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Pressure leaching characteristics of a magnetically enhanced concentrate with specific refrence to the precious metal components

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APPENDIX A

Splitting Data

SPLITING ALR MATERIAL

SAMPLE JAR NUMBER : 1

ALR		
Gross mass :	2406.6	g
Tare mass :	1598.9	g
Net mass :	807.7	g

	Gross (g)	Tare (g)	Mass (g)
Split No. 1	148.91	98.99	49.92
Split No. 2	152.70	101.41	51.29
Split No. 3	149.84	99.30	50.54
Split No. 4	148.28	99.36	48.92
Split No. 5	149.61	99.95	49.66
Split No. 6	148.58	99.53	49.05
Split No. 7	153.51	102.44	51.07
Split No. 8	150.15	99.18	50.97
Split No. 9	154.75	103.29	51.46
Split No. 10	149.98	99.58	50.40
Split No. 11	148.75	98.36	50.39
Split No. 12	150.96	99.12	51.84
Split No. 13	151.12	99.44	51.68
Split No. 14	152.39	99.33	53.06
Split No. 15	149.88	100.48	49.40
Split No. 16	147.18	99.14	48.04

Standard Deviation	1.2846087
% Standard Deviation	2.54%
Average	50.48
Relative Splitting Difference	9.46

SAMPLE JAR NUMBER : 2

ALR		
Gross mass :	2439.7	g
Tare mass :	1610.8	g
Net mass :	828.9	g

	Gross (g)	Tare (g)	Mass (g)
Split No. 1	153.02	102.19	50.83
Split No. 2	148.92	98.04	50.88
Split No. 3	151.71	101.90	49.81
Split No. 4	150.43	99.99	50.44
Split No. 5	148.61	98.36	50.25
Split No. 6	153.33	101.79	51.54
Split No. 7	153.50	102.54	50.96
Split No. 8	153.70	100.00	53.70
Split No. 9	155.25	100.87	54.38
Split No. 10	154.08	99.61	54.47
Split No. 11	154.86	101.39	53.47
Split No. 12	154.60	102.20	52.40
Split No. 13	153.49	101.37	52.12
Split No. 14	152.12	100.68	51.44
Split No. 15	152.14	98.55	53.59
Split No. 16	149.92	101.33	48.59

Standard Deviation	1.73318
% Standard Deviation	3.35%
Average	51.80

SPLITING ALR MATERIAL

SAMPLE JAR NUMBER : 3

ALR		
Gross mass :	2478.9	g
Tare mass :	1626.7	g
Net mass :	852.2	g

	Gross (g)	Tare (g)	Mass (g)
Split No. 1	154.41	102.24	52.17
Split No. 2	151.33	99.00	52.33
Split No. 3	155.84	103.65	52.19
Split No. 4	152.73	99.58	53.15
Split No. 5	153.61	100.34	53.27
Split No. 6	155.71	102.59	53.12
Split No. 7	152.09	98.19	53.90
Split No. 8	154.74	100.86	53.88
Split No. 9	157.66	102.67	54.99
Split No. 10	159.00	104.65	54.35
Split No. 11	156.74	101.64	55.10
Split No. 12	157.19	108.37	48.82
Split No. 13	156.43	102.92	53.51
Split No. 14	155.77	102.13	53.64
Split No. 15	152.89	99.18	53.71
Split No. 16	152.73	98.67	54.06

Standard Deviation	1.468633
% Standard Deviation	2.76%
Average	53.26

SAMPLE JAR NUMBER : 4

ALR		
Gross mass :	2469.2	g
Tare mass :	1637.0	g
Net mass :	832.2	g

	Gross (g)	Tare (g)	Mass (g)
Split No. 1	152.32	99.97	52.35
Split No. 2	155.06	101.42	53.64
Split No. 3	155.72	102.36	53.36
Split No. 4	156.74	102.76	53.98
Split No. 5	155.78	101.85	53.93
Split No. 6	154.81	101.91	52.90
Split No. 7	154.40	101.99	52.41
Split No. 8	154.38	102.44	51.94
Split No. 9	154.23	102.78	51.45
Split No. 10	152.37	101.74	50.63
Split No. 11	152.66	102.26	50.40
Split No. 12	153.42	103.25	50.17
Split No. 13	153.96	103.33	50.63
Split No. 14	153.01	102.25	50.76
Split No. 15	155.09	103.39	51.70
Split No. 16	155.20	103.28	51.92

Standard Deviation	1.28805
% Standard Deviation	2.48%
Average	52.01

SPLITING ALR MATERIAL

SAMPLE JAR NUMBER : 5

ALR		
Gross mass :	2468.6	g
Tare mass :	1640.3	g
Net mass :	828.3	g

	Gross (g)	Tare (g)	Mass (g)
Split No. 1	155.39	103.05	52.34
Split No. 2	154.18	102.32	51.86
Split No. 3	155.04	103.24	51.80
Split No. 4	152.77	101.90	50.87
Split No. 5	153.09	101.63	51.46
Split No. 6	153.87	103.03	50.84
Split No. 7	153.97	102.88	51.09
Split No. 8	154.47	102.22	52.25
Split No. 9	154.45	101.95	52.50
Split No. 10	155.39	102.99	52.40
Split No. 11	155.35	102.68	52.67
Split No. 12	154.92	103.18	51.74
Split No. 13	154.09	102.71	51.38
Split No. 14	154.34	102.56	51.78
Split No. 15	154.02	101.91	52.11
Split No. 16	153.29	102.09	51.20

Standard Deviation	0.5848672
% Standard Deviation	1.13%
Average	51.77

SAMPLE JAR NUMBER : 6

ALR		
Gross mass :	2482.9	g
Tare mass :	1635.5	g
Net mass :	847.4	g

	Gross (g)	Tare (g)	Mass (g)
Split No. 1	154.32	102.06	52.26
Split No. 2	153.16	101.67	51.49
Split No. 3	153.11	101.69	51.42
Split No. 4	153.66	102.10	51.56
Split No. 5	154.91	102.58	52.33
Split No. 6	156.50	102.01	54.49
Split No. 7	157.43	102.27	55.16
Split No. 8	157.19	102.79	54.40
Split No. 9	156.84	102.23	54.61
Split No. 10	156.64	102.27	54.37
Split No. 11	156.18	101.79	54.39
Split No. 12	155.56	102.20	53.36
Split No. 13	154.89	102.29	52.60
Split No. 14	153.80	102.03	51.77
Split No. 15	155.12	103.16	51.96
Split No. 16	153.60	102.38	51.22

Standard Deviation	1.3933806
% Standard Deviation	2.63%
Average	52.96

SPLITING ALR MATERIAL

SAMPLE JAR NUMBER : 7

ALR		
Gross mass :	2470.1	g
Tare mass :	1637.0	g
Net mass :	833.1	g

	Gross (g)	Tare (g)	Mass (g)
Split No. 1	154.26	102.25	52.01
Split No. 2	154.77	103.28	51.49
Split No. 3	154.44	103.39	51.05
Split No. 4	154.18	103.25	50.93
Split No. 5	152.92	103.33	49.59
Split No. 6	152.04	101.85	50.19
Split No. 7	151.07	99.97	51.10
Split No. 8	152.24	101.42	50.82
Split No. 9	153.99	102.26	51.73
Split No. 10	153.99	101.74	52.25
Split No. 11	156.57	102.76	53.81
Split No. 12	156.76	102.36	54.40
Split No. 13	156.18	101.91	54.27
Split No. 14	156.01	101.99	54.02
Split No. 15	155.72	102.78	52.94
Split No. 16	154.92	102.44	52.48

Standard Deviation	1.4841406
% Standard Deviation	2.85%
Average	52.07

SAMPLE JAR NUMBER : 8

ALR		
Gross mass :	2402.1	g
Tare mass :	1597.8	g
Net mass :	804.3	g

	Gross (g)	Tare (g)	Mass (g)
Split No. 1	149.47	99.74	49.73
Split No. 2	149.68	100.66	49.02
Split No. 3	151.43	102.13	49.30
Split No. 4	149.48	99.98	49.50
Split No. 5	149.48	99.28	50.20
Split No. 6	151.40	99.80	51.60
Split No. 7	151.03	98.53	52.50
Split No. 8	151.98	99.69	52.29
Split No. 9	150.54	99.44	51.10
Split No. 10	153.79	103.15	50.64
Split No. 11	148.52	98.62	49.90
Split No. 12	147.52	98.07	49.45
Split No. 13	149.01	98.99	50.02
Split No. 14	148.38	98.71	49.67
Split No. 15	151.93	102.08	49.85
Split No. 16	148.44	98.90	49.54

Standard Deviation	1.0640142
% Standard Deviation	2.12%
Average	50.27

SPLITING ALR MATERIAL

SAMPLE JAR NUMBER : 9

ALR		
Gross mass :	2404.9	g
Tare mass :	1603.5	g
Net mass :	801.5	g

	Gross (g)	Tare (g)	Mass (g)
Split No. 1	148.19	99.31	48.88
Split No. 2	153.04	103.59	49.45
Split No. 3	147.85	99.33	48.52
Split No. 4	151.62	102.91	48.71
Split No. 5	150.60	100.01	50.59
Split No. 6	150.67	99.11	51.56
Split No. 7	153.76	102.82	50.94
Split No. 8	150.43	99.64	50.79
Split No. 9	149.39	98.88	50.51
Split No. 10	150.54	100.29	50.25
Split No. 11	149.48	98.86	50.62
Split No. 12	149.87	99.82	50.05
Split No. 13	150.44	99.95	50.49
Split No. 14	150.20	100.00	50.20
Split No. 15	150.38	100.03	50.35
Split No. 16	148.45	98.91	49.54

Standard Deviation	0.8521774
% Standard Deviation	1.70%
Average	50.09

SAMPLE JAR NUMBER : 10

ALR		
Gross mass :	2436.9	g
Tare mass :	1605.4	g
Net mass :	831.5	g

	Gross (g)	Tare (g)	Mass (g)
Split No. 1	155.23	102.32	52.91
Split No. 2	150.78	98.22	52.56
Split No. 3	154.59	102.71	51.88
Split No. 4	152.87	100.17	52.70
Split No. 5	150.52	98.92	51.60
Split No. 6	153.10	99.57	53.53
Split No. 7	151.38	99.45	51.93
Split No. 8	149.75	98.91	50.84
Split No. 9	151.88	100.62	51.26
Split No. 10	154.19	103.74	50.45
Split No. 11	149.97	99.68	50.29
Split No. 12	149.43	99.49	49.94
Split No. 13	151.80	100.12	51.68
Split No. 14	156.08	102.99	53.09
Split No. 15	153.19	99.07	54.12
Split No. 16	152.11	99.42	52.69

Standard Deviation	1.2071659
% Standard Deviation	2.32%
Average	51.97

SPLITING ALR MATERIAL

SAMPLE JAR NUMBER : 11

ALR		
Gross mass :	2459.7	g
Tare mass :	1624.6	g
Net mass :	835.1	g

	Gross (g)	Tare (g)	Mass (g)
Split No. 1	152.78	102.14	50.64
Split No. 2	153.13	102.08	51.05
Split No. 3	150.66	99.95	50.71
Split No. 4	151.29	100.44	50.85
Split No. 5	151.49	100.20	51.29
Split No. 6	150.35	99.28	51.07
Split No. 7	151.75	99.61	52.14
Split No. 8	151.46	99.88	51.58
Split No. 9	156.83	103.04	53.79
Split No. 10	158.14	103.46	54.68
Split No. 11	158.12	103.54	54.58
Split No. 12	156.07	101.84	54.23
Split No. 13	156.50	103.32	53.18
Split No. 14	154.67	101.79	52.88
Split No. 15	153.42	102.01	51.41
Split No. 16	153.07	102.06	51.01

Standard Deviation	1.4655544
% Standard Deviation	2.81%
Average	52.19

SAMPLE JAR NUMBER : 12

ALR		
Gross mass :	2409.8	g
Tare mass :	1614.7	g
Net mass :	795.1	g

	Gross (g)	Tare (g)	Mass (g)
Split No. 1	148.63	99.64	48.99
Split No. 2	149.24	100.13	49.11
Split No. 3	153.05	103.24	49.81
Split No. 4	152.88	102.61	50.27
Split No. 5	151.61	100.01	51.60
Split No. 6	153.15	100.79	52.36
Split No. 7	151.86	100.26	51.60
Split No. 8	149.76	100.19	49.57
Split No. 9	152.29	102.61	49.68
Split No. 10	149.30	99.35	49.95
Split No. 11	150.98	102.61	48.37
Split No. 12	148.00	99.21	48.79
Split No. 13	148.89	100.60	48.29
Split No. 14	150.69	102.39	48.30
Split No. 15	150.60	101.45	49.15
Split No. 16	148.86	99.62	49.24

Standard Deviation	1.2280852
% Standard Deviation	2.47%
Average	49.69

SPLITING ALR MATERIAL

SAMPLE JAR NUMBER : 13

ALR		
Gross mass :	2449.8	g
Tare mass :	1608.6	g
Net mass :	841.2	g

	Gross (g)	Tare (g)	Mass (g)
Split No. 1	154.55	102.26	52.29
Split No. 2	152.41	99.12	53.29
Split No. 3	151.08	98.42	52.66
Split No. 4	156.14	103.28	52.86
Split No. 5	155.70	102.25	53.45
Split No. 6	152.53	99.23	53.30
Split No. 7	151.43	98.52	52.91
Split No. 8	150.97	98.30	52.67
Split No. 9	155.93	103.88	52.05
Split No. 10	155.17	102.88	52.29
Split No. 11	153.50	100.47	53.03
Split No. 12	152.38	100.45	51.93
Split No. 13	153.12	101.27	51.85
Split No. 14	151.70	99.53	52.17
Split No. 15	151.53	98.89	52.64
Split No. 16	151.63	99.84	51.79

Standard Deviation	0.5405784
% Standard Deviation	1.03%
Average	52.57

SAMPLE JAR NUMBER : 14

ALR		
Gross mass :	2450.3	g
Tare mass :	1635.3	g
Net mass :	815.0	g

	Gross (g)	Tare (g)	Mass (g)
Split No. 1	152.78	102.02	50.76
Split No. 2	153.24	102.70	50.54
Split No. 3	153.26	101.88	51.38
Split No. 4	156.30	102.27	54.03
Split No. 5	155.93	102.22	53.71
Split No. 6	153.65	101.46	52.19
Split No. 7	155.49	102.88	52.61
Split No. 8	153.09	102.26	50.83
Split No. 9	152.29	101.82	50.47
Split No. 10	152.88	102.77	50.11
Split No. 11	150.95	101.99	48.96
Split No. 12	151.03	101.76	49.27
Split No. 13	150.90	101.54	49.36
Split No. 14	152.35	102.46	49.89
Split No. 15	153.53	103.16	50.37
Split No. 16	152.64	102.14	50.50

Standard Deviation	1.4990391
% Standard Deviation	2.94%
Average	50.94

SPLITING ALR MATERIAL

SAMPLE JAR NUMBER : 15

ALR		
Gross mass :	2489.2	g
Tare mass :	1635.2	g
Net mass :	854.1	g

	Gross (g)	Tare (g)	Mass (g)
Split No. 1	154.57	102.15	52.42
Split No. 2	155.25	102.90	52.35
Split No. 3	155.14	103.21	51.93
Split No. 4	154.81	102.33	52.48
Split No. 5	155.74	101.92	53.82
Split No. 6	155.98	102.43	53.55
Split No. 7	156.38	102.39	53.99
Split No. 8	157.74	102.89	54.85
Split No. 9	156.07	102.24	53.83
Split No. 10	155.82	102.11	53.71
Split No. 11	155.05	101.52	53.53
Split No. 12	154.75	101.72	53.03
Split No. 13	155.45	101.50	53.95
Split No. 14	155.85	101.73	54.12
Split No. 15	155.99	102.13	53.86
Split No. 16	154.64	101.98	52.66

Standard Deviation	0.805324
% Standard Deviation	1.51%
Average	53.38

SAMPLE JAR NUMBER : 16

ALR		
Gross mass :	2459.9	g
Tare mass :	1636.7	g
Net mass :	823.2	g

	Gross (g)	Tare (g)	Mass (g)
Split No. 1	157.29	102.99	54.30
Split No. 2	155.34	102.02	53.32
Split No. 3	154.16	102.66	51.50
Split No. 4	153.15	102.44	50.71
Split No. 5	151.99	101.67	50.32
Split No. 6	150.57	101.28	49.29
Split No. 7	151.54	102.55	48.99
Split No. 8	151.83	101.66	50.17
Split No. 9	151.55	102.39	49.16
Split No. 10	152.35	102.27	50.08
Split No. 11	152.60	102.16	50.44
Split No. 12	153.48	102.53	50.95
Split No. 13	154.63	102.76	51.87
Split No. 14	155.65	102.79	52.86
Split No. 15	157.14	102.33	54.81
Split No. 16	156.65	102.21	54.44

Standard Deviation	1.9422889
% Standard Deviation	3.78%
Average	51.45

SPLITING ALR MATERIAL

SAMPLE JAR NUMBER : 17

ALR		
Gross mass :	2444.2	g
Tare mass :	1636.9	g
Net mass :	807.3	g

	Gross (g)	Tare (g)	Mass (g)
Split No. 1	151.72	102.40	49.32
Split No. 2	153.02	103.03	49.99
Split No. 3	153.74	102.45	51.29
Split No. 4	151.61	101.52	50.09
Split No. 5	153.53	102.90	50.63
Split No. 6	151.42	101.85	49.57
Split No. 7	152.68	102.40	50.28
Split No. 8	151.59	102.41	49.18
Split No. 9	152.40	102.42	49.98
Split No. 10	152.92	102.32	50.60
Split No. 11	152.91	102.56	50.35
Split No. 12	154.07	102.81	51.26
Split No. 13	154.32	101.96	52.36
Split No. 14	152.78	102.17	50.61
Split No. 15	153.06	101.68	51.38
Split No. 16	152.39	102.01	50.38

Standard Deviation	0.8256308
% Standard Deviation	1.64%
Average	50.45

SAMPLE JAR NUMBER : 18

ALR		
Gross mass :	2496.4	g
Tare mass :	1642.6	g
Net mass :	853.8	g

	Gross (g)	Tare (g)	Mass (g)
Split No. 1	155.25	102.93	52.32
Split No. 2	154.74	102.30	52.44
Split No. 3	153.96	102.72	51.24
Split No. 4	153.21	102.47	50.74
Split No. 5	155.94	102.53	53.41
Split No. 6	157.96	102.90	55.06
Split No. 7	158.12	102.98	55.14
Split No. 8	158.02	102.68	55.34
Split No. 9	156.97	103.05	53.92
Split No. 10	156.27	102.68	53.59
Split No. 11	156.33	102.30	54.03
Split No. 12	156.47	103.02	53.45
Split No. 13	154.86	102.53	52.33
Split No. 14	156.14	102.55	53.59
Split No. 15	156.42	102.53	53.89
Split No. 16	155.69	102.39	53.30

Standard Deviation	1.3035808
% Standard Deviation	2.44%
Average	53.36

SPLITING ALR MATERIAL

SAMPLE JAR NUMBER : 19

ALR		
Gross mass :	2457.2	g
Tare mass :	1639.3	g
Net mass :	817.9	g

	Gross (g)	Tare (g)	Mass (g)
Split No. 1	154.86	102.80	52.06
Split No. 2	155.83	103.25	52.58
Split No. 3	153.43	102.01	51.42
Split No. 4	154.11	102.99	51.12
Split No. 5	152.40	102.11	50.29
Split No. 6	152.38	102.48	49.90
Split No. 7	151.41	102.40	49.01
Split No. 8	152.61	102.32	50.29
Split No. 9	151.98	102.19	49.79
Split No. 10	153.08	102.86	50.22
Split No. 11	152.77	101.64	51.13
Split No. 12	153.09	101.92	51.17
Split No. 13	154.99	102.92	52.07
Split No. 14	154.60	102.25	52.35
Split No. 15	155.50	102.71	52.79
Split No. 16	154.16	102.47	51.69

Standard Deviation	1.1115785
% Standard Deviation	2.17%
Average	51.12

SAMPLE JAR NUMBER : 20

ALR		
Gross mass :	2432.7	g
Tare mass :	1617.3	g
Net mass :	815.3	g

	Gross (g)	Tare (g)	Mass (g)
Split No. 1	154.14	100.43	53.71
Split No. 2	151.88	99.55	52.33
Split No. 3	151.05	100.07	50.98
Split No. 4	151.00	100.76	50.24
Split No. 5	149.68	100.55	49.13
Split No. 6	151.36	101.93	49.43
Split No. 7	150.18	100.91	49.27
Split No. 8	149.21	99.91	49.30
Split No. 9	151.64	102.94	48.70
Split No. 10	151.76	102.52	49.24
Split No. 11	149.54	99.94	49.60
Split No. 12	148.19	99.40	48.79
Split No. 13	153.39	102.85	50.54
Split No. 14	154.20	100.26	53.94
Split No. 15	157.59	102.65	54.94
Split No. 16	157.85	102.67	55.18

Standard Deviation	2.2889546
% Standard Deviation	4.49%
Average	50.96