

CONTENTS

	Page
Summary	1
1. Introduction	2
2. Exploration objectives	3
3. Previous Exploration	4
4. Geology	5
5. Exploration programme	7
6. Conclusion	8
7. Expenditure	9
 References	 10

SUMMARY

The title to EL 23/92 was transferred from the original tenure by Newcrest Mining Limited to Mancala Pty on the 30th June 1994.

Newcrest worked the Exploration Licence over the period of October 1992 to September 1993, seeking large scale stockwork style gold mineralisation. Its exploration programme is detailed in the Newcrest Mining Limited Annual Report for Exploration Licences 22/92 Tower Hill, 23/92 Alberton and 34/92 Mt Saddleback, Tasmania (Pearson 1993). Further exploration was suspended as of September 1993, pending release of the NETGOLD Data Package (Quarterly Report for January - March 1994).

On review of the NETGOLD data and in the light of its exploration results, Newcrest decided to sell Exploration Licence 23/92 to a company with more appropriate exploration objectives for the perceived potential of the geological setting (Quarterly Report for April - June 1994).

Mancala has done only reconnaissance work to date, which includes a regional search for and sampling of tailings dumps (none of which were found on the EL itself), literature search and formulation of exploration ideas and targets, particularly for the ground covered by this EL. Efforts to find some of the more interesting old mines have been thwarted to date by the uncertainty of location, density of vegetation and rugged country.

The exploration work proposed for 1994/5 includes inspection and sampling of old workings and drilling specific targets.

1. INTRODUCTION

EL 23/92 is latitudinally long and thin, extending 38km, from 5,396,000N to 5,434,000N, nearly as far south as Mangana north to the latitude of Ringarooma (see Figure 1).

At the north end it covers parts of the Alberton and Mt Victoria Goldfields and the New River Goldfield, including the southern end of the Dorset River Valley and the northern end of the Dan's Rivulet Valley, each area with many gold diggings. The southern half of the EL is west of the Mathinna-Alberton Gold Corridor, and is sparse in reported gold shows.

Parts of the northern half, around Mt Victoria, has exploration restrictions in the form of a Forest Reserve and Recommended Areas of Protection. Otherwise access is generally good via a network of forestry roads and tracks.

2. EXPLORATION OBJECTIVES AND CONCEPTS

Mancala's objective in the acquisition of this Exploration Licence is to locate gold mineralisation in relatively small, high grade deposits appropriate for mining by narrow vein methods, in which the company specialises. This is quite in contrast to the objectives of the former holder, Newcrest Mining Limited, which sought a resource with a potential production of 100,000 oz gold per year.

The Mathinna - Alberton Gold Corridor is considered highly prospective for the type of deposit favoured by Mancala for the same reasons advanced by Newcrest, in that the gold corridor is located on a deep crustal fracture. Such a large structure has lateral and depth potential for deposits of the Golden Gate model. Such deposits would be tightly confined to the fracture structure itself or to offshoots of it.

Therefore, exploration will concentrate on location of the fracture structure itself, its confluences with offshoot structures and dilation zones within them. Structures like these could have been conduits to the mineralisation of the Alberton and Dans Rivulet fields, and placements for gold deposits in themselves.

3. PREVIOUS EXPLORATION

The reader is referred to Newcrest Mining Limited's Annual Report for Exploration Licences 22/92 Tower Hill, 23/92 Alberton & 34/92 Mt Saddleback, Tasmania (Pearson 1993), Sections 3 and 5 for details of previous exploration on EL 23/92.

The above report refers to another that further describes exploration before the ground was held by Newcrest, titled Exploration Licences 22/92 and 23/92 North-east Tasmania: Review of Previous Exploration Information (Newnham 1992).

4. GEOLOGY

Regional geology of the licence area is well covered by the work of the geologists of the Geological Survey of Tasmania, now of Mineral Resources Tasmania, in the 1:50,000 Series geological maps: Ben Lomond [8414N (48)] (Calver et al 1988) and Alberton [8415S (40)] (McClennaghan et al 1993).

Host to the gold mineralisation of the area is the Ordovician to Devonian series (not precisely dated, but prior to intrusion of Devonian granites) known as the Mathinna Beds, comprising a fairly monotonous sequence of sandstones, siltstones and shales, which are mostly quite deformed and partly metamorphosed to phyllite and quartzite, and, in proximity to granitic intrusives, to hornfels.

Deformation of the Mathinna Beds is moderate to tight and asymmetric on north west trending axes, with wavelengths of 0.5-2 km, and axial plane reversals with wavelengths of 2-5 km. Second order folds are common, with wavelengths of 5-50 m (Pearson 1993).

Mineralisation is most commonly in quartz veining and quartz-filled breccia reefs which tend to be associated with anticlinal fold limbs, often parallel to cleavage, and in some places following bedding plane partings, forming half saddle reefs on the eastern limbs. Cross reefs trending 010-050° are also mineralised, and dominate in some areas (ibid).

The reefs are rarely wider than 1 metre. Reef material tends to be a breccia, normally of the immediate host rock, but sometimes evidently sourced from close neighbouring beds of different texture or from different parts of the same graded beds. The breccia is filled with quartz, with occasionally subordinate carbonate. The breccias range from quite fine to coarse, with parallel arranged elongated fragments. The quartz fill varies from quite white to blue

grey, depending on the content of fine grained sulphides. Some reefs also have a component of clean white buck quartz, which is evidently of a second phase of quartz mineralisation or remobilisation (pers. comm. R. Bottrill 1994), an example of which can be seen in the Caxton Reef in Long Struggle Mine, Alberton. Gold mineralisation tends to be associated with pyrite and arsenopyrite in the blue grey quartz, noted above. Mineralisation of the buck quartz is rare, but when it occurs, it tends to be gold in nugget form rather than disseminated in combination with sulphides (pers. comm. R. Bottrill 1994).

The mineralised zones tend to have broad pervasive haloes of silicification in sandier units, and chlorite in the phyllite, with fairly common cordierite or carbonate spotting (Pearson 1993, and observed).

Sandstones, which generally grade into siltstones and shales, tend to be preferentially silicified and commonly contain quartz vein stockwork, particularly in fold hinges, shear zones, cross faulting and within the haloes to mineralisation noted above (Pearson 1993).

Pearson (1993) noted that fault and kink zones are generally dextral, normal and NE trending. Keele noted the principle mineralised structures in the gold lineament were initially developed as wrench faults, most of which were later reactivated as reverse faults. Keele also observed occasional thrusts and numerous other types of faults which contribute to the deformation of the Mathinna Beds of the gold corridor (Keele et al 1994).

The Mathinna beds are overlain by practically horizontal Permian sandstones and argillites with a basal conglomerate containing pebbles of silicified, quartz veined Mathinna Beds and quartz. This series contains the coal measures at Fingal, Cornwall and Tower Hill. It is then overlain by Triassic sediments and Jurassic dolerite.

5. EXPLORATION PROGRAMME

Since the writing of the 1993 Annual Report (Pearson 1993), Newcrest elected to suspend exploration activities pending the release and review of the NETGOLD data.

Having reviewed the NETGOLD data, Newcrest decided not to pursue further exploration of the Licence.

Mancala's exploration field work to date has consisted of a search for tailings dumps and trying to gain access to old workings, in particular those of the Mt Victoria and Dans Rivulet fields. Neither programme has met with much success, mainly because of the overgrowth and obscurity of old mines and access tracks and the lack of tailings dumps within the Licence.

Geological work has concentrated on literature search, to gain information from the Mineral Resources Tasmania Library on the mines and production of the area. Also, information gained in work done in three of the Alberton mines provided exploration pointers and some understanding of the nature of the gold-bearing reefs of the gold corridor, at least of the small reefs off the main fracture zone.

An in-house report on the exploration concepts and targets has been prepared for the management of Mancala (Iliff 1994). The formulation of a specific programme of operations is in train. Diamond drilling will be the main component of the programme.

Location of the mines of interest will be facilitated with the use of a GPS receiver.

6. CONCLUSION

The main interest for Mancala lies in the potential for gold mineralisation in dilation zones and conduits within the main crustal fracture zone. It is believed that the major known mineralisation of the gold corridor, that which was worked in the Golden Gate Mine, is located in such a position. Therefore the main thrust of Mancala's exploration programme will be to locate the fracture zone and to isolate dilation zones and conduits within it.

7. EXPENDITURE

A) Expenditure by Newcrest since September 1993:	\$12,384
B) Expenditure by Mancala since June 1994, to date:	\$19,459
Total expenditure on EL 23/92 in year 1993-94:	\$31,843
Total expenditure on EL 23/92 to date:	\$115,104

REFERENCES

- Calver, C.R., Everard, J.L., Findlay, R.H., Lennox, P.G. 1988. Ben Lomond, Sheet 8414N (48) Geological Atlas 1:50,000 Series. Geological Survey of Tasmania - Department of Mines - Hobart.
- Iliff, G.D. 1994. Proposed exploration in EL 23/92, MLs 44-46M/88 and ATP 1/93. Unpublished internal report, Mancala Pty Ltd, St Helens, Tas.
- Keele, R.A., Taheri, J. and Bottrill, R.S. 1994. Structure and veining in the Devonian-aged Mathinna-Alberton Gold Lineament, northeast Tasmania. NETGOLD Report, Tasmania Development and Resources, Hobart.
- McClennaghan, M.P., Everard, J.L., Goscombe, B.D., Findlay, R.H. and Calder, C.R. 1993. Alberton, Sheet 8415S (40) Geological Atlas 1:50,000 Series. Geological Survey of Tasmania - Department of Mines - Hobart.
- Newnham, L.A. 1982. Exploration Licences 22/92 and 23/92, North-east Tasmania: Review of Previous Exploration Information. Newnham Exploration and Mining Services unpublished report to Newcrest Mining Limited, Milton, Queensland.
- Pearson, D.F. 1993. Annual Report for Exploration Licences 22/92 Tower Hill, 23/92 Alberton & 34/92 Mt Saddleback, Tasmania, 9 October 1992 to September 1993. Unpublished report, Newcrest Mining Limited, Milton, Queensland.
- Taheri, J. 1993. Northeast Goldfields: A summary of the Alberton goldfield. NETGOLD Report, Tasmania Development and Resources, Hobart.