THE HOLE: 200.25m
START DEPTH: 0.00m
FINAL DEPTH: 200.25m

COLLAR GRID AZIMUTH: 270° 0' 0"

COLLAR ASTRONOMIC AZIMUTH: 225° 0' 0"

DATE STARTED: May 26, 1989
DATE COMPLETED: May 28, 1989
DATE LOGGED: May 27, 1989

COLLAR SURVEY: NO
MULTISHOT SURVEY: NO
ROD LOG: NO

PULSE EM SURVEY: NO
PLUGGED: YES
HOLE SIZE: NO

CONTRACTOR: Frontier
CASING: LIH
CORE STORAGE: OK FALLS

PURPOSE: To test the Northern fault extension

DIRECTIONAL DATA:

Depth (M)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments	Depth (M)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments
72.24	-	-45° 0'	ACID	OK		
106.68	-	-44° 0'	ACID	OK		
152.40	-	-46° 0'	ACID	OK		
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HOLE NUMBER: DM-14

MINNOVA INC.
DRILL HOLE RECORD

DATE: 22-March-1990

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 9.14	«Casings»					
9.14 TO 15.53	«Andesite» «Lahar»	Colour: Grey to Green Grain Size: 3 - 50mm Clasts 80%, Matrix 20% Clast Composition: approx. 60% Andesite feldspar Porphyry, 5% Quartz Fragments, 5% Argillite(?), 1% Carbonate Fragments Matrix is grey, <2mm grain size Fracture @ 15.30m	20	«Chl Alt»	«1% diss Py, tr cpy» -13.15m, 1cm clast with 10% cpy -15.26m, 1.5cm clast with 10% py	
15.53 TO 30.50	«Sediments» Interbedded Sandstone and Argillite	Colour: Grey to Dark Grey Sandstone: medium grained, locally with 5% 1 to 3 cm clasts 18.2 - 18.3m: Dark, fine grained, muddy matrix with subangular clasts (5 - 25mm) 21.9m - 24.1m: Lahar (fragments subangular) 28.2 - 30.5m: Beds 2-10mm Width Clay filled fracture @ 15.5m Carbonate Veinlet @ 15.8m Bedding @ 18.6m Fault @ 20.2m Bedding @ 28.7m	23 20 70 65 50	«1% Carb stringrs» (fracture filling) Average 15 degrees to C.A. 21.9 - 24.1m Chlorite alt.	«Trace Pyrite»	20.0 - 20.4m Fault: Dark grey, clay altered {26.4 - 28.2} «Fault: Graphitic/ argillic
30.50 TO 83.50	«Andesite» «Lahar»	Colour: Green/Grey Grain Size: 3mm to 40mm Clasts 85 to 90%, Matrix 10 to 15% Clast Composition: 60 to 70% Andesite feldspar Porphyry Flow, 5% Carbonate Fragments, 2% Mud Clasts/Argillite, 2% Quartz Fragments, 2% Pyroxene Flow(?) -{42.1 - 43.2} «Sandstone» with 5%, 2 to 3cm, subangular clasts -{45.1 - 47.0} «Interbedded sst & sltst»		43.4 - 44.1m Clay Alteration		43.4 - 44.1m Fault

HOLE NUMBER: DM-14

DRILL HOLE RECORD

LOGGED BY: Royanna Holder

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
145.80 TO 200.25	«Andesite» «Lahar»	<p>Colour: dark grey Clasts 80 to 85%, Matrix 15 to 20% Clast Composition: 50% Andesite Feldspar Porphyry Flow, 2% Quartz Fragments, 2% Carbonate Fragments, up to 10% pyroxene flow (?)</p> <p>158.3m 5 cm hematitic clast that looks flow banded 158.9 - 160.3m hematitic breccia (15% hematite) 160.3 - 162.6m green to red patches; brecciated</p> <p>162.6 - 165.6m pale grey to green, massive, with dark green blebs (pyroxene ?)</p> <p>183.5 - 183.8m Hematitic matrix (10 to 15% matrix) 190.2 - 192.6m Conglomerate Colour: grey Clasts 90%, Matrix 10% Clasts vary in size from 0.5 to 2cm, are subrounded to subangular and moderately sorted</p>		<p>«Weak chl alt, 1% carb strings»</p> <p>{153.6 - 155.0}«Silicification ?»</p> <p>162.6 - 165.6m Bleached</p> <p>{171.1 - 173.5}«Clay Alteration» {176.0 - 177.5}«Clay Alteration» «Weakly Graphitic»</p> <p>196.4 - 196.9m Clay Alteration</p>	<p>«1% Pyrite»</p> <p>158.9 - 160.3m 1% pyrite 160.0 - 160.2m 5 to 10% pyrite as 1 to 2cm pods</p> <p>{185.0 - 185.5}«3% pyrite» diss.</p>	<p>{153.6 - 155.0}«Fault» white to grey brecciated; subangular to subrounded fragments</p> <p>{171.1 - 173.5}«Fault» {176.0 - 177.5}«Fault»</p> <p>196.4 - 196.9m Fault</p>
200.25 TO 200.30						
200.30 TO 200.35	E.O.N.					

HOLE NUMBER: DN-14

ASSAY SHEET

DATE: 22-March-1990

Sample	From (m)	To (m)	Length (m)	ASSAYS					GEOCHEMICAL					COMMENTS
				Cu %	Pb %	Zn %	Ag g/t	Au g/t	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb	
BCD19526	26.52	27.77	1.25						34	34	66	1.1	2	
BCD19527	43.40	44.05	0.65						33	31	69	0.8	3	
BCD19529	52.00	53.30	1.30						34	23	60	1.2	17	
BCD19531	108.37	109.85	1.48						19	42	117	0.8	6	
BCD19532	109.85	111.33	1.48						15	53	174	0.7	2	
BCD19533	116.05	117.55	1.50						26	34	75	1	20	
BCD19534	117.55	119.40	1.85						34	28	69	0.9	15	
BCD19535	119.40	120.90	1.50						29	30	61	0.8	4	
BCD19536	120.90	122.40	1.50						32	23	67	0.9	1	
BCD19537	122.40	123.90	1.50						29	25	69	0.6	19	
BCD19538	123.90	126.50	2.60						16	27	46	0.7	11	
BCD19540	126.50	128.00	1.50						18	26	52	0.7	5	
BCD19541	128.00	129.50	1.50						19	27	57	0.8	3	
BCD19543	130.67	132.17	1.50						19	28	55	0.8	4	
BCD19544	132.17	133.67	1.50						21	24	56	0.8	6	
BCD19545	133.67	135.08	1.41						24	26	63	0.9	3	
BCD19546	135.08	136.70	1.62						20	20	51	0.9	500	
BCD19547	142.00	143.50	1.50						26	31	87	1	5	
BCD19549	145.00	146.50	1.50						26	36	69	1.1	13	
BCD19550	171.00	172.50	1.50						28	29	70	0.9	14	
BCD19577	174.00	175.50	1.50						24	30	61	0.8	22	
BCD19578	175.50	177.30	1.80						22	28	56	1.2	73	

HOLE NUMBER: DN-14

ASSAY SHEET

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HOLE NUMBER: DM-14

GEOCHEM. SHEET

DATE: 22-March-1990

Sample	From (m)	To (m)	Length (m)	AL2O3 %	BAT %	CAO %	FE2O3 %	K2O %	MGO %	MNO %	NA2O %	P2O5 %	SiO2 %	TiO2 %	S %	TOTAL %	Ag ppm	As ppm	Ba ppm	Cu ppm	Pb ppm	Sb ppm	Zn ppm	Au ppb
BCD19528	50.90	52.00	1.10	16.58	0.162	2.27	3.9	6.22	0.93	0.07	3.99	0.12	58.05	0.51	0.54	96.32	1.1	18	45	15	35	3	101	10
BCD19530	87.48	90.52	3.04	15.49	0.17	3.5	4.77	6.3	2.23	0.09	2	0.22	58.63	0.68	0.49	96.73	1.7	43	75	53	46	7	76	5
BCD19542	129.50	130.67	1.17	13.65	0.154	8.38	4.46	4.06	2.05	0.1	0.01	0.21	51.41	0.61	1.63	93.62	1.4	27	534	18	40	7	59	5
BCD19548	143.50	145.00	1.50	13.28	0.098	5.45	4.39	4.57	2.18	0.09	0.01	0.2	54.75	0.6	1.92	94.77	1.5	28	64	22	38	6	62	10
BCD19576	172.50	174.00	1.50	14.84	0.113	1.75	4.63	4.05	1.92	0.07	1.51	0.22	52.17	0.64	1.74	95.82	1.1	37	138	16	44	6	85	5
BCD19579	182.00	185.00	3.00	15.71	0.191	1.19	4.49	4.58	1.69	0.09	1.94	0.2	52.59	0.63	0.13	96.08	1	22	485	12	45	5	69	5

HOLE NUMBER: DM-14

GEOCHEM. SHEET

PAGE: 7

MINNOVA INC.
DRILL HOLE RECORD

DATE: 22-March-1990

HOLE NUMBER: DM-15

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 21.59	«Casing»					
21.59 TO 39.70	«Andesite Lahar»	Colour: Grey Grain Size: 0.5-4cm (clasts); fine grained matrix Clasts are subrounded. clasts: 80% matrix: 20% clasts: 60% And. FS Pophyry (FP rich) «2% qtz fragments» 2% carbonate 1% sed frags Some of the And FS Porphyry Clasts are bleached			tr py	
39.70 TO 44.81	«Fault»	Colour: Grey/green - faulted lahar frac @ 40 deg & @ 0 deg - frag comp appears similar to above but «quartz clasts» amt increases to «3-4%» Fault Fabric @ 41.0m Fracturing @ 42.9m	45 40	- «chlorite alt, clay alt?» - 1-2% qtz & carbonate veining - «weak bleaching»	«tr - 1% py»	
44.81 TO 62.50	«Andesite Lahar»	Grain size highly variable (0.5 - 14 cm) [coarse grading --> fining upwards] - matrix: fgr, dark 15-20% - clasts: 80-85%, 0.5-14.0 cm, And FS Porph, Qtz 46.7 - 46.8 m - 3% blebs of soft, blue mineral		{49.2 - 49.7} «silicification», or intense qtz veins? 49.5 - 49.7m - 3cm wide qtz filling. CA = 0-15 deg	46.7 - 46.8m - 3-5% diss py 51.0m : 3-5% diss py in qtz clast, 8cm	
62.50 TO 83.70	«Coarse SST w/ Marama»	Colour: Light Green Grain Size: Coarse to Fine Grained - 30-40 cm blocks of fgr fl-banded Marama in a crse.gr SST? Andesitic. - occas subrounded FP rich And frags 1-4 cm - matrix 1-2mm Qtz & FP grains w/occas arg & fels grain (quite siliceous appearance) Bedding @ 62.5 - 83.7m varies from to	30 48	- 1-2% carb veinlets: 2% 1cm rounded carb veinlets clasts - minor silic'n to matrix		{62.5 - 69.2} «Fault zone» - mod broken w/«clay» on fract - 40-70 deg to CA - no increase in alteration

HOLE NUMBER: DM-15

DRILL HOLE RECORD

LOGGED BY: R.Holder, G.Evans

PAGE: 2

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		Contact	70			
83.70 TO 105.50	«FP And Flow»	Colour: Medium Green Grain Size: Fine Grained - fgr grn matrix w/ 2-3mm FP's - occas Fl-Bx zones w/homogenous sub-ang 1-2 cm FP frags		Avg 3% carb veinlets @ 45 deg to CA	{97.4 - 100.6} «0.5% dissem py»	{97.4 - 100.6} «mod fault zone w/ clay gouge» @ 45-70 deg to CA
105.50 TO 119.90	«Strong Fault Zone»	Colour: Medium Grey Grain Size: Fine Grained - strong chl-clay fabric w/occas silic'd patches - subrounded 1-2 cm «OV frags 5%» - unit highly contorted. Host FP And Flow ? Fabric @ 105.5 - 119.9m	30	- occas grn micas - silicified patches 1-4cm along fabric	- «avg 5% py», dissem, fgr - 5% silic'd zones w/ 10-20% fgr dissem py - some OV frags w/10% dissem & py clots	
119.90 TO 135.80	«andesite Lahar»	Colour: Medium Green Grain Size: Fine Grained - A fine grained mafic matrix with subrounded 1-10cm fp and px rich frags		{119.9 - 122.7 } - «3-4% OV's»; milky wht, 1-4 cm {122.7 - 130.1 } - hematitic alt'n in the matrix becomes pervasive w/only remnant px - «15% OV's»; milky wht, crudely banded 1-4 cm @ 20-30 deg to CA {130.1 - 135.8} - hematite disappears - «5% qtz veins» 0.5 - 3.0 cm	avg tr dissem py	
135.80 TO 141.30	«Silicified And Lahar»	Colour: Medium grey Grain Size: Fine Grained - Same Andesite Lahar as above		- «intensely silicified» pervas - 5% qtz veinlets	- avg «5% py»; fgr, dissem	
141.30 TO 152.10	«And Lahar»	Colour: Medium Green Grain Size: Fine Grained - Same as 119.9 - 135.8m		- weakly bleached - minor hem - 2% qtz veinlets	- avg 1% dissem py	
152.10 TO 166.70	«Fault Zn»	Colour: Medium Grey Grain Size: Fine Grained Andesite Lahar Host Fabric @ 152.1 - 166.7m varies from to	20 30	- clay fault gouge w/ 2-3% talc - 5% Celadonite alt'n to Lahar - minor silicification - 2% milky wht qtz veinlets	- avg 4% dissem py w/ occas py clots round 1-2 cm dia.	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
166.70 TO 176.00	«And Lahar»	Colour: Medium Green Grain Size: Fine Grained - matrix has a sed. component - subrounded And frags 1-10 cm (FP rich) - occas felsic looking frag		- minor qtz veinlets	- tr disse py	
176.00 TO 188.60	«Fault Zn w/ Felsic Intrusion»	Colour: Light Green Grain Size: Fine Grained - Andesite frags 1-4 cm very angular fault Bx - matrix clay and felsic looking fgr matrix w/ 2mm FP's and biotite? - (could this be the intrusive?) - both as matrix and frags(biotite or musc) lt brn		- «1-2% qtz veinlets» - silicified patches	- «avg 3-4% py» - in clots 1-3 cm in dia w/ 20-30% py - soft lt brn sp ? 0.5%	
188.60 TO 217.20	«Silicified And Lahar?»	Colour: Light Grey Grain Size: Fine Grained - orig. textures generally hidden by pervasive silicification - occas fp and Px rich And frag seen Veins @ 188.6 - 217.2m vary from to	20 30	- «pervasive silic'ns» - «7-8% QV's»; wht, crudely laminated - occas grn micas - QV's 5-10 cm wide	- avg «3% py» disse - up to 7% disse py on vein selvages	
217.20 TO 272.30	«And Lahar»	Colour: Dark Green Grain Size: Fine Grained - subrounded 0.5 - 5.0 cm And frags, fgr, FP and Px rich - some sections get a sed. component in them and grade into fine beds of arg & SST 258.0 - 272.3 m - more mafic rich w/some frags w/amyg Bedding @ 258.5m	65	- avg 2% qtz veinlets - occas patches where matrix is hem alt		231.5 m - 30 cm fault w/clay gouge
272.30 TO 282.60	«Andesite Lahar (Lower)» E.O.H.	Colour: Medium Green Grain Size: Fine Grained - subang 0.5 - 5.0 cm frags - mainly And frags; fgr, FP rich, and Amyg but also fgr brn & pink Marame frags		- avg 2% qtz veinlets - patches of hem in the matrix		

HOLE NUMBER: DM-15

ASSAY SHEET

DATE: 22-March-1990

Sample	From (m)	To (m)	Length (m)	ASSAYS					GEOCHEMICAL					COMMENTS
				Cu %	Pb %	Zn %	Ag g/t	Au g/t	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb	
BCD19602	39.70	41.20	1.50						28	38	66	2.2	261	
BCD19604	42.70	44.20	1.50						28	29	81	1.7	41	
BCD19605	44.20	44.80	0.60						63	81	81	1.8	44	
BCD19609	105.50	107.00	1.50						43	16	72	1.1	34	
BCD19610	107.00	108.50	1.50						37	39	69	0.9	6	
BCD19611	108.50	110.00	1.50						38	26	73	0.9	34	
BCD19613	111.50	113.00	1.50						40	37	74	1.3	750	
BCD19614	113.00	114.50	1.50						29	32	84	1	5	
BCD19615	114.50	116.00	1.50						32	36	74	0.9	4	
BCD19616	116.50	118.00	1.50						33	37	75	1.4	8	
BCD19617	118.00	119.90	1.90						38	49	75	1.5	3	
BCD19618	122.70	124.20	1.50						63	26	80	3.8	200	
BCD19620	125.70	127.20	1.50						70	25	57	5	673	
BCD19621	127.20	128.70	1.50						69	31	61	9.7	62	
BCD19622	128.70	130.10	1.40						47	24	58	1.8	1	
BCD19623	135.80	137.30	1.50						29	43	64	0.9	3	
BCD19625	138.80	140.00	1.20						12	21	51	0.8	3	
BCD19626	140.00	141.30	1.30						28	22	63	0.8	4	
BCD19627	152.10	153.60	1.50						29	24	68	0.9	44	
BCD19628	153.60	155.10	1.50						29	26	65	4.1	22	
BCD19630	156.60	158.10	1.50						40	29	68	1	2	
BCD19631	158.10	159.60	1.50						30	29	72	1.1	1	
BCD19632	159.60	161.10	1.50						67	25	75	1.1	1	
BCD19633	161.10	162.60	1.50						40	23	68	1	2	
BCD19634	162.60	164.10	1.50						37	26	64	0.7	1	
BCD19635	164.10	165.60	1.50						28	27	65	1	1	
BCD19636	176.00	177.50	1.50						51	29	77	1.5	2	
BCD19638	179.00	180.50	1.50						21	28	66	1.4	2	
BCD19640	182.00	183.50	1.50						18	24	71	0.9	1	
BCD19641	183.50	185.00	1.50						20	27	73	1.2	2	
BCD19642	185.00	186.50	1.50						11	26	75	0.9	1	
BCD19643	186.50	188.60	2.10						24	33	80	1.8	42	
BCD19644	188.60	190.10	1.50						12	29	52	3.1	268	
BCD19645	190.10	191.60	1.50						10	21	58	2.4	180	
BCD19647	193.10	194.60	1.50						7	19	50	2.7	1	
BCD19648	194.60	196.10	1.50						11	22	54	1.7	45	
BCD19650	197.60	199.10	1.50						7	24	53	8.4	401	
BCD19651	209.70	211.20	1.50						10	22	56	1	17	

HOLE NUMBER: DM-15

ASSAY SHEET

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HOLE NUMBER: DM-15

ASSAY SHEET

DATE: 22-March-1990

Sample	From (m)	To (m)	Length (m)	Cu %	Pb %	Zn %	Ag g/t	Au g/t	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb
BCD19653	212.70	214.20	1.50						10	24	67	0.9	43
BCD19654	214.20	215.70	1.50						16	21	62	3.8	112
BCD19655	215.70	217.20	1.50						14	39	55	1.4	765

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ASSAY SHEET

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HOLE NUMBER: DN-15

GEOCHEM. SHEET

DATE: 22-March-1990

Sample	From (m)	To (m)	Length (m)	AL2O3 %	BAT %	CAO %	FE2O3 %	K2O %	MGO %	MNO %	NA2O %	P2O5 %	SiO2 %	TiO2 %	S %	TOTAL %	Ag ppm	As ppm	Be ppm	Cu ppm	Pb ppm	Sb ppm	Zn ppm	Au ppb
BCD19601	32.60	35.60	3.00	17.49	0.195	4.4	4.89	5.05	1.82	0.09	3.28	0.25	56.3	0.73	0.02	94.53	0.3	7	30	14	31	1	60	5
BCD19603	41.20	42.70	1.50	13.64	0.133	1.06	4.58	5.97	2.09	0.07	0.74	0.14	67.08	0.69	0.62	96.8	2.1	31	21	23	45	1	73	120
BCD19606	50.90	53.90	3.00	14.48	0.139	2.43	4.43	5.48	2.1	0.07	1.42	0.19	65.01	0.7	0.54	96.99	0.5	15	20	22	39	1	60	10
BCD19607	74.40	77.40	3.00	13.67	0.126	3.05	3.88	7.17	1.98	0.08	0.62	0.12	64.86	0.59	0.01	95.95	0.2	7	23	11	26	1	57	5
BCD19608	87.50	90.50	3.00	14.31	0.101	5.1	5.71	4.19	2.71	0.09	2.32	0.19	58.53	0.75	0.04	94.04	0.8	21	24	23	42	2	81	5
BCD19612	110.00	111.50	1.50	17.59	0.067	3.06	6.63	4.48	3.45	0.09	0.04	0.38	55.58	0.93	1.57	93.87	0.5	26	67	39	44	2	81	5
BCD19619	124.20	125.70	1.50	13.95	0.117	1.49	6.18	7.45	2.36	0.06	0.06	0.17	64.16	0.79	1.29	98.08	7.9	48	21	58	30	1	68	260
BCD19624	137.30	138.80	1.50	12	0.131	3.33	4.12	7.7	1.75	0.07	0.16	0.13	66.21	0.56	1.73	97.88	0.7	16	31	13	25	1	51	10
BCD19629	155.10	156.60	1.50	17.41	0.136	4.47	5.9	4.85	2.81	0.11	0.62	0.31	55.85	0.82	1.68	94.96	0.9	25	242	25	44	3	77	5
BCD19637	177.50	179.00	1.50	14.76	0.062	3.82	6.19	3.44	3.29	0.09	0.06	0.32	60.27	0.74	1.63	94.66	0.8	23	88	13	46	4	71	5
BCD19639	180.50	182.00	1.50	15.12	0.04	5.11	5.99	3.45	4.1	0.16	0.07	0.33	56.46	0.75	0.04	91.62	0.6	24	58	15	49	3	80	5
BCD19644	191.60	193.10	1.50	10.41	0.09	3.38	3.79	5.53	2.84	0.05	0.04	0.06	69.78	0.49	1.02	97.49	2.4	42	20	11	85	2	48	400
BCD19649	196.10	197.60	1.50	10.93	0.087	3.35	3.46	6.66	2.54	0.06	0.06	0.1	68.33	0.5	0.46	96.53	1.1	22	21	17	33	1	48	80
BCD19652	211.20	212.70	1.50	11.33	0.1	5.44	3.7	6.19	2.14	0.07	0.16	0.1	65.83	0.5	0.84	96.41	0.8	26	19	9	137	1	60	15
BCD19656	239.90	242.90	3.00	16.8	0.131	4.05	6.62	4	2.74	0.1	0.82	0.31	57.47	0.87	1.23	95.14	1.2	26	118	24	71	2	80	5
BCD19657	261.20	264.20	3.00	16.89	0.14	5.4	7.54	4.2	3.72	0.16	1.14	0.41	54.85	1.05	1.52	97	3.1	26	76	32	301	6	150	10
BCD19658	279.50	282.50	3.00	17.23	0.125	2.64	4.33	5.11	1.38	0.08	2.45	0.15	62.28	0.62	0.45	96.86	0.5	3	60	19	81	1	63	10

HOLE NUMBER: DN-15

GEOCHEM. SHEET

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HOLE NUMBER: DM-16

MINNOVA INC.
DRILL HOLE RECORD

IMPERIAL UNITS: METRIC UNITS: X

PROJECT NAME: DUSTY MAC
PROJECT NUMBER: 627
CLAIM NUMBER: 21690
LOCATION:

PLOTTING COORDS GRID:
NORTH: 702.00N
EAST: 195.00W
ELEV: 462.00

ALTERNATE COORDS GRID:
NORTH: 7+ 2N
EAST: 1+95W
ELEV: 462.00

COLLAR DIP: -45° 0' 0"
LENGTH OF THE HOLE: 221.59m
START DEPTH: 0.00m
FINAL DEPTH: 221.59m

COLLAR GRID AZIMUTH: 270° 0' 0"

COLLAR ASTRONOMIC AZIMUTH: 225° 0' 0"

DATE STARTED: May 31, 1989
DATE COMPLETED: June 2, 1989
DATE LOGGED: June 2, 1989

COLLAR SURVEY: NO
MULTISHOT SURVEY: NO
ROD LOG: NO

PULSE EM SURVEY: NO
PLUGGED: NO
HOLE SIZE: NO

CONTRACTOR: Frontier
CASING: LIH
CORE STORAGE: OK FALLS

PURPOSE: To test under the A zone showing

DIRECTIONAL DATA:

Depth (m)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments	Depth (m)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments
87.48	-	-44° 0'	ACID	OK		
163.68	-	-43° 0'	ACID	OK		
212.44	-	-43° 0'	ACID	OK		
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HOLE NUMBER: DM-16

DRILL HOLE RECORD

LOGGED BY: Royanna Holder

PAGE: 1

MINNOVA INC.
DRILL HOLE RECORD

DATE: 22-March-1990

HOLE NUMBER: DM-16

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 18.29	«Casing»					
18.29 TO 44.61	«Andesite» «Lahar»	<p>Colour: Grey/Green with Red patches Grain Size: (Clasts) 2 to 85mm; Matrix is fine grained Clasts 80%, Matrix 20% Clast Composition: 75% Andesite Feldspar Porphyry Flow, 1% Quartz Fragments Clasts are subangular</p> <p>23.1 - 44.6m Hematitic Matrix 44.6m 5% Fluorite (green and purple)</p> <p>Carbonate Vein @ 39.6m @ 39.7m Fracture @ 40.8m Fractures (Fabric ?) @ 45.8m</p>	45 50 50 20	<p>20.4 - 21.1m Clay Alteration with Weak Silicification</p> <p>{41.8 - 44.6}«Clay Alt» {44.6 - 51.9}«Clay and Wk Chlorite Alt»</p>		<p>20.4 - 21.1m Fault</p> <p>{41.8 - 51.9}«Fault»</p>
44.61 TO 75.28	«Feldspar» «Andesite» «Flow and» «Flow» «Breccia»	<p>Colour: Grey/Green Grain Size: Fine Grained Feldspar Phenocrysts: 2 to 6mm, 15 to 20% 44.6 - 47.1m Brecciated 47.1 - 48.0m Autobreccia ->clasts and matrix is Andesitic composition with very little matrix 48.0 - 53.6m Brecciated, coarse grained, clasts angular to subangular 53.6 - 54.4m More massive 54.4 - 58.6m Breccia, coarse grained, clasts are subangular and beige to orange in colour 56.9 - 58.6m Hematitic matrix (matrix 20%)</p> <p>62.0 - 63.7m 5 to 10% Amygdules. Composition of Amygdules: Quartz, Mafic (Pyroxene ?), Epidote, Mafic rimmed with quartz infilling</p>		<p>{44.6 - 51.9}«Clay and Weak Chlorite» «Alt»</p> <p>{54.4 - 58.6}«Hematitic or Potassic» «Altered Clasts» 59.0 - 63.7m Yellow/Green alteration (epidote ?) of feldspars</p> <p>63.5 - 64.6m Clay alteration with minor epidote and chlorite {64.1 - 71.1}«Hematitic/Potassic Alt» 64.6 - 68.5m Feldspars are altered to epidote at centers, yet edges are a salmon pink colour. Host is also a pink/brown/light orange colour -></p>		<p>{63.3 - 75.3}«Fault»</p>

HOLE NUMBER: DM-16

DRILL HOLE RECORD

LOGGED BY: Royanna Holder

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HOLE NUMBER: DM-16

MINNOVA INC.
DRILL HOLE RECORD

DATE: 22-March-1990

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		<p>Carbonate Vein @ 90.9m @ 91.9m @ 92.3m</p> <p>Fault Fabric @ 94.2m @ 94.6m @ 95.6m</p> <p>Quartz Vein @ 101.3m @ 101.8m @ 101.9m</p> <p>Clay filled fracture @ 106.4m</p>	<p>27</p> <p>55</p> <p>55</p> <p>70</p> <p>45</p> <p>30</p> <p>45</p> <p>55</p> <p>55</p> <p>20</p>	<p>101.8m and 101.9m 1cm quartz veins at 55 degrees to C.A.</p> <p>{103.5 - 107.4} «Clay alt»</p> <p>{106.4 - 107.0} «Silic.»</p> <p>106.4 - 107.0m 2% Apple Green Mineral (Fuchsite)</p>	<p>{103.5 - 106.4} «2% py» disseminated</p> <p>{106.4 - 107.0} «15% py» associated with quartz</p>	<p>{103.5 - 107.4} «Fault»</p>
107.37 TO 130.82	«Andesite» «Lahar» «(lower)»	<p>Colour: Grey matrix with grey, green, white, pink, yellow, and dark brown clasts</p> <p>Grain Size: 0.4 to 15 cm clasts; fine grained matrix</p> <p>Clasts 80%, Matrix 20%</p> <p>Clast Composition: 30% Marama Dacite Flow, 30% Andesitic Flow, 5% Andesite Feldspar Porphyry Flow, 5% Argillite (?), Trace Red Siliceous Fragments</p> <p>Clasts are subrounded to subangular</p>			«1-2% pyrite»	
130.82 TO 139.91	«Andesite» «Flow and» «Flow» «Breccia»	<p>Colour: light to dark grey/green</p> <p>Grain Size: Fine to medium grained</p> <p>Rock varies from a "salt and pepper" mottled appearance to a paler grey/green with 5 to 10% mafics. The mottled rock seems to be coarser grained. The meterage of this region is 130.8 to 133.4m. At 135.8 to 137.7m, similar rock type.</p> <p>134.9 - 135.7m Amygdules</p> <p>Composition: Carbonate and Mafics</p> <p>135.8m Clast containing 1.5cm by 0.3cm region of banded blue quartz</p>		<p>134.1 - 134.2m Silicification with hard red mineral (jasper ?). Quartz is brecciated</p> <p>137.7m Quartz vein; 1cm width; 40</p>	<p>134.1 - 134.2m 5% disseminated pyrite pods (up to 2mm diameter)</p>	

HOLE NUMBER: DM-16

DRILL HOLE RECORD

LOGGED BY: Royanna Holder

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HOLE NUMBER: DM-16

MINNOVA INC.
DRILL HOLE RECORD

DATE: 22-March-1990

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		138.0 - 138.9m Red, siliceous fragments (5%) Quartz Vein @ 137.7m	40	degrees to C.A. {138.0 - 139.9} Chloritic Alt 139.5 - 139.9m Weak Hematitic (?) alteration and 5% Carbonate Blebs		
139.91 TO 145.74	«Andesite» «Lahar» «(Lower)»	Colour: Grey/Green with variable coloured clasts Grain Size: 2mm to 40mm Clasts 75 to 80%, Matrix 20 to 25% Clast Composition: 30% Mafic Dacite Flow, 10% Sedimentary Clasts, 5% Mafic Flow, 1% Andesite Feldspar Porphyry Flow Clasts are subangular to subrounded				
145.74 TO 148.44	«Andesite» «Flow» «Breccia»	Colour: Dark Grey Grain Size: fine grained (breccia fragments: 2 to 25mm) Clasts 85%, Matrix 15% Clasts are angular (autobreccia) Contains 1%, 0.5mm black crystals (hblid or px), 1 to 2% pods of chlorite (?)		147.7 - 148.4 Chloritic Alt and Weak Silicification; Weak Bleaching ? 148.3 - 148.4m Siliceous	148.3 - 148.4m 5% pyrite	147.7 - 148.4m Fault
148.44 TO 151.48	«Andesite» «Lahar» «(Lower)»	Colour: Dark Green with variable coloured clasts Clasts 70 to 75%, Matrix 25 to 30% Composition is similar to interval of 139.91 to 145.74m except 2% Quartz clasts are present Clasts difficult to distinguish Carbonate Vein @ 151.5m	30	151.0 - 151.2m Strong Hematite 151.5m 1.5cm thick, carbonate and chlorite vein at 30 degrees to C.A.		
151.48 TO 154.36	«Dacite» «Flow»	Colour: Pale Green and Pale Reddish Brown Grain Size: Fine Grained Brecciated, clasts vary in size from 0.3 to 7cm				

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
154.36 TO 169.53	«Andesite» «Lahar» «(Lower)»	Colour: Dark Grey/Brown Matrix with variable coloured clasts Clasts 60%, Matrix 40% Clast Composition: Marama Dacite Flow, Quartz Fragments, Pyroxene? Feldspar Porphyry Flow Fault Fabric @ 167.4m Carbonate Vein @ 167.7m	40 22	{158.3 - 160.6}«Clay and Chlorite Alt» «Wk Hematite Alt» 164.7 - 165.5m Clay Alteration, 3% Carbonate Stringers, Weak Chlorite Alteration ? 167.0 - 167.6m Clay and Chlorite Alteration	{158.3 - 160.6}«Fault» 164.7 - 165.5m Fault 167.0 - 167.6m Fault	
169.53 TO 176.81	«Andesite» «Flow»	Colour: Grey/Green Grain Size: Fine Grained with 1 to 5mm feldspar phenocrysts, and <1mm mafics Feldspars 15 to 20%, mafic blebs 5% Bottom contact (176.8m) is gradational, as from 173.2 - 176.8m, rock is brecciated (either Andesite Flow Breccia or Lahar)		{170.6 - 176.8}«Clay and Wk Chlorite» «Alt» 171.2 - 173.0m Strong hematite	{170.6 - 176.8}«Fault»	
176.81 TO 195.42	«Andesite» «Lahar» «(Lower)»	Colour: Grey matrix with green to red clasts Grain Size: .4 to 50cm Clasts 80%, Matrix 20% Clast Composition: 30 to 50% Marama Dacite Flow, 15 to 20% Feldspar and Mafic Porphyry Andesite Flow, 2% Quartz Fragments		{176.8 - 181.9}«Clay and Wk Chlorite» «Alt» {184.6 - 186.0}«3% Carbonate Vns» {184.8 - 186.0}«Chlorite, Clay,» and «Carbonate Alt»	{176.8 - 181.9}«Fault» {184.8 - 186.0}«Fault»	
195.42 TO 221.59	«Dacite» «Flow»	Colour: Red, Green, Beige, Grey Flow Banded 207.2 - 207.4m Clasts have a red/brown center		3% Carbonate Veining 207.2 - 207.4m 1% Talc	207.2 - 207.4m 1% pyrite	

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	E.O.H.	<p>rinned by a green colour. The "clasts" are angular to subangular, with 90% clasts, 10% matrix. Chlorite veinlets throughout.</p> <p>Flow Banding @ 198.3m @ 198.6m @ 202.4m @ 202.8m @ 205.5m @ 206.9m @ 211.6m @ 212.0m @ 219.2m</p>	<p>65 40 50 75 60 35 20 40 65</p>			

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ASSAY SHEET

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Sample	From (m)	To (m)	Length (m)	ASSAYS					GEOCHEMICAL					COMMENTS
				Cu %	Pb %	Zn %	Ag g/t	Au g/t	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb	
BCD19677	41.76	43.26	1.50						63	64	32	0.9	10	
BCD19678	43.26	44.61	1.35						31	37	27	0.6	12	
BCD19679	44.61	46.10	1.49						14	65	89	0.7	4	
BCD19680	46.10	47.60	1.50						11	28	73	0.9	1	
BCD19681	47.60	49.05	1.45						21	31	76	0.8	2	
BCD19682	49.05	50.55	1.50						10	45	69	0.8	1	
BCD19683	50.55	51.90	1.35						7	35	73	0.7	3	
BCD19685	63.27	64.57	1.30						21	29	89	1.1	1	
BCD19686	64.57	66.14	1.57						17	31	98	1	1	
BCD19688	67.64	68.88	1.24						18	32	91	1.1	3	
BCD19689	68.88	70.38	1.50						12	36	89	0.9	1	
BCD19690	70.38	71.88	1.50						13	55	67	0.8	1	
BCD19691	71.88	73.36	1.48						19	41	72	1.4	2	
BCD19693	92.40	93.90	1.50						19	33	73	1.2	6	
BCD19694	93.90	95.40	1.50						9	29	83	1.1	2	
BCD19695	95.40	97.09	1.69						15	28	101	1.3	15	
BCD19696	104.26	105.76	1.50						15	29	71	1	4	
BCD19697	105.76	107.37	1.61						22	31	69	0.8	2	
BCD19699	170.61	172.11	1.50						15	27	69	0.7	2	
BCD19700	172.11	173.61	1.50						9	32	70	0.9	1	
BCD19701	173.61	175.11	1.50						8	31	71	0.6	3	
BCD19702	175.11	176.81	1.70						23	33	78	0.8	6	
BCD19703	176.81	178.31	1.50						19	22	66	0.6	2	
BCD19704	178.31	179.81	1.50						25	27	64	0.7	1	
BCD19705	179.81	181.31	1.50						23	20	63	0.9	3	

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Sample	From (m)	To (m)	Length (m)	AL2O3 %	BAT %	CAO %	FE2O3 %	K2O %	MGO %	MNO %	NA2O %	P2O5 %	SiO2 %	TiO2 %	S %	TOTAL %	Ag ppm	As ppm	Ba ppm	Cu ppm	Pb ppm	Sb ppm	Zn ppm	Au ppb
8CD19676	34.50	36.00	1.50	19.65	0.21	1.52	3.57	4.99	0.51	0.02	4.05	0.01	61.15	0.72	0.06	96.46	0.6	1	1110	10	32	1	13	2
8CD19684	59.04	62.04	3.00	17.78	0.207	3.24	4.69	4.41	1.91	0.13	4.8	0.25	58.54	0.71	0.03	96.69	1.6	14	438	22	50	2	94	2
8CD19687	66.14	67.64	1.50	18.18	0.219	4.04	7.18	5.01	2.02	0.11	5.37	0.35	53.82	0.73	0.06	97.08	1.1	15	307	23	71	4	81	2
8CD19692	89.45	92.30	2.85	14.35	0.157	7.35	7.52	4.34	5.83	0.15	1.55	0.35	49.41	0.91	0.09	92.02	2.6	35	41	33	69	9	80	7
8CD19698	130.15	133.15	3.00	11.86	0.094	6.16	7.66	3.52	9.22	0.14	0.58	0.42	52.42	0.72	0.18	92.96	1.9	74	20	37	76	14	72	6
8CD19706	215.49	218.54	3.05	16.82	0.087	3.31	3.15	3.23	1.08	0.04	4.41	0.01	62.12	0.42	0.04	94.71	0.2	2	450	29	26	1	51	4

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 6.48	«Casing»					
6.48 TO 55.08	«Andesite» «Lahar»	<p>Colour: Grey/Green Grain Size: 3 to 150mm Clasts 75 to 80%, Matrix 20 to 25% Clast Composition: 30% Andesite Feldspar Porphyry Flow, 10 to 20% Mafic Flow with Pyroxene (?) Clasts -subrounded Clasts are difficult to distinguish from matrix</p> <p>15.9 - 19.2m Colour: White to Grey/Green, mottled; 1% Quartz clasts 17.0 - 17.2m Rock is pale green to dark green</p> <p>20.0 - 35.0m difficult to determine whether this region is the lahar or a brecciated flow. Clasts contain 10% feldspar phenocrysts (1 to 3mm), and 5% mafic phenocrysts (0.5 to 2mm)</p> <p>35.0 to 38.1m Pale grey to whitish colour, with a tint of green. Intense alteration --> clasts are difficult to distinguish.</p> <p>Fracture @ 16.9m Fault Fabric @ 18.1m @ 19.2m Quartz Vein @ 28.8m</p>		<p>10.1 - 12.0m Rusty Coloured (Iron or Iron Carbonate Alteration) 13.5 - 15.9m «Clay Alt» 15.9 - 20.0m «Clay and Chlorite Alt» 15.9 - 19.2m «weakly bleached» Clay and Chlorite altered, minor talc 17.0 - 17.2m «2% Quartz veins» in Chloritic Altered rock. 19.2 - 20.0m Clay and Chlorite Altered, with possible Epidote</p> <p>28.7 - 28.8m Brecciated Quartz Vein 30.8 - 30.9m Banded Quartz Vein 30.9 - 31.1m Quartz Veins (40%) Veins are 0.5 to 1.5cm wide 34.0 - 34.2m Strong chlorite Alteration 35.0 - 38.1m «Chlorite Alt» Intense and «Silicification?»</p> <p>41.9 - 44.4m «Clay Alt» 45.4 - 45.7m Potassic Alteration? 45.7m 1cm wide alteration envelopes around fracture 45.7 - 55.1m Hematite and Chlorite Alteration 46.6 - 46.7m Quartz Veining that is weakly laminated and brecciated, comprises 50% of core (.5-2cm width) 50.5 - 50.6m Quartz Veinlets</p>	<p>13.9 - 20.0m «2% pyrite» 17.0 - 17.2m 2 to 5% pyrite 34.0 to 34.2m 3 to 5% pyrite 41.9 - 44.4m «1% pyrite» 45.4 - 45.7m 5% pyrite</p>	<p>13.9 - 20.0m «Fault» 41.9 - 44.4m «Fault»</p>

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		@ 30.8m @ 31.0m Fault Fabric @ 44.3m Fault Contact @ 44.4m Fracture @ 45.7m Quartz Vein @ 50.5m	55 30 45 52 50 50			
55.08 TO 63.77	«Dacite» «Flow»	Colour: Beige/Salmon Pink to Beige and Reddish Bands Grain Size: Fine Grained 55.1 - 59.2m Massive Marema Dacite flow that is beige/light brown with pink feldspars. Feldspars are euhedral to subhedral, 0.5 to 2mm in size, and compose up to 20% of flow. As well, there is 5% very fine grained mafics (<0.5mm) 59.2 - 62.7m Flow Banded dacite that appears altered. Yellow/Beige bands with Red and Grey bands. Flow Banding @ 59.9m @ 61.1m	60 55	{59.2 - 62.7}«2X Qtz Blebs» «1 - 2X fuchsite»	{59.2 - 62.7}«5X pyrite»	
63.77 TO 73.77	«SDST &» «Congl.»	Colour: Green/Grey to a pale green/gray Grain Size: 2 to 5mm Clasts are subrounded Fault Fabric @ 70.2m	45	{67.1 - 70.7}«Clay and Chlorite Alt»	{66.8 - 70.7}«5X py»	{67.1 - 70.7}«Fault»
73.77 TO 89.94	«Dacite» «Flow»	Colour: light brown with white Feldspar phenocrysts Grain Size: Fine grained Massive Feldspar phenocrysts are euhedral to subhedral, comprising 15 to 20% of flow. As well, flow contains 5% <0.5mm mafic "phenocrysts". Slickenside @ 80.8m	25	77.0 - 82.0m Carbonate (?) Alteration {86.2 - 90.1}«Clay Alt»		{77.0 - 82.0}«Fault» {86.2 - 90.1}«Fault»

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Sample	From (m)	To (m)	Length (m)	ASSAYS					GEOCHEMICAL					COMMENTS
				Cu %	Pb %	Zn %	Ag g/t	Au g/t	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb	
BCD19726	13.90	15.90	2.00						19	29	61	1.8	36	
BCD19727	15.90	17.33	1.43						4	28	24	1.2	192	
BCD19728	17.37	18.90	1.53						14	35	35	1.6	345	
BCD19729	18.90	20.42	1.52					7.73	26	31	72	7.4	6150	
BCD19730	28.52	30.06	1.54						18	20	60	2.6	199	
BCD19731	30.06	31.56	1.50						25	14	54	1.8	335	
BCD19734	67.10	69.19	2.09						16	16	59	2.5	229	
BCD19736	76.96	78.46	1.50						14	11	32	0.4	2	
BCD19738	79.96	81.99	2.03						17	12	46	0.8	3	
BCD19739	93.46	95.10	1.64						21	16	62	1.2	50	
BCD19740	95.10	96.62	1.52						16	31	57	0.8	3	
BCD19742	98.12	99.90	1.78						21	23	58	0.9	20	

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Sample	From (m)	To (m)	Length (m)	AL2O3 %	BAT %	CAO %	FE2O3 %	K2O %	MGO %	MNO %	NA2O %	P2O5 %	SI02 %	TIO2 %	S %	TOTAL %	Ag ppm	As ppm	Ba ppm	Cu ppm	Pb ppm	Sb ppm	Zn ppm	Au ppb
BCD19732	34.90	36.40	1.50	11.42	0.125	3.86	4.8	5.18	2.54	0.11	0.01	0.22	66.42	0.68	1.59	96.95	2.1	15	26	11	28	2	38	2950
BCD19733	41.93	44.10	2.17	16.39	0.093	2.19	7.04	5.59	2.35	0.13	0.01	0.38	58.52	0.95	1.66	95.29	0.7	5	12	13	34	2	43	200
BCD19735	69.19	70.71	1.52	16.82	0.09	1.95	8.59	5.88	1.75	0.06	0.01	0.41	57.09	1.01	3.65	97.3	1.8	46	28	12	45	4	66	160
BCD19737	78.46	79.96	1.50	14.31	0.101	1.87	2.56	3.68	0.64	0.05	3.91	0.01	69	0.27	0.01	96.41	0.4	2	17	11	11	1	24	5
BCD19741	96.62	98.12	1.50	14.63	0.051	4.79	5.28	3.63	3.11	0.1	0.01	0.27	59.67	0.73	0.17	92.44	0.5	7	17	8	18	1	23	5
BCD19743	157.58	160.63	3.05	16.37	0.131	3.8	4.15	4.02	2.07	0.07	2.84	0.06	60.78	0.62	0.04	94.94	0.3	8	11	13	19	1	26	5

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 3.10	«Casing»					
3.10 TO 7.00	«Andesite» «Lahar» «(Lower)»	Colour: Medium Green Grain Size: Fine Grained Subrounded 5cm blocks of Marama and feldspar rich Andesite Matrix is Fine Grained Andesite +/- Hematite		«1% Quartz Veinlets»	Average 2% fine grained and medium grained disseminated pyrite «average 2% pyrite»	
7.00 TO 32.00	«Fault» «Zone»	Host in Lower Marama Conglomerate with 0.5 to 10cm round pebbles of Marama Dacite and feldspar rich Andesite in a sandstone and argillite rich matrix Occasional 1cm Quartz Vein fragments ? 23.7 - 26.5 Section of Marama Dacite in fault Bedding @ 29.9m, 80 deg to CA		{7.0 - 11.3} «Str flt zn, clay gouge & ang frags» Talc in gouge «fabric 30 to 40 deg to C.A.» {11.3 - 15.3} «2% Qtz frags, 2% Qtz vnlt» 15.3 - 23.7 Highly ground matrix @ 45 deg to C.A. Occasional angular quartz vein frags in matrix. Minor talc and green mica alteration Minor hematitic alt'n 23.7 - 26.5 Not as fractured Some clay gouge Bleached w/ 4% Qtz veinlets. 5% hematitic alteration. 26.5 - 32.0 Strong clay gouge @ 45 deg to CA. Zones w/ strong talc alteration.	{7.0 - 11.3} «Avg 5% pyrite», fine grained to medium grained in matrix, disseminated {11.3 - 15.3} «Avg 3% dissem pyrite» 23.7 - 26.5 tr dissem py {26.5 - 32.0} Average «7% py» w/ 5% as fgr dissem, & 2% as clots.	
32.00 TO 46.30	«Andesite Lahar (Lower)»	Colour: Med Green Grain Size: Fine Grained - FP rich and occas Dacite frags subrounded from 0.5-20cm in diameter - matrix fgr And w/ minor sed component		- avg «2% QV's», 0.5-1.0cm, 45 deg to CA 36.6 - 38.2 - 10% wht vuggy QVs 1-2cm in a bleached weakly silicified matrix		Faults @: 35.0 - 35.2 - clay gouge @ 45 deg to CA 36.0 - 36.6 - clay gouge @ 45 deg to CA

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
46.30 TO 54.70	«Fault Zone w/Alt'n»	Colour: Med Green Grain Size: Fine Grained - highly fract @ 45 deg to CA w/50% clay gouge - host is And Laher		- pervasive, «weak silicification» - frags silic'd w/ minor grn micas and leucoxene - occas Qtz veinlet w/ fl blebs - zones w/ talc gr sericite in matrix	- avg «5% py», dissem & in matrix	
54.70 TO 71.90	«Marama Dacite fl»	Colour: Lt Grn Grain Size: Fine Grained - porph massive flow w/ 1-2mm FP's		- matrix pervas seric alt'd w/ FP's alt'd pink pottasic? - fract have talc alt'n - avg «2% Qtz veinlets» 0.5cm @ 45 deg to CA 63.8 - 66.8 - fault zone w/fract @ 45 deg to CA - 5% Qtz veinlets, milky white	63.8 - 66.8 - minor py on fract	
71.90 TO 75.30	«Andesite Laher» «(Lower)» E.O.H.	Colour: Med Green Grain Size: Fine Grained - And matrix w/ subrounded frags 1-15cm of Marama Dacite, FP And and Hem rich frags		- «1-2% Qtz veinlets» - dacite seric alt'd - some frags hem alt'd (primary?) - minor talc in gouge - occas grn mica	- tr dissem py	- mod fault @ 30 deg to CA w/minor clay gouge

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ASSAY SHEET

DATE: 22-March-1990

Sample	From (m)	To (m)	Length (m)	ASSAYS					GEOCHEMICAL					COMMENTS
				Cu %	Pb %	Zn %	Ag g/t	Au g/t	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb	
BCD20251	5.50	7.00	1.50						26	40	100	1	2	
BCD20252	7.00	8.50	1.50						20	37	85	0.7	1	
BCD20254	10.00	11.30	1.30						20	42	76	0.8	10	
BCD20255	11.30	13.30	2.00						20	38	79	0.8	45	
BCD20257	15.30	16.80	1.50						24	32	120	0.9	41	
BCD20259	18.30	19.80	1.50						25	29	81	0.7	78	
BCD20260	19.80	21.80	2.00						28	34	86	0.8	52	
BCD20261	21.80	23.70	1.90						24	32	88	0.9	8	
BCD20262	23.70	25.20	1.50						18	30	49	0.5	4	
BCD20263	25.20	26.50	1.30						16	36	69	0.4	2	
BCD20264	26.50	28.00	1.50						32	40	78	0.7	40	
BCD20265	28.00	29.50	1.50						22	30	75	1.9	181	
BCD20266	29.50	31.00	1.50						40	20	58	4.1	585	
BCD20267	31.00	32.00	1.00						14	19	70	1.9	181	
BCD20268	36.60	38.20	1.60						50	24	63	2.6	107	
BCD20269	46.30	47.80	1.50						20	40	90	0.8	16	
BCD20271	49.30	50.80	1.50						14	42	64	0.6	2	
BCD20272	50.80	52.30	1.50						14	37	45	0.4	1	
BCD20273	52.30	54.70	2.40						29	30	72	0.8	1	
BCD20274	63.80	65.30	1.50						18	20	42	0.4	2	

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Sample	From (m)	To (m)	Length (m)	AL2O3 %	BAI %	CAO %	FE2O3 %	K2O %	MGO %	MNO %	NA2O %	P2O5 %	SI02 %	TIO2 %	S %	TOTAL %	Ag ppm	As ppm	Ba ppm	Cu ppm	Pb ppm	Sb ppm	Zn ppm	Au ppb
BCD20253	8.50	10.00	1.50	17.13	0.075	1.82	6.15	4.73	2.57	0.1	0.45	0.36	55.5	0.89	0.67	93.44	1.4	31	72	26	50	1	91	5
BCD20256	13.30	15.30	2.00	14.26	0.141	1.38	4.5	5.74	1.45	0.06	1.36	0.32	60.6	0.7	0.92	95.63	1.5	32	48	18	37	3	69	50
BCD20258	16.80	18.30	1.50	16.58	0.116	1.5	5.43	5.48	1.9	0.08	1.63	0.31	56.4	0.81	0.49	95.37	1.5	33	52	21	42	1	78	60
BCD20270	47.80	49.30	1.50	18.64	0.186	1.46	3.12	6.59	1.5	0.06	2.2	0.3	55.46	0.61	0.84	94.33	1.1	20	129	8	46	1	37	5
BCD20275	65.30	66.80	1.50	11.9	0.085	5.21	2	3.51	0.57	0.08	1.88	0.36	61.04	0.22	0.03	92.29	1	13	571	16	19	1	29	5

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		<p>Andesite Lahar (lower) from 75.4 - 173.0m, the core is distinctly the lahar unit (ie. darker matrix, defined clasts), whereas from 18.3 - 75.4m, the clasts were difficult to distinguish from the matrix Clasts are subangular, 0.5-30cm in diameter Clast Composition: 30% And. Feldspar Porphyry, 30% Andesitic Clasts, 10-25% Marama Few clasts have reaction rims Matrix is fine grained and dark grey in colour Amount of Marama clasts is not consistent, and disappear in intervals.</p> <p>133.1 - 133.2m Siliceous breccia fragments that are light grey in colour</p> <p>carbonate vein @ 20.8m fabric/fractures @ 27.9m Quartz Vein @ 35.3m Fabric ? @ 56.3m Quartz Vein @ 57.0m @ 57.1m Slickenside Plane @ 102.0m Fault Fabric @ 126.6m 127.2m</p>	40 30 20 15 35 40 30 55 45	<p>{121.5 - 133.6} «clay, chlor alt»</p> <p>156.6 - 156.8m 1% Apple Green Mineral</p>	<p>76.6m Clast with 3cm pyrite veinlet (1mm width)</p> <p>{121.5 - 133.6} «2-3% pyrite»</p>	<p>102.0m Slickenside -Carbonaceous 30 deg to CA {121.5 - 133.6} «fault»</p>
173.00 TO 183.76	Marama «Dacite» «Flow» «Breccia»	<p>Colour: Green with a reddish matrix Grain Size: 0.5-20cm The rock is brecciated with the clasts being dominantly Marama Dacite. Clasts are subrounded to subangular Clasts: 70-80% Matrix: 20-30% Few clasts are flow banded. Matrix is hematitic.</p>				
183.76 TO 376.88	Marama «Dacite» «Flow»	<p>Colour: Green to reds to pale creme/green Grain Size: Fine Grained 183.8 - 197.8m Flow banded grey/green with red/brown bands. Flow band widths vary between 1-10mm. Minor brecciation of flow bands in areas 197.8 - 198.6m Brecciated flow ?</p>		<p>183.8 - 197.4m 1% Carbonate veining (avg 0 deg to CA) 186.9m Carbonate vein, 1mm width with 2% pyrite at 20 deg to CA 197.8 - 198.0m Pink siliceous alt and</p>	<p>186.9m 2% pyrite</p>	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		280.2 - 280.5m Breccia (beige/yellow and red clasts) Matrix is carbonate Clasts are subangular to subrounded. Clasts: 70-80% Matrix: 20-30%				
		280.5 - 285.8m Massive to flow banded, yellow/beige to red colour		283.8 - 284.3m Clay Alt 284.9 - 285.5m 2% Talc, Clay alt 285.8 - 290.5m Carbonate veinlets (1-2%), avg 80 deg to CA		283.8 - 284.3m Fault 284.9 - 285.5m Fault
		285.8 - 290.5m Increase in chlorite Rock is grey/green. Contains feldspar phenocrysts (<2mm) and hematite blebs (10%).				
		290.5 - 293.7m Breccia: Pale green/grey with darker green/grey colour, mottled with a faint pink colour. Clasts are subrounded with some flow banding. Clasts are 0.5 - 4cm.				
		293.7 - 296.9m Breccia: Clasts are subrounded, 3-50mm in diameter. Clasts are green, occas. have red/pink patches with a red matrix. Clasts: 80-85% Matrix: 15-20%		293.7 - 296.9m 1% Carbonate veins		
		296.9 - 304.0m Breccia: brown colour with beige and minor green matrix. Clasts are subrounded, 3-85mm in diameter. Clasts: 70% Matrix: 30%		296.9 - 304.0m 1% Carbonate veins		
		Chloritic alteration of matrix and clasts. Brecciation seems to follow flow banding (fabric at 45 deg to CA at 301.3m) --> Autobrecciation				
		304.0 - 307.4m Brown to brown green mottled colour. Clasts appear darker with a lighter coloured matrix. Sometimes matrix is weakly chloritic. Clasts are difficult to distinguish and are rounded. Feldspar and mafic phenos. Clasts: 70% Matrix: 30%				
		307.4 - 308.4m Light brown, massive Marama (pale peach tint). Trace of apple green mineral. May be weakly autobrecciated.				
		308.4 - 310.0m Brecciated Massive Marama		308.4 - 310.0m Clay and Carbonate Alt		308.4 - 310.0m Fault
		310.0 - 312.1m Pale brown, brecciated massive Marama Dacite		310.0 - 312.1m 1-2% Carbonate Veins and 1% talc		
		312.8 - 320.4m Breccia: Clasts are grey/green. Matrix is pale brown. Clasts are subangular to subrounded. Clasts: 75-80% Matrix: 20-25%		312.1 - 312.8m Clay Alteration 312.8 - 320.4m Weak chlorite alt, 1-2% carbonate veins		312.1 - 312.8m Fault
		320.4 - 336.8m Pale peach brown, massive Marama flow. May be autobrecciated.		315.0 - 316.1m Hematitic blebs (<2mm) 5%; chloritic veining 2%.		
		336.8 - 360.8m Brown/grey, weakly flow banded and		332.6 - 333.3m 1% chlorite in vnlts		
				336.8 - 360.8m 1% carbonate veins with		

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		brecciated		very weak chlorite alt. 341.1m white clay filled fracture (60 deg to CA), also, a carbonate vein containing 1% talc, 1% chlorite, with fragments of host within vein. 349.7m Carbonate vein at 20 deg to CA 360.8 - 366.9m Weak chloritic Alt		356.1 - 356.2m Fault fabric at 50 deg to CA; intensely brecciated with chlorite alteration
		360.8 - 366.9m Breccia: Pale green/grey with hematitic (?) alt patches (patches are orange in colour). Few fragments are flow banded. Autobrecciation. Clasts 0.5-5cm diameter. Clasts: 60% Matrix: 40%		366.9 - 367.9m 1-2% carbonate veins (some Fe carbonate ?)		
		366.9 - 367.9m Pale peach/beige Marana Dacite Weakly brecciated (autobreccia)		367.9 - 371.8m Intense chlorite alt, 1% carbonate veins, 5-10% v. fine veinlets (Fe Carb/sericite?) of yellow/beige colouring		
		367.9 - 371.8m Green/grey breccia of Andesitic composition (?). Clasts are rounded to subrounded, ranging from 0.5 - 14cm. Clast composition: Altered Marana ?, Andesite ? Clasts: 70% Matrix: 30% Matrix is fine grained. 1% Apple green mineral (fuchsite) Fault? (Fault contact at 371.8m, possible fault contact at 367.9m) Moderate to intensely altered Fabric: Veinlets and matrix appear to "flow" around the clasts.		371.8 - 376.9m 1-2% carbonate veinlets (Fe?); <0.5mm width	373.9 - 374.4m 2% diss pyrite	
		371.8 - 376.9m Marana Dacite is beige with faint pink/peach colouring. Feldspar phenocrysts are <2mm Rock is massive 374.3m 2% talc				
		Flow Banding	185.6m 35 186.0m 50 186.4m 30 186.6m 35 186.8m 25 187.2m 20 187.4m 75 189.4m 75 189.7m 65 189.8m 75 190.0m 65 191.1m 60 193.7m 60 194.0m 50 195.0m 20 195.2m 15			

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		195.4m	15			
		197.3m	50			
		Fault Fabric @ 202.0m	60			
		Flow Banding @ 203.6m	40			
		@ 210.6m	55			
		211.5m	65			
		211.6m	65			
		212.1m	75			
		213.3m	70			
		213.5m	70			
		213.6m	70			
		213.8m	60			
		213.9m	55			
		214.0m	65			
		Clay Filled Fracture @ 216.2m	12			
		Pyrite Veinlets @ 244.4m	50			
		244.5m	50			
		244.8m	40			
		245.2m	67			
		245.9m	50			
		Flow Banding @ 249.9m	55			
		250.0m	60			
		250.2m	55			
		251.0m	65			
		251.2m	55			
		251.4m	70			
		252.7m	60			
		253.4m	60			
		254.1m	65			
		257.2m	60			
		257.6m	60			
		258.5m	58			
		259.1m	65			
		262.7m	65			
		Pyrite and Carbonate Vein @ 260.2m	40			
		Carbonate Vein @ 262.8m	40			
		Quartz Vein @ 264.4m	20			
		264.5m	30			
		Flow Banding @ 273.1m	30			
		Carbonate Veining @ 275.6m	45			
		276.9m	65			
		Flow Banding @ 277.1m	50			
		Fabric/Fault Contact @ 285.5m	20			
		Carbonate Vein @ 295.2m	10			
		296.7m	35			
		296.8m	40			

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		Fabric @ 308.8m Flow Banding @ 347.5m Carbonate Vein @ 349.7m	45 45 20			
376.88 TO 420.24	«Andesite» «Breccia»	<p>Colour: grey Brecciated unit Matrix and clasts are similar in colour, therefore probably the same composition. Moderate to intensely altered 1% Fuchsite</p> <p>376.9 - 377.5m Clasts are angular with a hematitic matrix (gradational contact?) 377.5 - 379.9m Grey to dark green, brecciated Clasts are subrounded, 3-15mm. Matrix is fine grained, green/grey in colour Clast composition is dominantly Andesite feldspar porphyry and Marama Dacite Clasts: 60-70% Matrix: 30-40% Trace Fuchsite</p> <p>379.9 - 384.4m Fault: Grey, Intensely altered/sheared. Brecciation at 382.0 - 382.3m (clasts are subangular; clasts: 60% matrix: 40%) at 384.4m sharp contact at 65 deg to CA</p> <p>384.4 - 387.0m Marama Flow 384.4 - 384.5m Fabric/flow banding is parallel to fault fabric (50 deg). grey to dark grey, dark grey colour is an alteration (or light grey may be bleaching) 386.8m Amygdules tend to align along a plane at 60 deg to CA 387.0m Fault contact at 70 deg to CA</p>		<p>Moderate Carbonate Alteration (Carbonate veins average 3-5%)</p> <p>377.5 - 379.9m Chloritic alteration 5% yellow/green/beige veinlets (sericite or Fe Carbonate?) of random orientation (often follows matrix pattern) carbonate alteration (tr - 1% carbonate veining)</p> <p>379.9 - 384.4m Clay Alteration, Very weak Carbonate Alteration</p> <p>384.4 - 387.0m Weak Carbonate Alt</p> <p>393.2 - 393.3m 5% talc 393.3m weakly banded carbonate vein at 75 deg to CA</p> <p>{401.8-402.8} «5-10% qz vm» 406.7m Crudely banded Quartz vein - looks like stylolite at center. Vein 2cm width, at 70 deg to CA 412.6 - 412.8m Quartz vein (filling matrix and vein at 05 deg to CA) 413.4 - 413.6m Carbonate vein containing angular fragments of host</p>	<p>«avg 5% py»</p> <p>376.9 - 395.0: 10% pyrite, from 395.0 to 420.2m, pyrite decreased to about 1-2%</p> <p>{379.9 - 384.4} «10% Pyrite»</p> <p>395.0m Pyrite down to 5%, gradually decreases to 1-2% at 420.4m</p>	{379.9 - 384.4} «fault»

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		Fault Fabric @ 380.2m @ 380.6m @ 383.8m Carbonate Vein @ 393.2m Quartz Vein @ 406.7m Carbonate Vein @ 413.4m Quartz Vein @ 419.9m @ 420.0m	35 40 50 35 70 20 70 70	*rock; at 20 deg to CA 414.7 - 414.8m Carbonate vein with angular fragments of host. 415.8m Quartz vein, weakly banded; 4cm width, at 52 deg to CA 417.2 - 417.5m 5-10% quartz veins 419.9m 0.5cm wide quartz vein at 70 deg to CA		
420.24 TO 458.72	«Felsic» «Intrusion» E.O.K.	Colour: Pale grey to medium grey, mottled Grain Size: fine to medium grained Contains 5% feldspar phenocrysts (2-5mm), contains some angular clasts. Trace to 1% apple green mineral in blebs (fuchsite?)		trace to 1% carbonate veining 453.0m Quartz vein that is weakly banded; 2cm width; 25 deg to CA	«3-5% py»	

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Sample	From (m)	To (m)	Length (m)	ASSAYS					GEOCHEMICAL					COMMENTS
				Cu %	Pb %	Zn %	Ag g/t	Au g/t	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb	
BCD19752	23.47	25.00	1.53						114	298	169	1.9	10	
BCD19753	25.00	26.40	1.40						52	42	160	0.9	70	
BCD19754	26.40	28.30	1.90						28	29	103	0.8	223	
BCD19755	30.10	31.60	1.50					1.63	26	38	62	2.7	1350	
BCD19757	55.20	56.70	1.50					1.02	21	25	53	1.4	1050	
BCD19758	56.70	58.86	2.16						29	14	34	1.9	277	
BCD19759	63.85	65.35	1.50						30	26	67	1.3	64	
BCD19760	65.35	66.85	1.50						21	18	52	1.2	27	
BCD19761	66.85	68.47	1.62						24	17	58	1.2	261	
BCD19763	121.48	122.98	1.50						28	32	73	0.8	4	
BCD19764	122.98	124.50	1.52						24	31	71	0.9	2	
BCD19765	124.50	126.00	1.50						16	26	59	0.7	19	
BCD19766	126.00	127.50	1.50						17	31	81	0.7	23	
BCD19767	127.50	129.00	1.50						13	37	32	0.8	19	
BCD19768	129.00	130.50	1.50						17	25	55	0.9	14	
BCD19769	130.50	132.25	1.75						15	32	69	1	3	
BCD19772	183.76	185.35	1.59						27	15	51	0.7	2	
BCD19775	244.47	245.97	1.50						44	16	46	0.4	3	
BCD19777	283.84	285.54	1.70						21	17	48	0.9	1	
BCD19778	308.45	310.00	1.55						28	19	47	0.4	2	
BCD19782	377.04	378.54	1.50						24	27	75	0.9	2	
BCD19783	378.54	379.87	1.33						22	22	76	0.9	1	
BCD19784	379.87	381.40	1.53						21	36	51	0.8	3	
BCD19785	381.40	382.90	1.50						22	35	68	0.7	4	
BCD19786	382.90	384.40	1.50						20	29	34	0.9	2	
BCD19787	384.40	385.70	1.30						18	19	66	0.4	2	
BCD19788	385.70	387.20	1.50						18	19	45	0.5	4	
BCD19789	387.20	388.70	1.50						14	20	87	0.7	2	
BCD19791	390.20	391.70	1.50						15	17	24	0.7	54	
BCD19792	391.70	393.20	1.50						16	16	41	0.6	20	
BCD19793	393.20	394.70	1.50						19	19	50	0.4	26	
BCD19794	394.70	396.20	1.50						16	16	32	0.8	19	
BCD19795	396.20	397.70	1.50						15	19	91	0.6	18	
BCD19796	397.70	399.20	1.50						14	29	82	0.5	22	
BCD19797	399.20	400.70	1.50						23	118	103	0.9	40	
BCD19798	400.70	402.20	1.50						12	23	48	0.5	31	
BCD19799	402.20	403.70	1.50						13	42	43	0.8	19	
BCD19800	403.70	405.20	1.50						12	24	76	0.6	3	

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Sample	From (m)	To (m)	Length (m)	Cu %	Pb %	Zn %	Ag g/t	Au g/t	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb
BCD20201	405.20	406.70	1.50						14	23	78	0.6	16
BCD20202	406.70	408.20	1.50						13	27	48	0.8	44
BCD20203	408.20	409.70	1.50						16	24	71	0.7	19
BCD20204	409.70	411.20	1.50						14	25	58	0.7	38
BCD20206	412.70	414.20	1.50						14	23	62	0.9	42
BCD20207	414.20	415.70	1.50						12	22	61	0.8	219
BCD20208	415.70	417.20	1.50						15	20	46	0.7	51

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Sample	From (m)	To (m)	Length (m)	AL2O3 %	BAT %	CAO %	FE2O3 %	K2O %	MGO %	MNO %	NA2O %	P2O5 %	SI02 %	TIO2 %	S %	TOTAL %	Ag ppm	As ppm	Ba ppm	Cu ppm	Pb ppm	Sb ppm	Zn ppm	Au ppb
BCD19751	18.29	20.67	2.38	19.63	0.258	3.09	4.45	6.75	1.78	0.1	3.4	0.25	55.83	0.71	0.87	97.12	1	20	41	20	49	3	73	5
BCD19756	53.71	55.20	1.49	12.23	0.094	3.38	4.3	5.46	3.12	0.11	0.05	0.2	66.83	0.59	0.01	96.38	2.1	23	19	41	73	5	67	600
BCD19762	93.57	96.62	3.05	16.42	0.159	2.32	5.32	4.76	2.25	0.07	1.65	0.21	61.79	0.83	0.62	96.4	0.8	24	43	21	49	3	64	5
BCD19770	132.25	133.64	1.39	17.08	0.089	4.74	6.6	4.22	3.35	0.12	0.12	0.39	56.09	0.89	1.08	94.78	1	36	285	21	59	7	73	40
BCD19771	172.98	175.87	2.89	16.57	0.054	2.88	3.73	2.47	1.43	0.07	4.77	0.09	63.32	0.5	0.01	95.88	0.7	9	69	26	33	2	61	10
BCD19773	198.80	201.80	3.00	16.5	0.081	5.44	3.81	2.85	1.14	0.09	3.23	0.05	61.06	0.49	0.01	94.75	0.8	7	107	22	22	5	56	5
BCD19774	244.47	245.97	1.50	23.6	0.103	0.53	4.38	5.21	0.85	0.05	1.56	0.01	57.29	0.64	0.02	94.23	0.5	7	90	48	22	1	69	5
BCD19776	279.50	281.00	1.50	15.01	0.091	8.23	2.81	2.47	0.78	0.07	4.03	0.01	58.79	0.36	0.05	92.69	0.8	3	389	30	14	1	37	5
BCD19779	322.17	325.22	3.05	16.22	0.113	3.57	3.11	2.87	0.59	0.06	4.59	0.01	63.53	0.41	0.02	95.08	0.6	3	166	31	18	1	46	5
BCD19780	342.60	345.50	2.90	17.14	0.135	2.84	3.12	3.39	0.76	0.05	5.07	0.02	63.76	0.44	0.01	96.72	0.6	5	83	29	15	1	46	5
BCD19781	373.88	376.88	3.00	15.28	0.11	3.82	2.71	3.23	0.96	0.05	3.46	0.01	64.4	0.31	0.07	94.41	0.6	8	173	18	20	1	37	5
BCD19790	388.70	390.20	1.50	15.26	0.143	2.09	5.56	6.66	1.12	0.02	0.51	0.17	62.26	0.65	3.48	97.94	0.6	5	38	13	20	1	24	10
BCD20205	411.20	412.70	1.50	16.01	0.136	3.18	4.42	8.53	1.34	0.04	1.03	0.16	59.82	0.63	2.3	97.62	1.2	16	20	15	36	1	73	45
BCD20209	425.80	428.85	3.05	14.09	0.107	1.76	4.43	8.71	2.09	0.04	0.27	0.16	63.76	0.55	2.95	98.91	1	25	17	12	37	3	51	5
BCD20210	453.24	456.28	3.04	16.76	0.121	1.26	4.36	8.29	2.79	0.06	0.52	0.18	59.69	0.62	2.64	97.3	0.8	27	30	14	48	5	65	5

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 3.40	«Casing»					
3.40 TO 19.40	«Andesite Lahar» «(Lower)»	Colour: Medium Green Grain Size: Fine Grained - sed rich matrix w/ subrounded frags 0.5-10 cm - 20% fgr And - 30% fl-banded Dacite Frags - 30% Px rich frags - 20% assorted sed frags, hematite rich, etc.		- «3-4% Qtz veinlets» - 1-15mm, some finely laminated veins @ 45 deg to CA		Faults w/clay gouge: 16.0 - 16.4 19.2 - 19.4 @ 70 deg to CA
19.40 TO 41.80	«Marama Fl-Bx»	Colour: Medium Red Grain Size: Fine Grained - Pale sub-ang Flow Banded Marama frags in a hematite rich dacite matrix (primary) (3mm-10cm)		2-3% 0.5cm Qtz veinlets @ 40 deg to CA {38.0 - 41.8} Increase to «5% QV's»; 1 cm, vuggy, @ 10-30 deg to CA	rare 0.5 cm pyrite frags	Faults @ 28.0 m(10 cm) 50 deg to CA w/hem 28.5 - 29.3 @ 60 deg to CA w/hem 31.6 - 33.0 @ 50 deg to CA 35.1 - 35.3 @ 30 deg to CA
41.80 TO 49.70	«Fault Zn»	Colour: Medium Brown Grain Size: Fine Grained - a strong fault w/poor recovery - some clay gouge but most lost - 44.8: end of Flow-Bx, beginning of massive flow	15	- «strong oxidation» to fault w/hem. staining - 5% 0.5cm QV's @ 10-20 deg to CA		portions only 50% recovery
49.70 TO 106.30	«Marama Fl»	Colour: Light Green Grain Size: Fine Grained {49.7 - 57.5} Lt grn «massive flow» w/occas hem rich flow band {57.5 - 66.1} Primary «Fl-Bx» w/ subrounded 1-5cm grn dacite frags in a hematite rich matrix {66.1 - 79.2} «Fl Band» flow w/ alternating grn and hematitic bands {79.2 - 106.3} Generally «Fl-Bx» w/subrounded grn dacite frags 1-4cm in a hematite rich matrix Flow banding @ 52.2m 69.2m 90.5m	30 25 30	{49.7 - 103.6} «2% Qtz veinlets» 1-3 mm @ 10-40 deg to CA 103.6 - 106.3 10% Qtz-carb veinlets milky wht @30 deg to CA, to 4cm wide		

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
106.30 TO 110.10	«Fault Zn»	Colour: Dark Green Grain Size: Fine Grained - Host is chloritic And? - Strongly fracture zone w/ clay gouge Fault @ 106.3 - 110.1m	40	- «intense chlorite & sericite alt'n» w/ minor talc - minor hematite alteration	tr dissem py	
110.10 TO 307.00	«Marana Dacite»	Colour: Light Green Grain Size: Fine Grained {110.1 - 120.4} «Fl-Bx?» {120.4 - 175.9} «Dacite fl» w/ mainly grn flow bands but 30% hematite rich bands 175.9 - 307.0 Dacite fl. w/ flow bands all grn homogenous Flow Banding @ 136.1m 156.2m 192.6m 290.0m	30 40 40 45	{110.1 - 120.4} - strong chl presence clots or frags (1-4 cm) - pervasive hematite alteration - «5% QV's»; 0.5 cm @ 30 deg to CA, milky wht w/open space vugs {120.4 - 180.4} - avg «2% Qtz veinlets» @ 30 deg to CA {180.4 - 182.3} - «10% QV's»; milky wht to 1cm @ 45 deg to CA. Weak bleaching. {182.3 - 234.1} - increase to «3% Qtz veinlets» @ 30 deg to CA {234.1 - 235.7} - shatter zone w/ «15-20% Qtz-carb veinlets»; milky wht {235.7 - 255.1} - pervasive, «weak bleaching» - 3% Qtz carb veinlets - occas 1 cm shear zone 255.1 - 274.9 - bleaching disappears - 3% Qtz carb veinlets {274.9 - 276.7} - shatter zone, «15% Qtz carb veinlets» in the matrix 276.7 - 307.0 - 3% Qtz carb veinlets		298.0 - 307.0 Rock becomes broken approaching a fault breaks every 2-3cm @ 60 deg to CA

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307.00 TO 321.40	«Altered Fault Zn»	Colour: Dark Grey Grain Size: Fine Grained - Host Rock is likely Dacite		- mod to «intensely pervasive silic'n» - some talc on fractures w/ minor grn micas and leucoxene xtals - 5% late stage wht Qtz carb veinlets - silicified zones @ 60 deg to axis - occas 1cm round QV wht frag - silicified portions have a dark blue color - high Cl content	- «avg 8% fgr py» - 3-4% as fgr dissem py - 3-5% as veinlets parallel to silic'n (more yellow colour) - occas bleb 0.5 cm of py	
321.40 TO 351.10	«Dacite Fl»	Colour: Medium Green Grain Size: Fine Grained - Massive fine grained dacite flow with occas flow bands (faint)		- 3% Qtz Carb veinlets @ 45 deg to CA 1mm - 5mm - minor talc on fracture		
351.10 TO 378.50	«Altered And Flow»	Colour: Medium Green Grain Size: Fine Grained - Appears to be a fp rich flow? with some px 370.0 - 378.5 Hem rich fp flow w/ seric rich tuff units Fabric @ 351.1 - 378.5m varies from to	20 40	- pervasive chl alt'n - «25% silic'n by milky wht-blue QV's» w/ another 10-25% silic'd bx's - avg 2% leucoxene xtals - commonly have talc on fract - 3-4% late stage carb veinlets - occas fl in veinlets 351.1 - 370.0 - pink fragments (rhodonite or kspar) 370.0 - 378.5 - 5% chalc veinlets @ 30 deg to CA - 0.5 cm in dia	- «avg 5% fgr dissem py»	
378.50 TO 452.00	«Marama Dacite»	Colour: Light Pink Grain Size: Fine Grained - fp rich massive dacite flow - fp's 1mm in diameter		- pervasive (pottassic alteration) - avg «5% chalc veinlets» @30deg to CA		{436.4 - 435.9}«Fault» w/clay gouge & broken rock
452.00 TO 488.00	«Altered Marama Dacite»	Colour: Light Pink - fgr massive dacite flow {484.8 - 487.5} - «bx» - Marama becomes brecciated w/ silica in fract {487.5 - 488.0} - «finely laminated @ 45 deg to CA» w/ gry, almost tuffaceous contact w/ small subang fragments		- pervasive pottassic alt'n (pink) - avg 5% 5mm silica veinlets @ 30 deg to CA	tr dissem py	

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
488.00 TO 505.10	«Gneiss» E.O.H.	Colour: Medium Green Grain Size: Medium Grained - mgr with chl. alt'd mafics - Gneissocity @ 60-70 deg to CA		{488.0 - 491.3} - Textures obliterated w/ - hem and silic'n 491.3 - 505.1 - textures more visible w/ 10% semi transparent QV's 1-3 cm w/ pottasic alt'n @ 60-70 deg to CA		

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ASSAY SHEET

DATE: 22-March-1990

Sample	From (m)	To (m)	Length (m)	ASSAYS					GEOCHEMICAL					COMMENTS
				Cu %	Pb %	Zn %	Ag g/t	Au g/t	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb	
BCD20226	11.70	13.20	1.50						51	27	53	1	1	
BCD20227	16.30	17.90	1.60						30	32	52	1	1	
BCD20228	17.90	19.40	1.50						24	29	58	0.8	2	
BCD20229	28.00	29.30	1.30						22	18	48	0.5	4	
BCD20231	38.00	39.50	1.50						18	36	47	0.6	1	
BCD20232	39.50	41.80	2.30						19	26	42	0.5	2	
BCD20233	41.80	43.30	1.50						21	25	49	0.7	4	
BCD20234	43.30	44.80	1.50						17	14	29	0.3	1	
BCD20235	44.80	46.30	1.50						18	12	28	0.4	5	
BCD20236	46.30	47.80	1.50						20	15	33	0.5	1	
BCD20237	47.80	49.70	1.90						11	12	32	0.3	4	
BCD20240	103.60	105.10	1.50						21	28	40	0.8	2	
BCD20241	105.10	106.30	1.20						30	22	52	0.6	5	
BCD20242	106.30	107.80	1.50						22	27	51	0.8	1	
BCD20244	109.30	110.10	0.80						29	33	12	0.7	3	
BCD20245	110.10	111.60	1.50						38	29	54	0.7	1	
BCD20246	111.60	113.10	1.50						31	20	46	0.6	2	
BCD20248	114.60	116.10	1.50						28	14	44	0.5	1	
BCD21151	180.40	182.30	1.90						29	22	49	0.3	2	
BCD21153	234.10	235.70	1.60						28	11	53	0.4	1	
BCD21156	274.90	276.70	1.80						24	18	42	0.5	2	
BCD21158	307.00	308.50	1.50						13	27	71	1	1	
BCD21159	308.50	310.00	1.50						12	32	74	1.2	5	
BCD21160	310.00	311.50	1.50						9	23	68	1	1	
BCD21162	313.00	314.50	1.50						13	29	57	0.7	2	
BCD21163	314.50	316.00	1.50						18	30	54	1.3	1	
BCD21164	316.00	317.50	1.50						23	28	69	0.9	3	
BCD21165	317.50	319.00	1.50						22	23	61	0.9	2	
BCD21166	319.00	321.40	2.40						12	30	48	1.1	4	
BCD21168	351.10	352.60	1.50						23	44	64	1.5	1	
BCD21170	354.10	355.60	1.50						12	26	88	1.1	2	
BCD21171	355.60	357.10	1.50						25	28	79	1.2	1	
BCD21172	357.10	358.60	1.50						14	31	42	1.4	1	
BCD21174	360.10	361.60	1.50						22	37	38	1.1	3	
BCD21175	361.60	363.10	1.50						37	44	39	1.4	1	
BCD21176	363.10	364.60	1.50						45	40	68	1.1	5	
BCD21177	364.60	366.10	1.50						21	33	20	1.1	2	
BCD21178	366.10	367.60	1.50						13	38	49	1	3	

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ASSAY SHEET

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Sample	From (m)	To (m)	Length (m)	Cu %	Pb %	Zn %	Ag g/t	Au g/t	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb
BCD21179	367.60	369.10	1.50						9	30	47	1.1	2
BCD21180	369.10	370.00	0.90						11	51	38	1.5	1
BCD21186	486.50	488.00	1.50						29	20	52	0.4	1
BCD21187	488.00	489.50	1.50						16	12	51	0.4	1

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ASSAY SHEET

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Sample	From (m)	To (m)	Length (m)	AL2O3 %	BAT %	CAO %	FE2O3 %	K2O %	MGO %	MNO %	NA2O %	P2O5 %	SI02 %	TIO2 %	S %	TOTAL %	Ag ppm	As ppm	Ba ppm	Cu ppm	Pb ppm	Sb ppm	Zn ppm	Au ppb
8CD20230	31.60	33.00	1.40	14.48	0.083	1.66	2.96	2.82	0.71	0.05	3.02	0.24	68.31	0.42	0.02	94.77	0.4	12	267	27	22	1	49	5
8CD20238	69.20	72.20	3.00	14.78	0.109	1.76	2.94	3.42	0.79	0.04	3.96	0.28	68.5	0.43	0.06	97.07	0.6	5	58	27	23	1	47	5
8CD20239	90.50	93.50	3.00	14.43	0.132	2.97	3.66	3.14	1.5	0.07	3.57	0.35	66.16	0.53	0.01	96.53	1.2	6	65	34	27	2	59	10
8CD20243	107.80	109.30	1.50	21.2	0.074	1.21	2.87	5.43	0.93	0.03	1.82	0.23	59.34	0.72	0.04	93.88	0.6	4	131	35	22	1	38	5
8CD20247	113.10	114.60	1.50	16.61	0.069	3.27	2.77	3.03	0.96	0.08	3.67	0.31	63	0.41	0.02	94.21	0.6	1	154	29	23	1	50	5
8CD20249	142.30	145.30	3.00	15.56	0.121	2.96	2.99	3.29	1.17	0.04	4.15	0.3	64.26	0.38	0.01	95.24	0.6	8	85	33	24	1	57	5
8CD20250	169.80	172.80	3.00	16.05	0.083	2.35	2.66	3.04	0.95	0.04	3.93	0.28	65.38	0.39	0.03	95.18	0.4	1	76	38	21	1	54	5
8CD21152	206.40	209.40	3.00	15.53	0.106	2.46	2.86	2.85	1	0.05	4.71	0.28	65.69	0.38	0.02	95.94	0.8	12	50	34	23	1	60	10
8CD21154	236.80	239.80	3.00	15.38	0.136	3.51	2.65	2.61	0.6	0.05	4.32	0.3	64.31	0.37	0.04	94.27	0.6	2	711	29	20	1	50	5
8CD21155	267.30	270.30	3.00	16.25	0.098	2.41	2.81	3.38	0.73	0.04	4.14	0.26	65.19	0.39	0.01	95.71	0.4	3	95	37	13	1	55	5
8CD21157	291.70	294.70	3.00	15.43	0.109	2.39	2.7	3.03	0.77	0.05	4.51	0.28	66.43	0.37	0.03	96.09	0.7	6	86	33	23	1	78	10
8CD21161	311.50	313.00	1.50	14.54	0.157	4.23	6.15	4.72	2.12	0.06	1.42	0.47	57.6	0.68	3.75	95.9	1.7	9	69	16	44	1	82	5
8CD21167	343.50	346.50	3.00	16.64	0.119	2.71	3.14	3.15	0.73	0.04	4.49	0.29	63	0.39	0.02	94.72	0.7	5	391	35	24	1	62	5
8CD21169	352.60	354.10	1.50	13.82	0.147	3.48	6.38	4.11	2.73	0.06	0.66	0.43	60.19	0.93	1.82	94.77	1.3	8	114	21	54	3	68	5
8CD21173	358.60	360.10	1.50	14.44	0.093	2.27	6.32	3.78	2.55	0.05	0.29	0.38	61.06	0.96	1.79	93.99	1.2	7	161	24	50	1	62	5
8CD21181	370.00	373.00	3.00	16.13	0.138	3	6.36	3.55	2.05	0.08	3.45	0.42	58.21	0.97	0.01	94.35	1	13	114	38	37	1	83	10
8CD21182	383.10	386.10	3.00	13.7	0.104	1.76	2.2	3.04	0.76	0.04	3.35	0.23	69.55	0.26	0.23	95.22	0.4	12	348	11	23	1	42	5
8CD21183	407.50	410.50	3.00	13.66	0.1	2.62	2.19	2.87	0.75	0.05	3.28	0.25	67.99	0.26	0.15	94.17	0.5	14	301	7	26	1	41	5
8CD21184	441.00	444.00	3.00	14.26	0.097	3.07	2.26	3.07	0.7	0.05	3.41	0.27	67.58	0.27	0.14	95.17	0.6	13	273	12	20	1	40	5
8CD21185	471.50	474.50	3.00	13.37	0.087	2.78	2.14	3.66	0.57	0.05	3.21	0.28	62.82	0.27	0.09	94.73	1	25	178	17	26	1	42	5
8CD21188	499.00	502.00	3.00	15.22	0.056	5.18	5.17	2.28	2.2	0.12	3.48	0.49	56.8	0.56	0.02	96.62	3.2	32	57	47	81	7	104	5

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 6.06	«Casing»					
6.06 TO 34.42	«And Lahar»	<p>- 70% clasts (2-65mm) - 30% matrix (fine grained;<1mm) Clast composition: Feldspar Andesite Flow; 1% felsic (Intrusive ?) (with 5% mafics of up to 2mm size; mottled white/pale beige colour); 1% fine grained, light beige/pink clasts (Marama ?) 2% Carbonate clasts Clasts are subrounded</p> <p>{21.2 - 21.4} «Quartz Breccia» Contains band approx 2mm width, red siliceous (Jasper ?) at 30 degrees to C.A.</p> <p>23.3m 15cm clast that is green and white mottled coloured with 2% mafic blebs, 15% "white" patches 40% light green patches, 40% dark green patches; 10% of feldspars are weakly iron altered (orange coloured)</p> <p>25.3 - 26.6m 5% Matrix, 95% Feldspar Andesite Flow Clasts 25.6 - 25.8m Clasts with reaction rims of a brown/yellow colour, vary up to 0.5cm width 25.8 - 26.2m Hematitic reac/weath rims of clasts 26.6 - 30.7m 10 - 15% Matrix, 85 - 90% Feldspar Andesite Flow Clasts {27.2 - 30.7} «5% Quartz Clasts»</p> <p>30.7 - 31.2m Increase in matrix to 25%</p>		<p>«Chloritic Alt»</p> <p>6.6 - 8.9m Hematitic matrix 9.3 - 9.7m Weak Chloritic Alteration</p> <p>10.0 - 10.9m Hematitic Matrix 11.9 - 12.7m Weak Chloritic Alteration 13.9 - 14.7m Hematitic Matrix 17.4 - 20.2m Hematitic Matrix with Chloritic Altered Clasts 21.2 - 21.4m Chloritic Alteration</p> <p>21.4 - 23.5 Hematitic Alteration</p> <p>23.7 - 24.5m Clay and Iron (Carbonate ?) Alteration 24.5m Celadonite (?) 24.5 - 25.3m Clay and Hematite Alt.</p> <p>26.6 - 30.7m Hematitic Matrix and weak alteration to clasts (sometimes get a concentric banding effect due to the hematite alteration) 29.6m 2.5cm wide quartz vein that contains chlorite, epidote, and hematite 30.7 - 31.2m Weak Chlorite Alteration</p>	<p>«tr py»</p> <p>{23.7 - 24.0} «1% Malachite»</p>	<p>9.3 - 9.7m Fault (broken core that is rusty coloured on fracture surfaces)</p> <p>11.9 - 12.7 Fault (broken core)</p> <p>{23.7 - 25.3} «Fault» Too rubby to determine orientation</p>

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		<p>31.2 - 32.8m 75% clasts, 25% matrix</p> <p>32.8 - 34.4m Andesite Breccia Clasts 80%, Matrix 20% Feldspar Andesite Flow clasts contain 5% feldspar phenocrysts (0.5 - 2mm) and 2% mafics</p> <p>Fault Fractures @ 9.3m 9.4m 9.6m 9.7m 12.2m 12.3m 12.4m 12.7m</p> <p>Red Siliceous Vein(?) @ 21.2m Slickenside @ 21.4m Quartz Vein @ 29.6m Fracture @ 31.2m Fault Fractures @ 32.0m 32.2m Quartz Breccia @ 33.4m</p>	<p>35 40 35 35 40 65 40 20 30 35 65 35 20 05 45</p>	<p>31.2 - 32.8m Hematitic Alteration 2% Talc 31.2 - 32.0m Hematitic Alteration is pervasive 31.4 - 31.6m Concentric Alteration to clasts 32.0 - 32.8m Hematitic Alteration restricted to clasts</p> <p>{33.3 - 33.4} «Qz Breccia» contains quartz, fluorite, chlorite, and hematite 33.7 - 33.8m Iron alteration 34.2 - 34.4m Iron alteration</p>	<p>33.3 - 33.4m 1% pyrite</p>	<p>31.8 - 32.6m Fault (broken core)</p> <p>34.2 - 34.4m Fault (broken core)</p>
34.42 TO 40.34	«Feldspar» «Andesite» «Flow» «Breccia»	Flow brx is altered		<p>36.1 - 38.3m Feldspars altered to a pale yellow/green mineral (epidote) 36.1 - 37.5m Iron Alteration along fractures and Carbonate Veinlets 38.3 - 38.7m Clay Alteration 38.7 - 40.0m Hematitic Alteration</p>		<p>36.1 - 37.5m Fault 38.3 - 38.7m Fault</p>
40.34 TO 52.34	«Fault» «Zone» «with» «Quartz» «Breccia»	<p>Colour: Grey to grey/brown Grain Size: 3mm to 45mm</p> <p>40.3 - 43.8m 60 - 70% Clasts, 30 - 40% Matrix Clasts: 3mm - 25mm; difficult to distinguish from matrix</p>		<p>{40.3 - 47.4} «Clay Alt» 42.9 - 43.1m Chlorite and Clay Alt.</p>	1% pyrite	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		Matrix is fine grained Fault Gouge texture				
		{43.8 - 44.2} «Quartz Breccia» Milky white quartz clasts with weak chloritic colouring around edges of clasts. Clasts are subangular to subrounded, varying in size from 0.5 to 8cm. As well, mottled grey/green colouring within clasts and matrix.				43.6 - 43.8m 2-3% pyrite {43.8 - 43.9} «3% cpy, 2% tetra, 1% py» {43.9 - 44.2} «1% chalcopyrite» «3% pyrite»
		44.2 - 44.4m Andesite Breccia		44.2 - 44.4m Clay altered	44.2 - 44.9m 2% pyrite	
		{44.4 - 44.9} «10% Quartz Clasts»		44.4 - 44.9m Weak Silicification	44.8 - 44.9m 1% chalcopyrite	
		44.9 - 45.0m Andesite Breccia		44.9 - 45.0m Clay alteration		
		{45.0 - 45.2} «Quartz Breccia»				
		45.2 - 47.4m Andesite Fault Breccia		45.2 - 47.4m Clay alteration		
				46.6 - 47.0m Chlorite alteration		
		{47.4 - 48.0} «Quartz Breccia»		{47.4 - 48.0} «Silic. & Chlorite Alt.»	{47.4 - 47.6} «1% Cpy, 1% tetra, 1% py»	
				47.8m 1% purple fluorite in calcite veinlets. One veinlet (40 deg to CA) is vuggy with calcite crystal growth into vugs. Veinlets are 2mm width.	47.6 - 48.0m 1-2% pyrite	
		48.0 - 48.4m Andesite Fault Breccia				
		{48.4 - 48.7} «Quartz Breccia»			{48.4 - 48.7} «1% Cpy, tr tetra.»	
		48.7 - 48.9m Andesite Fault Breccia			48.7 - 48.9m 3% pyrite	
		{48.9 - 49.6} «Quartz Breccia»		48.9 - 49.6m Silicification and Chlorite Alteration	{48.9 - 49.6} «1% Cpy, 1% Tetra.»	
		49.6 - 52.3m Andesite Fault Breccia		49.6 - 50.7m Clay Alteration		
		Fracture @ 40.4m	40	50.7 - 52.3m Chlorite and Clay Alt.	{50.7 - 52.3} «5% Py»	
		40.8m	15			
		Clay filled Fracture @ 41.2m	35			
		Quartz Breccia Contact @ 43.8m	30			
		Fracture @ 45.8m	10			
		Clay filled Fracture @ 46.2m	35			
		Carbonate Vein @ 47.8m	40			
		47.8m	10			
		Quartz Breccia Contact @ 48.9m	55			
		Fractures in Quartz Breccia @ 49.1m	45			
		49.2m	60			
		49.3m	55			
		49.4m	50			
		Clay filled Fracture @ 51.3m	20			
		Fabric @ 52.2m	45			
		Andesite Fault Contact @ 52.3m	45			

MINNOVA INC.
DRILL HOLE RECORD

HOLE NUMBER: DM-21

DATE: 22-March-1990

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
52.34 TO 57.08	«Andesite» «Lahar»	80% Clasts, 20% Matrix Clasts: 1 - 70mm; Matrix is fine grained Clasts are subrounded to subangular, dominantly of feldspar Andesite Porphyry Flow. Clasts are grey with white feldspar phenocrysts. Some clasts have a beige/white alteration rim while other clasts are all beige/white. Matrix is hematitic.		54.4m Trace Fuchsite		
57.08 TO 64.90	«Feldspar» «Andesite» «Flow» «Breccia»	Colour: Grey/green Grain Size: 0.5 to 5cm (clasts) Clasts are subangular. 10% feldspar phenocrysts that range up to 5mm in size, and 3% mafic blebs, ranging to 3mm in size. {63.0 - 64.9} «Fault Zone» 63.1 - 64.0m Brown, very hard. Trace Fluorite. Subangular to subrounded clasts that are 2cm diameter. 64.6m 1.5cm wide band that is 50 deg to CA. Band is green (chlorite and clay, possibly talc), soft, containing clasts of host rock. 64.9m Similar to 64.6m except 40 deg to CA Fault Fabric @ 63.0m 64.2m 64.4m 64.6m Fault Contact @ 64.9m	50 60 50 40 40	«Chlorite Alt» {63.1 - 64.0}«Silic.» 1% Carb. Vnlts 64.0 - 64.9m Clay and Chloritic Alt	«2% Py» 64.0 - 64.9 1-2% Pyrite	63.0 - 64.9m Fault Zone
TO 64.90	«Zone»					
64.90 TO 72.00	«Andesite» «Lahar»	Colour: Grey/green with creme and pale green patches 64.9 - 67.6m 75% clasts, 25% matrix Clasts: 3 - 120mm; subangular to subrounded Clasts are grey, fine grained with 1% of clasts containing feldspar phenocrysts Matrix is fine grained, being predominantly hematitic. However, matrix is intermixed with chlorite from 66.8 - 67.3m, and is chloritic				

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS														
		<p>at 67.3 - 67.6m. 65.1 - 65.9m Clasts have creme coloured alteration rims 66.6 - 67.4m Clasts have a pale green alteration rim 67.6 - 69.1m Grey, fine grained breccia that is Andesitic in composition [Fault ?] 69.1 - 69.8m Andesite Breccia with a green/grey colour 69.8 - 70.4m Same as 67.6 - 69.1m 70.4 - 72.0m Same as 69.1 - 69.8m</p>																		
72.00 TO 81.75	«Fault» «Zone»	<p>Colour: Grey to green</p> <p>75.5 - 76.6m Most intensely altered</p> <p>77.0 - 78.7m Pale red and green mottled colouring with carbonate veins and blebs</p> <p>Fault Fabric</p> <table style="margin-left: 40px;"> <tr><td>72.7m</td><td>75</td></tr> <tr><td>74.0m</td><td>60</td></tr> <tr><td>75.4m</td><td>60</td></tr> <tr><td>75.6m</td><td>50</td></tr> <tr><td>75.8m</td><td>65</td></tr> <tr><td>76.2m</td><td>50</td></tr> <tr><td>79.5m</td><td>50</td></tr> </table>	72.7m	75	74.0m	60	75.4m	60	75.6m	50	75.8m	65	76.2m	50	79.5m	50		<p>72.0 - 72.5m Chloritic Alteration 72.5 - 73.8m Clay Alteration 73.8 - 76.3m Clay and Chlorite Alt 76.3 - 76.6m «Celadonite Alt» 76.6 - 77.0m Chlorite and Carbonate Alteration 77.0 - 78.7m Hematite, Chlorite, and Carbonate Alteration 78.7 - 81.8m Chlorite and Clay Alt. (Weak Celadonite ?)</p>	«1 - 2% py»	
72.7m	75																			
74.0m	60																			
75.4m	60																			
75.6m	50																			
75.8m	65																			
76.2m	50																			
79.5m	50																			
81.75 TO 203.30	«Andesite» «Lahar» «(Lower)»	<p>Colour: Grey/green with variable coloured clasts Grain Size: 2 - 90mm (clasts)</p> <p>Clasts 80%, Matrix 20% Clasts are subrounded to subangular Clast composition: 10% Mafic, 30% Andesite Feldspar Flow, 30% Other (Flows ?), 1% Quartz Clasts, 1% Banded Quartz Vein Clasts</p> <p>84.0m 3cm clast (Andesite ?) with a carbonate vein with 2% pyrite. Vein is rimmed by chlorite (selvage ?) which is then rimmed by a dark blue coloured (selvage or envelope ?)</p>			«1% Pyrite»															

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		84.8 - 84.9 Quartz Carbonate Breccia quartz and carbonate forming matrix for host clasts (matrix supported)		84.9 - 85.0m Carbonate Veinlets		
		90.2m Banded Quartz Vein clast of a blue colour 90.6m Banded Quartz Vein clast with a blue colour and 2% pyrite		{97.0 - 102.1} «Clay Alt» 97.0 - 98.4m Chlorite and Clay Alt. 98.4 - 98.8m Clay Alteration 98.8 - 99.7m Intensely Altered, Clay Alteration and ? 99.7 - 102.1m Clay and Chlorite Alt.	{97.0 - 102.1} «2% py»	{97.0 - 102.1} «Fault zone»
		103.4m 11cm siliceous clast with quartz veinlets and 3% pyrite {110.3 - 110.4} «Qtz Brx» Host Rock clasts in Quartz Matrix		127.2 Jasper? (siliceous red) veinlets at 40 deg to CA	{110.3 - 110.4} «5% Py»	110.4 - 110.6 fault @ 60 deg to CA (clay & chl alt'n)
		128.8 - 131.6 looks like a flow (andesitic) fgr, lt grn w/faint mottled pnk-brn colouring; contains 3% mafic phenos (euhedral or subhedral to 3mm, px or hbld?) and 2-3% fsp phenos (ehdrl to sbhdrl, <3mm, wht to lt pnk) chl alt'n or wk potassic alt'n		133.4 large (11cm) carbonate blebs @ 0 deg to CA 133.6 - 141.6 hem alt rx, difficult to determine lahar clasts fault zone? (dk brn-red) 143.5 - 145.9 hematitic alt'n (red) 147.7 - 152.4 hematitic alt rx same dark brn-red colouring as 133.6 - 141.6 151.6 carbonate vein (1cm width) 174.8 carb vein to 5mm 175.0 carb vein to 10mm 175.1 carb vein to 5mm		175.7 - 175.8 fault, chl alt'n, fabric @ 50 deg to CA 183.3 - 183.7 fault 186.8 - 186.9 fault
		188.5 - 188.6 carb vein bx (carb matrix w/host		183.3 - 183.7 clay alt'n 184.4 carb vein, 5mm width 186.4 carb vein 186.8 - 186.9 clay alt'n 188.0 carb vein, 5mm width		

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		clasts, matrix supported) 188.6 - 203.3 dominantly Merame fragments				
		Carbonate Vein @ 90.1m	20			
		@ 90.1m	25			
		Bedding (?) @ 96.6m	65			
		Fault Fabric @ 99.3m	50			
		110.4m	60			
		Jasper (?) Vein @ 127.2m	40			
		Fractures @ 137.8m	55			
		Carbonate Vein @ 151.6m	40			
		174.8m	75			
		175.0m	50			
		175.1m	40			
		Fault Fabric @ 175.7m	50			
		Carbonate Vein @ 184.4m	35			
		186.4m	45			
		188.0m	40			
		188.5m	30			
	E.O.N.					

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ASSAY SHEET

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Sample	From (m)	To (m)	Length (m)	ASSAYS					GEOCHEMICAL					COMMENTS
				Cu %	Pb %	Zn %	Ag g/t	Au g/t	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb	
BCD18752	23.70	25.30	1.60						440	1780	350	4	1	
BCD18753	32.60	34.10	1.50						38	36	303	1.7	8	
BCD18756	41.80	43.70	1.90						51	92	376	1.2	2	
BCD18757	43.70	44.20	0.50	0.078	0.07	0.08	11.6	0.18						
BCD18758	44.20	45.20	1.00	0.032	0.02	0.03	7.7	0.03						
BCD18759	45.20	47.30	2.10						30	69	166	1.6	2	
BCD18760	47.30	48.40	1.10	0.009	0.01	0.04	5.9	0.02						
BCD18761	48.40	49.50	1.10	0.026	0.03	0.06	8.0	0.01						
BCD18762	49.50	50.90	1.40						20	32	145	0.8	1	
BCD18763	50.90	52.30	1.40						24	38	122	1.3	2	
BCD18764	52.30	53.80	1.50						15	22	43	1.6	1	
BCD18766	63.00	64.90	1.90						19	34	93	1.2	15	
BCD18767	70.40	72.00	1.60						60	19	89	1.2	6	
BCD18768	72.00	73.50	1.50						26	24	45	0.6	3	
BCD18769	73.50	75.30	1.80						19	24	60	1	1	
BCD18771	76.60	78.70	2.10						21	16	67	0.6	2	
BCD18772	78.70	80.20	1.50						27	25	70	0.6	155	
BCD18773	80.20	81.70	1.50						27	22	74	0.5	2	
BCD18774	84.40	85.90	1.50						22	24	69	0.7	1	
BCD18775	88.80	90.50	1.70						20	44	71	0.8	6	
BCD18776	97.00	98.50	1.50						15	32	64	0.6	2	
BCD18777	98.50	100.00	1.50						23	26	52	1.1	189	
BCD18778	100.00	102.10	2.10						21	23	79	0.4	1	
BCD18779	110.00	111.50	1.50						20	22	60	0.6	1	
BCD18783	187.10	188.60	1.50						23	20	64	0.5	1	

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ASSAY SHEET

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GEOCHEM. SHEET

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Sample	From (m)	To (m)	Length (m)	AL2O3 %	BAT %	CAO %	FE2O3 %	K2O %	MGO %	MNO %	NA2O %	P2O5 %	SiO2 %	TiO2 %	S %	TOTAL %	Ag ppm	As ppm	Ba ppm	Cu ppm	Pb ppm	Sb ppm	Zn ppm	Au ppb
BCD18751	14.90	17.40	2.50	15.89	0.119	5.08	6.07	3.87	3.39	0.15	2.58	0.26	53.58	0.87	0.01	91.86	2.3	3	122	31	46	1	78	5
BCD18754	37.70	40.30	2.60	18.41	0.169	1.71	4.59	6.23	2.07	0.13	3.4	0.26	58.07	0.71	0.63	96.38	1.2	3	68	32	47	1	173	5
BCD18755	40.30	41.80	1.50	18.87	0.188	1.85	5.43	6.5	2.09	0.09	2.42	0.31	56.56	0.75	2.45	97.51	2	3	62	26	53	1	149	5
BCD18765	57.60	60.60	3.00	18.72	0.228	1.49	4.69	7.09	1.85	0.09	2.72	0.24	57.18	0.67	1.74	96.71	1.3	3	68	28	46	1	144	5
BCD18770	75.30	76.60	1.30	15.6	0.053	3.73	5.57	4.22	3.24	0.1	0.01	0.32	58.06	0.78	1.19	92.86	0.7	11	173	30	42	1	83	5
BCD18780	111.70	114.70	3.00	15.03	0.11	2.68	5.48	5.89	2.58	0.08	0.77	0.24	60.36	0.77	1.1	95.09	0.8	15	58	24	43	1	75	5
BCD18781	128.80	131.60	2.80	15.61	0.12	2.32	3.78	5.2	1.18	0.05	2.51	0.09	64.49	0.57	0.03	95.94	0.3	3	115	16	23	1	43	5
BCD18782	168.50	171.50	3.00	14.84	0.182	6	5.51	3.08	2.98	0.11	3.45	0.31	55.95	0.76	0.06	93.23	2.3	3	545	23	45	1	79	5
BCD18784	197.20	200.20	3.00	15.65	0.127	2.88	3.92	3.3	1.54	0.06	4.09	0.09	63.28	0.55	0.07	95.55	0.5	3	244	35	31	1	66	5

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GEOCHEM. SHEET

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 3.05	«Casing»					
3.05 TO 42.58	«And Lahar»	<p>Colour: Grey-green Grain Size: 3-80mm (clasts) - 80:20, clasts:matrix - clasts are subrounded to subangular - clast composition: 60-70% and fsp porph 5% qtz clasts (vein frags?) 3% fgr and clasts w/5% mafics tr-1% chert? (beige-grey, v siliceous)</p> <p>- some "anomalous" sized clasts: clast or And fsp porph flow @ 12.9 - 13.6 clast @ 14.4 - 14.7 9.1 -9.2 - sandstone matrix (approx 50%) - may actually be SS with And clasts slumping in</p> <p>15.9 - 16.2 - "sandstone" forms matrix (20%)</p> <p>20.2 - banded qtz vein, 5mm, in clast 21.2 - 21.4 - SST & fgr conglomerate forming matrix 25.5 - banded qtz vn frag with cpy & Tt, 2cm width (cpy:15%, Tt:25%)</p>		<p>- «1% carbonate veining» - «chloritic alt'n» 3.1 - 6.5 - Fe alt'n of lahar - alt'n following trends of fractures and matrix 3.5 - 3.6 - clay alt'n as well as Fe alt'n</p> <p>9.2 - carb vein, 5mm width 10.3 - 10.7 - clay alteration 12.7 - 12.8 - 2cm wide zone containing ang frags w/ a carbonate matrix</p> <p>19.6 and 19.8m - carb veins</p> <p>21.4 - carb vein, 3mm width</p> <p>31.4 - carb vein, containing ang clasts of host, to 2cm @ 60 deg to C.A. 34.6 - 34.8 - 2cm carb bleb containing 1% fluorite (grn & purple) @ 0 deg to C.A. 36.9 - qtz veinlet, 5mm, w/2% py in selvage</p>	<p>- «1% pyrite»</p> <p>7.0 - 2% py</p> <p>17.8 - 18.2 - 3% py</p> <p>25.5 - 2% cpy, 2% Tt</p>	

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		<p>37.5 - 37.8 - sandstone, bedding evident</p> <p>40.0 - 40.1 - sandstone</p> <p>40.8 - qtz clast, 6cm</p> <p>42.4 - 42.5 - sandstone/siltstone</p> <p>Carbonate Vein @ 9.2m 12.8m 19.6m 19.8m</p> <p>Bedding @ 21.2m</p> <p>Carbonate Vein @ 21.4m 31.4m</p> <p>Quartz Vein @ 36.6m</p> <p>Carbonate Vein @ 37.5m</p> <p>Bedding @ 37.6m 37.7m 37.8m</p> <p>Carbonate Vein @ 38.7m</p> <p>Bedding @ 42.4m</p>	<p>40</p> <p>20</p> <p>30</p> <p>25</p> <p>45</p> <p>20</p> <p>60</p> <p>40</p> <p>20</p> <p>70</p> <p>65</p> <p>60</p> <p>05</p> <p>80</p>	<p>37.5 - 37.6 - carb vein @ 20 deg to C.A.</p> <p>38.7 - 39.3 - carb vein @ 5 deg</p>		
42.45 TO 45.82	«Fault Zn»	<p>Colour: Grey</p> <p>- most intensely altered @ 42.5 - 42.9</p> <p>- tr fluorite @ 44.6</p> <p>- sheared up And fsp porph</p>		- «clay & chl alt'n»		
45.82 TO 87.37	«Fp Andsite Flow»	<p>Colour: Grey</p> <p>Grain Size: Fine Grained</p> <p>- fgr, grey massive rx w/15-20% fsp phenos</p> <p>- fsp phenos are wht, euhdrl to spharl, varying from 1-5mm</p> <p>- sometimes flow is bx</p> <p>46.6 - 49.1</p> <p>- rx is lighter in colour, pale grey to green (bleached?) w/ patches of "orig" grey colour</p>	<p>25</p>	<p>1% Carbonate Veins</p> <p>46.2 - 1% fluorite in calcite blebs/clasts to 15mm</p> <p>46.3 - carb vein to 5mm @ 25 deg to C.A.</p> <p>46.6 - 49.1 - intensely altered - alt'n follows veins & fractures - could alt'n be envelopes? eg. @ 47.3: 1mm vein @ 10 deg to CA has</p>		

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		<p>53.2 - 54.5 - grey andesite with (5%) pale green fsp phenos</p> <p>55.4 - 58.3 - same flow type as 53.2 - 54.5</p> <p>Carbonate Vein @ 46.3m Fault Fabric @ 65.7m Carbonate Vein @ 71.1m Slickenside @ 71.1m Fault Contact @ 77.9m Carbonate Vein @ 78.4m Quartz Vein @ 78.4m</p>	<p>25 45 25 25 50 85 10</p>	<p>3mm (either side) alt envelope 48.3 - 50.7 - clay alt'n 51.8 - thin(2mm), chl, alt'n envelope of <1mm wide veinlet 53.8 - 5cm carb bleb & veinlet containing 2% fluorite (grn & prpl) 55.4 - 58.3 - 2% carb blebs w/1% fluorite {63.9 - 65.8} - «clay alt'n» (fault?) - most intensely alt'd @ 65.5 - 65.8 71.1 - carb vein @ 25 deg to CA - slickenside (vein filling fault) {73.9 - 75.4} - «chl & weak clay alt'n» 77.9 - 78.7 - clay alt'd fault {78.1 - 78.5}: qtz as veins and blebs «30% Qtz» 78.4: 85 deg to CA carb vein cuts @ 10 deg to CA qtz vein qtz vein has 3mm dark strip at its centre {81.6 - 85.8} - «clay alt'n»</p>	<p>{55.4 - 58.3} - «2% py» stringers</p>	<p>49.1 - 50.7: fault</p> <p>65.5 - 65.8: fault</p> <p>77.9 - 78.7: fault</p> <p>{81.6 - 85.8} - «fault»</p>
87.37 TO 96.41	«Sediments» SST + SLST with minor Lahar	<p>Colour: Grey Grain Size: Fine to Medium Grained</p> <p>87.8 - 88.9 - upper lahar (80% clasts, 20% matrix)</p>		<p>87.4 - 87.8 - intensely alt'd & sheared 87.9 - carb vein, 15mm, @ 30 deg to C.A.</p>		87.4 - 87.8: fault

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		<ul style="list-style-type: none"> - clasts dom And fsp porph 88.9 - 96.3 - interbedded SST & SLST - beds vary between 1mm & 170mm <p>Fault Fabric @ 87.6m 70</p> <p>Carbonate Vein @ 87.8m 30</p> <p>Bedding @ 89.1m 70</p> <p style="padding-left: 20px;">89.8m 50</p> <p style="padding-left: 20px;">90.4m 70</p> <p style="padding-left: 20px;">90.5m 70</p> <p style="padding-left: 20px;">92.2m 90</p> <p style="padding-left: 20px;">92.5m 75</p> <p style="padding-left: 20px;">93.0m 85</p> <p style="padding-left: 20px;">94.3m 60</p> <p style="padding-left: 20px;">94.9m 65</p> <p style="padding-left: 20px;">95.1m 75</p> <p style="padding-left: 20px;">95.2m 60</p> <p style="padding-left: 20px;">96.3m 55</p> <p>Contact @ 96.4m 60</p>				
96.41 TO 129.73	Upper «And Lahar»	<p>Colour: Grey/green</p> <ul style="list-style-type: none"> - composition similar to above lahar except qtz is 2% - clasts: 80% matrix: 20% clasts subrounded to subangular <p>100.3</p> <ul style="list-style-type: none"> - 2cm wide sediment zone that drapes around clasts <p>100.7</p> <ul style="list-style-type: none"> - 2cm wide, clay filled fracture @ 40 deg to CA <p>104.0 - 105.4</p> <ul style="list-style-type: none"> - interbedded SST & SLST <p>106.1</p> <ul style="list-style-type: none"> - 2.5cm qtz clast w/50% darker shaded regions - finely diss sx? 		<p>101.6 - 101.7</p> <ul style="list-style-type: none"> - qtz clast with 2% dark patches (fgr, diss sulphides?) <p>103.6 - 103.8</p> <ul style="list-style-type: none"> - carb matrix in a bx zone (20% carb) <p>At 104.27 & 104.32, carb veins to 5mm at 60 deg & 30 deg to CA, respectively</p> <p>†106.5 - 109.5†</p> <ul style="list-style-type: none"> - «clay alt» 	96.9 - 97.0 - 5% diss py	<p>†106.5 - 109.5†</p> <ul style="list-style-type: none"> - «fault» - @ 109.5, contact is 30 deg to CA, otherwise, no orientation of fabric is distinct within core

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		110.3 - 115.5 - lahar seems more altered as clasts are more diff to distinguish from clasts	25	109.5 - 110.3 - chl & hem alt'n 110.48 - 110.53 - qtz bleb 111.1 - carb vein to 4mm, 25 deg to CA 112.82 - 112.85 - carb & zeolites - pink-orange, soft; heulandite/laumontite; 2-3% pinkish-orange mineral 113.7 - carb vein to 2mm @ 30 deg	109.5 - 110.3 - 1% py	
		114.03 - 114.05 - clay filled fracture 114.2 - more heulandite/laumontite, 1%	30	114.37 - 114.42 - carb stringers & blebs 115.5 - 118.5 - hematitic matrix 121.6 - 122.1 - clay & chl alt'n		121.60 - 122.06: fault
		122.1 - 125.3 - sed component of lahar picking up - matrix is dark, sometimes composed of sand sized material - minor sed bands		124.46 - 124.55 - 5-10% qtz frags 125.7 - 128.2 - hematitic matrix 128.45 - carb veins, 5mm, @ 45 deg to C.A. 128.50 - carb veins, 15mm wide, @ 45 deg to CA - contains trace fluorite		
		Clay filled Fracture @ 100.7m	40			
		Bedding @ 104.0m	80			
		104.2m	80			
		104.3m	80			
		104.4m	80			
		104.7m	80			
		105.2m	70			
		Carbonate Vein @ 104.3m	60			
		104.3m	30			
		Fault Contact @ 109.5m	30			
		Carbonate Vein @ 111.1m	25			
		113.7m	30			
		128.4m	45			
		128.5m	45			

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
129.73 TO 143.62	«Fault Zn»	<ul style="list-style-type: none"> - intensely altered 132.7 - 132.9 - qtz clasts; few are weakly banded - clasts are subangular, 3mm-55mm - compose about 30% of core 142.2 - 142.8 <ul style="list-style-type: none"> - intrusive? pale grn-gry w/15% dk grn, subhedral blebs, 1% fuchsite Fault fabric @ 129.8m 130.3m 133.9m 142.1m	70 60 60 60	<ul style="list-style-type: none"> - «clay & chl alt» 135.1 - 135.2 <ul style="list-style-type: none"> - 2% qtz blebs of which 1% is bluish 135.5 <ul style="list-style-type: none"> - qtz vein to 1cm @ 60 deg to CA - vein composed of small, angular qtz frags 	- «2% py»	
143.62 TO 157.58	«And Lahar»	<ul style="list-style-type: none"> - 80% clasts, 20% matrix - clasts are subrounded, seem alt'd - prob most were And fsp porph, however, possibly marama clasts (fgr, brn/bge to 1mm fsp phenos) - 1% carb clasts, 1% chert clasts 		<ul style="list-style-type: none"> - «1% carb stringers» 150.1 - 150.2 <ul style="list-style-type: none"> - qtz bleb - lt grn patches (chl component?) & wht with lt gry patches 	<ul style="list-style-type: none"> - «1% py» 150.1 - 150.2 <ul style="list-style-type: none"> - 2-3% py 	148.1 - 148.6: clay alt'd fault

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DRILL HOLE RECORD

LOGGED BY: Royann Holder

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HOLE NUMBER: DM-22

ASSAY SHEET

DATE: 22-March-1990

Sample	From (m)	To (m)	Length (m)	ASSAYS					GEOCHEMICAL					COMMENTS
				Cu %	Pb %	Zn %	Ag g/t	Au g/t	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb	
BCD20276	3.05	5.20	2.15						21	38	95	0.8	1	
BCD20277	5.20	6.50	1.30						22	37	92	0.6	1	
BCD20278	6.50	8.00	1.50						36	82	83	5	29	
BCD20279	8.00	9.50	1.50						22	28	75	1	2	
BCD20280	9.50	11.00	1.50						20	29	82	1.2	1	
BCD20281	11.00	12.20	1.20						20	30	84	1.3	2	
BCD20282	12.20	14.00	1.80						22	30	86	1.4	1	
BCD20283	14.00	15.50	1.50						21	31	100	1.2	3	
BCD20284	15.50	17.00	1.50						20	30	80	1.4	2	
BCD20286	18.50	20.00	1.50						21	24	81	1	26	
BCD20287	20.00	21.50	1.50						20	34	70	2.6	6	
BCD20288	21.50	23.00	1.50						19	34	80	1.8	37	
BCD20289	23.00	24.60	1.60	0.010	0.01	0.01	14.5	1.41						
BCD20290	24.60	26.10	1.50						20	30	84	1.6	2	
BCD20291	26.10	27.60	1.50						18	30	92	1.2	31	
BCD20292	27.60	29.10	1.50						19	29	88	1.4	10	
BCD20293	29.10	30.60	1.50						20	30	83	1.3	57	
BCD20294	30.60	32.10	1.50						18	31	84	1.5	2	
BCD20295	32.10	33.60	1.50						20	27	85	1.2	26	
BCD20296	33.60	35.10	1.50						18	30	83	1.5	1	
BCD20297	35.10	36.60	1.50						19	26	72	1	2	
BCD20298	36.60	38.10	1.50						22	29	79	1.4	98	
BCD20299	38.10	39.60	1.50						18	36	89	1.1	3	
BCD20300	39.60	41.10	1.50						22	30	80	1.8	147	
BCD20301	41.10	42.50	1.40						18	29	79	1.5	268	
BCD20302	42.50	44.00	1.50						32	38	111	1.4	16	
BCD20303	44.00	45.80	1.80						18	30	82	0.6	2	
BCD20304	45.80	47.30	1.50						16	60	162	1	3	
BCD20305	47.30	48.50	1.20						18	34	134	0.7	1	
BCD20306	48.50	50.70	2.20						16	46	145	1	5	
BCD20308	63.90	65.80	1.90						18	34	108	0.9	3	
BCD20309	77.90	78.70	0.80						16	202	56	1	10	
BCD20310	81.60	83.10	1.50						18	47	61	0.6	2	
BCD20311	83.10	84.60	1.50						18	46	80	0.9	1	
BCD20312	84.60	85.80	1.20						20	39	86	0.8	3	
BCD20313	101.00	102.50	1.50						22	36	70	0.8	2	
BCD20314	106.50	108.00	1.50						24	34	72	1	120	
BCD20315	108.00	109.50	1.50						24	39	70	0.8	6	

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Sample	From (m)	To (m)	Length (m)	Cu %	Pb %	Zn %	Ag g/t	Au g/t	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb
BCD20316	109.50	111.00	1.50						28	40	86	1.2	10
BCD20318	129.70	131.20	1.50						20	36	64	0.8	2
BCD20319	131.20	132.70	1.50						28	26	67	1	3
BCD20320	132.70	134.20	1.50						26	27	60	0.8	1
BCD20322	135.70	137.20	1.50						19	38	60	1.7	253
BCD20323	137.20	138.70	1.50						20	29	69	0.8	3
BCD20324	138.70	140.20	1.50						22	29	74	0.9	236
BCD20325	140.20	141.70	1.50						24	32	66	0.7	4
BCD20326	141.90	143.60	1.70						20	32	65	0.8	1
BCD20327	148.10	150.30	2.20						33	38	70	0.8	6

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GEOCHEM. SHEET

DATE: 22-March-1990

Sample	From (m)	To (m)	Length (m)	AL2O3 %	BAT %	CAO %	FE2O3 %	K2O %	MGO %	MNO %	NA2O %	P2O5 %	SiO2 %	TiO2 %	S %	TOTAL %	Ag ppm	As ppm	Ba ppm	Cu ppm	Pb ppm	Sb ppm	Zn ppm	Au ppb
BCD20285	17.00	18.50	1.50	17.69	0.206	3.79	4.9	5.62	1.94	0.1	3.45	0.4	54.85	0.7	0.57	94.21	1.8	4	216	25	41	1	89	25
BCD20307	59.40	62.40	3.00	18.26	0.235	2.04	4.24	6.52	2.32	0.1	3.35	0.32	56.19	0.65	1.6	95.83	0.7	8	62	17	56	1	56	5
BCD20317	118.50	121.50	3.00	14.99	0.148	5.07	6.54	5.93	3.55	0.14	0.82	0.52	56.06	0.87	1.38	96.01	1.1	8	244	20	32	1	87	5
BCD20321	134.20	135.70	1.50	14.91	0.091	4.49	5.2	4.81	3.74	0.1	0.38	0.48	56.05	0.74	1.47	92.46	1.1	2	72	21	31	1	75	5
BCD20328	150.30	153.30	3.00	15.88	0.105	2.36	5.92	4.39	3.26	0.1	0.98	0.38	59.47	0.88	0.23	93.95	0.7	6	132	35	35	1	83	5

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GEOCHEM. SHEET

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 24.40	«Casing»					
24.40 TO 64.10	«FP And Fl»	<p>- fgr gry-lt grn matrix w/ coarse 30-40% FP's (3-5mm in dia)</p> <p>62.9 - 64.1 - becomes an And Lahar</p>		<p>{24.4 - 34.1} - «mod bleached w/weak silic'n» - occas milky QV 2-3cm - talc & clay gouge in matrix @45deg-CA</p> <p>{34.1 - 34.8} - milky wht «Qtz bx» w/ 0.5-2.0cm crudely banded ang Qtz frags - matrix has seric</p> <p>{34.8 - 37.1} - «clay rich» matrix w/talc - «10% milky QV's» (2cm) and frags</p> <p>{37.1 - 37.5} - milky wht «QV 8x»</p> <p>{37.5 - 45.3} - «10% Qtz veins»; milky, banded, 1-3cm & occas ang frag in clay & talc +/- seric matrix</p> <p>{45.3 - 48.9} - «fault bx» disappearing - mod pervasive bleaching w/ minor talc</p> <p>{48.9 - 58.6} - matrix weakly crushed - «3-4% Qtz veinlets»; milky wht, @45 deg to CA (0.5cm)</p> <p>58.6 - 64.1 - unaltered</p>	<p>{24.4 - 34.1} - avg «2-4% py»; dissem w/occas 0.5cm py veinlet</p> <p>{34.1 - 34.8} - avg «5% py»; dissem in the matrix</p> <p>{34.8 - 37.1} - avg «5% py»; dissem</p> <p>{37.1 - 37.5} - «2% py»; dissem</p> <p>{37.5 - 45.3} - avg «5% py»; dissem</p> <p>{45.3 - 48.9} - avg «1% py»; dissem</p> <p>{48.9 - 58.6} - avg «2% py»; fgr, dissem</p>	<p>{37.5 - 45.3} - «mod fault» w/clay gouge @45deg to CA</p>
64.10 TO 67.20	«Sandstone & Argillite»	<p>Colour: Med Grey Grain Size: Fine Grained Well laminated sandstone and arg w/occas Ang FP And fragment Bedding 50 to 90 deg to CA</p>		- 2% carb veinlets		
67.20 TO 70.70	«And Lahar»	<p>Colour: Med Green Grain Size: Fine Grained - some arg & siltstone in the matrix w/fgr And - generally fgr and FP And frags ang 0.5-5.0cm</p>		<p>{68.7 - 70.7} - pervasive «seric alt'n» steadily increases along w/silic'n - occas 10cm silic'd patches</p>	<p>{68.7 - 70.7} - «1-2% py»; dissem</p>	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
70.70 TO 80.70	«Qtz Breccia»	Colour: Light White Grain Size: Aphanitic {70.7 - 77.3} - massive «Qtz Bx» - several stages of silic'n - subrounded frags of Qtz w/wht & gry ang bx frags within - either a silicified matrix or clay rich pyritic clay - 5% late stage Qtz veinlets x-cut frags & matrix - Qtz frags ang in fault zones {77.3 - 80.7} - decreasing to «30% silic'n»		{70.7 - 77.3} - weak pottassic and talc alt overprint {77.3 - 80.7} - «pottassic overprint» on And - some clay gouge - QV's milky white w/ang wallrock frags and occas ang Qtz frag	{70.7 - 77.3} - avg «4% py»; fgr, in the matrix - 2% coarser py rimming the frags {77.3 - 80.7} - avg «3% py» as veinlets and dissem	
80.70 TO 97.90	«And Lahar»	Colour: Med Green Grain Size: Fine Grained - FP rich subrounded And frags 80%, fgr and px rich frags 20% in a fgr matrix		{85.7 - 97.9} - «weak pottassic alt'n» overprints w/ 8% silica veinlets - clay gouge in faults - minor hematite - QV's wht w/silic'n on margins to 20cm	{85.7 - 97.9} - avg «3-4% py»; dissem	96.2 - 97.9 - faulting increases @ 45-70 deg to CA
97.90 TO 101.00	«Qtz Breccia»	Colour: Light White Grain Size: Fine Grained - And Lahar extensively silicified - 40% milky wht veinlets and subang crudely banded 1-3cm QV frags bx zones @ 50 deg to CA		- «weak pottassic overprint»	- «avg 5-6% pyrite»; fgr, dissem	
101.00 TO 149.80	«Lower And congl'ate»	Colour: Med Green Grain Size: Fine Grained - a fgr sst and org w/ And matrix - various clasts rounded 1-30cm 60% fgr +/- mafic phenos 10% Marens Dacite 10% Fp rich And 10% sediment (arg & sst) 10% others (Felsic rock) - bedding @ 122.5m	70	- generally 2% 3-4mm carb veinlets {106.5 - 110.6} - «clay fault gouge»	- generally tr dissem py and mod hem in matrix {106.5 - 110.6} - avg «3% py» as dissem and clots {114.5 - 115.9} - 2% dissem py	{106.5 - 110.6} Fault - fabric w/ «clay gouge» @45 deg to CA 114.5 - 115.9 - strong fault w/clay gouge

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MINNOVA INC.
DRILL HOLE RECORD

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
149.80 TO 169.80	«Fault Zone w/Alt'm»	Colour: Med Grey Grain Size: Fine Grained - And host - fabric @ 45 deg to CA		- «strong clay alt'm» in the fabric - «mod silic'm» pervasive in remaining frags +/- grn micas - avg 5% milky white, late stage qtz veinlets(1-4mm) - mod chl in fault gouge	- avg «10% py»; dissem in matrix	
169.80 TO 185.30	«Lower And Lahar» E.O.H.	Colour: Med Green Grain Size: Fine Grained - andesite matrix w/ ang fgr And and Marama frags ang 1-10cm - weak faulting throughout the section		- 2% late stage carb veinlets 1mm-1cm @ 45 deg to CA	- avg 1% dissem py	

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DRILL HOLE RECORD

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ASSAY SHEET

DATE: 22-March-1990

Sample	From (m)	To (m)	Length (m)	ASSAYS					GEOCHEMICAL					COMMENTS
				Cu %	Pb %	Zn %	Ag g/t	Au g/t	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb	
BCD20351	24.40	25.90	1.50						10	11	12	1.1	19	
BCD20352	25.90	27.40	1.50						14	14	35	1.6	22	
BCD20354	28.90	30.40	1.50						10	17	17	1.2	18	
BCD20355	30.40	31.90	1.50						14	22	56	1.3	24	
BCD20356	31.90	34.10	2.20						16	19	130	1.9	25	
BCD20358	34.80	37.10	2.30						15	50	190	3.2	51	
BCD20360	37.50	39.00	1.50						16	24	91	3.4	41	
BCD20362	40.50	42.00	1.50						23	28	100	3	68	
BCD20363	42.00	43.50	1.50						18	20	55	4.4	21	
BCD20364	43.50	45.30	1.80						10	34	56	2.6	17	
BCD20366	46.80	48.90	2.10						14	28	66	2.2	19	
BCD20367	48.90	50.40	1.50						19	34	55	1.1	18	
BCD20368	50.40	51.90	1.50						18	30	51	0.7	3	
BCD20370	53.40	54.90	1.50						27	28	63	0.8	2	
BCD20371	54.90	56.40	1.50						35	30	50	1.1	2	
BCD20372	56.40	57.90	1.50						16	29	57	0.8	4	
BCD20373	59.40	60.90	1.50						36	22	62	1	5	
BCD20374	67.20	68.70	1.50						36	26	72	1.3	2	
BCD20375	68.70	70.70	2.00				4.6	0.09	120	910	47			
BCD20376	70.70	72.20	1.50				6.3	0.06	85	190	82			
BCD20377	72.20	73.70	1.50				7.5	0.03	31	82	75			
BCD20378	73.70	75.20	1.50				2.0	0.05						
BCD20380	76.30	77.30	1.00				3.9	0.20	4	15	31			
BCD20381	77.30	78.80	1.50				2.3	0.17	10	6	42			
BCD20383	85.70	87.20	1.50						12	16	45	1	28	
BCD20385	88.70	90.20	1.50						12	31	55	0.8	11	
BCD20386	90.20	91.70	1.50						16	16	58	0.8	19	
BCD20388	93.20	94.70	1.50						20	20	63	1.2	110	
BCD20389	96.70	96.20	1.50						17	19	61	1	4	
BCD20390	96.20	97.90	1.70						16	26	64	0.9	3	
BCD20391	97.90	99.40	1.50						16	10	53	1	109	
BCD20392	99.40	101.00	1.60						15	12	47	1.2	52	
BCD20393	101.00	102.50	1.50						25	14	106	0.8	1	
BCD20394	106.50	108.50	2.00						24	10	68	0.8	9	
BCD20395	108.50	110.60	2.10						23	12	83	0.8	11	
BCD20396	114.50	115.90	1.40						22	24	81	0.9	18	
BCD20398	149.80	151.30	1.50						48	38	63	0.8	6	
BCD20400	152.80	154.30	1.50						23	48	61	1.0	8	

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Sample	From (m)	To (m)	Length (m)	Cu %	Pb %	Zn %	Ag g/t	Au g/t	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb
BCD20401	154.30	155.80	1.50						21	38	74	0.8	3
BCD20402	155.80	157.30	1.50						22	40	64	0.7	10
BCD20404	158.80	160.30	1.50						19	32	78	0.8	7
BCD20405	160.30	161.80	1.50						19	34	79	0.8	6
BCD20406	161.80	163.30	1.50						18	33	79	1.0	12
BCD20407	163.30	164.80	1.50						19	36	90	1.3	8
BCD20408	164.80	166.30	1.50						21	40	87	1.0	2
BCD20409	166.30	167.80	1.50						29	29	83	0.6	1
BCD20410	167.80	169.80	2.00						28	30	84	0.6	12

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DATE: 22-March-1990

Sample	From (m)	To (m)	Length (m)	AL2O3 %	BAT %	CAO %	FE2O3 %	K2O %	MGO %	MNO %	NA2O %	P2O5 %	SI02 %	TIO2 %	S %	TOTAL %	Ag ppm	As ppm	Ba ppm	Cu ppm	Pb ppm	Sb ppm	Zn ppm	Au ppb
BCD20353	27.40	28.90	1.50	16.71	0.105	0.87	3.95	6.7	0.83	0.03	0.08	0.25	64.96	0.72	1.69	96.88	2.7	1	60	14	19	1	41	130
BCD20361	39.00	40.50	1.50	14.53	0.194	0.68	5.42	8.66	0.9	0.06	0.12	0.24	62.15	0.62	3.3	96.86	4.6	6	62	14	29	1	84	5
BCD20365	45.30	46.80	1.50	15.46	0.137	1.95	4.29	5.88	2.13	0.12	2.23	0.3	58.84	0.65	0.18	92.17	0.8	3	49	12	36	2	70	5
BCD20369	51.90	53.40	1.50	18.31	0.224	2.96	3.96	6.89	1.53	0.07	2.16	0.33	54.63	0.65	1.74	93.46	0.6	6	50	13	34	1	56	5
BCD20379	75.20	76.30	1.10	9.88	0.029	2.36	3.45	3.52	1.86	0.04	0.08	0.33	71.24	0.4	1.85	95.04	4	152	18	10	30	1	26	110
BCD20382	78.80	80.70	1.90	12.24	0.11	5.08	3.51	8.09	1.55	0.07	0.14	0.41	60.23	0.5	1.24	93.17	2.1	152	84	9	27	2	49	440
BCD20384	87.20	88.70	1.50	13.65	0.113	2.6	3.78	8.56	1.45	0.07	0.15	0.32	64.32	0.55	0.43	95.98	0.7	14	66	9	25	1	50	5
BCD20387	91.70	93.20	1.50	14.35	0.124	2.94	4.05	9.3	1.86	0.07	0.15	0.35	61.09	0.58	1.16	96.03	1	70	19	15	28	1	57	5
BCD20397	139.30	142.30	3.00	15.34	0.12	2.9	6	4.6	3.19	0.09	1.5	0.45	59.59	0.84	0.34	94.95	0.8	1	25	25	42	1	80	5
BCD20399	151.30	152.80	1.50	15.76	0.11	2.66	5.18	5.43	2.9	0.08	0.83	0.39	60.46	0.79	1.1	95.68	1.8	1	44	34	40	1	65	5
BCD20403	157.30	158.80	1.50	15.13	0.092	1.93	5.94	4.65	1.96	0.06	0.32	0.34	61.56	0.84	3.1	95.93	1.6	29	41	29	35	1	88	5
BCD20411	172.80	175.80	3.00	15.62	0.116	1.45	5.7	5.46	2.03	0.09	0.79	0.34	62.7	0.88	0.07	95.25	0.2	1	53	31	26	1	70	5

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 81.20	«Casing»					
81.20 TO 112.00	«Fault Zn»	<p>81.8 - 84.6</p> <ul style="list-style-type: none"> - alt'd lahar (And rich?); 80% clasts, 20% matrix - rx is grey with clasts varying in colour from a beige with grey patches to a more greyish comp - size variation of clasts; 3-30mm - clasts are subrounded <p>84.6 - 85.7m Intensely Altered Zone</p> <p>{85.7 - 86.7}</p> <ul style="list-style-type: none"> - «qtz brx» <p>86.1 - 86.2</p> <ul style="list-style-type: none"> - clasts are subangular, 1-34mm, composing 85% - matrix is fgr, dk gry/blk, composing 15% - clast supported <p>85.7 - 86.1 & 86.2 - 86.7</p> <ul style="list-style-type: none"> - clasts are subangular to subrounded w/65% of th clasts being qtz (other 20% a mixture of alt rx - clasts: 80%, matrix: 20% <p>{86.7 - 88.6}</p> <ul style="list-style-type: none"> - «10% qtz» frags & veins - clast supported; 80% clasts, 20% matrix - clasts appear subangular, 3-40mm, altered - 87.9: qtz vein, vuggy, containing qtz crystal growth within <p>88.6 - 90.2</p> <ul style="list-style-type: none"> - clasts are smaller than previously and are diff to distinguish - clasts are subrounded, 3-10mm - colour is more(overall) dom lt yllw-bge with clasts varying from this colour to darker <p>90.2 - 92.3</p> <ul style="list-style-type: none"> - rx is strongly alt, clasts diff to determine - 85:15, cl:mtrx - clasts 3-40mm, subangular <p>90.2 - 90.3: dk gry zn w/5% py; 30 deg to CA</p> <p>{90.9 - 91.1} silicified «qtz bx zone»</p>		<p>{81.8 - 83.2}</p> <ul style="list-style-type: none"> - «1% carb veinlets» <p>{81.8 - 85.6}</p> <ul style="list-style-type: none"> - «clay alt'n» <p>83.2 - 83.7</p> <ul style="list-style-type: none"> - light gry-brn colour, strong clay alt <p>84.6 - 85.7</p> <ul style="list-style-type: none"> - intense, dk gry, clay alt'n - 85.3 - 85.7 - slightly darker gry than above - @ 85.3, contact of lighter & darker clay alts plus bx qtz vein - vein not continuous, composed of clasts oriented @ 45 deg to CA <p>- matrix is mod clay alt'd, (weak chl?) with pale beige-yellow colour (alt'n Fe carb or sericite?)</p> <p>86.7 - 88.6m</p> <ul style="list-style-type: none"> - trace talc, wk chl, wk hem, mod pale beige-yellow alt'n - does not effervesce; Fe carb or ser? - wk to mod clay alt'n, mottled <p>88.6 - 90.2</p> <ul style="list-style-type: none"> - alt appears to be the same as above except there is no clay alt'n <p>90.2 - 92.3m wk pottasic?</p> <p>90.2 - 90.3 5% pyrite</p>	<p>{81.8 - 83.2}</p> <ul style="list-style-type: none"> - «1% py» <p>84.6 - 85.7</p> <ul style="list-style-type: none"> - tr, 1% py <p>- 1% py</p> <p>- 1% py</p> <p>90.2 - 90.3</p> <ul style="list-style-type: none"> - 5% py 	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS	
		<p>matrix is chl, (green)</p> <p>{92.3 - 92.5} - «qtz bx» - 75% qtz clasts 1mm to 45mm - matrix is chl as well as lt yllw-bge alt mineral</p> <p>92.5 - 93.3 - darker gry</p> <p>{92.9 - 93.2} - «qtz bx zone» - clasts to 50mm, subangular to subrounded in chl, clay, and beige-pink alt'd matrix</p> <p>93.3 - 97.2 - grey, fgr alt'd rx</p> <p>97.2 - 98.3 - gry-grn intensely alt'd - fault fabric; 97.3 @ 50-55 deg</p> <p>98.3 - 99.7 - beige-light brown</p> <p>99.7 - 104.2 - pale gm-gry colour w/some lt bge-ylw patches - fault fabric; 103.2 @ 45 deg to CA - fault fabric; 103.9 @ 60 deg to CA</p> <p>103.9 - 104.2 - dk gry, composed of clasts, 3% qtz</p> <p>104.2 - 105.2 - reddish patches, beige, w/minor green regions</p> <p>105.2 - 107.9 - altered And flow bx - core is pinkish-red w/pink fsp phenos(5%) - clasts are subrounded, clast:matrix, 75:25</p> <p>107.9 - 112.0 - intensely alt'd, lt grn-lt gry - strong fabric, contains a few frags - contact @ 112.00m @ 50 deg to CA</p> <p>Fault Fabric @ 85.1m Quartz Vein @ 85.3m Fault Fabric @ 85.6m Contact @ 85.7m @ 90.2m Quartz Breccia Contact @ 91.1m Fault Fabric @ 97.3m @ 103.2m @ 103.8m @ 111.4m</p>		<p>{92.5 - 99.7} - «clay alt'm»</p> <p>92.5 - 93.3 - strong clay alt'n</p> <p>{93.3 - 97.2} - «mod clay alt'm»</p> <p>97.2 - 97.6 - chl & clay alt'n</p> <p>97.6 - 98.3 - strong clay alt'n, lt gry to white</p> <p>98.3 - 99.7 - wk clay alt</p> <p>{99.7 - 104.2} - «chl and clay alt»</p> <p>104.2 - 105.2 - wk chl, wk hem, wk clay, mod beige</p> <p>{105.2 - 107.9} - «1% talc, potassic alt'm»</p> <p>{107.9 - 112.0} - «chl, weak clay» - 5% lt yllw-bge veinlets (sericite?)</p>			<p>- 1% py</p> <p>103.9 - 104.2 - 2% py</p>

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		111.6m 111.8m Contact @ 112.0m	60 60 50			
112.00 TO 124.05	«Andesite Lahar»	112.0 - 113.2 - matrix supported conglomerate, appears to be sand grain size - clasts approx 60%, of which 40-50% are <2mm & 10-20% are >2mm 113.2 - 115.5 - hematitic matrix lahar, clasts are andesite fsp porph that are weakly altered (wk hem?) - clasts:matrix, 80:20 - clasts are subangular to subrounded, 2-60mm 115.5 - 118.0 - andesite feldspar porph flow breccia (gry-grn) 118.0 - 122.3 - med grey, pyritic zone - clastic And fsp porph clasts w/ And matrix - approx 1-2% qtz clasts 119.2 - 119.2: qtz forming matrix to angular host (pyritic) clasts 121.7 - 121.8: qtz bleb 122.3 - 122.9 - And fsp porph, rx is brn-red w/ lt grn feldspars (1-6mm) 122.9 - 124.1 - red-orn regions that forms or follows rims of clasts and also is alt of clasts - overall colour approx 10% of core - strongest @ 122.9 - 123.5 - greenish clasts (chl) - clastic (clasts: 1-50mm) Quartz Vein @ 122.2m Carbonate Vein @ 122.3m	65 35	122.2m - qtz vein 2-7mm @ 65 deg to CA 122.30 - carb vein 2cm @ 35 deg to CA - moderate chl alt'n - red-orange coloured alt'n	{118.0 - 122.3} - «5% py» 122.3 - 122.9 - 3% py	{118.0 - 122.3} «Fault»

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
124.05 TO 137.57	«Fault Zn»	<p>124.1 - 125.5</p> <ul style="list-style-type: none"> - gry-grn, sheared up, pyritic zone - And fsp porph clasts are present <p>125.5 - 127.9</p> <ul style="list-style-type: none"> - grey, with minor green patches - contains few clasts 126.7m: Fault fabric at 60 deg to CA 127.2m: Fault fabric at 65 deg to CA <p>127.9 - 130.3</p> <ul style="list-style-type: none"> - same as 124.1 - 125.5 except py approx 3% & chl alt'n appears non-existent <p>130.3 - 132.2</p> <ul style="list-style-type: none"> - med grey, strongly alt'd rx - clasts within are subrounded, 3-50mm - compose about 60% of this region <p>132.2 - 132.6</p> <ul style="list-style-type: none"> - lt grn, crumbly zone with 20% clasts <p>132.6 - 133.2</p> <ul style="list-style-type: none"> - felsic (lt gry-brn), siliceous, brx - remnant fsp (occas euhedral, silicified) <p>133.2 - 133.7</p> <ul style="list-style-type: none"> - dark green-grey <p>133.7 - 136.9</p> <ul style="list-style-type: none"> - lt gry, mottled, w/ylw-brn and lt brn-grn <p>136.9 - 137.1</p> <ul style="list-style-type: none"> - gry-grn clastic sheared region - trace purple fluorite - clasts: 2 - 35mm, subrounded, approx 70% <p>137.1 - 137.4</p> <ul style="list-style-type: none"> - lt brn-gry felsic clasts (same as 132.6 - 133.2) that are siliceous, hosted in a clay matrix - clasts are 1-10cm <p>137.4 - 137.57</p> <ul style="list-style-type: none"> - yellow-brown alt'd rx <p>Fault Fabric @ 126.7m 127.2m</p>	60 65	<p>124.1 - 125.5</p> <ul style="list-style-type: none"> - chl alt'n <p>{125.5 - 132.6}</p> <ul style="list-style-type: none"> - «clay alt with chl alt'n» <p>125.5 - 127.9</p> <ul style="list-style-type: none"> - mod-strong clay alt'n, v wk chl alt'n <p>130.3 - 132.2</p> <ul style="list-style-type: none"> - strong clay alt'n <p>132.2 - 132.6</p> <ul style="list-style-type: none"> - v strong clay alt, mod chl alt'n <p>{132.6 - 133.2}</p> <ul style="list-style-type: none"> - «silicification», bleached <p>{133.2 - 137.6}</p> <ul style="list-style-type: none"> - «clay alt'n» <p>133.2 - 133.7</p> <ul style="list-style-type: none"> - chl & clay alt'n <p>133.7 - 136.9</p> <ul style="list-style-type: none"> - strong clay altered, wk chl? <p>137.1 - 137.4</p> <ul style="list-style-type: none"> - clay alt matrix <p>137.4 - 137.57</p> <ul style="list-style-type: none"> - strong clay alt'n 	<p>124.1 - 125.5</p> <ul style="list-style-type: none"> - 5% py <p>130.3 - 132.2</p> <ul style="list-style-type: none"> - tr, py (however, has a dark brn tint, may be extremely fgr py; up to 3% py?) <p>132.6 - 133.2</p> <ul style="list-style-type: none"> - tr, py 	

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
137.57 TO 146.10	«And Laher»	<p>137.6 - 139.9 - grn, alt And fsp porph bx (?); clasts of And fsp porph evident + approx 1-2% Qtz clasts - clasts difficult to distinguish from matrix</p> <p>139.9 - 140.4 - med to darker green; approx 60% clasts</p> <p>140.4 - 142.1 - grey to light-med yellow-brown</p> <p>142.1 - 142.9 - green to dark grey - clasts 2 - 50mm, 75%; fgr (Andesitic comp?)</p> <p>142.3 - 142.5: dk gry beds to 3cm containing bands of py within (approx 40% of bed). 30 deg to CA. bed is argillic</p> <p>142.9 - 146.1 - alt And fsp porph breccia? - more intensely altered from 142.9 - 144.5 - dark green, clasts 0.3-11.0cm</p>		<p>137.6 - 140.4 - «chlorite alt» 137.6 - 139.9 - strong chloritic alt'n - v wk clay alt (?)</p> <p>139.9 - 140.4 - med-strong chl alt'n</p> <p>140.4 - 142.1 - moderate to strong «clay alt»</p> <p>142.1 - 142.9 - wk chl alt'n</p> <p>142.9 - 146.1 - «chl alt'n» 142.9 - 144.0 - mod-strong chl alt'n 144.0 - 144.9 - mod-strong chl and 5% carb stringers 144.9 - 146.1 - mod-strong chl alt'n</p>	<p>140.7 - 141.2 - 3-5% py</p>	
146.10 TO 177.50	«fault»	<p>146.1 - 149.7 - mod-strong clay alt (med grey)</p> <p>149.7 - 156.1 pyritic zone</p> <p>149.7 - 166.0 - fgr, med-dk gry, containing 30% clasts (3-110mm) - clasts: And fsp porph alt And fsp porph? alt And fsp porph or Marama Dacite yellowish-beige clasts with Qtz specks (due to alt'n of clasts, difficult to determine exact composition)</p> <p>164.2 - 165.0 - more clastic with 5% clasts of carbonate</p> <p>165.0 - 168.3 - med grey, mod-strongly alt - fault fabrics: 166.0 @ 30 deg to CA 166.2 @ 35 deg to CA</p>		<p>149.7 - 156.1 - v wk chl alt'n, wk carb alt'n 156.7 - 154.8: 5% seric stringers</p> <p>149.7-171.6 «Clay alt» 149.7 - 166.0m Moderate clay alt</p> <p>165.0 - 168.3 - mod-strong clay alt'n 167.5 - 168.3: strong clay alt'n</p>	<p>149.7-156.1 «3-5% py»</p> <p>164.2 - 165.0 - 1% py (has dk brnsh colour of fgr pyrite, may be up to 5% py)</p> <p>165.0 - 168.3 - 1-2% py in matrix: 166.45, 166.50, 166.4 - 166.5, 3 pyrite clasts: 1.5cm, 1cm, and 1cm diameters (replacement</p>	

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		<p>166.3 @ 40 deg to CA</p> <p>168.3 - 170.0 - grey with yellow-beige patches - can see some remnant fsp porph And clasts - few clasts are pyritic alt - clasts are subrounded</p> <p>170.0 - 171.6 - med grey, strong alt'n 170.8: carb veinlets @ 30 deg to CA</p> <p>171.6 - 175.9 - pale grn to lt gry alt rx 172.1: alt flow banding(?) / fabric(?) at 60 deg to CA</p> <p>175.9 - 177.5 - med grey w/lt brn-gry patches - lt green tints - mod-intensely alt - similar to 171.6 - 175.90m</p> <p>Fabric @ 163.4m Fault Fabric @ 166.0m @ 166.2m @ 166.3m</p> <p>Carbonate Veinlets @ 170.8m Sericite ? Stringers @ 175.9 - 177.5m</p>	<p>25 30 35 40 30 45</p>	<p>168.3 - 170.0 - wk clay alt - chl alt?</p> <p>{171.6 - 175.9} - «chl alt, clay alt» (wk-mod) - «1% talc» - 1-2% sericite veinlets {175.9 - 177.5} - mod «clay alt'n» - wk chl alt? - 3-5% sericite(?) veinlets w/avg 45 deg to CA</p>	<p>of original rock?) - 1-2% py clasts between 166.0 - 166.6</p> <p>175.9 - 177.5 - 1% pyrite</p>	
177.50 TO 194.00	«Lower And Lahar»	<p>177.5 - 180.8 - light yellowish-brown alt Lahar</p> <p>180.8 - 185.2 - 15% orange-red alt clasts w/overall greenish colour to core - some clasts are And fsp porph, others are fgr and/or alt - clasts:matrix, 70:30</p> <p>185.2 - 194.0 - relatively unaltered, green to grey colour - clasts:matrix, 80:20 - clasts are subrounded to subangular, 3-200mm - composition: 50% mafic, 5% felsic w/5% mafic blebs, 5-10% And fsp porph</p> <p>Overall: Colour is green/grey, grain size is 0.3-20cm</p>				

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
194.00 TO 206.40	Marama «Dacite» «Flow»	Colour: lt green to lt brown to dark green Grain Size: fine grained flow banded - flow banding @ 195.2m 197.0m 201.7m 205.3m	50 45 30 45	- 1% carb stringers - 1% Fe'carb or sericite stringers, avg 45 deg to CA		
	E.O.H.					

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ASSAY SHEET

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Sample	From (m)	To (m)	Length (m)	ASSAYS					GEOCHEMICAL					COMMENTS
				Cu %	Pb %	Zn %	Ag g/t	Au g/t	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb	
BCD21326	81.80	84.40	2.60						18	34	92	1.6	18	
BCD21328	85.60	86.70	1.10	0.010	0.02	0.01	6.0	0.03	72	110	111	1.8	4	
BCD21329	86.70	88.20	1.50						54	42	104	1	2	
BCD21330	88.20	89.70	1.50						34	29	115	0.9	2	
BCD21331	89.70	91.20	1.50						68	42	117	1	3	
BCD21332	91.20	92.20	1.00	0.002	0.01	0.01	2.0	0.02	14	28	21	0.9	19	
BCD21333	92.20	93.20	1.00						10	60	22	0.7	19	
BCD21334	93.20	94.70	1.50						18	27	68	1.2	17	
BCD21335	94.70	96.20	1.50						14	28	55	1	20	
BCD21336	96.20	97.50	1.30						20	20	64	0.9	6	
BCD21337	97.50	99.00	1.50						16	30	67	0.8	14	
BCD21338	99.00	100.30	1.30						28	48	87	1.1	9	
BCD21340	101.80	103.30	1.50						19	24	86	0.6	3	
BCD21341	103.30	105.20	1.90						18	26	68	0.8	18	
BCD21343	106.70	108.20	1.50						22	24	69	0.8	23	
BCD21344	108.20	109.70	1.50						21	28	65	0.8	81	
BCD21345	109.70	111.20	1.50						14	23	60	0.6	3	
BCD21346	111.20	112.00	0.80						19	18	92	0.5	5	
BCD21347	112.00	113.50	1.50						20	23	103	0.8	4	
BCD21348	113.50	115.00	1.50						22	28	99	0.6	2	
BCD21349	115.00	116.50	1.50						22	31	67	1	21	
BCD21350	116.50	118.00	1.50						28	32	75	1.8	21	
BCD21352	119.50	121.00	1.50						21	30	94	0.8	4	
BCD21353	121.00	122.50	1.50						18	42	68	0.7	19	
BCD21355	124.00	125.50	1.50						19	42	75	0.8	18	
BCD21356	125.50	127.00	1.50						18	51	88	1	21	
BCD21357	127.00	128.50	1.50						15	44	77	0.5	18	
BCD21358	128.50	130.00	1.50						10	57	82	0.6	2	
BCD21359	130.00	131.50	1.50						14	52	51	0.4	3	
BCD21360	131.50	133.20	1.70						10	37	18	0.4	8	
BCD21362	133.20	134.70	1.50						28	38	84	1	12	
BCD21364	136.20	137.60	1.40						10	56	26	0.8	19	
BCD21366	139.10	140.60	1.50						38	30	76	0.7	4	
BCD21367	140.60	142.10	1.50						30	28	67	0.8	9	
BCD21368	142.10	143.60	1.50						18	28	70	0.6	3	
BCD21369	143.60	145.10	1.50						19	34	68	0.8	4	
BCD21370	145.10	146.10	1.00											
BCD21371	146.10	147.60	1.50											

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ASSAY SHEET

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Sample	From (m)	To (m)	Length (m)	Cu %	Pb %	Zn %	Ag g/t	Au g/t	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb
BCD21373	149.10	150.60	1.50						29	36	77	0.8	16
BCD21374	150.60	152.10	1.50						27	38	79	0.7	11
BCD21376	153.60	155.10	1.50						38	28	77	0.6	3
BCD21377	155.10	156.60	1.50						20	34	100	0.8	5
BCD21378	156.60	158.10	1.50						15	35	60	0.6	17
BCD21379	158.10	159.60	1.50						16	36	70	0.9	12
BCD21380	159.60	161.10	1.50						21	34	72	0.8	9
BCD21381	161.10	162.60	1.50						18	32	76	0.8	5
BCD21382	162.60	164.10	1.50						25	36	59	0.9	11
BCD21383	164.10	165.60	1.50						38	42	54	0.8	4
BCD21385	167.10	168.30	1.20						14	32	50	0.5	3
BCD21387	169.80	171.60	1.80						15	35	62	0.5	18
BCD21389	173.10	174.60	1.50						24	27	80	0.6	5
BCD21390	174.60	175.90	1.30						30	29	82	0.7	2
BCD21391	175.90	177.50	1.60						28	34	65	0.7	17
BCD21392	177.50	179.00	1.50						20	24	81	0.8	3

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GEOCHEM. SHEET

DATE: 22-March-1990

Sample	From (m)	To (m)	Length (m)	AL2O3 %	BAT %	CAO %	FE2O3 %	K2O %	MGO %	MNO %	NA2O %	P2O5 %	SI02 %	TI02 %	S %	TOTAL %	Ag ppm	As ppm	Ba ppm	Cu ppm	Pb ppm	Sb ppm	Zn ppm	Au ppb
BCD21327	84.40	85.60	1.20	16.55	0.08	1.88	6.17	5	2.19	0.06	0.14	0.35	56.4	0.8	1.83	91.43	2.2	21	92	20	54	4	78	5
BCD21339	100.30	101.80	1.50	13.72	0.066	3.58	4.46	4.6	3.44	0.09	0.07	0.39	56.87	0.62	0.47	88.37	1	29	148	16	42	4	62	5
BCD21342	105.20	106.70	1.50	14.87	0.151	1.91	5.51	4.58	2.83	0.09	2.17	0.37	57.5	0.8	0.14	90.92	0.5	18	118	20	40	3	79	5
BCD21351	118.00	119.50	1.50	13.54	0.101	1.69	4.86	6.17	1.86	0.06	0.18	0.28	63.99	0.74	1.62	95.09	1.4	25	50	28	33	2	60	5
BCD21354	122.50	124.00	1.50	14.54	0.1	1.37	5.49	5.42	2.65	0.08	0.12	0.32	62.44	0.78	1.73	95.04	0.9	25	70	25	42	2	75	5
BCD21363	134.70	136.20	1.50	14.2	0.032	1.68	6.14	3.74	1.54	0.05	0.07	0.33	63.43	0.97	1.38	93.55	0.4	16	203	17	52	1	69	5
BCD21365	137.60	139.10	1.50	16.82	0.045	0.75	6.81	4.02	2.84	0.08	0.27	0.32	60.67	0.93	0.13	93.68	0.2	18	83	29	55	2	90	5
BCD21372	147.60	149.10	1.50	14.17	0.06	4.23	5.79	4.5	3.25	0.08	0.29	0.45	56.51	0.75	1.8	91.87	0.8	26	32	22	54	3	75	5
BCD21375	152.10	153.60	1.50	14.6	0.109	4.21	5.89	4.63	3.21	0.11	1.29	0.49	55.52	0.8	1.76	92.61	0.6	21	40	27	51	3	76	5
BCD21384	165.60	167.10	1.50	15.5	0.099	2.46	6.08	4.22	2.26	0.07	0.12	0.35	57.08	0.79	3.4	92.44	0.3	31	331	19	37	4	61	5
BCD21386	168.30	169.80	1.50	15.2	0.17	4.05	7.22	3.2	2.37	0.12	0.93	0.48	52.06	0.76	1.58	88.13	0.6	21	231	18	43	6	112	5
BCD21388	171.60	173.10	1.50	15.39	0.072	3.04	5.18	3.69	2.53	0.09	0.08	0.36	57.64	0.77	0.71	89.57	0.5	43	319	24	35	5	59	5
BCD21393	179.00	180.50	1.50	14.3	0.121	2.47	4.45	4.33	1.94	0.07	0.68	0.34	61.33	0.67	0.36	91.05	0.5	22	124	22	30	2	62	5
BCD21394	200.20	203.20	3.00	13.86	0.094	2.55	2.84	2.85	0.56	0.11	3.22	0.26	67.78	0.4	0.06	94.57	0.1	1	331	24	14	1	53	5

HOLE NUMBER: DM-24

GEOCHEM. SHEET

PAGE: 11

HOLE NUMBER: DM-24

ROD ASSAY

DATE: 22-March-1990

From (m)	To (m)	Length (L)	Sum Of Length	ROD S/LX100	Number Of Fracturs	Fracturs Per Metres	Number Of Veins	Veins Per Metres	Angle	Comments
0.00	0.00	0.00	0.00	0	0	0	0	0	0	

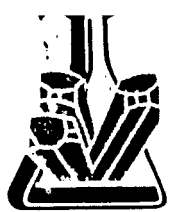
HOLE NUMBER: DM-24

ROD ASSAY

PAGE: 12

Appendix II

Analytical Results



MINNOVA INC.
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VANCOUVER OFFICE:
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 NORTH VANCOUVER, B.C. CANADA V7M 1T2
 TELEPHONE (604) 980-5814 OR (604) 988-4524
 TELEX: VJA USA 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:
 33 EAST IROQUOIS ROAD
 P.O. BOX 867
 TIMMINS, ONTARIO CANADA P4N 7G7
 TELEPHONE: (705) 264-9996

Geochemical Analysis Certificate

9/V/0375/R/G/001

Company: **MINNOVA INC.**

Date: **MAY-27-89**

Project: **627**

MINNOVA INC. VANCOUVER B.C.

Attn: **I. D. PIRIE/G. EVANS**

MINNOVA INC. PENTICTON B.C.

We hereby certify the following Geochemical Analysis of 7 ROCK samples submitted MAY-23-89 by G. EVANS:

Sample Number	CU PPM	PB PPM	ZN PPM	AG PPM	TI-FIRE PPB
BCD19401	117	48	69	9.6	100
BCD19402	27	34	102	1.5	13
BCD19403	22	25	68	2.4	89
BCD19423	21	36	61	1.6	34
BCD19424	12	22	46	1.3	117
BCD19426	23	33	77	1.3	15
BCD19429	13	27	52	1.0	20

Certified by

Pat Gaffney

MIN-EN LABORATORIES



MIN-EN LABORATORIES LTD.

SPECIALISTS IN MINERAL ENVIRONMENTS
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VANCOUVER OFFICE:
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TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:
33 EAST IROQUOIS ROAD
P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Certificate of Assay

9/V/0375/R/A/002

Company: **MINNOVA INC.**
Project: **627**
Attn: **I.D. PIRIE/G. EVANS**

Date: **MAY-27-89**
Copy: **MINNOVA INC. VANCOUVER B.C.**
MINNOVA INC. PENTICTON B.C.

We hereby certify the following Assay of 10 ROCK samples submitted MAY-23-89 by G. EVANS.

Sample Number	LDI %	AU G/TONNE	AU OZ/TON
BCD19409	1.70	1.28	.037
BCD19414	3.30		
BCD19418	1.60		
BCD19419	2.70		
BCD19420	3.80		
BCD19421	4.50		
BCD19425	1.90		
BCD19427	4.20		
BCD19428	4.30		
BCD19430	3.70		

Certified by

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TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:
33 EAST IROQUOIS ROAD
P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Certificate of Assay

9/V/0375/R/A/001

Company: **MINNOVA INC.**
Project: **627**
Attn: **I.D.PIRIE/G.EVANS**

Date: **MAY-27-89**
Copy 1. **MINNOVA INC. VANCOUVER B.C.**
2. **MINNOVA INC. PENTICTON B.C.**

We hereby certify the following Assay of 14 ROCK samples submitted MAY-23-89 by G.EVANS.

Sample Number	CU %	PB %	ZN %	AG G/TONNE	AG OZ/TON	AU G/TONNE	AU OZ/TON
BCD19404	.002	.01	.01	1.9	.06	.23	.007
BCD19405	.002	.01	.01	1.8	.05	.18	.005
BCD19406	.001	.01	.01	3.3	.10	.19	.006
BCD19407	.002	.01	.01	20.4	.60	1.28	.037
BCD19408	.001	.02	.01	59.7	1.74	3.01	.088
BCD19409	.001	.01	.01	18.2	.53	1.70	.050
BCD19410	.001	.01	.01	5.9	.17	1.80	.053
BCD19411	.001	.01	.01	22.3	.65	.59	.017
BCD19412	.002	.01	.01	8.2	.24	.38	.011
BCD19413	.001	.01	.01	2.0	.06	.02	.001
BCD19414	.016	.01	.02	25.6	.75	.65	.019
BCD19415	.004	.01	.01	2.7	.08	.02	.001
BCD19416	.005	.01	.01	2.4	.07	.01	.001
BCD19417	.008	.01	.02	90.3	2.63	3.73	.109

Certified by Pat Gaffney

MIN-EN LABORATORIES

COMPANY: MINNOVA INC.

MIN-EM LABS ICP REPORT

(ACT:F31) PAGE 1 OF 1

PROJECT NO: 627

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2

FILE NO: 9/V/0375/R/J/002

ATTENTION: I.PIRIE/G.EVANS

(604)980-5814 OR (604)988-4524

* TYPE ROCK GEOCHEM * DATE: 05-30-1989

(VALUES IN PPM)	AG	AS	BA	CU	PB	SB	ZN	AU-PPB
BCD19409	16.0	58	18	17	24	1	11	1190
BCD19414	39.4	10	21	200	73	1	130	760
BCD19418	.5	7	29	11	36	1	44	10
BCD19419	1.1	9	39	18	41	1	44	15
BCD19420	1.1	8	381	22	51	3	78	5
BCD19421	1.2	20	229	20	49	4	77	5
BCD19425	2.0	164	28	10	29	2	44	10
BCD19427	1.8	12	30	14	41	3	60	445
BCD19428	1.6	17	42	19	44	4	64	50
BCD19430	1.0	22	55	26	52	3	67	5

COMPANY: MINNOVA INC.

MIN-EN LABS ICP REPORT

(ACT:F26) PAGE 1 OF 2

PROJECT NO: 627

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2

FILE NO: 9/V/0375/R/L/002

ATTENTION: I.PIRIE/G.EVANS

(604)980-5814 OR (604)988-4524

TYPE LITHO GEOCHEM # DATE: 05-30-1989

(VALUES IN %)	AL2O3	BAT	CAO	FE2O3	K2O	MGO	MNO2	NA2O	P2O5	SI02	TIO2	S
BCD19409	8.79	.096	.01	2.78	5.17	.38	.02	.06	.01	79.43	.38	.58
19414	12.70	.132	.23	3.87	7.01	.87	.04	.04	.10	69.96	.54	1.76
BCD19418	17.34	.173	.97	3.54	9.12	.68	.09	2.54	.06	62.60	.54	.12
BCD19419	18.65	.239	1.76	3.75	7.27	1.00	.09	4.09	.20	58.44	.67	.15
BCD19420	18.48	.254	3.61	5.58	4.97	2.64	.18	4.50	.41	53.69	.77	.82
BCD19421	15.37	.133	3.44	6.81	5.21	3.53	.12	.15	.42	58.54	.90	.04
BCD19425	11.94	.102	1.55	3.77	6.72	1.28	.04	.08	.07	71.00	.50	1.82
BCD19427	12.80	.075	3.92	4.89	4.75	2.85	.08	.05	.23	64.46	.62	.29
BCD19428	13.89	.150	4.82	4.94	5.79	2.41	.10	.40	.22	61.36	.63	.66
BCD19430	15.49	.115	1.56	6.04	5.21	2.45	.09	.24	.34	62.92	.88	.48

COMPANY: MINNOVA INC.

MIN-EM LABS ICP REPORT

(ACT:F26) PAGE 2 OF 2

PROJECT NO: 627

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2

FILE NO: 9/V/0375/R/L/002

ATTENTION: I.PIRIE/G.EVANS

(604)980-5814 OR (604)988-4524

* TYPE LITHO GEOCHEM * DATE: 05-30-1989

(VALUES IN %)	TOT(%)
BCD19409	97.69
BCD19414	97.25
BCD19418	97.78
BCD19419	96.31
BCD19420	95.90
BCD19421	94.66
BCD19425	98.88
BCD19427	95.01
BCD19428	95.36
BCD19430	95.82



MIN-EN LABORATORIES DM-13

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TELEPHONE: (705) 264-9998

Geochemical Analysis Certificate 9/V/0405/R/G/001

Company: **MINNOVA INC.** Date: **JUN-04-89**
Project: **627** Copy 1. **MINNOVA INC., VANCOUVER, B.C.**
Attn: **I. PIRIE/G. EVANS** 2. **MINNOVA INC., PENTICTON, B.C.**

We hereby certify the following Geochemical Analysis of 29 ROCK samples submitted MAY-30-89 by G. EVANS.

Sample Number	CU PPM	PB PPM	ZN PPM	AG PPM	AU-FIRE PPB
BCD19453	48	29	73	19.3	690 ✓
BCD19454	14	26	52	2.2	16
BCD19456	6	21	16	1.4	8
BCD19457	8	25	24	3.0	21
BCD19458	8	35	12	4.8	46


BCD19460	6	44	14	3.2	16
BCD19461	13	31	34	3.6	92
BCD19462	14	30	35	2.8	128 ✓
BCD19463	10	37	18	4.2	55
BCD19464	12	46	16	4.2	98

BCD19465	7	41	14	2.1	33
BCD19467	10	34	38	1.0	3
BCD19468	10	26	30	1.0	2
BCD19469	10	32	48	1.4	9
BCD19470	8	20	29	1.3	10

BCD19472	11	39	102	0.6	4
BCD19473	8	26	100	0.7	1
BCD19474	7	42	60	0.6	2
BCD19475	9	38	98	0.5	2
BCD19476	11	33	74	0.6	3

BCD19477	8	25	44	0.6	7
BCD19479	9	21	40	1.4	3
BCD19480	8	26	41	1.5	2
BCD19481	10	26	63	0.8	2
BCD19483	8	29	70	1.1	1

BCD19484	7	19	33	1.0	2
BCD19485	8	17	25	1.6	4
BCD19489	34	37	88	1.4	2
BCD19490	28	23	84	1.0	1

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TELEPHONE: (705) 264-9996

Geochemical Analysis Certificate 9/V/0405/R/G/002

Company: MINNOVA INC. Date: JUN-04-89
Project: 627 Copy 1. MINNOVA INC., VANCOUVER, B.C.
Attn: I. PIRIE/G. EVANS Copy 2. MINNOVA INC., PENTICTON, B.C.

We hereby certify the following Geochemical Analysis of 27 ROCK samples submitted MAY-30-89 by G. EVANS.

Sample Number	CU PPM	PB PPM	ZN PPM	AG PPM	AU-FIRE PPM
BCD19491	22	26	90	0.8	5
BCD19492	28	25	65	1.0	2
BCD19493	20	23	62	1.0	2
BCD19494	18	24	56	1.0	37
BCD19496	17	23	50	1.2	8
BCD19497	12	21	46	1.0	32
BCD19500	22	25	55	1.6	37
BCD19502	30	22	68	1.3	37
BCD19503	26	25	66	1.6	3
BCD19504	28	30	76	1.2	2
BCD19507	30	25	94	1.0	2
BCD19507	32	26	62	2.6	1200
BCD19508	45	24	80	1.2	38
BCD19510	23	26	71	1.0	16
BCD19511	24	27	70	1.0	10
BCD19512	20	26	62	1.0	10
BCD19513	24	33	52	1.4	9
BCD19514	16	29	67	0.8	3
BCD19515	25	25	66	0.8	2
BCD19521	36	12	39	0.4	1
BCD19525	29	31	82	0.8	1
BCD19553	29	15	66	0.8	2
BCD19554	20	15	70	0.6	1
BCD19555	59	10	69	0.6	1
BCD19556	15	8	36	0.3	2
BCD19498	16	25	46	1.3	240
BCD19499	20	17	48	1.2	253

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COMPANY: MINNOVA INC.

MIN-EN LABS ICP REPORT

(ACT:F26) PAGE 1 OF 2

PROJECT NO: 627

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2

FILE NO: 9/V/0405/R/L/003

ATTENTION: I.PIRIE/G.EVANS

(604)980-5814 OR (604)988-4524

* TYPE LITHO GEOCHEM * DATE: 06-05-1989

(VALUES IN %)	AL2O3	BAT	CAO	FE2O3	K2O	MGO	MND2	NA2O	P2O5	SI02	TIO2	S
BCD19451	16.82	.199	3.45	4.45	5.45	1.89	.10	3.43	.27	57.87	.70	.54
BCD19452	15.55	.173	5.03	4.45	4.99	1.75	.10	2.77	.25	56.44	.70	.59
BCD19455	18.46	.109	.85	3.65	6.12	1.34	.03	.64	.18	62.54	.72	.72
BCD19459	18.76	.105	1.45	4.92	5.74	1.20	.03	.49	.18	61.05	.54	.46
BCD19466	22.21	.087	.63	3.39	7.10	1.10	.02	.55	.14	58.73	.60	.50
BCD19471	16.79	.165	1.22	4.03	7.10	.88	.07	2.80	.13	61.89	.57	.23
BCD19478	16.10	.149	1.35	4.08	8.92	.79	.12	1.32	.06	62.03	.50	.43
BCD19482	16.95	.148	1.10	3.70	7.20	.77	.10	3.09	.11	61.82	.53	.46
BCD19486	17.97	.180	2.75	3.95	8.05	1.36	.12	2.45	.15	58.76	.56	.14
BCD19487	15.25	.192	5.07	3.31	5.01	.95	.06	2.33	.09	62.47	.52	1.33
BCD19488	14.76	.148	2.82	4.72	5.69	2.19	.09	1.93	.19	61.58	.69	.14
BCD19495	11.58	.049	4.18	4.11	2.83	3.56	.10	.58	.20	65.65	.58	.07
BCD19501	11.50	.074	6.35	4.26	3.95	3.05	.09	.07	.22	61.72	.57	1.30
BCD19506	16.70	.147	4.20	6.85	4.57	3.86	.18	.45	.39	54.93	.99	.46
BCD19509	15.50	.120	1.52	5.77	4.77	2.26	.09	1.33	.16	63.02	.77	.04
BCD19516	14.37	.143	4.59	5.22	3.19	2.60	.09	2.92	.20	54.64	.66	.05
BCD19517	14.59	.055	3.28	2.64	2.29	.82	.04	4.88	.01	64.74	.35	.06
BCD19518	15.63	.094	3.37	2.85	3.06	.51	.03	4.68	.01	64.22	.37	.03
BCD19519	15.56	.098	3.28	2.93	3.21	.79	.05	4.36	.01	65.69	.38	.02
BCD19520	15.51	.105	2.59	2.90	3.15	.68	.05	4.81	.01	65.40	.37	.02
BCD19522	15.78	.109	1.74	2.97	3.52	1.16	.05	3.66	.01	65.62	.38	.03
BCD19523	13.46	.094	2.63	2.22	2.71	.79	.05	3.78	.01	68.34	.25	.02
BCD19524	15.91	.110	4.54	5.97	3.76	3.88	.11	.33	.28	55.32	.78	.04
BCD19551	14.32	.082	2.78	2.38	3.23	.75	.05	3.53	.01	67.65	.29	.02
BCD19552	14.58	.073	3.19	2.50	3.06	.85	.05	3.70	.01	66.01	.29	.03

COMPANY: MINNOVA INC.

MIN-EN LABS ICP REPORT

(ACT:F31) PAGE 1 OF 1

PROJECT NO: 627

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2

FILE NO: 9/V/0405/R/J/001

ATTENTION: I.PIRIE/G.EVANS

(604)980-5814 OR (604)988-4524

* TYPE ROCK GEDCHEM * DATE: 06-05-1989

(VALUES IN PPM)	AG	AS	BA	CU	PB	SB	ZN	AU-PFB
BCD19451	2.2	6	120	21	54	6	94	10
BCD19452	1.1	7	78	19	27	3	62	155
BCD19455	1.8	13	35	16	18	2	38	25
BCD19459	2.8	4	39	6	57	2	20	70
BCD19466	2.2	8	39	5	26	1	15	5
BCD19471	.8	9	29	9	19	2	73	5
BCD19478	.5	11	34	13	34	2	80	10
BCD19482	.3	1	23	8	28	1	86	5
BCD19486	1.0	10	87	10	39	4	108	5
BCD19487	1.6	6	72	14	30	5	39	10
BCD19488	1.0	10	99	17	29	5	65	5
BCD19495	.9	18	31	13	31	6	59	5
BCD19501	1.6	31	41	25	34	7	58	5
BCD19506	.8	23	58	25	41	9	91	10
BCD19509	1.7	12	49	24	29	4	72	80
BCD19516	.4	12	218	20	25	4	61	5
BCD19517	.1	4	29	21	4	1	42	5
BCD19518	.5	2	131	34	1	1	41	10
BCD19519	.3	1	85	40	3	1	51	5
BCD19520	.3	1	176	37	2	2	43	5
BCD19522	.5	1	330	46	7	1	37	10
BCD19523	.1	2	219	24	8	1	42	5
BCD19524	.4	16	138	24	41	6	69	5
BCD19551	.1	1	114	17	4	1	36	5
BCD19552	.8	4	150	17	5	1	41	5



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TIMMINS OFFICE:
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P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Certificate of Assay

9/V/0405/R/A/001

Company: MINNOVA INC.

Date: JUN-04-89

Project: 627

Copy 1. MINNOVA INC., VANCOUVER, B.C.

Attn: I. BIRIE/G. EVANS

2. MINNOVA INC., PENTICTON, B.C.

We hereby certify the following Assay of 25 ROCK samples submitted MAY-30-89 by G. EVANS.

Sample Number	LOI %
BCD19451	4.10
BCD19452	6.50
BCD19455	4.50
BCD19459	4.40
BCD19466	4.30

BCD19471	3.50
BCD19478	3.30
BCD19482	3.40
BCD19486	2.60
BCD19487	3.70

BCD19488	4.00
BCD19495	5.60
BCD19501	7.00
BCD19506	5.90
BCD19509	3.50

BCD19516	10.20
BCD19517	5.60
BCD19518	4.20
BCD19519	2.90
BCD19520	3.40

BCD19522	4.20
BCD19523	4.90
BCD19524	8.20
BCD19551	3.90
BCD19552	4.60

Certified by

MIN-EN LABORATORIES

COMPANY: MINNOVA INC.

MIN-EN LABS ICP REPORT

(ACT:F26) PAGE 2 OF 2

PROJECT NO: 627

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2

FILE NO: 9/V/0405/R/L/003

ATTENTION: I.PIRIE/G.EVANS

(604)980-5814 OR (604)988-4524

* TYPE LITHO GEOCHEM * DATE: 06-05-1989

(VALUES IN %) TOT(%)

BCD19451	95.16
BCD19452	92.80
BCD19455	95.37
BCD19459	94.93
BCD19466	95.07
BCD19471	95.86
BCD19478	95.86
BCD19482	95.96
BCD19486	96.45
BCD19487	96.58
BCD19488	94.94
BCD19495	93.49
BCD19501	93.16
BCD19506	93.73
BCD19509	95.36
BCD19516	88.66
BCD19517	93.76
BCD19518	94.85
BCD19519	96.39
BCD19520	95.59
BCD19522	95.02
BCD19523	94.35
BCD19524	91.04
BCD19551	95.09
BCD19552	94.33



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VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:
33 EAST IROQUOIS ROAD
P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Certificate of Assay

9/V/0405/R/A/001

Company: MINNOVA INC.
Project: 627
Attn: I. PIRIE/G. EVANS

Date: JUN-04-89
Copy 1. MINNOVA INC., VANCOUVER, B.C.
2. MINNOVA INC., PENTICTON, B.C.

We hereby certify the following Assay of 1 ROCK samples submitted MAY-30-89 by G. EVANS.

Sample Number	AU G/TONNE	AU OZ/TON
BCD19507	1.22	.036

Certified by 



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TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:
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P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Geochemical Analysis Certificate

9V-0452-RG1

Company: MINNOVA INC.
Project: 627
Attn: G.EVANS/I.PIRIE

Date: JUN-14-89

Copy 1. MINNOVA INC., VANCOUVER, B.C.
2. MINNOVA INC., PENTICTON, B.C.

We hereby certify the following Geochemical Analysis of 22 ROCK samples submitted JUN-08-89 by G.EVANS.

Sample Number	CU PPM	PB PPM	ZN PPM	AG PPM	AU-FIRE PPM
BCD19526	34	34	66	1.1	2
BCD19527	33	31	69	0.8	3
BCD19529	34	23	60	1.2	17
BCD19531	19	42	117	0.8	6
BCD19532	15	53	174	0.7	2

BCD19533	26	34	75	1.0	20
BCD19534	34	28	69	0.9	15
BCD19535	29	30	61	0.8	4
BCD19536	32	23	67	0.9	1
BCD19537	29	25	69	0.6	19

BCD19538	16	27	46	0.7	11
BCD19540	18	26	52	0.7	5
BCD19541	19	27	57	0.8	3
BCD19543	19	28	55	0.8	4
BCD19544	21	24	56	0.8	6

BCD19545	24	26	63	0.9	3
BCD19546	20	20	51	0.9	500
BCD19547	26	31	87	1.0	5
BCD19549	26	36	69	1.1	13
BCD19550	28	29	70	0.9	14

BCD19577	24	30	61	0.8	22
BCD19578	22	28	56	1.2	73

Certified by

MIN-EN LABORATORIES



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TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Assay Certificate

9V-0452-RA2

Company: MINNOVA INC.
Project: 627
Attn: G.EVANS/I.PIRIE

Date: JUN-16-89
Copy 1. MINNOVA INC., VANCOUVER, B.C.
Copy 2. MINNOVA INC., PENTICTON, B.C.

We hereby certify the following Assay of 6 ROCK samples submitted JUN-07-89 by G.EVANS.

Sample Number	LDI %
BCD19528	3.00
BCD19530	2.55
BCD19542	7.25
BCD19548	6.05
BCD19576	4.80
BCD19579	3.05

Certified by _____

MIN-EN LABORATORIES

COMPANY: MINNOVA INC.

MIN-EN LABS ICP REPORT

(ACT:F26) PAGE 2 OF 2

PROJECT NO: 627

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2

FILE NO: 9/V/0452/R/L/002

ATTENTION: G.EVANS/I.PIRIE

(604)980-5814 OR (604)988-4524

* TYPE ROCK GEOCHEM * DATE: 06-16-1989

(VALUES IN %)	TOT(%)
BCD19528	96.32
BCD19530	96.73
BCD19542	93.62
BCD19548	94.77
BCD19576	95.82
BCD19579	96.08

COMPANY: MINNOVA INC.

MIN-EN LABS ICF REPORT

(ACT:F25) PAGE 1 OF 2

PROJECT NO: 627

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2

FILE NO: 57V/0452/R/L/002

ATTENTION: G.EVANS/I.PIRIE

(604)980-5914 OR (604)988-4524

TYPE ROCK GEOCHEM # DATE: 06-16-1989

(VALUES IN %)	AL2O3	BAI	CAO	FE2O3	K2O	MGO	MNO2	NA2O	P2O5	SiO2	TIO2	S
BCD19528	17.11	.167	2.34	4.02	6.42	.96	.07	4.12	.12	59.92	.53	.54
BCD19530	15.85	.174	3.58	4.88	6.44	2.28	.09	2.05	.23	59.98	.70	.49
BCD19542	14.76	.167	9.06	4.82	4.39	2.22	.11	.01	.23	55.57	.66	1.63
BCD19548	14.41	.106	5.91	4.76	4.95	2.37	.10	.01	.21	57.38	.65	1.92
BCD19576	17.04	.129	2.01	5.32	4.65	2.21	.08	1.73	.25	59.92	.74	1.74
BCD19579	18.10	.220	1.37	5.17	5.28	1.95	.10	2.23	.23	60.58	.72	.13

COMPANY: MINNOVA INC.

MIN-EN LABS ICP REPORT

(ACT:F31) PAGE 1 OF 1

PROJECT NO: 627

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2

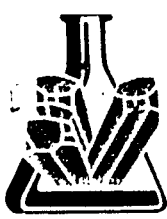
FILE NO: 9/V/0452/R/J/002

ATTENTION: G.EVANS/I.PIRIE

(604)980-5814 OR (604)988-4524

* TYPE ROCK GEOCHEM * DATE: 06-16-1989

(VALUES IN PPM)	AG	AS	BA	CU	FB	SB	ZN	AU-PPB
BCD19528	.5	1	45	18	25	1	91	10
BCD19530	1.1	23	75	56	36	2	66	5
BCD19542	.8	7	534	21	30	2	49	5
BCD19548	.9	8	64	25	28	1	52	10
BCD19576	.5	17	138	19	34	1	75	5
BCD19579	.4	2	485	15	35	1	59	5



MIN-EN LABORATORIES

DM-15

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TIMMINS OFFICE:
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P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Geochemical Analysis Certificate

9V-0480-RB2

Company: MINNOVA INC.
Project: 627
Attn: I. PIRIE/G. EVANS

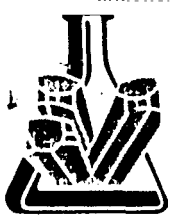
Date: JUN-13-89
Copy 1. MINNOVA INC., VANCOUVER, B.C.
2. MINNOVA INC., PENTICTON, B.C.

We hereby certify the following Geochemical Analysis of 30 ROCK samples submitted JUN-13-89 by R. HOLDER.

Sample Number	CU PPM	PB PPM	ZN PPM	AG PPM	AU-FIRE PPB
BCD19602	28	38	66	2.2	261
BCD19604	28	29	81	1.7	41
BCD19605	63	81	81	1.8	44
BCD19609	43	16	72	1.1	34
BCD19610	37	39	69	0.9	6
BCD19611	38	26	73	0.9	34
BCD19613	40	37	74	1.3	750
BCD19614	29	32	84	1.0	5
BCD19615	32	36	74	0.9	4
BCD19616	33	37	75	1.4	8
BCD19617	38	49	75	1.5	3
BCD19618	63	26	80	3.8	200
BCD19620	70	25	57	5.0	673
BCD19621	69	31	61	9.7	62
BCD19622	47	24	58	1.8	1
BCD19623	29	43	64	0.9	3
BCD19625	12	21	51	0.8	3
BCD19626	28	22	63	0.8	4
BCD19627	29	24	68	0.9	44
BCD19628	29	26	65	4.1	22
BCD19630	40	29	68	1.0	2
BCD19631	30	29	72	1.1	1
BCD19632	67	25	75	1.1	1
BCD19633	40	23	68	1.0	2
BCD19634	37	26	64	0.7	1
BCD19635	28	27	65	1.0	1
BCD19636	51	29	77	1.5	2
BCD19638	21	28	66	1.4	2
BCD19640	18	24	71	0.9	1
BCD19641	20	27	73	1.2	2

Certified by

MIN-EN LABORATORIES



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TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:
33 EAST IROQUOIS ROAD
P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Geochemical Analysis Certificate 9V-0480-RG3

Company: **MINNOVA INC.** Date: **JUN-17-89**
 Project: **627** Copy 1. MINNOVA INC., VANCOUVER, B.C.
 Attn: **I. PIRIE/G. EVANS** 2. MINNOVA INC., PENTICTON, B.C.

We hereby certify the following Geochemical Analysis of 11 ROCK samples submitted JUN-13-89 by R.HOLDER.

Sample Number	CU PPM	PB PPM	ZN PPM	AG PPM	AU-FIRE PPB
BCD 19642	11	26	75	0.9	1
BCD 19643	24	33	80	1.8	42
BCD 19644	12	29	52	3.1	268
BCD 19645	10	21	58	2.4	180
BCD 19647	7	19	50	2.7	1

BCD 19648	11	22	54	1.7	45
BCD 19650	7	24	53	8.4	401
BCD 19651	10	22	56	1.0	17
BCD 19653	10	24	67	0.9	43
BCD 19654	16	21	62	3.8	112

19655	14	39	55	1.4	765

Certified by 
MIN-EN LABORATORIES

COMPANY: MINNOVA INC.

MIN-EN LABS ICF REPORT

(ACT:F26) PAGE 1 OF 2

PROJECT NO: 627

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2

FILE NO: 97V/0480/R/L/001

ATTENTION: I. PIRIE/G. EVANS

(604)980-5814 OR (604)988-4524

* TYPE RGE: GEOL/EN * DATE: 06-20-1989

(VALUES IN %)	AL2O3	BAT	CAO	FE2O3	K2O	MGO	MnO2	NA2O	P2O5	SiO2	TiO2	S
BCD19601	17.49	.195	4.40	4.89	5.05	1.82	.09	3.28	.25	56.30	.73	.02
BCD19603	13.64	.133	1.06	4.58	5.97	2.09	.07	.74	.14	67.08	.69	.62
BCD19606	14.48	.139	2.43	4.43	5.48	2.10	.07	1.42	.19	65.01	.70	.54
BCD19607	13.67	.126	3.05	3.88	7.17	1.98	.08	.42	.12	64.86	.59	.01
BCD19608	14.31	.101	5.10	5.71	4.19	2.71	.09	2.32	.19	58.53	.75	.04
BCD19612	17.59	.067	3.06	6.63	4.48	3.45	.09	.04	.38	55.58	.93	1.57
BCD19619	13.95	.117	1.49	6.18	7.45	2.36	.06	.06	.17	64.16	.79	1.29
BCD19624	12.00	.131	3.33	4.12	7.70	1.75	.07	.16	.13	66.21	.56	1.73
BCD19629	17.41	.136	4.47	5.90	4.85	2.81	.11	.62	.31	55.85	.82	1.68
BCD19637	14.76	.062	3.82	6.19	3.44	3.29	.09	.06	.32	60.27	.74	1.63
BCD19639	15.12	.040	5.11	5.99	3.45	4.10	.16	.07	.33	56.46	.75	.04
BCD19646	10.41	.090	3.38	3.79	5.53	2.84	.05	.04	.06	69.78	.49	1.02
BCD19649	10.93	.087	3.35	3.46	6.66	2.54	.06	.06	.10	68.33	.50	.46
BCD19652	11.33	.100	5.44	3.70	6.19	2.14	.07	.16	.10	65.83	.50	.84
BCD19656	16.80	.131	4.05	6.62	4.00	2.74	.10	.82	.31	57.47	.87	1.23
BCD19657	16.89	.140	5.40	7.54	4.20	3.72	.16	1.14	.41	54.85	1.05	1.52
BCD19658	17.23	.125	2.64	4.33	5.11	1.38	.08	2.45	.15	62.28	.62	.45

ksic
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COMPANY: MINNOVA INC.

MIN-EN LABS ICP REPORT

ACT:F261 PAGE 2 OF 2

PROJECT NO: 627

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2

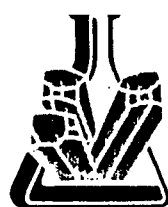
FILE NO: 9/9/0480/R/L/001

ATTENTION: I.PIRIE/G.EVANS

(604)980-5814 OR (604)988-4524

* TYPE RODI GEOLHE1 * DATE: 06-20-1987

(VALUES IN %)	TOT(%)
BCD19601	94.53
BCD19603	96.80
BCD19606	96.99
BCD19607	95.95
BCD19608	94.04
BCD19612	93.87
BCD19619	98.08
BCD19624	97.88
BCD19629	94.96
BCD19637	94.66
BCD19639	91.62
BCD19646	97.49
BCD19649	96.53
BCD19652	96.41
BCD19656	95.14
BCD19657	97.00
BCD19658	96.86



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TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:
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P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Assay Certificate

9V-0480-RA1

Company: MINNOVA INC.

Project: 627

Attn: I. PIRIE/G. EVANS

Date: JUN-20-89

Copy 1. MINNOVA INC., VANCOUVER, B.C.

2. MINNOVA INC., PENTICTON, B.C.

We hereby certify the following Assay of 17 ROCK samples submitted JUN-13-89 by R. HOLDER.

Sample Number	LOI %
BCD19601	4.25
BCD19603	2.60
BCD19606	2.80
BCD19607	2.95
BCD19608	4.90

BCD19612	6.85
BCD19619	2.20
BCD19624	2.75
BCD19629	5.70
BCD19637	6.00

BCD19639	7.30
BCD19646	2.60
BCD19649	2.80
BCD19652	3.70
BCD19656	4.90

BCD19657	3.40
BCD19658	2.85

Certified by

MINNEN LABORATORIES

COMPANY: MINNOVA INC.

MIN-EN LABS ICP REPORT

(ACT:F11) PAGE 1 OF 1

PROJECT NO: 627

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2

FILE NO: 9/V/0480/R/J/001

ATTENTION: I.PIRIE/G.EVANS

(604)980-5814 OR (604)988-4524

* TYPE ROCK GEOCHEM * DATE: 06-20-1989

(VALUES IN PPM)	AG	AS	BA	CU	PB	SE	ZN	AU-PFB
19601	.3	7	30	14	31	1	60	5
BCD19603	2.1	31	21	23	45	1	73	120
BCD19606	.5	15	20	22	39	1	60	10
BCD19607	.2	7	23	11	26	1	57	5
BCD19608	.8	21	24	23	42	2	81	5
BCD19612	.5	26	67	39	44	2	81	5
BCD19619	7.9	48	21	58	30	1	68	260
BCD19624	.7	16	31	13	25	1	51	10
BCD19629	.9	25	242	25	44	3	77	5
BCD19637	.8	23	88	13	46	4	71	5
BCD19639	.6	24	58	15	49	3	80	5
BCD19646	2.4	42	20	11	85	2	48	400
BCD19649	1.1	22	21	17	33	1	48	80
BCD19652	.8	26	19	9	137	1	60	15
BCD19656	1.2	26	118	24	71	2	80	5
BCD19657	3.1	26	76	32	301	6	150	10
BCD19658	.5	3	60	19	81	1	63	10



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NORTH VANCOUVER, B.C. CANADA V7M 1T2
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TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:
33 EAST IROQUOIS ROAD
P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Geochemical Analysis Certificate

9V-0488-RG1

Company: MINNOVA INC.

Date: JUN-17-89

Project: 627

Copy 1. MINNOVA INC., VANCOUVER, B.C.

Attn: G. EVANS/I. PIRIE

2. MINNOVA INC., PENTICTON, B.C.

We hereby certify the following Geochemical Analysis of 25 ROCK samples submitted JUN-13-89 by R. HOLDER.

Sample Number	CU PPM	PB PPM	ZN PPM	AG PPM	AU-FIRE PPB
BCD19677	63	64	32	0.9	10
BCD19678	31	37	27	0.6	12
BCD19679	14	65	89	0.7	4
BCD19680	11	28	73	0.9	1
BCD19681	21	31	76	0.8	2
BCD19682	10	45	69	0.8	1
BCD19683	7	35	73	0.7	3
BCD19685	21	29	89	1.1	1
BCD19686	17	31	98	1.0	1
BCD19688	18	32	91	1.1	3
BCD19689	12	36	89	0.9	1
BCD19690	13	55	67	0.8	1
BCD19691	19	41	72	1.4	2
BCD19693	19	33	73	1.2	6
BCD19694	9	29	83	1.1	2
BCD19695	15	28	101	1.3	15
BCD19696	15	29	71	1.0	4
BCD19697	22	31	69	0.8	2
BCD19699	15	27	69	0.7	2
BCD19700	9	32	70	0.9	1
BCD19701	8	31	71	0.6	3
BCD19702	23	33	78	0.8	6
BCD19703	19	22	66	0.6	2
BCD19704	25	27	64	0.7	1
BCD19705	23	20	63	0.9	3

Certified by

MIN-EN LABORATORIES



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NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:
33 EAST IROQUOIS ROAD
P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Assay Certificate

9V-0488-RA1

Company: MINNOVA INC.

Date: JUN-21-89

Project: 627

Copy 1. MINNOVA INC., VANCOUVER, B.C.

Attn: B. EVANS / I. PIRIE

2. MINNOVA INC., PENTICTON, B.C.

We hereby certify the following Assay of 6 ROCK samples submitted JUN-13-89 by R. HOLDER.

Sample Number	LOI %
BCD19676	2.20
BCD19684	2.00
BCD19687	2.00
BCD19692	6.70
BCD19698	5.90

BCD19706	4.40

Certified by

MIN-EN LABORATORIES

MM-16

COMPANY: MINNOVA INC.

MIN-EN LABS ICP REPORT

(ACT:F31) PAGE 1 OF 1

PROJECT NO: 627

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2

FILE NO: 91V/0488/R/J/002

ATTENTION: G.EVANS/I.PIRIE

(604)980-5814 OR (604)988-4524

* TYPE ROCK GEOCHEM * DATE: 06-22-1989

(VALUES IN PPM)	AG	AS	BA	CU	PB	SB	ZN	AU-PPB
BCD19676	.6	1	1110	10	32	1	13	2
BCD19684	1.6	14	438	22	50	2	94	2
BCD19687	1.1	15	307	23	71	4	81	2
BCD19692	2.6	35	41	33	69	9	80	7
BCD19698	1.9	74	20	37	76	14	72	6
BCD19706	.2	2	450	29	26	1	51	4

COMPANY: MINNOVA INC.

MIN-EN LABS ICP REPORT

(ACT:F26) PAGE 1 OF 2

PROJECT NO: 627

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2

FILE NO: 9/V/0488/R/L/002

ATTENTION: G. EVANS/I. FIRIE

(604)980-5814 OR (604)988-4524

* TYPE LITHO GEOCHEM * DATE: 06-22-1989

(VALUES IN %)	AL2O3	BAT	CAO	FE2O3	K2O	MGO	MNO2	NA2O	P2O5	SI02	TIO2	S
BCD19676	19.65	.210	1.52	3.57	4.99	.51	.02	4.05	.01	61.15	.72	.06
BCD19684	17.78	.207	3.24	4.69	4.41	1.91	.13	4.80	.25	58.54	.71	.03
BCD19687	18.18	.219	4.04	7.18	5.01	2.02	.11	5.37	.35	53.82	.73	.06
BCD19692	14.35	.157	7.35	7.52	4.34	5.83	.15	1.55	.35	49.41	.91	.09
BCD19698	11.86	.094	6.16	7.66	3.52	9.22	.14	.58	.42	52.42	.72	.18
BCD19706	16.82	.087	3.31	3.15	3.23	1.08	.04	4.41	.01	62.12	.42	.04

COMPANY: MINNOVA INC.

MIN-EN LABS ICP REPORT

(ACT:F26) PAGE 2 OF 2

PROJECT NO: 627

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2

FILE NO: 9/V/0488/R/L/002

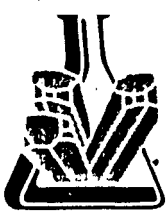
ATTENTION: G. EVANS/I. PIRIE

(604) 980-5814 OR (604) 988-4524

* TYPE LITHO GEOCHEM *

DATE: 06-22-1987

(VALUES IN %)	TOT(%)
BCD19676	96.46
BCD19684	96.69
BCD19687	97.08
BCD19692	92.02
BCD19698	92.96
BCD19706	94.71



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TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:
33 EAST IROQUOIS ROAD
P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9998

Geochemical Analysis Certificate

9V-0501-RB1

Company: MINNOVA INC.

Project: 627

Attn: I. PIRIE/B. EVANS

Date: JUN-19-89

Copy 1. MINNOVA INC., VANCOUVER, B.C.

2. MINNOVA INC., PENTICTON, B.C.

We hereby certify the following Geochemical Analysis of 12 ROCK samples submitted JUN-16-89 by ROYANNA HOLDER.

Sample Number	CU PPM	PB PPM	ZN PPM	AG PPM	AU-FIRE PPB
BCD19726	19	29	61	1.8	36
BCD19727	4	28	24	1.2	192
BCD19728	14	35	35	1.6	345
BCD19729	26	31	72	7.4	6150
BCD19730	18	20	60	2.6	199

BCD19731	25	14	54	1.8	335
BCD19734	16	16	59	2.5	229
BCD19736	14	11	32	0.4	2
BCD19738	17	12	46	0.8	3
BCD19739	21	16	62	1.2	50

BCD19740	16	31	57	0.8	3
BCD19742	21	23	58	0.9	20

Certified by

MIN-EN LABORATORIES

COMPANY: MINNOVA INC.

MIN-EN LABS ICP REPORT

(ACT:F26) PAGE 1 OF 2

PROJECT NO: 627

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2

FILE NO: 97V/0501/R/L/002

ATTENTION: I.PIRIE/G.EVANS

(604)980-5814 OR (604)988-4524

* TYPR LITHO GEOCHEM *

DATE: 06-21-1989

(VALUES IN %)	AL2O3	BAT	CAO	FE2O3	K2O	MGO	MNO2	NA2O	FE2O5	SI02	TIO2	S
BCD19732	11.42	.125	3.86	4.80	5.18	2.54	.11	.01	.22	66.42	.68	1.59
BCD19733	16.39	.093	2.19	7.04	5.59	2.35	.13	.01	.38	58.52	.95	1.66
BCD19735	16.82	.090	1.95	8.59	5.88	1.75	.06	.01	.41	57.09	1.01	3.65
BCD19737	14.31	.101	1.87	2.56	3.68	.64	.05	3.91	.01	69.00	.27	.01
BCD19741	14.63	.051	4.79	5.28	3.63	3.11	.10	.01	.27	59.67	.73	.17
BCD19743	16.37	.131	3.80	4.15	4.02	2.07	.07	2.84	.06	60.78	.62	.04

COMPANY: MINNOVA INC.

MIN-EN LABS ICP REPORT

(ACT:F26) PAGE 2 OF 2

PROJECT NO: 627

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7R 1T2

FILE NO: 9/V/GE01/R/L/002

ATTENTION: I.PIRIE/G.EVANS

(604)980-5814 OR (604)988-4524

* TYFR LITHO GEOCHEM * DATE: 06-21-1997

(VALUES IN %) TOT(%)

BCD19732	96.95
BCD19733	95.29
BCD19735	97.30
BCD19737	96.41
BCD19741	92.44
BCD19743	94.94

COMPANY: MINNOVA INC.

MIN-EN LABS ICP REPORT

(ACT:F31) PAGE 1 OF 1

PROJECT NO: 627

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2

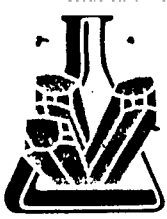
FILE NO: 9/V/0501/R/J/002

ATTENTION: I.PIRIE/G.EVANS

(604) 980-5814 OR (604) 988-4524

* TYPE ROCK GEOCHEM * DATE: 06-21-1989

(VALUES IN PPM)	AG	AS	BA	CU	FB	SB	ZN	AU-FFB
BCD19732	2.1	15	26	11	28	2	38	2950
BCD19733	.7	5	12	13	34	2	43	200
BCD19735	1.8	46	28	12	45	4	66	160
BCD19737	.4	2	17	11	11	1	24	5
BCD19741	.5	7	17	8	18	1	23	5
BCD19743	.3	8	11	13	19	1	26	5



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TELEX: VIA U.S.A. 760 1067 • FAX (604) 980-9621

TIMMINS OFFICE:
33 EAST IROQUOIS ROAD
P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Assay Certificate

9V-0501-RA1

Company: MINNOVA INC.

Project: 627

Attn: I. PIRIE/B. EVANS

Date: JUN-19-89

Copy 1. MINNOVA INC., VANCOUVER, B.C.

2. MINNOVA INC., PENTICTON, B.C.

We hereby certify the following Assay of 1 ROCK samples
submitted JUN-16-89 by ROYANNA HOLDER.

Sample Number	AU G/TONNE	AU OZ/TON
BCD19729	7.73	.225

Certified by _____

MIN-EN LABORATORIES

Assay Certificate

9V-0501-RA2

Company: MINNOVA INC.

Project: 627

Attn: I. PIRIE/G. EVANS

Date: JUN-21-89

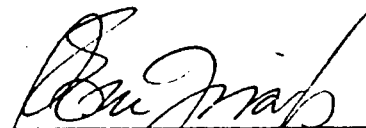
Copy 1. MINNOVA INC., VANCOUVER, B.C.

2. MINNOVA INC., PENTICTON, B.C.

We hereby certify the following Assay of 6 ROCKS samples submitted JUN-16-89 by ROYANNA HOLDER.

Sample Number	LOI %	AU G/TONNE	AU OZ/TON
BCD19732	3.40	3.18	.093
BCD19733	5.20		
BCD19735	5.60		
BCD19737	2.55		
BCD19741	6.70		
BCD19743	4.25		

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TELEPHONE: (705) 264-9998

Assay Certificate

9V-0511-RA2

Company: MINNOVA INC.

Project: 627

Attn: I.D. PIRIE/G. EVANS

Date: JUN-26-89

Copy 1. MINNOVA INC., VANCOUVER, B.C.

2. MINNOVA INC., PENTICTON, B.C.

We hereby certify the following Assay of 15 ROCK samples
submitted JUN-16-89 by G. EVANS.

Sample Number	LOI %
---------------	-------

CD19751	2.50
CD19756	2.45
CD19762	3.45
CD19770	5.20
CD19771	3.10

CD19773	4.45
CD19774	4.80
CD19775	6.30
CD19779	4.00
CD19780	2.35

CD19791	4.55
CD19792	4.60
CD20205	3.50
CD20209	3.25
CD20210	4.20

Certified by

MIN-EN LABORATORIES

COMP: MINNOVA INC.
 PROJ: 627
 ATTN: I.PIRIE/G.EVANS

MIN-EN LABS ICP REPORT
 705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2
 (604)980-5814 OR (604)988-4524

FILE NO: 9V-0557-RL3
 DATE: JUL-08-89

• TYPE ROCK GEOCHEM • (ACT:FIRE)

SAMPLE NUMBER	AL2O3 %	BAT %	CAO %	FE2O3 %	K2O %	MGO %	MNO2 %	NA2O %	P2O5 %	SI02 %	TIO2 %	S %	TOT(%)
BCD20230	14.48	.085	1.66	2.96	2.82	.71	.05	3.02	.24	68.31	.42	.02	94.77
BCD20238	14.78	.110	1.76	2.94	3.42	.79	.04	3.96	.28	68.50	.43	.06	97.07
BCD20239	14.43	.130	2.97	3.66	3.14	1.50	.07	3.57	.35	66.16	.53	.01	96.53
BCD20243	21.20	.075	1.21	2.87	5.43	.93	.03	1.82	.23	59.34	.72	.04	93.88
BCD20247	16.61	.070	3.27	2.77	3.03	.96	.08	3.67	.31	63.00	.41	.02	94.21
BCD20249	15.56	.120	2.96	2.99	3.29	1.17	.04	4.15	.30	64.26	.38	.01	95.24
BCD20250	16.05	.085	2.35	2.66	3.04	.95	.04	3.93	.28	65.38	.39	.03	95.18
BCD21152	15.53	.105	2.46	2.86	2.85	1.00	.05	4.71	.28	65.69	.38	.02	95.94
BCD21154	15.38	.135	3.51	2.65	2.61	.60	.05	4.32	.30	64.31	.37	.04	94.27
BCD21155	16.25	.100	2.41	2.81	3.38	.73	.04	4.14	.26	65.19	.39	.01	95.71
BCD21157	15.43	.110	2.39	2.70	3.03	.77	.05	4.51	.28	66.43	.37	.03	96.09
BCD21161	14.54	.155	4.23	6.15	4.72	2.12	.06	1.42	.47	57.60	.68	3.75	95.90
BCD21167	16.64	.120	2.71	3.14	3.15	.73	.04	4.49	.29	63.00	.39	.02	94.72
BCD21169	13.82	.145	3.48	6.38	4.11	2.73	.06	.66	.43	60.19	.93	1.82	94.77
BCD21173	14.44	.095	2.27	6.32	3.78	2.55	.05	.29	.38	61.06	.96	1.79	93.99
BCD21181	16.13	.140	3.00	6.36	3.55	2.05	.08	3.45	.42	58.21	.97	.01	94.35
BCD21182	13.70	.105	1.76	2.20	3.04	.76	.04	3.35	.23	69.55	.26	.23	95.22
BCD21183	13.66	.100	2.62	2.19	2.87	.75	.05	3.28	.25	67.99	.26	.15	94.17
BCD21184	14.26	.095	3.07	2.26	3.07	.70	.05	3.41	.27	67.58	.27	.14	95.17



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TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:
33 EAST IROQUOIS ROAD
P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Assay Certificate

9V-0557-RA3

Company: MINNOVA INC.
Project: 627
Attn: I. PIRIE/G. EVANS

Date: JUL-08-89
Copy 1. MINNOVA, VANCOUVER, B.C.
2. MINNOVA, BARRIERE, B.C.

We hereby certify the following Assay of 19 ROCK samples
submitted JUN-24-89 by G. EVANS.

Sample Number	LOI %
BCD20230	4.15
BCD20238	1.90
BCD20239	2.80
BCD20243	5.15
BCD20247	4.85

BCD20249	4.00
BCD20250	3.90
BCD21152	3.05
BCD21154	4.85
BCD21155	3.40

BCD21157	2.85
BCD21161	6.95
BCD21167	4.20
BCD21169	6.30
BCD21173	6.65

BCD21181	4.60
BCD21182	4.35
BCD21183	5.05
BCD21184	4.25

Certified by 
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TIMMINS OFFICE:
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TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Assay Certificate

9V-0575-RA2

Company: MINNOVA INC.
Project: 627
Attn: I. PIRIE/B. EVANS

Date: JUL-11-89
Copy 1. MINNOVA, VANCOUVER, B.C.
2. MINNOVA, PENTICTON, B.C.

We hereby certify the following Assay of 9 ROCK samples
submitted JUN-24-89 by G. EVANS.

Sample Number	LOI %
BCD18751	6.90
BCD18754	3.05
BCD18755	4.15
BCD18765	3.90
BCD18770	7.30
BCD18780	5.15
BCD18781	3.10
CD18782	5.70
CD18784	3.50

Certified by

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DM-18

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TELEPHONE (604) 980-5814 OR (604) 988-4524
TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:
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TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Geochemical Analysis Certificate

9V-0640-RG1

Company: MINNOVA INC.

Date: JUL-15-89

Project: 627

Copy 1. MINNOVA, VANCOUVER, B.C.

Attn: I. PIRIE/G. EVANS

2. MINNOVA, PENTICTON, B.C.

We hereby certify the following Geochemical Analysis of 22 ROCKS samples submitted JUL-12-89 by R.HOLDER.

Sample Number	CU PPM	PB PPM	ZN PPM	AG PPM	AU-FIRE PPB
BCD20251	26	40	100	1.0	2
BCD20252	20	37	85	0.7	1
BCD20254	20	42	76	0.8	10
BCD20255	20	38	79	0.8	45
BCD20257	24	32	120	0.9	41
BCD20259	25	29	81	0.7	78
BCD20260	28	34	86	0.8	52
BCD20261	24	32	88	0.9	8
BCD20262	18	30	49	0.5	4
BCD20263	16	36	69	0.4	2
BCD20264	32	40	78	0.7	40
BCD20265	22	30	75	1.9	181
BCD20266	40	20	58	4.1	585
BCD20267	14	19	70	1.9	181
BCD20268	50	24	63	2.6	107
BCD20269	20	40	90	0.8	16
BCD20271	14	42	64	0.6	2
BCD20272	14	37	45	0.4	1
BCD20273	29	30	72	0.8	1
BCD20274	18	20	42	0.4	2
BCD21186	29	20	52	0.4	1
BCD21187	16	12	51	0.4	1

Certified by

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TIMMINS OFFICE:
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P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Assay Certificate

9V-0640-RA1

Company: MINNOVA INC.

Project: 627

Attn: I. PIRIE/G. EVANS

Date: JUL-19-89

Copy 1. MINNOVA, VANCOUVER, B.C.

2. MINNOVA, PENTICTON, B.C.

We hereby certify the following Assay of 7 ROCK samples
submitted JUL-12-89 by R. HOLDER.

Sample Number	LOI %
BCD20253	6.10
BCD20256	4.15
BCD20258	4.40
BCD20270	5.45
BCD20275	6.75

BCD21185	4.60
BCD21188	2.45

Certified by

MIN-EN LABORATORIES

DM-19

COMPANY: MINNOVA INC.

MIN-EN LABS ICP REPORT

(ACT:F31) PAGE 1 OF 1

PROJECT NO: 627

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2

FILE NO: 9-511R/F1

ATTENTION: I. PIRIE/G. EVANS

(604) 980-5814 OR (604) 988-4524

* TYPE ROCK GEOCHEM *

DATE: 06-26-1989

(VALUES IN PPM)	AG	AS	BA	CU	PB	SB	ZN	AU-PPB
BCD19751	1.0	20	41	20	49	3	73	5
BCD19756	2.1	23	19	41	73	5	67	600
BCD19762	.8	24	43	21	49	3	64	5
BCD19770	1.0	36	285	21	59	7	73	40
BCD19771	.7	9	69	26	33	2	61	10
BCD19773	.8	7	107	22	22	5	56	5
BCD19774	.5	7	90	48	22	1	69	5
BCD19776	.8	3	389	30	14	1	37	5
BCD19779	.6	3	166	31	18	1	46	5
BCD19780	.6	5	83	29	15	1	46	5
BCD19781	.6	8	173	18	20	1	37	5
BCD19790	.6	5	38	13	20	1	24	10
BCD20205	1.2	16	20	15	36	1	73	45
BCD20209	1.0	25	17	12	37	3	51	5
BCD20210	.8	27	30	14	48	5	65	5

COMPANY: MINNOVA INC.

MIN-EN LABS ICP REPORT

(ACT:F26) PAGE 2 OF 2

PROJECT NO: 627

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2

FILE NO: 9-522L/P1

ATTENTION: L.PIRIE/G.EVANS

(604)980-5814 OR (604)988-4524

* TYPE LITHO GEOCHEM * DATE: 06-26-1989

(VALUES IN %)	TOT(%)
CD19751	97.12
CD19756	96.38
BCD19762	96.40
BCD19770	94.78
BCD19771	95.88
BCD19773	94.75
BCD19774	94.23
BCD19776	92.69
BCD19779	95.08
BCD19780	96.72
BCD19781	94.41
BCD19790	97.94
BCD20205	97.62
BCD20209	98.91
BCD20210	97.30

COMPANY: MINNOVA INC.

MIN-EN LABS ICP REPORT

(ACT:F26) PAGE 1 OF 2

PROJECT NO: 627

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2

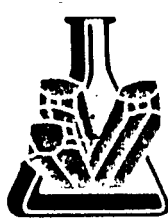
FILE NO: 9-522L/P1

ATTENTION: I.PIRIE/G.EVANS

(604)980-5814 OR (604)988-4524

* TYPE LITHO GEOCHEM * DATE: 06-26-1989

(VALUES IN %)	AL2O3	BAT	CAO	FE2O3	K2O	MGO	MNO2	NA2O	P2O5	SI02	TIO2	S
19751	19.63	.258	3.09	4.45	6.75	1.78	.10	3.40	.25	55.83	.71	.87
19756	12.23	.094	3.38	4.30	5.46	3.12	.11	.05	.20	66.83	.59	.01
BCD19762	16.42	.159	2.32	5.32	4.76	2.25	.07	1.65	.21	61.79	.83	.62
BCD19770	17.08	.089	4.74	6.60	4.22	3.35	.12	.12	.39	56.09	.89	1.08
BCD19771	16.57	.054	2.88	3.73	2.47	1.43	.07	4.77	.09	63.32	.50	.01
BCD19773	16.50	.081	5.44	3.81	2.85	1.14	.09	3.23	.05	61.06	.49	.01
BCD19774	23.60	.103	.53	4.38	5.21	.85	.05	1.56	.01	57.29	.64	.02
BCD19776	15.01	.091	8.23	2.81	2.47	.78	.07	4.03	.01	58.79	.36	.05
BCD19779	16.22	.113	3.57	3.11	2.87	.59	.06	4.59	.01	63.53	.41	.02
BCD19780	17.14	.135	2.84	3.12	3.39	.76	.05	5.07	.02	63.76	.44	.01
BCD19781	15.28	.110	3.82	2.71	3.23	.96	.05	3.46	.01	64.40	.31	.07
BCD19790	15.26	.143	2.09	5.56	6.66	1.12	.02	.51	.17	62.26	.65	3.48
BCD20205	16.01	.136	3.18	4.42	8.53	1.34	.04	1.03	.16	59.82	.63	2.30
BCD20209	14.09	.107	1.76	4.43	8.71	2.09	.04	.27	.16	63.76	.55	2.95
BCD20210	16.76	.121	1.26	4.36	8.29	2.79	.06	.52	.18	59.69	.62	2.64



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TIMMINS OFFICE:
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P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Assay Certificate

9V-0511-RA1

Company: MINNOVA INC.
Project: 627
Attn: I.D. PIRIE/G.EVANS

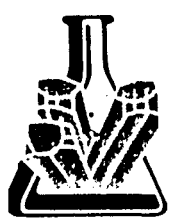
Date: JUN-20-89
Copy 1. MINNOVA INC. VANCOUVER B.C.
2. MINNOVA INC. PENTICTON B.C.

We hereby certify the following Assay of 2 ROCK samples submitted JUN-16-89 by G.EVANS.

Sample Number	AU G/TONNE	AU OZ/TON
BCD19755	1.63	.048
BCD19757	1.02	.030

Certified by

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TELEPHONE: (705) 264-9996

Geochemical Analysis Certificate

9V-0511-RG3

Company: MINNOVA INC.

Date: JUN-20-89

Project: 627

Copy 1. MINNOVA INC. VANCOUVER B.C.

Attn: I. D. PIRIE/G. EVANS

2. MINNOVA INC. PENTICTON B.C.

We hereby certify the following Geochemical Analysis of 15 ROCK samples submitted JUN-16-89 by G. EVANS.

Sample Number	CU PPM	PB PPM	ZN PPM	AG PPM	AU-FIRE PPB
BCD19793	19	19	50	0.4	26
BCD19794	16	16	32	0.8	19
BCD19795	15	19	91	0.6	18
BCD19796	14	29	82	0.5	22
BCD19797	23	118	103	0.9	40

BCD19798	12	23	48	0.5	31
BCD19799	13	42	43	0.8	19
BCD19800	12	24	76	0.6	3
BCD20201	14	23	78	0.6	16
BCD20202	13	27	48	0.8	44

BCD20203	16	24	71	0.7	19
BCD20204	14	25	58	0.7	38
BCD20206	14	23	62	0.9	42
BCD20207	12	22	61	0.8	219
BCD20208	15	20	46	0.7	51

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TELEPHONE: (705) 264-9996

Geochemical Analysis Certificate

9V-0511-R62

Company: MINNOVA INC.

Date: JUN-20-89

Project: 627

Copy 1. MINNOVA INC. VANCOUVER B.C.

Attn: I. D. PIRIE/B. EVANS

2. MINNOVA INC. PENTICTON B.C.

We hereby certify the following Geochemical Analysis of 30 ROCK samples submitted JUN-16-89 by G. EVANS.

Sample Number	CU PPM	PB PPM	ZN PPM	AG PPM	AU-FIRE PPB
BCD19752	114	298	169	1.9	10
BCD19753	52	42	160	0.9	70
BCD19754	28	29	103	0.8	223
BCD19755	26	38	62	2.7	1350
BCD19757	21	25	53	1.4	1050

BCD19758	29	14	34	1.9	277
BCD19759	30	26	67	1.3	64
BCD19760	21	18	52	1.2	27
BCD19761	24	17	58	1.2	261
BCD19763	28	32	73	0.8	4

BCD19764	24	31	71	0.9	2
BCD19765	16	26	59	0.7	19
BCD19766	17	31	81	0.7	23
BCD19767	13	37	32	0.8	19
BCD19768	17	25	55	0.9	14

BCD19769	15	32	69	1.0	3
BCD19772	27	15	51	0.7	2
BCD19775	44	16	46	0.4	3
BCD19777	21	17	48	0.9	1
BCD19778	28	19	47	0.4	2

BCD19782	24	27	75	0.9	2
BCD19783	22	22	76	0.9	1
BCD19784	21	36	51	0.8	3
BCD19785	22	35	68	0.7	4
BCD19786	20	29	34	0.9	2

BCD19787	18	19	66	0.4	2
BCD19788	18	19	45	0.5	4
BCD19789	14	20	87	0.7	2
BCD19791	15	17	24	0.7	54
BCD19792	16	16	41	0.6	20

Certified by *B. Evans*

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DM-20

Geochemical Analysis Certificate

9V-0557-RG1

Company: MINNOVA INC.

Date: JUN-29-89

Project: 627

Copy 1. MINNOVA, VANCOUVER, B.C.

Attn: I. PIRIE/G. EVANS

2. MINNOVA, PENTICTON, B.C.

We hereby certify the following Geochemical Analysis of 30 ROCK samples submitted JUN-23-89 by G. EVANS.

Sample Number	CU PPM	PB PPM	ZN PPM	AG PPM	AU-FIRE PPB
BCD20226	51	27	53	1.0	1
BCD20227	30	32	52	1.0	1
BCD20228	24	29	58	0.8	2
BCD20229	22	18	48	0.5	4
BCD20231	18	36	47	0.6	1

BCD20232	19	26	42	0.5	2
BCD20233	21	25	49	0.7	4
BCD20234	17	14	29	0.3	1
BCD20235	18	12	28	0.4	5
BCD20236	20	15	33	0.5	1

BCD20237	11	12	32	0.3	4
BCD20240	21	28	40	0.8	2
BCD20241	30	22	52	0.6	5
BCD20242	22	27	51	0.8	1
BCD20244	29	33	12	0.7	3

BCD20245	38	29	54	0.7	1
BCD20246	31	20	46	0.6	2
BCD20247	27	18	40	0.7	1
BCD20248	28	14	44	0.5	1
BCD21151	29	22	49	0.3	2

BCD21153	28	11	53	0.4	1
BCD21156	24	18	42	0.5	2
BCD21158	13	27	71	1.0	1
BCD21159	12	32	74	1.2	5
BCD21160	9	23	68	1.0	1

BCD21162	13	29	57	0.7	2
BCD21163	18	30	54	1.3	1
BCD21164	23	28	69	0.9	3
BCD21165	22	23	61	0.9	2
BCD21166	12	30	48	1.1	4

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TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Geochemical Analysis Certificate 9V-0557-RG2

Company: **MINNOVA INC.** Date: **JUN-29-89**
Project: **627** Copy 1. **MINNOVA, VANCOUVER, B.C.**
Attn: **I. PIRIE/G. EVANS** 2. **MINNOVA, PENTICTON, B.C.**

We hereby certify the following Geochemical Analysis of 11 ROCK samples submitted JUN-23-89 by G. EVANS.

Sample Number	CU PPM	PB PPM	ZN PPM	AG PPM	AU-FIRE PPB
BCD21168	23	44	64	1.5	1
BCD21170	12	26	88	1.1	2
BCD21171	25	28	79	1.2	1
BCD21172	14	31	42	1.4	1
BCD21174	22	37	38	1.1	3

BCD21175	37	44	39	1.4	1
BCD21176	45	40	68	1.1	5
BCD21177	21	33	20	1.1	2
BCD21178	13	38	49	1.0	3
BCD21179	9	30	47	1.1	2

BCD21180	11	51	38	1.5	1

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TELEPHONE: (705) 264-9996

Geochemical Analysis Certificate

9V-0575-RG1

Company: **MINNOVA INC.**
Project: 627
Attn: I. PIRIE/G. EVANS

Date: **JUL-05-89**
Copy 1. MINNOVA INC., VANCOUVER, B.C.
2. MINNOVA INC., PENTICTON, B.C.

We hereby certify the following Geochemical Analysis of 21 CORE samples submitted JUN-24-89 by G. EVANS.

Sample Number	CU PPM	PB PPM	ZN PPM	AG PPM	AU-FIRE PFB
BCD18752	440	1780	350	4.0	1
BCD18753	38	36	303	1.7	8
BCD18756	51	92	376	1.2	2
BCD18759	30	69	166	1.6	2
BCD18762	20	32	145	0.8	1

BCD18763	24	38	122	1.3	2
BCD18764	15	22	43	1.6	1
BCD18766	19	34	93	1.2	15
BCD18767	60	19	89	1.2	6
BCD18768	26	24	45	0.6	3

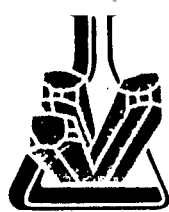
BCD18769	19	24	60	1.0	1
BCD18771	21	16	67	0.6	2
BCD18772	27	25	70	0.6	155
BCD18773	27	22	74	0.5	2
BCD18774	22	24	69	0.7	1

BCD18775	20	44	71	0.8	6
BCD18776	15	32	64	0.6	2
BCD18777	23	26	52	1.1	189
BCD18778	21	23	79	0.4	1
BCD18779	20	22	60	0.6	1

BCD18783	23	20	64	0.5	1

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TELEPHONE: (705) 264-9996

Assay Certificate

9V-0575-RA1

Company: MINNOVA INC.
Project: 627
Attn: I. PIRIE/G. EVANS

Date: JUL-05-89

Copy 1. MINNOVA INC., VANCOUVER, B.C.
2. MINNOVA INC., PENTICTON, B.C.

*We hereby certify the following Assay of 4 CORE samples
submitted JUN-24-89 by G. EVANS.*

Sample Number	CU %	PB %	ZN %	AG G/TONNE	AG OZ/TON	AU G/TONNE	AU OZ/TON
BCD18757	0.078	0.07	0.08	11.6	.34	0.18	.005
BCD18758	0.032	0.02	0.03	7.7	.22	0.03	.001
BCD18760	0.009	0.01	0.04	5.9	.17	0.02	.001
BCD18761	0.026	0.03	0.06	8.0	.23	0.01	.001

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TELEX: VIA U.S.A. 7601087 • FAX (604) 980-9621

TIMMINS OFFICE:
33 EAST IROQUOIS ROAD
P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Geochemical Analysis Certificate 9V-0631-RG1

Company: **MINNOVA INC.**
Project: 627
Attn: I. PIRIE/G. EVANS

Date: **JUL-15-89**
Copy 1. **MINNOVA INC., VANCOUVER, B.C.**
2. **MINNOVA INC., PENTICTON, B.C.**

We hereby certify the following Geochemical Analysis of 30 ROCK samples submitted JUL-05-89 by G. EVANS.

Sample Number	CU PPM	PB PPM	ZN PPM	AG PPM	AU PPB
BCD20276	21	38	95	0.8	1
BCD20277	22	37	92	0.6	1
BCD20278	36	82	83	5.0	29
BCD20279	22	28	75	1.0	2
BCD20280	20	29	82	1.2	1

BCD20281	20	30	84	1.3	2
BCD20282	22	30	86	1.4	1
BCD20283	21	31	100	1.2	3
BCD20284	20	30	80	1.4	2
BCD20286	21	24	81	1.0	26

BCD20287	20	34	70	2.6	6
BCD20288	19	34	80	1.8	37
BCD20290	20	30	84	1.6	2
BCD20291	18	30	92	1.2	31
BCD20292	19	29	88	1.4	10

BCD20293	20	30	83	1.3	57
BCD20294	18	31	84	1.5	2
BCD20295	20	27	85	1.2	26
BCD20296	18	30	83	1.5	1
BCD20297	19	26	72	1.0	2

BCD20298	22	29	79	1.4	98
BCD20299	18	36	89	1.1	3
BCD20300	22	30	80	1.8	147
BCD20301	18	29	79	1.5	268
BCD20302	32	38	111	1.4	16

BCD20303	18	30	82	0.6	2
BCD20304	16	60	162	1.0	3
BCD20305	18	34	134	0.7	1
BCD20306	16	46	145	1.0	5
BCD20308	18	34	108	0.9	3

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TELEPHONE: (705) 264-9996

Geochemical Analysis Certificate

9V-0631-R62

Company: MINNOVA INC.
Project: 627
Attn: I. PIRIE/B. EVANS

Date: JUL-15-89

Copy 1, MINNOVA INC., VANCOUVER, B.C.
2. MINNOVA INC., PENTICTON, B.C.

We hereby certify the following Geochemical Analysis of 17 ROCK samples submitted JUL-05-89 by G. EVANS.

Sample Number	CU PPM	PB PPM	ZN PPM	AG PPM	AU PPB
BCD20309	16	202	56	1.0	10
BCD20310	18	47	61	0.6	2
BCD20311	18	46	80	0.9	1
BCD20312	20	39	86	0.8	3
BCD20313	22	36	70	0.8	2

BCD20314	24	34	72	1.0	120
BCD20315	24	39	70	0.8	6
BCD20316	28	40	86	1.2	10
BCD20318	20	36	64	0.8	2
BCD20319	28	26	67	1.0	3

BCD20320	26	27	60	0.8	1
BCD20322	19	38	60	1.7	253
BCD20323	20	29	69	0.8	3
BCD20324	22	29	74	0.9	236
BCD20325	24	32	66	0.7	4

BCD20326	20	32	65	0.8	1
BCD20327	33	38	70	0.8	6

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TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:
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TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Assay Certificate

9V-0631-RA2

Company: MINNOVA INC.
Project: 627
Attn: J. PIRIE/G. EVANS

Date: JUL-19-89

Copy 1. MINNOVA INC., VANCOUVER, B.C.
2. MINNOVA INC., PENTICTON, B.C.

We hereby certify the following Assay of 5 ROCK samples
submitted JUL-05-89 by G. EVANS.

Sample Number	LOI %
BCD20285	5.15
BCD20307	4.60
BCD20317	4.65
BCD20321	8.00
BCD20328	5.30

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TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:
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TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Assay Certificate

9V-0631-RA1

Company: MINNOVA INC.
Project: 627
Attn: I. PIRIE/G. EVANS

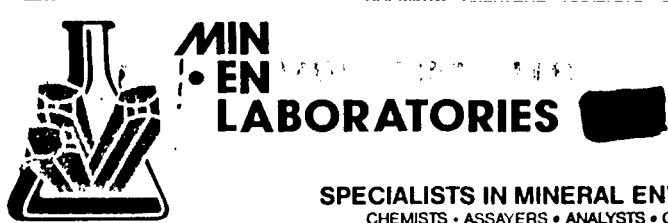
Date: JUL-14-89
Copy 1. MINNOVA INC., VANCOUVER, B.C.
2. MINNOVA INC., PENTICTON, B.C.

We hereby certify the following Assay of 1 ROCK samples submitted JUL-05-89 by G. EVANS.

Sample Number	CU %	PB %	ZN %	AG G/TONNE	AG OZ/TON	AU G/TONNE	AU OZ/TON
BCD20289	0.010	0.01	0.01	14.5	.42	1.41	.041

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DM-23

Geochemical Analysis Certificate

9V-0669-RG1

Company: MINNOVA INC.
Project: 627
Attn: I. PIRIE/B. EVANS

Date: JUL-20-89

Copy 1. MINNOVA INC., VANCOUVER, B.C.
2. MINNOVA INC., PENTICTON, B.C.

We hereby certify the following Geochemical Analysis of 30 CORE samples submitted JUL-11-89 by R. HOLDER.

Sample Number	CU PPM	PB PPM	ZN PPM	AB PPM	AU-FIRE PPB
BCD20351	10	11	12	1.1	19
BCD20352	14	14	35	1.6	22
BCD20354	10	17	17	1.2	18
BCD20355	14	22	56	1.3	24
BCD20356	16	19	130	1.9	25

BCD20358	15	50	190	3.2	51
BCD20360	16	24	91	3.4	41
BCD20362	23	28	100	3.0	68
BCD20363	18	20	55	4.4	21
BCD20364	10	34	56	2.6	17

BCD20366	14	28	66	2.2	19
BCD20367	19	34	55	1.1	18
BCD20368	18	30	51	0.7	3
BCD20370	27	28	63	0.8	2
BCD20371	35	30	50	1.1	2

BCD20372	16	29	57	0.8	4
BCD20373	36	22	62	1.0	5
BCD20374	36	26	72	1.3	2
BCD20383	12	16	45	1.0	28
BCD20385	12	31	55	0.8	11

BCD20386	16	16	58	0.8	19
BCD20388	20	20	63	1.2	110
BCD20389	17	19	61	1.0	4
BCD20390	16	26	64	0.9	3
BCD20391	16	10	53	1.0	109

BCD20392	15	12	47	1.2	52
BCD20393	25	14	106	0.8	1
BCD20394	24	10	68	0.8	9
BCD20395	23	12	83	0.8	11
BCD20396	22	24	81	0.9	18

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Geochemical Analysis Certificate

9V-0669-R64

Company: MINNOVA INC.

Date: JUL-19-89

Project: 627

Copy 1. MINNOVA INC., VANCOUVER, B.C.

Attn: I. PIRIE/G. EVANS

2. MINNOVA INC., PENTICTON, B.C.

We hereby certify the following Geochemical Analysis of 11 CORE samples submitted JUL-11-89 by R. HOLDER.

Sample Number	CU PPM	PB PPM	ZN PPM	AG PPM	AU-FIRE PPB
BCD20398	48	38	63	0.8	6
BCD20400	23	48	61	1.0	8
BCD20401	21	39	74	0.8	3
BCD20402	22	40	64	0.7	10
BCD20404	19	32	78	0.8	7
BCD20405	19	34	79	0.8	6
BCD20406	18	33	79	1.0	12
BCD20407	19	36	90	1.3	8
BCD20408	21	40	87	1.0	2
BCD20409	29	29	83	0.6	1
D20410	28	30	84	0.6	12

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Geochemical Analysis Certificate

9V-0669-RG2

Company: MINNOVA INC.

Date: JUL-18-89

Project: 627

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Attn: I. PIRIE/G. EVANS

2. MINNOVA INC., PENTICTON, B.C.

We hereby certify the following Geochemical Analysis of 5 ROCK samples submitted JUL-11-89 by R. HOLDER.

Sample Number	CU PPM	PB PPM	ZN PPM
BCD20375	120	910	67
BCD20376	85	190	82
BCD20377	31	82	75
BCD20380	4	15	31
BCD20381	10	6	42

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Assay Certificate

9V-0669-RA2

Company: MINNOVA INC.
Project: 627
Attn: I. PIRIE/G. EVANS

Date: JUL-18-89

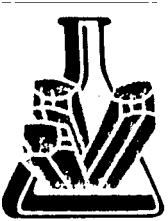
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2. MINNOVA INC., PENTICTON, B.C.

We hereby certify the following Assay of 5 ROCK samples submitted JUL-11-89 by R. HOLDER.

Sample Number	AG	AG	AU	AU
	G/TONNE	OZ/TDN	G/TONNE	OZ/TDN
BCD20375	4.6	.13	.09	.003
BCD20376	6.3	.18	.06	.002
BCD20377	7.5	.22	.03	.001
BCD20380	3.9	.11	.20	.006
BCD20381	2.3	.07	.17	.005

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9V-0669-RA1

Company: MINNOVA INC.

Date: JUL-18-89

Project: 627

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Attn: I. PIRIE/G. EVANS

2. MINNOVA INC., PENTICTON, B.C.

We hereby certify the following Assay of 4 CORE samples submitted JUL-11-89 by R.HOLDER.

Sample Number	CU %	PB %	ZN %	AG G/TONNE	AG OZ/TON	AU G/TONNE	AU OZ/TON
BCD20357	.001	.01	.01	0.3	.01	.21	.006
BCD20359	.001	.01	.01	0.2	.01	.02	.001
BCD20379				4.2	.12	.19	.006
BCD20378				2.0	.06	.05	.001

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Geochemical Analysis Certificate 9V-0669-RG3

Company: MINNOVA INC.
Project: 627
Attn: I. PIRIE/S. EVANS

Date: JUL-20-89
Copy 1. MINNOVA INC., VANCOUVER, B.C.
2. MINNOVA INC., PENTICTON, B.C.

We hereby certify the following Geochemical Analysis of 12 CORE samples submitted JUL-11-89 by R. HOLDER.

Sample Number	LOI %
BCD20353	3.70
BCD20361	5.25
BCD20365	7.30
BCD20369	7.20
BCD20379	5.85

BCD20382	7.30
BCD20384	3.50
BCD20387	4.10
BCD20397	4.45
BCD20399	4.50

BCD20403	6.10
BCD20411	3.95

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TELEPHONE: (705) 264-9996

Assay Certificate

9V-0671-RA2

Company: MINNOVA INC.
Project: 627
Attn: J. PIRIE/G. EVANS

Date: JUL-21-89

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2. MINNOVA INC., PENTICTON, B.C.

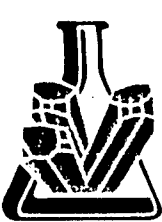
We hereby certify the following Assay of 14 ROCK samples submitted JUL-14-89 by R.HOLDER.

Sample Number	LOI %
BCD21327	9.25
BCD21339	11.00
BCD21342	8.50
BCD21351	5.50
BCD21354	5.70

BCD21363	7.05
BCD21365	5.50
BCD21372	8.90
BCD21375	8.20
BCD21384	9.90

BCD21386	11.80
BCD21388	10.25
BCD21393	8.25
BCD21394	4.80

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Assay Certificate

9V-0671-RA1

Company: MINNOVA INC.

Date: JUL-19-89

Project: 627

Copy 1. MINNOVA INC., VANCOUVER, B.C.

Attn: J. PIRIE/G. EVANS

2. MINNOVA INC., PENTICTON, B.C.

We hereby certify the following Assay of 2 CORE samples
submitted JUL-14-89 by R.HOLDER.

Sample Number	CU %	PB %	ZN %	AG G/TONNE	AG OZ/TON	AU G/TONNE	AU OZ/TON
BCD21328	.010	.02	.01	6.0	.18	.03	.001
BCD21333	.002	.01	.01	2.0	.06	.02	.001

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Geochemical Analysis Certificate

9V-0671-RG2

Company: MINNOVA INC.

Date: JUL-19-89

Project: 627

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Attn: I. PIRIE/G. EVANS

2. MINNOVA INC., PENTICTON, B.C.

We hereby certify the following Geochemical Analysis of 22 ROCK samples submitted JUL-14-89 by R. HOLDER.

Sample Number	CU PPM	PB PPM	ZN PPM	AG PPM	AU-FIRE PPB
BCD21366	28	38	84	1.0	12
BCD21367	10	56	26	0.8	19
BCD21368	38	30	76	0.7	4
BCD21369	30	28	67	0.8	9
BCD21370	18	28	70	0.6	3

BCD21371	19	34	68	0.8	4
BCD21373	29	36	77	0.8	16
BCD21374	27	38	79	0.7	11
BCD21376	38	28	77	0.6	3
BCD21377	20	34	100	0.8	5

BCD21378	15	35	60	0.6	17
BCD21379	16	36	70	0.9	12
BCD21380	21	34	72	0.8	9
BCD21381	18	32	76	0.8	5
BCD21382	25	36	59	0.9	11

BCD21383	38	42	54	0.8	4
BCD21385	14	32	50	0.5	3
BCD21387	15	35	62	0.5	18
BCD21389	24	27	80	0.6	5
BCD21390	30	29	82	0.7	2

BCD21391	28	34	65	0.7	17
BCD21392	20	24	81	0.8	3

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Geochemical Analysis Certificate

9V-0671-RG1

Company: MINNOVA INC.

Date: JUL-19-89

Project: 627

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Attn: I. PIRIE/B. EVANS

2. MINNOVA INC., PENTICTON, B.C.

We hereby certify the following Geochemical Analysis of 30 CORE samples submitted JUL-14-89 by R. HOLDER.

Sample Number	CU PPM	PB PPM	ZN PPM	AG PPM	AU-FIRE PPB
BCD21326	18	34	92	1.6	18
BCD21329	72	110	111	1.8	4
BCD21330	54	42	104	1.0	2
BCD21331	34	29	115	0.9	2
BCD21332	68	42	117	1.0	3
BCD21334	14	28	21	0.9	19
BCD21335	10	60	22	0.7	19
BCD21336	18	27	68	1.2	17
BCD21337	14	28	55	1.0	20
BCD21338	20	20	64	0.9	6
BCD21340	16	30	67	0.8	14
BCD21341	28	48	87	1.1	9
BCD21343	19	24	86	0.6	3
BCD21344	18	26	68	0.8	18
BCD21345	22	24	69	0.8	23
BCD21346	21	28	65	0.8	81
BCD21347	14	23	60	0.6	3
BCD21348	19	18	92	0.5	5
BCD21349	20	23	103	0.8	4
BCD21350	22	28	99	0.6	2
BCD21352	22	31	67	1.0	21
BCD21353	28	32	75	1.8	21
BCD21355	21	30	94	0.8	4
BCD21356	18	42	68	0.7	19
BCD21357	19	42	75	0.8	18
BCD21358	18	51	88	1.0	21
BCD21359	15	44	77	0.5	18
BCD21360	10	57	82	0.6	2
BCD21362	14	52	51	0.4	3
BCD21364	10	37	18	0.4	8

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