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Appendix: Lotus produced tables, Tables 1-7.

SUMMARY

In May 1994 Mancala conducted a reconnaissance study of the tailings dumps of the Mangana-Mathinna-Alberton-Warrentinna gold belt, based on a list of dumps, author anonymous, provided by the Department of Mines, and by asking questions of locals and other informed people. This report concerns those dumps sampled within EL 22/92 only.

The Department list proved generally rather optimistic in grades (of which only a few were given) and tonnage, and some of the reported dumps were found to be nonexistent or long since spread on roads by Forestry Department or graziers.

Some dumps were sampled on more than one occasion and are assessed on several samples, others are represented by only a few samples.

Tables of results are given in this report. Cut-offs and availability are represented in the tables.

Table 1:

Gold-bearing Tailings, NE Tasmania				
Mine	kT	g/t	EL	Licensee
Mangana G.R.	20	0.83	18/19	A. White
Fingal	?	0.3	18/19	
Buckland	1.4		22/92	Newcrest
Golden Entrance	0.7		18/91	
Miami	0.8		22/92	
Golden Gate	300	1.5	17/91	A. White
Volunteer	14.5	0.67	22/92	
Twilight	5	15	22/92	
City of Hobart	15.1	0.43	17/91	
Volunteer Cons.	1.8		17/91	
New Eldorado	0.6		17/91	
New Golden King	1.6		22/92	
City of Melbourne	0.8	2.07	22/92	
O'Briens	1.3		1/92	Newcrest
Havelock	0.9		1/92	
Starlight	1		1/92	
Alberton	>22?		4/88 & 23/92	
			VMT	Newcrest
Warrentinna	>3.6?			
Gladstone	>3?			
Golconda	>0.8?		Est-92 2/92	Mac Mining
Deposits without grades are estimates based on production.				

This table was provided by Ralph Bottrill of Mineral Resources Tasmania. The author is not known.

1. POTENTIAL RESOURCES OF TAILINGS

A guide to the potentially available tailings was provided by a Mines Department list, Table 1, given to the writer by Ralph Bottrill, a Geologist of the Department.

The mines in EL 22/92 (ex-Newcrest, then Resolute Mining) considered to have potential for resources of tailings were:

- City of Melbourne: 800t at 2.07g/t Au,
- Bright Star, King Solomon, Heaton, Lady Mary,
- New Golden King: 1,600t,
- Volunteer Consolidated: 1,800t,
- Golden Horseshoe, Revenue, Mabel, October.
- Twilight: 5,000t at 1.5g/t Au (?),
- Sunbeam, Tower Hill, Golden Gully.
- Miami: 800t, West Miami,
- Hit or Miss, Great Fingal, South Golden Entrance,
- Buckland: 1,400t,
- Richardsons, Alpine, Cardinal, Tower Hill Freehold.

2. PROGRAMME

A reconnaissance programme of testing known tailings dumps using a 150mm diameter power auger and an 80mm hand auger was done in May 1994.

In the northern half of EL 22/92, the dumps of the Twilight, Volunteer and New Golden King were identified as definite mounds in proximity to those mines and were sampled. The City of Melbourne Mine tailings, remote from the mine, were positively identified on Delvin Flat, beside Dan's Rivulet, well east of the mine. The tailings here included material that came from the nearby King Solomon, Heaton, Bright Star, Lady Mary and True Blue mines (H. Rayner, pers. comm.).

In the southern part of EL 22/92, dumps were listed at the Miami and Buckland Mines.

In the search for the Miami Mine tailings, three likely sites were tested. The first was in a pasture paddock north of the mine (checked on past experience, as of the City of Melbourne), where a patch of thistles marked a fairly fine uniform textured grey sandy soil up to 20cm deep, which elsewhere in the paddock was brown, stony and uneven in texture, as would be expected of a normal soil of the area. The second site was an extended northerly trending creek-like depression in woods adjacent to and west of the paddock, in which was a two to three metre diameter mound of buff coloured uniform sandy material, similar in appearance to that found at the Twilight and New Golden King dumps. Some more of this material was found beneath an uprooted tree nearby. The third site investigated was at the dam at Miami Park, which made sense as a site for a battery, being down hill of, and relatively close to the mine, with a water supply. There was a 'beach' of quartz sand and grit by the dam, which might have been brought there by the Forestry Department. It did not look like tailings, but it was sampled, assaying <0.1g/t Au.



333007
 AMG REFERENCE POINTS ADDED

MANCALA PTY LTD
 Tower Hill Area, EL 22/92
 Location of known tailings dumps
 Scale 1:25,000



333009
 AMG REFERENCE POINTS ADDED

MANCALA PTY LTD

Mangana Area, ELs 18/92 & 22/92
 Location of known tailings dumps
 Scale 1:25,000

The results indicated that none of these sites was positively the Miami tailings dump. The mine-site is now in the midst of a pine plantation, where the ground has been greatly disturbed, and indications of direction of transport of ore from the mine, except for the track to it, have been totally obscured. The writer since learned that Forestry Department had a habit of using tailings for road material, and this was the fate of the Miami tailings.

The reported tailings of Buckland Mine (and presumably of the other mines nearby: Alpine, Cardinal and Richardson's) were thought also to be quite well removed from the mines, which are located up on a ridge. No signs of tailings could be found in the valley and creek below the Buckland Mine. However, in a paddock on the south side of Richardson's Creek, east of the bridge across the creek, is a concrete emplacement which might have supported a battery or other machinery, in front of which is an area of distinct red-brown, fine, uniform sandy textured 'soil' which, can be seen exposed in the river bank. This looked similar to the tailings of the Twilight and New Golden King dumps, though more consolidated than these, and atypical the surrounding natural stony soil. The impression these were tailings was not supported by the assays of five samples, which were all below detection limit of the laboratory's fire assaying method. This area has not been planted with pines, so there is a chance the real tailings are still relatively undisturbed. One must conclude that the uniform red-brown 'soil', which is an anomalous soil for the area, must be the tailings of the nearby mines, from which the gold was comprehensively recovered from the ore.

3. RESULTS

The sampling programme results are summarised in Table 2. This should be compared with Table 1.

Table 2: EL 22/92 Gold Mines Tailings Dumps.

Mine	Tonnes	g/t Au
City of Melbourne	800	3.83
New Golden King	1,600	6.80
Twilight	<5,000	1.00
Volunteer	<10,000	0.80
Buckland	1,400	0.06
Total available dumps	18,800	1.44

See also Lotus Tables 1 to 13, which provide the data for this and following tables, in the Appendix.

4. CONCLUSIONS

4.1 Locations of tailings dumps

The investigations were not completely successful in finding all the tailings dumps reported by the Mines Department (Table 1). The list of dumps was compiled (anon.) some years ago, apparently on reported production information rather than field investigation (R. Bottrill, pers. comm.). So the list could be theoretical rather than factual. Nevertheless it was a useful guide on which to base the search.

4.2 Economic Potential

See Lotus Table 7 for a summary of valid dumps and operation of cut-offs.

Clearly, the grade of many of these dumps is too low to make re-treatment economic: those below 1g/t, for instance.

Table 3: Gold Mines Tailings Dumps, cut-off 1g/t Au.

Mine	Tonnes	g/t Au
City of Melbourne	800	3.83
New Golden King	1,600	6.80
Twilight	5,000	1.00
Total available dumps	7,400	2.56

Then, the Twilight tailings, averaging 1.00g/t could be eliminated:

Table 4 Gold Mines Tailings Dumps, cut-off 3g/t Au.

Mine	Tonnes	g/t Au
City of Melbourne	800	3.83
New Golden King	1,600	6.80
Total available dumps	2,400	5.81

APPENDIX

LOTUS PRODUCED TABLES:

TABLES 1 - 7

Table 1: Twilight Mine tailings sampling.				g/t	repeats
73434	18-May-94	Twilight Mine	Red-brown fine sandy tailings.	1.25	
73435	18-May-94	Twilight Mine	Red-brown fine sandy tailings.	0.84	
73436	18-May-94	Twilight Mine	Red-brown fine sandy tailings.	0.93	
73437	18-May-94	Twilight Mine	Red-brown fine sandy tailings.	2.00	0.93
73438	18-May-94	Twilight Mine	Red-brown fine sandy tailings with some white sand.	0.25	
73439	18-May-94	Twilight Mine	Red-brown fine sandy tailings with some white sand.	0.75	
73440	18-May-94	Twilight Mine	Red-brown fine sandy tailings with some white sand.	0.43	
73441	18-May-94	Twilight Mine	Red-brown fine sandy tailings with some white sand.	1.30	
73484	17-Jun-94	Twilight Mine	1m deep beneath site of sample No 73435, above.	0.55	
73485	17-Jun-94	Twilight Mine	0.4-0.6m depth in tailings mound: tan sand/tailings.	1.38	
73486	17-Jun-94	Twilight Mine	Tan sand/tailings in mound.	1.33	0.95
		Average		1.00	

Table 2: Volunteer Consolidated tailings sampling.					
73443	18-May-94	Volunteer Mine	Grey sandy tailings with light brown 'pellets' of finer material.	0.78	0.68
73444	18-May-94	Volunteer Mine	Grey sandy tailings with light brown 'pellets' of finer material.	0.60	0.50
73445	18-May-94	Volunteer Mine	Grey sandy tailings with light brown 'pellets' of finer material.	0.58	
73446	18-May-94	Volunteer Mine	Grey sandy tailings with light brown 'pellets' of finer material.	1.25	
		Average		0.80	

Table 3: New Golden King Mine tailings sampling.					
73448	18-May-94	New Golden King	Red-brown sandy tailings like those of Twilight Mine.	6.61	
73449	18-May-94	New Golden King	Red-brown sandy tailings like those of Twilight Mine.	6.50	
73450	18-May-94	New Golden King	Red-brown sandy tailings like those of Twilight Mine.	7.50	
73451	18-May-94	New Golden King	Red-brown sandy tailings like those of Twilight Mine.	6.60	
		Average		6.80	

Table 4: City of Melbourne & other mines tailings, Delvin Flat, sampling.					
				g/t	repeats
73447	18-May-94	City of Melbourne	Light grey sandy soil near minesite.	1.18	
73464	10-Jun-94	City of Melbourne	Tan sandy tailings on Delvin Flat (site of battery by Dan's Rivulet.)	3.50	
73465	10-Jun-94	City of Melbourne	Tan sandy tailings on Delvin Flat.	3.40	
73466	10-Jun-94	City of Melbourne	Brown sandy soil/tailings (?) on Delvin Flat.	0.10	0.05
73467	10-Jun-94	City of Melbourne	Brown soil and sandy tailings on Delvin Flat.	4.60	
		Average	Proper tailings average: 3.83 G/t Au.	2.56	
Table 5: Miami Mine: sampled possibilities of tailings.					
73472	16-Jun-94	Miami: thistle patch	Grey-brown soil in limited area of the same soil type: tailings?	0.05	
73473	16-Jun-94	Miami: thistle patch	Grey-brown sandy soil of the same type: tailings?	0.04	
73474	16-Jun-94	Miami: bush mound	Buff fine sand from a mound 2m diameter: tailings?	0.03	
73475	16-Jun-94	Miami: bush	Buff fine sand /soil exposed by fallen tree's roots: tailings?	0.05	
73476	16-Jun-94	Miami: bush	Grey-brown soil/sand: tailings?	0.05	
73477	16-Jun-94	Miami Park	Buff quartz sand (perhaps carted to site).	0.10	
73478	16-Jun-94	Miami Park	Grey coarse quartz sand/grit (perhaps carted to site).	0.08	
		Average		0.06	
Table 6: Buckland & other mines: supposed tailings sampling.					
73479	17-Jun-94	Buckland Mine	Red-brown sandy soil/tailings devoid of stones, beneath paddock.	0.13	
73480	17-Jun-94	Buckland Mine	Dark red-brown sandy soil/tailings, as above.	0.04	
73481	17-Jun-94	Buckland Mine	Red-brown sandy soil/tailings as above.	0.04	0.95
73482	17-Jun-94	Buckland Mine	Red-brown sandy soil/tailings as above.	0.04	
73483	17-Jun-94	Buckland Mine	Red-brown sandy soil/tailings as above.	0.04	
		Average		0.06	

Table 7: Summary of available valid tailings sampled.

Mine	Material	Tons	g/t
Twilight Mine	Red-brown and tan sandy tailings.	5000	1.00
Volunteer Consolidated Mine	Grey sandy tailings with brown mud pellets.	10000	0.80
New Golden King Mine	Red-brown sandy tailings.	1600	6.80
City of Melbourne and other mines	Light grey, tan and brown sandy tailings.	800	3.83
Weighted average, all dumps:		17400	1.55
Cut-off 3 g/t:		2400	5.81