

SUMMARY REPORT
ON THE
1990 EXPLORATION PROGRAM

SPECTRUM PROPERTY
N.T.S. 104G/9W, 10E

LATITUDE: 57° 41'N
LONGITUDE: 130° 29'W

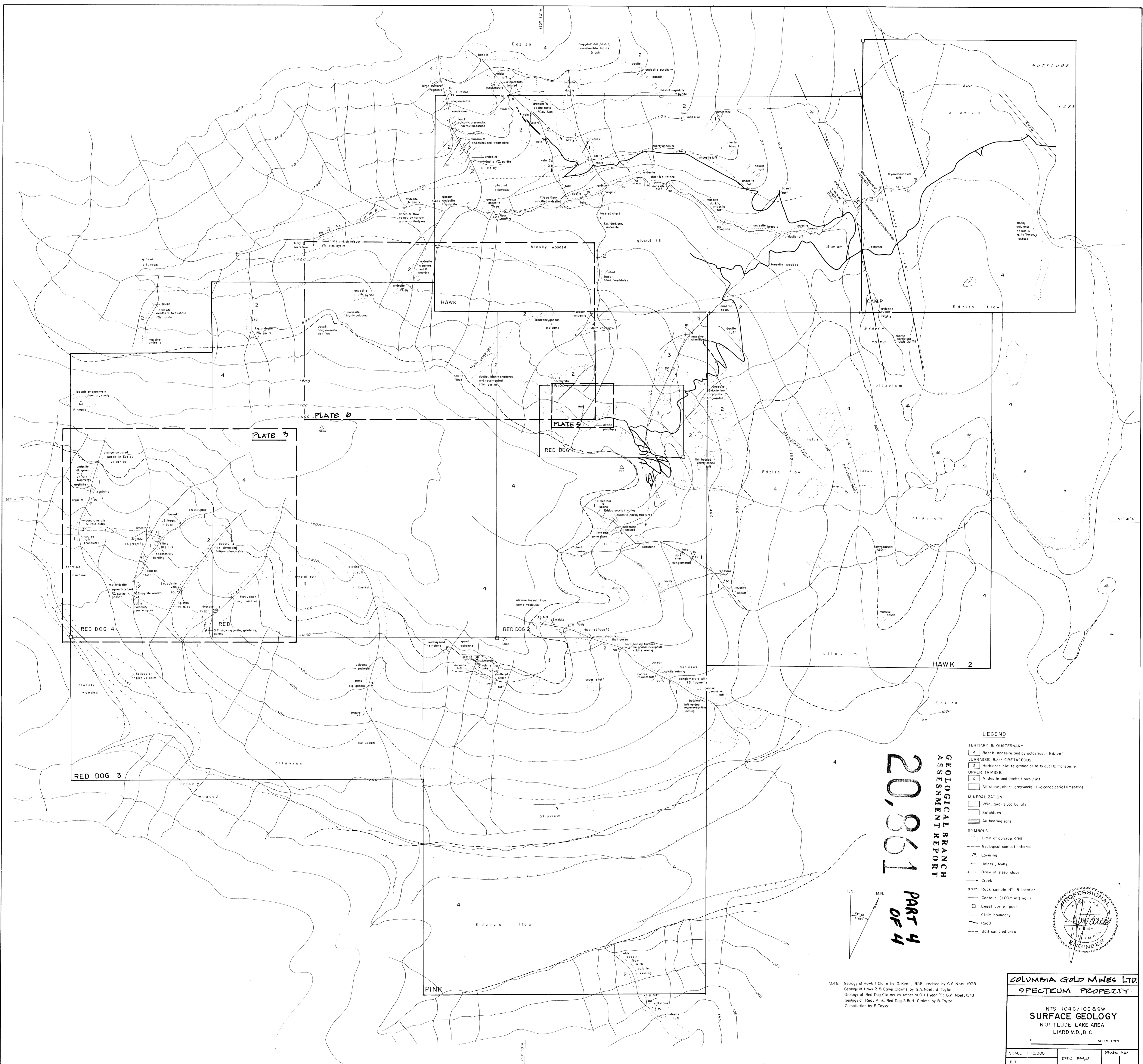
COLUMBIA GOLD MINES LTD.
#1500-675 W. Hastings St.
Vancouver, B.C.
V6B 1N2

BY: J.J. HYLANDS, P.ENG

JANUARY, 1991 Vol. IV

PART 4
OF 4

20861



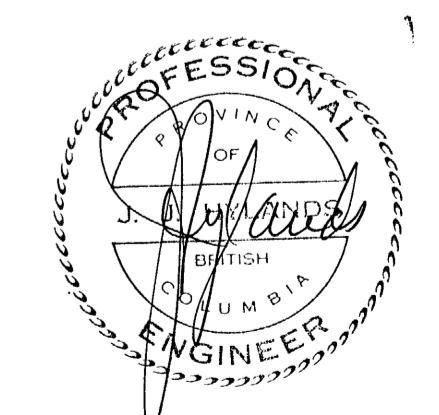
- LEGEND**
- TERTIARY & QUATERNARY**
- 4 Basalt, andesite and pyroclastics, (Edziza)
 - JURASSIC &/or CRETACEOUS
 - 3 Hornblende biotite granodiorite to quartz monzonite
 - UPPER TRIASSIC
 - 2 Andesite and dacite flows, tuff
 - 1 Siltstone, chert, greywacke, (volcanoclastic) limestone
- MINERALIZATION**
- Vein, quartz, carbonate
 - Sulphides
 - Au bearing zone
- SYMBOLS**
- Limit of outcrop area
 - Geological contact inferred
 - Layering
 - Joints, faults
 - Break of steep slope
 - Creek
 - X 997 Rock sample No. & location
 - Contour (100m interval)
 - Legal corner post
 - Claim boundary
 - Road
 - Soil sampled area

20,861

PART 4

OF 4

NOTE: Geology of Hawk 1 Claim by G. Kent, 1958, revised by G.A. Noel, 1978.
 Geology of Hawk 2 & Camp Claims by G.A. Noel, B. Taylor
 Geology of Red Dog Claims by Imperial Oil (1971), G.A. Noel, 1978.
 Geology of Red, Pink, Red Dog 3 & 4. Claims by B. Taylor
 Compilation by B. Taylor.



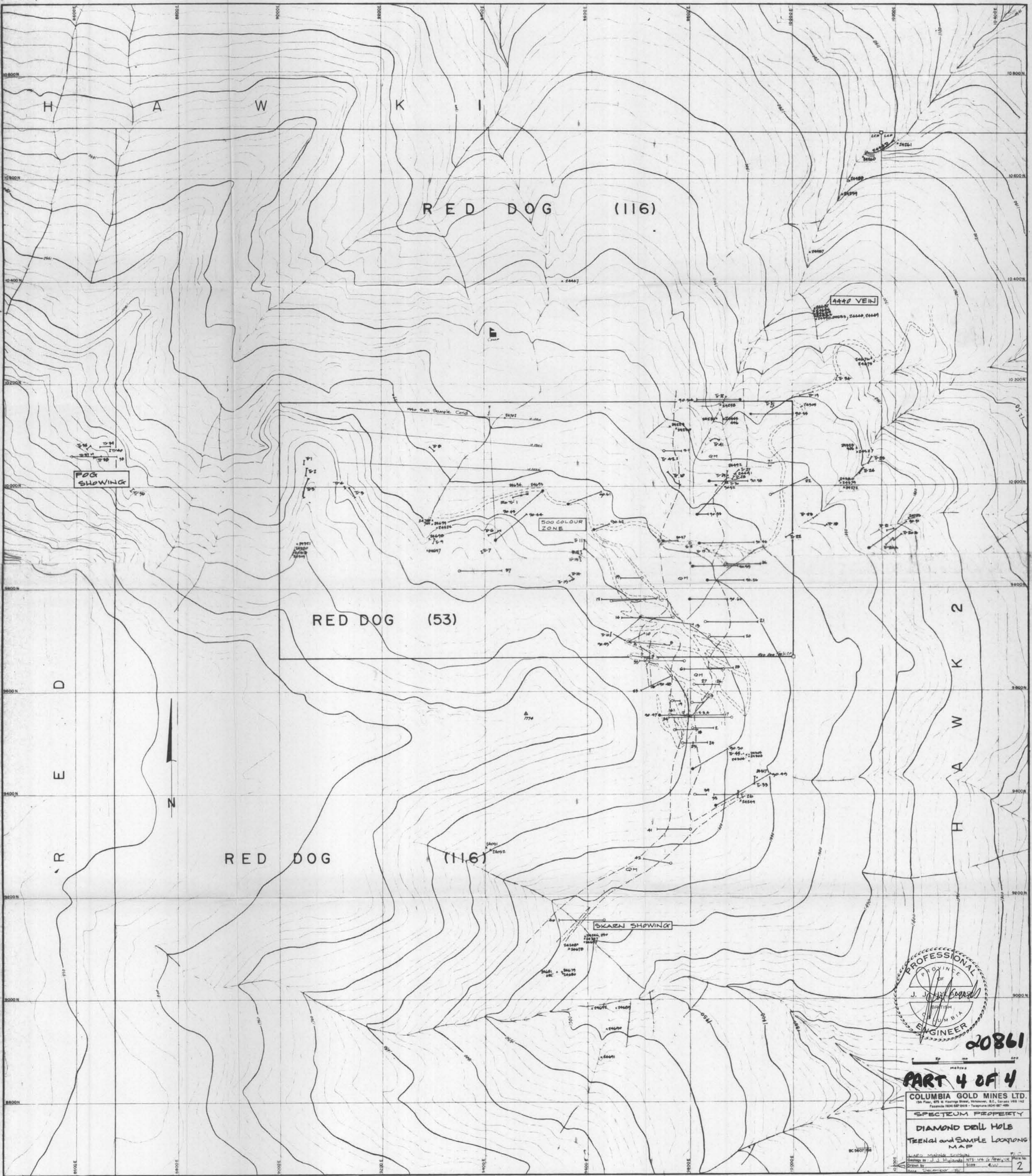
COLUMBIA GOLD MINES LTD.
SPECTRUM PROPERTY

NTS 104G/10E 89W
SURFACE GEOLOGY
 NUTTLUDE LAKE AREA
 LIARD M.D., B.C.

0 500 METRES

SCALE 1:10,000 Date 1990 Plate No. 1

B.T.



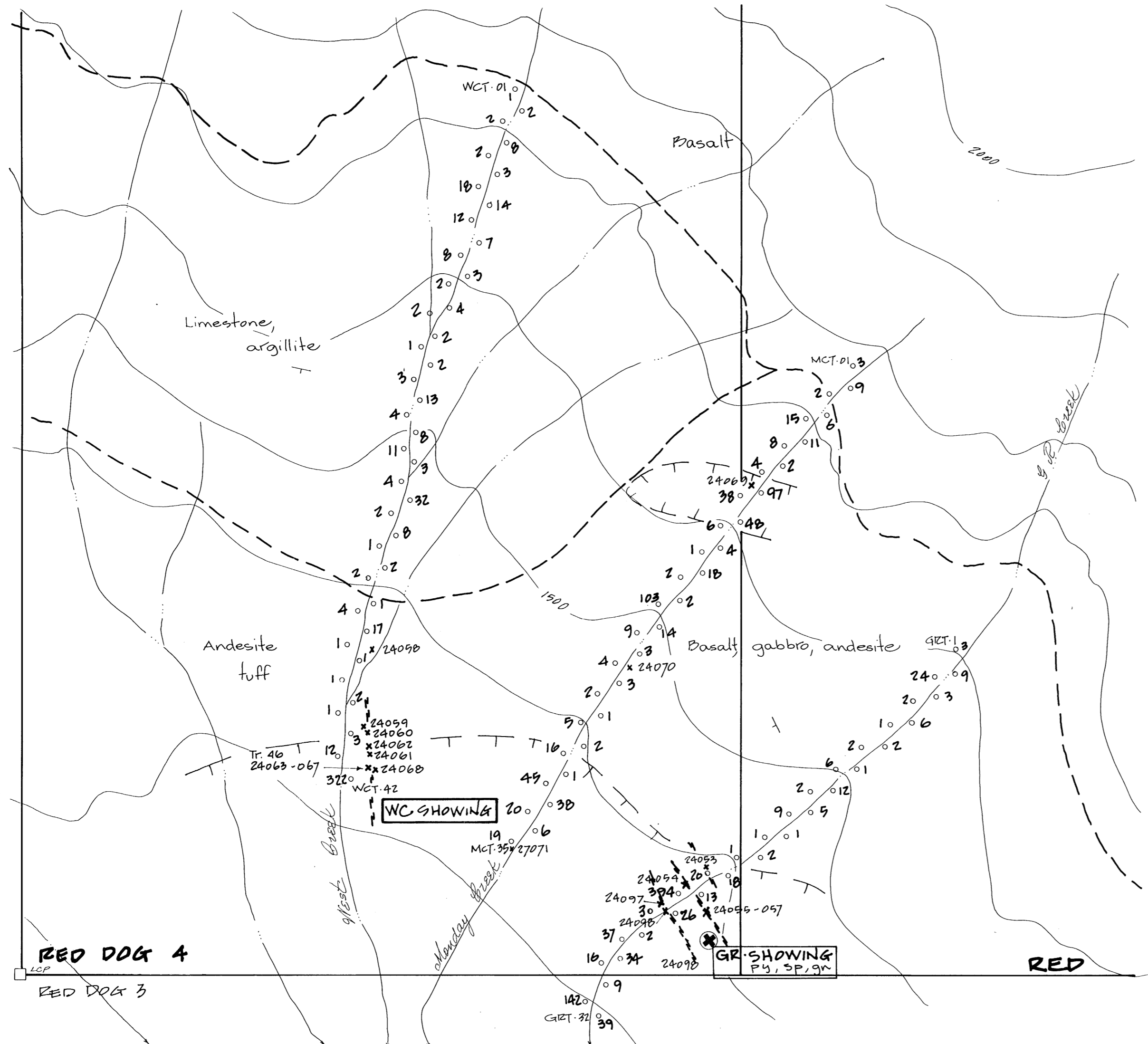
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 104 Park, 625 W. Hastings Street, Vancouver, B.C., Canada V6B 1W1
 Telephone (604) 687-2418 • Telex (604) 687-499

SPECTRUM PROPERTY
DIAMOND DRILL HOLE
TRENCH AND SAMPLE LOCATIONS
MAP

Scale: 1:50,000
 Date: 1987-07-15



SAMPLE RESULTS

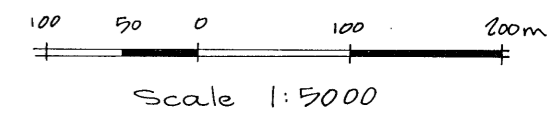
Sample	ppb	oz/t
24053	4900	0.149
054	40	
055	5	
056	1250	0.027
057	30	
058	5	
059	5	
060	1050	0.057
061	4250	0.156
062	5100	0.137
068	410	
069	25	
070	5	
071	35	
067	3050	0.088
098	3310	0.110

TRENCH 46

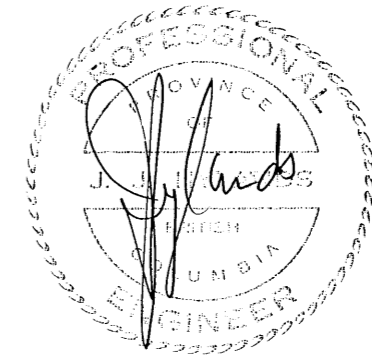
Sample	From in metres	To in metres	AU PPB	AU oz/t
24063	0.0	0.9	35	
064	0.9	1.7	100,000	5.914
065	1.7	2.9	800	
066	2.9	4.1	350	
067	4.1	5.3	100	

- EXPLANATION ~**
- x . Rock sample: number and location
 - 097 . Soil sample with ppm Gold
 - ~ . Contact, assumed
 - /- . Fault
 - . General attitude of bedding
 - . Legal corner post
 - ┌ . Claim boundaries
 - - - . Assumed contact
 - x T . Soil gold anomaly

NOTE: Geology by: P. Taylor 1981
Summarized by: J.J. Hylands 1990



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 GEOLOGICAL BRANCH
 ASSESSMENT REPORT
PART 4 OF 4



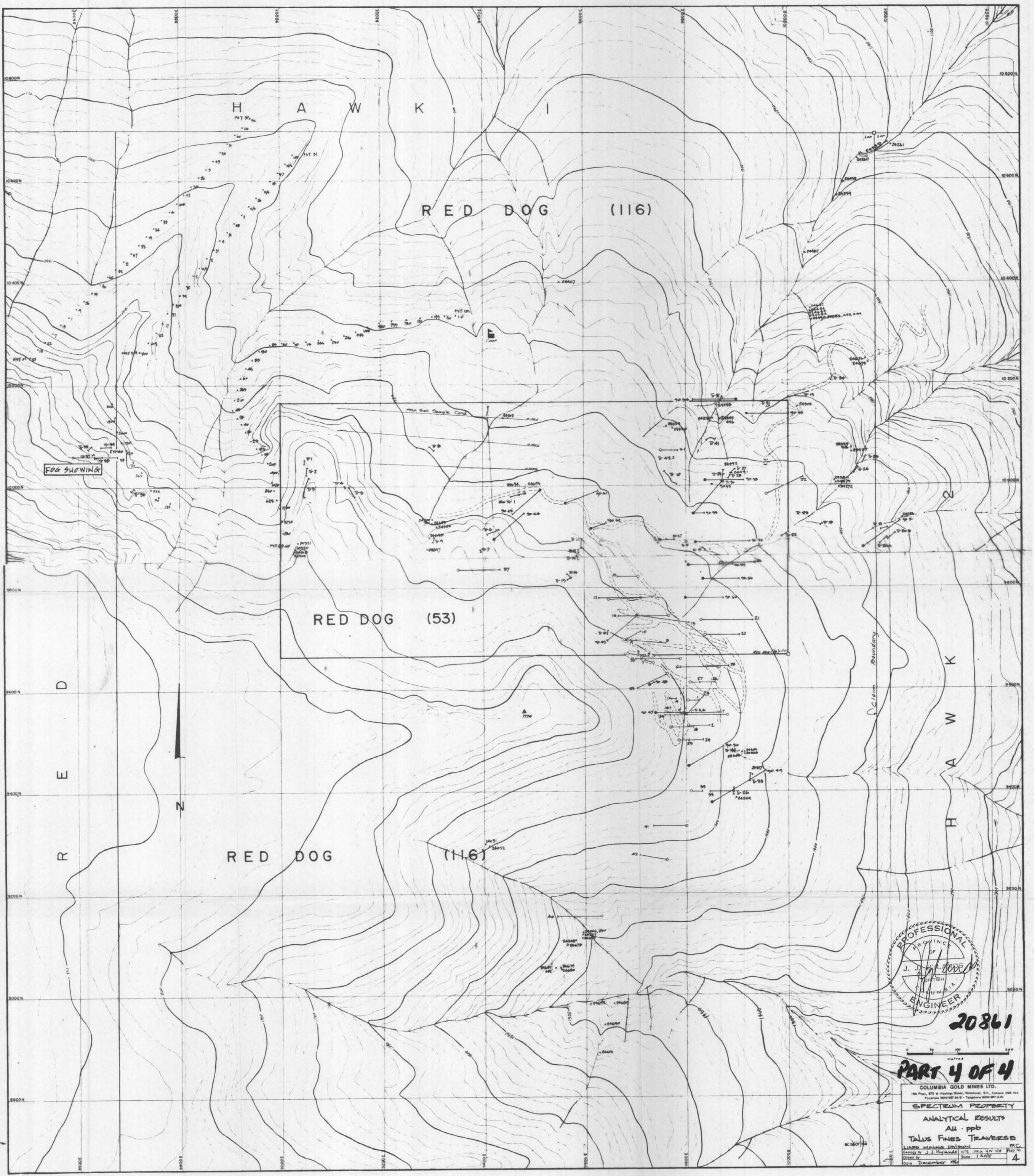
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 15th Floor, 675 W. Hastings Street, Vancouver, B.C., Canada V6B 1N2
 Facsimile (604) 687-2419 - Telephone (604) 687-4351

SPECTRUM PROPERTY

G. R. SHOWING
SAMPLE LOCATIONS

LIARD MINING DIVISION P.C.

Geology by: Noted above	NTS: 104a/gw, 10E	Plate No.
Drawn by: Y. Hutchings	Scale: 1:5000	
Date: November 1990		3



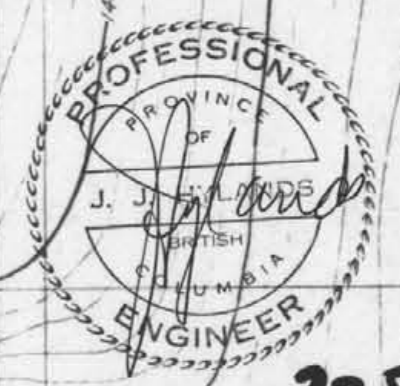
FOG SHOWING

RED DOG (53)

RED DOG (116)

RED DOG

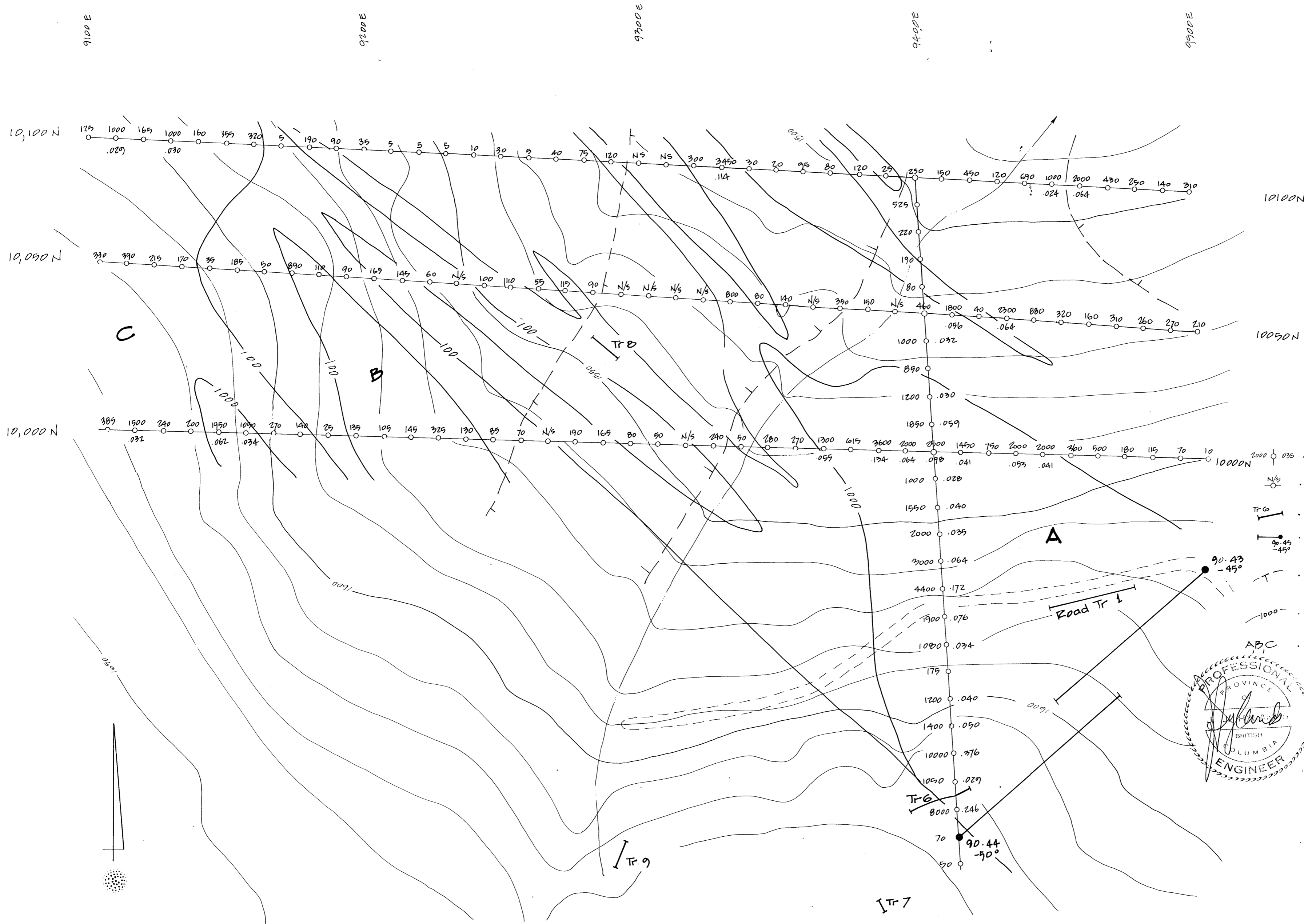
(116)



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PART 4 OF 4

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 186 Four, 675 W. Hastings Street, Vancouver, B.C., Canada V6B 1W2
 Telephone: 683-8811
 SPECTRUM PROPERTY
 ANALYTICAL RESULTS
 Au - ppb
 TALUS FINES TRAVERSE
 Group by J. J. Luds
 Date: December 1988



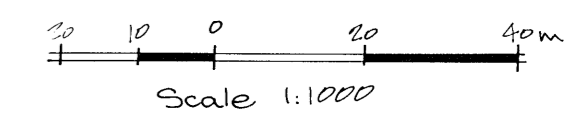
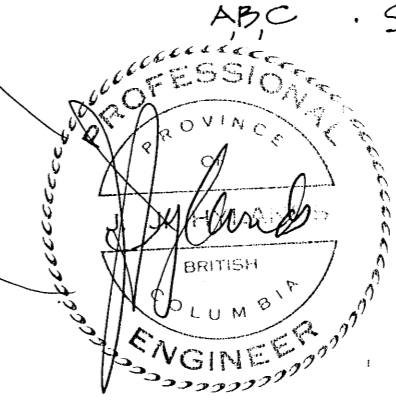
**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

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EXPLANATION ~

- 2000 0.035 • Sample location; 2000 ppb Au, 0.035 oz/t Au
- N/S • No sample; basalt overburden or boulders thicker than 1.5 metres.
- Tr 10 • Trench
- 90.45 -45° • Diamond Drill Hole 1990
- - - • Approximate limit of Edziza basalt overburden
- 1000- • 100 ppb Au contour
- ABC • Soil Au anomalies

PART 4 OF 4

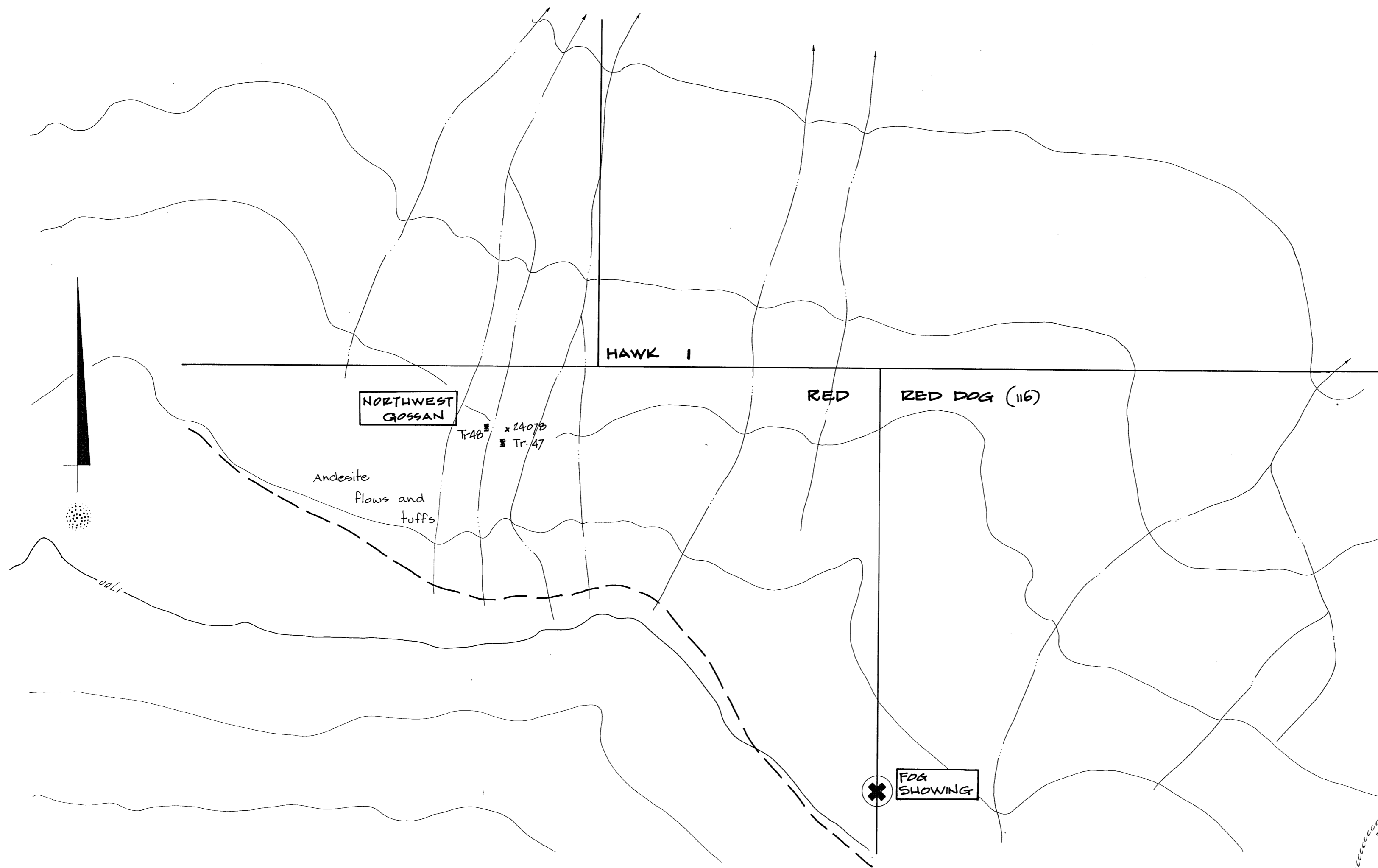


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SPECTRUM PROPERTY

**DETAILED
SOIL SAMPLE GRID**

LIAED MINING DIVISION		B.C.
Geology by:	NIS: 104a/9W/10E	Plate No
Drawn by V. Hutchings	Scale: 1:1000	5
Date November 1990		



TRENCH 47 RESULTS

Sample	from in metres	to in metres	Au ppb	Au oz/t
24072	0	1.7	5	
073	1.7	3.2	5	
074	3.2	4.7	5	
075	4.7	5.9	5	

TRENCH 48 RESULTS

Sample	from in metres	to in metres	Au ppb	Au oz/t
24076	0	2.4	10	
077	2.4	4.9	5	
078	0	1.8	5	

SAMPLE RESULTS

24078 from 0m to 1.8m 5ppb Au

EXPLANATION ~

- x . Rock sample: number and location
- Contact, assumed. (Location approximate)

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

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Scale 1:5000



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SPECTRUM PROPERTY

**NORTHWEST GOSSAN
SAMPLE LOCATIONS**

LIARD MINING DIVISION		B.C.
Geology by:	NTS: 104G/qw, 10E	Plate No.
Drawn by: Y. Hutchings	Scale: 1:5000	6
Date: November 1990		

SW

NE

TRENCH 7
Projected 7m NW
.093 oz/t Au / 3m
.060 oz/t Au / 4.7m

DDH 90.44
Projected 7m NW
Angle -90°

TRENCH 6 (EAST END)
.694 oz/t Au / 3m (east end)
.125 oz/t Au / 19m

ROAD TRENCH 1
Projected 7m - 23m SE

DDH 90.43
Projected 7m SE
Angle -49°

20861

LEGEND

LITHOLOGIES

UPPER TERTIARY - RECENT: EDZIZA

[BT] Basalt flows and dykes

UPPER TRIASSIC - CRETACEOUS ?

[AM] Quartz monzonite intrusive

UPPER TRIASSIC

[VL] Andesite to dacitic flows and tufts, undifferentiated overlying sediments

Flows:

AN - andesite DC - dacite RD - rhyodacite
FP - feldspar porphyry

Tuffs:

RT - rhyodacite AT - ash XL - crystal
SH - mugilite LT - lithic CT - cherty
DT - dacite PT - lapilli AX - mixed ash and crystal, etc

SEDIMENTS

SST - siltstone LST - limestone
SST - sandstone CHT - chert

MISCELLANEOUS

BX - breccia FT - fault zone --B- brecciated
OD - overburden NA - not assayed

MINERALIZATION ~

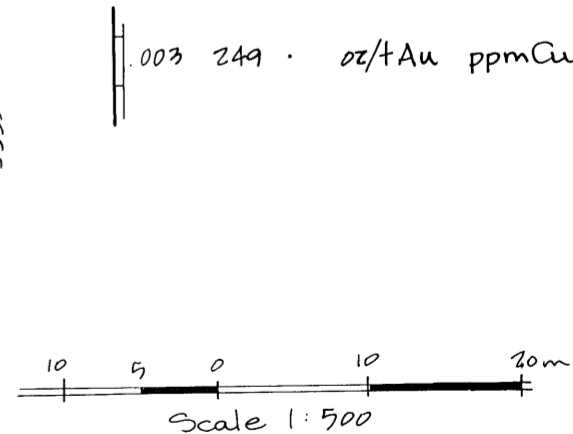
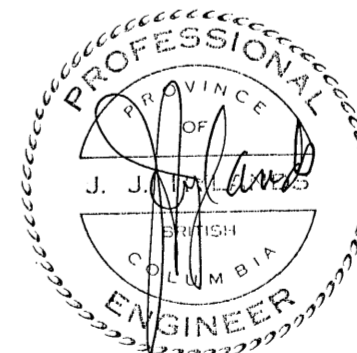
Ms - Massive sulphides q - quartz veins
VZ - Vein zone I - calcite veins
qc - quartz carbonate veins
py - pyrite as - arsenopyrite sp - sphalerite
cp - chalcopyrite po - pyrrhotite mg - magnetite
Fyrite noted if >5% other minerals noted if >1%

ALTERATION -

w - weathered s - silicification e - epidote
a - argillic c - chloritization k - secondary k-spar
p - propylitic b - secondary biotite CS - calc silicate

SYMBOLS ~

--- Contact --- Road
--- Fault --- Trench
--- Interbedded --- Diamond drill hole
--- Casing
--- No recovery
x Sample location and number



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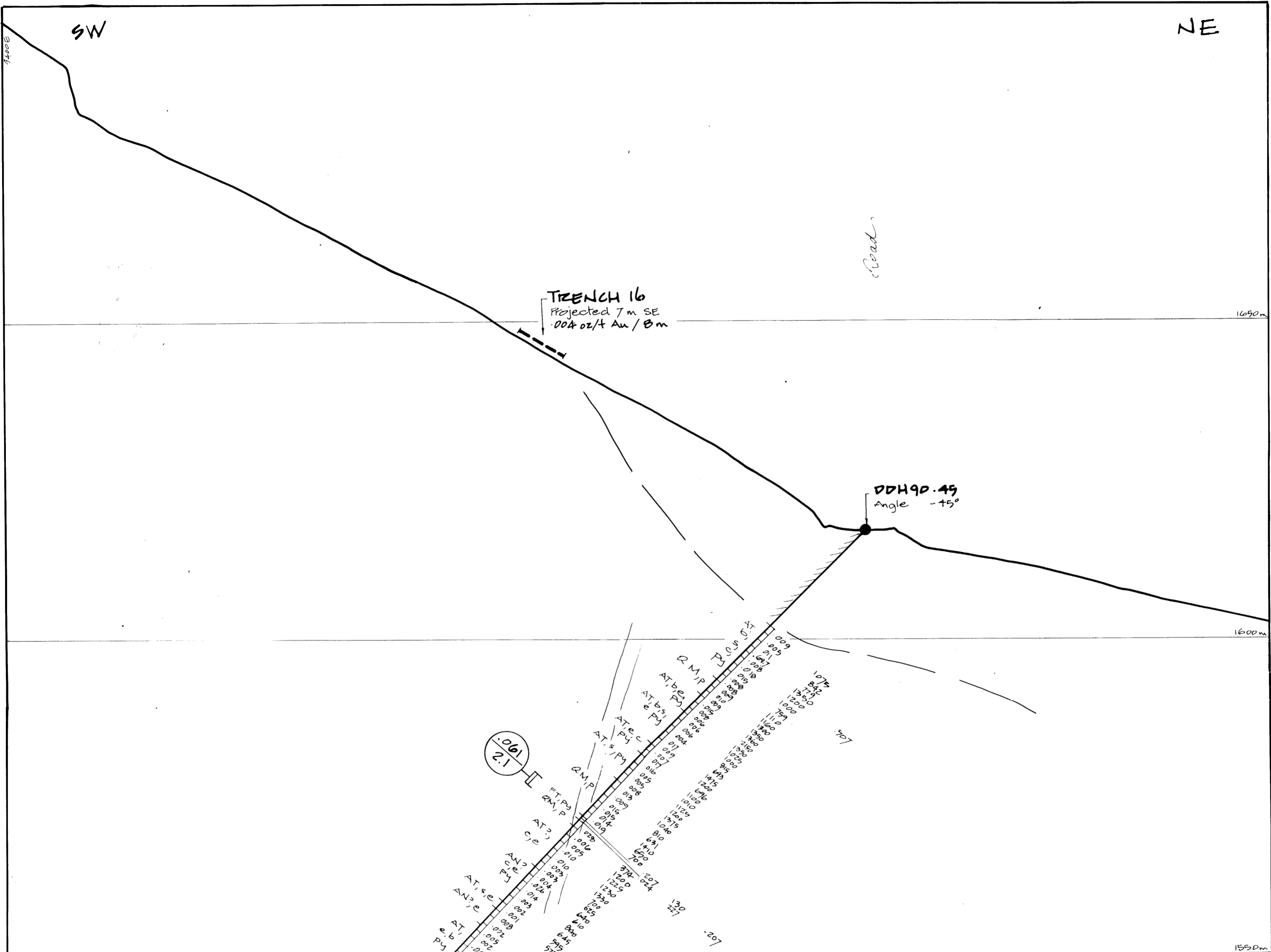
SPECTRUM PROPERTY

**CROSS SECTION 90-43
DDH 90.43, 44
TRENCH 6, 7
ROAD TRENCH 1
LOOKING 320°**

HAZARD MINING DIVISION B.C.

Geology by J.J. Hylands NTS: 104G/9W,10E Plate No
Drawn by V. Hutchings Scale: 1:500
Date November 90

7



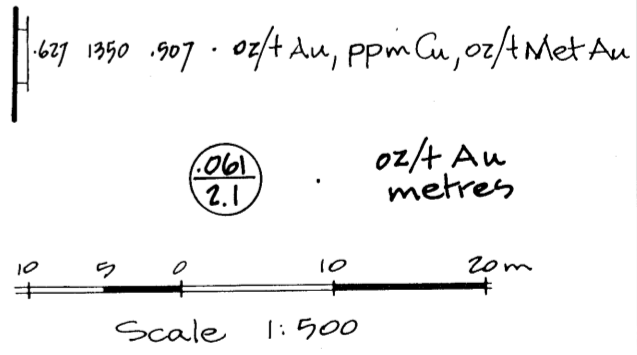
20,861
PART 4 OF 4

GEOLOGICAL BRANCH
ASSESSMENT REPORT

LEGEND

- LITHOLOGIES**
- UPPER TERTIARY - RECENT: EDZIZA
 - [BT] Basalt flows and dykes
 - UPPER TRIASSIC - CRETACEOUS ?
 - [RM] Quartz monzonite intrusive
 - UPPER TRIASSIC
 - [VL] Andesite to dacitic flows and tuffs, undifferentiated overlying sediments
- Flows:**
- AN - andesite DC - dacite RD - rhyodacite
 - FP - feldspar porphyry
- Tuffs:**
- RT - rhyodacite AT - ash XL - crystal
 - RH - rhyolite LT - lithic CT - cherty
 - DT - dacite PT - lapilli AX - mixed ash and crystal, etc
- SEDIMENTS**
- SST - siltstone LST - limestone
 - SST - sandstone CHT - chert
- MISCELLANEOUS**
- BX - breccia FT - fault zone --B- - brecciated
 - OO - overburden NA - not assayed

- MINERALIZATION ~**
- MS - Massive sulphides q - quartz veins
 - VZ - Vein zone l - calcite veins
 - qs - quartz carbonate veins
 - py - pyrite as - arsenopyrite sp - sphalerite
 - cp - chalcopyrite po - pyrrhotite mg - magnetite
 - Pyrite noted if >5% other minerals noted if >1%
- ALTERATION ~**
- w - weathered s - silicification e - epidote
 - a - argillic c - chloritization k - secondary k-spar
 - p - propylitic b - secondary biotite CS - calc silicate
- SYMBOLS ~**
- Contact
 - Fault
 - Interbedded
 - Road
 - Trench
 - Diamond drill hole
 - Casing
 - No recovery
 - * Sample location and number



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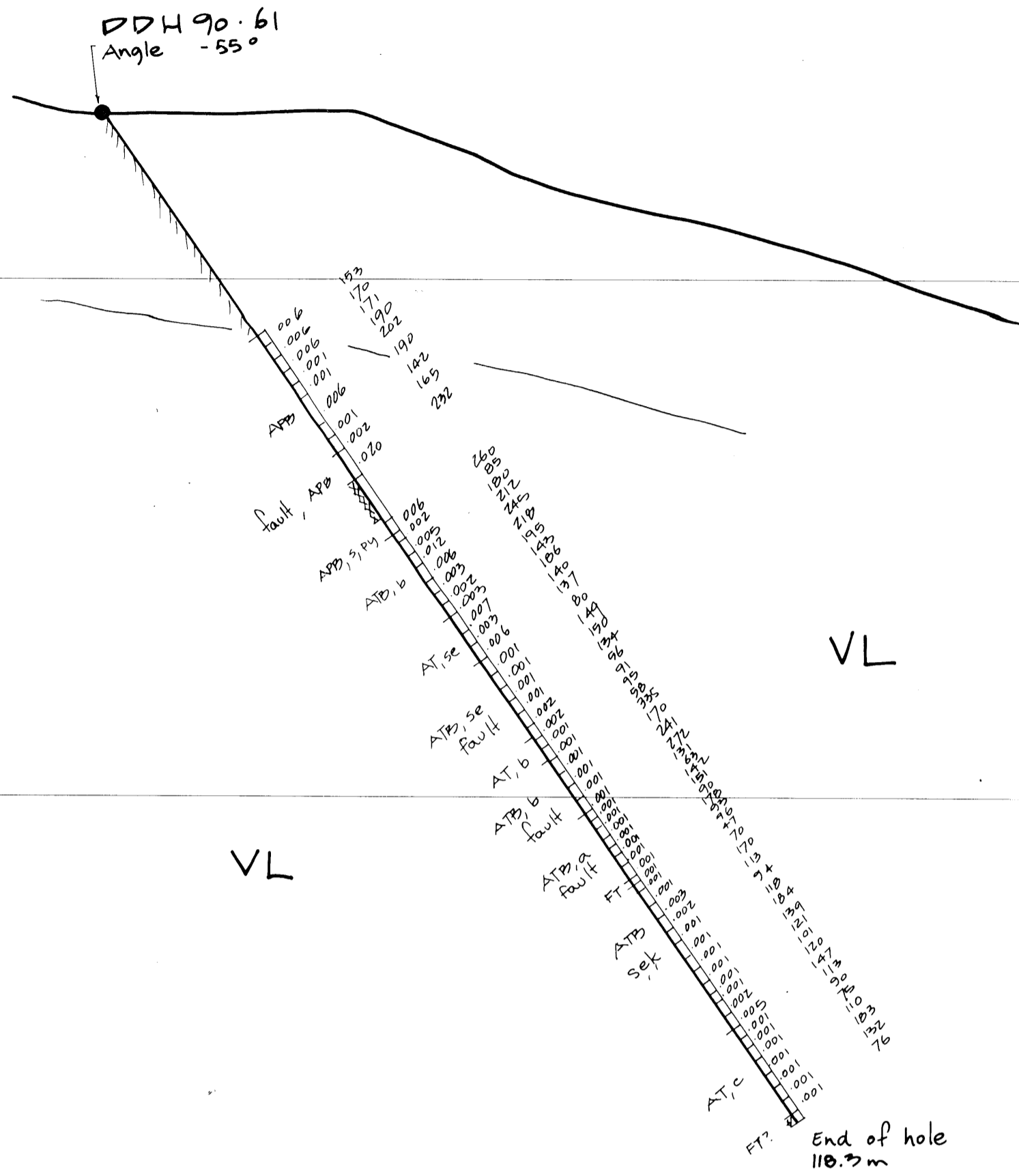
SPECTRUM PROPERTY

CROSS SECTION 90-45
DDH 90.45
TRENCH 16
LOOKING 320°

LIAZED MINING DIVISION P.C.
 Geology by: JJ Hylands NTS: 1049/9W, 10E Plate No.
 Drawn by: V. Hurewings Scale: 1:500
 Date: Nov. 1990

SW

NE



GEOLOGICAL BRANCH
ASSESSMENT REPORT

20,861

LEGEND

PART 4 OF 4

LITHOLOGIES

UPPER TERTIARY - RECENT: EDZIZA

BT Basalt flows and dykes

UPPER TRIASSIC - CRETACEOUS ?

QM Quartz monzonite intrusive

UPPER TRIASSIC

VL Andesite to dacitic flows and tuffs, undifferentiated overlying sediments

Flows:

AN. andesite DC. dacite RD. rhyodacite
FP. feldspar porphyry

Tuffs:

RT. rhyodacite AT. ash XL. crystal
RH. rhyolite LT. lithic CT. cherty
DT. dacite PT. lapilli AX. mixed ash and crystal, etc.

SEDIMENTS

SLT. siltstone LST. limestone
SST. sandstone CHT. chert

MISCELLANEOUS

BX. breccia FT. fault zone --P. brecciated
OP. overburden NA. not assayed

MINERALIZATION ~

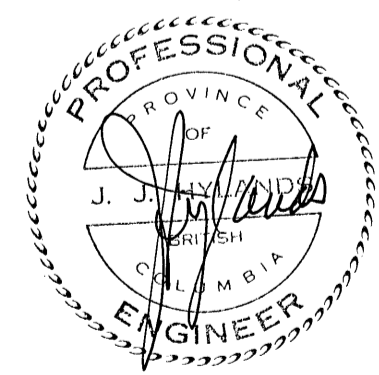
Mz. Massive sulphides q. quartz veins
VZ. Vein zone l. calcite veins
qf. quartz carbonate veins
py. pyrite as. arsenopyrite sp. sphalerite
cp. chalcopyrite po. pyrrhotite mg. magnetite
Pyrite noted if >5% Other minerals noted if >1%

ALTERATION ~

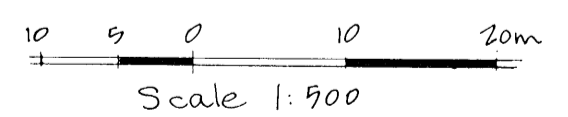
w. weathered s. silicification e. epidote
a. argillic c. chloritization k. secondary k-spar
p. propylitic b. secondary botite CS. calc. silicate

SYMBOLS ~

--- Contact --- Road --- Casing
--- Fault --- Trench --- No recovery
--- Interbedded --- Diamond drill hole * Sample location and number



001 335 02/4 Au ppm Cu



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SPECTRUM PROPERTY

CROSS SECTION 90-61

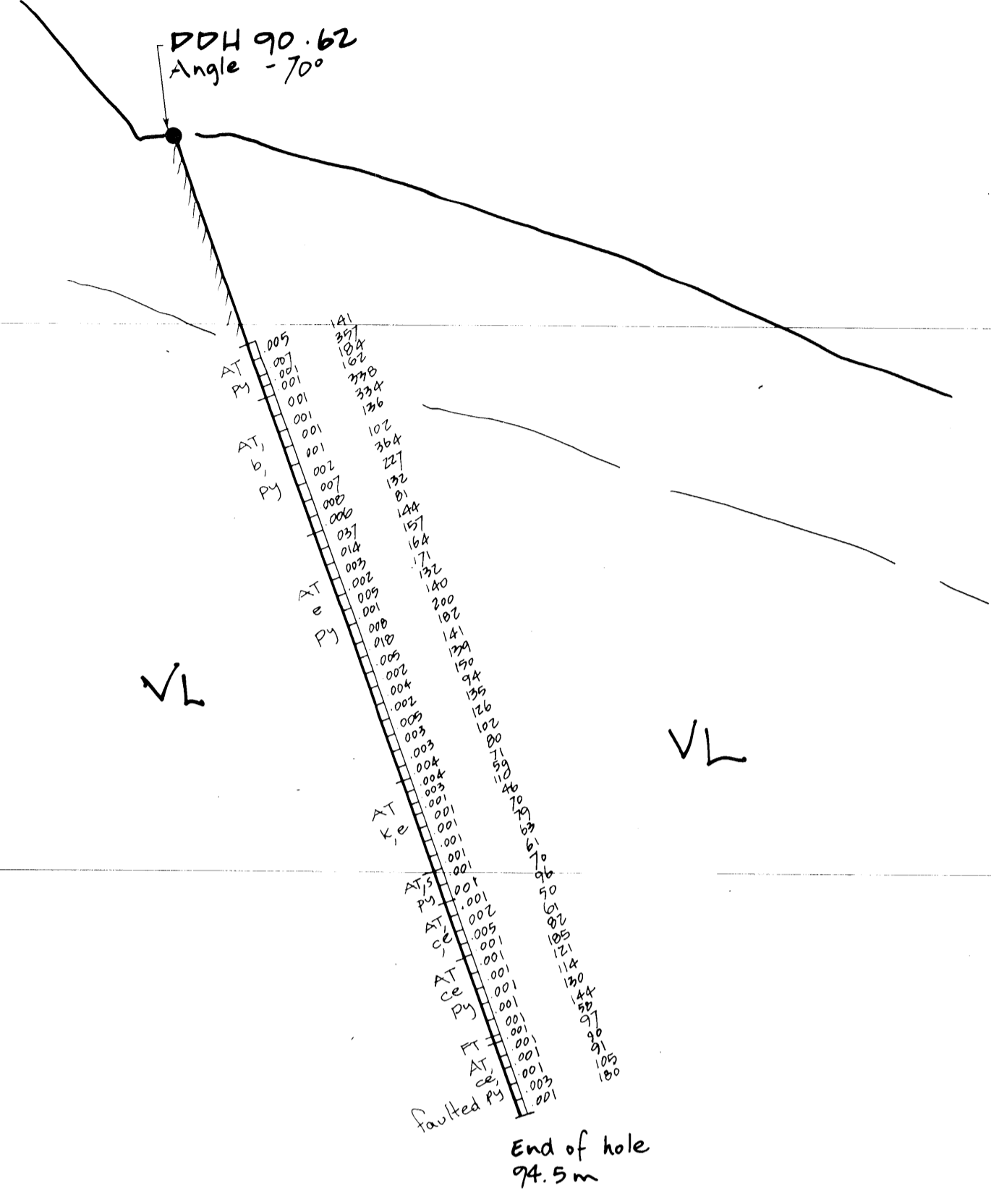
DDH 90.61

LOOKING 340°

LIAED MINING DIVISION P.S.C.
Geology by: J. J. Hylands NTS: 104G/9w, 10E Plate No.
Drawn by: Y. Hutchings Scale: 1:500
Date: Nov. 1990 9

SW

NE



GEOLOGICAL BRANCH
ASSESSMENT REPORT

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LEGEND

LITHOLOGIES

- UPPER TERTIARY - RECENT: EDZIZA**
- [BT]** Basalt flows and dykes
- UPPER TRIASSIC - CRETACEOUS ?**
- [RM]** Quartz monzonite intrusive
- UPPER TRIASSIC**
- [VL]** Andesite to dacitic flows and tuffs, undifferentiated overlying sediments
- Flows:**
AN - andesite DC - dacite RD - rhyodacite
FP - feldspar porphyry
- Tuffs:**
RT - rhyodacite AT - ash XL - crystal
RH - rhyolite LT - lithic CT - cherty
DT - dacite FT - lapilli AX - mixed ash and crystal, etc
- SEDIMENTS**
SLT - siltstone LST - limestone
SST - sandstone CHT - chert
- MISCELLANEOUS**
BX - breccia FT - fault zone --B- brecciated
OB - overburden NA - not assayed

MINERALIZATION ~

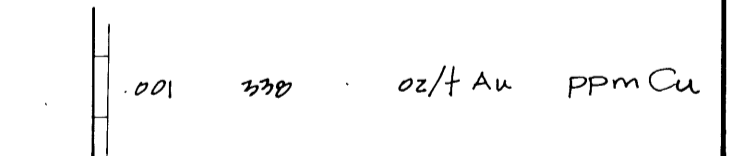
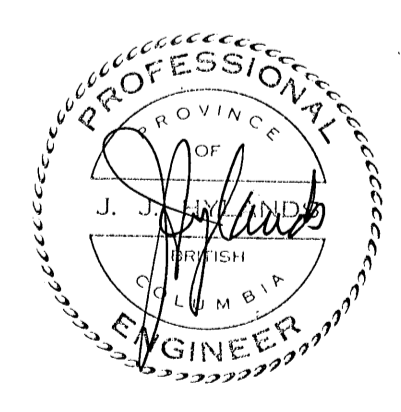
- Ms - Massive sulphides q - quartz veins
VZ - Vein zone l - calcite veins
qc - quartz carbonate veins
py - pyrite as - arsenopyrite sp - sphalerite
cp - chalcopyrite po - pyrrhotite mg - magnetite
Fyrite noted if >5% other minerals noted if >1%

ALTERATION ~

- w - weathered s - silicification e - epidote
a - argillic c - chloritization k - secondary k-spar
p - propylitic b - secondary biotite CS - calc silicate

SYMBOLS ~

- Contact == Road ↗ Casing
--- Fault Trench No recovery
--- Interbedded Diamond drill hole x Sample location and number



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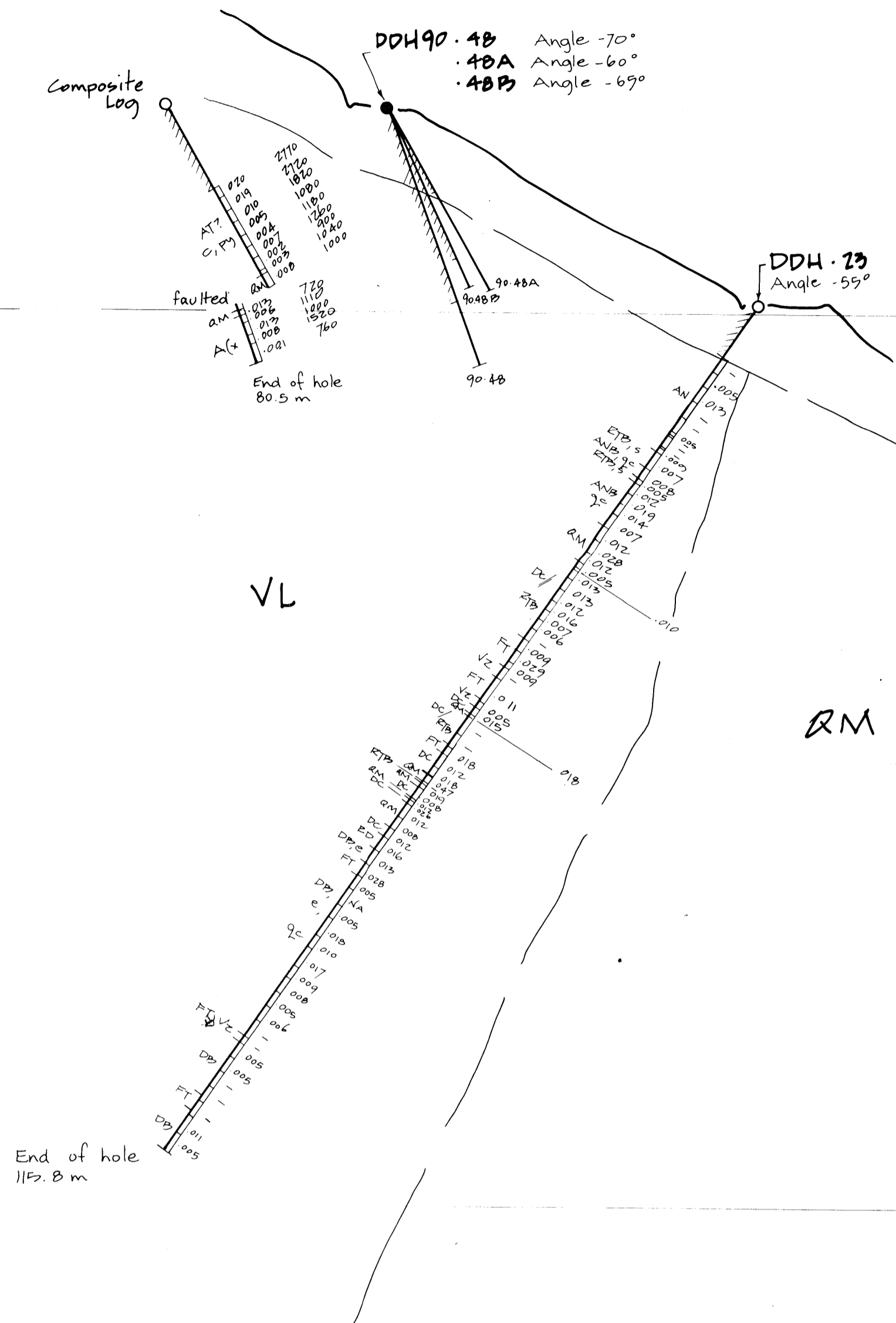
SPECTRUM PROPERTY

CROSS SECTION 90-62
DDH 90.62
LOOKING 70°

LIARD MINING DIVISION B.C.
Geology by: J. J. Hylands NTS: 104G/9W, 10E Plate No.
Drawn by: Y. Hutzinger Scale: 1:500
Date: Nov 1990 10

SW

NE



GEOLOGICAL BRANCH
 ASSESSMENT REPORT

20,361

PART 4 OF 4

LEGEND

LITHOLOGIES

UPPER TERTIARY - RECENT: EDZIZA

BT Basalt flows and dykes

UPPER TRIASSIC - CRETACEOUS ?

RM quartz monzonite intrusive

UPPER TRIASSIC

VL Andesite to dacitic flows and tuffs, undifferentiated overlying sediments

Flows:

AN andesite DC dacite RD rhyodacite
 FP feldspar porphyry

Tuffs:

RT rhyodacite AT ash XL crystal
 RH rhyolite LT lithic CT cherty
 DT dacite PT lapilli AX mixed ash and crystal, etc

Sediments

SLT siltstone LST limestone
 SST sandstone CHT chert

Miscellaneous

BX breccia FT fault zone --B brecciated
 OB overburden NA not assayed

MINERALIZATION ~

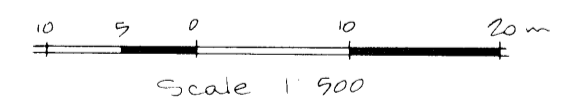
Ms Massive sulphides q quartz veins
 VZ Vein zone l calcite veins
 qc quartz carbonate veins
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 cp chalcopyrite po pyrrhotite mg magnetite
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ALTERATION ~

w weathered s silicification e epidote
 a argillic c chloritization k secondary k-spar
 P prepyritic b secondary biotite cs calc silicate

SYMBOLS ~

--- Contact == Road Casing
 --- Fault --- Trench No recovery
 --- Interbedded --- Diamond drill hole * Sample location and number



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SPECTRUM PROPERTY

CROSS SECTION 90-4B

DDH 90-4B, 4BA, 4BB

DDH 23
 LOOKING 330°

Liased Mining Division
 Geology by J. J. Hutchings NTS-104G/9w, 10E Plate No.
 Drawn by V. Hutchings Scale: 1:500
 Date Nov. 1990

11

SW

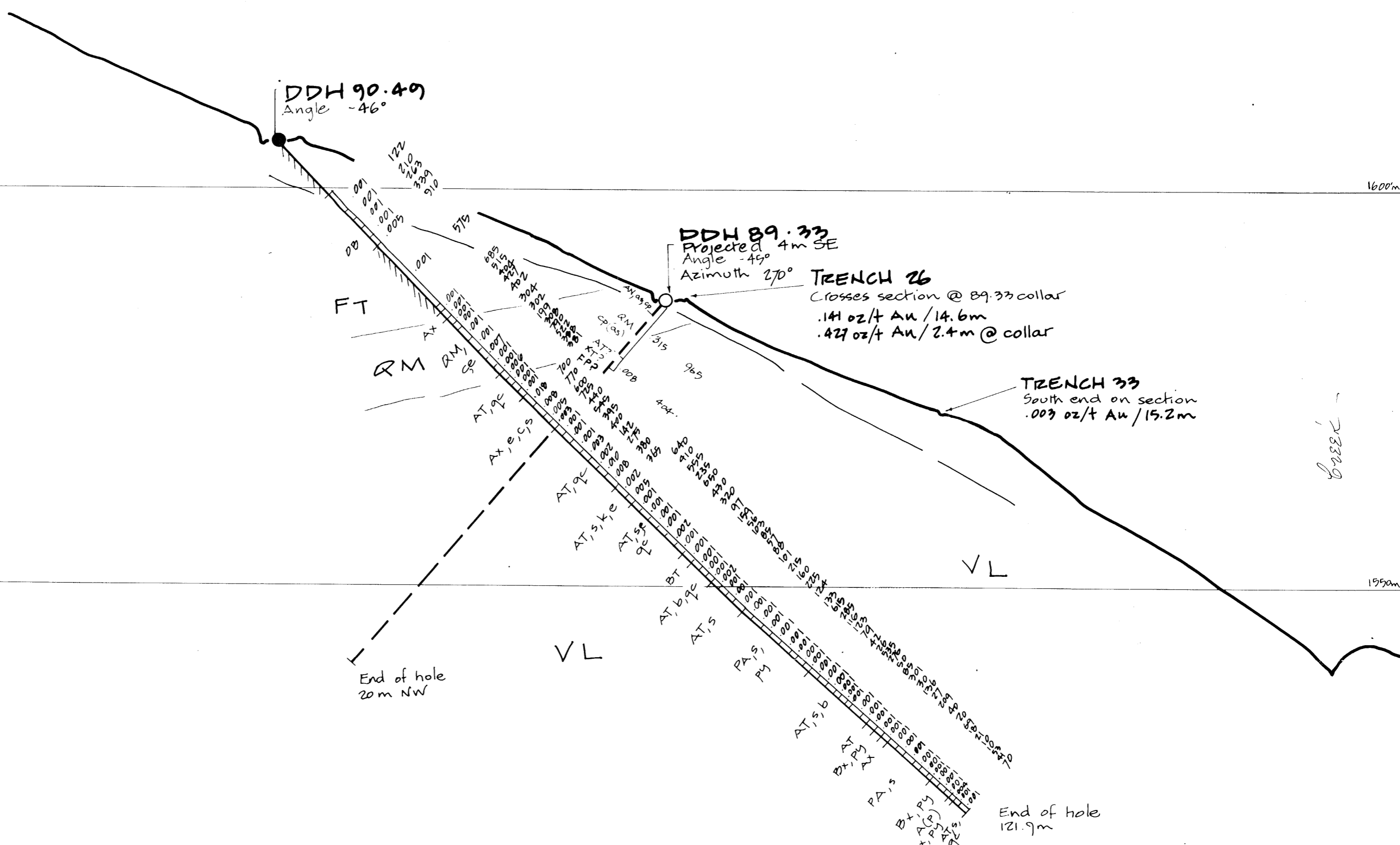
NE

9890 E

1600m

1950m

1950m



**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

20,861
PART 4 OF 4

LEGEND

- LITHOLOGIES**
- UPPER TERTIARY - RECENT EDZIZA**
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 [RM] Quartz monzonite intrusive
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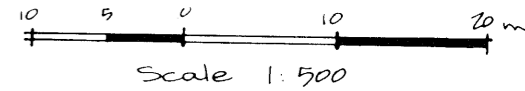
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- M_S - Massive sulphides q - quartz veins
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 QC - quartz carbonate veins
- PY - pyrite AS - arsenopyrite SP - sphalerite
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 a - argillic C - chloritization K - secondary k-spar
 P - propylitic B - secondary biferite CS - calc. silicate

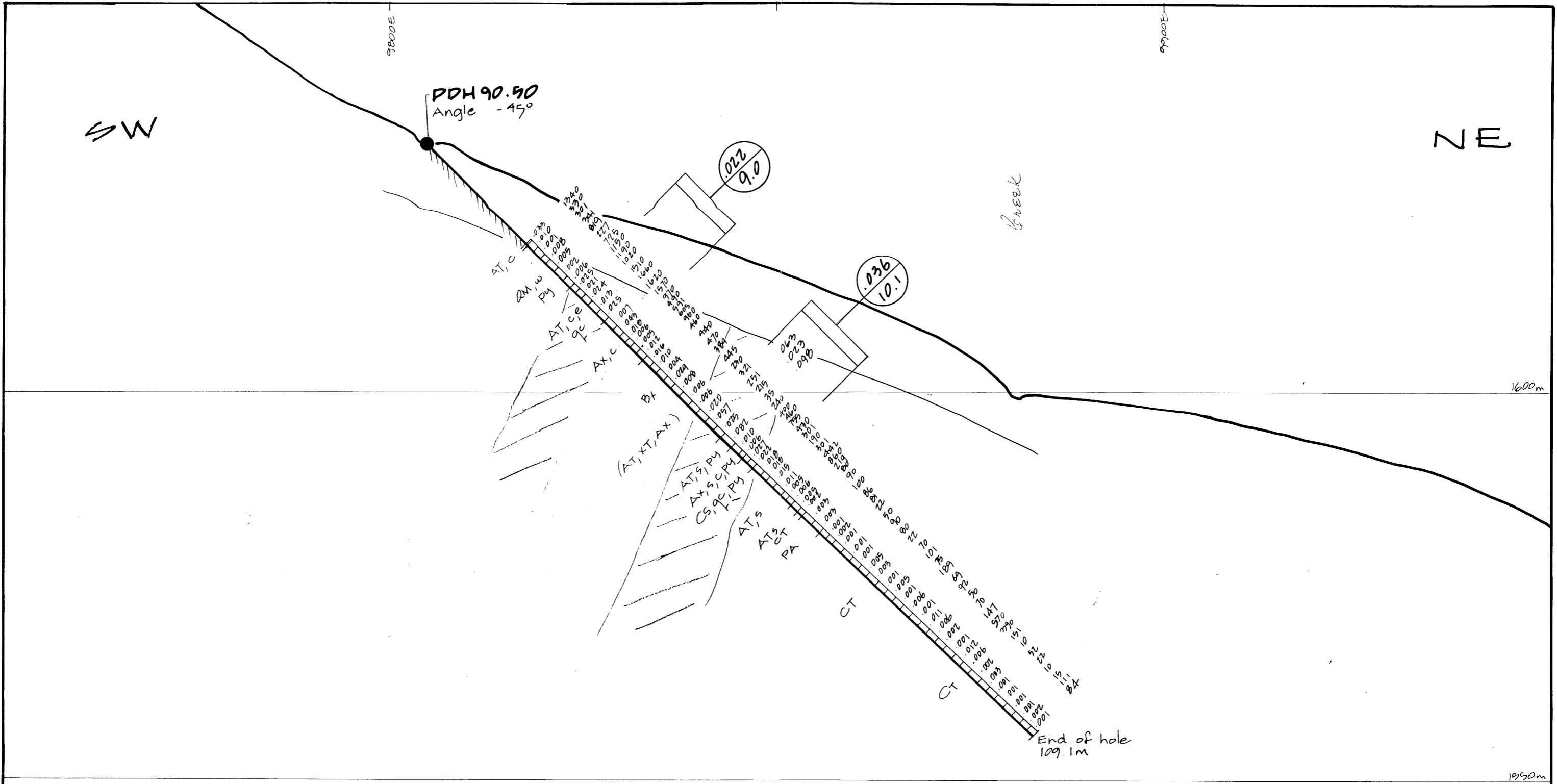
- SYMBOLS ~**
- Contact == Road [Casing] No recovery
 --- Fault [Trench] * Sample location and number
 - - - Interbedded [Diamond drill hole]



0.003 249 oz/t Au ppm Cu



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SPECTRUM PROPERTY		
CROSS SECTION 90.49		
DDH 89.33, DDH 90.49		
TRENCH 26, 33		
LOOKING 330°		
LIARD MINING DIVISION B.C.		
Geology by: J. J. Hylands	NTS: 1:249/gw, 1:10E	Plate No
Drawn by: Y. Hutchings	Scale: 1:500	12
Date: November 90		



**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

**20,861
PART 4 OF 4**

LEGEND

LITHOLOGIES

- UPPER TERTIARY - RECENT: EDZIZA**
 [BT] Basalt, flows and dykes
- UPPER TRIASSIC - CRETACEOUS ?**
 [AM] Quartz monzonite intrusive
- UPPER TRIASSIC**
 [VL] Andesite to dacitic flows and tuffs, undifferentiated overlying sediments
- Flows:**
 AN - andesite DC - dacite RD - rhyodacite
 FP - feldspar porphyry
- Tuffs:**
 RT - rhyodacite AT - ash XL - crystal
 RH - rhyolite LT - lithic CT - cherty
 DT - dacite PT - lapilli AX - mixed ash and crystal, etc
- SEDIMENTS**
 SLT - siltstone LST - limestone
 SST - sandstone CHT - chert
- MISCELLANEOUS**
 BX - breccia FT - fault zone --B - brecciated
 OD - overburden NA - not assayed

MINERALIZATION ~

- Ms - massive sulphides q - quartz veins
 VZ - vein zone l - calcite veins
 qc - quartz carbonate veins
- py - pyrite as - arsenopyrite sp - sphalerite
 cp - chalcopyrite po - pyrrhotite mg - magnetite
- Pyrite noted if >5% other minerals noted if >1%

ALTERATION ~

- w - weathered s - silicification e - epidote
 a - argillic c - chloritization k - secondary k-spar
 p - propylitic b - secondary biotite CS - calc silicate

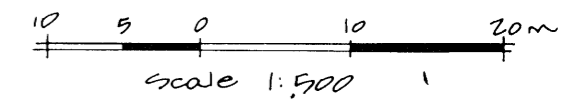
SYMBOLS ~

- Contact == Road [] Casing
 ~~~ Fault      [ ] Trench      [ ] No recovery  
 - - - Interbedded      [ ] diamond drill hole      x Sample location and number



0.002 35 .098 .02/t Au, ppm Cu, oz/t Met Au

0.36 oz/t Au  
10.1 metres



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**SPECTRUM PROPERTY**

**CROSS SECTION 90-50**

**DDH 90.50  
LOOKING 330°**

LIARD MINING DIVISION P.C.

|                           |                   |           |
|---------------------------|-------------------|-----------|
| Geology by: J. J. Hulands | NTS: 104G/9W, 10E | Plate No. |
| Drawn by: Y. Hutchings    | Scale: 1:500      | 13        |
| Date: November 90         |                   |           |

SW

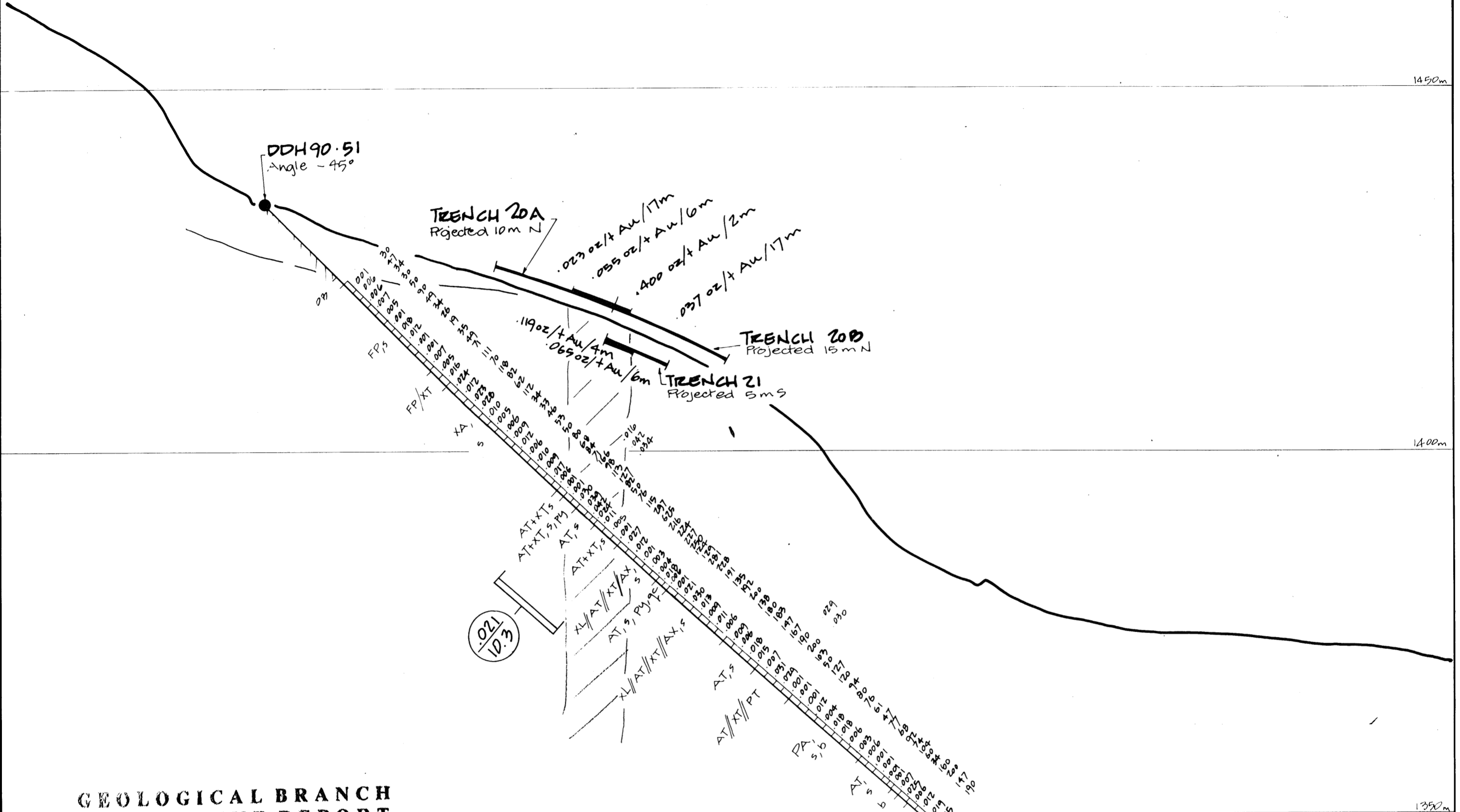
NE

10200E

1450m

1400m

1350m



**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**20,861**

**PART 4 OF 4**

**LEGEND**

**LITHOLOGIES**

- UPPER TERTIARY - RECENT: EDZIZA
  - [BT] Basalt, flows and dykes
- UPPER TRIASSIC - CRETACEOUS ?
  - [QM] Quartz monzonite intrusive
- UPPER TRIASSIC
  - [VL] Andesite to dacitic flows and tuffs, undifferentiated overlying sediments
- Flows:
  - AN - andesite DC - dacite RD - rhyodacite
  - FP - feldspar porphyry
- Tuffs:
  - RT - rhyodacite AT - ash XL - crystal
  - RH - rhyolite LT - lithic CT - cherty
  - DT - dacite PT - lapilli AX - mixed ash and crystal, etc
- SEDIMENTS
  - SILT - siltstone LST - limestone
  - SST - sandstone CHT - chert
- MISCELLANEOUS
  - PA - breccia FT - fault zone --P-- brecciated
  - OB - overburden NA - not assayed

**MINERALIZATION ~**

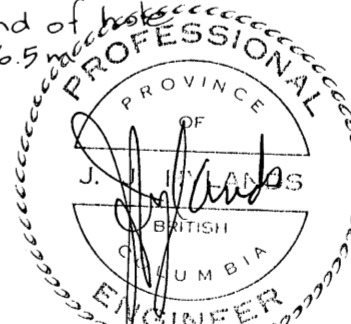
- Ms - Massive sulphides
- VZ - Vein zone
- qs - quartz carbonate veins
- py - pyrite as - arsenopyrite sp - sphalerite
- cp - chalcopyrite po - pyrrhotite mg - magnetite
- Pyrite noted if >5% other minerals noted if >1%

**ALTERATION ~**

- w - weathered
- a - argillic
- p - propylitic
- s - silicification
- c - chloritization
- b - secondary biotite
- e - epidote
- k - secondary k-spar
- cs - calc. silicate

**SYMBOLS ~**

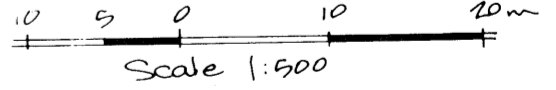
- == Road
- Contact
- Fault
- Interbedded
- Casing
- Trench
- Diamond drill hole
- No recovery
- Sample location and number



.039 113 .034 . oz/t Au, ppm Cu, oz/t Met Au

021/10.3

oz/t Au metres



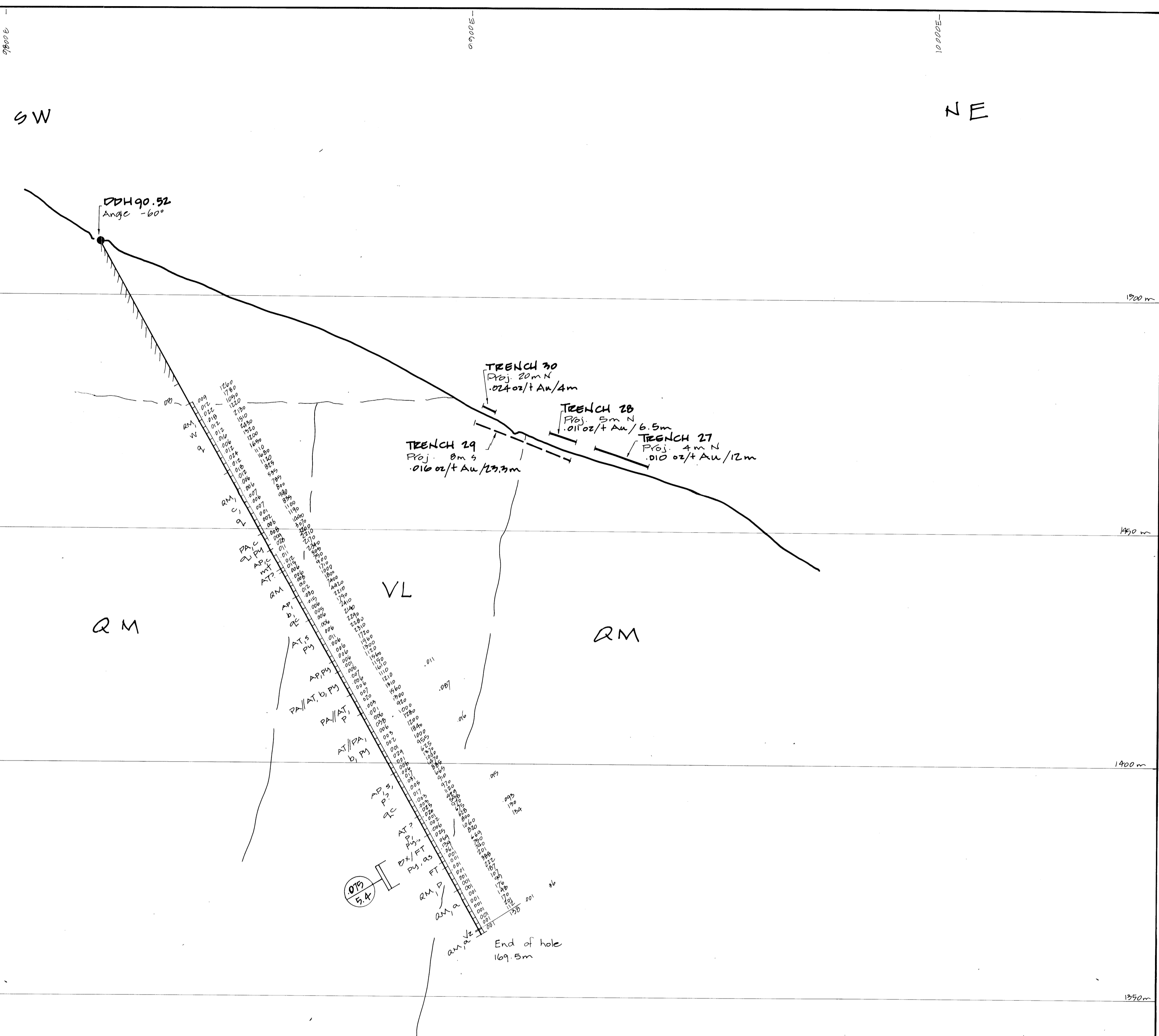
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**SPECTRUM PROPERTY**

**CROSS SECTION 90-51  
DDH 90.51  
TRENCH 20A, 20B, 21  
LOOKING 325°**

LIARD MINING DIVISION

|                          |                   |           |
|--------------------------|-------------------|-----------|
| Geology by J. J. Hylands | NTS: 104G/9W, 10E | Plate No. |
| Drawn by V. Hutchings    | Scale: 1:500      | 14        |
| Date November 90         |                   |           |



GEOLOGICAL BRANCH  
ASSESSMENT REPORT

20,861  
PART 4 OF 4

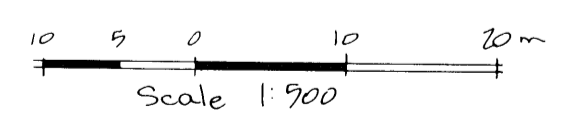
LEGEND

- LITHOLOGIES**
- UPPER TERTIARY - RECENT: EDZIZA**  
 [BT] Basalt flows and dykes
- UPPER TRIASSIC - CRETACEOUS ?**  
 [RM] Quartz monzonite intrusive
- UPPER TRIASSIC**  
 [VL] Andesite to dacitic flows and tufts, undifferentiated overlying sediments
- Flows:**  
 AN - andesite DC - dacite RD - rhyodacite  
 FP - feldspar porphyry
- Tuffs:**  
 RT - rhyodacite AT - ash XL - crystal  
 RH - rhyolite LT - lithic CT - cherty  
 DT - dacite FT - lapilli AX - mixed ash and crystal, etc
- SEDIMENTS**  
 SLT - siltstone LST - limestone  
 SST - sandstone CHT - chert
- MISCELLANEOUS**  
 BX - breccia FT - fault zone --B- brecciated  
 OD - overburden NA - not assayed

- MINERALIZATION**
- Ms - Massive sulphides q - quartz veins  
 VZ - Vein zone l - calcite veins  
 qs - quartz carbonate veins
- py - pyrite as - arsenopyrite sp - sphalerite  
 cp - chalcopyrite po - pyrrhotite mg - magnetite
- Pyrite noted if >5% Other minerals noted if >1%
- ALTERATION**
- w - weathered s - silicification e - epidote  
 a - argillic c - chloritization k - secondary k-spar  
 p - prepyllic b - secondary botite cs - calc. silicate
- SYMBOLS**
- Contact  
 --- Fault  
 --- Interbedded  
 --- Road  
 --- Trench  
 --- Diamond drill hole  
 --- Casing  
 --- No recovery  
 \* Sample location and number

0.069 1060 .099 oz/t Au, ppm Cu, oz/t Met Au

0.075 5.4 oz/t Au metres



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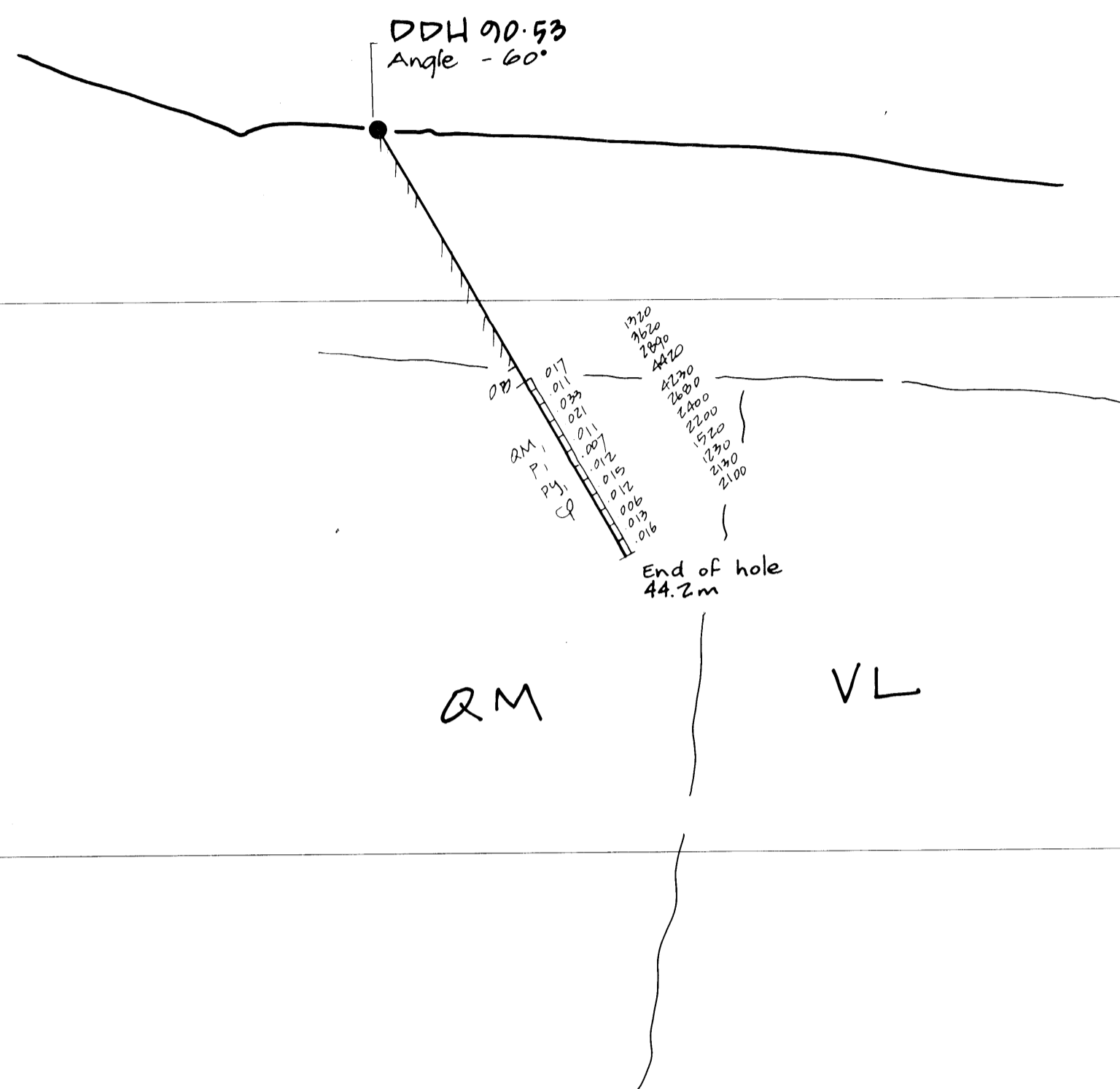
**SPECTRUM PROPERTY**

**CROSS SECTION 9052  
 DDH 90.52  
 TRENCH 27, 28, 29, 30  
 LOOKING 312°**

LIARD MINING DIVISION  
 Geology by: J. J. Hutchings NTS: 104 G/9W, 10E  
 Drawn by: Y. Hutchings Scale: 1:500  
 Date: Nov 1990

P.C.  
 15





GEOLOGICAL BRANCH  
ASSESSMENT REPORT

20,861

PART 4 OF 4

021 4420 02/4 Au ppm Cu

LEGEND

LITHOLOGIES

UPPER TERTIARY - RECENT: EDZIZA

BT Basalt flows and dykes

UPPER TRIASSIC - CRETACEOUS ?

QM Quartz monzonite intrusive

UPPER TRIASSIC

VL Andesite to dacitic flows and tuffs, undifferentiated overlying sediments

Flows:

AN andesite DC dacite RD rhyodacite  
FP feldspar porphyry

Tuffs:

RT rhyodacite AT ash XL crystal  
ET andesite LT lithic CT cherty  
DT dacite FT lapilli AX mixed ash and crystal, etc

Sediments:

SIT siltstone LST limestone  
SST sandstone CHT chert

Miscellaneous:

BX breccia FT fault zone --B brecciated  
OD overburden NA not assayed

MINERALIZATION ~

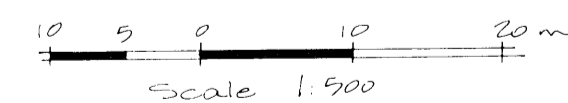
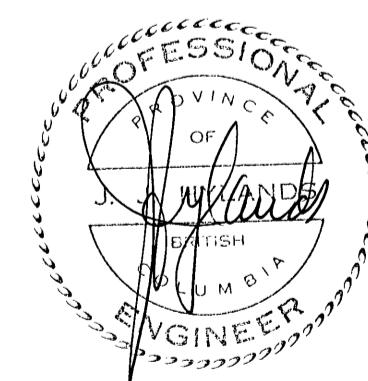
Ms Massive sulphides q quartz veins  
VZ Vein zone l calcite veins  
qs quartz carbonate veins  
py pyrite as arsenopyrite sp sphalerite  
cp chalcopyrite po pyrrhotite mg magnetite  
Pyrite noted if >5% other minerals noted if >1%

ALTERATION ~

w weathered s silicification e epidote  
a argillic c chloritization k secondary k-spar  
p propylitic b secondary biotite G calc silicate

SYMBOLS ~

--- Contact = Road  
--- Fault Trench  
--- Interbedded Diamond drill hole  
Casing  
No recovery  
Sample location and number



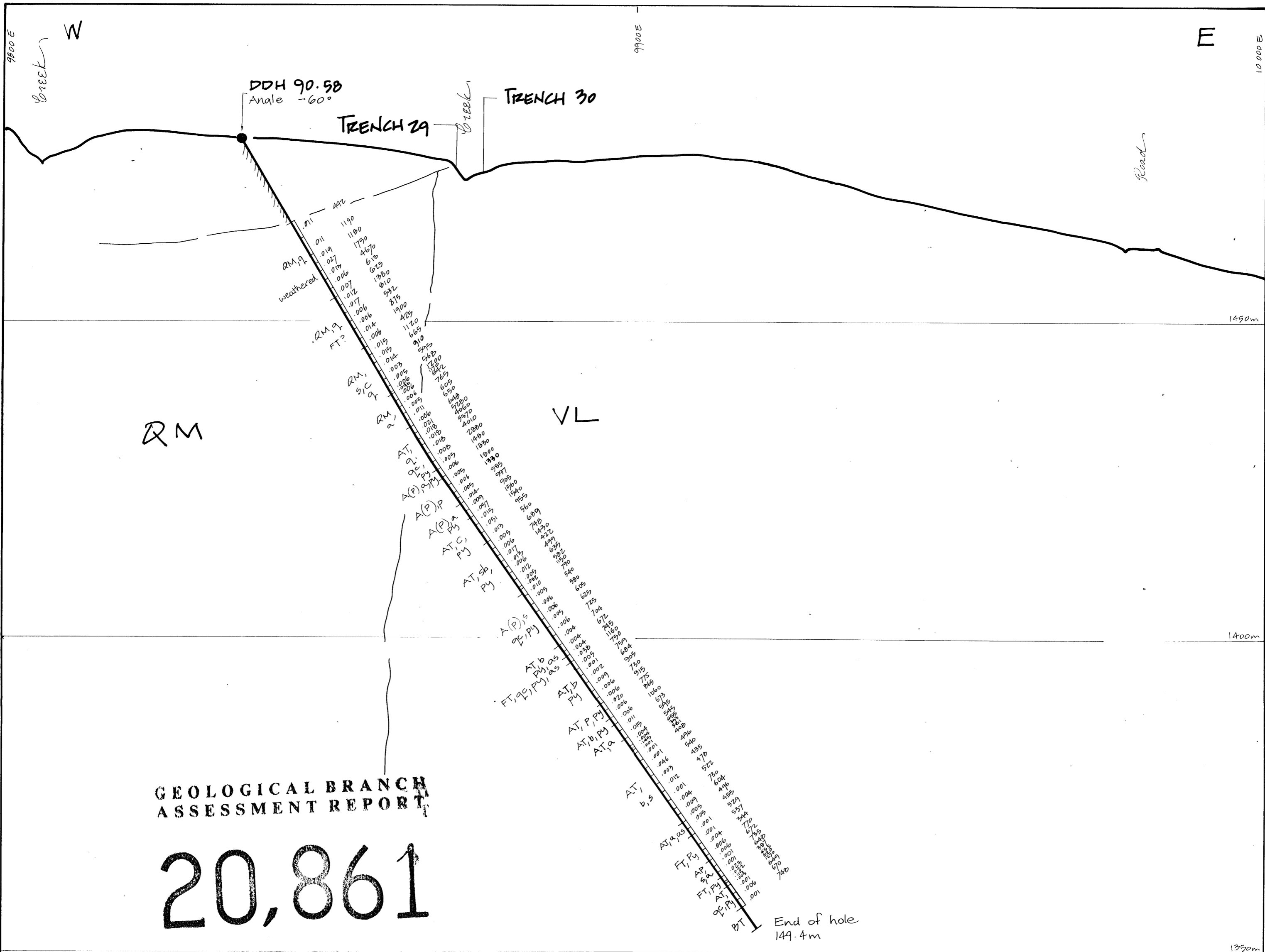
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SPECTRUM PROPERTY

CROSS SECTION 9990N  
DDH 90-53

LIARD MINING DIVISION B.C.  
Geology by: J. J. Hyland NTS: 1046 J.N.100 Plate No.  
Drawn by: J. Hutchings Scale: 1:500  
Date: November 1990

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GEOLOGICAL BRANCH  
ASSESSMENT REPORT

20,861

PART 4 OF 4

LEGEND

LITHOLOGIES

UPPER TERTIARY - RECENT EDZIZA

BT Basalt flows and dykes

UPPER TRIASSIC - CRETACEOUS ?

RM Quartz monzonite intrusive

UPPER TRIASSIC

VL Andesite to dacitic flows and tufts, undifferentiated overlying sediments

Flows:

AN andesite DC dacite RD rhyodacite  
FP feldspar porphyry

Tufts:

RT rhyodacite AT ash XL crystal  
RH myolite LT lithic CT cherty  
DT dacite PT lapilli AX mixed ash and crystal, etc

SEDIMENTS

SLT siltstone LST limestone  
SST sandstone CHT chert

MISCELLANEOUS

BX breccia FT fault zone --P brecciated  
OO overburden NA not assayed

MINERALIZATION ~

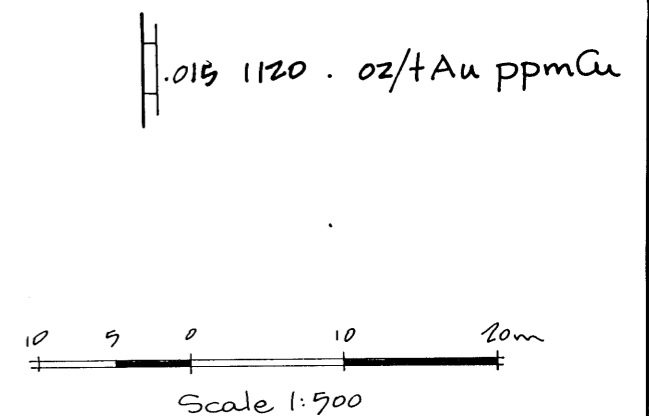
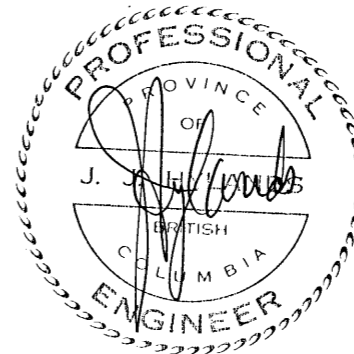
MS Massive sulphides q. quartz veins  
VZ Vein zone l. calcite veins  
qc quartz carbonate veins  
py pyrite as arsenopyrite sp sphalerite  
cp chalcopryite po pyrrothite mg magnetite  
Pyrite noted if >5% other minerals noted if >1%

ALTERATION ~

w. weathered s. silicification e. epidote  
a. argillic c. chloritization k. secondary k-spar  
p. prephyllitic b. secondary botite CS calc silicate

SYMBOLS ~

--- Contact --- Road --- Casing  
--- Fault --- Trench --- No recovery  
--- Interbedded --- Diamond drill hole \* Sample location and number



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SPECTRUM PROPERTY

CROSS SECTION 10010N  
DDH 90.58

LIARD MINING DIVISION P.C.

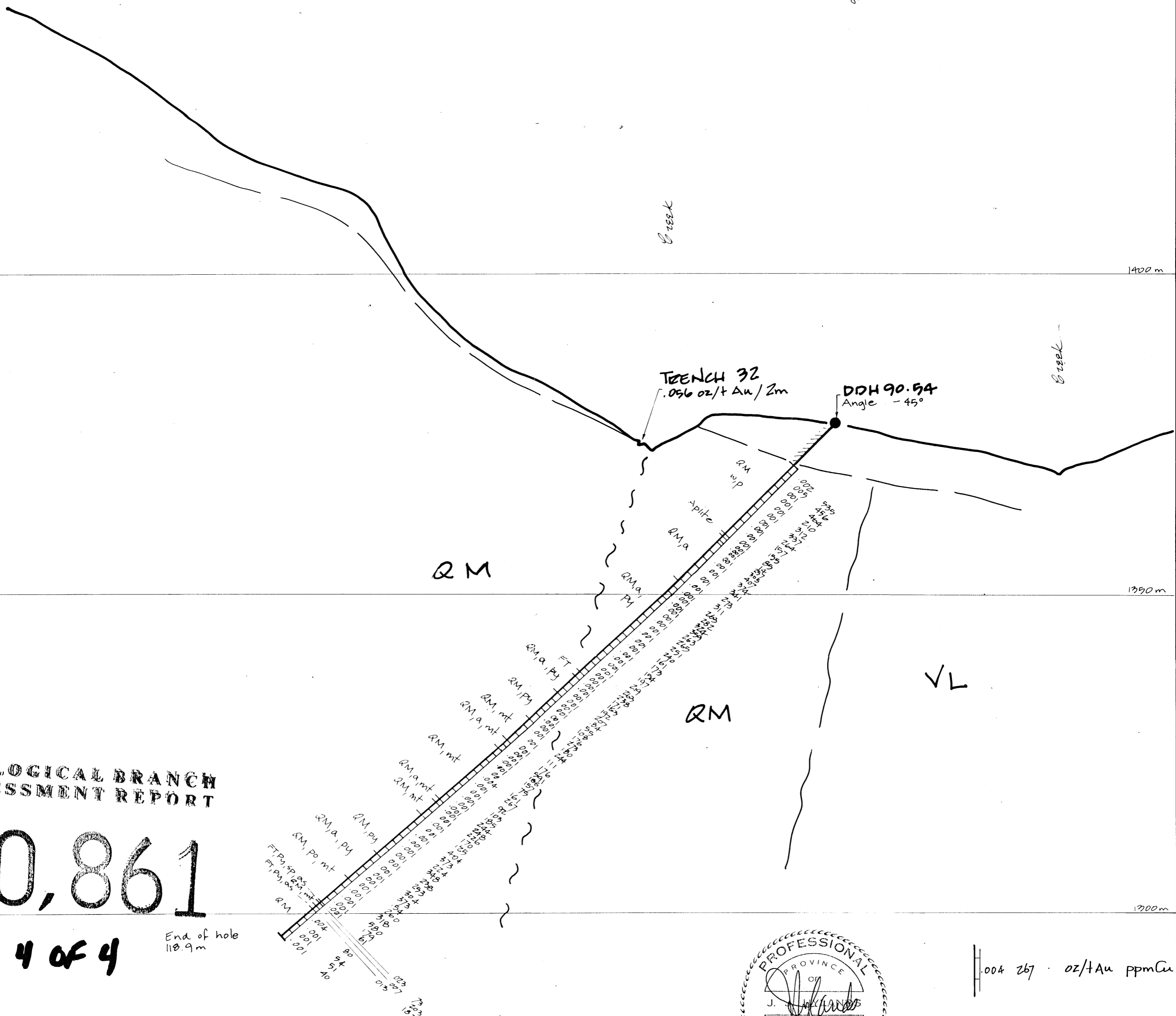
Geology by J.J. Hylands NTS: 104G/AW, 10E Plate No  
Drawn by V. Hutchings Scale: 1:500  
Date November 1990 17

W

E

9800

9900



**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**20,861**

**PART 4 OF 4**

End of hole  
118.9m

**LEGEND**

**LITHOLOGIES**

- UPPER TERTIARY - RECENT: EDZIZA
  - BT** Basalt, flows and dykes
- UPPER TRIASSIC - CRETACEOUS ?
  - QM** Quartz monzonite intrusive
- UPPER TRIASSIC
  - VL** Andesite to dacitic flows and tuffs, undifferentiated overlying sediments
- Flows:
  - AN - andesite
  - DC - dacite
  - RD - rhyodacite
  - FP - feldspar porphyry
- Tuffs:
  - RT - rhyodacite
  - AT - ash
  - XL - crystal
  - RH - rhyolite
  - LT - lithic
  - CT - cherty
  - DT - dacite
  - PT - lapilli
  - AX - mixed ash and crystal, etc
- SEDIMENTS
  - SILT - siltstone
  - LST - limestone
  - SST - sandstone
  - CHT - chert
- MISCELLANEOUS
  - BX - breccia
  - FT - fault zone
  - PP - brecciated
  - OD - overburden
  - NA - not assayed

**MINERALIZATION ~**

- MS - Massive sulphides
- VZ - Vein zone
- qz - quartz carbonate veins
- py - pyrite
- cp - chalcopyrite
- Pyrite noted if >5%
- q - quartz veins
- l - calcite veins
- sp - sphalerite
- mg - magnetite
- Other minerals noted if >1%

**ALTERATION ~**

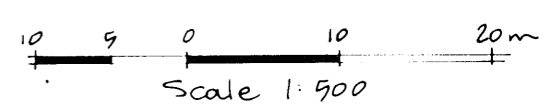
- w - weathered
- a - argillic
- p - prepyllitic
- s - silicification
- c - chloritization
- b - secondary biotite
- e - epidote
- k - secondary k-spar
- cs - calc. silicate

**SYMBOLS ~**

- Contact
- Fault
- Interbedded
- Road
- Trench
- Diamond drill hole
- Casing
- No recovery
- \* Sample location and number



004 267 oz/t Au ppm Cu



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**SPECTRUM PROPERTY**

**CROSS SECTION 10170N**

**DDH 90.54  
TRENCH 32**

LIAED MINING DIVISION P.J.C.  
Geology by: J.J. Hutchings NTS: 104 G/W, 10E Plate No.  
Drawn by: V. Hutchings Scale: 1:500  
Date: November 90

18

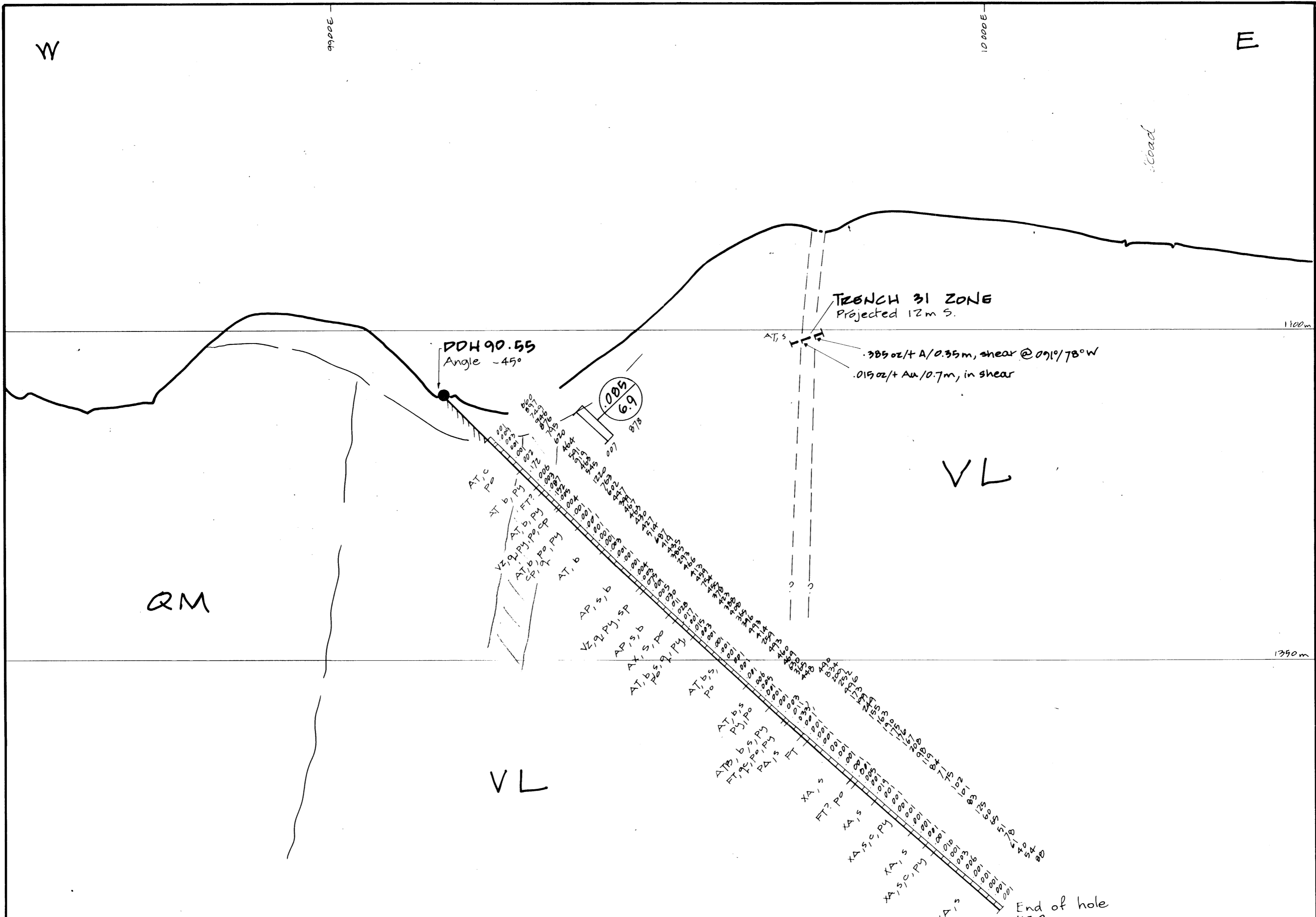
W

E

9900E

10000E

Coast



**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**20,861 PART 4 OF 4**

**LEGEND**

**LITHOLOGIES**

- UPPER TERTIARY - RECENT / EDZIZA**  
 [BT] Basalt flows and dykes
- UPPER TRIASSIC - CRETACEOUS ?**  
 [QM] Quartz monzonite intrusive
- UPPER TRIASSIC**  
 [VL] Andesite to dacitic flows and tuffs, undifferentiated overlying sediments
- Flows:**  
 AN - andesite DC - dacite RD - rhyodacite  
 FP - feldspar porphyry
- Tuffs:**  
 RT - rhyodacite AT - ash XL - crystal  
 RH - rhyolite LT - lithic CT - cherty  
 DT - dacite PT - lapilli AX - mixed ash and crystal, etc
- SEDIMENTS**  
 SLT - siltstone LST - limestone  
 SST - sandstone CHT - chert
- MISCELLANEOUS**  
 BX - breccia FT - fault zone -- B - brecciated  
 OO - overburden NA - not assayed

**MINERALIZATION ~**

- Ms - Massive sulphides q - quartz veins  
 VZ - Vein zone l - calcite veins  
 qc - quartz carbonate veins
- py - pyrite as - arsenopyrite sp - sphalerite  
 cp - chalcopyrite po - pyrrhotite mg - magnetite
- Ryrite noted if >5% other minerals noted if >1%

**ALTERATION ~**

- w - weathered s - silicification e - epidote  
 a - argillic c - chloritization k - secondary k-spar  
 p - propylitic b - secondary biotite OS - calc silicate

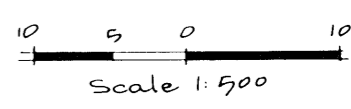
**SYMBOLS ~**

- Contact == Road --- Casing  
 --- Fault --- Trench --- No recovery  
 --- Interbedded --- Diamond drill hole \* Sample location and number



0.05 469 . oz/t Au ppm Cu

0.085 6.9 ! oz/t Au metres

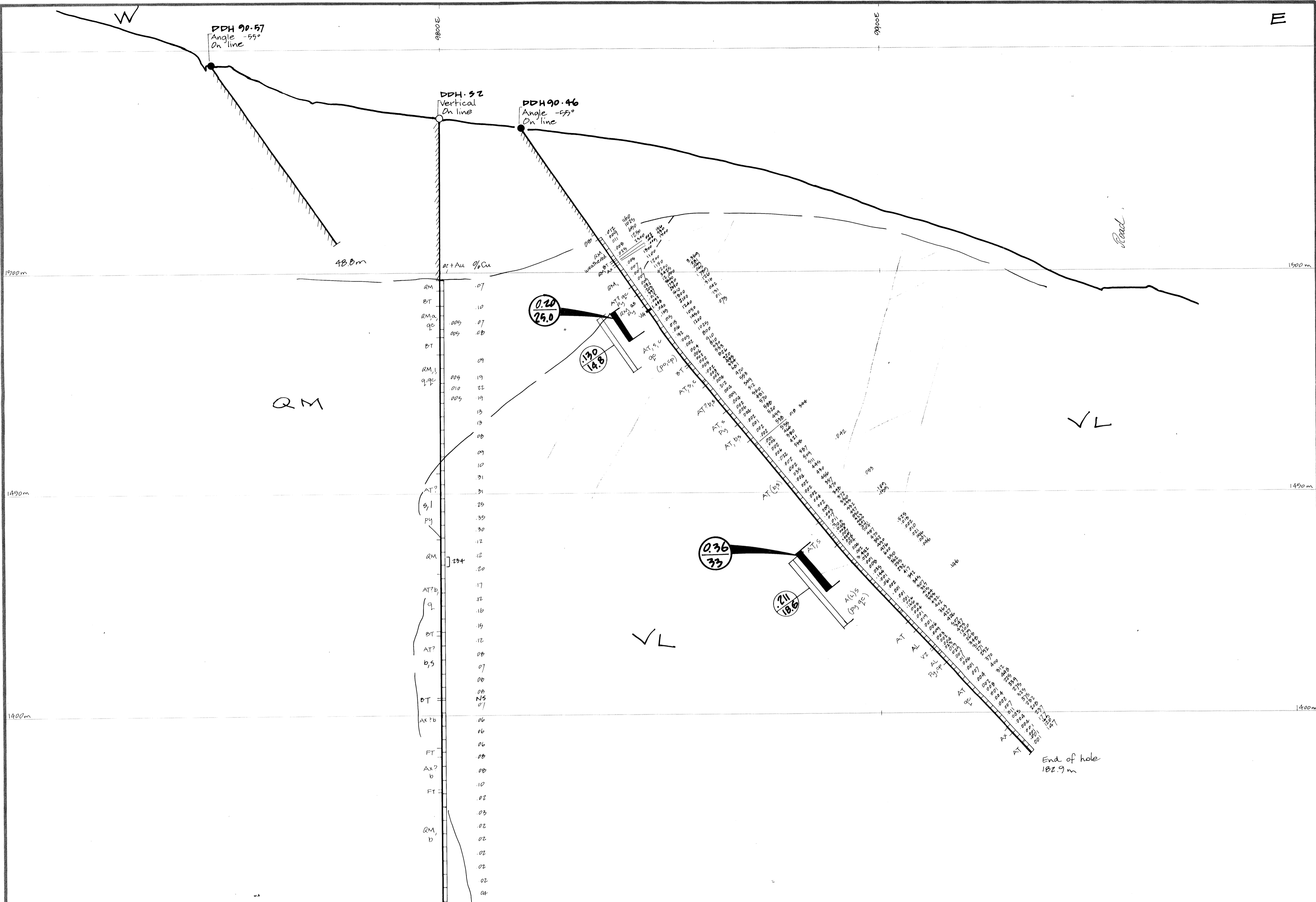


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**SPECTRUM PROPERTY**

**CROSS SECTION 10140N  
DDH 90.55  
TRENCH 31**

LIARD MINING DIVISION P.O.  
 Geology by: J. J. Hylands NTS: 10246/9 W, 10E Plate No.  
 Drawn by: V. Hutchings Scale: 1:500  
 Date: November 90 19



GEOLOGICAL BRANCH  
ASSESSMENT REPORT

20,861

PART 4 OF 4

LEGEND

LITHOLOGIES

UPPER TERTIARY - RECENT: EDZIZA

BT Basalt flows and dykes

UPPER TRIASSIC - CRETACEOUS ?

QM Quartz monzonite intrusive

UPPER TRIASSIC

VL Andesite to dacitic flows and tuffs, undifferentiated overlying sediments

Flows:

AN - andesite DC - dacite RD - rhyodacite  
FP - feldspar porphyry

Tuffs:

RT - rhyodacite AT - ash XL - crystal  
RH - rhyolite LT - lithic CT - cherty  
DT - dacite PT - lapilli AX - mixed ash and crystal, etc

SEDIMENTS

SILT - siltstone LST - limestone  
SST - sandstone CHT - chert

MISCELLANEOUS

BX - breccia FT - fault zone --B- brecciated  
OB - overburden NA - not assayed

MINERALIZATION ~

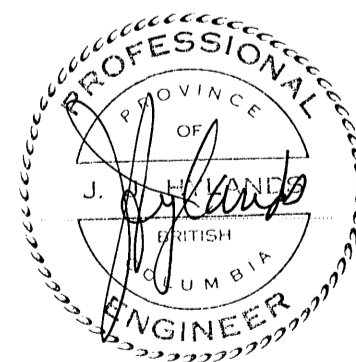
MS - Massive sulphides q - quartz veins  
VZ - Vein zone l - calcite veins  
qc - quartz carbonate veins  
py - pyrite as - arsenopyrite sp - sphalerite  
cp - chalcopyrite po - pyrrhotite mg - magnetite  
Pyrite noted if >5% other minerals noted if >1%

ALTERATION ~

w - weathered s - silicification e - epidote  
a - argillic c - chloritization k - secondary k-spar  
p - propylitic b - secondary biotite CS - calc. silicate

SYMBOLS ~

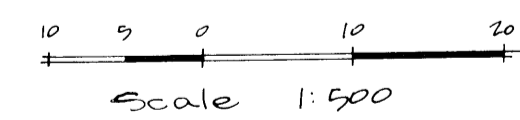
--- Contact == Road  
--- Fault == Trench  
--- Interbedded == Diamond drill hole  
--- Casing  
--- No recovery  
\* Sample location and number



1:100 12,000 3,369 oz/t Au ppm Cu oz/t Met Au

120 148 oz/t Au metres

236 33 oz/t Au feet



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SPECTRUM PROPERTY

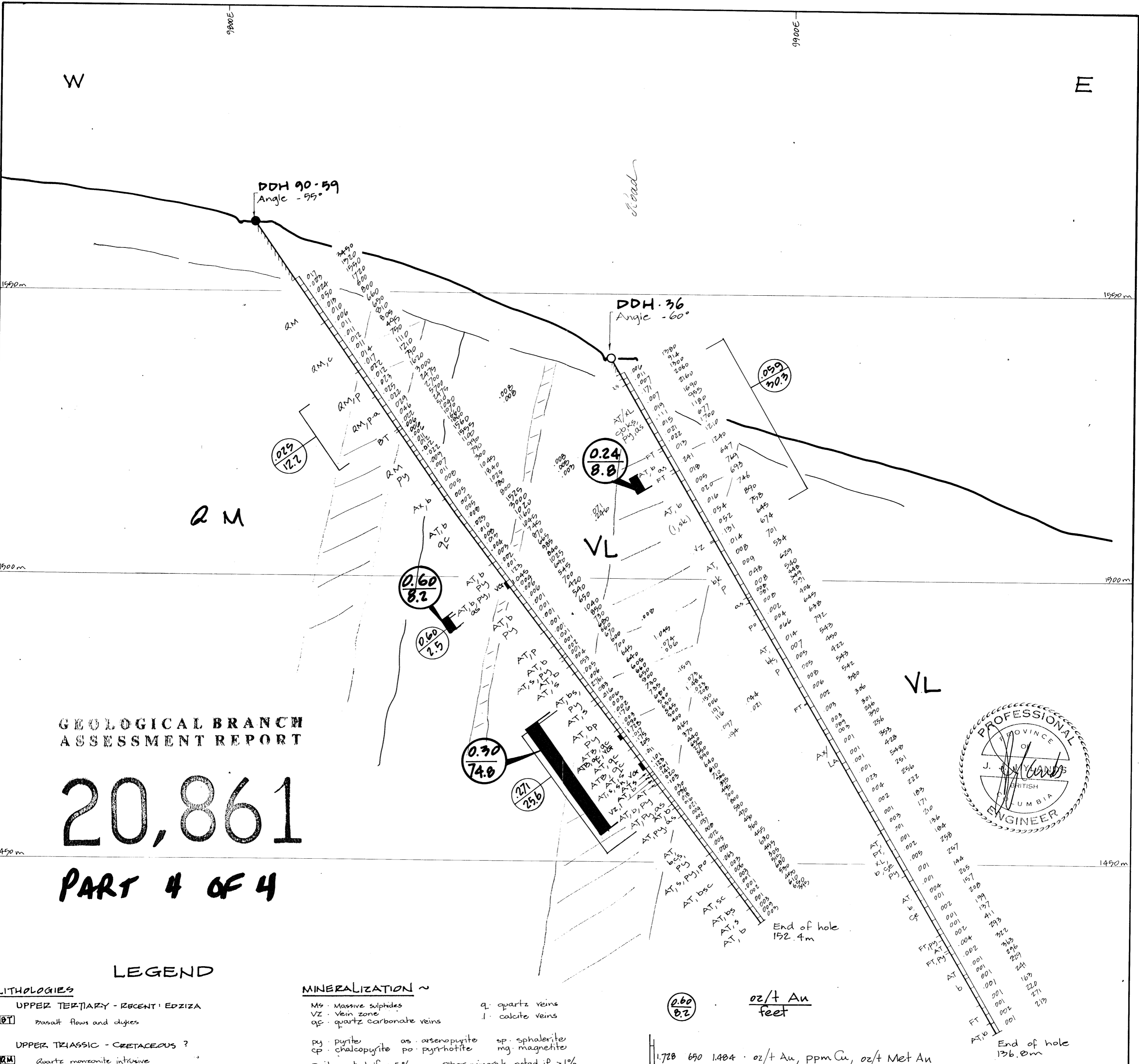
CROSS SECTION 9890 N

DDH 5.2 DDH 90.46, 57

LIARD MINING DIVISION BC.

Geology by: J. J. Hylands NTS: 104 G / 9W, 10E Plate No.  
Drawn by: V. Hutchings Scale: 1:500  
Date: November 1990

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GEOLOGICAL BRANCH  
ASSESSMENT REPORT

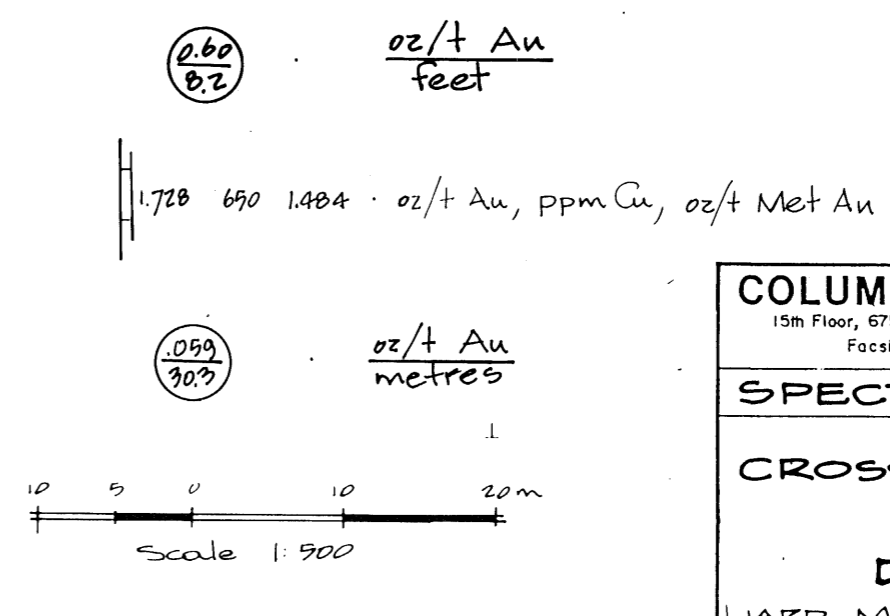
**20,861**

**PART 4 OF 4**

**LEGEND**

- LITHOLOGIES**
- UPPER TERTIARY - RECENT EDZIZA
- BT Basalt flows and dykes
- UPPER TRIASSIC - CRETACEOUS ?
- RM Quartz monzonite intrusive
- UPPER TRIASSIC
- VL Andesite to dacitic flows and tuffs, undifferentiated overlying sediments
- Flows:**
- AN: andesite DC: dacite RD: rhyodacite
  - FP: feldspar porphyry
- Tuffs:**
- RT: rhyodacite AT: ash XL: crystal
  - KH: myolite LT: lithic CT: cherty
  - DT: dacite PT: lapilli AX: mixed ash and crystal, etc.
- SEDIMENTS**
- SLT: siltstone LST: limestone
  - SST: sandstone CHT: chert
- MISCELLANEOUS**
- BX: breccia FT: fault zone --B: brecciated
  - OD: overburden NA: not assayed

- MINERALIZATION ~**
- Ms: Massive sulphides q: quartz veins
  - VZ: Vein zone l: calcite veins
  - qc: quartz carbonate veins
  - py: pyrite as: arsenopyrite sp: sphalerite
  - cp: chalcopyrite po: pyrrotite mg: magnetite
  - Pyrite noted if >5% other minerals noted if >1%
- ALTERATION ~**
- w: weathered e: epidote
  - a: argillic k: secondary k-spar
  - p: prepyllic b: secondary botite cs: calc silicate
- SYMBOLS ~**
- Contact
  - Fault
  - Interbedded
  - == Road
  - Trench
  - Diamond drill hole
  - Casing
  - No recovery
  - x Sample location and number



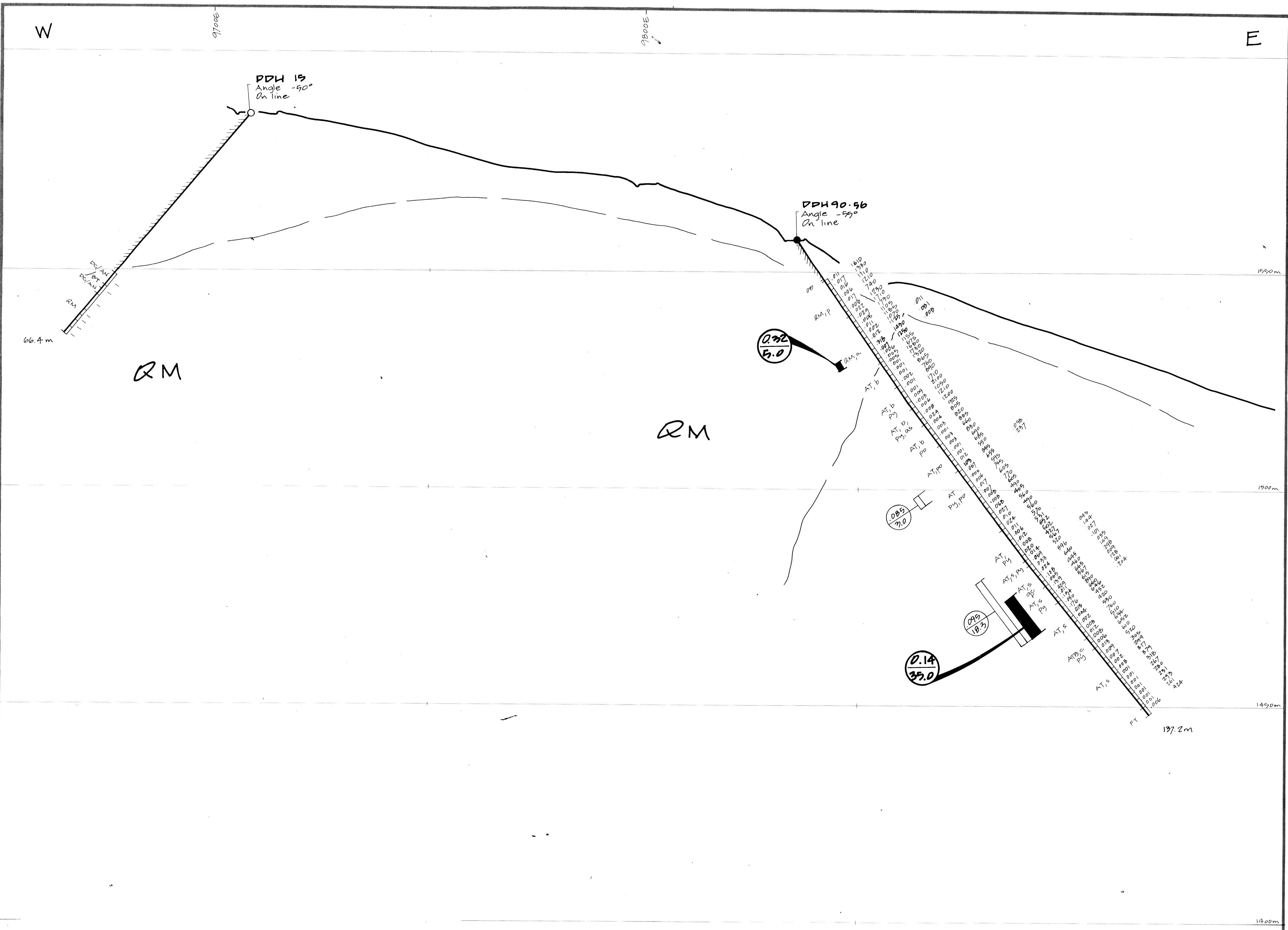
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**SPECTRUM PROPERTY**

**CROSS SECTION 9845N**  
**DDH 36**  
**DDH 90.59**

LIAISED MINING DIVISION B.C.  
Geology by: J. J. Hylands NTS: 1046/9W, 10E Plate No.  
Drawn by: V. Hutchings Scale: 1:500  
Date: November 90

**21**



W

E

QM

QM

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**20,861  
PART 4 OF 4**

**LEGEND**

**LITHOLOGIES**

UPPER TERTIARY - RECENT: EDZIZA

**BT** Basalt flows and dykes

UPPER TRIASSIC - CRETACEOUS ?

**QM** Quartz monzonite intrusive

UPPER TRIASSIC

**VL** Andesite to dacitic flows and tuffs, undifferentiated overlying sediments

**Flows:**

AN - andesite - DC - dacite RD - rhyodacite  
FP - feldspar porphyry

**Tuffs:**

RT - rhyodacite AT - ash XL - crystal  
RH - rhyolite LT - lithic CT - cherty  
DT - dacite PT - lapilli AX - mixed ash and crystal, etc

**SEDIMENTS**

SLT - siltstone LST - limestone  
SST - sandstone CHT - chert

**MISCELLANEOUS**

BX - breccia FT - fault zone --B- brecciated  
OB - overburden NA - not assayed

**MINERALIZATION ~**

Ms - Massive sulphides q - quartz veins  
VZ - Vein zone l - calcite veins  
qc - quartz carbonate veins

py - pyrite as - arsenopyrite sp - sphalerite  
cp - chalcopryite po - pyrrhotite mg - magnetite  
Fyrite noted if >5% other minerals noted if >1%

**ALTERATION -**

w - weathered s - silicification e - epidote  
a - argillic c - chloritization k - secondary k-spar  
p - propylitic b - secondary biotite CS - calc-silicate

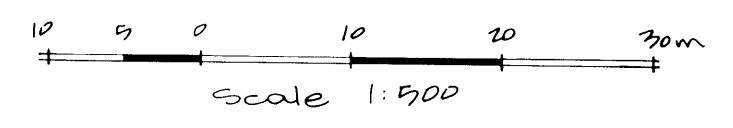
**SYMBOLS ~**

--- Contact --- Road --- Casing  
--- Fault --- Trench --- No recovery  
--- Interbedded --- Diamond drill hole \* Sample location and number



0.14  
39.0 oz/t Au feet

0.09  
18.3 oz/t Au metres



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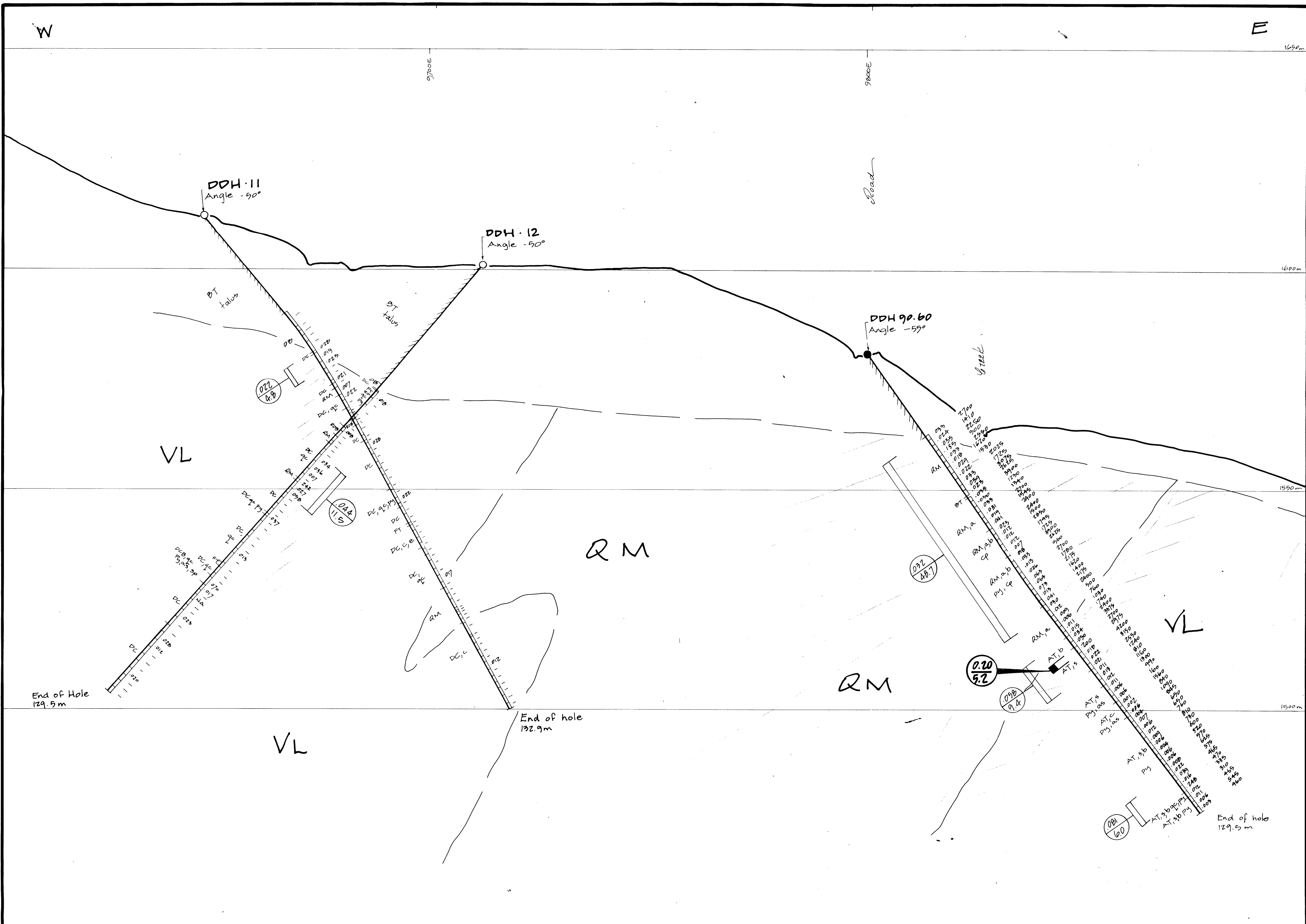
**SPECTRUM PROPERTY**

**CROSS SECTION 9820 N**

**DDH - 15, 90.56**

LIARZ MINING DIVISION B.C.

|                           |                  |           |
|---------------------------|------------------|-----------|
| Geology by: J. J. Hylands | NTS: 1046/9W 10E | Plate No. |
| Drawn by: Yvri Hultings   | Scale: 1:500     | <b>22</b> |
| Date: November 1990       |                  |           |



GEOLOGICAL BRANCH  
ASSESSMENT REPORT

20,861

PART 4 OF 4

LEGEND

LITHOLOGIES

- UPPER TERTIARY - RECENT: EDZIZA
- BT** Basalt flows and dykes
- UPPER TRIASSIC - CRETACEOUS ?
- QM** Quartz monzonite intrusive
- UPPER TRIASSIC
- VL** Andesite to dacitic flows and tuffs, undifferentiated overlying sediments

Flows:

- AN - andesite DC - dacite RD - rhyodacite  
FP - feldspar porphyry

Tuffs:

- RT - rhyodacite AT - ash XL - crystal  
RH - rhyolite LT - lithic CT - cherty  
DT - dacite PT - lapilli AX - mixed ash and crystal, etc

Sediments

- SILT - siltstone LST - limestone  
SST - sandstone CHT - chert

MISCELLANEOUS

- BX - breccia FT - fault zone --P- brecciated  
OB - overburden NA - not assayed

MINERALIZATION ~

- Ms - Massive sulphides q - quartz veins  
VZ - Vein zone l - calcite veins  
qc - quartz carbonate veins  
py - pyrite as - arsenopyrite sp - sphalerite  
cp - chalcopyrite po - pyrrhotite mg - magnetite  
Fyrite noted if >5% Other minerals noted if >1%

ALTERATION ~

- w - weathered s - silicification e - epidote  
a - argillic c - chloritization k - secondary k-spar  
p - propylitic b - secondary biotite CS - calc silicate

SYMBOLS ~

- Contact  
--- Fault  
--- Interbedded  
--- Road  
--- Trench  
--- Diamond drill hole  
--- Casing  
--- No recovery  
--- Sample location and number

0.06 1090 oz/t Au ppm Cu

0.20 oz/t Au metres

0.20 oz/t Au feet



Scale 1:500

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**SPECTRUM PROPERTY**

**CROSS SECTION 9780N**  
**DDH-11, 12, and 90.60**

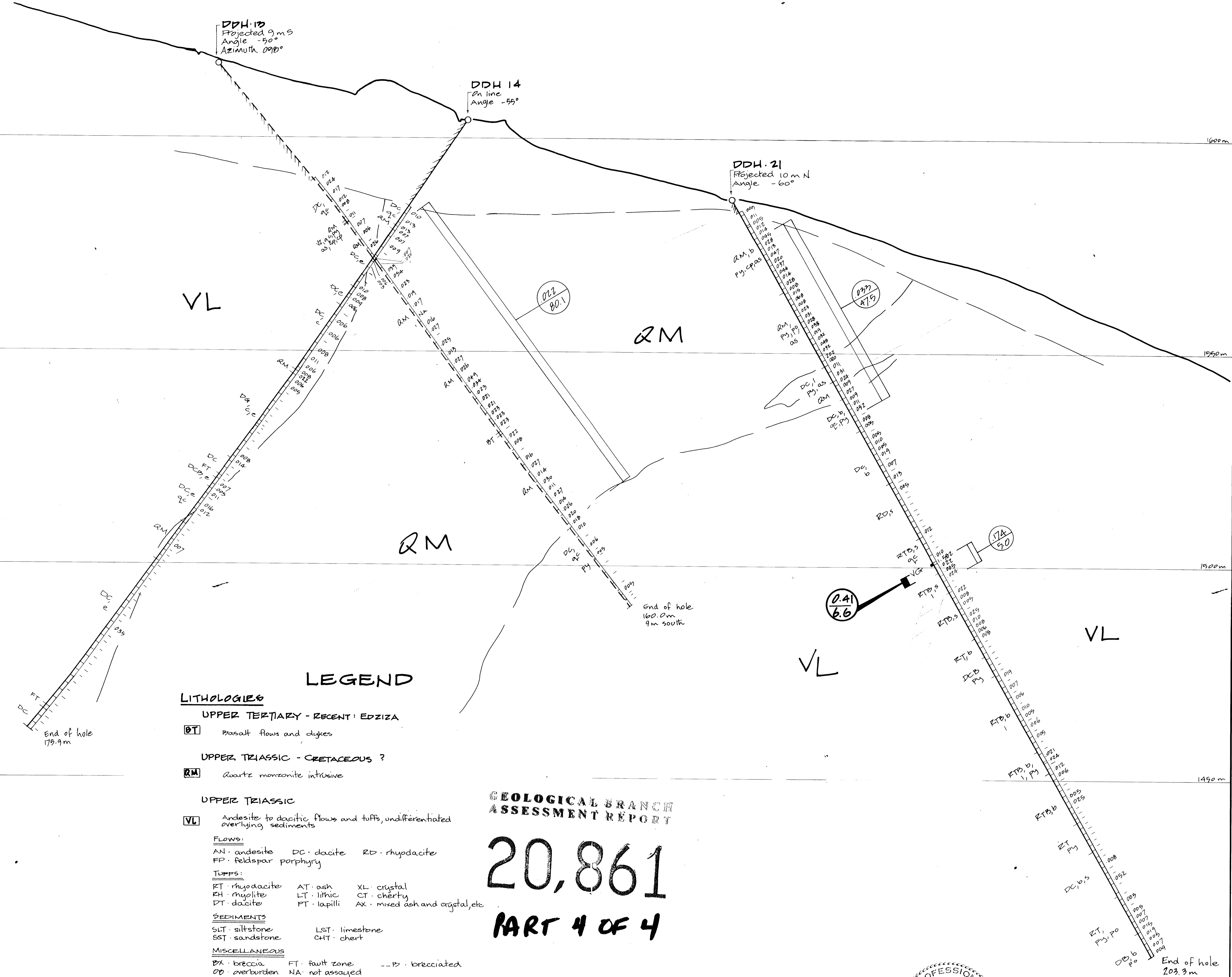
LIARD MINING DIVISION B.C.

|                             |                    |           |
|-----------------------------|--------------------|-----------|
| Geology by: J. J. Hutchings | NTS: 104 G/9W, 10E | Plate No. |
| Drawn by: Y. Hutchings      | Scale: 1:500       | 23        |
| Date: November 1990         |                    |           |



W

E



### LEGEND

- LITHOLOGIES**
- UPPER TERTIARY - RECENT: EDZIZA**
- BT** Basalt flows and dykes
- UPPER TRIASSIC - CRETACEOUS ?**
- QM** Quartz monzonite intrusive
- UPPER TRIASSIC**
- VL** Andesite to dacitic flows and tuffs, undifferentiated overlying sediments
- Flows:**  
 AN - andesite DC - dacite RD - rhyodacite  
 FP - feldspar porphyry
- Tuffs:**  
 RT - rhyodacite AT - ash XL - crystal  
 RH - rhyolite LT - lithic CT - cherty  
 DT - dacite PT - lapilli AX - mixed ash and crystal, etc
- SEDIMENTS**  
 SLT - siltstone LST - limestone  
 SST - sandstone CHT - chert
- MISCELLANEOUS**  
 BX - breccia FT - fault zone --P-- brecciated  
 OD - overburden NA - not assayed

- MINERALIZATION ~**
- Ms - Massive sulphides a - quartz veins  
 VZ - vein zone l - calcite veins  
 qc - quartz carbonate veins
- py - pyrite as - arsenopyrite sp - sphalerite  
 cp - chalcopyrite po - pyrrhotite mg - magnetite
- Fyrite noted if >5% Other minerals noted if >1%

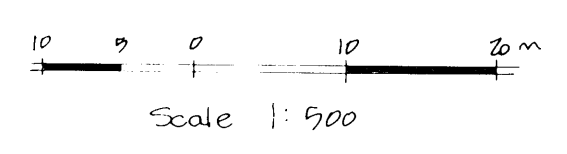
- ALTERATION ~**
- w - weathered s - silicification e - epidote  
 a - argillic c - chloritization k - secondary k-spar  
 p - propylitic b - secondary biotite cs - calc. silicate

- SYMBOLS ~**
- Contact --- Road --- Casing ---  
 --- Fault --- Trench --- No recovery ---  
 --- Interbedded --- Diamond drill hole --- Sample location and number ---

GEOLOGICAL BRANCH  
 ASSESSMENT REPORT

# 20,861

PART 4 OF 4



0.02 oz/t Au

174/90 oz/t Au metres

0.41/6.6 oz/t Au Feet

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**SPECTRUM PROPERTY**

**CROSS SECTION 9740 N**

**DDH - 13, 14, 21**

LIARD MINING DIVISION P.C.

Geology by: J. J. Hylands NTS: 104-G/9W, 10E Plate No.  
 Drawn by: Y. Hutchings Scale: 1:500  
 Date: November 1990

**24**

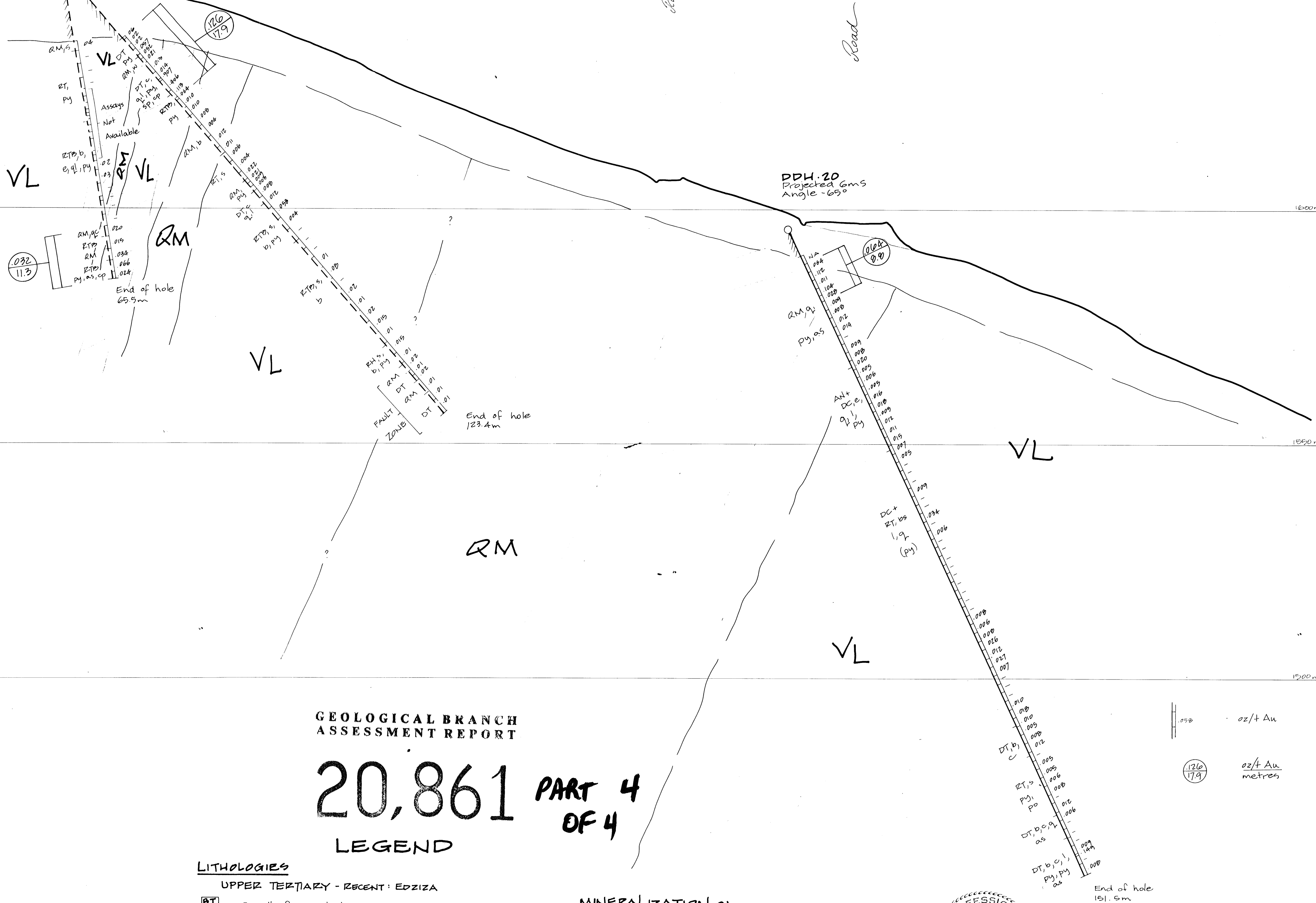
W

E

DDH. 9  
Projected 4m S  
Angle -80.5°  
Azimuth 095°

DDH. 8  
Projected 4m S  
Angle -49°  
Azimuth 095°

DDH. 20  
Projected 6m S  
Angle -65°



GEOLOGICAL BRANCH  
ASSESSMENT REPORT

20,861 PART 4  
OF 4  
LEGEND

LITHOLOGIES

- UPPER TERTIARY - RECENT: EDZIZA
- BT Basalt flows and dykes
- UPPER TRIASSIC - CRETACEOUS ?
- RM Quartz monzonite intrusive
- UPPER TRIASSIC
- VL Andesite to dacitic flows and tuffs, undifferentiated overlying sediments
- Flows:
- AN andesite DC dacite RD rhyodacite
  - FP feldspar porphyry
- Tuffs:
- RT rhyodacite AT ash XL crystal
  - RH rhyolite LT lithic CT cherty
  - DT dacite PT lapilli AX mixed ash and crystal, etc
- SEDIMENTS
- SLT siltstone LST limestone
  - SST sandstone CHT chert
- MISCELLANEOUS
- BX breccia FT fault zone --B brecciated
  - OB overburden NA not assayed

MINERALIZATION ~

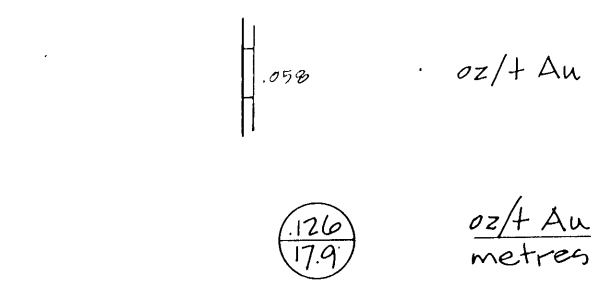
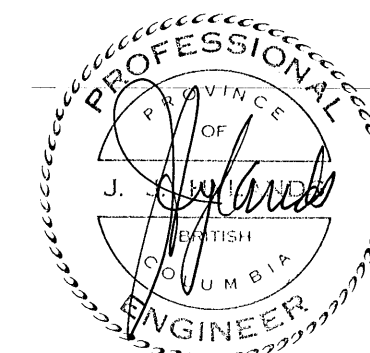
- Ms Massive sulphides
- VZ Vein zone
- QC quartz carbonate veins
- py pyrite
- cp chalcopyrite
- pyrite noted if >5%
- q quartz veins
- l calcite veins
- as arsenopyrite
- po pyrrotite
- sp sphalerite
- mg magnetite
- Other minerals noted if >1%

ALTERATION ~

- w weathered
- a argillic
- p prepyllic
- s silicification
- c chloritization
- b secondary biotite
- e epidote
- k secondary k-spar
- cs calc silicate

SYMBOLS ~

- Contact
- Fault
- Interbedded
- Road
- Trench
- Diamond drill hole
- Casing
- No recovery
- Sample location and number

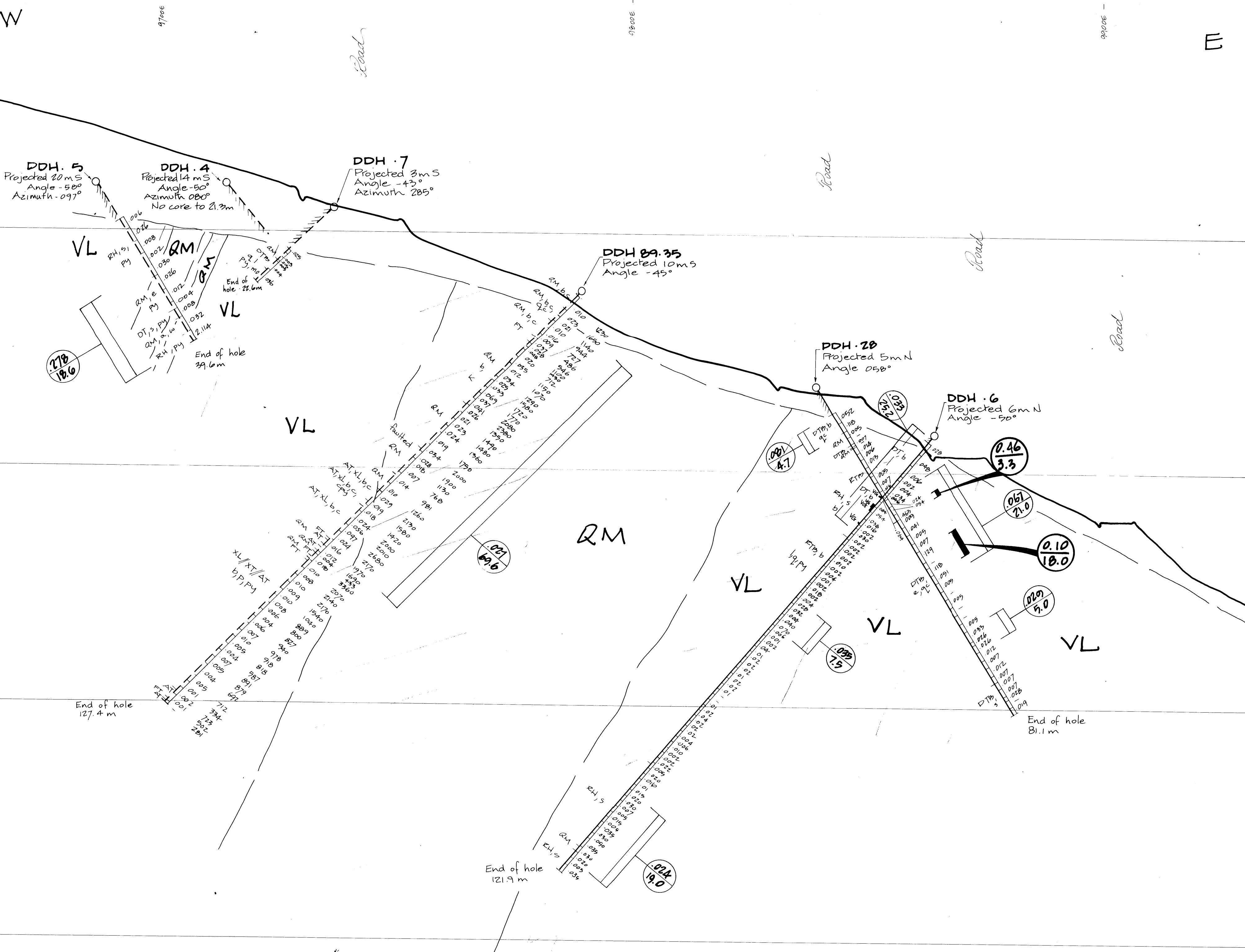


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**SPECTRUM PROPERTY**

**CROSS SECTION 0700N  
DDH. 8, 9, 20**

LIARD MINING DIVISION P.C.  
Geology by: J. J. Hylands NTS: 104 Gr/QW 10E Plate No. 25  
Drawn by: Y. Hutchings Scale: 1:500  
Date: November



**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

# 20,861 PART 4 OF 4

## LEGEND

**LITHOLOGIES**

**UPPER TERTIARY - RECENT: EDZIZA**

**BT** Basalt flows and dykes

**UPPER TRIASSIC - CRETACEOUS ?**

**RM** Quartz monzonite intrusive

**UPPER TRIASSIC**

**VL** Andesite to dacitic flows and tuffs, undifferentiated overlying sediments

**Flows:**  
 AN: andesite DC: dacite RD: rhyodacite  
 FP: feldspar porphyry

**Tuffs:**  
 RT: rhyodacite AT: ash XL: crystal  
 RH: rhyolite LT: lithic CT: cherty  
 DT: dacite PT: lapilli AX: mixed ash and crystal, etc

**Sediments**  
 SLT: siltstone LST: limestone  
 SST: sandstone CHT: chert

**Miscellaneous**  
 BX: breccia FT: fault zone --P: brecciated  
 OB: overburden NA: not assayed

**MINERALIZATION ~**

Ms: Massive sulphides q: quartz veins  
 VZ: vein zone l: calcite veins  
 qf: quartz carbonate veins

py: pyrite as: arsenopyrite sp: sphalerite  
 cp: chalcopyrite po: pyrrhotite mg: magnetite  
 Pyrite noted if >5% other minerals noted if >1%

**ALTERATION -**

w: weathered s: silicification e: epidote  
 a: argillic c: chloritization k: secondary k-spar  
 p: propylitic b: secondary biotite CS: calc. silicate

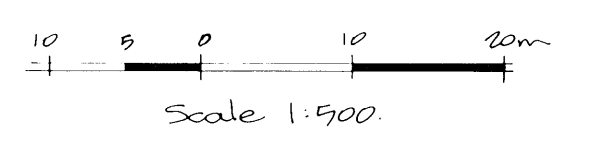
**SYMBOLS ~**

== Road casing  
 --- Fault trench  
 --- Interbedded diamond drill hole  
 \* Sample location and number

0.46 18.0 oz/t Au ppm Cu

0.09 4.7 oz/t Au metres

0.46 3.3 oz/t Au feet



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**SPECTRUM PROPERTY**

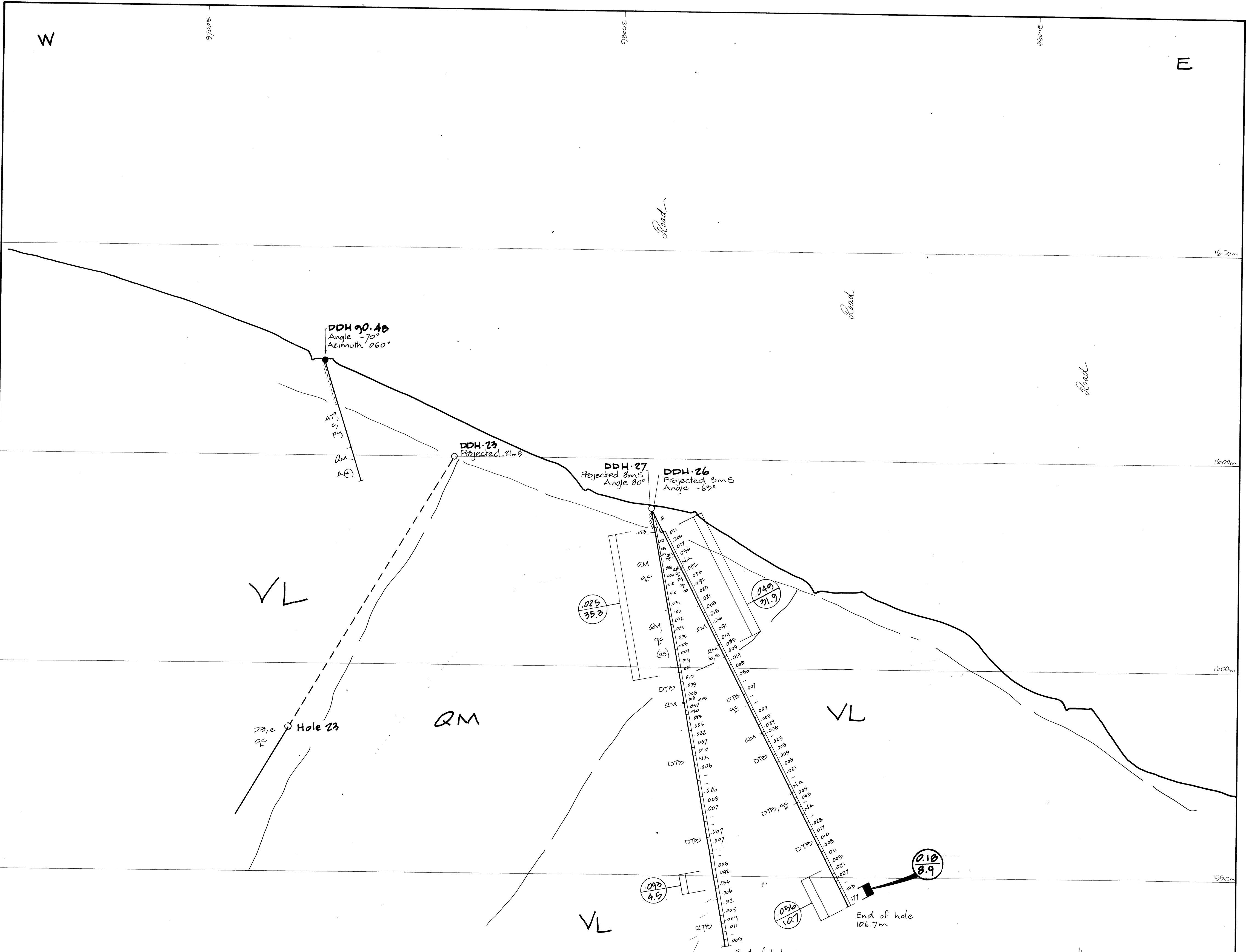
**CROSS SECTION 9650N**  
**DDH 4, 5, 6, 7, 28**  
**DDH 29.35**

LIAED MINING DIVISION B.C.  
 Geology by: J. J. Hylands NTS: 104 G/9W, 10E Plate No.  
 Drawn by: V. Hutchings Scale: 1:500  
 Date: November 1990

**26**

W

E



**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**20,861**

**PART 4  
OF 4**

**LEGEND**

**LITHOLOGIES**

UPPER TERTIARY - RECENT: EDZIZA

**[BT]** Basalt flows and dykes

UPPER TRIASSIC - CRETACEOUS ?

**[QM]** Quartz monzonite intrusive

UPPER TRIASSIC

**[VL]** Andesite to dacitic flows and tuffs, undifferentiated overlying sediments

**Flows:**

AN - andesite DC - dacite RD - rhyodacite  
FP - feldspar porphyry

**Tuffs:**

RT - rhyodacite AT - ash XL - crystal  
RH - rhyolite LT - lithic CT - cherty  
DT - dacite PT - lapilli AX - mixed ash and crystal, etc

**Sediments**

SLT - siltstone LST - limestone  
SST - sandstone CHT - chert

**Miscellaneous**

BX - breccia FT - fault zone --P- brecciated  
OD - overburden NA - not assayed

**MINERALIZATION ~**

MS - Massive sulphides q. quartz veins  
VZ - Vein zone l. calcite veins  
QC - quartz carbonate veins

py - pyrite as - arsenopyrite sp - sphalerite  
cp - chalcopyrite po - pyrrhotite mg - magnetite  
Ryrite noted if >5% other minerals noted if >1%

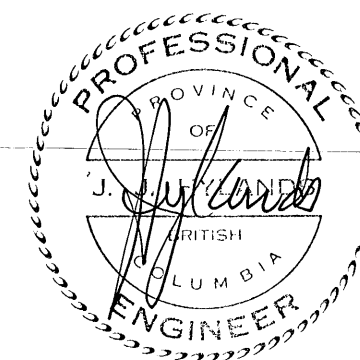
**ALTERATION ~**

w - weathered s - silicification e - epidote  
a - argillic c - chloritization k - secondary k-spar  
p - propylitic b - secondary botite cs - calc. silicate

**SYMBOLS ~**

== Road Casing  
--- Contact Trench No recovery  
--- Fault Diamond drill hole  
--- Interbedded \* Sample location and number

0.124 oz/t Au  
0.049 / 71.9 oz/t Au metres  
0.018 / 8.9 oz/t Au feet



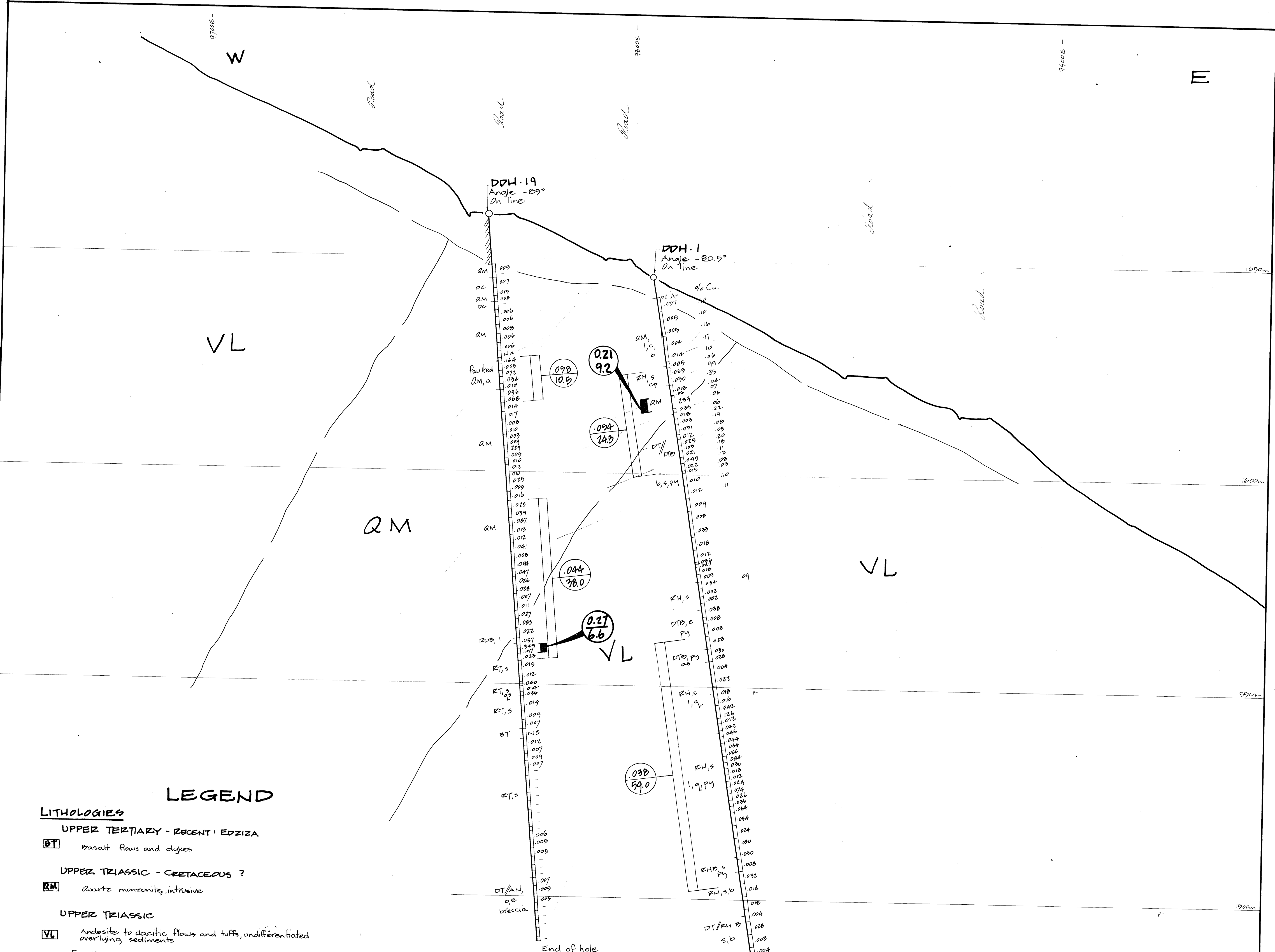
Scale 1:500

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**SPECTRUM PROPERTY**

**CROSS SECTION 9610 N.  
DDH 90.48  
DDH - 23, 26, 27**

LIARD MINING DIVISION B.C.  
Geology by: J. J. Hylands NTS: 104 G / 9W, 10E Plate No.  
Drawn by: Y. Hutchings Scale: 1:500 27  
Date: November 1990



**LEGEND**

**LITHOLOGIES**

- UPPER TERTIARY - RECENT: EDZIZA**  
 BT Basalt flows and dykes
- UPPER TRIASSIC - CRETACEOUS ?**  
 QM Quartz monzonite, intrusive
- UPPER TRIASSIC**  
 VL Andesite to dacitic flows and tuffs, undifferentiated overlying sediments
- Flows:**  
 AN - andesite DC - dacite RD - rhyodacite  
 FP - feldspar porphyry
- Tuffs:**  
 RT - rhyodacite AT - ash XL - crystal  
 RH - rhyolite LT - lithic CT - cherty  
 DT - dacite FT - lapilli AX - mixed ash and crystal, etc
- SEDIMENTS**  
 SLT - siltstone LST - limestone  
 SST - sandstone CHT - chert
- MISCELLANEOUS**  
 BX - breccia FT - fault zone --P - brecciated  
 OD - overburden NA - not assayed

**MINERALIZATION ~**

- MS - Massive sulphides q - quartz veins  
 VZ - Vein zone l - calcite veins  
 qc - quartz carbonate veins
- py - pyrite as - arsenopyrite sp - sphalerite  
 cp - chalcopyrite po - pyrrhotite mg - magnetite
- Pyrite noted if >5% Other minerals noted if >1%

**ALTERATION -**

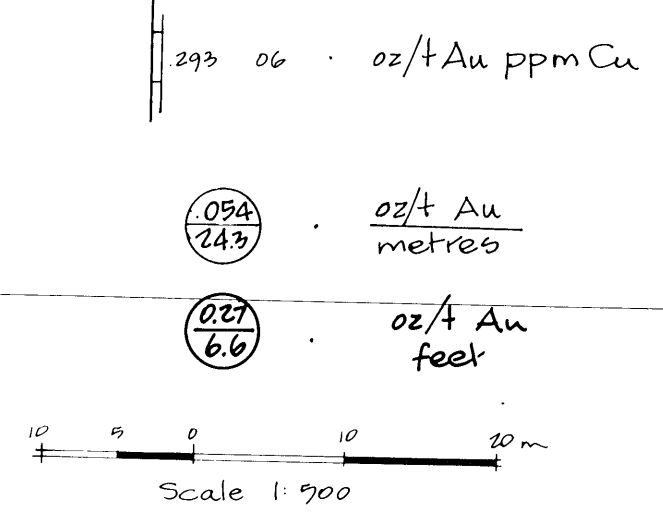
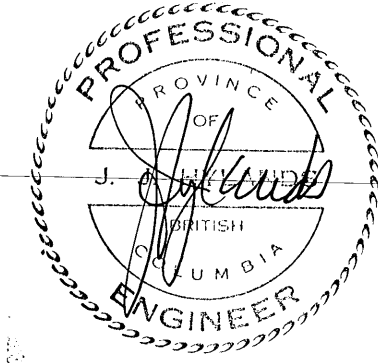
- w - weathered e - epidote  
 a - argillic c - chloritization k - secondary k-spar  
 p - propylitic b - secondary biotite cs - calc. silicate

**SYMBOLS ~**

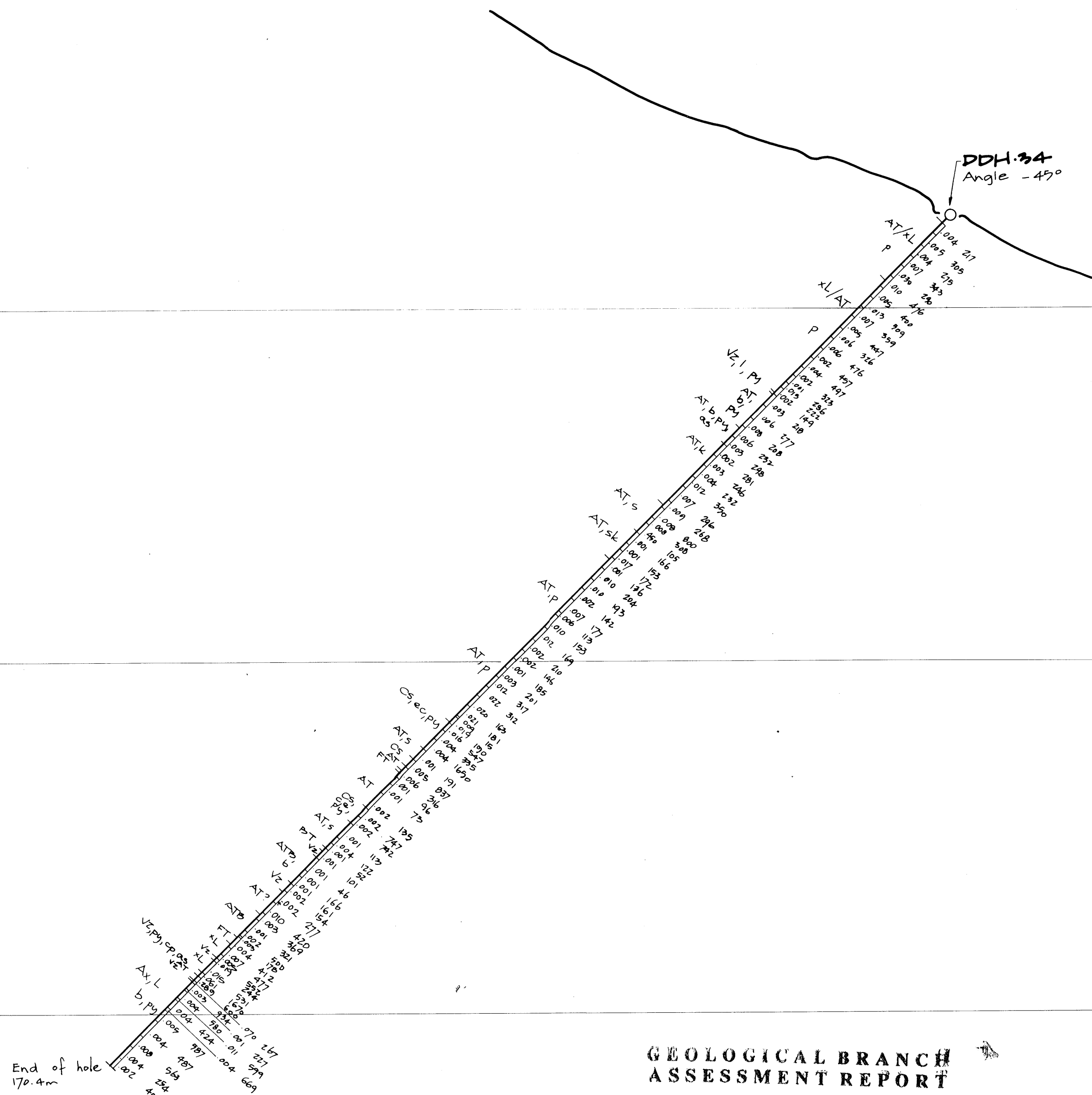
- Contact  
 Fault  
 Interbedded
- Road  
 Trench  
 Diamond drill hole
- Casing  
 No recovery  
 Sample location and number

**GEOLOGICAL BRANCH ASSESSMENT REPORT**

**20,861**  
**PART 4 OF 4**



|                                                                                                                                                               |                    |              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------|
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| <b>SPECTRUM PROPERTY</b>                                                                                                                                      |                    |              |
| <b>CROSS SECTION 9580N</b>                                                                                                                                    |                    |              |
| <b>DDH-19, 1</b>                                                                                                                                              |                    |              |
| LIARD MINING DIVISION                                                                                                                                         |                    |              |
| Geology by: J. J. Highlands                                                                                                                                   | NTS: 104 G/9W, 10E | Plate No: 28 |
| Drawn by: Val Hutchings                                                                                                                                       | Scale: 1:500       |              |
| Date: November 1990                                                                                                                                           |                    |              |



**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**20,861  
PART 4 OF 4**

**LEGEND**

**LITHOLOGIES**

- UPPER TERTIARY - RECENT: EDZIZA**  
**[BT]** Basalt flows and dykes
- UPPER TRIASSIC - CRETACEOUS ?**  
**[RM]** Quartz monzonite intrusive
- UPPER TRIASSIC**  
**[VL]** Andesite to dacitic flows and tuffs, undifferentiated overlying sediments
- Flows:**  
 AN - andesite DC - dacite RD - rhyodacite  
 FP - feldspar porphyry
- Tuffs:**  
 RT - rhyodacite AT - ash XL - crystal  
 RH - rhyolite LT - lithic CT - cherty  
 DT - dacite PT - lapilli AX - mixed ash and crystal, etc
- Sediments**  
 SLT - siltstone LST - limestone  
 SST - sandstone CHT - chert
- Miscellaneous**  
 BX - breccia FT - fault zone --B - brecciated  
 OD - overburden NA - not assayed

**MINERALIZATION ~**

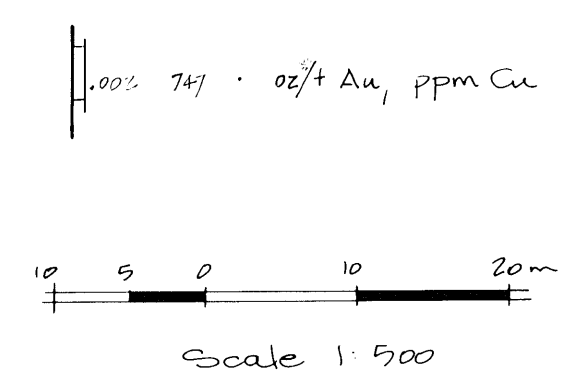
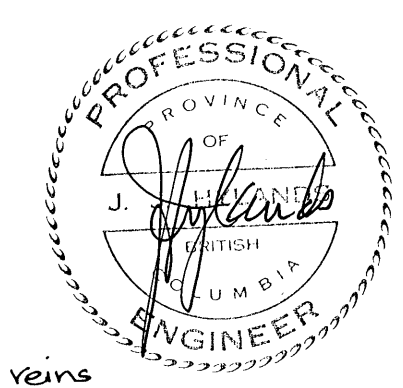
- MS - Massive sulphides q - quartz veins  
 VZ - Vein zone l - calcite veins  
 QF - quartz carbonate veins  
 PY - pyrite AS - arsenopyrite SP - sphalerite  
 CP - chalcopryrite PO - pyrrhotite MG - magnetite  
 Pyrite noted if >5% Other minerals noted if >1%

**ALTERATION ~**

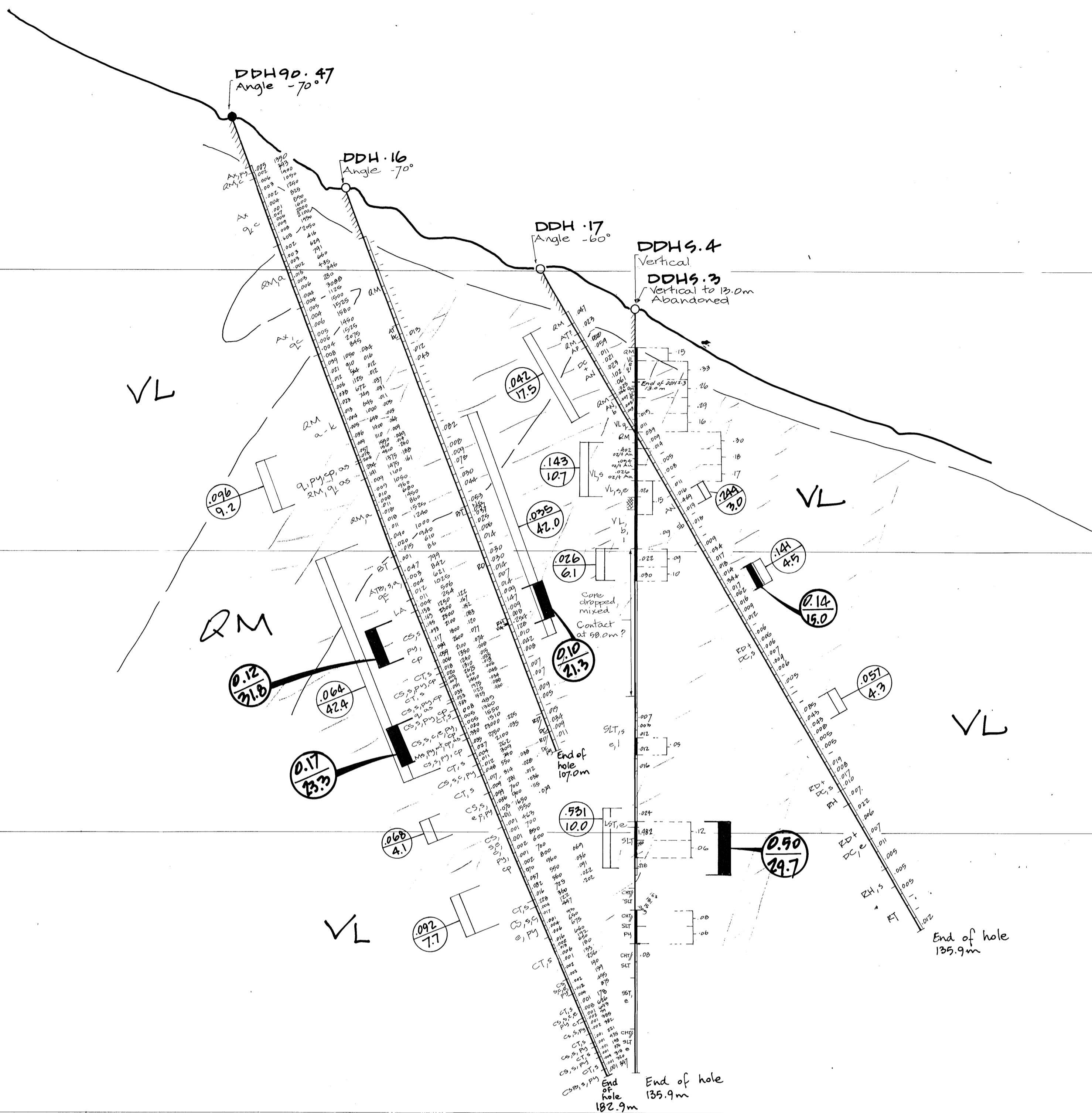
- w - weathered s - silicification E - epidote  
 a - argillic c - chloritization K - secondary k-spar  
 p - propylitic b - secondary botite as - calc. silicate

**SYMBOLS ~**

- Contact == Road ↗ Casing  
 --- Fault Trench ↘ No recovery  
 --- Interbedded ⚡ Diamond drill hole \* Sample location and number



|                                                                                                                            |                    |           |
|----------------------------------------------------------------------------------------------------------------------------|--------------------|-----------|
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| <b>SPECTRUM PROPERTY</b>                                                                                                   |                    |           |
| <b>CROSS SECTION 9560N<br/>DDH-34</b>                                                                                      |                    |           |
| LIAZO MINING DIVISION                                                                                                      |                    | P. C.     |
| Geology by: J. J. Hylands                                                                                                  | NTS: 104 α/9W, 10E | Plate No. |
| Drawn by: Yalri Hothung                                                                                                    | Scale: 1:500       | <b>29</b> |
| Date: November 1990                                                                                                        |                    |           |



GEOLOGICAL BRANCH  
ASSESSMENT REPORT

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PART 4 OF 4

LEGEND

LITHOLOGIES

UPPER TERTIARY - RECENT: EDZIZA

**BT** Basalt flows and dykes

UPPER TRIASSIC - CRETACEOUS?

**QM** Quartz monzonite intrusive

UPPER TRIASSIC

**VL** Andesite to dacitic flows and tufts, undifferentiated overlying sediments

Flows:

AN - andesite DC - dacite RD - rhyodacite  
FP - feldspar porphyry

Tufts:

RT - rhyodacite AT - ash XL - crystal  
RH - rhyolite LT - lithic CT - cherty  
DT - dacite PT - lapilli AX - mixed ash and crystal, etc

Sediments

SLT - siltstone LST - limestone  
SST - sandstone CHT - chert

Miscellaneous

BX - breccia FT - fault zone --P- brecciated  
OP - overburden NA - not assayed

MINERALIZATION ~

MS - Massive sulphides q - quartz veins  
VZ - Vein zone L - calcite veins  
QC - quartz carbonate veins

py - pyrite as - arsenopyrite sp - sphalerite  
cp - chalcopyrite po - pyrrhotite mg - magnetite  
Pyrite noted if >5% Other minerals noted if >1%

ALTERATION ~

w - weathered s - silicification e - epidote  
a - argillic c - chloritization k - secondary k-spar  
p - propylitic b - secondary botite CS - calc-silicate

SYMBOLS ~

--- Contact == Road Casing  
--- Fault Trench No recovery  
--- Interbedded Diamond drill hole \* Sample location and number

DRILL HOLE EXPLANATION

DDH 34  
oz/t Gold % Copper  
oz/t Gold % Copper  
oz/t Gold

All other drill holes  
DDH 90.47  
oz/t Gold, % Copper, oz/t Metallic Gold

0.07 (4.3) oz/t Au metres 0.14 (15) oz/t Au feet 1450m

Scale 1:500



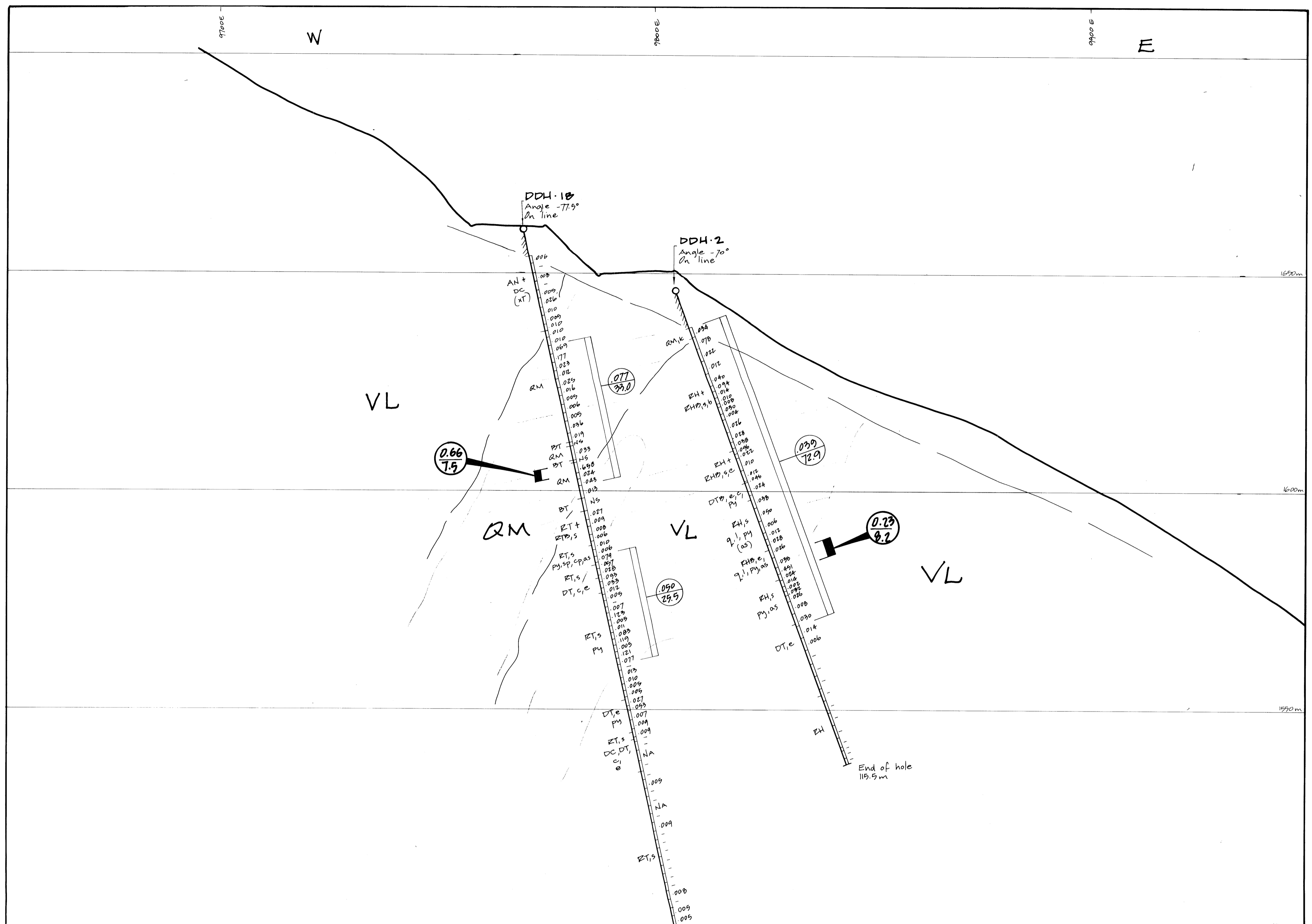
COLUMBIA GOLD MINES LTD.  
15th Floor, 675 W. Hastings Street, Vancouver, B.C., Canada V6B 1N2  
Facsimile (604) 687-2419 - Telephone (604) 687-4951

SPECTRUM PROPERTY

CROSS SECTION 9550N

DDH 3, 4  
DDH 16, 17  
DDH 90.47

LIARD MINING DIVISION P.C.  
Geology by J. J. Huilands NTS: 10439/9W, 10E Plate No.  
Drawn by Y. Hutchings Scale: 1:500  
Date November 1990 30



GEOLOGICAL BRANCH  
ASSESSMENT REPORT

**20,861**  
**PART 4 OF 4**  
**LEGEND**

**LITHOLOGIES**

UPPER TERTIARY - RECENT: EDZIZA

**BT** Basalt flows and dykes

UPPER TRIASSIC - CRETACEOUS ?

**QM** Quartz monzonite intrusive

UPPER TRIASSIC

**VL** Andesite to dacitic flows and tuffs, undifferentiated overlying sediments

**Flows:**

AN - andesite DC - dacite RD - rhyodacite  
FP - feldspar porphyry

**Tuffs:**

RT - rhyodacite AT - ash XL - crystal  
RH - rhyolite LT - lithic CT - cherty  
DT - dacite PT - lapilli AX - mixed ash and crystal, etc.

**Sediments**

SIL - siltstone LST - limestone  
SST - sandstone CHT - chert

**Miscellaneous**

BX - breccia FT - fault zone --B- brecciated  
OB - overburden NA - not assayed

**MINERALIZATION ~**

MS - massive sulphides q - quartz veins  
VZ - vein zone l - calcite veins  
qc - quartz carbonate veins  
py - pyrite as - arsenopyrite sp - sphalerite  
cp - chalcopyrite po - pyrrhotite mg - magnetite  
Pyrite noted if >5% other minerals noted if >1%

**ALTERATION ~**

w - weathered s - silicification e - epidote  
a - argillic c - chloritization k - secondary k-spar  
p - propylitic b - secondary botite CS - calc silicate

**SYMBOLS ~**

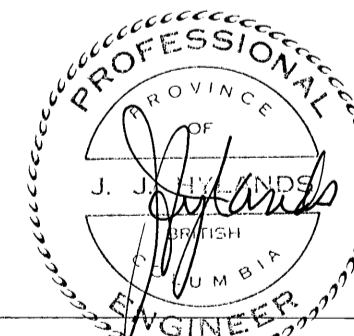
--- Contact      = Road      --- Casing  
--- Fault      Trench      No recovery  
--- Interbedded      Diamond drill hole      \* Sample location and number

NA No assay  
491 oz/t Au

0.77 33.0 oz/t Au metres

0.23 8.2 oz/t Au Feet

Scale 1:500



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**SPECTRUM PROPERTY**

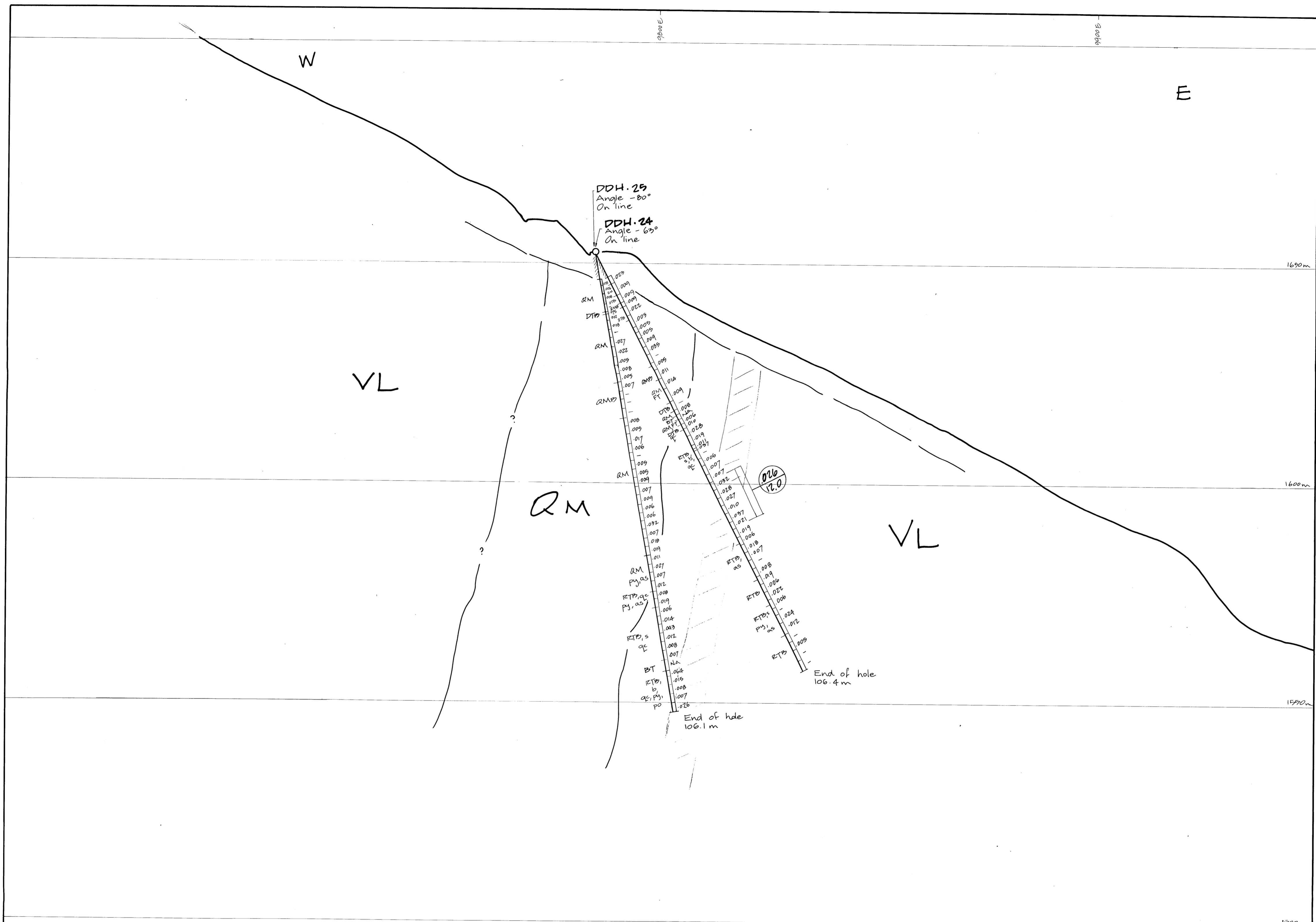
**CROSS SECTION 9925 N**

**DDH - 2, 18**

LIARD MINING DIVISION P.C.

Geology by J. J. Hyland NTS: 104 G / 9W, 10E Plate No.  
Drawn by Y. Hutchings Scale: 1:500  
Date November 1990 31





GEOLOGICAL BRANCH  
ASSESSMENT REPORT

20,861

LEGEND PART 4 OF 4

LITHOLOGIES

UPPER TERTIARY - RECENT: EDZIZA

BT Basalt flows and dykes

UPPER TRIASSIC - CRETACEOUS ?

QM Quartz monzonite intrusive

UPPER TRIASSIC

VL Andesite to dacitic flows and tuffs, undifferentiated overlying sediments

Flows:

AN andesite DC dacite RD rhyodacite  
FP feldspar porphyry

Tuffs:

RT rhyodacite AT ash XL crystal  
RH rhyolite LT lithic CT cherty  
DT dacite PT lapilli AX mixed ash and crystal, etc

Sediments

SLT siltstone LST limestone  
SST sandstone CHT chert

Miscellaneous

BX breccia FT fault zone --B brecciated  
OB overburden NA not assayed

MINERALIZATION ~

MS Massive sulphides  
VZ Vein zone  
QC quartz carbonate veins

q quartz veins  
l calcite veins

py pyrite as arsenopyrite sp sphalerite  
cp chalcopryite po pyrrhotite mg magnetite

Pyrite noted if >5% other minerals noted if >1%

ALTERATION ~

w weathered s silicification e epidote  
a argillic c chloritization k secondary k-spar  
p propylitic b secondary biotite CS calc silicate

SYMBOLS ~

--- Contact  
--- Fault  
--- Interbedded  
--- Road  
--- Trench  
--- Diamond drill hole  
--- Casing  
--- No recovery  
--- Sample location and number

0.042 127 02/4 Au ppm Cu

0.026 12.0 02/4 Au metres



Scale 1:500

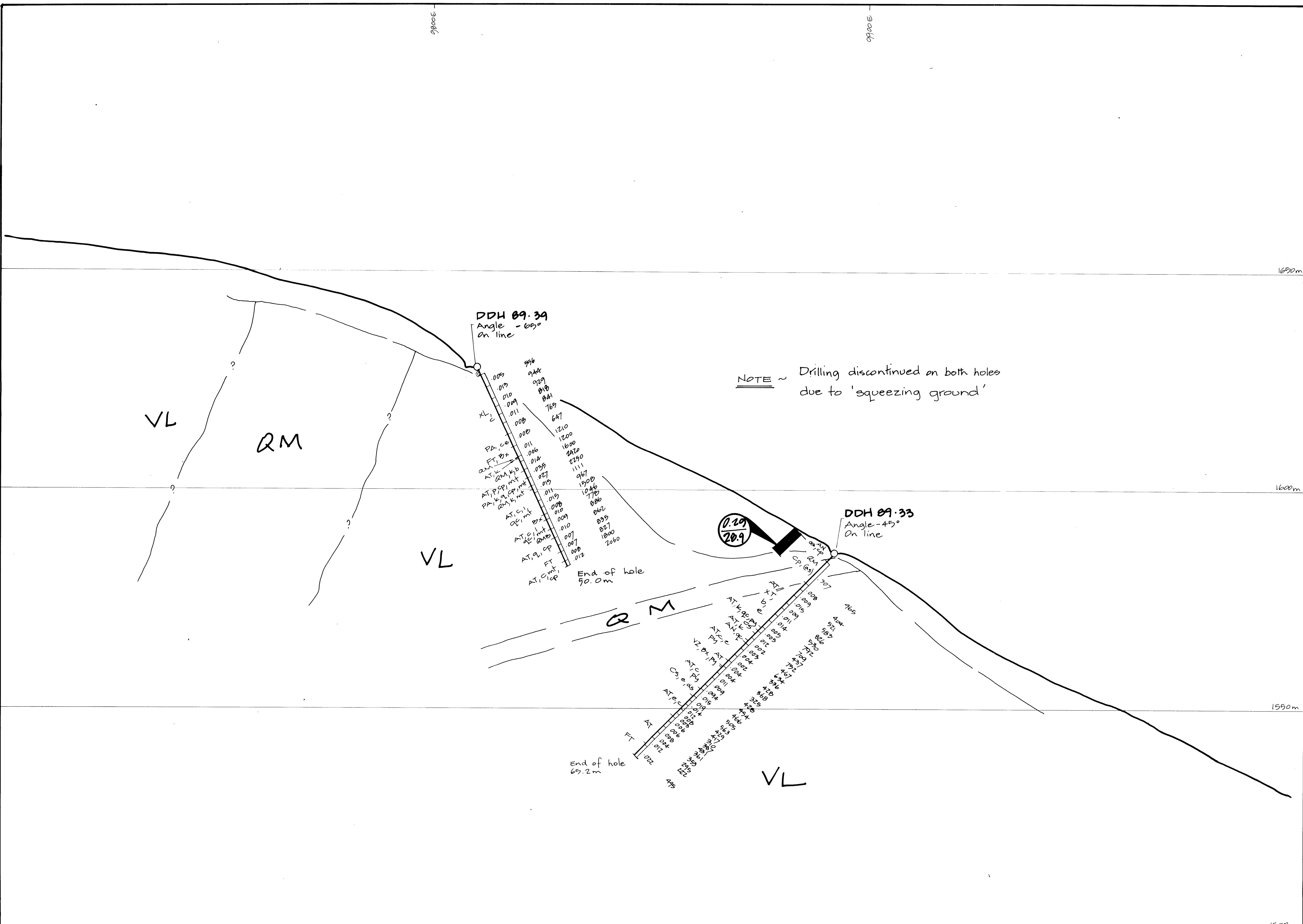
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SPECTRUM PROPERTY

CROSS SECTION 9500 N

DDH 24, 25

LIABD MINING DIVISION P.C  
Geology by: J. J. Hylands NTS: 124 G / 9W, 10E Plate No.  
Drawn by: V. Hutchings Scale: 1:500  
Date: November 1990 32



GEOLOGICAL BRANCH  
ASSESSMENT REPORT

20,861  
PART 4 OF 4

LEGEND

LITHOLOGIES

UPPER TERTIARY - RECENT: EDZIZA

BT Basalt flows and dykes

UPPER TRIASSIC - CRETACEOUS ?

QM Quartz monzonite intrusive

UPPER TRIASSIC

VL Andesite to dacitic flows and tuffs, undifferentiated overlying sediments

Flows:

AN - andesite DC - dacite RD - rhyodacite  
FP - feldspar porphyry

Tuffs:

RT - rhyodacite AT - ash XL - crystal  
RH - rhyolite LT - lithic CT - cherty  
DT - dacite PT - lapilli AX - mixed ash and crystal, etc

SEDIMENTS

SILT - siltstone LST - limestone  
SST - sandstone CHT - chert

MISCELLANEOUS

BX - breccia FT - fault zone --B- brecciated  
OB - overburden NA - not assayed

MINERALIZATION ~

MS - Massive sulphides  
VZ - Vein zone  
QS - quartz carbonate veins

q - quartz veins  
l - calcite veins

py - pyrite as - arsenopyrite sp - sphalerite  
cp - chalcopyrite po - pyrrhotite mg - magnetite  
Pyrite noted if >5% Other minerals noted if >1%

ALTERATION ~

w - weathered s - silicification e - epidote  
a - argillic c - chloritization k - secondary k-spar  
p - propylitic b - secondary biotite CS - calc. silicate

SYMBOLS ~

--- Contact --- Road --- Casing  
--- Fault --- Trench --- No recovery  
--- Interbedded --- Diamond drill hole \* Sample location and number



0.15 1500 oz/t Au, ppm Cu

0.29 28.9 oz/t Au Feet

0 5 10 20 m  
Scale 1:500

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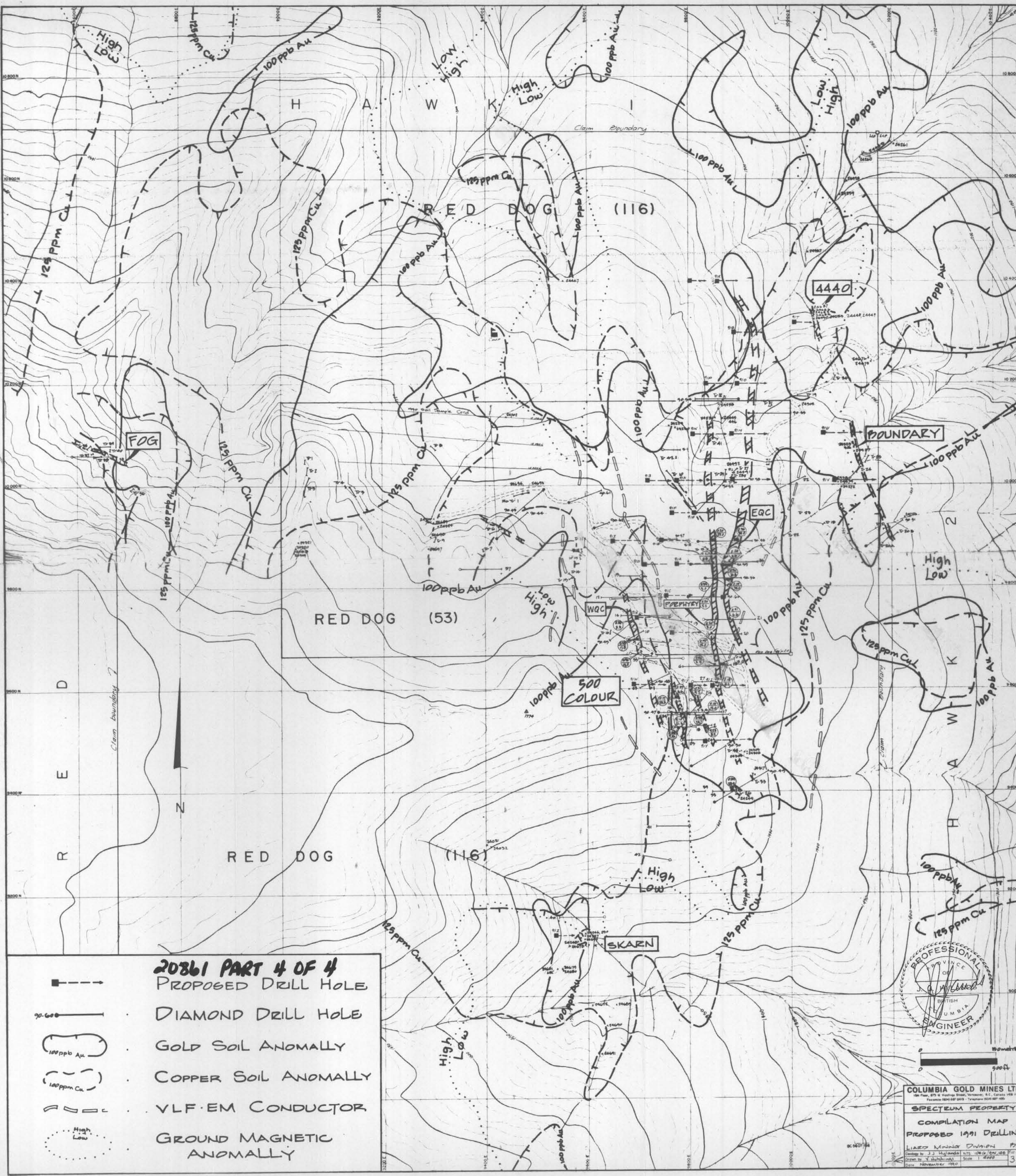
SPECTRUM PROPERTY

CROSS SECTION 9400N

DDH - 89 - 33, 39

LIARD MINING DIVISION P.C.

|                             |                     |           |
|-----------------------------|---------------------|-----------|
| Geology by: J. J. Hutchings | NTS: 1:24 G/9W, 10E | Plate No. |
| Drawn by: J. Hutchings      | Scale: 1:500        | 33        |
| Date: November 1990         |                     |           |



- 20861 PART 4 OF 4**  
**PROPOSED DRILL HOLE**
- DIAMOND DRILL HOLE
  - GOLD SOIL ANOMALLY
  - COPPER SOIL ANOMALLY
  - VLF-EM CONDUCTOR
  - High Low GROUND MAGNETIC ANOMALY



**COLUMBIA GOLD MINES LTD.**  
 100 Feet, 875 W. Hastings Street, Vancouver, B.C., Canada V6B 1A2  
**SPECTRUM PROPERTY**  
**COMPLETION MAP**  
**PROPOSED 1991 DRILLING**  
 LIAISON MINING DIVISION P.C.  
 Drawn by J.J. Williams NTS 1000/gm/100 Part 4  
 Date: November 1990 Scale: 1:5000 34