

Appendix 3

**List of minable ore reserves for each ore block
in the Hayl as Safil deposit**

Hayl As Safil : 670 m
Cut-off grade : 0.35 Cu

No	X (E)	Y (N)	Volume (m3)	S.G. (t/m3)	Tonnage (ton)	Cu		Zn		Au		Ag	
						grade (%)	content (ton)	grade (%)	content (ton)	grade (g/t)	content (kg)	grade (g/t)	content (kg)
1	453230	2618810	800	3.30	2640	2.74	72.34	.01	.26	.29	.77	2.57	6.78
2	453230	2618870	2000	3.12	6240	1.36	84.86	.01	.62	.15	.94	1.28	7.99
3	453230	2618890	4000	3.05	12200	.87	106.14	.01	1.22	.10	1.22	.81	9.88
4	453250	2618810	800	3.31	2648	2.81	74.41	.01	.26	.29	.77	2.64	6.99
5	453250	2618830	2000	3.27	6540	2.49	162.85	.01	.65	.26	1.70	2.33	15.24
6	453250	2618850	3000	3.20	9600	1.98	190.08	.01	.96	.21	2.02	1.85	17.76
7	453250	2618870	4000	3.14	12560	1.50	188.40	.01	1.26	.16	2.01	1.41	17.71
8	453250	2618890	4000	3.08	12320	1.05	129.36	.01	1.23	.11	1.36	.98	12.07
9	453270	2618830	600	3.27	1962	2.51	49.25	.01	.20	.26	.51	2.35	4.61
10	453270	2618850	3000	3.21	9630	2.05	197.41	.01	.96	.22	2.12	1.92	18.49
11	453270	2618870	4000	3.15	12600	1.61	202.86	.01	1.26	.17	2.14	1.51	19.03
12	453270	2618890	4000	3.10	12400	1.20	148.80	.01	1.24	.13	1.61	1.12	13.89
			32200		101340		1606.76		10.12		17.17		150.44

Hayl As Safil : 660 m
Cut-off grade : 0.35 Cu

No	X (E)	Y (N)	Volume (m3)	S.G. (t/m3)	Tonnage (ton)	Cu		Zn		Au		Ag	
						grade (%)	content (ton)	grade (%)	content (ton)	grade (g/t)	content (kg)	grade (g/t)	content (kg)
1	453250	2618770	3200	3.03	9696	.86	83.39	.03	2.91	.35	3.39	4.88	47.32
2	453250	2618790	3200	3.05	9760	1.01	98.58	.01	.98	.25	2.44	5.86	57.19
3	453250	2618810	1600	3.03	4848	.86	41.69	.09	4.36	.33	1.60	4.89	23.71
4	453270	2618770	3200	3.00	9600	.67	64.32	.07	6.72	.55	5.28	3.40	32.64
5	453270	2618790	4000	3.01	12040	.77	92.71	.09	10.84	.52	6.26	3.86	46.47
6	453270	2618810	4000	3.00	12000	.70	84.00	.15	18.00	.47	5.64	3.73	44.76
7	453270	2618830	4000	2.99	11960	.59	70.56	.22	26.31	.42	5.02	3.38	40.42
8	453270	2618850	4000	2.98	11920	.54	64.37	.25	29.80	.41	4.89	3.22	38.38
9	453270	2618870	4000	2.98	11920	.53	63.18	.25	29.80	.39	4.65	3.32	39.57
10	453290	2618770	3200	2.97	9504	.46	43.72	.10	9.50	.72	6.84	1.73	16.44
11	453290	2618790	3960	2.99	11840	.60	71.04	.15	17.76	.80	9.47	2.13	25.22
12	453290	2618810	4000	2.98	11920	.57	67.94	.21	25.03	.59	7.03	2.69	32.06
13	453290	2618830	2228	2.97	6617	.47	31.10	.29	19.19	.44	2.91	2.75	18.20
14	453290	2618850	4000	2.97	11880	.49	58.21	.28	33.26	.42	4.99	2.97	35.28
15	453290	2618870	4000	2.97	11880	.49	58.21	.28	33.26	.41	4.87	3.03	36.00
16	453310	2618690	400	3.32	1328	3.31	43.96	.05	.66	1.57	2.08	8.53	11.33
17	453310	2618710	2000	3.21	6420	2.44	156.65	.06	3.85	1.40	8.99	6.25	40.13
18	453310	2618770	1600	2.97	4752	.51	24.24	.10	4.75	.77	3.66	1.22	5.80
19	453310	2618790	4000	3.00	12000	.66	79.20	.15	18.00	.69	8.28	1.98	23.76
20	453310	2618810	4000	2.99	11960	.62	74.15	.22	26.31	.60	7.18	2.41	28.82
21	453310	2618830	4000	2.98	11920	.53	63.18	.27	32.18	.48	5.72	2.67	31.83
22	453310	2618850	4000	2.97	11880	.48	57.02	.29	34.45	.43	5.11	2.80	33.26
23	453310	2618870	4000	2.98	11920	.52	61.98	.28	33.38	.42	5.01	2.84	33.85
24	453330	2618690	1600	3.46	5536	4.46	246.91	.05	2.77	1.78	9.85	11.72	64.88
25	453330	2618710	2000	3.32	6640	3.32	220.45	.06	3.98	1.61	10.69	8.80	58.43
26	453330	2618790	4000	3.05	12200	1.00	122.00	.13	15.86	.59	7.20	2.32	28.30
27	453330	2618810	4000	3.04	12160	.95	115.52	.17	20.67	.52	6.32	2.49	30.28
28	453330	2618830	4000	3.02	12080	.81	97.85	.22	26.58	.47	5.68	2.70	32.62
29	453330	2618850	4000	3.01	12040	.73	87.89	.25	30.10	.43	5.18	2.73	32.87
30	453330	2618870	4000	3.00	12000	.70	84.00	.25	30.00	.41	4.92	2.72	32.64
31	453350	2618690	2000	3.58	7160	5.43	388.79	.04	2.86	1.85	13.25	14.10	100.96
32	453350	2618710	2500	3.32	8300	3.28	272.24	.08	6.64	1.72	14.28	10.37	86.07
33	453350	2618790	4000	3.12	12480	1.46	182.21	.09	11.23	.47	5.87	2.93	36.57
34	453350	2618810	4000	3.10	12400	1.38	171.12	.12	14.88	.45	5.58	2.88	35.71
35	453350	2618830	4000	3.08	12320	1.19	146.61	.16	19.71	.42	5.17	2.81	34.62
36	453350	2618850	4000	3.05	12200	1.03	125.66	.20	24.40	.40	4.88	2.67	32.57
37	453350	2618870	4000	3.03	12120	.90	109.08	.22	26.66	.38	4.61	2.59	31.39
38	453370	2618690	2000	2.99	5980	.65	38.87	.03	1.79	2.09	12.50	8.05	48.14
39	453370	2618710	1500	3.19	4785	2.23	106.71	.15	7.18	1.74	8.33	10.70	51.20
40	453370	2618790	3880	3.17	12300	1.82	223.85	.06	7.38	.38	4.67	3.08	37.88

No	X (E)	Y (N)	Volume (m3)	S. G. (t/m3)	Tonnage (ton)	Cu		Zn		Au		Ag	
						grade (%)	content (ton)	grade (%)	content (ton)	grade (g/t)	content (kg)	grade (g/t)	content (kg)
41	453370	2618810	4000	3.15	12600	1.67	210.42	.08	10.08	.39	4.91	2.99	37.67
42	453370	2618830	4000	3.12	12480	1.45	180.96	.12	14.98	.38	4.74	2.82	35.19
43	453370	2618850	4000	3.09	12360	1.28	158.21	.15	18.54	.37	4.57	2.67	33.00
44	453370	2618870	4000	3.07	12280	1.14	139.99	.18	22.10	.35	4.30	2.46	30.21
45	453390	2618690	1000	3.04	3040	1.01	30.70	.18	5.47	1.83	5.56	10.07	30.61
46	453390	2618710	356	3.10	1104	1.40	15.45	.31	3.42	1.61	1.78	11.85	13.08
47	453390	2618790	4000	3.16	12640	1.78	224.99	.07	8.85	.39	4.93	3.14	39.69
48	453390	2618850	1000	3.12	3120	1.48	46.18	.12	3.74	.35	1.09	2.70	8.42
49	453390	2618870	3000	3.10	9300	1.34	124.62	.15	13.95	.32	2.98	2.45	22.79
			157424		481190		5424.68		775.12		285.15		1768.23

Hayl As Safil : 650 m
Cut-off grade : 0.35 Cu

No	X (E)	Y (N)	Volume (m3)	S. G. (t/m3)	Tonnage (ton)	Cu		Zn		Au		Ag	
						grade (%)	content (ton)	grade (%)	content (ton)	grade (g/t)	content (kg)	grade (g/t)	content (kg)
1	453270	2618750	2000	3.23	6460	2.38	153.75	.03	1.94	1.01	6.52	4.40	28.42
2	453270	2618770	2000	3.45	6900	3.98	274.62	.03	2.07	1.40	9.66	5.79	39.95
3	453270	2618790	2000	3.51	7020	4.45	312.39	.06	4.21	1.50	10.53	6.26	43.95
4	453290	2618690	668	3.23	2158	2.31	49.84	.04	.86	.84	1.81	8.49	18.32
5	453290	2618710	2000	3.17	6340	1.86	117.92	.04	2.54	.77	4.88	6.49	41.15
6	453290	2618730	3332	3.10	10329	1.42	146.67	.03	3.10	.71	7.33	3.93	40.59
7	453290	2618750	4000	3.17	12680	1.93	244.72	.03	3.80	.84	10.65	3.49	44.25
8	453290	2618770	2400	3.39	8136	3.52	286.39	.03	2.44	1.21	9.84	5.00	40.68
9	453290	2618790	2000	3.66	7320	5.55	406.26	.03	2.20	1.68	12.30	7.04	51.53
10	453290	2618810	4000	3.32	13280	3.05	405.04	.14	18.59	1.05	13.94	4.47	59.36
11	453290	2618830	4000	3.00	12000	.69	82.80	.24	28.80	.45	5.40	1.98	23.76
12	453290	2618850	4000	2.98	11920	.56	66.75	.24	28.61	.41	4.89	1.81	21.58
13	453290	2618870	4000	2.96	11840	.40	47.36	.23	27.23	.37	4.38	1.63	19.30
14	453310	2618690	4000	3.26	13040	2.48	323.39	.05	6.52	.88	11.48	9.96	129.88
15	453310	2618710	4000	3.18	12720	1.91	242.95	.05	6.36	.81	10.30	8.01	101.89
16	453310	2618730	4000	3.08	12320	1.24	152.77	.04	4.93	.66	8.13	4.32	53.22
17	453310	2618750	4000	3.01	12040	.74	89.10	.03	3.61	.55	6.62	2.31	27.81
18	453310	2618770	4000	3.27	13080	2.67	349.24	.04	5.23	.98	12.82	4.45	58.21
19	453310	2618790	4000	3.39	13560	3.54	480.02	.07	9.49	1.16	15.73	5.23	70.92
20	453310	2618810	4000	3.29	13160	2.80	368.48	.14	18.42	.96	12.63	4.24	55.80
21	453310	2618830	4000	3.08	12320	1.26	155.23	.21	25.87	.58	7.15	2.56	31.54
22	453310	2618850	4000	2.99	11960	.64	76.54	.24	28.70	.43	5.14	1.90	22.72
23	453310	2618870	4000	2.98	11920	.51	60.79	.24	28.61	.38	4.53	1.71	20.38
24	453310	2618890	4000	2.96	11840	.40	47.36	.23	27.23	.34	4.03	1.54	18.23
25	453330	2618690	4000	3.28	13120	2.62	343.74	.05	6.56	.90	11.81	10.85	142.35
26	453330	2618710	4000	3.20	12800	2.06	263.68	.06	7.68	.89	11.39	10.40	133.12
27	453330	2618750	2000	3.11	6220	1.46	90.81	.06	3.73	.75	4.67	5.37	33.40
28	453330	2618770	4000	3.20	12800	2.08	266.24	.07	8.96	.84	10.75	5.24	67.07
29	453330	2618790	4000	3.25	13000	2.52	327.60	.10	13.00	.85	11.05	4.67	60.71
30	453330	2618810	4000	3.22	12880	2.30	296.24	.14	18.03	.76	9.79	3.86	49.72
31	453330	2618830	4000	3.12	12480	1.52	189.70	.19	23.71	.59	7.36	2.93	36.57
32	453330	2618850	4000	3.05	12200	1.04	126.88	.21	25.62	.48	5.86	2.33	28.43
33	453330	2618870	4000	3.01	12040	.77	92.71	.22	26.49	.42	5.06	1.96	23.60
34	453330	2618890	4000	2.98	11920	.52	61.98	.22	26.22	.37	4.41	1.65	19.67
35	453350	2618690	4000	3.31	13240	2.79	369.40	.04	5.30	.89	11.78	11.07	146.57
36	453350	2618710	3332	3.18	10596	1.89	200.26	.11	11.66	1.13	11.97	14.01	148.45
37	453350	2618770	3000	3.18	9540	1.96	186.98	.09	8.59	.78	7.44	6.35	60.58
38	453350	2618790	4000	3.22	12880	2.22	285.94	.11	14.17	.70	9.02	4.82	62.08
39	453350	2618810	4000	3.20	12800	2.09	267.52	.13	16.64	.63	8.06	3.86	49.41
40	453350	2618830	4000	3.13	12520	1.61	201.57	.16	20.03	.55	6.89	3.13	39.19
41	453350	2618850	4000	3.08	12320	1.22	150.30	.18	22.18	.51	6.28	2.61	32.16
42	453350	2618870	4000	3.03	12120	.89	107.87	.20	24.24	.46	5.58	2.14	25.94
43	453350	2618890	4000	3.00	12000	.68	81.60	.21	25.20	.40	4.80	1.76	21.12
44	453370	2618690	4000	2.98	11920	.56	66.75	.22	26.22	1.31	15.62	7.33	87.37
45	453370	2618710	2000	3.13	6260	1.54	96.40	.19	11.89	1.68	10.52	25.04	156.75

No	X (E)	Y (N)	Volume (m3)	S.G. (t/m3)	Tonnage (ton)	Cu		Zn		Au		Ag	
						grade content (%)	grade content (ton)	grade content (%)	grade content (ton)	grade content (g/t)	grade content (kg)	grade content (g/t)	grade content (kg)
46	453370	2618770	2000	3.15	6300	1.71	107.73	.12	7.56	.79	4.98	7.65	48.20
47	453370	2618790	4000	3.19	12760	1.98	252.65	.11	14.04	.52	6.64	3.97	50.66
48	453370	2618810	4000	3.18	12720	1.94	246.77	.12	15.26	.56	7.12	3.88	49.35
49	453370	2618830	4000	3.12	12480	1.49	185.95	.14	17.47	.56	6.99	3.31	41.31
50	453370	2618850	4000	3.07	12280	1.20	147.36	.16	19.65	.54	6.63	2.77	34.02
51	453370	2618870	4000	3.03	12120	.91	110.29	.17	20.60	.49	5.94	2.25	27.27
52	453370	2618890	4000	3.00	12000	.71	85.20	.18	21.60	.44	5.28	1.79	21.48
53	453390	2618690	4000	3.04	12160	.96	116.74	.24	29.18	1.76	21.40	18.90	229.82
54	453390	2618710	520	3.11	1617	1.40	22.64	.27	4.37	2.17	3.51	28.84	46.64
55	453390	2618810	1000	3.12	3120	1.53	47.74	.11	3.43	.59	1.84	3.83	11.95
56	453390	2618830	3000	3.09	9270	1.33	123.29	.11	10.20	.61	5.65	3.51	32.54
57	453390	2618850	4000	3.05	12200	1.01	123.22	.13	15.86	.59	7.20	2.91	35.50
58	453390	2618870	4000	3.02	12080	.81	97.85	.15	18.12	.54	6.52	2.33	28.15
59	453390	2618890	4000	3.00	12000	.65	78.00	.16	19.20	.49	5.88	1.75	21.00
60	453410	2618870	2000	3.00	6000	.67	40.20	.12	7.20	.59	3.54	2.35	14.10
61	453410	2618890	4000	2.98	11920	.56	66.75	.14	16.69	.53	6.32	1.70	20.26
			211252		661026		10866.93		877.91		486.24		3199.95

Hayl As Safii : 640 m
Cut-off grade : 0.35 Cu

No	X (E)	Y (N)	Volume (m3)	S.G. (t/m3)	Tonnage (ton)	Cu		Zn		Au		Ag	
						grade content (%)	grade content (ton)	grade content (%)	grade content (ton)	grade content (g/t)	grade content (kg)	grade content (g/t)	grade content (kg)
1	453270	2618730	400	3.16	1264	1.82	23.00	.08	1.01	1.16	1.47	9.45	11.94
2	453270	2618750	2000	3.13	6260	1.62	101.41	.05	3.13	1.27	7.95	8.67	54.27
3	453270	2618770	2000	3.04	6080	.98	59.58	.03	1.82	1.26	7.66	5.56	33.80
4	453270	2618790	2000	2.97	5940	.54	32.08	.02	1.19	1.13	6.71	3.23	19.19
5	453290	2618730	3000	3.22	9660	2.22	214.45	.08	7.73	1.20	11.59	10.66	102.98
6	453290	2618750	4000	3.19	12760	2.01	256.48	.06	7.66	1.29	16.46	9.89	126.20
7	453290	2618770	4000	3.09	12360	1.35	166.86	.04	4.94	1.26	15.57	6.90	85.28
8	453290	2618790	2960	2.97	8791	.52	45.71	.01	.88	1.21	10.64	3.15	27.69
9	453290	2618810	2400	2.97	7128	.50	35.64	.03	2.14	.80	5.70	2.44	17.39
10	453310	2618690	4000	3.17	12680	1.84	233.31	.16	20.29	.59	7.48	7.53	95.48
11	453310	2618710	4000	3.20	12800	2.04	261.12	.13	16.64	.82	10.50	8.79	112.51
12	453310	2618730	4000	3.24	12960	2.32	300.67	.09	11.66	1.14	14.77	10.67	138.28
13	453310	2618750	4000	3.27	13080	2.55	333.54	.07	9.16	1.31	17.13	12.09	158.14
14	453310	2618770	4000	3.14	12560	1.68	211.01	.07	8.79	1.18	14.82	7.94	99.73
15	453310	2618790	4000	3.05	12200	1.03	125.66	.06	7.32	1.03	12.57	4.84	59.05
16	453310	2618810	4000	3.00	12000	.69	82.80	.06	7.20	.72	8.64	3.01	36.12
17	453310	2618830	4000	2.97	11880	.54	64.15	.06	7.13	.30	3.56	1.82	21.62
18	453310	2618850	4000	2.96	11840	.42	49.73	.06	7.10	.11	1.30	1.02	12.08
19	453310	2618870	4000	2.95	11800	.37	43.66	.06	7.08	.09	1.06	.79	9.32
20	453310	2618890	4000	2.95	11800	.37	43.66	.06	7.08	.06	.71	.70	8.26
21	453330	2618690	4000	3.16	12640	1.78	224.99	.18	22.75	.46	5.81	7.01	88.61
22	453330	2618710	4000	3.17	12680	1.88	238.38	.15	19.02	.71	9.00	7.44	94.34
23	453330	2618730	4000	3.22	12880	2.17	279.50	.12	15.46	1.00	12.88	9.29	119.66
24	453330	2618750	4000	3.21	12840	2.14	274.78	.11	14.12	1.08	13.87	9.41	120.82
25	453330	2618770	4000	3.16	12640	1.79	226.26	.12	15.17	.99	12.51	7.65	96.70
26	453330	2618790	4000	3.09	12360	1.30	160.68	.13	16.07	.77	9.52	5.16	63.78
27	453330	2618810	4000	3.04	12160	.98	119.17	.12	14.59	.59	7.17	3.56	43.29
28	453330	2618830	4000	3.00	12000	.73	87.60	.10	12.00	.34	4.08	2.24	26.88
29	453330	2618850	4000	2.98	11920	.55	65.56	.08	9.54	.21	2.50	1.36	16.21
30	453330	2618870	4000	2.96	11840	.46	54.46	.06	7.10	.11	1.30	.93	11.01
31	453330	2618890	4000	2.96	11840	.45	53.28	.06	7.10	.06	.71	.68	8.05
32	453350	2618670	2000	3.11	6220	1.41	87.70	.17	10.57	.47	2.92	4.41	27.43
33	453350	2618690	4000	3.11	12440	1.42	176.65	.16	19.90	.52	6.47	4.49	55.86
34	453350	2618710	4000	3.13	12520	1.57	196.56	.15	18.78	.64	8.01	4.99	62.47
35	453350	2618730	3000	3.16	9480	1.78	168.74	.14	13.27	.79	7.49	6.34	60.10

No	X (E)	Y (N)	Volume (m3)	S. G. (t/m3)	Tonnage (ton)	Cu		Zn		Au		Ag	
						grade (%)	content (ton)	grade (%)	content (ton)	grade (g/t)	content (kg)	grade (g/t)	content (kg)
36	453350	2618750	3000	3.16	9480	1.78	168.74	.15	14.22	.80	7.58	6.92	65.60
37	453350	2618770	4000	3.14	12560	1.69	212.26	.18	22.61	.72	9.04	6.38	80.13
38	453350	2618790	4000	3.11	12440	1.44	179.14	.21	26.12	.58	7.22	5.01	62.32
39	453350	2618810	4000	3.06	12240	1.15	140.76	.18	22.03	.48	5.88	3.70	45.29
40	453350	2618830	4000	3.02	12080	.84	101.47	.12	14.50	.36	4.35	2.38	28.75
41	453350	2618850	4000	2.99	11960	.67	80.13	.09	10.76	.25	2.99	1.59	19.02
42	453350	2618870	4000	2.98	11920	.56	66.75	.06	7.15	.15	1.79	.94	11.20
43	453350	2618890	4000	2.97	11880	.51	60.59	.06	7.13	.08	.95	.62	7.37
44	453370	2618650	1000	3.12	3120	1.50	46.80	.18	5.62	.49	1.53	4.01	12.51
45	453370	2618670	4000	3.07	12280	1.19	146.13	.15	18.42	.56	6.88	4.02	49.37
46	453370	2618690	4000	3.03	12120	.89	107.87	.15	18.18	.51	6.18	1.94	23.51
47	453370	2618710	3332	3.11	10363	1.43	148.18	.14	14.51	.71	7.36	3.36	34.82
48	453370	2618770	4000	3.10	12400	1.41	174.84	.20	24.80	.52	6.45	5.55	68.82
49	453370	2618790	4000	3.13	12520	1.61	201.57	.28	35.06	.42	5.26	5.17	64.73
50	453370	2618810	4000	3.05	12200	1.09	132.98	.18	21.96	.43	5.25	3.66	44.65
51	453370	2618830	4000	3.02	12080	.84	101.47	.12	14.50	.35	4.23	2.14	25.85
52	453370	2618850	4000	3.00	12000	.70	84.00	.07	8.40	.26	3.12	1.23	14.76
53	453370	2618870	4000	2.99	11960	.62	74.15	.06	7.18	.17	2.03	.80	9.57
54	453370	2618890	4000	2.98	11920	.58	69.14	.05	5.96	.08	.95	.46	5.48
55	453390	2618650	840	3.11	2612	1.43	37.36	.14	3.66	.43	1.12	3.27	8.54
56	453390	2618670	3600	3.06	11016	1.08	118.97	.14	15.42	.81	8.92	6.55	72.15
57	453390	2618690	4000	3.04	12160	.96	116.74	.14	17.02	1.01	12.28	7.94	96.55
58	453390	2618710	2000	3.05	6100	1.02	62.22	.13	7.93	1.01	6.15	7.77	47.40
59	453390	2618810	2000	2.99	5980	.63	37.67	.10	5.98	.39	2.33	2.66	15.91
60	453390	2618830	4000	2.99	11960	.64	76.54	.07	8.37	.35	4.19	1.38	16.50
61	453390	2618850	4000	3.00	12000	.74	88.80	.06	7.20	.27	3.24	.87	10.44
62	453390	2618870	4000	3.00	12000	.70	84.00	.05	6.00	.19	2.28	.71	8.52
63	453390	2618890	4000	2.99	11960	.63	75.35	.04	4.78	.10	1.20	.29	3.47
64	453410	2618650	200	3.08	616	1.23	7.58	.14	.86	.77	.47	6.78	4.18
65	453410	2618670	2000	3.04	6080	.96	58.37	.13	7.90	1.19	7.24	10.94	66.52
66	453410	2618690	2200	3.00	6600	.67	44.22	.13	8.58	1.72	11.35	16.46	108.64
67	453410	2618710	400	3.01	1204	.76	9.15	.12	1.44	1.38	1.66	12.53	15.09
68	453410	2618870	2000	2.99	5980	.68	40.66	.03	1.79	.21	1.26	.31	1.85
69	453410	2618890	4000	2.99	11960	.67	80.13	.04	4.78	.14	1.67	.14	1.67
70	453430	2618890	2000	2.99	5980	.65	38.87	.02	1.20	.18	1.08	.00	.00
			236332		724034		8372.43		757.41		436.02		3275.72

Hayl As Safil : 630 m
Cut-off grade : 0.35 Cu

No	X (E)	Y (N)	Volume (m3)	S. G. (t/m3)	Tonnage (ton)	Cu		Zn		Au		Ag	
						grade (%)	content (ton)	grade (%)	content (ton)	grade (g/t)	content (kg)	grade (g/t)	content (kg)
1	453270	2618730	500	3.03	1515	.91	13.79	.06	.91	1.40	2.12	6.66	10.09
2	453270	2618750	1500	3.05	4575	1.07	48.95	.06	2.74	1.18	5.40	8.89	40.67
3	453270	2618770	2500	3.12	7800	1.49	116.22	.05	3.90	1.22	9.52	14.04	109.51
4	453270	2618790	3500	3.15	11025	1.73	190.73	.04	4.41	1.34	14.77	17.20	189.63
5	453290	2618710	2000	3.02	6040	.82	49.53	.06	3.62	1.81	10.93	4.71	28.45
6	453290	2618730	4000	3.02	12080	.80	96.64	.08	9.66	1.09	13.17	4.81	58.10
7	453290	2618750	4000	3.04	12160	.97	117.95	.08	9.73	.88	10.70	6.98	84.88
8	453290	2618770	4000	3.10	12400	1.38	171.12	.06	7.44	1.08	13.39	11.87	147.19
9	453290	2618790	4000	3.16	12640	1.79	226.26	.04	5.06	1.38	17.44	17.77	224.61
10	453290	2618810	2000	3.16	6320	1.77	111.86	.04	2.53	1.33	8.41	17.19	108.64
11	453310	2618690	4000	3.03	12120	.86	104.23	.04	4.85	2.51	30.42	4.75	57.57
12	453310	2618710	4000	3.04	12160	.94	114.30	.10	12.16	1.89	22.98	4.90	59.58
13	453310	2618730	4000	3.02	12080	.85	102.68	.11	13.29	1.12	13.53	4.21	50.86
14	453310	2618750	4000	3.00	12000	.70	84.00	.09	10.80	.70	8.40	3.46	41.52
15	453310	2618770	4000	3.10	12400	1.40	173.60	.07	8.68	.92	11.41	9.17	113.71
16	453310	2618790	4000	3.17	12680	1.86	235.85	.05	6.34	1.11	14.07	13.71	173.84
17	453310	2618810	4000	3.18	12720	1.93	245.50	.04	5.09	1.14	14.50	14.94	190.04
18	453310	2618830	3000	3.20	9600	2.03	194.88	.04	3.84	1.06	10.18	14.22	136.51
19	453310	2618850	1000	3.19	3190	1.99	63.48	.04	1.28	.98	3.13	13.65	43.54
20	453330	2618670	3000	3.08	9240	1.27	117.35	.14	12.94	1.89	17.46	5.90	54.52

No	X (E)	Y (N)	Volume (m3)	S. G. (t/m3)	Tonnage (ton)	Cu		Zn		Au		Ag	
						grade (%)	content (ton)	grade (%)	content (ton)	grade (g/t)	content (kg)	grade (g/t)	content (kg)
21	453330	2618690	4000	3.08	12320	1.26	155.23	.13	16.02	2.43	29.94	7.68	94.62
22	453330	2618710	4000	3.07	12280	1.14	139.99	.19	23.33	1.78	21.86	4.82	59.19
23	453330	2618730	4000	3.06	12240	1.11	135.86	.18	22.03	1.25	15.30	3.83	46.88
24	453330	2618750	4000	3.08	12320	1.27	156.46	.13	16.02	.88	10.84	4.63	57.04
25	453330	2618770	4000	3.16	12640	1.78	224.99	.09	11.38	.76	9.61	6.69	84.56
26	453330	2618790	4000	3.23	12920	2.24	289.41	.07	9.04	.75	9.69	9.04	116.80
27	453330	2618810	4000	3.24	12960	2.33	301.97	.05	6.48	.76	9.85	10.08	130.64
28	453330	2618830	4000	3.21	12840	2.13	273.49	.04	5.14	.75	9.63	10.34	132.77
29	453330	2618850	4000	3.20	12800	2.01	257.28	.04	5.12	.74	9.47	10.60	135.68
30	453330	2618870	4000	3.17	12680	1.87	237.12	.03	3.80	.70	8.88	10.54	133.65
31	453330	2618890	4000	3.16	12640	1.75	221.20	.03	3.79	.65	8.22	10.36	130.95
32	453350	2618650	1000	3.15	3150	1.71	53.86	.23	7.24	.85	2.68	4.84	15.25
33	453350	2618670	4000	3.10	12400	1.40	173.60	.20	24.80	1.17	14.51	4.78	59.27
34	453350	2618690	4000	3.08	12320	1.27	156.46	.22	27.10	1.33	16.39	4.35	53.59
35	453350	2618710	4000	3.11	12440	1.44	179.14	.36	44.78	1.34	16.67	3.55	44.16
36	453350	2618730	4000	3.09	12360	1.31	161.92	.22	27.19	1.34	16.56	3.90	48.20
37	453350	2618750	4000	3.15	12600	1.72	216.72	.14	17.64	1.01	12.73	4.23	53.30
38	453350	2618770	4000	3.25	13000	2.37	308.10	.10	13.00	.67	8.71	5.11	66.43
39	453350	2618790	4000	3.32	13280	2.89	383.79	.07	9.30	.44	5.84	5.32	70.65
40	453350	2618810	4000	3.29	13160	2.68	352.69	.06	7.90	.40	5.26	5.78	76.06
41	453350	2618830	4000	3.21	12840	2.09	268.36	.04	5.14	.47	6.03	6.88	88.34
42	453350	2618850	4000	3.17	12680	1.85	234.58	.03	3.80	.51	6.47	7.46	94.59
43	453350	2618870	4000	3.13	12520	1.58	197.82	.03	3.76	.50	6.26	7.47	93.52
44	453350	2618890	4000	3.12	12480	1.47	183.46	.03	3.74	.49	6.12	7.66	95.60
45	453370	2618650	3000	3.18	9540	2.00	190.80	.33	31.48	.63	6.01	4.90	46.75
46	453370	2618670	4000	3.14	12560	1.67	209.75	.31	38.94	.68	8.54	4.41	55.39
47	453370	2618690	4000	3.05	12200	1.05	128.10	.19	23.18	.25	3.05	1.49	18.18
48	453370	2618710	4000	3.07	12280	1.13	138.76	.22	27.02	1.21	14.86	3.41	41.87
49	453370	2618730	4000	3.08	12320	1.25	154.00	.18	22.18	1.50	18.48	3.72	45.83
50	453370	2618750	4000	3.14	12560	1.63	204.73	.12	15.07	1.29	16.20	3.87	48.61
51	453370	2618770	4000	3.26	13040	2.41	314.26	.09	11.74	.69	9.00	3.83	49.94
52	453370	2618790	4000	3.40	13600	3.40	462.40	.07	9.52	.26	3.54	3.84	52.22
53	453370	2618810	4000	3.26	13040	2.42	315.57	.05	6.52	.21	2.74	3.27	42.64
54	453370	2618830	4000	3.16	12640	1.78	224.99	.04	5.06	.22	2.78	3.56	45.00
55	453370	2618850	4000	3.11	12440	1.39	172.92	.03	3.73	.27	3.36	3.92	48.76
56	453370	2618870	4000	3.09	12360	1.26	155.74	.02	2.47	.31	3.83	4.64	57.35
57	453370	2618890	4000	3.08	12320	1.21	149.07	.02	2.46	.32	3.94	4.97	61.23
58	453390	2618630	332	3.23	1072	2.31	24.77	.41	4.40	.62	.66	5.51	5.91
59	453390	2618650	4000	3.29	13160	2.79	367.16	.56	73.70	.69	9.08	6.18	81.33
60	453390	2618670	4000	3.16	12640	1.85	233.84	.40	50.56	.77	9.73	6.32	79.88
61	453390	2618690	4000	3.08	12320	1.29	158.93	.30	36.96	1.02	12.57	6.18	76.14
62	453390	2618710	2000	3.05	6100	1.01	61.61	.19	11.59	1.44	8.78	5.23	31.90
63	453390	2618750	1000	3.09	3090	1.27	39.24	.08	2.47	1.54	4.76	3.67	11.34
64	453390	2618770	4000	3.15	12600	1.72	216.72	.07	8.82	.89	11.21	3.39	42.71
65	453390	2618790	4000	3.16	12640	1.80	227.52	.05	6.32	.34	4.30	2.79	35.27
66	453390	2618810	4000	3.10	12400	1.36	168.64	.03	3.72	.12	1.49	1.84	22.82
67	453390	2618830	4000	3.04	12160	.91	110.66	.02	2.43	.06	.73	1.09	13.25
68	453390	2618850	4000	3.03	12120	.87	105.44	.02	2.42	.08	.97	1.17	14.18
69	453390	2618870	4000	3.05	12200	.97	118.34	.02	2.44	.15	1.83	2.16	26.35
70	453390	2618890	4000	3.05	12200	.99	120.78	.02	2.44	.17	2.07	2.82	34.40
71	453410	2618630	600	3.26	1956	2.57	50.27	.51	9.98	.74	1.45	6.51	12.73
72	453410	2618650	4000	3.23	12920	2.33	301.04	.50	64.60	.90	11.63	7.51	97.03
73	453410	2618670	4000	3.15	12600	1.78	224.28	.44	55.44	1.19	14.99	9.14	115.16
74	453410	2618690	4000	3.07	12280	1.18	144.90	.38	46.66	1.57	19.28	11.44	140.48
75	453410	2618750	1200	3.02	3624	.80	28.99	.06	2.17	1.63	5.91	3.82	13.84
76	453410	2618770	1000	3.03	3030	.86	26.06	.04	1.21	.99	3.00	2.87	8.70
77	453410	2618830	4000	2.96	11840	.38	44.99	.01	1.18	.01	.12	.10	1.18
78	453410	2618850	4000	2.99	11960	.59	70.56	.01	1.20	.03	.36	.34	4.07
79	453410	2618870	4000	3.00	12000	.68	81.60	.02	2.40	.05	.60	.77	9.24
80	453410	2618890	4000	3.01	12040	.74	89.10	.01	1.20	.07	.84	1.34	16.13
81	453430	2618630	828	3.22	2686	2.31	61.59	.50	13.33	.95	2.53	7.90	21.06
82	453430	2618650	3200	3.18	10176	2.00	203.52	.47	47.83	1.15	11.70	9.04	91.99
83	453430	2618670	2400	3.11	7464	1.50	111.96	.42	31.35	1.44	10.75	10.53	78.60
84	453430	2618690	1000	3.07	3070	1.18	36.23	.35	10.74	1.65	5.07	10.53	32.33
85	453430	2618870	2000	2.97	5940	.48	28.51	.01	.59	.00	.00	.04	.24
86	453430	2618890	4000	2.98	11920	.51	60.79	.01	1.19	.00	.00	.28	3.34

294560

919703

14181.55

1145.52

772.19

5640.57

Hayl As Safil : 620 m
Cut-off grade : 0.35 Cu

No	X (E)	Y (N)	Volume (m3)	S.G. (t/m3)	Tonnage (ton)	Cu		Zn		Au		Ag	
						grade (%)	content (ton)	grade (%)	content (ton)	grade (g/t)	content (kg)	grade (g/t)	content (kg)
1	453310	2618730	2000	2.99	5980	.61	36.48	.45	26.91	.53	3.17	5.00	29.90
2	453310	2618750	3720	2.98	11086	.51	56.54	.22	24.39	.24	2.66	2.11	23.39
3	453310	2618770	4000	3.01	12040	.75	90.30	.24	28.90	.46	5.54	3.50	42.14
4	453310	2618790	4000	3.03	12120	.86	104.23	.24	29.09	.63	7.64	4.45	53.93
5	453310	2618810	3332	3.02	10063	.84	84.53	.24	24.15	.67	6.74	4.58	46.09
6	453330	2618710	3000	3.03	9090	.85	77.26	.92	83.63	.90	8.18	9.78	88.90
7	453330	2618730	4000	3.02	12080	.75	90.60	.58	70.06	.65	7.85	6.53	78.88
8	453330	2618750	4000	3.03	12120	.88	106.66	.35	42.42	.46	5.58	4.22	51.15
9	453330	2618770	4000	3.09	12360	1.26	155.74	.22	27.19	.42	5.19	3.63	44.87
10	453330	2618790	4000	3.13	12520	1.57	196.56	.17	21.28	.45	5.63	3.83	47.95
11	453330	2618810	4000	3.14	12560	1.61	202.22	.15	18.84	.47	5.90	3.89	48.86
12	453330	2618830	4000	3.10	12400	1.39	172.36	.15	18.60	.46	5.70	3.59	44.52
13	453330	2618850	4000	3.08	12320	1.25	154.00	.15	18.48	.45	5.54	3.40	41.89
14	453330	2618870	4000	3.06	12240	1.09	133.42	.15	18.36	.41	5.02	2.93	35.86
15	453330	2618890	4000	3.04	12160	.96	116.74	.14	17.02	.37	4.50	2.44	29.67
16	453350	2618690	4000	3.05	12200	1.27	154.94	.52	63.44	.58	7.08	5.84	71.25
17	453350	2618710	4000	3.05	12200	.98	119.56	.86	104.92	.79	9.64	9.54	116.39
18	453350	2618730	4000	3.03	12120	.84	101.81	.60	72.72	.76	9.21	7.08	85.81
19	453350	2618750	4000	3.07	12280	1.15	141.22	.33	40.52	.59	7.25	4.86	59.68
20	453350	2618770	4000	3.18	12720	1.91	242.95	.18	22.90	.42	5.34	4.05	51.52
21	453350	2618790	4000	3.27	13080	2.54	332.23	.09	11.77	.31	4.05	3.64	47.61
22	453350	2618810	4000	3.24	12960	2.32	300.67	.07	9.07	.29	3.76	3.27	42.38
23	453350	2618830	4000	3.14	12560	1.62	203.47	.09	11.30	.31	3.89	2.87	36.05
24	453350	2618850	4000	3.09	12360	1.32	163.15	.10	12.36	.32	3.96	2.59	32.01
25	453350	2618870	4000	3.05	12200	1.02	124.44	.11	13.42	.30	3.66	2.17	26.47
26	453350	2618890	4000	3.03	12120	.87	105.44	.11	13.33	.26	3.15	1.73	20.97
27	453370	2618670	3000	3.42	10260	6.18	634.07	.50	51.30	.65	6.67	5.48	56.22
28	453370	2618690	4000	2.97	11880	.50	59.40	.15	17.82	.18	2.14	1.26	14.97
29	453370	2618710	4000	3.01	12040	.78	93.91	.46	55.38	.71	8.55	6.00	72.24
30	453370	2618730	4000	3.00	12000	.67	80.40	.40	48.00	.86	10.32	5.66	67.92
31	453370	2618750	4000	3.08	12320	1.21	149.07	.35	43.12	.75	9.24	5.86	72.20
32	453370	2618770	4000	3.21	12840	2.11	270.92	.16	20.54	.46	5.91	4.39	56.37
33	453370	2618790	4000	3.37	13480	3.20	431.36	.03	4.04	.24	3.24	3.65	49.20
34	453370	2618810	4000	3.23	12920	2.28	294.58	.03	3.88	.19	2.45	2.68	34.63
35	453370	2618830	4000	3.13	12520	1.56	195.31	.05	6.26	.17	2.13	1.93	24.16
36	453370	2618850	4000	3.06	12240	1.11	135.86	.07	8.57	.18	2.20	1.60	19.58
37	453370	2618870	4000	3.03	12120	.90	109.08	.08	9.70	.18	2.18	1.35	16.36
38	453370	2618890	4000	3.02	12080	.80	96.64	.08	9.66	.17	2.05	1.13	13.65
39	453390	2618650	520	4.12	2142	12.23	262.02	.91	19.50	1.18	2.52	9.58	20.52
40	453390	2618670	4000	3.57	14280	7.63	1089.56	.50	71.40	.81	11.57	6.65	94.96
41	453390	2618690	4000	3.22	12880	2.99	385.11	.31	39.93	.69	8.89	5.58	71.87
42	453390	2618710	4000	3.06	12240	1.01	123.62	.31	37.94	.82	10.04	6.09	74.54
43	453390	2618730	4000	3.01	12040	.75	90.30	.47	56.59	1.19	14.33	8.36	100.65
44	453390	2618750	4000	3.06	12240	1.11	135.86	.33	40.39	.90	11.02	6.76	82.74
45	453390	2618770	4000	3.14	12560	1.60	200.96	.18	22.61	.62	7.79	5.46	68.58
46	453390	2618790	4000	3.16	12640	1.79	226.26	.06	7.58	.31	3.92	3.48	43.99
47	453390	2618810	4000	3.10	12400	1.38	171.12	.02	2.48	.15	1.86	1.95	24.18
48	453390	2618830	4000	3.03	12120	.89	107.87	.03	3.64	.08	.97	.90	10.91
49	453390	2618850	4000	3.01	12040	.77	92.71	.04	4.82	.08	.96	.65	7.83
50	453390	2618870	4000	3.01	12040	.77	92.71	.06	7.22	.10	1.20	.71	8.55
51	453390	2618890	4000	3.01	12040	.73	87.89	.06	7.22	.10	1.20	.58	6.98
52	453410	2618650	1400	3.90	5460	9.81	535.63	.61	33.31	1.00	5.46	7.88	43.02
53	453410	2618670	4000	3.62	14480	7.21	1044.01	.44	63.71	.93	13.47	7.58	109.76
54	453410	2618690	4000	3.27	13080	2.52	329.62	.24	31.39	.89	11.64	7.73	101.11
55	453410	2618710	3000	3.14	9420	1.63	153.55	.30	28.26	.95	8.95	7.49	70.56
56	453410	2618730	1000	3.07	3070	1.11	34.08	.34	10.44	1.03	3.16	7.87	24.16
57	453410	2618750	2000	3.04	6080	.94	57.15	.30	18.24	.99	6.02	7.77	47.24
58	453410	2618770	3500	3.05	10675	.99	105.68	.17	18.15	.73	7.79	6.21	66.29
59	453410	2618790	2500	3.00	7500	.70	52.50	.06	4.50	.48	3.60	4.42	33.15
60	453410	2618850	4000	2.98	11920	.53	63.18	.04	4.77	.04	.48	.24	2.86
61	453410	2618870	4000	2.98	11920	.58	69.14	.04	4.77	.04	.48	.20	2.38
62	453410	2618890	4000	2.98	11920	.57	67.94	.05	5.96	.04	.48	.15	1.79
63	453430	2618650	3200	3.83	12256	7.33	898.36	.36	44.12	.84	10.30	6.14	75.25
64	453430	2618670	4000	3.63	14520	6.02	874.10	.30	43.56	.86	12.49	6.66	96.70
65	453430	2618690	2000	3.38	6760	3.53	238.63	.25	16.90	.89	6.02	7.25	49.01

No	X (E)	Y (N)	Volume (m3)	S.G. (t/m3)	Tonnage (ton)	Cu		Zn		Au		Ag	
						grade (%)	content (ton)	grade (%)	content (ton)	grade (g/t)	content (kg)	grade (g/t)	content (kg)
66	453430	2618850	2000	2.96	5920	.38	22.50	.04	2.37	.05	.30	.18	1.07
67	453430	2618870	3332	2.96	9863	.42	41.42	.04	3.95	.03	.30	.02	.20
68	453450	2618650	3760	3.86	14514	6.74	978.22	.17	24.67	.69	10.01	4.40	63.86
69	453450	2618670	2000	3.70	7400	5.72	423.28	.20	14.80	.76	5.62	5.44	40.26
70	453470	2618650	1000	3.82	3820	6.33	241.81	.17	6.49	.70	2.67	4.56	17.42
			250264		786879		15614.91		1825.02		388.43		3258.03

Hayl As Safil : 610 m
Cut-off grade : 0.35 Cu

No	X (E)	Y (N)	Volume (m3)	S.G. (t/m3)	Tonnage (ton)	Cu		Zn		Au		Ag	
						grade (%)	content (ton)	grade (%)	content (ton)	grade (g/t)	content (kg)	grade (g/t)	content (kg)
1	453310	2618750	600	2.98	1788	.57	10.19	.86	15.38	.75	1.34	4.50	8.05
2	453310	2618770	2600	2.99	7774	.60	46.64	.54	41.98	.44	3.42	3.17	24.64
3	453310	2618790	3200	2.98	9536	.58	55.31	.44	41.96	.34	3.24	2.67	25.46
4	453310	2618810	3000	2.98	8940	.55	49.17	.42	37.55	.31	2.77	2.50	22.35
5	453330	2618710	744	2.98	2217	.53	11.75	1.62	35.92	1.36	3.02	7.89	17.49
6	453330	2618730	3000	2.98	8940	.56	50.06	1.14	101.92	1.09	9.74	5.60	50.06
7	453330	2618750	4000	3.00	12000	.67	80.40	.75	90.00	.76	9.12	4.18	50.16
8	453330	2618770	4000	3.01	12040	.77	92.71	.50	60.20	.51	6.14	3.43	41.30
9	453330	2618790	4000	3.02	12080	.82	99.06	.40	48.32	.37	4.47	3.17	38.29
10	453330	2618810	4000	3.02	12080	.82	99.06	.33	39.86	.29	3.50	2.87	34.67
11	453330	2618830	4000	3.00	12000	.72	86.40	.30	36.00	.23	2.76	2.40	28.80
12	453330	2618850	3668	3.00	11004	.65	71.53	.28	30.81	.20	2.20	2.09	23.00
13	453330	2618870	3000	2.98	8940	.57	50.96	.26	23.24	.14	1.25	1.56	13.95
14	453330	2618890	2332	2.97	6926	.50	34.63	.23	15.93	.07	.48	1.01	7.00
15	453350	2618690	1000	2.99	2990	.61	18.24	.71	21.23	.77	2.30	3.81	11.39
16	453350	2618710	4000	2.98	11920	.56	66.75	.80	95.36	.94	11.20	3.91	46.61
17	453350	2618730	4000	2.99	11960	.58	69.37	.70	83.72	.93	11.12	3.37	40.31
18	453350	2618750	4000	3.00	12000	.72	86.40	.50	60.00	.72	8.64	2.96	35.52
19	453350	2618770	4000	3.04	12160	.96	116.74	.38	46.21	.48	5.84	3.36	40.86
20	453350	2618790	4000	3.06	12240	1.13	138.31	.25	30.60	.32	3.92	3.49	42.72
21	453350	2618810	4000	3.05	12200	1.04	126.88	.22	26.84	.25	3.05	3.06	37.33
22	453350	2618830	4000	3.02	12080	.80	96.64	.22	26.58	.20	2.42	2.30	27.78
23	453350	2618850	4000	3.00	12000	.68	81.60	.21	25.20	.15	1.80	1.82	21.84
24	453350	2618870	4000	2.98	11920	.56	66.75	.20	23.84	.11	1.31	1.25	14.90
25	453350	2618890	4000	2.97	11880	.47	55.84	.19	22.57	.05	.59	.72	8.55
26	453370	2618690	3000	3.00	9000	.68	61.20	.13	11.70	.35	3.15	1.26	11.34
27	453370	2618710	4000	3.00	12000	.67	80.40	.30	36.00	.63	7.56	1.77	21.24
28	453370	2618730	4000	2.98	11920	.56	66.75	.14	16.69	.77	9.18	.30	3.58
29	453370	2618750	4000	3.01	12040	.75	90.30	.27	32.51	.69	8.31	2.01	24.20
30	453370	2618770	4000	3.05	12200	1.02	124.44	.24	29.28	.49	5.98	3.00	36.60
31	453370	2618790	4000	3.09	12360	1.31	161.92	.19	23.48	.30	3.71	3.80	46.97
32	453370	2618810	4000	3.05	12200	1.06	129.32	.15	18.30	.21	2.56	2.76	33.67
33	453370	2618830	4000	3.02	12080	.79	95.43	.13	15.70	.13	1.57	1.80	21.74
34	453370	2618850	4000	2.99	11960	.62	74.15	.13	15.55	.10	1.20	1.28	15.31
35	453370	2618870	4000	2.98	11920	.52	61.98	.14	16.69	.06	.72	.85	10.13
36	453370	2618890	4000	2.97	11880	.46	54.65	.14	16.63	.03	.36	.51	6.06
37	453390	2618670	1000	3.04	3040	.94	28.58	.07	2.13	.28	.85	1.93	5.87
38	453390	2618690	4000	3.05	12200	1.05	128.10	.11	13.42	.35	4.27	1.78	21.72
39	453390	2618710	4000	3.04	12160	.92	111.87	.11	13.38	.52	6.32	1.54	18.73
40	453390	2618730	4000	3.01	12040	.74	89.10	.13	15.65	.74	8.91	1.79	21.55
41	453390	2618750	4000	3.01	12040	.78	93.91	.13	15.65	.78	9.39	2.53	30.46
42	453390	2618770	4000	3.03	12120	.92	111.50	.14	16.97	.64	7.76	2.87	34.78
43	453390	2618790	4000	3.04	12160	1.00	121.60	.12	14.59	.35	4.26	2.63	31.98
44	453390	2618810	4000	3.02	12080	.85	102.68	.08	9.66	.17	2.05	1.73	20.90
45	453390	2618830	4000	2.99	11960	.62	74.15	.06	7.18	.07	.84	.95	11.36
46	453390	2618850	4000	2.98	11920	.51	60.79	.06	7.15	.05	.60	.64	7.63
47	453390	2618870	4000	2.97	11880	.48	57.02	.08	9.50	.04	.48	.53	6.30
48	453390	2618890	4000	2.97	11880	.44	52.27	.09	10.69	.00	.00	.26	3.09
49	453410	2618670	3000	3.10	9300	1.33	123.69	.12	11.16	.36	3.35	2.87	26.69
50	453410	2618690	4000	3.15	12600	1.69	212.94	.14	17.64	.25	3.15	2.44	30.74

No	X (E)	Y (N)	Volume (m3)	S. G. (t/m3)	Tonnage (ton)	Cu		Zn		Au		Ag	
						grade (%)	content (ton)	grade (%)	content (ton)	grade (g/t)	content (kg)	grade (g/t)	content (kg)
51	453410	2618710	4000	3.06	12240	1.06	129.74	.12	14.69	.67	8.20	2.55	31.21
52	453410	2618730	4000	3.01	12040	.76	91.50	.09	10.84	.95	11.44	3.12	37.56
53	453410	2618750	4000	3.01	12040	.74	89.10	.09	10.84	1.02	12.28	4.02	48.40
54	453410	2618770	4000	3.03	12120	.90	109.08	.09	10.91	.78	9.45	4.24	51.39
55	453410	2618790	4000	3.02	12080	.82	99.06	.06	7.25	.54	6.52	2.55	30.80
56	453410	2618810	4000	2.99	11960	.64	76.54	.03	3.59	.16	1.91	.75	8.97
57	453410	2618830	4000	2.96	11840	.37	43.81	.02	2.37	.01	.12	.08	.95
58	453410	2618850	4000	2.97	11880	.42	49.90	.03	3.56	.02	.24	.25	2.97
59	453410	2618870	4000	2.97	11880	.42	49.90	.04	4.75	.00	.00	.18	2.14
60	453410	2618890	4000	2.96	11840	.39	46.18	.05	5.92	.00	.00	.01	.12
61	453430	2618670	4000	3.20	12800	2.01	257.28	.23	29.44	.53	6.78	3.86	49.41
62	453430	2618690	4000	3.13	12520	1.53	191.56	.21	26.29	.68	8.51	3.60	45.07
63	453430	2618710	4000	3.06	12240	1.05	128.52	.13	15.91	.94	11.51	3.65	44.68
64	453430	2618730	2200	2.97	6534	.45	29.40	.06	3.92	1.35	8.82	3.89	25.42
65	453430	2618750	2400	3.03	7272	.85	61.81	.08	5.82	1.18	8.58	6.06	44.07
66	453430	2618770	3000	3.06	9180	1.06	97.31	.09	8.26	1.03	9.46	6.95	63.80
67	453430	2618790	1000	3.05	3050	1.00	30.50	.07	2.13	.73	2.23	5.34	16.29
68	453430	2618810	1000	3.00	3000	.67	20.10	.04	1.20	.29	.87	2.15	6.45
69	453430	2618830	3000	2.97	8910	.47	41.88	.02	1.78	.09	.80	.72	6.42
70	453430	2618850	4000	2.96	11840	.39	46.18	.02	2.37	.02	.24	.26	3.08
71	453430	2618870	4000	2.96	11840	.38	44.99	.02	2.37	.00	.00	.06	.71
72	453450	2618670	948	3.22	3053	2.18	66.55	.45	13.74	.89	2.72	5.26	16.06
73	453450	2618690	2000	3.15	6300	1.68	105.84	.30	18.90	.95	5.99	4.91	30.93
74	453470	2618650	1000	3.39	3390	3.33	112.89	.36	12.20	1.39	4.71	11.33	38.41
75	453470	2618670	2000	3.29	6580	2.69	177.00	.38	25.00	1.33	8.75	9.63	63.37
76	453470	2618690	600	3.19	1914	1.95	37.32	.35	6.70	1.24	2.37	7.47	14.30
77	453490	2618650	1192	3.39	4041	3.36	135.77	.39	15.76	2.27	9.17	19.00	76.78
78	453490	2618670	600	3.32	1992	2.87	57.17	.38	7.57	1.85	3.69	14.42	28.72
			259084		782931		6557.01		1752.60		347.53		2004.15

Hayl As Safil : 600 m
Cut-off grade : 0.35 Cu

No	X (E)	Y (N)	Volume (m3)	S. G. (t/m3)	Tonnage (ton)	Cu		Zn		Au		Ag	
						grade (%)	content (ton)	grade (%)	content (ton)	grade (g/t)	content (kg)	grade (g/t)	content (kg)
1	453330	2618730	1332	3.09	4116	1.31	53.92	.68	27.99	.54	2.22	3.00	12.35
2	453330	2618750	3668	3.08	11297	1.27	143.48	.56	63.27	.44	4.97	2.67	30.16
3	453330	2618770	4000	3.07	12280	1.19	146.13	.38	46.66	.29	3.56	2.18	26.77
4	453330	2618790	4000	3.06	12240	1.10	134.64	.21	25.70	.16	1.96	1.69	20.69
5	453330	2618810	2000	3.05	6100	1.01	61.61	.12	7.32	.09	.55	1.37	8.36
6	453350	2618710	2000	3.09	6180	1.30	80.34	.60	37.08	.51	3.15	2.83	17.49
7	453350	2618730	4000	3.09	12360	1.31	161.92	.72	88.99	.58	7.17	3.10	38.32
8	453350	2618750	4000	3.07	12280	1.19	146.13	.53	65.08	.43	5.28	2.60	31.93
9	453350	2618770	4000	3.07	12280	1.15	141.22	.24	29.47	.19	2.33	1.89	23.21
10	453350	2618790	4000	3.05	12200	1.07	130.54	.10	12.20	.08	.98	1.50	18.30
11	453350	2618810	4000	3.03	12120	.92	111.50	.05	6.06	.05	.61	1.17	14.18
12	453350	2618830	4000	3.02	12080	.83	100.26	.05	6.04	.02	.24	.91	10.99
13	453350	2618850	4000	3.01	12040	.78	93.91	.04	4.82	.00	.00	.75	9.03
14	453350	2618870	4000	3.00	12000	.70	84.00	.03	3.60	.00	.00	.47	5.64
15	453370	2618690	2000	3.11	6220	1.43	88.95	.41	25.50	.34	2.11	2.39	14.87
16	453370	2618710	4000	3.07	12280	1.15	141.22	.49	60.17	.52	6.39	2.70	33.16
17	453370	2618730	4000	3.04	12160	.94	114.30	.57	69.31	.61	7.42	2.81	34.17
18	453370	2618750	4000	3.05	12200	1.03	125.66	.44	53.68	.42	5.12	2.60	31.72
19	453370	2618770	4000	3.05	12200	1.03	125.66	.23	28.06	.16	1.95	1.99	24.28
20	453370	2618790	4000	3.06	12240	1.10	134.64	.06	7.34	.05	.61	1.45	17.75
21	453370	2618810	4000	3.01	12040	.78	93.91	.04	4.82	.05	.60	1.04	12.52
22	453370	2618830	4000	2.99	11960	.63	75.35	.04	4.78	.02	.24	.68	8.13
23	453370	2618850	4000	2.99	11960	.64	76.54	.05	5.98	.00	.00	.56	6.70
24	453370	2618870	4000	2.99	11960	.60	71.76	.03	3.59	.00	.00	.31	3.71
25	453390	2618690	4000	3.03	12120	.91	110.29	.23	27.88	.45	5.45	1.90	23.03

No	X (E)	Y (N)	Volume (m3)	S. G. (t/m3)	Tonnage (ton)	Cu		Zn		Au		Ag	
						grade content (%)	content (ton)	grade content (%)	content (ton)	grade content (g/t)	content (kg)	grade content (g/t)	content (kg)
26	453390	2618710	4000	3.03	12120	.87	105.44	.32	38.78	.81	7.39	2.54	30.78
27	453390	2618730	4000	3.02	12080	.82	99.06	.38	45.90	.67	8.09	3.25	39.26
28	453390	2618750	4000	3.02	12080	.81	97.85	.32	38.66	.53	6.40	3.25	39.26
29	453390	2618770	4000	3.02	12080	.84	101.47	.19	22.95	.26	3.14	2.49	30.08
30	453390	2618790	4000	3.01	12040	.74	89.10	.08	9.63	.11	1.32	1.47	17.70
31	453390	2618810	800	2.97	2376	.50	11.88	.04	.95	.06	.14	.74	1.76
32	453390	2618830	4000	2.97	11880	.50	59.40	.04	4.75	.03	.36	.38	4.51
33	453390	2618850	4000	2.97	11880	.51	60.59	.04	4.75	.00	.00	.31	3.68
34	453390	2618870	4000	2.97	11880	.51	60.59	.03	3.56	.00	.00	.17	2.02
35	453410	2618690	140	2.97	416	.48	2.00	.05	.21	.57	.24	.90	.37
36	453410	2618710	4000	2.99	11960	.63	75.35	.19	22.72	.80	9.57	3.22	38.51
37	453410	2618730	4000	2.99	11960	.62	74.15	.24	28.70	.91	10.88	4.49	53.70
38	453410	2618750	4000	2.99	11960	.62	74.15	.23	27.51	.80	9.57	4.54	54.30
39	453410	2618770	4000	2.99	11960	.61	72.96	.15	17.94	.56	6.70	3.17	37.91
40	453410	2618790	4000	2.98	11920	.53	63.18	.07	8.34	.32	3.81	1.80	21.46
41	453410	2618810	4000	2.97	11880	.47	55.84	.03	3.56	.20	2.38	.36	4.28
42	453410	2618830	4000	2.96	11840	.42	49.73	.02	2.37	.15	1.78	.07	.83
43	453410	2618850	4000	2.96	11840	.44	52.10	.02	2.37	.10	1.18	.13	1.54
44	453410	2618870	4000	2.96	11840	.45	53.28	.03	3.55	.07	.83	.02	.24
45	453430	2618670	400	3.03	1212	.91	11.03	.13	1.58	.37	.45	3.26	3.95
46	453430	2618690	4000	3.00	12000	.69	82.80	.12	14.40	.69	8.28	3.64	43.68
47	453430	2618710	4000	2.97	11880	.50	59.40	.13	15.44	1.02	12.12	4.77	56.67
48	453430	2618730	4000	2.97	11880	.46	54.65	.17	20.20	1.23	14.61	6.60	78.41
49	453430	2618750	4000	2.97	11880	.49	58.21	.18	21.38	1.00	11.88	5.46	64.86
50	453430	2618770	4000	2.97	11880	.50	59.40	.14	16.63	.73	8.67	3.73	44.31
51	453430	2618790	4000	2.97	11880	.46	54.65	.07	8.32	.60	7.13	2.04	24.24
52	453430	2618810	4000	2.96	11840	.43	50.91	.03	3.55	.42	4.97	.49	5.80
53	453430	2618830	4000	2.96	11840	.42	49.73	.02	2.37	.32	3.79	.04	.47
54	453450	2618670	612	3.09	1891	1.32	24.96	.21	3.97	.22	.42	4.54	8.59
55	453450	2618690	4000	3.00	12000	.68	81.60	.15	18.00	.97	11.64	5.94	71.28
56	453450	2618710	2800	2.96	8288	.42	34.81	.14	11.60	1.30	10.77	5.89	57.10
57	453450	2618730	1600	2.96	4736	.43	20.36	.15	7.10	1.25	5.92	6.60	31.26
58	453450	2618750	668	2.97	1984	.44	8.73	.15	2.98	1.12	2.22	5.93	11.76
59	453470	2618670	800	3.02	2416	.86	20.78	.17	4.11	1.19	2.88	6.58	15.90
60	453490	2618670	1200	3.03	3636	.87	31.63	.18	6.54	2.02	7.34	7.75	28.18
61	453490	2618690	800	3.03	2424	.86	20.85	.18	4.36	2.39	5.79	9.60	23.27
62	453510	2618670	3500	3.04	10640	.93	98.95	.19	20.22	2.37	25.22	7.66	81.50
63	453510	2618690	1080	3.11	3359	1.43	48.03	.24	8.06	3.49	11.72	12.02	40.37
64	453530	2618670	2500	3.03	7575	.88	66.66	.19	14.39	2.25	17.04	7.07	53.56
65	453530	2618690	1016	3.03	3078	.88	27.09	.16	4.93	2.58	7.94	11.00	33.86
			212916		641224		4971.23		1212.72		317.49		1638.67

Hayl As Safil : 590 m
 Cut-off grade : 0.35 Cu

No	X (E)	Y (N)	Volume (m3)	S.G.	Tonnage (ton)	Cu		Zn		Au		Ag	
						grade (%)	content (ton)	grade (%)	content (ton)	grade (g/t)	content (kg)	grade (g/t)	content (kg)
1	453330	2618750	1000	2.99	2990	.59	17.64	.53	15.85	.42	1.26	2.07	6.19
2	453330	2618770	3000	2.97	8910	.48	42.77	.36	32.08	.27	2.41	1.52	13.54
3	453330	2618790	4000	2.95	11800	.38	44.84	.21	24.78	.14	1.65	1.04	12.27
4	453350	2618730	2000	3.00	6000	.68	40.80	.67	40.20	.56	3.36	2.60	15.60
5	453350	2618750	4000	2.98	11920	.57	67.94	.48	57.22	.41	4.89	2.14	25.51
6	453350	2618770	4000	2.96	11840	.40	47.36	.22	26.05	.18	2.13	1.30	15.39
7	453370	2618710	1000	2.96	2960	.43	12.73	.33	9.77	.68	2.01	3.74	11.07
8	453370	2618730	4000	2.99	11960	.60	71.76	.44	52.62	.58	6.94	3.20	38.27
9	453370	2618750	4000	2.98	11920	.56	66.75	.37	44.10	.40	4.77	2.44	29.08
10	453370	2618770	4000	2.96	11840	.44	52.10	.19	22.50	.20	2.37	1.53	18.12
11	453370	2618810	4000	2.95	11800	.38	44.84	.06	7.08	.04	.47	.67	7.91
12	453370	2618830	4000	2.95	11800	.39	46.02	.05	5.90	.02	.24	.41	4.84
13	453390	2618710	3000	2.99	8970	.63	56.51	.25	22.42	.86	7.71	5.25	47.09
14	453390	2618730	4000	3.01	12040	.74	89.10	.31	37.32	.66	7.95	4.39	52.86
15	453390	2618750	4000	3.00	12000	.69	82.80	.26	31.20	.46	5.52	3.37	40.44
16	453390	2618770	4000	2.98	11920	.56	66.75	.18	21.46	.28	3.34	2.21	26.34
17	453390	2618790	4000	2.97	11880	.47	55.84	.09	10.69	.12	1.43	1.21	14.37
18	453390	2618810	4000	2.97	11880	.49	58.21	.05	5.94	.05	.59	.64	7.60
19	453390	2618830	4000	2.98	11920	.53	63.18	.05	5.96	.03	.36	.40	4.77
20	453390	2618850	4000	2.97	11880	.46	54.65	.05	5.94	.02	.24	.29	3.45
21	453390	2618870	3200	2.95	9440	.36	33.98	.06	5.66	.02	.19	.29	2.74
22	453410	2618690	1000	3.04	3040	.97	29.49	.18	5.47	1.42	4.32	7.96	24.20
23	453410	2618710	4000	3.05	12200	1.00	122.00	.22	26.84	.98	11.96	6.57	80.15
24	453410	2618730	4000	3.05	12200	1.04	126.88	.24	29.28	.81	9.88	5.93	72.35
25	453410	2618750	4000	3.04	12160	.93	113.09	.23	27.97	.65	7.90	4.91	59.71
26	453410	2618770	4000	3.01	12040	.75	90.30	.16	19.26	.39	4.70	3.17	38.17
27	453410	2618790	4000	2.99	11960	.64	76.54	.09	10.76	.20	2.39	1.73	20.69
28	453410	2618810	4000	2.99	11960	.61	72.96	.04	4.78	.04	.48	.47	5.62
29	453410	2618830	4000	3.00	12000	.67	80.40	.03	3.60	.02	.24	.24	2.88
30	453410	2618850	4000	2.98	11920	.57	67.94	.04	4.77	.02	.24	.26	3.10
31	453410	2618870	4000	2.97	11880	.47	55.84	.05	5.94	.02	.24	.25	2.97
32	453430	2618690	3000	3.12	9360	1.48	138.53	.17	15.91	1.96	18.35	10.44	97.72
33	453430	2618710	4000	3.10	12400	1.38	171.12	.19	23.56	1.29	16.00	8.13	100.81
34	453430	2618730	3720	3.08	11458	1.21	138.64	.20	22.92	.91	10.43	6.99	80.09
35	453430	2618750	3600	3.06	11016	1.10	121.18	.19	20.93	.78	8.59	5.93	65.32
36	453430	2618770	4000	3.04	12160	.91	110.66	.14	17.02	.44	5.35	3.50	42.56
37	453430	2618790	4000	3.01	12040	.77	92.71	.09	10.84	.21	2.53	1.84	22.15
38	453430	2618810	4000	3.00	12000	.69	82.80	.04	4.80	.06	.72	.58	6.96
39	453430	2618830	4000	3.00	12000	.65	78.00	.03	3.60	.02	.24	.22	2.64
40	453450	2618690	4000	3.21	12840	2.13	273.49	.18	23.11	2.60	33.38	13.08	167.95
41	453450	2618710	4000	3.16	12640	1.74	219.94	.18	22.75	1.92	24.27	10.36	130.95
42	453450	2618730	2000	3.12	6240	1.48	92.35	.19	11.86	1.21	7.55	7.61	47.49
43	453450	2618750	2000	3.08	6160	1.23	75.77	.18	11.09	.78	4.80	5.66	34.87
44	453470	2618690	4000	3.27	13080	2.56	334.85	.17	22.24	3.28	42.90	15.67	204.96
45	453470	2618710	2000	3.26	6520	2.63	171.48	.18	11.74	2.28	14.87	12.02	78.37
46	453490	2618670	1000	3.60	3600	5.89	212.04	.22	7.92	3.08	11.09	18.54	66.74
47	453490	2618690	2400	3.56	8544	5.64	481.88	.20	17.09	3.12	26.66	18.65	159.35
48	453510	2618670	3000	3.69	11070	6.69	740.58	.29	32.10	2.64	29.22	17.48	193.50
49	453510	2618690	1600	3.95	6320	8.67	547.94	.23	14.54	3.71	23.45	26.09	164.89
50	453530	2618670	4000	3.64	14560	5.94	864.86	.35	50.96	2.17	31.60	14.50	211.12
51	453530	2618690	2800	3.53	9884	4.30	425.01	.40	39.54	3.18	31.43	18.07	178.60
			173320	532922		7325.84		1007.93		445.61		2764.33	

Hayl As Safil : 580 m
Cut-off grade : 0.35 Cu

No	X (E)	Y (N)	Volume (m3)	S. G. (t/m3)	Tonnage (ton)	Cu		Zn		Au		Ag	
						grade (%)	content (ton)	grade (%)	content (ton)	grade (g/t)	content (kg)	grade (g/t)	content (kg)
1	453350	2618770	3000	2.98	8940	.56	50.06	.30	26.82	.53	4.74	1.66	14.84
2	453350	2618790	4000	2.98	11920	.55	65.56	.13	15.50	.17	2.03	1.20	14.30
3	453370	2618750	1000	3.00	3000	.69	20.70	.55	16.50	1.08	3.24	2.35	7.05
4	453370	2618770	4000	3.00	12000	.67	80.40	.27	32.40	.49	5.88	1.66	19.92
5	453370	2618790	4000	2.98	11920	.56	66.75	.08	9.54	.06	.72	1.11	13.23
6	453370	2618810	4000	2.98	11920	.57	67.94	.07	8.34	.06	.72	.90	10.73
7	453370	2618830	4000	2.98	11920	.54	64.37	.05	5.96	.02	.24	.59	7.03
8	453370	2618850	4000	2.98	11920	.54	64.37	.05	5.96	.03	.36	.41	4.89
9	453390	2618750	3000	3.04	9120	.99	90.29	.42	38.30	.88	8.03	2.25	20.52
10	453390	2618770	4000	3.03	12120	.93	112.72	.22	26.66	.50	6.06	1.75	21.21
11	453390	2618790	4000	3.02	12080	.85	102.68	.10	12.08	.23	2.78	1.30	15.70
12	453390	2618810	4000	3.00	12000	.69	82.80	.05	6.00	.10	1.20	.86	10.32
13	453390	2618830	4000	2.98	11920	.57	67.94	.05	5.96	.06	.72	.54	6.44
14	453390	2618850	4000	2.97	11880	.50	59.40	.04	4.75	.02	.24	.34	4.04
15	453410	2618730	2000	3.11	6220	1.45	90.19	.47	29.23	.88	5.47	2.57	15.99
16	453410	2618750	3200	3.10	9920	1.36	134.91	.32	31.74	.73	7.24	2.25	22.32
17	453410	2618770	4000	3.09	12360	1.34	165.62	.17	21.01	.54	6.67	1.94	23.98
18	453410	2618790	4000	3.08	12320	1.23	151.54	.07	8.62	.35	4.31	1.54	18.97
19	453410	2618810	4000	3.03	12120	.91	110.29	.04	4.85	.19	2.30	.98	11.88
20	453410	2618830	4000	2.97	11880	.47	55.84	.03	3.56	.02	.24	.27	3.21
21	453430	2618710	4000	3.18	12720	1.93	245.50	.50	63.60	.73	9.29	2.74	34.85
22	453430	2618730	4000	3.15	12600	1.75	220.50	.40	50.40	.71	8.95	2.53	31.88
23	453430	2618750	3200	3.15	10080	1.70	171.36	.26	26.21	.63	6.35	2.30	23.18
24	453430	2618770	4000	3.14	12560	1.63	204.73	.10	12.56	.54	6.78	2.04	25.62
25	453430	2618790	1128	3.15	3553	1.73	61.47	.03	1.07	.51	1.81	2.00	7.11
26	453430	2618810	4000	3.06	12240	1.13	138.31	.03	3.67	.27	3.30	1.19	14.57
27	453450	2618690	1500	3.24	4860	2.31	112.27	.52	25.27	.53	2.58	2.81	13.66
28	453450	2618710	4000	3.23	12920	2.25	290.70	.47	60.72	.53	6.85	2.74	35.40
29	453470	2618690	2500	3.25	8125	2.41	195.81	.52	42.25	.47	3.82	2.82	22.91
			100528		307138		3345.02		599.53		112.92		475.75

Hayl As Safil : 570 m
Cut-off grade : 0.35 Cu

No	X (E)	Y (N)	Volume (m3)	S. G. (t/m3)	Tonnage (ton)	Cu		Zn		Au		Ag	
						grade (%)	content (ton)	grade (%)	content (ton)	grade (g/t)	content (kg)	grade (g/t)	content (kg)
1	453350	2618770	668	2.98	1991	.50	9.95	.16	3.19	.14	.28	1.25	2.49
2	453350	2618790	4000	2.98	11920	.52	61.98	.15	17.88	.13	1.55	1.20	14.30
3	453370	2618770	2000	2.98	5960	.50	29.80	.16	9.54	.16	.95	1.25	7.45
4	453370	2618790	4000	2.98	11920	.52	61.98	.16	19.07	.14	1.67	1.25	14.90
5	453370	2618810	4000	2.98	11920	.52	61.98	.12	14.30	.11	1.31	.96	11.44
6	453370	2618830	4000	2.99	11960	.60	71.76	.09	10.76	.07	.84	.63	7.53
7	453370	2618850	4000	3.01	12040	.74	89.10	.06	7.22	.03	.36	.41	4.94
8	453390	2618770	3332	2.98	9929	.49	48.65	.15	14.89	.19	1.89	1.22	12.11
9	453390	2618790	4000	2.97	11880	.48	57.02	.14	16.63	.17	2.02	1.12	13.31
10	453390	2618810	4000	2.97	11880	.46	54.65	.10	11.88	.12	1.43	.81	9.62
11	453390	2618830	4000	2.97	11880	.49	58.21	.07	8.32	.06	.71	.47	5.58
12	453390	2618850	4000	2.99	11960	.59	70.56	.05	5.98	.03	.36	.30	3.59
13	453410	2618770	4000	2.98	11920	.52	61.98	.14	16.69	.21	2.50	1.13	13.47
14	453410	2618790	4000	2.97	11880	.44	52.27	.13	15.44	.23	2.73	1.16	13.78
15	453410	2618810	4000	2.97	11880	.44	52.27	.09	10.69	.13	1.54	.71	8.43
16	453410	2618830	4000	2.95	11800	.35	41.30	.03	3.54	.03	.35	.14	1.65
17	453430	2618770	4000	2.98	11920	.57	67.94	.14	16.69	.21	2.50	1.04	12.40
18	453430	2618790	4000	2.98	11920	.56	66.75	.13	15.50	.20	2.38	.98	11.68
19	453430	2618810	4000	2.97	11880	.45	53.46	.09	10.69	.14	1.66	.67	7.96
20	453450	2618690	500	3.30	1650	2.75	45.38	.54	8.91	.34	.56	2.57	4.24
21	453450	2618710	4000	3.27	13080	2.51	328.31	.50	65.40	.32	4.19	2.41	31.52
22	453470	2618690	1472	3.32	4887	2.89	141.24	.57	27.86	.35	1.71	2.68	13.10
			75972		228057		1586.54		331.07		33.49		225.49

Hayl As Safil : 560 m
 Cut-off grade : 0.35 Cu

No	X (E)	Y (N)	Volume (m3)	S. G. (t/m3)	Tonnage (ton)	Cu		Zn		Au		Ag	
						grade (%)	content (ton)	grade (%)	content (ton)	grade (g/t)	content (kg)	grade (g/t)	content (kg)
1	453370	2618790	4000	2.97	11880	.43	51.08	.16	19.01	.15	1.78	1.33	15.80
2	453390	2618790	4000	3.00	12000	.68	81.60	.11	13.20	.20	2.40	2.01	24.12
3	453390	2618810	4000	2.99	11960	.57	68.17	.10	11.96	.17	2.03	1.40	16.74
4	453390	2618830	4000	2.99	11960	.56	66.98	.10	11.96	.13	1.55	.76	9.09
5	453410	2618790	1332	3.04	4049	.98	39.68	.07	2.83	.26	1.05	3.00	12.15
6	453410	2618810	4000	2.99	11960	.60	71.76	.07	8.37	.19	2.27	1.52	18.18
			21332		63809		379.27		67.33		11.08		96.08

Hayl As Safil : 550 m
 Cut-off grade : 0.35 Cu

No	X (E)	Y (N)	Volume (m3)	S. G. (t/m3)	Tonnage (ton)	Cu		Zn		Au		Ag	
						grade (%)	content (ton)	grade (%)	content (ton)	grade (g/t)	content (kg)	grade (g/t)	content (kg)
1	453390	2618790	3000	2.96	8880	.38	33.74	.15	13.32	.10	.89	.90	7.99
2	453390	2618810	4000	2.96	11840	.38	44.99	.13	15.39	.08	.95	.63	7.46
3	453390	2618830	3332	2.96	9863	.42	41.42	.12	11.84	.06	.59	.39	3.85
4	453410	2618790	4000	2.95	11800	.36	42.48	.11	12.98	.09	1.06	.63	7.43
5	453410	2618810	4000	2.95	11800	.35	41.30	.08	9.44	.07	.83	.39	4.60
			18332		54183		203.93		62.97		4.32		31.33

Appendix 4

**List of minable ore reserves for each ore block
in the Rakah deposit**

Rakah : 650 m
Cut-off grade : 0.35 Cu

No	X (E)	Y (N)	Volume (m3)	S. G. (t/m3)	Tonnage (ton)	Cu		Zn		Au		Ag	
						grade (%)	content (ton)	grade (%)	content (ton)	grade (g/t)	content (kg)	grade (g/t)	content (kg)
1	457270	2618690	2000	2.86	5719	.77	44.04	.12	6.86	1.32	7.55	6.00	34.31
2	457270	2618710	2800	2.88	8060	.88	70.93	.08	6.45	1.25	10.07	4.86	39.17
3	457270	2618730	152	2.82	429	.49	2.10	.04	.17	.62	.27	4.95	2.12
4	457290	2618670	2000	2.85	5700	.67	38.19	.19	10.83	.92	5.24	4.47	25.48
5	457290	2618690	4000	2.88	11514	.90	103.63	.22	25.33	.92	10.59	3.52	40.53
6	457290	2618710	4000	2.88	11514	.90	103.63	.12	13.82	.99	11.40	2.62	30.17
7	457290	2618730	628	2.94	1849	1.35	24.97	.02	.37	1.83	3.38	2.18	4.03
8	457310	2618670	3000	2.89	8664	.92	79.71	.27	23.39	.86	7.45	3.11	26.95
9	457310	2618690	3204	2.93	9375	1.21	113.44	.40	37.50	.84	7.87	2.44	22.87
10	457310	2618710	4000	2.83	11324	.55	62.28	.02	2.26	.62	7.02	2.06	23.33
11	457310	2618730	400	2.89	1155	.97	11.21	.02	.23	1.28	1.48	2.62	3.03
12	457330	2618670	3000	2.94	8807	1.25	110.08	.31	27.30	.82	7.22	2.49	21.93
13	457330	2618690	4000	2.90	11590	1.00	115.90	.25	28.97	.77	8.92	2.30	26.66
14	457330	2618710	2800	2.87	8033	.82	65.87	.10	8.03	.81	6.51	2.30	18.48
15	457350	2618670	3000	3.01	9035	1.88	169.85	.23	20.78	.84	7.59	2.25	20.33
16	457350	2618690	2400	2.97	7136	1.59	113.47	.19	13.56	.82	5.85	2.27	16.20
17	457350	2618710	1000	2.94	2945	1.38	40.64	.13	3.83	.97	2.86	2.53	7.45
18	457370	2618630	1000	3.15	3154	2.91	91.78	.15	4.73	.96	3.03	2.48	7.82
19	457370	2618650	2400	3.15	7570	2.91	220.28	.17	12.87	.94	7.12	2.34	17.71
20	457370	2618670	2000	3.13	6251	2.65	165.65	.18	11.25	.91	5.69	2.24	14.00
21	457390	2618570	1600	2.84	4545	.65	29.54	.06	2.73	.96	4.36	2.46	11.18
22	457390	2618630	2800	3.18	8911	3.13	278.91	.13	11.58	.98	8.73	2.45	21.83
23	457390	2618650	1600	3.24	5183	3.53	182.97	.15	7.77	.97	5.03	2.38	12.34
24	457410	2618630	2400	3.17	7615	3.07	233.79	.13	9.90	.97	7.39	2.45	18.66
			56184		166078		2472.86		290.51		152.62		466.58

Rakah : 640 m
Cut-off grade : 0.35 Cu

No	X (E)	Y (N)	Volume (m3)	S. G. (t/m3)	Tonnage (ton)	Cu		Zn		Au		Ag	
						grade (%)	content (ton)	grade (%)	content (ton)	grade (g/t)	content (kg)	grade (g/t)	content (kg)
1	457270	2618690	1000	2.84	2841	.66	18.75	.28	7.95	.83	2.36	6.05	17.19
2	457270	2618710	1136	2.83	3216	.56	18.01	.13	4.18	.46	1.48	6.25	20.10
3	457270	2618730	1688	2.88	4859	.89	43.24	.06	2.92	.62	3.01	6.44	31.29
4	457290	2618670	500	2.84	1420	.65	9.23	.55	7.81	.84	1.19	4.45	6.32
5	457290	2618690	4000	2.84	11362	.60	68.17	.47	53.40	.74	8.41	4.45	50.56
6	457290	2618710	4000	2.83	11324	.57	64.55	.28	31.71	.71	8.04	4.94	55.94
7	457310	2618670	800	2.85	2280	.70	15.96	.61	13.91	.84	1.92	3.26	7.43
8	457310	2618690	4000	2.85	11400	.69	78.66	.72	82.08	.99	11.29	3.09	35.23
9	457310	2618710	4000	2.86	11438	.76	86.93	.40	45.75	.71	8.12	3.66	41.86
10	457310	2618730	2800	2.89	8086	.96	77.63	.18	14.56	.73	5.90	5.32	43.02
11	457310	2618750	36	2.99	108	1.68	1.81	.11	.12	.31	.03	7.94	.86
12	457330	2618670	1600	2.89	4621	.94	43.44	.49	22.64	.69	3.19	2.38	11.00
13	457330	2618690	4000	2.84	11362	.65	73.85	.44	49.99	.61	6.93	1.90	21.59
14	457330	2618710	4000	2.85	11400	.71	80.94	.31	35.34	.50	5.70	2.14	24.40
15	457330	2618730	800	2.90	2318	1.01	23.41	.20	4.64	.38	.88	3.40	7.88
16	457350	2618670	2400	2.96	7114	1.51	107.42	.29	20.63	.49	3.49	1.93	13.73
17	457350	2618690	4000	2.84	11362	.61	69.31	.25	28.40	.32	3.64	1.38	15.68
18	457350	2618710	2120	2.82	5982	.48	28.71	.16	9.57	.17	1.02	1.08	6.46
19	457350	2618730	800	2.87	2295	.79	18.13	.17	3.90	.40	.92	2.35	5.39
20	457370	2618630	1000	3.49	3487	4.73	164.91	.21	7.32	.78	2.72	3.37	11.75
21	457370	2618650	2000	3.23	6460	3.42	220.93	.16	10.34	.65	4.20	2.92	18.86
22	457370	2618670	4000	2.94	11780	1.39	163.74	.14	16.49	.49	5.77	2.24	26.39
23	457370	2618690	4000	2.83	11324	.54	61.15	.18	20.38	.22	2.49	1.37	15.51
24	457370	2618710	2000	2.82	5643	.48	27.09	.20	11.29	.20	1.13	1.45	8.18
25	457370	2618730	500	2.84	1420	.59	8.38	.18	2.56	.33	.47	2.09	2.97
26	457390	2618630	1000	3.64	3639	5.71	207.76	.20	7.28	.80	2.91	3.67	13.35
27	457390	2618650	4000	3.26	13034	3.60	469.22	.19	24.76	.72	9.38	3.29	42.88
28	457390	2618670	924	2.88	2660	.89	23.67	.07	1.86	.50	1.33	2.53	6.73
29	457390	2618690	1200	2.82	3386	.48	16.25	.23	7.79	.34	1.15	1.99	6.74
30	457410	2618630	3500	3.38	11837	4.53	536.22	.26	30.78	.77	9.11	3.57	42.26

No	X (E)	Y (N)	Volume (m3)	S. G. (t/m3)	Tonnage (ton)	Cu		Zn		Au		Ag	
						grade (%)	content (ton)	grade (%)	content (ton)	grade (g/t)	content (kg)	grade (g/t)	content (kg)
31	457410	2618650	4000	3.27	13072	3.72	486.28	.35	45.75	.69	9.02	3.33	43.53
32	457410	2618670	2800	2.98	8352	1.66	138.65	.29	24.22	.56	4.68	2.85	23.80
33	457430	2618630	2500	3.22	8051	3.39	272.94	.28	22.54	.70	5.64	3.48	28.02
34	457430	2618650	4000	3.14	12578	2.82	354.70	.32	40.25	.64	8.05	3.25	40.88
35	457430	2618670	2200	3.01	6625	1.84	121.91	.34	22.53	.49	3.25	2.99	19.81
36	457450	2618630	1000	3.09	3087	2.37	73.17	.26	8.03	.67	2.07	3.36	10.37
37	457450	2618650	4000	3.06	12236	2.23	272.86	.29	35.48	.59	7.22	3.22	39.40
38	457450	2618670	56	3.02	169	1.92	3.25	.28	.47	.47	.08	3.07	.52
39	457470	2618650	3400	3.02	10271	1.94	199.27	.28	28.76	.49	5.03	3.14	32.25
40	457470	2618670	400	3.01	1205	1.82	21.92	.28	3.37	.56	.67	3.10	3.73
			92160		275104	4772.42		811.75		163.89		853.86	

Rakah : 630 m
Cut-off grade : 0.35 Cu

No	X (E)	Y (N)	Volume (m3)	S. G. (t/m3)	Tonnage (ton)	Cu		Zn		Au		Ag	
						grade (%)	content (ton)	grade (%)	content (ton)	grade (g/t)	content (kg)	grade (g/t)	content (kg)
1	457250	2618730	500	3.00	1501	1.80	27.02	.09	1.35	1.78	2.67	3.65	5.48
2	457250	2618750	1600	3.04	4864	2.01	97.77	.11	5.35	2.29	11.14	4.22	20.53
3	457250	2618770	4000	3.03	12122	1.96	237.59	.11	13.33	2.87	34.79	4.38	53.09
4	457270	2618710	1000	2.92	2916	1.14	33.25	.08	2.33	1.15	3.35	3.01	8.78
5	457270	2618730	3500	2.97	10407	1.59	165.48	.08	8.33	1.31	13.63	3.28	34.14
6	457270	2618750	4000	3.13	12540	2.71	338.83	.08	10.03	1.82	22.82	3.90	48.91
7	457270	2618770	4000	3.00	12008	1.72	206.54	.23	27.62	2.73	32.78	4.90	58.84
8	457290	2618690	1600	2.87	4590	.83	38.10	.10	4.59	1.03	4.73	2.46	11.29
9	457290	2618710	4000	2.88	11514	.90	103.63	.09	10.36	.85	9.79	2.66	30.63
10	457290	2618730	4000	2.82	11286	.49	55.30	.08	9.03	.59	6.66	2.80	31.60
11	457290	2618750	4000	2.97	11894	1.55	184.36	.15	17.84	1.20	14.27	3.69	43.89
12	457290	2618770	4000	2.96	11856	1.47	174.28	.29	34.38	1.88	22.29	4.98	59.04
13	457290	2618790	1348	2.86	3855	.71	27.37	.48	18.50	1.77	6.82	5.60	21.59
14	457310	2618670	668	2.85	1904	.66	12.57	.11	2.09	.99	1.88	2.00	3.81
15	457310	2618690	4000	2.85	11400	.65	74.10	.10	11.40	1.13	12.88	2.10	23.94
16	457310	2618710	4000	2.92	11666	1.17	136.49	.12	14.00	.62	7.23	2.28	26.60
17	457310	2618730	4000	2.91	11628	1.10	127.91	.12	13.95	.62	7.21	2.73	31.74
18	457310	2618750	2400	2.98	7159	1.62	115.98	.15	10.74	.70	5.01	3.38	24.20
19	457310	2618770	2000	2.94	5871	1.25	73.39	.29	17.03	1.14	6.69	4.21	24.72
20	457310	2618790	668	2.88	1923	.88	16.92	.43	8.27	1.63	3.13	5.02	9.65
21	457330	2618670	2000	2.85	5700	.64	36.48	.13	7.41	.73	4.16	1.70	9.69
22	457330	2618690	4000	2.86	11438	.76	86.93	.14	16.01	.64	7.32	1.69	19.33
23	457330	2618710	4000	2.88	11514	.86	99.02	.14	16.12	.49	5.64	1.81	20.84
24	457330	2618730	2800	2.90	8113	1.03	83.56	.15	12.17	.48	3.89	2.23	18.09
25	457350	2618670	3332	2.85	9496	.67	63.62	.16	15.19	.45	4.27	1.49	14.15
26	457350	2618690	4000	2.85	11400	.69	78.66	.16	18.24	.30	3.42	1.43	16.30
27	457350	2618710	4000	2.84	11362	.59	67.04	.18	20.45	.16	1.82	1.37	15.57
28	457350	2618730	2000	2.83	5662	.57	32.27	.16	9.06	.36	2.04	1.80	10.19
29	457370	2618650	2000	2.83	5662	.59	33.41	.17	9.63	.39	2.21	1.37	7.76
30	457370	2618670	4000	2.87	11476	.88	100.99	.17	19.51	.29	3.33	1.35	15.49
31	457370	2618690	4000	2.86	11438	.69	78.92	.16	18.30	.17	1.94	1.35	15.44
32	457370	2618710	4000	2.81	11248	.41	46.12	.15	16.87	.19	2.14	1.46	16.42
33	457390	2618650	2400	2.88	6908	1.59	109.84	.16	11.05	.28	1.93	1.27	8.77
34	457390	2618670	4000	2.91	11628	1.11	129.07	.17	19.77	.22	2.56	1.31	15.23
35	457390	2618690	4000	2.85	11400	.72	82.08	.12	13.68	.16	1.82	1.38	15.73
36	457410	2618630	600	2.86	1716	1.73	29.68	.14	2.40	.23	.39	1.11	1.90
37	457410	2618650	4000	3.02	12084	4.35	525.65	.14	16.92	.21	2.54	1.20	14.50
38	457410	2618670	4000	2.92	11666	1.88	219.32	.13	15.17	.16	1.87	1.27	14.82
39	457410	2618690	1440	2.82	4063	.46	18.69	.05	2.03	.16	.65	1.36	5.53
40	457410	2618710	1200	2.81	3374	.35	11.81	.10	3.37	.22	.74	1.56	5.26

No	X (E)	Y (N)	Volume (m3)	S. G. (t/m3)	Tonnage (ton)	Cu		Zn		Au		Ag	
						grade (%)	content (ton)	grade (%)	content (ton)	grade (g/t)	content (kg)	grade (g/t)	content (kg)
41	457430	2618630	500	2.85	1425	1.64	23.37	.12	1.71	.17	.24	1.04	1.48
42	457430	2618650	4000	2.93	11704	2.28	266.85	.15	17.56	.16	1.87	1.14	13.34
43	457430	2618670	4000	2.92	11666	1.80	209.99	.14	16.33	.13	1.52	1.23	14.35
44	457430	2618690	4000	2.85	11400	.77	87.78	.12	13.68	.13	1.48	1.33	15.16
45	457450	2618650	3500	2.88	10075	1.29	129.96	.16	16.12	.10	1.01	1.08	10.88
46	457450	2618670	4000	2.92	11666	1.17	136.49	.22	25.67	.08	.93	1.16	13.53
47	457450	2618690	1600	2.86	4575	.78	35.69	.15	6.86	.07	.32	1.25	5.72
48	457470	2618650	2500	2.84	7101	.71	50.42	.15	10.65	.01	.07	.99	7.03
49	457470	2618670	4000	2.87	11476	.82	94.10	.16	18.36	.00	.00	1.05	12.05
50	457470	2618690	1200	2.84	3409	.61	20.79	.13	4.43	.00	.00	1.15	3.92
51	457490	2618670	2668	2.81	7502	.43	32.26	.11	8.25	.00	.00	.85	6.38
			149024		432251	5268.74		643.49		291.89		937.32	

Rakah : 620 m
Cut-off grade : 0.35 Cu

No	X (E)	Y (N)	Volume (m3)	S. G. (t/m3)	Tonnage (ton)	Cu		Zn		Au		Ag	
						grade (%)	content (ton)	grade (%)	content (ton)	grade (g/t)	content (kg)	grade (g/t)	content (kg)
1	457270	2618750	3000	2.82	8465	.48	40.63	.23	19.47	.63	5.33	6.65	56.29
2	457270	2618770	600	2.88	1727	.87	15.03	.20	3.45	1.41	2.44	6.38	11.02
3	457270	2618790	4000	2.93	11704	1.22	142.79	.20	23.41	1.85	21.65	6.14	71.86
4	457290	2618750	4000	2.85	11400	.66	75.24	.16	18.24	.58	6.61	4.49	51.19
5	457290	2618770	4000	2.89	11552	.94	108.59	.21	24.26	.76	8.78	4.00	46.21
6	457290	2618790	4000	2.94	11742	1.29	151.47	.26	30.53	1.10	12.92	3.49	40.98
7	457310	2618730	4000	2.82	11286	.47	53.04	.12	13.54	.47	5.30	3.33	37.58
8	457310	2618750	4000	2.92	11666	1.13	131.83	.13	15.17	.31	3.62	3.38	39.43
9	457310	2618770	3500	2.85	9975	.69	68.83	.20	19.95	.59	5.89	3.26	32.52
10	457310	2618790	2500	2.84	7101	.63	44.74	.24	17.04	.77	5.47	3.37	23.93
11	457330	2618690	1500	2.84	4261	.62	26.42	.12	5.11	.44	1.87	2.28	9.71
12	457330	2618710	4000	2.84	11362	.63	71.58	.14	15.91	.46	5.23	2.36	26.81
13	457330	2618730	4000	2.83	11324	.57	64.55	.15	16.99	.44	4.98	2.52	28.54
14	457350	2618670	332	2.91	965	1.11	10.71	.20	1.93	.34	.33	1.79	1.73
15	457350	2618690	2000	2.91	5814	1.11	64.54	.17	9.88	.43	2.50	1.98	11.51
16	457350	2618710	4000	2.92	11666	1.17	136.49	.18	21.00	.44	5.13	2.14	24.97
17	457350	2618730	4000	2.83	11324	.56	63.41	.17	19.25	.53	6.00	2.28	25.82
18	457370	2618670	2668	2.98	7959	1.64	130.52	.24	19.10	.28	2.23	1.45	11.54
19	457370	2618690	4000	2.96	11856	1.52	180.21	.20	23.71	.37	4.39	1.76	20.87
20	457370	2618710	4000	2.89	11552	.97	112.05	.17	19.64	.52	6.01	2.00	23.10
21	457370	2618730	3332	2.82	9401	.48	45.13	.16	15.04	.69	6.49	2.16	20.31
22	457390	2618650	1000	2.89	2888	.93	26.86	.24	6.93	.17	.49	.99	2.86
23	457390	2618670	4000	3.08	12312	2.32	285.64	.26	32.01	.24	2.95	1.28	15.76
24	457390	2618690	4000	2.95	11818	1.45	171.36	.19	22.45	.32	3.78	1.51	17.85
25	457390	2618710	4000	2.88	11514	.89	102.47	.15	17.27	.46	5.30	1.74	20.03
26	457390	2618730	2000	2.83	5662	.55	31.14	.15	8.49	.60	3.40	1.93	10.93
27	457410	2618670	4000	2.90	11590	1.02	118.22	.18	20.86	.21	2.43	1.22	14.14
28	457410	2618690	4000	2.90	11590	1.02	118.22	.13	15.07	.24	2.78	1.36	15.76
29	457410	2618710	4000	2.87	11476	.81	92.96	.13	14.92	.36	4.13	1.54	17.67
30	457410	2618730	668	2.83	1891	.56	10.59	.13	2.46	.49	.93	1.78	3.37
31	457430	2618650	1000	2.81	2812	.43	12.09	.21	5.91	.17	.48	1.02	2.87
32	457430	2618670	4000	2.84	11362	.64	72.72	.20	22.72	.22	2.50	1.25	14.20
33	457430	2618690	4000	2.86	11438	.78	89.22	.16	18.30	.27	3.09	1.38	15.78
34	457430	2618710	2800	2.83	7927	.58	45.98	.10	7.93	.32	2.54	1.49	11.81
35	457450	2618650	1000	2.83	2831	.57	16.14	.25	7.08	.18	.51	1.07	3.03
36	457450	2618670	4000	2.86	11438	.76	86.93	.30	34.31	.22	2.52	1.23	14.07
37	457450	2618690	4000	2.85	11400	.67	76.38	.18	20.52	.27	3.08	1.39	15.85
38	457450	2618710	2000	2.84	5681	.61	34.65	.12	6.82	.34	1.93	1.49	8.46
39	457470	2618650	600	2.83	1699	.57	9.68	.24	4.08	.19	.32	1.12	1.90
40	457470	2618670	4000	2.84	11362	.63	71.58	.22	25.00	.23	2.61	1.23	13.98

No	X (E)	Y (N)	Volume (m3)	S. G. (t/m3)	Tonnage (ton)	Cu		Zn		Au		Ag	
						grade (%)	content (ton)	grade (%)	content (ton)	grade (g/t)	content (kg)	grade (g/t)	content (kg)
41	457470	2618690	4000	2.84	11362	.62	70.44	.15	17.04	.28	3.18	1.33	15.11
42	457470	2618710	1200	2.83	3397	.57	19.36	.08	2.72	.34	1.16	1.47	4.99
43	457490	2618670	1000	2.81	2812	.43	12.09	.15	4.22	.23	.65	1.18	3.32
44	457490	2618690	2584	2.81	7266	.40	29.06	.09	6.54	.28	2.03	1.30	9.45
45	457490	2618710	420	2.83	1189	.53	6.30	.04	.48	.33	.39	1.38	1.64
			131704		378819		3347.88		676.75		176.35		870.75

Rakah : 610 m
Cut-off grade : 0.35 Cu

No	X (E)	Y (N)	Volume (m3)	S. G. (t/m3)	Tonnage (ton)	Cu		Zn		Au		Ag	
						grade (%)	content (ton)	grade (%)	content (ton)	grade (g/t)	content (kg)	grade (g/t)	content (kg)
1	457290	2618750	4000	3.06	12236	5.00	611.80	.98	119.91	6.06	74.15	15.29	187.09
2	457290	2618770	1200	2.81	3374	.39	13.16	.32	10.80	1.92	6.48	10.86	36.65
3	457290	2618790	1300	2.83	3680	.55	20.24	.33	12.14	.69	2.54	7.97	29.33
4	457310	2618770	4000	2.81	11248	.51	57.36	.22	24.75	1.42	15.97	5.79	65.13
5	457310	2618790	4000	2.81	11248	.37	41.62	.28	31.49	.76	8.55	4.19	47.13
6	457330	2618710	2000	3.00	6004	3.39	203.54	.73	43.83	3.18	19.09	6.95	41.73
7	457330	2618730	4000	2.94	11780	2.62	308.64	.53	62.43	3.08	36.28	6.68	78.69
8	457330	2618770	4000	2.81	11248	.41	46.12	.13	14.62	.10	1.12	1.40	15.75
9	457330	2618790	4000	2.81	11248	.38	42.74	.26	29.24	.69	7.76	2.63	29.58
10	457350	2618690	800	2.92	2333	1.46	34.06	.42	9.80	1.03	2.40	3.01	7.02
11	457350	2618710	4000	2.87	11476	.82	94.10	.42	48.20	.64	7.34	2.19	25.13
12	457350	2618730	4000	2.89	11552	1.15	132.85	.31	35.81	.81	9.36	2.50	28.88
13	457350	2618750	4000	2.84	11362	.72	81.81	.18	20.45	.45	5.11	1.73	19.66
14	457370	2618610	3356	2.93	9820	1.21	118.82	.14	13.75	.54	5.30	1.51	14.83
15	457370	2618630	500	2.93	1463	1.25	18.29	.12	1.76	.55	.80	1.15	1.68
16	457370	2618670	400	2.96	1186	1.47	17.43	.24	2.85	.74	.88	1.91	2.26
17	457370	2618690	4000	2.94	11780	1.32	155.50	.28	32.98	.50	5.89	1.78	20.97
18	457370	2618710	4000	2.92	11666	1.15	134.16	.28	32.66	.55	6.42	1.81	21.12
19	457370	2618730	4000	2.94	11742	1.33	156.17	.23	27.01	.62	7.28	1.59	18.67
20	457370	2618750	1600	2.87	4590	.82	37.64	.19	8.72	.50	2.30	1.28	5.88
21	457390	2618610	4000	2.90	11590	1.05	121.69	.11	12.75	.53	6.14	1.12	12.98
22	457390	2618630	3500	2.93	10241	1.27	130.06	.04	4.10	.57	5.84	.74	7.58
23	457390	2618650	500	2.94	1468	1.28	18.79	.14	2.05	.50	.73	1.05	1.54
24	457390	2618670	800	3.02	2417	1.89	45.68	.23	5.56	.46	1.11	1.38	3.34
25	457390	2618690	4000	2.97	11894	1.57	186.74	.19	22.60	.46	5.47	1.61	19.15
26	457390	2618710	4000	2.94	11742	1.33	156.17	.19	22.31	.50	5.87	1.69	19.84
27	457390	2618730	3800	2.91	11047	1.13	124.83	.20	22.09	.54	5.97	1.34	14.80
28	457390	2618750	332	2.87	953	.84	8.00	.18	1.71	.56	.53	1.03	.98
29	457410	2618630	2000	2.87	5738	.84	48.20	.09	5.16	.54	3.10	.88	5.05
30	457410	2618650	2000	2.86	5719	.74	42.32	.16	9.15	.50	2.86	1.07	6.12
31	457410	2618670	800	2.93	2341	1.26	29.49	.14	3.28	.44	1.03	1.38	3.23
32	457410	2618690	4000	2.98	11932	1.67	199.26	.09	10.74	.40	4.77	1.56	18.61
33	457410	2618710	4000	2.92	11666	1.18	137.66	.13	15.17	.45	5.25	1.60	18.67
34	457410	2618730	2400	2.88	6908	.91	62.87	.16	11.05	.53	3.66	1.41	9.74
35	457430	2618630	500	2.81	1406	.44	6.19	.09	1.27	.51	.72	.98	1.38
36	457430	2618650	1600	2.82	4514	.52	23.47	.09	4.06	.48	2.17	1.15	5.19
37	457430	2618670	800	2.85	2280	.68	15.50	.08	1.82	.43	.98	1.42	3.24
38	457430	2618690	4000	2.87	11476	.84	96.40	.08	9.18	.41	4.71	1.57	18.02
39	457430	2618710	4000	2.84	11362	.65	73.85	.12	13.63	.43	4.89	1.58	17.95
40	457430	2618730	800	2.85	2280	.74	16.87	.13	2.96	.51	1.16	1.42	3.24
41	457450	2618690	2000	2.80	5605	.38	21.30	.06	3.36	.44	2.47	1.54	8.63
42	457450	2618710	3500	2.82	9875	.51	50.36	.09	8.89	.47	4.64	1.55	15.31
			112488		325490		3941.75		776.09		299.09		911.77

Rakah : 600 m
 Cut-off grade : 0.35 Cu

No	X (E)	Y (N)	Volume (m3)	S.G. (t/m3)	Tonnage (ton)	Cu		Zn		Au		Ag	
						grade (%)	content (ton)	grade (%)	content (ton)	grade (g/t)	content (kg)	grade (g/t)	content (kg)
1	457310	2618770	3500	2.87	10042	.84	84.35	.15	15.06	.72	7.23	3.56	35.75
2	457310	2618790	2500	2.89	7220	.94	67.87	.22	15.88	.98	7.08	2.62	18.92
3	457330	2618730	2000	2.84	5681	.62	35.22	.25	14.20	.51	2.90	2.04	11.59
4	457330	2618750	4000	2.84	11362	.62	70.44	.08	9.09	.31	3.52	2.26	25.68
5	457330	2618770	4000	3.01	12046	1.82	219.24	.19	22.89	.39	4.70	2.45	29.51
6	457330	2618790	4000	2.90	11590	.99	114.74	.21	24.34	.74	8.58	2.25	26.08
7	457350	2618710	1000	2.88	2879	.88	25.33	.44	12.67	.67	1.93	1.24	3.57
8	457350	2618730	4000	2.88	11514	.87	100.17	.40	46.06	.50	5.76	1.55	17.85
9	457350	2618750	4000	2.87	11476	.79	90.66	.30	34.43	.39	4.48	2.07	23.76
10	457350	2618790	2000	2.86	5719	.73	41.75	.22	12.58	.66	3.77	2.25	12.87
11	457370	2618690	500	2.85	1425	.72	10.26	.31	4.42	.44	.63	.95	1.35
12	457370	2618710	3500	2.90	10141	1.06	107.50	.45	45.64	.52	5.27	1.18	11.97
13	457370	2618730	4000	2.92	11666	1.18	137.66	.63	73.50	.50	5.83	1.43	16.68
14	457370	2618750	4000	2.86	11438	.77	88.07	.44	50.33	.43	4.92	1.69	19.33
15	457370	2618770	1332	2.83	3771	.51	19.23	.29	10.94	.48	1.81	1.93	7.28
16	457390	2618650	668	2.80	1872	.40	7.49	.10	1.87	.15	.28	.42	.79
17	457390	2618690	1400	2.89	4043	.97	39.22	.20	8.09	.25	1.01	.75	3.03
18	457390	2618710	4000	2.96	11856	1.52	180.21	.33	39.12	.34	4.03	.98	11.62
19	457390	2618730	4000	2.95	11818	1.46	172.54	.47	55.54	.38	4.49	1.22	14.42
20	457390	2618750	2000	2.93	5852	1.22	71.39	.43	25.16	.43	2.52	1.38	8.08
21	457410	2618630	3200	2.81	8998	.46	41.39	.04	3.60	.12	1.08	.33	2.97
22	457410	2618650	2500	2.86	7149	.78	55.76	.05	3.57	.12	.86	.43	3.07
23	457410	2618690	1800	2.97	5352	1.60	85.64	.06	3.21	.10	.54	.60	3.21
24	457410	2618710	2400	3.07	7364	2.24	164.96	.19	13.99	.20	1.47	.79	5.82
25	457410	2618730	4000	3.09	12350	2.38	293.93	.29	35.81	.32	3.95	1.06	13.09
26	457410	2618750	600	3.02	1813	1.93	34.98	.30	5.44	.41	.74	1.24	2.25
27	457430	2618650	2800	2.80	7847	.44	34.53	.04	3.14	.10	.78	.45	3.53
28	457430	2618690	1000	2.99	2993	1.75	52.37	.07	2.09	.11	.33	.64	1.92
29	457430	2618710	3180	3.26	10362	3.61	374.07	.11	11.40	.16	1.66	.74	7.67
30	457430	2618730	4000	3.16	12654	2.95	373.29	.16	20.25	.26	3.29	.93	11.77
31	457450	2618710	4000	3.06	12236	2.19	267.97	.09	11.01	.15	1.84	.80	9.79
32	457450	2618730	4000	3.13	12502	2.66	332.55	.12	15.00	.25	3.13	.91	11.38
33	457470	2618710	2000	2.89	5776	1.00	57.76	.09	5.20	.17	.98	.80	4.62
34	457470	2618730	4000	2.94	11780	1.37	161.39	.10	11.78	.24	2.83	.88	10.37
			95880		282587		4013.93		667.30		104.22		391.59

Rakah : 590 m
 Cut-off grade : 0.35 Cu

No	X (E)	Y (N)	Volume (m3)	S.G. (t/m3)	Tonnage (ton)	Cu		Zn		Au		Ag	
						grade (%)	content (ton)	grade (%)	content (ton)	grade (g/t)	content (kg)	grade (g/t)	content (kg)
1	457330	2618730	1600	2.84	4545	.66	30.00	.18	8.18	.79	3.59	1.67	7.59
2	457330	2618770	2920	2.83	8267	.53	43.81	.07	5.79	.20	1.65	1.60	13.23
3	457350	2618710	480	2.88	1382	.92	12.71	.20	2.76	.44	.61	1.24	1.71
4	457350	2618730	4000	2.88	11514	.87	100.17	.27	31.09	.36	4.15	1.25	14.39
5	457350	2618750	4000	2.88	11514	.88	101.32	.21	24.18	.22	2.53	1.43	16.47
6	457350	2618770	4000	2.93	11704	1.20	140.45	.11	12.87	.18	2.11	1.72	20.13
7	457370	2618710	1200	2.89	3466	.96	33.27	.33	11.44	.40	1.39	1.20	4.16
8	457370	2618730	4000	2.94	11780	1.38	162.56	.45	53.01	.32	3.77	1.25	14.73
9	457370	2618750	4000	2.92	11666	1.18	137.66	.29	33.83	.20	2.33	1.32	15.40
10	457390	2618710	1200	2.88	3454	.89	30.74	.35	12.09	.31	1.07	1.09	3.77
11	457390	2618730	4000	2.92	11666	1.15	134.16	.37	43.16	.26	3.03	1.26	14.70
12	457410	2618650	4000	2.85	11400	.66	75.24	.03	3.42	.23	2.62	.55	6.27
13	457410	2618670	2500	2.81	7030	.41	28.82	.21	14.76	.26	1.83	.74	5.20
14	457410	2618710	800	2.86	2288	.74	16.93	.30	6.86	.25	.57	1.08	2.47
15	457410	2618730	4000	2.88	11514	.90	103.63	.31	35.69	.23	2.65	1.22	14.05
16	457430	2618650	4000	2.82	11286	.46	51.92	.12	13.54	.23	2.60	.63	7.11
17	457430	2618670	3500	2.81	9842	.45	44.29	.17	16.73	.24	2.36	.78	7.68
18	457430	2618710	500	2.84	1420	.61	8.66	.24	3.41	.21	.30	1.06	1.51
19	457450	2618650	2400	2.80	6726	.37	24.89	.16	10.76	.22	1.48	.71	4.78
20	457450	2618690	600	2.80	1682	.40	6.73	.19	3.19	.21	.35	.97	1.63
21	457470	2618690	1200	2.80	3363	.37	12.44	.14	4.71	.21	.71	1.05	3.53
			54900		157509		1300.40		351.47		41.70		180.51

Rakah : 580 m
 Cut-off grade : 0.35 Cu

No	X (E)	Y (N)	Volume (m3)	S. G. (t/m3)	Tonnage (ton)	Cu		Zn		Au		Ag	
						grade (%)	content (ton)	grade (%)	content (ton)	grade (g/t)	content (kg)	grade (g/t)	content (kg)
1	457370	2618690	2000	2.81	5624	.37	20.81	.20	11.25	2.16	12.15	1.25	7.03
2	457390	2618730	4000	2.82	11286	.45	50.79	.13	14.67	1.21	13.66	1.25	14.11
3	457410	2618730	1600	2.80	4484	.36	16.14	.14	6.28	.71	3.18	1.25	5.61
			7600		21394		87.74		32.20		28.99		26.75

Rakah : 570 m
 Cut-off grade : 0.35 Cu

No	X (E)	Y (N)	Volume (m3)	S. G. (t/m3)	Tonnage (ton)	Cu		Zn		Au		Ag	
						grade (%)	content (ton)	grade (%)	content (ton)	grade (g/t)	content (kg)	grade (g/t)	content (kg)
1	457390	2618690	2000	2.80	5605	.39	21.86	.19	10.65	.53	2.97	1.50	8.41
			2000		5605		21.86		10.65		2.97		8.41

Rakah : 560 m
 Cut-off grade : 0.35 Cu

No	X (E)	Y (N)	Volume (m3)	S. G. (t/m3)	Tonnage (ton)	Cu		Zn		Au		Ag	
						grade (%)	content (ton)	grade (%)	content (ton)	grade (g/t)	content (kg)	grade (g/t)	content (kg)
1	457390	2618690	4000	2.87	11476	.86	98.69	.12	13.77	.52	5.97	.98	11.25
2	457390	2618710	4000	2.87	11476	.84	96.40	.09	10.33	.56	6.43	.93	10.67
3	457410	2618690	3480	2.94	10216	1.33	135.87	.05	5.11	.53	5.41	1.01	10.32
4	457410	2618710	4000	2.87	11476	.82	94.10	.08	9.18	.66	7.57	1.02	11.71
5	457430	2618690	4000	2.86	11438	.78	89.22	.06	6.86	.63	7.21	1.05	12.01
6	457450	2618690	4000	2.85	11400	.69	78.66	.06	6.84	.78	8.89	1.11	12.65
7	457470	2618690	4000	2.88	11514	.90	103.63	.06	6.91	.91	10.48	1.17	13.47
			27480		78996		696.57		59.00		51.96		82.08

Appendix 5

X-ray diffraction pattern of head samples

Appendix 6

Details and results of flotation tests

Table 1 Flotation Test Results of Hayl as Safil Ore
- Effect of feed size on copper selective flotation -

TEST No.	OPER ATION	CONDITIONS				PROD UCITS	WEIGHT %	ASSAY			DISTRIBUTION						
		Time min.	P. D. Size %	Temp °C	Lime g/T			KAX g/T	AF65 g/T	PH Intial	PH Final	Cu %	Fe %	S %	Cu %	Fe %	S %
1	GRINDING	8	60	25	2000	30	27.9	12.1	11.7	C Head	100.00	1.14	15.73	14.33	100.00	100.00	100.00
	ROUGHER	10	35	50		5	9.3	11.7	11.6	C-1	25.99	4.02	36.93	42.22	91.34	61.03	76.56
	SCAVENGER	5								C-2 Tail	5.34 68.67	0.57 0.10	34.67 6.23	36.93 2.02	2.66 6.00	11.77 27.20	13.78 9.68
2	GRINDING	11	60	25	2000	30	27.9	12.0	11.8	C Head	100.00	1.16	16.10	14.58	100.00	100.00	100.00
	ROUGHER	10	35	60		5	9.3	11.8	11.6	C-1	16.03	6.58	36.68	40.65	90.61	36.52	44.69
	SCAVENGER	5								C-2 Tail	1.31 82.66	1.40 0.11	31.65 11.86	31.75 9.25	1.58 7.81	2.58 60.90	2.86 52.45
3	GRINDING	13	60	26	2000	30	27.9	12.1	11.8	C Head	100.00	1.16	16.19	14.52	100.00	100.00	100.00
	ROUGHER	10	35	70		5	9.3	11.8	11.6	C-1	12.45	8.37	35.04	38.47	89.82	26.95	32.38
	SCAVENGER	5								C-2 Tail	1.50 86.05	1.56 0.11	33.41 13.16	33.77 10.72	2.02 8.16	3.10 69.95	3.50 63.52
4	GRINDING	16	60	25	2000	30	27.9	12.0	11.6	C Head	100.00	1.16	16.03	14.31	100.00	100.00	100.00
	ROUGHER	10	35	80		5	9.3	11.6	11.3	C-1	11.11	9.30	34.16	38.26	89.42	23.68	29.70
	SCAVENGER	5								C-2 Tail	1.86 87.03	1.43 0.11	34.79 13.31	35.73 10.80	2.30 8.29	4.03 72.29	4.64 65.67

Table 2 Flotation Test Results of Hail as Safil Ore
 - Effect of KAX on copper selective flotation varying pH value -

TEST No.	OPERATION	CONDITIONS										PROD UCIS	WEIGHT %	ASSAY			DISTRIBUTION		
		Time min.	P.D. %	Size %	Temp °C	Lime g/T	KAX g/T	AF65 g/T	PH		Cu %			Fe %	S %	Cu %	Fe %	S %	
									Initial	Final									
5	GRINDING	16	60	80	27	860	30	27.9	8.6	8.2	C. Head	100.00	1.16	15.81	14.66	100.00	100.00	100.00	
	ROUGHER	10	35	80	27	860	5	27.9	8.2	8.1	C-1	15.34	6.07	35.92	41.31	80.14	34.87	43.24	
	SCAVENGER	5	5	80	27	860	5	27.9	8.2	8.1	Tail	79.38	2.42	36.42	41.30	10.98	12.15	14.85	
6	GRINDING	16	60	80	28	1100	30	27.9	9.8	9.0	C. Head	100.00	1.16	16.57	14.62	100.00	100.00	100.00	
	ROUGHER	10	35	80	28	1100	5	27.9	9.0	8.7	C-1	12.36	7.66	33.91	36.44	81.33	25.30	30.82	
	SCAVENGER	5	5	80	28	1100	5	27.9	9.0	8.7	Tail	83.35	2.54	37.68	40.51	9.36	9.76	11.89	
7	GRINDING	16	60	80	28	1500	30	27.9	10.8	9.7	C. Head	100.00	1.16	16.08	14.67	100.00	100.00	100.00	
	ROUGHER	10	35	80	28	1500	5	27.9	9.7	9.4	C-1	9.93	9.58	32.40	35.90	82.27	20.01	24.31	
	SCAVENGER	5	5	80	28	1500	5	27.9	9.7	9.4	Tail	87.67	2.70	33.03	35.52	5.60	4.92	5.81	
4	GRINDING	16	60	80	25	2000	30	27.9	12.0	11.5	C. Head	100.00	1.16	16.03	14.31	100.00	100.00	100.00	
	ROUGHER	10	35	80	25	2000	5	27.9	11.6	11.3	C-1	11.11	9.30	34.16	38.26	89.42	23.68	29.70	
	SCAVENGER	5	5	80	25	2000	5	27.9	11.6	11.3	Tail	87.03	1.43	34.79	35.73	2.30	4.03	4.54	

Table 5 Flotation Test Results of Hayl as Safil Ore
 - Effect of AP404 on copper selective flotation varying pH value -

TEST No.	OPER ATION	CONDITIONS										PROD UCIS	WEIGHT %	ASSAY			DISTRIBUTION		
		Time min.	P.D. %	Size %	Temp °C	Lime g/T	AP404 g/T	AF65 g/T	pH		Cu %			Fe %	S %	Cu %	Fe %	S %	
									Initial	Final									
16	GRINDING	16	60	80	28	740	54.1	27.9	8.1	7.9	C. Head	100.00	1.15	15.94	14.89	100.00	100.00	100.00	
	ROUGHER	10	35	80	28	740	54.1	27.9	8.1	7.9	C-1	8.35	9.12	33.83	39.03	66.13	17.71	21.88	
	SCAVENGER	5			28	740	7.7	9.3	7.9	7.8	C-2	2.01	5.11	31.34	34.12	8.94	3.96	4.62	
											Tail	89.64	0.32	13.93	12.21	24.92	78.33	73.51	
17	GRINDING	16	60	80	28	1000	54.1	27.9	9.2	8.8	C. Head	100.00	1.17	15.81	14.80	100.00	100.00	100.00	
	ROUGHER	10	35	80	28	1000	54.1	27.9	9.2	8.8	C-1	6.56	12.75	30.60	35.35	71.76	12.70	15.68	
	SCAVENGER	5			28	1000	7.7	18.6	8.8	8.6	C-2	2.32	5.15	32.84	36.21	10.27	4.83	5.69	
											Tail	91.11	0.23	14.31	12.77	17.97	82.47	78.63	
18	GRINDING	16	60	80	28	1400	54.1	27.9	10.8	10.0	C. Head	100.00	1.17	15.91	14.85	100.00	100.00	100.00	
	ROUGHER	10	35	80	28	1400	54.1	27.9	10.8	10.0	C-1	7.98	12.01	30.72	35.84	82.19	15.41	19.27	
	SCAVENGER	5			28	1400	7.7	9.3	10.0	9.6	C-2	1.82	2.99	34.20	37.63	4.66	3.91	4.61	
											Tail	90.20	0.17	14.23	12.53	13.15	80.68	76.12	
19	GRINDING	16	60	80	30	2980	54.1	27.9	11.9	11.4	C. Head	100.00	1.15	15.41	14.36	100.00	100.00	100.00	
	ROUGHER	10	35	80	30	2980	54.1	27.9	11.9	11.4	C-1	8.23	11.66	29.21	34.71	83.29	15.60	19.90	
	SCAVENGER	5			30	2980	7.7	9.3	11.4	11.3	C-2	1.73	2.80	32.07	34.94	4.20	3.60	4.21	
											Tail	90.04	0.16	13.83	12.10	12.51	80.80	75.89	

Table 6 Flotation Test Results of Hayl as Safil Ore
 - Recovery as a function of flotation time on copper selective flotation varying KAX dosage -

TEST No.	OPER ATION	CONDITIONS										PROD UCTS	WEIGHT %	ASSAY		DISTRIBUTION	
		Time min.	P.D. %	Size %	Temp °C	Lime g/T	KAX g/T	AF65 g/T	pH		Cu %			Fe %	Cu %	Fe %	
									Initial	Final							
20	GRINDING ROUGHEN	16	60	80	31	2080	30	18.6	11.6		C. Head	100.00	1.18	15.88	100.00	100.00	
		3	35						11.6		C-1	6.68	13.34	31.67	77.16	13.37	
		3				200		9.3	11.6		C-2	1.84	4.15	34.31	6.61	3.99	
		4				150		9.3	11.5		C-3	1.40	2.64	33.83	3.20	3.00	
		5				150		9.3	11.5		C-4	0.66	2.21	31.19	1.26	1.30	
		5				200	5	9.3	11.5		C-5	0.45	1.91	30.71	0.74	0.87	
		10							11.6		C-6	2.55	1.61	33.71	3.55	5.42	
									Tail	86.42	0.10	13.20	7.48	72.06			
21	GRINDING ROUGHEN	16	60	80	30	2050	40	18.6	11.6		C. Head	100.00	1.12	15.31	100.00	100.00	
		3	35						11.6		C-1	10.44	8.28	33.79	76.99	23.03	
		3				100		9.3	11.4		C-2	2.22	3.76	32.79	7.43	4.75	
		4				100		9.3	11.4		C-3	1.66	2.90	30.54	4.28	3.30	
		5				100		9.3	11.4		C-4	0.77	2.32	27.53	1.58	1.38	
		5				100		9.3	11.4		C-5	0.71	1.92	25.78	1.21	1.19	
		10					5	9.3	11.4		C-6	2.45	1.56	30.54	3.41	4.89	
									Tail	81.77	0.07	11.91	5.10	61.46			

Table 7 Flotation Test Results of Hayl as Safil Ore
- Effect of feed size on bulk flotation -

TEST No.	OPER ATION	CONDITIONS				PROD UCIS	WEIGHT %	ASSAY			DISTRIBUTION							
		Time min.	P.D. %	Size %	Temp °C			Lime g/I	KAX g/I	AF65 g/I	pH Intial	pH Final	Cu %	Fe %	S %	Cu %	Fe %	S %
22	GRINDING	8	60															
	ROUGHER	10	35	50	29	620	30	37.2	7.2	7.4	C. Head	100.00	1.16	15.99	15.56	100.00	100.00	100.00
	SCAVEN-GEN		5				5	9.3	7.4	7.5	C-1	32.74	2.99	36.05	42.01	84.45	73.81	88.42
											Tail	64.08	0.16	5.51	1.80	8.84	22.08	7.41
23	GRINDING	11	60															
	ROUGHER	10	35	60	29	880	30	37.2	7.2	7.4	C. Head	100.00	1.18	15.97	15.47	100.00	100.00	100.00
	SCAVEN-GEN		5				5	18.6	7.4	7.4	C-1	29.51	3.16	36.91	43.02	78.83	68.20	82.09
											Tail	66.61	0.22	6.28	2.84	12.39	26.19	12.23

Table 8 - Flotation Test Results of Haylas Safil Ore
Effect of pH value on bulk flotation -

TEST No.	OPER ALLION	CONDITIONS						PH		PROD UCTS	WEIGHT %			ASSAY %			DISTRIBUTION %			
		Time min.	P.D. Size %	Temp °C	Lime g/T	KAX g/T	AF65 g/T	Initial	Final		C. Head	C-1	C-2	Tail	Cu %	Fe %	S %	Cu %	Fe %	S %
24	GRINDING	8	60		H2SO4					C. Head	100.00			1.12	16.21	14.58	100.00	100.00	100.00	
	ROUGHER	10	35	28	443	30	4.0	4.4		C-1	30.59			2.93	39.19	42.77	80.03	73.96	89.74	
	SCAVENGER	5				5	4.4	4.4		C-2	5.15			2.97	18.09	18.93	13.65	5.74	6.58	
										Tail	64.27			0.11	5.12	0.81	6.31	20.30	3.57	
22	GRINDING	8	60							C. Head	100.00			1.16	15.99	15.56	100.00	100.00	100.00	
	ROUGHER	10	35	29	620	30	7.2	7.4		C-1	32.74			2.99	36.05	42.01	84.45	73.81	88.42	
	SCAVENGER	5				5	7.4	7.5		C-2	3.17			2.45	20.71	20.45	6.71	4.11	4.17	
										Tail	64.08			0.16	5.51	1.80	8.84	22.08	7.41	
25	GRINDING	8	60							C. Head	100.00			1.16	16.26	15.26	100.00	100.00	100.00	
	ROUGHER	10	35	26	480	30	8.0	7.9		C-1	29.03			3.32	39.44	44.34	83.11	70.43	84.37	
	SCAVENGER	5				5	7.9	7.9		C-2	2.77			2.89	25.12	25.31	6.89	4.27	4.59	
										Tail	68.21			0.17	5.03	2.47	10.00	25.30	11.04	
26	GRINDING	8	60							C. Head	100.00			1.20	16.45	15.51	100.00	100.00	100.00	
	ROUGHER	10	35		1000	30	10.0	9.2		C-1	17.54			5.22	39.69	44.66	76.45	42.31	50.50	
	SCAVENGER	5				5	9.2	8.9		C-2	5.66			1.59	39.44	43.07	7.52	13.57	15.73	
										Tail	76.80			0.25	9.45	6.82	16.04	44.12	33.78	
1	GRINDING	8	60							C. Head	100.00			1.14	15.73	14.33	100.00	100.00	100.00	
	ROUGHER	10	35	25	2000	30	12.1	11.7		C-1	25.99			4.02	36.93	42.22	91.34	61.03	76.56	
	SCAVENGER	5				5	11.7	11.6		C-2	5.34			0.57	34.67	35.93	2.65	11.77	13.76	
										Tail	68.67			0.10	6.23	2.02	6.00	27.20	9.68	

Table 9 Flotation Test Results of Hayl as Safil Ore
 - Recovery as a function of flotation time on bulk flotation varying KAX dosage -

TEST No.	OPERATION	CONDITIONS				PROD UCIS	WEIGHT %	ASSAY			DISIRIBUTION							
		Time min.	P.D. %	Size %	Temp °C			Lime g/T	KAX g/T	AF65 g/T	pH Initial	pH Final	Cu %	Fe %	S %	Cu %	Fe %	S %
1	GRINDING ROUGHER SCAVEN- GER	8	60															
		10	35	50	25	2000	30	27.9	12.1	11.7	C. Head	100.00	1.14	15.73	14.33	100.00	100.00	100.00
		5					5	9.3	11.7	11.6	C-1	25.99	4.02	36.93	42.22	91.34	61.03	76.56
											tail	68.67	0.57	34.67	36.93	2.66	11.77	13.76
27	GRINDING ROUGHER SCAV'ER1 SCAV'ER2	8	60															
		10	35	50	32	2000	40	37.2	11.6	10.8	C. Head	100.00	1.16	15.77	14.64	100.00	100.00	100.00
		10					10	9.3	11.4	10.7	C-1	26.22	3.95	36.95	42.83	89.18	61.41	76.71
		10					10	18.6	11.3	10.5	C-2	8.82	0.80	28.79	31.09	6.08	16.10	18.73
										tail	3.75	0.49	12.36	10.31	1.58	2.94	2.64	
											61.22	0.06	5.04	0.46	3.16	19.56	1.92	

Table 11. Flotation Test Results of Rakah Stockwork Ore
 - Effect of feed size on copper selective flotation -

TEST No.	OPER ATION	CONDITIONS										PROD UCTS	WEIGHT %	ASSAY			DISTRIBUTION		
		Time min.	P.D. %	Size %	Temp °C	Lime g/T	KAX g/T	AF65 g/T	pH		Cu %			Fe %	S %	Cu %	Fe %	S %	
									Intial	Final									
32	GRINDING	9	60	50	27	2000	25	27.9	10.8	10.0	C. Head	100.00	1.25	19.89	9.62	100.00	100.00	100.00	
	ROUGHER	10	35	50	27	2000	5	9.3	10.0	9.6	C-1	20.81	5.55	36.44	38.37	92.48	38.13	82.98	
	SCAVENGER	5										2.80	1.17	30.70	26.31	2.62	4.32	7.66	
											Tail	76.39	0.08	14.98	1.18	4.89	57.55	9.37	
33	GRINDING	11	60	60	27	2000	25	27.9	10.7	9.8	C. Head	100.00	1.25	20.11	9.54	100.00	100.00	100.00	
	ROUGHER	10	35	60	27	2000	5	9.3	9.8	9.6	C-1	18.54	6.16	37.46	39.57	91.48	34.54	76.95	
	SCAVENGER	5									2.85	1.53	34.65	31.95	3.49	4.90	9.53		
											Tail	78.61	0.08	15.49	1.64	5.04	60.56	13.52	
34	GRINDING	13	60	70	27	2000	25	27.9	10.8	10.1	C. Head	100.00	1.28	20.14	9.72	100.00	100.00	100.00	
	ROUGHER	10	35	70	27	2000	5	9.3	10.1	9.8	C-1	17.39	6.84	37.58	39.97	93.23	32.47	71.53	
	SCAVENGER	5									1.62	1.33	34.53	31.84	1.69	2.78	5.31		
											Tail	80.98	0.08	16.10	2.78	5.08	64.75	23.16	
35	GRINDING	16	60	80	27	2000	25	27.9	10.6	9.9	C. Head	100.00	1.25	20.05	9.71	100.00	100.00	100.00	
	ROUGHER	10	35	80	27	2000	5	4.7	9.9	9.6	C-1	14.29	8.24	37.20	39.60	94.04	26.51	58.27	
	SCAVENGER	5									1.63	0.97	33.38	28.90	1.26	2.71	4.85		
											Tail	84.08	0.07	16.88	4.26	4.70	70.78	36.88	

Table 12 Flotation Test Results of Rakah Stockwork Ore
- Effect of KAX on copper selective flotation varying pH value -

TEST No.	OPER ATION	CONDITIONS										PROD UCTS	WEIGHT %	ASSAY			DISTRIBUTION		
		Time		p. D. Size %	Temp °C	Lime g/T	KAX g/I	AF65 g/T	pH		Cu %			Fe %	S %	Cu %	Fe %	S %	
		min.	%						Initial	Final									
36	GRINDING	16	60	80	27	1000	25	27.9	8.7	8.2	1.36	20.07	9.40	100.00	100.00	100.00			
	ROUGHER	10	35	80	27	1000	5	27.9	8.7	8.2	6.48	37.58	38.13	94.63	37.29	80.60			
	SCAVENGER	5			27	1000	5	9.3	8.2	8.2	0.70	31.27	26.03	1.38	4.19	7.45			
37	GRINDING	16	60	80	27	1500	25	27.9	9.6	8.9	1.35	19.92	9.32	100.00	100.00	100.00			
	ROUGHER	10	35	80	27	1500	5	27.9	9.6	8.9	7.12	37.18	37.64	95.03	33.52	72.72			
	SCAVENGER	5			27	1500	5	9.3	8.9	8.7	0.85	32.40	27.88	1.42	3.67	6.76			
35	GRINDING	16	60	80	27	2000	25	27.9	10.6	9.9	1.25	20.05	9.71	100.00	100.00	100.00			
	ROUGHER	10	35	80	27	2000	5	27.9	10.6	9.9	8.24	37.20	39.60	94.04	26.51	58.27			
	SCAVENGER	5			27	2000	5	4.7	9.9	9.6	0.97	33.38	28.90	1.26	2.71	4.85			
38	GRINDING	16	60	80	27	4000	25	27.9	11.4	10.9	1.25	19.96	9.41	100.00	100.00	100.00			
	ROUGHER	10	35	80	27	4000	5	27.9	11.4	10.9	9.04	37.05	39.06	93.58	23.93	53.53			
	SCAVENGER	5			27	4000	5	4.7	10.9	10.7	1.91	30.02	24.92	1.59	1.56	2.74			
											0.07	17.28	4.78	4.84	74.51	43.73			

Table 14 Flotation Test Results of Rakah Stockwork Ore
 - Effect of AP3418 on copper selective flotation varying pH value -

TEST No.	OPERATION	CONDITIONS										PROD UCTS	WEIGHT %	ASSAY			DISTRIBUTION		
		Lime AP3418		Temp °C	Size %	AF65 g/I	AF65 g/I	PH		Cu %	Fe %			S %	Cu %	Fe %	S %		
		g/I	g/I					Initial	Final										
43	GRINDING ROUGHER SCAVENGER	16	60	28	38.7	27.9	9.4	8.8	C. Head	100.00	1.26	20.29	9.73	100.00	100.00	100.00			
		10	35	80	1500	7.7	9.3	8.8	C-1	16.49	7.14	36.32	38.39	93.75	29.52	55.07			
		5						8.7	C-2	4.24	0.73	37.81	38.06	2.47	7.91	16.60			
									Tail	79.27	0.06	16.02	2.25	3.79	62.58	18.33			
44	GRINDING ROUGHER SCAVENGER	16	60	29	38.7	27.9	10.3	9.6	C. Head	100.00	1.26	21.23	9.46	100.00	100.00	100.00			
		10	35	80	2000	7.7	9.3	9.6	C-1	13.09	9.09	34.18	34.77	94.65	21.07	48.11			
		5						9.4	C-2	2.90	0.58	36.54	34.49	1.34	5.00	10.59			
									Tail	84.01	0.06	18.68	4.65	4.01	73.93	41.31			
45	GRINDING ROUGHER SCAVENGER	16	60	27	34.00	18.6	12.0	11.6	C. Head	100.00	1.24	19.57	9.67	100.00	100.00	100.00			
		10	35	80	38.7	7.7	9.3	11.6	C-1	9.14	12.89	28.71	28.90	94.64	13.41	27.30			
		5						11.4	C-2	0.90	1.41	28.51	22.60	1.02	1.32	2.11			
									Tail	89.96	0.06	18.55	7.59	4.34	85.28	70.59			
46	GRINDING ROUGHER SCAVENGER	16	60	29	30.9	27.9	10.6	9.8	C. Head	100.00	1.27	21.53	9.55	100.00	100.00	100.00			
		10	35	80	2000	7.7	9.3	9.8	C-1	12.38	9.58	35.42	35.39	93.45	20.36	45.87			
		5						9.6	C-2	2.60	0.58	40.07	37.94	1.19	4.84	10.33			
									Tail	85.02	0.08	18.94	4.92	5.36	74.80	43.81			

Table 15 Flotation Test Results of Rakah Stockwork Ore
- Effect of AP404 on copper selective flotation varying pH value -

TEST No.	OPERATION	CONDITIONS				PROD UCTS	WEIGHT %	ASSAY			DISTRIBUTION								
		Time min.	P. D. Size %	Temp °C	Lime g/T			AP404 g/T	AF65 g/T	PH Initial	PH Final	Cu %	Fe %	S %	Cu %	Fe %	S %		
47	GRINDING	16	60																
	ROUGHER	10	35	28	820	38.7	18.6	8.0	7.7	C. Head	100.00	1.28	19.56	10.09	100.00	100.00	100.00	100.00	
	SCAVENGER	5				7.7	9.3	7.7	7.6	C-1	16.58	7.14	36.39	40.43	92.72	30.84	66.45	66.45	
										C-2	3.49	0.83	34.50	33.79	2.27	6.15	11.67	11.67	
									tail	79.94	0.08	15.42	2.76	5.01	63.01	21.87	21.87		
48	GRINDING	16	60																
	ROUGHER	10	35	29	1500	38.7	27.9	9.3	8.7	C. Head	100.00	1.24	19.59	9.77	100.00	100.00	100.00	100.00	
	SCAVENGER	5				7.7	9.3	8.7	8.6	C-1	11.65	9.94	33.83	36.63	93.02	20.12	43.67	43.67	
										C-2	2.14	0.84	34.84	33.68	1.44	3.80	7.36	7.36	
									tail	86.21	0.08	17.29	5.55	5.54	76.09	48.97	48.97		
49	GRINDING	16	60																
	ROUGHER	10	35	28	2620	38.7	23.3	11.0	10.2	C. Head	100.00	1.26	19.50	9.87	100.00	100.00	100.00	100.00	
	SCAVENGER	5				7.7	9.3	10.2	9.9	C-1	7.59	15.14	29.85	32.89	91.33	11.62	25.29	25.29	
										C-2	1.28	2.11	31.84	29.93	2.15	2.09	3.89	3.89	
									tail	91.13	0.09	18.46	7.67	6.52	86.29	70.83	70.83		
50	GRINDING	16	60																
	ROUGHER	10	35	29	2000	30.9	27.9	10.8	10.0	C. Head	100.00	1.25	20.11	9.36	100.00	100.00	100.00	100.00	
	SCAVENGER	5				7.7	9.3	10.0	9.8	C-1	8.45	13.52	31.65	28.82	91.26	13.30	26.01	26.01	
										C-2	1.58	1.80	31.02	26.23	2.27	2.44	4.42	4.42	
									tail	89.97	0.09	18.84	7.24	6.47	84.27	69.56	69.56		

Table 17 Flotation Test Results of Rakah Stockwork Ore
 - Effect of feed size on bulk flotation -

TEST No.	OPER ATION	Time			Size %	Temp °C	CONDITIONS			PROD UCITS	WEIGHT %	ASSAY			DISTRIBUTION		
		min.	%	min.			Lime g/T	KAX g/T	AF65 g/T			PH Intial	PH Final	Cu %	Fe %	S %	Cu %
53	GRINDING	9	60							C. Head	100.00	1.20	20.20	10.28	100.00	100.00	100.00
	ROUGHER	10	35	50	27	25	27.9	7.0	7.1	C-1	24.59	4.57	36.93	35.72	93.28	44.96	85.49
	SCAVENGER	5				5	9.3	7.1	7.2	C-2	2.29	0.98	23.49	14.04	1.86	2.66	3.13
										tail	73.12	0.08	14.47	1.60	4.86	52.38	11.38
54	GRINDING	11	60							C. Head	100.00	1.25	19.89	9.44	100.00	100.00	100.00
	ROUGHER	10	35	60	26	25	27.9	7.0	7.2	C-1	20.64	5.52	36.57	37.54	90.95	37.95	82.10
	SCAVENGER	5				5	9.3	7.2	7.3	C-2	3.49	1.29	27.11	19.70	3.59	4.76	7.29
										tail	75.87	0.09	15.02	1.32	5.45	57.29	10.61

Table 18 Flotation Test Results of Rakah Stockwork Ore
- Effect of pH value on bulk flotation -

TEST No.	OPER ATION	CONDITIONS										PROD UCITS	WEIGHT			ASSAY			DISTRIBUTION		
		Time min.	P.D. %	Size %	Temp °C	Lime g/T	KAX g/T	AF65 g/T	pH		%		Cu %	Fe %	S %	Cu %	Fe %	S %			
									Initial	Final											
55	GRINDING	9	60	50	28	H2SO4	25	27.9	3.9	4.7	C. Head	100.00	1.22	20.15	9.48	100.00	100.00	100.00			
	ROUGHER	10	35	50	28	701	5	9.3	4.7	4.8	C-1	26.12	4.37	35.17	33.74	93.31	45.59	93.01			
	SCAVENGER	5									Tail	71.83	0.08	14.67	0.67	4.70	52.29	5.08			
53	GRINDING	9	60	50	27	420	25	27.9	7.0	7.1	C. Head	100.00	1.20	20.20	10.28	100.00	100.00	100.00			
	ROUGHER	10	35	50	27		5	9.3	7.1	7.2	C-1	24.59	4.57	36.93	35.72	93.28	44.96	85.49			
	SCAVENGER	5								Tail	73.12	0.08	14.47	1.60	4.86	52.38	11.38				
56	GRINDING	9	60	50	26	740	25	27.9	8.0	7.7	C. Head	100.00	1.28	19.98	10.27	100.00	100.00	100.00			
	ROUGHER	10	35	50	26		5	9.3	7.7	7.7	C-1	23.78	4.93	35.54	36.64	91.55	42.31	84.82			
	SCAVENGER	5								Tail	74.25	0.11	14.87	1.67	6.38	55.26	12.07				
57	GRINDING	9	60	50	26	1000	25	27.9	9.2	8.6	C. Head	100.00	1.29	19.77	9.80	100.00	100.00	100.00			
	ROUGHER	10	35	50	26		5	9.3	8.6	8.5	C-1	22.51	5.18	36.05	37.00	90.41	41.06	84.98			
	SCAVENGER	5								Tail	74.43	0.11	14.62	1.24	6.35	55.04	9.42				
32	GRINDING	9	60	50	27	2000	25	27.9	10.8	10.0	C. Head	100.00	1.25	19.89	9.62	100.00	100.00	100.00			
	ROUGHER	10	35	50	27		5	9.3	10.0	9.6	C-1	20.81	5.55	36.44	38.37	92.48	38.13	82.98			
	SCAVENGER	5								Tail	76.39	0.08	14.98	1.18	4.89	57.55	9.37				

Table 21 Flotation Test Results of Rakah Massive Ore
 - Preliminary tests on copper selective flotation -

TEST No.	OPER ATION	CONDITIONS				PROD UCITS	WEIGHT %	ASSAY		DISTRIBUTION						
		Time p. min.	D. Size %	Temp °C	Lime g/T			KAX g/T	AF65 g/T	pH Initial	pH Final	Cu %	Fe %	S %	Cu %	Fe %
63	GRINDING	10.5	50	28	11100	200	46.4	11.0	C. Head	100.00	1.60	37.13	100.00	100.00		
	ROUGHER	10	20						C-1	40.69	0.92	44.28	23.44	48.53		
	SCAV'ER1	5							C-2	5.22	2.64	42.02	8.63	5.91		
	SCAV'ER2	5							C-3	2.67	4.28	40.15	7.17	2.89		
	SCAV'ER3	10							C-4	3.19	4.87	38.70	9.72	3.32		
									Tail	48.23	1.69	30.29	51.05	39.35		
64	GRINDING	10.5	50	27	11475	200	46.4	11.1	C. Head	100.00	1.66	36.64	100.00	100.00		
	ROUGHER	10	20						C-1	37.13	0.96	43.27	21.50	43.85		
	SCAV'ER1	5							C-2	8.51	2.01	41.95	10.31	9.74		
	SCAV'ER2	5							C-3	4.97	2.93	40.27	8.78	5.46		
	SCAV'ER3	10							C-4	14.05	2.13	40.51	18.05	15.54		
									Tail	35.34	1.94	26.35	41.36	25.42		
65	GRINDING	16	50	27	14850	200	69.6	11.1	C. Head	100.00	1.66	36.49	100.00	100.00		
	ROUGHER	10	20						C-1	27.79	1.30	42.79	21.78	32.59		
	SCAV'ER1	5							C-2	4.92	3.59	39.43	10.66	5.32		
	SCAV'ER2	5							C-3	2.79	3.87	39.07	6.52	2.99		
	SCAV'ER3	10							C-4	14.02	2.04	41.35	17.24	15.88		
									Tail	50.47	1.44	31.25	43.81	43.22		
66	GRINDING	16	50	29	12500	200	46.4	11.0	C. Head	100.00	1.63	37.17	100.00	100.00		
	ROUGHER	10	20						C-1	30.96	1.54	44.23	29.29	36.84		
	SCAV'ER1	5							C-2	4.71	3.17	42.43	9.18	5.38		
	SCAV'ER2	5							C-3	3.10	3.82	40.75	7.27	3.40		
	SCAV'ER3	10							C-4	14.38	1.97	42.67	17.41	16.74		
									Tail	46.85	1.28	30.05	36.85	37.87		

Table 22 Flotation Test Results of Rakah Massive Ore
- Effect of feed size on copper selective flotation -

TEST No.	OPER ATION	CONDITIONS										PROD UCIS	WEIGHT			ASSAY			DISIRIBUTION		
		TimeP.		D.Size	Temp	Lime	KAX	AF65	pH		Cu		Fe	S	Cu	Fe	S				
		min.	%						%	g/T								g/T	Initial	Final	%
67	GRINDING	4	5	50	17500				10.0				C. Head	100.00			100.00			100.00	
	ROUGHER	10	20	50	1175	150	46.4	11.2	10.0	17.75	3.41	36.36	C-1	17.75	37.62	42.09	19.44	19.44	47.85	20.17	
	SCAV'ER1	10	10	20	250	50	11.6	11.2-10.8	10.8	5.63	2.63	40.31	C-2	5.63	9.21	45.28	6.24	6.24	45.77	6.06	
	SCAV'ER2	10	10	50	500	50	34.8	10.9	10.9	11.81	1.59	40.55	C-3	11.81	11.67	47.77	13.17	13.17	47.77	13.40	
					64.81					64.81	1.03	34.31	tail	64.81	41.50	39.20	61.15	61.15	39.20	60.36	60.36
68	GRINDING	6	5	50	17500				10.2				C. Head	100.00			100.00			100.00	
	ROUGHER	10	20	60	1075	150	46.4	11.2	10.2	22.01	1.51	36.21	C-1	22.01	33.57	41.87	25.38	25.38	47.29	24.86	
	SCAV'ER1	10	10	20	250	50	11.6	11.3-10.8	10.8	6.25	2.46	40.07	C-2	6.25	10.19	45.73	6.91	6.91	45.73	6.82	
	SCAV'ER2	10	10	50	500	50	34.8	11.0	11.0	14.23	1.23	41.87	C-3	14.23	11.61	47.98	16.45	16.45	47.98	16.30	
					57.52					57.52	1.17	32.27	tail	57.52	44.63	37.87	51.26	51.26	37.87	52.02	52.02
69	GRINDING	8	5	50	17500				9.9				C. Head	100.00			100.00			100.00	
	ROUGHER	10	20	70	1250	150	46.4	11.2	9.9	25.26	1.73	36.09	C-1	25.26	44.72	41.61	28.64	28.64	47.79	29.01	
	SCAV'ER1	10	10	20	250	50	11.6	11.3-10.8	10.8	7.52	2.32	39.83	C-2	7.52	10.10	45.17	8.30	8.30	45.17	8.17	
	SCAV'ER2	10	10	50	500	50	23.2	11.0	11.0	13.35	1.17	41.75	C-3	13.35	9.03	48.14	15.44	15.44	48.14	15.44	
					53.86					53.86	1.16	31.91	tail	53.86	36.15	36.60	47.62	47.62	36.60	47.38	47.38
70	GRINDING	11	5	50	18750				10.4				C. Head	100.00			100.00			100.00	
	ROUGHER	10	20	80	800	150	34.8	11.2	10.4	22.84	1.67	35.86	C-1	22.84	45.06	41.16	25.52	25.52	47.53	26.38	
	SCAV'ER1	10	10	20	500	50	23.2	11.3-10.8	10.8	7.58	2.21	40.67	C-2	7.58	10.01	45.08	8.60	8.60	45.08	8.30	
	SCAV'ER2	10	10	50	250	50	23.2	10.8	10.8	20.01	1.03	41.99	C-3	20.01	12.32	47.59	23.43	23.43	47.59	23.14	
					49.57					49.57	1.10	30.71	tail	49.57	32.60	35.02	42.45	42.45	35.02	42.18	42.18
71	GRINDING	16	5	50	20000				10.6				C. Head	100.00			100.00			100.00	
	ROUGHER	10	20	94	1175	150	34.8	11.4	10.6	21.66	1.62	36.45	C-1	21.66	44.20	42.41	24.67	24.67	48.62	24.83	
	SCAV'ER1	10	10	20	250	50	23.2	11.2-10.8	10.8	7.28	2.82	41.39	C-2	7.28	12.66	47.49	8.27	8.27	47.49	8.15	
	SCAV'ER2	10	10	50	500	50	34.8	10.8	10.8	25.02	1.03	42.95	C-3	25.02	15.89	50.12	29.48	29.48	50.12	29.57	
					46.04					46.04	0.96	29.75	tail	46.04	27.25	34.50	37.58	37.58	34.50	37.45	37.45

Table 24 Flotation Test Results of Rakah Massive Ore
- Effect of KAX on copper selective flotation varying pH value -

TEST No.	OPERATION	CONDITIONS						PROD UCITS	WEIGHT %	ASSAY					DISTRIBUTION						
		Time min.	P.D. %	Size %	Temp °C	Lime g/I	KAX g/I			AF65 g/T	pH Initial	pH Final	Au g/t	Ag g/t	Cu %	Fe %	S %	Al %	Ag %	Cu %	Fe %
74	GRINDING ROUGHER SCAVEN- GER	16	50	94	28	15000	100	69.6	7.8	7.8	11.41	6.52	1.64	37.00	41.86	100.00	100.00	100.00	100.00	100.00	100.00
		20	20			725	50	23.2	7.8	7.8	13.34	5.07	2.01	42.05	48.27	47.71	31.74	50.10	46.37	47.05	45.53
		10							7.8	7.8	12.23	4.10	1.14	43.05	48.57	42.07	24.68	27.33	45.66	45.53	
												5.84	14.23	1.85	14.77	15.56	10.22	43.58	22.56	7.97	7.42
75	GRINDING ROUGHER SCAVEN- GER	16	50	94	29	17500	100	58	9.3	9.0	10.28	4.23	1.62	35.67	42.02	100.00	100.00	100.00	100.00	100.00	100.00
		20	20				50	11.6	9.0	13.44	6.51	3.47	39.05	43.40	18.92	21.23	29.44	14.68	14.24	12.57	
		10							9.0	8.9	16.12	7.00	3.54	40.30	46.01	18.01	19.01	25.02	12.62		
												8.80	3.38	0.99	35.67	41.15	63.97	59.76	45.54	72.70	73.19
76	GRINDING ROUGHER SCAV'ER1 SCAV'ER2	16	50	94	31	20000	100	46.4	10.4	10.3	9.48	7.90	1.65	35.82	47.76	100.00	100.00	100.00	100.00	100.00	100.00
		10	20				50	11.6	10.3	13.77	5.89	3.83	39.59	47.77	26.28	13.48	41.96	19.39	20.20		
		10							10.2	10.2	12.88	6.09	3.29	40.31	47.63	6.34	9.29	5.25	5.19		
		10							10.0	10.0	9.64	3.16	1.29	42.47	50.60	17.59	6.91	13.51	20.50	20.46	
72	GRINDING ROUGHER SCAV'ER1 SCAV'ER2	16	50	94	28	17500	100	46.4	11.0	10.9	10.60	3.46	1.61	35.54	41.91	100.00	100.00	100.00	100.00	100.00	100.00
		10	20			700	50	23.2	11.0	10.9	18.38	6.54	4.90	39.79	46.70	17.27	18.82	30.24	10.85	11.10	
		10				500			10.9	10.9	14.71	6.58	3.64	38.79	45.85	12.08	16.55	19.63	9.48	9.53	
		10									10.93	3.61	1.32	42.19	48.69	20.10	20.33	18.36	22.51	22.69	
										8.67	2.48	0.83	33.78	38.45	50.55	44.29	31.78	57.15	56.72		

Table 25 Flotation Test Results of Rakah Massive Ore
- Effect of AP3501 on copper selective flotation varying pH value -

TEST No.	OPERATION	CONDITIONS				PROD UCTS	WEIGHT %	ASSAY				DISTRIBUTION									
		Time min.	D. Size %	Temp °C	Lime g/l			AP3501 g/l	AF65 g/l	pH Initial	pH Final	Au g/t	Ag g/t	Cu %	Fe %	S %	Au %	Ag %	Cu %	Fe %	S %
77	GRINDING	16	50	29	15000	153.3	69.6	7.5	7.7	C. Head	100.00	11.67	4.48	1.66	36.60	42.07	100.00	100.00	100.00	100.00	
	ROUGHER	20	20	29	575	51.1	34.8	7.7	7.7	C-1	44.74	14.08	3.86	2.04	41.55	48.22	53.96	38.57	55.03	50.80	
	SCAVENGER	10						7.7	7.7	C-2	34.77	11.31	2.65	1.12	42.43	48.98	33.68	20.58	23.48	40.31	
										Tail	20.49	7.04	8.93	1.74	15.89	16.89	12.36	40.86	21.49	8.90	8.23
78	GRINDING	16	50	28	15000	153.3	69.6	9.4	9.3	C. Head	100.00	10.09	4.30	1.63	36.50	43.77	100.00	100.00	100.00	100.00	
	ROUGHER	20	20	28	1975	51.1	46.4	9.3	9.1	C-1	18.54	13.77	4.74	2.28	41.67	49.67	25.30	20.46	25.92	21.16	
	SCAVENGER	10			125			9.3	9.1	C-2	19.19	13.77	6.09	2.37	41.93	51.06	26.19	27.20	27.88	22.04	
										Tail	62.28	7.86	3.61	1.21	33.29	39.77	48.51	52.34	46.20	56.80	56.68
79	GRINDING	16	50	28	17500	153.3	46.4	10.2	9.9	C. Head	100.00	10.80	3.64	1.65	35.86	43.38	100.00	100.00	100.00	100.00	
	ROUGHER	20	20	28	800	51.1	23.2	10.4	10.1	C-1	20.93	17.41	6.09	3.72	38.80	47.83	33.73	34.97	47.18	22.64	
	SCAVENGER	10			376			10.4	10.1	C-2	9.15	11.99	5.19	2.34	40.17	47.76	10.15	13.03	12.97	10.24	
										Tail	69.93	8.67	2.71	0.94	34.42	41.48	56.12	52.00	39.84	67.12	66.86
80	GRINDING	16	50	29	20000	153.3	46.4	11.2	11.1	C. Head	100.00	10.70	4.35	1.63	36.32	43.79	100.00	100.00	100.00	100.00	
	ROUGHER	20	20	29	1625	51.1	23.2	11.1	11.0	C-1	22.24	17.82	7.67	3.72	39.30	48.29	37.02	39.20	50.73	24.06	
	SCAVENGER	10			250			11.1	11.0	C-2	7.57	13.20	5.64	2.36	40.55	48.36	9.24	9.82	10.96	8.46	
										Tail	70.19	8.18	3.16	0.89	34.92	41.87	53.64	50.98	38.31	67.48	67.11
81	GRINDING	16	50	31	20000	102.2	34.8	11.4	10.8	C. Head	100.00	6.53	2.98	1.62	35.98		100.00	100.00	100.00	100.00	
	ROUGHER	10	20	31	1075	51.1	24.8	11.4	11.2	C-1	11.98	17.39	6.80	4.67	38.67		31.93	27.83	34.57	12.95	
	SCAVENGER	10			250			11.2	11.2	C-2	6.30	11.66	5.88	3.10	39.46		11.26	12.44	12.07	8.91	
										Tail	73.13	4.29	1.89	0.90	34.81		48.06	46.38	40.64	70.70	

Table 26. Flotation Test Results of Rakah Massive Ore
- Effect of AP3418 on copper selective flotation varying pH value -

TEST No.	OPER ATION	CONDITIONS				PROD UCTS	WEIGHT				ASSAY				DISTRIBUTION			
		Timep. min.	D. Size %	Temp °C	Lime g/T		AP3418 g/T	Au g/T	Ag g/t	Cu %	Fe %	S %	Au %	Ag %	Cu %	Fe %	S %	
82	GRINDING ROUGHER SCAVEN- GER	16	50	29	15000		10.90	3.66	1.65	36.85	42.22	100.00	100.00	100.00	100.00	100.00		
		20	20		500	154.6	46.4	7.4	7.6	48.68	43.05	54.07	57.92	57.84	29.30	12.86		
		10				48.3	23.2	7.6	7.6	48.41	18.50	21.81	28.80	28.80	29.30	12.86		
										1.64	20.15	22.35	14.86	38.44	24.12	13.28	12.86	
83	GRINDING ROUGHER SCAVEN- GER	16	50	25	15000		10.28	3.04	1.40	36.35	41.96	100.00	100.00	100.00	100.00	100.00		
		20	20		1975	154.6	58	8.9	8.9	41.80	48.44	31.12	33.32	44.13	32.28	32.40		
		10			250	48.3	23.2	9.2	8.9	41.55	48.30	22.15	22.66	25.01	20.51	20.55		
										0.80	31.79	36.49	46.73	44.03	30.87	47.21	46.95	
84	GRINDING ROUGHER SCAVEN- GER	16	50	29	17500		10.43	2.69	1.62	35.40	41.98	100.00	100.00	100.00	100.00	100.00		
		20	20		1325	154.6	58	10.2	9.8	39.42	45.45	29.70	25.37	40.53	19.81	19.26		
		10			375	48.3	23.2	10.4	9.8	39.92	46.18	14.17	15.06	17.51	12.67	12.36		
										0.96	33.67	40.44	55.13	59.57	41.96	67.52	68.38	
85	GRINDING ROUGHER SCAVEN- GER	16	50	30	20000		11.08	4.96	1.62	35.79	42.39	100.00	100.00	100.00	100.00	100.00		
		20	20		1500	154.6	46.4	11.2	11.0	40.30	48.74	41.91	31.28	53.81	31.01	31.66		
		10			250	48.3	23.2	11.1	10.8	40.30	48.50	11.27	9.34	11.96	11.58	11.76		
										0.89	33.04	38.57	46.82	59.38	34.23	57.41	55.58	
86	GRINDING ROUGHER SCAV'ER SCAV'ER	16	50	30	20000		8.70	2.88	1.63	35.68	42.39	100.00	100.00	100.00	100.00	100.00		
		10	20		800	106.3	34.8	11.4	11.0	38.15	48.74	17.21	24.56	38.76	15.64	15.64		
		10			250	48.3	23.2	11.2	10.8	39.11	48.82	8.03	10.78	11.11	7.04	7.04		
		10			250	48.3	34.8	11.0	11.0	39.82	48.82	8.62	13.42	11.38	9.77	9.77		
								0.90	34.34	34.34	68.13	51.24	38.75	67.55	67.55			

Table 27. Flotation Test Results of Rakah Massive Ore
- Effect of AP404 on copper selective flotation varying pH value -

TEST No.	OPERATION	CONDITIONS				PROD UCITS	WEIGHT %	ASSAY				DISTRIBUTION											
		Time min.	P.D. %	Size %	Temp °C			Lime g/T	AP404 g/T	AF65 g/T	PH Initial	PH Final	Au g/t	Ag g/t	Cu %	Fe %	S %	Au %	Ag %	Cu %	Fe %	S %	
87	GRINDING	16	50		15000	154.6	46.4		7.2	7.5	C. Head	100.00	4.29	1.52	36.96	41.97	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	ROUGHER	20	20	94	29	48.3	23.2		7.5	7.6	C-1	14.99	6.27	3.25	39.80	45.51	17.99	21.40	30.02	16.75	16.26	16.26	
	SCAVENGER	10							7.5	7.6	C-2	15.92	6.76	3.16	40.30	46.15	8.89	9.11	11.52	6.86	6.51	6.51	
											Tail	79.09	3.86	1.20	36.17	40.99	73.12	69.49	56.46	77.40	77.23	77.23	77.23
88	GRINDING	16	50		15000	154.6	56		9.3	8.9	C. Head	100.00	3.90	1.52	36.68	41.78	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	ROUGHER	20	20	94	29	48.3	23.2		9.3	8.9	C-1	11.27	6.03	3.44	39.67	44.44	14.27	17.43	23.88	12.19	11.99	11.99	
	SCAVENGER	10							9.4	8.9	C-2	7.62	6.27	3.34	40.30	46.30	11.28	12.26	15.68	8.38	8.45	8.45	
											Tail	81.11	3.38	1.21	35.92	40.99	74.45	70.31	60.44	79.43	79.57	79.57	79.57
89	GRINDING	16	50		20000	154.6	46.4		11.2	10.8	C. Head	100.00	2.45	1.51	37.05	41.89	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	ROUGHER	20	20	94	32	48.3	23.2		11.2	10.8	C-1	14.28	4.96	4.34	38.92	44.64	21.44	28.88	38.59	15.00	15.18	15.18	
	SCAVENGER	10							11.2	10.9	C-2	7.77	4.29	3.57	39.92	46.07	11.91	13.58	17.74	8.37	8.52	8.52	
											Tail	77.95	1.81	0.90	36.42	41.10	66.65	57.53	43.67	76.63	76.30	76.30	76.30
90	GRINDING	16	50		20000	106.3	34.8		11.4		C. Head	100.00	3.47	1.60	35.45		100.00	100.00	100.00	100.00	100.00	100.00	100.00
	ROUGHER	10	20	94	30	250	23.2		11.2	10.8	C-1	4.78	4.83	4.08	37.20		15.13	6.66	12.16	5.01	5.01	5.01	
	SCAVENGER	10							11.2	11.0	C-2	2.16	5.88	3.97	35.77		5.42	3.67	5.35	2.18	2.18	2.18	
											Tail	87.79	3.15	1.17	35.17		68.58	79.78	64.06	87.10	87.10	87.10	87.10

Table 28 Flotation Test Results of Rakah Massive Ore
 - Recovery as a function of flotation time on copper selective flotation -

TEST No.	OPER ATION	Time min.	P.D. %	Size %	Temp °C	CONDITIONS			PROD UCTS	WEIGHT %	ASSAY				DISTRIBUTION				
						Lime g/t	AXX g/t	AF65 g/t			PH Initial	PH Final	Au g/t	Ag g/t	Cu %	Fe %	S %	Au %	Ag %
91	GRINDING	16	50	94	32	20000			C. Head	100.00	8.03	5.89	1.63	35.74	41.47	100.00	100.00	100.00	100.00
	ROUGHENING	10	20			1100	34.8	11.3	C-1	9.02	10.59	7.35	4.89	38.03	44.68	11.89	27.00	9.60	9.72
		3	10			500	11.5		C-2	4.34	15.10	6.51	5.05	37.19	43.26	8.16	13.42	4.52	4.53
		4	10			250	23.2		C-3	6.09	14.24	4.20	3.67	38.37	44.79	10.80	13.68	5.62	5.58
		5	10		10.8	250	23.2	11.4	C-4	5.01	7.23	3.78	2.57	40.07	44.90	4.51	7.88	5.61	5.42
		6	10			250	23.2		C-5	5.38	4.37	2.73	1.73	39.83	45.87	2.93	5.86	6.00	5.95
		7	10			500	11.6		C-6	9.86	4.79	2.52	1.93	40.91	47.06	3.21	4.38	6.16	6.11
		8	10			350	11.6		C-7	24.99	6.56	1.68	0.76	42.59	49.32	5.35	4.59	11.75	11.72
					500	34.8	11.0	tail	29.93	6.20	12.01	0.89	23.04	26.88	23.10	60.98	16.31	19.29	19.40

Table 29 Flotation Test Results of Rakah Massive Ore
- Effect of feed size and pH value on bulk flotation -

TEST No.	OPER	CONDITIONS										PROD UCITS	ASSAY					DISTRIBUTION				
		Time		D. Size	Temp	Lime	KAX	AF65	PH		Au		Ag	Cu	Fe	S	Au	Ag	Cu	Fe	S	
		min.	%						%	°C												g/T
92	GRINDING	4	5	50	30	12500	250	69.6	8.0	8.0	C. Head	10.17	5.43	1.62	36.68	42.29	100.00	100.00	100.00	100.00		
	ROUGHER	20	20	50	30	2900	50	34.8	8.0	8.0	C-1	11.04	3.86	1.59	42.43	49.02	78.94	51.79	71.62	84.22		
	SCAVENGER	10									Tail	12.79	5.07	2.10	36.17	41.12	9.39	6.98	9.71	7.37		
93	GRINDING	4	5	50	29	15000	250	69.6	9.2	9.0	C. Head	11.62	5.89	1.57	36.34	42.76	100.00	100.00	100.00	100.00		
	ROUGHER	20	20	50	29	2125	50	23.2	9.0	8.8	C-1	13.34	3.62	1.63	41.67	49.08	77.00	41.23	69.61	76.94		
	SCAVENGER	10								Tail	10.01	4.34	1.70	38.67	44.51	6.99	5.98	8.79	8.64			
94	GRINDING	8	5	50	29	15000	250	69.6	8.0	8.0	C. Head	11.20	5.37	1.61	36.39	42.71	100.00	100.00	100.00	100.00		
	ROUGHER	20	20	70	29	575	50	34.8	8.0	7.8	C-1	12.20	4.83	1.55	41.93	49.44	83.39	68.68	73.73	87.97		
	SCAVENGER	10								Tail	12.97	4.58	1.79	35.67	40.39	9.43	6.94	9.08	7.98			
95	GRINDING	8	5	50	29	15000	250	69.6	9.3	9.4	C. Head	11.67	5.32	1.57	36.96	42.53	100.00	100.00	100.00	100.00		
	ROUGHER	20	20	70	29	1475	50	23.2	9.4	8.9	C-1	13.10	4.58	1.74	42.18	48.51	73.92	56.49	72.50	74.85		
	SCAVENGER	10								Tail	12.60	3.86	1.07	40.17	45.33	18.79	12.64	11.84	18.93			
												9.65	1.45	13.52	15.04	7.28	30.87	15.67	6.22	6.01		

Table 30 Flotation Test Results of Rakah Massive Ore
- Effect of pH value on bulk rougher/cleaner flotation -

TEST No.	OPER AIIION	CONDITIONS					PROD UCIS	WEIGHT %	ASSAY				DISTRIBUTION								
		time min.	P.D. Size %	Temp °C	Lime g/T	KAX g/T			AF65 g/T	pH Initial	pH Final	Au g/t	Ag g/t	Cu %	Fe %	S %	Au %	Ag %	Cu %	Fe %	S %
95	GRINDING	5	50	31	15000	300	127.6	9.1	8.8	100.00	5.15	4.45	1.60	35.17	41.37	100.00	100.00	100.00	100.00	100.00	
	ROUGHER	30	20	70	4375					84.61	5.50	3.55	1.65	41.22	47.38	30.49	68.53	37.32	96.44	98.91	
	REGRIND - INC	11								27.33	4.99	4.07	2.24	41.81	50.01	34.99	25.02	38.24	31.59	33.04	
	1CLEANER	7	18	29	4475	4	23.2	12.2	12.0	57.28	7.19	3.46	1.37	40.94	46.12	55.50	44.51	49.08	64.84	63.87	
	1CL-SCAV	10	17	26	3000	4	11.6	12.0	12.0	11.04	4.46	3.01	1.97	40.83	48.18	15.42	13.22	18.19	12.64	12.86	
	2CLEANER	5	9	26	2000			12.3	12.3	46.24	8.64	5.43	3.76	40.47	48.61	40.08	31.29	30.89	52.20	51.01	
	3CLEANER	4	9	26				12.3	12.3	10.33	5.22	3.25	1.32	42.63	50.25	17.74	12.60	24.23	11.55	12.38	
										17.00	11.27	6.03	5.14	39.71	49.33	10.91	12.42	14.01	20.04	20.66	
										Conc	4.98	4.87	2.47	41.17	49.87	6.83	5.85	8.24	5.47	5.94	
										3C-M	6.58	8.81	1.92	8.38	8.32	9.51	30.47	12.68	6.08	6.44	
										Tail	3.18										3.09

Table 31 Flotation Test Results of Hayl as Safil Ore and Rakah Stockwork Ore
- Scalp Rougher/cleaner flotation -

TEST No.	OPER ATION	CONDITIONS				PROD UCITS	WEIGHT %				ASSAY				DISIRIBUTION				
		Time min.	P.D. Size %	Temp °C	Line g/t		col'or	AF65 g/t	PH Initial	PH Final	Au g/t	Ag g/t	Cu %	Fe %	S %	Cu %	Fe %	S %	
97	GRINDING ROUGHER	16	60		2000	AP3501	11.8	11.2											
		10	35	31	1030	46.7 KAX	27.9												
	ROUGHER-SCALER	20			375	10	11.5	11.1											
	CLEANING OF 1ST ROUGHER	9			FROTH		12.8	12.8											
		7		25	2000		12.8	12.8											
	3-CL'ER	5		25	800		12.8	12.8											
		5		24	800		12.8	12.8											
	5-CL'ER	4		24	800		12.8	12.8											
		3.5			1000														
	REGRIND	OF 2ND ROUGHER	15			FROTH													
			10		26	200	KAX	12.9	12.8										
	Hayl Ore	CLEANING OF 1ST ROUGHER	15					12.9	12.8										
			10		25	700		12.8	12.9										
3-CL'ER		9		25	400		12.8	12.8											
		8		25	600		12.9	12.8											
5-CL'ER		8		25	500		12.8	12.8											
		8		25	500		12.8	12.8											
98	GRINDING ROUGHER	16	60		2000	AP3501	10.8	10.4											
		10	35	30	1620	40.9 KAX	18.6												
	ROUGHER-SCALER	20			450	10	11.0	10.5											
	CLEANING OF 1ST ROUGHER	6			FROTH		12.8	12.9											
		6		25	1900		12.9	12.8											
	3-CL'ER	6		24	100		12.9	12.9											
		6		23	500		12.9	12.9											
	4-CL'ER	6		23	600		12.9	12.9											
		3.5			1000														
	REGRIND	OF 2ND ROUGHER	15			FROTH													
			10		25	200	KAX	12.8	12.7										
	Rakah Stockwork Ore	CLEANING OF 1ST ROUGHER	15					12.7	12.6										
			10		24	800		12.8	12.8										
3-CL'ER		11		24	400		12.9	12.8											
		9		24	400		12.8	12.8											
5-CL'ER		8		24	400		12.8	12.8											
		8		24	400		12.8	12.8											

Table 32 Flotation Test Results of Rakah Massive Ore
 - Effect of mixing ratio of Rakah massive ore on bulk flotation of composite ore -

TEST No.	OPERATION	CONDITIONS					PH		PROD UCIS	WEIGHT				ASSAY				DISTRIBUTION			
		R* %	Time min.	D. Size %	Lime g/T	KAX g/T	AF65 g/T	Initial		Final	%	Au g/t	Ag g/t	Cu %	Fe %	S %	Au %	Ag %	Cu %	Fe %	S %
99	GRINDING		9	60					C. Head	100.00								100.00			
	ROUGHER	0	15	35	2300	35	37.2	11.4	C-1	29.60	1.25	17.03					99.96				
	SCAV'ER1		5		200	5	9.3	11.4	C-2	2.87	3.96	35.29					1.67			61.35	
	SCAV'ER2		10		400	5	18.6	11.1	C-3	2.52	0.78	21.40					1.23			3.95	
									Tail	63.21	0.61	15.64					3.14			32.98	
100	GRINDING		9	60					C. Head	100.00								100.00			
	ROUGHER	5	15	35	2900	45	37.2	11.4	C-1	28.39	2.00	17.66					100.00				
	SCAV'ER1		5		200	5	9.3	11.3	C-2	4.23	4.41	35.79					90.09			57.54	
	SCAV'ER2		10		200	5	18.6	11.1	C-3	3.95	5.72	29.03					3.39			6.95	
									Tail	63.44	0.34	8.51					4.24			30.58	
101	GRINDING		9	60					C. Head	100.00								100.00			
	ROUGHER	10	15	35	3320	50	37.2	11.4	C-1	31.33	1.48	18.34					100.00				
	SCAV'ER1		5		200	5	9.3	11.4	C-2	2.11	3.51	35.92					88.46			61.76	
	SCAV'ER2		10		200	5	18.6	11.0	C-3	4.03	3.22	23.92					3.65			2.75	
									Tail	62.33	0.26	8.66					4.62			30.12	
102	GRINDING		9	60					C. Head	100.00								100.00			
	ROUGHER	20	15	35	5240	80	27.9	11.4	C-1	38.51	1.80	20.51					100.00				
	SCAV'ER1		5		200	5	9.3	11.4	C-2	1.58	3.72	37.80					87.37			70.99	
	SCAV'ER2		10		200	5	18.6	11.0	C-3	1.95	6.93	19.02					4.49			1.47	
									Tail	57.95	0.43	9.11					2.93			25.75	
103	GRINDING		9	60					C. Head	100.00								100.00			
	ROUGHER	30	15	35	6800	110	27.9	11.4	C-1	42.76	3.28	22.85					100.00				
	SCAV'ER1		5		200	5	9.3	11.2	C-2	1.59	3.51	39.30					82.79			73.60	
	SCAV'ER2		10		200	5	18.6	10.8	C-3	2.05	5.87	21.28					5.15			1.49	
									Tail	53.98	0.79	9.86					7.98			23.12	
104	GRINDING		9	60					C. Head	100.00								100.00			
	ROUGHER	40	15	35	7600	110	27.9	11.4	C-1	43.47	5.08	24.65					100.00				
	SCAV'ER1		5		200	5	9.3	11.2	C-2	1.85	3.10	40.17					76.01			70.84	
	SCAV'ER2		10		200	5	18.6	10.8	C-3	2.32	8.65	24.53					4.15			1.84	
									Tail	52.37	1.67	11.81					5.51			2.23	

the composite ore was prepared by mixing Hayl as Saffil ore with Rakah stockwork ore in the ratio 1.85 to 1.
 R* : Percent of Rakah massive ore

Table 33 Flotation Test Results of Composite Ore
- Bulk and copper selective rougher/cleaner flotation -

TEST No.	OPER AIIION	CONDITIONS						PROD UCITS	ASSAY						DISTRIBUTION										
		Time min.	P.D. %	Size %	Temp °C	Lime g/I	KAX g/T		AF65 g/T	PH Initial	PH Final	WEIGHT %	Au g/t	Ag g/t	Cu %	Zn %	Fe %	S %	Au %	Ag %	Cu %	Zn %	Fe %	S %	
																									Au g/t
105	GRINDING ROUGHER REGRIND	9	60	48	32	2800	50	93	11.4	10.5	100.00	0.48	3.16	1.17	0.24	16.81	13.12	100	100	100	100	100	100	100	100
		30	35			1000				12.2	40.48	1.12	7.38	2.83	0.53	29.64	31.60	93.82	94.54	97.46	87.80	71.36	97.46	97.46	97.46
		7.5									59.52	0.05	0.29	0.05	0.05	8.09	0.56	6.18	5.46	2.54	12.20	26.64	2.54	2.54	
	CLEANING	OF ROUGHER	15	21	95	28	1700		27.9	12.6	7.43	3.56	13.39	2.32	0.32	32.71	38.71	54.92	49.58	84.80	70.76	14.44	21.91	21.91	21.91
		1-CL'ER	15	18				6	18.6	12.6	33.05	0.57	4.00	0.45	0.13	28.96	30.00	38.90	44.96	12.66	17.04	56.92	75.55	75.55	
		1CL-SCA	10	14			400		4.7	12.8	2.02	1.14	6.26	2.59	0.52	36.78	41.05	4.79	4.01	4.47	4.32	4.43	6.33	6.33	
		2-CL'ER	13	13			400			12.8	6.07	4.06	0.53	4.17	0.31	28.45	29.28	34.12	40.95	8.20	12.72	52.50	58.22	58.22	
		3-CL'ER	13	13			400			12.8	1.36	1.36	1.36	1.36	0.52	32.40	33.44	51.08	45.48	81.88	67.85	11.69	18.24	18.24	
		4-CL'EM	12	12			400			12.8	12.8	5.31	4.37	17.41	3.00	31.87	33.40	48.09	41.68	78.73	65.26	10.06	15.93	15.93	
	BULK	5-CL'EM	12	11			500			12.8	4.78	1.89	15.77	4.87	3.20	31.48	39.78	2.98	3.80	3.16	2.59	1.63	2.31	2.31	2.31
		6-CL'ER	11	10			500			12.8	0.47	1.06	15.81	6.71	0.92	35.93	41.29	1.04	2.29	2.70	1.80	1.01	1.48	1.48	
											4.49	4.91	25.88	19.18	3.35	34.26	39.09	45.76	35.77	73.40	61.72	8.35	13.38	13.38	
										0.34	1.82	24.12	8.96	1.24	31.35	40.77	1.30	2.82	2.62	1.75	0.70	1.07	1.07		
										4.11	5.20	25.94	19.95	3.52	31.06	38.97	44.30	33.72	69.82	59.27	7.59	12.19	12.19		
										0.38	1.82	25.05	10.93	1.55	33.37	40.40	1.45	3.05	3.58	2.45	0.76	1.18	1.18		
106	GRINDING ROUGHER REGRIND	16	60	80	31	3120	45	65.1	11.6	100.00	0.53	2.77	1.26	0.28	17.33	13.01	100	100	100	100	100	100	100	100	
		30	35			1000				11.3	19.28	1.85	9.59	5.80	1.01	35.20	38.15	67.82	69.65	89.07	70.71	39.16	56.52	56.52	
		4									80.72	0.21	1.04	0.17	0.10	13.06	7.01	32.18	30.35	10.93	29.29	60.84	43.48		
	CLEANING	OF ROUGHER	15	20	95	26	500		9.3	12.6	6.39	3.12	14.09	2.58	0.28	34.31	39.92	37.82	33.75	71.67	59.82	12.64	19.59	19.59	
		1-CL'ER	15	15			400		9.3	12.6	12.89	1.23	7.70	1.69	0.23	35.64	37.28	30.00	35.90	17.40	10.89	25.52	36.93	36.93	
		1CL-SCA	10	14			400	1		12.6	1.40	2.50	11.97	8.38	0.83	34.23	38.81	6.66	6.07	9.25	4.22	2.77	4.18	4.18	
		2-CL'EM	13	14			400			12.8	11.49	1.07	7.18	0.89	0.16	35.81	37.09	23.34	29.83	8.14	6.67	23.74	32.75	32.75	
		3-CL'ER	13	11			500			12.8	4.85	3.70	17.34	3.77	0.20	32.50	38.86	34.10	30.49	68.99	57.54	9.10	14.49	14.49	
		4-CL'EM	12	9			500			12.8	1.53	4.07	18.86	20.24	0.72	49.07	43.27	37.72	32.26	2.68	2.28	3.54	5.09	5.09	
	STRAIGHT	5-CL'ER	11	8			500			12.8	0.73	1.61	8.99	4.21	0.72	39.71	44.06	2.22	2.35	2.44	1.90	1.66	2.46	2.46	
		6-CL'EM	10	7			500			12.8	3.60	4.37	19.93	4.08	0.68	30.52	37.37	29.86	25.93	62.76	53.27	6.34	10.33	10.33	
											3.15	4.59	19.16	22.98	1.24	36.05	41.84	2.02	2.22	3.80	2.38	1.10	1.70	1.70	
										0.45	2.82	25.35	14.36	1.86	30.11	36.96	27.44	21.80	57.59	60.22	5.47	8.94	8.94		
										2.77	4.77	18.51	23.88	4.66	29.96	35.88	25.08	18.54	52.24	46.83	4.79	7.65	7.65		
										0.38	3.29	23.95	17.82	2.48	31.18	37.57	2.35	3.26	5.35	3.39	0.68	1.09	1.09		
										2.77	4.77	18.51	23.88	4.66	29.96	35.88	25.08	18.54	52.24	46.83	4.79	7.65	7.65		
										5.02	2.04	11.73	7.18	0.95	36.69	41.28	19.39	21.28	28.69	17.22	10.63	15.92	15.92		
										92.21	0.92	1.81	0.26	0.11	15.89	10.76	55.52	60.18	19.07	35.95	84.58	76.23	76.23		

Table 34 Flotation Test Results of Composite Ore
- Scalp rougher/cleaner flotation -

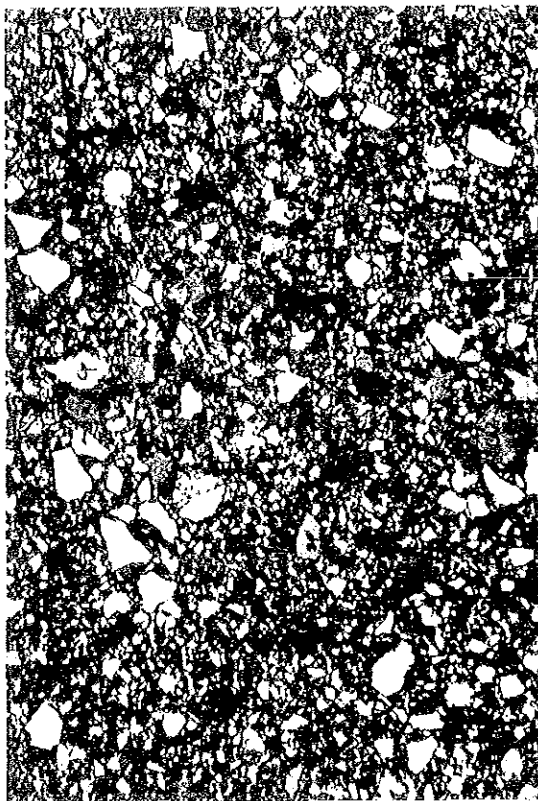
TEST No.	OPEN ATION	CONDITIONS			PH		PROD UCITS	WEIGHT %				ASSAY				DISTRIBUTION			
		Time min.	Temp °C	Size %	Initial	Final		AU g/t	Ag g/t	Cu %	Zn %	Fe %	S %	AU %	Ag %	Cu %	Zn %	Fe %	S %
107	GRINDING	16	31	60	11.6	11.2	C. Head	0.49	2.57	1.15	0.24	16.75	13.34	100	100	100	100	100	100
	ROUGHER	5		35			R. RS-C	1.81	9.72	6.47	1.16	30.52	34.08	62.37	63.41	94.22	82.41	30.56	47.86
	ROUGHER	25			11.6	10.9	E-I	0.22	1.13	0.08	0.05	13.98	9.16	37.63	36.57	5.78	17.59	69.44	57.14
	SCA'ER						Conc. 1	3.89	16.99	19.78	3.83	29.29	38.02	23.51	19.42	50.50	47.51	5.13	8.36
	CLEANING						IC-C	2.40	12.52	8.31	1.30	32.78	38.68	32.42	25.38	42.25	38.42	13.43	13.43
	1-CL'ER	9	FROTH				IC-M	0.80	5.99	1.29	0.51	15.71	21.45	10.30	9.42	16.37	21.05		
	2-CL'ER	25			12.8	12.9	ICS-C	1.61	9.97	3.78	0.52	33.62	37.85	3.17	2.60	3.12	7.10	1.92	2.72
	3-CL'ER	24			12.8	12.8	1CS-I	0.74	5.89	1.00	0.21	29.35	34.85	2.54	18.86	7.16	7.32	14.45	18.33
	4-CL'ER	24			12.8	12.8	2C-M	2.81	14.19	10.14	1.56	32.78	39.75	19.89	18.95	30.36	22.77	6.75	10.27
	5-CL'ER	23			12.8	12.8	3C-M	1.34	7.84	2.98	0.52	32.76	35.57	3.26	3.61	3.06	2.60	2.32	3.16
SCA LP	REGRIND	3.5					4C-C	3.25	16.69	4.99	0.83	33.50	38.93	2.33	2.08	2.81	2.27	1.30	1.89
	CLEANING						5C-C	2.28	10.89	6.81	1.91	32.39	39.85	14.82	4.39	24.10	17.93	4.28	6.82
	1-CL'ER	15	FROTH		12.8	12.8	5C-M	1.63	10.07	14.73	2.04	33.50	40.26	2.74	2.48	3.46	2.57	1.17	1.78
	1CL-SCA	10			12.8	12.8	Conc. 2	1.93	12.85	7.76	1.55	33.86	40.64	2.01	2.91	3.93	3.82	1.18	1.78
	2-CL'ER	14			12.8	12.8	6C-M	4.30	18.29	15.98	2.07	31.42	39.06	10.72	8.63	16.83	10.62	2.28	3.55
	3-CL'ER	13			12.8	12.8	TTL-C	0.27	1.42	9.15	1.97	33.13	41.06	2.09	2.84	3.34	3.50	0.83	1.29
	4-CL'ER	11			12.8	12.8	TTL-M	4.01	17.36	18.67	3.32	29.87	38.32	34.23	28.52	67.33	58.23	7.41	11.93
	5-CL'ER	9			12.9	12.8	TTL-I	1.73	9.71	5.19	0.91	33.34	38.39	15.60	35.52	19.73	16.87	8.71	12.60
	6-CL'ER	3			12.8	12.8		0.27	1.56	0.16	0.06	15.37	11.01	50.17	55.43	12.94	24.91	83.89	75.47
	108	GRINDING	16	29	60	11.7	11.4	C. Head	0.56	2.57	1.17	0.23	17.03	13.30	100	100	100	100	100
ROUGHER		2		35			R. RS-C	2.22	10.45	7.40	1.28	31.95	34.81	57.63	59.54	92.71	81.53	27.50	38.38
ROUGHER		28			11.4	11.1	E-I	0.34	1.22	0.10	0.05	14.47	9.60	42.37	40.46	7.29	18.47	72.50	61.82
SCA'ER							Conc. 1	3.96	15.89	22.67	4.35	29.84	35.99	7.55	6.64	20.83	20.25	1.88	2.91
CLEANING							IC-C	3.19	13.58	12.03	1.99	33.11	38.32	35.12	32.76	33.85	53.52	12.07	17.89
1-CL'ER		23	FROTH		12.9	12.8	IC-M	1.14	7.03	1.27	0.24	31.28	31.68	18.97	20.14	8.02	7.75	13.55	17.57
2-CL'ER		23			12.9	12.9	ICS-I	2.24	9.36	4.00	0.52	35.20	38.51	3.16	2.84	2.67	1.76	1.61	2.26
3-CL'ER		23			12.8	12.8	1CS-C	1.01	5.75	0.95	0.21	30.82	30.87	11.81	17.30	5.35	5.00	1.93	15.31
REGRIND		3.5					2C-M	3.45	14.46	13.77	2.28	32.77	38.73	31.71	29.13	61.04	51.22	9.98	15.11
CLEANING							3C-C	1.88	9.14	3.21	0.52	34.83	36.23	3.41	3.63	2.81	2.30	2.09	2.79
SCA LP	1-CL'ER	15			12.8	12.7	4C-C	3.61	15.10	14.89	2.49	32.46	38.74	29.73	27.26	59.14	50.01	8.86	13.54
	1CL-SCA	10			12.9	12.9	4C-M	2.08	8.93	4.14	0.52	35.44	38.64	1.98	1.87	1.90	1.21	1.12	1.56
	2-CL'ER	14			12.8	12.8	5C-C	3.16	15.61	15.74	2.65	32.16	38.63	28.02	25.49	56.49	48.21	7.94	12.20
	3-CL'ER	13			12.9	12.8	5C-M	2.15	10.23	6.94	0.93	35.08	39.79	1.70	1.78	2.65	1.80	0.92	1.34
	4-CL'ER	11			12.8	12.8	6C-C	3.93	16.20	16.73	2.83	32.12	38.73	26.02	23.51	53.41	45.71	7.04	10.88
	5-CL'ER	9			12.8	12.8	6CS1-M	0.77	10.89	7.73	1.24	32.64	37.87	2.00	1.97	3.08	2.50	0.89	1.33
	6CL-SV1	2			12.8	12.9	6CS1-C	1.33	16.98	19.68	3.52	31.42	38.09	10.76	8.79	22.39	20.29	2.40	3.81
	6CL-SV2	6			12.8	12.9	6CS2-C	2.40	15.77	15.10	2.44	32.51	39.08	15.26	14.73	31.01	25.42	4.59	7.05
					12.8	12.8	6CS2-M	1.20	16.35	12.84	1.99	32.16	38.90	8.14	7.01	17.81	15.05	2.32	3.55
					12.8	12.9		0.99	14.15	13.77	2.07	33.37	39.78	5.40	4.90	10.48	7.98	1.74	2.66

* TTL-C of Test No.108 = Conc.1 + Conc.2 + 6CS1-C + 6CS2-C

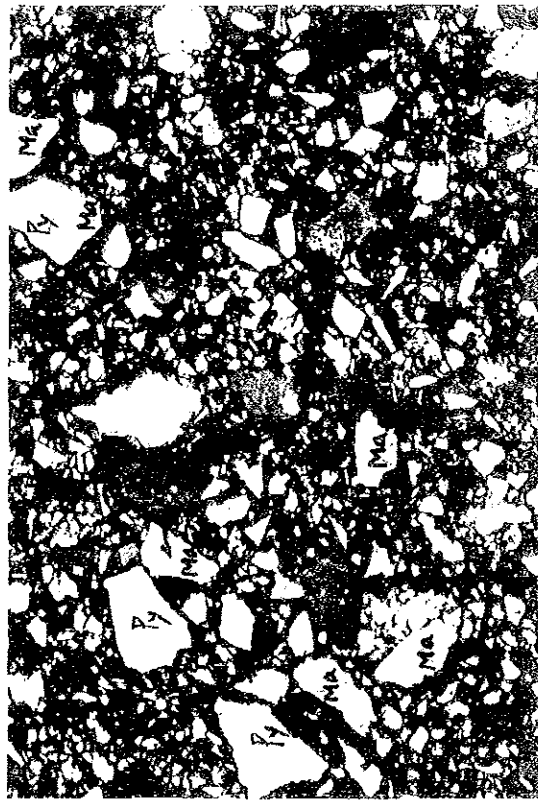
Appendix 7

SEM and microprobe images of test samples

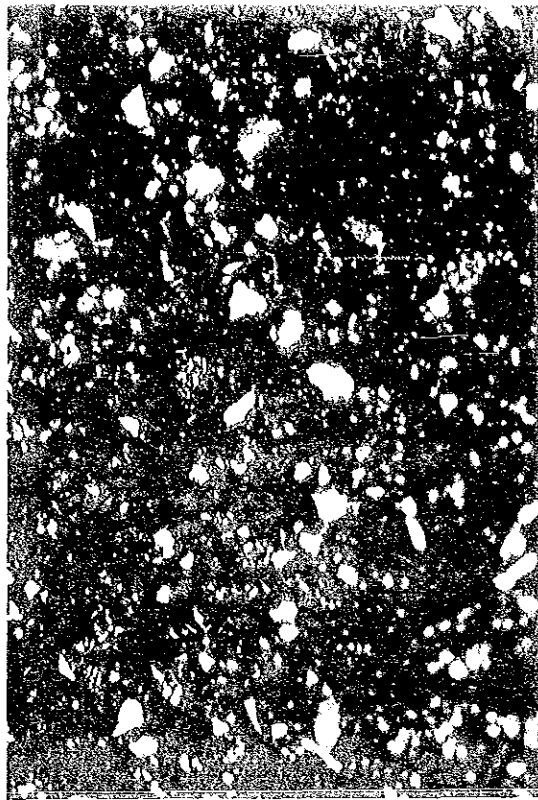
Photomicrograph 1 Flotation products of Rakah massive ore



10 min. Product (magnification: X 175, 100 μ m)



10 min. Product (magnification: X 350, 50 μ m)

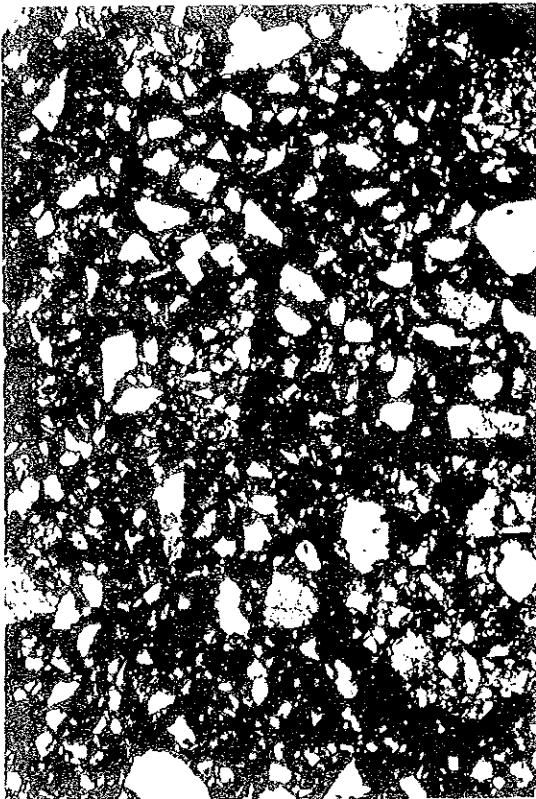


30 min. Product (magnification: X 175, 100 μ m)



30 min. Product (magnification: X 350, 50 μ m)

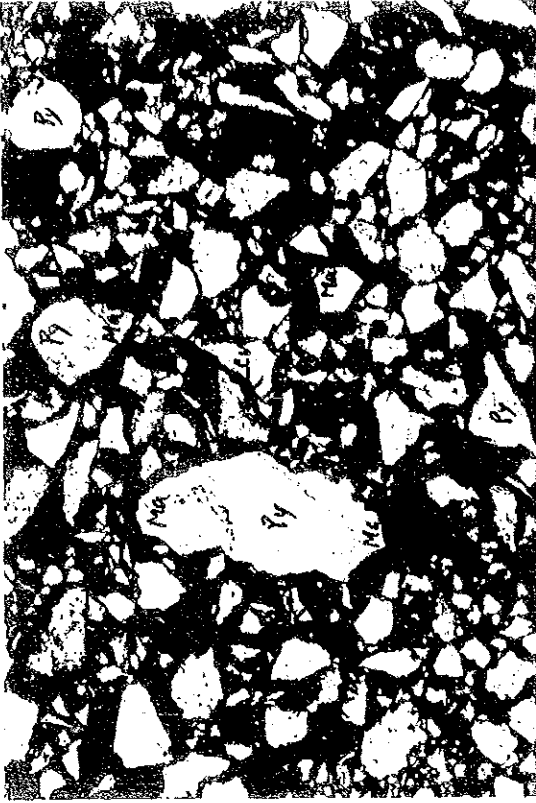
Photomicrograph 2 Flotation products of Rakah massive ore



50 min. Product (magnification: X 175, 100 μ m)



50 min. Product (magnification: X 350, 50 μ m)

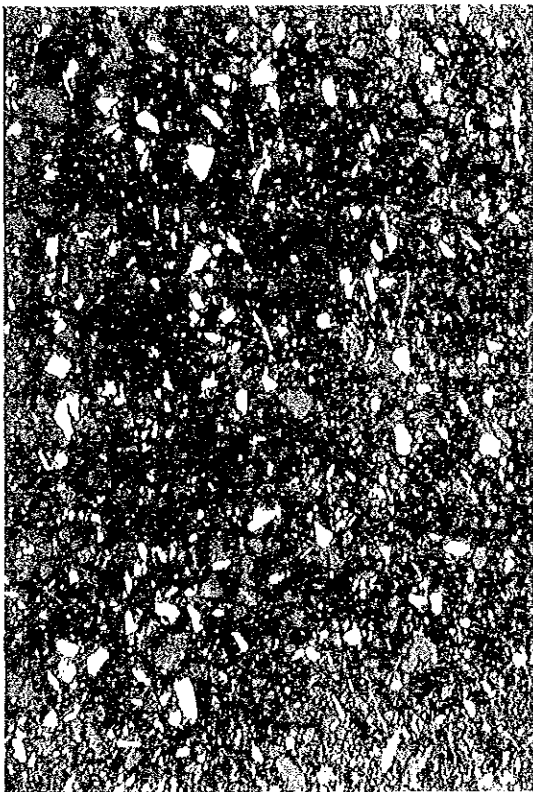


80 min. Product (magnification: X 175, 100 μ m)



80 min. Product (magnification: X 350, 50 μ m)

Photomicrograph 3 Flotation products of Rakah massive ore



tailing (magnification: $\times 175$, $100 \mu\text{m}$)

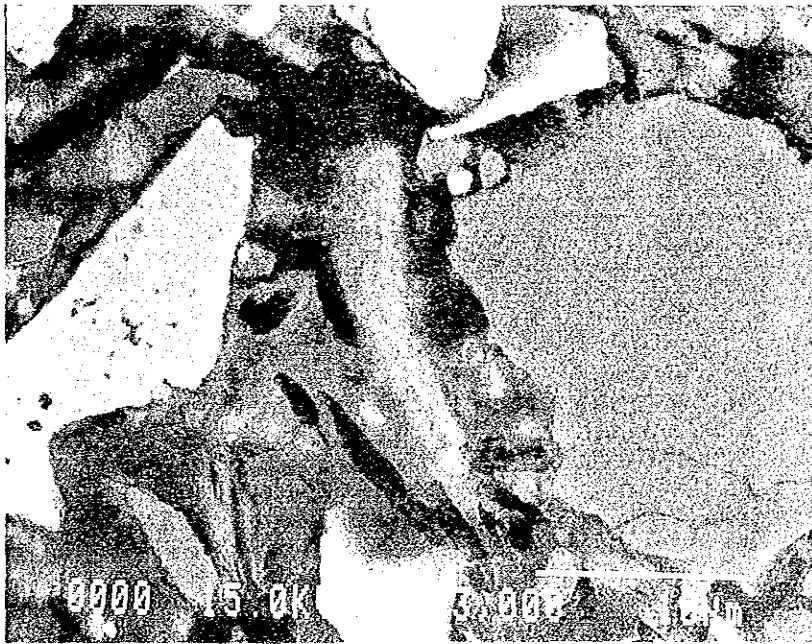


tailing (magnification: $\times 175$, $100 \mu\text{m}$)



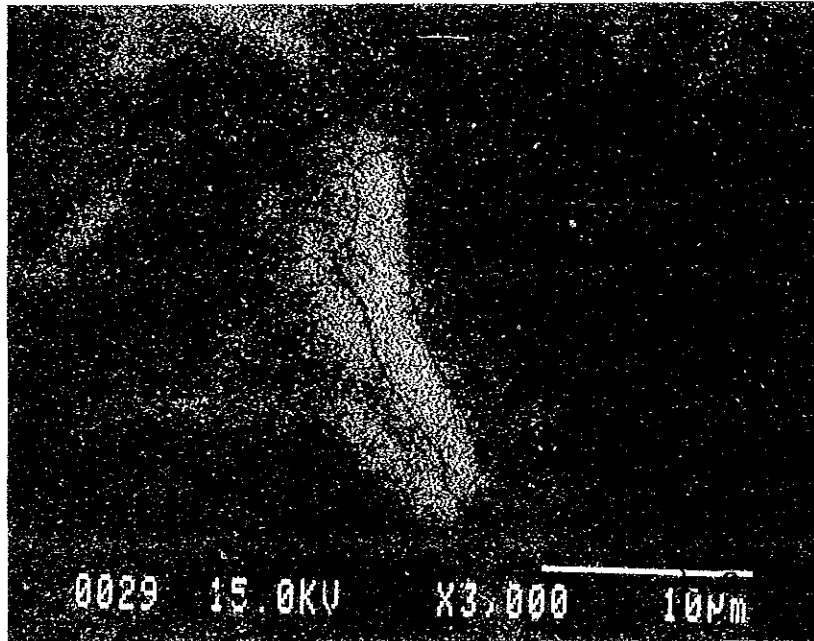
tailing (magnification: $\times 350$, $50 \mu\text{m}$)

X-ray image of tailing by EPMA analysis



Back scattered electron image

X-ray images of tailing by EPMA analysis



Cu Kα X-ray Image



Si Kα X-ray Image

Appendix 8

Drawings of proposed mineral processing plant

- Fig. 1 General layout of mineral processing plant
- Fig. 2 General arrangement of primary crushing plant
- Fig. 3 General arrangement of secondary & tertiary crushing plant
- Fig. 4 General arrangement of fine ore stockpile
- Fig. 5 General arrangement of fine ore stockpile and ball mill
- Fig. 6 General arrangement of ball mill & flotation plant
- Fig. 7 General arrangement of filter plant & concentrate stockyard
- Fig. 8 General arrangement of tailing thickener



Fig.1 General layout of mineral processing plant

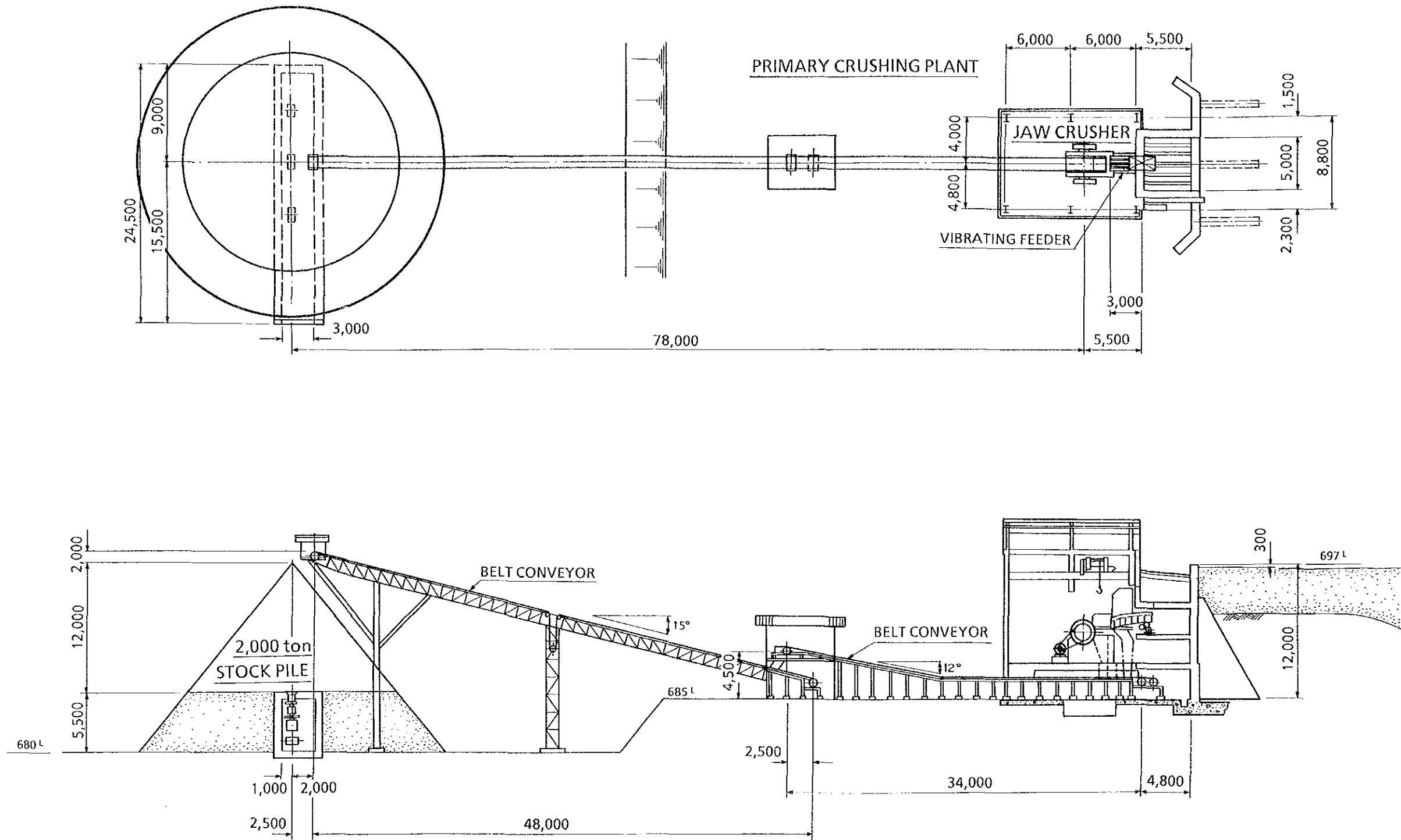


Fig. 2 General arrangement of primary crushing plant

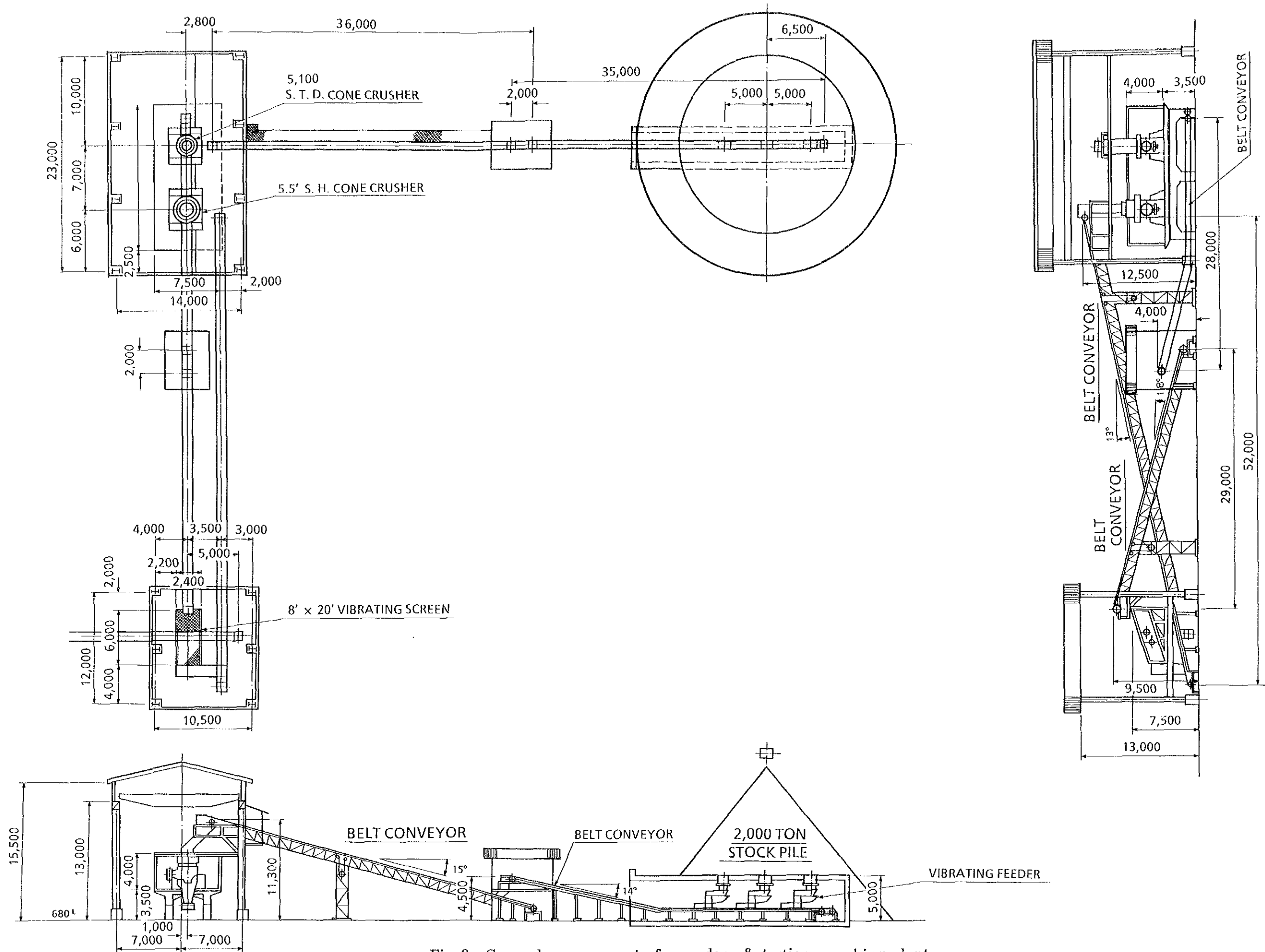


Fig. 3 General arrangement of secondary & tertiary crushing plant

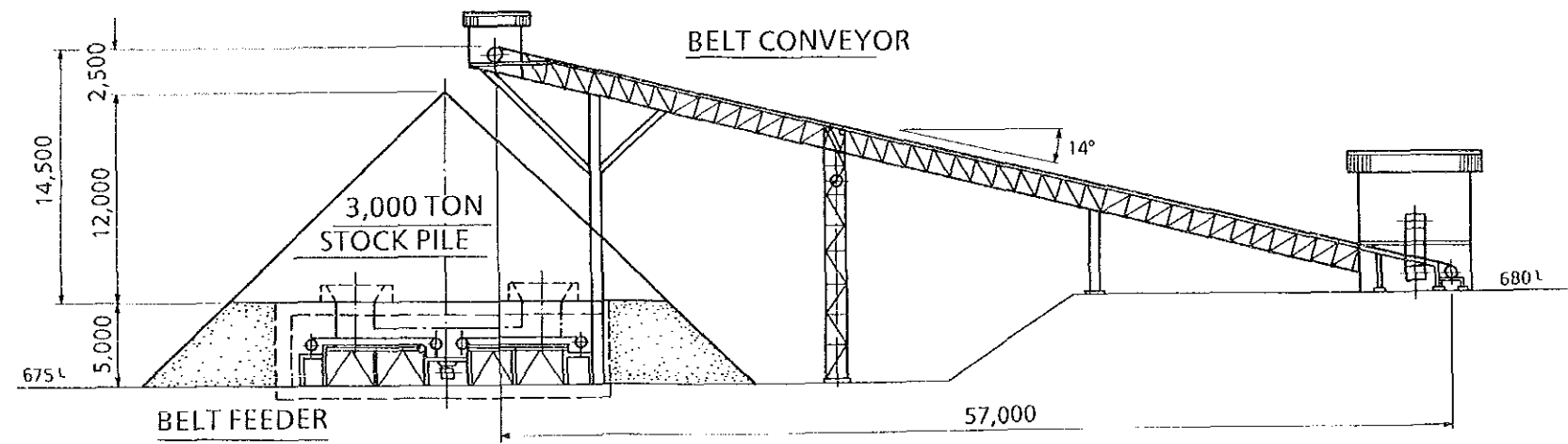
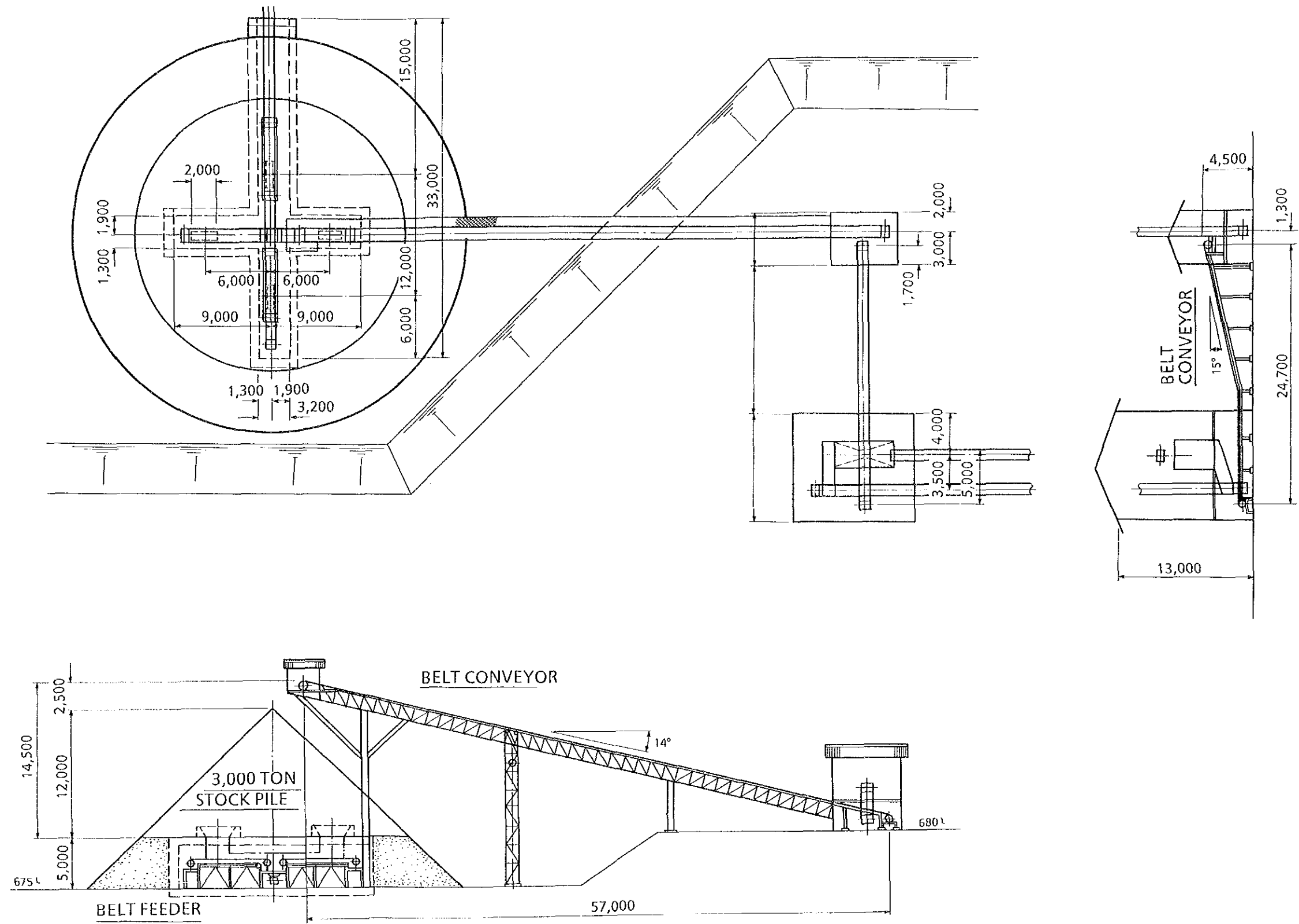


Fig. 4 General arrangement of fine ore stockpile

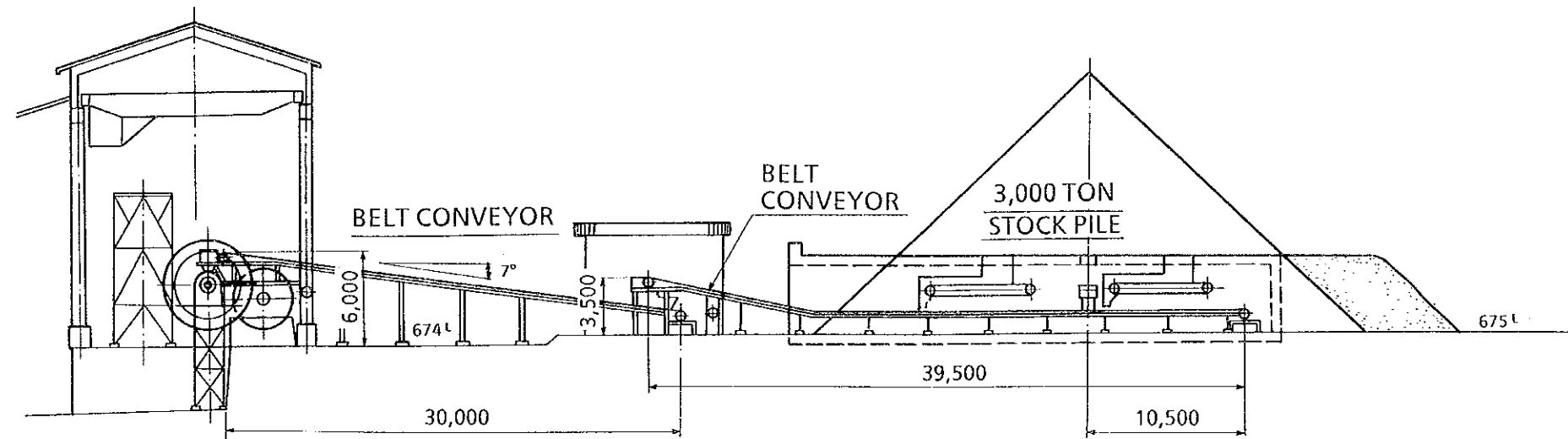
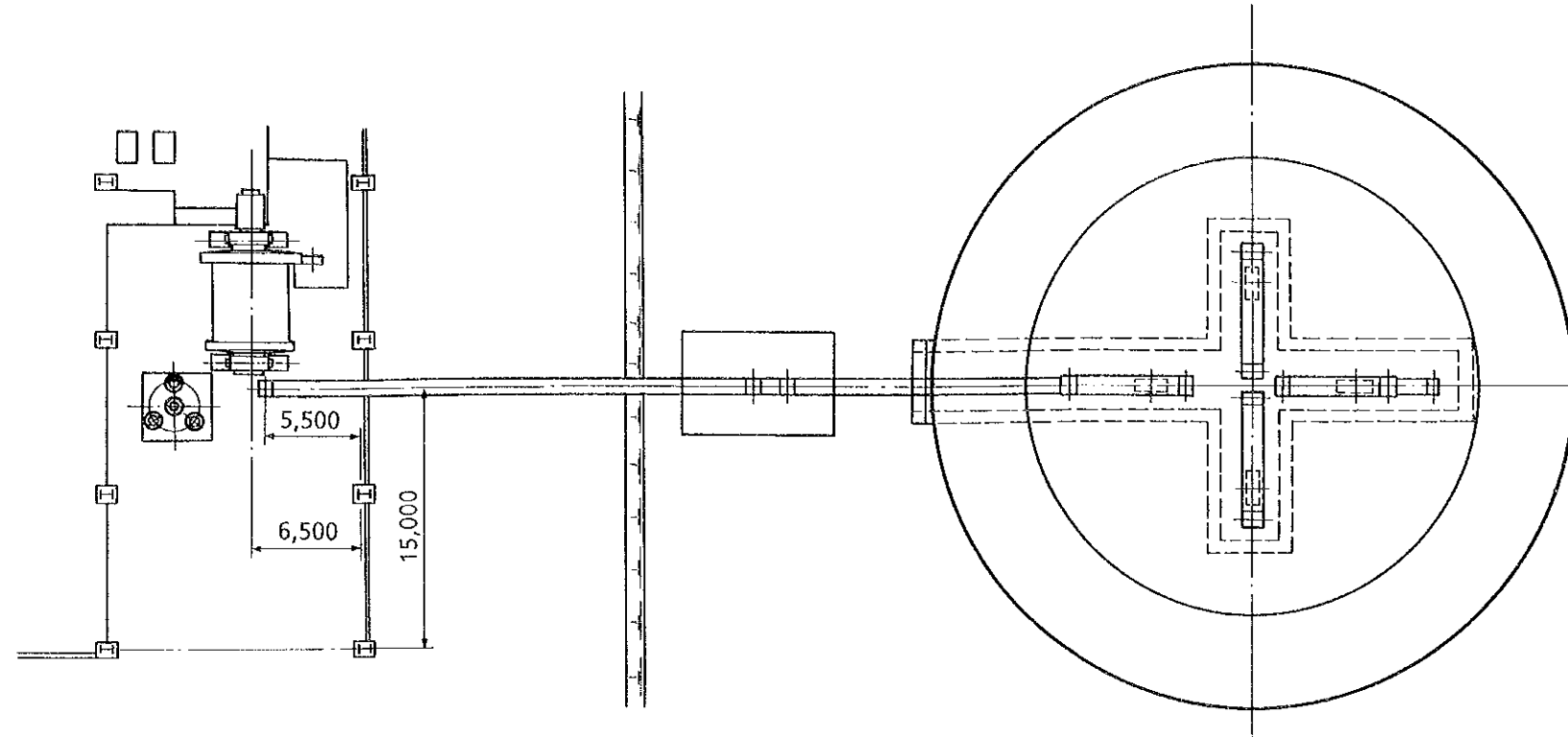


Fig. 5 General arrangement of fine ore stockpile and ball mill

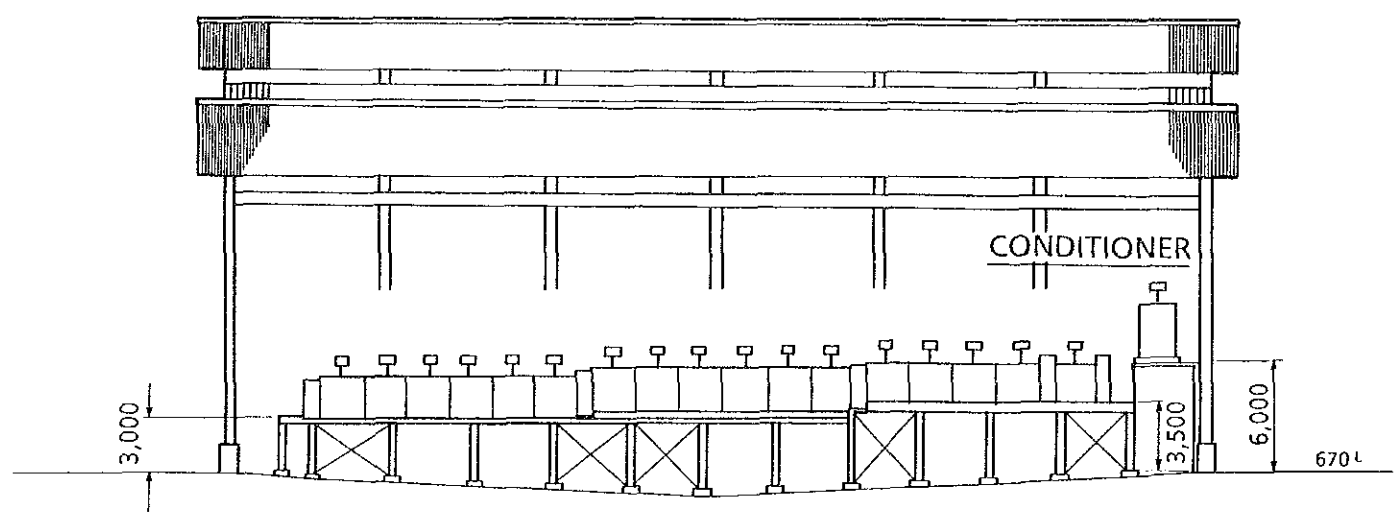
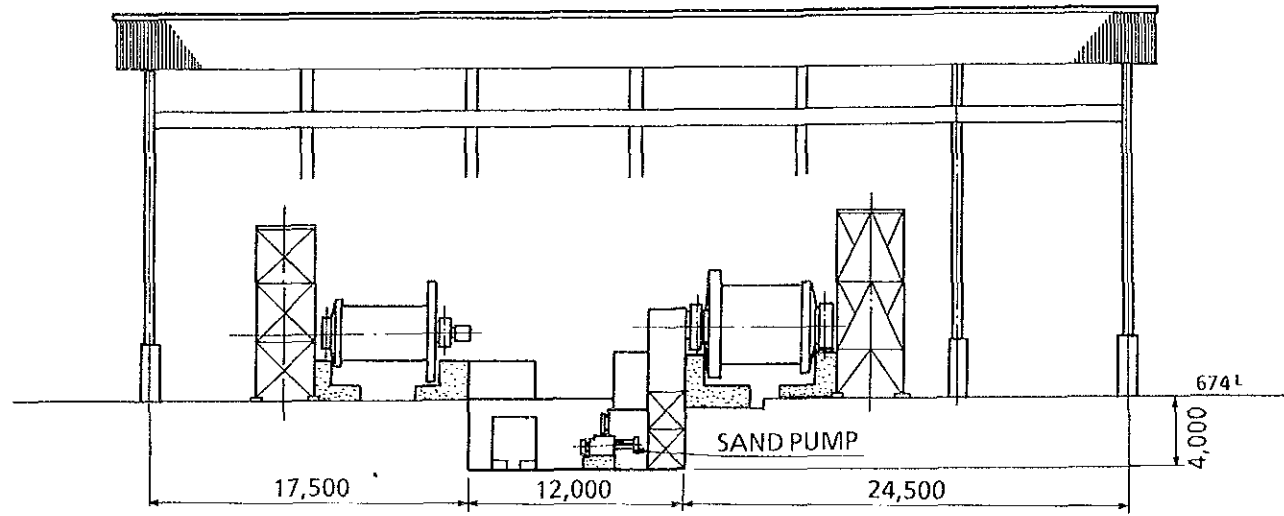
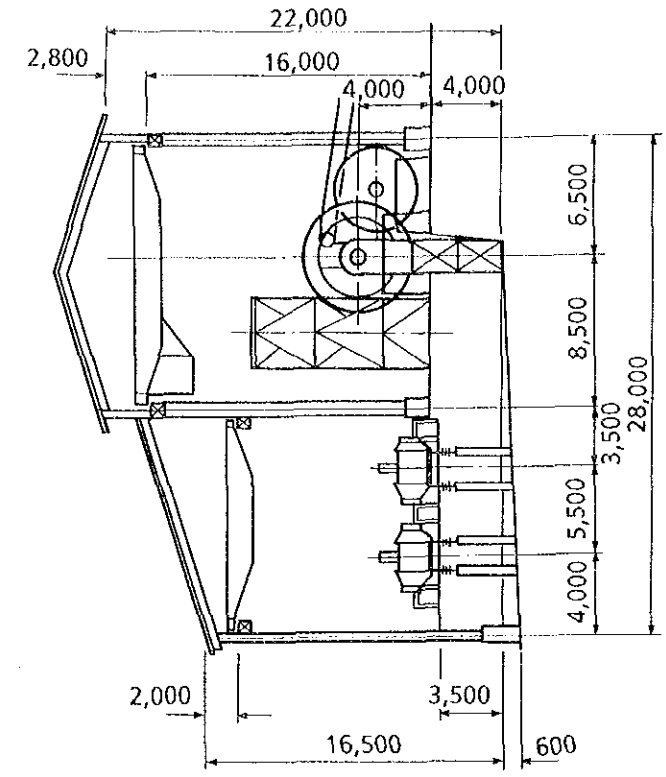
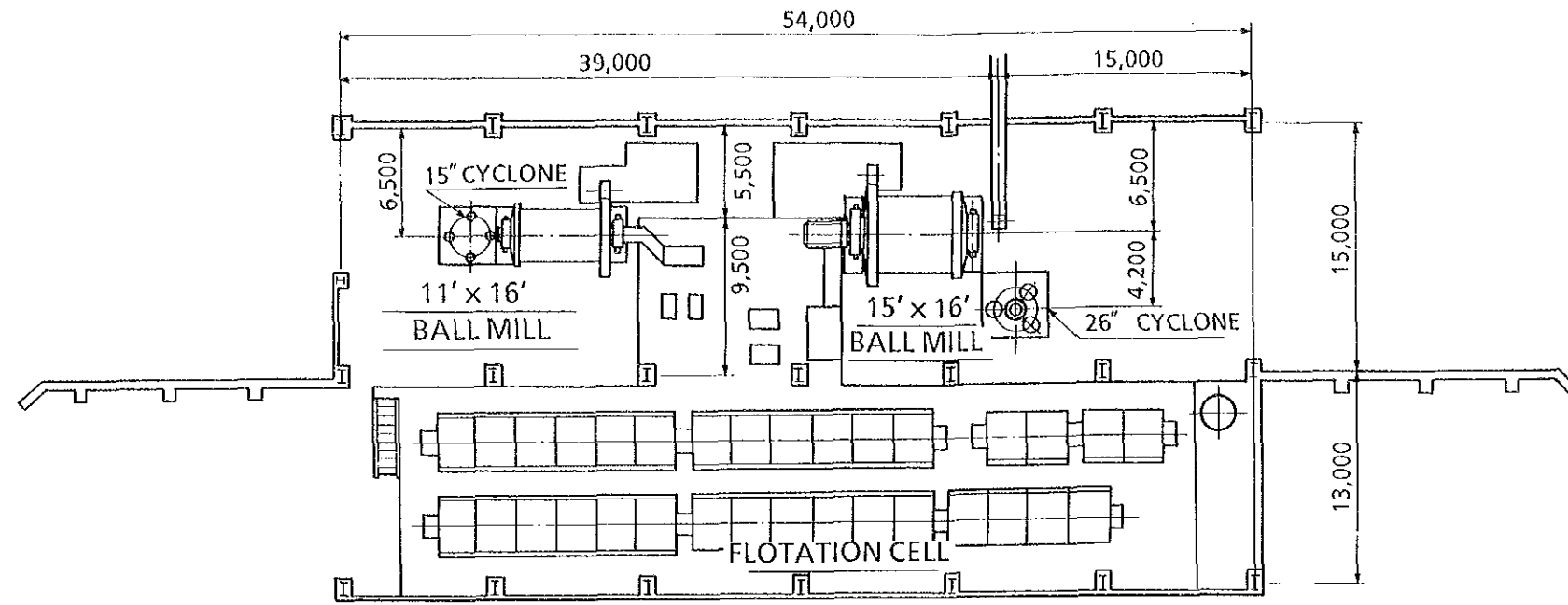


Fig. 6 General arrangement of ball mill & flotation plant

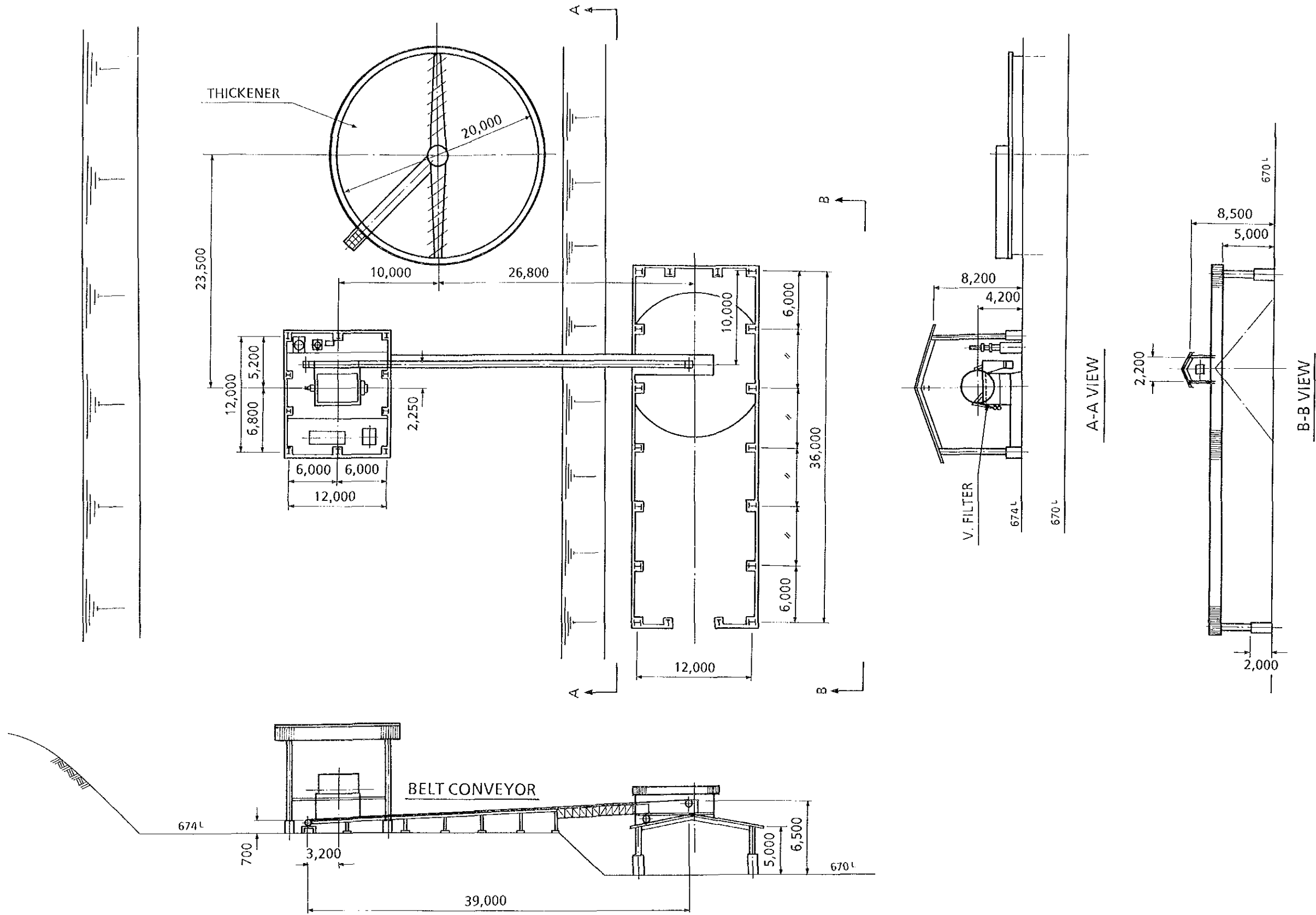


Fig. 7 General arrangement of filter plant & concentrate stockyard

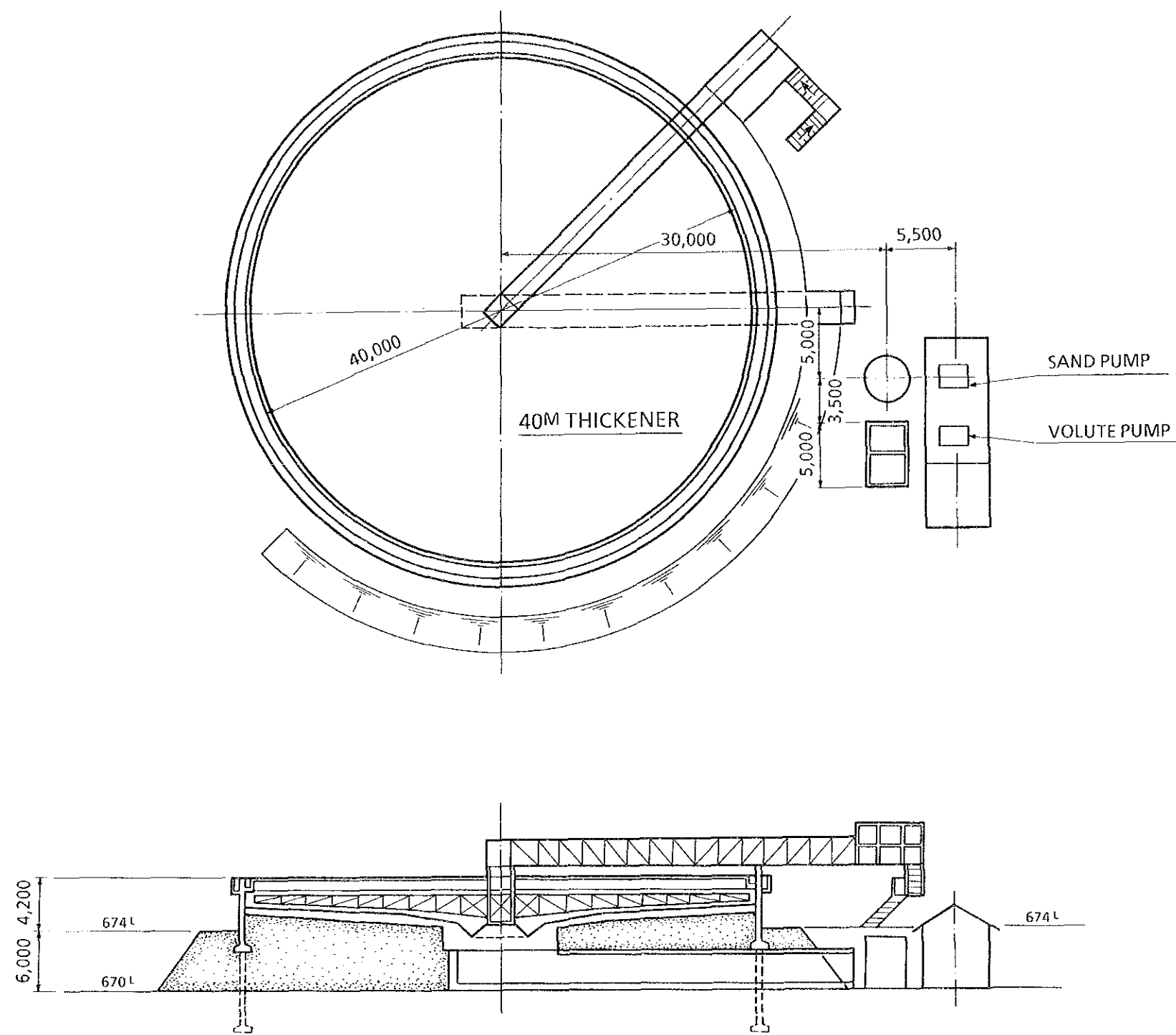


Fig. 8 General arrangement of tailing thickener

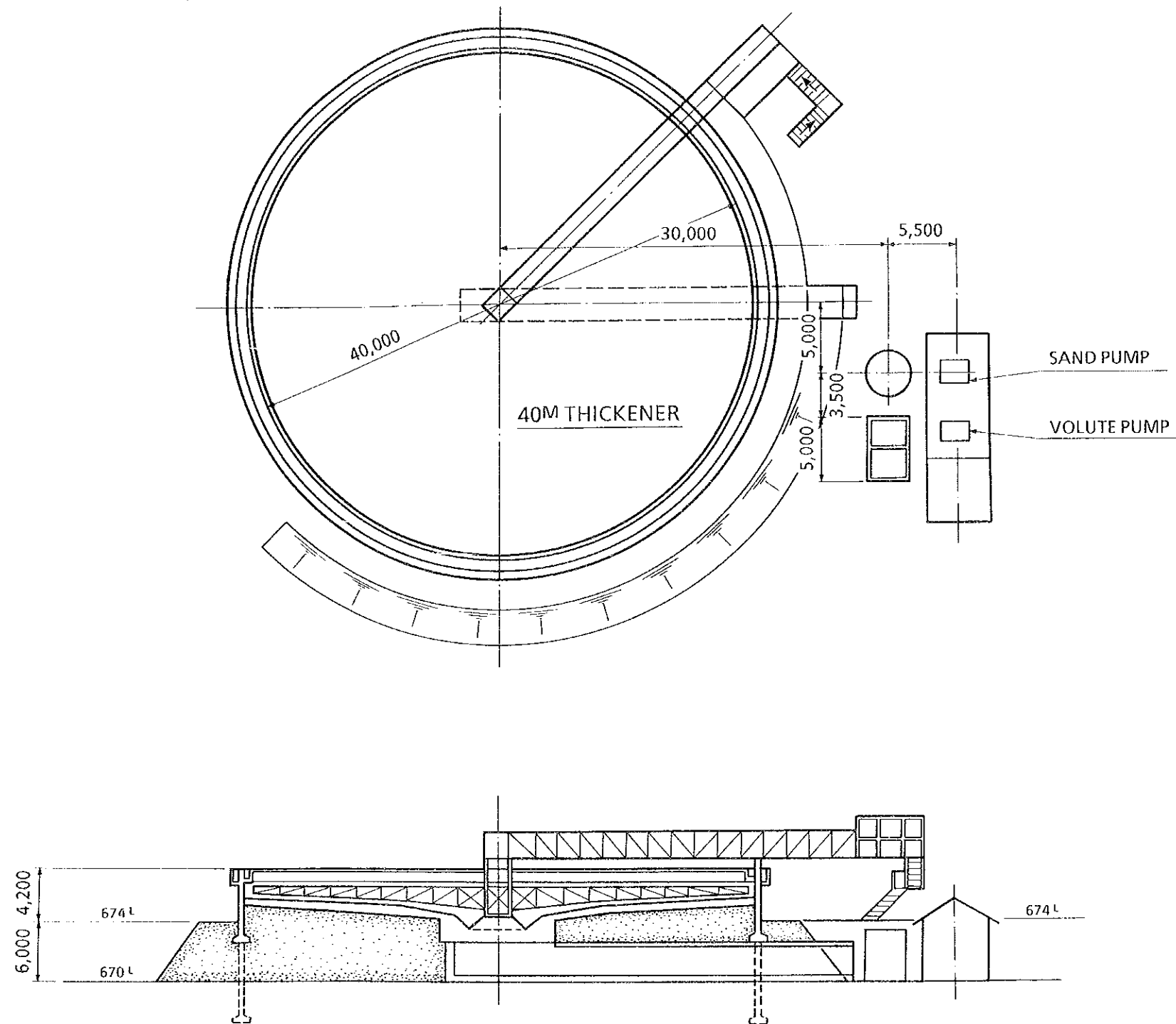


Fig. 8 General arrangement of tailing thickener

