

VICTORIA

OCCURRENCE

82-954-16687

9/92



Province of British Columbia

Ministry of Energy, Mines and Petroleum Resources

ASSESSMENT REPORT
TITLE PAGE AND SUMMARY

TYPE OF REPORT/SURVEY(S)	TOTAL COST
DRILLING	\$29,283.57

AUTHOR(S) J. A. FLEMING G. A. CLARKE SIGNATURE(S) *[Handwritten signatures]*

DATE STATEMENT OF EXPLORATION AND DEVELOPMENT FILED September 21, 1987 YEAR OF WORK 1986

PROPERTY NAME(S) BAY

COMMODITIES PRESENT Cu, Ag, Zn

S.C. MINERAL INVENTORY NUMBER(S), IF KNOWN 92L-

MINING DIVISION NANAIMO NTS 92L/12E

LATITUDE 50° 37' 44" LONGITUDE 127° 31' 10"

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)):

BAY 68

OWNER(S) (1) (2) UTAH MINES LTD.

MAILING ADDRESS Box 370 Port Hardy, B.C. VON 2P0

OPERATOR(S) (that is, Company paying for the work) (1) UTAH MINES LTD. (2)

MAILING ADDRESS BOX 370 PORT HARDY, B.C. VON 2P0

16,687

GEOLOGICAL BRANCH
ASSESSMENT REPORT

SUMMARY GEOLOGY (lithology, age, structure, alteration, mineralization, size, and attitude):
The area is underlain by the Upper Triassic - Lower Jurassic volcanic and sedimentary succession of the Vancouver and Bonanza Groups. Mid-Jurassic granodioritic stocks (Quatse Stock), and quartz-feldspar porphyry dykes cut the gently southwestward dipping succession. Copper and zinc mineralization was encountered in garnet skarn in the Quatsino Formation.

REFERENCES TO PREVIOUS WORK

LOG NO: 1229 RD.

ACTION:

FILE NO: 87-954-16687

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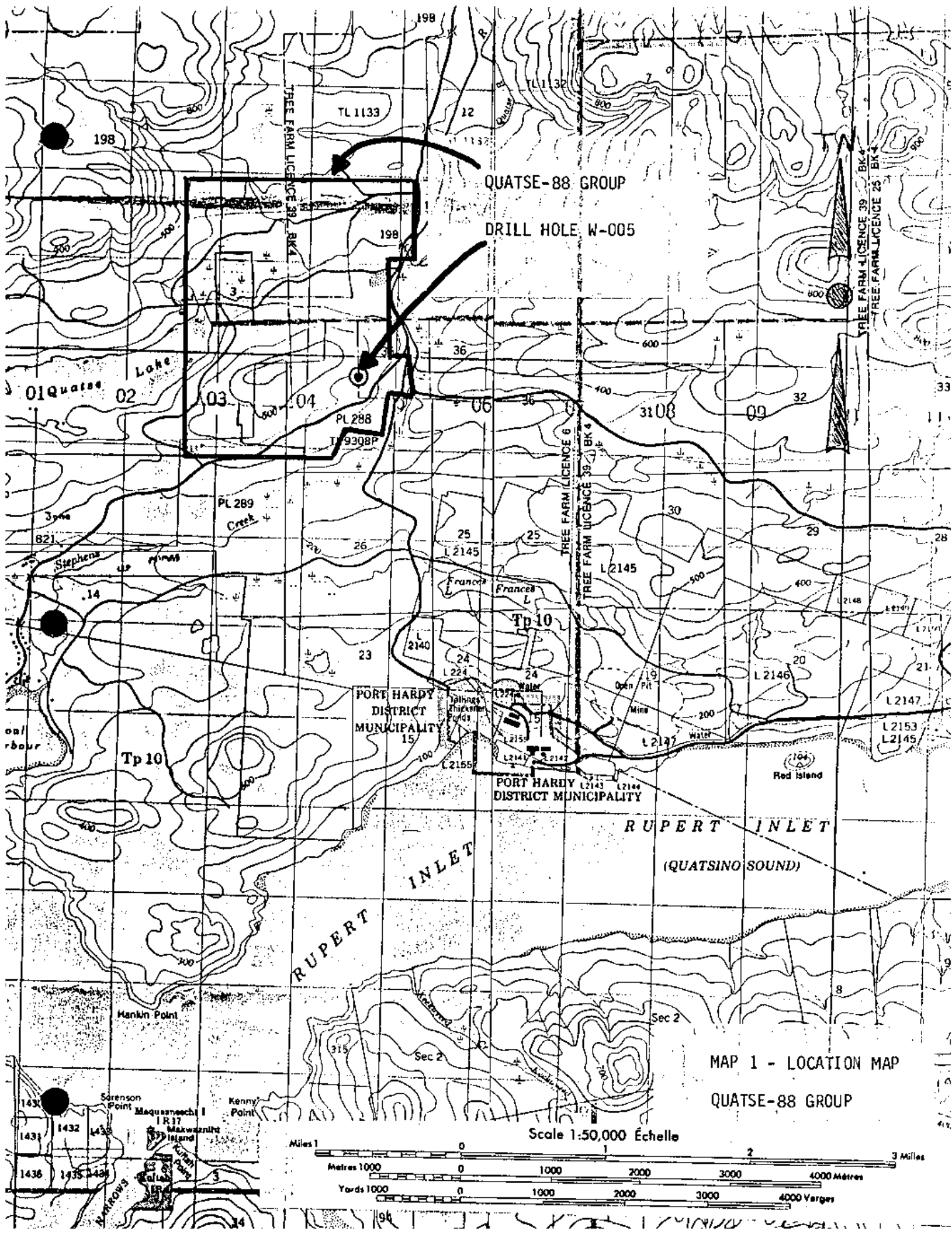
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QUATSE-88 GROUP

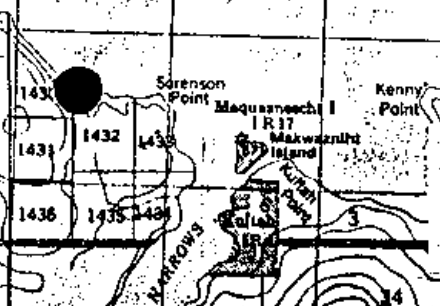
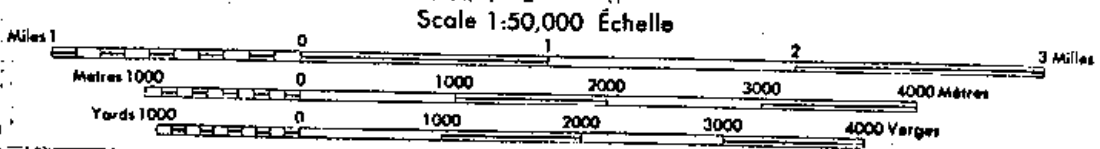
DRILL HOLE W-005

RUPERT INLET
(QUATSINO SOUND)

PORT HARDY
DISTRICT MUNICIPALITY
15

PORT HARDY
DISTRICT MUNICIPALITY

MAP 1 - LOCATION MAP
QUATSE-88 GROUP



1.0 INTRODUCTION

Between the 10th of December and 16th of December 1986, diamond drill hole W-5, previously drilled to 62 meters in 1983, was extended 306 meters to a total depth of 368 meters. This forms part of the mineral exploration program in the area in 1986.

2.0 LOCATION AND ACCESS

The survey area is located in the Nanaimo Mining Division with co-ordinates $50^{\circ} 37 \frac{1}{2}'N$ and $127^{\circ} 32'W$. It is located on the NTS map sheet 92L/12E and borders on claims contiguous with the BHP Utah Mines Ltd. mineral leases some 8 km south of Port Hardy. Access is provided part way by paved highway from Port Hardy and the remainder by logging roads suitable for two wheel drive vehicles.

3.0 PHYSIOGRAPHY

The area is in the coastal lowland of the Squash Basin forming part of the Nahwitti Lowlands of the Central Trough physiographic subdivision. The area is characterized by rounded, gently rolling hills with a maximum relief of about 125 meters. Quatse Lake lies immediately west of the claim group.

4.0 GEOLOGY

The Upper Triassic and Lower Jurassic sedimentary and volcanic succession of the Vancouver and Bonanza Groups respectively, and Jurassic Granodiorite and Quartz Diorite Stocks "Rupert" Stock underlie the area north of Holberg and Rupert Inlets. The succession strikes approximately west-northwest and dips gently southward becoming younger to the south. From south to north the formations are: (1) Bonanza Volcanics andesitic tuffs and flows underlain by (2) Parson Bay calcareous siltstone with interbedded shales and andesitic and cherty tuffs, and limestone with shaley interbeds underlain by (3) Quatsin limestone and (4) Karmutsen amygdaloidal basalt flows. The Quatse Stock underlies part of the claim group.

5.0 PREVIOUS WORK

Recent work by Utah has included mapping, Mag/VLF, I.P and geochem surveys, and diamond drilling.

6.0 OBJECTIVES

This hole was drilled to determine whether skarn alteration and copper and mineralization encountered previously in holes E-65, E-66 and E-69 increased down dip towards the projected porphyry intrusion to the south.

8.0 RESULTS (cont'd)

upper run of skarn is relatively un-mineralized and contains significant quartz veining. The lower run contains very significant copper mineralization with grades over 2% in 3 metre runs. Between the two massive garnet sections is a run of moderately chlorite altered tuffs with patchy garnet alteration. Minor moly and trace chalcopyrite mineralization is noted in this section.

Underlying the skarnified Quatsino formation from 288 - 368 metres are volcanics of the Karmutsen which are megascopically andesites with moderate to strong quartz and quartz/moly veining throughout. These rocks are moderately chlorite and sericite altered. The rocks are fine-grained with a porphyritic section from 305 - 320 metres. The moly in this section does not present an economic target.

9.0 DISCUSSION

The copper mineralization encountered in this hole confirms that copper bearing skarn exists in the Quatsino limestone in this area. The thicknesses of ore grade material encountered to-date are not of economic proportions, but indicate a reasonable potential for a porphyry related copper skarn deposit in the Quatsino.

10.0 RECOMMENDATIONS

Further drilling east and west along strike of the line of holes E-66 to W-5 is warranted to determine if there is any tonnage potential to the mineralization.

11.0 COST STATEMENT

DIAMOND DRILLING

CONTRACTOR COSTS

Diamond Drilling Contractor:

Rock:	1004 ft. @ \$19.50	\$19,996.65
Field Costs:		683.00
Supplies		585.44 *
Cost Reduction		(135.53)*
MOB/DEMOB		137.20 *
TOTAL CONTRACTOR COSTS		<u>\$21,266.76</u>

UTAH COSTS

Core Shack Labour:		\$ 1,750.00*
Supervision & Core Logging:		650.00*
Company Overhead @ 25% of Supervision & Labour:		700.00
Core Storage: 1004 feet		500.00
Truck Rental:		167.78*
Computer Rental:		150.00*
Assays: 110 samples x \$30/sample		3,300.00
12 samples x \$15/samples		219.03*
Report Preparation:		400.00
TOTAL UTAH COSTS		<u>\$ 8,016.81</u>

TOTAL DIAMOND DRILLING COSTS		
UNIT COST: \$95.70/METER		\$29,283.57

* Prorated at 9.8% of total 1986 footage

STATEMENT OF QUALIFICATIONS

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


J.A. FLEMING - CHIEF GEOLOGIST
ISLAND COPPER MINE, BHP - UTAH MINES LIMITED, PORT HARDY, B.C.

1. B.Sc. (Major Geology) 1971 from McGill University.
2. Employed as a geologist continuously since June, 1968, and presently Chief Geologist, Island Copper Mine, Utah Mines Limited.
3. Fellow of the Geological Association of Canada since 1974.



G.A. CLARKE - GEOLOGIST
ISLAND COPPER MINE, BHP - UTAH MINES LIMITED, PORT HARDY, B.C.

Completed B.Sc. (Honours), (Geophysics) at University of Manitoba, in 1976. Employed by Hudson Bay Oil & Gas, and Saskatchewan Dept. of Mineral Resources during the 1975 and 1976 summer field sessions as geophysical assistant,; from September 1975 to February 1977, Inco Limited, as a geologist in Thompson, Manitoba,; from February 1977 to May 1979, Lloyd Geophysics, as a geophysicist,; from October 1979 to present, Utah Mines Limited as a geologist/geophysicist, presently under supervision of J.A. Fleming.



G.A. Clarke

dated December 11, 1987.

GEOLOGICAL BRANCH
ASSESSMENT REPORT

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QL-1



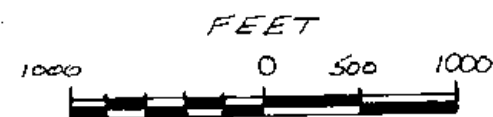
← QUATSE-88
GROUP

TO PORT HARDY

LOCATION MAP

HOLE W-005

SCALE: 1:12000

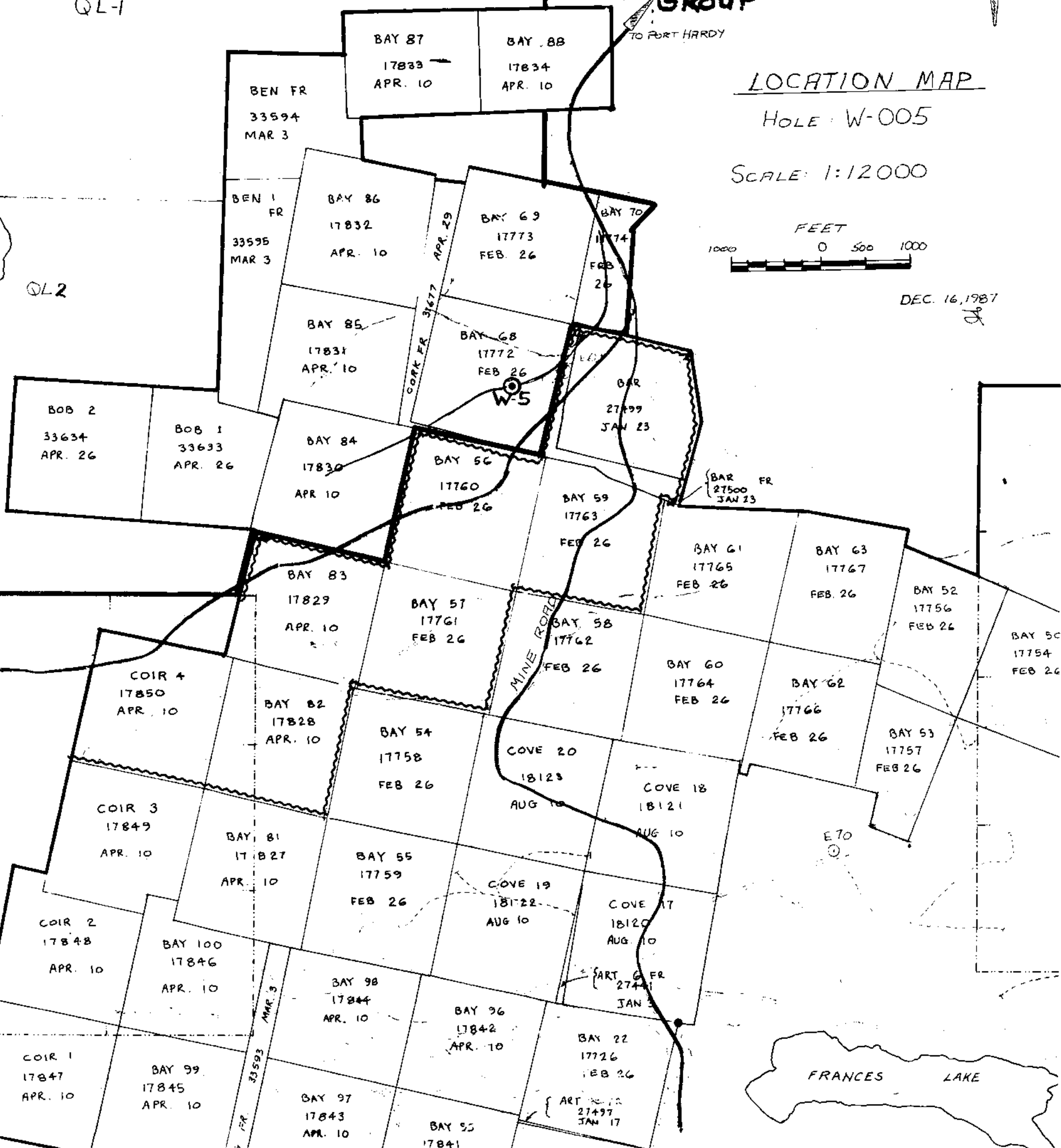


DEC. 16, 1987



QUATSE
LAKE

QL2



FRANCES LAKE

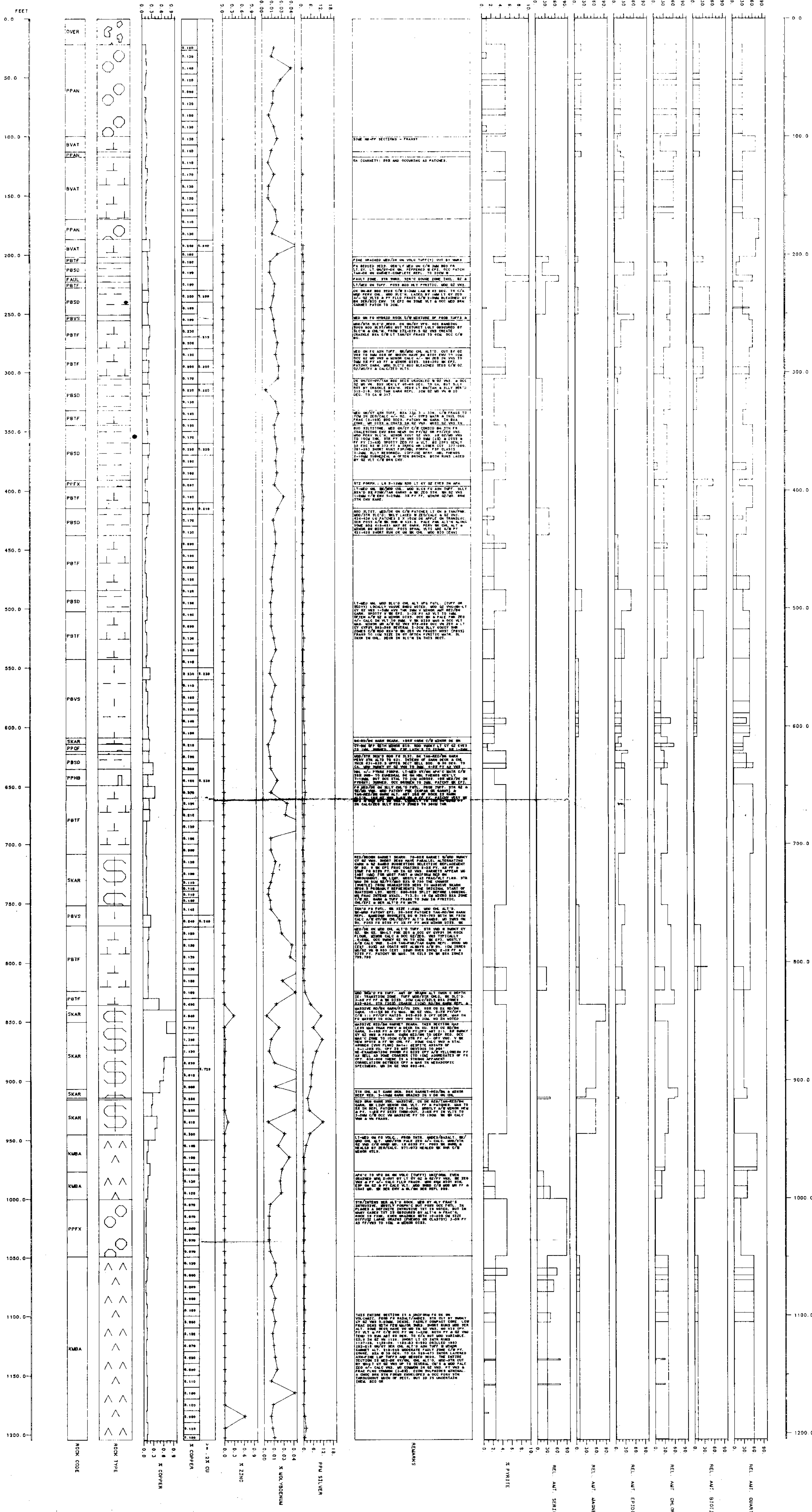
Utah Mines Ltd., Island Copper Mine
Exploration and Development Drilling
W_005 GRAPHIC LOG
PROJECT ID : ILC

GEOLOGICAL BRANCH
ASSESSMENT REPORT

16,687

HOLE / TRAVERSE ID : W_005
CORE HOLE SIZE : NQ
DATE STARTED : 86/12/10
DATE COMPLETED : 86/12/16
GEOLOGGED BY : GAC
PLOT DATE : 87/DEC/15
PROJECT LEADER : ISLAND COPPER
LOCATION : ISLAND COPPER

COLLAR AZIMUTH : 0.00
COLLAR DIP : -90.00
COLLAR ELEVATION : 1375.80
COLLAR NORTHING : 17889.50
COLLAR EASTING : 15601.50
COLLAR OFFSET :
COLLAR STATION :
TOTAL LENGTH : 1206.0



GEOLOG CODES

MARCH 1987

GEOLG Dictionary Table L1
GEOLOG ROCK CODES

ROCK CODE	ROCK DESCRIPTION	MINERAL CODE	ROCK DESCRIPTION	LAG CODE	FLAW DESCRIPTION
ALTD	altered rock	AP	clear field		clear field
APLT	APLITE DYKE	BI	BIOTITE	ALT	REMARK, ALTERATION
BRXX	BRECCIA: UNDIFFERENTIATED	CA	calcite	ASY	REMARK, ASSAY FILE REMARKS
BS/D	ANDESITE TO BASALT DIKE - POST	CB	CARBONATE	BSR	REMARK, BEDROCK SURFACE
BVAB	BONANZA ANDESITE BRECCIA - PRE	CL	CHLORITE	COL	REMARK, COLOUR
BVAF	BONANZA ANDESITE FLOW AND PORP	CP	chalcocopyrite	CON	REMARK, CONTACT
BVAG	BONANZA AGGLOMERATES	CY	CLAY	FRC	REMARK, FRACTURE ZONE
BVAN	BONANZA ANDESITE UNDIFF. - PRE	DU	DUMORTIERITE	HED	REMARK, HEADER; PRINTED AT TOP
BVAT	BONANZA ANDESITE TUFF - PRE MI	EN	ENARGITE (?)	LTH	REMARK, LITHOLOGY
CASN	CASINGS IN BED ROCK, NO CORE	EP	epidote/eld	MIN	REMARK, MINERAL (NON-SULPHIDE)
CRCG	CRETACEOUS CONGLOMERATE	FD	feldspatoids, general	MNZ	REMARK, MINERALIZATION
CRSD	CRETACEOUS SEDIMENTS - UNDIFF.	FL	FLUORITE	OVB	OVERBURDEN
FAUL	FAULT (BOBBE ZONE > 1 FT)	FX	FELDSPAR PHENOCRYST	PHO	REMARK, PHOTO TAKEN
INBX	INTRUSIVE BRECCIA - UNDIFF.	GA	GARNET	SAH	REMARK, SAMPLE TAKEN
ISDR	ISLAND INTRUSIVES DIORITE	GB	GOLGE	STK	CASING ABOVE GROUND
ISGD	ISLAND INTRUSIVES GRANODIORITE	GI	GILSONITE	STN	REMARK, SAMPLE STAINED
ISQD	ISLAND INTRUSIVES QUARTZ DIORI	GL	galena	STR	REMARK, STRUCTURE
ISQM	ISLAND INTRUSIVES QUARTZ MONZO	GR	graphite	SUM	REMARK, SUMMARY; PRINTED AT BO
KMBA	KARLUTSEN VOLCANICS - UNDIFF.	HB	HORNBLende	THN	REMARK, THIN SECTION
KMLS	KARLUTSEN LIMESTONE	HE	HEMATITE	TXT	REMARK, TEXTURE
MARB	MARBLE	IF	INTRUSIVE FRAGMENTS	VEN	REMARK, VEIN
MASS	MASSIVE SULPHIDES	LA	LAUMONTITE	XRD	REMARK, X-RAY DIFFRACTION
MATR	MATRIX DESCRIPTION	MG	MAGNETITE		
MISN	MISSING CORE (CORE NOT AVAILAB	MX	MAFIC PHENOCRYSTS		
OVER	OVERBURDEN	PP	PHYROPHILLITE		
PBLS	PARSONS BAY LIMESTONE	PX	PYROXENE	COLOR CODE	GEOLOG C-SCALE: COLOR
PBSD	PARSONS BAY SEDIMENTS	QF	QUARTZ FRAGMENT	A	GREY
PBTF	PARSONS BAY TUFF	QX	QUARTZ PHENOCRYSTS	B	BLUE
PBVS	PARSONS	QZ	QUARTZ	G	GREEN
PP/D	PORPHYRITIC BASALT	RF	ROCK FRAGMENT	N	BLACK
PPAN	BONANZA ANDESITE PORPHYRY DIKE	SP	sphalerite	O	ORANGE
PPDR	QUARTZ, DIORITE TO DIORITE POR	VF	VOLCANIC FRAGMENTS	P	PURPLE
PPFX	FELDSPAR PORPHYRY DYKE	X1	ENARGITE ?	R	RED OR PINK
PPGD	GRANODIORITE PORPHYRY DIKE - I	X2	UN ID	T	TAN
PPHB	HORNBLende PORPHYRY	X3	UN ID	U	BROWN
PPQF	QUARTZ-FELDSPAR PORPHYRY DIKE	X4	SOFT GRY GYPSUM(?)	W	WHITE
PPQM	QUARTZ MONZONITE PORPHYRY DIKE	X5	BRN CHLORITE(?)		
QALS	QUATZINO LIMESTONE	X6	BRN BIOTITE (?)	G-CODE	G-CODE DESCRIPTION
QTZV	QUARTZ VEIN	X7	SOFT BK HYDROCARB ?		
RSGD	RUPERT STOCK GRANODIORITE	X8	GRN CALC-SILICATE		
RSQM	RUPERT STOCK QUARTZ MONZONITE	ZE	ZEOHITE		
SAND	SAND (ASSOCIATED WITH FAULT)				
SKAR	SKARNIFIED/ALTERED				
SKTP	CASING ABOVE GROUND				
TUFF	TUFF - FORMATION UNSPECIFIED				
VEIN	vein				

SID CODE	SID DESCRIPTION
"	clear field
..	clear entry
<<	microveined - <
>>	macrovein - >
BD	BEDDING
BN	BANDING
BR	brecciated
C/	CONTACT
CN	contact
F/	FAULT
SH	SHEAR
SR	sheared
SW	STOCKWORK
V/	MISC. VEINS
VA	QUARTZ PYRITE VEIN
VB	QUARTZ CARBONATE
VC	VEIN, CLAY
VF	MAGNETITE VEIN(LET)
VH	CHALCOPYRITE VEIN
VL	CALCITE VEIN
VM	QUARTZ MOLY VEIN
VN	vein
VP	VEIN, PYRITE
VO	VEIN, QUARTZ
VT	QUARTZ MAGNETITE
VV	veined - 1mm to 10 cm
VY	VEIN, PYROPHYLITE
VZ	ZEOHITE VEIN

ROCK QUALITY	QUALITY DESCRIPTION
"	clear field
AG	agglomerate
AS	ash tuff
BN	banded
BR	brecciated
CU	copper bearing
LP	lapilli tuff
LT	lithic
TF	tuffaceous
VB	volcanic breccia
XE	xenolithic
XL	crystal tuff

TURE CODE	TEXTURE DESCRIPTION
..	SLICKENSIDES
O,	
<<	MICROVEINED
<H	subhedral
A*	AMYGDALOIDAL
AH	APHANITIC
AP	APLITIC
AR	ARGILLACEOUS
B/	vague bedding
BD	BEDDED
BN	BANDED
BR	BRECCIATED
CM	CHILLED MARGIN
CT	CLASTIC
EQ	EQUIGRANULAR
EU	EUHEDRAL
FR	FRAGMENTAL
G1	GRADED BEDDING
GB	GOUGED
KR	CRACKLED
LM	LAMINATED
LT	LITHIC TUFF
MX	MASSIVE
P/	vague phenocrysts
PB	porphyroblastic
PP	PORPHYRITIC
RA	ASYMMETRICAL
SH	SHEARED
SR	scoured
SU	SUBHEDRAL
SW	STOCKWORK
T/	TUFFACEOUS (VAGUE???)
UF	UNIFORM TEXTURED
UH	uhedral
V/	VEINED
VS	VUGGY
VV	VEINED

COLOR CODE	COLOR DESCRIPTION
A	GREY
B	BLUE
G	GREEN
N	BLACK
O	ORANGE
P	PURPLE
R	RED OR PINK
T	TAN
U	BROWN
W	WHITE

G-CODE	G-CODE DESCRIPTION
"	clear field
(.05 to <.2
)	.5 to < 2
0	.2 to <.5
+	2 to < 3
-	.02 to <.05
.	Trace = <.02
/	Present; Estima
0	Nil, Absent
1	7 to <15
2	15 to <25
3	25 to <35
4	35 to <45
5	45 to <55
6	55 to <65
7	65 to <75
8	75 to <85
9	85 to 99
=	5%
?	Possibly Presen
X	Essentially 100

HOW CODE	HOW DESCRIPTION
"	CLEAR FIELD
0	Fresh, primary rock
1	A, minor > and/or scat. C
2	Macroveins and Veins
3	Veins, Spots or Patches
4	Veins, and/or occas. Enve
5	Veins, and/or abundant En
6	P or D LESS THAN <, S, an
7	P or D EQUAL TO <, S, and
8	P or D GREATER THAN <, S
9	P or D, V, <, S and E
<	Microveins, fracture fill
>	Macroveins
C	Coatings & encrustations
D	Disseminations, scat. cry
E	Envelopes
N	REPLACED PHENOCRYSTS
K	Stockwork
L	LAMINATIONS/BEDDING
P	Pervasive
Q	Patches, as in quilts
R	ROSETTES & CRYSTAL CLUSTERS
S	Selvages
T	STAININGS, AS IN TARNISH
U	EUMEDIAL CRYSTALS
V	Veins
X	K and/or S, M and/or L
Z	MASSIVE, LAMINATED/BEDDED

FRACTURE CODE	FRACTURE DESCRIPTION	GEOLOG F-SCALE
"	clear field	
0	Unfractured	
1	Slightly fractured	
2	Very lightly fracture	
3	lightly fractured	
4	10 Fairly lightly fract	
5	15 Moderately fractured	
6	21 Fairly well fracture	
7	28 Well fractured	
8	36 very well fractured	
9	43 Extremely well fract	
X	55+ Shattered	

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

16,687

ROCK QUALITY DESIGNATION (R.Q.D.)

HOLE #: W-5

DATE: JULY 22/83

LOGGED BY: GARRY P.

FOOTAGES (FT)		INTERVAL		CORE	%	CUMUL. LENGTH OF PIECES (INCHES)			R. Q. D.			# of	FRAC.
FROM	TO	INCHES	CUM. INCHES	REC. ² (IN)	REC. %	>2"	74"	28"	2"	4"	8"	FRACT.?	INTERVAL
0	22	264	264	0	0	-	-	-	-	-	-	-	-
22	27	60	324	60	100	39			65			20	4.0
27	34.5	90	414	83	92	29			32			34	4.9
34.5	45	126	540	120	100	110			87			20	1.9
45	52	84	624	84	100	80			95			12	1.7
52	57	60	684	60	100	55			92			6	1.2
57	67	120	804	120	100	82			68			33	3.3
67	77	120	924	120	100	78			65			37	3.7
77	87	120	1044	120	100	93			78			21	2.1
87	97	120	1164	120	100	92			77			18	1.8
97	107	120	1284	120	100	96			80			18	1.8
107	117	120	1404	120	100	97			81			17	1.7
117	127	120	1524	120	100	93			78			20	2.0
127	137	120	1644	120	100	61			51			27	2.7
137	147	120	1764	120	100	104			87			15	1.5
147	157	120	1884	120	100	117			98			12	1.2
157	167	120	2004	120	100	96			80			20	2.0
167	177	120	2124	120	100	96			80			16	1.6
177	187	120	2244	120	100	118			98			13	1.3
187	197	120	2364	120	100	93			78			19	1.9
197	202	60	2424	60	100	50			83			9	1.8

ROCK QUALITY DESIGNATION (R.Q.D.)

HOLE # : W-5

DATE : DEC 17/86

LOGGED BY : MB

TOTAL DEPTH (FT)		INTERVAL		CORE REC. (IN)	% REC.	NORMAL LOSS OF PIECES (INCHES)	L. LOSS OF PIECES (INCHES)	R. Q. D.		# OF PIECES	FAC. INCHES
FROM	TO	INCHES	CUM. INCHES					4"	4"		
200	202	24	24	14	58		0		0		
202	212	120	144	126	105		68		57		
212	222	120	264	120	100		58		48		
222	223	12	276	14	117		11		92		
223	233	120	396	120	100		64		53		
233	243 1/2	126	522	122	97		55		44		
243 1/2	254	126	648	119	94		67		53		
254	264	120	768	120	100		76		63		
264	274	120	888	118	98		64		53		
274	284	120	1008	120	100		78		65		
284	294	120	1128	120	100		77		64		
294	304	120	1248	122	102		119		99		
304	314	120	1368	120	100		106		88		
314	324	120	1488	117	97.5		103		86		
324	334	120	1608	118	98		98		82		
334	344	120	1728	125	104		115		96		
344	354	120	1848	114	95		103		86		
354	364	120	1968	115	96		80		67		
364	374 1/2	126	2094	116	92		89		71		
374 1/2	384 1/2	120	2214	124	103		109		91		
384 1/2	386 1/2	24	2238	18	75		4		17		
386 1/2	396	114	2352	111	97		94		82		
396	406	120	2472	122	102		86		72		
406	416	120	2592	123	102.5		95		79		
416	426	120	2712	122	102		94		78		
426	436	120	2832	120	100		77		64		
436	446	120	2952	120	100		85		71		
446	456	120	3072	126	105		111		92.5		
456	462 1/2	78	3150	68	87		42		54		
462 1/2	466 1/2	48	3198	58	121		24		50		
466 1/2	476	114	3312	112	98		83		73		
476	486	120	3432	113	94		75		62.5		
486	496	120	3552	120	100		72		60		
496	506	120	3672	117	97.5		104		87		
506	516	120	3792	124	103		65		52		

ROCK QUALITY DESIGNATION (R.Q.D.)

HOLE # : W-5

DATE : Dec 17/86

LOGGED BY : MB

FOOTAGES (FT)		INTERVAL		CORC REC. #/IN	% REC.	ANNUAL LENGTH OF PIECES (INCHES)	R. Q. D.		# of PIECES	FR. IN.
FROM	TO	INCHES	COIN INCHES				4"	4"		
516	526	120	3912	118	98	100				83
526	536	120	4032	121	101	105				87.5
536	546	120	4152	120	100	85				71
546	556	120	4272	120	100	84				70
556	566	120	4392	117	97.5	85				71
566	576	120	4512	123	102.5	106				88
576	586	120	4632	116	97	89				74
586	596	120	4752	122	102	96				80
596	606	120	4872	120	100	107				89
606	616	120	4992	111	92.5	70				58
616	626	120	5112	122	102	75				62.5
626	636	120	5232	120	100	66				55
636	642	72	5304	69	96	45				62.5
642	652	120	5424	118	98	77				64
652	662	120	5544	120	100	72				60
662	673½	138	5682	135	98	90				65
673½	683½	120	5802	103	86	48				40
683½	693	114	5916	119	104	74				65
693	694½	18	5934	20	111	11½				64
694½	704	114	6048	114	100	50				44
704	714	120	6168	106	88	40				33
714	724	120	6288	125	104	103				86
724	734½	126	6414	118	94	53				42
734½	745	126	6540	118	94	57				45
745	755	120	6660	120	100	14				12
755	765½	126	6786	112	89	78				62
765½	775½	120	6906	122	102	63				52.5
775½	785½	120	7026	124	89	74				62
785½	794	102	7128	100	98	71				70
794	804	120	7248	120	100	81				67.5
804	814	120	7368	120	100	78				65
814	824	120	7488	119	99	75				62.5
824	834	120	7608	115	96	73				61
834	843	108	7716	100	93	58				54
843	852	108	7824	108	100	87				81

ROCK QUALITY DESIGNATION (R.Q.D.)

HOLE # : W-5

DATE : DEC 17/86

LOGGED BY : MB

Footings (FT)		INTERVAL		CORE REC. %	% REC.	NO. OF PIECES (FRAGS)	R. Q. D.		# of FRAGS	FRAG SIZE
FROM	TO	INCHES	CUM. INCHES				4"	4'		
852	861	108	7932	110	102	56		52		
861	871	120	8052	102	85	45		37.5		
871	880	108	8160	115	106	85		79		
880	889	108	8268	110	102	81		75		
889	899	120	8388	109	91	83		69		
899	906	84	8472	94	112	84		100		
906	914	96	8568	82	85	73		76		
914	919	60	8628	60	100	28		47		
919	926	84	8712	90	107	67		80		
926	936	120	8832	117	97.5	97		81		
936	946	120	8952	118	98	98		82		
946	956	120	9072	120	100	62		52		
956	966	120	9192	114	95	55		46		
966	976	120	9312	120	100	63		52.5		
976	980	48	9360	46	96	8		17		
980	988 1/2	102	9462	99	97	54		53		
988 1/2	996	90	9552	92	102	48		53		
996	1002	72	9624	68	94	22		30.5		
1002	1012	120	9744	120	100	0		0		
1012	1022	120	9864	130	108	11		9		
1022	1026	48	9912	46	96	0		0		
1026	1036	120	10,032	126	105	29		24		
1036	1046	120	10,152	118	98	48		40		
1046	1056	120	10,272	120	100	57		47.5		
1056	1066	120	10,392	118	98	88		73		
1066	1076	120	10,512	123	102.5	26		22		
1076	1086	120	10,632	102	85	55		46		
1086	1096	120	10,752	126	105	48		40		
1096	1106	120	10,872	126	100	44		37		
1106	1116	120	10,992	120	100	91		76		
1116	1126	120	11,112	120	100	92		77		
1126	1136	120	11,232	120	100	69		57.5		
1136	1146	120	11,352	120	100	48		40		
1146	1156	120	11,472	120	100	98		82		
1156	1166	120	11,592	120	100	95		79		

MAGNETITE SUSCEPTIBILITY
ROCK QUALITY DESIGNATION (R.Q.D.)

HOLE # : W-5

DATE :

LOGGED BY : G.P.

FT.	READING	FT.	R	FT.	R	CORRECTIONS		FT.	R	FT.	R	FT.	R
						72"	74"						
TOOTHES (FT)	TO	INTERVAL	INCHES	CORE	%	72"	74"	78"	72"	74"	78"	72"	74"
LOG	TO	INCHES	INCHES	REG. (in)	REG.	72"	74"	78"	72"	74"	78"	72"	74"
42	0	77	.3	112	1	147	.1	182	.1	31	0		
43	0	78	.2	113	✓	148	.1	183	0	32	0		
44	0	79	.3	114	.1	149	0	184	0	33	0		
45	0	80	.1	115	.1	150	0	185	0	34	0		
46	.1	81	.8	116	.1	151	.1	186	0	35	0		
47	0	82	.1	117	.1	152	.1	187	0	36	0		
48	.1	83	.4	118	.1	153	0	188	0	37	0		
49	.1	84	.4	119	.1	154	0	189	0	38	0		
50	.1	85	.6	120	.2	155	0	190	.2	39	0		
51	.3	86	0	121	.1	156	0	191	.1	40	0		
52	.1	87	.1	122	.1	157	0	192	0	41	0		
53	.1	88	.1	123	.1	158	0	193	.1				
54	.1	89	.1	124	.2	159	0	194	.1				
55	.1	90	0	125	.1	160	0	195	.1				
56	.1	91	0	126	0	161	0	196	0				
57	.1	92	0	127	0	162	0	197	0				
58	.1	93	0	128	0	163	0	198	2.1				
59	0	94	0	129	.1	164	0	199	0				
60	0	95	0	130	.1	165	0	200	0				
61	.2	96	0	131	0	166	0	201	0				
62	.1	97	0	132	.1	167	0	202	0				
63	0	98	0	133	.1	168	.1						
64	.1	99	0	134	.1	169	0						
65	0	100	0	135	.1	170	.1						
66	0	101	0	136	.1	171	0						
67	0	102	0	137	.1	172	0						
68	.2	103		138	.1	173	0						
69	.4	104		139	.1	174	.3	23	.1				
70	.9	105		140	0	175	0	24	.2				
71	.1	106		141	0	176	0	25	.2				
72	.6	107		142	0	177	0	26	.1				
73	.1	108		143	0	178	0	27	0				
74	.2	109		144	0	179	0	28	0				
75	.3	110		145	.1	180	.1	29	.1				
76	.2	111		146	0	181	.1	30	.1				

MAGNETIC SUSCEPTIBILITY

HOLE: W-5

INTERVAL START	+ 2'	+ 4'	+ 6'	+ 8'	INTERVAL AVERAGE (G.S. UNITS)
0 - 10					
- 20					
- 30					
- 40					
- 50					
- 60					
70					
80					
90					
100					
110					
120					
130					
140					
150					
160					
170					
180					
190 START					
200 -	.02	.00	.01	.08	.03
210 .03	.01	.04	.05	.01	.03
220 .01	.00	.03	.03	.04	.02
230 .17	.12	.03	.10	.11	.53
240 .33	.11	.03	.08	.12	.13
250 .08	.02	.05	.06	.04	.05
260 .12	.08	.08	.10	.12	.10
270 .10	.64	.05	.03	.02	.17
280 .00	.00	.01	.04	.00	.01
290 .08	.04	.00	.04	.00	.03
300 .02	.02	.04	.05	.16	.06
310 .18	.00	.15	.13	.26	.12
320 .17	.00	.00	.07	.01	.05
330 .00	.00	.00	.00	.00	.00
340 .02	.03	.00	.05	.22	.06
350 .07	.02	.22	.43	.38	.22
360 .35	.46	.14	.34	.26	.31
370 .59	.07	.01	.02	.06	.14

MAGNETIC SUSCEPTIBILITY

HOLE: W-5

INTERVAL START	+ 2'	+ 4'	+ 6'	+ 8'	INTERVAL AVERAGE (G.S. UNITS)
380-.00	.00	.00	.04	.37	.08
390-.00	.01	.04	.00	.01	.01
400-.02	.06	.01	.04	.01	.03
410-.15	.16	.09	.04	.15	.12
420-.39	.07	.01	.22	.08	.15
430-.10	.23	.00	.31	.03	.13
440-.02	.00	.00	.00	.00	.00
450-.00	.19	.27	.02	.00	.10
460-.00	.00	.00	.00	.00	.00
470-.00	.00	.00	.00	.04	.01
480-.01	.48	.02	.44	.25	.24
490-.01	1.2	.00	.02	.00	.25
500-.00	.00	.00	.22	.00	.04
510-.03	.00	.00	.00	.09	.02
520-.06	.00	.10	.36	.29	.16
530-.46	.48	.03	.02	.00	.20
540-.00	.00	.00	.01	.02	.01
550-.01	.04	.38	.20	.11	.15
560-.01	.07	.00	.01	.00	.02
570-.00	.37	.05	.11	.26	.16
580-.07	.01	.01	.00	.06	.03
590-.10	.00	.00	.00	.00	.02
600-.00	.02	.00	.00	.03	.01
610-.06	.07	.02	.01	.00	.03
620-.00	.03	.07	.02	.05	.03
630-.39	.09	.03	.00	.02	.11
640-.02	.01	.11	.06	.07	.05
650-.36	1.1	.01	.07	.01	.31
660-.78	.02	.03	.03	.24	.22
670-.04	.59	.00	.02	.04	.14
680-.02	.03	.04	9.9	.06	2.01
690-.13	.01	.90	.03	.19	.25
700-.29	.01	.06	.00	.06	.02
710-.01	.00	.02	.04	.06	.0
720-.06	.07	.03	.00	.00	.03
730-.16	.09	.02	.06	.00	.07
740-.04	.00	.10	.10	.11	.23

MAGNETIC SUSCEPTIBILITY

HOLE: W-5

INTERVAL START	+ 2'	+ 4'	+ 6'	+ 8'	INTERVAL AVERAGE (SEE UNITS)
750 .81	.72	.41	.16	.55	.53
760 .28	.29	.48	.01	.90	.39
770 .45	.04	.02	.15	.05	.14
780 .11	.21	.50	.22	.02	.21
790 .02	.08	.00	.04	.00	.02
800 .01	.00	.00	.11	.04	.23
810 .10	.07	.06	.02	.06	.06
820 .04	.04	.21	.21	.10	.30
830 .86	.04	.03	.11	.56	.52
840 14.	.32	.38	.20	.30	26.8
850 54	.29	.07	.10	.15	1.2
860 .09	.07	.39	.14	.08	.15
870 3.5	2.0	.03	.18	.41	1.22
880 .16	.02	.03	.06	.80	.21
890 3.7	3.8	1.0	9.1	.15	3.55
900 .33	1.0	.95	5.5	.13	4.16
910 2.3	.55	.23	.64	.78	9.9
920 .13	.14	.20	6.6	H.H. > 100	21.4
930 10	11	31	H.H. > 100	3.8	31
940 2.1	4.6	5.7	1.1	.16	2.73
950 .00	.03	.14	.06	.05	.06
960 .02	.18	.00	.00	.01	.04
970 .50	.19	.02	.00	.02	.14
980 .03	.15	.16	.39	.36	.22
990 .27	.05	.18	.24	.42	.23
1000 .01	.00	.00	.01	.04	.01
1010 .03	.16	.03	.00	.01	.05
1020 .01	.00	.01	.02	.00	.01
1030 .05	.00	.00	.00	.00	.01
1040 .00	.00	.00	.00	.00	.00
1050 .08	.07	.00	.16	.57	.18
1060 .08	.28	.20	.40	.19	.23
1070 .00	.00	.00	.03	.04	.01
1080 .04	.01	.00	.01	.00	.01
1090 .14	.00	.00	.01	.04	.04
1100 .04	.21	.00	.00	.04	.07

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

16,687

B7/12/15

DRILL HOLE M_005
ASSAY REPORT
DRILL CORE ASSAYS

PAGE: 1

FROM	TO	CU %	MO %	FE %	AU PPM	AG PPM	PB %	ZN %
22.00	27.00	0.120	0.0180					
27.00	37.00	0.130	0.0140					
37.00	47.00	0.140	0.0440		0.020	0.640	0.002	-0.010
47.00	57.00	0.120	0.0280					
57.00	67.00	0.090	0.0170					
67.00	77.00	0.130	0.0160					
77.00	87.00	0.100	0.0100		0.030	0.480	0.004	-0.010
87.00	97.00	0.130	0.0180					
97.00	107.00	0.150	0.0230		0.030	0.640	0.003	0.010
107.00	117.00	0.140	0.0140					
117.00	127.00	0.110	0.0090					
127.00	137.00	0.170	0.0180		0.030	0.870	0.005	0.010
137.00	147.00	0.130	0.0100					
147.00	157.00	0.120	0.0090					
157.00	167.00	0.110	0.0200		0.040	0.720	0.003	0.010
167.00	177.00	0.110	0.0230					
177.00	187.00	0.130	0.0150					
187.00	197.00	0.240	0.0520		0.040	1.000	0.004	0.010
197.00	202.00	0.160	0.0230		0.030	0.780	0.003	0.010
202.00	210.00	0.180	0.0120	5.70	-0.010	1.250	0.002	0.004
210.00	220.00	0.190	0.0110	8.10	0.020	1.030	0.003	0.012
220.00	230.00	0.190	0.0190	6.50	0.020	0.980	0.003	0.009
230.00	240.00	0.200	0.0170	5.40	0.020	0.770	0.002	0.005
240.00	250.00	0.160	0.0130	5.60	0.020	1.200	0.002	0.004
250.00	260.00	0.190	0.0170	7.10	0.020	1.200	0.003	0.007
260.00	270.00	0.230	0.0190	6.10	0.020	1.110	0.004	0.006
270.00	280.00	0.200	0.0230	5.10	0.010	0.690	0.003	0.002
280.00	290.00	0.130	0.0200	5.10	-0.010	0.760	0.001	0.003
290.00	300.00	0.200	0.0250	5.30	0.020	1.030	0.004	0.003
300.00	310.00	0.170	0.0240	5.30	0.010	0.700	0.002	0.003
310.00	320.00	0.220	0.0050	6.40	0.010	0.070	0.004	0.002
320.00	330.00	0.130	0.0200	4.30	-0.010	0.810	0.002	0.003
330.00	340.00	0.140	0.0240	4.30	0.010	0.050	0.002	0.004
340.00	350.00	0.150	0.0180	4.20	0.010	0.150	0.005	0.005
350.00	360.00	0.170	0.0190	4.00	0.010	0.730	0.002	0.003
360.00	370.00	0.220	0.0220	5.00	-0.010	1.180	0.001	0.004
370.00	380.00	0.180	0.0200	4.20	0.010	0.390	0.002	0.004
380.00	390.00	0.160	0.0220	3.90	0.020	0.410	0.002	0.003
390.00	400.00	0.090	0.0180	3.80	0.010	0.010	0.002	0.003
400.00	410.00	0.160	0.0320	4.10	0.010	1.060	0.022	0.004
410.00	420.00	0.210	0.0230	4.50	0.030	0.550	0.002	0.005
420.00	430.00	0.170	0.0160	3.80	-0.010	0.630	0.003	0.008
430.00	440.00	0.130	0.0190	4.10	0.010	0.440	0.003	0.004
440.00	450.00	0.090	0.0200	4.70	0.010	0.290	0.001	0.003
450.00	460.00	0.100	0.0180	4.10	0.010	0.470	0.003	0.004
460.00	470.00	0.080	0.0150	5.00	0.010	0.160		
470.00	480.00	0.120	0.0130	4.30	0.010	0.540	0.003	0.004

FROM	TO	CU %	MO %	FE %	AU PPM	AG PPM	PB %	ZN %
480.00	490.00	0.120	0.0150	9.60	-0.010	0.960	0.003	0.015
490.00	500.00	0.150	0.0120	8.60	0.010	0.620	0.002	0.011
500.00	510.00	0.140	0.0130	7.20	0.010	0.610	0.006	0.006
510.00	520.00	0.090	0.0130	5.10	0.010	0.350	0.009	0.019
520.00	530.00	0.130	0.0170	4.90	-0.010	1.160	0.001	0.004
530.00	540.00	0.140	0.0200	4.60	0.010	0.700	0.002	0.007
540.00	550.00	0.110	0.0130	4.40	0.010	0.510	0.002	0.007
550.00	560.00	0.230	0.0110	5.20	0.010	1.060	0.002	0.006
560.00	570.00	0.110	0.0190	3.40	-0.010	1.000	0.001	0.006
570.00	580.00	0.160	0.0140	4.60	0.010	0.780	0.002	0.006
580.00	590.00	0.150	0.0130	4.40	0.010	1.020	0.003	0.007
590.00	600.00	0.140	0.0190	4.20	-0.010	1.010	0.003	0.011
600.00	610.00	0.180	0.0160	4.00	-0.010	1.490	0.002	0.008
610.00	620.00	0.210	0.0080	10.00	0.010	1.690	0.004	0.014
620.00	630.00	0.190	0.0110	8.90	0.020	1.530	0.004	0.012
630.00	640.00	0.320	0.0120	8.10	0.010	1.720	0.004	0.018
640.00	650.00	0.160	0.0220	4.20	-0.010	1.350	0.001	0.005
650.00	660.00	0.370	0.0120	6.50	0.030	1.800	0.003	0.016
660.00	670.00	0.190	0.0370	5.70	0.020	1.170	0.003	0.011
670.00	680.00	0.210	0.0340	4.70	0.020	1.010	0.004	0.009
680.00	690.00	0.120	0.0740	4.10	-0.010	1.050	0.003	0.010
690.00	700.00	0.100	0.0120	4.90	-0.010	0.910	0.001	0.006
700.00	710.00	0.090	0.0120	6.00	-0.010	0.470	0.002	0.007
710.00	720.00	0.120	0.0190	6.60	-0.010	0.990	0.002	0.011
720.00	730.00	0.100	0.0150	10.00	0.010	0.970	0.003	0.011
730.00	735.00	0.110	0.0120	10.20	0.050	0.860	0.005	0.022
735.00	740.00	0.110	0.0090	10.30	-0.010	0.710	0.004	0.011
740.00	745.00	0.110	0.0080	10.90	-0.010	0.900	0.005	0.012
745.00	750.00	0.140	0.0110	12.60	0.030	0.940	0.005	0.021
750.00	760.00	0.140	0.0120	9.00	-0.010	0.970	0.004	0.014
760.00	770.00	0.240	0.0250	4.40	-0.010	1.480	0.002	0.010
770.00	780.00	0.180	0.0280	3.30	-0.010	1.130	0.002	0.005
780.00	790.00	0.150	0.0440	3.90	-0.010	1.430	0.002	0.005
790.00	800.00	0.170	0.0410	4.30	-0.010	1.120	0.002	0.010
800.00	810.00	0.150	0.0640	4.00	-0.010	0.740	0.001	0.004
810.00	820.00	0.150	0.0290	5.10	-0.010	0.870	0.001	0.002
820.00	830.00	0.160	0.0490	5.80	0.010	1.520	0.003	0.006
830.00	840.00	0.490	0.0200		-0.065	4.840	-0.010	0.020
840.00	850.00	2.040	0.0050		-0.065	11.300	-0.010	0.310
850.00	860.00	0.710	0.0240		-0.065	6.450	-0.010	0.020
860.00	870.00	1.350	0.0120		-0.065	11.950	-0.010	0.040
870.00	880.00	1.130	0.0090		-0.065	8.390	-0.010	0.040
880.00	890.00	0.630	0.0170		-0.065	6.130	-0.010	0.020
890.00	900.00	0.610	0.0650		-0.065	5.160	-0.010	0.020
900.00	910.00	0.500	0.0180		-0.065	4.840	-0.010	0.020
910.00	920.00	0.280	0.0840		-0.065	2.910	-0.010	0.010
920.00	930.00	0.250	0.0470		-0.065	3.870	-0.010	0.020

FROM	TO	CU %	MO %	FE %	AU PPM	AG PPM	PB %	ZN %
930.00	940.00	0.410	0.0070		-0.065	12.270	0.160	0.120
940.00	950.00	0.350	0.0320		-0.065	4.200	-0.010	0.010
950.00	960.00	0.140	0.0220	5.10	-0.010	1.870	0.006	0.023
960.00	970.00	0.100	0.0390	4.10	-0.010	0.510	0.001	0.004
970.00	980.00	0.190	0.0280	5.00	-0.010	0.880	0.003	0.007
980.00	990.00	0.130	0.0250	6.40	-0.010	0.900	0.002	0.007
990.00	1000.00	0.120	0.0270	6.20	0.020	0.820	0.002	0.006
1000.00	1010.00	0.070	0.0100	3.40	-0.010	0.120	0.001	0.003
1010.00	1020.00	0.070	0.0080	5.40	-0.010	0.640	0.003	0.005
1020.00	1030.00	0.060	0.0080	5.40	0.010	0.600	0.003	0.002
1030.00	1040.00	0.070	0.0080	3.70	-0.010	0.530	0.002	0.002
1040.00	1050.00	0.070	0.0100	3.80	-0.010	0.130	0.001	0.002
1050.00	1060.00	0.120	0.0170	6.00	0.010	0.790	0.003	0.015
1060.00	1070.00	0.090	0.0190	7.80	0.010	0.770	0.004	0.009
1070.00	1080.00	0.060	0.0110	6.90	0.010	0.680	0.003	0.005
1080.00	1090.00	0.080	0.0170	6.20	-0.010	0.410	0.001	0.004
1090.00	1100.00	0.100	0.0130	5.90	0.010	0.750	0.003	0.014
1100.00	1110.00	0.080	0.0170	5.50	-0.010	0.700	0.002	0.005
1110.00	1120.00	0.100	0.0130	6.50	0.010	0.400	0.003	0.005
1120.00	1130.00	0.070	0.0150	5.90	-0.010	0.380	0.001	0.003
1130.00	1140.00	0.080	0.0170	5.00	-0.010	0.400	0.002	0.004
1140.00	1150.00	0.090	0.0200	6.80	-0.010	0.320	0.003	0.007
1150.00	1160.00	0.110	0.0110	5.70	0.040	0.640	0.003	0.009
1160.00	1170.00	0.100	0.0470	6.00	-0.010	0.420	0.001	0.004
1170.00	1180.00	0.100	0.0140	6.70	0.040	0.030	0.003	0.007
1180.00	1190.00	0.080	0.0110	5.50	0.010	0.710	0.002	0.620
1190.00	1200.00	0.120	0.0130	6.00	0.010	1.540	0.001	0.016
1200.00	1206.00	0.100	0.0160	6.20	0.010	0.700	0.001	0.010

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

16,687

Utah Mines Ltd., Island Copper Mine
ILC

DRILLHOLE/TRVERSE : W_005

PROJECT IDEN : ILC
COLLAR NORTHING: 17889.50

START DATE : 86/12/10
COLLAR EASTING : 15601.50
TOTAL LENGTH : 1206.00

COMPLETION DATE : 86/12/16
COLLAR ELEVATION: 1375.80
CORE/HOLE SIZE : NQ

GEOLOGGED BY : GAC + JAF
GRID AZIMUTH : 0.00

SURVEY FLAG	SURVEY POINT LOCATION	FORESIGHT	AZIMUTH (DEGREES)	VERTICAL ANGLE (DEGREES)	NORTHING	EASTING
000	0.0		0.00	-90.00		

R HED LOGGED BY JAF IN 1983 (TO 202'), AND GEOLOGGED BY GAC (1986)
R HED HOLE W-005 DRILLED 1983 TO 202 FT TO TEST PORPHYRY POTENTIAL,
R HED NOW EXTENDED TO INTERSECT SKARN IN LST AT EST DEPTH
R HED 800-1000FT.
R HED TARGET: COPPER SKARN, FOLLOW-UP DRILLING TO E-069.

K L (UNITS = FT)	Y G FROM - TO	CORE RECOVERY (%)	Z M ROCK TYPE	TYPI- DAL TEX- GRAIN FRAC- FYING MIN TURES CHARACS TURE	STRUCTUR-1	ALTERATION MINS ORE-TYPE MINS										SUMMARY					
						ID	STK	DIP	A	A	A	A	A	MIN	A		A	A	MIN		
		(%)	X TYPE	1 2 QM1 1 2 F F C P # TK	1	AZM	RT	QZ	BI	CY	CB	MS	XX	PY	CP	SL	YY				
		ROCK QUAL DESIG	FOR EN V AGE	RT G LC- 3 COL	TM RM2 TX TX S R S O DIP F	1	ID	STK	DIP	KF	MU	CL	EP	HE	HA	PR	MO	SL	HA		
					3 4 Q N H / SML I	2	AZM	RT				H	H	H	H	H	H	H	H		
					R D P C		STRUCTUR-2					A	A	A	A	A	A	A	A		
P	0.0	22.0		OVER		P															
P	22.0	100.0		PPAN HB 56	HB3 PP	P			V3 P2			V3 D2	ZE 7=							5 5	
L						6						P7 E2	E6 V2 E.							3 =	
N	29.0	34.0		X PPAN		N	F/														
N MIN	47.0	47.0		X PPAN HB 56	HB3 PP	N	VN	20	V3 P2			V3 D2	7=							5 5	
L						6						P7 E2	E6 E.							3 =	
N MIN	52.0	52.0		X PPAN HB 56	HB3 PP	N	VN	40	V3 P2			V3 D2	7=							5 5	
L						6						P7 E2	E6 E.							3 =	
N MIN	57.0	57.0		X PPAN HB 56	HB3 PP	N	VN	30	V3 P2			V3 D2	7=							5 5	
L						6						P7 E2	E6 E.							3 =	
N MIN	77.0	77.0		X PPAN HB 56	HB3 PP	N	VN	30	V3 P2			V3 D2	7=							5 5	
L						6						P7 E2	E6 E.							3 =	
N	82.0	82.0		X PPAN HB 56	HB3 PP	N	VN	50	V3 P2			V3 D2	7=							5 5	
L						6						P7 E2	E6 E.							3 =	
N	91.0	96.0		X PPAN VF	BR	N															
L																					
N	98.0	98.0		X PPAN HB 56	HB3 PP	N	VN	20	V3 P2			V3 D2	7=							5 5	
L						6						P7 E2	E6 E.							3 =	
P	100.0	113.0		BVAT		P	BN	55	B7				ZE							1 2	
L						6						P2 P1	V6							0	
R LTH	100.0	113.0		SOME HB-PP SECTIONS - FRAGGS?																	
P	113.0	117.5		PPAN HB 56	HB3 PP	P			V3 P2			V3 P2	ZE 7=							5 5	
L												P7 E2	E6 V2 E.							3 =	
P	117.5	170.0		BVAT		P	BN	65	V3				ZE 7=						6I	1 4	

Utah Mines Ltd., Island Copper Mine
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DRILLHOLE/TRVERSE : W_005 (CONTINUED)

F - INTERVAL -		CORE	%	TYPI-	QAL	TEX-	GRAIN	FRAC-	STRUCTUR-1 ALTERATION MINS ORE-TYPE MINS																					
K L (UNITS = FT)	RECOV-								M	ROCK	FYING	MIN	TURES	CHARACS	TURE	H H H H H ANY H H H ANY														
E A	ERY	1	TM	TK	MAT	TX	TX	F C % M	T	ID	STK	DIP	A	A	A	A	A	MIN	A	A	A	MIN								
Y G	F R O M - T O	(%)	X	TYPE	1	2	GM1	1	2	F F C P	#	TK	1	AZM	RT	DZ	BI	CI	CB	CG	CH	XX	PY	CP	GL	YY	SUMMARY			
K F		ROCK	FOR	EN	RT	TM	GM2	TX	TX	S	R	S	O	DIP	F	T	ID	STK	DIP	KF	MU	CL	EP	HE	HA	PR	MO	SL	HA	
E L		QUAL	MEM	V	Q	LC-	3	3	4	Q	N	H	/	SHL	I	2	AZM	RT		H	H	H	H	H	H	H	H	H	H	H
Y G		DESIG	AGE	COL				R	D	P	C					STRUCTUR-2				A	A	A	A	A	A	A	A	A	A	
R	332.3	345.0	MOST QZ VNS IN TUFF SECTS HAVE 2-7MM CHOC BRN ENV & INCL PY FF.																											
R	332.3	345.0	THE BRN MIN TENTATIVELY ID'D HEM, SENT FOR THN SECT.																											
R	SAM	340.0	340.0	GN ASH TUFF C/W QZ/PY VN & BRN ENV. FOR THIN SECT.																										
P	345.0	391.0	PBSD 80 BN 2 2 8 P 0 BD 60 76 E? 23 ZE 6= D?																											
L				R4 3 84 E3 13 2-																										
R	345.0	391.0	BDD SILTSTONE. MED GN/GY C/W CONSID BN STM FR COALESCING ENV																											
R	345.0	391.0	BRN HEM? ON PY/QZ OR PY/ZEO VNS. MOD PERV SLC'N, MINOR XCUT QZ																											
R	345.0	391.0	VNS. 3% QZ/MO VNS TO 10CM THK. STR PY IN VNS TO 5MM (2%) & DISS																											
R	345.0	391.0	& FF PY (3-4%) SPOTTY ZEO FF & VLT. BG DIPS GENLY 55 EIC B5 @																											
R	345.0	391.0	373 FT & IRREG NR LOWER ECT.																											
R	345.0	391.0	377-380, 381-383 SHORT RUNS FSP/HBL PORPH. FSP CLASTS 2-3MM,																											
R	345.0	391.0	SLLY RESORBED, DIFFUSE BFRY. HBL PHENOS 2-10MM SUBHEDRAL &																											
R	345.0	391.0	OFTEN BROKEN. BOTH RUNS LACED BY QZ VLT C/W BRN ENV.																											
N	377.0	383.0	B PPFX HB2 PP 1 J 5 K 52 N 0 SW 24 E? 23 ZE 6+																											
L				PB R3 46 FX3 1 J 0 4 3 VM 40 01 E5 23 1-																										
R	389.0	391.0	QZ, QZ/MO, & ZEO STOCKWORK BXA'D TUFF.																											
P	391.0	396.5	PPFX QZ2 PP 2 L 2 M 5 P 0 V0 40 22 T6 22 6+ D? 3 4																											
L				PB R4 MU B1+ B 0 3 T? 1 +																										
R	391.0	396.5	QZ PORPH.; LG 5-12MM RDD LT BY QZ EYES IN APH BRN STM MATR.																											
R	391.0	396.5	2% 1MM SIZE PRIM DK BN-DK B10 PHENO'S. MATR PERV STM W CHOC BN																											
R	391.0	396.5	MIN CALLED HEM ABOVE, PROB B10. 1-2% VFG DISS PY & 1% FF PY.																											
R	391.0	396.5	TR DISS CPY. PY/GOUGE/ZEO FLD 5CM SHR @ 391.5 @ 25 DEG. TO CA.																											
P	396.5	415.0	PBTf P 86 E1 21 8A 7+ ZE 1 4																											
L				68 83 83 C- 1? 6 2 4 +																										
R	396.5	415.0	LT-MED GN, WK/MOD CHL. MOD SLCs FG ASH TUFF. SLLY BXA'D																											
R	396.5	415.0	5% PINK/TAN GARN? & WK ZEO STM. WH QZ VNS 1-2MM C/W ENV 5-25MM.																											
R	396.5	415.0	3% PY FF, MINOR QZ/MO. BRN STM ENV RARE.																											
P	415.0	438.0	PBSD 80 BN 2 2 8 P 0 B6 60 84 E1 23 8A 6)																											
L				R3 46 5 84 83 E? D2 C-																										
R	415.0	438.0	BDD SLTST. MED/DK BN C/W PATCHES LT GN & TAN/PNK. MOD/STR																											
R	415.0	438.0	SLC'D; WKLY LACED W ZEO/CALC & QZ VNS. 434-436 LG PATCHES 2 X																											
R	415.0	438.0	10CM DK APPLE BN TRANSLUC. SER POSS A/W WK SHR @ 435.5. PALE																											
R	415.0	438.0	PNK ALT'M ALONG SOME BDS 415-421 MAY BE GARN. PERV WK CHL ALT																											
R	415.0	438.0	& MINOR BN B10? ENV. POSS SPHAL VLTS ARE A/W PY																											
R	415.0	438.0	421-425 SHORT RUN DK GN WK CHL. MOD B10 (ENV) ALT'D ASH TUFF.																											
N	422.0	425.0	X PBTf VF FR 2 3 5 N 0 VP 60 23 E5 21 T? ZE 6+																											
L				RF AS 46 3 22 1. 1 +																										
R	436.0	609.0	LT-MED GN, MOD SLC'D CHL ALT VFG FGL. (TUFF OR SED??) LDCALLY																											
R	436.0	609.0	VAGUE BNDG NOTED. MOD QZ VNS-WH-LT BY QZ VNS 1-5MM AVG THK 2MM																											
R	436.0	609.0	V MINOR AMT RED/BN GARN. SPOTTY V WK EPI. 2-3% PY AS VLT TO																											

Utah Mines Ltd., Island Copper Mine
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DRILLHOLE/TRVERSE : W_005 (CONTINUED)

K L (UNITS = FT)	F - I N T E R V A L - E A Y B F R O M - T O	CORE RECOV- ERY (%)	X M I X T Y P E	T Y P I - M R O C K	G A L F Y I N G	T E X - M I N	B R A I N F R A C - C H A R A C T U R E	S T R U C T U R - 1 I D S T K D I P	A L T E R A T I O N M I N S H H H H H	O R E - T Y P E M I N S A A A A A	S U M M A R Y			
												1 2 Q M 1	1 2 F F C P	# T K
R	436.0	609.0					1MM, OFTEN A/W QZ & MINOR DISS. OCC WH & PALE PNK ZEO +/- CALC							
R	436.0	609.0					IN VLT TO 5MM. V MK DISS MAG & OCC VLT MAG. MINOR MO A/W QZ							
R	436.0	609.0					VNS							
R	436.0	609.0					579-589 OCC VN ZEO & LT BY GYPS?							
R	436.0	609.0					593-598 SEVERAL 2-3CM SLLY GOUGY SHR ZONES C/W RDD BXA'D WH							
R	436.0	609.0					ZEO VN FRAGS? HOST (PBVS) FRAGS TO 1CM SIZE IN BY OFTEN PYRITIC							
R	436.0	609.0					MATR. SL INCR IN CHL, DECR IN SLC'M IN THIS SECT.							
P	438.0	484.5					PBTF VF FR VV 2 3 8 3 6 P 0 VQ 40 21 E4 22 ZE 6+ D?					1 3		
L							PB AS 46 4 83 Q1 T? 23 1-					4 +		
R	438.0	489.5					1MM SIZE ASH TUFF. MED BN/SY C/W FAIRLY PERV WK BN STN. CUT							
R	438.0	489.5					BY WH/LT BY ZEO/CALC & QZ/PY VLT. QZ/PY VLT HAVE 2-5MM EVN.							
R	438.0	489.5					473-484.5 TUFF IS FINER GRAINED, MOD/STR SLC'D C/W PATCHY EPI &							
R	438.0	489.5					MOD (2-3X) PY FF. & DISS. CCT AT UPPER TUFF SECT IS BRAD'L OVER							
R	438.0	489.5					50 CM.							
R	445.0	449.5					WH/LT BY QZ BXA. BXA FRAGS TO 3CM MOSTLY 10-20MM. FRAGS 60%							
R	445.0	449.5					CY QZ, 30% ASH TUFF OF WHICH APT 1/2 IS MOD BRN BIG? STND.							
R	445.0	449.5					MATRIX IS SLLY CHL'D PYRITIC. ROCK FLOUR & MAKES UP 10-15% BY							
R	445.0	449.5					VOL, SOME FRAGS MAY CONT GARNET.							
M	445.0	449.5					X BRTX RF Q26 FR 2 6 8 N N D=							
L							PB R3 VF3 C 4 64					1 =		
M	473.0	484.5					X PBTF VF FR VV 2 3 8 3 6 D 0 VQ 40 B5 E4 22 ZE 6+ D?					1 3		
L							PB AS 66 4 83 Q1 T? 23 1-					4 +		
P	484.5	502.5					PB5D SA3 BD BN 2 3 3 7 P 1 BD 50 23 23 12 6A 6= D?					K 5		
L							R4 GT 3 84 75 L1 E-					4 =		
R	489.5	502.5					GARNETIFEROUS SKARNIFIED BEDDED SLST. MED GN & PNK/TAN BANDED @							
R	489.5	502.5					45-55 BEB TO CA MINOR DISS & FRAC ASSOC'D MAG. MOD EPI AS							
R	489.5	502.5					PATCHES & SELV/ENV.							
R	489.5	502.5					GARN GENLY LT PNK/TAN BUT MED DK RED/BN 482-85. WK/MOD QZ VNS,							
R	489.5	502.5					OCC QZ/MO VN TO 7MM. 1MM PY VLTS @ 1-3CM SPCG, 4CM PY BAND @							
R	489.5	502.5					500 FT. LOWER CCT @ 4CM BXA ZONE.							
R	489.5	502.5												
P	502.5	543.0					PBTF VF FR 2 I J 40 P 2 VQ 40 25 E3 21 ZE 6+ D?					1 4		
L							R3 AS 56 3 3 BN 50 84 Q2 23 1- D?					4 +		
R	502.5	543.0					MED GN FG ASH TUFF. MOD/STR VND C WH/LT BY QZ. +/- MO, CALC							
R	502.5	543.0					+/- ZEO. WK BN BIG? ENV DN OCC QZ/PY VLT. WK CHL ALT. 2-3X							
R	502.5	543.0					PY FF & DISS. 518-534 SLLY LIGHTER GN, POSS BMD BUT CUT BY							
R	502.5	543.0					NARS HAIRLINE FRACS. THIS SECT PROB BDD SLST C/W WK/MOD TAN							
R	502.5	543.0					GARN & PERV MOD CHL ALT. 534-536 QZ CRACKLE BXA. QZ +/- MO							
R	502.5	543.0					VNS TO 1CM MAKE UP 50% OF ROCK & 50% ANG LT-MED GN TUFF FRAGS.							
R	502.5	543.0					PYRITIC QZ BXA PEBBLE DIKE @ 538 (4CM THICK) I/W 30% RDD-QZ							
R	502.5	543.0					FRAG TO 3MM.							

Utah Mines Ltd., Island Copper Mine
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DRILLHOLE/TRVERSE : W_005 (CONTINUED)

F - I N T E R V A L -			CORE	Z	TYP1-	QAL	TEX-	GRAIN	FRAC-	STRUCTUR-1 ALTERATION MINS										ORE-TYPE MINS											
K L (UNITS = FT)			RECOV-	M	ROCK	FYING	MIN	TURES	CHARACS	TURE	H	H	H	H	H	ANY	H	H	H	ANY	H	H	H	ANY							
E A			ERY	1	TM	TM	MAT	TX	TX	F	C	X	M	1	ID	STK	DIP	A	A	A	A	A	A	MIN	A	A	MIN				
Y 6 F R O M - T O			(%)	X	TYPE	1	2	QM1	1	2	F	F	C	P	#	TK	1	AIM	RT	QZ	BI	CY	CB	MG	XX	PY	CP	GL	YY	SUMMARY	
K F			ROCK	FDR	EN	RT	TM	QM2	TX	TX	S	R	S	O	DIP	F	1	ID	STK	DIP	KF	MU	EL	EP	NE	HA	PR	MO	SL	HA	
E L			QUAL	MEM	V	Q	LC-3	3	4	O	N	H	/	SNL	1	2	AIM	RT													
Y 6			DESIG	AGE	COL												STRUCTUR-2														
R	850.5	907.0	SPOTS & FF WK CHL FF. SOME CALC VNS & XTAL AGGREG (VUG FLNG)																												
R	850.5	907.0	Note: DESPITE ASSAYS OF .5-1-35% CU, CPY IS NOT OBVIOUS TO 906'																												
R	850.5	907.0	RE-EXAMINATION SHOWS FG DISS CPY A/W YELLOWISH PY AS WELL AS																												
R	850.5	907.0	SOME COARSER (TO 1CM) AGGREGATES OF FG CPY.																												
R	850.5	907.0	836-906																												
R	850.5	907.0	THERE IS A STRONG APPARENT CORRELATION BETWEEN CPY & MAG IN																												
R	850.5	907.0	MEGASCOPIC SPECIMENS.																												
R	850.5	907.0	NO IN QZ VNS 892-94.																												
P	907.0	914.5	SKAR GAB SW VV 4 L M 6 P 0 VB 40 24 23 03 GA 6= 8) K ?																												
L			QL R3 RU B/ 67 06 98 C. D? 3 =																												
R	907.0	914.5	STR CHL ALT BARN SKN. 80Z GARNET-RED/BN & MINOR DEEP RED.																												
R	907.0	914.5	5-10MM BARN BRAINS IN V DK BN CHL STKWK. MOD CALC AS VLT & OCC																												
R	907.0	914.5	XTAL TO 5MM. 3-5X CG XTAL PY & OCC VN TO 3-5MM. PATCHY																												
R	907.0	914.5	HEMATITE/SPECULARITE WITH MINOR ASSOC MAG & CPY. 913.5-914																												
R	907.0	914.5	SMOKY BY QZ VN?) C/W MOD MD & LACED EVERY 5MM BY 0-1MM PY FLLO																												
R	907.0	914.5	FRACS.																												
P	914.5	916.0	PPQF QZ FX PP << 2 5 3 L 1 P 6 F/ 60 84 11 2E 7= 1 4																												
L			R2 GA 94 86 01 24 1 =																												
R	914.5	916.0	STR CHL ALT'D APP. DIFFUSE BY QZ EYES TO 1CM. BY FSP PHENOS																												
R	914.5	916.0	TO 5MM IN FG MED BY SILICIC MATR. SX DK CHL'D MAFICS. MINDR																												
R	914.5	916.0	EPI ALT'D SPOTS. WK FINE ZED VNG. 3X DISS & FF PY.																												
P	916.0	945.5	SKAR GAY MX 3 5 9 L P 22 06 GA 7= 8) K X																												
L			QL R4 RU CA) 64 H3 97 C? 2 =																												
R	916.0	945.5	RED BRN GARN SKN. MASSIVE, CG DK RED/TAN-RED/BN GARN, WK LINY																												
R	916.0	945.5	MINOR CHL VLT. FF & PATCHES. MAG TO 5X IN REPL PATCHES TO																												
R	916.0	945.5	3-4CM, MOSTLY A/W MINOR HEM & PY. 1-2X PY DISS THRU-OUT, 3-4X																												
R	916.0	945.5	PY IN VLTs TO 3-5MM C/W OCC VN MASSIVE PY TO 15CM. WK WH CALC																												
R	916.0	945.5	VNG & VN FRACS.																												
P	945.5	977.0	KNBA QZ MX EQ VV 3 4 K 35 P 2 VQ 50 V7 V6 2E D) D? 1 3																												
L			R2 GA 3 1 V2 60 83 V8 C- 4)																												
R	945.5	977.0	LT-MED BN FG VOLC., PROB INTR. ANDES/BASALT. WK/ MOD CHL ALT.																												
R	945.5	977.0	MOD/STR PALE ZED +/- CALC. MOD/STR QZ VNG C/W GOOD MO. 1X																												
R	945.5	977.0	DISS PY. POSS WK SHRD & HEALED BY ZED/CALC. 971-973 HEALED WK																												
R	945.5	977.0	SHR C/W MINOR GILS.																												
M	974.0	977.0	X KNBA RF MX BR VV 3 4 K 35 D 5 F/ 25 V7 V6 2E D) D? 1 3																												
L			R2 GA 4 1 V2 60 83 V8 C- 4)																												
P	977.0	1000.5	KNBA VF EQ AH 2 3 3 4 P 1 VQ 40 24 E3 22 2E 6+ D? 1 3																												
L			R3 AS VV Q2 82 23 C. 1 +																												
R	977.0	1000.5	APK'C TO VFG BK SN VOLC (TUFF?) UNIFORM, EVEN GRAINED MOD X-CUT																												

Utah Mines Ltd., Island Copper Mine
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DRILLHOLE/TRVERSE : M_005 (CONTINUED)

SUMMARY REMARKS

MODERATE FAULT ZONE C/W PY. SOUBE, BXA @ 30 DEG. TO CA
220-473
INTER LAYERED ASH-FINE LAP TUFFS AND BEDDED SEDS. THE ENTIRE
SECTION IS MED-DK GY/BN, CHL ALT'D, MOD-STR CUT BY WH-LT GY QZ
VNS UP TO SEVERAL CM'S & MOD PALE ZEO +/- CALC VNS.
MO COMMON IN QZ VNS. PY VNS & FRAC FLNG COMMON (3-5%). ECON
SULPHIDES MINIMAL. A CHOC BRN STN FORMS ENVELOPES & OCC PERV
STN THROUGHOUT MUCH OF SECT, BUT ID IS UNCERTAIN (HEM, BIO OR
GILS? - PROB BIO)
391-396.5
SHORT RUN QZ PORPHYRY C/W WK CHL ALT'D BRN STN MATR. QZ EYES
TO 1CM
445-449.5
GY QZ BXA. 1-2CM QZ & MINOR ALT'D TUFF FRAGS IN PYRITIC, CHL
ALT'D FB MATRIX.
473-484
SILIC CHL ALT'D ASH TUFF, MOD QZ & QZ NO VND AS 220-473
484-502
TAN GARNET SKARNIFIED BDD SEDIMENTS WITH MOD PY, MO, MINIMAL
CU, ZN.
502-609
MOD SLCS FB BEDDED SEDS AND TUFFS. WEAK TO MOD CHL ALT &
MOD/STR QZ VNG C/W MINOR MO. PATCHY GARNETS & EPI (WK). MOD
WH ZEO +/- CALC VNG.
220-609
THIS ENTIRE SECTION OF FINE GRAINED ROCKS HAS BEEN
DIFFERENTIATED LARGELY ON THE RECOGNITION OF BEDDING IN
MODERATELY ALT'D ROCKS, WITH NON-BEDDED (OR NON-BANDED)
SECTIONS CALLED TUFFS. THIS DISTINCTION MAY NOT ALWAYS BE
CORRECT, ESPECIALLY WHERE BEDDING IS OBSCURED BY ALTERATIONS.
609-614
DARK RED/BRN GARNET SKARN WITH MOD CHLORITE VEINS & SPOTS
SLIGHTLY BANDED SKN'D PB SEDS.
614-620
BRN/GRY QFP WITH 2-3% BLK BIO PHENOS, 1CM QZ EYES & 5MM FELDSP
PHENOS IN APANITIC BRN STAINED MATR.
620-622
EPI/PYRITE RICH INTR BXA WITH SOME COARSE GARNET CLASTS FROM
UNDERLYING UNIT.
622-637
SLIGHTLY BANDED INTENSELY GARNET ALTERED BANDED PB SEDS GRADING
INTO EPI/CHL/GARNET ALT'D SEDS/TUFFS 631-637.
637-648
HORNBLNDE (+PYROX?) PORPHYRY. DARK GRN PHENOS TO 2CM IN LT
GRN MATR. X.
648-709
MODERATE CHLDRITE GARNET ALTERED FINE GRAINED SEDIMENTS & TUFF
WITH PATCHY TAN TO RED BROWN GARNET ALTERATION. MODERATELY QZ
VEINED WITH SOME MOLY.
709-752
GARNET/QUARTZ SKARN. TOTALLY ALTERED TO TAN/BROWN GARNET WITH

Utah Mines Ltd., Island Copper Mine
ILC

DRILLHOLE/TRVERSE : W_005 (CONTINUED)

S U M M A R Y R E M A R K S

10% QZ VEINS/VEIN FRAGMENTS. MOD PY, BUT MINIMAL CPY.

752-836

F6 MED-DK GRN TUFFS WITH MINOR PATCHES GARNET ALT'N, MOD QZ
VNB., SOME MOLY, V LITTLE CPY. MAGNETIC TO 760. MOD ZEOLITE
THROUGHOUT.

736-945

MASSIVE RED BROWN COARSE GRAINED GARNET SKARN. CONSID. MAG TO
850, WITH 2% CPY. CPY NOT VIS 750-945, BUT CU IS PRESENT. MOD
QZ VNB & WK CALC. PATCHES TO 10 FT. WITH INCR CHLDRITE +/-
MAG.

945-1206

FINE GRAINED DK GRN VOLCANIC, PROBABLY INTRUSIVE. MOD-STR CUT
BY QZ & ZEO VEINS, OFTEN WITH MOLY. MINOR SILS WITH QZ VNS.

1000-1050

SECTION FROM 1000-1050 IS STRONGLY SERICITIZED & FRACTURED WITH
VAGUE PORPHYRY & INTRUSIVE TEXTURES LARGELY OBSCURED BY
ALTERATION

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