



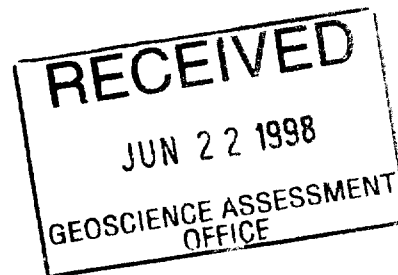
42A12SE2004 2.18592 ROBB

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**Assessment Report**  
**1994-95 DIAMOND DRILL PROGRAM**  
**VIOLAMAC OPTION (P.N. 8221)**  
**ROBB TOWNSHIP**  
**NTS 42-A/12**

DDH R55-05, R55-06, R55-07, R55-08,  
R55-10, R55-11, R56-21, R56-23

**2.18592**



**M. S. Collison M.Sc.**  
**Project Geologist**  
**Falconbridge Limited**  
**Timmins Exploration**

**TIMMINS EXPLORATION - AMENDED ROCK LEGEND - v8.0**

**1. MAIN ROCK DIVISIONS**

15	Phanerozoic Sediments
14	Huronian Supergroup
13	Metamorphic (Unknown)
12	Gneiss
11	Schist
10	Diabase
9	Felsic Intrusive
8	Intermediate Intr. Rocks
7	Mafic Intrusive Rocks
6	Ultramafic Intr. Rocks
5	Sedimentary Rocks
5,s	Sulphide (>40%)
4	Felsic Volcanic Rocks
3	Intermediate Volcanic Rocks
3,C	Heterolithic Volcanic Rocks
2	Mafic Volcanic rocks
1	Ultramafic Volcanic Rocks

**2. TEXTURAL/GEOCHEMICAL MODIFIERS**

a	Fine Grained	A	Primitive (Y<20)
b	Medium Grained	B	Evolved (Y>20<60)
bx	Breccia	C	Heterolithic
c	Coarse Grained	D	Feldspar Phyric
d	Quartz-Feldspar Phyric	E	Chert
e	Amygdaloidal/Vesicular	F	Wacke
f	Primary Fragmentals	G	Leucoxene Bearing
g	Graphitic/Argillaceous	H	Basaltic Komatiite
h	Tholeiitic	J	Pyroxenite
i	Alkalic	K	Net Textured
j	Calc-Alkalic	L	Peridotite
k	Komatiitic	M	Dunite
l	Flows (banded)	N	Ophitic
m	Massive	P	Porphyritic
n	Variolitic/Spherulitic	Q	
p	Pillowed	R	Polysutured
q	Quartz Phyric	S	Fractured
r	Oxide Iron Formation	T	Gabbroic Textured
s	Sulphides, Exhاللites	U	Pyroxene Spinifex
t	Pyroclastic	V	Olivine Spinifex
u	High Mg	W	Skeletal/Crescumulate
v	High Fe	X	Adcumulate
w	High Al	Y	Mesocumulate
x	Andesite	Z	Orthocumulate
y	Icelandite		
z	Highly Evolved (Y>60)		

**ROCK NAMES MUST HAVE ALL MODIFIERS COMMA DELIMITED AND CAN BE NO LONGER THAN 15 CHARACTERS, COMMAS INCLUDED. Example: 3,\*y,d,<DAC>,\*t**

**3. ALTERATION MODIFIERS**

Ab	Albitization
Bl	Bleached
C>	Carbonaceous
Cb	Carbonatization
Ch	Chloritization
Ep	Epidotization
F>	Iron Carbonatization
He	Hematization
K>	Potassic Alteration
Ka	Kaolinitization
Rs	Rust Stained
Se	Sericitization
Si	Silicification
Sr	Serpentinization
Tc	Talc-Carbonatization
Tk	Talc

**4. Textural/Structural MODIFIERS**

*a	Tuff (67% <2mm)	*n	Graded Bedding
*b	Lapilli Tuff (2-64mm)	*o	Cross bedding
*c	Lapillistone (76% <264mm)	*p	Fault Gouge
*ct	Cataclastic	*q	Augen
*d	Block (>64mm)/Xenolith	*r	Porphyroblastic
*e	Autoclastic/Hyaloclastic	*s	Hornfels
*f	Thickly Laminated	*t	foliated/sheared
*g	Thinly Laminated	*u	folded
*h	Clast Supported	*v	boudinage
*i	Matrix Supported	*w	fragmental (felsic>mafic)
*j	Granule (grit 2-4mm)	*x	fragmental (mafic>felsic)
*k	Pebble (4-64mm)	*y	Crystal Tuff (>50% of frags)
*l	Cobble (64-256mm)	*z	Lithic Tuff (>50% of frags)
*m	Boulder (>256)		

**ALTERATION CODES**

FORM	
S	Spots
F	Fracture/vein controlled
P	Pervasive
STRENGTH	
S	Strong
M	Moderate
W	Weak

Example: EpPW = Epidote,Pervasive,Wea

**MINERALIZATION CODES**

FORM	
D	Disseminated/Blebs
F	Fracture/vein controlled
M	Massive
B	Bedded
C	Clasts/Fragments

**PERCENTAGE**

Numeric percentage, or percentage range (i.e. 1-3%), must always be specified

Example: CpB3% = Chalcopyrite, Bedded, 3%

5. MINERALOGICAL NAMES

Ak	Actinolite	Fc	Fuchsite	Pn	Pentlandite
Alb	Albite	Gn	Galena	Py	Pyrite
Al	Almandine	Gt	Garnet	Px	Pyroxene
Am	Amphibolite	VG	Gold	Po	Pyrrhotite
Ah	Anhydrite	Gf	Graphite	Qt	Quartz
Ad	Andalusite	GS	Gravel & sand	Ro	Rhodochrosite
Ay	Anthophyllite	Gyp	Gypsum	Ru	Rutile
Ap	Apatite	Hem	Hematite	Sur	Serpentine
Ar	Argentite	Hb	Hornblende	Sc	Sericite
Asp	Arsenopyrite	Hy	Hypersthene	Sh	Scheelite
Asb	Asbestos	Il	Ilmenite	Sid	Siderite
Aug	Augite	I-F	Iron Formation	Sil	Silica
Az	Azurite	Jr	Jarosite	SIm	Silliminite
Ba	Barite	Ky	Kyanite	Sps	Spessarite
bi	Bismuthite	Ls	Limestone	Sph	Sphalerite
Bi	Biotite	Lm	Limonite	Ti	Sphene (Titanite)
Bo	Bornite	Mag	Magnetite	Ag	Silver
Ca	Calcite	Mc	Malachite	Sp	Spinel
Cn	Chalcedony	Ma	Marcasite	Spd	Spodumene
Cc	Chalcocite	Mi	Mica	St	Staurolite
Cp	Chalcopyrite	Mk	Microcline	Sb	Stibnite
Chl	Chlorite	Ml	Millerite	Sul	Sulphides
Ch>	Chloritoid	Mo	Molybdenite	S-M	Mass.Sulphides
Cr	Chromite	Mu	Muscovite	S-D	Diss.Sulphides
Cpx	Clinopyroxene	Ne	Nepheline	Tk	Talc
Co	Cobalt Minerals	Nc	Niccolite	Te	Telluride
Cv	Covellite	Ni	Nickel minerals	Tt	Tertrahedrite
Ct	Cordierite	Ov	Olivine	Ta-Cl	Tantalite-Columbite
Dp	Diopside	Or	Orthoclase	Tl	Tourmaline
Dol	Dolomite	Opx	Orthopyroxene	Tr	Tremolite
Epi	Epidote	Pl	Phlogopite	Wo	Wollastonite
Fel	Feldspar	Pg	Plagioclase	Zr	Zircon
Fl	Fluorite				

6. ROCK TYPE / PROTOLITH

<QFG>	Quartzfeldspathic	<PER>	Peridotite	<CHM>	Chem. Precip.
<QTZ>	Quartzite	<SER>	Serpentinite	<SLA>	Slate
<MAR>	Marble	<DUN>	Dunite	<KIM>	Kimberlite
<SKA>	Skarn(Calc-Silicate)	<PRX>	Pyroxenite	<CAR>	Carbonatite
<PHY>	Phyllite	<LMP>	Lamprophyre	<AMP>	Amphibolite
<TON>	Tonalite	<SST>	Sandstone	<MIG>	Migmatite
<SYN>	Syenite	<ARK>	Arkosic sandstone	<PEG>	Pegmatite
<GRA>	Granite	<WCK>	Graywacke	<LEU>	Leucocratic
<MON>	Monzonite	<CGL>	Conglomerate	<MEL>	Melanocratic
<GRD>	Granodiorite	<SLT>	Siltstone	<UNK>	Unknown Protolith
<APL>	Aplite	<ARG>	Mudstone-argillite	<UMF>	Ultramafic
<FEL>	Felsite	<EXH>	Chert/exhalite	<MAF>	Mafic
<QDI>	Quartz Diorite	<QIF>	Silicate IF	<AND>	Andesite
<GAB>	Gabbro	<OIF>	Oxide IF	<DAC>	Dacite
<NOR>	Norite	<SIF>	Sulphide IF	<RYD>	Rhyodacite
<ANT>	Anorthosite	<CIF>	Carbonate IF	<RHY>	Rhyolite
<DIO>	Diorite	<SHA>	Shale	<SCL>	Sulphide Clasts
		<LST>	Limestone	<RWV>	Reworked Volcanic Debris

7. HURONIAN SUPERGROUP

BR	Bar River Formation	
GL	Gordon Lake Formation	Cobalt Group
LR	Lorrain Formation	
GW	Gowganda Formation	
SP	Serpent Formation	
ES	Espanola Formation	Quirke Lake Group
BC	Bruce Formation	
MS	Mississagi Formation	
PC	Pecors Formation	Hough Lake Group
RL	Ramsey Lake Formation	
MK	McKim Formation	Elliot Lake Group
MT	Matinenda Formation	

FALCONBRIDGE LIMITED



Exploration Division

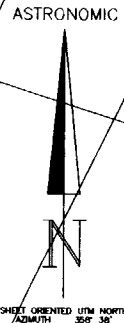
Timmins ONTARIO

VIOLAMAC OPTION

ROBB TOWNSHIP

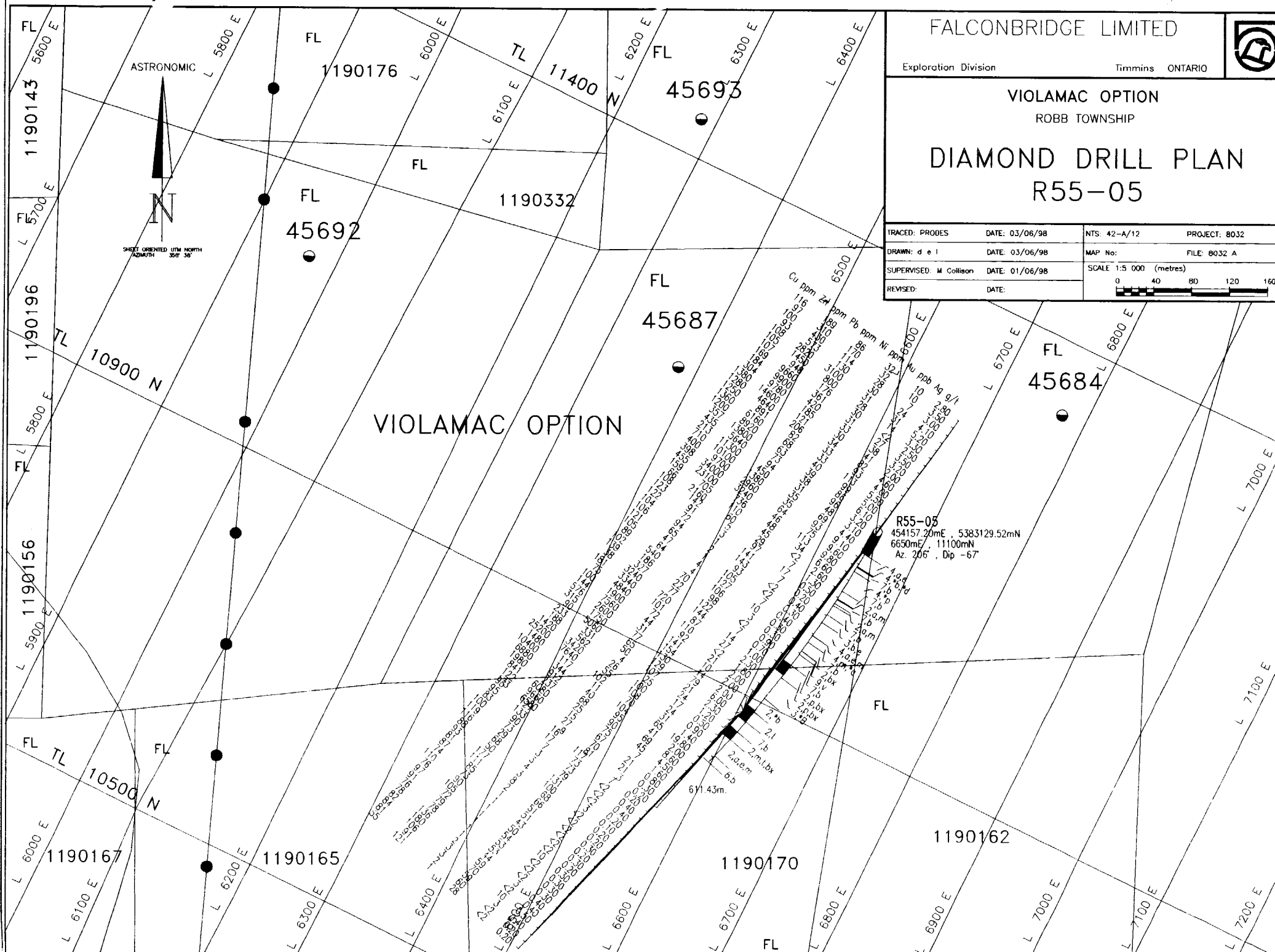
# DIAMOND DRILL PLAN R55-05

TRACED: PRODES	DATE: 03/06/98	NTS: 42-A/12	PROJECT: 8032
DRAWN: d e l	DATE: 03/06/98	MAP No:	FILE: 8032 A
SUPERVISED: M. Collison	DATE: 01/06/98	SCALE: 1:5 000 (metres)	
REVISED:	DATE:	0 40 80 120 160	



## VIOLAMAC OPTION

**R55-05**  
 454157.20mE, 5383129.52mN  
 6650mE, 11100mN  
 Az. 206°, Dip -67°





HOLE NUMBER: R55-05

## DRILL HOLE RECORD

DATE: 06/01/1998

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 70.10	CASING «lob»					
70.10 TO 107.40	AMYGDAL- OIDAL INTER- MEDIATE TO FELSIC FLOW «4,a,e»	-fine grained -greyish to grey-green  -intermediate (andesite) composition local fragments up to 3-5mm elongate felsic material and small up to 1mm laths of mafic fragments -typically uniform with elongate ovoids of quartz ± carbonate amygdules (10%) -uniformly sericitized (greyish) -local cm-scale seams of hyaloclastite/tuff possibly representing inter-lobe material -weakly foliated 40° to CA		-weak-pervasive grey sericite	-<2% pyrite	-WR samples at: AP09521 74.98-78.03m AP09522 96.32-99.37m
107.40 TO 109.90	FELSIC LAPILLI TUFF BRECCIA «4,*b,*d»	-grey-green -fine grained  -similar composition at 70.1-107.4m -fragmental (matrix supported) fragments up to 2cm in size elongate parallel to foliation 55° to CA -fragments are felsic in composition with chlorite in interstices -may represent sheared/brecciated host rocks		-chlorite, sericite moderate	-<1% pyrite	-WR sample at: AP09523 107.4-109.9m
109.90 TO 122.55	MAFIC TO ULTRAMAFIC DYKE «7,b»	-olive green to grey green -fine to medium grained  -locally fine grained (near margins) basaltic in composition, massive, uniform from 109.9-115.5m -medium to coarse grained from 115.5-122.55m showing ophitic and diabasic texture -locally leucoxene-bearing serpentine also locally weakly observed -lower contact sharp and sheared 50° to CA		-chlorite, leucoxene, serpentine	-<2% pyrite	-WR sample at: AP09524 115.5-122.5m
122.55 TO 181.30	FELSIC LAPILLI- TUFF LOCALLY BRECCIATED «4,*p»	-greyish green -fine grained  -aphanitic, breccia, possibly primary fragmentals or secondary fracturing -fragments are insitu locally crosscut by		-sericite pervasive and moderate -chlorite is weak in veinlets		-WR sample at: AP09525 132.9-133.3

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DRILL HOLE RECORD

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## DRILL HOLE RECORD

DATE: 06/01/1998

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		<ul style="list-style-type: none"> <li>chlorite, quartz veinlets</li> <li>-crosscut by numerous icelandite dykes (cm-scale) showing leucoxenes up to 0.5-1mm laths</li> <li>-tuff is greyish-sericite altered throughout</li> <li>-fragments range up to 2cm in size locally rounded in mafic matrix</li> <li>-122.5-131.9m: massive uniform possibly part of icelandite dyke above</li> <li>-133.3-140.2m: highly siliceous section</li> <li>-icelandite dykelets at: 162.4-162.5m, 162.72-162.81m, 163.04-163.13m, 165.42-165.48m</li> </ul>				<ul style="list-style-type: none"> <li>-WR samples at:</li> <li>AP09526 133.3-140.2m</li> <li>AP09527 122.5-131.9m</li> <li>AP09528 154.23-157.28m</li> <li>AP09529 composite of icelandites</li> </ul>
181.30 TO 203.44	MAFIC INTRUSIVE «7,b»	<ul style="list-style-type: none"> <li>-dark green</li> <li>-medium grained</li> <li>-probably icelandite sill ophitic texture</li> <li>-locally leucoxene-bearing</li> <li>-lower contact sharp 70° to CA</li> <li>-at 181.3m: 1cm wide section of 5% Py, Po stringers</li> </ul>		-local quartz-epidote common as veinlets		<ul style="list-style-type: none"> <li>-WR sample at:</li> <li>AP09530 193.85-196.9m</li> </ul>
203.44 TO 204.91	MAFIC FLOW «2,a,m»	<ul style="list-style-type: none"> <li>-dark green</li> <li>-fine grained</li> <li>-similar composition to 181.3-203.44m but fine grained</li> <li>-well foliated 65° to CA</li> </ul>				<ul style="list-style-type: none"> <li>-WR sample at:</li> <li>AP09531 203.44-204.91m</li> </ul>
204.91 TO 215.98	MAFIC INTRUSIVE «7,b»	<ul style="list-style-type: none"> <li>-green</li> <li>-medium grained</li> <li>-similar to icelandite at 181.3-203.44m</li> <li>-may be coarse flow</li> <li>-no pillows or flow contacts evident</li> </ul>		-weak carbonate as veins	-<1% pyrite	<ul style="list-style-type: none"> <li>-WR sample at:</li> <li>AP09532 206.05-209.09m</li> </ul>
215.98 TO 221.85	MAFIC INTER-MEDIATE VOLCANIC «2,a,m»	<ul style="list-style-type: none"> <li>-light green</li> <li>-fine grained</li> <li>-mafic flow, highly foliated 40° to CA</li> <li>-crosscut by quartz-carbonate veins</li> <li>-contains chloritic seams along (shearing)</li> <li>S-fabric</li> <li>-upper to lower contacts sharp 60° to CA</li> <li>-215.98-217.3m: felsic volcanic</li> </ul>		-chlorite		<ul style="list-style-type: none"> <li>-WR sample at:</li> <li>AP09533 215.98-217.3m</li> </ul>

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DRILL HOLE RECORD

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HOLE NUMBER: R55-05

## DRILL HOLE RECORD

DATE: 06/01/1998

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
221.85 TO 247.77	MAFIC INTRUSIVE GABBRO *7,b*	-dark green -medium grained -similar to 181.3-203.44m locally very coarse grained -highly foliated 55° to CA -S-fabric shows chloritic shears or seams -crosscut by numerous mm-scale to cm-scale leucoxene bearing icelandite -236.6-239.5m: highly sheared section, blocky ground, fault/shear				
247.77 TO 268.49	MAFIC/ INTER-MEDIATE INTRUSIVE/ FLOW *3,b,e*	-fine to medium grained -possibly flow or intrusive -visual estimate on composition (andesite) intermediate -locally feldspars common showing interlocking habit with mafic minerals -locally amygdule-"like" spheroidal ovoids up to 0.5cm in size filled with quartz carbonate -typically well foliated 35-40° to CA -S-fabric steepens to 60° to CA locally -lower contact sharp at mafic dykelet 50° to CA		-weak chlorite ± sericite -quartz-carbonate as veinlets and ovoid filling	-up to 2% pyrite ± pyrrhotite, stringers	-WR samples at: AP09535 254.51-257.46m AP09536 263.96-267.01m
268.49 TO 303.50	MASSIVE FELSIC AMYGDALOIDAL *4,a,e,m*	-fine to medium grained -highly foliated felsic volcanic locally feldspar phyrlic locally fragmental, with numerous crosscutting quartz-carbonate veins throughout transposed parallel to foliation 50° to CA -feldspar phyrlic sections common up to 20% phenocrysts of plagioclase (1-3mm) -fragmental over most of interval possibly insitu brecciated -protolith is not unequivocally massive rhyolite -highly amygdaloidal with vesicles/amygdules up to 15% locally filled with quartz carbonate -lower contact sharp 50° to CA		-sericite (grey) pervasive and strong -chlorite weak  -chlorite pervasive -sericite throughout	-<2% pyrite ± pyrrhotite in quartz-carbonate stringers  -1-2% pyrite ± Po blebs and stringers	-WR sample at: AP09537 276.15-279.2m  -WR samples at: AP09538 282.25-285.29m AP09539 300.53-303.5m
303.50 TO 303.94	HI-SI RHYOLITE *4,m,*a*	-aphyritic -pink-grey -cryptocrystalline, high silica massive aphyritic rhyolite		-silicified	-1-2% Py stringers	-WR sample at: AP09540 303.5-303.94m

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DATE: 06/01/1998

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
303.94 TO 320.43	MAFIC INTRUSIVE «7,b»	-highly foliated 50° to CA -lower contact sharp 20° to CA -locally diabasic texture preserved, typically ophitic -leucoxenes locally evident but uncommon -crosscut by quartz carbonate stringers variably oriented -lower contact sharp and intrusive 50° to CA		-epidote common -chlorite pervasive	-<2% pyrite	-WR sample at: AP09541 306.63-309.68m
320.43 TO 343.17	MAFIC FLOW BRECCIATED «2,bx»	-dark green -fine grained -mafic breccia unit locally insitu brecciated, typically randomly brecciated and rotated fragments up to 2cm in size angular -crosscut by cm-scale dykes of leucoxene-bearing mafic intrusive		-minor epidote -chlorite throughout	-<1-3% pyrite ± specks of Cpy	-WR samples at: AP09542 324.98-327.98m AP09543 340.18-343.17m
343.17 TO 343.73	QUARTZ VEIN «9,v»	-white cryptocrystalline -typically barren vein upper and lower contacts sharp 70° to CA				
343.73 TO 351.75	MAFIC INTRUSIVE ICELANDITE «7,b»	-dark green -medium grained -massive to weakly foliated intrusive (mafic) showing 5% leucoxene -crosscut by quartz-epidote stringers/veinlets randomly oriented -344.57-345.43m: barren quartz vein, upper lower contacts sharp at 35° to CA -lower contact sharp 40° to CA		-leucoxene altered ilmenites -weak epidote altered adjacent to veins	-1-2% pyrite	-WR sample at: AP09544 349.33-351.75m
351.75 TO 379.32	AMYGDALOIDAL PILLOWED TO BRECCIATED VOLCANICS «2,p,bx»	-dark green -fine grained -Mafic composition, 5% amygdules. Locally filled with quartz carbonate. -pillow selvages locally preserved -deformation intensity increases with depth as does brecciation -chloritic seams throughout along shear fabric 50° to CA -lower contact gradational		-chlorite	-1-2% Py, Po blebs with quartz-carbonate veinlets	-WR samples at: AP09545 355.43-358.48m AP09546 370.68-373.73m

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
375.32 TO 410.00	MAFIC BRECCIA *2,p,bx*	-well foliated near base 45° to CA -dark green/grey -fine grained -probably same protolith as previous section, change in rock type is gradational and reflects alteration change (ie. silica-sericite alteration) with depth towards mineralized zones -foliation/shear intensity also increases with depth -locally amygdaloidal as previous section -banded nature appears largely structural rather than primary -considerable variation in foliation orientation -382.0-389.0m: up to 10-15% Py, Sph ± Cpy stringers, bands -389.0-391.85m: up to 15-20% Py, Sph ± Cpy stringers bands (5% Sph, 2% Cpy) -391.85-397.44m: 10% Py, Sph ± Cpy -397.44-400.5m: 15-20% Py, Sph ± Cpy (5-7% Sph 2% Cpy) -silica content increases near base		-silicified (moderate to locally intense) -sericite (grey) pervasive	-up to 15-25% pyrite, pyrrhotite ± chalcopyrite, sphalerite  379.32-460.35 *5.25%Py+Po+/-Sp+/-Cp*	-WR samples at: AP09547 379.83-385.93m AP09548 397.44-400.0m AP09549 401.18-404.23m -ASSAY samples at: AP09492 379.32-380.0m AP09493 380.0-381.0m AP09494 381.0-382.0m AP09495 382.0-383.0m AP09496 383.0-384.0m AP09497 384.0-385.0m AP09498 385.0-386.0m AP09499 386.0-387.0m AP09500 387.0-388.0m AP09701 388.0-389.0m AP09702 389.0-390.0m AP09703 390.0-391.0m AP09704 391.0-392.0m AP09705 392.0-393.0m AP09706 393.0-394.0m AP09707 394.0-395.0m AP09708 395.0-396.0m AP09709 396.0-397.44m AP09710 397.44-398.5m AP09711 398.5-399.5m AP09712 399.5-400.5m AP09713 400.5-401.5m AP09714 401.5-402.5m AP09715 402.5-403.5m -WR samples: AP09554 413.38-416.43m AP09551 428.63-431.68m AP09552 443.88-446.93m AP09553 459.13-460.35m   383.0-403.5 *0.05%Cu, 0.91%Zn, 0.07%Pb, 4.7g Ag/+/20.5m*

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DRILL HOLE RECORD

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
410.00 TO 460.35	INTERMEDIATE TO FELSIC LAPILLI TUFF *3,*B*	-Lapilli fragments matrix supported in ash very well developed. Locally amygdaloidal. Lower contact sharp 50° to CA at shear.				
460.35 TO 492.39	MAFIC BRECCIA LAPILLI TUFF *2,*b*	-grey to beige -fine grained  -siliceous felsic volcanic quartz phyrlic (5% quartz filled amygdale up to 2mm in size) -Fragments throughout, some may be primary lapilli to blocks up to 3cm in size. Some appear to be largely insitu breccia. -well foliated 45° to CA -intensely silicified, carbonatized -mineralization increases with depth consists of 2-3% pyrite ± sphalerite dusting -lower contact gradational		-silicification pervasive and intense -carbonate intense as vein filling		-WR samples at: AP09555 462.18-465.12m AP09556 474.26-477.32m AP09557 483.53-486.46m
492.39 TO 515.37	SULPHIDIZED TO MAFIC TUFF-BRECCIA *2,t*	-grey to grey green fine grained  -cryptocrystalline highly siliceous -banded (foliated) well sheared 55° to CA -Sulphides (pyrite, chalcopyrite and sphalerite, pyrrhotite) up to 25-35% of rock locally. Comprise bands and stringers parallel to foliation 55° to CA and interstitial to fragments. -host rock is mafic fragmental with fragments up to 3cm in size (angular) interstitial to fragments consists of chlorite, carbonate and quartz-sulphides -498.8-501.2m: 15-20% sulphides, 10% pyrite ± pyrrhotite, 10% sphalerite, 1-2% chalcopyrite -501.2-508.8m: up to 25% sulphides, 10% pyrite ± pyrrhotite, 10-15% sphalerite, 2% chalcopyrite -508.8-515.37m: up to 25% sulphides			{492.39-515.37}*5.25%Py+/-Cp+/-Sp*	-WR samples: AP09558 493.0-494.0m AP09559 498.0-499.0m AP09560 502.0-503.0m AP09561 510.0-511.0m AP09562 513.0-514.0m -ASSAY samples: AP09716 489.0-490.0m AP09717 490.0-491.0m AP09718 491.0-492.0m AP09719 492.0-493.0m AP09720 493.0-494.0m AP09721 494.0-495.0m AP09722 495.0-496.0m AP09723 496.0-497.0m AP09724 497.0-498.0m AP09725 498.0-499.0m AP09726 499.0-500.0m AP09727 500.0-501.12m AP09728 501.12-502.13m AP09729 502.13-503.0m AP09730 503.0-504.0m AP09731 504.0-504.93m

HOLE NUMBER: R55-05

DRILL HOLE RECORD

LOGGED BY: M.Y. HOULE

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HOLE NUMBER: R55-05

## DRILL HOLE RECORD

DATE: 06/01/1998

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
						AP09732 504.93-506.0m AP09733 506.0-506.86m AP09734 506.86-507.07m AP09735 507.07-508.0m AP09736 508.0-508.87m AP09737 508.87-509.5m AP09738 509.5-510.0m AP09739 510.0-511.0m AP09740 511.0-512.0m AP09741 512.0-513.0m AP09742 513.0-514.0m 499.0-516.0 ± 0.24%Cu, 0.37%Zn/17.0m
515.37 TO 533.78	MAFIC INTRUSIVE ICELANDITE *7,b*	-508.8-515.37m: 10-15% pyrite ± pyrrhotite, 10% sphalerite, 5% chalcopyrite blebs stringers  -felsic unit becomes more mafic below 514.0m -contact with underlying mafic is not clear but sheared/foliated 60° to CA  -green medium grained		-leucoxene alteration of ilmenite		-ASSAY samples: AP09743 514.0-515.38m AP09744 515.38-516.0m -WR sample at: AP09563 523.18-526.23m
533.78 TO 557.00	MASSIVE MAFIC VOLCANIC LOCALLY TUFF BRECCIA *2,m,t,bx*	-greyish green -fine grained  -cryptocrystalline, very siliceous, locally banded/foliated 50° to CA (flow banding?) -metre-scale coarse breccia sections intercalated with massive sections of rhyolite -coarse breccia are "near vent" explosive breccias with interstices filled with sulphides (pyrite sphalerite) -typically clast supported -massive mafic is locally amygdaloidal quartz phyric -overall sulphide content ranges up to 10% Py ± Po ± sphalerite bands, stringers -539.1-541.0m: 2-5% sphalerite-pyrite bands in massive-banded rhyolite 50° to CA -542.87-543.15m: flow contact chloritic material/hyaloclastite foliated 50° to CA -543.15-545.38m: up to 7-8% pyrite, pyrrhotite with traces sphalerite in felsic breccia -551.4-556.0m: up to 10-15% pyrite, pyrrhotite ± Cpy 5% sphalerite as bands stringers -at 554.19-556.0m: coarse vent breccia with		-sericite-silica intense pervasive carbonate throughout		-WR samples at: AP09564 538.78-541.48m AP09565 553.68-556.73m  -ASSAY samples at: AP09745 538.78-539.65m AP09746 539.65-540.0m AP09747 540.0-541.0m AP09748 541.0-542.0m AP09749 542.0-542.85m AP09750 542.85-544.0m AR00301 544.0-544.53m AR00302 544.53-545.2m AR00303 545.2-546.0m AR00304 546.0-547.0m AR00305 547.0-548.0m AR00306 548.0-549.0m AR00307 549.0-550.0m AR00308 550.0-551.0m

HOLE NUMBER: R55-05

DRILL HOLE RECORD

LOGGED BY: M.Y. HOULE

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HOLE NUMBER: R55-05

## DRILL HOLE RECORD

DATE: 06/01/1998

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		fragments up to 4cm in size in sulphide matrix, clast supported 15% sulphides, 10% Py, Po, 5% Sph, 2% Cpy -lower contact gradational				AR00309 551.0-552.0m AR00310 552.0-553.0m AR00311 553.0-554.0m AR00312 554.0-555.0m AR00313 555.0-556.0m AR00314 556.0-557.0m AR00315 557.0-558.0m
557.00 TO 595.80	INTER- MEDIATE TO MAFIC VOLCANIC AMYGDAL- OIDAL *2,a,e,m*	-fine grained -light green  -massive uniform, possibly pillowed, (siliceous for mafic flow) -strongly carbonatized (calcite) throughout as vesicle fillings and crosscutting veinlets -1-3% pyrite stringers and disseminations -locally well foliated 50° to CA -lower contact intrusive				-WR samples: AP09566 568.76-571.8m AP09567 587.04-588.0m
595.80 TO 611.43	ULTRAMAFIC DYKE *6,b*	-medium grained -black to bluish green  -porphyritic with 15-20% pyroxene crystals up to 3mm in size -locally strongly magnetic but typically very weakly magnetic -blocky, bad ground -chloritic along fractures				-WR samples: AP09568 602.28-605.33m
611.43 TO 611.43	E.O.H.					

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DRILL HOLE RECORD

LOGGED BY: M. Y. HOULE

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HOLE NUMBER : R55-05

ASSAYS SHEET

DATE: 01/06/1998

Sample	From (M)	To (M)	Leng. (M)	Cu ppm	Zn ppm	Pb ppm	Ni ppm	Au ppb	Ag ppm	Cu/Zn	Co ppm	Pt ppb	Pd ppb	S ppm	Se ppm	As ppm	Hg ppm	Sb ppm
AP09492	379.32	380.00	0.68	116	189	86	32.0	10	3									
AP09493	380.00	381.00	1.00	97	310	170	32.0	10	4									
AP09494	381.00	382.00	1.00	100	430	114	28.0	7	3									
AP09495	382.00	383.00	1.00	93	573	130	30.0	24	4									
AP09496	383.00	384.00	1.00	108	2820	3100	31.0	31	5									
AP09497	384.00	385.00	1.00	105	1450	800	28.0	14	3									
AP09498	385.00	386.00	1.00	107	948	176	30.0	0	2									
AP09499	386.00	387.00	1.00	169	9660	361	31.0	27	4									
AP09500	387.00	388.00	1.00	184	9900	420	33.0	38	3									
AP09701	388.00	389.00	1.00	304	9780	185	30.0	41	2									
AP09702	389.00	390.00	1.00	1380	14600	121	34.0	82	5									
AP09703	390.00	391.00	1.00	1280	4640	206	33.0	93	4									
AP09704	391.00	392.00	1.00	1250	891	82	33.0	113	6									
AP09705	392.00	393.00	1.00	1360	6160	68	40.0	99	5									
AP09706	393.00	394.00	1.00	1200	8920	63	39.0	86	6									
AP09707	394.00	395.00	1.00	357	13800	73	38.0	96	3									
AP09708	395.00	396.00	1.00	435	5640	94	31.0	48	3									
AP09709	396.00	397.44	1.44	213	11300	450	35.0	69	4									
AP09710	397.44	398.50	1.06	710	10100	1380	35.0	93	9									
AP09711	398.50	399.50	1.00	400	9700	2960	64.0	75	10									
AP09712	399.50	400.50	1.00	398	34000	3240	46.0	113	10									
AP09713	400.50	401.50	1.00	455	23100	736	48.0	34	7									
AP09714	401.50	402.50	1.00	159	705	110	45.0	0	3									
AP09715	402.50	403.50	1.00	66	2160	60	29.0	7	1									
AP09716	489.00	490.00	1.00	108	142	5	97.0	17	0									
AP09717	490.00	491.00	1.00	123	91	3	141.0	7	0									
AP09718	491.00	492.00	1.00	122	72	1	143.0	0	0									
AP09719	492.00	493.00	1.00	104	94	2	93.0	0	0									
AP09720	493.00	494.00	1.00	106	65	1	105.0	7	0									
AP09721	494.00	495.00	1.00	121	47	4	127.0	10	0									
AP09722	495.00	496.00	1.00	105	64	4	106.0	3	0									
AP09723	496.00	497.00	1.00	89	540	70	98.0	0	1									
AP09724	497.00	498.00	1.00	102	186	22	122.0	7	1									
AP09725	498.00	499.00	1.00	139	327	77	144.0	14	1									
AP09726	499.00	500.00	1.00	38	3240	720	87.0	27	2									
AP09727	500.00	501.12	1.12	181	3340	101	110.0	0	2									
AP09728	501.12	502.13	1.01	75	4840	72	92.0	21	2									
AP09729	502.13	503.00	0.87	100	1900	44	141.0	10	2									
AP09730	503.00	504.00	1.00	144	7560	31	154.0	14	2									
AP09731	504.00	504.93	0.93	576	2600	77	130.0	79	6									
AP09732	504.93	506.00	1.07	315	1750	65	129.0	21	2									
AP09733	506.00	506.86	0.86	90	5060	50	107.0	24	1									
AP09734	506.86	507.07	0.21	233	331	4	25.0	17	0									
AP09735	507.07	508.00	0.93	188	562	26	100.0	24	1									
AP09736	508.00	508.87	0.87	1420	3420	55	108.0	31	1									
AP09737	508.87	509.50	0.63	25200	7640	102	70.0	65	20									
AP09738	509.50	510.00	0.50	1480	117	11	104.0	41	2									

HOLE NUMBER: R55-05

ASSAYS SHEET

HOLE NUMBER : R55-05

ASSAYS SHEET

DATE: 01/06/1998

Sample	From (M)	To (M)	Leng. (M)	Cu ppm	Zn ppm	Pb ppm	Ni ppm	Au ppb	Ag ppm	Cu/Zn ppm	Co ppm	Pt ppb	Pd ppb	S ppm	Se ppm	As ppm	Hg ppm	Sb ppm
AP09739	510.00	511.00	1.00	10400	344	40	95.0	69	9									
AP09740	511.00	512.00	1.00	6880	912	68	90.0	45	4									
AP09741	512.00	513.00	1.00	1980	237	25	75.0	7	2									
AP09742	513.00	514.00	1.00	841	6080	15	67.0	21	1									
AP09743	514.00	515.38	1.38	122	9660	27	70.0	21	0									
AP09744	515.38	516.00	0.62	173	6580	9	81.0	3	0									
AP09745	538.78	539.65	0.87	93	127	16	117.0	7	0									
AP09746	539.65	540.00	0.35	95	133	17	73.0	0	0									
AP09747	540.00	541.00	1.00	83	90	7	73.0	0	0									
AP09748	541.00	542.00	1.00	100	73	3	79.0	0	0									
AP09749	542.00	542.85	0.85	119	29	3	131.0	3	0									
AP09750	542.85	544.00	1.15	116	68	4	100.0	0	0									
AR00301	544.00	544.53	0.53	88	50	3	68.0	0	0									
AR00302	544.53	545.20	0.67	93	177	8	66.0	0	0									
AR00303	545.20	546.00	0.80	81	111	2	51.0	0	0									
AR00304	546.00	547.00	1.00	87	85	1	51.0	0	0									
AR00305	547.00	548.00	1.00	74	73	1	43.0	0	0									
AR00306	548.00	549.00	1.00	110	90	1	50.0	10	0									
AR00307	549.00	550.00	1.00	76	105	1	54.0	0	0									
AR00308	550.00	551.00	1.00	97	72	1	53.0	0	0									
AR00309	551.00	552.00	1.00	91	79	1	53.0	0	0									
AR00310	552.00	553.00	1.00	76	78	1	44.0	3	0									
AR00311	553.00	554.00	1.00	78	136	2	59.0	0	0									
AR00312	554.00	555.00	1.00	82	180	3	70.0	10	0									
AR00313	555.00	556.00	1.00	84	106	3	59.0	3	0									
AR00314	556.00	557.00	1.00	81	91	2	60.0	0	0									
AR00315	557.00	558.00	1.00	55	121	1	28.0	0	0									

HOLE NUMBER: R55-05

ASSAYS SHEET

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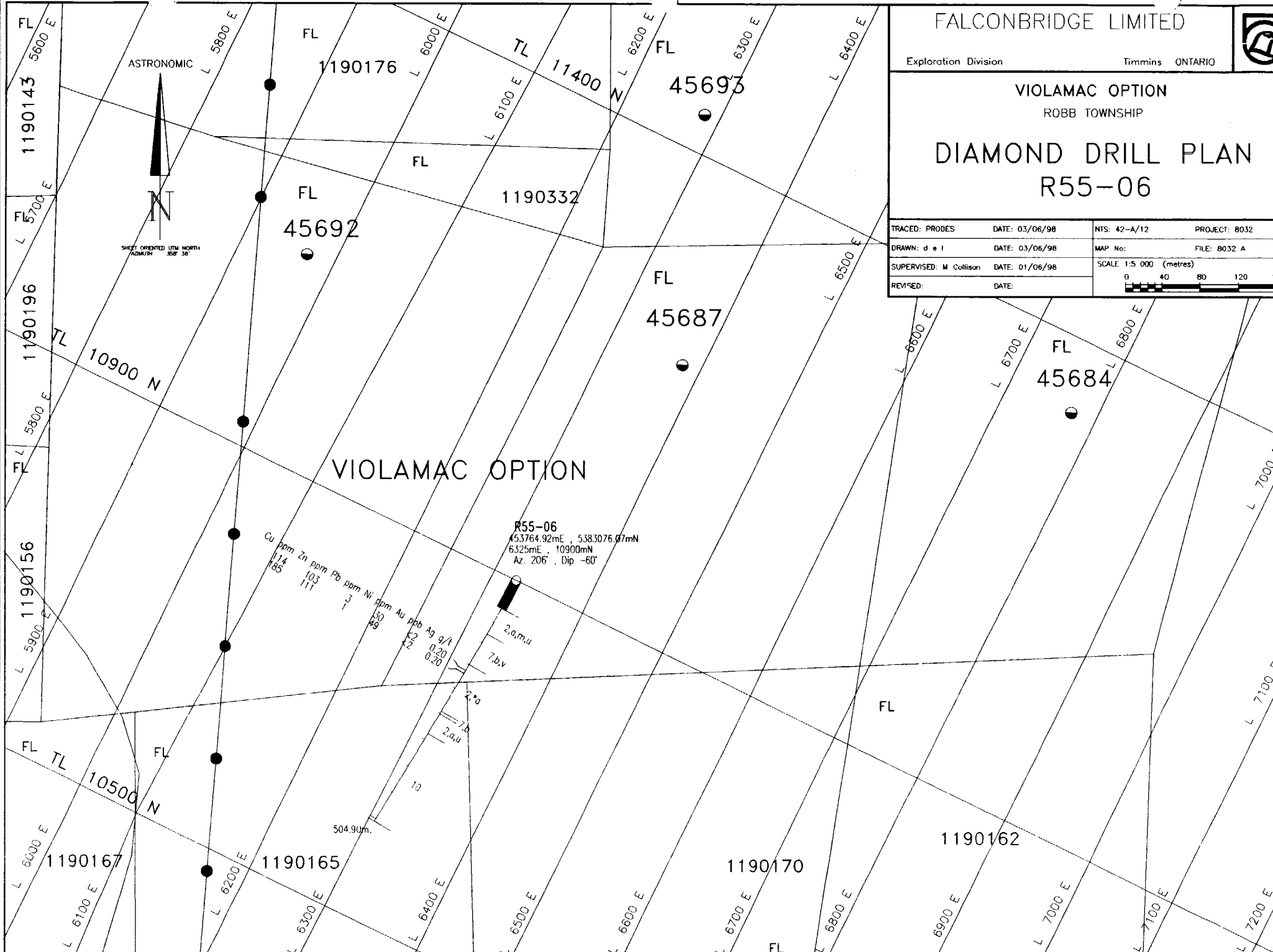
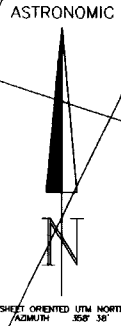


VIOLAMAC OPTION

ROBB TOWNSHIP

DIAMOND DRILL PLAN  
R55-06

TRACED: PRODES	DATE: 03/06/98	NTS: 42-A/12	PROJECT: 8032
DRAWN: d e l	DATE: 03/06/98	MAP No:	FILE: 8032 A
SUPERVISED: M Collison	DATE: 01/06/98	SCALE 1:5 000 (metres)	
REVISED:	DATE:	0 40 80 120 160	



VIOLAMAC OPTION

R55-06  
453764.92mE, 5383076.07mN  
6325mE, 10900mN  
Az. 206°, Dip -60°

Cu ppm	Zn ppm	Pb ppm	Ni ppm	Au g/t	Ag g/t
114	103	111	3	0.20	0.20
185			1	0.20	0.20
				0.20	0.20

2,0,uu  
7,b,v  
2,fo  
7,b  
2,uu  
10  
504.90m.





HOLE NUMBER: R55-06

## DRILL HOLE RECORD

DATE: 06/01/1998

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 67.06	CASING <{ob}>					
67.06 TO 129.15	MAFIC INTER- MEDIATE FLOW <2,a,m,u>	-grey-green -fine grained  -typically fine grained, locally medium grained silicified mafic flow -weakly foliated 50° to CA -crosscut by numerous quartz-carbonate veinlets ± epidote variably oriented -locally pillow selvages or "pillow-like" forms evident -contains flattened chlorite "disks" up to 4mm in size -lower contact sharp at 85° to CA			-up to 2% pyrite stringers locally	-WR samples at: AP09570 81.08-84.13m AP09571 102.41-105.46m AP09572 123.75-126.8m
129.15 TO 199.60	MAFIC DYKE <7,b,v>	-dark green -medium grained  -typical mafic intrusive leucoxenes and plagioclase throughout as large laths up to 3mm in size -relatively unaltered weakly foliated at 60° to CA -locally showing diabasic texture between feldspars and pyroxenes -epidote and quartz veinlets locally evident			-trace Py	-WR samples at: AP09573 129.85-132.89m AP09574 145.09-151.18m AP09575 163.37-166.42m AP09576 190.81-193.85m
199.60 TO 296.00	MASSIVE INTER- MEDIATE FLOW (Possibly a tuff) <2,*a>	-fine to medium grained -grey-green  -uniform massive intermediate volcanic - silicified, chlorite throughout (weak but pervasive) -locally siliceous with quartz phenocrysts up to 2mm in size (5%) -minor chlorite-spots up to 3mm discs locally developed -weakly foliated 50° to CA -212.91-213.15m: two 1cm wide quartz-carbonate veins lined with pyrite sphalerite (3% total) -212.8-219.2m: carbonate-chlorite veinlets oriented 30° to CA with 3% Py, Sph ± pyrrhotite lining fractures			-up to 2% pyrrhotite stringers associated with crosscutting quartz-carbonate stringers -minor sphalerite stringers	-WR samples at: AP09577 206.05-209.09m AP09578 221.28-224.33m AP09579 239.57-242.12m -ASSAY sample: AR00316 212.91-213.15m AR00317 218.8-219.2m -WR sample: AP09580 283.9-287.08m

HOLE NUMBER: R55-06

DRILL HOLE RECORD

LOGGED BY: M. Y. HOULE

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HOLE NUMBER: R55-06

DRILL HOLE RECORD

DATE: 06/01/1998

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
296.00 TO 301.23	MAFIC INTRUSIVE DYKE COMPLEX «7,b»	-283.9-287.08m: chloritized flow breccia section -dark green -fine to medium grained -Mafic intrusive intermixed with mafic flow to breccia. Probably incorporated (stoped) wallrock. -ophitic texture locally preserved (plagioclase and pyroxenes up to 3mm in size) -lower contact unclear		-chloritized		-WR sample at: AP09581 296.0-301.23m
301.23 TO 333.57	MASSIVE AMYGDALOIDAL MAFIC VOLCANIC «2,a,u»	-fine grained greyish cryptocrystalline -quartz-phyric, siliceous with amygdules up to 3mm filled with carbonate -locally pervasively silicified-sericitized as irregular patches -possibly consists of ash sized particles and quartz phenocrysts (5%) -foliated 60° to CA		-chlorite pervasively moderate	<1% pyrite disseminations	-WR samples at: AP09582 306.65-309.68m AP09583 318.83-321.86m AP09584 331.01-334.08m
333.57 TO 514.90	DIABASE «10»	-black medium grained -upper contact 20° to CA -typical diabasic texture -strongly magnetic		-none		
514.90 TO 514.90	E.O.H.					

HOLE NUMBER: R55-06

DRILL HOLE RECORD

LOGGED BY: M.Y. HOULE

HOLE NUMBER : R55-06

ASSAYS SHEET

DATE: 01/06/1998

Sample	From (M)	To (M)	Leng. (M)	Cu ppm	Zn ppm	Pb ppm	Ni ppm	Au ppb	Ag ppm	Cu/Zn	Co ppm	Pt ppb	Pd ppb	S ppm	Se ppm	As ppm	Hg ppm	Sb ppm
AR00316	212.91	213.15	0.24	114	103	3	30.0	0	0									
AR00317	218.80	219.20	0.40	185	111	1	49.0	0	0									





HOLE NUMBER: R55-07

## DRILL HOLE RECORD

DATE: 06/01/1998

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 73.46	OVERBURDEN «{obj}»					
73.46 TO 155.15	MASSIVE MAFIC VOLCANIC/ INTRUSIVE «2,7,a,m,v» RQD=75	-medium green -fine grained to 110.8m then medium grained to 133.0m and then fine grained to 155.15m -very massive, foliation not well developed -occasional quartz-calcite vein to 15cm -moderate shearing and minor gouge at 35° to CA at 146.0m -lower contact is irregular but sharp at 40° to CA -78.9-80.7m: Rusty, vuggy core probably a water seam. Locally core is very blocky. -145.45-145.55m: Brown-grey, fine grained felsic volcanic. Upper contact is very irregular at about 30° to CA. Lower contact is at 50° to CA.		-77.0-97.0m: Moderate pervasive calcite. Up to 5% 1mm white calcite flecks disseminated throughout the rock. -97.0-155.15m: weak pervasive epidote and calcite and weak fracture controlled hematite «{77.0-155.15}»«Cb»	-73.9-74.05m: quartz-calcite vein at 40-35° to CA -90.0-90.1m: quartz-calcite vein at 50° to CA with a speck of chalcopyrite -106.55-106.65m: quartz-calcite-chlorite vein at 55-45° to CA with 3% chalcopyrite -119.9-120.35m: Quartz-calcite-chlorite vein with trace chalcopyrite and arsenopyrite. Upper contact is at 45° to CA. Lower contact is at 40° to CA. -134.15-134.7m: Quartz-calcite-chlorite vein with trace pyrite. Upper contact is at 65° to CA, lower contact is at 40° to CA. -141.5-141.7m: Quartz-calcite chlorite vein at 50° to CA. Nil sulphides.	
155.15 TO 178.30	SPHERULITIC AMYGDAL- OIDAL QUARTZ PHYRIC FELSIC VOLCANIC «4,e,n,q,z» RQD=80	-light grey -fine to very fine grained -spherules are generally <2mm in diameter -locally up to 5% 2-20mm calcite-filled amygdalae -amygdalae do not look deformed -locally up to 5% 1-2mm dark grey quartz eyes -weak foliation at 50° to CA -Several blocks of massive mafic volcanic/intrusive material above 157.0m. Largest occurs from 156.2-156.75m. -occasional bleached mafic volcanic lapilli -minor gouge at 50° to CA at 159.9m -2-3% <0.5cm randomly oriented calcite veinlets -lower contact is gradational -175.8-175.9m: Irregular fragment of finely		-weak fractured controlled calcite	-nil	

HOLE NUMBER: R55-07

DRILL HOLE RECORD

LOGGED BY: J. PATTISON

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HOLE NUMBER: R55-07

## DRILL HOLE RECORD

DATE: 06/01/1998

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		bedded felsic ash tuff with 3-5% fine pyrite and pyrrhotite				
		-177.65-177.8m: Bed/clast of fine, light grey, cherty felsic ash tuff at 25-15° to CA. Tuff is vaguely banded/bedded parallel to the upper contact.				
178.90 TO 193.00	AMYGDAL- OIDAL SPHERULITIC QUARTZ EYE LAPILLI TUFF <4,e,n,q,t, b,z> RQD=80	-light grey -fine to medium grained -up to 10% grey to light blue quartz eyes <1-2mm in diameter and 5% buff coloured 0.5-2.0cm angular mafic lapilli in a moderately sheared sericitic matrix (at 30-35° to CA) -minor gouge at 50° to CA at 190.4m -minor gouge at 50° to CA at 193.0m -lower contact is gradational -179.0-179.4m: pale green tightly folded 1-2cm thick mafic lapilli subparallel to CA -185.0-187.4m: coarse quartz eyes 15-20% 1-4mm clear quartz-eyes (relatively undeformed) 5% 2-5mm calcite-filled amygdaloids -179.8-179.95m: irregular block of pale green mafic volcanic -181.0-181.3m: block of pale green mafic volcanic subparallel to CA -181.45-181.65m: irregular block of pale green mafic volcanic -182.95-183.25m: irregular block of pale green mafic volcanic		-weak pervasive sericitization -weak fracture controlled calcite	-trace disseminated pyrite	
193.00 TO 199.10	AMYGDAL- OIDAL FELSIC VOLCANIC <4,e,z> RQD=90	-light grey-green -fine grained -trace to 4% 1-5mm calcite-filled amygdaloids in weakly to moderately sheared felsic matrix -occasional felsic lapilli -foliation/shearing is at 30-40° to CA -2mm of sericitic gouge at 30° to CA at 195.8m -lower contact is sharp at 28° to CA -195.8-198.1m: Moderate shearing at 30° to CA. Blocky core. RQD=20.		-weak to moderate fracture controlled calcite #193.0-199.1#<Cb>	-nil to trace disseminated and fracture controlled pyrite	

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## DRILL HOLE RECORD

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
199.10 TO 202.80	MASSIVE TO MAFIC INTRUSIVE/ FLOW «7,2,a,m,v» RQD=60	-medium green -fine grained -quite massive foliation not well developed -moderate shearing and 3mm of gouge material at the lower contact -lower contact is at 35° to CA		-strong pervasive carbonatization (calcite) -weak pervasive chloritization   199.1-202.8  «Cb»	-nil	
202.80 TO 217.90	AMYGDAL- OIDAL SPHERULITIC FELSIC VOLCANIC «4,e,n,z» RQD=90	-light green-grey -fine grained -nil to trace calcite-filled amygdales and locally 1-2½ 1-2mm quartz eyes in a spherulitic felsic volcanic -weak foliation at ° to CA -5-15½ 2-20cm quartz-calcite veins at 20-40° to CA -lower contact is sharp at 70° to CA -203.75-204.2m: strongly chloritic shear zone subparallel to the CA		-weak fracture controlled calcite -weak pervasive chlorite	-nil to trace fracture controlled pyrite	
217.90 TO 230.60	MASSIVE TO MAFIC INTRUSIVE/ VOLCANIC «7,2,a,m,v» RQD=70	-medium green -fine grained to 224.2m then medium grained to 225.3m then fine grained -quite massive foliation not well developed -ophitic intrusive texture developed in medium grained portion of unit -lower contact is at 55° to CA		-weak pervasive carbonatization -weak pervasive epidotization	-nil	
230.60 TO 259.90	MASSIVE TO WEAKLY AMYGDAL- OIDAL FELSIC VOLCANIC «4,e,m» RQD=80	-light grey -fine grained -relatively massive, foliation not well developed -rare 2-3mm calcite-filled amygdale -rare quartz veinlet to 1cm at 40° to CA -lower contact is at 55° to CA		-1-3½ <5mm randomly oriented calcite veinlets	-nil to trace disseminated pyrite	
259.90 TO 274.30	MASSIVE TO MAFIC INTRUSIVE/ FLOW «2,7,a,m,y» RQD=90	-medium green -fine grained -weak foliation at 45° to CA -2-3½ leucoxene -lower contact is sharp at 40° to CA		-speckled with 5% <1mm white calcite flecks -very weak epidotization	-nil	

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
274.30 TO 297.50	FELSIC QUARTZ EYE TUFF *4,q,t,z* RQD=90	-light grey -fine grained -2-3% 1-2mm clear quartz eyes in a weakly sericitic felsic matrix -weak foliation at 50° to CA -occasional lapilli sized bleached mafic volcanic clast -becomes bedded below 291.8m -beds are <2cm thick at 55° to CA -beds are kink folded near the lower contact -broken core at lower contact but it appears to be at 40° to CA -286.0-291.8m: Strong shearing at 30-50° to CA. Many 1-3mm sericitic gouge zones. Rubby blocky pokerchip core. RQD=0.		-weak pervasive sericitization -weak fracture controlled calcite  -286.0-291.8m: moderate pervasive sericitization #286.0-291.8#*Se*	-274.3-276.5m: 1% disseminated fine pyrrhotite and pyrite -276.5-297.5m: trace pyrite	
297.50 TO 355.70	SHEARED MAFIC BRECCIA *2,bx* RQD=60	-light green -becomes grey-green below 340.8m -soft -moderate to strong foliation/shearing at 30-40° to CA -moderately in situ brecciated -locally weakly amygdaloidal (trace to 1%, 1-3mm, calcite-filled) -quite blocky -<5mm chloritic gouges at: 45° to CA at 308.5m 40° to CA at 326.8m 50° to CA at 341.6m 30° to CA at 354.8m -sharp flow contact (?) at 90° to CA at 340.8m -5mm of sericitic gouge at 60° to CA at the the lower contact -341.8-342.6m: Bleached shear zone. Moderate foliation at 50° to CA. Foliation is wavy in places.		-moderate to strong pervasive and fracture controlled calcite -weak epidote concentrated in calcite veinlets #297.5-356.7#*Cb*	-297.5-341.8m: nil -341.8-342.6m: 2-5% fine to medium euhedral pyrite in chloritic fractures subparallel to foliation and disseminated #341.8-342.6#*2-5%Py*	
356.70 TO 367.20	SHEARED TO ALTERED AMYGDALOIDAL MAFIC VOLCANIC *2,e*	-light buff to medium grey-green -fine grained -moderately soft -strong foliation/shearing at 45-50° to CA -several 1-2mm gouges parallel to foliation -foliation is locally strongly kinked		-356.7-358.4m: strong pervasive YELLOW SERICITE	-356.7-358.4m: 5-10% fine to medium subhedral pyrite and trace to 1% pyrite and trace to 1% red-brown sphalerite. Sulphides occur in	-strong shearing, bad ground probably a major fault zone

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DRILL HOLE RECORD

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
	RQD=10	-core is very blocky and locally forms "poker chips" -shearing and alteration mask most primary structures, however, 1-3mm calcite-filled amygdalae are locally recognizable -3mm chloritic gouge at 55° to CA at the lower contact -lower contact is at 50° to CA -359.8-359.83m sericitic fault gouge at 45° to CA -364.3-364.7m: FAULT/SLIP subparallel to the CA -364.6-367.2m: 0.6m of LOST CORE		-358.4-362.7m: strong pervasive chlorite and sericite weak local pervasive calcite  -362.7-364.3m: moderate pervasive sericite, weak pervasive chlorite and strong pervasive calcite -364.3-365.5m: moderate to strong sericitization and bleaching  -365.5-367.2m: strong pervasive sericitization and chloritization ‡356.7-358.4‡*Yellow Se* ‡358.4-367.2‡*Se,Ch*	1-5mm stringers subparallel to foliation. ‡356.7-358.4‡*5-10% Py,Tr-1%Sp* -358.4-362.7m: 5-15% fine to medium subhedral pyrite and trace to 2% sphalerite ‡358.4-362.7‡*5-15% Tr-2%Sp* -362.7-364.3m: trace to 2% disseminated and stringer pyrite ‡362.7-364.3‡*Tr-2%Py* -364.3-365.5m: 3-5% fine to medium disseminated and stringer pyrite ‡364.3-365.5‡*3-5%Py* -365.5-367.2m: 2-3% disseminated pyrite ‡365.5-367.2‡*2-3%Py*	‡356.7-360.9‡*0.05%Cu,0.94%Zn/4.20m* ‡360.9-361.5‡*0.06%Cu,5.65%Zn/0.60m* ‡361.5-362.1‡*0.03%Cu,1.31%Zn/0.60m* ‡362.1-365.0‡*0.01%Cu,0.22%Zn/2.90m* ‡365.0-365.5‡*0.02%Cu,1.61%Zn/0.50m* ‡365.5-373.6‡*0.01%Cu,0.15%Zn/8.10m*
367.20 TO 374.60	SHEARED TO MAFIC VOLCANIC *2,a,*t* RQD=10	-medium green-grey -very fine grained  -strong shearing at 55-60° to CA -soft, blocky, pokerchip core -shearing and alteration obliterate primary features -numerous 2-10mm fault gouges at <30° to CA -lower contact is at 50° to CA -371.25-371.35m: FAULT GOUGE at 60° to CA -371.6-372.5m: FAULT GOUGE and SHEARED CHIPS at 60° to CA RQD=0		-strong pervasive sericitization -moderate pervasive chloritization -367.2-370.3m: moderate pervasive calcite ‡367.2-374.6‡*Se,Ch*	-367.2-370.3m: nil to trace disseminated pyrite -370.3-373.0m: trace to 5% fine to medium subhedral pyrite disseminated and in <1cm stringers parallel to foliation -373.0-374.6m: 5% pyrite as 370.3-373.0m and trace red-brown sphalerite in <5mm stringers ‡370.3-373.0‡*Tr-5%Py* ‡373.0-374.6‡*5%Py,Tr.Sp*	-370.68-378.73m: 1.0m of LOST CORE       ‡373.6-374.6‡*0.02,1.11%Zn/1.00m*
374.60 TO 384.70	FELSIC-INTER-MEDIATE LAPILLI TUFF *4,3,t,b* RQD=20	-pale green  -vague bleached lapilli in a pale green felsic matrix -foliation is not well developed but rock is highly fractured and blocky -locally 1-3% quartz filled amygdalae -broken core at the lower contact but it appears to be at 50° to CA -375.6-376.78m: MUD. LOST CORE.		-locally moderate fracture controlled silicification	-nil to trace disseminated euhedral pyrite	‡374.6-375.6‡*0.01%Cu,0.10%Zn/1.00m*

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
384.70 TO 386.98	PYROXENITE DYKE *6,a* RQD=20	-medium green  -fine grained with 1-2% pale green plagioclase phenocrysts to 1.0cm -weakly magnetic -blocky -HOLE LOST at 388.98m due to bad ground		-moderately chloritic		
386.98 TO 388.98	E.O.H.					

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ASSAYS SHEET

DATE: 01/06/1998

Sample	From (M)	To (M)	Leng. (M)	Cu ppm	Zn ppm	Pb ppm	Ni ppm	Au ppb	Ag ppm	Cu/Zn ppm	Co ppm	Pt ppb	Pd ppb	S ppm	Se ppm	As ppm	Hg ppm	Sb ppm
AP09991	89.90	90.20	0.30	43	86	1	18.0	0	0									
AP09992	106.50	106.80	0.30	704	97	1	33.0	0	0									
AP09993	119.80	120.50	0.70	413	54	1	25.0	0	0									
AP09994	134.00	134.80	0.80	33	67	1	26.0	0	0									
AP09995	274.30	275.30	1.00	26	23	2	20.0	0	0									
AP09996	275.30	276.50	1.20	33	30	1	11.0	0	0									
AP09997	341.80	342.60	0.80	49	173	41	24.0	3	1									
AP09998	355.20	356.70	1.50	34	163	13	18.0	0	0									
AP09999	356.70	357.70	1.00	219	9100	3010	36.0	3	7									
AP10000	357.70	358.40	0.70	348	13600	262	17.0	0	4									
AR00701	358.40	358.70	0.30	253	15700	48	102.0	0	4									
AR00703	358.70	359.50	0.80	269	4820	200	128.0	31	3									
AR00704	359.50	360.00	0.50	1890	12100	142	140.0	120	13									
AR00705	360.00	360.90	0.90	556	7160	193	103.0	41	8									
AR00706	360.90	361.50	0.60	606	56500	386	100.0	96	10									
AR00707	361.50	362.10	0.60	319	13100	572	92.0	45	7									
AR00708	362.10	362.70	0.60	136	2060	488	110.0	27	6									
AR00709	362.70	363.70	1.00	70	820	110	73.0	0	1									
AR00710	363.70	364.30	0.60	98	2100	162	81.0	0	2									
AR00711	364.30	365.00	0.70	108	4280	542	92.0	48	3									
AR00712	365.00	365.50	0.50	220	16100	510	85.0	103	6									
AR00713	365.50	367.20	1.70	314	2420	198	81.0	14	2									
AR00714	367.20	368.70	1.50	89	974	15	43.0	0	0									
AR00715	368.70	370.30	1.60	113	896	6	45.0	0	0									
AR00716	370.30	371.80	1.50	230	1410	30	86.0	0	1									
AR00717	371.80	373.00	1.20	76	1590	31	88.0	0	1									
AR00718	373.00	373.60	0.60	210	7320	39	53.0	0	1									
AR00719	373.60	374.60	1.00	241	11100	111	69.0	0	2									
AR00720	374.60	375.60	1.00	137	972	28	40.0	0	0									

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ASSAYS SHEET



VIOLAMAC OPTION

ROBB TOWNSHIP

DIAMOND DRILL PLAN  
R55-08

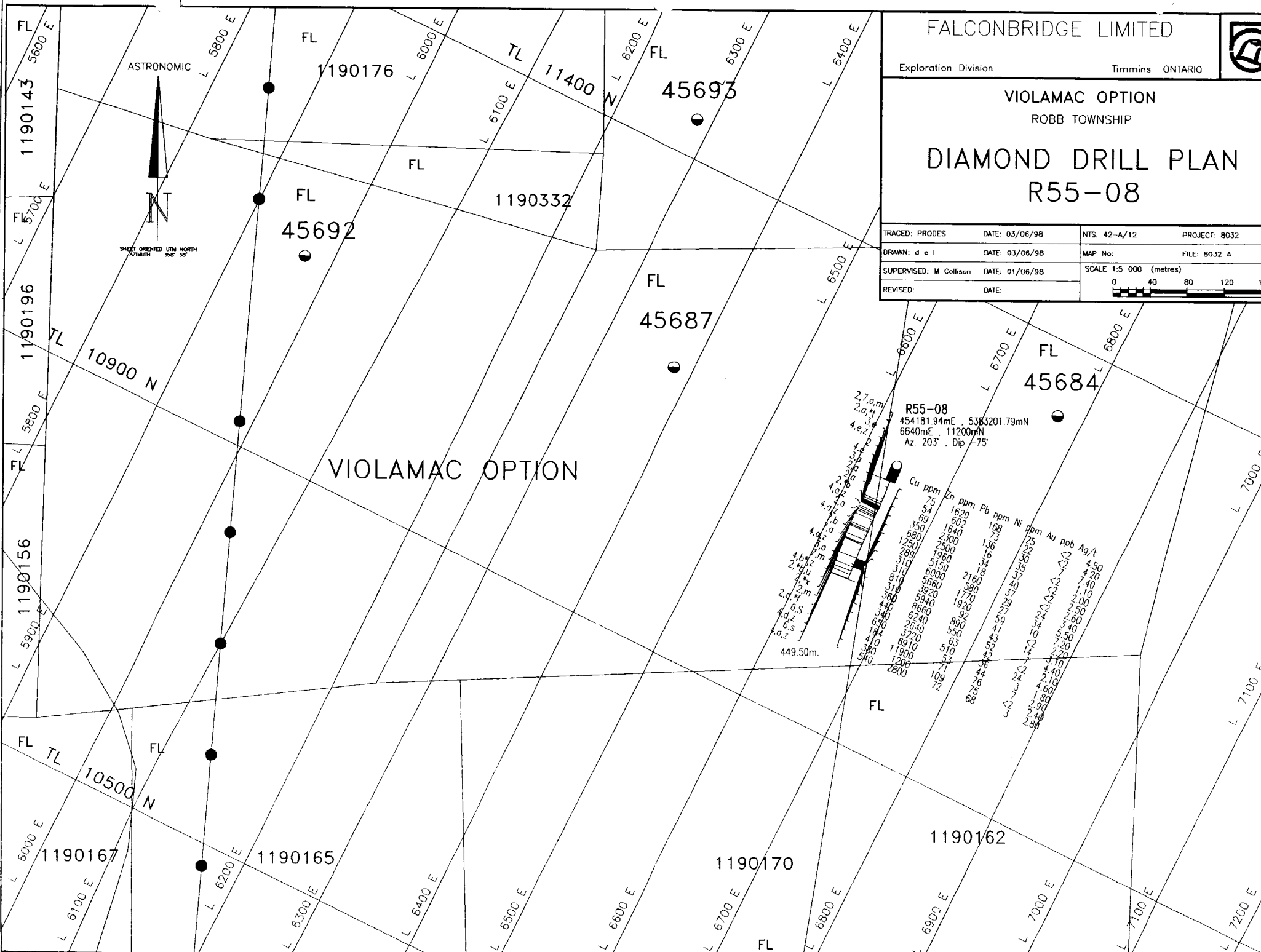
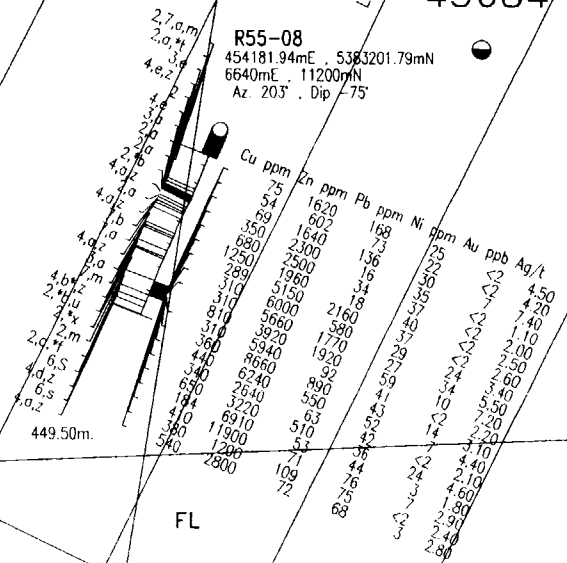
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DRAWN: d e l	DATE: 03/06/98	MAP No:	FILE: 8032 A
SUPERVISED: M Collinson	DATE: 01/06/98	SCALE 1:5 000 (metres)	
REVISED:	DATE:		

ASTRONOMIC



SHEET ORIENTED UTM NORTH  
AZIMUTH 359° 35'

VIOLAMAC OPTION





HOLE NUMBER: R55-08

## DRILL HOLE RECORD

DATE: 06/01/1998

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 72.00	CASING «{ob}»					
72.00 TO 164.30	MASSIVE TO MAFIC FLOW/ INTRUSIVE «2,7,a,m» RQD=70	-Dark green to greenish grey, medium to fine grained.  -Massive: white leucoxene chlorite patches associated with quartz calcite veins. -81.50-83.0m and 119.15-120.2m broken core with Fe-Oxides (weathering). -Incipient schistosity S1=40°.		-Carbonatization. «Cb» -Moderate to pervasive calcite. Locally epidotization. «Ep» from 107.4-129.8m, and 151.2m.	-Trace of pyrite.	-Quartz-carbonate vein and veinlets. -Vein density increases from 142.1-151.0m.
164.30 TO 173.50	MAFIC TO VOLCANIC «2,a,t»	-Green to greenish grey.  -Thinly foliated S1=S0 (35-40°). -1-2mm amygdules from 166.1-166.7m. -Fine grained (intrusive?) from 166.7-168.95m. -Amygdules, scattered pyrite from 168.95-173.5m.		-Carbonatization. «Cb» -Chloritization. «Ch»	-Trace of pyrite.	-Top appears inverted from 164.3-166.4m.
173.50 TO 183.60	INTER- MEDIATE TO VOLCANIC «3,e»	-Grey to greenish grey.  -Amygdulic zone with silicified intervals. S1=35°.		-Silicification. «Si» -Chloritization. «Ch» -Carbonatization. «Cb»	-Scattered pyrite crystals.	-Quartz-carbonate vein. -Hard, silicified.
183.60 TO 186.10	INTER- MEDIATE TO VOLCANIC (Mafic Intervals) «4,e,2»	-Green to grey, fine to coarse grained.  -Carbonated, silica and glassy amygdules in fine grained matrix. -Fine with amygdules and fragmental appearance, good schistosity from 183.95-184.4m and 186.8-187.3m. -Sericitized and silicified from 185.8-186.05m, 186.5-186.8m and 187.3-188.1m.		-Silicification. «Si» -Chloritization. «Ch» -Silicification. «Si» -Sericitization. «Se»	-Trace of pyrite.  -Pyrite layer 0.3cm at 187.75m.	-Remains silicified bands of pillowed units in Noranda.
186.10 TO 189.95	MAFIC TO VOLCANIC «2»	-Green. -Tuff with lapilli fragments.  -Scattered lapilli and smaller fragments in a fine matrix.		-Chloritization. «Ch»	-One pyrite stringer (0.3cm thick).	
189.95 TO 192.95	FELSIC TO VOLCANIC «4,e»	-Grey, fine matrix.  -Porphyry looking, amygdules in a fine matrix.		-Silicification. «Si» -Some sericitization. «Se»	-Trace of pyrite.	

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## DRILL HOLE RECORD

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
192.95 TO 195.95	MIXED MAFIC AND FELSIC «3,a»	-Green to grey, fine. -Silicified bands in mafic flow (some amygdules).		-Silicification. «Si» -Chloritization. «Ch»		-Quartz-carbonate veins.
195.95 TO 196.95	MAFIC VOLCANIC «2,a»	-Green to greenish yellow, fine. -Massive flow.		-Carbonatization. «Cb» -Chloritization. «Ch»	-Trace of pyrite.	-Quartz-carbonate veinlets.
196.95 TO 198.45	MAFIC VOLCANIC «2,a»	-Dark green to grey, fine to very fine grained. -Tuffaceous appearance. -Moderate to good schistosity.		-Chloritization. «Ch» -Carbonatization. «Cb» -Silicified bands.	-Pyrite stringers.	-Quartz-carbonate veinlets.
198.45 TO 199.65	MAFIC VOLCANIC «2,*b»	-Greenish grey and grey. -Felsic (grey) lapilli fragments in mafic matrix (hyaloclastite breccia equivalent?).		-Chloritization. «Ch» -Carbonatization. «Cb»	-Pyrite crystals associated with carbonate veinlets.	-Quartz-carbonate veinlets.
199.65 TO 213.80	MAFIC VOLCANIC «4,a,2»	-Dark green, fine grained. -Felsic volcanic (scattered fragments). -201.5-213.8m, quartz-carbonate amygdules. S1-30-35°. -210.8-211.2m, strong silicification and sericitization.		-Chloritization. «Ch» -Carbonatization. «Cb» -Silicification. «Si»	-Up to 1% pyrite aggregate and thin veins.	-Quartz-carbonate veinlets and amygdules.
213.80 TO 219.65	MAFIC INTRUSIVE «2,a»	-Green, fine grained. -Massive with white leucoxenes.		-Chloritization. «Ch» -Carbonatization. «Cb»	-Trace of pyrite.	-Poor RQD 30% (blocky). -219.15-219.35m, quartz-carbonate chlorite vein.
219.65 TO 227.00	INTER-MEDIATE VOLCANIC «4,a,2»	-Greenish grey, fine grained. -Silicified variolitic. -Very poor RQD: ~25% (fragmented). -Variolites are <1mm and in large amounts. -Last metre is very silicified.		-Silicification. «Si»	-Trace of pyrite.	-Check TiO2. -Quartz-carbonate veinlets.
227.00 TO 232.10	MAFIC INTRUSIVE «7,b»	-Green to greenish grey, fine to medium grained. -Massive with white leucoxenes (icelandite?).		-Chloritization. «Ch»	-Pyrite in quartz-carbonate veins.	-Quartz-carbonate vein from 229.45-229.60m.

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
232.10 TO 243.60	MAFIC INTRUSIVE «7,a»	-Green, fine grained. -Massive with quartz-carbonate patches (amygdule-looking)) and quartz-carbonate "boxwork".		-Chloritization. «Ch»		-Quartz-carbonate vein density increases.
243.60 TO 277.00	FELSIC VOLCANIC «4,a,z»	-Grey, fine grained. -Massive with 5-10% quartz eyes, <1mm in diameter. Generally with reaction rim. -Bleached from 157.0-158.5m. -Autobrecciated from 257.3-257.6m, 269.65-270.05m, 270.3-271.0m and 272.7-273.15m.		-Silicification. «Si»	-Thin pyrite stringers and isolated crystals.	-Thin quartz carbonate veinlets. -RQD=50%. -Pass gradually to a less siliceous or more chloritic altered with no quartz eyes.
277.00 TO 283.00	INTER-MEDIATE VOLCANIC «3,a»	-Grey, fine grained. -Massive, fine grained, white leucoxenes. -S1=40°-S0.		-Carbonatization. «Cb» -Chloritization. «Ch» -Silicification. «Si»	-Trace of pyrite.	-Quartz-carbonate veinlets. -Could be mafic, high TiO2.
283.00 TO 287.95	MAFIC INTRUSIVE «7,m»	-Green-grey, medium grained. -Massive, mottled with white leucoxenes. -286.0-287.47m, finer grained. -S1=35°.		-Carbonatization. «Cb»	-Trace of pyrite.	-Quartz-carbonate veinlets.
287.95 TO 315.30	FELSIC VOLCANIC «4,b*,z»	-Grey, fine grained with lapilli and breccia fragments. -Rhyolite tuff with some breccia and lapilli fragments. -S1=35°. -296.5-297.3m, slightly more chloritic. -294.4-400.0m, sericitic. -303.2-311.1m, sericitic, softer intervals. -311.1-314.2m, chloritic and carbonated. -Agglomerate size and fragments. -314.2-315.3m, flow breccia? -Sharp contact with mafic volcanic (sinvolcanic fault?).		-Silicification. «Si» -Carbonatization. «Cb» -Chloritization. «Ch» -Sericitization. «Se»	-Trace of pyrrhotite and pyrite.	-Quartz-carbonate veinlets.
315.30 TO 328.80	MAFIC VOLCANIC «2,*b,u»	-Pale green, coarse grained. -Mafic tuff and lapilli tuff. «*x»		-Chloritization. «Ch» -Carbonatization. «Cb»	-Trace of pyrite (pyrite crystals). -Trace of pyrrhotite, thin pyrite horizon (0.5cm).	

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## DRILL HOLE RECORD

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
328.80 TO 331.90	FELSIC VOLCANIC «2,*x»	-Grey to greenish grey, fine matrix. -Lapilli tuff. -230.4-230.85m, fault contact subparallel to core axis between lapilli and ash tuffs.		-Silicification. «Si» -Carbonatization. «Cb»		-Crenulation fold at 361.50m.
331.90 TO 378.30	MAFIC INTRUSIVE «2,m»	-Green to dark green, fine to medium grained. -Massive, with white leucoxenes. -Weak to moderate schistosity S1=35°. -356.5-357.05m, epidote and quartz increases. -350.6-363.9m, darker, finer grained. -363.9-372.95m, medium to coarse grained. -372.95m, darker, finer grained with strong carbonate alterations.		-Chloritization. «Ch» -Epidotization. «Ep»  -Carbonatization. «Cb»	-Pyrite crystals.	-Quartz-carbonate veinlets slightly silicified from 331.9-349.5m. -362.0-363.0m, quartz veins 43812cm thick.
378.30 TO 408.00	FELSIC VOLCANIC «2,a,*f»	-Grey to dark grey fine grained. -Highly schistose, fractured along joints with quartz eyes. Scarce fine grained pyrite from 378.8-382.85m.  -Pale grey with greenish yellow bands and pyrite stringer. Fine grained. -Similar rock and alteration, but with pyrite stringers (2-5% pyrite) from 382.85-389.5m. -389.5-395.08m, 15-25% pyrite. -S1=20-30°.  -Grey with pyrite stringers. -395.08-398.90m, strong schistosity. -S1=20-25°.  -Dark greenish grey, fine grained. -Strong schistosity S1=30-35° from 398.9-408.0m.		-Carbonatization. «Cb» -Sericitization. «Se»  -Sericitization. «Se» -Silicification. «Si»  -Silicification. «Si» -Sericitization. «Se» -Some chloritization.  -Chloritization. «Ch» -Sericitization. «Se» -Silicification. «Si»	-Pyrite stringers (2-5%).  -Trace of galena and sphalerite at 389.65m, and 390.15m. -Galena stringer (5mm) at 394.95m. -Trace of chalcopyrite at 394.95m (20-30%) pyrite. -Trace of pyrrhotite.  -20-25% pyrite.	-Sulphides zone.  -Sulphides zone.  -Sulphides zone.  -Gouge zone from 404.9-404.95m.
408.00 TO 421.85	MAFIC TO ULTRA MAFIC INTRUSIVE «6,S»	-Dark green, medium grained. -Polygon fractured with (epidote amygdules?).		-High chloritization. «Ch» -Epidotization. «Ep»	-Trace of pyrite.	-Fault breccia appearance.

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
421.85 TO 433.50	FELSIC VOLCANIC «4,d,z»	-Grey, medium to fine grained. -Massive, fine grained from 421.85-423.70m. -Massive, medium grained with quartz eyes and plagioclase thin laths from 423.7-429.75m (QFP). -Fine grained from 430.0-433.5m. -Gouge zone: 429.75-430.0m.		-Silicification. «Si» -Minor chlorite and sericite.	-Trace of pyrite.	-Quartz-carbonate veinlets.
433.50 TO 448.50	MAFIC TO ULTRAMAFIC INTRUSIVE «6,s»	-Massive with epidote clots, very fractured. -Broken fragments from 435.3-435.5m and 436.3-436.5m. -Dark green, medium grained. -Broken, fault zone from 445.2-448.5m.		-Epidotization «Ep» (epidote clots and balls) from 442.05m. -Chloritization. «Ch»	-Trace of pyrite at 443.60m.	-Fractured quartz-carbonate veinlets.
448.50 TO 449.50	FELSIC VOLCANIC «4,a,z»	-Fine grained, grey. -Fault contact with above unit. -Massive (rhyolite).		-Silicification. «Si» -Chloritization. «Ch»		-Quartz-carbonate veins.
449.50 TO 449.50	E.O.H.					-Lost hole.

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ASSAYS SHEET

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Sample	From (M)	To (M)	Leng. (M)	Cu ppm	Zn ppm	Pb ppm	Ni ppm	Au ppb	Ag ppm	Cu/Zn	Co ppm	Pt ppb	Pd ppb	S ppm	Se ppm	As ppm	Hg ppm	Sb ppm	
AR00151	380.00	381.50	1.50	75	1620	168	25.0	0	4										
AR00152	381.50	383.00	1.50	54	602	73	22.0	0	4										
AR00153	383.00	384.50	1.50	69	1640	136	30.0	7	7										
AR00154	384.50	386.00	1.50	350	2300	16	35.0	0	1										
AR00155	386.00	387.50	1.50	680	2500	34	37.0	0	2										
AR00156	387.50	389.00	1.50	1250	1960	18	40.0	0	2										
AR00157	389.00	390.50	1.50	289	5150	2160	37.0	0	3										
AR00158	390.50	392.00	1.50	310	6000	580	29.0	24	3										
AR00159	392.00	393.50	1.50	310	5660	1770	27.0	34	6										
AR00160	393.50	395.00	1.50	810	3920	1920	59.0	10	7										
AR00161	395.00	396.50	1.50	310	5940	92	41.0	0	2										
AR00162	396.50	398.00	1.50	360	8660	890	43.0	14	3										
AR00163	398.00	399.50	1.50	440	6240	550	52.0	7	4										
AR00164	399.50	401.00	1.50	340	2640	63	42.0	0	2										
AR00165	401.00	402.50	1.50	650	3220	510	36.0	24	5										
AR00166	402.50	404.00	1.50	184	6910	53	44.0	3	2										
AR00167	404.00	405.50	1.50	410	11900	71	76.0	7	3										
AR00168	405.50	407.00	1.50	380	1200	109	75.0	0	2										
AR00169	407.00	407.75	0.75	540	2800	72	68.0	3	3										

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 74.75	CASING «job»					
74.75 TO 144.70	MAFIC INTRUSIVE «7,m,b,h,v, B» RQD=30-80% increasing with depth	-Green, fine and medium grained intervals. -Massive equigranular with quartz-carbonate, chlorite-carbonate veins and veinlets. Epidote veins are less common. -Fractured core: 82.75-84.75m and 86.35-90.1m, rust stained fractures and water circulation indicators. Possible fault zone (RQD=0%). -Other fractured intervals at: 93.27m (20cm); 93.9m (20cm); 99.37m (20cm); 101.0-101.7m; 102.35-102.4m. -At 103.25m: quartz-carbonate-chlorite, 10cm rhythmic vein. Very fractured. -RQD>80% below 103.35m. -Quartz-carbonate veins are 1mm to 1cm thick (103.25-144.7m), many contain epidote or chlorite. -107.96-129.85m: green, medium grained. -129.85-144.7m: greenish grey. -144.7m: flow contact with grey, fine grained rhyolite 30°/CA. -Sl=30°/CA.		-Moderate chloritization and carbonatization 74.75-98.2m. -Weak chloritization and strong carbonatization 98.2-107.96m. -Quartz-carbonate veins: 93.75-93.85m; 95.6-95.7m; 98.9-99.2m. -Also 2-4cm veins at: 96.75m; 96.5m; 97.05m; 97.85m; 98.45m. -Rust stained broken quartz-carbonate vein: 101.4-101.7m. -Strong chloritization and epidotization. -Fissures filling carbonate 107.96-129.85m. -Moderate chloritization. -Pervasive carbonatization 129.85-144.70m.	-Nil.	-WR samples: AR01719 77.0-80.0m, AR01720 108.5-111.5m, AR01721 137.0-140.0m.
144.70 TO 145.65	FELSIC VOLCANIC «4,m,a» RQD=80%	-Grey, fine grained. -Massive rhyolite with thin quartz-carbonate veinlets. -Lower contact is sharp (35°/CA) may be faulted.				
145.65 TO 150.95	MAFIC INTRUSIVE «7,m,a» RQD=60%	-Greenish grey, fine grained. -Massive with thin quartz-carbonate veinlets, 10-45°/CA. -Lower contact is sharp at 30°.		-Pervasive carbonatization. «Cb»	-Trace of sulphides.	
150.95 TO 161.87	FELSIC VOLCANIC «4,a,e» RQD=75%	-Grey, fine grained. -Amygdaloidal rhyolite, amygdules are ellipsoidal in shape with long axis measuring 2-15mm, about 2.5 times longer than shortest diameter. They are filled by quartz and carbonate. May contain fine grained mafic intrusive bands in top first		-Some fracture filling chlorite.		-Fine grained disseminated pyrite in trace amounts. -Locally pyrite stringers.

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		metre. -Lower contact is flow type.				
151.87 TO 154.95	FELSIC VOLCANIC «4,*c,m» RQD=65%	-Pale grey fragments, grey matrix, coarse grained. -Rhyolite, breccia fragments are paler. They may contain 1-3mm quartz eyes and fine grained spherulitic matrix. -Fragments size decrease to lapilli and may amount to up to 10% below 164.95m.		-Silicified fragments. -Moderate chloritization of matrix.	-Disseminated pyrite in trace amounts within the matrix.	
154.95 TO 190.40	FELSIC VOLCANIC TUFF «4,t,*a,e, h,z» RQD=75%	-Grey, fine grained with some lapilli fragments. -Rhyolite tuff with lapilli fragments. They are generally paler and up to 5 times longer than wide with long axis subparallel to schistosity (S1) at 50°/CA. -The matrix is darker and spherulitic. -167.6-169.70m: 10% amygdules. -169.7-190.4m: variable amygdule content, generally around 1-3%. -175.3-190.4m: quartz-carbonate veinlets.		-Chloritization with the matrix.	-Trace of pyrite.	-WR sample: AR01722 167.0-170.0m.
190.40 TO 195.60	FELSIC VOLCANIC «4,m,a» RQD=70%	-Dark grey, very fine grained. -Massive rhyolite. -Upper contact is gradational. -Lower contact is about 30°/CA. It is marked by thin argillitic layer.		-Dark (High Fe?) chloritic alteration and quartz-carbonate veinlets.	-Trace of sulphides, finely disseminated pyrite.	
195.60 TO 239.66	FELSIC VOLCANIC «4,a,e,h,z» RQD=65%	-Grey, fine grained. -Sequence of spherulitic rhyolite flows with less than 5% pyroclastic fragments, capped by less than 1m thick flow top breccia. -Flows could be 3-10m thick. -Intersection angle is approximately 45°. -Quartz-carbonate veinlets and scarce amygdules. -Broken with 0% RQD: 193.35-193.55m; 197.7-198.0m; 201.45-201.60m fault; 205.4-205.65m; 207.7-209.45; 218.9-219.65m; 218.85-221.28m; 225.30-227.38m; 234.7-234.9m; 239.4-239.57m.		-Chlorite fills open fractures. -Quartz-carbonate veinlets stockwork.	-Disseminated pyrite in trace amounts.	-WR samples: AR01723 197.0-200.0m, AR01724 227.0-230.0m.

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
239.66 TO	MAFIC INTRUSIVE	-Green, fine grained, especially near contacts.				
246.50	<7,m,b,h,v> RQD=70%	-Massive fanocrystalline, medium grained intervals. -Upper and lower contacts are sharp at 50° and 65°/CA respectively. -Broken core: 241.9-242.7m and 244.0-244.15m.		-Pervasive carbonatization and chloritization. -Quartz-carbonate veinlets.		-WR sample: AR01725 241.0-244.0m.
246.50 TO	FELSIC VOLCANIC	-Grey, fine grained.				
267.55	<4,a,m,h,B> RQD=75%	-Massive rhyolite with epidotized glomeroporphyritic intervals. -Tuffaceous appearance 258.60-263.8m. -263.87-264.50m: mafic volcanic (pervasive chloritization and carbonatization). -267.0-267.55m: chloritized. -Interception angle approximately 45°/CA.		-Quartz and carbonate veinlets are common.		-WR sample: AR01726 257.0-260.0m.
267.55 TO	FELSIC VOLCANIC	-Grey, fine matrix, some lapilli fragments.				
280.90	<4,t,*c> RQD=70%	-Rhyolite tuff with breccia fragments, 276.35-280.90m. Fragments are paler and more siliceous. -Lower contact is 65°/CA. -Interception angle is approximately 50°/CA.				
280.90 TO	INTER- MEDIATE VOLCANIC	-Greenish grey, medium grained.				
289.65	<2,t,c,h,u> RQD=60%	-Intermediate tuff with amygdules and lapilli fragments. They are mainly mafic, elongate, subparallel to main schistosity at 50°/CA.		-Good chloritization. -Quartz-carbonate veins and amygdules.	-Disseminated pyrite stringer, 8m thick at 282.90m.	-WR sample: AR01727 286.5-289.5m.
289.65 TO	FELSIC VOLCANIC	-Grey with breccia fragments.				
294.44	<4,t,*c> RQD=60%	-Tuff, flow and breccia, in that order; at 294.44m the contact is gradually becoming more argillitic. -Interception angle approximately 40°/CA.				
294.44 TO	INTER- MEDIATE VOLCANIC	-Greenish grey, fine to coarse grained.				
300.53	<3,t,e> RQD=30%	-Intermediate tuff with elongated siliceous lapilli fragments.		-Quartz-carbonate veinlets.	-Trace of pyrite.	

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
300.53 TO 303.40	FELSIC VOLCANIC BRECCIA *4,t,*c,e* RQD=15%	-Grey with breccia fragments. -Mainly felsic breccia fragments from massive, grey rhyolite and intermediate volcanic rock, locally amygdaloidal. -Lower contact is a gouge zone filled by 1cm of chlorite. -The contact angle is approximately 20°. -SI approximately 40°/CA.		-Quartz-carbonate veinlets and amygdules.	-Scarce pyrite stringers 300.8-301.0m.	
303.40 TO 348.85	MAFIC INTRUSIVE *7,m,b,h,v* RQD=80%	-Green, fine to medium grained. -Massive leucoxene bearing with scattered quartz-carbonate veins and veinlets. -Veins are 1-3cm (317.5-348.85m) and some are made of epidote. -SI is approximately 40°/CA.		-Chloritized with epidote and quartz-carbonate and chlorite veins and veinlets.	-Trace of pyrite.	-Some broken core at 319.4-319.7m and 306.55-306.6m. -WR sample: AR01728 317.0-320.0m.
348.85 TO 359.35	FELSIC VOLCANIC *4,m,a,J,B* RQD=80%	-Grey, fine grained. -Massive spherulitic with quartz-carbonate veinlet stockwork. -Upper contact is a fault at 35°/CA. -Lower contact is flow type at 50°/CA. -Some tuffaceous intermediate intervals (361.08-362.0m).		-Carbonate-quartz veinlets (stockwork). -Chloritization along in tuffaceous intermediate horizons.	-Trace of pyrite.	-WR sample: AR01729 349.0-352.0m.
359.35 TO 377.85	MAFIC TO INTER-MEDIATE VOLCANIC *2,m,a* RQD=80%	-Green, fine grained. -Massive homogeneous with tuffaceous bands: 376.4-376.73m; 377.5-377.85m.		-Strong chloritization and pervasive carbonatization. -Also quartz-carbonate veinlets.	-Trace of disseminated pyrite.	
377.85 TO 425.27	FELSIC VOLCANIC *4,a,m,h,z* RQD=85%	-Grey, fine grained. -Massive spherulitic rhyolite; fragmentary intervals; locally mafic laminated and tuffaceous. -Less than 5% quartz-carbonate amygdules. -Upper contact is faulted at 50°/CA. -377.85-378.82m: felsic volcanic, variolitic rhyolite. -378.83-382.96m: massive mafic volcanic. -388.92-389.55m: lapilli sized fragments, highly siliceous and carbonated.		-Moderate carbonatization and chloritization. -Chlorite fills cavities and schistosity. -Calcite and quartz as veinlets. -Strong carbonatization and chloritization (420.7-423.55m).	-Trace of sulphides. -2cm disseminated pyrite (5% py) at 398.27m. -Very thin pyrite stringers along schistosity, pyrite <1% (398.2-401.2m; 410.4-418.0m). -Disseminated pyrite crystals (420.7-423.55m).	-WR samples: AR01730 379.0-382.0m, AR01731 409.0-412.0m. -401.15-401.25m and 421.76m: secondary S2 type folds.

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		-420.7-423.55m: greenish grey, locally laminated with spherulites and amygdules. -423.55-425.27m: grey, coarser and more siliceous.				
425.27 TO 447.00	MAFIC INTRUSIVE «7,a,m,y,h, B» RQD=85%	-Green, fine to medium grained. -Massive with very weak schistosity. -Upper contact is chilled approximately 55°/CA. -Lower contact is a joint. -Sl approximately 50°.		-Strong chloritization and quartz-carbonate veins and veinlets. -Some epidote quartz veins. -Some quartz-chlorite and quartz epidote 1-2cm veins and epidote ball type alteration.		-WR sample: AR01732 439.0-442.0m. -At 427.55m: very thin red chert at edge of carbonate vein.
447.00 TO 447.20	FELSIC VOLCANIC «4,t,E»	-Grey, very fine grained. -Laminated cherty tuff with some carbonate veinlets.				
447.20 TO 456.80	MAFIC VOLCANIC «2,t,*b,h, u» RQD=85%	-Green, coarse grained. -Mafic lapilli tuff. -Some breccia sized blocks. -Locally variolitic. -Amygdules are rare. -Fragments are mafic, some are more chloritic, others may contain carbonate white spots and veinlets. Some have flow top breccia appearance. -Lower contact is a mixed, heterogenous showing banded chill margin.		-Pervasive carbonate alteration. -Moderate carbonatization.	-Trace of pyrite (pyrite bleb at 407.3m).	-WR sample: AR01733 449.0-452.0m.
456.80 TO 480.40	MAFIC INTRUSIVE «7,m,b,h,v» RQD=85%	-Green, medium grained. -Massive mafic intrusive with quartz-carbonate veins and veinlets, more common close to contacts. -Lower contact is small (joint/fault) filled by a thin chlorite film. -Sl approximately 45°/CA.		-Strong chloritization. -Quartz-carbonate and/or chlorite veinlets, also epidote quartz veins.	-Trace of sulphides (scattered pyrite crystals).	-WR sample: AR01734 477.0-480.0m.
480.40 TO 484.00	MIXED FELSIC VOLCANIC WITH MAFIC INTERVALS	-Green and grey, fine grained. -Rhyolite tuff. -Some lapilli sized fragments near lower contacts, up to 5% quartz eyes (480.4-480.84m).		-Quartz-carbonate veinlets. -Chloritized where mafic. -Some chlorite and quartz-carbonate		

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
	«3,t,*c» RQD=85%	-Both contacts are 50°/CA. -480.84-481.98m: fine grained, mainly mafic. -Lower contact at 75°/CA. -481.98-483.42m: spherulitic rhyolite with two 10cm mafic intervals. -483.42-484.0m: fine grained, mafic.		veinlets.		
484.00 TO 488.00	INTER-MEDIATE LAPILLI-STONE «3,t,*c» RQD=85%	-Grey-green, coarse grained. -Mafic and felsic blocks and lapilli sized (hyaloclastite?). -Lower contact is 35°/CA.		-Carbonate-chlorite sericite fracture filling.	-Locally disseminated pyrite replacing amygdules and matrix.	
488.00 TO 492.16	INTER-MEDIATE VOLCANIC «2,t,*b,h,y,B» RQD=85%	-Green, fine to coarse grained. -Variolitic tuff (488.0-488.75m). -Mafic lapilli tuff, locally silicified and variolitic (488.75-492.16m).		-Chloritization. -Silicified matrix.	-Disseminated pyrite <0.5%. -Up to 3% pyrite (stringers subparallel to schistosity).	-WR sample: AR01735 488.0-491.0m.
492.16 TO 493.66	FELSIC VOLCANIC «4,t,*b» RQD=85%	-Grey, coarse grained. -Lapilli tuff possibly autofragmented.		-Silicification. -Fracture filling chlorite.	-Pyrite stringers.	
493.66 TO 504.65	FELSIC VOLCANIC «4,a,g,J,B» RQD=90%	-Grey, fine grained. -Quartz porphyry, quartz eyes are 1mm in diameter. -Some lapilli fragments are present in the first 5m.		-Quartz-carbonate veinlets. -Highly siliceous.	-Some pyrite stringers. -496.0-499.5m: approximately 1% pyrite.	-WR sample: AR01736 498.0-501.0m. -Assays: 503.15-522.7m.
504.65 TO 514.40	INTERMEDIATE LAPILLI TUFF «3,t,*b»	-Greenish grey. -Tuff and lapilli tuff; fragments are on average 2cm long and 0.5 across, most of them of mafic composition. -Good schistosity: S1 approximately 55°.		-Some silicified intervals. -Chloritization and carbonatization.	-493.65-506.20m: 3-5% pyrite. -Trace of sphalerite.	{504.65-519.40}«0.24%Zn/14.75m»
514.40 TO 521.45	FELSIC VOLCANIC «2,t,*b,S» RQD=85%	-Pale yellowish green, lapilli sized fragments. -Laminated silica-sericite and pyrite; bands are 1mm to 1.5cm in average. They subparallel the main schistosity at approximately 60°/CA. -The original rock has been almost completely		-Strong: Silicification «Si» Sericitization «Se»	-Fine to medium grained, disseminated pyrite stringers. -Up to 20% pyrite, trace of chalcopyrite and sphalerite.	-Kink bands (518.2m). -WR sample: AR01737 517.0-520.0m. {519.40-520.9}«1.50%Zn/1.50m»

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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		replaced. -Upper and lower contacts are 50° and 60° respectively.			514.4-521.45  «20% py»	520.9-522.4  «0.14%Zn/1.50m»
521.45 TO 579.90	FELSIC VOLCANIC «3,t,*a,m,j,B» RQD=90%	-Grey, fine grained. -Massive spherulitic rhyolite with tuffaceous intervals, becoming a tuff with scattered lapilli fragments at depth. -Tuffaceous material increases towards lower gradational contact. -Some mafic bands: 525.75-526.65m; 543.6-543.87m. -Weak schistosity (S1 approximately 50°/CA). -578.1-579.9m: siliceous and heterogeneous stringers.		-Pervasive carbonatization. -Some quartz-carbonate veinlets.	-Trace of pyrite.	-WR sample: AR01738 547.0-550.0m.
579.90 TO 586.20	INTER-MEDIATE LAPILLI TUFF «3,*b,h,B» RQD=90%	-Greenish grey, coarse grained. -Mainly green, fine grained, chloritized and/or silicified glassy fragments, some with small chlorite filled amygdules. -The matrix is silicified and spherulitic.		-Carbonate.	-Trace of pyrite.	-WR sample: AR01739 599.0-602.0m.
586.20 TO 589.85	INTER-MEDIATE VOLCANIC «3,a,e» RQD=90%	-Greenish green, fine grained. -Amygdaloidal flow with some lapilli fragments. -589.65-589.85m: chloritized matrix and lapilli. Some larger cherty fragments and a 1cm chert horizon. -Lower contact is 57°/CA.		-Carbonate filled amygdules.		
589.85 TO 590.05	CHERT «E»	-Grey, very fine grained. -Cherty horizon, upper contact is 45°/CA and lower contact is 50°/CA and folded.		-Carbonate veinlets.	-Trace of sulphides.	-Secondary fold.
590.05 TO 629.65	MAFIC VOLCANIC BRECCIA «2,t,*c,h,w,s» RQD=90%	-Pale greenish grey to green, coarse grained. -Pale grey lapilli and blocky fragments in a chloritized or silicified matrix. -Fragments composition is: devitrified, amygdaloidal, variolitic, or leucoxene/carbonate bearing mafics. -Some amygdales are filled with sulphides, pyrite or pyrrhotite.		-Chloritization «Ch» -Silicification «Si» -Some quartz-carbonate veins and veinlets.	-Pyrite stringers and minor pyrrhotite filling open cavities. -590.05-598.2m: scattered pyrrhotite stringers. -598.2-601.75m: 1-2% pyrite. -601.75-604.3m: 8-12% pyrite, trace of sphalerite.	-WR sample: AR01740 599.0-602.0m.

HOLE NUMBER: R55-10

DRILL HOLE RECORD

LOGGED BY: J. JIMENEZ

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HOLE NUMBER: R55-10

## DRILL HOLE RECORD

DATE: 06/01/1998

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
529.65 TO 638.10	MAFIC TUFF/FLOW «2,t,*a,m» RQD=90%	-Heterogeneous, possibly pillowed flows with lapilli size fragmentary intervals: (608.1-614.4m), (615.95-616.95m). -Greenish grey, fine grained with lapilli fragments. -Homogeneous, variolitic, lapilli bearing with coarse fragmentary intervals (pillowed?).		-Chloritization «Ch» -Quartz-carbonate and epidote veins and veinlets.	-Minor pyrite and pyrrhotite.	
638.10 TO 642.55	MASSIVE & SEMI-MASSIVE PYRITE «2,t,*b,s» RQD=85%	-Coarse to medium grained. -Massive and semi-massive pyrite and silica-sericitic alteration. -The original rock is difficult to distinguish. -Probably a mafic similar to the above mentioned. -Upper contact is 47°/CA and gradational. -Lower contact is 56°/CA and sharp.		-Chloritization «Ch» -Carbonate and chlorite fill cavities.	-Scattered pyrite seams.	-WR sample: AR01741 629.7-632.7m.
642.55 TO 684.60	MAFIC INTRUSIVE «7,b,h,y,B» RQD=80%	-Green, medium grained, finer near contact. -Massive, homogeneous, altered ferromagnesian minerals have been chloritized, feldspars have altered to epidote. Leucoxene bearing. -647.4-650.0m: coarse grained. -650.0-668.0m: medium grained. -650.25-650.85m: epidotization. -664.75-664.95m and 665.5-665.8m: quartz veins. -664.95-683.60m: medium to coarse grained. -683.60-684.60m: fine grained "chilled" contact zone.		-Strong: Silicification «Si» Sericitization «Se»	{638.1-638.55} «15-20% py» {638.55-641.44} «40-50% py, tr. sp» {641.44-642.55} «10-15% py» -Pyrite is fine to medium grained and tends to occur subparallel to main schistosity 50-55°/CA.	-642.18-642.24m: fine mafic intrusive. -WR sample: AR01742 639.0-642.0m. -Very good conductivity. {639.6-642.55} «0.39% Zn/2.95m»
684.60 TO 692.35	MAFIC VOLCANIC «2,t,*b,h,u,s» RQD=85%	-Green, coarse grained. -Mixed pyroclastic mafic debris in mafic matrix. -684.6-687.0m: glassy tuff with lapilli fragments. -687.0-689.53m: pyrite bearing mafic breccia. -689.53-690.2m: amygdaloidal, chlorite filled cavities. -690.2-692.35m: hyaloclastite, lapilli size fragments.		-Strong chloritization and epidotization. -Epidote occurs as veins at 60-35°/CA, locally may be pervasive. -Carbonate is pervasive in most of this unit, usually it forms white spots and fills veinlets with quartz and chlorite. -670.1-684.4m: carbonate alteration is weak, mainly veinlets.	-Disseminated pyrite and stringers up to 5% pyrite.  -Minor pyrite as veinlets.	-653.0-655.0m: blocky, 10% RQD. -WR sample: AR01743 669.0-672.0m.

HOLE NUMBER: R55-10

DRILL HOLE RECORD

LOGGED BY: J. JIMENEZ

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HOLE NUMBER: R55-10

DRILL HOLE RECORD

DATE: 06/01/1998

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
692.35 TO 705.92	MAFIC VOLCANIC *2,p,i,s* RQD=80%	-Grey and green, fine and coarse grained. -Pillowed flows showing flow top breccia, amygdaloidal flows and hyaloclastite. -Some of the flows are grey with rhyolitic appearance. -693.4-694.85m: hard, greyish green, siliceous. -694.85-695.21m: mafic hyaloclastite. -695.21-697.45m: grey amygdaloidal with hyaloclastite and pyrite band (695.5-695.6m). -697.45-697.87m: hyaloclastite. -697.87-698.15m: grey, siliceous, rhyolitic. -698.15-698.7m: mafic fragmental with pyrite. -698.7-700.75m: grey tuffs with fragmental interval (699.82-699.92m). -700.45-701.35m: hyaloclastite tuff. -701.35-702.8m: grey, amygdaloidal, fine grained. -702.80-705.95m: pillowed mafic flow. Most contacts and schistosity are 45-55°/CA.		-Moderate epidotization. -Strong silicification along flows. -Also strong chloritization especially within brecciated "selvages".	-Minor pyrite associated with chlorite.	-WR sample: AR01745 699.0-702.0m.
705.92 TO 705.92	E.O.H.					

HOLE NUMBER: R55-10

DRILL HOLE RECORD

LOGGED BY: J. JIMENEZ



HOLE NUMBER : R55-10

ASSAYS SHEET

DATE: 01/06/1998

Sample	From (M)	To (M)	Leng. (M)	Cu ppm	Zn ppm	Pb ppm	Ni ppm	Au ppb	Ag ppm	Cu/Zn	Co ppm	Pt ppb	Pd ppb	S ppm	Se ppm	As ppm	Hg ppm	Sb ppm
AR01658	503.15	504.65	1.50	17	21	7	18.0	0	0									
AR01659	504.65	506.15	1.50	125	3980	284	30.0	31	7									
AR01660	506.15	507.65	1.50	164	2550	14	31.0	7	2									
AR01661	507.65	509.00	1.35	150	2690	12	43.0	14	1									
AR01662	509.00	510.40	1.40	105	1010	1	77.0	3	0									
AR01663	510.40	511.90	1.50	203	1340	2	97.0	7	0									
AR01664	511.90	513.40	1.50	263	368	11	77.0	14	1									
AR01665	513.40	514.90	1.50	133	170	33	48.0	10	2									
AR01666	514.90	516.40	1.50	321	1490	92	29.0	45	5									
AR01667	516.40	517.90	1.50	205	7160	98	20.0	34	6									
AR01668	517.90	519.40	1.50	196	3860	455	19.0	62	9									
AR01669	519.40	520.90	1.50	776	15000	135	25.0	3	10									
AR01670	520.90	522.40	1.50	145	1410	30	21.0	3	1									
AR01671	597.50	599.00	1.50	108	75	1	102.0	0	0									
AR01672	599.00	600.50	1.50	113	82	1	87.0	10	0									
AR01673	600.50	602.00	1.50	90	297	1	83.0	14	0									
AR01674	602.00	603.50	1.50	91	112	6	52.0	10	0									
AR01675	603.50	605.00	1.50	92	100	6	78.0	17	0									
AR01676	605.00	606.50	1.50	101	46	1	82.0	0	0									
AR01677	636.60	638.10	1.50	75	118	1	44.0	3	0									
AR01678	638.10	639.60	1.50	61	502	30	71.0	0	1									
AR01679	639.60	641.10	1.50	448	4360	34	67.0	75	2									
AR01680	641.10	642.55	1.45	325	3400	11	69.0	10	1									
AR01681	642.55	644.05	1.50	57	257	1	43.0	0	0									
AR01683	686.70	688.20	1.50	95	142	8	43.0	3	0									
AR01684	688.20	689.70	1.50	86	82	5	60.0	14	0									
AR01685	689.70	691.20	1.50	83	89	1	89.0	7	0									

HOLE NUMBER: R55-10

ASSAYS SHEET

FALCONBRIDGE LIMITED



Exploration Division

Timmins ONTARIO

VIOLAMAC OPTION

ROBB TOWNSHIP

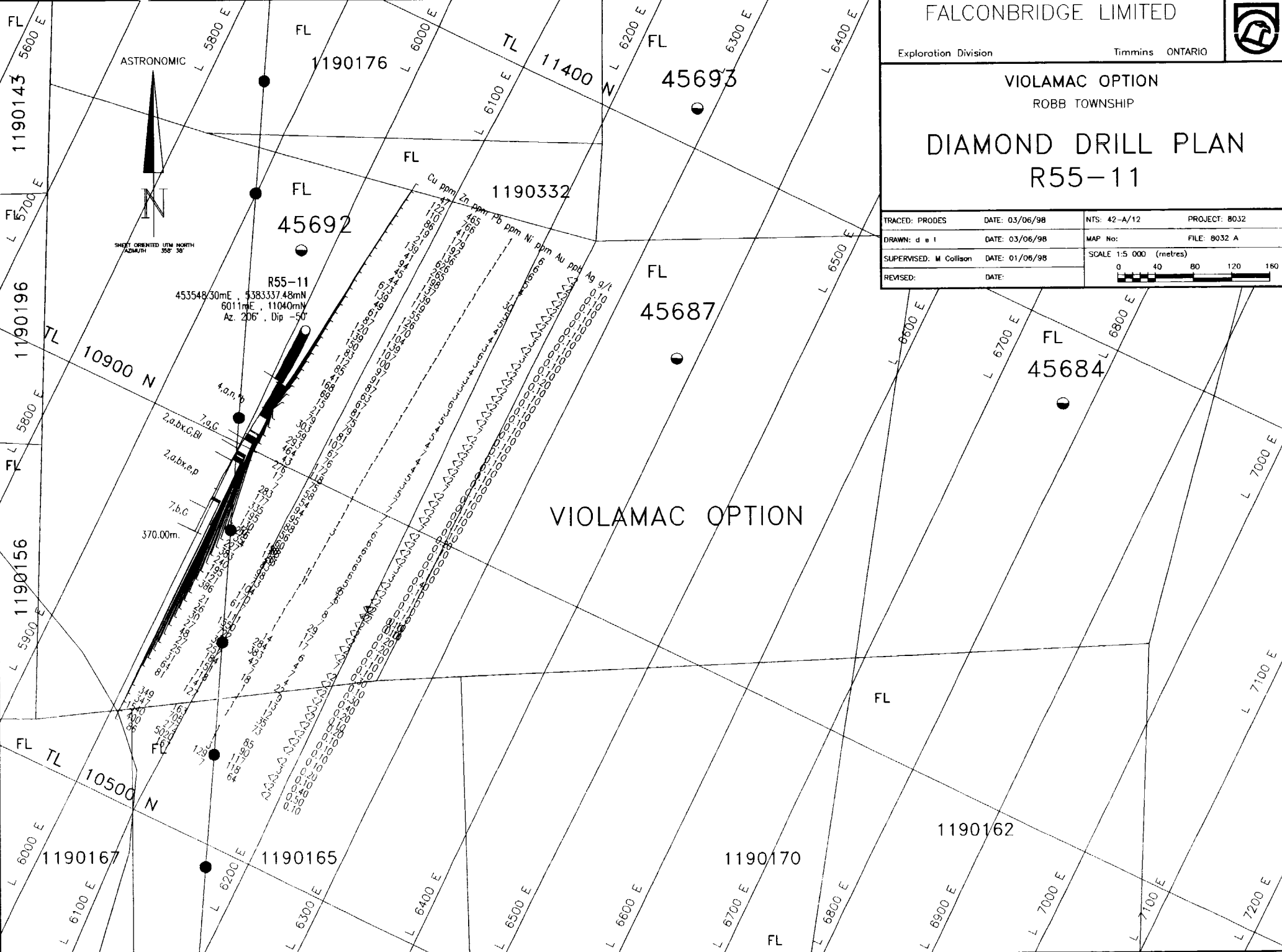
# DIAMOND DRILL PLAN R55-11

TRACED: PRODES	DATE: 03/06/98	NTS: 42-A/12	PROJECT: 8032
DRAWN: d e l	DATE: 03/06/98	MAP No:	FILE: 8032 A
SUPERVISED: M. Collison	DATE: 01/06/98	SCALE 1:5 000 (metres)	
REVISED:	DATE:		

ASTRONOMIC



SHEET ORIENTED UTM NORTH  
ADAMUS 205° 30'





HOLE NUMBER: R55-11

DRILL HOLE RECORD

DATE: 06/01/1998

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 96.00	« OB » Casing Overburden					
96.00 TO 209.39	«4,a,n,*b» Felsic Volcanic fine grained spherulitic lapilli tuff	<p>-fine grained dark grey to light green rock -chlorite-sericite clots and foliation parallel smears, appear to be mafic fragments for first 3m, but look more like matrix further downhole -spherules common, to 1-2mm in size -coalesced elongate fragments to 20mm to approximately 101m, become more discrete after 101m -105.2-105.33m band of spherule, quartz rich to 3mm in size up to 25% of rock --&gt; appear under microscope to be recrystallized quartz -more matrix rich, lapilli &gt;50% of rock after 111.5m -118.45-118.84m broken, poker chip core -134-142.1m massive, spherulitic section, still looks pyroclastic but lapilli poor -147-154m lapilli appear coalesced, but less flattened than previous -156.5-169m more massive spherulitic, lapilli poor section -possible internal contact @ 191.91m -unit becomes massive, more coarsely spherulitic, no visible lapilli, possible perlitic fractures -somewhat gradational lower contact, possibly structural</p> <p>  98.00-98.01  « S2 51° » Foliation strong foliation defined by sericite</p> <p>  131.00-131.01  « S2 49° » Foliation strong foliation/schistosity</p> <p>179.34-179.71 «7,a»</p> <p>179.92-180.47 «7,a»</p> <p>  182.87-184.77  «7,a» -fine grained mafic intrusive dike -sharp foliation parallel upper contact @ 45° to c.a. -irregular intrusive lower contact</p>		<p>-Pervasive sericite alteration imparting foliation 98-163m -Pervasive weak to moderate sericite alteration 190m to end of unit</p> <p>  98.00-163.00  «SePS» strong, pervasive, sericitization</p> <p>  192.00-209.39  «SePM» moderate, pervasive, sericitization weak foliation possibly around perlitic fractures</p>	<p>  98.00-163.00  «PyF1-5» 1.0-5.0% fracture/vein controlled pyrite</p> <p>  192.00-209.30  «PyD1-3» 1.0-3.0% disseminated banded pyrite, possible clasts in matrix between spherules and as massive fracture controlled bands locally to 10%</p>	

HOLE NUMBER: R55-11

DRILL HOLE RECORD

LOGGED BY: M.Collison

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HOLE NUMBER: R55-11

## DRILL HOLE RECORD

DATE: 06/01/1998

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		<p>209.38-209.39 {FAI} Fault -lower contact @ water bearing seam/fault @ 48° to c.a.</p>				
209.39 TO 227.88	<7,a,G> Mafic Intrusive fine grained leucoxene bearing	<p>-fine to medium grained light to light green rock -upper contact semi-gradational structural intercoolation? over first 30cm of unit -becomes massive fine grained -&lt;1mm leucoxene -dark chloritic? clots possible pseudomorphs after mafic minerals noted 219.15 to 220m -219.08 to 219.71 possible block or xenolith darker green, similar grain size, less epidotization, sharp contacts --&gt;either dike or block -sharp upper and lower contacts at high angle to c.a. -lower 50.0cm of unit marked by decreasing grain size to good lower chill margin -somewhat irregular lower contact with small dikelets @ -50° to c.a.</p> <p>212.59-213.60 &lt;4(?)&gt; -colour bounded epidotized unit, fine grained, possibly included felsic block, possibly just more bleached mafic --&gt; leucoxene noted in unit under 10X magnification</p> <p>{228.87-228.88} {S0 50°} Intrusive Bedding</p>		<p>-Pervasive moderate to strong epidotization from 211.0 to 219.08m -common quartz and or calcite and or epidote fractures at high angle to core axis.</p> <p>{209.39-219.08} {Epps} strong, pervasive, epidotization</p>	-tr disseminated py	
227.88 TO 249.50	<2,a,bx,G,B 1> Mafic Volcanic fine grained breccia leucoxene bearing bleached	<p>-fine grained light grey to light green rock -227.88-228.20 fairly siliceous, possibly felsic but not spherulitic -228.5-231.45m breccia w/ angular fragments, dominantly &lt;1cm in size -fragments diffuse to 229.5m -matrix chloritic -possibly in situ breccia -leucoxene noted throughout, generally only under magnification -moderately foliated -brecciation becomes more in situ after 231.0m -becomes more fine grained, massive, no visible internal structure after 232.0m -gradational colour change to more greenish after</p>		<p>-pervasive weak carbonatization -patchy moderate to strong bleaching common especially after 247m -fracture controlled foliation sub-parallel epidote alteration from 243 to 246.2m</p>	<p>-Fracture controlled py locally to 3% common throughout</p> <p>{232.40-233.00} {SphF1-3%} 1.0-3.0% fracture/vein controlled sphalerite</p>	{232.0-233.0} {0.16%Zn/1.00m}

HOLE NUMBER: R55-11

DRILL HOLE RECORD

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HOLE NUMBER: R55-11

## DRILL HOLE RECORD

DATE: 06/01/1998

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		<p>235.3m to 239.13m where rock again becomes bleached and brecciated</p> <ul style="list-style-type: none"> <li>-possible shear fabric</li> <li>-gradational colour change to darker green 239.8m</li> <li>-becomes massive structureless darker green at 241.78m</li> <li>-becomes increasingly foliated, shear?</li> <li>-248.6 to 249.5 RQD less than 10</li> <li>-lower contact lost in broken core with sand fault</li> </ul> <p>  230.79-230.80  *{S2 53°}* Foliation</p> <p>  244.68-244.69  *{S2 60°}* Foliation</p> <p>  249.40-249.50  *{FAI}* Fault</p> <ul style="list-style-type: none"> <li>-brittle fault, ground core, sand, dirty fragments probably water bearing</li> </ul>				
249.50 TO 332.28	*2,a,bx,e,p * Mafic Volcanic fine grained breccia amygduloida l/ vesicular pillowed	<ul style="list-style-type: none"> <li>-fine grained mottled, dark green to very light green fragmental unit</li> <li>-upper contact lost in fault</li> <li>-bleached vesicular pillow fragments to 20cm apparent size in generally dark fine grained chloritic matrix</li> <li>-pillow fragments larger after 255.5, less matrix, no visible selvages</li> <li>-less fragmental, more intact pillows with intact selvages after 258m</li> <li>-quartz filled vesicles give way to quartz/calcite filled amygdules after 266m</li> <li>-breccia resumes after 266m, moderately foliated at 54° to c.a.</li> <li>-possible hyaloclastite at 275.36</li> <li>-292.85 to 293.47 possible tufaceous or strongly sheared horizon, appears more siliceous</li> <li>-common 1-2m massive mafic sections between pillow breccia intervals of 1-5m to end of unit</li> <li>-sharp lower contact probably intrusive at 60° to c.a.</li> </ul> <p>  253.30-253.60  *{FAI}* Fault</p> <ul style="list-style-type: none"> <li>-30cm RQD=0, minor chloritic fault gauge</li> </ul>		<ul style="list-style-type: none"> <li>-pervasive, patchy, moderate to strong bleaching common throughout, common chloritization throughout matrix</li> <li>-common weak to moderate carbonatization throughout</li> </ul> <p>  277.21-278.13  *{EpFM}* moderate, fracture/vein controlled, epidotization</p> <p>  304.41-306.96  *{B1PS}* strong, pervasive, bleaching</p>	<ul style="list-style-type: none"> <li>-tr to 1% disseminated py in matrix</li> </ul> <p>  292.80-293.50  *{PyF1-3%}* 1.0-3.0% fracture/vein controlled pyrite</p> <p>  314.30-315.45  *{CpF1-3%}* 1.0-3.0% fracture/vein controlled chalcopyrite</p> <ul style="list-style-type: none"> <li>-cpy stringers 1-3mm wide, some association with quartz, remobilized?</li> </ul>	<p>  314.5-314.8  *0.07%Cu, 0.36%Zn/1.00m*</p>

HOLE NUMBER: R55-11

DRILL HOLE RECORD

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HOLE NUMBER: R55-11

DRILL HOLE RECORD

DATE: 06/01/1998

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		264.95-264.97  * S2 67° Seam* Foliation -water filled seam, talk chlorite alteration, no apparent movement				
		282.67-282.68  * S2 52° * Foliation -strong foliation				
		332.27-332.28  * S0 60° Intrusive* Bedding				
332.28 TO 370.00	*7,b,G* Mafic Intrusive medium grained leucxcene bearing	-fine to medium grained, geen and white rock -sharp upper contact, chill margin? -becomes medium grained by 335m -equigranular, saussuritized plagioclase, minor leucoxene noted, massive, becomes slightly finer grained from 369m to end of hole		-pervasive weak chlorization -pervasive weak to moderate saussuritization -common quartz veins 0.5 to 30cm crosscut unit at high angle to c.a. -hematite associated with quartz veins noted at 338.8m 338.9m 340.86m 343.42m and 345.79m 352.9m	-trace to 1% disseminated and fracture related euhedral py	
370.00 TO 370.00	*EOH* End-Of-Hole					

HOLE NUMBER: R55-11

DRILL HOLE RECORD

LOGGED BY: M.Collison

HOLE NUMBER : R55-11

## ASSAYS SHEET

DATE: 01/06/1998

Sample	From (M)	To (M)	Leng. (M)	Cu ppm	Zn ppm	Pb ppm	Ni ppm	Au ppb	Ag ppm	Cu/Zn	Co ppm	Pt ppb	Pd ppb	S ppm	Se ppm	As ppm	Hg ppm	Sb ppm
AR06566	98.50	100.00	1.50	47	465	1	6.0	0	0									
AR06567	100.00	101.50	1.50	122	766	1	6.0	0	0									
AR06568	101.50	103.00	1.50	110	411	1	6.0	0	0									
AR06569	103.00	104.50	1.50	86	179	1	5.0	0	0									
AR06570	104.50	106.00	1.50	19	192	1	4.0	0	0									
AR06571	106.00	107.50	1.50	21	136	1	11.0	0	0									
AR06572	107.50	109.00	1.50	139	626	1	30.0	0	0									
AR06573	109.00	110.50	1.50	41	265	1	5.0	0	0									
AR06574	110.50	112.00	1.50	94	198	1	5.0	3	0									
AR06575	112.00	113.50	1.50	45	137	1	4.0	0	0									
AR06576	113.50	115.00	1.50	44	139	1	4.0	3	0									
AR06577	115.00	116.50	1.50	673	119	1	3.0	0	0									
AR06578	116.50	118.00	1.50	139	55	1	6.0	0	0									
AR06579	118.00	119.50	1.50	49	126	1	3.0	0	0									
AR06580	119.50	121.00	1.50	61	170	1	4.0	0	0									
AR06581	121.00	122.50	1.50	87	104	1	3.0	0	0									
AR06582	122.50	124.00	1.50	120	139	1	3.0	0	0									
AR06583	124.00	125.50	1.50	139	107	1	3.0	0	0									
AR06584	125.50	127.00	1.50	150	100	1	6.0	0	0									
AR06585	127.00	128.50	1.50	83	97	1	3.0	7	0									
AR06586	128.50	130.00	1.50	112	91	1	5.0	0	0									
AR06588	130.00	131.50	1.50	85	87	1	4.0	0	0									
AR06589	131.50	133.00	1.50	41	63	1	5.0	0	0									
AR06590	133.00	134.50	1.50	168	67	1	4.0	0	0									
AR06591	134.50	136.00	1.50	69	81	1	7.0	0	0									
AR06592	136.00	137.50	1.50	15	75	1	4.0	0	0									
AR06593	137.50	139.00	1.50	21	79	1	4.0	7	0									
AR06594	139.00	141.50	2.50	79	81	1	5.0	0	0									
AR06595	140.50	143.00	2.50	303	107	1	3.0	0	0									
AR06596	142.00	143.50	1.50	59	67	1	5.0	0	0									
AR06597	143.50	145.00	1.50	293	76	1	7.0	0	0									
AR06598	145.00	146.50	1.50	464	172	1	7.0	7	0									
AR06599	146.50	148.00	1.50	43	118	1	7.0	0	0									
AR06600	148.00	149.50	1.50	276	75	1	7.0	0	0									
AT00401	149.50	151.00	1.50	17	58	1	6.0	0	0									
AT00402	151.00	152.50	1.50	7	54	1	6.0	0	0									
AT00403	152.50	154.00	1.50	283	94	3	6.0	3	0									
AT00404	154.00	155.50	1.50	177	95	1	5.0	3	0									
AT00405	155.50	157.00	1.50	335	88	1	6.0	0	0									
AT00406	157.00	158.50	1.50	195	56	1	6.0	0	0									
AT00407	158.50	160.00	1.50	130	60	1	5.0	0	0									
AT00409	160.00	161.50	1.50	216	68	1	5.0	0	0									
AT00410	161.50	163.00	1.50	4	53	1	6.0	0	0									
AT00411	191.50	193.00	1.50	10	198	1	9.0	0	0									
AT00412	199.00	200.50	1.50	35	126	1	7.0	0	0									
AT00413	200.50	202.00	1.50	227	83	1	7.0	0	0									
AT00414	202.00	203.50	1.50	383	98	1	8.0	0	0									

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ASSAYS SHEET

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HOLE NUMBER : R55-11

ASSAYS SHEET

DATE: 01/06/1998

Sample	From (M)	To (M)	Leng. (M)	Cu ppm	Zn ppm	Pb ppm	Ni ppm	Au ppb	Ag ppm	Cu/Zn ppm	Co ppm	Pt ppb	Pd ppb	S ppm	Se ppm	As ppm	Hg ppm	Sb ppm
AT00415	203.50	205.00	1.50	240	73	1	7.0	0	0									
AT00416	205.00	206.50	1.50	195	104	1	29.0	0	0									
AT00417	206.50	208.00	1.50	121	170	1	17.0	0	0									
AT00418	208.00	209.33	1.33	386	617	1	17.0	7	0									
AT00419	231.00	232.00	1.00	21	111	14	6.0	0	0									
AT00420	232.00	233.00	1.00	26	1550	284	4.0	0	0									
AT00421	233.00	234.00	1.00	30	722	383	7.0	0	0									
AT00422	234.00	235.00	1.00	27	390	42	4.0	0	0									
AT00423	235.00	236.00	1.00	48	257	7	22.0	0	0									
AT00424	239.50	241.00	1.50	27	184	18	9.0	0	0									
AT00425	241.00	242.50	1.50	25	151	1	13.0	0	0									
AT00426	242.50	244.00	1.50	31	118	1	12.0	0	0									
AT00427	244.00	245.50	1.50	64	141	1	35.0	0	0									
AT00428	245.50	247.00	1.50	81	127	1	73.0	0	0									
AT00429	313.00	314.00	1.00	349	163	1	85.0	0	0									
AT00430	314.00	314.50	0.50	347	705	1	90.0	3	0									
AT00431	314.50	314.80	0.30	1540	272	3	117.0	0	0									
AT00432	314.80	315.50	0.70	400	5020	129	118.0	0	0									
AT00433	315.50	316.50	1.00	86	167	7	64.0	0	0									

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ASSAYS SHEET

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HOLE NUMBER: R56-21

## DRILL HOLE RECORD

DATE: 06/01/1998

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 40.80	CASING «{ob}»					
40.80 TO 132.89	DIABASE «10»	-Blackish grey-green, coarse grained.  -Typical diabasic texture. -Strongly magnetic. -Lower contact siliceous interdigitating with felsic volcanics between 132.0-134.0m.				
132.89 TO 158.94	INTER- MEDIATE TO FELSIC VOLCANICS «3,4,n»	-Grey-black, fine grained.  -Very dark for felsic volcanics. -Intensely altered to chlorite and subordinate sericite. -Massive unit showing sericitic silicified cm-scale seams throughout (patchy sections). -Crosscut by dykes and veins of quartz-carbonate. -Epidote/saussurite sections (look like pillow selvages). -Locally spherulitic with 1-2mm sized ovoids of felsic material concentrated in cm-scale intermittent bands. -May be mafic protolith?		-Epidote. -Sausserite.	-2% pyrite cubes ± blebs disseminated and as stringers.	-WR samples: AP09503 139.99-142.04m, AP09504 154.23-157.28m.
158.94 TO 166.70	SULPHIDE ZONE IN FELSIC TUFF «4,a,t,*a»	-Grey-green, fine grained.  -Up to 25% sulphides locally within felsic ash tuff. -Plagioclase and locally quartz phyrlic. -Local intercalations of amygdaloidal rhyolite common as cm-scale bands. -Foliation varies from shallow (10-20°/CA near 159.20m) to 50°/CA near 166.0m. -Upper and lower contact sharp 30° and 40° respectively. -Highest sulphide content 25-35% from 164.90-166.0m.		-Chlorite weak to moderate.	-15-20% pyrite ± pyrrhotite ± sphalerite "dusting". ‡158.94-166.7‡«15-20%Py+Po+Sp»	-Assay samples: AP09478 158.94-159.20m, ‡158.94-166.7‡«15-20%Py+Po+Sp» AP09479 159.20-160.0m, AP09480 160.0-161.0m, AP09481 161.0-162.0, AP09482 162.0-163.0m, AP09483 163.0-164.0m, AP09484 164.0-165.0m, AP09485 165.0-166.0m, AP09486 166.0-166.60m. ‡158.94-161.0‡ «0.19%Cu, 0.27%Zn, 4.0gAg/t/2.06m» -WR sample: AP09505 159.20-163.37m. ‡165.0-166.0‡ «0.33%Cu, 0.04%Zn, 4.8gAg/t 1.00m»

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DRILL HOLE RECORD

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HOLE NUMBER: R56-21

## DRILL HOLE RECORD

DATE: 06/01/1998

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
166.70 TO 179.80	MAFIC-INTER-MEDIATE MASSIVE FLOW *2,3,a,m*	-Fine grained, black to dark grey. -Non descript, black, locally siliceous with quartz phenocrysts. -Possibly altered felsic. -Very fine grained. -Crosscut by quartz-carbonate veinlets. -Local seams of epidote-quartz and silica-sericite as cm-scale crosscutting veins. -Very fine grained locally.		-Epidote. -Sericite.	-Up to 2% pyrite disseminations.	-WR AP09506 172.52-175.57m.
179.80 TO 222.23	RHYOLITE QUARTZ-PHYRIC LAPILLI-ASH TUFF *4,a,t,n,q,*b*	-Grey-green, fine grained, cryptocrystalline. -Lapilli-ash felsic tuff with quartz-feldspar phenocrysts and fragments up to 3mm in size. -Matrix supported or crystal fragments throughout. -Locally very coarsely quartz phyric (possibly spherulites). -At 187.10-192.60m, dark coloured chloritized section. -At 211.60-212.50m, coarse quartz-feldspar phenocrysts up to 4mm in size 15-20% of rock.		-Silicified (weak). -Sericitized (locally).	-Up to 2% pyrite disseminations throughout.	-WR samples: AP09507 181.66-184.71m, AP09508 199.95-208.0m.
222.23 TO 226.95	BASALTIC DYKE *7,a*	-Green, fine grained. -Massive, uniform, weakly magnetic. Crosscut by quartz carbonate dykes 30-50°/CA. -Upper and lower contacts sharp 55°/CA.		-Weak chlorite.	-None.	-WR AP09513 222.23-226.95m.
226.95 TO 261.34	MASSIVE AMYGDALOIDAL RHYOLITE *4,a,e*	-Grey, fine grained. -Locally well foliated (65°/CA) felsic flow with amygdules up to 3mm in size throughout filled with carbonate ± quartz. -Intercalations of lapilli-ash at cm-scale. -Some amygdules appear to be lapilli fragments up to 4mm in size. -Quartz ± feldspar phyric. -Below 242.10m, amygdules become less prominent and unit becomes tuffaceous.		-Sericite pervasive. -Epidote locally developed.	-<2% pyrite disseminated.	-WR samples: AP09514 230.43-233.48m, AP09515 242.16-245.67m.
261.34 TO 265.12	SULPHIDE BEARING MAFIC BRECCIA/	-Dark green, fine grained. -Mafic volcanic interflow material, massive, showing structural fabric 60°/CA.		-Weak sericite epidote.	-Up to 10% pyrite blebs and stringers. *261.34-265.12*Tr-10%Py*	-WR sample: AP09516 261.34-265.12m.

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DRILL HOLE RECORD

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## DRILL HOLE RECORD

DATE: 06/01/1998

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
	FLOW *2,bx*	-Possibly breccia, fragments inconspicuous. -Upper and lower contacts sharp 60°/CA.				-Assay samples: AP09488 261.34-262.0m. AP09489 262.0-263.0m, AP09490 263.0-264.0m, AP09491 264.0-265.12m.
265.12 TO 294.44	MAFIC DYKE (ICELAN- DITE) *7,b*	-Dark green, medium grained.  -Weakly magnetic leucoxenes locally developed in coarser sections. -Grain size up to 3-5mm laths of plagioclase- pyroxenes. -Upper contact sharp 60°/CA. -At 279.40-281.4m and 283.7-294.44m, finer grained sections.		-Veins of quartz-epidote.	-<1% pyrite cubes.	-WR samples: AP09517 267.01-270.05m, AP09518 282.25-285.29m, AP09519 291.39-294.44m.
294.44 TO 294.44	E.O.H.					

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## DRILL HOLE RECORD

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ASSAYS SHEET

DATE: 01/06/1998

Sample	From (M)	To (M)	Leng. (M)	Cu ppm	Zn ppm	Pb ppm	Ni ppm	Au ppb	Ag ppm	Cu/Zn	Co ppm	Pt ppb	Pd ppb	S ppm	Se ppm	As ppm	Hg ppm	Sb ppm
AP09478	158.94	159.20	0.26	624	1230	13	38.0	21	1									
AP09479	159.20	160.00	0.80	1290	1990	15	42.0	27	2									
AP09480	160.00	161.00	1.00	2820	3640	17	36.0	55	6									
AP09481	161.00	162.00	1.00	145	697	1	25.0	0	0									
AP09482	162.00	163.00	1.00	76	252	1	27.0	0	0									
AP09483	163.00	164.00	1.00	91	894	1	22.0	0	0									
AP09484	164.00	165.00	1.00	98	556	1	27.0	0	0									
AP09485	165.00	166.00	1.00	3350	430	17	40.0	384	5									
AP09486	166.00	166.60	0.60	763	273	13	50.0	31	1									
AP09488	261.34	262.00	0.66	123	81	4	44.0	14	0									
AP09489	262.00	263.00	1.00	111	73	1	39.0	10	0									
AP09490	263.00	264.00	1.00	95	95	1	37.0	3	0									
AP09491	264.00	265.12	1.12	106	102	1	35.0	7	0									



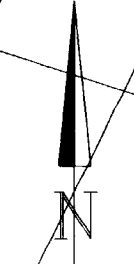
VIOLAMAC OPTION

ROBB TOWNSHIP

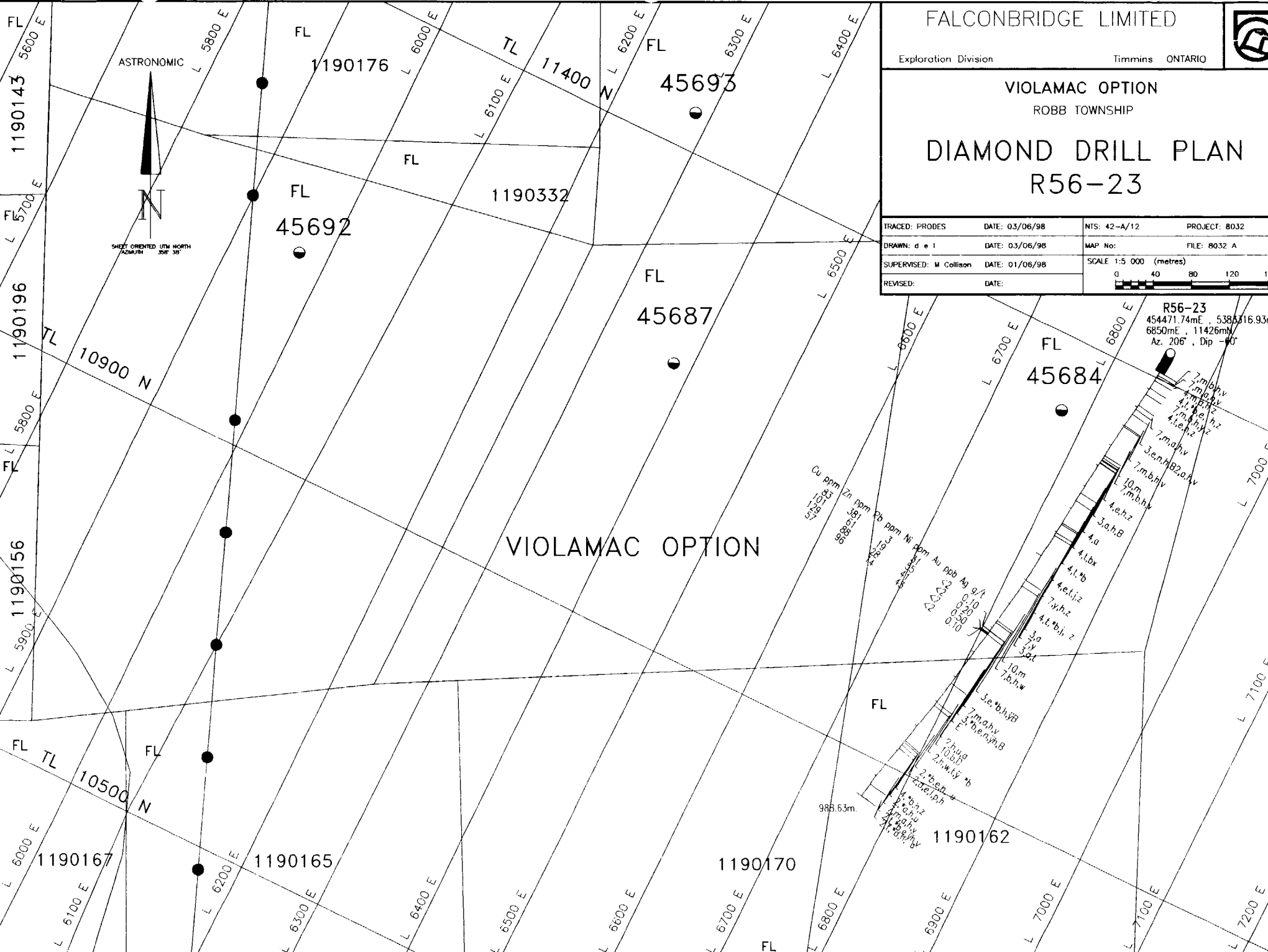
DIAMOND DRILL PLAN  
R56-23

TRACED: PRODES	DATE: 03/06/98	NTS: 42-A/12	PROJECT: 8032
DRAWN: d e l	DATE: 03/06/98	MAP No:	FILE: 8032 A
SUPERVISED: M Collison	DATE: 01/06/98	SCALE 1:5 000 (metres)	
REVISED:	DATE:		

ASTRONOMIC



SHEET ORIENTED UTM NORTH  
AZIMUTH 357 35'







HOLE NUMBER: R56-23

## DRILL HOLE RECORD

DATE: 06/01/1998

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 50.05	CASING <{ob}>					
50.05 TO 58.40	MAFIC INTRUSIVE <7,m,b,h,v> RQD=75%	-green, medium grained. -massive, medium grained. -57.3-58.48m: broken. -58.4-58.48m: quartz vein, faulted contact.				-a few quartz-carbonate veins (1-2cm thick).
58.40 TO 53.25	MAFIC INTRUSIVE <7,m,a,h,v> RQD=80%	-green, fine grained. -massive, leucoxene bearing, equigranular. -59.1-59.45m: contact parallel to core with coarser grained dyke.				-WR sample at: AR00765 58.0-61.0m.
53.25 TO 74.20	FELSIC VOLCANIC <4,m,a,h,z> RQD=80%	-grey, fine grained. -massive rhyolite with quartz-carbonate veinlets.			-trace of sulphides.	-WR sample at: AR00140 65.0-68.0m.
74.20 TO 56.25	FELSIC VOLCANIC <4,t,*b,e, z> RQD=80%	-dark grey, fine matrix. -rhyolite. -Heterolithic Lapilli tuff/Breccia. Lapilli and breccia fragments in a fine matrix mixed with flow. Amygdaloidal intervals.		-quartz and carbonate filled amygdules and veins.	-trace of pyrite.	-WR sample at: AR00141 93.0-96.0m.
56.25 TO 113.55	MAFIC INTRUSIVE <7,m,b,h,y, z> RQD=85%	-green, medium grained. -Massive, mafic intrusive dyke. Fine grained contact zones. -Broken: 102.1-102.35m and quartz vein, 101.65-101.7m, 102.0-102.05m. -113.3-113.55m: Fault zone (see mineralization).		-epidote and chlorite.	-113.3-113.55m: pyrite, trace of galena and chalcopyrite along quartz carbonate veins edge, associated with a faulted breccia zone at contact with green to grey baked rhyolite.	-WR sample at: AR00766 110.0-113.0m.
113.55 TO 145.08	FELSIC VOLCANIC <4,t,e,h,z> RQD=80%	-grey, fine grained. -massive amygdaloidal rhyolite tuffs and flows. -occasionally dark fragments. -S <sub>1</sub> =40° to CA at 120.7m. -113.55-117.8: massive fine grained. -117.8-145.08m: fragmental (tuff) with amygdaloidal intervals. 124.0-127.2m, 131.25-133.6m, 139.7-142.4m. -lapilli and breccia fragments occurs adjacent to		-113.55-114.6m: silicification. «Si» -weak carbonatization. «Cb»	-113.55-114.6m: 1% pyrite. -trace of pyrite. «Py»	-142.9-143.0m: quartz-carbonate vein -WR sample at: AR00142 123.0-126.0m.

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## DRILL HOLE RECORD

DATE: 06/01/1998

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
145.08 TO 156.30	MAFIC INTRUSIVE «7,m,a,h,v»	amygdule zones, flow top breccia? -green, fine grained. -massive, fine grained mafic intrusive. -153.4-154.5m: rhyolite with trace of pyrite. -154.5-156.3m: mafic intrusive.		-carbonatization. «Cb»	-trace of pyrite.	-WR sample at: AR00767 153.0-156.0m.
156.30 TO 169.25	INTER- LAYER RHYOLITE/ MAFIC «3,e,n,h,B» «2,a,h,v»	-grey and green fine grained. -amygdaloidal rhyolite interlayered with fine grained green mafic flow. -156.4-158.7m: silicified, with pyrite stringers and some chloritic bands. -158.7-161.0m: amygdaloidal rhyolite and green mafic bands. -161.0-164.7m: interlayered rhyolite-mafic at a 2:3 ratio -164.7-169.25m: spherulitic rhyolite with mafic bands.		-weak: silicification. «Si» chloritization. «Ch» carbonatization. «Cb»	-pyrite stringers (1-2% Py) at 156.4-170.0m. -trace of pyrite for remaining core.	-WR sample at: AR00143 156.4-159.4m.  -WR sample at: AR00144 161.2-164.2m: Mafic bands only.
169.25 TO 193.55	MAFIC INTRUSIVE «7,m,b,h,v» RQD=80%	-green, fine to medium grained. -massive mafic intrusive. -169.25-172.53m: fine grained altered. -172.53-184.0m: massive fine grained. -184.0-194.3m: spotted, massive medium grained. -194.3-198.55m: fine grained, baked at lower contact.		-epidotization. «Ep» -leucoxene bearing.		-188.5-190.0m: quartz-epidote veins. -WR sample at: AR00768 191.0-194.0m.
193.55 TO 211.95	MAFIC INTRUSIVE «10,m» RQD=80%	-dark grey, fine grained. -massive fine grained diabase dyke chilled margins and wallrock. -highly magnetic.		-none.	-magnetite. «mag»	
211.95 TO 254.95	MAFIC INTRUSIVE «7,m,b,h,v» RQD=90%	-green, medium grained. -massive mafic intrusive, leucoxene bearing. -quartz-carbonate veins: 219.6m, 233.6m, 255.65m, 258.15m, 254.4m, 260.55m, 262.8m, 264.25m (1-5cm thick). -fine grained at the contact with rhyolite.		-epidotization. «Ep» -chloritization. «Ch» -carbonatization. «Cb»		-WR sample at: AR00769 221.0-224.0m: quartz- carbonate veins. -WR sample at: AR00771 251.0-254.0m.

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## DRILL HOLE RECORD

DATE: 06/01/1998

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
274.95 TO 281.05	FELSIC VOLCANIC «4,e,h,z» RQD=85%	-grey, fine grained unit. -amygdaloidal rhyolite with quartz eyes. -it contains tongues of fine mafic rock.		-silicification. «Si»	-pyrite (1%) along contact with mafic dyke.	-WR sample at: AR00146 276.0-279.0m.
281.05 TO 285.30	FELSIC VOLCANIC? «3,a,h,b» RQD=80%	-green, fine grained matrix. -281.05-285.3m: chloritic matrix with felsic lapilli fragments (5%) some siliceous bands.		-chloritization. «Ch»		-WR sample at: AR00147 282.0-285m.
285.30 TO 287.30	FELSIC VOLCANIC «4,a» RQD=80%	-grey, fine grained. -amygdaloidal rhyolite.		-silicification. «Si»		
287.30 TO 292.65	FELSIC VOLCANIC «4,t,bx» RQD=75%	-greenish yellow breccia. -rhyolite breccia strongly sericitized.		-sericitization. «Se»	-trace of Py.	
292.65 TO 293.45	FELSIC VOLCANIC «4,t,*b»	-green-grey lapilli. -lapilli altered rhyolite strong chlorite and carbonate alteration.		-chloritization. «Ch»	-trace of Py.	
293.45 TO 365.00	FELSIC VOLCANIC «4,e,t,j,z»	-grey, fine grained. -Amygdaloidal rhyolite, slightly chloritized. Some lapilli fragments (<5% (297.3-298.5m)). -327.0-329.5m: chloritized. -330.6-331.35m: fragmental. -293.45-326.8m: pressure brecciated and amygdaloidal intervals. -326.8-365.0m: quartz-carbonate veins and veinlets. -342.15-343.43m: fragmented core. -355.95-365.0m: Chlorite and carbonate altered. Pressure brecciated intervals. Silicified.		-some chloritization.  -chloritization. «Ch» -silicification.	-trace of pyrite near contact with above unit.  -pyrite-trace to 0.5%.	-quartz carbonate veinlets amygdules are mainly quartz-carbonate filled. -WR sample at: AR00152 342.0-345.0m.
365.00 TO 382.40	MAFIC INTRUSIVE «7,y,h,z» RQD=80%	-dark green, fine to medium grained. -massive "icelandite", equigranular strongly chloritized. -scattered pyrite crystals -albite phenocryst. -381.05-381.3m: rhyolite bands with pyrite		-chloritization. «Ch» -369.5-369.8m: quartz veins.	-pyrite.	-WR sample at: AR00770 372.0-375.0m.

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DRILL HOLE RECORD

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## DRILL HOLE RECORD

DATE: 06/01/1998

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		veinlets.				
382.40 TO 431.40	FELSIC VOLCANIC TUFF «4,t,*b,j, z» RQD=75%	-dark grey, fine grained. -massive rhyolite. -387.45-394.6m: tuff with lapilli fragments. -394.6-397.25m: fragmental, mainly tuff. -397.25-399.2m: fragmental, lapilli, very chloritic. -399.2-402.0m: fine grained fragmental (tuff). -402.0-410.0m: spherulitic rhyolite with disseminated pyrite and scattered lapilli. -410.0-428.35m: heterolithic lapilli tuff felsic and mafic fragments, some of them amygdaloidal. -428.35-431.4m: fine grained, high silica.		-chloritization. «Ch»  -chloritization. «Ch»  -silicification. «Si»	-trace of pyrite.  -disseminated sulphides (¼%). -pyrite and pyrrhotite from 398.9-399.3m.	-WR sample at: AR00757 382.5-385.5m  -quartz veins 392.2-398.0m 1 per metre 1-2cm thick.  -WR sample at: AR00760 412.0-415.0m
431.40 TO 434.20	FELSIC VOLCANIC/ MAFIC INTRUSIVE TRANS- ITIONAL «3,a»	-grey to green, fine to medium grained. -transition zone, chilled margins. -silicified rhyolite showing epidote veins and silicified intrusive bands.		-silicification.	-disseminated pyrite ¼%.	-epidote/orotclase and quartz veins.
434.20 TO 451.60	MAFIC INTRUSIVE «7,y»	-green, fine medium grained. -alternating medium and fine grained mafic intrusive. -434.2-437.8m: medium grained. -437.8-447.3m: fine grained. -447.3-451.6m: medium grained.			-disseminated pyrite crystals.	-quartz vein at: 439.6-439.85m, 441.5-441.2m, 447.15-447.25m.
451.60 TO 457.35	FELSIC VOLCANIC «3,a,t» RQD=65%	-grey, fine grained matrix with fragments. -cherty appearance with white quartz-carbonate veins, pinkish ortoclase and pyrite stringers.		-silicification. «Si»	-2-4% pyrite.	-WR sample at: AR00764 452.0-455.0m, only alteration was sampled.
457.35 TO 550.95	DIABASE «10,m» RQD=80%  RQD=15%	-grey, medium grained. -massive medium grained, ophitic (fine grained near margins) with epidotized feldspar glomerporphyritic up to 1cm across. -491.0-518.0m: coarser grained. -518.0-546.0m: medium grained.		-epidotization.	-trace of sulphides at chilled margins.	

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DRILL HOLE RECORD

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## DRILL HOLE RECORD

DATE: 06/01/1998

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
550.95 TO 563.00	MAFIC INTRUSIVE «7,b,h,w»	-546.0-550.95m: fine grained. -green, medium grained. -massive, fine to medium grained, quartz veined. -550.95-552.4m: fine grained. -552.4-561.6m: medium grained. -561.6-562.35m: rhyolite tuff. -562.35-563.0m: medium grained.		-chloritization. «Ch»	-traces of sulphides.	-537.0-550.95m: broken core.  -WR sample at: AR00772 556.0-559.0m.
563.00 TO 635.00	FELSIC VOLCANIC «3,e,*b,h,B» RQD=75%	-dark greenish grey, fine grained matrix. -Amygdaloidal heterolithic tuff and lapilli tuff. Veinlets parallel and subparallel schistosity (S1-55° to CA) some cherty quartz fragments. Amygdules are filled by carbonate and coated by a thin chlorite envelope. -Locally bleached with high silica bands, commonly spherulitic, sometimes glassy. -581.4-582.15m: broken core. -586.3-589.4m: slightly more chloritic. -547.1-605.3m: pale grey-green colour. -605.3-624.0m: Amygdules almost absent, spherulites very common, still fragmental but sometimes with flow appearance. Quartz eyes may be found. Siliceous bands are present. -624.0-635.0m: dark grey amygdaloidal variolitic tuff with lapilli fragments.		-563.0-572.8m: strong silicification. «Si» -moderate chloritization. -some quartz-carbonate veins.  -some carbonate veins and flakes   547.1-624.0  «Cb»	-disseminated sulphides near upper contact: minor Py,Po,Sp? -trace of pyrite along this unit.	-WR sample at: AR00773 586.0-589.0m.
635.00 TO 638.90	MAFIC INTRUSIVE «7,m,a,h,v» RQD=70%	-green, fine grained. -massive fine grained homogeneous "Icelandite" lower and upper contact -60° to CA and slightly sheared.		-moderate chloritization and carbonatization.	-629.0m and 629.3m: 2cm quartz vein with pyrite. Pyrite stringers 629.5-634.05m-1% Py.  -thin Py stringer at lower contact associated with quartz veinlet.	-WR samples at: AR00774 616.0-619.0m AR00775 631.0-634.0m.  -WR sample at: AR00792 635.0-638.0m.
638.90 TO 656.42	FELSIC VOLCANIC «3,*b,e,n,h,B» RQD=80%	-pale to dark grey, fine to lapilli sized fragments. -Rhyolite tuff with lapilli fragments. Locally amygdaloidal and spherulitic quartz veins crosscutting at 80-60° to CA. Fragments are white, grey and black, mostly, of rhyolite composition.		-moderate chlorite alteration.	-trace of pyrite.	-WR sample at: AR00793 653.0-656.0m.

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DRILL HOLE RECORD

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## DRILL HOLE RECORD

DATE: 06/01/1998

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
556.42 TO 556.70	CHERT «E»	-grey, very fine grained. -556.42-556.7m: Exhalite: mainly laminated grey chert with thin pyrite layers.		-silicification. «Si»	-thin pyrite layers.	
556.70 TO 563.54	FELSIC VOLCANIC «2,h,u,a» RQD=60%	-grey, fine grained. -massive fine grained rhyolite with quartz carbonate veins. -locally fragmental. -lower contact appears to be faulted at 50° to CA.		-silicification and moderate chloritization.	-Py in quartz-carbonate veins and minor disseminations. -662.6-663.24m: semi-massive pyrite. «25%Py»	-WR sample at: AR00794 657.0-660.0m.
563.54 TO 752.20	DIABASE «10,b,D» RQD=75%	-grey, medium grained. -Massive medium grained, ophitic with epidotized feldspar glomeroporphyries up to 1cm in diameter. Fine grained near chilled margins. -673.0-673.75m: fine grained upper and lower contact 40° and 65° respectively. -673.75-677.0m: medium grained, chloritic. -677.0-678.1m: fine grained epidote and quartz vein. -678.1-679.65m: alternating fine and medium grained, quartz veins. -679.65-684.0m: Massive. Grain size increases gradually to medium. -684.0-757.8m: Medium grained, feldspar glomeroporphyries. Gradually becoming finer towards the last 3.0m, before 757.8m, where it is fine grained. -757.8-762.2m: Fine grained, feldspar glomeroporphyries disappear. Broken core.		-quartz-carbonate veins 30 to 60° to CA. -epidotized plagioclase glomeroporphyries.	-trace of pyrite.	-very poor RQD at lower contact.
752.20 TO 800.90	FELSIC VOLCANIC TUFF «2,h,w,t, *b» RQD=60%	-grey to greenish grey, fine grained matrix. -finely laminated rhyolite tuff. -locally spherulitic and silicified. -baked near contact with diabase. -762.2-763.1m: recrystallized. -764.35-764.4m: autobrecciated. -767.8-769.0m: hyaloclastite, chloritic matrix with quartz eyes (amygdules) interlayered with fine rhyolite tuff. -769.0-769.7m: variolitic. -769.7-772.25m: quartz veined.		-good silicification. -moderate chloritization and epidotization.	-disseminated 1-3mm pyrite crystals in minor amounts.	-562.0-563.5m and 566.6-567.0: very broken core. -WR sample at: AR00795 773.0-776.0m.

HOLE NUMBER: R56-23

DRILL HOLE RECORD

LOGGED BY: J. JIMENEZ

PAGE: 7

HOLE NUMBER: R56-23

## DRILL HOLE RECORD

DATE: 06/01/1998

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		-572.25-774.0m: tuffaceous chloritic. -774.0-778.5m: massive with spherulitic bands and some quartz veins. -778.5-800.9m: Lapilli tuff with amygdaloidal bands, quartz veins and silicified intervals, hematitic.		-778.5-800.9m: Epidote-quartz alteration and veins. Hematitization.   778.5-800.9  «He»	-pyritic millimeter fragments.	-781.0-781.4m and 782.0-782.3m: broken core. -WR sample at: AR00796 793.0-796.0m.
500.90 TO 507.48	MAFIC VOLCANIC TUFF «2,*b,e,h,u» RQD=70%	-green, fine grained with lapilli intervals. -Deformed lapilli-breccia fragments in chloritic matrix. May contain amygdaloidal flows. -800.9-803.3m: transition zone still some hematite.		-chloritization and moderate carbonatization.	-trace of sulphides.	-S1-45° to CA. -WR sample at: AR00797 803.4-806.4m.
507.48 TO 590.07	MAFIC VOLCANIC «2,a,e,l,p,h» RQD=80%	-green, fine grained. -pillowed flow with fragmental intervals (flow top breccia) often amygdaloidal and/or variolitic. -807.48-811.0m: amygdaloidal flow. -811.0-813.0m: glassy flow breccia. -813.0-826.93m: amygdaloidal flow, white feldspar, microcrystals. -flow breccia fragments tend to elongate subparallel to S1(=50° to CA). -fragment zones range from 10cm to 2.8m in thickness. -826.93-872.0m: amygdaloidal flow and/or breccia, sometimes glassy or variolitic. -872.0-880.07m: massive amygdaloidal flow.		-pervasive carbonate alteration. «Cb» -chloritization is moderate to strong, usually fills cavities and matrix. -320.0-320.63m: epidote quartz veins. -441.4-472.0m: strong chloritization. «Ch»	-trace of sulphides. -841.4-872.2m: minor pyrite crystals. -trace of pyrrhotite. -868.15-868.2m: 5% Po.	-814.63m: lost some core.  -WR samples at: AR00798 833.0-836.0m AR00799 863.0-866.0m -440.0-468.0m: RQD=75% -868.0-880.07m RQD=85%
590.07 TO 593.10	FELSIC VOLCANIC «4,*b,h,2» RQD=80%	-greenish-yellow, coarse grained. -881.0-881.5m: mafic volcanic lapilli tuff, trace of pyrite.		-silicification.	-disseminated pyrite (1%Py).	-WR sample at: AR01701 880.1-883.1m.
593.10 TO 599.80	MAFIC VOLCANIC «2,*a,h,u» RQD=80%	-green, fine grained. -mafic volcanic tuff and flow, schistosity at 40° to CA.		-carbonate and chlorite alteration.	-isolated pyrite crystals.	-WR sample at: AR01702 883.1-886.1m.

HOLE NUMBER: R56-23

DRILL HOLE RECORD

LOGGED BY: J. JIMENEZ

PAGE: 8



HOLE NUMBER: R56-23

## DRILL HOLE RECORD

DATE: 06/01/1998

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
588.80 TO 595.25	MAFIC INTRUSIVE «7,m,a,h,v» RQD=85%	-green, fine to medium grained. -massive icelandite-looking with quartz-carbonate-epidote veinlets, white leucoxene/carbonate.		-carbonatization and chloritization.	-isolated pyrite crystals.	-WR sample at: AR01703 893.0-896.0m.
595.25 TO 566.05	MAFIC VOLCANIC «2,t,*b,c, h,v» RQD=80%	-green-pale green, coarse grained. -breccia and lapilli sized pale green siliceous fragments in a dark chlorite rich matrix. -some dark green-lapilli rich intervals. -fragments are amygdaloidal and sometimes variolitic or hyaloclastitic. -interlayered mafic amygdaloidal flows. -S1-50° to CA.		-strong chloritization in matrix. -carbonatization is pervasive. -epidote-quartz alteration in most fragments. -916.0-920.0m: Some quartz-carbonate veins 1-5cm across. Gradually chlorite decreases.	-trace of pyrite.	-WR samples at: AR01704 923.0-926.0m. AR01705 953.0-956.0m.
566.05 TO 588.63	MAFIC VOLCANIC «2,t,*a,h, u» RQD=70%	-green-pale green, fine grained. -mafic tuff and lapilli tuff. -975.25-975.3m: lots of quartz carbonate veinlets, forming almost a box work texture around a gouge zone. -977.6-987.4m: bleached more massive with thin fragmental intervals (pillowed)? -987.4-988.63m: bleached, breccia fragments.		-971.6-979.6m: quartz carbonate veinlets and veins. -some dark chlorite filling matrix and joints. -987.25-987.75m: silicification.	-trace of pyrite.  -trace of sulphides, especially along chlorite-rich zones.	-WR sample at: AR01706 983.0-986.0m.  -water circulation around gouge fault.
588.63 TO 588.63	E.O.H.					

HOLE NUMBER: R56-23

DRILL HOLE RECORD

LOGGED BY: J. JIMENEZ

PAGE: 9

HOLE NUMBER : R56-23

ASSAYS SHEET

DATE: 01/06/1998

Sample	From (M)	To (M)	Leng. (M)	Cu ppm	Zn ppm	Pb ppm	Ni ppm	Au ppb	Ag ppm	Cu/Zn	Co ppm	Pt ppb	Pd ppb	S ppm	Se ppm	As ppm	Hg ppm	Sb ppm
AR01240	656.42	656.70	0.28	83	381	3	31.0	0	0									
AR01237	661.00	662.60	1.60	101	61	19	55.0	0	0									
AR01238	662.60	663.24	0.64	129	88	28	41.0	0	0									
AR01239	663.24	664.00	0.76	57	96	14	43.0	0	0									

Transaction Number (office use) <i>W9860.60681</i>
Assessment Files Research Imaging



42A12SE2004 2.18592 ROBB 900

subsection 65(2) and 66(3) of the Mining Act. Under section 8 of the Mining Act, assessment work and correspond with the mining land holder. Questions about Northern Development and Mines, 3rd Floor, 933 Ramsey Lake Road, Sudbury,

Instructions: - For work performed on Crown Lands before recording a claim, use form 0240.  
- Please type or print in ink.

**2.18592**

**1. Recorded holder(s) (Attach a list if necessary)**

Name Falconbridge Limited	Client Number 130679
Address P.O. Box 1140, 571 Moneta Avenue	Telephone Number (705) 267-1188
Timmins, Ontario P4N 7H9	Fax Number (705) 264-6080
Name <i>Lionel Bonhomme.</i>	Client Number
Address <i>168 Algonquin Blvd East</i>	Telephone Number <i>705-267-3511</i>
<i>Timmins Ontario - P4N 1A9.</i>	Fax Number <i>705 267-3121</i>

**2. Type of work performed: Check (✓) and report on only ONE of the following groups for this declaration. *ROBIS***

Geotechnical: prospecting, surveys, assays and work under section 18 (regs)	Physical: drilling stripping, trenching and associated assays	Rehabilitation
Work Type Diamond Drilling ✓	Office Use	
	Commodity	
	Total \$ Value of Work Claimed <i>\$117,362 (56% of 28475)</i>	
Dates Work Performed From <i>7</i> July 1994 To <i>04</i> November 1995	NTS Reference	
Global Positioning System Data (if available)	Township/Area <i>Robb Township</i>	Mining Division <i>Porcupine</i>
	M or G-Plan Number <i>G-3968</i>	Resident Geologist District <i>Timmins</i>

Please remember to: - obtain a work permit from the Ministry of Natural Resources as required;  
- provide proper notice to surface rights holders before starting work;  
- complete and attach a Statement of Costs, form 0212;  
- provide a map showing contiguous mining lands that are linked for assigning work;  
- include two copies of your technical report.

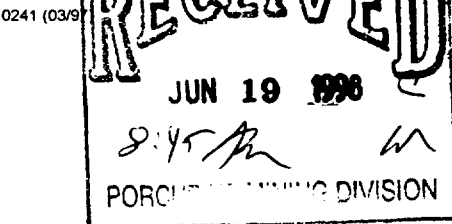
**3. Person or companies who prepared the technical report (Attach a list if necessary)**

Name Michael Collison	Telephone Number (705) 267-1188
Address P.O. Box 1140, 571 Moneta Ave., Timmins Ontario, P4N 7H9	Fax Number (705) 264-6080
Name	Telephone Number
Address	Fax Number
Name	Telephone Number
Address	Fax Number

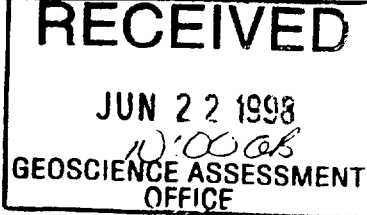
**4. Certification by Recorded Holder or Agent**

I, *Michael Collison Lionel Bonhomme*, do hereby certify that I have personal knowledge of the facts set forth in this Declaration of Assessment Work having caused the work to be performed or witnessed the same during or after its completion and, to the best of my knowledge, the annexed report is true.

Signature of Recorded Holder or Agent <i>[Signature]</i>	Date <i>June 17/98</i>
Agent's Address P.O. Box 1140, 571 Moneta Avenue, Timmins Ontario P4N 7H9	Telephone Number (705) 267-1188
	Fax Number (705) 264-6080



*deemed: Sept. 17/98*



5. Work to be recorded and distributed. Work can only be assigned to claims that are contiguous (adjoining) to the mining land where work was performed, at the time work was performed. A map showing the contiguous link must accompany this form.

W 9860.00681

Mining Claim Number. Or if work was done on other eligible mining land, show in this column the location number indicated on the claim map.	Number of Claim Units. For other mining land, list hectares.	Value of work performed on this claim or other mining land.	Value of work applied to this claim.	Value of work assigned to other mining claims.	Bank. Value of work to be distributed at a future date
eg TB 7827	16 ha	\$26,825	N/A	\$24,000	\$2,825
eg 1234567	12	0	\$24,000	0	0
eg 1234568	2	\$ 8,892	\$ 4,000	0	\$4,892
1 P - 45684	16 ha	\$34979		17 600	17 379
2 P - 45687	16 ha	\$30603			30 603
3 P - 45692	16 ha	\$19204			19 204
4 P - 1190162	16 ha	\$13501			13 501
5 P - 1190170	16 ha	\$19075			19 075
6 1116 298	1		400		
7 1116 299	1		400		
8 1116 300	1		400		
9 1116 301	1		400		
10 1116 648	1		400		
11 1116 649	1		400		
12 1116 650	1		400		
13 1116 651	1		400		
14 1116 652	1		400		
15 1116 653	1		400		
Column Totals		\$117362	4000	17600	99762

I, Lionel Bourbome, do hereby certify that the above work credits are eligible under subsection 7 (1) of the Assessment Work Regulation 6/96 for assignment to contiguous claims or for application to the claim where the work was done.

Signature of Recorded Holder or Agent Authorized in Writing [Signature] Date June 17/98

6. Instruction for cutting back credits that are not approved.

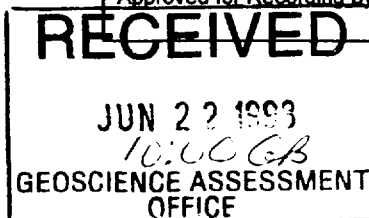
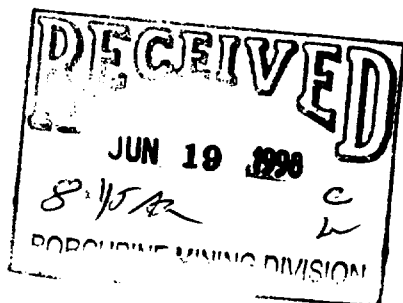
Some of the credits claimed in this declaration may be cut back. Please check (✓) in the boxes below to show how you wish to prioritize the deletion of credits:

- 1. Credits are to be cut back from the Bank first, followed by option 2 or 3 or 4 as indicated.
- 2. Credits are to be cut back starting with the claims listed last, working backwards; or
- 3. Credits are to be cut back equally over all claims listed in this declaration; or
- 4. Credits are to be cut back as prioritized on the attached appendix or as follows (describe):

Note: If you have not indicated how your credits are to be deleted, credits will be cut back from the Bank first, followed by option number 2 if necessary.

For Office Use Only

Received Stamp	Deemed Approved Date	Date Notification Sent
	Date Approved	Total Value of Credit Approved

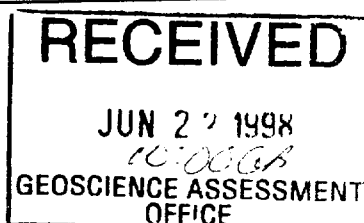
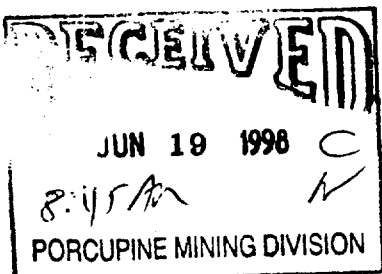


2.18592

Approved for Recording by Mining Recorder (Signature)

Mining Claim Number. Or if work was done on other eligible mining land, show in this column the location number indicated on the claim map.	Number of Claim Units. For other mining land, list hectares.	Value of work performed on this claim or other mining land.	Value of work applied to this claim.	Value of work assigned to other mining claims.	Bank. Value of work to be distributed at a future date.
<i>Fowans</i>		117362.	4000	17600	99762
16	1116654	1	400		
17	1116655	1	400		
18	1116656	1	400		
19	1116657	1	400		
20	1116658	1	400		
21	1116659	1	400		
22	1116660	1	400		
23	1116661	1	400		
24	1116662	1	400		
25	1116663	1	400		
26	1116664	1	400		
27	1116665	1	400		
28	1116666	1	400		
29	1116667	1	400		
30	1116668	1	400		
31	1116669	1	400		
32	1116670	1	400		
33	1116671	1	400		
34	1116672	1	400		
35	1190586	2	800		
36	1190587	1	400		
37	1190147	2	800		
38	1190156	1	400		
39	1190196	1	400		
40	1190194	1	400		
41	1190169	1	400		
42	1190197	1	400		
43	1190167	1	400		
44	969269	1	400		
45	1190161	1	400		
46	997539	1	400		
47	1190165	1	400		
<b>Column Totals</b>		117362	17600	17600	99762

0290 (02/96)



2.18592

Personal information collected on this form is obtained under the authority of subsection 6 (1) of the Assessment Work Regulation 6/96. Under section 8 of the Mining Act, this information is a public record. This information will be used to review the assessment work and correspond with the mining land holder. Questions about this collection should be directed to a Provincial Mining Recorder, Ministry of Northern Development and Mines, 3rd Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 6B5.

Work Type	Units of work Depending on the type of work, list the number of hours/day worked, metres of drilling, kilometres of grid line, number of samples, etc.	Cost Per Unit of work	Total Cost
Diamond Drilling	4315 metres	\$50.53/metre	218024
Supervision, logging, sampling, spotting holes	73 days	\$200/day	14600
<b>Associated Costs (e.g. supplies, mobilization and demobilization).</b>			
<b>Transportation Costs</b>			
Truck Rental		\$700/month	2100
<b>Food and Lodging Costs</b>			
<b>Total Value of Assessment Work</b>			<b>234724</b>

**Calculations of Filing Discounts:**

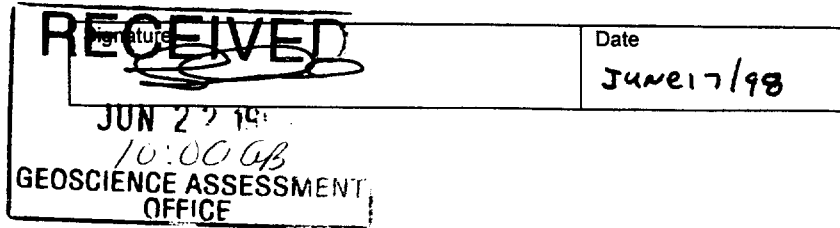
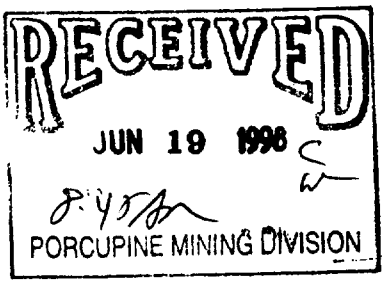
1. Work filed within two years of performance is claimed at 100% of the above Total Value of Assessment Work.
2. If work is filed after two years and up to five years after performance, it can only be claimed at 50% of the Total Value of Assessment Work. If this situation applies to your claims, use the calculation below:

TOTAL VALUE OF ASSESSMENT WORK      234724      x 0.50 = 117362      Total \$ value of worked claimed.

**Note:**  
 - Work older than 5 years is not eligible for credit.  
 - A recorded holder may be required to verify expenditures claimed in this statement of costs within 45 days of a request for verification and/or correction/clarification. If verification and/or correction/clarification is not made, the Minister may reject all or part of the assessment work submitted.

**Certification verifying costs:**

I, Lionel Bouhemma, do hereby certify, that the amounts shown are as accurate as may reasonably be determined and the costs were incurred while conducting assessment work on the lands indicated on the accompanying Declaration of Work form as Agent. I am authorized to make this certification.  
(recorded holder, agent, or state company position with signing authority)



Geoscience Assessment Office  
933 Ramsey Lake Road  
6th Floor  
Sudbury, Ontario  
P3E 6B5

Telephone: (888) 415-9846  
Fax: (877) 670-1555

September 16, 1998

FALCONBRIDGE LIMITED  
SUITE 1200, 95 WELLINGTON STREET WEST  
TORONTO, ONTARIO  
M5J-2V4

Visit our website at:  
[www.gov.on.ca/MNDM/MINES/LANDS/mlsmnpg.htm](http://www.gov.on.ca/MNDM/MINES/LANDS/mlsmnpg.htm)

Dear Sir or Madam:

**Submission Number:** 2.18592

**Status**

**Subject: Transaction Number(s):** W9860.00681 Approval

---

We have reviewed your Assessment Work submission with the above noted Transaction Number(s). The attached summary page(s) indicate the results of the review. **WE RECOMMEND YOU READ THIS SUMMARY FOR THE DETAILS PERTAINING TO YOUR ASSESSMENT WORK.**

If the status for a transaction is a 45 Day Notice, the summary will outline the reasons for the notice, and any steps you can take to remedy deficiencies. The 90-day deemed approval provision, subsection 6(7) of the Assessment Work Regulation, will no longer be in effect for assessment work which has received a 45 Day Notice. Allowable changes to your credit distribution can be made by contacting the Geoscience Assessment Office within this 45 Day period, otherwise assessment credit will be cut back and distributed as outlined in Section #6 of the Declaration of Assessment work form.

Please note any revisions must be submitted in **DUPLICATE** to the Geoscience Assessment Office, by the response date on the summary.

If you have any questions regarding this correspondence, please contact Lucille Jerome by e-mail at [jeromel2@epo.gov.on.ca](mailto:jeromel2@epo.gov.on.ca) or by telephone at (705) 670-5858.

Yours sincerely,



ORIGINAL SIGNED BY  
Blair Kite  
Supervisor, Geoscience Assessment Office  
Mining Lands Section

# Work Report Assessment Results

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**Submission Number:** 2.18592

**Date Correspondence Sent:** September 16, 1998

**Assessor:** Lucille Jerome

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<b>Transaction Number</b>	<b>First Claim Number</b>	<b>Township(s) / Area(s)</b>	<b>Status</b>	<b>Approval Date</b>
W9860.00681	45684	ROBB	Approval	September 16, 1998

**Section:**  
16 Drilling PDRILL

**Correspondence to:**

Resident Geologist  
South Porcupine, ON

**Recorded Holder(s) and/or Agent(s):**

Lionel Bonhomme  
TIMMINS, ONTARIO, CANADA

Assessment Files Library  
Sudbury, ON

FALCONBRIDGE LIMITED  
TORONTO, ONTARIO

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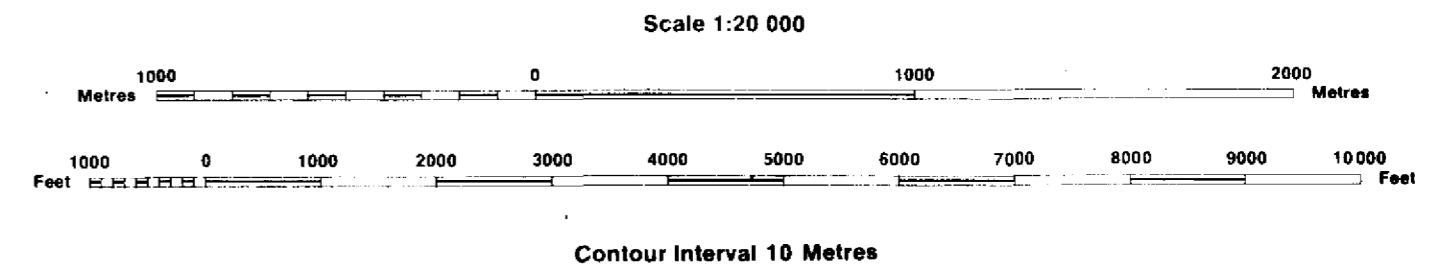


**INDEX TO LAND DISPOSITION**

PLAN  
G-3968  
TOWNSHIP  
**ROBB**

**RECEIVED**  
JUL 15 1998  
GEOSCIENCE ASSESSMENT OFFICE

M.N.R. ADMINISTRATIVE DISTRICT  
**TIMMINS**  
MINING DIVISION  
PORCUPINE  
LAND TITLES/REGISTRY DIVISION  
**COCHRANE**



**AREAS WITHDRAWN FROM DISPOSITION**

- MRO - Mining Rights Only
- SRO - Surface Rights Only
- M+S - Mining and Surface Rights

Description	Order No.	Date	Disposition	File
MNR RESERVE				

**SYMBOLS**

Boundary	
Township, Meridian, Baseline	—
Road allowance, surveyed shoreline	—
Lot/Concession, surveyed, unsurveyed	—
Parcel, surveyed, unsurveyed	—
Right-of-way, road, railway, utility	—
Reservation	—
Cliff, Pit, Pile	—
Contour	—
Interpolated, Approximate, Depression	—
Control point (horizontal)	—
Flooded land	—
Mine head frame	—
Pipeline (above ground)	—
Railway, single track, double track, abandoned	—
Road, highway, county, township, access, trail, bush	—
Shoreline (original)	—
Transmission line	—
Wooded area	—
<b>DISPOSITION OF CROWN LANDS</b>	
Patent	
Surface & Mining Rights	●
Surface Rights Only	○
Mining Rights Only	○
Lease	
Surface & Mining Rights	■
Surface Rights Only	□
Mining Rights Only	□
Licence of Occupation	▼
Order-in-Council	○
Cancelled	⊙
Reservation	⊙
Sand & Gravel	⊙

THIS TWP. IS SUBJECT TO FOREST ACTIVITIES IN 1992/93. FURTHER INFORMATION AVAILABLE ON FILE.

PLANS OF SUBDIVISION - NOT OPEN FOR STAKING

PROPOSED SURFACE RIGHTS DISPOSITION UNDER THE P.L.A. - NOTICE RECEIVED MARCH 7, 1991

THIS TWP IS SUBJECT TO FOREST ACTIVITY IN 1994/95. FURTHER INFORMATION ON FILE.

**R4** MINING AND SURFACE RIGHTS WITHDRAWN UNDER SECTION 35 OF THE MINING ACT, R.S.O. 1990 - ORDER NO. W.P. 6/97 NER DATED APR. 28/97

**R2** MINING AND SURFACE RIGHTS RE-OPENED UNDER SECTION 36 OF THE MINING ACT, R.S.O. 1990 - ORDER NO. W.P. 25/93 NER DATED SEPT. 22, 1993

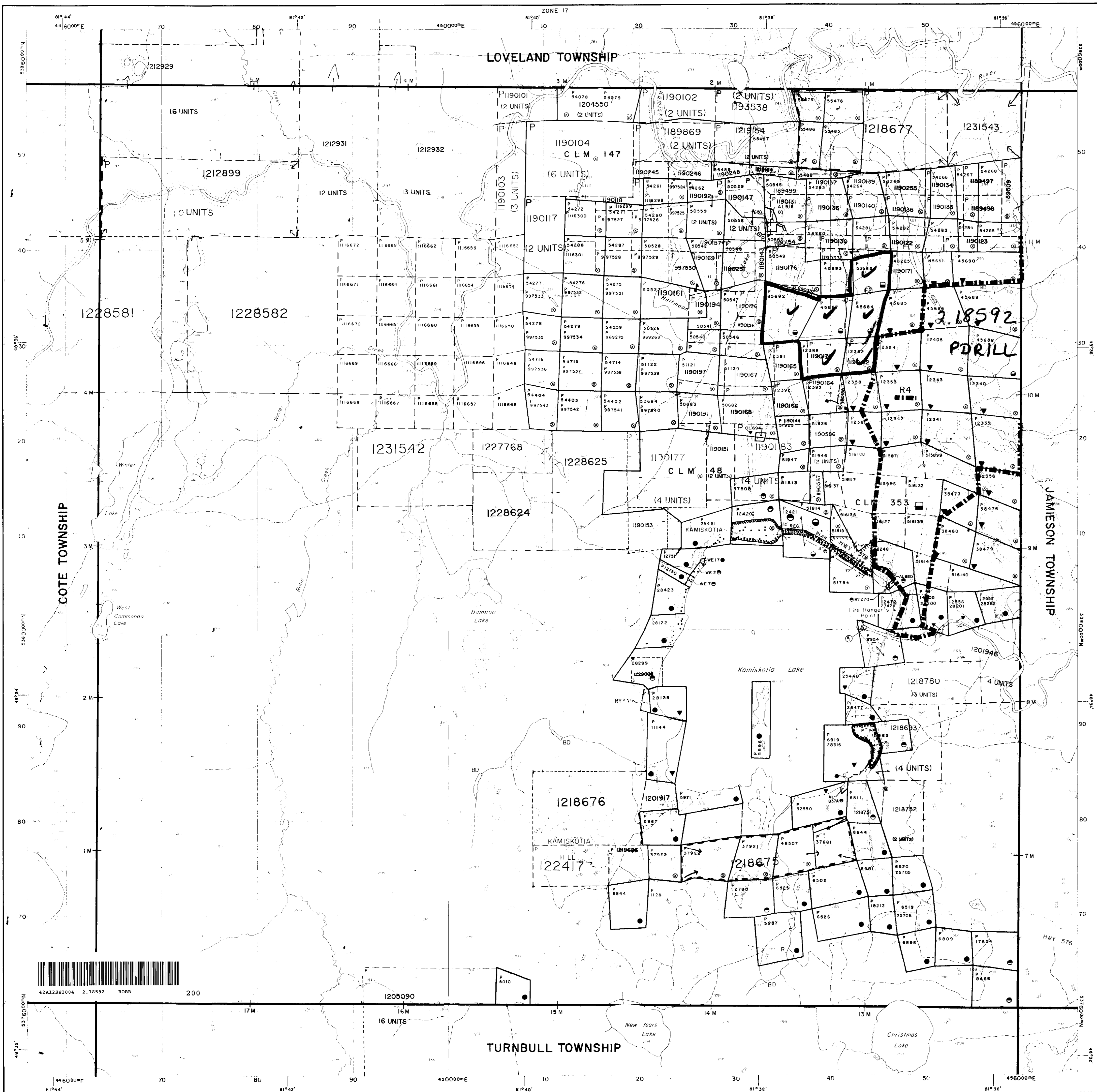
**R3** MINING AND SURFACE RIGHTS WITHDRAWN UNDER SECTION 36 OF THE MINING ACT, R.S.O. 1990 - ORDER NO. W.P. 25/93 NER DATED SEPT. 22, 1993 - SAVERS AND EXCEPTING THE MINING RIGHTS ONLY OF E.L.O. 14904 AND LEASED CLAIMS - CONTAINED WITHIN CLM-353.

THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES AND ACCURACY IS NOT GUARANTEED. THOSE WISHING TO STAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER, MINISTRY OF NORTHERN DEVELOPMENT AND MINES, FOR ADDITIONAL INFORMATION ON THE STATUS OF THE LANDS SHOWN HEREON.

ACTIVATED AUGUST 13, 1997  
BY D.C.  
CHECKED BY G.W.

Map base and land disposition drafting by Surveys and Mapping Branch, Ministry of Natural Resources.

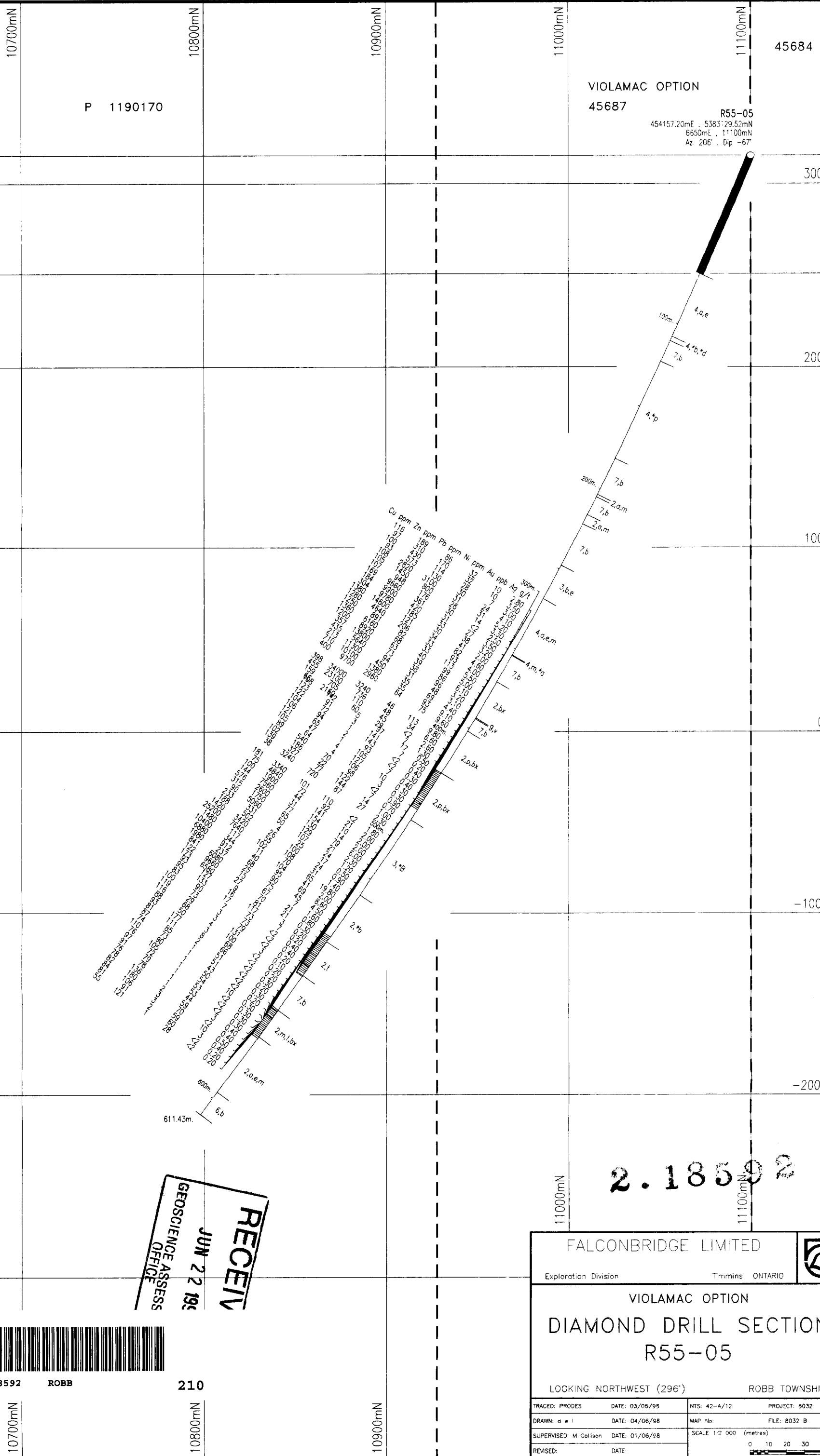
The disposition of land, location of lot fabric and parcel boundaries on this index was compiled for administrative purposes only.



3968

ROBB TWP

G-3968



P 1190170

VIOLAMAC OPTION  
45687

R55-05  
454157.20mE . 5383'29.52mN  
6550mE . 11100mN  
Az. 206° . Dip -67°

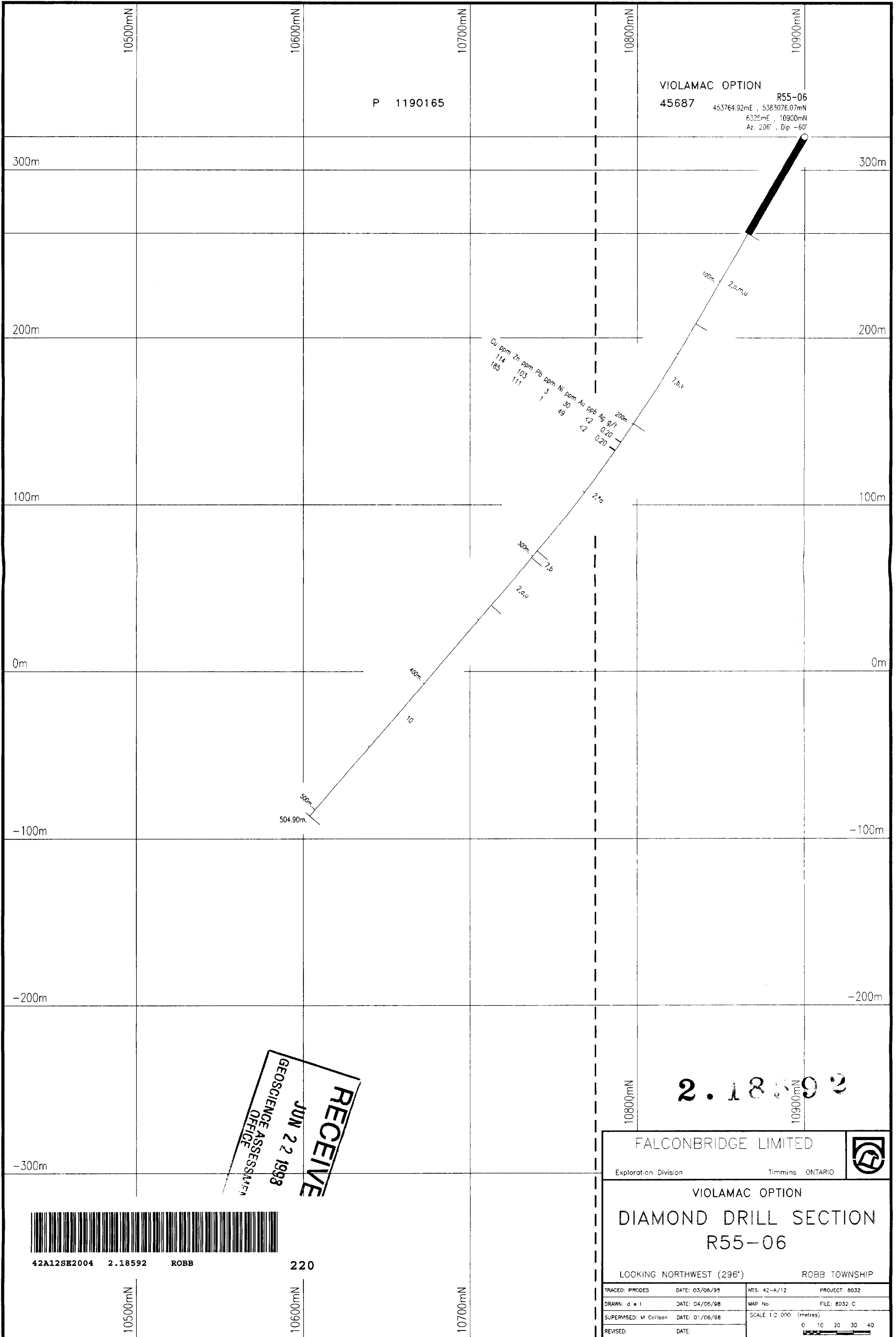
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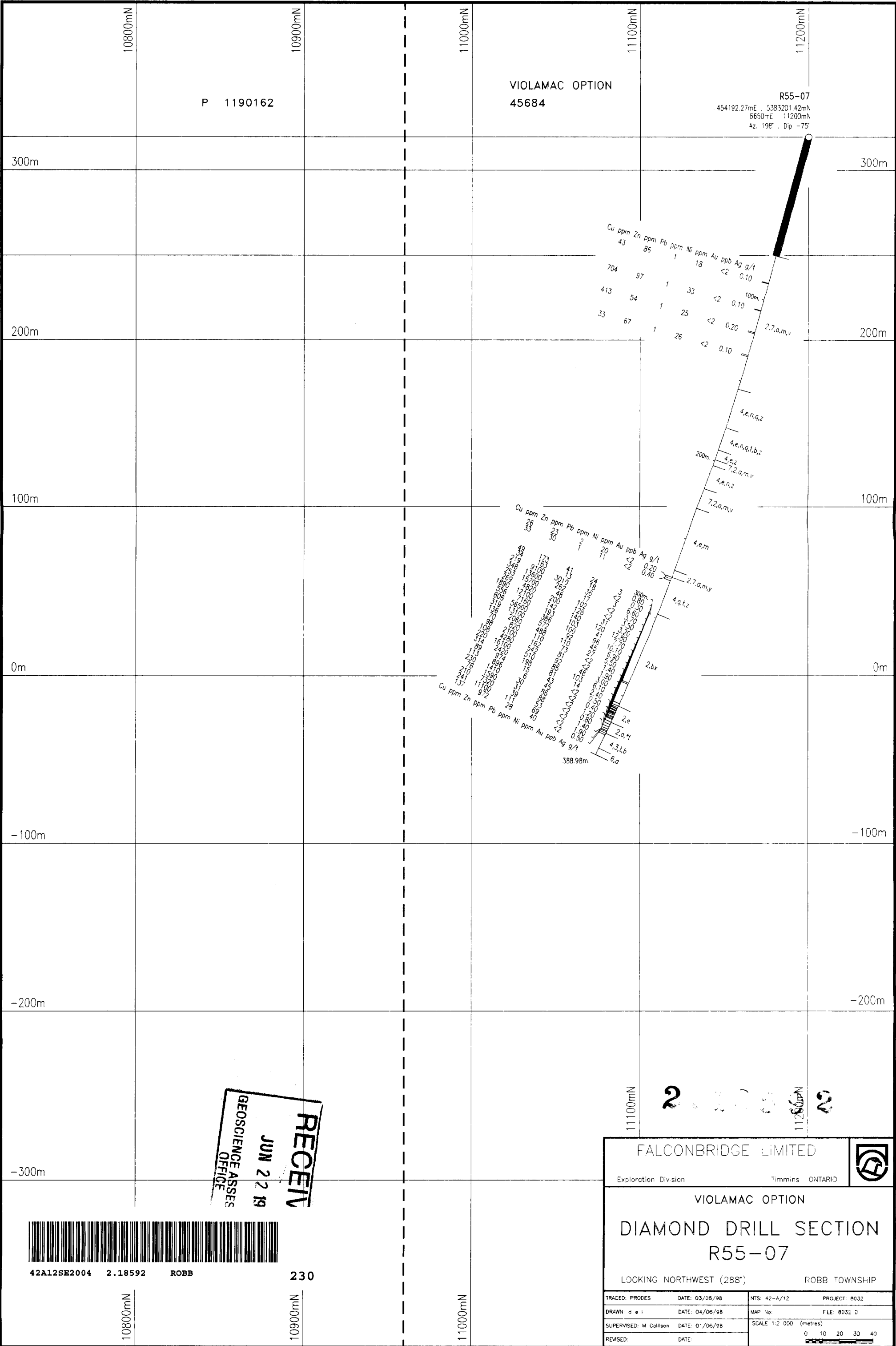
FALCONBRIDGE LIMITED			
Exploration Division		Timmins ONTARIO	
VIOLAMAC OPTION DIAMOND DRILL SECTION R55-05			
LOOKING NORTHWEST (296°)		ROBB TOWNSHIP	
TRACED: PRODES	DATE: 03/06/98	NTS: 42-A/12	PROJECT: 8032
DRAWN: d e l	DATE: 04/06/98	MAP No:	FILE: 8032 B
SUPERVISED: M Collison	DATE: 01/06/98	SCALE 1:2 000 (metres)	
REVISED:	DATE:	0 10 20 30 40	



42A12SE2004 2.18592 ROBB

210





P 1190162

VIOLAMAC OPTION  
45684

R55-07  
454192.27mE . 5383201.42mN  
6650mE 11200mN  
Az. 198° . Dip -75°

300m

300m

200m

200m

100m

100m

0m

0m

-100m

-100m

-200m

-200m

-300m

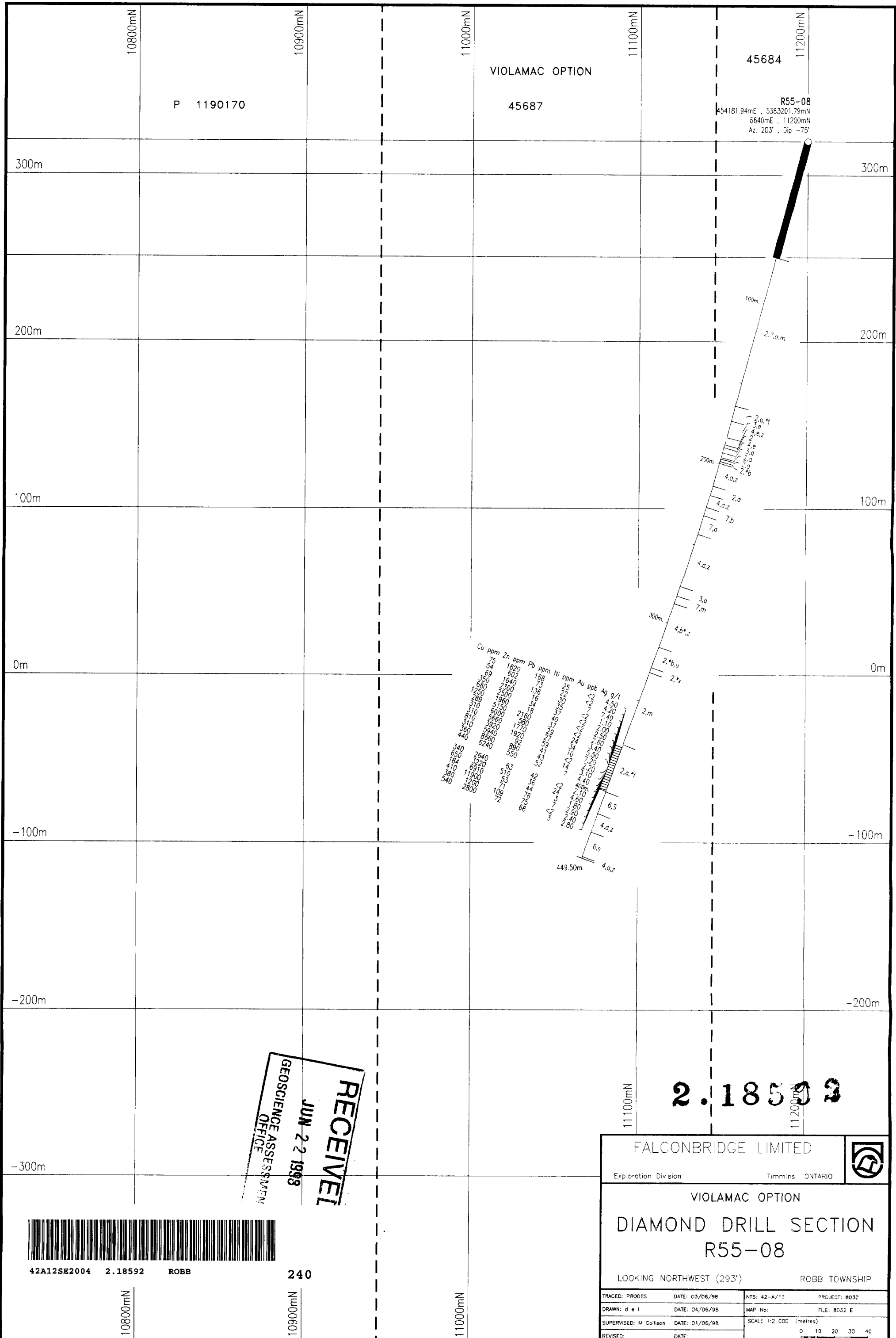
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230

FALCONBRIDGE LIMITED		
Exploration Division	Timmins ONTARIO	
VIOLAMAC OPTION		
DIAMOND DRILL SECTION		
R55-07		
LOOKING NORTHWEST (288°)		ROBB TOWNSHIP
TRACED: PRODES	DATE: 03/05/98	NTS: 42-A/12 PROJECT: 8032
DRAWN: d e l	DATE: 04/06/98	MAP No. FILE: 8032 D
SUPERVISED: M Collison	DATE: 01/06/98	SCALE 1:2 000 (metres)
REVISED:	DATE:	0 10 20 30 40



10800mN

10900mN

11000mN

11100mN

11200mN

P 1190170

VIOLAMAC OPTION

45687

45684

R55-08  
 454181.94mE, 5383201.79mN  
 8640mE, 11200mN  
 Az. 203°, Dip -75°

300m

300m

200m

200m

100m

100m

0m

0m

-100m

-100m

-200m

-200m

-300m

11100mN

11200mN

2.18592

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240

10800mN

10900mN

11000mN

FALCONBRIDGE LIMITED

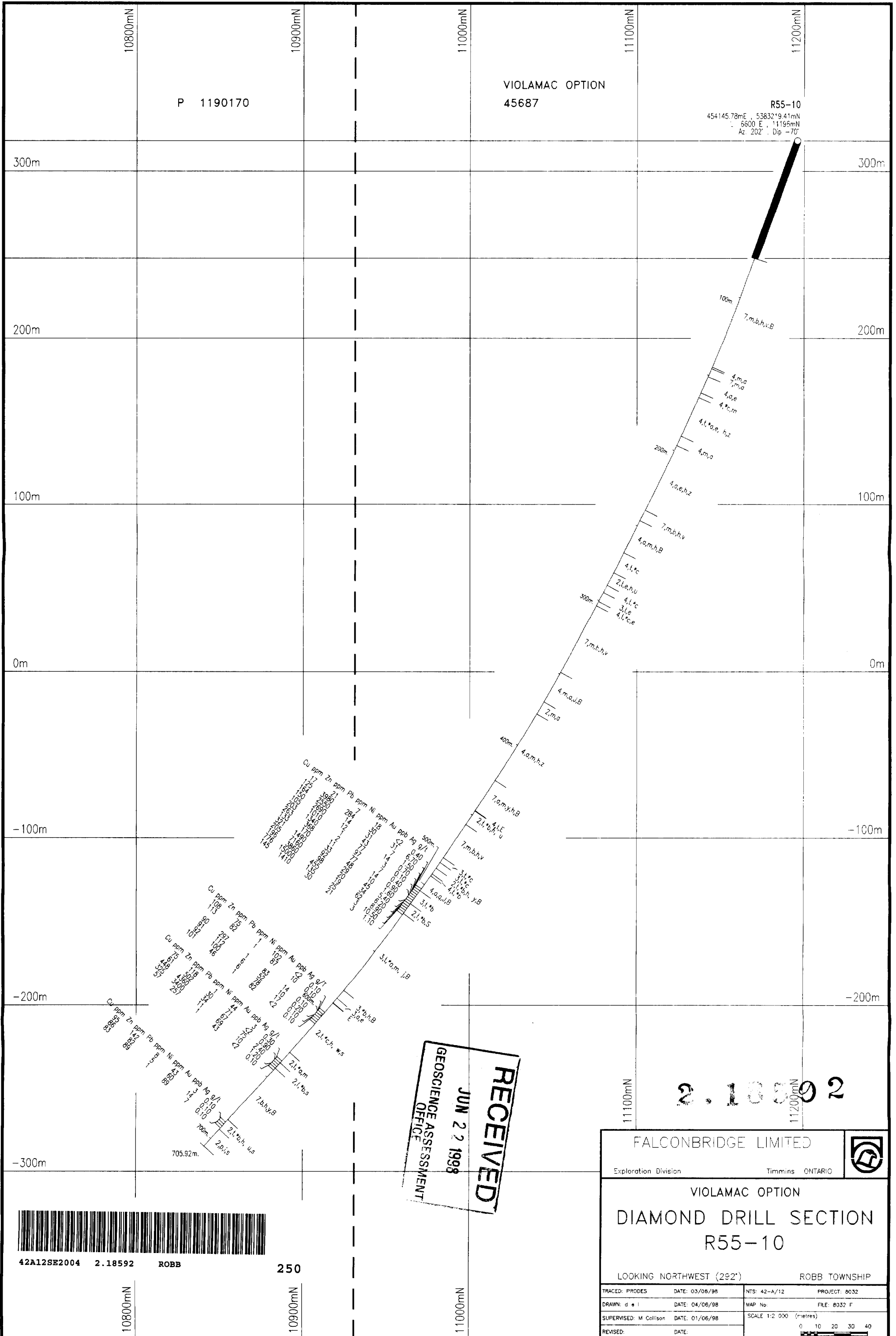


Exploration Division Timmins ONTARIO

VIOLAMAC OPTION  
 DIAMOND DRILL SECTION  
 R55-08

LOOKING NORTHWEST (293°) ROBB TOWNSHIP

TRACED: PRODES	DATE: 03/06/98	NTS: 42-A/12	PROJECT: 8032
DRAWN: d e l	DATE: 04/06/98	MAP No:	FILE: 8032 E
SUPERVISED: M Colison	DATE: 01/05/98	SCALE 1:2 000 (metres)	
REVISED:	DATE:	0 10 20 30 40	



P 1190170

VIOLAMAC OPTION  
45687

R55-10  
454145.78mE, 5383219.41mN  
6600 E, 11195mN  
Az 202°, Dip -70°

300m

300m

200m

200m

100m

100m

0m

0m

-100m

-100m

-200m

-200m

-300m

10800mN

10900mN

11000mN

11100mN

11200mN

10800mN

10900mN

11000mN

11100mN

11200mN

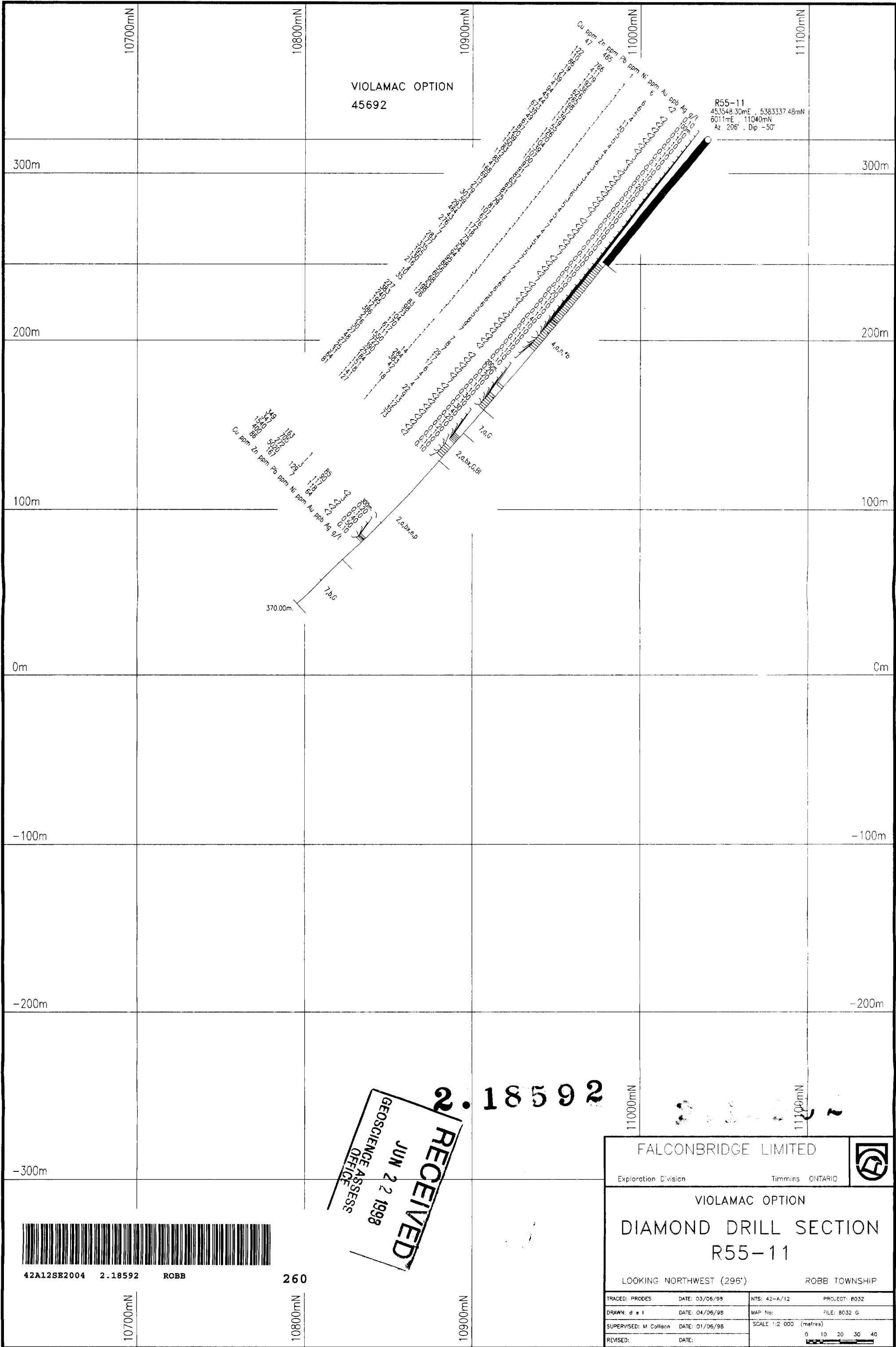
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FALCONBRIDGE LIMITED			
Exploration Division		Timmins ONTARIO	
VIOLAMAC OPTION DIAMOND DRILL SECTION R55-10			
LOOKING NORTHWEST (292°)		ROBB TOWNSHIP	
TRACED: PRODES	DATE: 05/06/98	NTS: 42-A/12	PROJECT: 8032
DRAWN: d e l	DATE: 04/06/98	MAP No.	FILE: 8032 F
SUPERVISED: M Collison	DATE: 01/06/98	SCALE 1:2 000 (metres)	
REVISED:	DATE:	0 10 20 30 40	



42A12SE2004 2.18592 ROBB 250



VIOLAMAC OPTION  
45692

R55-11  
453548.30mE, 5383337.48mN  
6011mE, 11040mN  
Az 206°, Dip -50°

349 183  
15749 203  
480 205  
86 5120  
167 167  
Cu ppm Zn ppm Pb ppm Ni ppm Au ppb Ag g/t

370.00m

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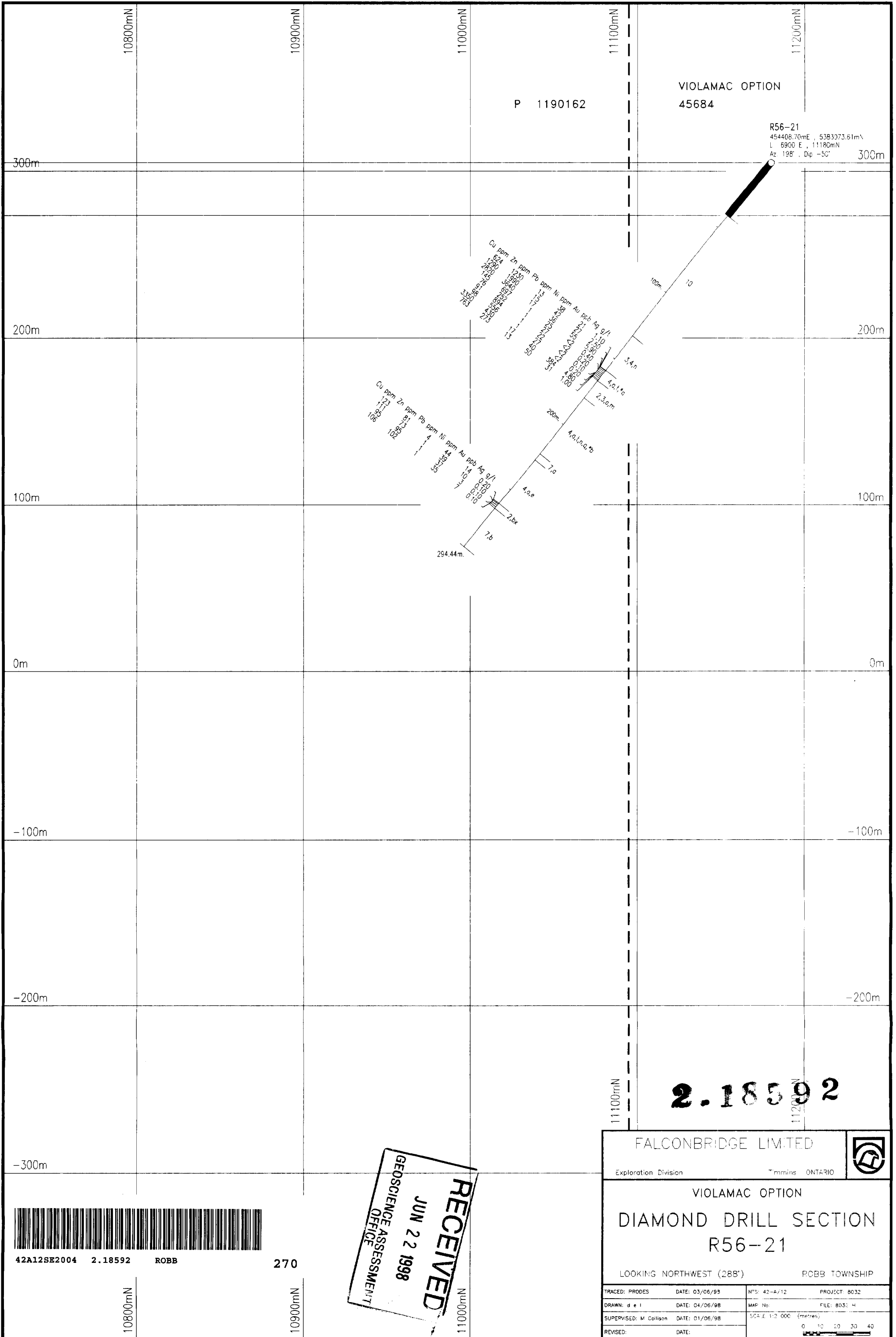
2.18592

FALCONBRIDGE LIMITED			
Exploration Division		Timmins ONTARIO	
VIOLAMAC OPTION			
DIAMOND DRILL SECTION			
R55-11			
LOOKING NORTHWEST (296°)		ROBB TOWNSHIP	
TRACED: PRODES	DATE: 03/06/98	NTS: 42-A/12	PROJECT: R032
DRAWN: d e l	DATE: 04/06/98	MAP No:	FILE: 8032 G
SUPERVISED: M Collison	DATE: 01/06/98	SCALE 1:2 000 (metres)	
REVISED:	DATE:	0 10 20 30 40	



42A12SE2004 2.18592 ROBB

260



P 1190162

VIOLAMAC OPTION  
45684

R56-21  
454408.70mE, 5383073.61mN  
L 6900 E, 11180mN  
Az 198°, Dip -50°

Cu ppm Zn ppm Pb ppm Ni ppm Au ppb Ag g/t  
 123 123 123 123 123 123 123  
 234 234 234 234 234 234 234  
 345 345 345 345 345 345 345  
 456 456 456 456 456 456 456  
 567 567 567 567 567 567 567  
 678 678 678 678 678 678 678  
 789 789 789 789 789 789 789  
 890 890 890 890 890 890 890  
 901 901 901 901 901 901 901  
 012 012 012 012 012 012 012  
 123 123 123 123 123 123 123  
 234 234 234 234 234 234 234  
 345 345 345 345 345 345 345  
 456 456 456 456 456 456 456  
 567 567 567 567 567 567 567  
 678 678 678 678 678 678 678  
 789 789 789 789 789 789 789  
 890 890 890 890 890 890 890  
 901 901 901 901 901 901 901  
 012 012 012 012 012 012 012

**2.18592**

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FALCONBRIDGE LIMITED			
Exploration Division		Timmins ONTARIO	
VIOLAMAC OPTION			
DIAMOND DRILL SECTION			
R56-21			
LOOKING NORTHWEST (288°)		ROBB TOWNSHIP	
TRACED: PRODES	DATE: 03/06/99	N°S: 42-A/12	PROJECT: 8032
DRAWN: d e l	DATE: 04/06/98	MAP No:	FILE: 8032 H
SUPERVISED: M Collison	DATE: 01/06/98	SCALE 1:2 000 (metres)	
REVISED:	DATE:	0 10 20 30 40	



42A12SE2004 2.18592 ROBB 270



