

# Drill Hole Record



Property Mackintosh EL 2/70 District Tasmania Hole No. QR7  
 Commenced 26/6/74 Location Que River Area Tests at with Eastman single shot Hor. Comp.  
 Completed 9/7/74 Core Size NQ to 42.05m, BQ to Corr. Dip Vert. Comp.  
 Co-ordinates 5300E 7400N completion. True Brg. Logged by EHS  
 Objective To test above massive sulphides in QR1 and immediately % Recov. 100 except as specified Date 19/8/74  
 beneath the EM conductor axis. Also to test down dip below massive mineralisation in QR2

Claim

T. Brg.

Collar Dip

Elev.

Length

Hole No.

Sheet

Footage Metres		Description	Metres		Mineralisation	Sample No.	Length	Analysis												
From	To		To	From																
		SURVEYS: Surface minus 60°, 284° magnetic																		
		48.15 " 58°, 285° "																		
		82.00 " 55°, 286° "																		
		129.30 " 51°, 288° "																		
		174.60 " 46.5°, 290.5° "																		
		225.25 " 42.5°, 292° "																		
		258.60 " 39.5°, 291.5° "																		
0 - 2.90		Bleached volcanic rubble																		
2.90 - 4.80		Rubble of grey pyritic lithic tuff	2.90 - 9.82		Av 5-10% pyrite, locally 60% as coarse ramifying veins of subhedral															
4.80 - 9.82		Feldspar crystal lithic tuff agglomerate with quartz and carbonate veining. Brown-yellow colour imparted by oxidising pyrite and carbonate. Rock fragments are grey feldspar crystal fine lithic tuff of subangular to amoeboid shape up to 5cms in a white siliceous (silicified?) matrix. Fracturing is 45° to core axis.			1mm crystals.															
9.82 - 27.50		Massive sulphide with white quartz rich matrix. Where, locally sulphide content is low, the	9.82 - 13.02		75% pyrite, 2% chalcopyrite locally Pyrite is euhedral-subhedral and up															



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Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim  
T. Brg.  
Collar Dip  
Elev.  
Length  
Hole No.

Footage From	Metres To	Description	Metres		Mineralisation	Sample No.	Length	Analysis							
			To	From											
			14.40	14.70	15% pyrite, 10% galena, 10% sphalerite 1% chalcopyrite. Bulk is 50% crypto- crystalline black mineral with silica forming a hard (>6 mhos scale) matrix. All sulphides show concentration into disrupted 1cm bands. Sphalerite also occurs finely mixed with pyrite. Galena, only, shows discrete crystal surfaces. Banding is 20-30° to core axis.										
			14.70	14.98	85% pyrite										
		15.35: Slumped bedding indicates stratigraphic top down hole. Bedding is known to be sub- vertical, hence direction of slumping.	14.98	15.55	50% pyrite, 10% galena, 15% sphalerite, 5% chalcopyrite, bulk, black mineral plus quartz as above. Slumping of < 2cm beds indicates stratigraphic top is down hole, and source of slumped material from above the hole.										
			15.55	16.15	75% pyrite, 5% galena, 5% sphalerite										

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Claim  
T. Brg.  
Collar Dip  
Elev.  
Length  
Hole No.  
Sheet

Footage From	Metres To	Description	Metres		Mineralisation	Sample No.	Length	Analysis							
			To	From											
					2% (?) chalcopyrite. Base metals are concentrated into clots and disrupted bands.										
			16.15	16.99	85% pyrite, cryptocrystalline aggregates.										
			16.99	17.27	40% pyrite, 35% galena, 10% sphalerite minor chalcopyrite.										
			17.27	27.50	50% pyrite average, commonly 80% in vitric tuff-agglomerate/ medium fine grey lithic tuff. Disrupted bands and stringers are 50° to core axis, some bands with massive sphalerite (rare) are 15-20° to core axis. Chalcopyrite occurs as rare splashes, reaching 3-5% between 24.25 and 25.80. Short intervals of low (<10%) pyrite.										
20.32	31.80	Mid grey medium to fine grained reworked lithic tuff: contains scattered rounded fragments up to 3cms. Bedding is 30° to core axis at end of unit. Occasional narrow (5cm) bands of agglomerate occur. Fractured core (fault?) at 31.10.													
			27.50	30.40	Typically 5% pyrite, locally 10% as										

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Claim	T. Brg.	Collar Dip	Elev.	Length	Hole No.	Sheet
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Footage From	Metres To	Description	Metres		Mineralisation	Sample No.	Length	Analysis							
			To	From											
					veins and stringers. Rare sphalerite in veinlets.										
31.80 - 42.57		Medium grained (< 5mm) reworked lithic tuff, of subangular to rounded fragments, locally agglomerate. Carbonate alteration through but locally intense (10%). Foliation at 45° to core axis.	30.40 - 34.80		5% pyrite: disseminated euhedral grains < 1mm. random veining.										
			34.80 - 40-60		15% pyrite: disseminated euhedral grains; veining of massive pyrite (after beds?) 1-2% sphalerite. average locally (< 1cm bands) massive; trace galena throughout.										
42.57 - 44.0			40.60 - 41.00		Slumped pyrite bed (85%); chalcopyrite 2%; galena, trace. Thoroughly disrupted beds(?) vary subparallel to core axis.										
			41.00 - 42.05		5-10% disseminated pyrite; specks sphalerite.										
			42.05 - 42.35		60% plus pyrite with minor sphalerite.										

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Claim

T. Brg.

Collar Dip

Elev.

Length

Hole No.

Sheet

Footage From To	Metres Description	Metres		Mineralisation	Sample No.	Length	Analysis							
		To	From											
	54.55, with coarse lithic tuff present to end of interval.													
	<u>Interference</u> : Graded sequence of water laid tuffs (top is down hole)													
62.55 - 62.90	Buff coloured siltstone. Foliation is 45° to core axis Unit is bounded by Fault pug.	62.55	62.90	No sulphide										
62.90 - 74.48	Coarse lithic tuff. Carbonate and diffuse quartz veining throughout, most intense above 65.40. Hard light grey siliceous rock generally, patchy development of sericite.	62.90	65.40	5% pyrite										
	Crude fractures at 45° to core axis. Core is broken throughout but probable fault occurs at 71.75.	65.40	66.35	50% pyrite										
		66.35	74.48	5% pyrite, scattered veins and vein concentrations to 50% plus, with very rare chalcopyrite, and finely disseminated sphalerite (e.g. 69.85)										
74.48 - 79.30	Fine grained feldspar crystal tuff, possibly dacite flow breccia. Irregular banding, emphasised by carbonate alteration (yellow)	74.48	86.98	5% pyrite as disseminated grains and veinlets.										

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Objective		% Recov.	Date

Claim

T. Brg.

Collar Dip

Elev.

Length

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Sheet

Footage From To	Metres	Description	Metres		Mineralisation	Sample No.	Length	Analysis									
			To	From													
		alternates with agglomerate texture.															
79.30 - 80.50		Coarse <u>lithic tuff</u> . Foliation is 45° to core axis (alignment of fragments)															
80.50 - 82.77		Dominantly fine grained <u>siliceous tuff</u> or <u>dacitic(?)</u> flow breccia. Core broken 81-84 metres approx..															
82.77 - 115.21		<u>Tuff agglomerate</u> : shows carbonate alteration declining <sup>n</sup> intensity to 86.40. Below this point matrix colour is blue grey; fragments are greenish grey. Fragment shape varies subangular to amoeboid; individual fragments are broken. Below 108.30 the texture is agglomerate or more probably <u>autobreccia</u> in which fragments with white alteration rims are closely packed with corresponding margins. A mosaic effect is apparent. Fragments are sericitised, after a glassy volcanic.															
T7			86.98 - 87.38		60% pyrite												
			87.38 - 115.21		Typically 1% pyrite as disseminated euhedral crystals < 1mm. Scattered short (5-10cm) zones of 50%+ pyrite with trace galena occur, particularly between 94 and 102 metres, and below 112.10, where galena in pyrite zones is obvious. Here sulphide is in vein form between fragments, forming a coarse stockwork, associated with quartz.												

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Objective	% Recov.		Date

Claim	T. Brg.	Collar Dip	Elev.	Length	Hole No.	Sheet
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From	To	Description	Metres		Mineralisation	Sample No.	Length	Analysis								
			To	From												
115.21-123.15		Moderately to strongly altered zone; carbonate-chlorite-sericite (talc?) mosaic, with coarse veining of quartz-carbonate, particularly below 120m. Cleavage is 60° to core axis.	115.21-123.15		10-15% pyrite as a fine network, also locally replacing lithic fragments.											
		Core Recovery (1.97) Rec. 0.25														
123.50-125.08		Faulting: Broken core, pug and losses between 121.11 and 125.08														
		Rec. 0.40														
123.15-142.74		Mid grey feldspathic autobreccia (dacite?), patchily carbonated (e.g. 132.22) veined throughout with carbonate and quartz. Grey-green colour indicates genetic affinity close to unit 82.77 to 115.21	123.15-128.10		Average 5% pyrite, patchily as a network of veins associated with quartz and carbonate, and containing scattered galena (total <1%) Massive pyrite (no base metals) 125.96 to 126.41 (45cms)											
		T7														
			128.10-142.74		Typically <2% pyrite, patchy zones of 15%, rare narrow (2cm) massive bands.											
142.74-144.77		Fawn-grey fine grained tuff with scattered feldspar crystals. Bedding is 55° to core axis	142.74-144.77		No sulphide											

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Claim  
T. Brg.  
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Footage From	Metres To	Description	Metres		Mineralisation	Sample No.	Length	Analysis								
			To	From												
		<u>Fault zone</u> (broken puggy core)														
		144.55 to 144.77														
144.77-175.90		Mid grey dacite or rhyolite <u>agglomerate</u> or, locally, <u>flow banded autobreccia</u> . Banding where present (e.g. 173m) is 60° to core axis. Colouration indicates affinity with tuff agglomerates and autobreccias above. This unit is patchily sericitised and carbonated, with sparse carbonate and diffuse quartz veining throughout. Near the top of the unit, very fine grained grey areas of silicification (?) are identical with occurrences in QR2.	144.77-200.20		5% pyrite average in veins and stringers bounding quartz-carbonate veins which occupy inter-fragment areas. Some massive veins of up to 90% pyrite show erratic shapes and orientations. Between 163.00 and 168.40 pyrite veining and pyrite with chlorite attains 25-30% of the interval. 183.50 to 184.37 - 30% pyrite in a sheared sericitic carbonate host.											
175.90-200.20		Indefinite contact: <u>Tuff agglomerate</u> . Distinguished from above by obvious nature of fragments and variety of fragments. Below 189.00 the general fragment size has declined - <u>coarse lithic tuff</u> . Fragments are sericitised to varying degree, but irrespective of this, shows colours of light grey, greenish grey and dark grey to black in a steel grey matrix.														

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Objective		% Recov.	Date

Claim	T. Brg.	Collar Dip	Elev.	Length	Hole No.	Sheet
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Footage From	Metres To	Description	Metres		Mineralisation	Sample No.	Length	Analysis								
			To	From												
		Shapes are rounded, amoeboid to angular.														
		Occasional fragments are sulphide and/or carbonate rich. Original composition similar to unit above. Fine carbonate veining and spotting is marked below 191m.														
		Narrow 2-5cm bands of chlorite-sericite-carbonate, finely cleaved, become commoner (2 per metre) below 195m. Cleavage is 55° to core axis.														
		<u>Faulting:</u> Broken core 187.74 to 188.18														
		Pig (2cms) 196.20														
		Broken core 196.50														
		"      "      199.40														
200.20-205.36	T1	T1 type - Chlorite-sericite carbonate schist, after lithic tuff(?). Below 203m fine grained mid grey siliceous areas appear to be preserved zones of silicification predating the sericitisation. Sericite lenticles (up to 2mm) defining the cleavage planes are 65° to 85° to the core axis.	200.20-205.36		5% disseminated pyrite											
		<u>Faulting:</u> whole unit is strongly cleaved.														

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Claim  
T. Brg.  
Collar Dip  
Elev.  
Length  
Hole No.

Footage From To	Metres Description	Metres To From	Mineralisation	Sample No.	Length	Analysis				
	Pug zones present at:									
	200.45 to 200.70									
	202.50 to 203.20 (intermittently)									
	204.65									
205.36-212.39	Massive sulphide zone: sericite carbonate matrix after lithic tuff.	205.36-205.92	50% pyrite, trace chalcopyrite and sphalerite, concentrated into diffuse non-continuous bands at 60° to core axis. Pyrite is <<1mm grain aggregates.							
		205.92-206.69	30% galena, 10%(?) very fine pyrite, 15% sphalerite, trace chalcopyrite. Sphalerite and pyrite occur as <3mm subangular crystal aggregates (mud balls?) with interstitial galena (dominant) and matrix gangue. Gross texture is schistose.							
		206.69-208.38	80% pyrite, cryptocrystalline, sub-spherical aggregates c. 5mm. Interstitial galena, and sphalerite aggregates varies 5-10% combined. Rare flecks							

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Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim  
T. Brg.  
Collar Dip  
Elev.  
Length  
Hole No.

Footage Metres		Description	Metres		Mineralisation	Sample No.	Length	Analysis							
From	To		To	From											
					of chalcopyrite present. Occasional										
					bands of 1cm (207.97) of massive										
					cryptocrystalline sphalerite.										
					Foliation (disrupted bedding?) 45°										
					to core axis.										
				208.38-212.39	Fine (< 3mm average) wavy laminations										
					(beds) with sulphide mud balls and										
					" boudins" in massive pyrite (10%)										
					galena (20%) and sphalerite (50%)										
					with silica, and a fine grained										
					black mineral. Sphalerite occurs as										
					massive bands, usually with admixed										
					galena visible at x10. Galena occurs										
					dominantly between sphalerite bands and shows										
					crystal surfaces to the naked eye.										
					Chalcopyrite is rare. Pyrite is commoner										
					below 211.80.										
					Bedding is ~45° to core axis.										
					No facing data was deciphered.										
					Direction of slumping not										
					determinable.										

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Claim	T. Brg.	Collar Dip	Elev.	Length	Hole No.	Sheet
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Footage From	Metres To	Description	Metres		Mineralisation	Sample No.	Length	Analysis								
			To	From												
212.39	213.48	Sheared <u>sericitised lithic tuff</u> with pyrite pellets. Cleavage is 50° to core axis.	212.39	213.48	Pyrite 5-10% as pellets, and dis-											
					rupted beds.											
213.48	213.90	Grey sericitised <u>tuffaceous shale</u>	213.48	213.90	No mineralisation											
213.90	214.29	Sheared <u>sericitised lithic tuff</u> . Foliation at 60° to core axis.	213.90	214.29	Finely banded, locally remobilised galena 10% and sphalerite 10%.											
214.29	219.46	Massive <u>sulphide mineralisation</u>	214.29	215.56	60% sphalerite, 10% galena, bands 1mm to 1cm. Pyrite inobvious because of fine grain of sulphides - ?10%. Bulk is ? fine black mineral. Bedding is 60-70° to core axis.											
		Note on recoveries. Several apparent gains (and one loss) may be attributable to swelling of soft core, or driller error(?) No obvious core losses.														
	212.45 to 217.10 (plus 55cms core)		215.56	216.50	Massive fine grained pyrite (95%); short intervals of massive sphalerite, galena (60% combined - viz. 216.20, 216.42)											
	217.10 to 220.15 (plus 25 " " )															
	220.15 to 223.20 (plus 20 " " )															
	223.20 to 226.25 (plus 20 " " )															
	226.25 to 228.75 (minus 50 " " )															
	228.75 to 229.95 (plus 20 " " )		216.50	219.46	Massive fine grained pyrite (90%), showing contorted banding locally. Trace sphalerite, galena.											

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Completed	Core Size	Hor. Comp.
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		Date

Claim	T. Brg.	Collar Dip	Elev.	Length	Hole No.	Sheet
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Footage Metres From To	Description	Metres		Mineralisation	Sample No.	Length	Analysis				
		To	From								
219.46-230.65	Strongly sheared sericitised lithic tuff, with numerous pyrite fragments up to 5mm typically. Banding in sulphide fragments oblique to the schistosity, and the variety of sulphide grain sizes is considered to indicate the detrital, rather than replacement nature of the pyrite. This unit suggests stratigraphic top is down hole. Below 227m quartz carbonate veining is present locally intense (over 10cm intervals); some minor intervals (5cms max.) are rich in chlorite. Shearing is intense throughout. Pug zones occur at 221.19, 222.80, 223.20, 224.73, 228.00 (with quartz carbonate veining) 228.45, 229.08 (15cms), 229.95.	219.46	229.00	Pyrite 15-20%, as detrital fragments and disrupted layers. Fine stringers of sphalerite and galena are rare.							
		229.00	250.00	Short, < 10cm massive pyrite intervals become progressively commoner below 229m, discrete sulphide fragments show greater degree of remobilisation into vein networks. Ground mass sulphide becomes common in the chloritic unit. Sulphide (pyrite) averages 20%; commonly up to 60%+ over short intervals. These zones are comprised of subangular aggregates of subhedral-euhedral crystals < 1mm.							
230.65-238.16	Massive chlorite-schist with carbonate veinlets and spotting. Disseminated pyrite occurs as described opposite. The chlorite appears to replace a medium to fine grained lithic tuff. Cleavage is 60° to core axis but is relatively										

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Claim	T. Brg.	Collar Dip	Elev.	Length	Hole No.	Sheet
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Footage From	Metres To	Description	Metres		Mineralisation	Sample No.	Length	Analysis									
			To	From													
		poor compared with sericitic units. Fracturing at 60-90° to core axis is common.															
		Core very broken between 232.60 and 235.40 but no major core loss.															
238.16	256.30	Indefinite contact with mid grey <u>sericitised feldspar(??) crystal fine tuff</u> . White flecking is probably carbonate alteration. Locally, sericitisation has converted this rock to a T1 type with dark green lenticles of sericite. Quartz carbonate veining is common below 248.50. These are typically erratic in shape but largest dimension is usually 45-60° to core axis. Cleavage is 45° to core axis. <u>Faults</u> : (pug zones) 241.25, 242.39, 249.97 to 251.47 (intermittent pug zones indicate broad <u>fault zone</u> ).	250.00	256.30	Pyrite typically 5% occurs as disseminated grains, grain clots, bands and associated with carbonate veins. Between 249.43 and 255.00 rare chalcopyrite occurs with pyrite-carbonate veins.												
256.30	259.85	Pink to green sericitised <u>pumiceous(?) tuff-agglomerate or autobreccia</u> . Foliation is 55-60° to core axis; The contact is strongly carbonate veined both	256.30	259.85	1% pyrite interstitial to rock fragments.												

GSC-1101070-1







HOLE NO QR 7

DATE 23-8-74

INITIAL ANALYSIS: A.C.S. Labs.

CHECK LAB

SAMPLE NO	FROM   M	TO   M	IW   cm	REMARKS	%Cu		%Pb		%Zn		%Fe	ppm Ag	pph Au	ppm Au	INTERVAL & BULK NO	%Cu TIT	%Pb GRAV	%Zn TIT	Δ
					AAS	XRF	AAS	XRF	AAS	XRF	TIT	AAS	AAS	FIRE					
141044	31.67	32.57	90	Datum 30.50		0.34		0.15		0.12	12.5	13	220						
045	32.57	33.47	90			0.17		0.14		0.43	11.9	10	160						
047	33.47	34.37	90	15 cm core loss to 33.85		0.051		0.071		0.57	16.0	8	120						
141050	34.37	35.30	93			0.015		0.31		0.52	14.6	9	160						
053	35.30	36.30	100			0.18		0.75		2.39	17.6	15	260						
057	36.30	37.45	115	+ 20 cm core to 36.80		0.02		0.18		0.22	13.3	5	115						
059	37.45	38.85	140			0.07		0.33		0.68	14.1	6	110						
141070	38.85	39.85	100	10 cm core loss betw. 36.90 and 40.25		0.061		0.30		0.37	17.5	3	80						
072	39.85	40.20	35			0.01		0.081		0.05	14.7	<2	75						
073	40.20	40.70	50	+ 15 cm core betw. 40.25 r 41.15		1.52		0.45		0.90	32.5	8	350						
074	40.70	41.30	60			0.017		0.12		0.18	14.4	<2	75						
076	41.30	41.93	63	+ 15 cm core 41.15 to 42.05		0.012		0.12		0.079	13.4	2	70						
141077	41.93	43.20	127			0.21		0.33		1.00	18.0	11	190						
141078	50.25	51.17	92	datum 49.25 ties block		0.81		1.07		2.17	18.8	19	160						
141081	51.17	51.59	42	51.30		0.29		0.33		0.34	15.6	31	115						
141085	60.90	60.95	25	datum 60.65		1.30		0.44		1.55	39.6	23	70						

