

<b>SUB-RECORDER</b> RECEIVED  FEB 19 1991  M.R. # ..... \$ ..... VANCOUVER, B.C.
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LOG NO: Feb 27/91	RD.
ACTION:	
FILE NO:	

1990 DIAMOND DRILLING REPORT

on the

Lara Group II

Solly, T.L., Jennie, Ugly, Wimp, Nero, Face and Plant Claims  
 COR 1-7 Fractional Claims

Victoria Mining Division

Latitude: 48° 54' N  
 Longitude: 123° 52' W

Owner

Laramide Resources Ltd.  
 675 W. Hastings St.  
 Vancouver, B.C. V6B 1N2

Operator

Minnova Inc.  
 3rd Floor - 311 Water St.  
 Vancouver, B.C. V6B 1B8

GEOLOGICAL BRANCH  
 MINING DEPARTMENT

27,980

Minnova Inc.  
 Vancouver, B.C.

J. D. Kapusta  
 February 4, 1991

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## 1. Introduction

The Lara property is situated on southern Vancouver Island, British Columbia, in the Victoria Mining Division. The property is comprised of 14 claims (totalling 144 units), seven fractional claims and three Crown Grants, and measures about 11 kilometres east-west by three kilometres north-south. The property is primarily underlain by felsic to intermediate volcanic rocks of the Paleozoic Sicker Group (McLaughlin Ridge Formation).

This report describes the results for DDH 90-316 which tested the 262 Felsic Package. The hole totalled 303.89 m and was drilled between November 7 and November 10, 1990.

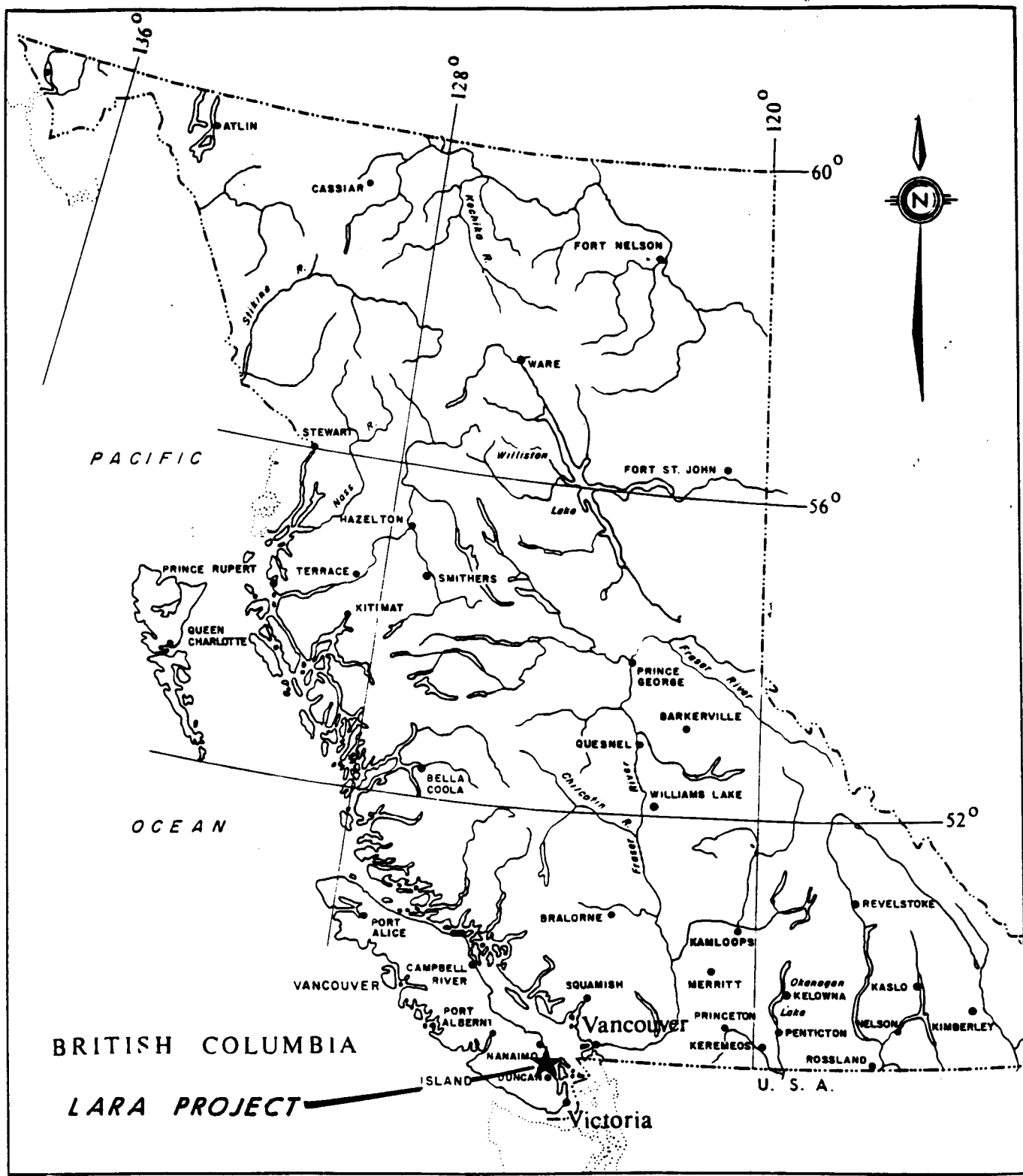
### 1.1 Location and Access

NTS: 92B/13W  
Latitude: 48° 52' 30" N  
Longitude: 123° 52' W

The Lara Property is located on southern Vancouver Island in the Victoria Mining Division (Figure 1). It lies about 75 kilometres north of Victoria and 15 kilometres northwest of Duncan. Access to the property is along the Chemainus River Logging Trunk Road (MacMillan Bloedel) for a distance of about 12 kilometres from Highway No. 1 at Chemainus. From the Chemainus River road, the property is accessed by a network of secondary logging and forestry roads. In addition, a major B.C. Hydro Right of Way cuts across the west side of the property.

### 1.2 Property Status

The Lara Property is owned 100% by Laramide Resources Ltd. of 904 - 675 W. Hastings St., Vancouver, B.C. In addition Laramide has granted to Abermin Corporation of Vancouver, a convertible royalty equal to a 10% Net Profit Interest, convertible,



BRITISH COLUMBIA

LARA PROJECT

U. S. A.

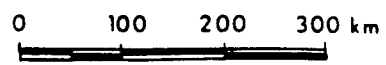
TO ACCOMPANY REPORT NO. \_\_\_\_\_ BY \_\_\_\_\_

**MINNOVA Inc.**

LARA PROJECT

**GENERAL LOCATION MAP**

FIGURE 1



DATE	SCALE	NTS	DRWG NO.
	1:7 500 000		

at the option of Abermin at any time prior to October 31, 1990 into 5% of the issued common shares of Laramide.

Minnova Inc. has entered into an agreement with Laramide by which it has obtained exclusive exploration rights to the Lara Property, on an expenditure basis, between November 1, 1988 and June 30, 1991.

### 1.3 Mineral Claims

The Lara Property consists of 14 claims, seven fractional claims and three reverted crown grants. For assessment purposes these have been divided into Lara Group I and Lara Group II (Figure 2) as follows:

<u>Claim Name</u>	<u>Record No.</u>	<u>Units</u>	<u>Expiry Date</u>
<u>Group I</u>			
Silver I	535	12	May 8, 2000
Silver II	536	9	May 8, 2000
Fang	534	20	May 8, 2000
Tooth	1377	5	Nov 7, 2000
Touche	1396	12	Jan 21, 2000
Cavity	1397	12	Jan 21, 2000
Susan (Lot 23G)	698	1	Oct 26, 2000
Klondyke (Lot 68G)	699	1	Oct 26, 2000
Tinto View (Lot 78G)	700	1	Oct 26, 2000
<u>Group II</u>			
Solly	537	9	May 8, 2000
T.L.	538	20	May 8, 2000
Jennie	1112	4	Nov 18, 2000
Ugly	753	6	Feb 8, 2000
Wimp	754	2	Feb 8, 2000
Nero	755	1	Feb 8, 2000
Face	1402	12	Jan 23, 2000
Plant	1401	20	Jan 23, 2000
COR 1-7 Fr.	1378-84	7	Nov 7, 2000

TO WEST SEE MAP 92C/16E

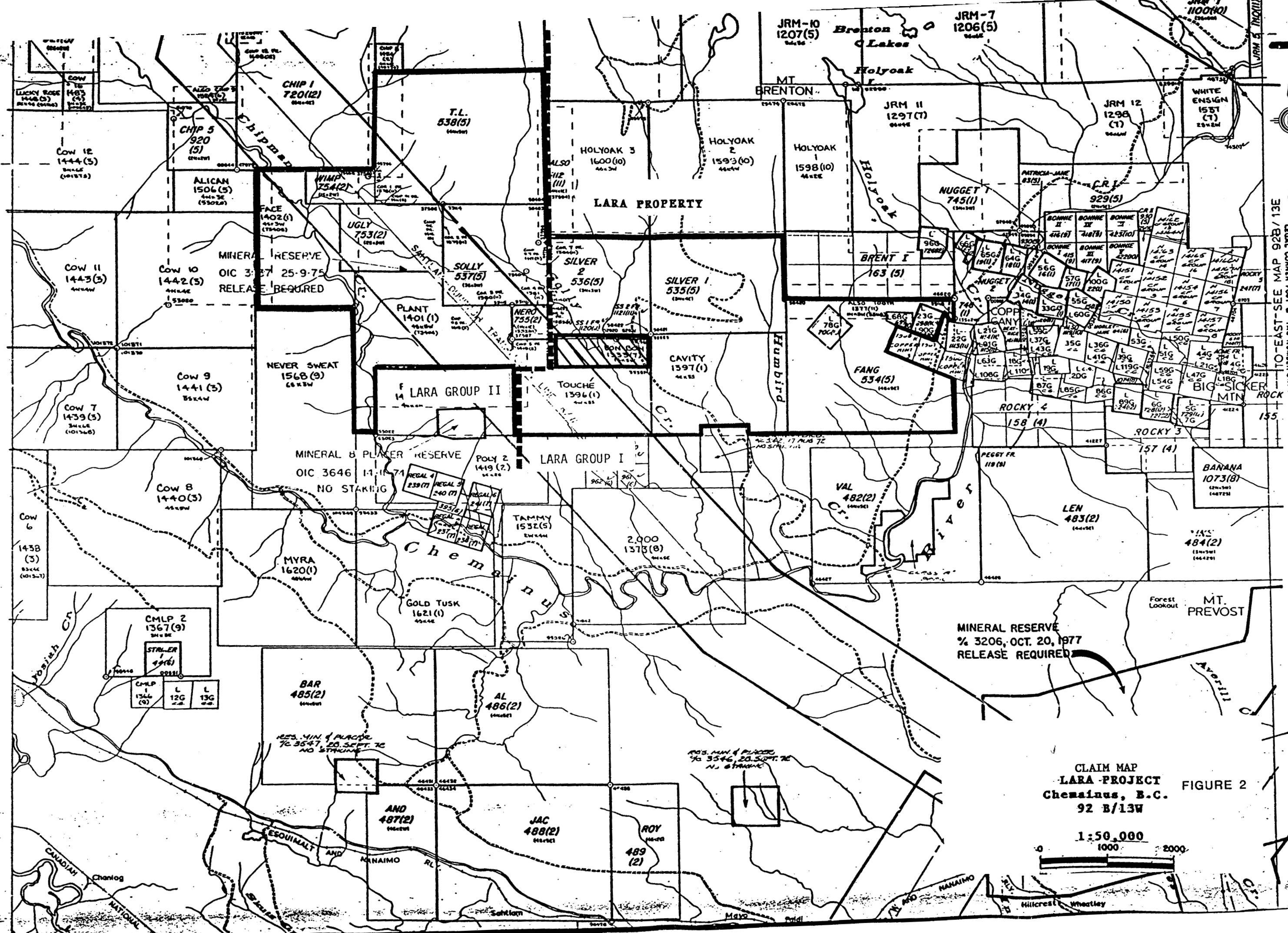
TO EAST SEE MAP 92B/13E

4

4

3

2



CLAIM MAP  
 LARA PROJECT  
 Chemainus, B.C.  
 92 B/13W

1:50,000  
 1000 2000

UNLESS VERIFIED  
 LEGAL CORNER POST IS BY  
 THEIR INFORMATION, APPLY  
 CONCERNED.  
 DATE OF MICROFILM

3 Miles  
 3 Kilometres

1000  
 500  
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 500  
 1000  
 Miles

1000  
 500  
 0  
 500  
 1000  
 Kilometres

#### 1.4 History (to the end of 1989)

The Lara Property was staked by Laramide Resources in 1981 and optioned to Abermin Corporation in 1982. During 1981-83, exploration consisted of the establishment of a cut line grid, geological mapping, geophysical and soil geochemical surveys, and backhoe trenching to test anomalous areas. In 1984, 12 diamond drill holes totalling 1346 metres were drilled to test targets defined by the backhoe trenching, the last drill hole of this program, DDH 84-12, intersected economically significant mineralization beneath Trench 83-35. This intersection graded 0.68% Cu, 0.45% Pb, 3.01% Zn, 67.54 g/T Ag and 3.463 g/T Au, over a true thickness of 7.95 metres. This mineralized sequence was named the Coronation Zone, after its occurrence on the south slope of Coronation Mountain.

In 1985 the exploration program was designed to test the extent of mineralization intersected in drill hole 84-12; 61 diamond drill holes totalling 7437 metres were completed.

The 1986 exploration program tested both the Coronation Zone and reconnaissance targets throughout the property, 75 diamond drill holes totalling 11,339 metres were completed. In addition to the diamond drilling, one backhoe trench (86-43) over the Coronation Zone was excavated. This trench exposed high grade massive sulphides grading 3.04% Cu, 43.01% Zn, 8.30% Pb, 513.60 g/T Ag and 24.58 g/T Au over a true thickness of 3.51 metres. The reconnaissance drilling tested geophysical, humus geochemical and geologic targets in the East, Far East, and North Grid areas. In the North grid a total of ten holes were drilled in an area referred to as the Randy Zone, that was discovered during surface mapping in 1986.



The 1987 exploration program tested the Coronation Zone, Randy Zone and reconnaissance targets throughout the property, 83 diamond drill holes totalling 15,038 metres were completed, one backhoe trench (87-44) over the Coronation Zone was also excavated. In the Randy Zone ten diamond drill holes were completed, this drilling has now traced the Randy Zone trend over a distance of 2000 metres and down-dip from surface to a depth of 180 metres. The Reconnaissance drilling tested geophysical, humus geochemical and geologic targets on the West and North grid areas.

In 1988 an underground exploration program was undertaken in the Coronation Zone. The goals of this program were: 1) to test the continuity of the Coronation Zone; 2) check rock conditions for mining cost estimate; and 3) take a bulk sample for metallurgical tests. To best accomplish these goals all work was conducted on the 600 bench level.

The 1989 program tested the Coronation Zone and reconnaissance targets throughout the property. The bulk of the program was devoted to diamond drilling (43 holes, 10,328 m) although geophysical, geological and lithochemical surveys were completed along strike of the Coronation Zone.

## 2. Work Done

This report summarizes the results of drill hole 90-316 (303.89) that was drilled on the Lara Group II between November 7, 1990 and November 10, 1990 (Table 1). The drill contractor was Frontier Drilling Ltd. of Langley, B.C.



### 3. Geology

#### 3.1 Regional Geology

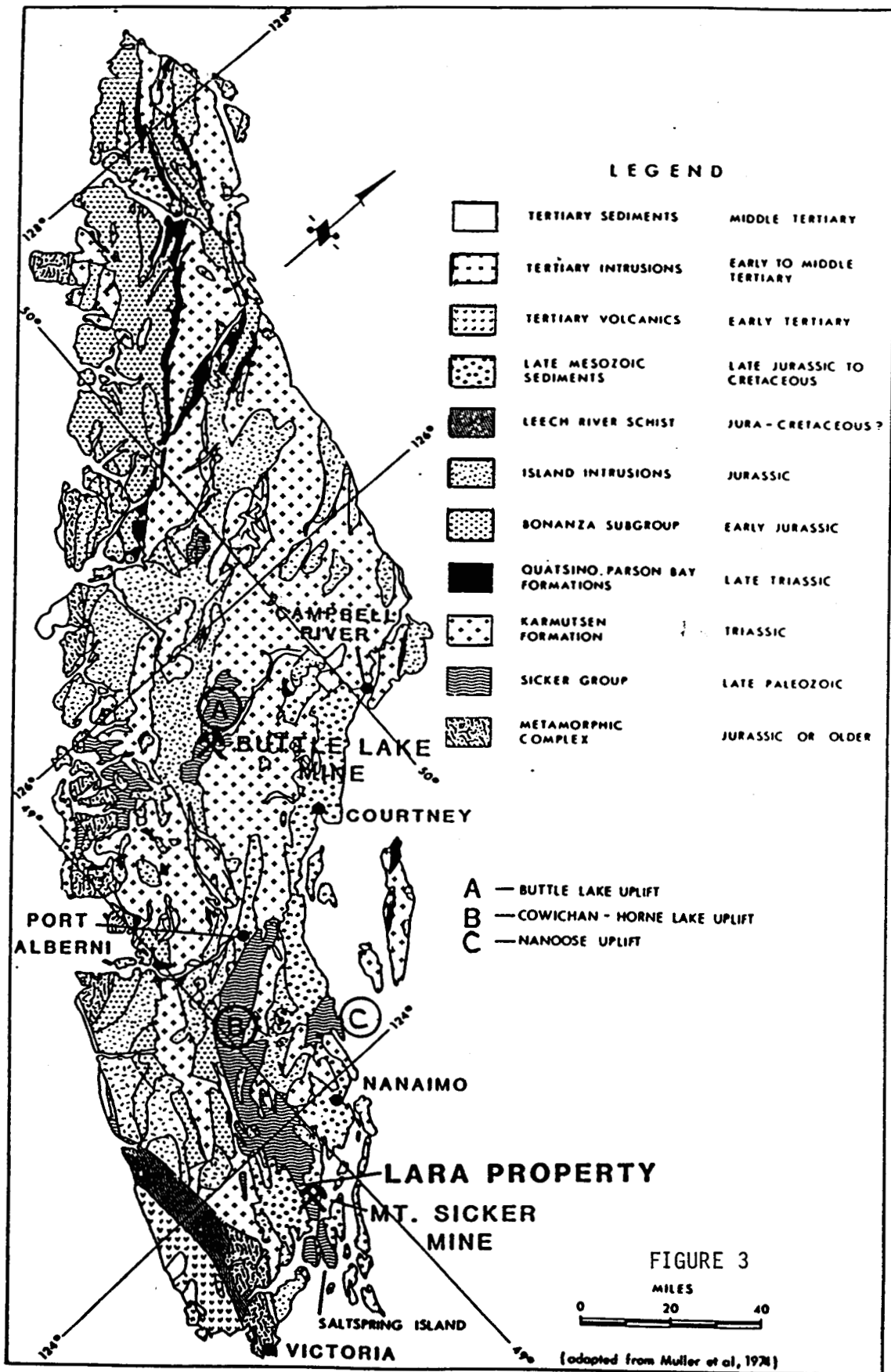
The Lara Property is underlain primarily by the Paleozoic age Sicker Group which comprises well differentiated volcanic rocks with interbedded tuffaceous, carbonaceous and volcanoclastic sedimentary rocks. These rocks are strongly deformed (commonly schistose) and are regionally metamorphosed to lower to upper greenschist facies.

The Sicker Group is exposed in three major geanticlinal uplifts on Vancouver Island (Figure 3). The Lara property occurs toward the southwestern end (Figure 4) of the Horne Lake - Cowichan uplift which extends in an arc from Saltspring Island to Port Alberni, a distance of about 140 kilometres.

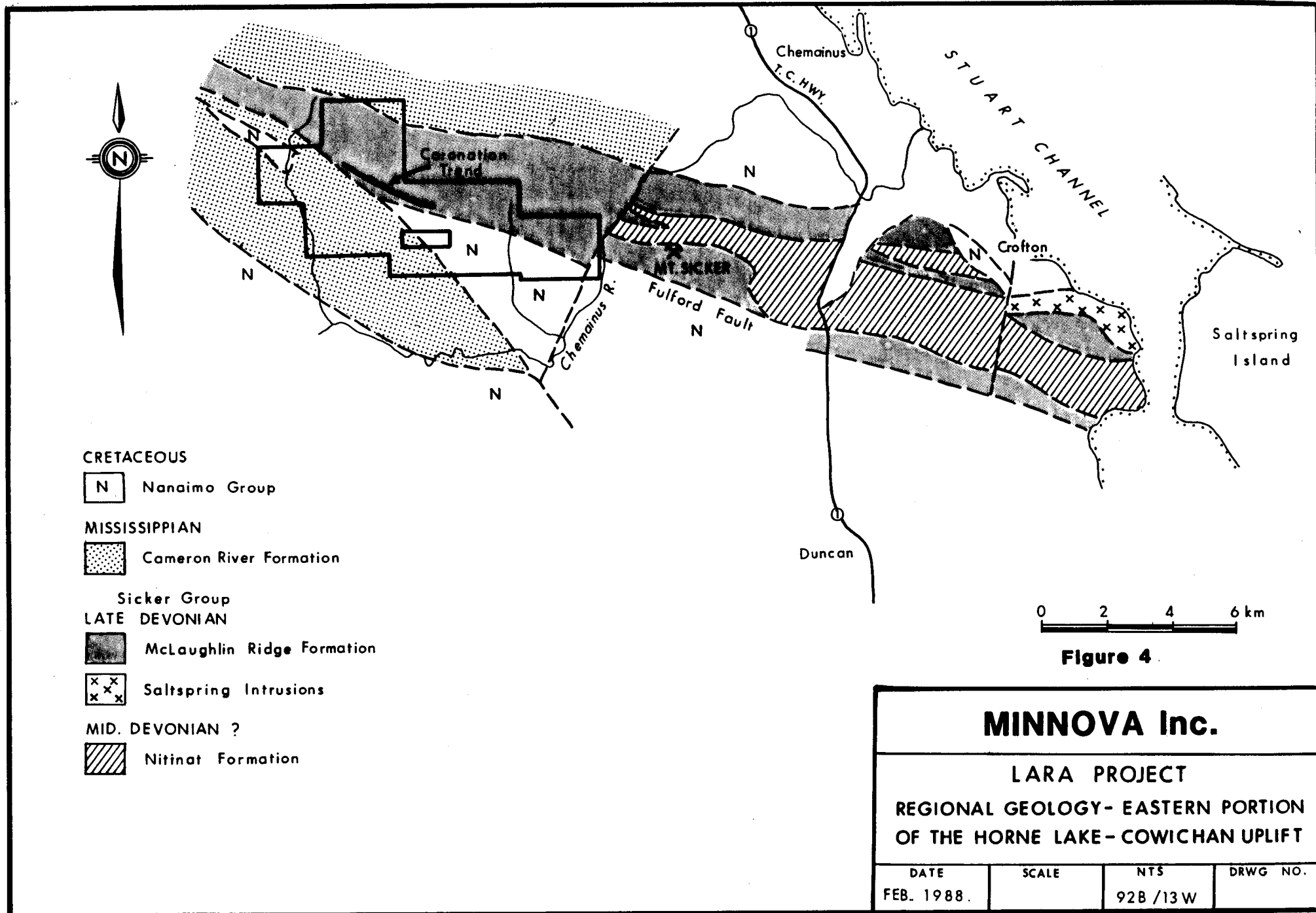
The stratigraphic divisions that are presently being used in the Horne Lake - Cowichan Uplift, and on the Lara property are those proposed by Nick Massey (Massey and Friday 1987, 1988) of the British Columbia Ministry of Energy, Mines and Petroleum Resources.

The Nitinat Formation, which is the lowermost unit in the Sicker Group, consists of mafic pyroclastics with subordinate volcanic flows (Brandon et al, 1986). The unit is commonly agglomeritic and is characterized by the presence of black augite phenocrysts which have been variably altered to uralite. These phenocrysts are up to 3 centimetres in diameter and comprise from 5 to 20% of the rock. Plagioclase phenocrysts are also abundant but are generally smaller. The Nitinat Formation contains a chlorite-epidote-actinolite-plagioclase metamorphic assemblage which is consistent with upper greenschist facies.

The McLaughlin Ridge Formation conformably overlies the Nitinat Formation. It consists of aphyric andesite pillow flows and breccias, rhyolite, volcanic sandstone, siltstone, argillite and chert. In the central part of the belt, the rocks are predominately volcanoclastic sediments with minor volcanic rocks.



GEOLOGICAL SKETCH MAP OF  
 VANCOUVER ISLAND



Felsic volcanic rocks are relatively uncommon, but are well developed at the southeastern end of the belt from just west of the Lara Property to Saltspring Island.

Sicker Group rocks are in fault contact or are unconformably overlain by the Cameron River Formation which consists of epiclastic sedimentary rocks including turbiditic sandstone, siltstone and argillite. The base of the unit is marked by a thick sequence of chert and cherty tuff.

The geology of the eastern portion of the Horne Lake-Cowichan uplift is shown in Figure 4. Sicker Group rocks outcrop in a folded, structurally complex west-northwest trending uplift which appears to plunge shallowly to the west. Progressively younger rocks are exposed from east to west along this trend. The belt is cut by several major cross faults along which differential uplift has taken place.

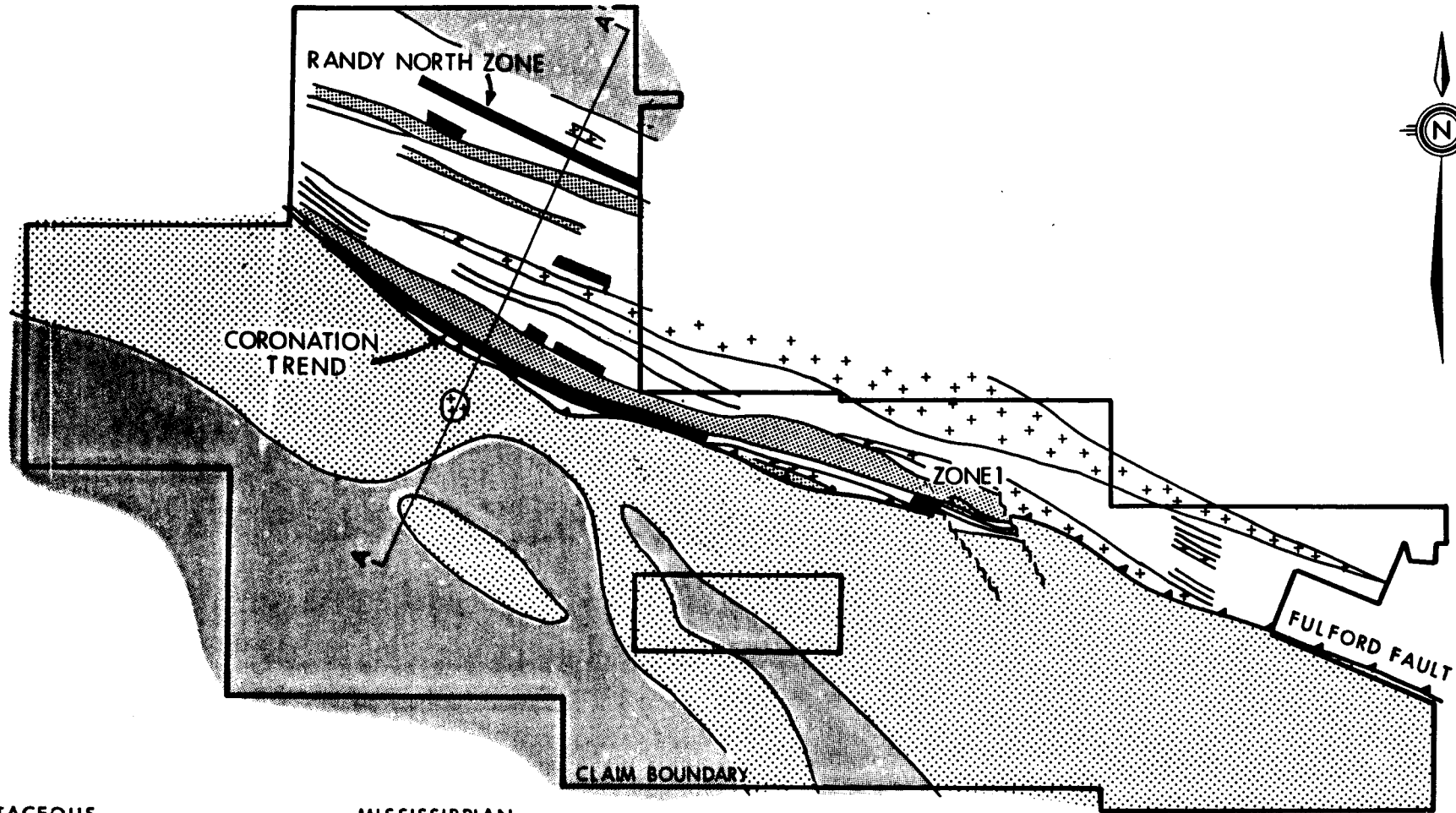
The Fulford Fault is a regionally extensive reverse fault that brings Mclaughlin ridge volcanics into contact with younger rocks of the Cameron River Formation and the Nanaimo Group. This faulting is associated with a Late Cretaceous to Early Tertiary deformational event.

### 3.2 Geology of the Lara Property


The property is underlain by the Mclaughlin Ridge Formation which has been thrust over younger rocks of the Cameron River Formation and the Nanaimo Group on the Fulford Fault (Figures 5 & 6). The Mclaughlin Ridge Formation consists of northerly dipping, west-northwest striking rhyolitic to andesitic rocks. Bedding in these rocks generally dips steeply at 60° to 75° N, although dips of 30° to 45° are common in the eastern half of the property between Humbird Creek and Silver Creek. The volcanics are dominated by felsic rocks; quartz phyric units are common particularly in the west half of the property. The most widespread

123°55'

123°50'



**CRETACEOUS**

 Nanaimo Group, sandstone, siltstone, shale.

**TRIASSIC**

 Karmutsen - Gabbro

**MISSISSIPPIAN**

 Cameron River Formation

**LATE DEVONIAN - SICKER GROUP**

McLaughlin Ridge Formation

 Felsic volcanics

 Intermediate volcanics

 Polymetallic horizon

**Figure 5**



**MINNOVA Inc.**

LARA PROJECT  
SCHEMATIC GEOLOGICAL MAP

DATE  
FEB. 1988.

SCALE

NTS  
92B /13W

DRWG.NO.

lithologies are light green to white, feldspar and quartz feldspar crystal tuff. Lapilli tuffs occur locally.

Thick sequences of intermediate volcanic rocks occur at intervals in this felsic package. Intermediate rocks include fine grained andesite tuff and coarse grained lapilli tuff and breccia containing large epidotized fragments up to several centimetres in diameter.

Sedimentary rocks in the volcanic sequence include dark grey to black argillite, buff-coloured volcanic mudstone and tuffaceous quartz sandstones of both felsic and intermediate composition.

The Fulford Fault juxtaposes volcanic rocks of the McLaughlin Ridge Formation and sedimentary rocks of the Cameron River Formation and the Nanaimo Group. The fault dips at about  $47^{\circ}$  in the west half of the property and cross-cuts bedding in the volcanic rocks at a shallow angle.

The Cameron River Formation south of the Fulford Fault consists of basal pebble conglomerate and volcanoclastic units grading upward into sandstone-argillite series and then to an upper argillite sequence with siltstone and chert interbeds. The Nanaimo Group, which unconformably overlies the Cameron River Formation includes basal conglomerates, sandstone and fossil-bearing mudstone.

In the northwest part of the property, the volcanic rocks are again in contact with the Cameron River Formation which consists of greenish grey mudstone with argillite interbeds. A distinctive maroon schist package which is locally hematitic occurs immediately south of these sedimentary rocks and may represent the uppermost units in the McLaughlin Ridge Formation.



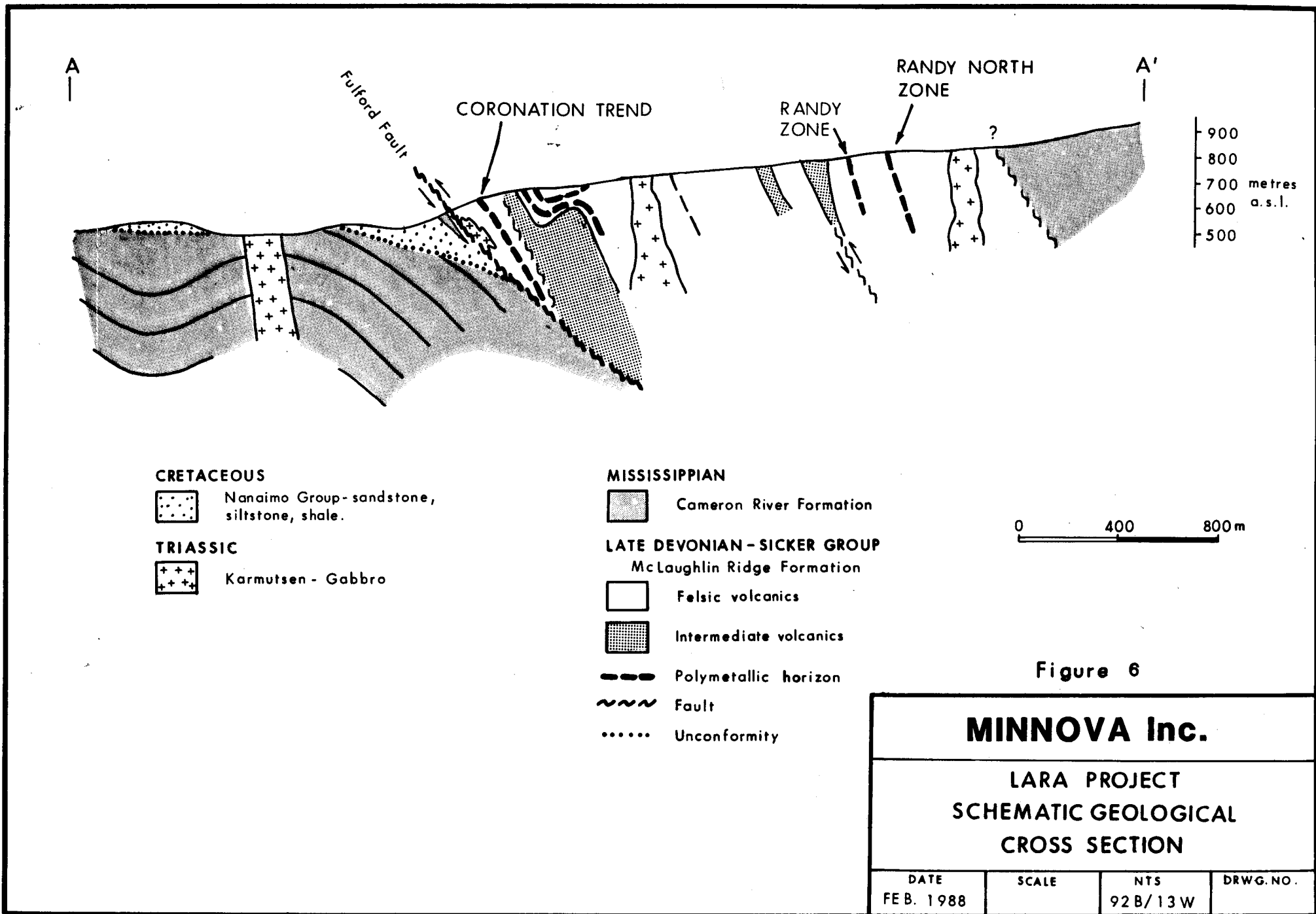
### Intrusive Rocks

On the Lara Property the Sicker Group is cut by a number of mafic intrusions (Figure 5 and 6) which are probably feeders to the Triassic Karmutsen Formation. Compositionally the mafic intrusions are medium to coarse-grained diabase, gabbro and leucogabbro with minor diorite. They are commonly porphyritic with feldspar phenocrysts often being glomero-porphyritic clusters up to three centimetres in diameter, mafic phenocrysts are generally absent. Equigranular gabbros are also common. The intrusive bodies vary in size and form. Sill-like bodies are generally subconcordant with bedding, though they usually follow foliation where this is strongly developed. As a result of this they can show a variety of attitudes from shallow dipping to vertical. They may range in thickness from only a few metres to 200 metres, discordant dykes are also common varying from 10 centimetres to 20 metres wide.

Also on the property are a number of quartz-feldspar porphyry dykes. These dykes are known as the Saltspring Intrusions and are coeval with the felsic volcanics in the McLaughlin Ridge Formation and were probably feeders for felsic crystal tuffs found within the formation (Massey and Friday, 1987). The porphyries are usually well foliated and difficult to distinguish from crystal tuffs when contact relationships with host volcanics are not clear. Quartz phenocrysts are up to 1 centimetre in diameter, round to oval in shape and may be stretched in the foliation. They comprise up to 20% of the rock. Plagioclase phenocrysts are smaller and vary in shape from euhedral laths to rounded and are sporadically altered to epidote.

It is believed there also exists a number of mafic intrusives, possibly dioritic in composition that are coeval with the andesite packages found in the McLaughlin Ridge Formation.

Elsewhere on the property Tertiary age hornblende porphyry dykes occur. These late dykes are distinctly porphyritic with phenocrysts of dark green hornblende and feldspar up to several millimetres in size set in a fine grained, light green



epidote-rich matrix. Border phases of these dykes may be brecciated and contain rounded fragments of dyke rock in a fine grained chloritic matrix. This brecciation may be the result of fluidization during emplacement of the dyke, suggesting a high volatile content. A petrographic sample from one of these dykes suggests that they are strongly altered mafic igneous rocks.

#### 4.0 Diamond Drilling Results

Drill hole 90-316 was drilled to test the 262 Felsic Package downdip from hole 87-224. Drill hole 224 intersected the 262 Horizon between 76.00-80.00 metres. The Horizon in this hole is a moderate to strongly silicified ash, with minor pyrite stringers. Hole 316 intersected the 262 Horizon 175 metres downdip from 224, between 232.69-238.16. Here the Horizon is a moderately silicified felsic ash containing trace pyrite and minor pyrrhotite, as disseminations and stringers. A lithogeochemical sample from 232.87-235.87 returned values of 15 ppm Cu, 139 ppm Zn, 43 ppm Pb, 5 ppb Au and 4.27% Na<sub>2</sub>O.

The Na<sub>2</sub>O values obtained from the lithogeochem sampling throughout this hole are of interest, in that they are all relatively high. One sample returned a value of 6.09% Na<sub>2</sub>O in the felsics and another had 6.18% Na<sub>2</sub>O in an andesite in the structural footwall. This trend towards high Na<sub>2</sub>O is not evident in hole 87-224.

## 5. Conclusions

Drill hole 90-316 was successful in testing the 262 Horizon but failed to intersect any economic sulphide mineralization. The relatively high  $\text{Na}_2\text{O}$  values encountered throughout the hole may be indicative of  $\text{Na}_2\text{O}$  dumping. Further stratigraphic drilling of the 262 Horizon in conjunction with the lithogeochemical sampling will help to zero into the hydrothermal heat source area and hopefully an economic volcanogenic massive sulphide.

6. Cost Statement

A.	Drill Costs	\$15,342.31
B.	Personnel	870.00
C.	Truck Rental	200.00
D.	Food and Accomodation	80.00
E.	Report Preparation	650.00
F.	Analytical Costs	235.00
		=====
	Total	\$17,377.31

7. Core Storage

Drill cores are stored on the Lara property.

## 8. References

- Brandon, M.T., Orchard, M.J., Parrish, R.R., Sutherland Brown, A., and Yorath, C.J. (1986): Fossil Ages and Isotopic Dates from the Paleozoic Sicker Group and Associated Intrusive Rocks, Vancouver Island, British Columbia, in Current Research, Part A, Geological Survey of Canada, Paper 86-1A, pages 683-696.
- Kapusta, J.D., Blackadar, D.W., McLaughlin, A.D. (1987): 1987 Report for Drilling Conducted on the Lara Group I and Lara Group II, Abermin Corporation.
- Massey, N.W.D. and Friday, S.J. (1987): Geology of the Cowichan Lake Area, Vancouver Island (92C/16), British Columbia Ministry of Energy, Mines and Petroleum Resources, Geological Field Work, 1986, Paper 1987-1, pages 223-229.
- Massey, N.W.D. and Friday, S.J., Tercier P.E. and Rublee V.J. (1987b): Geology of the Cowichan Lake Area, NTS 92C/16, British Columbia Ministry of Energy, Mines and Petroleum Resources, Open File 1987-2.
- Massey, N.W.D. and Friday, S.J., Tercier P.E. and Rublee V.J. (1988a): Geology of the Chemainus River - Duncan Area, Vancouver Island (92C/16; 92B/13), B.C. Ministry of Energy, Mines and Petroleum Resources, Geological Fieldwork 1987, Paper 1988-1, pages 81-91.
- Massey, N.W.D., Friday, S.J., Tercier, P.E., and Potter, T.E. (1988b): Geology of the Duncan and Chemainus River Area, NTS 92B/13 and 92C/16E, B.C. Ministry of Energy, Mines and Petroleum Resources, Open File 1988-8.
- Müller, J.E. (1980): The Paleozoic Sicker Group of Vancouver Island, British Columbia, Geological Survey of Canada Paper 79-30, 24 pages.

9. Statement of Qualifications

I, John D. Kapusta of Vancouver, British Columbia, do hereby certify that:

1. I am a geologist residing at 6170 Arlington Street, Vancouver, B.C. and currently employed by Minnova Inc. of 311 Water Street, Vancouver, B.C.
2. I graduated from the University of Manitoba in 1981 with a BSc. degree in Geology.
3. I have been employed on a full time basis in my profession since April 1981.

Date: February 7, 1991

Signature: 



Appendix I

Drill Log: 90-316

HOLE NUMBER: 90-316

MINNOVA INC.  
DRILL HOLE RECORD

IMPERIAL UNITS:

METRIC UNITS: X

PROJECT NAME: LARA PROJECT  
PROJECT NUMBER: 242  
CLAIM NUMBER: SOLLY  
LOCATION: NTS 92 B/13W

PLOTTING COORDS GRID: MINE  
NORTH: 10579.00M  
EAST: 10900.00W  
ELEV: 705.00

ALTERNATE COORDS GRID:  
NORTH: 0+ 0  
EAST: 0+ 0  
ELEV: 0.00

COLLAR DIP: -75° 0' 0"  
LENGTH OF THE HOLE: 303.89m  
START DEPTH: 0.00m  
FINAL DEPTH: 303.89m

COLLAR GRID AZIMUTH: 180° 0' 0"

COLLAR ASTRONOMIC AZIMUTH: 208° 0' 0"

DATE STARTED: November 7, 1990  
DATE COMPLETED: November 10, 1990  
DATE LOGGED: 0, 0

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

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

CONTRACTOR: FRONTIER DRILLING  
CASING: 16.45 m  
CORE STORAGE: ON SITE

PURPOSE: To test the 262 felsic package

DIRECTIONAL DATA:

Depth (m)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments	Depth (m)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments
20.50	-	-75° 0'	ACID	OK		-	-	-	-	-	
94.00	-	-74° 0'	ACID	OK		-	-	-	-	-	
288.00	-	-71° 0'	ACID	OK		-	-	-	-	-	
191.00	211° 0'	-71° 0'	SING.SHOT	OK		-	-	-	-	-	
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HOLE NUMBER: 90-316

MINNOVA INC.  
DRILL HOLE RECORD

DATE: 5-December-1990

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 16.45	«OB»					
16.45 TO 78.66	FELSIC LAP TUFF «F LAP TUFF»	<p>Colour: medium greenish grey Grain Size: c.gr. Thick bedded; massive, moderate to strongly foliated; 10-15% bleached white and silicified felsic fragments to 4 cm, rare to 15 cm, generally flattened parallel to foliation; groundmass is medium to dark green in colour; matrix locally a chlorite schist</p> <p>CAF @ 25.00 m CAF @ 36.00 m CAF @ 44.00 m</p> <p>50.00-51.90 -Fault, gouge seam, near parallel to c.a.</p> <p>CAF @ 61.00 m CAF @ 74.50 m</p> <p>77.23-78.66 -Diorite; dark green, fine to medium grained</p>	<p>10 15 15</p> <p>08 25</p>	<p>Moderate to well developed sericite and chlorite on foliation surfaces</p> <p>-strongly calcareous, 20% carbonate</p>	Trace pyrite	Bedding? foliation near parallel to c.a.
78.66 TO 100.27	FELSIC TUFF «F TUFF»	<p>Colour: white to light grey Grain Size: m. to c.gr. Thick bedded, massive, weakly foliated; massive, weak mottled look, local silicified felsic frags to 6 mm, &lt;5% dark green lithic frags to 2 mm, very gritty granular look</p> <p>89.15-90.33 -Diorite, dark green, strongly calcareous</p> <p>92.29-93.86 -intensely bleached</p> <p>93.86-94.79 -intensely foliated, abundant F2 folds;</p>		Intense patchy silicification, weak sericite development, minor chlorite, local well developed sericite, strongly bleached	Trace pyrite	Possible clast supported fragmental

HOLE NUMBER: 90-316

DRILL HOLE RECORD

LOGGED BY: J.D. KAPUSTA

PAGE: 2

HOLE NUMBER: 90-316

MINNOVA INC.  
DRILL HOLE RECORD

DATE: 5-December-1990

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		predominantly a chlorite schist, 80% 20% sericite		94.79-96.00 -intensely bleached		
100.27 TO 118.90	QUARTZ FSP PORPHYRY «QFP»	Colour: light to medium greyish green Grain Size: m. to c.gr. Thick bedded, massive, weakly foliated, massive, very gritty and granular in appearance, 3 to locally 5% qtz eyes to 3 mm, locally to 8 mm, possibly 5% fsp xls to 1 mm; locally silicified 5% fsp fragments to 4 mm, matrix is a light to medium green colour  CAF @ 112.00 m 113.60-117.00 -finer grained interval, QE and fsp xls indistinct	35	No pervasive silicification, weak to moderate sericite and minor chlorite, local bleached white mottled look	Trace pyrite  103.00 -2 pyritic fragments to 3 mm	May be a less bleached version of the overlying interval
118.90 TO 137.55	FELSIC LITH TO LAP TUFF «F LITH, LAP TUFF»	Colour: greyish green Grain Size: c.gr. Thick bedded, massive, weakly foliated interval contain 15% bleached white and silicified felsic frags to 4 cm generally flattened parallel to foliation, locally interval has a bleached mottled look, possibly large frags to 8 cm; matrix is a dark greenish grey colour; gritty in texture, locally contains minor QE to 2 mm and fsp xls to 1 mm, fragment size and percentage decreases down-hole  CAF @ 126.43 m 135.76-137.55 -Mafic dyke -lower contact	35  20	Weak sericite and local chlorite development on foliation surfaces	Trace pyrite	

HOLE NUMBER: 90-316

DRILL HOLE RECORD

LOGGED BY: J.D. KAPUSTA

PAGE: 3

HOLE NUMBER: 90-316

MINNOVA INC.  
DRILL HOLE RECORD

DATE: 5-December-1990

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
137.55 TO 160.20	QTZ FSP PORPHYRY «QFP»	Colour: light to medium grey Grain Size: m.gr. Thick bedded; massive, weakly foliated massive, 5% to locally 10% qtz eyes to 4 mm, locally to 9 mm; up to 5% white to ghostly to epidote altered fsp xls to 1 mm  144.90-160.20 -generally <5% QE to 3 mm and <5% fsp xls to 1 mm; interval medium to dark grey in colour		Poor sericite development  143.80-144.90 -intensely silicified  -very weak pervasive biotite development; very poor sericite development	Trace pyrite  -<1% patchy m.gr. pyrite	
160.20 TO 169.72	FELSIC LAP TUFF «F LAP TUFF»	Colour: light to medium grey, weak green cast Grain Size: c.gr. Thick bedded; massive, weakly foliated, massive 5% bleached white and silicified felsic frags to 6 cm, up to 5% very weakly epidote altered frags to 2 cm; groundmass is greyish green colour, very gritty and granular, minor QE to 2 mm and fsp xls to 1 mm		Weak sericite development	Minor pyrite, disseminated patchy and stringers; rare trace chalcopyrite	
169.72 TO 217.98	«DIORITE»	Colour: medium to dark green Grain Size: f. to m.gr. Thick, massive, Karmutsen; fsp porph, interval includes numerous fine to medium grained phases		Locally strongly calcareous		
217.98 TO 232.69	FELSIC LITH TO LAP TUFF «F LITH, LAP TUFF»	Colour: medium grey green Grain Size: m. to c.gr. Thick bedded; massive; weak to moderate foliated; 3-5% white felsic frags 2 mm to 2 cm; larger frags generally flattened in foliation plane, rare frags to 4 cm; groundmass very gritty and granular, minor QE and fsp xls; frag size and % decreases downhole		Poor sericite development on foliation surfaces; local patchy epidote alteration	1% pyrite, diss. patchy and stringers .5% to locally 1% pyrrhotite; diss. patchy and stringers; rare trace chalcopyrite	

HOLE NUMBER: 90-316

DRILL HOLE RECORD

LOGGED BY: J.D. KAPUSTA

PAGE: 4

HOLE NUMBER: 90-316

MINNOVA INC.  
DRILL HOLE RECORD

DATE: 5-December-1990

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
232.69 TO 238.16	FELSIC ASH «F ASH»	Colour: light grey, weak green cast Grain Size: v.f.gr. Thick bedded, massive, weakly foliated, interval contains a small percentage of f.gr. lithic material  CAB @ 232.86 m	60	Very poor sericite development on foliation surfaces, moderately silicified	Trace diss. pyrite, minor pyrrhotite, diss. and stringers	
238.16 TO 258.25	FELSIC TUFF «F TUFF»	Colour: medium grey green Grain Size: m.gr. Thick bedded, massive, weakly foliated, massive, very granular in texture, 35 light green epidote altered lithic fragments to 2 mm, 3-5% white felsic fragments to 5 mm  242.44-243.30 -Diorite  246.43-247.34 -core ground  254.73-255.50 -brecciated and healed  255.50-257.86 -locally strongly sheared, common gouge seams	55	Moderately silicified, locally intense patchy silicification, local weak to moderate sericite development on foliation surfaces          -intensely silicified, patchy epidization	Trace pyrite, pyrrhotite, diss. and stringers       247.34-247.75 -3-5% pyrite, tr. pyrrhotite, minor cp diss and stringers  -2-3% pyrite, tr cp, pos tr. sp, patches and stringers	
258.25 TO 272.97	FELSIC LITH TO LAP TUFF «F LITH, LAP TUFF»	Colour: medium grey, weak green cast Grain Size: m. to c.gr. Thick bedded, massive, weakly foliated, massive 5% bleached white to light grey felsic frags to 5 cm, the size and abundance of fragments increases towards the base of the interval, up to 5% light green epidote altered lithic fragments to 3 mm, smaller ones to 1 mm may be fsp xls; matrix is generally a greyish green colour; and v.		Poor sericite development on foliation surfaces	Trace diss. pyrite	

HOLE NUMBER: 90-316

DRILL HOLE RECORD

LOGGED BY: J.D. KAPUSTA

PAGE: 5

HOLE NUMBER: 90-316

MINNOVA INC.  
DRILL HOLE RECORD

DATE: 5-December-1990

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		granular in texture, local weakly epidized frags to 3 cm				
272.97 TO 303.89	ANDESITE XTL LITHIC TUFF «AND XLY TU FF»  E.O.H.	Colour: medium to dark green Grain Size: m. to c.gr. Thick bedded, massive, weakly foliated, massive, 5 to locally 10% epidote altered fsp xls to 1 mm; 5 % siliceous grains to 3 mm; 5-10% light green epidote altered lithic fragments to 5 mm; 5% dark green to black lithic fragments to 3 mm; rare epidized fragments to 4 cm, minor ash sections		Weak to moderate chlorite development on foliation surfaces; local patches; local patchy silicification and pervasive epidote alteration	1% diss, patchy, m.gr. pyrite	

HOLE NUMBER: 90-316

DRILL HOLE RECORD

LOGGED BY: J.D. KAPUSTA

PAGE: 6

HOLE NUMBER: 90-316

ASSAY SHEET

DATE: 5-December-1990

Sample	From (m)	To (m)	Length (m)	ESTIMA Cu ppm	ASSAYS										GEOCHEMICAL					SUL %	COMMENTS			
					Pb ppm	Zn ppm	Ag ppm	Au ppb	Ba ppm	Cu %	Pb %	Zn %	Ag oz/t	Ag g/t	Au oz/t	Au g/t	Ba %	SG SG	NSR NSR					
	0.00	0.00	0.00																					



HOLE NUMBER: 90-316

## GEOCHEM. SHEET

DATE: 5-December-1990

Sample	From (m)	To (m)	Length (m)	Al2O3 %	Ba %	CaO %	Fe2O3 %	K2O %	MgO %	MnO2 %	Na2O %	P2O5 %	SiO2 %	Sr %	TiO2 %	Zr %	S %	Tot %	Ag ppm	As ppm	Ba-ppm ppm	Cu ppm	Pb ppm	Sb ppm	Zn ppm	Au ppb
16541	20.50	23.50	3.00	14.81	0.08	4.12	2.97	1.85	1.36	0.1	4.43	0.01	64.56	0.32		0.04	94.64	0.8	35	120	8	179	1	219	5	
16542	52.42	55.42	3.00	14.89	0.125	3.27	2.69	1.75	1	0.1	5.17	0.01	66.23	0.32		0.05	95.6	0.8	45	146	47	395	1	412	10	
16543	82.29	85.29	3.00	14.17	0.06	4.35	2.39	1.27	0.84	0.09	5.73	0.01	66.59	0.3		0.06	95.84	0.8	40	81	11	37	1	62	5	
16544	108.35	111.35	3.00	14.39	0.09	2.56	2.88	1.88	2.13	0.07	4.38	0.01	66.83	0.29		0.06	95.55	0.5	31	97	5	44	1	64	5	
16545	128.93	131.93	3.00	14.37	0.1	4.18	2.51	2.85	1.12	0.07	3.02	0.01	66.99	0.28		0.01	95.5	0.5	34	173	11	48	1	59	5	
16546	154.53	157.53	3.00	14.97	0.115	1.69	2.49	2.05	0.93	0.05	6.09	0.01	68.98	0.31		0.2	97.87	0.4	27	200	11	33	1	32	5	
16547	223.57	226.57	3.00	15.93	0.035	4.38	6.04	0.67	3.37	0.12	4.72	0.01	60.32	0.47		0.39	96.44	1	1	57	71	14	1	58	5	
16548	232.87	235.87	3.00	14.19	0.075	1.45	2.56	1.57	2.26	0.07	4.27	0.01	70.84	0.16		0.17	97.61	0.4	29	106	15	43	1	139	5	
16549	263.95	266.95	3.00	15.45	0.065	1.8	4.32	1.86	3.33	0.11	3.88	0.01	65.34	0.38		0.09	96.62	0.8	1	82	25	61	1	119	10	
16550	282.29	285.29	3.00	17.56	0.035	7	7.93	0.55	5.62	0.18	6.18	0.04	50.5	0.67		0.06	96.32	2.8	1	144	140	38	1	155	5	

HOLE NUMBER: 90-316

GEOCHEM. SHEET

PAGE: 8

Appendix II  
Itemized Cost Statement

## Itemized Cost Statement

### A. Drill Costs

Drill Hole 90-316, November 7-10, 1990:

Drive Casing:	54', $54 \div 3.28 = 16.46$ m x \$47.00/m	\$ 773.62
Coring:	930', $930 \div 3.28 = 283.54$ m x \$44.94/m	12,742.29
Coring:	13', $13 \div 3.28 = 3.96$ m x \$54.78/m	216.93
Man Hours:	2 x \$26/hour	52.00
Drill Hours:	1 x \$38/hour	38.00
Casing Cap:	1 NW Cap @ \$39.55	39.55
Casing:	5 NW 10' casing @ \$124.66	623.30
left in hole		
	2 NW 2' casing @ \$41.66	83.32
	1 NW casing shoe @ \$133.30	\$133.30

Drill Site Construction: (Valley Drilling & Excavating)  
8 hours @ \$80/hr. 640.00  
{Oct. 31/90 (4 hrs); Nov. 1/90 (4 hrs)}

Subtotal -----  
\$ 15,342.31

### B. Personnel Costs

John Kapusta, Project Geologist; 2 days @ \$325/day  
(November 10, 11) \$650.00

Roy Knight, Field Assistant; 2 days @ \$110/day  
(October 31, November 1) 220.00

Subtotal -----  
\$ 870.00

### C. Truck Rental

4 days @ \$50/day \$200.00  
(October 31, November 1, 10, 11)

### D. Food and Accommodation

John Kapusta, 2 days @ \$40/day \$80.00  
(November 10, 11)

E. Report Preparation

John Kapusta, 2 days @ \$325/day \$650.00  
(November 26, 27)

F. Analytical Costs

Min-En Labs  
(November 9, 14, 15)

10 Minnova litho packages @\$23.50 \$235.00

Appendix III  
Diamond Drilling/Construction Invoices

November 20/90

MINNOVA Inc.  
4th Floor, 311 Water Street  
Vancouver, B. C.      V6B 1B8

IN ACCOUNT WITH: Frontier Drilling (1989) Ltd.  
19644 33A Avenue  
Langley, B.C.  
V3A 7X1

Nov 20/90	Invoice 9003	49,471.25
Nov 20/90	9003-4	60,925.17

49,471.25 +  
60,925.17 =  
110,396.42

**MINNOVA INC.**

VENDOR NAME			INVOICE NUMBER OR DATE	CURRENCY 1. - CDN 2. - U.S.	F. I. L.
FRONTIER DRILLING			Nov 20/90		1
ACCOUNT CODE				AMOUNT	CR
GENERAL LEDGER	DETAIL	EXPLORATION PROJECTS			X
71015180	6010	242	110,396.42		
APPROVED	CODED	EXT. & ADDITION	A/PAY		
<i>J</i>	<i>J</i>	<i>J</i>	T900044		

FRONTIER DRILLING (1989) LTD.

19644 33A Ave.

Langley, B.C. V3A 7X1

Phone: 604-530-4100

NOV 26 1990

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INVOICE DATE November 20, 1990 PERIOD November 1 - 16, 1990  
INVOICE NUMBER 9003-4 JOB 9003 Lara  
LOCATION Chemainus, B.C.

IN ACCOUNT WITH Minnova Inc.  
4th Floor  
311 Water Street  
Vancouver, B.C. V6B 1B8

PAGE ONE: DRILL FOOTAGE CHARGES \$54,889.65 ✓  
PAGE TWO: FIELD COST CHARGES \$ 1,375.00 X 1370.00  
PAGE THREE: SUPPLIES AND SERVICES \$ 4,665.52 ✓  
TOTAL INVOICE \$60,930.17 X #60,925.17

PLEASE NOTIFY WITHIN 7 DAYS OF INVOICE DATE IF THERE IS DISAGREEMENT WITH INVOICE CALCULATIONS.

DRILL FOOTAGE CHARGES

HOLE NUMBER	CASING			CORING		
	FROM	TO	TOTAL	FROM	TO	TOTAL
311	0	60	60	60	487 <del>168.00</del> ✓	427 ✓
313	0	50	50	50	984	934 ✓
				984	1146 <del>249.5</del> ✓	162*
316	0	54	54	54	<del>7146</del> 984 ✓	930 ✓
				984	997 ✓	13 *
318	0	12	12	12	877 ✓	865 ✓
319	0	32	32	32	451 ✓	419 ✓
			208			3575 ✓
						175 *
CASING    208 ÷ 3.28 = 63.4 m X \$47.00 = \$2,979.80 ✓						
CORING    3575 ÷ 3.28 = 1090 m X \$44.94 = \$48,984.60 ✓						
175 ÷ 3.28 = 53.4 m X \$54.78 = \$ 2,925.25 ✓						
TOTAL DRILL FOOTAGE CHARGES    \$54,889.65 ✓						







Valley Drilling &  
 Excavating  
 Box 1016  
 Chemainus B.C.  
 VORIKO

Date <u>Oct</u> 19 <u>90</u>				
M. <u>MINNOVA</u>				
SOLD BY	C.O.D.	CHARGE	ON ACCT.	ACCT. FWD.
1		<u>Drill 40 Excavator</u>		
2				
3		<u>Putting in road &amp;</u>		
4		<u>drill pads.</u>		
5				
6		<u>60.00 per hr.</u>		
7				
8		<u>13 hrs.</u>		<u>\$ 3440.00</u>
9				
10				
11		<u><del>200-705-604</del></u>		
12				
13				
14				
15				<u>\$ 3440.00</u>

48


BROWNLIN 65909 00028

MINNOVA INC.

VENDOR NAME		INVOICE NUMBER OR DATE		CURRENCY
<u>VALLEY DRILLING</u>		<u>48</u>		1 - CDN 2 - US
ACCOUNT CODE			AMOUNT	CR
GENERAL LEDGER	DETAIL	EXPLORATION PROJECTS		X
<u>70580</u>	<u>600</u>	<u>242</u>	<u>3440.00</u>	
APPROVED		CODER	EXT. & ADDITION	A/PAY
<u>[Signature]</u>		<u>[Signature]</u>		<u>1900041</u>

Valley Drilling & Excavating  
Box 1016  
Cheramas B.C.  
VOR 140.

- Oct 27. Worked on road P20  
walked down to mine sight  
walked back to road at  
P21 7 hrs
- Oct 28. Worked on road to P20. 4 hrs
- Oct 30. Work on road to P20  
Put pad in P20. 8 hrs.  
Road and drill pad P19.
- Oct 31 Worked on road out of  
P19. 8 hrs  
dug trench  
fixed road to P23 (316)
- Nov 1 Put road and drill pad  
in P23 (316) 8 hrs  
Flatten dirt pile at  
trench.
- Nov 2. Put drill pad in P24 8 hrs  
Road in to P28

 242-705-604

Appendix IV  
Analytical Results and Invoices

**EN**  
**LABORATORIES**  
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS  
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

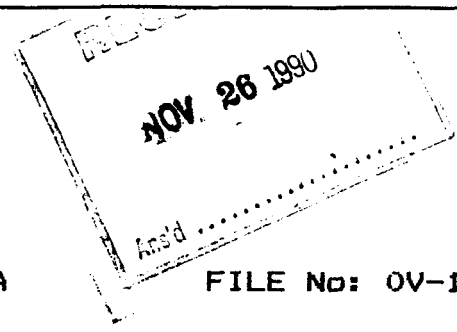
705 WEST 15TH STREET  
NORTH VANCOUVER, B.C. CANADA V7M 1T2  
TELEPHONE (604) 980-5814 OR (604) 988-4524  
FAX (604) 980-9621

**THUNDER BAY LAB.:**  
TELEPHONE (807) 622-8958  
FAX (807) 623-5931

**SMITHERS LAB.:**  
TELEPHONE/FAX (604) 847-3004

**INVOICE**

TO : MINNOVA INC.  
4TH FLOOR,  
311 WATER STREET,  
VANCOUVER, B.C.  
V6B 1B8



INVOICE No 19018D  
PAGE : 1 OF 1  
DATE : Nov 22/90  
  
ACCOUNT: 10162

ATTENTION: G.WELLS/J.KAPUSTA  
PROJECT: LARA 242

FILE No: 0V-1722

QTY DESCRIPTION	UNIT PRICE	AMOUNT
30 MINNOVA LITHO PACKAGE	23.50	705.00
ISLAND COACH 40512	10.75	10.75
ISLAND COACH 40513	9.00	9.00
		-----
	* TOTAL *	724.75

THESE ARE PROFESSIONAL SERVICES AND ARE PAYABLE WHEN RENDERED.  
OUTSTANDING BALANCES OVER 30 DAYS WILL BE CHARGED 2% INTEREST/MONTH.

**SPECIALISTS IN MINERAL ENVIRONMENTS**  
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

*Assay Certificate* NOV 26 1990

OV-1722-RA1

Company: **MINNOVA INC.**  
Project: LARA 242  
Attn: G. WELLS

Date: NOV-22-90

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

Ans'd .....

*We hereby certify* the following Assay of 30 CORE samples submitted NOV-14-90 by PAUL BAXTER.

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

[REDACTED]	[REDACTED]
16541	4.40

16542	3.60
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16543	3.30
-------	------

16544	3.50
-------	------

16545	3.60
-------	------

16546	1.45
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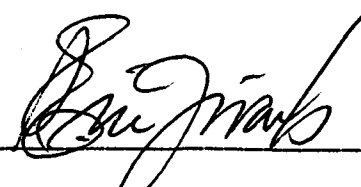
16547	2.90
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16548	1.70
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16549	2.40
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16550	3.00
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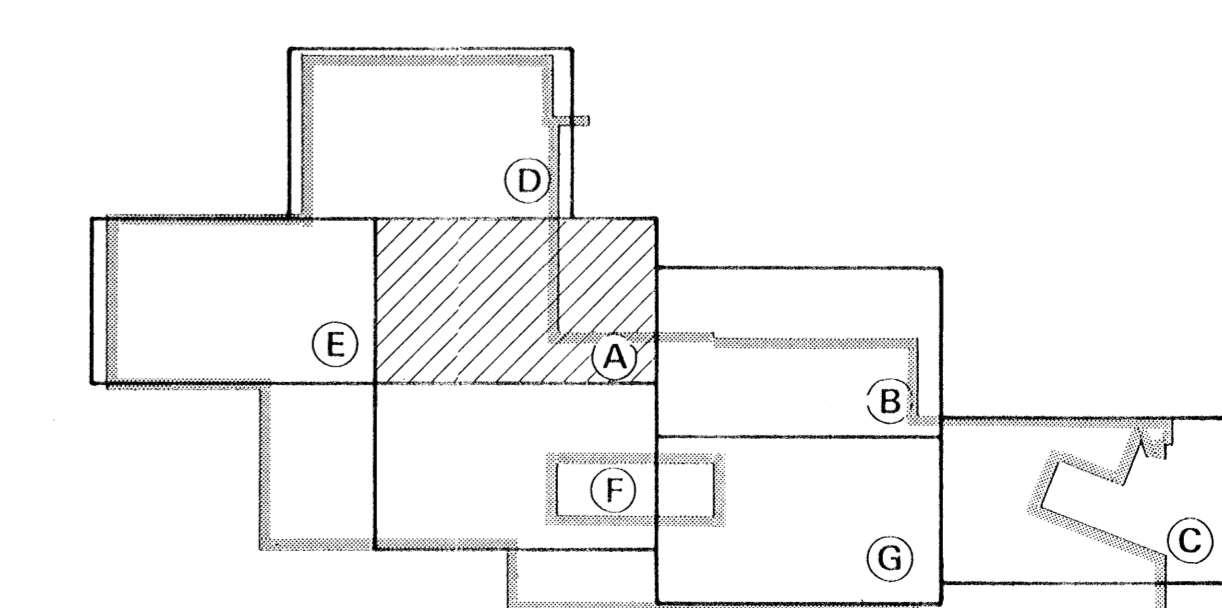
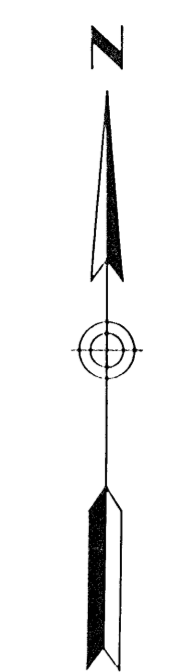
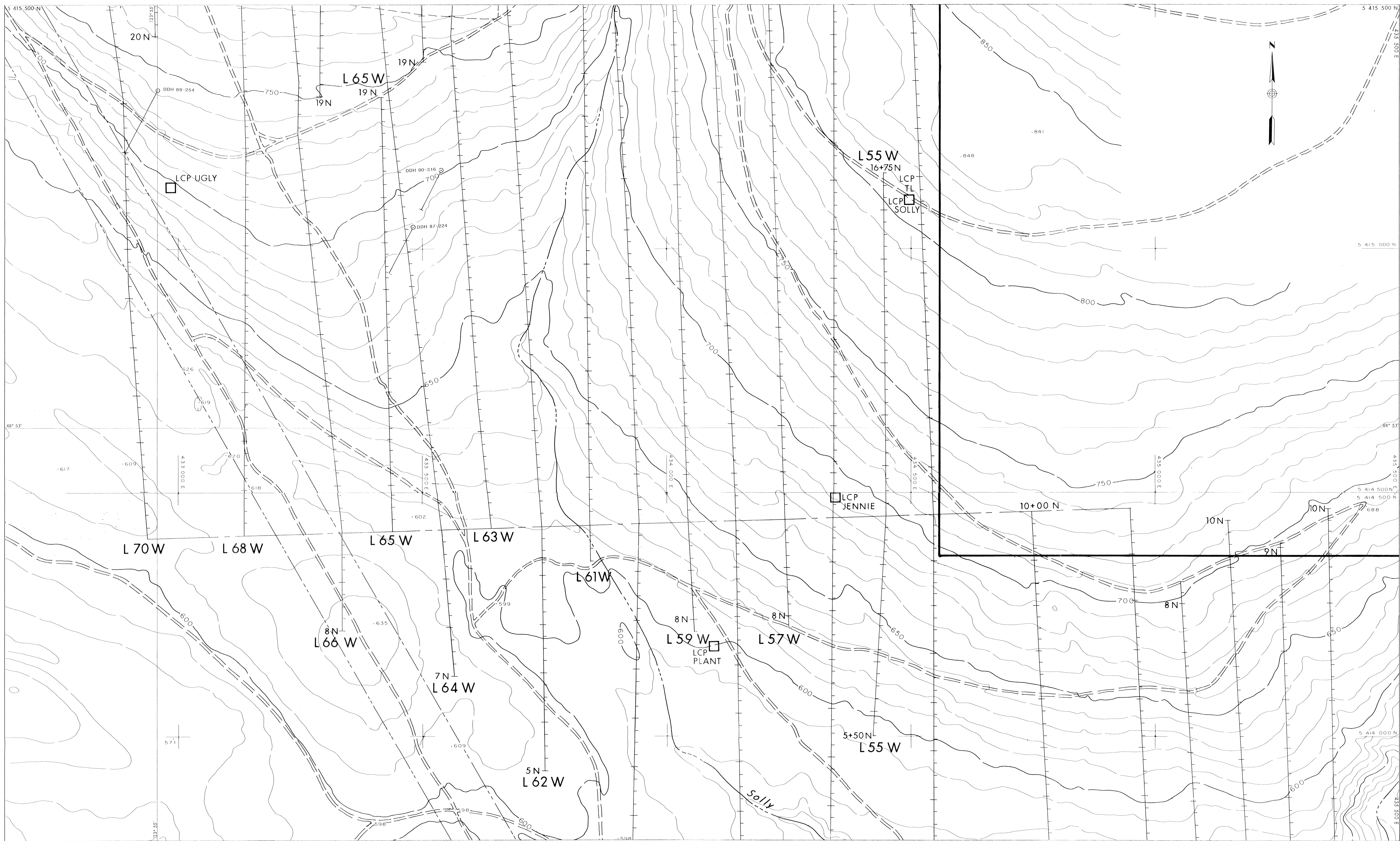
Certified by











SHEET A

TO ACCOMPANY REPORT NO. BY			
<b>MINNOVA</b>		<b>FIG. 1</b>	
<b>DIAMOND DRILL HOLE PLAN</b>			
WEST GRID AREA LARA PROJECT			
DATE	SCALE	HTS	DRAWING NO.
	1:2500	92.8/13W	E-

GEOPHYSICAL BRANCH  
ASSESSMENT REPORT  
20,980