



Intermittent Acid Bottle Roll on Pacifico Minerals Copper Oxide Ore

INTERIM DRAFT RESULTS
31/10/2017

Test Details

Client Name:	Pacifico Minerals
Job Number:	0794BH
Sample Description:	Comp. A
Test Description:	Acid Bottle Roll (Feed Size: - 19 mm)
Core Intervals:	BLD6 35-36 & BLD6 36-37
Test Number:	ABR.01
Date:	13/10/2017

Test Parameters

Dry solids mass, g	2990	Wet solids mass, g	2990
H2SO4 added, g	91.3 (@ 100% purity)	Solids Moisture, % (w/w)	0.0
Water added (g)	6071	Duration, days	33
Leach Liquor (g/mL)	1.000	Initial free acid target concentration (range)	5 to 10 g/L
Leach Liquor (mL)	6071	Final Free Acid, g/L	
% solids (w/w)	33		

Head Assay Data

Head Assays (%)					
Sample	Cu	Fe	Mg	Ca	Si
Solids	1.57	0.64	1.98	0.06	33.7
Feed Solution Assays (g/L)					
Liquor	0.00	0.00	0.00	0.00	0.00

Residue and Final Solution Assay Data

Residue Assays (%)					
Sample	Cu	Fe	Mg	Ca	Si
Solids	0.061	0.63	1.96	0.03	33.7
Final Solution Assays (g/L)					
Liquor	7.220	0.11	0.18	0.156	0.127

Mass	Cu, g	Fe, g	Mg, g	Ca, g	Si, g
Feed Solids	46.9	19.0	59.2	2	1008
Feed Soln	0.0	0.0	0.0	0.0	0.0
Inputs	46.9	19.0	59.2	2	1008
Final Solids	1.8	18.5	57.3	1	986
Solutions	42.6	0.7	1.1	1	1
Outputs	44.4	19.2	58.4	2	987

Date	Time Days	pH	ORP mV (Ag/AgCl)	Solution Free Acid g/L	Solution Fe(II) g/L	Solution Density g/mL	H2SO4 Added g (98%)	Acid Addition kg/t	Assays					Removed (cum)			Extracted (Based on Solution & Head)			
									Cu g/L	Fe g/L	Mg g/L	Ca g/L	Si g/L	Solution mL	Cu g	Fe g	Cu g	Fe g	Cu %	Fe %
13-Oct-17	0	0.77	661	18.9		1.022	93.2	31	0.28	0.002	0.032	0.08	0.007	23	0.01	0.0	1.72	0.0	3.7	0.1
13-Oct-17	0.08	1.06	659	8.8		1.028	0.0	31	4.52	0.020	0.072	0.15	0.028	53	0.14	0.0	27.35	0.1	58.3	0.6
13-Oct-17	0.17	1.13	642	6.9		1.029	0.0	31	5.16	0.024	0.076	0.15	0.034	78	0.27	0.0	31.20	0.1	66.5	0.8
13-Oct-17	0.33	0.91	650	5.9		1.029	25.5	39	5.67	0.029	0.081	0.15	0.045	106	0.43	0.0	34.25	0.2	73.0	0.9
14-Oct-17	1	1.12	656	7.8		1.025	13.4	44	7.01	0.053	0.111	0.15	0.075	131	0.60	0.0	42.25	0.3	90.0	1.7
15-Oct-17	2	1.11	662	9.8		1.026	0.0	44	7.30	0.084	0.145	0.16	0.107	154	0.78	0.0	43.97	0.5	93.7	2.6
16-Oct-17	3	1.15	568	8.3		1.031	0.0	44	7.22	0.113	0.178	0.16	0.127	179	0.95	0.0	43.50	0.7	92.7	3.5
Final Bulk Solution				8.3		1.031			7.22	0.113	0.178	0.156	0.127							

Mass Balance Results

Product	Mass	Density	Analysis (ppm)					Distribution (g)		Distribution (%)	
	g	g/mL	Cu	Fe	Mg	Ca	Si	Cu	Fe	Cu	Fe
Leach Solution	6089	1.031	7220	113	178	156	127	43.6	1	96.1	3.5
Residue	2926		607	6330	19600	270	337000	1.8	19	3.9	96.5
Total	9015							45.4	19	100	100
Calc Head (Feed Based) ; %			1.517	0.6	2.0	0.1	33.0				
Accountability; %			97	101	99	102	98				

Other Data	
Mass Loss ; %	2.1
Total 98% Acid Addition; kg/t	44
Net Acid Consumption; kg/t	25
Net Acid Consumption; kg/kg Cu leached	1.7
Total 98% Acid Addition; kg/kg Cu leached	3.0

Technical Comments

Potential to optimise total acid addition (reduce) by targeting lower terminal (free acid) concentration in leach liquor.
Rapid leach kinetics for copper (~90% after 24h); Cu extractions plateau at ~93% between 24 and 48hrs elapsed.
Negligible mass loss - reflects low gangue acid consumption
Relatively low impurity levels in leach liquor - especially Fe. Around 2.5L of solution available for scouting test to assess impurity removal and/or production of liquor for CuSO4 crystallisation or as EW feed.

Metal Extraction vs Time

