PASMINCO ROSEBERY

A.C.N. 004 074 962

Hole No: 015B **Location:** Southern Trenches

Objective: Along strike from 009B mineralisation.

Result: No significant mineralisation. Fruuuuiiiiiiitttttttcaaaake!!! I've killed it!

Depth	Direct	Dip
0.0	216.0	-53.5
20.0	213.0	-53.3
48.0	214.5	-53.0
70.0	214.0	-53.5

Planned Direction: 216°	Drilling Commenced: 17/10/98
Planned Dip: -54°	Drilling Completed: 19/10/98
Planned Depth: 100.0 m	Actual Depth: 70.0 m
Planned Northing: 4410 m N	Surveyed Northing: 4409.35 m N
Planned Easting: 4652 m E	Surveyed Easting: 4653.38 m E
Planned Collar R.L.: 422 m RL	Surveyed Collar R.L.: 421.83 m RL

Date Logged: 28-Oct-1998
Logged By: Michael Whitbread
Hole Size: HQ
Hole Category: other
Grouted:

Date Log Verified: 26-Nov-1998
Verified By: Michael Whitbread

Summary Log:

0-3m NC; -8.6m Hots; -10.7m F; -17.1m Hots; -17.2m F; -17.5m Ho, -24.1m Hots; -27.8m F; -33.9m Hots; -34.8m F; -35.9m Hots; -36.8m F; -51.7m Hots; -57.9m F; -69.9m Hots; -70m F EOH.

From (m)	To (m)	Strat Code	Desc Code	Alt Code	Alt Int.	Description	@ Depth	Feature	LCA Deg°
0.0	**3.0**	**NC**				**NO CORE**			
0.0	3.0		NC		a	No core.			
3.0	**8.6**	**HOTS**				**HOST - TRACE SULPHIDES**			
3.0	8.6		RK	cb cl si	a	Dark green to medium grey, slightly oxidised and clay altered, variably chlorite and silica altered, heavily carbonate/clay spotted, rock. Spots are 1-8mm in diameter, and contain white carbonate/clay. Some have been weathered out leaving a pitted surface. Uncommonly have medium brown sphalerite +/- fine grained black sulphide or pyrite, contained within or associated with the spotting. Chlorite alteration can be massive, or as abundant distinct clots of chlorite 1cm in diameter. Fabric present, most obvious in chlorite rich intervals. Core of moderate to poor competency, but decreases in competency (and increases in browny fracture coatings - weathering), after 7.3m.	3.3 5.3 7.6	CV CV CV	45° 35° 25°
8.6	**10.7**	**F**				**FAULT**			

RQD To (m)	RQD %	Sample No	From (m)	To (m)	Length (m)	Pb %	Zn %	Cu %	Ag g/t	Au g/t	Fe %	TMU $
3.0	NC	97238	3.0	4.5	1.5	0.1	0.1	0.01	1	0.1	2.3	3
4.9	0	97239	4.5	5.5	1.0	0.1	0.1	0.01	1	0.1	1.5	3
5.3	100	97240	5.5	6.5	1.0	0.1	0.1	0.01	1	0.1	1.4	3
5.7	0	97241	6.5	7.5	1.0	0.1	0.1	0.01	1	0.1	2.3	3
6.8	54	97242	7.5	8.6	1.1	0.1	0.1	0.01	1	0.1	2.6	3
10.9	19	97243	8.6	9.4	0.8	0.1	0.3	0.01	1	0.1	1.8	6
11.6	85	97244	9.4	10.7	1.3	0.1	0.2	0.01	1	0.1	0.7	4
12.1	20	97245	10.7	12.0	1.3	0.1	0.7	0.01	1	0.1	2.0	11
13.9	83	97246	12.0	13.0	1.0	0.1	0.8	0.01	1	0.1	1.2	12
16.1	3	97247	13.0	13.9	0.9	0.1	1.9	0.16	4	0.1	1.3	29
18.1	70	97248	13.9	14.2	0.3	0.2	1.2	0.01	4	0.1	0.6	18
18.7	0	97249	14.2	16.0	1.8	0.1	0.2	0.01	1	0.1	0.6	4
19.6	100	97250	16.0	17.1	1.1	0.1	1.0	0.03	1	0.1	1.2	15
22.1	12	97251	17.1	17.2	0.1	0.1	0.3	0.01	1	0.1	1.0	6
23.7	68	97252	17.2	17.5	0.3	0.1	0.2	0.01	1	0.1	0.8	4
25.5	27	97253	17.5	18.5	1.0	0.1	0.4	0.02	1	0.1	1.3	7
26.0	80	97254	18.5	19.5	1.0	0.1	0.1	0.01	1	0.1	1.4	3
27.9	10	97255	19.5	20.6	1.1	0.1	0.1	0.01	2	0.1	0.7	3
29.5	75	97256	20.6	21.6	1.0	0.1	0.1	0.01	1	0.1	0.6	3
32.5	13	97257	21.6	22.6	1.0	0.1	0.2	0.02	2	0.1	0.6	5
33.8	84	97258	22.6	23.7	1.1	0.2	0.3	0.03	3	0.1	1.0	7
34.0	0	97259	23.7	24.1	0.4	0.4	0.9	0.11	13	0.1	0.8	18

From (m)	To (m)	Strat Code	Desc Code	Alt Code	Alt Int.	Description	@ Depth	Feature	LCA Deg°
8.6	10.7		BR CH ST	se cl se	a	Broken zone with mixed components, most with a dull-browny hue to them due to mild weathering. Some are cherty breccias, other components are sericite or chlorite altered sandstone/siltstone. Distinct lack of carbonate spots or pitting c.f. last unit. Impossible to pick a believable fabric. 5cm pug at ~8.9m, and at ~9.7m.			
10.7	**13.9**	**HOTS**				**HOST - TRACE SULPHIDES**			
10.7	13.9		CH RK	 cs si	a	Dark green and light grey coloured, variably chlorite+/-sericite and silica altered rock similar to 3-8.6m - but with only minor carbonate/chlorite spotting. The spotting that is present is also much smaller 1-3mm. Unit quite quartz-carbonate flooded/veined in last 20cm of unit. Some blebs and wisps of sulphide (as previous) associated with this veining. Rare occurrences elsewhere in unit. <<1%Zn in unit. Fabric noted. Unit of moderate to good competency.	12.4	CV	45°
13.9	**14.2**	**HOTS**				**HOST - TRACE SULPHIDES**			
13.9	14.2		SH	sc	a	Sericite-chlorite schist, with thin minor blebs of fine grained sulphide and sphalerite. Strong fabric. Abrupt boundaries with units either side. Core of poor competency.	14.0	CV	49°
14.2	**17.1**	**HOTS**				**HOST - TRACE SULPHIDES**			
14.2	16.0		RK	cs ql	a	Pale green silica and chlorite-sericite altered rock. Most likely after siltstone. Chlorite dominant to ~15m after which silica dominates. Small blebs of sphalerite etc present in occasional, thin quartz veins. Some clay 'clasts'/spots (3-10mm) in the chlorite dominant portion. Core of moderate to poor competency. Particularly poor around 15.7m.	14.9	CV	50°
16.0	17.1		CH		a	Grey, cherty rock, with small wisps and zones of chlorite, sericite alteration. Carries common blebs and wisps of sphalerite etc usually hosted within thin quartz veins - sulphides occur mainly in the moderately silica flooded/veined first 30cm of unit. Overall unit probably won't make 1%Zn. Unit fairly competent.	16.3 16.5	VN JT	35° 30°
17.1	**17.2**	**F**				**FAULT**			
17.1	17.2		CY		a	Small puggy zone. Contains clay and lithic fragments from surrounding units. Boundary with next unit has 67degree angle to CA.	17.2	FT	67°
17.2	**17.5**	**HO**				**HOST SEQUENCE**			
17.2	17.5		CH RK		a	Unit as in that before the puggy fault. Trace quantity of sulphides.			
17.5	**24.1**	**HOTS**				**HOST - TRACE SULPHIDES**			

RQD To (m)	RQD %	Sample No	From (m)	To (m)	Length (m)	Pb %	Zn %	Cu %	Ag g/t	Au g/t	Fe %	TMU $
35.7	82	97260	24.1	25.5	1.4	0.3	0.4	0.05	7	0.1	0.8	9
36.8	9	97261	25.5	26.6	1.1	0.1	1.0	0.18	2	0.1	1.5	17
37.4	100	97262	26.6	27.8	1.2	0.3	0.2	0.01	1	0.1	0.8	5
38.6	0	97263	27.8	29.0	1.2	0.2	0.1	0.01	4	0.1	0.7	4
39.6	100	97264	29.0	30.3	1.3	0.1	0.1	0.01	3	0.1	0.5	3
41.1	33	97265	30.3	31.6	1.3	1.9	1.8	0.24	52	0.4	1.2	48
42.8	82	97266	31.6	32.2	0.6	0.4	1.3	0.06	8	0.1	1.2	22
44.5	11	97267	32.2	33.9	1.7	0.3	2.0	0.05	8	0.1	3.0	30
45.7	100	97268	33.9	34.8	0.9	1.6	2.8	0.03	18	0.1	3.2	49
47.3	18	97269	34.8	35.9	1.1	0.1	0.3	0.01	5	0.1	1.0	6
53.6	82	97270	35.9	36.8	0.9	0.2	0.4	0.01	1	0.1	0.9	7
57.7	24	97271	36.8	38.0	1.2	0.1	0.1	0.01	1	0.1	1.8	3
58.3	83	97272	38.0	39.4	1.4	0.4	0.3	0.01	16	0.1	0.5	10
59.4	9	97273	39.4	40.4	1.0	0.4	0.2	0.01	5	0.1	0.6	7
61.3	52	97274	60.8	61.8	1.0	0.1	0.1	0.03	2	0.1	0.3	3
63.7	8	97275	61.8	62.8	1.0	0.3	1.0	0.09	2	0.1	0.5	17
67.4	83	97276	62.8	63.8	1.0	0.1	0.1	0.02	1	0.1	0.6	3
68.7	15	97277	63.8	64.8	1.0	0.1	0.6	0.08	1	0.1	1.5	10
70.0	84	97278	64.8	65.8	1.0	0.1	0.1	0.03	2	0.1	1.1	3
		97279	65.8	66.8	1.0	0.1	0.1	0.03	2	0.1	0.7	3
		'97280	66.8	68.0	1.2	0.1	0.1	0.03	1	0.1	0.7	3
		97281	68.0	69.0	1.0	0.2	0.4	0.04	1	0.1	0.8	8
		97282	69.0	69.9	0.9	0.1	0.2	0.02	1	0.1	0.6	4
		97283	69.9	70.0	0.1	0.1	0.5	0.03	2	0.1	1.8	9
			Total Length:		46.6							

Standards

		Pb	Zn	Cu	Ag	Au	Fe	
Reference Values for:	LBM-07						21/08/98	
		2.0	6.3	0.17	51	0.4	9.4	
Variances Allowed:		20%	20%	30%	20%	20%	20%	
97284	Inserted @ 70.0m	2.0	5.9	0.18	46	0.4	8.2	Y

TMU Parameters

Pb Metal Price (US$/t):	$525	**Pb Recovery (%):**	68.40%
Zn Metal Price (US$/t):	$1,200	**Zn Recovery (%):**	75.50%
Cu Metal Price (US$/t):	$1,750	**Cu Recovery (%):**	45.40%
Ag Metal Price (US$/oz):	$6	**Ag Recovery (%):**	70.00%
Au Metal Price (US$/oz):	$300	**Au Recovery (%):**	63.70%

From (m)	To (m)	Strat Code	Desc Code	Alt Code	Alt Int	Description	@ Depth	Feature	LCA Deg°	RQD To (m)	RQD %	Sample No	From (m)	To (m)	Length (m)	Pb %	Zn %	Cu %	Ag g/t	Au g/t	Fe %	TMU $
17.5	24.1		BR RK	 ql	a	Pale green and grey, faintly banded, possibly silica clast bearing, variably chlorite-sericite altered silica rock/volcanoclastic breccia. Contains occasional quartz veins +/-sulphide (sphalerite etc as previously). Unit still would not go 1%Zn. Most parts have a slightly banded/zoned look to them due to alternations between light grey silica rich domains/'clasts', and the greenish silica-chlorite intervening zones- possibly due to solely to alteration, but may reflect protolith texture (siliceous pumice breccia?). "Clast' size can vary from 5mm, to one at 22.7m which is 10cm. Occasional intervals look more like cherty sediment than altered pumice breccia. Some minor orangey carbonate-?sericite alteration present sporadically throughout as wisps, or as small spots and aggregates. Yellowy carbonate sometimes accompanies the quartz veins. Noticeable fabrics are the banding, and veining and carbonate-sericite wisps, which tend to run with it anyway. Competency is mixed, poor between 20-22m, but generally moderate elsewhere. The more chlorite rich intervals tend to be less competent.	19.1 22.0	BD BD	35° 47°													
24.1	**27.8**	**F**				**FAULT**																
24.1	27.8		CH RK	 ql	a	Broken version of previous unit dominated by chlorite more than silica, with two main patches of cherty intervals carrying quartz+/-sphalerite etc veins. These occur at 28.6-25.8m and 26.1-26.6m, and are slightly more competent (pieces 5-10cm in length). The cherty intervals would struggle to go 1%Zn, and overall the grade is far worse.																
27.8	**30.3**	**HOTS**				**HOST - TRACE SULPHIDES**																
27.8	30.3		 SH	 ql	a	More competent version (c.f. last unit) of the silica chlorite rock of previous units. Looks almost schistose, with quite discrete segregation of silica and silica-chlorite bands (1-15mm wide), and a lack of the 'clast' like texture of previous units. Still carry occasional blebs of sulphide -associated with quartz veining. Occasional joints (can be conjugate to banding) have small galena growths, or films of chlorite and fine grained black sulphide on them. Banding in more chlorite rich intervals becomes a strong cleavage. Overall grade still	28.0 28.0 28.6	CV JT BD	35° 30° 35°													
30.3	**32.2**	**HOTS**				**HOST - TRACE SULPHIDES**																
30.3	32.2		CH		b	Medium grey cherty sediments. Small wisps and patches of sericite-chlorite alteration present - rarely as a matrix to localised cherty breccia. Unit carries minor blebs and veinlets of medium brown sphalerite-galena-pyrite etc not contained with any recognisable quartz veining (c.f. previous units). Unit suffers increasing sericite-chlorite alteration and bad competency after 31.6m. 30cm loss from 31.7-32m. No really obvious fabric, except for sub-parallel mineralised veinlets of sulphide. Difficult to put an accurate boundary between this unit and the next. Boundary chosen at chlorite shear/fault.	30.6 30.7 32.2	JT VN SR	7° 25° 60°													
32.2	**33.9**	**HOTS**				**HOST - TRACE SULPHIDES**																

From (m)	To (m)	Strat Code	Desc Code	Alt Code	Alt Int.	Description	@ Depth	Feature	LCA Deg°	RQD To (m)	RQD %	Sample No	From (m)	To (m)	Length (m)	Pb %	Zn %	Cu %	Ag g/t	Au g/t	Fe %	TMU $
32.2	33.9		CH RK	cs cl	a	Weird looking mixed lithology/altered unit. Unit dominated by intervals of medium grey cherty sediment with abundant chloritic clots alternating with extremely chlorite altered rock; while from 32.4-32.7 we have, contained within a dark green chloritic matrix, aggregate clasts of deformed quartz-carbonate clasts separated by a light green chlorite-sericite matrix. These clasts are often cored by, or contain sphalerite-galena blebs and spots. This zone is most likely a screwed up quartz-carbonate vein contained within an annealed chloritic shear (sheared due to competency of surrounding cherty sediment). At 33.45 we have a carbonate vein containing thin blebs and veinlets of fine grained black sulphide (black streak). Sulphides are present, but uncommon outside the two zones mentioned. Chlorite rich zones carry a strong fabric, but this varies depending on the presence of silicified material. Unit will not make 1%Zn. Unit of moderate competency except in the first 5cm which is broken.	33.0 33.4	CV CV	20° 40°													
33.9	**34.8**	**F**				**FAULT**																
33.9	34.8		RK	cl cs	a	Begins with a broken zone of chloritic rock, carrying minor occurrences of galena, generally within thin, erratic quartz veinlets. Rubble of this material to ~34.2m; then two 10cm sticks of yellowy green sericite-chlorite-?carbonate, strongly foliated rock (fabric close to CA); then 10cm of very small broken chlorite-sericite chips; followed by 30-40cm of unmarked core loss to the next unit.	34.3	CV	8°													
34.8	**35.9**	**HOTS**				**HOST - TRACE SULPHIDES**																
34.8	35.9		BR CH RK	cs si	a	Light grey silicified sandstone/siltstone/rock/chert. Some evidence of original grainsize variations/bedding preserved in colour and transluscency changes. Unit brecciated by green chlorite-sericite matrix in first 20cm of unit (looks like normal chert breccia; still can't tell if the breccia is an artefact of alteration or alteration of a primary texture. Brecciated interval carries minor galena and fine grained black sulphide as in previous units. The extremely fine grained thin silica after 35.4 carries very thin worm-like wisps of galena etc with 1mm sized blebs of brown sphalerite entrained within. Sporadic chlorite wisps sub-parallel to banding occur; many of the sulphide wisps sub-parallel the banding aswell. Contact with next unit is sharp, but shows brecciation of marginal 2-3mm sized cherty fragments away from this unit. Core competent.	35.0 35.4 35.6 35.9	BD BD BD CT	38° 47° 45° 35°													
35.9	**36.8**	**F**				**FAULT**																
35.9	36.8		RK	sc	a	Broken zone of yellowy-green sericite-chlorite altered rock. Strongly foliated. Rare small blebs of galena and fine grained black sulphide can be found sitting within the fabric.	36.6	CV	43°													
36.8	**39.4**	**HOTS**				**HOST - TRACE SULPHIDES**																

Hole No: 015B

From (m)	To (m)	Strat Code	Desc Code	Alt Code	Alt Int.	Description	@ Depth	Feature	LCA Deg°	RQD To (m)	RQD %	Sample No	From (m)	To (m)	Length (m)	Pb %	Zn %	Cu %	Ag g/t	Au g/t	Fe %	TMU $
36.8	39.4		RK	sc si	a	Greeny-yellow coloured, sericite-chlorite altered, silcified rock/volcanoclastic. Strong fabric in sericite-chlorite dominated areas. Siliceous patches often carry orangey carbonate spots and veinlets (can be quite concentrated). Textute of unit looks slightly schistose/banded with sericite-chlorite finely intermixed with siliceous lamellae. Possibly a more altered version of the next unit, the boundary with which is gradational. Greenish alteration certainly decreases and the relevant silica content increases towards the next unit. Very trace quantites of sulphide blebs (assemblage as previous). Core of moderate to good competency.	37.3 38.7	CV BD	43° 48°													
39.4	**51.7**	**HOTS**				**HOST - TRACE SULPHIDES**																
39.4	51.7		PU RK	cb si	a	Light to medium greenish-tinged, grey, cherty rock/pumice breccia with fairly intense carbonate spotting and rimming, and abundant chlorite clots and pseudo fiamme of varying size and shape. Fiamme vary from 3mm to 2cm in width, and are usually elongate in a preferred banding orientation. Rare angular lithic fragments of the same cherty rock can be found within the unit. Carbonate as thin yellow white to orange coloured veinlets, spots and thin (<1mm) rims around the margins of some pseudo-fiamme etc. Some rounded pitting present throughout unit, probably after the carbonate. Occasional carbonate veins (<1-2cm wide) brecciate the host rock. Very minor disseminated pyrite accompanying some chlorite rich patches, and very rare galena in similar positions. Carbonate orange prior to ~44m, and after ~49.5m. Core generally competent. Broken zones (fragments generally 2-5cm in size), possible fault? ~42.8m to 43.9m, and ~45.8-46.5m.	42.0 44.5 49.9	BD BD BD	40° 47° 49°													
51.7	**57.9**	**F**				**FAULT**																
51.7	57.9		PU RK	si	a	Broken version of previous unit. Lots of unmarked core loss. Chlorite pseudo-fiamme size and occurrence gradually decreasing throughout unit, although wispy, indistinct chlorite-sericite alteration is present. Carbonate alteration also majorly decreased. Some occasional, isolated, thin blebs of galena and brown sphalerite, or pyrite and fine grained black sulphide. Banding looks like a cleavage in places, with thin carbonate wisps and chlorite-sericite wisps running sub-parallel. At least 1.5m core loss to 53.9m, ~20cm loss 55-56m, with partial recovery dominating throughout. Some occurences of broken material falling in after runs - makes estimating core block accuracy very difficult.	57.0	BD	40°													
57.9	**60.8**	**HOTS**				**HOST - TRACE SULPHIDES**																
57.9	60.8		PU RK	si	a	More competent version of previous unit. Some small broken zones sporadically throughout, amongst competent core. Chlorite pseudo-fiamme only present as thin 1-5mm wide and elongate blebs, still forming a fabric. Very thin orangey ?sericite-carbonate veinlets commonly present.	60.6	BD	50°													
60.8	**69.9**	**HOTS**				**HOST - TRACE SULPHIDES**																

Hole No: 015B

From (m)	To (m)	Strat Code	Desc Code	Alt Code	Alt Int	Description	@ Depth	Feature	LCA Deg°	RQD To (m)	RQD %	Sample No	From (m)	To (m)	Length (m)	Pb %	Zn %	Cu %	Ag g/t	Au g/t	Fe %	TMU $
60.8	69.9		RK SS	sc si	b	Greenish hued grey, silica rich rock/sandstone, containing minor sericite-chlorite wispy alteration througout. Unit contains common blebs of galena-sphalerite-pyrite and fine grained black sulphide, often contained with thin quartz-carbonate veins, or areas of stronger, but subtle, silica flooding. Still, probably make 1%Zn. Only rarely does unit have small (<1cm long) chlorite 'pseudo-fiamme'. Thin orangey carbonate-?sericite veinlets still present and fairly common. Unit begins to carry more chlorite pseudo-fiamme in last 1m of core. Difficult to pick a fabric as quartz veins can run in conjugate senses, and carbonate veinlets have varying orientations. The quartz veins do often lie parallel to chlorite blebs. Core of poor competency to 63.5 (possible part of a fault zone); competent thereafter. Core orientation at 68m. Orientated measurement of the vague banding - ~N-S stike, ~60 degrees dip east.	62.1 62.5 62.6 65.1 66.7 66.7 68.0	JT BD JT BD BD JT BD	50° 35° 40° 44° 52° 30° 50°													
69.9	**70.0**	**F**				**FAULT**																
69.9	70.0		CY RK	qs	a	10cm of broken fragments (silica, and silica-sericite-chlorite) and clayey bits. EOH at 70m though, so difficult to indicate if this zone is important.	69.9	CT	21°													