

Phelps Dodge Corporation of Canada

DIAMOND DRILL LOG

PROPERTY: Mary March (294)
HOLE No.: MM294-9
Collar Eastings: -10940.00
Collar Northings: 145.00
Collar Elevation: 0.00
Grid: Mary March -PDC

Collar Inclination: -45.00
Grid Bearing: 180.00
Final Depth: 395.00 metres

Logged by: J.G. Thurlow
Date: July 20, 1999
Down-hole Survey: Tropari

FROM	TO	LITHOLOGICAL DESCRIPTION	SAMPLE No.	FROM	TO	ASSAYS					
						W10TH	Au (ppb)	Ag (ppm)	Cu (%)	Pb (%)	Zn (%)
0	3.0	Overburden									
3.0	91.4	Intermediate-felsic flow; heterogeneous colours, textures and incipient alteration. Medium green-brown. Moderately broken core throughout. Local weak pervasive epidote alteration, especially in fractures. Large amoeboid silica-filled amygdules. Some pseudofragmental textures. Common coarse leucoxene specks, elsewhere, fine leucoxene dust. Plagioclase phenocrysts generally not visible except where orange-brown. Local hard brownish alteration (developed around voids in the incipient stage). Incipient to weak silica-sericite alteration. From 10.0-11.5m is weakly bleached with silica-sericite alteration and minor Zn-Pb in fractures and voids. Local fine vesicles, local perlitic cracks. Trace barite veinlets and patchy anomalous blue-grey silicification around 74.5m-79.5m.									
91.4	98.6	Fault and intrusive zone.									
	91.4	96.0	Fine grained, intermediate, synvolcanic(?) sill(?). Aphanitic with leucoxene "snowflakes." Anomalous black submetallic mineral in quartz-calcite-barite vein at 93.3m. Bleached towards basal contact with progressively broken core.								
	96.0	98.9	Fault gouge and broken core in mixed mafic/intermediate lithologies. Some bleached mafic fragments								

HOLE No: MM294-9

Phelps Dodge Corporation of Canada

DIAMOND DRILL LOG

PROPERTY: Mary March (294)
HOLE No.: MM294-9

Page 2

FROM	TO	LITHOLOGICAL DESCRIPTION	SAMPLE No.	FROM	TO	ASSAYS					
						WIDTH	Au (ppb)	Ag (ppm)	Cu (%)	Pb (%)	Zn (%)
		have trace chalcopryrite. Intrusives are mainly intermediate composition, like 91.4-96.0m.									
98.9	341.3	Basaltic-andesitic volcanoclastic rocks with incipient to weak alteration.									
98.9	164.4	Basaltic-andesitic breccia containing a variety of angular unsorted mafic clasts. Both diffuse silica and calcite in amygdules in clasts. Essentially non-magnetic (k= 0.02-0.03). Most clasts 10 cm and less. Some clasts have intermediate-felsic aspect. A few reddish jasperoidal clasts have associated specks chalcopryrite. Some hyaloclastic brecciation with silica infill but, for the most part, clasts were weakly altered elsewhere and then resedimented nearby. Minor pyrite throughout; some clasts are moderately pyritized. Some distinctive sections with bleached clasts in dark, weakly chloritized matrix. Local weak bleaching of both clasts and matrix. Some bleached clasts have trace specks chalcopryrite and sericitized plagioclase phenocrysts. Some sections of moderately blocky/broken core but overall fairly solid core. Rare minor gouge zone.									
164.4	168.5	Synvolcanic diabasic or intermediate-composition intrusive, medium dark grey. "Anomalous pyrite content, coarse leucoxene. Elongate silica-filled voids. Very weak shear on lower contact at 45 degrees to core.									
168.5	187.9	Weakly altered mafic breccias as									

HOLE No: MM294-9

Phelps Dodge Corporation of Canada

DIAMOND DRILL LOG

PROPERTY: Mary March (294)
HOLE No.: MM294-9

Page 3

LITHOLOGICAL DESCRIPTION						ASSAYS					
FROM	TO	SAMPLE No.	FROM	TO	WIDTH	Au (ppb)	Ag (ppm)	Cu (%)	Pb (%)	Zn (%)	

HOLE No: MM294-9

Phelps Dodge Corporation of Canada

DIAMOND DRILL LOG

PROPERTY: Mary March (294)
HOLE No.: MM294-9

Page 4

FROM	TO	LITHOLOGICAL DESCRIPTION	SAMPLE No.	FROM	TO	WIDTH	ASSAYS				
							Au (ppb)	Ag (ppm)	Cu (%)	Pb (%)	Zn (%)
		chalcopyrite, as in adjacent holes. Both pillow breccias and hyaloclastic breccias with perlitic cracks. Minor leucoxene-rich intermediate intrusives; larger ones from 311.1m-315.2m and from 320.5m-322m and from 339.7m-341.3m. Local silica-calcite veinlets have weak carbonate alteration selvages with bright green mica alteration of plagioclase. Local weak epidotic alteration									
341.3	343.13	Shear zone comprising mafic volcanics and partially sheared diabase. Mesoscopic folds evident.									
343.13	353.44	Pyritized zone. Foliated and variably sheared. Foliation variable from 35 to 70 degrees to core.	294066	343.13	343.52	0.39	191	4.7	0.13	0.01	NIL
			294067	343.52	344.10	0.58	5	0.2	0.01	NIL	0.02
			294068	344.10	345.45	1.35	96	3.0	NIL	0.01	0.01
343.13	343.52	Most pyritized section. Includes 18cm of 50% pyrite with traces base metal from 343.23m-343.41.	294069	345.45	346.80	1.35	247	4.3	NIL	NIL	NIL
			294070	346.80	348.15	1.35	250	3.9	NIL	0.01	0.03
			294071	348.15	349.50	1.35	88	1.5	0.11	0.02	0.05
343.52	344.1	Sheared, bleached chilled diabase (or basalt?) with bright green micas and anomalous disseminated pyrite.	294072	349.50	351.25	1.75	158	2.6	0.13	0.37	0.63
344.1	349.5	Strongly pyritized, strongly sericitized, foliated felsic rock. Mottled greyish to yellow-green according to sericite and pyrite content. 10% to 30% medium grained pyrite on average. Minor base metal sulphide. Traces fine grained, acicular sulphide (arsenopyrite?) Local minor barite. Foliation 45 to 70 degrees to core. Probably correlates with 294-8 from 368m to 378m.									

HOLE No: MM294-9

Phelps Dodge Corporation of Canada

DIAMOND DRILL LOG

PROPERTY: Mary March (294)

HOLE No.: MM294-9

Page 5

FROM	TO	LITHOLOGICAL DESCRIPTION	SAMPLE No.	FROM	TO	ASSAYS					
						WIDTH	Au (ppb)	Ag (ppm)	Cu (%)	Pb (%)	Zn (%)
		349.5 351.6 Peachy-brownish altered felsic volcanic interspersed with greenish talcy sericite-pyrite. Some pyritic stringers have substantial Zn-Pb. 351.2m-351.6m is fault gouge which correlates with the fault at the base of the mineralized zone in Hole #7.									
		351.6 353.44 Sericitized felsic volcanic with 1% disseminated pyrite, i.e., much less pyritic than sub-units above. Weak shear at basal contact.									
353.44	395.0	Grey, flow banded, cherty rhyolite containing consistent, disseminated and veinlet pyrite with base metal sulphides.	294073	355.40	356.90	1.50	68	1.8	0.01	0.04	0.15
			294074	356.90	358.40	1.50	81	4.6	0.14	0.61	1.12
			294075	358.40	359.90	1.50	73	1.8	0.01	0.04	0.15
			294076	359.90	361.40	1.50	89	2.6	0.04	0.06	0.29
		353.44 355.4 Brecciated rhyolite with greyish siliceous clasts in anastomosing sericitized matrix. 1% disseminated and veinlet pyrite, trace sphalerite. Weak shear at basal contact.	294077	361.40	362.90	1.50	153	6.2	0.01	0.09	0.33
			294078	362.90	364.40	1.50	96	3.2	0.01	0.03	0.21
			294079	364.40	365.90	1.50	210	4.9	0.03	0.08	0.36
			294080	365.90	367.40	1.50	118	4.9	0.03	0.03	0.27
			294081	367.40	368.90	1.50	131	6.2	0.05	0.04	0.30
		355.4 372.9 Remarkable, flow banded, mineralized, siliceous rhyolite with characteristic dark hairline fractures highlighting the flow banding (stylolite-fashion) and also in reticulate patterns. Common pyritic fracture-fills and veinlets. Common disseminated specks base metal sulphide, some thin, rich veinlets. Pyritic veinlets contain fine chalcopyrite. Common minor crystalline barite. Overall colour is medium-dark grey. Some brecciated zones	294082	368.90	370.40	1.50	139	4.3	0.02	0.04	0.15
			294083	370.40	371.90	1.50	167	5.4	0.02	0.02	0.16

HOLE No: MM294-9

Phelps Dodge Corporation of Canada

DIAMOND DRILL LOG

PROPERTY: Mary March (294)
HOLE No.: MM294-9

Page 6

FROM	TO	LITHOLOGICAL DESCRIPTION	SAMPLE No.	FROM	TO	ASSAYS				
						WIDTH Au (ppb)	Ag (ppm)	Cu (%)	Pb (%)	Zn (%)
		(e.g., sample 294077). No phenocrysts. This relatively thick unit may correlate with a thin unit in hole #7 around 347m. Weak shear at basal contact.								
		<u>MINERALIZED ZONE: Cherty Rhyolite Core Angle: 90 True Width: 16.50</u>								
		372.9 395.0 Less mineralized flow banded rhyolite with flow banding showing an abrupt change and running more or less along the core for considerable parts of this section. Less base metal evident as compared to sub-unit above. Some breccia with disoriented, flow-banded, siliceous fragments in sericitic matrix. Elsewhere quite siliceous and hard. Pyritic fracture fills contain minor base metals. Pyrite tends to be finer grained, locally framboidal and concentric zoned. Minor specks sphalerite continue to end of hole.	355.40	371.90	16.50	120	4.2	0.03	0.10	0.32
		395.0 metres EOH, 98 NQ core trays Casing left in hole.								
		Line 110+00 runs 126 degrees - hole collared at 126 degrees								
		Tropari tests: at 128 metres: 41 degree dip at 125 degree true azimuth at 395 metres: 41 degree dip at 143 degree true azimuth Hole is lined to bottom with small PVC pipe (48mm OD, 40mm ID)								
		Assay Samples: 294066 to 294083								

HOLE No: MM294-9

Phelps Dodge Corporation of Canada

DIAMOND DRILL LOG

PROPERTY: Mary March (294)
HOLE No.: MM294-9

Page 7

FROM	TO	LITHOLOGICAL DESCRIPTION	SAMPLE No.	FROM	TO	ASSAYS				
						WIOTH Au (ppb)	Ag (ppm)	Cu (%)	Pb (%)	Zn (%)

Lithogeochem samples @ 321.3m, 331.6, 348.9, 365.4, 385.9m

DOWN-HOLE SURVEY DATA

DEPTH	INCLINATION	BEARING
128.00	-41.00	179.00
395.00	-41.00	197.00

HOLE No: MM294-9