BHP MINERALS CANADA LTD.

ASSESSMENT REPORT

Rupert-93 Group

JULY 1993

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Province of British Columbia

Ministry of Energy, Mines and Petroleum Resources

TYPE OF REPORT/SURVEY(S): **DIAMOND DRILLING** TOTAL COST: **$22,593.00**

AUTHOR(S): **J.A. Fleming, P.Geo.** SIGNATURE(S):

DATE STATEMENT OF EXPLORATION AND DEVELOPMENT FILED: **April 30, 1993** YEAR OF WORK: **1993**

PROPERTY NAME(S): **RUPERT-93 GROUP**

COMMODITIES PRESENT: **COPPER, MOLYBDENUM, GOLD**

B.C. MINERAL INVENTORY NUMBER(S), IF KNOWN:

MINING DIVISION: **NANAIMO** NTS: **92L/11E**

LATITUDE: **50° 36'** LONGITUDE: **127° 31'**

NAMES and NUMBERS of all mineral tenures in good standing (when work was done) that form the property (Examples: TAX 1-4, FIRE 2 (12 units), PHOENIX (Lot 1706); Mineral Lease M 123, Mining or Certified Mining Lease ML 12 (claims involved):

ROAD 1, BEACH 1 (16 UNITS), ART #4, DAM FR., RUPERT #9, RUPERT #1 - #5, RUPERT #7, RUPERT #11 - #13, RUPERT #15, RUPERT #18, EXPO #29 - #32, EXPO #51, EXPO #53 - #56, DOG #1, DOG #2, M.L. 250, M.L. 254, M.L. 255, EXPO 1 FR., CAR 11, SNAFU (12 UNITS), RUPERT #6, KEY FR.**

OWNER(S)

(1) **BHP MINERALS CANADA LTD** (2) **GORDON MILBOURNE**

MAILING ADDRESS

**BOX 370,
PORT HARDY, B.C.
V0N 2P0**

**C/O LADNER DOWNS,
1200-700 WEST GEORGIA ST.
VANCOUVER, B.C. V7Y 1A8**

OPERATOR(S) (that is, Company paying for the work)

(1) **BHP MINERALS CANADA LTD.** (2) ****(OWNER) WESTERN CANADA STEEL**

MAILING ADDRESS

**BOX 370,
PORT HARDY, B.C.
V0N 2P0**

SUMMARY GEOLOGY (lithology, age, structure, alteration, mineralization, size and attitude):

The area north of Rupert and Holberg Inlets is underlain by the Upper Triassic (Vancouver Group) to Lower Jurassic (Bonanza Group) volcanic and sedimentary succession. Jurassic quartz-diorite to porphyritic granodiorite stocks with minor quartz-feldspar porphyry dykes of the Island Plutonic Suite cut the gently southwestward dipping succession. These units are overlain by Cretaceous (Kyuquot and Queen Charlotte groups) sediments. The work area is on the east wall of the Island Copper porphyry copper-gold-molybdenum deposit. The target was an extension of the north limb of the deposit to the east of the proposed ultimate pit wall.

REFERENCES TO PREVIOUS WORK: **ASSESSMENT REPORT # 22006**

1. INTRODUCTION

Between the 11th and the 20th of December, 1992, one diamond drill hole (Table 1) totalling 356.0 metres (1168 feet) was drilled immediately to the east of the Island Copper pit. The program was designed to test for ≥0.20% Cu grade porphyry copper type mineralization in an extension of the north limb of the deposit to the east past the ultimate pit wall. The hole was also used for geotechnical purposes and the core was oriented for a total 243.8 metres (800 feet) from 61.0 to 243.8 metres (200 to 1000 feet).

2. LOCATION AND ACCESS

The survey area (Figures 1 & 2) is located on the north shore of Rupert Inlet in the Nanaimo Mining Division. It falls on NTS map sheet 92L/12W with co-ordinates 50° 36° and 127° 31°.

Access to the area is by way of paved road from Port Hardy located some 18 km to the north, and by logging roads and dozer trails to the drill sites.

3. PHYSIOGRAPHY

The area is in the Nahwitti lowlands of the Coastal Trough physiographic subdivision that divides the Insular Mountains of Vancouver Island from the Coast Mountains on the mainland. The area is characterized by rounded, gently-rolling hills with a maximum relief of about 125 metres. The drill area lies on the east side of the Island Copper open pit on the Road 1 claim, owned by Western Canada Steel (Figure 3).

4. EXPLORATION HISTORY

The Island Copper porphyry copper-molybdenum-gold deposit was discovered in 1967 and exploitation of the deposit by open-pit mining has taken place since late 1971. The deposit occurs mainly in hydrothermally altered, crackled and brecciated basalt tuffs of the lower Jurassic Bonanza Formation where intruded by ≈180 million year old rhyodacite porphyry dykes of the Island Plutonic Suite.

Exploration activity in 1966 through 1969 in the area that led to the discovery of the deposit also delineated mineralization in the other zones of mineralization around the deposit. Results of drill testing these targets have been reported in various papers, assessment reports and internal company reports.

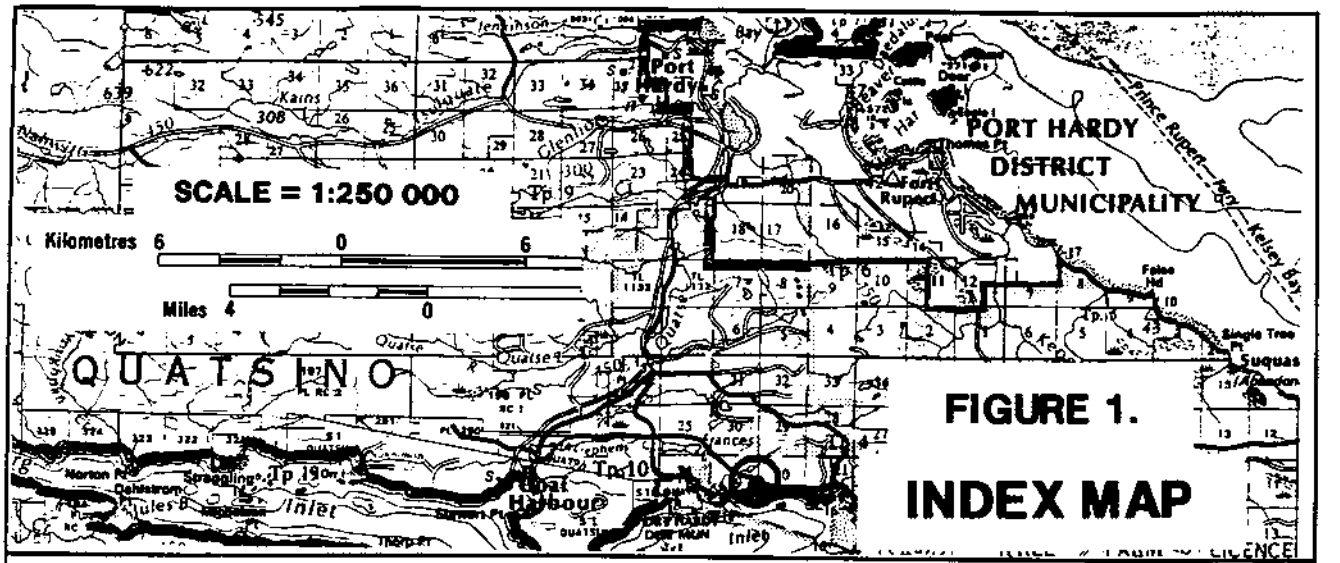


FIGURE 1.

INDEX MAP

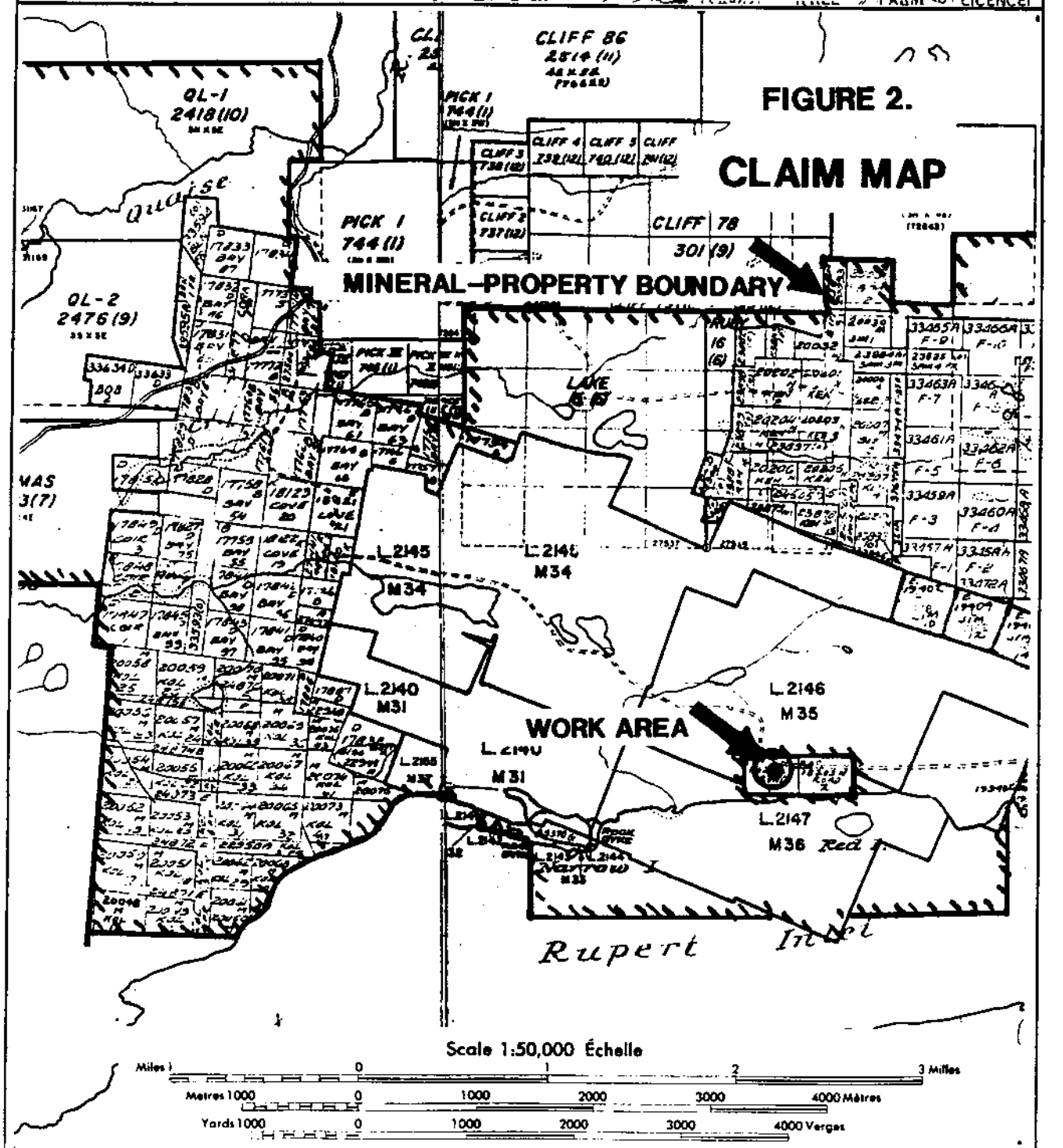


FIGURE 2.

CLAIM MAP

T.N.

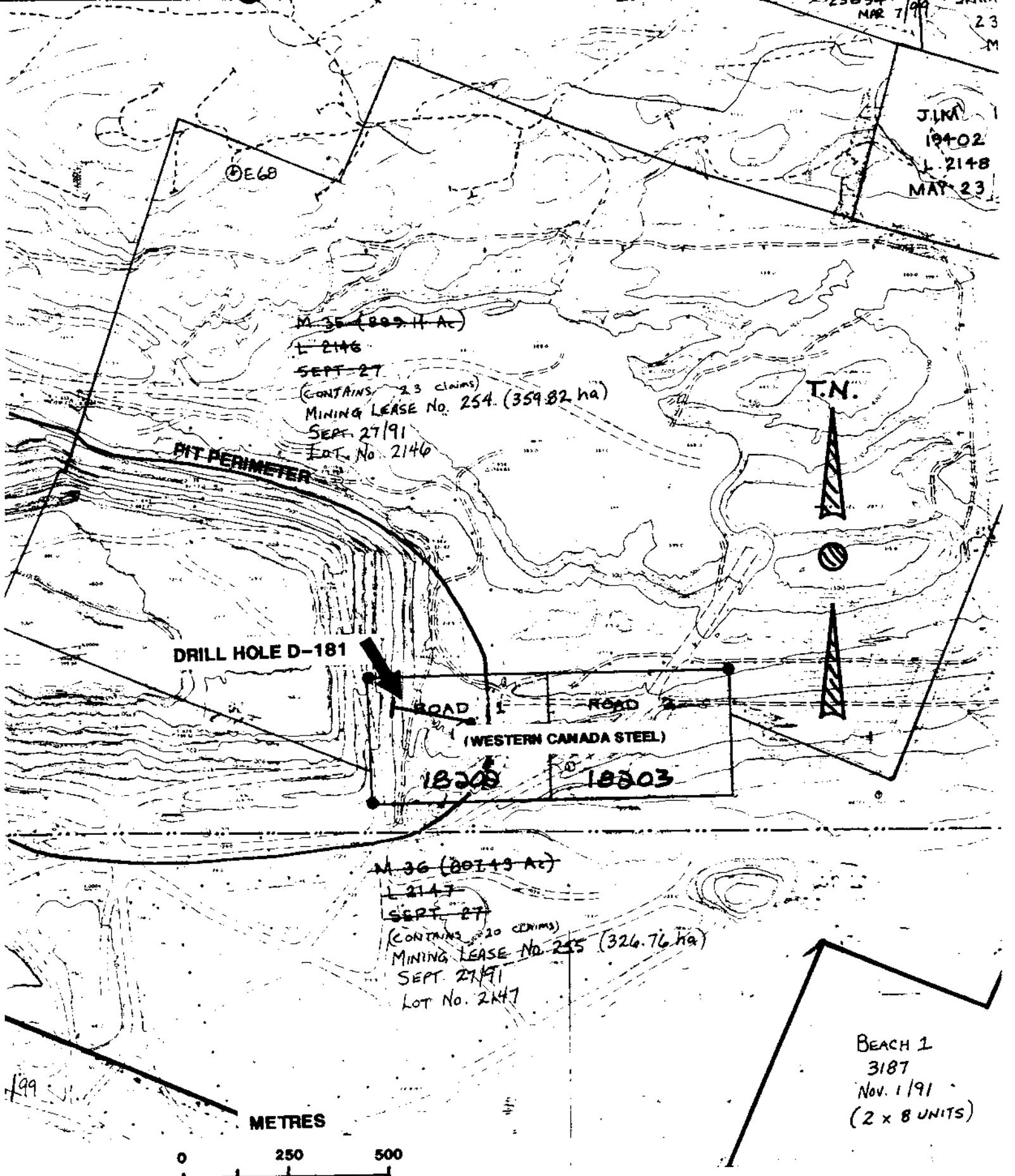
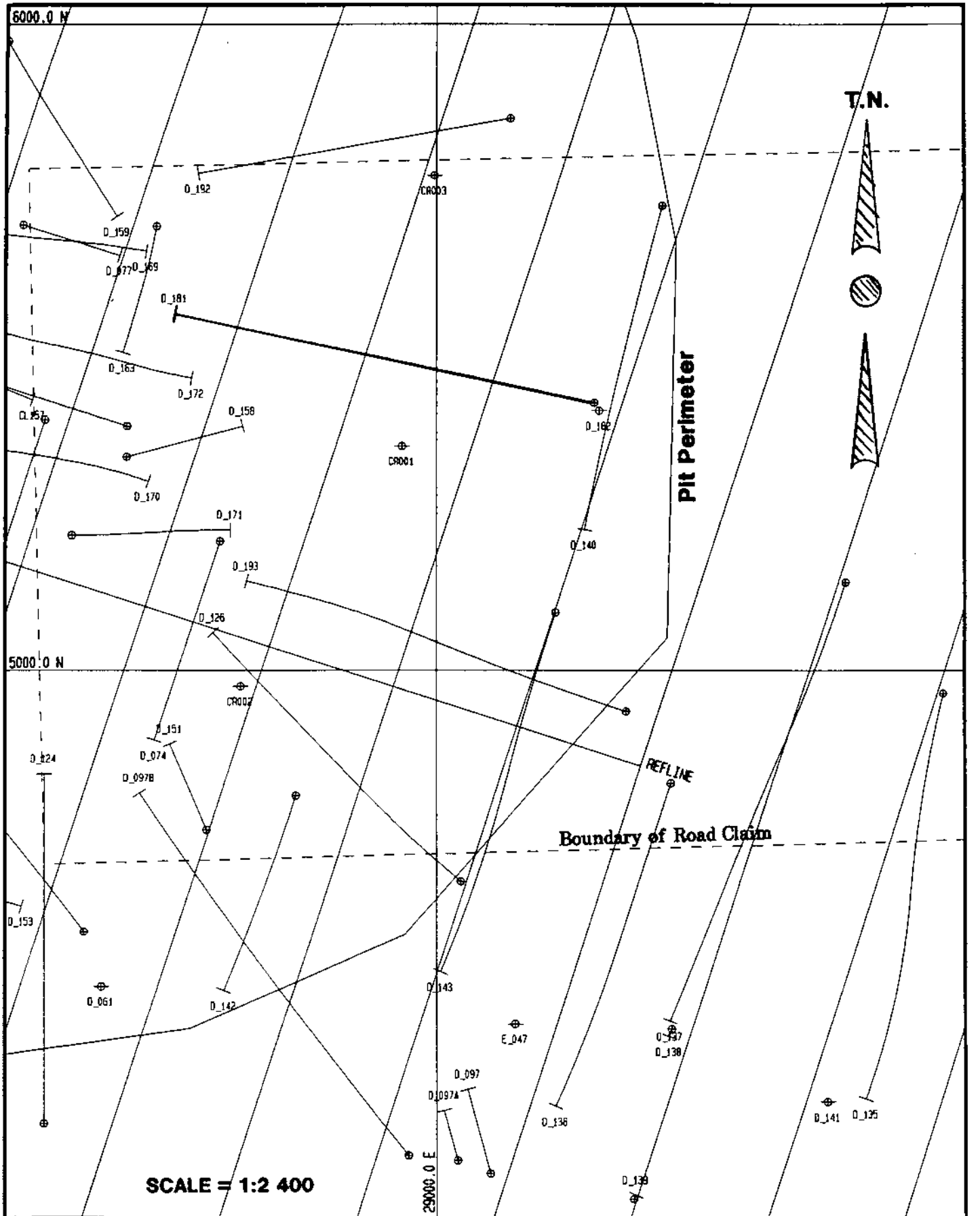


FIGURE 3.

DRILL HOLE LOCATION MAP



BHP Minerals Canada Ltd. P.O. Box 370 Port Hardy, BC V0N 3P0	DRILL HOLE LOCATION MAP EAST SIDE OF ISLAND COPPER OPEN PIT HOLE D-181 Figure 4.
DATE: 07/28/93 TIME: 17:52:49	
SCALE (HOR) 1": 200' SCALE (VERT) 1": 200'	

Software by GEMCOM Services Inc

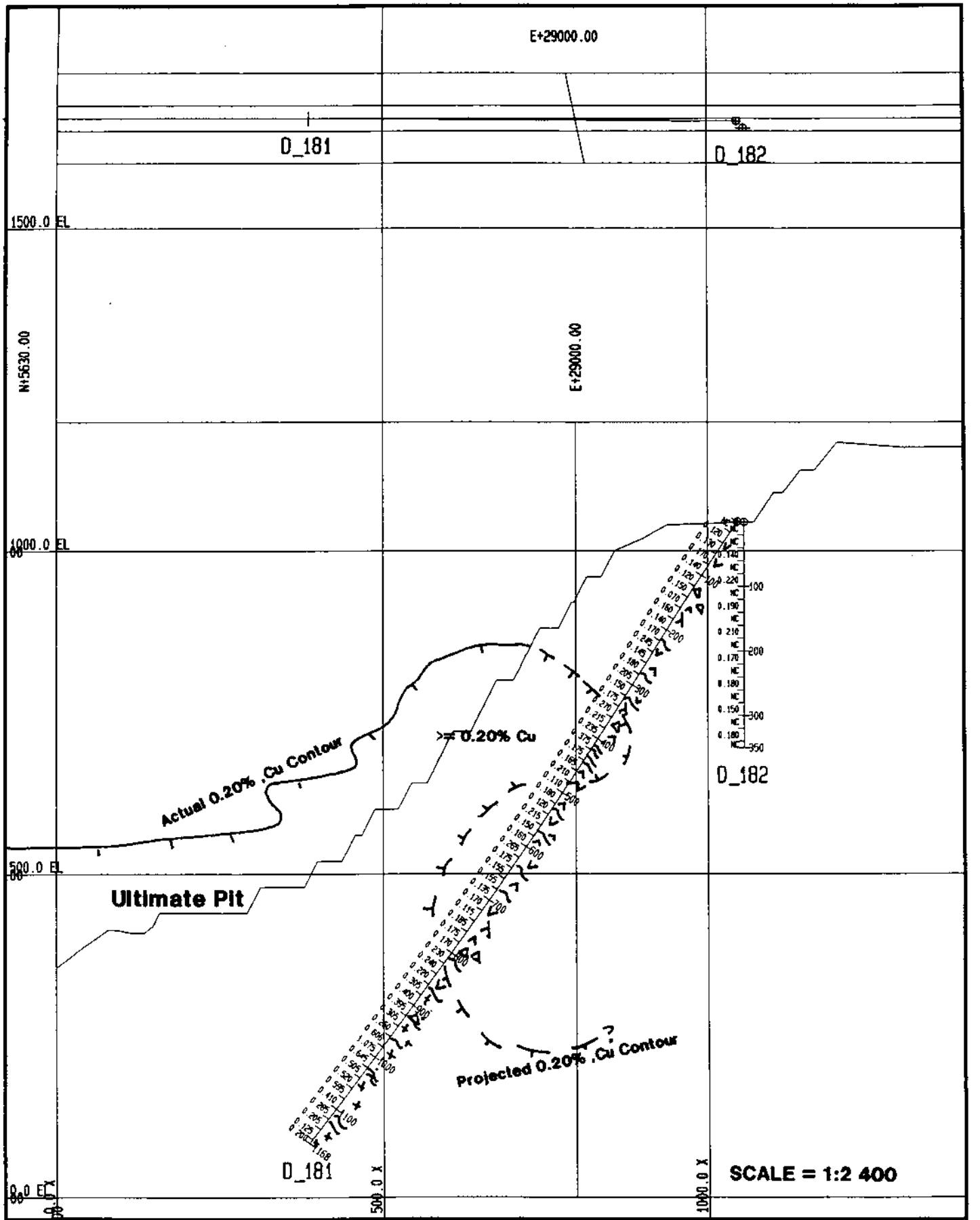
5. OBJECTIVES

The north limb of the Island Copper deposit was projected on the basis of drill hole and bench blast hole copper assays to swing sharply to the south at the east end of the pit. Blast hole data from lower benches showed that the north limb of the deposit in fact continued along strike to the east and that the diamond drill holes on the east end of the pit but within the pit were not representative of the zone. The waste intersected in the drill holes was in isolated pockets with more ≥ 0.20 per cent copper grade material present than of lower (waste) grade. The hole was designed to better test the extension of the zone past the pit wall so as to provide data to evaluate the potential for a pit extension. The slope stability requirements of the east wall in that area dictated that the hole should be oriented so as to obtain as much geotechnical information about the wall as possible.

6. WORK PERFORMED

The drill program was designed and supervised by the author and A.T. Reeves, P.Geo., staff geologists at Island Copper Mine. The core was logged by D.J. Pawliuk, P.Geo., of Vancouver, B.C.. Graphic logs at scales of 1:120 and 1:2 400 are included in Appendix II (Back Pocket 1). The drill hole collar data are summarized in Table 1.

The core was measured for 1) magnetic susceptibility using a KDA Instruments Model K2 susceptibility meter, 2) rock quality designator (RQD) and 3) recovery. The core was oriented from 61.0 to 243.8 metres (200 to 1000 feet) and faults, shears, joints and significant vein orientations were measured using a goniometer box. The method used for orienting the core was the clay imprint method (Pincock, Allen & Holt, Inc.). Every second 1.5 metre (5 foot) interval was sampled where mineralization was estimated at greater than 0.15 per cent copper and on a less frequent basis where the grade was estimated at less than 0.15 per cent copper. The samples were assayed for copper, molybdenum, gold, silver, lead and zinc at the Island Copper assay laboratory. A summary of laboratory methods is included in Appendix I. Assays, magnetic susceptibility, RQD, recovery and core orientation data are included in Appendix II (Back Pocket 2). The drilling results have been plotted on a 1:2 400 scale cross-section (Figure 5).



BHP Minerals Canada Ltd.
P.O. Box 370
Port Hardy, BC
V0N 3P0

DATE: 07/28/93 TIME: 17:48:21

SCALE (HOR) 1": 200' SCALE (VERT) 1": 200'

Software by GEMCOM Services Inc

SECTION ALONG D_181 (LOOKING NORTH) 20 FOOT COMPOSITE COPPER GRADES

Figure 5.

TABLE 1

Diamond Drilling -- December 11 to 20, 1992

HOLE	CO-ORDS[1]	ELEV[2]	AZIM	DIP	LENGTH[3]	SECT[4]	START	FINISH
D_181	E 29243.3 N 5414.6	1045.6	282	-56	355.9 (1167.5)	131	12/11/93	12/20/93

1. BHP mine grid system in feet
2. Elevation in feet with Sea Level = 1000 feet
3. Metres / Feet
4. Section numbers = feet in 100's increasing to west.

7. DRILLING RESULTS

The drilling (Figure 5) confirmed continuity of the ≥0.20 Cu zone to the east of the proposed ultimate pit wall.

A summary of the justification and results of the hole is provided below.

D-181

TD: 355.9 m (1167.5')

TARGET: eastward extension of north limb of Island Copper deposit.

RESULTS: Casing: 3.7 m (12') 3.7 - 123.5 m (12 - 405'): mineralized (0.10 - 0.29 per cent copper) weakly chlorite-magnetite-quartz altered green-grey to black Bonanza basalt; 123.5 - 128.5 m (405 - 421.7'): fault breccia with fragments of volcanic and quartz in soft, clay-rich matrix; 128.5 - 261.7 , (421.7 - 858.6'): mineralized (as above) "hybrid" basalt with dykes of quartz-feldspar porphyry; 261.7 - 355.9 m (858.6 - 1167.5'): well mineralized (to 1.08 per cent copper) quartz-feldspar porphyry (rhyodacite porphyry) with silica increasing with depth.

SIGNIFICANT INTERCEPTS: 266.7 - 338.3 m (875 - 1110') @ 0.50% Cu

8. INTERPRETATION OF RESULTS

The hole was collared in chlorite-magnetite altered Bonanza volcanics and continued in volcanics through to 261.7 m (858.6') intersecting a significant fault zone at 128.5 m. The hole intersected QFP at 261.7 m and continued through to the end of the hole in this unit.

The copper mineralization consists of chalcopyrite occurring as fine disseminations and veinlets in the chlorite-magnetite-quartz altered basaltic volcanic and in the rhyodacite porphyry. Gold is

associated with the copper mineralization having the highest 1.5 m (5'0) gold assay at 0.92 ppm gold occurring with the highest copper and molybdenum grades (1.08% cu and 0.095% Mo) at 300.2 m (985'). The porphyry is classified as the "Main" or "Early" mineralizing porphyry of the Island Copper deposit due to the extensive copper-molybdenum-gold mineralization in the unit. The copper, molybdenum and gold are of lower concentrations in the volcanics.

9. RECOMMENDATIONS

Further drilling would be contingent on establishing the economic feasibility of mining a zone based on the mineralization encountered in this hole.

10. COST STATEMENT

10.1 Rupert-93 Group

Contractor's Costs:

Hole #	Lengths	Drilling* Cost	
D-181	355.9 m	$17,209.61	$17,209.61

BHP Minerals Canada Ltd's. Costs:

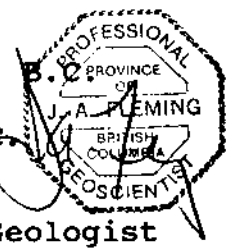
Core Logging:	
1 geologist x 5 days x $200/day	$ 1,000.00
Core Shack Labour	
1 labourer @ $140/day x 6 days	840.00
Supervision:	
1 supervisor x 6 days x 25% x $200/day	300.00
Overhead:	
20% (max) of Supervision & Labour	383.00
Assays:	
106 samples x $30/sample :apportioned =	1,890.00
Vehicle:	
1 truck @ $41/day x 5 days	205.00
Core Storage:	
355.9 m @ $1.48/m	525.39
Report Preparation:	240.00
TOTAL:	$22,593.00

Total Drilling = 355.9 metres (1167.5 feet)
Unit Cost = $630.46 per metre ($19.35 per foot)

* Drilling Contractor: Olympic Drilling and Consulting

11. STATEMENT OF QUALIFICATIONS

J.A. Fleming, P.Geo.
Chief Geologist
Island Copper Mine, BHP Minerals Canada Ltd., Port Hardy, B.C.



1) Professional Geoscientist, (1992) A.P.E.G. of B.C.
2) Fellow of the Geological Association of Canada
3) B.Sc. (Major Geology) 1971, McGill University
4) Employed as a geologist since 1968 and as Chief Geologist at Island Copper since 1982.

A.T. Reeves, P.Geo.
Geologist
Island Copper Mine, BHP Minerals Canada Ltd., Port 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 a geologist at Island Copper since 1990 and as a geotechnician from 1979 - 1990.

Appendix I

Island Copper Mine
Drill Core Assaying Procedures

Sample Preparation:

Split cores are received in the laboratory and the whole sample received is crushed to 95% less than 2 cm using a jaw crusher. A one quarter fraction of this material is obtained using a Jones riffle splitter (2 passes). This fraction is then dried for 2 hours at 150 ^{o}C and crushed to 95 % less tham .5 cm using a cone crusher and split again to 1/16 of the original sample using a Jones riffle splitter (2 more passes). This fraction is then pulverized to 95% less than 150 mesh using a Bico plate pulverizer and placed in a tin top sample bag for assay.

Base Metals;

Drill core samples are analysed for Copper, Molybdenum, Iron, Lead and Zinc as follows.

1) 2.5 g of sample is weighed into a 250 ml digesting flask, pulp standards of similar matrix are carried along with the samples.

2) Samples are digested with 10 ml Nitric acid, 10 ml Hydrochloric acid and 7 ml Perchloric acid on a bare (300 ^{o}C) hotplate until they cease to evolve NO_2 fumes (5 minutes) then 20 ml of a solution of 2 % $AlCl_3$ in 50 % Hydrochloric acid is added and the samples are digested a further 5 minutes.

3) Samples are cooled, bulked to 250 ml with deionized water and shaken then allowed to settle.

4) Base metal levels are measured using flame Atomic Absorption Spectometry (A.A.S.).

Precious Metals;

Drill cores are analysed for Gold and Silver using the following method.

1) 5.0 grams of sample is weighed into 250 ml digesting flasks. Pulp standards are carried along with samples.

2) 20 ml of Nitric acid is added to the samples and they are allowed to stand at room temperature for 30 minutes. Then 80 ml of Hydrochloric acid is added and the samples are allowed to stand at room temperature for a further 30 minutes. Samples are then boiled on a padded hotplate (150 ^{o}C) for 30 minutes.

3) Samples are cooled and bulked to 250 ml with deionized water then shaken and allowed to settle.

4) This solution is analysed for silver using heated graphite atomization A.A.S..

5) 50 ml of the digest is measured in a 250 ml flask containing 20 ml of Methyl Isobutyl Ketone (MIBK). These flasks are stoppered and shaken mechanically for 3 minutes. The samples are then bulked till the MIBK is near the top of the flask with 10 % Hydrochloric acid and shaken manually for 15 seconds to back extract iron from the MIBK.

6) The MIBK layer is then analysed for gold using heated graphite atomization A.A.S.

HOLE NO. V 181

DRILL LOG

PROJECT Island Copper
CONTRACTOR Olympic Drilling & Consulting Ltd.
DATE STARTED ____ COMPLETED Dec. 1992
LOGGED BY D. Pawliuk / A. Reeves

T.D. 1167.5 FT COLLAR ELEVATION 1045
INCLINATION -57 BEARING 282
COORDINATES 9243.3E 5414.5N
SURVEY REFERENCES ____

12 - 200' HW 200 - 1000 NQ3 1000 - 1167.5 NQ

LOG SCALE 1" = 200'
BASIC GEOLOGY: rock types, metallization, structures alterations, one column system

0 - 12 CASING

12 - 405.1 BONANZA VOLCANICS
Medium grey-green to black basalt with weak spotty chl-mag alt'n and pale grey-white QV's. Retrograde (?) epidote alt'n overprinting chl-mag alt'n. Volcanic less silicified from 360' to 440'.

405.1 - 421.7 FAULT BRECCIA
Frags of volcanic rock and vein qtz in soft, clay-rich matrix.

421.7 - 803.4 BONANZA VOLCS
Dark greenish grey to black, fine grained basalt flows(?). Abundant quartz veins become more numerous with increasing depth.

803.4 - 858.6 "HYBRID" basalt with QFP dykes, dykelets to 3' wide.

858.6 - 1167.5 QUARTZ - FELDSPAR PORPHYRY
Cpy specks within QFP not as small as those within volcanic, but still generally smaller than py masses. Silica content increases with depth.

vlts.

cpy as irregular, disseminated

abundant cpy

local traces cpy

calcite, zeol, py, cpy + moly all within qtz vn 0.7" wide.

HOLE NO. D-181

DRILL LOG

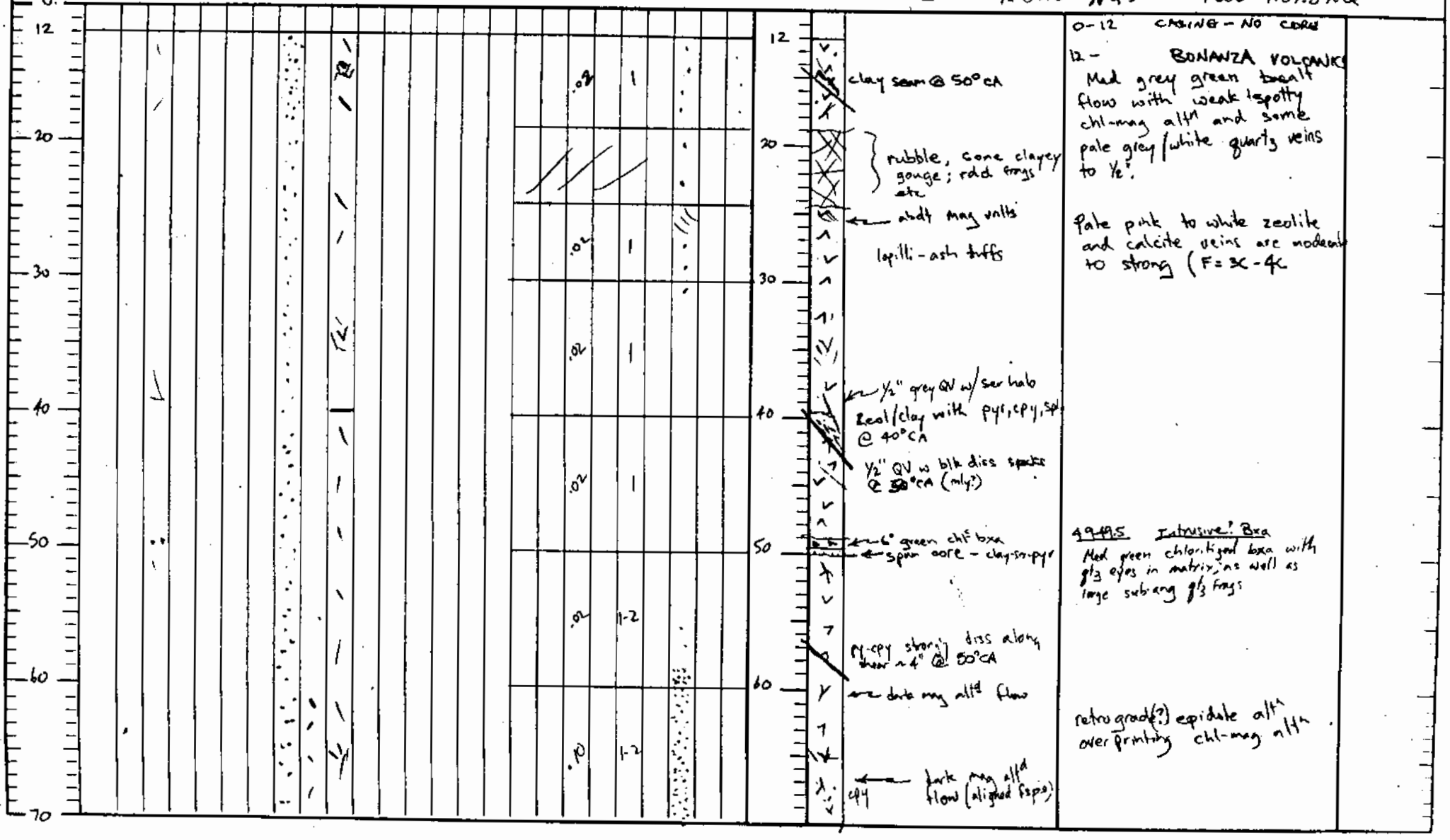
Page 1 of 20

PROJECT **Island Copper**
CONTRACTOR Olympic Diamond Drilling.
DATE STARTED _____ COMPLETED Dec. 1992
LOGGED BY AR to 350' then David Pawliuk

T.D. 1167.5 COLLAR ELEVATION 1045
INCLINATION -57 BEARING 282
COORDINATES _____
SURVEY REFERENCES _____

Footage	Core Recovery	Oxide	ALTERATION: Quartz	Sericite	Clay/Pyrop	Biotite	K-spar	Chlorite	Epidote	Carb-Zeo	Garnet	Pyroxene	Amphibole	STR.: Sulf Veins	Frac Inten	VISUAL EST.: Est. Cu. Mo	$CuFeS_2$	FeS_2	Cu_2FeS_3	Fe_2O_3	MoS_2	Sample No. & Interval	LOG SCALE 1" = 10' BASIC GEOLOGY: rock types, metallization, structures alterations, one column system	LITHOLOGIC DESCRIPTIONS. NOTES & SKETCHES	ROCK UNIT

12 - 200' HW CORE 200 - 1000 NQ3 1000 - 1167.5 NQ



0-12 CASING - NO CORE

12 - BONANZA VOLCANICS
Med grey green basalt flow with weak ispotty chl-mag alt'n and some pale grey/white quartz veins to ⅛".

Pale pink to white zeolite and calcite veins are moderate to strong (F = 3C - 4C

49-49.5 Intrusive? Bxa
Med green chloritized bxa with g/3 eyes in matrix as well as large sub-ang g/3 frags

retrograde(?) epidote alt'n overprinting chl-mag alt'n

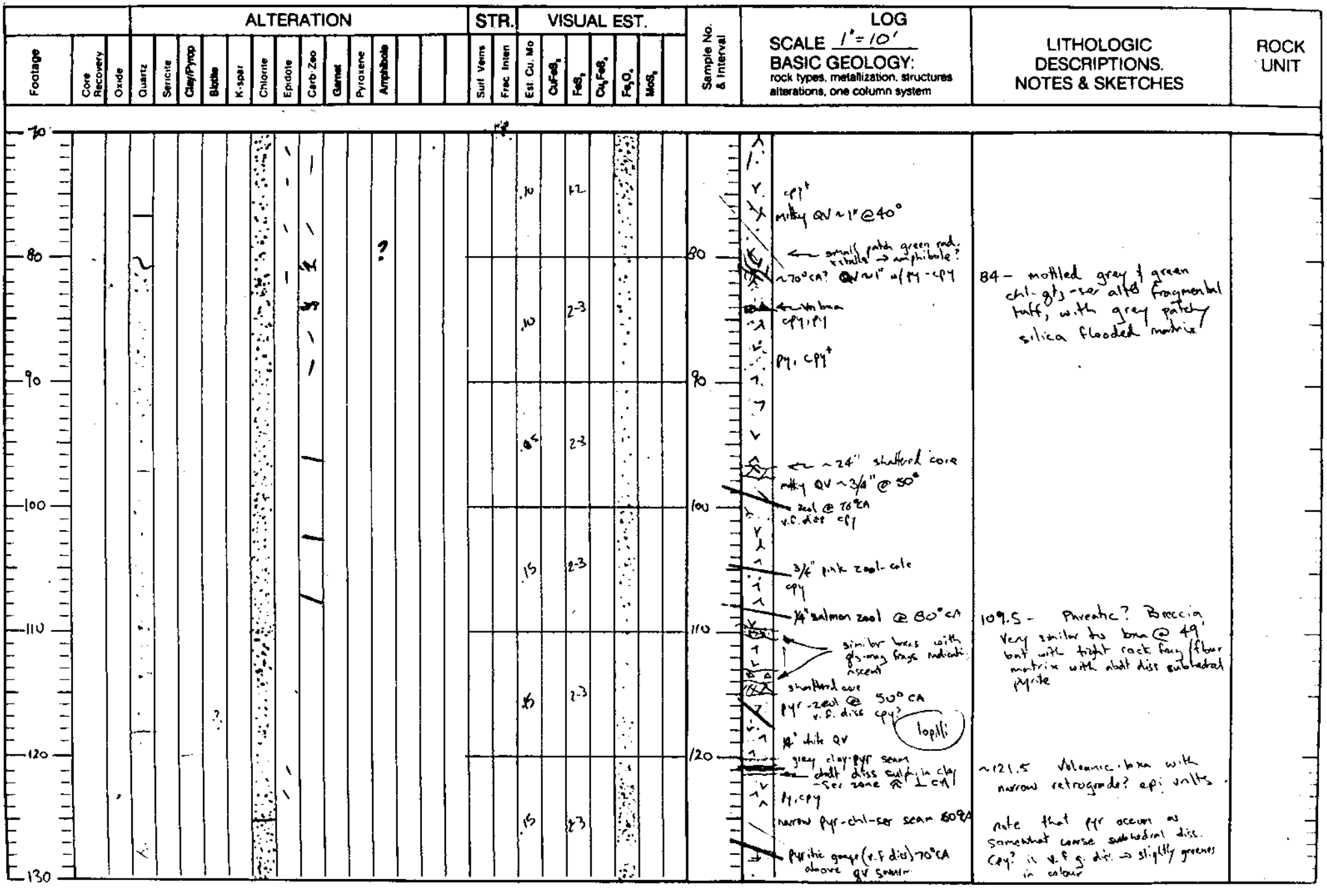
HOLE NO. D-181

DRILL LOG

PROJECT Island Copper
CONTRACTOR
DATE STARTED COMPLETED
LOGGED BY AR

T.D.
INCLINATION 1
COORDINATES
SURVEY REFERENCES

COLLAR ELEVATION
BEARING



HOLE NO. D-181

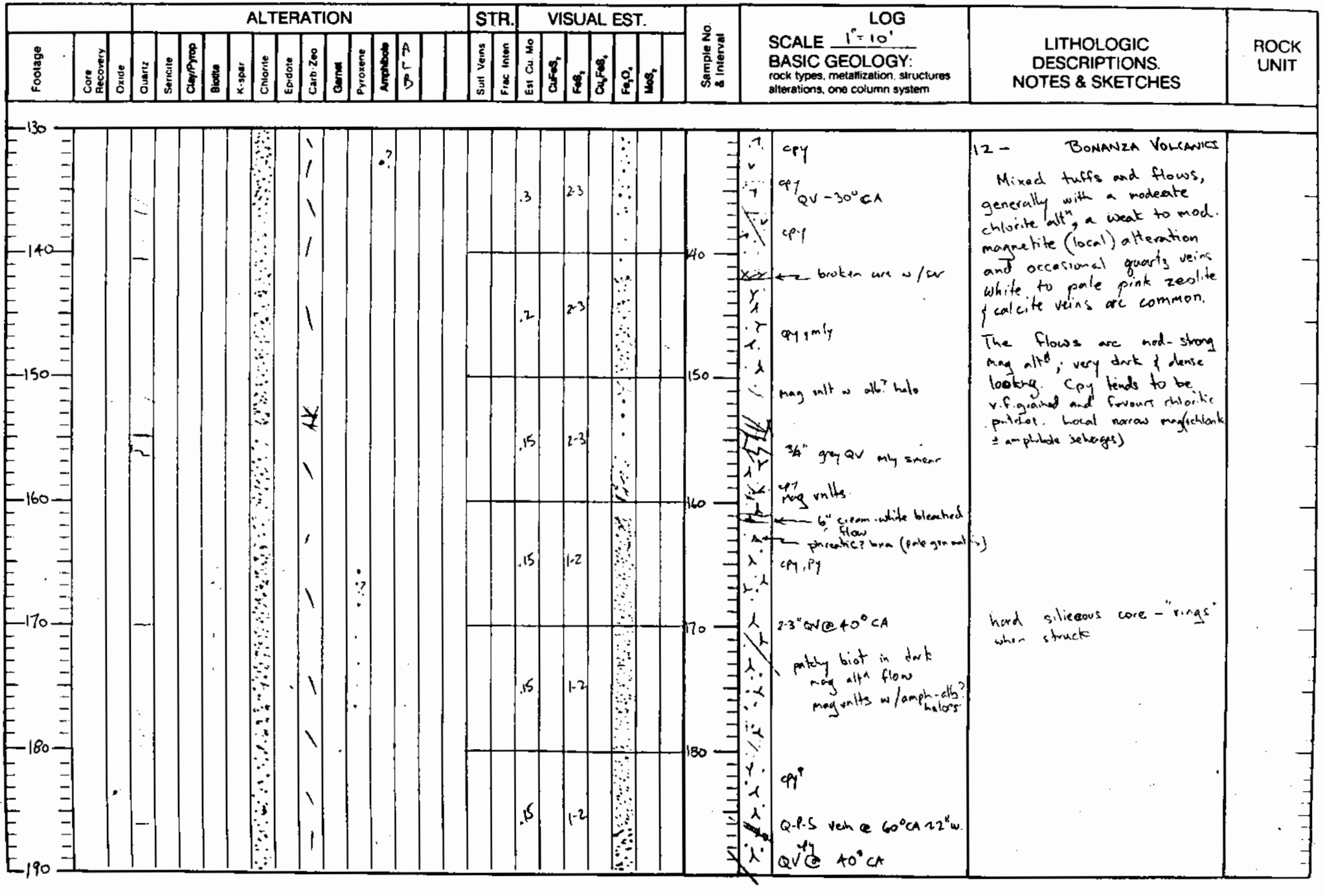
DRILL LOG

Page 3 of 20

PROJECT Island Copper
CONTRACTOR
DATE STARTED COMPLETED
LOGGED BY AR

T.D. 1167.5
INCLINATION
COORDINATES
SURVEY REFERENCES

COLLAR ELEVATION
BEARING



HOLE NO. D-181

DRILL LOG

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

T.D. 1167.5
INCLINATION 1
COORDINATES
SURVEY REFERENCES

COLLAR ELEVATION
BEARING

ALTERATION | STR. | VISUAL EST. | Sample No. & Interval | LOG | LITHOLOGIC DESCRIPTIONS. NOTES & SKETCHES | ROCK UNIT

Footage | Core Recovery | Oxide | Quartz | Sericite | Clay/Pyrop | Biotite | K-spar | Chlorite | Epidote | Carb-Zeo | Garnet | Pyroxene | Amphibole | A B C | Sulf Veins | Frac Inten | Est Cu Mo | $CuFeS_2$ | FeS_2 | Cu_3FeS_3 | Fe_2O_3 | MoS_2

SCALE 1" = 10'
BASIC GEOLOGY: rock types, metallization, structures alterations, one column system

190
200
210
220
230
240
250

.10 1-2
.10 2-3
.15 2-3
.20 2-3
.10
.10 1-2

M + qtz

← start of NQ3

fn diss cpy favours mafic sites

¼" Q; ¾" zeol-calc @ 50° CA
py

1" fol-gouge; rtd bxx @ 60° CA
cpy ≈ v.c. diss.
¼" milky qtz vn

blocky flow
cpy
1" grey Qtz @ 50° CA

1½" QV @ 40° CA
cpy
231.5 → Calc-zeol vn, bxx → M/cpy
M-qtz

chlory FA @ 70° CA
qtz-py-cpy @ 60° ~ ¾"

py
⅜" grey QV w sm holes @ 60° CA
py, cpy
QV 1" @ 40° CA

← green bleached amphibole? retrograde epi?

12 – BONANZA VOLCANICS

as above

mottled pale green-grey chl-mag ± alb alt'd tuff.

242 – dark green to black chl-mag alt'd flow? Some bleached dark green actinolite? See sample @ 247.5'

HOLE NO. D-181

DRILL LOG

PROJECT Island Copper
CONTRACTOR
DATE STARTED COMPLETED
LOGGED BY AR

T.D. 1167.5
INCLINATION
COORDINATES
SURVEY REFERENCES

COLLAR ELEVATION
BEARING

Footage	Core Recovery	Oxide	ALTERATION: Quartz	Sericite	Clay/Pyrop	Biotite	K-spar	Chlorite	Epidote	Carb/Zeo	Garnet	Pyroxene	Amphibole	STR.: Suil Veins	Frac Inten	VISUAL EST.: Est Cu Mo	CuFeS2	FeS2	Cu2FeS2	Fe2O3	MoS2	Sample No. & Interval

LOG
SCALE 1"=10'
BASIC GEOLOGY: rock types, metallization, structures alterations, one column system

LITHOLOGIC DESCRIPTIONS. NOTES & SKETCHES

ROCK UNIT

250
260
270
280
290
300
310

.10 2-3
.10 1-2
.1 1
.15 1-2
.10 2-3
.15 2-3

260
270
280
290
300

4" smoky qtz w/ pyr-cpy @60° py-cpy
cpy, py
grey silica flooding
1" light grey QV @ 40° CA
≈ 6" core loss @ 265'
½" dk fol-gange @60° CA
↓ inc in grey colour
bnd QV
60° CA ~ ¾"
50° CA ~ 1"
mottled green-grey
dk green chl clots with grey (alb?) silic halos
cpy°
65° CA
55° CA ~1'
5" @ 60° CA
py
≈2" smoky grey QV @60°

12- BONANZA VOLCANICS

mixed flows and ash to lapilli tuffs with variable chlorite-mag alteration overprinted by qtz-pyr-ser.

as previously noted cpy is as very fine dissem. compared to grain size of diss subhedral pyrite

↓ increase in carb-calc veins

↓ end of real. seams.

HOLE NO. D-181

DRILL LOG

PROJECT Island Copper
CONTRACTOR
DATE STARTED COMPLETED
LOGGED BY R to 350 then David Pawluk to EOH.

T.D. 1167.5
INCLINATION -1
COORDINATES
SURVEY REFERENCES

COLLAR ELEVATION
BEARING

Footage	Core Recovery	Oxide	ALTERATION: Quartz	Sericite	Clay/Pyrop	Biotite	K-spar	Chlorite	Epidote	Carb/Zeo	Garnet	Pyroxene	Amphibole	A	B	STR.: Sulf Veins	Frac Inten	VISUAL EST.: Est Cu Mo	$CuFeS_2$	FeS_2	Cu_2FeS_3	Fe_2O_3	MoS_2	Sample No. & Interval	LOG — SCALE 1"=10' — BASIC GEOLOGY: rock types, metallization, structures alterations, one column system	LITHOLOGIC DESCRIPTIONS. NOTES & SKETCHES	ROCK UNIT
30																											
320																		tr		1-2				320	chloritic matrix w QV frags → phreatic (?) breccia along fault? 2 // QVs ½" each @ 60° CA tan brown 2" light grey QV @ 60° tr sulph.	12 - BONANZA VOLCANICS 321 - start of block to dark green mag-chl altd flows & tuffs. note that some hard siliceous zones have a milky albitic look. Some fractures have a dark green radiating mineral (actinolite?) that may/may not be chloritized. Rock also has greyish brown cast, esp. where biotite alt'n noted. Generally medium grained with occ. plagioclase laths to 1/8".	
330																		.05		1				330	QV ~40° CA w/ pink radiolari and chlorite spots in bleached silic matrix qtz lapilli tuff		
340																		.10		1				340	1' green bxa w rock flour matrix & sub-ang qtz frags. Note a 2nd shear @ 336' cpy 70° CA ~3" coarse ash tuff w/ aligned QVs ⅜" grey QV @ 60° CA		
350																		.1		.5				350	1" QV @ 60° CA 3-hedral calcite xtls within vlts; calcite vlts cut by, and crosscut watery grey qtz vlts. 2 1" QV @ 60° mag-chl masses to 3/8" ± cpy; cpy as irreg. diss. masses to ¼ across cpy v.f. diss & vlt ⅛"		
360																		.12		1				360	~75% vein qtz over 2'	as irreg. vns + bands to 1" wide 050°	
370																		.08		1-2							

HOLE NO. D 181

DRILL LOG

PROJECT Island Copper
CONTRACTOR
DATE STARTED COMPLETED
LOGGED BY D. Pawliuk

T.D. 1167.5
INCLINATION
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SURVEY REFERENCES

COLLAR ELEVATION
BEARING

Footage	Core Recovery	Oxide	ALTERATION: Quartz	Sericite	Clay/Pyrop	Biotite	K-spar	Chlorite	Epidote	Carb/Zeo	Garnet	Pyroxene	Amphibole	Wollastonite	Alb/Ac	STR.: Sulf. Veins	Frac. Inten	VISUAL EST.: Est. Cu. Mo	CuFeS2	FeS2	CuFeS2	Fe2O3	MoS2	Sample No. & Interval	LOG: SCALE / BASIC GEOLOGY: rock types, metallization, structures alterations, ore column system	LITHOLOGIC DESCRIPTIONS. NOTES & SKETCHES	ROCK UNIT
370																											
380				?									?					.2		1-2				380	4" QV @ 50°. 2½" QV @ 65° cp v.f. diss + wispy masses to ⅛" 3½" QV @ 45° lapilli tuff bleached; dk chl-mag spots in silicified rec'd (+ clay(?) altered matrix lapilli	12 – Bonanza Volcanics Dark brownish grey to black to dk green, medium grained, mag-chl altered lapilli tuffs + flows. Increase in clay mineral (Kaolinite?) alt'n approaching upper margin of fault breccia at 405.1'. Silicified zones often have milky albitic appearance as above. Rare retrograde(?) cp specks within watery grey qtz vlts. Volcanic less silicified than above 360'.	
390																		.1		1				390	2" QV @ 55° 1" QV @ 60° cp v.f. diss		
400																		.1		1				400	clay along margins ⅝" QV @ 40° cp irreg. masses to ⅛"		
410																		.05		3				20°	fault w. clay + py @ 26°. Euhedral py xtlls to ⅛" in sooty py + clay matrix along upper fault margin. cp to 1/10" blebs ¼" clay on slip at 65°	405.1 – 421.7 FAULT BRECCIA. Light green to light brownish grey to cream coloured, medium grained with subangular to angular clasts of volcanic rock and vein quartz in a soft, clay-rich, aphanitic or very fine grained matrix. Matrix say 45%, clasts 55%. Clasts to 2" across. Clasts have undergone weak to locally intense clay mineral alt'n especially adjacent to fault slips. Some ground core @ 421.7; cannot obtain orientation of lower fault breccia contact. ½" wide @ 50°.	
420																		.05		2 to 3				420	30° ¼" clay on slip at 65° 1" QV @ 40° 35° py lens 3" x ½" QV 1" @ 26° zed. vn 1" wide @ 50°; QV		
430																		.08		3							

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DRILL LOG

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CONTRACTOR
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COLLAR ELEVATION
BEARING

Footage	Core Recovery	Oxide	ALTERATION: Quartz	Sericite	Clay/Pyrop	Biotite	K-spar	Chlorite	Epidote	Carb/Zeo	Garnet	Pyroxene	Amphibole	Alt/Int	STR.: Suit Veins	Frac Inten	VISUAL EST.: Est Cu Mo	CuFeS2	FeS2	Cu3FeS3	Fe2O3	MoS2	Sample No. & Interval	LOG: BASIC GEOLOGY: rock types, metallization, structures alterations, one column system	LITHOLOGIC DESCRIPTIONS. NOTES & SKETCHES	ROCK UNIT
430																										
440																	.1		1-2					1/10" f.gtn core + sooty py ∠ 32°. QV 1-4" wide ∠ 40°. cp v.f. to 1/10" across. QV 1½" wide ∠ 45°. QV ≈ 11" wide ∠ 40°; banded in part, otherwise intensely silicified volc. wispy qtz vlt. along vlt. QV 2½" ∠ 40°	421-7 — BONANZA VOLCANICS As for 12 — Dark greenish grey to black to light grey, medium grained lapilli tuff. Magnetite and chlorite both very finely disseminated and as subround to irregular clots and masses, esp. within and along the margins of qtz veins. Less abundant calcite/zeol. vlts than present above fault breccia zone. Hard, mod. silicified below 442'	
450																	.08		.5							
460																	.12		1					mag-py-chl clots to 0.8".		
470																	.2		1					QV 1" ∠ 65°. QV 0.4" ∠ 40°. cp, mag, py in white grey qtz vlt. v. fine diss cp.		
480																	.08		.5					cp v. f. diss. QV 0.8" ∠ 35°. QV 3" ∠ 70°		
490																	.05		.5					blocky clay to 1/10" fault at 30°; 0.05" clay gouge slip QV 2" ∠ 60°	± carb	

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DRILL LOG

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BEARING

Footage	Core Recovery	Oxide	ALTERATION: Quartz	Sericite	Clay/Pyrop	Biotite	K-spar	Chlorite	Epidote	Carb-Zeo	Garnet	Pyroxene	Amphibole	A/G/K	STR.: Sulf Veins	Frac Inten	VISUAL EST.: Est. Cu Mo	$CuFeS_2$	FeS_2	Cu_2FeS_3	Fe_2O_3	MoS_2	Sample No. & Interval	LOG: SCALE / BASIC GEOLOGY: rock types, metallization, structures alterations, one column system	LITHOLOGIC DESCRIPTIONS. NOTES & SKETCHES	ROCK UNIT
490																										
500																	.05		.5				500	euhedral plag laths QV 2-3" @ 40° QV 2" @ 75° cp v. f. diss, greenish sulphide	421.7 – BONANZA VOLCANICS Dark greenish grey to light greenish grey to black medium to fine grained lapilli tuff. Hard, moderately silicified to 515'; much softer rock below 515' can be easily scratched with steel. Magnetite and chlorite alt'n mainly v.f. diss; also with faint to locally discrete boundaries. Clots/mafic prominent within intensely silicified intervals. More abundant zeolite veinlets below 507' depth. Local flow bands throughout.	
510																	.08		1				510	QV 2-3" @ 40° QV 1.1" @ 40° QV 3" @ 58° qtz-py-cp-mag vlts QV 1.3" @ 55° as clots QV 2" @ 45°		
520																	.08		1				520	fault @ 42° py blebs rimmed by mag. QV 1" @ 50° fault @ 70° fault @ 30°; 1" above fault & below intensely fractured and brecciated.		
530																	.12		1				530	mag-py-cp clots in siliceous matrix. cp v. f. diss.		
540																	.05		.5				540	QV 0.7" @ 45° QV 0.4" @ 15°		
550																	.1		1					cp bleb 1/10" within pale grey qtz vlt		

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DRILL LOG

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LOGGED BY D. PAWLIUK

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COLLAR ELEVATION
BEARING

ALTERATION: Footage | Core Recovery | Oxide | Quartz | Sericite | Clay/Pyrop | Biotite | K-spar | Chlorite | Epidote | Carb/Zeo | Garnet | Pyroxene | Amphibole | Wollastonite | Alg; Ke
STR.: Sulf. Veins | Frac. Inten
VISUAL EST.: Est. Cu. Mo | $CuFeS_2$ | FeS_2 | Cu_2FeS_2 | Fe_2O_3 | MoS_2
Sample No. & Interval
LOG — SCALE
BASIC GEOLOGY: rock types, metallization, structures alterations, ore column system
LITHOLOGIC DESCRIPTIONS. NOTES & SKETCHES
ROCK UNIT

Footage	Sample No. & Interval	Est. Cu. Mo	$CuFeS_2$	FeS_2	Cu_2FeS_2	Fe_2O_3	MoS_2	LOG	LITHOLOGIC DESCRIPTIONS. NOTES & SKETCHES	ROCK UNIT
550								cp v. f. diss, greenish.	421.7 – BONANZA VOLCANICS. Dark greenish grey to black to watery greenish grey, medium grained interbanded, ?flows ± tuffs. Generally hard, moderately silicified rock.	
		.08		1				QV 1-1" @ 55° cut by red QV 0-4" @ 15° (fault) + 0.5" @ 25°.		
560	560							fault zone; broken, int. fractured core. fault slip @ 35°		
		.1		1				QV 6" @ 30° along lower margin fault zone. pale aqua coloured chlorite. subhedral py to 1/10" cp v. f. diss + as blebs to 0.05"		
570	570							magnetite-rich selvages along margins of watery grey qtz vlts.		
		.2		1-2				fault @ 30°; clays, sooty py along slip pale clay/silica alt'n		
580	580							@ irreg. py masses to 0.5" across. fault @ 33°		
		.15		1				QV 0-4" @ ~ 30° pale aqua chlorite.		
590	590							QV 1-5" @ 35°		
		.08		2				subround QFP xenolith/clast 1.5" across.		
600	600									
		.1		1						
610										

HOLE NO. D181

DRILL LOG

PROJECT Island Copper
CONTRACTOR
DATE STARTED COMPLETED
LOGGED BY D. Pawlink

T.D. 1167.5
INCLINATION -1
COORDINATES
SURVEY REFERENCES

COLLAR ELEVATION
BEARING

Footage	Core Recovery	Oxide	ALTERATION: Quartz	Sericite	Clay/Pyrop	Biotite	K-spar	Chlorite	Epidote	Carb/Zeo	Garnet	Pyroxene	Amphibole	Wollastonite	Alt Xo	STR.: Sulf. Veins	Frac Inten	VISUAL EST.: Est. Cu Mo	CuFeS2	FeS2	CuFeS2	Fe2O3	MoS2	Sample No. & Interval	LOG: SCALE / BASIC GEOLOGY: rock types, metallization, structures alterations, one column system	LITHOLOGIC DESCRIPTIONS. NOTES & SKETCHES	ROCK UNIT
610																											
620																		.1		1					v.f. cp specks in more int. silicification QV 0.5° @ 70°.	421.7 – BONANZA VOLCANICS Dark greenish grey to black to light greenish grey (mottled intervals) medium grained lapilli tuff w. minor flow interbands.	
630																		.2		2					QV 0.3" @ 35°. bkn; fault zone. fault @ 50° vein qtz frags within pale green talc matrix. abundant cp specks to 0.05" cp v.f. diss. fault @ 12°; parallel QV 0.7" wide py blebs to 1/10".		
640																		.15		1					QV 2.5" @ 75° QV 0.7" @ 40° QV 0.7" @ 40° cp v. f. diss. QV 0.6" @ 60°.		
650																		.2		1					mod. bkn, sometimes rounded core; fault zone. Cannot measure orientation. QV 0.4" @ 65° smear of gouge on fault slip at 25° to c.A. QV 1.8" @ 70° QV 0.5" @ 38° QV 2" @ 25°		
660																		.08		.5					fault @ 40°; 1/10" f bk core + clay on fracture sfc. QV 1" @ 55° QV 3" @ 70°		
670																		.1		1						668.0 – 674.5 FAULT ZONE. Fndy bkn core throughout; say volcanic rock, 60% watery grey pieces, Much sand-sized	40% vein qtz material.

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DRILL LOG

PROJECT Island Copper
CONTRACTOR
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LOGGED BY Pavlick

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COLLAR ELEVATION
BEARING

Footage	Core Recovery	Oxide	ALTERATION: Quartz	Sericite	Clay/Pyrop	Biotite	K-spar	Chlorite	Epidote	Carb/Zeo	Garnet	Pyroxene	Amphibole	Wollastonite	Alt'n/Ke	STR.: Sulf. Veins	Frac. Intens	VISUAL EST.: Est. Cu. Mo	CuFeS2	FeS2	Cu2FeS2	Fe3O4	MoS2	Sample No. & Interval	LOG: SCALE / BASIC GEOLOGY: rock types, metallization, structures alterations, one column system	LITHOLOGIC DESCRIPTIONS. NOTES & SKETCHES	ROCK UNIT
670																											
680																		.1		1					?orientation ? fault lower margin @ ~45° to c.a. qp vlt 3/10" long. fault slip @ ~65°	FAULT ZONE (cont.) Upper margin @ say 30° ± to c.a. lower approx. 45° to c.a. Fault zone orientation uncertain; say average maybe 45° to c.a.	
690																		.2		.5					QV 1.5" @ 85°. QV 0.8" @ 20°. qp v.f. diss.	421.7 – BONANZA VOLCANICS Greenish grey to light grey (vein quartz) to black; medium grained. Somewhat less magnetite + more chlorite than volcanic above fault zone.	
700																		.25		1					QV 0.8" @ 75°. qp finely diss. QV 0.7" @ 50°		
710																		.3		2					.05" sooty py, clay along fault @ 15° vein quartz zone @ ~30° to c.a.; irregular contacts. QV 0.9" @ 65° tiny reddish orange hematite specks along hairline qtz vlt and within magnetite clots. QV 3" @ 70°	← qp. both v.f. diss + as wispy, hairline irreg. vlts to 1/10" long,	
720																		.1		1					QV 0.8" @ 35° actinolite (?) along QV 0.6" @ 12° QV 0.6" @ 50°	margin of qtz vlt. Volcanic unit here finer-grained than above. Magnetite segregated into clots within margins of qtz vns, vlts	
730																		.1		.5-1					qp v.f. diss QV 0.5" @ 55°	about 20% of the	

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DRILL LOG

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COLLAR ELEVATION
BEARING

Footage	Core Recovery	Oxide	ALTERATION: Quartz	Sericite	Clay/Pyrop	Biotite	K-spar	Chlorite	Epidote	Carb/Zeo	Garnet	Pyroxene	Amphibole	Alt'n/K	STR.: Sulf Veins	Frac Inten	VISUAL EST.: Est Cu Mo	$CuFeS_2$	FeS_2	Cu_2FeS_3	Fe_2O_3	MoS_2	Sample No. & Interval	LOG: SCALE / BASIC GEOLOGY: rock types, metallization, structures alterations, one column system	LITHOLOGIC DESCRIPTIONS. NOTES & SKETCHES	ROCK UNIT
730																										
740																	.2		1				740	QV 0.5" @ 70°. QV 1-1.5" vlts @ 0-0.5" cp specks and irreg masses to 0.15" across fault @ 20° hairline qtz-hem vlts. QV 1-2" @ 45° within rubble/fault zone @ 45°; finely bkn core over 1' (236.5 - 237.5) cp finely diss. QV 1-6" @ 60°. QV 4" @ 42° along flt @ 42°. QV 2-5" @ 30°. faint mag vlts; occ py vlt QV 4-5" @ 30°. QV 0.25" @ 10° QV 0.5" @ 30°. QV 0.7" @ 45°. QV 0.5" @ 20° wispy cp vlts zeol (70%) - qtz (30%) vein 0.9" @ 30°. rubble; mod. bkn. fault 0.5' f bkn core, clayey gouge on fracture at 30° to c.a. QV 5" wide @ 30°. cp v. finely diss. 6" rubble; mod. bkn core. ? orientation of fault. QV 3" @ 25°. QV 1-6" @ 20° abund. diss cp QV 2" @ 15° disseminations and cutting hairline watery grey vein quartz. green cp as irreg fractures within JQV 0-7" @ 15°.	421.7 - BONANZA VOLCANICS Dark greenish grey to black, fine grained, generally massive basalt lls flows (?). Increase in vein qtz content and bleached (clay-altered) rock with increasing depth.	
750																	.12		.5				750			
760																	.15		1-2				760			
770																	.2		1				770			
780																	.1		.5				780			
790																	.4		2							

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T.D. COLLAR ELEVATION
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Footage	Core Recovery	Oxide	ALTERATION: Quartz	Sericite	Clay/Pyop	Biotite	K-spar	Chlorite	Epidote	Carb/Zeo	Garnet	Pyroxene	Amphibole	Alt'n Type	STR.: Sulf Veins	Frac Inten	VISUAL EST.: Est Cu Mo	CuFeS2	FeS2	Cu2FeS3	Fe2O3	MoS2	Sample No. & Interval	LOG: SCALE / BASIC GEOLOGY: rock types, metallization, structures alterations, one column system	LITHOLOGIC DESCRIPTIONS. NOTES & SKETCHES	ROCK UNIT
790																								QV 1.2" @ 35°.		
																								QV 0.8" @ 30° creamy white clay mineral offn envelope 2° from fracture (fault?) at 50° to c.a. QV 1" @ 15°.	421.7 – BONANZA VOLCANICS Medium to light green-grey with local black intervals. Basaltic flows, tuffs to 803.4'. Below 803.4' to 858.6' core ~ 30% apophyses or dykes and veins of light greenish to creamy grey medium grained QFP, ~70% Bonanza Fm. basaltic rock. From 803.4–858.6 say 3% watery grey to, rarely, flesh coloured quartz veins. At 810' there appears to be at least 3 generations of quartz veins in crosscutting relationship. QFP dykes up to 3' wide, generally with discrete, somewhat irregular contacts with Bonanza Volcanic wallrock. Dykes contain subhedral qtz eyes av. 0.2–0.25° across; dykes also have py and cp (v. finely diss) as in adjacent volcanic. Dykes from 803.4 – 805.3, 814.2 (045°) – 815.1, 817.8 (70°) – 818.8, 821.8 – 823.7, 826 – 827.3, 843.5 – 846.2 (contact @ ~60°). Early hybrid rock intruded by dykes as @ 817.8'.	
800																	.4	2						fault @ 20°; 2" f. bkn, intensely fractured core between slips.		
																	.3	3						at least 3 generations watery grey qtz vlts		
810																								QV 0.8" @ 35° py or subhedral tals, blebs to 1/16", cp in f. diss fault; smear of sooty py on slip @ 21° QV 0.15" @ 40° QV 0.4" @ 25°.		
																	.5	2						mdy + cp v. f. diss in qtz vlt.		
820																								QV 0.8" @ 16°. ?fault contact @ 66°. QV 0.25 @ 28°.		
																	.2	1						QV 1" @ 75°		
830																								fault? @ 20° QV 1.2" @ 30° hem QV 0.2" @ 15° QV 0.5" @ 20° QV 0.5" @ 20°		
																	.4	2								
840																								QV 1.1" @ 20°.		
																	.4	1						QV 0.7" @ 15°. QV 0.25" @ 75°.		
850																								fault; 0.5" f. bkn slips at 18° to c.a.		

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DRILL LOG

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DATE STARTED COMPLETED
LOGGED BY PAWLIUK

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COLLAR ELEVATION
BEARING

Footage	Core Recovery	Oxide	ALTERATION: Quartz	Sericite	Clay/Pyrop	Biotite	K-spar	Chlorite	Epidote	Carb-Zeo	Garnet	Pyroxene	Amphibole	Alt'n Type	STR.: Sulf. Veins	Frac Inten	VISUAL EST.: Est. Cu. Mo	CuFeS2	FeS2	Cu2FeS3	Fe3O4	MoS2	Sample No. & Interval	LOG: SCALE / BASIC GEOLOGY: rock types, metallization, structures alterations, one column system	LITHOLOGIC DESCRIPTIONS, NOTES & SKETCHES	ROCK UNIT
850																								py vlt 0.10" @ 15°±	803.4 – 858.6 "Hybrid" BONANZA VOLCANIC and QFP DYKE As above.	
																								QV 0.6" @ 20°		
																								QV 1.5" @ 40° wispy mag vlts, cp v.f. diss.		
																								QV 1" @ 80°		
860																								QV 0.8" @ 15°	858.6 – 1167.5' QFP Light greenish creamy grey, medium to coarse grained massive rock with watery, milky grey subhedral to rounded quartz eyes qv. ~0.2" across, max 0.4" diam. Py and cp mainly within dark magnetite-chlorite clots. Pale aqua-coloured chlorite often present along margins of qtz veins + vlts. Decrease in chlorite content with depth; little chlorite below ≈ 960'. Increased sericite – py – qtz (phyllic) altn with depth; rock generally pale cream-grey colour below say 960'.	
																								QV 0.3" @ 25°		
																								fault w. 0.1" sooty py @ 20°		
																								QV 0.4" @ 20°		
																								QV 0.8" @ 30°		
870																								QV 0.3 @ 35°		
																								cp v.f. diss		
																								QV 0.5" @ 73°		
880																								bornite? speck		
																								QV 1.6" @ 20°		
890																								QV 0.9" @ 50°		
																								fault @ 45°; int. fractured, soft core.		
																								QV 0.7" @ 30°		
																								fault @ 22°; f. bkn, bx core over 21"		
900																								fault slip @ 40°; sooty py 0.1".		
																								QV 0.5" @ 30° w bright orange zeol	vlts to 0.2"	
910																										

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BEARING

Footage	Core Recovery	Oxide	ALTERATION: Quartz	Sericite	Clay/Pyrop	Biotite	K-spar	Chlorite	Epidote	Carb-Zeo	Garnet	Pyroxene	Amphibole	STR.: Sulf Veins	Frac Inten	VISUAL EST.: Est Cu Mo	$CuFeS_2$	FeS_2	Cu_2FeS_3	Fe_2O_3	MoS_2	Sample No. & Interval	LOG: SCALE / BASIC GEOLOGY: rock types, metallization, structures alterations, one column system	LITHOLOGIC DESCRIPTIONS. NOTES & SKETCHES	ROCK UNIT
910																									
920																.3		1							
930																.3		5							
940																.4		1							
950																.25		1							
960																.25		1							
970																.4		2			tr				

- trgces hem within mag masses.
- fault; 0.1" of f. bkn core on fracture @ 25°; fault @ 30°; int. fractured across 3"
- ap specks within QFP not as small as those within overlying volc., but still gen'lly smaller than py masses.
- qv 0.8" @ 55°.
- v.fine, discontinuous mag vlts.
- fault slip @ 21°
- qv 0.5" @ 33°.
- fault; sheen of py on slip @ 20°
- fault; 2" salt; int. fractured core between fractures @ 55°.
- qv 1" @ 22°.
- py (60%) - cp (40%) vlt @ 50°.
- qv or band 5" wide @ 50° to c.a.
- fault; 0.05" py on smooth slip @ 35°.
- discont. Mdy vlt to 0.05" wide @ ~10° to c.a.

858.6 –
QFP As above. Subhedral to anhedral pale greenish white feldspar phenos to about 0.2" long, av. say 0.08" (smaller and less abundant than the quartz eyes). Decrease in magnetite content with increasing depth; increased hematite content below ~911'.

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PROJECT Island Copper T.D. COLLAR ELEVATION

CONTRACTOR INCLINATION BEARING

DATE STARTED COMPLETED COORDINATES

LOGGED BY Pawlik SURVEY REFERENCES

Footage	Core Recovery	Oxide	ALTERATION: Quartz	Sericite	Clay/Pyrop	Biotite	K-spar	Chlorite	Epidote	Carb-Zeo	Garnet	Pyroxene	Amphibole	Alt'n Key	STR.: Sulf Veins	Frac Inten	VISUAL EST.: Est Cu Mo	$CuFeS_2$	FeS_2	Cu_2FeS_3	Fe_2O_3	MoS_2	Sample No. & Interval	LOG: SCALE / BASIC GEOLOGY: rock types, metallization, structures alterations, one column system	LITHOLOGIC DESCRIPTIONS. NOTES & SKETCHES	ROCK UNIT
970																										
980																	.4	.5				tr		chlorite as v. fine, faint rims along margins of qtz eyes; 5 faint vlts of f. diss moly + py + cp over 3" @ 40°. QV lts to 0.5" @ 70°.	858.6 – QFP as above. More abundant (still minor) K spar gltn within a couple of inches of the margins of qtz veins, + also where rock has been brecciated. Rock light grey (abund. qtz) to creamy grey with local orangey (K-spar, zeol.) patches. Increased silica content with depth.	
																	.5	.5						bleached, qtz-rich band 1" @ 70°.		
990																								fault; smooth pyritic slip @ 40°		
																	.5	1						QV 1" @ 35°.		
																								often ~0.5% to 1% diss cp specks within QFP over 6" to 8".		
1000																								moly within QV.		
																	.6	1						QV 0.5" @ 55°		
1010																								118.5 – 122.0 rubble; moderately broken, fractured core.		
																	.5	1						QV 4" @ ~ 40°		
																								fault. 5" soft int. breccia, core; @ 40°.		
																								QV 0.4" @ 65°		
1020																								fault; 0.25" pyritic gouge @ 25°		
																	.3	1-2						fault; 0.5" clayey gouge + f. bkn core @ 70°.		
																								fault @ 40°.		
																								fault; pyritic slip @ 50°.		
1030																								fault w. py + moly on	slip @ 25° to c.a.	

HOLE NO. D 181

DRILL LOG

PROJECT Island Copper
CONTRACTOR
DATE STARTED COMPLETED
LOGGED BY

T.D.
INCLINATION 1
COORDINATES
SURVEY REFERENCES

COLLAR ELEVATION
BEARING

Footage	Core Recovery	Oxide	ALTERATION: Quartz	Sericite	Clay/Pyrop	Biotite	K-spar	Chlorite	Epidote	Carb-Zeo	Garnet	Pyroxene	Amphibole	Alt. Int.	STR.: Sulf. Veins	Frac. Inten.	VISUAL EST.: Est. Cu. Mo	$CuFeS_2$	FeS_2	Cu_2FeS_3	Fe_2O_3	MoS_2	Sample No. & Interval	LOG: SCALE / BASIC GEOLOGY: rock types, metallization, structures alterations, one column system	LITHOLOGIC DESCRIPTIONS. NOTES & SKETCHES	ROCK UNIT
1030																								QV 0.2" @ 15° fault; 0.05" py on slip @ 15°. moly vlt @ 45°	858.6 –	
																	.4	.5						QV 1.5" @ 34°	QFP As above except more silicified, less mafics, more pyrite than overlying rock. More abundant watery grey qtz vlts generally less than 0.2" wide and from 40° to 70° to c.a. Fewer zeol. vlts, Less hematite than in rock above; almost negligible below ~1035	
1040																							1040	QV 0.9" @ 15°.		
																	.6	1						py vlt 0.25" @ 50°. cp as irreg, disseminated masses to 0.1" across.		
1050																							1050	fault; 0.1" f. bkn py on slip @ 55°.		
																	.25	.5						QV 1" @ 60° f. dis moly moly vlt		
1060																							1060	fault slip @ 25° QV 0.8" @ 20°.		
																	.3	1						py vlt @ 55° fault slip @ 30° cp diss		
1070																							1070			
																	.3	1						QV 0.3" @ 40°.		
1080																							1080	py vlts to 0.1" @ ~40°		
																	.4	1						QV 0.3" @ 75° QV 0.3" @ 62°.		
1090																										

HOLE NO. D 181

DRILL LOG

PROJECT Island Copper
CONTRACTOR
DATE STARTED COMPLETED
LOGGED BY Pawlink

T.D. COLLAR ELEVATION
INCLINATION BEARING
COORDINATES
SURVEY REFERENCES

Footage	Core Recovery	Oxide	ALTERATION: Quartz	Sericite	Clay/Pyop	Biotite	K-spar	Chlorite	Epidote	Carb-Zeo	Garnet	Pyroxene	Amphibole	Alt%	STR.: Sulf Veins	Frac Inten	VISUAL EST.: Est Cu Mo	CuFeS2	FeS2	CuFeS2	Fe2O3	MoS2	Sample No. & Interval	LOG: SCALE / BASIC GEOLOGY: rock types, metallization, structures alterations, one column system	LITHOLOGIC DESCRIPTIONS. NOTES & SKETCHES	ROCK UNIT
1090																										
1100																	.25	1					1100	fault @ 40°. fault 1" wide @ 70°. fault; f. bkn, py-rich core over 2" @ 70°. fault; slip @ 20°. fault; 0.5" f. bkn core and clayey gouge between slips @ 70°. QV 1.2" @ 55°.	858.6 – QFP As above. Orange K-spar alth ovr patches up to 3' across. Bkn, discontinuous watery grey quartz veinlets; chalcopyrite less abundant below 1117'.	
1110																	.12	.5					1110	py QV 0.8" @ 60° along flt slip. fault from 1108.8 – 1110.0' w. mod. bkn core between slips at 40° to c.a. * cp * QV 0.4" @ 30°.		
1120																	.1	.5					1120	fault; 1.1" soft, bkn core between slips @ 53°. fault; 0.05" pyritic gouge on slip @ 45°. fault, clayey gouge on slip @ 35°.		
1130																	.05	tr					1130	1/10" sooty py on fault slip @ 35°. cp specks v. fine diss. QV 0.5" @ 35°.		
1140																	.03	.5					1140	quartz-rich band 2" wide @ 36°. 2" xenolith rel. fresh f. gr. volc w. mag, cp, py. QV 0.7" @ 30° contains 0.1" vlt of calcite, zeol, py, cp and moly within centre.		
1150																	.08	<.5						fault @ 40° 3.2" soft, bkn, clay-rich core at fault.		

HOLE NO. D 181

DRILL LOG

PROJECT Island Copper
CONTRACTOR
DATE STARTED COMPLETED
LOGGED BY D. Pawlink

T.D. 1167.5
INCLINATION
COORDINATES
SURVEY REFERENCES

COLLAR ELEVATION
BEARING

Footage	Core Recovery	Oxide	ALTERATION: Quartz	Sericite	Clay/Pyrop	Biotite	K-spar	Chlorite	Epidote	Carb-Zeo	Garnet	Pyroxene	Amphibole	Alt. Xx	STR.: Sulf Veins	Frac Inten	VISUAL EST.: Est Cu Mo	$CuFeS_2$	FeS_2	Cu_5FeS_4	Fe_2O_3	MoS_2	Sample No. & Interval	LOG: SCALE / BASIC GEOLOGY: rock types, metallization, structures alterations, one column system	LITHOLOGIC DESCRIPTIONS NOTES & SKETCHES	ROCK UNIT
1150																										
																	.02	<.5								
1160																	.03	<.5					1160			

1160: Xenolith greenish black v.f. gr. Banana Valley flow or ash tuff, α ~ 60° to c.a.

QV 0.7" α 33°. φ v. finely dies

QV 0.3" α 30° contains small mass yellowish green retrograde (?) epidote.

858.6 – 1167.5 QFP As above

1167.5' END OF HOLE

PHOTOS

HOLE NUMBER: D_181

EASTING: 29243.32 NORTHING: 5414.45 ELEVATION: 104556

DEPTH	INCLINATION	PLUNGE	BEARING (mag)	AZIMUTH	CALC. BY:	CHECKED BY
collar		-56½		282		AR
200	32	-58	SW 87 + 22	289	AR	
397	33	-57	SW 86 + 22	288	AR	
600	34	-56	NW 87 + 22	295	AR	
827	36	-54	NW 80 + 22	302	AR	
1000	37	-53	NW 84 + 22	298	AR	

brun Fo

Sperry Sun Compass → Hous for mag disregar Azim

D-181 1000 Ft.

BHP MINERALS CANADA - Island Copper Mine

HOLE-ID	EAST	NORTH	ELEV
D_181	29243.3	5414.5	1045.6

DOWN-HOLE SURVEY INFORMATION:

FROM	TO	AZIMUTH	DIP
0.0	200.0	282.0	-56.5
200.0	397.0	282.0	-58.0
397.0	600.0	282.0	-57.0
600.0	827.0	282.0	-56.0
827.0	1000.0	282.0	-54.0
1000.0	1167.5	282.0	-53.0

FROM	TO	CU	MO	FE	AU	AG	PB	ZN	TAG
25.0	30.0	0.12	0.010	3.8	0.06	0.80	0.007	0.056	16853
45.0	50.0	0.13	0.006	4.6	0.02	1.10	0.003	0.025	16854
65.0	70.0	0.17	0.006	4.8	0.04	0.90	0.003	0.014	16855
85.0	90.0	0.14	0.004	3.5	0.08	0.70	0.003	0.019	16856
105.0	110.0	0.12	0.004	3.1	0.03	0.50	0.004	0.011	16857
125.0	130.0	0.15	0.004	3.8	0.09	0.60	0.005	0.016	16858
145.0	150.0	0.07	0.004	3.3	0.03	0.20	0.001	0.006	16859
165.0	170.0	0.16	0.005	4.2	0.08	0.30	0.001	0.012	16860
185.0	190.0	0.14	0.005	3.9	0.10	0.30	0.001	0.009	16861
205.0	210.0	0.13	0.002	2.8	0.04	0.60	0.002	0.008	17005
215.0	220.0	0.21	0.002	5.8	0.39	0.50	0.002	0.004	17006
225.0	230.0	0.32	0.002	4.1	0.39	0.90	0.002	0.014	17007
235.0	240.0	0.17	0.004	8.5	0.12	1.40	0.002	0.013	17008
245.0	250.0	0.11	0.003	6.1	0.08	0.40	0.003	0.017	17009
255.0	260.0	0.18	0.001	4.1	0.18	1.30	0.002	0.021	17010
265.0	270.0	0.23	0.003	4.6	0.13	0.80	0.006	0.021	17011
275.0	280.0	0.13	0.001	3.0	0.11	0.50	0.002	0.009	17012
285.0	290.0	0.18	0.002	3.6	0.15	0.70	0.001	0.008	17013
295.0	300.0	0.23	0.003	3.7	0.42	0.20	0.003	0.012	17014
305.0	310.0	0.12	0.001	3.3	0.09	0.50	0.001	0.011	17015
315.0	320.0	0.18	0.003	4.5	0.19	0.80	0.002	0.015	17016
325.0	330.0	0.11	0.002	6.0	0.20	0.30	0.002	0.007	17017
335.0	340.0	0.24	0.004	4.8	0.29	0.60	0.002	0.006	17018
345.0	350.0	0.25	0.004	7.5	0.27	0.20	0.002	0.004	17019
355.0	360.0	0.29	0.003	6.8	0.38	0.80	0.003	0.010	17020
365.0	370.0	0.18	0.003	4.6	0.16	0.70	0.002	0.013	17021
375.0	380.0	0.25	0.003	4.1	0.18	0.90	0.001	0.006	17022
385.0	390.0	0.28	0.004	5.3	0.23	1.00	0.002	0.015	17023
395.0	400.0	0.19	0.003	6.3	0.10	0.90	0.002	0.017	17024
405.0	410.0	0.31	0.011	9.7	0.05	4.40	0.003	0.009	17025
415.0	420.0	0.44	0.006	7.1	0.20	1.00	0.002	0.008	17026
425.0	430.0	0.20	0.004	6.9	0.04	1.10	0.002	0.025	17027
435.0	440.0	0.15	0.002	5.1	0.02	0.80	0.002	0.023	17028
445.0	450.0	0.20	0.004	6.0	0.06	0.20	0.011	0.047	17029
455.0	460.0	0.13	0.002	4.2	0.07	0.40	0.002	0.011	17030
465.0	470.0	0.23	0.003	4.8	0.15	0.80	0.004	0.018	17031
475.0	480.0	0.19	0.005	6.1	0.10	0.40	0.005	0.021	17032
485.0	490.0	0.09	0.002	4.6	0.12	0.40	0.001	0.009	17033
495.0	500.0	0.13	0.003	3.6	0.16	0.60	0.002	0.009	17034
505.0	510.0	0.18	0.003	4.8	0.07	0.80	0.002	0.008	17035
515.0	520.0	0.18	0.005	5.7	0.04	1.20	0.003	0.023	17036
525.0	530.0	0.14	0.003	6.3	0.02	0.30	0.003	0.016	17037
535.0	540.0	0.10	0.003	4.9	0.05	0.50	0.002	0.008	17038
545.0	550.0	0.25	0.003	5.4	0.12	0.90	0.002	0.012	17039

FROM	TO	CU	MO	FE	AU	AG	PB	ZN	TAG

BHP MINERALS CANADA - Island Copper Mine

FROM	TO	CU	MO	FE	AU	AG	PB	ZN	TAG
555.0	560.0	0.18	0.003	5.2	0.07	1.30	0.003	0.023	17040
565.0	570.0	0.11	0.005	6.7	0.11	0.70	0.003	0.020	17041
575.0	580.0	0.19	0.003	8.8	0.08	1.10	0.003	0.008	17042
585.0	590.0	0.17	0.004	8.3	0.04	1.50	0.003	0.017	17043
595.0	600.0	0.15	0.003	6.1	0.03	1.10	0.003	0.028	17044
605.0	610.0	0.20	0.001	6.4	0.11	1.20	0.003	0.007	17045
615.0	620.0	0.33	0.004	6.7	0.10	2.20	0.004	0.052	17046
625.0	630.0	0.12	0.002	6.0	0.14	0.70	0.003	0.007	17047
635.0	640.0	0.23	0.004	5.2	0.45	0.80	0.003	0.007	17048
645.0	650.0	0.19	0.003	6.7	0.17	0.90	0.003	0.006	17049
655.0	660.0	0.12	0.009	6.7	0.13	0.90	0.002	0.006	17050
665.0	670.0	0.15	0.005	6.0	0.13	0.60	0.003	0.012	17051
675.0	680.0	0.16	0.004	4.7	0.26	0.80	0.003	0.008	17052
685.0	690.0	0.11	0.004	4.7	0.17	0.50	0.002	0.006	17053
695.0	700.0	0.16	0.005	5.2	0.16	0.60	0.002	0.007	17054
705.0	710.0	0.21	0.007	3.4	0.17	0.70	0.002	0.006	17055
715.0	720.0	0.13	0.005	5.9	0.14	0.70	0.002	0.013	17056
725.0	730.0	0.09	0.002	5.5	0.09	0.40	0.002	0.008	17057
735.0	740.0	0.14	0.005	6.0	0.13	0.70	0.003	0.012	17058
745.0	750.0	0.22	0.007	8.0	0.15	1.10	0.006	0.016	17059
755.0	760.0	0.15	0.005	9.9	0.20	0.70	0.004	0.010	17060
765.0	770.0	0.18	0.004	3.4	0.07	0.60	0.003	0.008	17061
775.0	780.0	0.17	0.007	6.5	0.11	0.70	0.002	0.004	17062
785.0	790.0	0.19	0.008	3.4	0.04	1.20	0.002	0.004	17063
795.0	800.0	0.15	0.004	10.2	0.11	0.60	0.002	0.008	17064
805.0	810.0	0.24	0.003	10.2	0.12	1.30	0.002	0.015	17065
815.0	820.0	0.22	0.006	6.4	0.15	0.80	0.002	0.009	17066
825.0	830.0	0.29	0.006	8.2	0.17	1.20	0.003	0.013	17067
835.0	840.0	0.19	0.007	5.9	0.15	0.60	0.002	0.004	17068
845.0	850.0	0.23	0.001	6.4	0.27	0.80	0.002	0.005	17069
855.0	860.0	0.21	0.001	6.3	0.20	0.70	0.001	0.007	17070
865.0	870.0	0.27	0.001	5.0	0.27	1.00	0.001	0.007	17071
875.0	880.0	0.34	0.002	4.6	0.21	1.40	0.001	0.006	17072
885.0	890.0	0.50	0.008	4.5	0.19	2.70	0.001	0.018	17073
895.0	900.0	0.30	0.012	4.0	0.19	1.50	0.001	0.011	17074
905.0	910.0	0.43	0.002	3.0	0.30	1.50	0.001	0.004	17075
915.0	920.0	0.36	0.011	3.6	0.32	1.20	0.001	0.004	17076
925.0	930.0	0.24	0.002	3.7	0.12	1.10	0.001	0.026	17077
935.0	940.0	0.37	0.006	4.3	0.31	1.40	0.001	0.005	17078
945.0	950.0	0.16	0.003	3.2	0.08	0.70	0.001	0.002	16846
955.0	960.0	0.36	0.011	3.3	0.20	1.00	0.001	0.002	16847
965.0	970.0	0.51	0.025	3.4	0.16	3.50	0.002	0.001	16848
957.0	980.0	0.63	0.020	3.5	0.61	1.80	0.001	0.003	16849
985.0	990.0	1.08	0.095	5.4	0.92	2.90	0.002	0.007	16850
995.0	1000.0	1.07	0.086	4.3	0.57	5.60	0.001	0.003	16851
1000.0	1010.0	0.73	0.068	3.9	0.32	3.20	0.001	0.005	17079
1010.0	1020.0	0.56	0.031	2.9	0.18	2.40	0.001	0.006	17080
1020.0	1030.0	0.55	0.020	2.1	0.19	1.60	0.001	0.005	17081
1030.0	1040.0	0.46	0.020	2.2	0.25	1.50	0.001	0.004	17082
1040.0	1050.0	0.64	0.020	2.6	0.35	2.20	0.001	0.006	17083
1050.0	1060.0	0.40	0.031	1.8	0.23	1.40	0.001	0.005	17084
1060.0	1070.0	0.63	0.018	2.1	0.24	1.80	0.001	0.005	17085
1070.0	1080.0	0.56	0.019	2.8	0.29	2.20	0.001	0.006	17086
1080.0	1090.0	0.36	0.015	3.4	0.23	1.60	0.001	0.005	17087
1090.0	1100.0	0.46	0.020	2.7	0.25	2.00	0.001	0.005	17088
1100.0	1110.0	0.35	0.021	2.0	0.16	1.60	0.001	0.005	17089
1110.0	1120.0	0.22	0.027	2.7	0.07	1.50	0.001	0.016	17090
1120.0	1130.0	0.18	0.025	2.6	0.04	1.40	0.001	0.008	17091
1130.0	1140.0	0.23	0.014	3.6	0.04	1.60	0.001	0.012	17092
1140.0	1150.0	0.14	0.006	3.4	0.08	1.10	0.001	0.009	17093
1150.0	1160.0	0.11	0.004	2.6	0.03	0.90	0.001	0.007	17094
1160.0	1167.0	0.20	0.001	2.4	0.03	1.00	0.001	0.006	17095

FROM	TO	CU	MO	FE	AU	AG	PB	ZN	TAG

Jan 93

ISLAND COPPER MINE

ASSAY REQUISITION AND REPORT FORM

LAB SENT TO: I/C DATE SENT: Jan 5/93 SENT BY/DEPT: GEOL 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-181~~	5	10			ADDITIONAL STARTS @ 10'					16852	
D-181	25	30	.12	.010	3.8	.06	.08	.007	.056	853	43
	45	50	.13	.006	4.6	.02	.11	.003	.025	854	44
	65	70	.17	.006	4.8	.04	.09	.003	.014	855	45
	85	90	.14	.004	3.5	.08	.07	.003	.019	856	46
	105	110	.12	.004	3.1	.03	.05	.004	.011	857	47
	125	130	.15	.004	3.8	.09	.06	.005	.016	858	48
	145	150	.27	.004	3.3	.03	.02	.001	.006	859	49
	165	170	.16	.005	4.2	.08	.03	.001	.012	860	50
	185	190	.14	.005	3.9	.10	.03	.001	.009	861	51

ISLAND COPPER MINE

ASSAY REQUISITION AND REPORT FORM

LAB SENT TO: I/C DATE SENT: ~~Jan 12/93~~ Mar. 10/93 SENT BY/DEPT: GEOL 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-181	205	210	.13	.02	2.28	.04	.6	.02	.03	170005	25
	215	220	.21	.02	2.58	.39	.5	.02	.04	000606	26
	225	230	.32	.02	4.11	.39	.9	.02	.14	000707	27
	235	240	.17	.04	2.85	.12	1.4	.02	.13	000808	28
	245	250	.11	.03	2.61	.08	1.4	.03	.17	000909	29
	255	260	.18	.01	4.11	.18	1.3	.02	.21	001010	30
	265	270	.23	.03	4.16	.13	.8	.06	.21	001111	31
	275	280	.13	.01	3.30	.11	.5	.02	.09	001212	32
	285	290	.18	.02	3.36	.15	.7	.01	.08	001313	33
	295	300	.23	.03	3.37	.42	1.2	.03	.12	001414	34
	305	310	.12	.01	3.33	.09	.5	.01	.11	001515	35
	315	320	.18	.03	4.45	.19	.8	.02	.15	001616	36
	325	330	.11	.02	1.60	.20	.3	.02	.07	001717	37
	335	340	.24	.04	4.48	.29	.6	.02	.06	001818	38
	345	350	.25	.04	4.75	.27	.2	.02	.04	001919	39
	355	360	.29	.03	6.18	.38	.8	.03	.10	002020	40
	365	370	.18	.03	4.16	.16	.7	.02	.13	002121	41
	375	380	.25	.03	4.61	.18	.9	.01	.06	002222	42

ISLAND COPPER MINE

ASSAY REQUISITION AND REPORT FORM

LAB SENT TO: I/C DATE SENT: Mar 10/93. SENT BY/DEPT: GEOL 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-181	385	390	.28	.004	5.3	.23	1.0	.2	.15	170023	43
	395	400	.19	.003	6.3	.10	.9	.2	.17	024	44
	405	410	.31	.011	9.7	.05	4.4	.3	.09	025	45
	415	420	.44	.006	7.1	.20	1.0	.2	.08	026	46
	425	430	.20	.004	6.9	.04	1.1	.2	.25	027	47
	435	440	.15	.002	5.1	.02	.8	.2	.23	028	48
	445	450	.20	.004	6.0	.06	.2	.11	.47	029	49
	455	460	.13	.002	4.2	.07	.4	.2	.11	030	50
	465	470	.23	.003	4.8	.15	.8	.4	.18	031	51
	475	480	.19	.005	6.1	.10	.4	.5	.21	032	52
	485	490	.09	.002	4.6	.12	.4	.1	.09	033	53
	495	500	.13	.003	3.6	.16	.6	.2	.09	034	54
	505	510	.18	.003	4.8	.07	.8	.2	.28	035	55
	515	520	.18	.005	5.7	.04	1.2	.3	.23	036	56
	525	530	.14	.003	6.3	.02	.3	.3	.16	037	57
	535	540	.10	.003	4.9	.05	.5	.2	.08	038	5
	545	550	.25	.003	5.4	.12	.9	.2	.12	039	6
	555	560	.18	.002	5.2	.07	1.3	.3	.23	040	7

ISLAND COPPER MINE

ASSAY REQUISITION AND REPORT FORM

LAB SENT TO: I/C DATE SENT: _____ SENT BY/DEPT: GEOL 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-181	565	570	.11	.005	67	.11	.7	.003	.012	17041
	575	580	.19	.003	88	.08	1.1	.003	.020	042
	585	590	.17	.004	83	.04	1.5	.003	.008	043
	595	600	.15	.003	61	.03	1.1	.003	.017	044
	605	610	.20	.001	64	.11	1.2	.003	.028	045
	615	620	.33	.004	67	.10	2.2	.004	.007	046
	625	630	.12	.002	60	.14	0.7	.003	.052	047
	635	640	.23	.004	52	.45	0.8	.003	.007	048
	645	650	.19	.003	67	.17	0.9	.003	.007	049
	655	660	.12	.009	67	.13	0.9	.002	.006	050
	665	670	.15	.005	60	.13	0.6	.003	.006	051
	675	680	.16	.004	47	.26	0.8	.003	.012	052
	685	690	.11	.004	47	.17	0.5	.002	.008	053
	695	700	.16	.005	52	.16	0.6	.002	.006	054
	705	710	.21	.007	34	.17	0.7	.002	.007	055
	715	720	.13	.005	59	.14	0.7	.002	.006	056
	725	730	.09	.002	55	.09	0.4	.002	.013	057
	735	740	.14	.005	60	.13	0.7	.003	.008	058

.012

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ISLAND COPPER MINE
ASSAY REQUISITION AND REPORT FORM

LAB SENT TO: I/C DATE SENT: ,, SENT BY/DEPT: GEOL 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-181	745	750	.22	.007	8.0	.15	1.1	.006	.016	17059
	755	760	.15	.005	9.9	.20	.7	.004	.010	060
	765	770	.18	.004	3.4	.07	.6	.003	.009	061
	775	780	.17	.007	6.5	.11	.7	.002	.004	062
	785	790	.19	.008	3.4	.04	.12	.002	.004	063
	795	800	.15	.004	1.02	.11	.6	.002	.008	064
	805	810	.24	.003	1.02	.12	.13	.002	.015	065
	815	820	.22	.006	6.4	.15	.8	.002	.009	066
	825	830	.29	.008	8.2	.17	.12	.003	.013	067
	835	840	.19	.007	5.9	.15	.6	.002	.004	068

ISLAND COPPER MINE
ASSAY REQUISITION AND REPORT FORM

LAB SENT TO: IC DATE SENT: Jan 14/93 SENT BY/DEPT: GEOL 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-181	845	850	.23	.001	6.4	.272	.8	.002	.005	170691	25
	855	860	.21	.001	6.3	.200	.7	.001	.007	170700	26
	865	870	.27	.001	5.0	.270	1.0	.001	.007	170711	27
	875	880	.34	.002	4.6	.211	1.4	.001	.006	170722	28
	885	890	.50	.008	4.5	.191	2.7	.001	.018	170733	29
	895	900	.30	.012	4.0	.191	1.5	.001	.011	170744	30
	905	910	.43	.002	3.0	.302	1.5	.001	.004	170755	31
	915	920	.36	.011	3.6	.325	1.2	.001	.004	170766	32
	925	930	.24	.002	3.7	.182	1.1	.001	.026	170777	33
	935	940	.37	.006	4.3	.315	1.4	.001	.005	170788	34
	1000	1010	.73	.068	3.9	.327	3.2	.001	.005	170799	35
	1010	1020	.56	.031	2.9	.330	2.4	.001	.006	170800	36
	1020	1030	.55	.020	2.1	.327	1.6	.001	.005	170811	37
	1030	1040	.46	.020	2.2	.251	1.5	.001	.004	170822	38
	1040	1050	.64	.020	2.6	.351	2.2	.001	.006	170833	39
	1050	1060	.40	.031	1.8	.231	1.4	.001	.005	170844	40
	1060	1070	.63	.018	2.1	.241	1.8	.001	.005	170855	41
	1070	1080	.56	.019	2.8	.291	2.2	.001	.006	170866	42

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ISLAND COPPER MINE
ASSAY REQUISITION AND REPORT FORM

LAB SENT TO: I/C DATE SENT: Dec 17/92 SENT BY/DEPT: GEOL 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 181	945	950	.16	.003	3.24	.08	.07	.001	.002	168446	4
	955	960	.36	.011	3.13	.20	1.0	.001	.002	8447	5
	965	970	.51	.025	3.14	1.16	3.5	.002	.001	8448	6
	975	980	.53	.020	3.15	.61	1.8	.001	.003	8449	7
	985	990	1.38	.095	5.14	1.92	2.9	.002	.007	8500	8
	995	1000	1.37	.086	4.73	5.97	5.6	.001	.003	8501	9

ISLAND C[illegible]PER MINE
ASSAY REQUISITION AND REPORT FORM

LAB SENT TO: I/C DATE SENT: _____ SENT BY/DEPT: GEOL 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-181	1080	1090	36	0015	34	23	16	0001	0005	17087	43
	1090	1100	46	0020	27	25	20	1	5	088	44
	1100	1110	35	0021	20	16	16	1	5	089	45
	1110	1120	22	0027	27	07	15	1	0016	090	46
	1120	1130	18	0025	26	04	14	1	0008	091	47
	1130	1140	23	0014	36	04	16	0001	0012	092	48
	1140	1150	14	6	34	08	11	1	0009	093	49
	1150	1160	11	4	26	03	09	1	7	094	50
	1160	1167	20	1	24	03	10	1	0006	095	51
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DRILL HOLE: D-181

MAGNETIC SUSCEPTIBILITY DATA

UNITS = 10^{-3} CGS units

FROM	TO	MAG-SUSC
10.00	20.00	0.78
20.00	30.00	0.30
30.00	40.00	0.04
40.00	50.00	0.03
50.00	60.00	0.24
60.00	70.00	1.80
70.00	80.00	0.43
80.00	90.00	1.00
90.00	100.00	1.10
100.00	110.00	1.60
110.00	120.00	0.22
120.00	130.00	1.70
130.00	140.00	0.96
140.00	150.00	2.70
150.00	160.00	1.90
160.00	170.00	1.80
170.00	180.00	1.80
180.00	190.00	2.50
190.00	200.00	2.30
200.00	210.00	0.56
210.00	220.00	2.60
220.00	230.00	1.60
230.00	240.00	1.40
240.00	250.00	1.10
250.00	260.00	2.50
260.00	270.00	0.43
270.00	280.00	0.61
280.00	290.00	0.27
290.00	300.00	1.30
300.00	310.00	1.20
310.00	320.00	0.76
320.00	330.00	7.10
330.00	340.00	4.50
340.00	350.00	4.60
350.00	360.00	3.20
360.00	370.00	1.10
370.00	380.00	0.14
380.00	390.00	2.80
390.00	400.00	1.30
400.00	410.00	2.20
410.00	420.00	0.04
420.00	430.00	0.09
430.00	440.00	1.20
440.00	450.00	3.80

FROM	TO	MAG-SUSC
450.00	460.00	7.80
460.00	470.00	3.60
470.00	480.00	2.50
480.00	490.00	8.10
490.00	500.00	4.50
500.00	510.00	1.80
510.00	520.00	1.70
520.00	530.00	0.10
530.00	540.00	2.70
540.00	550.00	2.90
550.00	560.00	4.80
560.00	570.00	1.10
570.00	580.00	4.40
580.00	590.00	4.90
590.00	600.00	3.90
600.00	610.00	4.20
610.00	620.00	0.21
620.00	630.00	2.80
630.00	640.00	4.20
640.00	650.00	5.60
650.00	660.00	5.30
660.00	670.00	6.30
670.00	680.00	3.00
680.00	690.00	6.70
690.00	700.00	7.40
700.00	710.00	3.30
710.00	720.00	9.80
720.00	730.00	5.30
730.00	740.00	6.40
740.00	750.00	7.30
750.00	760.00	7.60
760.00	770.00	0.47
770.00	780.00	4.40
780.00	790.00	1.00
790.00	800.00	0.90
800.00	810.00	0.74
810.00	820.00	3.20
820.00	830.00	7.40
830.00	840.00	2.80
840.00	850.00	4.30
850.00	860.00	8.50
860.00	870.00	0.11
870.00	880.00	0.09
880.00	890.00	0.02
890.00	900.00	0.41
900.00	910.00	1.30
910.00	920.00	2.00
920.00	930.00	2.00
930.00	940.00	3.90
940.00	950.00	0.62
950.00	960.00	0.79
960.00	970.00	0.09

FROM	TO	MAG-SUSC
970.00	980.00	1.10
980.00	990.00	1.40
990.00	1000.00	0.52
1000.00	1010.00	1.10
1010.00	1020.00	0.05
1020.00	1030.00	0.10
1030.00	1040.00	2.40
1040.00	1050.00	1.20
1050.00	1060.00	0.29
1060.00	1070.00	0.71
1070.00	1080.00	1.40
1080.00	1090.00	3.30
1090.00	1100.00	0.65
1100.00	1110.00	0.89
1110.00	1120.00	1.80
1120.00	1130.00	1.10
1130.00	1140.00	1.90
1140.00	1150.00	1.60
1150.00	1160.00	1.30
1160.00	1167.50	1.20

MAGNETIC SUSCEPTIBILITY

LE NO. D181 DATE Jan 4/93

INTERVAL: VALUE:

FOOTAGE	STARTING POINT VALUE	+2'	+4'	+6'	+8'	INTERVAL AVERAGE
10 - 20						.78
20 - 30						.30
30 - 40						.04
40 - 50						.03
50 - 60						.24
60 - 70						1.8
70 - 80						.43
80 - 90						1.0
90 - 100						1.1
100 - 110						1.6
110 - 120						.22
120 - 130						1.7
130 - 140						.96
140 - 150						2.7
150 - 160						1.9
160 - 170						1.8
170 - 180						1.8
180 - 190						2.5
190 - 200						2.3
200 - 210						.56
210 - 220						2.6
220 - 230						1.6
230 - 240						1.4
240 - 250						1.1
250 - 260						2.5
260 - 270						.43
270 - 280						.61
280 - 290						.27
290 - 300						1.3
300 - 310						1.2
310 - 320						.76
320 - 330						7.1
330 - 340						4.5
340 - 350						4.6

MAGNETIC SUSCEPTIBILITY

LE NO. D181 DATE Jan. 4/93

INTERVAL: VALUE:

FOOTAGE	STARTING POINT VALUE	+2'	+4'	+6'	+8'	INTERVAL AVERAGE
350-360						3.2
360-370						1.1
370-380						.14
380-390						2.8
390-400						1.3
400-410						2.2
410-420						.04
420-430						.09
430-440						1.2
440-450						3.8
450-460						7.8
460-470						3.6
470-480						2.5
480-490						8.1
490-500						4.5
500-510						1.8
510-520						1.7
520-530						.10
530-540						2.7
540-550						2.9
550-560						4.8
560-570						1.1
570-580						4.4
580-590						4.9
590-600						3.9
600-610						4.2
610-620						.21
620-630						2.8
630-640						4.2
640-650						5.6
650-660						5.3
660-670						6.3
670-680						3.0
680-690						6.7

MAGNETIC SUSCEPTIBILITY

LE NO. D181 DATE Jan 4/93

INTERVAL: VALUE:

FOOTAGE	STARTING POINT VALUE	+2'	+4'	+6'	+8'	INTERVAL AVERAGE
690-700						7.4
700-710						3.3
710-720						9.8
720-730						5.3
730-740						6.4
740-750						7.3
750-760						7.6
760-770						.47
770-780						4.4
780-790						1.0
790-800						.90
800-810						.74
810-820						3.2
820-830						7.4
830-840						2.8
840-850						4.3
850-860						8.5
860-870						.11
870-880						.09
880-890						.02
890-900						.41
900-910						1.3
910-920						2.0
920-930						2.0
930-940						3.9
940-950						.62
950-960						.79
960-970						.09
970-980						1.1
980-990						1.4
990-1000						.52
1000-1010						1.1
1010-1020						.05
1020-1030						.10

MAGNETIC SUSCEPTIBILITY

LE NO. D181 DATE Jan 4/93

INTERVAL: VALUE:

FOOTAGE	STARTING POINT VALUE	+2'	+4'	+6'	+8'	INTERVAL AVERAGE
1030-1040						2.4
1040-1050						1.2
1050-1060						.29
1060-1070						.71
1070-1080						1.4
1080-1090						3.3
1090-1100						.65
1100-1110						.89
1110-1120						1.8
1120-1130						1.1
1130-1140						1.9
1140-1150						1.6
1150-1160						1.3
1160-1168						1.2
EOH						

ROCK QUALITY DESIGNATION

HOLE NO.: D181 DATE: Dec 17/92 LOGGED BY: S. Oakley

HQ Core

FOOTAGE (FT) FROM	TO	INTERVAL INCHES	CUMULATIVE	RECOVERY INCHES	%	TOTAL CUM. PIECES ≥ 4"	RQD %	FRACTURE INTENSITY
12	17	60		63		11		
17	27	120		80		17		
27	37	120		121		19		
37	47	120		122		27		
47	57	120		117		32		
57	67	120		118		ø		
67	77	120		120		ø		
77	87	120		122		23		
87	96	108		90		5		
96	106	120		109		7		
106	115	108		100		11		
115	117	24		26		ø		
117	127	120		122		33		
127	137	120		120		26		
137	142	60		54		ø		
142	152	120		122		25		
152	162	120		123		29		
162	172	120		120		34		
172	177	60		57		24		
177	187	120		121		45		
187	197	120		118		38		
197	200	36		33		ø		

ROCK QUALITY DESIGNATION

HOLE NO.: D181 DATE: Dec 12/92 LOGGED BY: D. Pawliuk

Note: this is NQ3 core; HQ cored from ~5. Oakley 6 to 200 feet depth.

FOOTAGE (FT) FROM	TO	INTERVAL INCHES	CUMULATIVE	RECOVERY INCHES	%	TOTAL CUM. PIECES ≥ 4"	RQD %	FRACTURE INTENSITY
200	204	48		35		Ø		
204	205	12		11		4		
205	208	36		42		4		
208	212	48		49		17		
212	217	60		59		14		
217	221	48		39		Ø		
221	226	60		60		4		
226	231			60		16		
231	236			60		15		
236	236.5	6		7		Ø		
236.5	242	66		60		17		
242	247	60		57		11		
247	252			60		13		
252	257			58		9		
257	262			58		17		
262	265	36		34		6		
265	268	36		38		15		
268	272	48		50		6		
272	277	60		58		27		
277	282			58		4		
282	287			61		14		
287	292			55		22		
292	297			56		Ø		
297	302			59		10		
302	304	24		23		Ø		
304	308	48		50		8		
308	312	48		48		23		
312	317	60		59		25		
317	317.5	6		7		Ø		
317.5	322	54		48		14		
322	327			59		31		
327	332			59		19		

ROCK QUALITY DESIGNATION

HOLE NO.: D181 DATE: Dec 12/92 LOGGED BY: S.R. Oakley & D. Pawlink

FOOTAGE (FT) FROM	TO	INTERVAL INCHES	CUMULATIVE	RECOVERY INCHES	%	TOTAL CUM. PIECES ≥ 4"	RQD %	FRACTURE INTENSITY
332	333.5	18		18			0	
333.5	338	54		62			12	
338	342	48		46			22	
342	347	60		59			31	
347	352			58			25	
352	357			60			24	
357	362			59			30	
362	367			58			32	
367	372			60			31	
372	377			59			19	
377	378	12		8			0	
378	382	48		54			5	
382	387	60		60			23	
387	392			59			31	
392	397			60			41	
397	402			59			26	
402	407			59			31	
407	412			61			30	
412	417			61			25	
417	422			55			29	
422	427			61			39	
427	432			60			28	
432	437			60			42	
437	442			60			37	
442	447			60			29	
447	452			61			39	
452	457			60			21	
457	462			59			13	
462	467			58			26	
467	472			59			9	
472	477			59			30	
477	482			57			34	

ROCK QUALITY DESIGNATION

HOLE NO.: D181 DATE: Dec 14/92 LOGGED BY: S. Oakley & D. Pawlick

FOOTAGE (FT) FROM	TO	INTERVAL INCHES	CUMULATIVE	RECOVERY INCHES	%	TOTAL CUM. PIECES ≥ 4"	RQD %	FRACTURE INTENSITY
482	487			60		10		
487	492			59		33		
492	497			60		19		
497	502			59		34		
502	507			59		39		
507	512			57		10		
512	517			60		39		
517	522			57		31		
522	527			60		14		
527	532			59		23		
532	537			59		17		
537	542			60		34		
542	547			59		43		
547	552			60		8		
552	557			59		15		
557	562			60		18		
562	567			61		6		
567	572			62		13		
572	577			57		26		
577	582			60		34		
582	587			61		28		
587	592			60		14		
592	597			61		26		
597	602			58		35		
602	607			59		39		
607	612			60		9		
612	617			60		18		
617	622			59		24		
622	627			59		15		
627	632			59		20		
632	637			59		22		
637	642			59		8		

ROCK QUALITY DESIGNATION

HOLE NO.: D181 DATE: Dec 14/92 LOGGED BY: D. Pawlick & S. Oakley

FOOTAGE (FT) FROM	TO	INTERVAL INCHES	CUMULATIVE	RECOVERY INCHES	%	TOTAL CUM. PIECES ≥ 4"	RQD %	FRACTURE INTENSITY
642	647			46		4		
647	652			61		9		
652	657			60		17		
657	662			58		17		
662	667			58		16		
667	672			54		Ø		
672	677			60		Ø		
677	682			58		18		
682	687			59		16		
687	692			60		34		
692	697			61		15		
697	702			58		27		
702	707			60		28		
707	712			58		11		
712	717			57		36		
717	722			58		26		
722	727			59		22		
727	732			60		25		
732	737			55		4		
737	742			58		4		
742	747			60		9		
747	752			60		17		
752	757			59		19		
757	762			59		18		
762	767		?	67		25		
767	768		10'	18		Ø		
768	772			46		Ø		
772	777			55		27		
777	782			61		37		
782	787			60		49		
787	792			57		11		
797	797			59		5		

ROCK QUALITY DESIGNATION

HOLE NO.: D181 DATE: Dec. 15/92 LOGGED BY: S. Oakley & D. Pawlick

FOOTAGE (FT) FROM	TO	INTERVAL INCHES	CUMULATIVE	RECOVERY INCHES	%	TOTAL CUM. PIECES ≥ 4"	RQD %	FRACTURE INTENSITY
797	802			58		0		
802	807			59		20		
807	812			62		9		
812	817			61		6		
817	822			60		13		
822	827			61		22		
827	832			56		17		
832	837			61		4		
837	842			58		38		
842	847			60		43		
847	852			58		35		
852	857			60		39		
857	862			62		42		
862	867			58		33		
867	872			59		15		
872	877			59		20		
877	882			61		16		
882	887			62		40		
887	892			60		19		
892	897			62		28		
897	902			55		6		
902	907			61		26		
907	912			56		10		
912	917			60		16		
917	922			50		9		
922	927			61		39		
927	932			59		18		
932	937			44		4		
937	942			55		31		
942	947			61		35		
947	952			60		40		
952	957			61		33		

ROCK QUALITY DESIGNATION

HOLE NO.: D181 DATE: Dec 16/92 LOGGED BY: D. Pawlick & S. Oakley

FOOTAGE (FT) FROM	TO	INTERVAL INCHES	CUMULATIVE	RECOVERY INCHES	%	TOTAL CUM. PIECES ≥ 4"	RQD %	FRACTURE INTENSITY
957	962			60		29		
962	967			60		33		
967	972			61		13		
972	977			62		19		
977	982			55		20		
982	987			61		11		
987	992			60		21		
992	997			62		30		
997	1000			39		27		
Hole	continues		RQD to be completed.					

ROCK QUALITY DESIGNATION

HOLE NO.: D181 DATE: Jan. 5/93 LOGGED BY: S. Oakley

FOOTAGE (FT) FROM	TO	INTERVAL INCHES	CUMULATIVE	RECOVERY INCHES	%	TOTAL CUM. PIECES ≥ 4"	RQD %	FRACTURE INTENSITY
1000	1007	84		81		14		
1007	1017	120		120		36		
1017	1027			121		25		
1027	1037			117		ø		
1037	1047			122		32		
1047	1057			120		20		
1057	1067			115		11		
1067	1077			119		53		
1077	1087			118		58		
1087	1097			121		55		
1097	1107			122		46		
1107	1117			123		38		
1117	1127			123		54		
1127	1137			116		49		
1137	1147			122		39		
1147	1157			120		46		
1157	1167			125		34		
EOH								

CORE ORIENTATION

DATE: January 11, 1993 ORIENTED BY: D. PAWLIUK

HOLE: D 181 (~~continued~~) pg 1

nb: This form assumes that the reference angle=top of core (ie ref=0)

FOOTAGE	TYPE	T/B	ANGLE	DIP	THICK	INFILL	COMMENTS
211.4	FL	T	115	63	0.25	K, X, L	part of healed fault zone
2.5" thick containing abundant zeolite veinlets and fragments.							
236.7	FL	T	190	37	0.02	X	smooth fracture sfc.
240.1	FL	T	050	39	0.05	X, K	≈ " " " " in
centre of moderately fractured zone 5" wide.							
240.8	FL	B	230	52	0.08	X	≈ smooth fracture sfc.
241.6	FL	T	~310	80	0.7	X, P, K	~ orientation
310.7	FL	B	070	24	0.03	X, L	~ irregular fracture sfc.
362.0	FL	T	000	50	0.01	P	irreg. fracture sfc.
393.7	FL	T	115	36	0.03	X, K, L	~ smooth " "
395.8	FL	T	100	24	0.02	K, X, P	~ irreg. " "
396.4	FL	T	075	39	0.02	X, L	~ " " "
419.6	FL	T	065	64	0.02	X	irreg. " "
420.6	FL	B	225	34	0.6	L, f.bkn, X	smooth " " at
upper margin of fault zone filled mainly by finely bkn core.							
420.6 - 429.6			moderately fractured				
421.1	FL	T	245	74	0.05	L, X	~ irreg. fracture sfc.
424.2	FL	T	330	18	0.02	L, X	" " "
426.0	FL	T	265	61	0.01	X, K	~ " " "
426.8	FL	B	030	60	0.04	X	~ smooth " "
430.5	FL	B	220	33	0.03	X, K	~ " " " "
~~430.7~~	FL	T	305	30	0.15	f.bkn, X, L	~ " " " "
485.6	FL	T	085	27	0.08	L, X	~ " " " "
501.2	FL	B	030	25	0.1	L	~ " " " "
507.7	FL	B	100	44	0.02	L, X	~ " " " "
515.9	FL	B	080	38	0.03	L, X	~ irreg. " "
at bottom of 1" interval of healed fault w. abundant zeol. vlts, fragments							
516.1	FL	B	070	30	0.06	K, X, f.bkn	~ smooth fracture sfc.
522.5	FL	B	255	28	3.0"	f.bkn, L, X	~ " " " in
centre of 3" wide fault zone composed mainly of crushed, finely broken rock.							
524.1	FL	T	165	59	0.10	f.bkn, L, X	~ irregular fracture sfc. at
top of moderately to intensely fractured zone 18" wide.							
525.1	FL	B	027	51	0.03	L, X	irreg. fracture sfc
525.2	FL	T	200	44	0.02	X, P	~ smooth " "

CORE ORIENTATION

DATE: Jan. 11/93 ORIENTED BY: David Pawlink

HOLE: D181 (continued)

nb: This form assumes that the reference angle=top of core (ie ref=0)

FOOTAGE	TYPE	T/B	ANGLE	DIP	THICK	INFILL	COMMENTS
556.4	FL	T	285	24	0.02	L	~irregular fracture sfc.
564.1	FL	B	040	37	0.15	f.bkn, X, L	~smooth " "
565.0	FL	T	120	09	0.08	" , X	~ " " "
565.7	FL	T	105	21	0.04	X	irreg. " "
568.2	FL	T	000	15	0.02	X	smooth " "
568.5	FL	T	310	46	0.01	K	~ " " "
570.6	FL	T	305	41	0.07	K, X, L	~ " " "
571.2	FL	T	255	23	0.05	X, K	~ " " "
573.2	FL	B	025	17	0.05	L, X	~ irreg. " " in
centre of 2" wide fault zone with finely broken core.							
584.5	FL	T	290	17	0.02	L, X	~smooth fracture sfc.
585.8	FL	T	320	27	0.08	f.bkn, L, X	~ irreg " "
588.6	FL	T	330	27	0.5	f.bkn, L, X	~ smooth " " at
upper margin of fault zone with crushed, broken core about 3" wide							
~~574.0~~	~~FL~~	~~T~~					
600.4	FL	T	220	41	0.02	L, K	~irreg fracture sfc.
645.1	FL	B	265	13	0.02	L	~ smooth " " at
top of interval finely to moderately broken core about 35" wide; likely fault zone. Unsure if orientation measured is that of fault zone or underlying fracture.							
651.6	FL	T	080	20	0.02	L	~ irreg. fracture sfc.
652.7	FL	T	085	22	0.02	L	~ " " "
655.0	FL	B	305	34	0.1	f.bkn, L, X	~ smooth " "
656.0	FL	T	320	29	0.03	f.bkn, K	~ irreg. " "
658.5	FL	T	220	18	0.06	f.bkn, X, L	~ " " "
694.5	FL	T	320	13	0.03	P, L, X	~ smooth " "
693.7	FL	T	300	31	0.08	f.bkn, L, X	~ irreg. " "
730.4	FL	B	000	14	0.08	f.bkn, L	~ " " "
743.8	FL	T	280	26	0.2	f.bkn	~ smooth " "
749.2	FL	B	115	14	0.01	K	irreg. " "
752.3	FL	B	110	13	0.02	K, X	~ smooth " "
755.7	FL	T	045	10	0.02	X, K	irreg. " "
763.6	FL	T	015	33	0.02	P, L	" " "
778.6	FL	B	320	24	0.02	L	" " "
804.5	FL	B	135	16	0.05	P, X	~ " " "
823.6	FL	T	140	18	0.02	X	~ " " "
subparallel contact between volcanic and QFP							
850.2	FL	T	290	19	0.05	P, X	smooth " "
parallel and 0.5" below similar fault.							

CORE ORIENTATION

DATE: Jan. 11/93 ORIENTED BY: David Pawlink

HOLE: D 181 (continued)

nb: This form assumes that the reference angle=top of core (ie ref=0)

FOOTAGE	TYPE	T/B	ANGLE	DIP	THICK	INFILL	COMMENTS
856.2	FL	B	250	18	0.1	P, X	~ smooth fracture sfc.
893.4	FL	B	130	49	0.03	P, K	~ " " "
near upper margin of large fault zone							over ~ 15" core length.
Fault zone filled by crushed, finely broken core in a pyrite, chlorite, zeolite matrix.							
894.0	FL	T	170	09	0.3	P, f, bkn	along lower margin of
fault zone noted above; ~ smooth fracture sfc.							
894.5	FL	B	135	34	0.01	L, X	~ irreg. fracture sfc.
898.0	FL	T	185	40	0.9"	P, K, f, bkn	~ " " "
alternating pyrite bands with wispy bands or lenses of wallrock + chlorite.							
898.5	FL	B	315	54	0.03	P, L, K	~ irreg. fracture sfc.
along upper margin of 1" wide fault zone with crushed core and wispy irregular pyrite bands.							
903.6	FL	B	305	12	0.15	f, bkn, L, K	~ irreg. fracture sfc.
911.4	FL	T	235	20	0.10	f, bkn, K	~ " " "
913.6	FL	T	275	24	0.15	f, bkn, L	irreg. " "
914.6	FL	T	255	37	0.20	f, bkn, X	~ " " "
940.5	FL	B	355	18	0.3	f, bkn, L, X	~ " " "
951.9	FL	T	170	53	0.1	P, X	~ smooth " "
992.2	FL	T	290	37	0.02	P, L	irreg. " "
END OF GONIOMETER READINGS at 1000 ft depth; no core orientation done below 1000' in D 181.							
END OF HOLE at 1168 feet.							