Cominco

DRILL HOLE RECORD

Location Que River Area **Property** Mackintosh EL 2/70 **District** Tasmania, Australia.
Commenced 13.3.1975 **Completed** 17.3.1975 **Core size** NQ to 54.2 m BQ to 200 m EOH.
Objective To test coincident I.P. and Geochemical anomalies. **% Recovery** 96

Alt./R.L. 705.0 **Co-ordinate** 6701.4N 4827.9E **Bearing (M)** 100° **Grid bearing (M)** 8.68

Hole No QR 28 **Date** 20.3.1975 **Logged** R.D. BIRRELL **Dip** 46°

SURVEY DATA

DEPTH	DIP	BEARING(M)	INSTRUMENT TYPE
0	46	100	Compass and ~~Clinometer~~
23	45	100	Eastman
53	44	100	Single Shot
86	41.5	103	Camera
116	37.5	105.5	" "
170	30.5	108.5	" "
194	28	N/R	" "

GRAPH DERIVED DATA

DEPTH	DIP	BEARING(M)	NORTHING	EASTING	ALTITUDE
0	45	100	6701.4	4827.9	705.0
25	45	100	6700.99	4845.57	687.32
50	44	100	6700.58	4863.40	669.80
75	42.5	102	6699.84	4881.59	652.67
100	39.5	104	6698.41	4900.39	636.28
125	34	106	6696.20	4920.28	621.34
150	33	107.5	6693.27	4940.91	607.54
175	30	109	6689.72	4961.92	594.48
200	27	110	6685.60	4983.49	582.55

REMARKS

22.3 - 22.7 m Pyrite 40%, sphalerite 15%, galena 7%, chalcopyrite 1%.

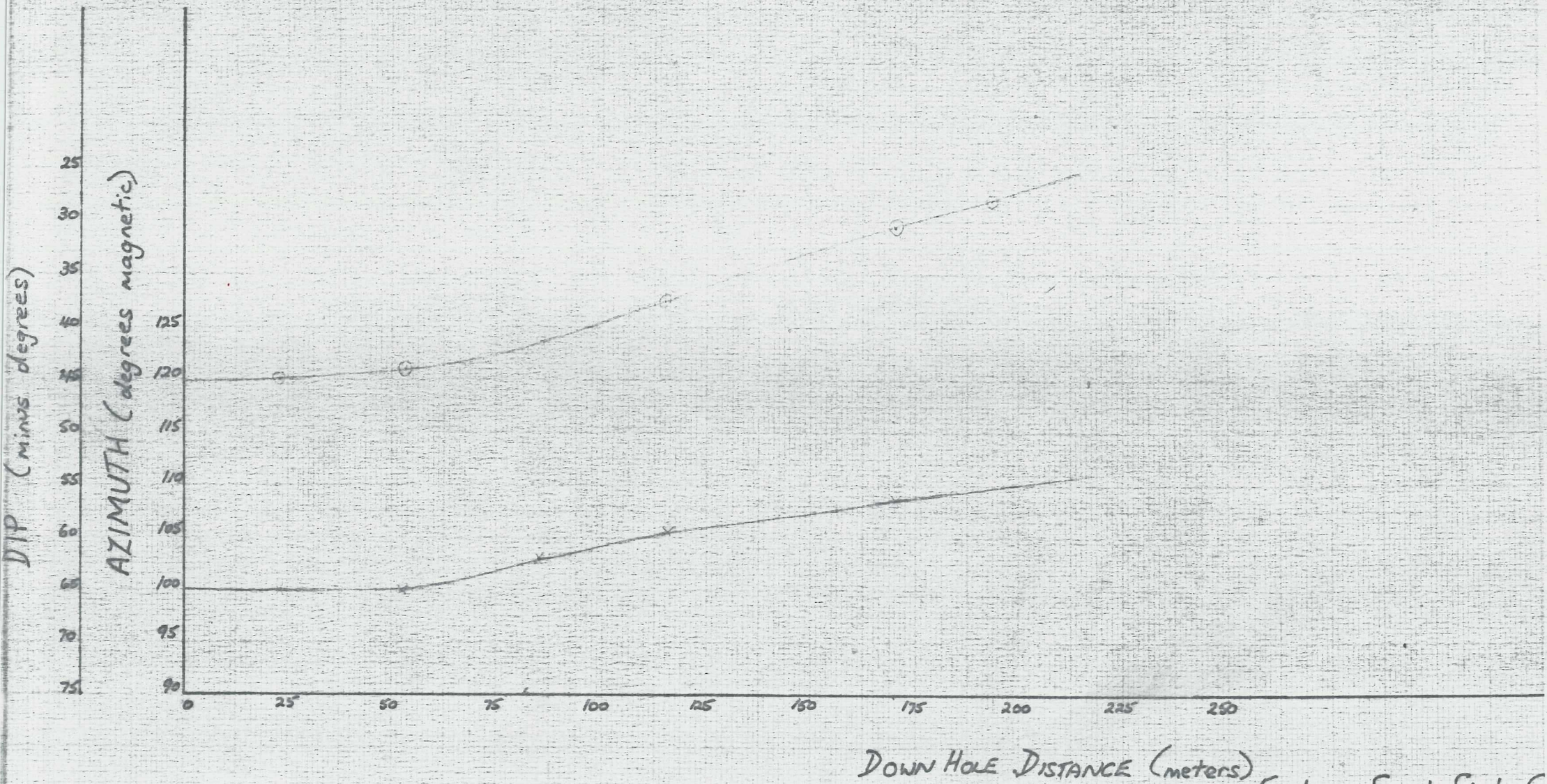
68 - 68.9 m Pyrite 30%, sphalerite 10%, galena 5%, trace chalcopyrite.

111.3 - 113.5 m Pyrite 20%, sphalerite 15%, galena 7%, chalcopyrite 1%.

145 - 153 m Irregular bands of pyrite 50% sphalerite 15%, galena 8% trace chalcopyrite

Hole abandoned at 200 m. Equipment lost in hole includes complete core barrel assembly, and overshot. Hole caved preventing recovery of equipment.

QR 28



Eastman Single Shot C
Camera

⊙ DIP
× AZIMUTH

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DIAMOND DRILL LOG

Hole N° QR 28 Page N° 1.

Feature : Bedding, Foliation, Fragment - size & shape; Shearing, Fault (F), Vein (c carbonate, q quartz)

Mineralization : Trace 1-5%; Common 5-15%; Abundant 15-60%; Massive <60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
	5	No Core.			
	6.9			6.9	
1.2		Grey sericitised, locally carbonated lithic tuff.	F		Pyrite < 1% as rare veins and bands of euhedral to subhedral crystals and disseminated fine dust.
1.6	10	Fragments of dacitic lava? (to 1 cm) have vague outlines because of thorough sericitisation.	F		
1.4		Patches of pale green lenticular aggregates of sericite possibly represent sheared feldspars or a sheared vitric tuff. Other indistinct fragments (to 3 cm) have euhedral sericite aggregates and are possibly an altered feldspar crystal tuff.	F		
2.6		The matrix is light grey, carbonated and "ashy". Foliation is weak, 40° to core axis while fractures are at 30° - 60° to the core axis.	F		
2.1	15		F		
	15.2	Fault zone. Broken and sheared core and pug.	F		
1.4	16.7	Below 16.7 m the unit is disrupted and carbonated.	F		
	18			18	Pyrite 2% occurs as above except when indicated.
3.0		Dark grey sericitised tuff.			
	20	The unit is commonly fine grained with occasional lithic fragments and disrupted bands as carbonate aggregates (to 1 mm) indistinct due to sericitisation, suggest the unit may be a fine feldspar crystal tuff. Chert bands (to 1 cm) have random occurence.	F		
3.0		Fine dusty pyrite is common in zones of increased sericitisation.	F	22 22.3	2 cm Pyrite 40% sphalerite 20% galena 1% chalcopyrite 2%. 22.3 - 22.7 m Pyrite 40% sphalerite 15% galena 7% chalcopyrite 1%.
1.4					
	25				

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DIAMOND DRILL LOG

Hole N° QR 28 Page N° 2.

Feature : Bedding, Foliation, Fragment - size & shape (0%), Shearing, Fault (F), Vein (c carbonate, q quartz)

Mineralization : Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive <60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
1.4									Secondary sphalerite and galena is associated with fractures and irregular carbonate veins.
1.2									
1.6		Below 23 m the unit is badly broken and faulted, with fractures between 10° and 60° to the core axis.							
	28.9								
1.7	29.3	Fault zone 40 cm of pug and broken core. 30° to core axis.	F					29.3	Pyrite 3% except where indicated, occurs as aggregates and bands of euhedral to subhedral crystals, and fine disseminations galena, sphalerite and minor chalcopyrite occurs as "stringers" throughout the unit.
	30	Mottled grey, sericitised and carbonated lithic tuff agglomerate sub-angular to rounded fragments (to 5 cm) are carbonated and often contain lens shaped aggregates of pale green sericite. Possibly feldspar crystal tuff/tuff lava.							
1.7									
1.4		Other fragments, angular to sub-rounded up to 10 cm, are thoroughly sericitised and often dusted with fine pyrite.							
1.4									
	35	Random local bands (to 25 cm) of fine tuff have a green-grey colour which can be attributed to sericitisation and dusty pyrite.							
2.8		Light grey disrupted chert bands (to 2 cm) and fragments (to 1 cm) are common.							
								38.6	Pyrite 80%.
3.1	40								
								40.5	1 cm Pyrite 90%.
3.0									
1.5	45								
		The matrix is light grey, fine and contains small (<1 mm) sugary quartz crystals.							
3.1									
	50								

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DIAMOND DRILL LOG

Hole N° QR.28 Page N° 3.

Feature : Bedding, Foliation, Fragment - size & shape; Shearing, Fault (F), Vein (c carbonate, q quartz)

Mineralization : Trace 1-5%; Common 5-15%; Abundant 15-60%; Massive <60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
2.0		Below 50 m the matrix becomes coarser giving the unit a "pyroclastic" appearance.			Pyrite 3% as above.
1.1					
1.2					
1.0					
1.8	55	Below 55m, the unit becomes disrupted, and irregular carbonate veins (to 2 cm) are common.			
3.0					
2.5	60				
	61.3	<u>Fault zone</u> Pug, sheared and broken core.			
0.35					
1.5					
1.1	65				
0.7	66.1				
1.8					
	68			68	Pyrite 30% sphalerite 1[illegible] galena 5% trace chalco-
1.3		Dark grey sericitised lithic tuff. The unit is similar to the unit described above between 18 - 29.3 m. Fragment outlines are obscure because of thorough sericitisation.		68.9	pyrite. Pyrite 5% as aggregates, veins and dissemination of euhedral to subhedral crystals. Galena and sphalerite <1% occurs as minor disseminations locally.
0.7	70				
1.0					
2.7					
1.6	75				

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DIAMOND DRILL LOG

Hole N° QR 28 Page N° 4.

Feature : Bedding, Foliation, Fragment - size & shape, Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization : Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
1.7		There appears to be a definite cyclicity developed between the coarse lithic tuff described between 29.3 - 68 m and the sericitised lithic tuff described between 18-29.3m and 68 - 80 m. The latter often has massive base metal mineralisation associated with it.			Pyrite 5% occurs as above.
3.0	80				
3.0		Grey locally sericitised and carbonated coarse lithic tuff. Light grey fragments to 4 cm, angular to sub-angular, have euhedral sericite aggregates and may be dacitic lava. Other grey fragments are fine grained, carbonated and are possibly a feldspar crystal tuff. Some fragments are sericitised and have dusty pyrite accompanying sericitisation.			
2.4	85	The matrix is fine grained, grey and carbonated.			
	86			86	Pyrite 3% occurs as above.
3.1		Fine grey tuff. Locally sericitised with carbonate aggregates to 1 mm throughout. Carbonate veins (to 3 cm) are common.			
	89				
3.2	90	Similar to above 86 m. Carbonate alteration is common, as is dusty pyrite in fragments that have been sericitised.			
3.1		Fractures are commonly 60° to core axis and the unit is reasonably competant.		93.6	Pyrite 5% sphalerite 5% galena 3% trace chalcopyrite.
		Foliation is weak but usually 40° to the core axis.		94	
	95				
3.1				96	10 cm pyrite 10% galena 5% sphalerite 10% trace chalcopyrite.
3.1	100				

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DIAMOND DRILL LOG

Hole N° QR 28 Page N° 5.

Feature : Bedding, Foliation, Fragment - size & shape; Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization : Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0	105	Below 100 m the unit appears to be coarser because of decreased sericitisation and increased carbonate alteration emphasising fragment outlines. There may be a lithilogical similarity between the above unit and that described in QR 5 165 - 179.4 m.							Pyrite 3% as above except where indicated.
3.0								109.3 109.5	20 cm Pyrite 15%, galena 5% sphalerite 10% trace chalcopyrite.
3.0	110	Below 110 m sericitisation is common and base metal sulphides occur in zones of thorough sericitisation.						111.3	Irregular bands and aggregates of massive base metal sulphides. Sphalerite 15% galena 7% chalcopyrite 1%.
3.0	114	Gradational contact.						113.5 114	Pyrite overall 20%. Pyrite 1% except where indicated as aggregates and veins and discrete euhedral to subhedral crystals.
3.0	115	Grey-green grey locally sericitised and carbonated lithic tuff agglomerate. Dark grey angular to sub-angular fragments (to 6 cm) have euhedral sericite aggregates and carbonate "spots" (< 1 mm). They are fine grained and may be a feldspar quartz crystal tuff. Other dark grey fragments (to 1 cm) are possibly a fine tuff.							
3.0	120	Some fragments (to 4 cm) have obscure outlines and are altered with lime green sericite and carbonate "spots" throughout. Fine dusty pyrite also occurs in areas of thorough sericitisation.							
3.0	125								

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DIAMOND DRILL LOG

Hole N° QR 28 Page N° 6.

Feature : Bedding, Foliation, Fragment - size & shape; Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization : Trace 1-5%; Common 5-15%; Abundant 15-60%; Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
3.0		The matrix is light grey, "ashy", often has sugary quartz crystals (1 mm), and is thoroughly carbonated. Fractures are usually 60° to the core axis and weak foliation is at 40° to the core axis.			125 - 129.6 m Irregular bands and aggregates of massive base metal sulphides. Sphalerite 20% galena 10% chalcopyrite <1%. Pyrite 5% overall.
3.0	130	Below 128 m, the unit has a blue grey colour, is appreciably coarser than that described above, and local areas have a pinkish hue. Pyrite fragments (to 1 cm) also occur.		128.5	Pyrite 1% as above.
				129.6	
3.0		Some buff coloured fragments (to 4 cm) have euhedral sericite aggregates and may be fragments of dacitic lava.			
3.0	135				Fine galena <1% is often disseminated throughout the matrix, and occasional secondary sphalerite and galena occurs as veins possibly along old fracture planes.
3.0					
3.0	140	Below 140 m the unit becomes somewhat disrupted, and the matrix is blue-grey, possibly because of disseminated galena.			
3.0	145				
	145.2	Fault zone 60% broken and sheared core, and fault pug. Sericitisation and chloritisation common.	F	145.2	Pyrite 5% - 10%. 147.4 m and 147.7 m, 5 and 10 cm respectivly, bands of pyrite 50% sphalerite 15% galena 8% trace chalcopyrite.
0.8					
1.3				147.4	
				147.7	
0.9	148.4			148.4	Pyrite 3% except where indicated.
		Dark green-grey lithic tuff. Angular to sub-angular thoroughly chloritised fragments (to 3 cm), have obscure outlines.			
	150				

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DIAMOND DRILL LOG

Hole N° QR 28 Page N° 7.

Feature : Bedding, Foliation, Fragment - size & shape; Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization : Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
3.0		Pyrite occurs as rare fragments and is disseminated through the fine grey carbonated matrix. The unit becomes finer below 151 m.		151.2	Pyrite 3% as above. 3 cm band pyrite 50% sphalerite 15% galena 8% trace chalcopyrite.
1.4	153.2				152 - 152.2 m Pyrite 10% galena 3% sphalerite 5% trace chalcopyrite.
0.5		Fault zone 80% sheared and broken core and fault pug.			
0.6					
0.8	155				
0.6	156			156	Pyrite 3%.
1.9		Coarse lithic tuff/tuff agglomerate. A very varied and disrupted mottled grey unit, with fragments (to 10 cm), green-yellow, and thoroughly altered to sericite, minor carbonate and sometimes containing sugary quartz crystals (<1 mm).			
1.1					
0.6					
1.2	160	Grey chert fragments (to 1 cm) and disrupted bands (to 5 cm) have carbonate and quartz filled tension fractures.			
3.0		Dirty green-grey fragments (to 5 cm) have lenticular and euhedral aggregates of pale green sericite and fine dusty pyrite, possibly a semi-sheared feldspar crystal tuff or vitric tuff.			
1.8	165	Smaller angular charcoal grey fragments to 2 cm but commonly <5 mm and irregular carbonate aggregates, often intersticial fillings, are prominant throughout.			
1.4		Light grey rounded to sub-rounded fragments (to 2 cm) with pale green sericite aggregates and carbonate spots (< 2mm), may be either a feldspar crystal tuff or in some cases dacitic lava.			
2.8					
1.8	170				
1.5					
1.7					
	175				

Feature : Bedding, Foliation, Fragment - size & shape; Shearing, Fault, Vein; c carbonate, q quartz

Mineralization : Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive <60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0		Below 176 m, the unit is weakly disrupted and carbonate less common. Some pale green to white fragments appear to be altered to white sericite, and/or clay and/or carbonate.							Pyrite 3% as above.
3.1	180	The distinctive "pyroclastic" appearance is now emphasied by thoroughly sericitised angular fragments flooded with dusty pyrite. The matrix is light grey, "ashy" and has abundant carbonate aggregates (<1 mm) and sugary quartz crystals (<1 mm).							Secondary sphalerite and galena has rare occurrence, usually associated with pyrite veins.
3.1		Fractures are usually 60° to the core axis while foliation is weak and usually at 40° to core axis.							
1.0	185								
3.0	185.6 186	Fault zone pug and sheared core. Below 183.5 m, buff-grey sub-rounded fragments (to 10 cm) have vesicles (to .5 cm), spherical and lenticular, filled with sericite, carbonate and fine pyrite crystals.	F						
3.0		Fine grey sericitised tuff bands (to 20 cm) occur below 185 m and chlorite alteration of lava clasts? is common below 193 m.							
3.0	190	Illite-hydromuscovite becomes common with increased chloritisation and green grey chloritised tuff lava? with carbonate filled vesicles occurs at 200 m. This may be similar to the bands described in QR 23 178.3 - 179 m. The unit between 190 - 200 m is similar to QR 8 303.8 - 327.6 m.							
3.0	195		F						
3.0									
	200	E.O.H.							

HOLE No QR 27 DATE 21/4/75

SAMPLE No	FROM (M)	TO (M)	W (cm)	REMARKS	INITIAL ANALYSIS: %Cu AAS	%Cu XRF	%Pb AAS	%Pb XRF	%Zn AAS	%Zn XRF	%Fe TIT	ppm Ag AAS	ppb Au AAS	ppm Au FIRE	CHECK LAB: INT	%Cu	%Pb	%Zn
159320	389.28	390.15	87	Block 389.5 ties in		1.40	0.28		0.62			17	240					
159321	390.15	390.75	60			1.25	0.25		0.42			35	300					
159322	390.75	391.25	50		0.12		0.17		0.38			2	30					
159323	393.30	394.10	80	Block 392.5 (datum)	0.21		0.14		0.45			10	140					
159324	394.10	394.38	28		0.03		0.03		0.15			2	30					
159325	394.38	394.87	49		0.41		0.16		0.37			10	200					
159326	394.87	395.70	83		0.02		0.03		0.17			2	40					
159327	395.70	396.37	67		0.08		0.06		0.49			8	180					
159328	396.37	396.85	48		0.13		0.07		0.27			5	270					
159329	396.85	397.73	88		0.02		0.02		0.18			2	40					
159330	397.73	398.35	62	Datum Block 398.6	0.05		0.02		0.73			2	60					
159331	398.35	399.25	90		0.16		0.15			3.90		19	220					
159332	399.25	400.98	173		0.08		0.16			1.67		17	290					
159333	400.98	401.38	40		0.21		0.03			1.46		8	170					
159334	401.38	402.28	90	Datum Block 401.65	0.13		0.09		0.10			12	320					
159335	402.28	402.73	45		0.56		0.24		0.45			20	>500	1.7				
159336	402.73	403.53	80		0.06		0.08		0.21			2	340					
159337	403.53	404.34	81		0.20		0.14		0.98			13	190					
159338	404.34	404.81	47	Block 404.7 ties in	0.18		0.08		0.26			10	170					
159339	404.81	406.05	124	Broken core & slurry	0.28		0.09		0.13			3	30					
159340	406.05	406.75	70	Datum Block 406.25		1.75	0.23		0.08			13	190					
159341	406.75	407.47	72		0.17		0.34		0.96			20	170					
159342	407.47	410.07	260	407.75 ties in. Core loss NQ casing to BQ	0.22		0.63		0.86			22	>500	1.3				
159343	410.07	410.55	48		0.14		0.14		0.27			2	40					
159344	410.55	411.75	120	410.8 ties in	0.05		0.12		0.23			8	70					
159345	411.75	412.70	95		0.55		0.14		0.93			7	50					
159346	412.70	413.80	110		0.01		0.27			1.26		10	50					
159347	413.80	414.70	90	Datum block 419.9	0.01		0.10		0.35			2	40					
159348	414.70	415.70	100		0.01		0.05		0.04			2	<20					
159349	415.70	416.85	115	Block 416.9 ties in	0.03		0.12		0.23			7	30					