

LOG NO:	DEC 31 1991	RD.
ACTION:		
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DIAMOND DRILLING

BEACH GROUP

NANAIMO MINING DISTRICT

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**22,006**  
DECEMBER 5, 1991

BHP-UTAH MINES LTD.

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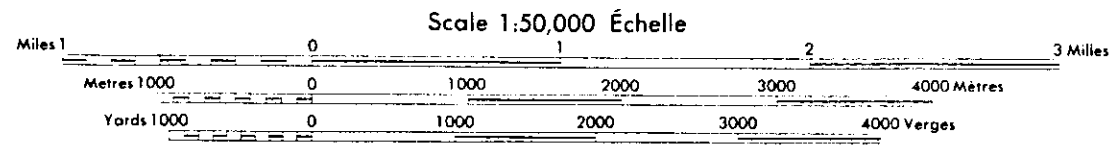
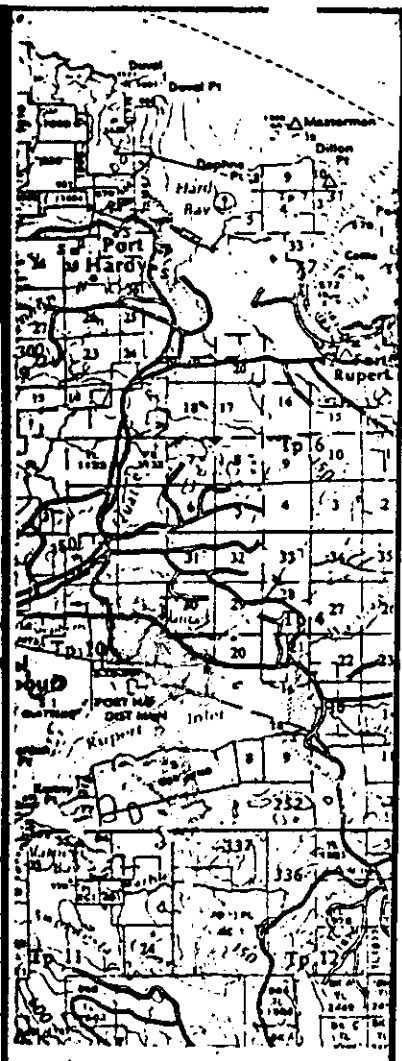
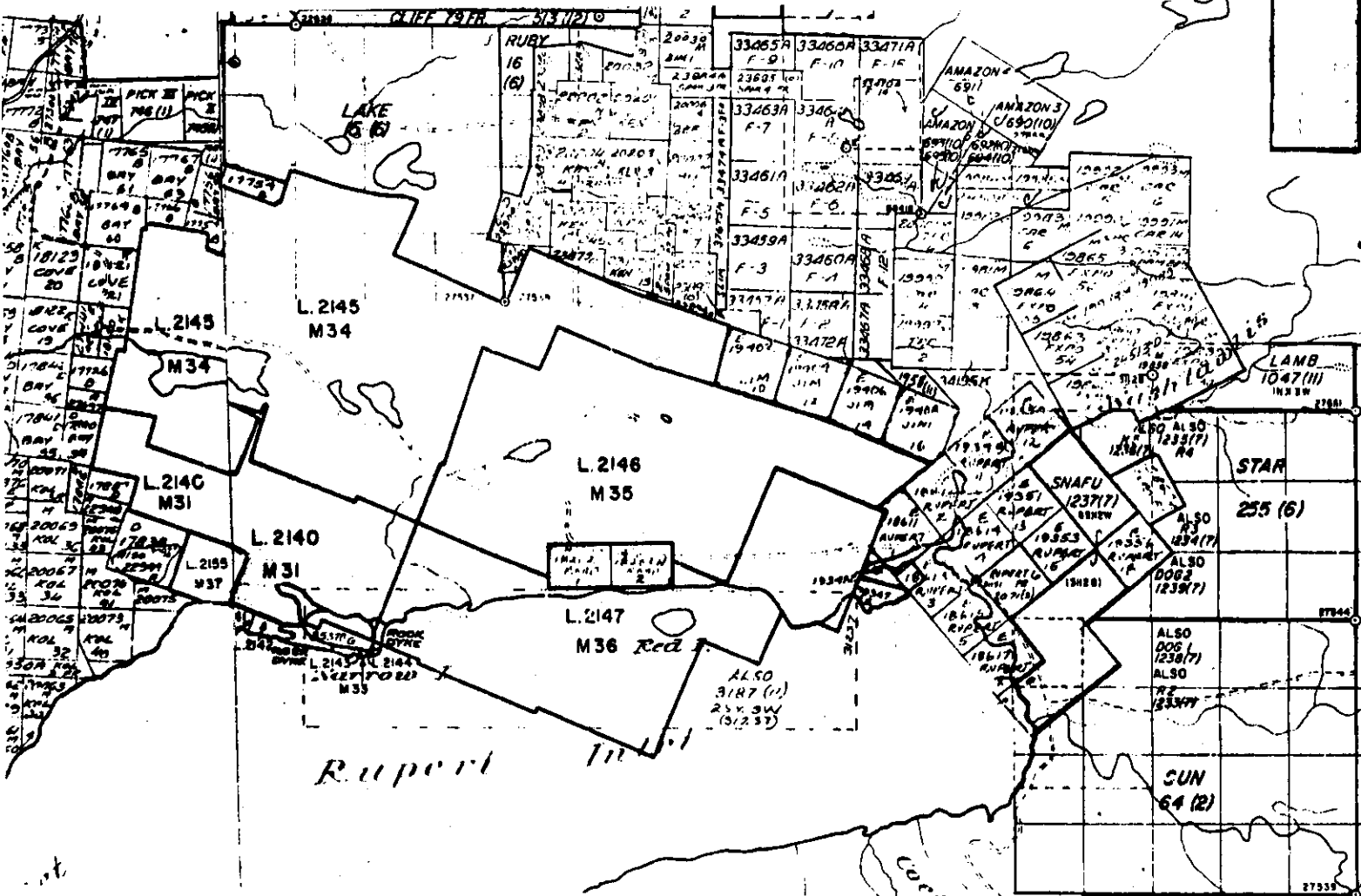
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Scale 1:50,000 Échelle

Map Area

SCALE = 1:250 000

NTS 92L

LOCATION MAP

BHP-UTAH MINES LTD.

FIG. 1

## 1.0 INTRODUCTION

Between February 1, 1991 and February 8, 1991, a series of 4 diamond drill holes were completed for a total cumulative footage of 1591 ft. (484.9 m). Of this, 1335 ft. (406.9 m) falls within the group. These holes formed a part of the study to improve the geologic understanding of the of the south-east extension of the Island Copper mineralizing porphyry.

## 2.0 LOCATION AND ACCESS

The claim group extends from the Island Copper mine site approximately 6 km to the east-southeast. The minesite is located on the north shore of Rupert Inlet. The area is within the Nanaimo mining district at roughly 127 deg. 25 min. Long., and 50 deg. 36 min. Lat., on the 92L/11W mapsheet.

Air service is available on a twice daily basis to Port Hardy. A paved highway offers land access to Port Hardy and the Island Copper Mine. Drill-site access is by private mine roads and logging roads.

## 3.0 PHYSIOGRAPHY

The area is within the coastal lowland of the Suquash basin forming part of the Nahwhitti Lowlands of the Central Trough physiographic subdivision. The area is characterized by very low relief with a few low rolling hills. Elevations range from 0-300 feet above sea level. The eastern end of Rupert Inlet covers part of the group, and the claims are crossed by the Waukwaas and Washlawlis creeks.

## 4.0 GEOLOGY

The upper Triassic and Lower Jurassic sedimentary and volcanic succession of the Vancouver and Bonanza Groups respectively, and the Jurassic granodiorite and quartz-diorite stocks underlie the area north and east of Rupert Inlet. The succession strikes west-northwest and dips gently to the south. From south to north (ie: youngest to oldest) the formations are:

#### 4.0 GEOLOGY cont'd

- 1) Bonanza Volcanics - andesitic to basaltic flows and tuffs.
- 2) Parson Bay Sediments - calcareous siltstone with interbedded shales, limestones, and some andesitic and cherty tuffs.
- 3) Quatsino Limestone - massive to thickly bedded fossiliferous limestone.
- 4) Karmutsen Formation - pillow basalts and amygdaloidal flows.

The Dawson Fault cuts across the claim group juxtaposing Karmutsen formation rocks against the Bonanza formation on the south-east shore of Rupert Inlet. In the drilled area two significant faults (FL-D and AR-FLT) disrupt the copper mineralization (see Fig. 2).

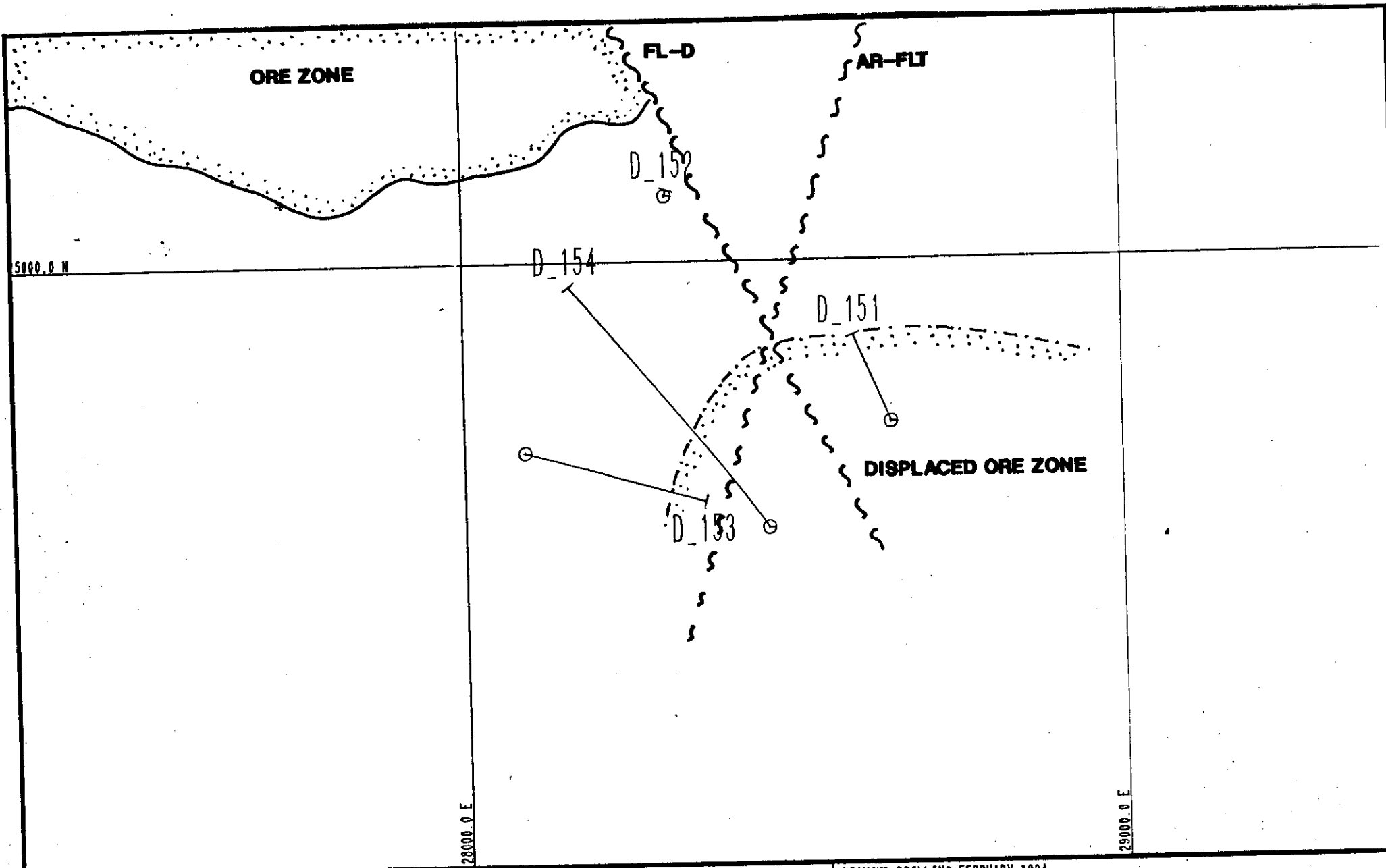
#### 5.0 PREVIOUS WORK

Mining is currently in progress on mining lease #255 with consequent drilling and development activities and geologic mapping. Surface mapping, mag, VLF, IP, geochem surveys, and exploratory diamond and percussion drilling has been carried out by BHP-UTAH and it's predecessor companies on the mineral claims.

The current program forms part of an ongoing exploration and engineering program aimed at maintaining a future supply of millfeed to the Island Copper mill. Previous diamond drilling was summarized in the Sun-89 Group report of October 1988.

#### 6.0 OBJECTIVES

The area drilled was considered to be waste based on blasthole contacts. A new geologic interpretation indicated the potential for the displacement of the east-pit ore zone and a parallel porphyry dyke system to the south of the main Island Copper porphyry. Two aspects had to be tested: 1) what kind of displacement could be expected of the two fault zones, and 2) was there an en-echelon dacite porphyry intrusive, and was it a mineralized porphyry or a later barren intrusive?



QUICK-PLOT  
GEMCOM Services Inc.

DATE = 04-12-91  
TIME = 11:25:29

Island Copper  
Island Copper Mine

DIAMOND DRILLING FEBRUARY 1991

**FIG. 2**

**760 BENCH PLAN VIEW**

HORIZONTAL SCALE =

1 : 2400

VERTICAL SCALE =

1 : 2400

## 7.0 WORK PERFORMED

The drill core was logged, measured for recovery and RQD, ILCRMR ( a special rock mass rating system), and magnetic susceptibility ( $\times 10^{-3}$  CGS units). Approximately 50% of the core was split and assayed onsite by the Island Copper assay lab. The core is stored, onsite, as are the pulps and rejects. The core was logged by A. T. Reeves and J. A. Fleming. The ILCRMR determinations were done by stability engineer G. A. Clarke, P.Eng. The intact half of the core was retained for it's future value in slope design or for acid rock drainage studies. Drilling statistics are tabulated below.

TABLE 1: DRILLING STATISTICS

HOLE ID	LENGTH ft	EAST (mine grid system)	NORTH	ELEV.	AZIMUTH true	DIP deg	# DIP tests
D-151	256	28647.6	4753.2	837.6	338	-56	1
D-152	283	28309.1	5098.6	706.9	019	-88	0
D-153	407	28092.3	4712.2	837.2	109	-45	1
D-154	645	28640.4	4595.8	837.3	328	-38	3

## 8.0 RESULTS

The individual (1:120 scale) drill hole logs are included in Appendix A along with summary (1:2400 scale) logs. Assays and ILCRMR data are included in Appendix B. The holes all lie within the Bonanza Formation with lithologies consisting of andesitic to high-alumina basaltic tuffs and flows. Textures are generally poorly preserved due to the intense alteration halo common to porphyry copper deposits. A few intrusive breccia zones are noted in D-151, D-152, and D-154. These are interpreted as channels venting high velocity fluids to the surface, likely from the later post-mineralization dykes.

## 8.0 RESULTS cont'd

There are no correlatable stratigraphic horizons within the host volcanic rocks. The only unique unit is a brick red hematitic fragmental unit which is considered to be a chloritic altered sheared zone that has undergone oxidation, perhaps in D-153 (80-87'/24.4-26.5m). The geology is further complicated by multiple faults with unknown offsets.

Alteration and faulting are the most significant features outlined by the drilling. In fact the focus of our exploration is on the identification of the alteration zones for the purpose of vectoring toward the potential mineralized zone. In general, the alterations at Island Copper are typical of island arc porphyry copper systems with the well described propylitic, transitional and potassic assemblages. Due to the multiple intrusions the alteration assemblages are often overprinted thus increasing the complexity of the geologic picture. These alterations which generally relate to magmatic water flow, are superimposed by phyllic and argillic to advanced argillic alterations driven primarily by the influx of meteoric water into the cooling and collapsing system.

The propylitic zone is characterized by strong epidote alteration with some chlorite. Chlorite is not diagnostic since it is ubiquitous through all alteration zones, generally as a retrograde feature. None of the drill holes fall within the propylitic zone.

The transition zone between the propylitic and potassic zones is characterized by moderate magnetite and chlorite alteration with accessory quartz and occasional retrograde epidote. This zone encompasses D-151 (13-62'/4-18.9m), D-152 (36-201/11-61.3m'), and D-154 (180-371'/54.9-113.1m).

Often the transition zone is overprinted or replaced by a phyllic alteration zone known as SCC or sericite-clay-chlorite assemblage. This occurs as selvages on quartz or pyrite veins. As the vein intensity increases the envelopes coalesce, thus forming zones of pervasive alteration. The SCC alteration is the zone of primary importance in determining the ILCRMR, because of the considerable influence they exert on the overall rock strength. Zones of significant SCC alteration are found in holes D-151 (62-102'), D-152 (17-36'), D-153 (15-407'), and D-154 (21-178').

The sericitic alterations also tend to channel along structures, creating envelopes in the adjacent wall-rocks. This causes a further deterioration of the rock strength, already weakened by mechanical movement. These zones may more correctly called advanced argillic alteration as pyrophyllite is often noted. No distinctions are made regarding the types of clay minerals.



## 8.0 RESULTS cont'd

The advanced argillic alterations are very localized and are represented by D-153 (117-142/35.7-43.3m') and D-154 (236-242.5'/71.9-73.9m). This zone is considered to be part of the AR (aka Trey Creek) fault system. The FL-D fault is a major ore control for the east end of the Island Copper deposit. Narrow, clay filled, faults are numerous but correlation is uncertain because of the shear numbers and lack of distinctive lithologic features.

Copper mineralization matched the geologic interpretation quite well, with only minor dislocations caused by the inordinate amount of faulting. Millable grades were intersected in D-151 (15-160'/4.6-48.8m), D-152 (140-283'/42.7-86.3m), and D-154 (225-640'/68.6-195.1m). Hole D-153 was barren. Note that for the purposes of the grouping, hole D-151 has not been included for credit as it falls on the IPSCO holding.

## 9.0 CONCLUSIONS

These holes outline part of a typical Island arc porphyry system with propylitic, transition, and potassic zones with superimposed SCC, and advanced argillic assemblages. The expected, displaced mineralized zone was encountered although the proposed en echelon dyke system was not encountered. The alteration pattern does not indicate any further potential to the south.

## 10.0 RECOMMENDATIONS

The weak rock alterations, sub-ore mineralization, and lack of a parallel porphyry system indicate a very low probability of further increasing ore reserve potential to the south-east. No further drilling is recommended for this purpose.

11.0 STATEMENT OF COSTS

DRILLING:

Total Footage: 1591  
 Footage in Group: 1335  
 % of costs for Group: 80%

SUBJECT	TOTAL	GROUP
Mob/Demob	\$ 3000	\$ 2400
Drilling	25682	20545
Moves, etc.	2100	1680
Materials	1249	1000
	-----	-----
	\$32031	\$25625
GST (7%)	2242	1793
	-----	-----
subtotal (a)	\$34273	\$27418
Assays	131 x \$30 ea	3930
Core shack labour	6 days x \$125/day	750
Supervision/core logging	6 days x \$175/day	1050
Report preparation	2 days x \$175/day	350
		-----
subtotal (b)		\$ 6080
Company overhead (25% of subtotal b)		1520
		-----
subtotal (c)		\$ 7600
		=====
Total Group Costs (subtotals a+c):		\$35018

## 12.0 PROCEDURES

### SAMPLE ANALYSIS PROCEDURES

BHP-UTAH MINES LTD.

ISLAND COPPER MINE ASSAY LAB

#### DRILL CORE

COPPER, MOLYBDENUM, IRON, LEAD & ZINC

Sample\_Size 90% minus 100 mesh

- 2.6g / 260 ml phosphoric flask

#### Acids

- 10 mls HNO<sub>3</sub> 70% Reagent Grade  
- 10 mls HCl 37% Reagent Grade  
- 7 mls HClO<sub>4</sub> 70% Reagent Grade  
- AlCl<sub>3</sub> solution - 50/50 HCl /H<sub>2</sub>O + 8.9g AlCl<sub>3</sub> per litre

#### Time\_Duration

- 7 to 10 minutes on bare hot plate

#### Instruments\_Used

- Varian Techtron A.A.275

#### GOLD

#### Sample\_Size

- 5g / 200 ml phosphoric flask  
- 50 ml aliquat of above extractd in 20 mls MIBK (reagent grade)

#### Acids

- 20 mls HNO<sub>3</sub> 70% reagent grade  
- 60 mls HCl 37% reagent grade  
- 20 mls M.I.B.K. reagent grade

#### Time\_Duration\_(Acid\_Attack)

- 1 1/2 to 2 hours

#### Extraction\_Time

- 3 minutes extraction  
- 1/2 minute rinse 8% HCl solution

Instrument\_Used

- Varian Techtron A.A. 1275 with G.T.A.95 (Graphic Tube Atomizer)

**SILVER**

Sample\_Size

- 2g / 300 ml beakers

Acids

- 10 mls HNO<sub>3</sub> 70% reagent grade
- 10 mls HCl 37% reagent grade
- 10 mls HClO<sub>4</sub> 70% reagent grade
  
- 30 mls HCl 37% reagent grade added after samples taken to strong HClO<sub>4</sub> fumes.

Time\_Duration

- Approximately 1 hour digestion
- Approximately 10-15 minutes boil in 30 mls HCl / 100 mls

Instrument\_Used

- Varian Techtron

RMR IS DETERMINED ACCORDING TO THE FOLLOWING TABLE:

PARAMETER		RANGES OF VALUES													
1	Strength of intact rock material	Point-load strength index	> 10 MPa	4 - 10 MPa	2 - 4 MPa	1 - 2 MPa	For this low range - uniaxial compressive test is preferred								
		Uniaxial compressive strength	R5 >250 MPa	R4 100 - 250 MPa	R3 50 - 100 MPa	R2 25 - 50 MPa	R1 5-25 MPa	R1 1-5 MPa	<1 MPa			S5	S4	S3	S2
	Rating	30	27	22	19	17	15	10	6	2	1	0			
2	Handled Drill core quality RQD		90% - 100%	75% - 90%	50% - 75%	25% - 50%	< 25%								
	Rating		20	17	13	8	3								
3	Handled spacing of discontinuities		>2 m	0.6 - 2 m	200 - 600 mm	60 - 200 mm	<60 mm								
	Rating		20	15	10	8	5								
4	Condition of discontinuities		Rock > R1 Very rough surfaces. Not continuous No separation Unweathered wall rock	Rock > R1 Slightly rough surfaces. Separation < 1 mm Slightly weathered walls	Rock > R1 Slightly rough surfaces Separation < 1 mm Highly weathered walls	Rock ≥ R1 Slit-sided surfaces OR Gouge < 5 mm thick OR Separation 1-5 mm Continuous	Rock < R1 Soft gouge > 5mm thick OR Separation > 5 mm. Continuous								
	Rating		30	25	20	10									

TABLE 2  
S R K GEOMECHANICS CLASSIFICATION OF ROCK MASSES ( SRMR )

### 13.0 STATEMENT OF QUALIFICATIONS

I submit that we are qualified to prepare and present this report for assessment credit. Our qualifications are as follows:

A. T. Reeves, P.Geo.  
Geologist  
Island Copper Mine, BHP-UTAH Mines Ltd., Pt. Hardy, B.C.

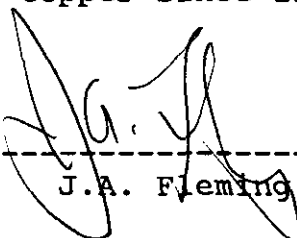
- 1) Professional Geoscientist, (1991) A.P.E.G. of B.C.
- 2) B.Sc. (1989) University of Waterloo
- 3) Dipl. T, Mining, (1979) B.C. Institute of Technology
- 4) Employed as geologist and/or geotechnician since 1979

  
-----  
A.T. Reeves, P.Geo.



J. A. Fleming, F.G.A.C.  
Chief Geologist  
Island Copper Mine, BHP-UTAH Mines Ltd., Pt. Hardy, B.C.

- 1) Fellow of the Geological Association of Canada
- 2) B.Sc. (1971), McGill University
- 3) Employed as geologist since 1971, and as Chief Geologist at Island Copper since 1982.

  
-----  
J.A. Fleming, F.G.A.C.



PROJECT Island Copper  
 CONTRACTOR Olympic  
 DATE STARTED Feb 1/91 COMPLETED Feb 2/91  
 LOGGED BY A. Reeves

T.D. 256' COLLAR ELEVATION 83' 6"  
 INCLINATION -56° BEARING 338°  
 COORDINATES 28647.6 E 4753.2 N  
 SURVEY REFERENCES L 135W → 299'S

Footage	ALTERATION															STR.	VISUAL EST.						Sample No. & Interval	LOG	LITHOLOGIC DESCRIPTIONS, NOTES & SKETCHES	ROCK UNIT		
	Core Recovery	Oxide	Quartz	Sericite	Clay/Pyrop	Biotite	K-spar	Chlorite	Epidote	Carb. Zeo	Garnet	Pyroxene	Amphibole	Wollastonite	PLA		CS	Sulf. Vens	Frac. Inten	Est. Cu, Mo	CuFeS <sub>2</sub>	FeS <sub>2</sub>		Cu <sub>2</sub> FeS <sub>4</sub>			Fe <sub>3</sub> O <sub>4</sub>	MeS <sub>2</sub>
100																									100	<p>0-10' No core                      PY, EPY                      1' bed AFP (@ 67')</p>	<p>13-62: Chl-Mag altered ash to la pilli tuffs / flows. Pale green fsp tuffs (sec). Chlorite (Chl, amph) mts, weak patchy biot.                      62-102: Strong chl-ser-epi mag alt tuffs. → SCC with retrograde sp.                      102-256' Chl-mag-biot ± amph alt tuffs. Occasional zones of massive ser. alt.</p>	
200																								200	<p>→ atg brn                      ppt: py</p>			
256																									256			

HOLE NO. D-151

**DRILL LOG**

Page 1 of 5

PROJECT Island Copper  
 CONTRACTOR Olympic  
 DATE STARTED Feb 1/91 COMPLETED Feb 2/91  
 LOGGED BY A. Reeves

T.D. 256' COLLAR ELEVATION 837.6  
 INCLINATION -56° BEARING 338°  
 COORDINATES 28647.6E 4753.2N  
 SURVEY REFERENCES 840 SE Pit L135W 299S

Footage	ALTERATION											STR.	VISUAL EST.						Sample No. & Interval	LOG SCALE <u>1" = 10'</u> BASIC GEOLOGY: rock types, metallization, structures alterations, one column system	LITHOLOGIC DESCRIPTIONS, NOTES & SKETCHES	ROCK UNIT					
	Core Recovery	Oxide	Quartz	Sericite	Clay/Pyrop	Biotite	K-spar	Chlorite	Epidote	Carb. Zeo	Garnet		Pyroxene	Amphibole	Wollastonite	Qtz	Sulf Veins	Frac Inten					Est Cu, Mo	CuFeS <sub>2</sub>	FeS <sub>2</sub>	Cu <sub>2</sub> FeS <sub>4</sub>	Fe <sub>3</sub> O <sub>4</sub>
0																										0-13 Casing set thru pit subgrade. Some cobbles recovered.	
13																											
13-23 .23 .008																											
20																											
20-23 .47 .011																											
30																											
30-36 .36 .013																											
40																											
40-43 .21 .010																											
50																											
50-53 .23 .010																											
60																											

narrow wht carb ± orange zeol throughout  
 ← retrocpi  
 P<sup>+</sup>CPY<sup>+</sup>  
 PY  
 clay seam above 1" QV  
 4" sale green, coarse grained chl and intrusive (± bxn)  
 cpy<sup>+</sup>  
 PY<sup>+</sup>  
 my  
 PY<sup>+</sup>  
 ← pink/zeol carb PY<sup>-</sup>  
 1" gauge, ser-clay seam with 2" orange zeol/carb  
 1/2" fault  
 PY<sup>+</sup>, cpy<sup>o</sup>

0-13 Casing set thru pit subgrade. Some cobbles recovered.  
 13-43' Green-black lapilli tuffs ± flows, clasts after mag alt'd (>20% mag). Some small (<2mm) pale green fsp laths (sec weak, alt'?) chl (after amphi?) haloes on mag<sup>o</sup> vltts → very thin. Exc cpy dist; especially to mag rich zones. Pale coloured siliceous areas could be albittization. Bt present; fine grained & partially masked by strong chlorite alterations.  
 43-47 1/2' Fault Zone; marked by narrow parallel clay seams, bxn and subparallel QV @ opp<sup>r</sup> CN  
 47 1/2'-62' : Andesite as above. Qtz veins have chl-mottled haloes to 12" (pseudo lapilli); mag decreases







HOLE NO. D151

**DRILL LOG**

Page 4 of 5

PROJECT Island Copper

T.D. \_\_\_\_\_

COLLAR ELEVATION \_\_\_\_\_

CONTRACTOR \_\_\_\_\_

INCLINATION \_\_\_\_\_

BEARING \_\_\_\_\_

DATE STARTED \_\_\_\_\_ COMPLETED \_\_\_\_\_

COORDINATES \_\_\_\_\_

LOGGED BY AR

SURVEY REFERENCES \_\_\_\_\_

Footage	ALTERATION												STR.	VISUAL EST.						Sample No. & Interval	LOG SCALE <u>1" = 10'</u> BASIC GEOLOGY: rock types, metallization, structures alterations, one column system	LITHOLOGIC DESCRIPTIONS, NOTES & SKETCHES	ROCK UNIT					
	Core Recovery	Oxide	Quartz	Sericite	Clay/Pyrop	Biotite	K-spar	Chlorite	Epidote	Carb. Zeo	Garnet	Pyroxene		Amphibole	Wollastonite	A	B	Sulf. Veins	Frac. Inten					Est. Cu. Mo	CuFeS <sub>2</sub>	FeS <sub>2</sub>	Cu <sub>2</sub> FeS <sub>4</sub>	Fe <sub>2</sub> O <sub>3</sub>
180																										181-195 Qty-veined, chl-ser altered (bt-mag) tuffs (sec)		
.22 .009																											195- Biot-mag-amph alt tuffs	
190																											198' → secondary amph in vults primary amph (pyx?) has been chloritid. Nms clear sp latic in mag ± bt ± chl matrix. Texture is ash-lapilli. Some xstal buff too?	
.17 .004																											190 orange pink zeol/carb.	
200																											190 ← chl <sup>d</sup> amph halo ← sec. amph.	
.15 .007																											200 1/2" smoky, diffuse illitic halo	
210																											210 1/4" smoky 1/4" smoky	
.23 .012																											210 1" pinkish gray	
220																											220 clouded smoky clouded smoky	
.19 .008																											230 1" smoky	
230																												
.17 .006																											230 3/8" smoky	
240																												



PROJECT Island Copper  
 CONTRACTOR Olympic  
 DATE STARTED Feb 2/91 COMPLETED Feb 3/91  
 LOGGED BY A. Reeves

T.D. 283' COLLAR ELEVATION 76.90  
 INCLINATION -88 BEARING 019°  
 COORDINATES 28309.1 E 5098.6 N  
 SURVEY REFERENCES L139.33 75'S

Footage	ALTERATION														STR.	VISUAL EST.						Sample No & Interval	LOG SCALE <u>1"=200'</u> BASIC GEOLOGY: rock types, metallization, structures alterations, one column system	LITHOLOGIC DESCRIPTIONS. NOTES & SKETCHES	ROCK UNIT					
	Core Recovery	Oxide	Quartz	Sericite	Clay/Pyrop	Biotite	K-spar	Chlorite	Epidote	Carb-Zeo	Garnet	Pyroxene	Amphibole	Wollastonite		Sulf Vens	Frac Inten	Est Cu	Mo	CuFeS <sub>2</sub>	FeS <sub>2</sub>					Cu <sub>2</sub> FeS <sub>4</sub>	Fe <sub>2</sub> O <sub>3</sub>	MoS <sub>2</sub>		
0																									0-17 No Core (just rubble)					
100																									17-36 Med green to bleached darker porphyry - top all to pale green color alt to chl. (see) Matrix	36-98 Andesite breccia (stockwork!)	98-113 Ash fall & Mag-Chl (after amphi)	122-193 Andesite Breccia (stockwork)	201-283' Mag - chl - bit and QV stockwork, chl (after amphi)	
200																									← QFP (114-122)					
																									← 5' bxa zone					
																									← 5' bxa zone					

HOLE NO. D-152

**DRILL LOG**

Page 1 of 5

PROJECT Island Copper  
 CONTRACTOR Olympic  
 DATE STARTED Feb. 2-91 COMPLETED Feb. 3-91  
 LOGGED BY A. Reeves

T.D. 283' COLLAR ELEVATION 706.90  
 INCLINATION -88 BEARING 286.5°  
 COORDINATES 28309.1 E 5098.6N  
 SURVEY REFERENCES SE PIT / on main ramp

Footage	ALTERATION											STR.	VISUAL EST.					Sample No. & Interval	LOG SCALE <u>1"=10'</u> BASIC GEOLOGY: rock types, metallization, structures alterations, one column system	LITHOLOGIC DESCRIPTIONS. NOTES & SKETCHES	ROCK UNIT					
	Core Recovery	Oxide	Quartz	Sericite	Clay/Pyrop	Bitite	K-spar	Chlorite	Epidote	Carb-Zeo	Garnet		Pyroxene	Amphibole	Wollastonite	Sulf. Veins	Frac Inter					Est. Cu. Mo	CuFeS <sub>2</sub>	FeS <sub>2</sub>	Cu <sub>2</sub> FeS <sub>4</sub>	Fe <sub>2</sub> O <sub>3</sub>
0																								0-17	bench subgrade some pebbles rec'd → chl-ser QFP	
17																								17-36'	"QFP" Med green chl alt rhyodacite-dacite Fsp alt to pale green colour Matrix completely alt to chl; diss pyr. Qtz eyes to lens = 10% Note some grey silicification and always accompanied by bleached sericitic haloes.	porphyry (occ). some matrix
20																								30	white clay seam to grey Qtz frags ~1" 2" grey ore	
30																								40	6" sandy cut by vit. Qtz minor carb on ben	
40																								50	replacement textures? cpy repl mag on boundary of mag clasts in Qtz. 70-80% grey silica	
50																								60	Pis cpy in dis	
60																								65'	Pale green flooded zone (sericitized albite?) in intense mag (units & dis) plus andesite.	Qtz streaked
70																								70	gravel core, poor recy	

HOLE NO. D-152

## DRILL LOG

Page 2 of 5PROJECT Island Copper

CONTRACTOR \_\_\_\_\_

DATE STARTED \_\_\_\_\_ COMPLETED \_\_\_\_\_

LOGGED BY R

T.D. \_\_\_\_\_

COLLAR ELEVATION \_\_\_\_\_

INCLINATION \_\_\_\_\_

BEARING \_\_\_\_\_

COORDINATES \_\_\_\_\_

SURVEY REFERENCES \_\_\_\_\_

Footage	ALTERATION													STR.	VISUAL EST.					Sample No. & Interval	LOG SCALE <u>1"=10'</u> BASIC GEOLOGY: rock types, metallization, structures, alterations, one column system	LITHOLOGIC DESCRIPTIONS. NOTES & SKETCHES	ROCK UNIT								
	Core Recovery	Oxide	Quartz	Sericite	Clay/Pyrop	Biotite	K-spar	Chlorite	Epidote	Carb Zeo	Garnet	Pyroxene	Amphibole		Wollastonite	A	Sulf Veins	Frac Inten	Est Cu, Mo					CuFeS <sub>2</sub>	FeS <sub>2</sub>	Cu <sub>2</sub> FeS <sub>4</sub>	Fe <sub>2</sub> O <sub>3</sub>	MoS <sub>2</sub>			
70																															
75																															
80																															
85																		.1	5												
90																	.2	10													
95																															
100																															
105																	.2	5													
110																.3	10														
115																															
120																															
125																															
130																															

36'-98' As above

76-87 coarser texture indicated by larger (1/2" - 2") qtz-vein frags supported by chl-mag matrix → may similar to D-151 138-142.5'

may usually as distinct flooding of matrix; occasional rimming of frags and matrix vits.

chl all' may be destroyed amph

98'-113' Mag-chl (after amph)

fine grains dark green to black andesites. Abt wavy mag vits and weak to moderate quartz veining.

113-114' Qtz-ser-chl breccia

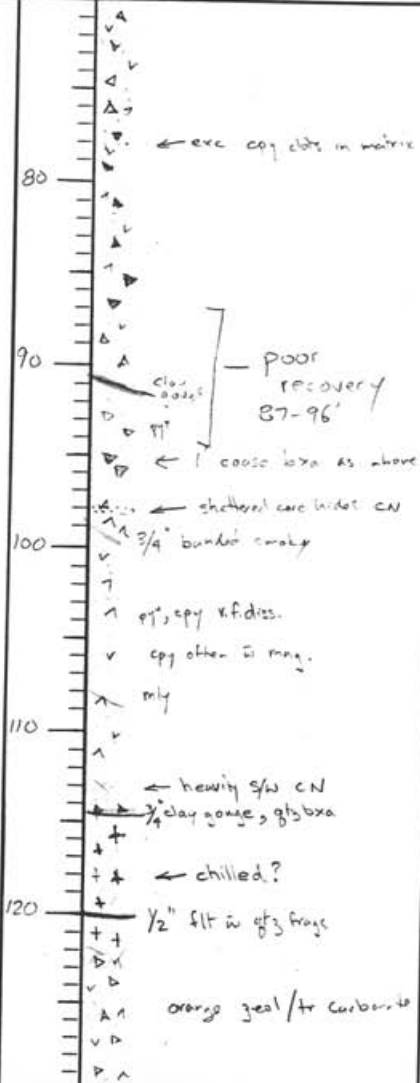
no identifiable probal. fac.

114-122 QFP. Chl-ser-mag

alt<sup>ed</sup> porphyry. Qtz eyes to 1cm  
~20%. Dis. pyr, mag

122-170 Breccia - very similar

to 36-98'; occ vauve of qtz eyes → may be rounded qtz-vein frags.



HOLE NO. D-152

# DRILL LOG

Page 3 of 5

PROJECT Island Copper

T.D. \_\_\_\_\_

COLLAR ELEVATION \_\_\_\_\_

CONTRACTOR \_\_\_\_\_

INCLINATION \_\_\_\_\_

BEARING \_\_\_\_\_

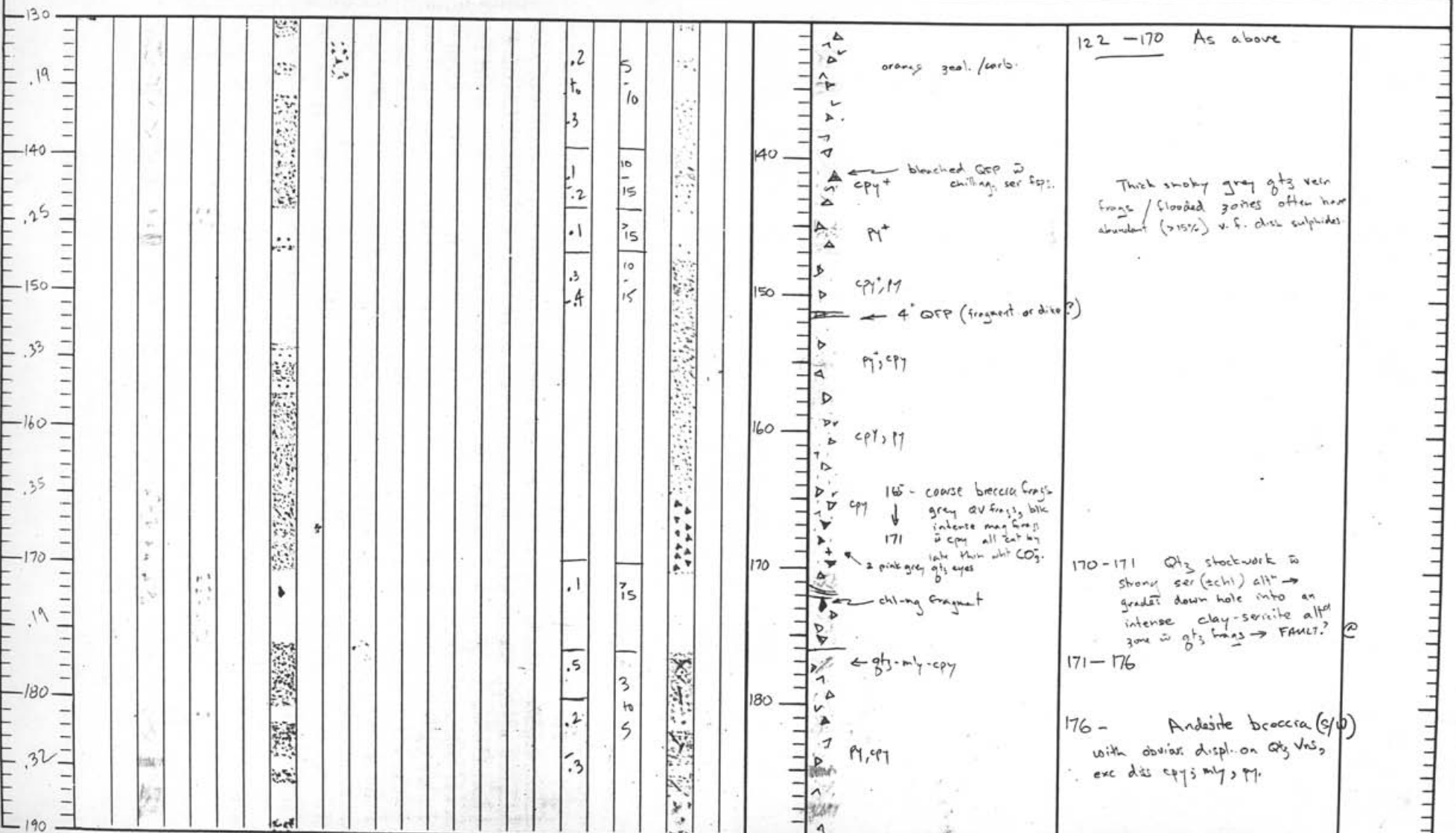
DATE STARTED \_\_\_\_\_ COMPLETED \_\_\_\_\_

COORDINATES \_\_\_\_\_

LOGGED BY R

SURVEY REFERENCES \_\_\_\_\_

Footage	ALTERATION											STR.	VISUAL EST.					Sample No. & Interval	LOG SCALE <u>1" = 10'</u> BASIC GEOLOGY: rock types, metallization, structures alterations, one column system	LITHOLOGIC DESCRIPTIONS. NOTES & SKETCHES	ROCK UNIT
	Core Recovery	Oxide	Quartz	Sericite	Clay/Pyrop	Biotite	K-spar	Chlorite	Epidote	Carb/Zeo	Garnet		Pyroxene	Amphibole	Wollastonite	Sulf. Veins	Frac Inten				







PROJECT **Island Copper**  
 CONTRACTOR \_\_\_\_\_  
 DATE STARTED \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 LOGGED BY **AR**

T.D. \_\_\_\_\_ COLLAR ELEVATION \_\_\_\_\_  
 INCLINATION \_\_\_\_\_ BEARING \_\_\_\_\_  
 COORDINATES \_\_\_\_\_  
 SURVEY REFERENCES \_\_\_\_\_

Footage	ALTERATION											STR.	VISUAL EST.					Sample No. & Interval	LOG SCALE $1''=10'$ BASIC GEOLOGY: rock types, metallization, structures alterations, one column system	LITHOLOGIC DESCRIPTIONS. NOTES & SKETCHES	ROCK UNIT					
	Core Recovery	Oxide	Quartz	Sericite	Clay/Pyrop	Biotite	K-spar	Chlorite	Epidote	Carb-Zeo	Garnet		Pyroxene	Amphibole	Wollastonite	Sulf. Veins	Frac. Inter.					Est. Cu, Mo	CuFeS <sub>2</sub>	FeS <sub>2</sub>	Cu <sub>2</sub> FeS <sub>4</sub>	Fe <sub>2</sub> O <sub>3</sub>
250																	.1	1-3					250-260	bxd qtz disc euhedral py pink/orange zool ± carb ← chloritized amp vltts?	245.5-261 As above Qtz stockwork	
260																							260-270	← shattered core (CONTACT ZONE) ← QPP frag cpx 6" grey; lower chl 4" light grey; 5-10% v.f. disc py & cpx py ← chl after amph vltts	261-266 Breccia Zone Very similar to previous bxa except for abndt disc cpx in matrix (often with mag)	
270																	.1	1-3					270-280		266-283 Similar to 245.5-261' Mag vltts, Qtz stockwork, chl (after amph) veins, and moderate thin calc veins to orange zeolite ± carbonate veins.	
280																							280-290			
290																										
300																										

HOLE NO. D-153

**DRILL LOG**

Page 1 of 1

PROJECT Island Copper  
 CONTRACTOR Olympic NQ  
 DATE STARTED Feb 3/91 COMPLETED Feb 5/91  
 LOGGED BY JF

T.D. 407' COLLAR ELEVATION 837.2  
 INCLINATION 44.5° BEARING 109°  
 COORDINATES 28092.3E 4712.2N  
 SURVEY REFERENCES L140.2E 509'S

Footage	ALTERATION											STR.		VISUAL EST.					Sample No. & Interval	LOG SCALE <u>1" = 200'</u> BASIC GEOLOGY: rock types, metalization, structures alterations, one column system	LITHOLOGIC DESCRIPTIONS, NOTES & SKETCHES	ROCK UNIT					
	Core Recovery	Oxide	Quartz	Sericite	Clay/Pyrop	Biotite	K-spar	Chlorite	Epidote	Carb/Zeo	Garnet	Pyroxene	Amphibole	Wollastonite	ann	Sulf. Veins	Frac. Inten	Est. Cu. Mo					CuFeS <sub>2</sub>	FeS <sub>2</sub>	Cu <sub>2</sub> FeS <sub>4</sub>	Fe <sub>2</sub> O <sub>3</sub>	MoS <sub>2</sub>
0																										0-15': No Core	
100																										15-117': SCC alt <sup>d</sup> andesites of variable textures, some brecciation.	alteration
200																										117-200': Major Fault and intense zone. Pyrophyllitic throughout	
300																										200-407': Ash-lapilli basalt Pale green, reddish, highly pyritic	tuff
400																											

HOLE NO. D 153

**DRILL LOG**

Page 1 of 7

PROJECT Island Copper

T.D. 407'

COLLAR ELEVATION 827.2

CONTRACTOR OLYMAE

INCLINATION AA.5°

BEARING 109°

DATE STARTED \_\_\_\_\_ COMPLETED \_\_\_\_\_

COORDINATES 28092.3E 4712.2 N

LOGGED BY J. Fleming

SURVEY REFERENCES \_\_\_\_\_

Footage	ALTERATION											STR.	VISUAL EST.							Sample No & Interval	SCALE <u>1"=10'</u> BASIC GEOLOGY: rock types, metallization, structures alterations, one column system	LITHOLOGIC DESCRIPTIONS. NOTES & SKETCHES	ROCK UNIT				
	Core Recovery	Oxide	Quartz	Sericite	Clay/Pyrop	Biotite	K-spar	Chlorite	Epidote	Carb Zeo	Garnet		Pyroxene	Amphibole	Wollastonite	Sulf. Veins	Frac Inter	Est Cu, Mo	CuFeS <sub>2</sub>					FeS <sub>2</sub>	Cu <sub>2</sub> FeS <sub>4</sub>	Fe <sub>3</sub> O <sub>4</sub>	Mos.
0																									0-15': <u>Casing thru</u> <u>surrounds; no core.</u>		
10																									15-117'	Dark to pale green, grey, loc. reddish buff mod-str. <u>chit-seric-pyrop</u> (S.C.C.) <u>alt'd</u> <u>mod alt'd</u> v. Dark soft waxy grn (S.C.C.) patches prob leplite clasts, occ in gen fc. v. pyritic, chit-seric alt'd mtx. Pyr. occ. as units & dis. w pyr clusters to mm, but gen as discrete grains. Hem. occ as spots & units (< 2%) Mn. occ in dk sections or patches, gen fc. dissem (rarely 5%) Prob. some pyrite, compared to other, but mostly S.C.C. Sections of int. seric + v. mod tan pyrope-hyllite cut the abv. Some of unit occ. in these sections, a more assem. w int. arg. adv. arg. altms.	
20																									30-33' 40% <u>swirled</u> , banded py-mag-pyr alt'd frags 5-2mm in the grn, pyritic chit-seric alt'd mtx. Pyr both wln frags & cut frags.		
30																									41-47' bleached grey tan py-seric-pyrop pyr alt'd volc as w 2' seric gauge seam @ 43'		
40																									50-57.5' v. highly fractured, w chit or ser. sh frags + 1 @ 53' of seric gauge + 1 pyritic grn core @ 57'		
50																									58.5-67' dk grey, fg mod chit mag alt'd tuff mod pyro, hem + epid brt arg zeo units + wt calc. Wt spots & units epi		
60																											







HOLE NO. D-153

DRILL LOG

Page 5 of       

PROJECT Island Copper

T.D. \_\_\_\_\_

COLLAR ELEVATION \_\_\_\_\_

CONTRACTOR CLYMER

INCLINATION \_\_\_\_\_

BEARING \_\_\_\_\_

DATE STARTED \_\_\_\_\_ COMPLETED \_\_\_\_\_

COORDINATES \_\_\_\_\_

LOGGED BY J LEMING

SURVEY REFERENCES \_\_\_\_\_

ALTERATION		STR.	VISUAL EST.							Sample No & Interval	LOG SCALE <u>1" = 10'</u> BASIC GEOLOGY: rock types, metallization, structures alterations, one column system	LITHOLOGIC DESCRIPTIONS, NOTES & SKETCHES	ROCK UNIT
Footage	Core Recovery Oxide Quartz Sericite Clay/Pyrop Biotite K-spar Chlorite Epidote Carb/Zep Garnet Pyroxene Amphibole Wollastonite C/M	Sulf Veins Frac Inten Est Cu Mo	CuFe <sub>2</sub> S <sub>4</sub>	FeS <sub>2</sub>	CuFeS <sub>4</sub>	Fe <sub>2</sub> O <sub>3</sub>	MoS <sub>2</sub>	Σ TIE					
240													
250													
260													
270													
280													
290													
300													

3  
0.1  
10  
+

240 - 250: ✓ Pyrite disseminations  
1 bdy 400

250 - 260: ✓

260 - 270: ✓ lapilli to tan  
fine lapilli to tan

270 - 280: ✓

280 - 290: ✓

290 - 300: ✓ coarse lapilli tuff

200' - 400'  
as above - lapilli tuff  
reddish hum chitseric  
(s.c.c.) alt'd lapilli wash  
tuff. Pyr - 10-15% dis  
>> ult  
Dark lapilli chitseric  
alt'd, dw narrow  
integrated after time.

0 of 001



HOLE NO. D-153

**DRILL LOG**

Page 6 of \_\_\_\_\_

PROJECT Island Copper

T.D. \_\_\_\_\_

COLLAR ELEVATION \_\_\_\_\_

CONTRACTOR OLYMPIC

INCLINATION \_\_\_\_\_

BEARING \_\_\_\_\_

DATE STARTED \_\_\_\_\_ COMPLETED \_\_\_\_\_

COORDINATES \_\_\_\_\_

LOGGED BY J. Fleming

SURVEY REFERENCES \_\_\_\_\_

Footage	ALTERATION											STR.		VISUAL EST.					Sample No. & Interval	LOG SCALE 1" = 10' BASIC GEOLOGY: rock types, metallization, structures alterations, one column system	LITHOLOGIC DESCRIPTIONS. NOTES & SKETCHES	ROCK UNIT					
	Core Recovery	Oxide	Quartz	Sericite	Clay/Pyrop	Biolite	K-spar	Chlorite	Epidote	Carb-Zeo	Garnet	Pyroxene	Amphibole	Wollastonite	Str.	Frac. Inten.	Est. Cu. Mo.	CuFeS <sub>2</sub>					FeS <sub>2</sub>	Cu <sub>2</sub> FeS <sub>4</sub>	Fe <sub>2</sub> O <sub>3</sub>	MoS <sub>2</sub>	
300																										200- as above.	
310																											
320																											
330																											
340																											
350																											
360																											

pyrite  
coarse lapill. tuff  
↓  
ash tuff  
↓  
ash + lapill. tuff  
→ v. b. box  
↓ large lap. to 4+ cm

HOLE NO. D-153

**DRILL LOG**

Page 7 of 7

PROJECT Island Copper

T.D. \_\_\_\_\_

COLLAR ELEVATION \_\_\_\_\_

CONTRACTOR \_\_\_\_\_

INCLINATION \_\_\_\_\_

BEARING \_\_\_\_\_

DATE STARTED \_\_\_\_\_ COMPLETED \_\_\_\_\_

COORDINATES \_\_\_\_\_

LOGGED BY A. LEVINE

SURVEY REFERENCES \_\_\_\_\_

Footage	ALTERATION												STR.	VISUAL EST.						Sample No & Interval	LOG SCALE 1"=10' BASIC GEOLOGY: rock types, metallization, structures alterations, one column system	LITHOLOGIC DESCRIPTIONS. NOTES & SKETCHES	ROCK UNIT					
	Core Recovery	Oxide	Quartz	Sericite	Clay/Pyrop	Biotite	K-spar	Chlorite	Epidote	Carb-Zeo	Garnet	Pyroxene		Amphibole	Wollastonite	SO <sub>2</sub>	Sulf Veins	Frac. Inten.	Est. Cu, Mo					CuFeS <sub>2</sub>	FeS <sub>2</sub>	Cu <sub>2</sub> FeS <sub>4</sub>	Fe <sub>2</sub> O <sub>3</sub>	MoS <sub>2</sub>
360																											360-407 as above	
370																											370-380 py 1+ diss >> units soft seric mud on fracts	
380																											380-390	
390																											390-400 strong seric on fracts + alt in of lap. mtr	
400																											400-410 397-402 Mix of coloured frags (formational brk?) w strong seric alt in assoc.	
410																											410-420	
420																											420	

PRC JT Island Copper  
 CONTRACTOR Olympic (HQ)  
 DATE STARTED Feb 5/91 COMPLETED Feb 8/91  
 LOGGED BY JF & AR

T.D. 645' COLLAR ELEVATION 82' ± 3  
 INCLINATION 38° BEARING 328°  
 COORDINATES 28460.4 E 4595.8 N  
 SURVEY REFERENCES L136.3 E 506'S

Footage	ALTERATION												STR.	VISUAL EST.					Sample No. & Interval	LOG SCALE 1" = 200' BASIC GEOLOGY: rock types, metallization, structures alterations, one column system	LITHOLOGIC DESCRIPTIONS. NOTES & SKETCHES	ROCK UNIT					
	Core Recovery	Oxide	Quartz	Sericite	Clay/Pyrop	Biotite	K-spar	Chlorite	Epidote	Carb-Zeo	Garnet	Pyroxene		Amphibole	Wollastonite	CU	Ag	Sulf Veins					Frac Inten	Est Cu. Mo	CuFeS <sub>2</sub>	FeS <sub>2</sub>	Cu <sub>2</sub> FeS <sub>4</sub>
0																										0-21 No Core	
100																										21-178': SCC alt'd ash to lapilli tuffs. Some local shears with pyrophyllitic alt's	
200																										178-180' Show Zone breccia 180-195.5' Chl-mag ± biot ash - lapilli tuffs 195.5-201' Intrusive breccia (GFP) chl metab 201-208.5' chl-mag ash tuff 229-242.5' Intrusive sericitization and 242.5-290' SCC alt'd tuffs 290-371' chl-magnetite alt'd tuffs intense sericitization on veins/shears	chl metab Stann Zr mag alt'
300																										371-421' Albite, biot, chl, + patchy tuff 421-497' SCC alt'd tuffs 497-519' Amph. Mag. chl-albite tuffs 519-550' SCC calc on intr bre 550-645' Chl-mag + patchy biot moderate quartz stock work + local flow	
400																										24" breccia (may be intrusive @ 04) 6" GFP dike in veins	
500																											
600																											
																										Comments: note sericitic halo on intrusive breccia @ 527'	

HOLE NO. D-154

### DRILL LOG

Page 1 of 11

PROJECT Island Copper  
 CONTRACTOR OLYMPIC  
 DATE STARTED Feb 5/91 COMPLETED Feb 8/91  
 LOGGED BY J. J. FLEMING

T.D. 645' COLLAR ELEVATION 837.3  
 INCLINATION 38° BEARING 328°  
 COORDINATES 28460.4E 4595.8N  
 SURVEY REFERENCES \_\_\_\_\_

Footage	ALTERATION											STR.	VISUAL EST.						Sample No. & Interval	LOG SCALE 1" = 10' BASIC GEOLOGY: rock types, metallization, structures, alterations, one column system	LITHOLOGIC DESCRIPTIONS, NOTES & SKETCHES	ROCK UNIT					
	Core Recovery	Oxide	Quartz	Sericite	Clay/Pyrop	Biotite	K-spar	Chlorite	Epidote	Carb Zeo	Garnet		Pyroxene	Amphibole	Wollastonite	Sulf Vens	Frac Inten	Est Cu, Mo					CuFeS <sub>2</sub>	FeS <sub>2</sub>	Cu <sub>2</sub> FeS <sub>4</sub>	Fe <sub>2</sub> O <sub>3</sub>	MoS <sub>2</sub>
0																									0-21 casing thru bench surrounds		
10																											
20																										21-127'	
30																										Lapilli basalt tuff Pale green-grey str. chl-seric (s.c.c.) alt lapilli tuff w 30-40% dk grn chl-seric alt clasts 4-35mm dia. in H grn-gry mtx. The dk lapilli contain most of the sulphides (py & ep). The dk clasts are sprinkled w fine pinkish-grey spots of altin (fine? phrenite?) while the altin is v-fg in the mtx. Locally the lap. are ameba shaped (-pass bombs) w thin wt. altin rims. Runs of int seric (±pyrop) and rt alternate w seric alt. vol. highly alt. r. is not beaded. ch. v. and ps v friable. Quartz mod exc on most fracs.	
40																											
50																											
60																											

HOLE NO. D-154

**DRILL LOG**

Page 2 of 11

PROJECT Island Copper

T.D. \_\_\_\_\_

COLLAR ELEVATION \_\_\_\_\_

CONTRACTOR \_\_\_\_\_

INCLINATION \_\_\_\_\_

BEARING \_\_\_\_\_

DATE STARTED \_\_\_\_\_ COMPLETED \_\_\_\_\_

COORDINATES \_\_\_\_\_

LOGGED BY \_\_\_\_\_

SURVEY REFERENCES \_\_\_\_\_

Footage	ALTERATION											STR.		VISUAL EST.						Sample No & Interval	LQ SCALE <u>1"=10'</u> BASIC GEOLOGY: rock types, metallization, structures alterations, one column system	LITHOLOGIC DESCRIPTIONS. NOTES & SKETCHES	ROCK UNIT					
	Core Recovery	Oxide	Quartz	Sericite	Clay/Pyrop	Biotite	K-spar	Chlorite	Epidote	Carb. Zeo	Garnet	Pyroxene	Amphibole	Wollastonite	Other	Sulf Veins	Frac Inten	Est Cu. Mo	CuFeS <sub>2</sub>					FeS <sub>2</sub>	Cu <sub>2</sub> FeS <sub>4</sub>	Fe <sub>2</sub> O <sub>3</sub>	MoS <sub>2</sub>	Other
60																	5									pyrrh- epytt pass box in seric mtx lapilli clasts loosely held in seric-clay mtx	- 127' as above.	
70																	4									3" seric mud Pyr + diss = units 6" milky wt qv. w seric encls	72-82 Reddish brown alt'd, stgy cht seric (s.c.c.) alt'd, pyrite lapilli tuff (identical to mt in D153) w stgy pyr. alt'n of dk lapilli, fg - parv. red brown alt'n of tuff mtx	
80																	7									bleached encls on thin (1mm) pyr units 2mm epy on in qv. 6" ground core bleached grey pass silic alt'd		
90																	6											
100																	9											
110																	5									2' soft seric mud/box	112-127 int. seric alt'd, strid vde. w 20% seric in mtx of fg - ash tuff → granular text of loosely held grains in seric (+ clay) mtx. Slick or waxy seric coated surfs occ at low % to 4%	
120																	4									seric mud mtx for 1 up. clast - friable + waxy slick surfaces		
																	3									4' gm - to - gm int seric alt'd zone		

HOLE NO. D-154

**DRILL LOG**

Page 3 of 11

PROJECT Island Copper

T.D. \_\_\_\_\_

COLLAR ELEVATION \_\_\_\_\_

CONTRACTOR \_\_\_\_\_

INCLINATION \_\_\_\_\_

BEARING \_\_\_\_\_

DATE STARTED \_\_\_\_\_ COMPLETED \_\_\_\_\_

COORDINATES \_\_\_\_\_

LOGGED BY J. Fleming & A. Reeves

SURVEY REFERENCES \_\_\_\_\_

Footage	ALTERATION											STR.	VISUAL EST.								Sample No & Interval	LOG SCALE BASIC GEOLOGY: rock types, metallization, structures alterations, one column system	LITHOLOGIC DESCRIPTIONS. NOTES & SKETCHES	ROCK UNIT			
	Core Recovery	Oxide	Quartz	Sericite	Clay/pyrop	Biotite	K-spar	Chlorite	Epidote	Carb Zeo	Garret		Pyroxene	Amphibole	Wollastonite	Sulf Vens	Frac Inten	Est Cu Mo	CuFeS <sub>2</sub>	FeS <sub>2</sub>					Cu <sub>2</sub> FeS <sub>4</sub>	Fe <sub>2</sub> O <sub>3</sub>	Mos <sub>2</sub>
120																									pyr + diss conkts	-127 as above	
130																									1cm epv on cts int ash alt'd rk blen contact	127-138 Breccia Dyke Poorly sorted, multi-colored, variably alt'd, subrd to and frags. imm. - 3cm diam comp. + 50% of box m. g. sh. g. pyritic to oxy mix. frags are ch-mag alt'd, ch-seic alt'd, silk or qtz frags. Pyr. occ both in mag se mix	
140																									breccia dyke		
150																									2' seam seic med at contact		
160																											
170																									2" seam of pyritic seic alt'd box	138-157 Patchy green, lt grn, ch-seic (S.C.C.) w/ mag alt'd ash + apl. off. Rk less alt'd than circ. oxy dyke, some rem. mag & thin inter pyr, less int seic. Also decrease in fract int. although still seic on fract. Org. zoo. vms more common	
180																										157-178 Med-dk grn ch-mag + l- ch-seic (S.C.C.) alt'd ash lapl. off	

HOLE NO. D-154

DRILL LOG

Page 4 of 11

PROJECT Island Copper

T.D. \_\_\_\_\_

COLLAR ELEVATION \_\_\_\_\_

CONTRACTOR \_\_\_\_\_

INCLINATION \_\_\_\_\_

BEARING \_\_\_\_\_

DATE STARTED \_\_\_\_\_ COMPLETED \_\_\_\_\_

COORDINATES \_\_\_\_\_

LOGGED BY AR

SURVEY REFERENCES \_\_\_\_\_

Footage	ALTERATION										STR.	VISUAL EST.							Sample No. & Interval	LOG SCALE <u>1=10'</u> BASIC GEOLOGY: rock types, metallization, structures, alterations, one column system	LITHOLOGIC DESCRIPTIONS, NOTES & SKETCHES	ROCK UNIT										
	Core Recovery	Oxide	Quartz	Sericite	Clay/Pyrop	Biotite	K-spar	Chlorite	Epidote	Carb. Zoo		Garnet	Pyroxene	Amphibole	Wollastonite	Al	Si	Sulf Veins					Frac Inter	Est. Cu Mo	CuFeS <sub>2</sub>	FeS <sub>2</sub>	CuFeS <sub>3</sub>	Fe <sub>3</sub> O <sub>4</sub>	MoS <sub>2</sub>	S <sub>2</sub>		
180																														178-180: SHEAR ZONE: Pyrope like frags, QV frags, etc		
180																	.3													180-195: Chlorite Monanite (Biot) Ash - Lapilli stuff with bxc that become coarser. Matrix mag rcc	alt textures at 194'	
190																	.4															
200																															195.5-201: Light-med ore dike with inclusions of dark qtz-mag vein frags. 5-7% clear w mag dusted rim/incl. ore eyes (3-10mm)	REF
210																		.05													201-228.5' Fine grained Ash buff ore. Small clear quartz (1mm) set w mag dusted rim. See notes below.	above. ch. o. ore
220																															220-228.5' Fine grained Ash buff ore. Small clear quartz (1mm) set w mag dusted rim. See notes below.	
230																																229'-233' Bleached Sulphuric Ash ± flows. Sericite
230																															232-236 Med-dark ore/black ash buff w salmon red qtz.	
240																															236-242.5- SHEAR ZONE Strong sericite ± microphyllite frags	alt

PRO JT Island Copper

T.D.                     

COLLAR ELEVATION           

CONTRACTOR                     

INCLINATION           

BEARING                     

DATE STARTED                      COMPLETED Feb 8 /91

COORDINATES                     

LOGGED BY AR

SURVEY REFERENCES                     

Footage	ALTERATION											STR.	VISUAL EST.					Sample No. & Interval	LOG SCALE <u>1" = 10'</u> BASIC GEOLOGY: rock types, metallization, structures alterations, one column system	LITHOLOGIC DESCRIPTIONS. NOTES & SKETCHES	ROCK UNIT							
	Core Recovery	Oxide	Quartz	Sericite	Clay/Pyrop	Biotite	K-spar	Chlorite	Epidote	Carb-Zeo	Garnet		Pyroxene	Amphibole	Wollastonite	BT	Sulf Vens					Frac Inten	Est Cu, Mo	CuFeS <sub>2</sub>	FeS <sub>2</sub>	Cu <sub>2</sub> FeS <sub>4</sub>	Fe <sub>2</sub> O <sub>3</sub>	MoS <sub>2</sub>
240																										236-242 1/2: As above		
250																											242 1/2 - 262 1/2 Chl-Ser Andonite (SCC) Mod green with dark green clots	
260																											262.5 - 266' Chl-Mag alt'd Tuff $\frac{1}{2}$ flow as described from 180-230'	
270																											266 - 290 Predominantly Chl-Ser alt'd (SCC) with runs of in fine to med tuff. Mod Qz vens/calc plus late quartz/carb veins	
280																											290 - Chl-mag flow + a h tuff as above. Silic ringing when breaking core	
290																												
300																												





PROJECT Island Copper

T.D. \_\_\_\_\_

COLLAR ELEVATION \_\_\_\_\_

CONTRACTOR \_\_\_\_\_

INCLINATION \_\_\_\_\_

BEARING \_\_\_\_\_

DATE STARTED \_\_\_\_\_ COMPLETED \_\_\_\_\_

COORDINATES \_\_\_\_\_

LOGGED BY AR

SURVEY REFERENCES \_\_\_\_\_

Footage	ALTERATION											STR.	VISUAL EST.						Sample No. & Interval	LOG SCALE <u>1"=10'</u> BASIC GEOLOGY: rock types, metallization, structures alterations, one column system	LITHOLOGIC DESCRIPTIONS. NOTES & SKETCHES	ROCK UNIT					
	Core Recovery Oxide	Quartz	Sericite	Clay/Pyrop	Bielite	K-spar	Chlorite	Epidote	Carb/Zeol	Garnet	Pyroxene		Amphibole	Wollastonite	UNL	Sulf. Veins	Frac. Inten	Est. Cu, Mo					CuFeS <sub>2</sub>	FeS <sub>2</sub>	Cu <sub>2</sub> FeS <sub>4</sub>	Fe <sub>2</sub> O <sub>3</sub>	MoS <sub>2</sub>
360																	1								<p>321-371' chl-mag + sericite andesites &amp; some late</p>	altered	
370																									<p>← bleached ± dry clay seams</p> <p>← grey gtz ± alb / chl mottled; remnant biot cpy, only</p>	<p>371-421' Albite; patchy biot, chlonic and weak to moderate g. veined fine grained to ash tuffs.</p> <p>376 - chl (after amph) with milky albite halos through a patchy biot-mag-chl alter grained andyite.</p>	chlonic fine
380																									<p>← clay seam ← albite bleaching</p>		
390																									<p>← abdt narrow gtz seams; ppy ± cpy vults. 1" light grey</p>		
400																									<p>← cpy<sup>+</sup>, later diss in chl-mag</p> <p>← 16" fine grained, few vns</p>		
410																									<p>← py-cpy</p> <p>← cpy &amp; pi</p> <p>← 1-2" light grey // to CA</p>	<p>cpy assoc with chlonic blobs minor mag diss thru matrix ± occasional vults</p>	
420																									<p>← 6-10" gravel</p>		



PF ECT **Island Copper**  
 CONTRACTOR \_\_\_\_\_  
 DATE STARTED \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 LOGGED BY \_\_\_\_\_ AR \_\_\_\_\_

T.D. \_\_\_\_\_ COLLAR ELEVATION \_\_\_\_\_  
 INCLINATION \_\_\_\_\_ BEARING \_\_\_\_\_  
 COORDINATES \_\_\_\_\_  
 SURVEY REFERENCES \_\_\_\_\_

Footage	ALTERATION												STR.	VISUAL EST.						Sample No. & Interval	LOG SCALE <u>1"=10'</u> BASIC GEOLOGY: rock types, metallization, structures alterations, one column system	LITHOLOGIC DESCRIPTIONS. NOTES & SKETCHES	ROCK UNIT									
	Core Recovery	Oxide	Quartz	Sericite	Clay/Pyrop	Blotite	K-spar	Chlorite	Epidote	Carb/Zeo	Garnet	Pyroxene		Amphibole	Wollastonite	Sulf. Veins	Frac. Inten	Est. Cu. Mo	CuFeS <sub>2</sub>					FeS <sub>2</sub>	Cu <sub>2</sub> FeS <sub>4</sub>	Fe <sub>2</sub> O <sub>3</sub>	MoS <sub>2</sub>					
480																		1		5												
																		2		7												
500																																
510																																
520																																
530																																
540																																

480-490: dissc euhedral pyr, minor v.f. disc cpy.  
 ← broken core (gravel size) light gray

490-500: med grey ~ 3/4" w mag-cpy holes  
 ← large hbl phenos → flow?  
 yellowish epi → saucer-shaped amydulites or a retrograde alt?  
 30° CA  
 ← green ser fsp with mag holar  
 Pl, mag, carb 50% CA cuts gray QV

500-520: patchy biot  
 cpy  
 1mm QV (gray) in alt-kasper holes to 1/2 cm.  
 2' light gray → Pyr, cpy

520-530: 50° CA - CN w py, cpy  
 ← vague intr. contact  
 cpy → coarse blebs  
 20-30° CA - clay sec-

421-497': As above; but sericite alt is diminishing with depth, as rock grades to chl-mag.

497-519': Blue-green ash tuff with primary hbl and unalt plg xstal frags set in mag-chl-cpy ± alb alt matrix

519-527' Chl-sericite alt. Volcanic

527-529' Breccia: Qtz vein frags, some milled, but generally sub angular, set in c.g. green chloritic matrix (matrix supported) → some vague eyes → intruse bre!

529- CS volcanic AS above

PROJECT Island Copper  
 CONTRACTOR                       
 DATE STARTED                      COMPLETED                       
 LOGGED BY AR

T.D.                      COLLAR ELEVATION                       
 INCLINATION                      BEARING                       
 COORDINATES                       
 SURVEY REFERENCES                     

Footage	ALTERATION											STR.	VISUAL EST.					Sample No. & Interval	LOG SCALE 1" = 10' BASIC GEOLOGY: rock types, metallization, structures alterations, one column system	LITHOLOGIC DESCRIPTIONS. NOTES & SKETCHES	ROCK UNIT						
	Core Recovery	Oxide	Quartz	Sericite	Clay/Pyrop	Biotite	K-spar	Chlorite	Epidote	Carb/Zeol	Garnet		Pyroxene	Amphibole	Wollastonite	Alb	Sulf. Veins					Frac. Inten	Est. Cu, Mo	CuFeS <sub>2</sub>	FeS <sub>2</sub>	Cu <sub>2</sub> FeS <sub>4</sub>	Fe <sub>2</sub> O <sub>3</sub>
540																			7-6%					← QV 1/2" → healed fault? Py, Ser holes ~ 30° CA	529-542: Chlorite-Sericite altered volcanics with a vague bre texture → as shown by Qtz veins.		
550																										542-550: chl-ser transitional to chl-mg.	
560																			3 to 5%					mg units; w/lt carb ves & occ pink-gray zeol. ← ground core ± albite; chlorite	550-560: Chlorite & Biot-Mg ± Qtz stockwork and flooddy.		
570																											
580																			3 to 5					3/4" grey & / to core about pink zeol & carbonate ← ~ 6" true? Qtz frags to 1" CN ~ 150° CA → into w Qtz frags.			
590																								~ 2" ⊥ CA 55° CA healed by brexd zeol (lapilli textures) diss f. g. euhedral py			
600																											

PROJECT Island Copper  
 CONTRACTOR \_\_\_\_\_  
 DATE STARTED \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 LOGGED BY AR

T.D. 645  
 COLLAR ELEVATION \_\_\_\_\_  
 INCLINATION \_\_\_\_\_  
 BEARING \_\_\_\_\_  
 COORDINATES \_\_\_\_\_  
 SURVEY REFERENCES \_\_\_\_\_

Footage	ALTERATION												STR.	VISUAL EST.					Sample No. & Interval	LOG SCALE <u>1"=10'</u> BASIC GEOLOGY: rock types, metallization, structures alterations, one column system	LITHOLOGIC DESCRIPTIONS, NOTES & SKETCHES	ROCK UNIT									
	Core Recovery	Oxide	Quartz	Sericite	Clay/Pyrop	Biotite	K-spar	Chlorite	Epidote	Carb/Zeol	Garnet	Pyroxene		Amphibole	Wollastonite	A	L	B					Sulf. Veins	Frac. Inten	Est. Cu. Mo	CuFeS <sub>2</sub>	FeS <sub>2</sub>	Cu <sub>2</sub> FeS <sub>4</sub>	Fe <sub>2</sub> O <sub>3</sub>	MoS <sub>2</sub>	
600																															
610																															
620																															
636																															
640																															

600 - cpy + as finer disc than pyr

610 - ~6" bra; 45° CA both contacts are sharp.

620 - s/w bra, some rotation

630 - 40° CA  
 50° CA chl after amph?  
 P1: cpy  
 veinlets mag ± cpy  
 thin, coarse gravel vein (wt. light grey)

640 - narrow grey Qz in CO<sub>2</sub> filled tension cracks  
 40° CA orange zeol/CO<sub>2</sub>  
 45° CA; 8-10" bra, gauge, ser. cpy ±  
 45° CA ± ser-pyr fracture

550 -

609-609.5' QFP in xenos  
 of dark mag alt? light-med grey Qtz  
 vein frag. dr. Matrix is med green chlorite  
 with 7-10% disc sulph → parh around xenos.  
 Qtz eyes 1/2-1cm light grey ± minor pychl  
 Fsp phenos to 3mm, generally grey-white, some  
 bright orange (zeol ± hem) stained.

Chloritized.

.7 to 1%  
 3 to 5

ISLAND COPPER PIT

This is the main drill-hole database!

HOLE-ID: D\_151

FROM	TO	CU	MO	FE	AU	AG	PB	ZN	TAG
15.0	20.0	.23	.008	6.4	.31	.45	.001	.008	14829
25.0	30.0	.47	.011	7.0	.49	1.00	.002	.021	14830
35.0	40.0	.36	.130	7.4	.45	.60	.010	.024	14831
45.0	50.0	.21	.010	5.2	.17	.95	.002	.015	14832
55.0	60.0	.23	.010	8.4	.17	.65	.002	.013	14833
65.0	70.0	.22	.005	4.9	.11	.50	.002	.011	14834
75.0	80.0	.24	.005	5.9	.20	1.05	.002	.018	14835
85.0	90.0	.29	.007	6.2	.17	1.10	.002	.021	14836
95.0	100.0	.17	.005	9.1	.09	1.45	.002	.031	14837
105.0	110.0	.21	.008	6.4	.08	.85	.002	.017	14838
115.0	120.0	.30	.008	6.1	.62	.75	.001	.014	14839
125.0	130.0	.19	.005	9.2	.19	1.50	.002	.021	14840
134.0	140.0	.29	.013	7.6	.12	1.50	.002	.045	14841
145.0	150.0	.21	.010	6.2	.45	.60	.001	.021	14842
155.0	160.0	.49	.013	5.8	.73	1.45	.002	.027	14843
165.0	170.0	.20	.006	8.0	.28	.50	.001	.013	14844
175.0	180.0	.17	.011	7.1	.27	.35	.001	.013	14845
185.0	190.0	.22	.009	4.9	.46	.50	.001	.013	14846
195.0	200.0	.17	.004	7.6	.25	.50	.001	.011	14847
205.0	210.0	.15	.007	7.4	.28	.45	.001	.017	14848
215.0	220.0	.23	.012	6.8	.45	.60	.001	.015	14849
225.0	230.0	.19	.008	5.9	.25	.80	.001	.013	14850
235.0	240.0	.17	.006	6.0	.18	.30	.001	.009	14851
245.0	250.0	.26	.007	5.1	.21	.30	.001	.009	14852

**ISLAND COPPER MINE  
ASSAY REQUISITION AND REPORT FORM**

LAB SENT TO: ICM

DATE SENT: FEB 12/91

SENT BY/DEPT: ABOLYN

TYPE: CORC

DATE REPORTED: \_\_\_\_\_

REPORTED BY: \_\_\_\_\_

(core / perc / other)

HOLE #	FROM (ft / m)	TO	COPPER % Cu	MOLY % Mo	IRON % Fe	GOLD ppm Au	SILVER ppm Ag	LEAD % Pb	ZINC % Zn	TAG #
D-151	15	20	23	8	64	31	45	1	8	14829
	25	30	47	11	70	49	100	2	21	14830
	35	40	36	13	74	45	60	10	24	14831
	45	50	21	10	52	17	95	2	15	14832
	55	60	23	10	84	17	65	2	13	14833
	65	70	22	5	49	11	50	2	11	14834
	75	80	24	5	59	20	105	2	18	14835
	85	90	29	7	62	17	110	2	21	14836
	95	100	17	5	91	09	145	2	31	14837
	105	110	21	8	64	08	185	2	17	14838
	115	120	30	8	61	62	175	1	14	14839
	125	130	19	5	92	19	150	2	21	14840
	135	140	29	13	76	12	150	2	45	14841
	145	150	21	10	62	45	60	1	21	14842
	155	160	49	13	58	73	145	2	27	14843
	165	170	20	6	86	28	150	1	13	14844
	175	180	17	11	71	27	135	1	13	14845
	185	190	22	9	49	46	50	1	13	14846





## MAGNETIC SUSCEPTIBILITY

LE NO. D151DATE Feb 5/91

INTERVAL:

VALUE:

FOOTAGE	STARTING POINT VALUE	+2'	+4'	+6'	+8'	INTERVAL AVERAGE
125-20						4.3
20-30						2.2
30-40						5.2
40-50						1.8
50-60						5.4
60-70						3.0
70-80						2.0
80-90						1.4
90-100						.80
100-110						.51
110-120						2.0
120-130						2.9
130-140						1.3
140-150						2.6
150-160						.13
160-170						4.5
170-180						4.1
180-190						4.1
190-200						7.9
200-210						5.0
210-220						5.3
220-230						.96
230-240						4.7
240-250						2.6
250-256						3.8
END OF HOLE						

ROCK QUALITY DESIGNATION

HOLE NO.: D151

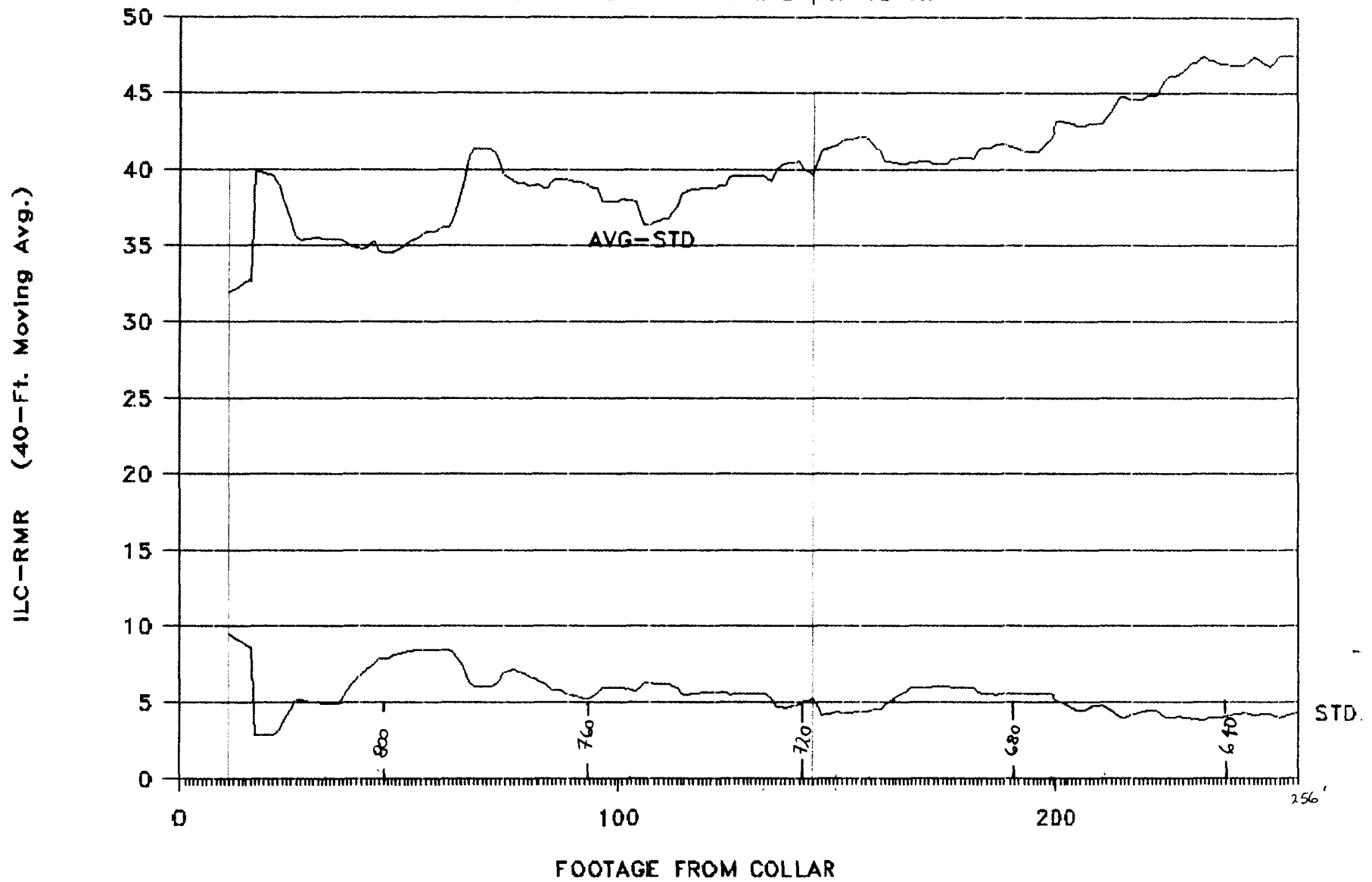
DATE: FEB 4/91

LOGGED BY: [Signature]

FOOTAGE (FT)		INTERVAL		RECOVERY		TOTAL CUM.	RQD	FRACTURE
FROM	TO	INCHES	CUMULATIVE	INCHES	%	PIECES > 4"	%	INTENSITY
12.5	13	6	6	6	100	0	0	HIGH
13	17	48	54	44	92	11.5	24	✓
17	27	120	174	116	97	22	18	✓
27	37	120	294	118	98	14	12	✓
37	47	120	414	116	97	47	39	MODERATE
47	57	120	534	117	98	33	28	✓
57	67	120	654	120	100	54	45	✓
67	77	120	774	122	102	73	61	✓
77	87	120	894	122	102	85	71	✓
87	97	120	1014	120	100	85	71	✓
97	107	120	1134	125	104	77	64	✓
107	117	120	1254	118	98	64	53	✓
117	127	120	1374	120	100	28	23	HIGH
127	137	120	1494	123	103	45	38	MODERATE
137	147	120	1614	122	102	76	63	✓
147	157	120	1734	123	103	26	22	HIGH
157	167	120	1854	121	101	44	37	MODERATE
167	177	120	1974	124	103	55	46	✓
177	187	120	2094	120	100	60	50	✓
187	197	120	2214	120	100	52	43	✓
197	207	120	2334	124	103	52	43	✓
207	217	120	2454	127	106	58	48	✓
217	226	108	2562	103	95	66	61	✓
226	236	120	2682	123	103	71	59	✓
236	246	120	2802	124	103	57	48	✓
246	256	120	2922	124	103	75	63	✓
END OF HOLE								

# DDH D-151 (NQ)

DESIGN CRITERIA : AVG-STD per 40-ft.



HOLE NO. D 151 NQ  
 LOGGED BY: GAC

DATE: 5-Feb 91  
 LOCATION: East side  
840 Bench  
-950

FOOTAGE				FOOTAGE			
FROM	TO	RMR	COMMENTS	FROM	TO	RMR	COMMENTS
0	1	/	No Core	50	51	40	firm chl/lt/mt
	2				52	↓	mod friacid
	3				53		
	4				54	45	
	5				55		
	6				56	↓	
	7				57		
	8				58	50+	
	9				59	↑	
	10				60		
	11				61		
	12	40			62		
	13	45	Hard, friacid		63		
	14				64		
	15				65	↓	
	16				66	30	flt gouge
	17				67	40	
	18				68	45	
	19				69	50+	
	20				70	50	
	21				71		
	22	↓			72		
	23	40			73		wk chl
	24	35			74		
	25	40	ser		75		
	26	45			76		
	27				77	↓	
	28				78	40	sec alt.
	29				79	↓	
	30	↓			80	45	
	31	40			81	↓	
	32				82	40	
	33				83	50	
	34	↓			84		
	35	45			85		
	36	40			86	↓	
	37				87	↓	
	38				88	45	
	39				89	40	wk alt
	40				90		
	41				91	↓	
	42	↓			92	↓	
	43	<del>40</del> 35	broken, ser/wk		93	35	
	44	30	clay, zeo		94	↓	
	45	30			95	30	wk flt
	46	30			96	40	ser/zeo
	47	25	flt gouge		97	↓	
	48	35			98	45	
	49	40			99	50	
	50	↓			00	45	

HOLE NO. D151  
 LOGGED BY: GAC

DATE: \_\_\_\_\_  
 LOCATION: \_\_\_\_\_

FOOTAGE				FOOTAGE			
FROM	TO	RMR	COMMENTS	FROM	TO	RMR	COMMENTS
1000	1	50		50	51	45	mt/chl/qs alt
	2	50			52	↓	basalt tuft ±
	3	50			53	↓	porph.
	4	40			54	40	
	5	50			55	↓	occ wk. mss
	6	35	wk flt.		56	↓	str. env. to
	7	45			57	40	5-20cm
	8	↓			58	50	
	9	↓			59	45	
	10	↓			60	50	
	11	↓			61	↓	
	12	↓			62	↓	
	13	↓			63	35	
	14	40	fract. chl alt		64	40	
	15	50+			65	↓	
	16	50+			66	↓	
	17	30	flt gouge		67	↓	
	18	40			68	50	
	19	↓			69	↓	
	20	45			70	↓	
	21	↓			71	↓	
	22	↓			72	↓	
	23	↓			73	↓	
	24	↓			74	45	
	25	40			75	50	
	26	30			76	50	
	27	30			77	45	
	28	45			78	40	
	29	↓			79	↓	
	30	↓			80	↓	
	31	↓			81	35	
	32	40			82	50+	
	33	45			83	↓	
	34	↓			84	↓	
	35	↓			85	↓	
	36	↓			86	↓	
	37	↓			87	↓	
	38	50	intr bxa dkt		88	↓	
	39	↓	↓		89	45	
	40	↓	↓		90	50	
	41	↓	↓		91	45	
	42	↓	bxa		92	45	
	43	↓			93	40	
	44	↓			94	↓	
	45	↓			95	↓	
	46	↓			96	↓	
	47	↓			97	50	
	48	45			98	↓	
	49	↓			99	↓	
	50	↓			00	↓	

HOLE NO. D151  
 LOGGED BY: GAC

DATE: 5-Feb-91  
 LOCATION: \_\_\_\_\_

FOOTAGE				FOOTAGE			
FROM	TO	RMR	COMMENTS	FROM	TO	RMR	COMMENTS
200	1	50		250	51	50r	
	2	45			52	50	
	3		frac'd		53	45	chl / Zoo
	4	40			54	50+	
	5	↓			55	50+	
	6				56	45	Wk ser / py
	7	↓			57		
	8	50+			58		
	9	50			59		
	10	45			60		
	11				61		
	12	↓			62		
	13				63		
	14	↓			64		
	15	50			65		
	16	↓			66		
	17	↓			67		
	18	50+			68		
	19	↓			69		
	20	50			70		
	21				71		
	22	↓			72		
	23				73		
	24	↓			74		
	25	45			75		
	26	↓			76		
	27	50+			77		
	28				78		
	29	↓			79		
	30				80		
	31	45			81		
	32	45			82		
	33	50			83		
	34				84		
	35	↓			85		
	36				86		
	37	↓			87		
	38	45			88		
	39	50+			89		
	40				90		
	41	↓			91		
	42	↓			92		
	43	45			93		
	44	↓			94		
	45	50			95		
	46	50+			96		
	47				97		
	48	↓			98		
	49				99		
	50	↓			300		

\*\*\* ISLAND COPPER PIT \*\*\*  
\*\*\* This is the main drill-hole database! \*\*\*

HOLE-ID: D\_152

FROM	TO	CU	MO	FE	AU	AG	PB	ZN	TAG
17.0	20.0	.03	.005	4.6	.04	.25	.002	.005	14801
20.0	30.0	.06	.004	2.8	.02	.45	.002	.002	14802
30.0	40.0	.11	.003	5.0	.07	.55	.002	.009	14803
40.0	50.0	.25	.005	7.5	.10	1.20	.002	.007	14804
50.0	60.0	.26	.005	4.1	.14	1.10	.002	.005	14805
60.0	70.0	.34	.004	7.6	.34	1.55	.002	.005	14806
70.0	80.0	.15	.004	6.5	.12	.90	.002	.006	14807
80.0	90.0	.12	.005	8.1	.05	.75	.003	.005	14808
90.0	100.0	.19	.004	7.6	.08	.65	.002	.006	14809
100.0	110.0	.20	.004	5.7	.19	.90	.002	.004	14810
110.0	120.0	.16	.004	4.0	.10	1.05	.002	.004	14811
120.0	130.0	.08	.005	4.2	.07	.70	.002	.004	14812
130.0	140.0	.19	.004	5.0	.30	.80	.002	.006	14813
140.0	150.0	.25	.007	6.5	.15	1.45	.002	.005	14814
150.0	160.0	.33	.007	8.4	.19	.90	.002	.007	14815
160.0	170.0	.35	.005	7.7	.22	1.20	.002	.007	14816
170.0	180.0	.19	.009	8.5	.14	.90	.002	.004	14817
180.0	190.0	.32	.008	6.3	.14	1.60	.002	.004	14818
190.0	200.0	.39	.008	8.7	.14	1.85	.003	.011	14819
200.0	210.0	.22	.007	6.1	.15	.60	.002	.011	14820
210.0	220.0	.34	.008	8.3	.11	1.25	.002	.013	14821
220.0	230.0	.22	.007	7.5	.18	.80	.002	.009	14822
230.0	240.0	.22	.010	7.3	.10	.50	.002	.007	14823
240.0	250.0	.19	.008	8.8	.16	.60	.002	.007	14824
250.0	260.0	.26	.011	8.3	.34	.80	.002	.007	14825
260.0	270.0	.44	.012	6.9	.63	1.40	.001	.006	14826
270.0	280.0	.33	.010	8.5	.30	.95	.002	.008	14827
280.0	283.0	.36	.012	6.6	.36	1.15	.001	.009	14828



**ISLAND COPPER MINE**  
**ASSAY REQUISITION AND REPORT FORM**

K. J. COSTA  
AT

LAB SENT TO: ICM

DATE SENT: FEB 7/91

SENT BY/DEPT: A. BOBYN

TYPE: CORE

DATE REPORTED: \_\_\_\_\_

REPORTED BY: \_\_\_\_\_

(core / perc / other)

HOLE #	FROM (ft / m)	TO	COPPER % Cu	MOLY % Mo	IRON % Fe	GOLD ppm Au	SILVER ppm Ag	LEAD % Pb	ZINC % Zn	TAG #
D-152	18	20	03	5	46	04	25	2	5	14801
	20	30	06	4	28	02	45	2	2	14802
	30	40	11	3	50	07	55	2	9	14803
	40	50	25	5	75	110	1120	2	7	14804
	50	60	26	5	41	114	1110	2	5	14805
	60	70	34	4	76	34	155	2	5	06
	70	80	15	4	65	12	90	2	6	07
	80	90	12	5	81	05	75	3	5	08
	90	100	19	4	76	08	65	2	6	09
	100	110	20	4	57	119	190	2	4	10
	110	120	16	4	40	110	105	2	4	11
	120	130	08	5	42	07	70	2	4	12
	130	140	19	4	50	30	80	2	6	13
	140	150	25	7	65	15	145	2	5	14
	150	160	33	7	84	19	90	2	7	15
	160	170	35	5	77	22	120	2	7	16
	170	180	19	9	85	14	190	2	4	17
	180	190	32	8	63	14	160	2	4	18

680  
105  
640  
.24  
600  
.16  
560  
.1  
520  
300





ROCK QUALITY DESIGNATION

HOLE NO.: D152

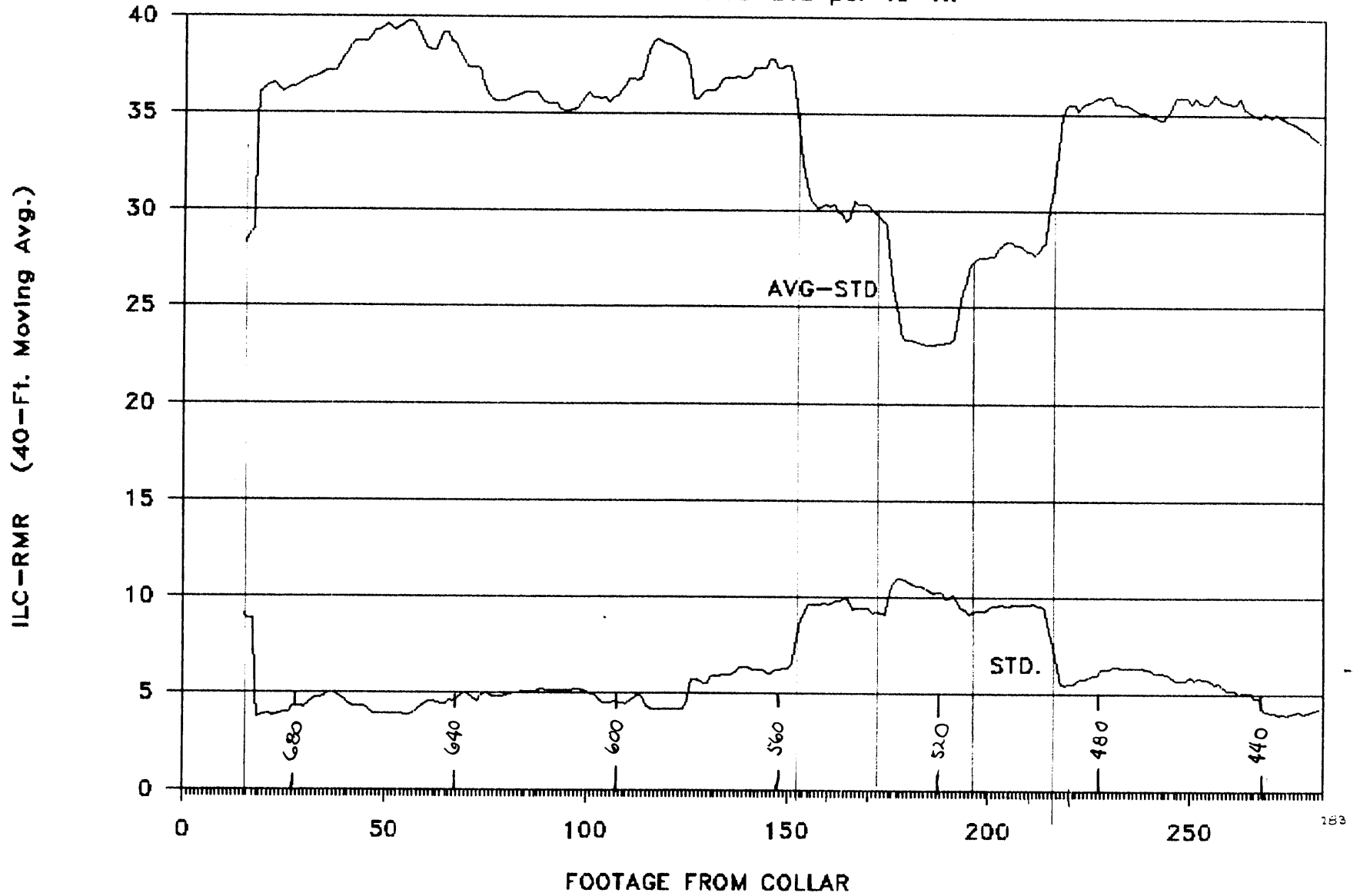
DATE: FEB 5/91

LOGGED BY: J. Sore

FOOTAGE (FT)		INTERVAL		RECOVERY		TOTAL CUM.	RQD	FRACTURE
FROM	TO	INCHES	CUMULATIVE	INCHES	%	PIECES ≥ 4"	%	INTENSITY
15	17	24	24	24	100	0	0	HIGH
17	27	120	144	103	86	8	7	✓
27	36	108	252	99	83	7	6	✓
36	46	120	372	131	109	44	37	HIGH
46	56	120	492	142	118	25	21	✓
56	66	120	612	100	83	0	0	✓
66	71	60	672	55	92	4	7	✓
71	76	60	732	65	108	10	17	✓
76	87	132	864	91	69	22	17	✓
87	96	108	972	62	57	4	4	✓
96	107	132	1104	119	96	9	7	✓
107	117	120	1224	120	100	20	17	✓
117	127	120	1344	120	100	25	21	✓
127	137	120	1464	123	103	36	30	MODERATE
137	147	120	1584	115	96	20	17	HIGH
147	155	96	1680	91	95	18	19	✓
155	161	72	1752	61	85	7	10	✓
161	163	24	1776	16	67	0	0	✓
163	167	48	1824	32	67	0	0	✓
167	177	120	1944	106	88	19	16	✓
177	187	120	2064	114	95	19	16	✓
187	197	120	2184	82	68	0	0	✓
197	207	120	2304	100	83	9	8	✓
207	217	120	2424	114	95	39	33	MODERATE
217	227	120	2544	112	93	30	25	HIGH
227	237	120	2664	107	89	17	14	✓
237	247	120	2784	125	104	42	35	MODERATE
247	257	120	2904	124	103	16	13	HIGH
257	267	120	3024	108	90	33	28	✓
267	276	108	3132	97	90	8	7	✓
276	283	84	3216	70	58	10	12	✓
END OF Hole								

# DDH D-152 (NQ)

DESIGN CRITERIA : AVG-STD per 40-ft.



HOLE NO. D152 - NQ  
 LOGGED BY: CAC

DATE: 6-2-91  
 LOCATION: 700 B near old bridge  
on side of ramp

FOOTAGE				FOOTAGE			
FROM	TO	RMR	COMMENTS	FROM	TO	RMR	COMMENTS
0	1		0-15 - no core -	50	51	50	qtz/chl alt volc.
	2		casing		52	↓	
	3				53	↓	
	4		n.b. entire hole is		54	45	
	5		badly broken.		55	50	
	6		<10% RQD 26"		56	↓	
	7				57	45	
	8		- hole drilled -90°		58	↓	
	9		for grade purposes		59	↓	
	10				60	40	badly broken
	11				61	↓	
	12				62	↓	
	13				63	↓	
	14				64	↓	
	15				65	↓	
	16	45			66	↓	
	17	↓			67	↓	
	18	35			68	↓	
	19	↓			69	45	
	20	↓			70	↓	
	21	↓			71	40	
	22	↓			72	↓	
	23	10			73	45	
	24	↓			74	↓	
	25	↓			75	↓	
	26	35			76	40	
	27	↓			77	↓	
	28	40			78	35	chl/ser alt d (fit?)
	29	↓			79	↓	
	30	↓			80	35	
	31	45			81	50	
	32	↓			82	40	
	33	40	zeo/calc frags		83	50	
	34	↓			84	50	
	35	↓			85	45	
	36	↓	QFP ↑		86	35	
	37	45	Andes ↓		87	40	
	38	↓			88	35	
	39	↓			89	↓	
	40	↓	hard, competent		90	↓	
	41	↓	core: RMR largely		91	45	
	42	40	reflects degree		92	↓	
	43	35	of frac + chl.		93	40	
	44	↓	to 80'		94	30	
	45	45			95	↓	
	46	↓			96	35	
	47	50			97	40	
	48	45			98	45	
	49	↓			99	↓	
	50	↓			00	↓	

Rec  
± 6%

Rec.  
65%

HOLE NO. D 152 (NQ)  
 LOGGED BY: GAC

DATE: 3-2-71  
 LOCATION: Camp 228

Grade Control Core

FOOTAGE				FOOTAGE			
FROM	TO	RMR	COMMENTS	FROM	TO	RMR	COMMENTS
100	10 1	45		150	151	50 +	
	2	↓			52	45	
	3				53	50	
	4	↓			54	50	
	5	40			55	45	
	6	↓			56	↓	
	7	↓			57	50	
	8	35	chl/qa alt'd hly fraced		58	50+	
	9	↓			59	45	
	10	40			60	↓	
	11	↓			61	↓	
	12	↓		50%	62	40	subble
	13	35	ser/clay shear. Volc	63	↓		
	14	40	perv ser/chl RFP		64	45	
	15	45	oss clay seam		65	↓	
	16	↓			66	↓	
	17	↓			67	35	v. str perv ser/pyroph
	18	↓			68	45	
	19	↓			69	50	
	20	40			70	45	
	21	35	clay/pyroph alt RFP		71	30	
	22	40	hls		72	15	} clay/ser alt'd fault
	23	↓			73	↓	
	24	45			74	25	
	25	35	clay/chl seam		75	20	
	26	45			76	35	
	27	↓			77	↓	
	28	↓			78	45	
	29	↓			79	↓	
	30	↓			80	40	
	31	50			81	45	
	32	↓			82	30	
	33	↓			83	35	
	34	↓			84	30	
	35	45			85	35	
	36	↓			86	↓	
	37	↓			87	↓	
	38	40			88	40	
	39	↓			89	↓	
	40	45			90	35	
	41	40			91	35	
	42	↓			92	5	} lost core - mud in box
	43	↓			93	5	
	44	↓			94	5	
	45	30			95	10	
	46	20			96	15	
	47	40			97	15	
	48	↓			98	15	
	49	↓			99	30	
	50	↓			200	40	

HOLE NO. D152-(NQ)  
 LOGGED BY: GAC

DATE: 6-2-91  
 LOCATION: \_\_\_\_\_

FOOTAGE				FOOTAGE			
FROM	TO	RMR	COMMENTS	FROM	TO	RMR	COMMENTS
200	201	40	rubble	250	251	45	chil healed frac
	2	35	chil/zeo		52	45	
	3	35			53	40	chil healed frac
	4	40			54	45	
	5	↓			55	40	str fract
	6	↓			56	↓	
	7	↓			57	↓	
	8	45	wk zeo/chl		58	45	friable
	9	40	frac pattern		59	40	
	10	45			60	↓	
	11	↓			61	↓	
	12	↓			62	↓	
	13	↓			63	45	intr bra
	14	↓			64	40	
	15	↓			65	45	
	16	↓			66	↓	
	17	↓			67	35	
	18	↓			68	↓	
	19	↓			69	↓	
	20	↓			70	30	clay seam
	21	50			71	35	
	22	45			72	↓	
	23	↓			73	40	
	24	35			74	↓	
	25	35			75	↓	
	26	30			76	35	
	27	35	str chl + clay		77	↓	
	28	↓	frac pattern		78	40	
	29	↓			79	↓	
	30	↓			80	↓	
	31	30	clay seam		81	↓	
	32	40			82	35	
	33	45			282	30	
	34	40		282	283		
	35	35		EOH	84		
	36	30			85		
	37	45			86		
	38	50			87		
	39	50			88		
	40	45			89		
	41	40			90		
	42	30	int ser, 2 clay seams		91		
	43	30	qz/mt bra.		92		
	44	45			93		
	45	45			94		
	46	50			95		
	47	45			96		
	48	50+			97		
	49	45			98		
	50	45			99		
					00		



ISLAND COPPER PIT

This is the main drill-hole database!

HOLE-ID: D\_153

FROM	TO	CU	MO	FE	AU	AG	PB	ZN	TAG
15.0	20.0	.04	.002	3.3	.00	.23	.001	.004	14861
25.0	30.0	.07	.001	7.6	.03	.48	.003	.017	14862
35.0	45.0	.04	.002	7.3	.02	.43	.002	.017	14863
45.0	50.0	.04	.001	9.2	.02	.53	.002	.014	14864
55.0	60.0	.05	.001	9.6	.02	.54	.002	.026	14865
65.0	70.0	.07	.001	11.1	.03	.65	.003	.026	14866
75.0	80.0	.03	.002	11.2	.02	.58	.003	.046	14867
85.0	90.0	.01	.002	9.0	.02	.40	.002	.029	14868
95.0	100.0	.02	.001	12.5	.02	.50	.003	.036	14869
105.0	110.0	.03	.001	12.3	.02	.64	.003	.033	14870
115.0	120.0	.01	.002	10.0	.03	.50	.001	.030	14871
125.0	130.0	.01	.002	10.0	.04	.50	.002	.025	14872
135.0	140.0	.02	.001	8.9	.03	.57	.002	.023	14873
145.0	150.0	.04	.001	7.9	.02	.54	.003	.031	14874
155.0	160.0	.02	.001	7.6	.02	.53	.003	.035	14875
165.0	170.0	.02	.001	8.6	.04	.49	.002	.066	14876
175.0	180.0	.04	.002	10.0	.04	.88	.003	.025	14877
185.0	195.0	.04	.002	12.6	.02	.76	.003	.040	14878
195.0	200.0	.02	.002	10.5	.02	.56	.003	.036	14879
205.0	210.0	.07	.001	15.2	.01	1.07	.003	.094	14880
215.0	220.0	.02	.000	15.4	.02	.45	.004	.047	14881
225.0	230.0	.05	.000	13.3	.02	.80	.004	.027	14882
235.0	240.0	.03	.000	9.6	.02	.52	.003	.027	14883
245.0	250.0	.01	.000	8.1	.01	.28	.003	.010	14884
255.0	260.0	.03	.000	8.7	.02	.50	.004	.113	14885
265.0	270.0	.02	.000	10.0	.02	.45	.003	.033	14886
275.0	280.0	.01	.000	9.4	.03	.39	.003	.021	14887
285.0	290.0	.03	.000	9.9	.02	.50	.003	.025	14888
295.0	300.0	.03	.000	9.4	.01	.46	.003	.027	14889
305.0	310.0	.05	.000	9.8	.01	.55	.004	.022	14890
315.0	320.0	.03	.000	11.8	.01	.44	.004	.029	14891
325.0	330.0	.01	.000	9.5	.01	.38	.004	.036	14892
335.0	340.0	.03	.000	10.7	.01	.43	.004	.032	14893
345.0	350.0	.01	.001	10.7	.03	.39	.004	.031	14894
355.0	360.0	.01	.002	12.9	.03	.45	.004	.037	14895
365.0	370.0	.00	.002	7.1	.03	.21	.004	.019	14896
375.0	380.0	.00	.017	6.0	.01	.27	.003	.029	14897
385.0	390.0	.01	.003	9.2	.02	.38	.003	.022	14898
395.0	400.0	.01	.001	8.1	.02	.46	.004	.032	14899
405.0	407.0	.01	.001	9.7	.02	.40	.003	.031	14900

109°Az / -45°dip call. 337' / 407'

ISLAND COPPER MINE  
ASSAY REQUISITION AND REPORT FORM

# 325

LAB SENT TO: ICM

DATE SENT: \_\_\_\_\_

SENT BY/DEPT: \_\_\_\_\_

TYPE: CORE

DATE REPORTED: \_\_\_\_\_

REPORTED BY: \_\_\_\_\_

(core / perc / other)

HOLE #	FROM (ft / m)	TO	COPPER % Cu	MOLY % Mo	IRON % Fe	GOLD ppm Au	SILVER ppm Ag	LEAD % Pb	ZINC % Zn	TAG #	
1	D-153	15	20	035	002	33	04	23	001	004	14861
2		25	30	073	001	76	03	48	003	017	14862
3		35	40	042	002	73	02	43	002	017	14863
4		45	50	037	001	92	02	53	002	014	14864
5		55	60	049	001	96	02	54	002	026	14865
6		65	70	068	001	111	03	65	003	026	14866
7		75	80	031	002	112	02	58	003	046	14867
8		85	90	011	002	90	02	40	002	029	14868
9		95	100	017	001	125	02	50	003	036	14869
10		105	110	033	001	123	02	64	003	033	14870
11		115	120	011	002	100	03	50	001	030	14871
12		125	130	014	002	100	04	50	002	025	14872
13		135	140	020	001	89	03	57	002	023	14873
14		145	150	044	001	79	02	54	003	031	14874
15		155	160	017	001	76	02	53	003	035	14875
16		165	170	021	001	86	04	49	002	066	14876
17		175	180	038	002	100	04	188	003	025	14877
18		185	190	036	002	126	02	76	003	040	14878

800  
760  
28.9  
108.9  
120  
26.5  
165.4

(interval contaminated by add<sup>n</sup> of 192-195')

**ISLAND COPPER MINE  
ASSAY REQUISITION AND REPORT FORM**

LAB SENT TO: ICM

DATE SENT: \_\_\_\_\_

SENT BY/DEPT: \_\_\_\_\_

TYPE: CORE

DATE REPORTED: \_\_\_\_\_

REPORTED BY: \_\_\_\_\_

(core / perc / other)

HOLE #	FROM (ft / m)	TO	COPPER % Cu	MOLY % Mo	IRON % Fe	GOLD ppm Au	SILVER ppm Ag	LEAD % Pb	ZINC % Zn	TAG #	
19	D-153	195	200	0.16	0.02	1.015	0.2	5.6	0.03	0.36	14879
20		205	210	0.70	0.01	1.512	0.1	1.07	0.03	0.94	14880
21		215	220	0.19	0	1.514	0.2	1.45	0.04	0.47	14881
22		225	230	0.48	0	1.313	0.2	1.80	0.04	0.27	14882
23		235	240	0.31	0	0.916	0.2	1.52	0.03	0.27	14883
24		245	250	0.09	0	0.811	0.1	1.28	0.03	0.10	14884
25		255	260	0.30	0	0.817	0.2	1.50	0.04	1.13	14885
26		265	270	0.22	0	1.010	0.2	1.45	0.03	0.33	14886
27		275	280	0.14	0	0.914	0.3	1.39	0.03	0.21	14887
28		285	290	0.27	0	0.919	0.2	1.50	0.03	0.25	14888
29		295	300	0.26	0	0.914	0.1	1.46	0.03	0.27	14889
30		305	310	0.50	0	0.918	0.1	1.55	0.04	0.22	14890
31		315	320	0.28	0	1.118	0.1	1.44	0.04	0.29	14891
32		325	330	0.11	0	0.915	0.1	1.38	0.04	0.36	14892
33		335	340	0.26	0	1.017	0.1	1.43	0.04	0.32	14893
34		345	350	0.09	0.01	1.017	0.3	1.39	0.04	0.31	14894
35		350	360	0.10	0.02	1.219	0.3	1.45	0.04	0.37	14895
36		365	370	0.01	0.02	0.71	0.3	1.21	0.04	0.19	14896

680

296

222

640

296

278.6

60

26.5

335.1

**ISLAND COPPER MINE  
ASSAY REQUISITION AND REPORT FORM**

LAB SENT TO: ICM

DATE SENT: \_\_\_\_\_

SENT BY/DEPT: \_\_\_\_\_

TYPE: CORE

DATE REPORTED: \_\_\_\_\_

REPORTED BY: \_\_\_\_\_

(core / perc / other)

HOLE #	FROM (ft/m)	TO	COPPER % Cu	MOLY % Mo	IRON % Fe	GOLD ppm Au	SILVER ppm Ag	LEAD % Pb	ZINC % Zn	TAG #	
37	D-153	375	380	0.02	0.17	610	01	27	100.3	10.29	14897
38		385	390	0.06	0.03	92	02	38	60.3	6.22	14898
39		395	400	0.11	0.01	81	02	46	60.4	6.32	14899
40		405	407	0.09	0.01	97	02	40	60.3	6.31	14900
END OF HOLE											

560

P. 1 of 2

MAGNETIC SUSCEPTIBILITY

LE NO. D153

DATE FEB 6/91

INTERVAL:

VALUE:

FOOTAGE	STARTING POINT VALUE	+2'	+4'	+6'	+8'	INTERVAL AVERAGE
5-20						1.1
20-30						1.9
30-40						1.4
40-50						.06
50-60						2.5
60-70						3.5
70-80						.11
80-90						1.1
90-100						.09
100-110						1.2
110-120						.84
120-130						.09
130-140						.04
140-150						.73
150-160						.94
160-170						.43
170-180						.53
180-190						.22
190-200						.10
200-210						1.06
210-220						.15
220-230						.14
230-240						.05
240-250						.06
250-260						.07
260-270						.03
270-280						.06
280-290						.13
290-300						.05
300-310						.06
310-320						.04
320-330						.12
330-340						.05
340-350						.04



ROCK QUALITY DESIGNATION

HOLE NO.: D153

DATE: FEB 5/91

LOGGED BY: J. Sore

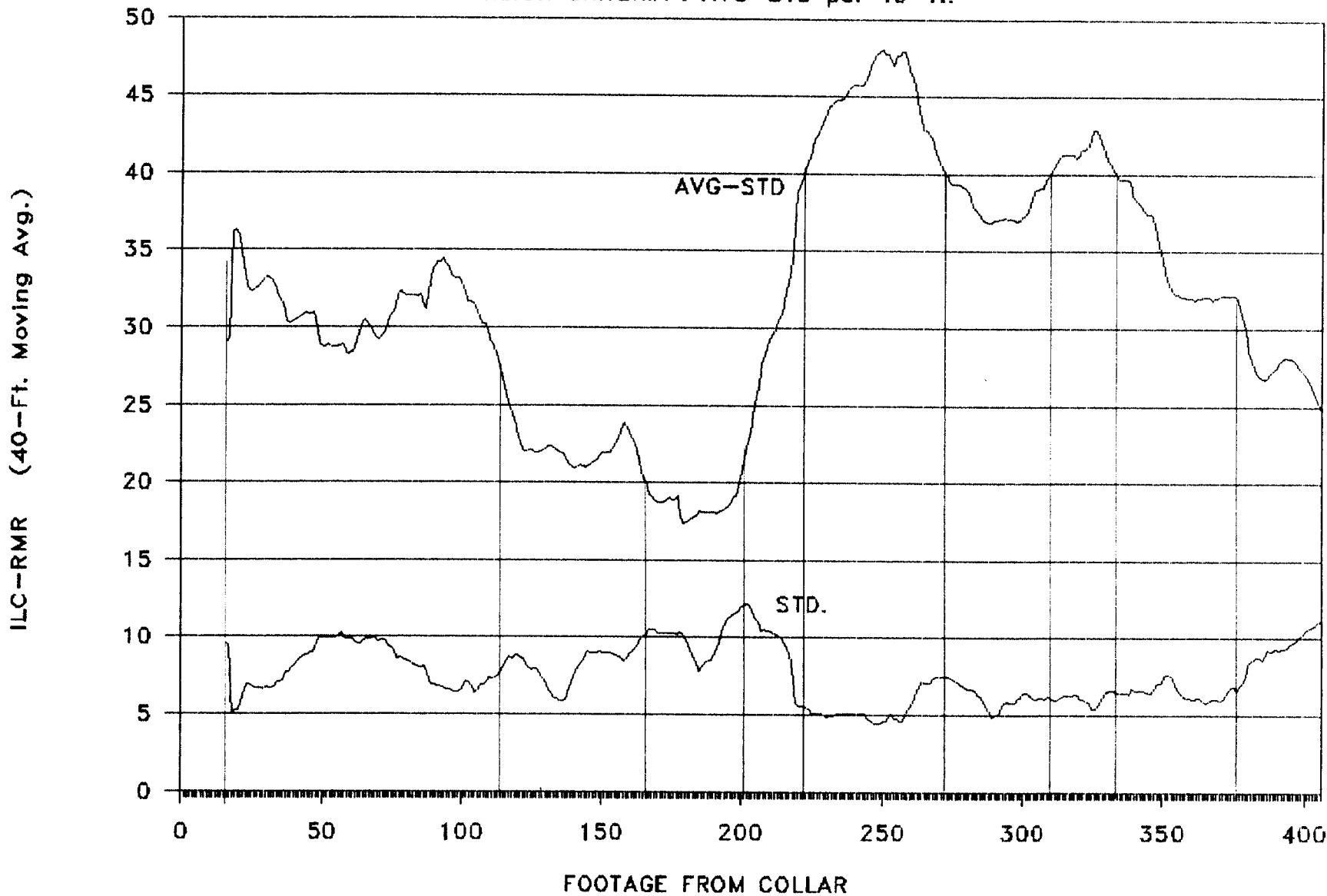
FOOTAGE (FT)		INTERVAL		RECOVERY		TOTAL CUM.	RQD	FRACTURE
FROM	TO	INCHES	CUMULATIVE	INCHES	%	PIECES > 4"	%	INTENSITY
15	17	24	24	24	100	4	17	HIGH
17	27	120	144	123	103	42	35	MODERATE
27	37	120	264	120	100	49	41	✓
37	47	120	384	113	94	41	34	HIGH
47	57	120	504	91	76	24	20	✓
57	67	120	624	120	100	48	40	MODERATE
67	77	120	744	120	100	13	11	HIGH
77	87	120	864	115	96	42	35	MODERATE
87	97	120	984	109	91	14	12	HIGH
97	107	120	1104	128	107	37	31	✓
107	117	120	1224	112	93	49	41	MODERATE
117	127	120	1344	94	78	10	8	HIGH
127	137	120	1464	116	97	0	0	HIGH (Gouge)
137	147	120	1584	71	76	10	8	✓ (Gouge)
147	157	120	1704	123	103	5	4	✓ (Gouge)
157	167	120	1824	111	93	21	18	✓ (Gouge)
167	177	120	1944	83	69	15	13	✓ (Gouge)
177	187	120	2064	113	94	12	10	✓ (Gouge)
187	195	96	2160	76	79	15	16	✓ (Gouge)
195	205	120	2280	129	108	15	13	✓ (Gouge)
205	207	24	2304	26	108	5	21	✓
207	217	120	2424	119	99	40	33	✓
217	227	120	2544	127	106	54	45	MODERATE
227	237	120	2664	123	103	86	72	low < 20
237	247	120	2784	117	98	81	68	low ≈ 20
247	257	120	2904	118	98	93	78	low < 20
257	267	120	3024	120	100	98	82	low < 20
267	277	120	3144	122	102	76	63	MODERATE
277	287	120	3264	120	100	65	54	MODERATE
287	297	120	3384	114	95	73	61	MODERATE
297	307	120	3504	123	103	70	58	MODERATE
307	317	120	3624	120	100	81	68	MODERATE





# DDH D-153 (NQ)

DESIGN CRITERIA : AVG-STD per 40-ft.



HOLE NO. D 153 - NQ  
 LOGGED BY: GAC

DATE: 5 Feb 91 (filled 2/24/91)  
 LOCATION: 28500 E 4500 N  
340 st.

FOOTAGE				FOOTAGE			
FROM	TO	RMR	COMMENTS	FROM	TO	RMR	COMMENTS
0	1	N/a	wk chl - seri alt'd	50	51	35	ser alt'd base
	2		basalt / andes cut		52	35	chl alt'd rubble
	3		bu nms bleached		53	30	
	4		gray-wh sericite		54	20	
	5		altered zones		55	30	47-57' 30% basalt
	6				56	30	
	7				57	20	
	8				58	35	
	9				59	50	
	10				60		
	11				61		
	12				62		
	13				63		
	14				64		
	15				65	35	2" flt gauge
	16	▼			66	50	
	17	40			67	45	
	18	40	peru ser		68	20	
	19	40			69	20	
	20	35			70	35	
	21	40			71	35	
	22	40			72	40	
	23	35			73	35	
	24	40			74	50	
	25				75		
	26				76		
	27				77		
	28	▼			78	35	peru ser.
	29	45			79	30	flt.
	30	40			80	40	
	31	35			81	35	SCC stockwork
	32	▼			82	40	
	33	40			83	50	
	34	50	pebble dika bra		84	50	
	35	▼			85	50+	
	36	45			86	35	peru ser
	37	40	fract'd chl		87	35	
	38	50+			88	30	1" clay seam
	39	50			89	<del>35</del> 35	
	40	35			90	40	
	41	30			91	45	
	42	25			92	"	
	43	25	3" clay seam		93	40	
	44	30			94	40	
	45	35			95	35	
	46	40			96	35	
	47	45			97	35	
	48	45			98	50	
	49	45			99	35	
	50	50			100	45	

HOLE NO. D-153-53  
 LOGGED BY: GAC

DATE: 5-2-91  
 LOCATION: \_\_\_\_\_

FOOTAGE				FOOTAGE			
FROM	TO	RMR	COMMENTS	FROM	TO	RMR	COMMENTS
100	1	45		50	51	30	
	2	↓			52	30	
	3	↓			53	25	
	4	↓			54	↓	
	5	40			55	30	
	6	30			56	25	int ser / pyroph.
	7	30			57	20	
	8	45			58	45	
	9	↓			59	↓	perc. wk ser.
	10	↓			60	↓	chl / zoo
	11	↓			61	↓	
	12	40			62	↓	
	13	40			63	↓	
	14	35			64	↓	
	15	35			65	↓	
	16	30			66	30	
	17	35			67	↓	
	18	35			68	35	
	19	30			69	40	
	20	30			70	30	
	21	25	start of pit		71	↓	
	22	25	zone		72	25	
	23	40			73	↓	
	24	35			74	25	
	25	30			75	5	} missing - labelled "mud" by drillers
	26	25			76	5	
	27	25			77	5	
	28	30			78	30	
	29	25			79	15	flt. along core
	30	25			80	↓	axis
	31	30			81	↓	
	32	25			82	↓	
	33	25			83	20	
	34	20			84	15	
	35	↓			85	↓	
	36	↓			86	20	
	37	↓			87	15	
	38	↓			88	30	*
	39	↓			89	25	
	40	↓			90	30	
	41	↓			91	↓	
	42	↓			92	↓	
	43	35	mod-wk ser / chl		93	↓	
	44	↓			94	↓	
	45	↓			95	25	chl + clay
	46	25			96	↓	
	47	30			97	↓	
	48	35			98	10	
	49	35			99	15	
	50	40			200	35	

HOLE NO. D153  
 LOGGED BY: \_\_\_\_\_

DATE: \_\_\_\_\_  
 LOCATION: \_\_\_\_\_

FOOTAGE				FOOTAGE			
FROM	TO	RMR	COMMENTS	FROM	TO	RMR	COMMENTS
200	201	35	chl ± ser alt	250	251	50+	
	2	↓			52	↓	
	3	↓			53	↓	
	4	↓			54	↓	
	5	↓			55	↓	
	6	40			56	↓	
	7	↓			57	↓	
	8	↓			58	↓	
	9	↓			59	↓	
	10	↓			60	↓	
	11	45	wk chl ± py alt d		61	↓	
	12	↓	lap tuff.		62	↓	
	13	50			63	↓	
	14	↓			64	↓	
	15	↓			65	↓	
	16	45			66	↓	
	17	↓			67	↓	
	18	↓			68	↓	
	19	50			69	↓	
	20	50+			70	45	
	21	↓			71	40	Clay filled frac
	22	↓			72	↓	
	23	45			73	↓	
	24	↓			74	50	
	25	40			75	↓	
	26	45			76	↓	
	27	↓			77	45	
	28	50			78	40	
	29	↓			79	↓	
	30	↓	Clay filled str.		80	↓	
	31	40			81	↓	
	32	45			82	35	
	33	45			83	↓	
	34	40			84	↓	
	35	50			85	50	
	36	45			86	45	
	37	↓			87	45	
	38	50			88	35	
	39	↓			89	40	
	40	45			90	↓	
	41	50+			91	↓	
	42	↓			92	↓	
	43	↓			93	↓	
	44	↓			94	45	
	45	↓			95	50	
	46	↓			96	↓	
	47	↓			97	↓	
	48	↓			98	45	
	49	↓			99	45	
	50	↓			300	40	

HOLE NO. D153  
 LOGGED BY: SAC

DATE: 6-Feb-91  
 LOCATION: \_\_\_\_\_

FOOTAGE				FOOTAGE			
FROM	TO	RMR	COMMENTS	FROM	TO	RMR	COMMENTS
300	301	35		350	351	40	
	2	↓			52	↓	
	3	40			53		
	4	↓			54	↓	
	5	35			55	45	
	6	40			56	50	
	7				57	40	
	8	↓			58	45	
	9	45			59	30	clay filled shear
	10	50			60	40	
	11	45			61		
	12	50+			62	↓	
	13	↓			63	↓	
	14	↓			64	↓	
	15	45			65	45	
	16	50			66	45	firm, c/w perv ser alt
	17	40			67	30	clay matrix ser. alt
	18	50+			68	25	ilt bra.
	19	50			69	30	
	20	50+			70	↓	
	21	50			71	25	
	22				72	30	
	23	↓			73	↓	
	24	↓			74	35	
	25	↓			75	↓	
	26	↓			76	↓	
	27	45			77	40	perv ser alt, no
	28	50+			78	↓	fracs
	29	↓			79	↓	
	30	45			80	↓	
	31	50			81	35	
	32	↓			82	45	
	33	50+			83	↓	
	34	↓			84	↓	
	35	↓			85	40	
	36	50			86	45	
	37	50			87	30	
	38	45			88	40	
	39	40			89	35	
	40	45			90	40	
	41	40			91	45	
	42	35			92	50	
	43	45			93	↓	
	44	50			94	↓	
	45	45			95	45	
	46	40	chl/clay alt"		96	35	start of clay/ilt
	47	35	↓		97	25	zone
	48	↓			98	↓	
	49	↓			99	20	
	50	↓			400	15	

HOLE NO. D153  
 LOGGED BY: SAC

DATE: 6 Feb 01  
 LOCATION: \_\_\_\_\_

FOOTAGE		RMR	COMMENTS	FOOTAGE		RMR	COMMENTS
FROM	TO			FROM	TO		
40 0	40 1	25		50	51		
	2	↓			52		
	3	30			53		
	4	↓			54		
	5	35			55		
	6	50			56		
	7	50+			57		
	8				58		
	9				59		
	10				60		
	11				61		
	12				62		
	13				63		
	14				64		
	15				65		
	16				66		
	17				67		
	18				68		
	19				69		
	20				70		
	21				71		
	22				72		
	23				73		
	24				74		
	25				75		
	26				76		
	27				77		
	28				78		
	29				79		
	30				80		
	31				81		
	32				82		
	33				83		
	34				84		
	35				85		
	36				86		
	37				87		
	38				88		
	39				89		
	40				90		
	41				91		
	42				92		
	43				93		
	44				94		
	45				95		
	46				96		
	47				97		
	48				98		
	49				99		
	50				00		

ISLAND COPPER PIT

This is the main drill-hole database!

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HOLE-ID: D\_154

FROM	TO	CU	MO	FE	AU	AG	PB	ZN	TAG
25.0	30.0	.17	.008	5.8	.02	1.60	.001	.007	14901
35.0	40.0	.13	.003	6.7	.02	1.15	.001	.011	14902
45.0	50.0	.07	.017	5.1	.02	1.20	.002	.003	14903
55.0	60.0	.02	.008	1.6	.01	.25	.001	.002	14904
65.0	70.0	.05	.006	4.7	.02	.60	.001	.017	14905
75.0	80.0	.17	.003	9.4	.02	2.15	.001	.021	14906
85.0	90.0	.06	.003	7.1	.02	1.15	.001	.014	14907
95.0	100.0	.04	.007	4.4	.01	.50	.001	.004	14908
105.0	110.0	.06	.006	4.7	.01	1.05	.001	.002	14909
115.0	120.0	.07	.005	7.1	.01	1.05	.002	.005	14910
125.0	130.0	.27	.007	9.4	.04	1.35	.002	.023	14911
135.0	140.0	.22	.007	8.5	.02	1.45	.001	.013	14912
145.0	150.0	.15	.007	6.5	.02	.90	.002	.012	14913
155.0	160.0	.12	.005	7.0	.03	.90	.001	.009	14914
165.0	170.0	.11	.011	7.8	.02	.65	.003	.022	14915
175.0	180.0	.13	.009	8.3	.02	1.05	.002	.015	14916
185.0	190.0	.22	.012	8.1	.09	1.05	*****	.002	14917
195.0	200.0	.16	.005	6.5	.05	1.00	.001	.019	14918
205.0	210.0	.09	.006	10.0	.05	.45	.003	.016	14919
215.0	220.0	.11	.005	7.8	.02	.50	.003	.009	14920
225.0	230.0	.32	.005	10.3	.00	1.90	.003	.006	14921
235.0	240.0	.31	.022	6.9	.05	4.55	.004	.005	14922
245.0	250.0	.40	.010	9.4	.07	2.05	.002	.007	14923
255.0	260.0	.25	.006	10.8	.06	1.55	.003	.030	14924
265.0	270.0	.20	.007	10.7	.13	1.15	.003	.013	14925
275.0	280.0	.20	.008	9.8	.11	1.10	.003	.012	14926
285.0	290.0	.19	.006	6.1	.19	.95	.003	.007	14927
295.0	300.0	.11	.005	6.8	.18	.60	.002	.000	14928
305.0	310.0	.09	.006	7.6	.13	.50	.003	.007	14929
315.0	320.0	.20	.007	9.9	.17	1.40	.002	.007	14930
325.0	330.0	.30	.009	6.4	.32	1.15	.003	.009	14931
335.0	340.0	.31	.017	6.3	.33	1.20	.003	.008	14932
345.0	350.0	.33	.018	10.4	.26	1.60	.004	.008	14933
355.0	360.0	.28	.014	7.8	.33	1.00	.004	.009	14934
365.0	370.0	.23	.011	6.2	.21	.80	.004	.006	14935
375.0	380.0	.19	.009	5.0	.20	.75	.003	.007	14936
385.0	390.0	.38	.011	5.0	.11	3.75	.002	.003	14937
395.0	400.0	.29	.007	4.8	.46	1.10	.003	.008	14938
405.0	410.0	.44	.010	4.1	.75	1.60	.003	.008	14939
415.0	420.0	.30	.010	4.1	.46	1.10	.003	.007	14940
425.0	430.0	.44	.010	10.0	.10	4.35	.003	.006	14941
435.0	440.0	.26	.007	12.1	.10	2.25	.004	.009	14942
444.0	446.0	6.80	.031	16.0	.18	54.30	.005	.041	14943
440.0	450.0	3.83	.015	17.4	.14	46.00	.006	.039	14944
455.0	460.0	2.50	.009	14.0	.26	13.00	.004	.018	14945
465.0	470.0	1.27	.012	17.8	.14	11.70	.005	.019	14946
475.0	480.0	.43	.010	11.3	.08	3.10	.004	.018	14947
485.0	490.0	.22	.006	7.2	.07	1.85	.004	.035	14948
495.0	500.0	.29	.012	8.8	.13	1.40	.004	.018	14949
505.0	510.0	.24	.009	10.0	.22	1.00	.004	.012	14950

ISLAND COPPER PIT

This is the main drill-hole database!

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515.0	520.0	.22	.008	10.0	.23	.95	.003	.008	14951
525.0	530.0	.40	.009	9.7	.07	2.20	.004	.013	14952
535.0	540.0	.46	.010	14.3	.10	3.15	.004	.015	14953
545.0	550.0	.48	.009	10.6	.07	2.85	.004	.014	14954
555.0	560.0	.42	.007	8.7	.23	1.25	.003	.008	14955
565.0	570.0	.45	.009	11.4	.73	1.35	.004	.009	14956
575.0	580.0	.41	.010	10.0	.39	2.10	.004	.005	14957
585.0	590.0	.34	.008	10.0	.21	1.30	.004	.021	14958
595.0	600.0	.36	.010	8.5	.35	1.30	.004	.019	14959
605.0	610.0	.41	.011	6.6	.26	1.55	.003	.013	14960
615.0	620.0	.29	.014	7.4	.22	.90	.003	.008	14961
625.0	630.0	.25	.011	5.0	.17	1.10	.003	.008	14962
635.0	640.0	.31	.008	8.3	.23	2.05	.003	.014	14963



328 °Az / - 38' dip

collar 837 / 645'

**ISLAND COPPER MINE**  
**ASSAY REQUISITION AND REPORT FORM**

LAB SENT TO: ICM

DATE SENT: \_\_\_\_\_

SENT BY/DEPT: \_\_\_\_\_

TYPE: CORE

DATE REPORTED: \_\_\_\_\_

REPORTED BY: \_\_\_\_\_

(core / perc / other)

HOLE #	FROM (ft / m)	TO	COPPER % Cu	MOLY % Mo	IRON % Fe	GOLD ppm Au	SILVER ppm Ag	LEAD % Pb	ZINC % Zn	TAG #	
D-154	25	30	17		8	12	160	1	7	14901	✓
	35	40	13		3	12	115	1	11	14902	✓
	45	50	7		17	12	120	2	3	14903	✓
	55	60	2		8	11	125	1	2	14904	✓
	65	70	5		6	12	160	1	17	14905	✓
	75	80	17		3	12	215	1	21	14906	✓
	85	90	6		3	12	115	1	14	14907	✓
	95	100	4		7	11	50	1	4	14908	✓
	105	110	6		6	11	1105	1	2	14909	✓
	115	120	7		5	11	1105	2	5	14910	✓
	125	130	27		7	11	1135	2	23	14911	✓
	135	140	22		7	11	145	1	13	14912	✓
	145	150	15		7	10	90	2	12	14913	✓
	155	160	12		5	10	90	1	9	14914	✓
	165	170	11		11	10	165	3	22	14915	✓
	175	180	13		9	10	1105	2	15	14916	✓
	185	190	22		12	09	1105	2	22	14917	✓
	195	200	16		5	05	1100	1	19	14918	✓

Not Sampled.



TO BE SAMPLED LATER.



**ISLAND COPPER MINE  
ASSAY REQUISITION AND REPORT FORM**

LAB SENT TO: ICM

DATE SENT: \_\_\_\_\_

SENT BY/DEPT: \_\_\_\_\_

TYPE: Core

DATE REPORTED: \_\_\_\_\_

REPORTED BY: \_\_\_\_\_

(core / perc / other)

HOLE #	FROM (ft / m)	TO	COPPER % Cu	MOLY % Mo	IRON % Fe	GOLD ppm Au	SILVER ppm Ag	LEAD % Pb	ZINC % Zn	TAG #	
D-154	205	210	29	6	100	05	45	3	16	14919	✓ 1
	215	220	11	5	78	02	50	3	9	14920	✓ 2
	225	230	32	5	103	05	190	3	6	14921	✓ 3
	235	240	31	22	69	05	455	4	5	14922	✓ 4
	245	250	40	10	94	07	205	2	7	14923	✓ 5
	255	260	25	6	135	06	155	3	30	14924	✓ 6
	265	270	20	7	107	13	115	3	13	14925	✓ 7
	275	280	20	8	98	11	110	3	12	14926	✓ 8
	285	290	19	6	61	19	195	3	7	14927	✓ 9
	295	300	11	5	68	18	160	2	6	14928	✓ 10
	305	310	09	6	76	13	50	3	7	14929	✓ 11
	315	320	20	7	99	17	140	2	7	14930	✓ 12
	325	330	30	9	64	32	115	3	9	14931	✓ 13
	335	340	31	17	63	33	120	3	8	14932	✓ 14
	345	350	33	18	104	26	160	4	8	14933	✓ 15
	355	360	28	14	78	33	1100	4	9	14934	✓ 16
	365	370	23	11	62	21	80	4	6	14935	✓ 17
	375	380	19	9	50	20	75	3	7	14936	✓ 18

**ISLAND COPPER MINE  
ASSAY REQUISITION AND REPORT FORM**

LAB SENT TO: ICM

DATE SENT: \_\_\_\_\_

SENT BY/DEPT: \_\_\_\_\_

TYPE: CORE

DATE REPORTED: \_\_\_\_\_

REPORTED BY: \_\_\_\_\_

(core / perc / other)

36-

HOLE #	FROM (ft / m)	TO	COPPER % Cu	MOLY % Mo	IRON % Fe	GOLD ppm Au	SILVER ppm Ag	LEAD % Pb	ZINC % Zn	TAG #	
D-154	385	390	36	11	50	11	375	2	3	14937	✓ 19
	395	400	29	7	48	46	110	3	8	14938	✓ 20
	405	410	44	10	41	75	160	3	8	14939	✓ 21
	415	420	30	10	41	46	110	3	7	14940	✓ 22
	425	430	44	10	190	10	435	3	6	14941	✓ 23
	435	440	26	7	171	10	225	4	9	14942	✓ 24
AV-29	444	446	680	31	160	18	5430	5	91	14943	✓ 25
39	446	450	383	15	174	14	4600	6	39	14944	✓ 26
40	455	460	250	9	170	26	1300	4	18	14945	✓ 27
41	465	470	127	12	178	14	1170	5	19	14946	✓ 28
	475	480	43	10	113	08	310	4	18	14947	✓ 29
	485	490	22	6	72	07	185	4	35	14948	✓ 30
	495	500	29	12	88	13	140	4	18	14949	✓ 31
	505	510	24	9	108	22	100	4	12	14950	✓ 32
	515	520	22	8	106	23	95	5	8	14951	✓ 33
	525	530	40	9	97	07	220	5	13	14952	✓ 34
	535	540	46	10	143	10	315	4	15	14953	✓ 35
	545	550	48	9	106	07	285	4	14	14954	✓ 36

**ISLAND COPPER MINE  
ASSAY REQUISITION AND REPORT FORM**

LAB SENT TO: ICM

DATE SENT: \_\_\_\_\_

SENT BY/DEPT: \_\_\_\_\_

TYPE: CORE

DATE REPORTED: \_\_\_\_\_

REPORTED BY: \_\_\_\_\_

(core / perc / other)

HOLE #	FROM (ft / m)	TO	COPPER % Cu	MOLY % Mo	IRON % Fe	GOLD ppm Au	SILVER ppm Ag	LEAD % Pb	ZINC % Zn	TAG #	
D-154	555	560	42	7	87	23	125	3	8	14955	✓ 37
	565	570	45	9	174	73	135	4	9	14956	✓ 38
	575	580	41	10	108	39	210	4	5	14957	✓ 39
	585	590	34	8	105	21	130	4	21	14958	✓ 40
	595	600	36	10	85	35	130	4	19	14959	✓ 41
	605	610	41	11	66	26	155	3	13	14960	✓ 42
	615	620	29	14	74	22	90	3	8	14961	✓ 43
	625	630	25	11	50	17	110	3	8	14962	✓ 44
	635	640	31	8	83	23	205	3	14	14963	✓ 45
										15289	46
	END OF HOLE									"	47
										BHP 2	48

MAGNETIC SUSCEPTIBILITY

LE NO. D154

DATE MAR 19/91

INTERVAL:

VALUE:

FOOTAGE	STARTING POINT VALUE	+2'	+4'	+6'	+8'	INTERVAL AVERAGE
21-30						.03
31-40						.02
41-50						.02
51-60						.00
61-70						.02
71-80						.06
81-90						.02
91-100						.01
101-110						.02
111-120						.02
121-130						.09
131-140						.82
141-150						.85
151-160						1.40
161-170						9.30
171-180						.24
181-190						5.7
191-200						3.6
201-210						5.4
211-220						7.5
221-230						6.1
231-240						1.2
241-250						1.5
251-260						2.6
261-270						5.7
271-280						1.2
281-290						1.7
291-300						8.4
301-310						6.7
311-320						2.5
321-330						2.2
331-340						3.6
341-350						4.1
351-360						4.9

MAGNETIC SUSCEPTIBILITY

WELL NO.

D154

DATE

MAR 19/91

INTERVAL:

VALUE:

FOOTAGE	STARTING POINT VALUE	+2'	+4'	+6'	+8'	INTERVAL AVERAGE
361-370						1.3
371-380						1.2
381-390						.52
391-400						2.7
401-410						2.7
411-420						1.4
421-430						.30
431-440						1.9
441-450						.01
451-460						.20
461-470						.07
471-480						1.1
<del>481</del> -490						1.6
491-500						2.5
501-510						7.3
511-520						9.2
521-530						1.0
531-540						.46
541-550						.19
551-560						6.1
561-570						4.6
571-580						5.0
581-590						8.1
591-600						6.2
601-610						3.9
611-620						13.
621-630						6.4
631-640						11.
641-645						3.6
END OF HOLE						

ROCK QUALITY DESIGNATION

HOLE NO.: D154

DATE: FEB 7/91

LOGGED BY: [Signature]

FOOTAGE (FT)		INTERVAL		RECOVERY		TOTAL CUM.	RQD	FRACTURE
FROM	TO	INCHES	CUMULATIVE	INCHES	%	PIECES ≥ 4"	%	INTENSITY
21	35	168	168	137	82	31	18	HIGH
35	45	120	288	108	90	24	20	✓
45	55	120	408	106	88	54	45	MODERATE
55	65	120	528	98	82	48	40	MOD/HIGH
65	72	84	612	65	90	0	0	HIGH (Gouge)
72	82	120	732	105	88	51	42	MOD/HIGH
82	87	60	792	61	102	12	20	HIGH
87	95	96	888	78	81	25	26	✓
95	104	108	996	68	63	4	4	✓
104	115	132	1128	86	65	18	14	✓
115	125	120	1248	69	58	14	12	✓
125	132	84	1332	77	92	22	26	✓
132	143	132	1464	119	90	58	44	MODERATE
143	148	60	1524	55	92	14	23	HIGH
148	155	84	1608	90	107	42	50	MODERATE
155	165	120	1728	107	89	38	32	MOD/HIGH
165	175	120	1848	123	103	46	38	✓
175	185	120	1968	118	98	36	30	✓ (2' Gouge)
185	195	120	2088	120	100	91	76	LOW < 20
195	205	120	2208	121	101	82	68	MODERATE
205	215	120	2328	116	97	62	52	✓
215	225	120	2448	120	100	82	68	✓
225	235	120	2568	122	102	89	74	LOW < 20
235	245	120	2688	119	99	72	60	MODERATE
245	255	120	2808	115	96	70	58	✓
255	265	120	2928	124	103	49	41	✓
265	275	120	3048	117	98	42	35	MODERATE
275	285	120	3168	115	96	38	32	✓
285	295	120	3288	124	103	74	62	✓
295	305	120	3408	132	110	78	65	✓
305	315	120	3528	120	100	20	17	HIGH
315	325	120	3648	114	95	34	28	✓

HOLE NO.: D154DATE: FEB 7/91LOGGED BY: [Signature]

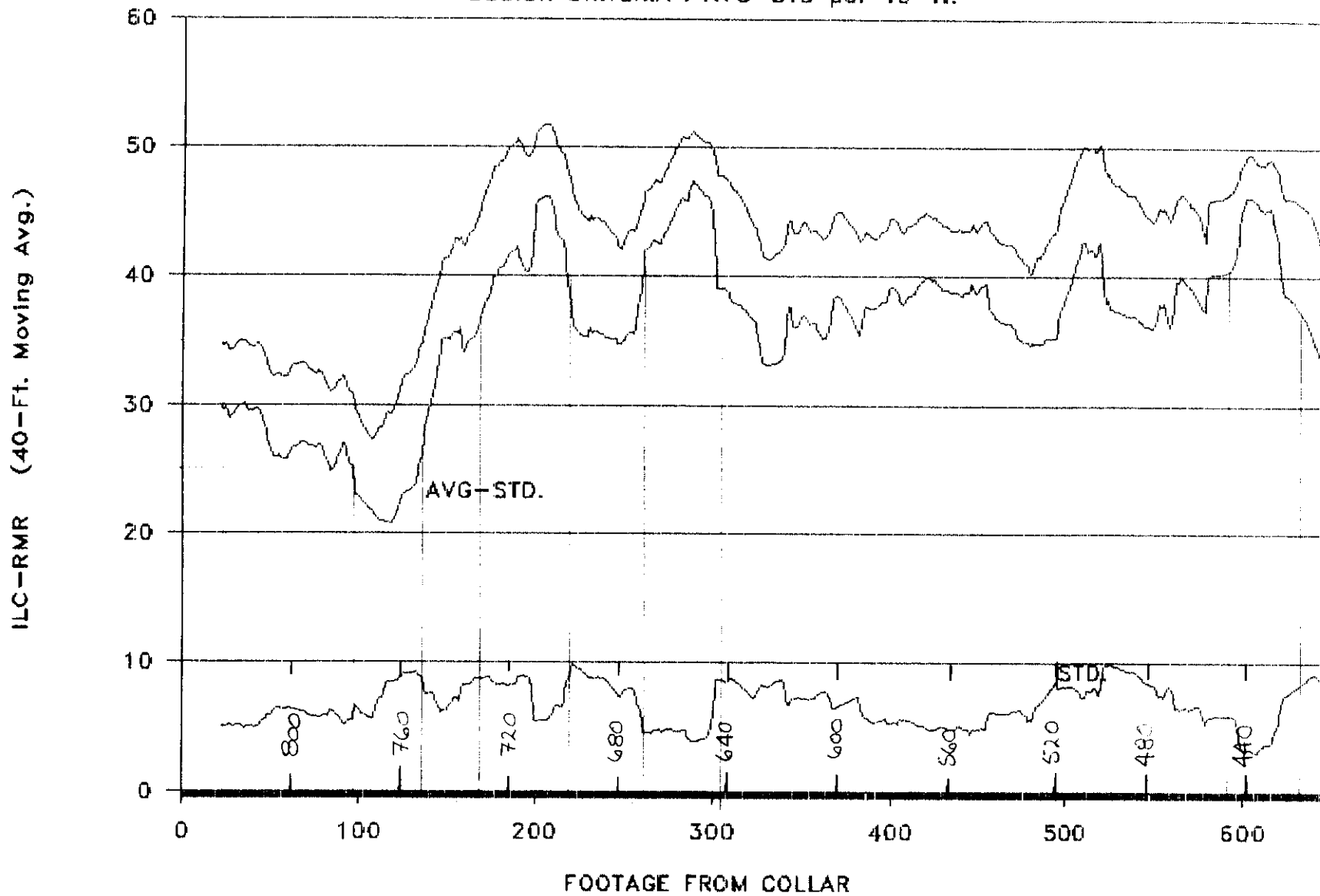
	FOOTAGE (FT)		INTERVAL		RECOVERY		TOTAL CUM.	RQD	FRACTURE
	FROM	TO	INCHES	CUMULATIVE	INCHES	%	PIECES ≥ 4"	%	INTENSITY
	325	335	120	3768	119	99	56	47	Med / High
	335	345	120	3888	120	100	21	18	High
	345	355	120	4008	121	101	41	34	✓
	355	365	120	4128	117	98	58	48	MODERATE
	365	375	120	4248	120	100	55	46	✓
✓	375	382.5	90	4338	88	98	20	22	High
	382.5	385	30	4368	10	33	4	13	High
	385	395	120	4488	97	81	15	13	✓
	395	405	120	4608	122	102	27	23	✓
	405	415	120	4728	105	88	19	16	✓
	415	425	120	4848	121	101	37	31	✓
✓	425	435	120	4968	120	100	68	57	MODERATE
	435	445	120	5088	122	102	85	71	Med / Low
	445	455	120	5208	120	100	106	88	low 20
	455	465	120	5328	120	100	68	57	MODERATE
	465	475	120	5448	122	102	95	79	low 20-30
	475	485	120	5568	123	103	30	25	High
	485	489	48	5616	36	75	11	29	✓
	489	495	72	5688	67	93	12	17	✓
	495	505	120	5808	115	96	33	28	✓
	505	515	120	5928	122	102	71	59	MODERATE
	515	525	120	6048	125	104	58	48	✓
	525	535	120	6168	121	101	75	63	✓
	535	545	120	6288	123	103	78	65	✓
	545	555	120	6408	121	101	75	63	✓
	555	562	84	6492	94	112	46	55	✓
	562	572	120	6612	123	103	38	32	✓
	572	583	132	6744	134	102	32	24	High
	583	585	24	6768	31	129	11	46	MODERATE
	585	595	120	6888	124	103	69	58	✓
	595	605	120	7008	122	102	31	26	High
	605	615	120	7128	122	102	23	19	✓





# DDH D-154 (HQ)

DESIGN CRITERIA : AVG-STD per 40-ft.



HOLE NO. D 154 (HQ)  
 LOGGED BY: \_\_\_\_\_

DATE: 6 Feb 91  
 LOCATION: 340 Bench

FOOTAGE				FOOTAGE			
FROM	TO	RMR	COMMENTS	FROM	TO	RMR	COMMENTS
0	1		Drilled to determine	50	51	30	
	2		controls on		52		
	3		Zone 9 stability.		53	↓	
	4		hopefully to		54	35	
	5		permit steepening		55	35	
	6		of wall.		56	35	
	7				57	25	
	8				58	30	
	9				59	35	
	10				60	30	
	11				61	35	
	12				62	40	
	13				63	40	
	14				64	30	
	15				65	25	
	16				66	↓	
	17				67	↓	
	18				68	↓	
	19				69	20	
	20				70	25	
	21				71	↓	
	22	35	str ser / chl		72	20	
	23	35			73	40	
	24	30			74	↓	
	25	↓			75	35	
	26	40	perv ser		76	35	
	27	↓			77	25	
	28	↓			78	35	
	29	↓			79	40	
	30	40			80	↓	
	31	40			81	↓	
	32	30			82	↓	
	33	35			83	35	V. str ser alt,
	34	↓			84	↓	few open frags.
	35	↓			85	↓	
	36	30			86	↓	
	37	40			87	30	
	38	35			88	35	
	39	40			89	↓	
	40	↓			90	↓	
	41	25			91	↓	
	42	↓			92	30	
	43	30			93	35	
	44	30			94	↓	
	45	40			95	30	
	46	30			96	↓	
	47	25	str ser + clay vns.		97	↓	
	48	35			98	35	
	49	↓			99	30	
	50	40		99	100	25	

casing

HOLE NO. D154  
 LOGGED BY: GAC

DATE: 6-2-91  
 LOCATION: \_\_\_\_\_

FOOTAGE				FOOTAGE			
FROM	TO	RMR	COMMENTS	FROM	TO	RMR	COMMENTS
100	101	25	int clay/ser	150	151	35	
	2	↓	2" of vale.		52	40	
	3	↓			53	40	
	4	↓			54	45	
	5	20			55	10	
	6	↓			56	↓	
	7	30			57	30	4" clay seam
	8	↓			58	50	
	9	35			59	25	
	10	30			60	45	
	11	↓			61	50	
	12	↓			62	↓	
	13	↓			63	↓	
	14	20			64	45	
	15	20			65	↓	
	16	25			66	50	
	17	25			67	↓	
	18	10	lost - mud in box		68	↓	
	19	15	same RMR assumed		69	↓	
	20	30			70	45	
	21	25			71	↓	
	22	↓			72	50+	
	23	↓			73	↓	
	24	↓			74	↓	
	25	↓			75	↓	
	26	↓			76	45	
	27	↓			77	40	py/ser/clay frac.
	28	↓			78	↓	
	29	40	pebble like bra.		79	20	ser/clay fault
	30	45			80	20	
	31	↓			81	45	
	32	↓			82	50	hard mt/gr/lt
	33	35			83	↓	lapilli tuff
	34	↓			84	↓	
	35	45			85	↓	
	36	↓			86	50+	
	37	↓			87	↓	
	38	30			88	↓	
	39	↓			89	↓	
	40	35			90	↓	
	41	↓			91	↓	
	42	40			92	↓	
	43	35			93	↓	
	44	45			94	↓	
	45	↓			95	↓	marg bra
	46	↓			96	↓	↓
	47	40			97	↓	↓
	48	35			98	45	OP - chilled marg.
	49	↓			99	↓	chl. alt., 200 frac.
	50	↓			00	50+	

HOLE NO. D154  
 LOGGED BY:           

DATE:             
 LOCATION:           

FOOTAGE				FOOTAGE			
FROM	TO	RMR	COMMENTS	FROM	TO	RMR	COMMENTS
200	201	50	GFP	150	251	50	
	2	50+			52	35	
	3	↓			53	45	
	4	↓			54	↓	
	5	↓			55	↓	
	6	↓			56	40	
	7	↓			57	45	
	8	↓			58	↓	
	9	↓			59	40	ser/clay vns
	10	↓			60	45	
	11	30	ser/clay/py sil. H.		61	↓	
	12	50			62	↓	
	13	40			63	50	
	14	45			64	↓	
	15	↓			65	↓	
	16	↓			66	45	
	17	50			67	35	
	18	45			68	45	
	19	45			69	↓	
	20	50			70	50+	
	21	50+			71	↓	
	22	↓			72	↓	
	23	↓			73	45	
	24	↓	tr ankerite?		74	50	
	25	↓			75	50	
	26	↓			76	45	
	27	↓			77	↓	
	28	↓			78	↓	
	29	45	per str ser +		79	50	
	30	40	py/py vns		80	↓	
	31	↓			81	↓	volc
	32	35			82	↓	GFP
	33	40			83	↓	volc
	34	45			84	↓	
	35	50			85	↓	
	36	50			86	↓	
	37	35			87	50+	
	38	25			88	↓	
	39	↓	ser bala on tilt.		89	45	
	40	35			90	↓	
	41	25			91	50+	
	42	25	6.8" GFP		92	↓	basalt of m+ch1
	43	45			93	↓	tilt on
	44	↓			94	↓	
	45	↓			95	↓	
	46	40			96	↓	
	47	45			97	↓	
	48	50			98	↓	
	49	↓			99	↓	
	50	↓			00	↓	

HOLE NO. D154  
 LOGGED BY: SAC

DATE: 8/27/55  
 LOCATION: \_\_\_\_\_

FOOTAGE				FOOTAGE			
FROM	TO	RMR	COMMENTS	FROM	TO	RMR	COMMENTS
300	301	50+		50	51	45	
	2	↓	V hard		52	↓	
	3	↓	sp. not calc		53	50	
	4	45	minor frac.		54	↓	
	5	50			55	↓	
	6	45			56	↓	
	7	50			57	↓	
	8	↓			58	45	
	9	↓			59	50	
	10	45			60	45	
	11	50			61	50	
	12	45			62	↓	
	13	↓			63	↓	
	14	↓			64	↓	
	15	↓			65	30	
	16	↓			66	↓	
	17	↓			67	30	
	18	40			68	↓	
	19	45			69	↓	
	20	35			70	↓	
	21	30	} pit @ 15° to c/a.		71	↓	
	22	20			72	↓	
	23	20			73	40	alt s/or frac d.
	24	50			74	↓	
	25	↓			75	↓	
	26	↓			76	40	
	27	↓			77	45	
	28	↓			78	↓	
	29	40			79	30	
	30	35			80	40	
	31	40			81	35	
	32	50			82	↓	
	33	↓			83	45	
	34	↓			84	50	
	35	↓			85	↓	
	36	45			86	↓	
	37	↓			87	↓	
	38	↓			88	40	serv ser/qr
	39	↓			89		otherwise solid
	40	40	wk-no ser. but bly		90	35	core
	41	↓	frac d.		91	40	
	42	45			92	↓	
	43	40			93	↓	
	44	↓			94	↓	
	45	30	ser/clay alt. alt.		95	35	
	46	↓			96	40	
	47	↓			97	↓	
	48	25			98	↓	
	49	40			99	↓	
	50	↓		399	400	↓	

HOLE NO. D154  
 LOGGED BY: GAC

DATE: 3-2-01  
 LOCATION: \_\_\_\_\_

FOOTAGE				FOOTAGE			
FROM	TO	RMR	COMMENTS	FROM	TO	RMR	COMMENTS
100	201	30+		450	451	45	
	2	30			52	↓	
	3	30			53	50	
	4	45	1/2 hard nit 32 amsh		54	40	
	5	40	alt. calc; med		55	45	
	6	45	frac		56	50	
	7				57	↓	
	8				58	↓	
	9				59	50+	
	10				60	40	
	11	↓			61	35	
	12	50			62	40	
	13	↓			63	↓	
	14	7			64	↓	
	15	45			65	45	
	16	50			66	40	
	17	↓			67	30+	
	18	↓			68	35	
	19	↓			69	40	
	20	↓			70	50	
	21	35			71	45	
	22	↓			72	50	
	23	40			73	↓	
	24	↓			74	45	
	25	45			75	↓	
	26	30	4" clay bsa flt		76	25	
	27	45	⊕ 30°		77	30	
	28	40			78	40	
	29	40			79	↓	
	30	↓			80	35	
	31	↓			81	45	
	32	↓			82	40	
	33	45			83	↓	
	34	40			84	↓	
	35	45			85	↓	
	36	↓			86	↓	
	37	↓			87	↓	
	38	↓			88	↓	
	39	40			89	↓	
	40	50			90	35	
	41	↓			91	40	
	42	45			92	35	
	43	↓			93	↓	
	44	40			94	↓	
	45	45	20% cpy + ser		95	40	
	46	40	40% " + "		96	↓	
	47	↓	19-20% cpy + py		97	45	
	48	↓			98	↓	
	49	↓			99	35	
	50	↓		499	500	↓	

HOLE NO. D154  
 LOGGED BY: JAC

DATE: 8-2-91  
 LOCATION: \_\_\_\_\_

FOOTAGE				FOOTAGE			
FROM	TO	RMR	COMMENTS	FROM	TO	RMR	COMMENTS
500	501	45		550	551	50+	
	2	50+			52	45	clay vlt.
	3	↓			53	50	
	4	↓			54	↓	
	5	40	broken core		55	↓	
	6	50+	v. solid not qz		56	↓	
	7		amph alt vlt		57	50+	
	8				58	↓	
	9				59	↓	
	10				60	↓	
	11				61	45	chl alt J frags
	12				62	↓	in otherwise v.g
	13				63	↓	core.
	14				64	↓	
	15				65	↓	
	16				66	↓	
	17				67	40	
	18				68	45	
	19				69	↓	
	20				70	↓	
	21				71	50	
	22				72	45	
	23				73	↓	
	24				74	↓	
	25				75	40	chl alt J frags
	26				76	↓	
	27	↓			77	↓	k-spar
	28	50	heated chl alt		78	30	chl/clay alt J alt
	29	↓	brk		79	↓	zone @ 20°
	30	50+			80	35	
	31	45			81	40	
	32	35			82	↓	
	33	30			83	↓	
	34	↓			84	↓	
	35	45			85	↓	
	36	40			86	50+	
	37	35			87	↓	
	38	45			88	↓	
	39	↓			89	45	
	40	↓			90	50	
	41	30	clay/ser fault		91		
	42	↓	zone		92		
	43	20	clay/proph/ly		93	↓	
	44	35			94	35	
	45	45			95	50	
	46	35			96	35	
	47	50			97		
	48	↓	k-spar alt		98	↓	
	49	↓			99	↓	
	50	50+		599	600	50	



HOLE NO. \_\_\_\_\_  
 LOGGED BY: \_\_\_\_\_

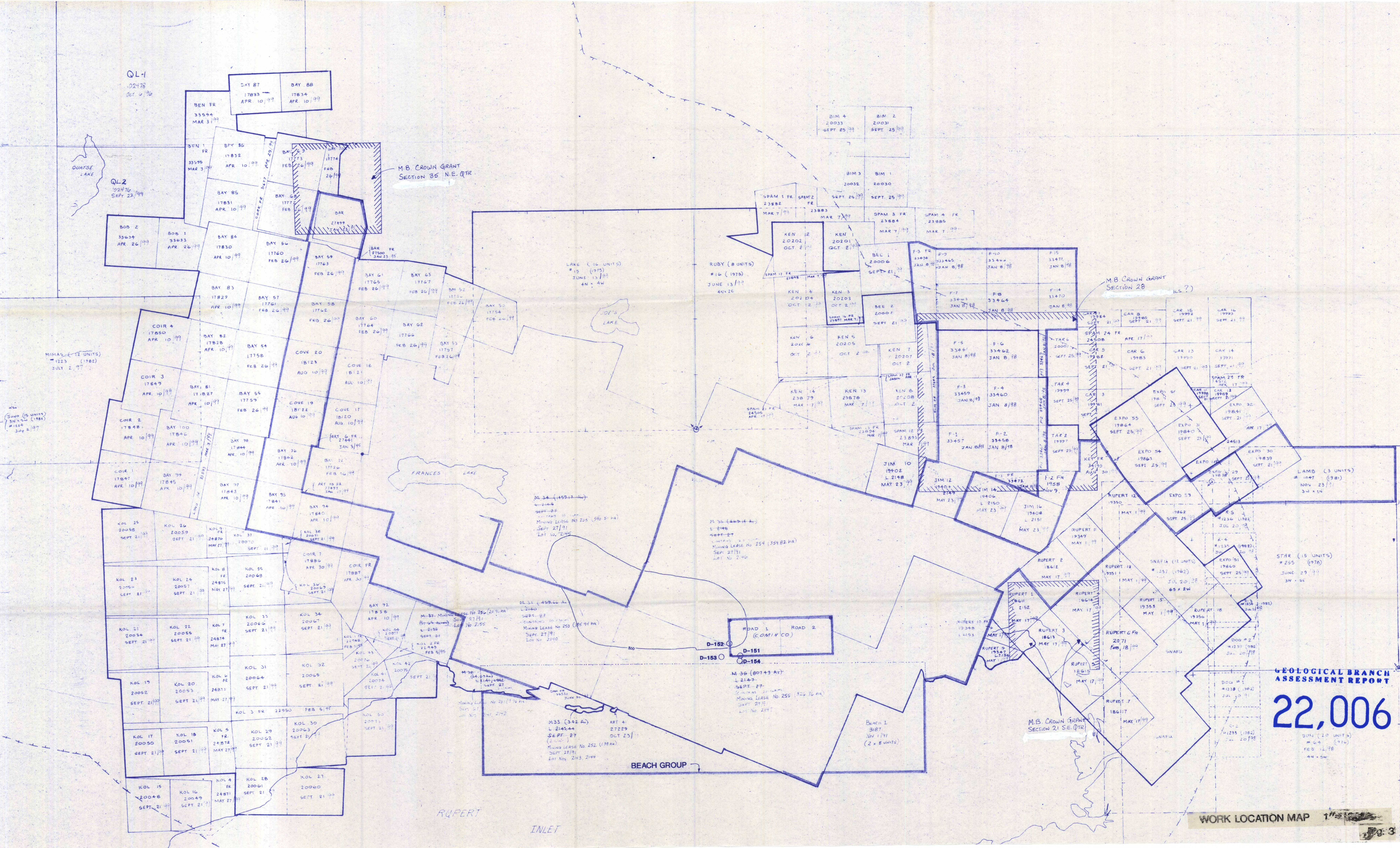
DATE: \_\_\_\_\_  
 LOCATION: \_\_\_\_\_

FOOTAGE				FOOTAGE			
FROM	TO	RMR	COMMENTS	FROM	TO	RMR	COMMENTS
600	601	30		50	51		
	2	30+			52		
	3	3			53		
	4	3			54		
	5	3			55		
	6	3			56		
	7	3			57		
	8	3			58		
	9	3			59		
	10	3			60		
	11	3			61		
	12	3			62		
	13	3			63		
	14	3			64		
	15	3			65		
	16	3			66		
	17	3			67		
	18	3			68		
	19	3			69		
	20	3			70		
	21	3			71		
	22	30+			72		
	23	3			73		
	24	3			74		
	25	3			75		
	26	3			76		
	27	35			77		
	28	3			78		
	29	3			79		
	30	3	set out of center		80		
	31	3			81		
	32	35			82		
	33	3			83		
	34	3			84		
	35	3			85		
	36	30			86		
	37	3	str ch. alt.		87		
	38	3			88		
	39	46			89		
	40	35			90		
	41	30			91		
	42	35			92		
	43	30			93		
	44	35			94		
	45	30			95		
	46		end of hole		96		
	47				97		
	48				98		
	49				99		
	50				00		

GEOLOGICAL BRANCH ASSESSMENT REPORT

22,006

SUN (20 UNITS) # 64 (1976) FEB 12/98 4N x 5W



QL-1 02478 Oct 6/96

QL2 02476 SEPT 22/99

M.B. Crown Grant SECTION 35 N.E. QTR

M.B. Crown Grant SECTION 28 (S?)

M.B. Crown Grant SECTION 21 S.E. QTR

LAKE (16 UNITS) # 15 (1975) JUNE 13/99 4N x 4W

RUBY (8 UNITS) # 16 (1975) JUNE 13/99 4N x 2E

MIMAS (12 UNITS) # 1223 (1982) JULY 2/97

SUNO (5 UNITS) 3N x 5W (1985) # 1224 JULY 2/97

STAR (15 UNITS) # 295 (1978) JUNE 29/99 3N x 5E

LAMB (3 UNITS) # 1047 (1981) NOV 23/97 3-4 x 1N

SNAP (12 UNITS) # 1257 (1982) JUL 20/98 6S x 2W

DOG # 2 # 1238 (1982) JUL 20/91

DOG # 1 # 1235 (1982) JUL 20/98

M 35 (849-4 A) L 2146 SEPT-27 MINING LEASE No 255 (590.5 ha) Lot No. 2146

M 36 (807-3 A) L 2147 SEPT-27 MINING LEASE No 255 (526.76 ha) Lot No. 2147

M 37 (807-3 A) L 2148 SEPT-27 MINING LEASE No 255 (526.76 ha) Lot No. 2148

M 38 (807-3 A) L 2149 SEPT-27 MINING LEASE No 255 (526.76 ha) Lot No. 2149

M 39 (807-3 A) L 2150 SEPT-27 MINING LEASE No 255 (526.76 ha) Lot No. 2150

M 40 (807-3 A) L 2151 SEPT-27 MINING LEASE No 255 (526.76 ha) Lot No. 2151

M 41 (807-3 A) L 2152 SEPT-27 MINING LEASE No 255 (526.76 ha) Lot No. 2152

M 42 (807-3 A) L 2153 SEPT-27 MINING LEASE No 255 (526.76 ha) Lot No. 2153

M 43 (807-3 A) L 2154 SEPT-27 MINING LEASE No 255 (526.76 ha) Lot No. 2154

M 44 (807-3 A) L 2155 SEPT-27 MINING LEASE No 255 (526.76 ha) Lot No. 2155

M 45 (807-3 A) L 2156 SEPT-27 MINING LEASE No 255 (526.76 ha) Lot No. 2156

M 46 (807-3 A) L 2157 SEPT-27 MINING LEASE No 255 (526.76 ha) Lot No. 2157

M 47 (807-3 A) L 2158 SEPT-27 MINING LEASE No 255 (526.76 ha) Lot No. 2158

M 34 (159-1 A) SEPT-27 MINING LEASE No 255 (590.5 ha) Lot No. 2145

M 35 (159-1 A) SEPT-27 MINING LEASE No 255 (590.5 ha) Lot No. 2146

M 36 (159-1 A) SEPT-27 MINING LEASE No 255 (590.5 ha) Lot No. 2147

M 37 (159-1 A) SEPT-27 MINING LEASE No 255 (590.5 ha) Lot No. 2148

M 38 (159-1 A) SEPT-27 MINING LEASE No 255 (590.5 ha) Lot No. 2149

M 39 (159-1 A) SEPT-27 MINING LEASE No 255 (590.5 ha) Lot No. 2150

M 40 (159-1 A) SEPT-27 MINING LEASE No 255 (590.5 ha) Lot No. 2151

M 41 (159-1 A) SEPT-27 MINING LEASE No 255 (590.5 ha) Lot No. 2152

M 42 (159-1 A) SEPT-27 MINING LEASE No 255 (590.5 ha) Lot No. 2153

M 43 (159-1 A) SEPT-27 MINING LEASE No 255 (590.5 ha) Lot No. 2154

M 44 (159-1 A) SEPT-27 MINING LEASE No 255 (590.5 ha) Lot No. 2155

M 45 (159-1 A) SEPT-27 MINING LEASE No 255 (590.5 ha) Lot No. 2156

M 46 (159-1 A) SEPT-27 MINING LEASE No 255 (590.5 ha) Lot No. 2157

M 47 (159-1 A) SEPT-27 MINING LEASE No 255 (590.5 ha) Lot No. 2158

RUPERT

INLET

BEACH GROUP

D-152

D-151

D-153

D-154

D-155

D-156

D-157

D-158

D-159

D-160

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