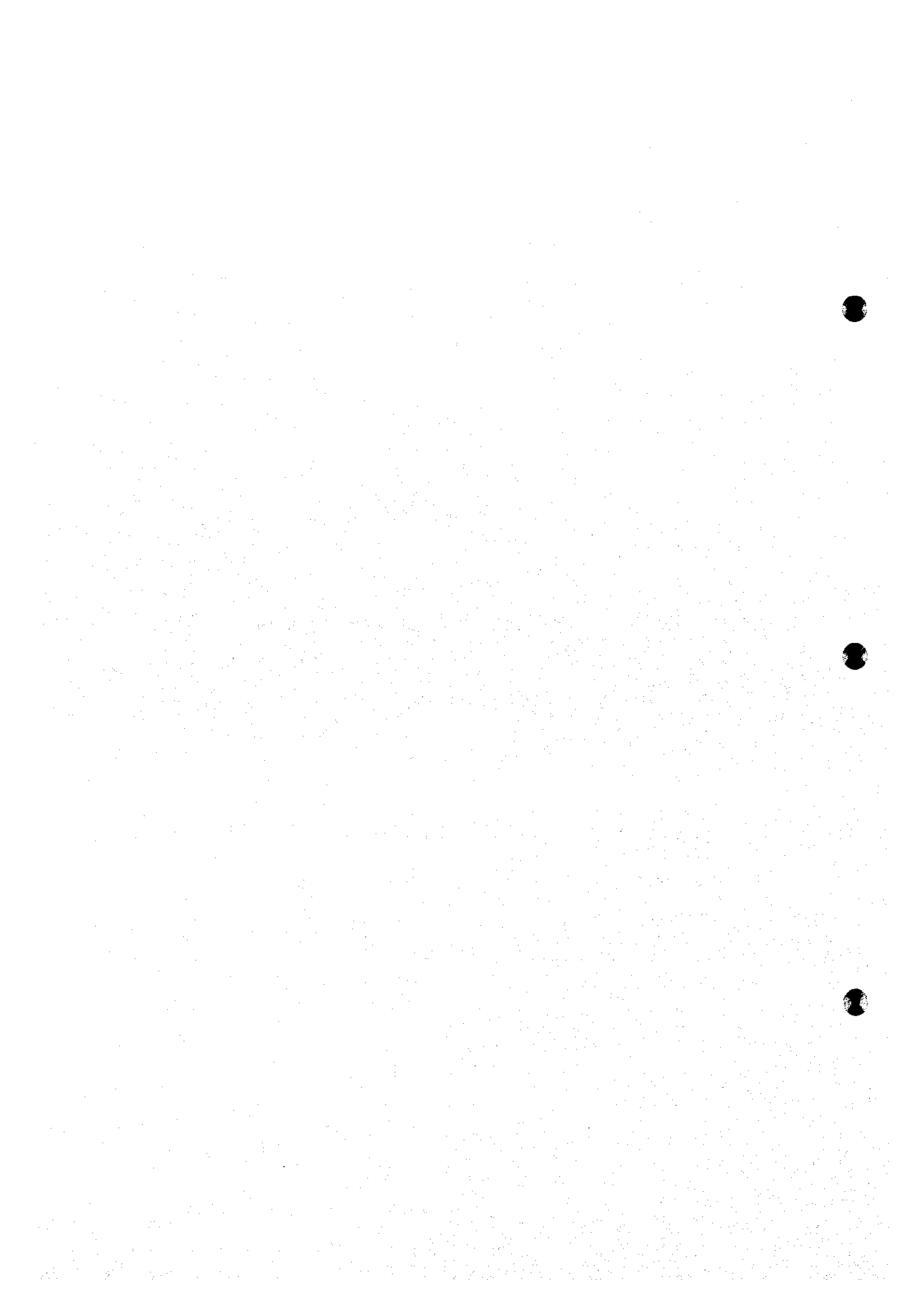


Appendix 8G

Cyanidation of pyrite tailings



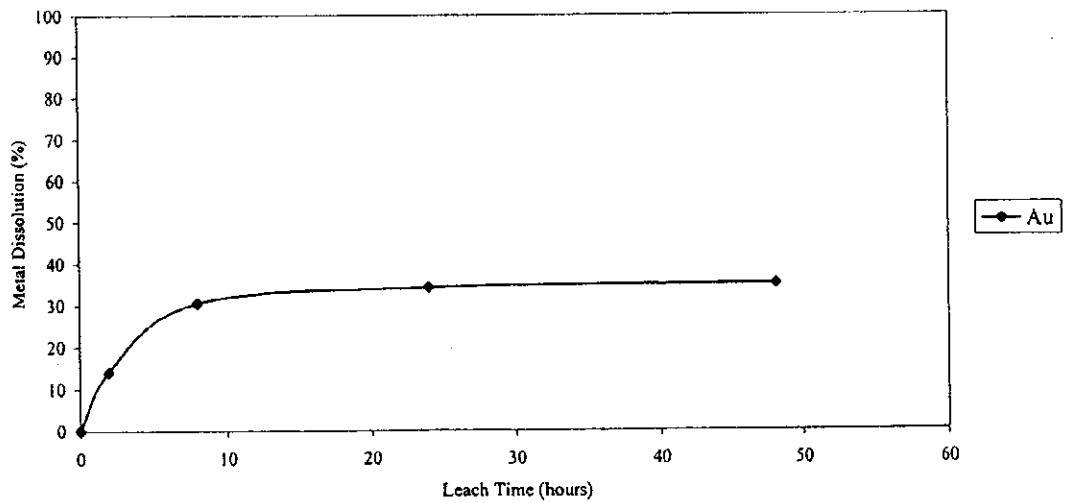
AGITATION CYANIDE LEACH TEST

Test No.		CY04					
Sample Tested		RAKAH MS, PYRITE TAILING					
Sample Weight (g)		500.5					
Target Parameters							
Grind Size (mm)		P80 70um					
NaCN Concentration (%)		0.050					
pH		11.0					
Leach Time (hours)			0	2	8	24	48
Solids Assays (ppm)		Calculated Head	Head				Final Residue
Au		1.66	1.93				1.09
Solution Assays (mg/L)							
Au				0.10	0.22	0.25	0.26
Metal Dissolution (%)							
Au				14	31	34	35
Leach Conditions							
Slurry Density (%w/w)		30	30	30	31	32	
NaCN conc (pre-adjustment)			0.004	0.050	0.150	0.112	
NaCN conc (post-adjustment)		0.097	0.110	0.255	0.156		
NaCN added (kg/t)		2.3	4.7	9.2	9.2	9.2	
NaCN [1] consumed (kg/t)			2.16	3.53	5.84	6.70	
CaO[2] added (kg/t)		0.52	0.65	0.92	0.92	0.92	
pH (pre-adjustment)		7.7	10.3	10.3	11.0	10.9	
pH (post-adjustment)		10.7	10.8	11.1	11.0		
Dissolved Oxygen (mg/L)		7.2	7.2	7.6	7.7	7.9	
Printed 23/02/01		Comments Pyrite tail from tests FL9, 10, 14 Ag assays; Leach feed <2ppm, leach residue <2ppm					
Job No. NI08FL00							
Technician KT							
Test Date 7/2/01							
File ref CYN108RMS							
Version 5							

[1] Cumulative NaCN consumed (kg/t) : NaCN added - (NaCN in leach solution + NaCN removed in samples)

[2] Cumulative CaO addition relates to a pure reagent and allows for test additions of Lime with an activity/concentration of 57.0 %

Au



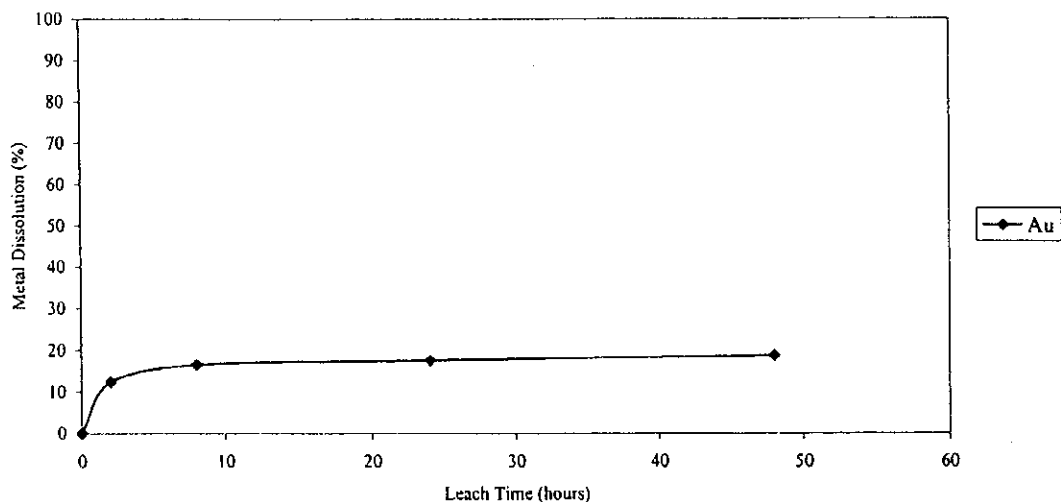
AGITATION CYANIDE LEACH TEST

Test No.	CY08					
Sample Tested	BISHARA BRECCIA, PYRITE TAILING					
Sample Weight (g)	1000.0					
Target Parameters						
Grind Size (mm)	P80 70um					
NaCN Concentration (%)	0.050					
pH	11.0					
Leach Time (hours)		0	2	8	24	48
Solids Assays (ppm)	Calculated Head	Head				Final Residue
Au	0.87	0.92				0.72
Solution Assays (mg/L)						
Au			0.07	0.09	0.10	0.11
Metal Dissolution (%)						
Au			12	16	18	19
Leach Conditions						
Slurry Density (%w/w)		40	39	39	40	41
NaCN conc (pre-adjustment)			0.014	0.030	0.030	0.042
NaCN conc (post-adjustment)		0.097	0.095	0.102	0.105	
NaCN added (kg/t)		1.5	2.8	3.8	4.9	4.9
NaCN [1] consumed (kg/t)			1.27	2.30	3.37	4.26
CaO[2] added (kg/t)		0.57	0.59	0.94	1.00	1.00
pH (pre-adjustment)		6.6	10.3	9.4	10.3	10.2
pH (post-adjustment)		10.6	10.4	10.8	10.7	
Dissolved Oxygen (mg/L)		2.0	7.6	7.0	7.1	8.1
Printed	23/02/01		Comments Pyrite tail from bulk sample flotation Air injected to maintain DO level Ag assays; Leach feed 5ppm, leach residue 5ppm			
Job No.	N108FL00					
Technician	KT					
Test Date	14/2/01					
File ref	CYN108BB					
Version 5						

[1] Cumulative NaCN consumed (kg/t) : NaCN added - (NaCN in leach solution + NaCN removed in samples)

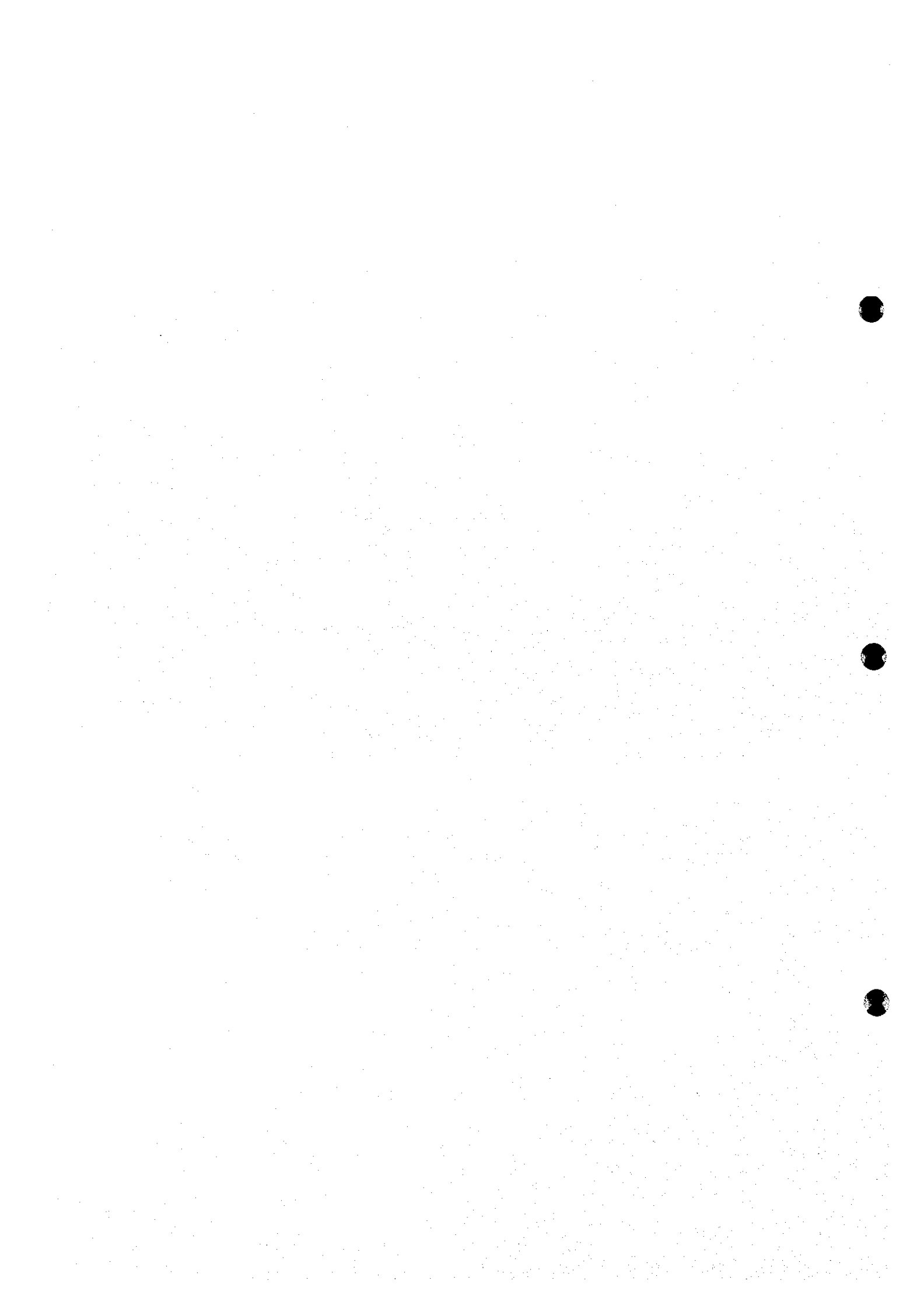
[2] Cumulative CaO addition relates to a pure reagent and allows for test additions of Lime with an activity/concentration of 57.0 %.

Au



Appendix 8H

X-ray diffraction analyses of samples



X-RAY DIFFRACTION ANALYSES OF TEST SAMPLES

Mineral	Rakah Body Stockwork Ore	Hayl As Safil Stockwork Ore	Rakah Body Massive Ore	Bishara Body Breccia Ore
Quartz	D	D	A	A
Chlorite	SD	A		A
Plagioclase				Tr
Pyrite	Tr	Tr-A	D	D
Chalcopyrite	Tr-A	Tr	Tr	A
Marcasite			Tr	A
Pyrrhotite	Tr	Tr		
Siderite			Tr	
Hematite				Tr

Semiquantitative Abbreviations;

- D = Dominant. Used for the component apparently most abundant, regardless of its probable percentage level.
- CD = Co-dominant. Used for two (or more) predominating components, both or all of which are judged to be present, in roughly equal amounts.
- SD = Sub-dominant. The next most abundant component(s) providing its percentage level is judged above about 20.
- A = Accessory. Components judged to be present between the levels of roughly 5 and 20%.
- Tr = Trace. Components judged to be below about 5%.



Appendix 8I

Equipments used for metallurgical tests



LIST OF MAJOR EQUIPMENT

Crushing of 'as received' samples	Jaques 8 x 5 jaw crusher Laboratory rolls crusher
Sample splitting	Various rotary splitters and riffle splitters
Grind establishment	Batch stainless steel rod mill, 190mm diameter x 220mm, operating at 70rpm Charge 15 x 25mm diameter stainless steel rods, total weight 14.4kg
Ball mill work index	Standard Bond mill, 305mm x 305mm operating at 70rpm Ball charge 20.1kg, 38mm to 12.7mm diameter balls
Flotation tests, laboratory	Agitair flotation machine, LA500
Flotation tests, bulk samples	Agitair, 2 x #8 cells, 7.5L capacity each
Settling tests	600mL graduated cylinders fitted with rake stirrers
Filtration tests	Vacuum filter leaf, 110mm diameter, Neotex 6044 cloth
Cyanide leaching	2L beakers, mechanical agitation, air or oxygen injection optional



Appendix 9

Description of thin sections of surface and borehole samples



Description of thin sections of surface and borehole samples.

Ser. No.	Sample No.	Coordination		Geological Unit	Rock Name	Texture	Phenocrysts, crystals and fragments											Secondary Minerals														Remarks						
		N	E				Quartz	K-feldspar	Plagioclase	Amphibole	Clinopyroxene	Olivine	Calcite	Apatite	Magnetite	Cr-spinel	Opaque minerals	Glass	Quartz	Albite	Actinolite	Tremolite	Zeolite	Stilbite	Dickite	Sericite	Chlorite	Epidote	Calcite	Laumontite	Smectite		Fargasite	Serpentine	Pumpellyite	Prehnite	Pyrite	Hematite
1	YN01	459800	2617750	Lasail	Basalt	Intersertal, amigdaloidal and porphyritic			⊙	○					⊙	⊙	⊙																			Δ	Phenocryst: Clinopyroxene	
2	YN02	459800	2618400	Dyke	Basalt	Hyalopilitic, amigdaloidal and porphyritic			⊙	○					⊙	⊙																				·	Phenocryst: Clinopyroxene	
3	YN03	460000	2617500	Lasail	Basalt	Subophitic			⊙	⊙					⊙	⊙	⊙																			Δ	Phenocryst: Clinopyroxene	
4	YN04	460000	2618250	Lasail	Metalliferous sediment	Clastic and laminated	⊙																											⊙	⊙	Including radiolaria		
5	YN05	460200	2617250	Lasail	Basalt	Intersertal and amigdaloidal			⊙	⊙					⊙	⊙	○																		Δ	Phenocryst: Clinopyroxene		
6	YN06	460400	2618950	Alley	Basalt	Subophitic and amigdaloidal			⊙	⊙																										Δ		
7	YN07	460400	2618424	Sheeted dyke	Dolerite	Subophitic			⊙	○					⊙	Δ	⊙																			·		
8	YN09	457400	2617300	Melange	Marble	Granular																														·	Δ	
9	YN12	458200	2617200	Dyke	Rhyolite	Porphyritic	⊙	⊙	○																											·	Phenocryst: K-feldspar	
10	YN14	458400	2617850	Cumulate sequence	Olivine gabbro	Granular and cumulate			⊙	⊙	○																									·		
11	YN16	458600	2617540	Cumulate sequence	Gabbro	Granular and cumulate			⊙	⊙																											·	
12	YN18	458800	2618300	Cumulate sequence	Gabbro	Granular and cumulate			⊙	⊙																											·	
13	YN20	459800	2618800	Cumulate sequence	Troctolite	Granular and cumulate			Δ	⊙	⊙																										·	
14	YN22	Western Khushshan		Lasail	Basaltic andesite	Intersertal			⊙	○	Δ				⊙	⊙	⊙	Δ																			Δ	
15	YN23	Eastern Khushshan		Geotimes	Basalt	Intersertal			⊙	⊙					⊙	·	⊙																				·	
16	YN24	459700	2619000	Lasail	Basaltic andesite	Intersertal and amigdaloidal			○	Δ					⊙	⊙																					·	
17	YN25	459800	2618700	Lasail	Basaltic andesite	Intersertal and amigdaloidal			⊙	○					⊙	⊙	Δ																				·	
18	YN26	459000	2617500	Sheeted dyke	Dolerite	Ophitic and porphyritic			⊙	⊙					○		⊙	Δ																		Δ	Phenocryst: Cpx & Pl	
19	YN27	458940	2615827	Alley	Basaltic andesite	Intersertal, amigdaloidal and quench			○	Δ					⊙	⊙																					·	
20	YN29	Southeastern Rakah Mine		Lasail	Basalt	Intersertal and porphyritic			⊙	⊙					⊙	○																					Δ	Phenocryst: Clinopyroxene
21	YN30	Eastern Rakah Mine		Alley	Basalt	Intersertal and quench			⊙	⊙					⊙	Δ	⊙																				·	
22	YN31	Eastern Rakah Mine		Lasail	Basaltic andesite	Intersertal, amigdaloidal and porphyritic			⊙	○					⊙	○	⊙																				·	Phenocryst: Clinopyroxene

⊙: abundant, ○: common, Δ: a little, ·: rare

Appendix 10

Results of X-ray diffraction analyses of surface and borehole samples



Results of X-ray diffraction analyses of surface and borehole samples.

Ser. No.	Sample No.	Coordination		Geological Unit	Description	Detected Minerals																Remarks	
		N	E			Quartz	Tridymite	Anorthite	Pargasite	Diopside	Enstatite	Calcite	Chlorite	Kaolinite	Dickite	Sericite	Laumontite	Stilbite	Chrysotile	Hematite	Magnetite		Pyrite
1	YN01	459800	2617750	Laseil	Basalt	⊙		Δ		○		○											Sanidine?
2	YN02	459800	2618400	Dyke	Basalt	⊙		.		Δ													Sanidine?
3	YN03	460000	2617500	Laseil	Basalt	○		⊙															
4	YN04	460000	2618250	Laseil	Metalliferous sediment	⊙				Δ											Δ	Δ	jaspilite
5	YN05	460200	2617250	Laseil	Basalt	⊙		○		Δ			Δ										
6	YN06	460400	2618950	Alley	Basalt	Δ		⊙				Δ	.										
7	YN07	460400	2618424	Sheeted dyke	Dolerite	⊙		⊙				○	⊙										
8	YN09	457400	2617300	Umar Group	Marble	.						⊙	tr	tr									
9	YN14	458400	2617850	Cumulate	Olivine gabbro			⊙						tr									
10	YN16	458600	2617540	Cumulate	Gabbro			Δ	.	Δ			⊙										
11	YN18	458800	2618300	Cumulate	Gabbro			○	⊙														
12	YN20	459800	2618800	Cumulate	Troctolite						Δ		Δ	tr						⊙			unknown
13	YN22	Western Khushshan		Laseil	Basaltic andesite	⊙		⊙	.				.										
14	YN23	Eastern Khushshan		Geotimes	Basalt	○		⊙				.	.										
15	YN24	459700	2619000	Laseil	Basaltic andesite	⊙						.	.										
16	YN25	459800	2618700	Laseil	Basaltic andesite	⊙						.	○										
17	YN26	459000	2617500	Sheeted dyke	Dolerite			⊙	○				Δ										
18	YN27	458940	2615827	Alley	Basaltic andesite	⊙				⊙			.			Δ						Δ	
19	YN29	Southeastern Rakah Mine		Laseil	Basalt	○		⊙				Δ	○										
20	YN30	Eastern Rakah Mine		Alley	Basalt	Δ		⊙				.	.									.	
21	YN31	Eastern Rakah Mine		Laseil	Basaltic andesite	⊙		○					.										
22	2-30.40	459800	2618600	Laseil	Chlorite-altered rock	○							⊙										
23	2-145.30	459800	2618600	Laseil	Hyaloclastite	⊙						.	○										
24	2-183.60	459800	2618600	Laseil	Basaltic andesite	⊙		○				Δ	○										
25	3-20.40	459800	2618500	Laseil	Basalt	⊙				Δ		.										.	
26	3-174.90	459800	2618500	Laseil	Basaltic andesite	⊙							Δ										
27	4-17.45	459800	2618700	Laseil	Basalt	⊙						○	.										unknown
28	4-117.30	459800	2618700	Laseil	Silicified-chloritized rock	⊙						○	○										○
29	5-17.80	459900	2618500	Laseil	Basaltic andesite								Δ						⊙				
30	5-64.50	459900	2618500	Laseil	Basalt	○		⊙					Δ										
31	5-155.75	459900	2618500	Laseil	Basaltic andesite	⊙		.				○	○										.

⊙: abundant, ○: common, Δ: a little, .: rare, tr: trace

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