Drill Hole Record

Cominco

HOLE N° QR 20

LOCATION Que River Area PROPERTY Mackintosh EL 2/70 DISTRICT Tasmania, Australia ALTITUDE / RL 693.4 DATE 22.2.1975

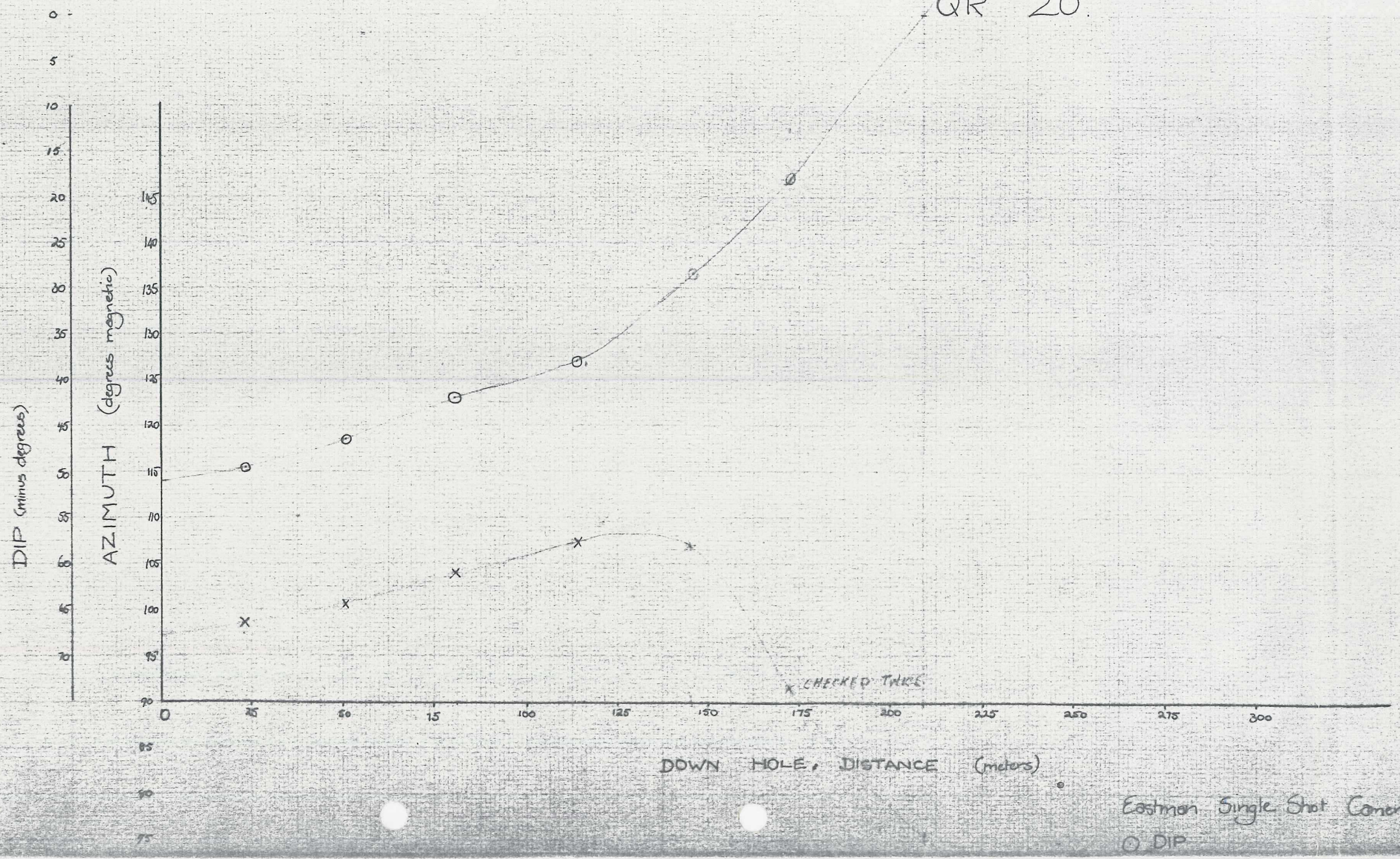
COMMENCED 14.2.1975 COMPLETED 19.2.1975 CORE SIZE NQ to 97.65 m BQ to 209 m E.O.H. LOGGED R. Birrell

OBJECTIVE To test a coincident I.P. and Geochemical anomaly and the projected strike of the east lens. %RECOVERY 99% GRID BEARING (M) 8.75° CO-ORDINATES 7804.1N 5274.6E BEARING (M) 97° DIP -51°

SURVEY DATA			
DEPTH	DIP	BEARING(M)	INSTRUMENT TYPE
0	51	97	Compass & Clinometer
23.45	49.5	98.5	Eastman
51	46.5	100.5	Single Shot
81.5	42	104	Camera
113.75	38	107.5	" "
120.75	33.5	109.5	Error?
145.45	28.5	107	
172.9	17.5	91	
174	19	92	Check
171	18.5	-	Check
173	18	91.5	Average

GRAPH DERIVED DATA						REMARKS
DEPTH	DIP	BEARING(M)	NORTHING	EASTING	ALTITUDE	
0	51	97	7804.1	5274.6	693.4	
25	49.5	97.5	7804.5	5290.5	674.1	
50	46.5	100.5	7804.4	5307.2	655.6	
75	43	103.5	7803.4	5325.0	638.0	
100	40	106	7801.4	5343.6	621.4	
125	35	109	7798.4	5363.1	606.2	
150	27	105	7795.3	5384.3	593.4	165 - 180 m East lens position? Pyrite 5%
175	17	90	7795.9	5407.2	584.0	rare chalcopyrite and sphalerite.
200	4.5	79	7802.0	5430.7	579.4	
209	0	75.5	7805.3	5439.1	579.0	

QR 20.



Eastman Single Shot Camera

⊙ DIP

DIAMOND DRILL LOG

Hole N° QR 20 | Page N° 1.

Feature: Bedding, Foliation, Fragment – size & shape (Qz); 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
	0.5	No Core							
1.0		Altered carbonate feldspar crystal tuff lava.							
3.05		Grey, fine grained and brecciated, the unit is siliceous with abundant irregular carbonate and quartz veins.							
		Fractures are at 50° to core axis, while foliation is indistinct.							
3.05	5		c						
	7.60							7.60	Pyrite rare as discrete euhedral crystals.
2.1		Buff to pink, carbonated feldspar crystal tuff-lava.							
		Commonly siliceous, with sporatic iron staining to 18 m that accentuates abundant irregular fractures, together with acicular quartz and carbonate.							
1.6	10								
		Minor leisgang banding occurs in some thoroughly ferruginised areas.							
3.2									
		Grey alteration zones also emphasise an irregular fracture pattern below 18 m.	BROKEN CORE.						
	15								
3.05		The unit is fine grained with feldspar crystals (<1 mm) and sugary quartz crystals (to 2 mm) are common. Occasional fine banding at 40° to core axis has been noted.							
		Note: Distinctive colouration may be due to dolomitisation (re petrology QR 15 245 m and QR 14 126 m).							
3.05	20								
3.05									
	25								

DIAMOND DRILL LOG

Hole N° QR 20 Page N° 2.

Feature: Bedding, Foliation, Fragment – size & shape Og; 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
3.05									Pyrite as above except where indicated as fine pyrite aggregates to 3% of euhedral to subhedral crystals.
3.05		Below 27 m, the unit is locally brecciated allowing thorough grey alteration. Quartz and carbonate veins, stringers and aggregates are common especially in zones of intense brecciation.							
3.05	30								
3.05			F						
3.05									
3.05	35								
3.05									
	38.3	Healed Fault Breccia, thoroughly silicified and carbonated.							
1.0	39								
	40	Also noted below 40 m, are sub-rounded pale green fragments (to 1 cm) of sericitised dacitic lava? These are genetically very similar to the host unit.							
2.0									
3.05									
3.05	45								
3.05		48 – 52 m The unit is brown-pink, siliceous and fine grained. Quartz carbonate stringers and aggregates are common with fractures irregular, chloritised and ragged.							
	50								

DIAMOND DRILL LOG

Hole N°. QR 20 | Page N°. 3.

Feature: Bedding, Foliation, Fragment – size & shape (fg) | 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
3.05	55	A weak foliation exists at about 60° to core axis. 50.8 m Sample for Petrology 155537. Buff coloured, fine grained <u>siliceous vesicular lava</u>? Irregular vesicles and "gas trails" have quartz and carbonate fillings. Grey alteration zones occur as bands (to 1 m) and are concentrated around zones of brecciation and fractures. Accompanying these zones is instersticial pyrite and carbonate aggregates.							Pyrite rare, 10% where indicated as aggregates and veins of euhedral to subhedral crystals.
3.05	60	Some lens shaped vesicles have sericite and occasionally chlorite fillings.							
3.05	65	61.5 m Sample for Petrology 155540.							
3.05	67	Below 66 m the unit is grey, disrupted siliceous and has abundant carbonate veins emphasising tension fractures.							
3.05	70	<u>Lithic tuff agglomerate</u>. Disrupted, siliceous and locally carbonated with large fragments (to 6 cm) that have carbonated, possibly albitised feldspar. Other small, angular light grey fragments are siliceous and common.							
3.05	72.25	<u>Fault Contact</u>	F						
3.05	75	<u>Lithic feldspar hornblende crystal tuff agglomerate</u>. Grey-green in colour with large lithic fragments (to 15 cm) with chloritised hornblende laths, albitised plagioclase feldspar in a kaolinised? groundmass.							

DIAMOND DRILL LOG

Hole N° QR 20 Page N°. 4.

Feature : Bedding, Foliation, Fragment- size & shape Qg; 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
3.05		76.7 m Sample for Petrology 155539. Alteration gives the unit a speckled appearance with chlorite flecks, small quartz crystals (1 mm) and carbonate predominant.	c						Pyrite rare.
3.05	79.6 80 80.6	Fault zone 50% broken and sheared core, chloritised slickensides.	qc						
3.05		The groundmass is fine grained, light grey, and foliation at 50° to the core axis is accentuated by rough allignment of chlorite laths.							
3.05	85 85.5	Fine vesicular lava. Buff coloured, the unit is similar to that described above, between 52 m and 66 m.							
3.05									
3.05	90								
3.05	93.4	93.4 - 98 m. Similar unit as described above 85.5 m.							
3.05	95		qc						
1.0									
2.0	98	Lithic tuff/tuff agglomerate. Green-grey colour with pumice? fragments (to 4 cm), carbonated and with pale green sericite replacing							
	100								

DIAMOND DRILL LOG

Hole N°. QR 20 | 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
3.05		relic vitric shards. Small, sub-rounded fragments (to 1 cm) of fine siliceous grey tuff? have pyrite dust throughout. Occasional fragments (to 5 cm) have chloritised hornblende laths, albitised? and carbonated feldspar in a kaolinised? groundmass. The matrix is fine grained, grey and "ashy".							Pyrite rare.
3.05	105								
3.05									
	109.8							109.8	Pyrite 7% as aggregates and intersticial dust.
3.05	110	Fragments of altered grey-buff feldspar crystal tuff lava in a fine grey tuff matrix.							
3.05									
	114.8	Fault Contact						114.8	Pyrite rare.
2.8	115	114.8 – 120.2 m Buff <u>feldspar crystal tuff lava</u>. Local grey alteration along fractures is common. The unit grades to a coarse tuff agglomerate with fragments (to 10 cm) of tuff containing albitised? feldspar.							
3.05	120	<u>Lithic hornblende crystal tuff agglomerate</u>. The unit is green-grey with large coarse grey fragments (to 12 cm) of feldspar crystal tuff with carbonate aggregates, (relic feldspars) and chlorite flecks in a green-grey "ashy" matrix. Pyrite fragments to 5 mm have been noted.							
3.05	125								

DIAMOND DRILL LOG

Hole N° QR 20 | 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	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.05		The unit has a light grey fine grained "ashy" matrix with discrete euhedral chlorite aggregates, (< 1 mm) and flecks.							Pyrite rare.
3.05		The unit is disrupted between 122 m and 124 m with carbonate veining common.							
	130	Foliation is usually at 40° to core axis while fractures can be between perpendicular to 60° to core axis.							
	130.8								
3.05		Grey to buff <u>tuff lava</u>. Fine grained and occasionally vesicular with carbonate and silica amygdules. Chlorite flecks (replacing hornblende?) are alligned to the foliation at 50° to core axis.							
		Minor grey alteration zones occur along some fractures.							
3.05	135								
0.3	136.4							136.4	Pyrite 2% as aggregates veins and disseminations throughout the matrix of fine euhedral to subhedral crystals.
3.05		Similar unit to that described above 130.8 m. Pyrite becomes more abundant, and "lithic" bands, dark grey in colour, with sericitised filamentus pumice, dacitic lava? fragments, (to 2 cm) and carbonate aggregates contained in a grey "ashy" matrix.							
	140								
3.05									
3.05		Foliation is emphasised by allignment of chlorite and sericite laths and flecks at 40° to core axis.							
	145								
		Fractures are usually 60° to core axis.							
3.05									
	150								

DIAMOND DRILL LOG

Hole N°: QR 20 | 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	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.05	150.5	Blue grey <u>pumice tuff agglomerate</u>. Large angular charcoal grey fragments (to 5 cm) have sugary quartz crystals and carbonated feldspar? crystals with fine interstitial pyrite throughout.							Secondary sphalerite along carbonate veins has been noted.
3.05		Sericitised pumice fragments (to 3 cm) give a banded appearance and are riddled with pyrite inclusions.							Pyrite 3% as fine disseminations and aggregates.
3.05	155	Weak foliation (bedding?) is about 50° to core axis.	c						
3.05			c						
3.05	160	159.6 – 161.2 m Pyroclastic band (lithic tuff agglomerate).							
3.05		Below 161.2 m the unit is fine grained grey with occasional "lithic" "bombs". Alternating dark and light bands have carbonate aggregates (to 5 mm) and sericitisation of the groundmass is common. Fractures are about 70° to core axis.							
3.05	165	Coarse <u>lithic pumice tuff</u>. Speckled yellow green colour with chlorite flecks and patches occasionally alligned to the foliation at 40° – 50° to core axis.						165	Pyrite 5% as above.
3.05									
3.05	170	Filamentus pumice often has a yellow green colour due to complete sericitisation.							
3.05		Other lithic fragments have carbonated and albitised? feldspar. Pyrite fragments (to 1 cm) are common near the top of the unit.							
3.05	175								

DIAMOND DRILL LOG

Hole N°. QR 20 Page N°. 8.

Feature : Bedding, Foliation, Fragment – size & shape Qg; 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
3.05	180	Bands (to 2 cm) of fine grey tuff have common occurance.						180	Secondary sphalerite and chalcopyrite has been noted. Pyrite 2% occurs as above.
3.05	185	The unit has a yellow colouration with pyrite aggregates, possibly replacing sericitised relic glass shards.							
3.05	190	Chloritised fine vesicular lava band (to 60 cm) with carbonated amygdules (to 5 mm).							
3.05	195	The unit has a mottled grey green buff colour with pyrite rich grey alteration zones along irregular fractures.							
3.05	200								

DIAMOND DRILL LOG

Hole N°. QR 20 | Page N°. 9.

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
3.05		As above.							Pyrite as above.
3.05	205	The unit becomes grey-green, partly siliceous, with a highly altered possibly pumiceous groundmass. Pale yellow lithic fragments are carbonated and have albitised? feldspars.							
3.05		209.5 E.O.H.						209.5	
	210								