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**MINERAL RESOURCE POTENTIAL
ASSESSMENTS OF THE MATHINNA–MANGANA AREA
NORTHEASTERN TASMANIA**

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INTRODUCTION

EL 55/83 in northeastern Tasmania, covering the Mathinna - Mangana area (Figure 1), has recently gone on to ETA (#252) and is the subject of this preliminary assessment for mineral resources.

These results are preliminary compilations of the more important geological studies in the areas, and assessments of the adequacy of these geoscientific databases. This work does not purport to be complete, and does not include any reinterpretation or synthesis of the data

SUMMARY

These areas are considered to have a very high potential for economic deposits of gold, which has been mined extensively within the area. There is also an unknown potential for many other commodities, including tin, uranium, base metals, coal and oil shale.

The area requires much better geological, geochemical and geophysical surveys over most of the area, as the present databases are inadequate for the determination of mineral potential.

DATA

a) Geological Maps

Calver, C.R., Everard, J.L., Findlay, R.H., Lennox, P.G., 1988. Tasmanian Geological Atlas 1: 50,000 Series. Sheet 48 (8414N). Ben Lomond. *Tas. Dept. Mines*.

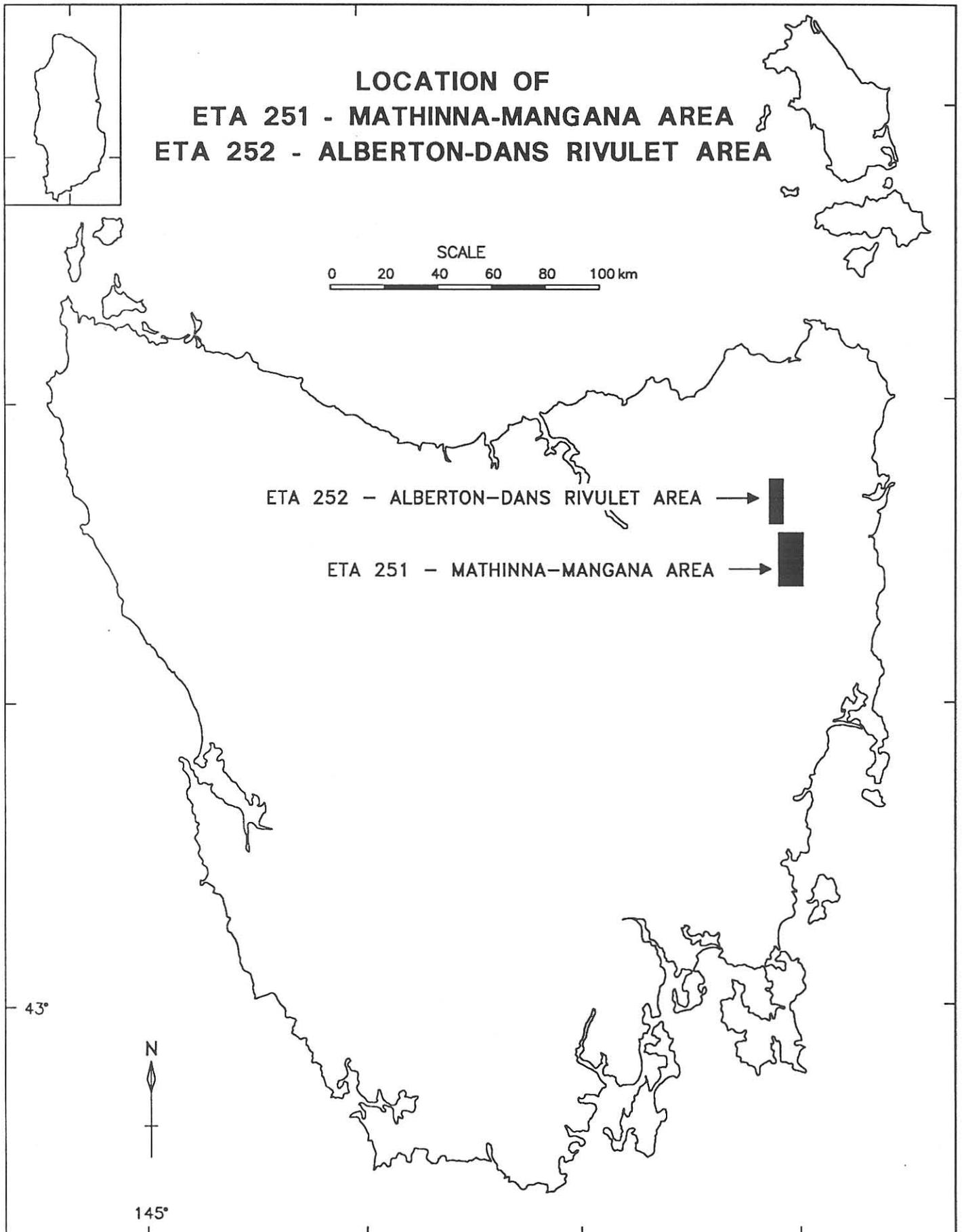
Groves, D.I.; Cocker, J.D.; Jennings, D.J., 1977. The Blue Tier Batholith. *Tas. Dept. Mines Geol Survey Bull.* 55

McClenaghan, M. P.; et al., in press. Tasmanian Geological Atlas 1: 50,000 Series. Sheet 40 (8415S). Alberton. *Tas. Dept. Mines*.

McClenaghan, M. P.; Baillie, P. W. 1974. Tasmanian Geological Atlas 1: 250,000 Series. SK55-4 Launceston. *Tas. Dept. Mines*.

FIG. 1

5 cm



(b) Geological Summary (Figs. 2 & 3)

The oldest rocks exposed in the area are the Mathinna Beds, quartzwacke turbidite sequences of (?)Ordovician - Devonian age. These are intruded and locally metamorphosed by granitic to dioritic rocks of the Scottsdale and Blue Tier Batholiths, of probable upper Devonian to lower Carboniferous age (not exposed in this area). These rocks were all overlain by sediments of the Parmeener Supergroup, now largely removed by erosion except in some of the more elevated areas, particularly around Tower Hill. Jurassic dolerite has intruded these sequences as sills and dykes, but is relatively uncommon in this area, except on Tower Hill. Tertiary basalt flows may have covered part of the area, but are now not known to be preserved within the area. The river valleys are partly filled with Cainozoic alluvium, perhaps Tertiary in part.

(c) Geophysical Coverage

Gravity station coverage is in the reconnaissance category, with about 1 station per 50 sq. km. (Richardson & Leaman, 1987). Aeromagnetic data for most of the area was derived from flights at a spacing of about 1.5 km, and is assessed as regional (Bureau of Mineral Resources Aeromagnetic Survey, 1985). Most of the area was flown at greater detail (about 400m spacing) by the Electrolytic Zinc Co. in 1959, although this is now rather dated data (Gregory, 1961). An Airborne Radiometric survey flown by Geophoto Resources Consultants in about 1969 covered the Mathinna-Tower Hill area (Rattigan, 1970), but the data appears to be poorly constrained and recorded (Mortimore, 1974).

(d) Geochemical Coverage

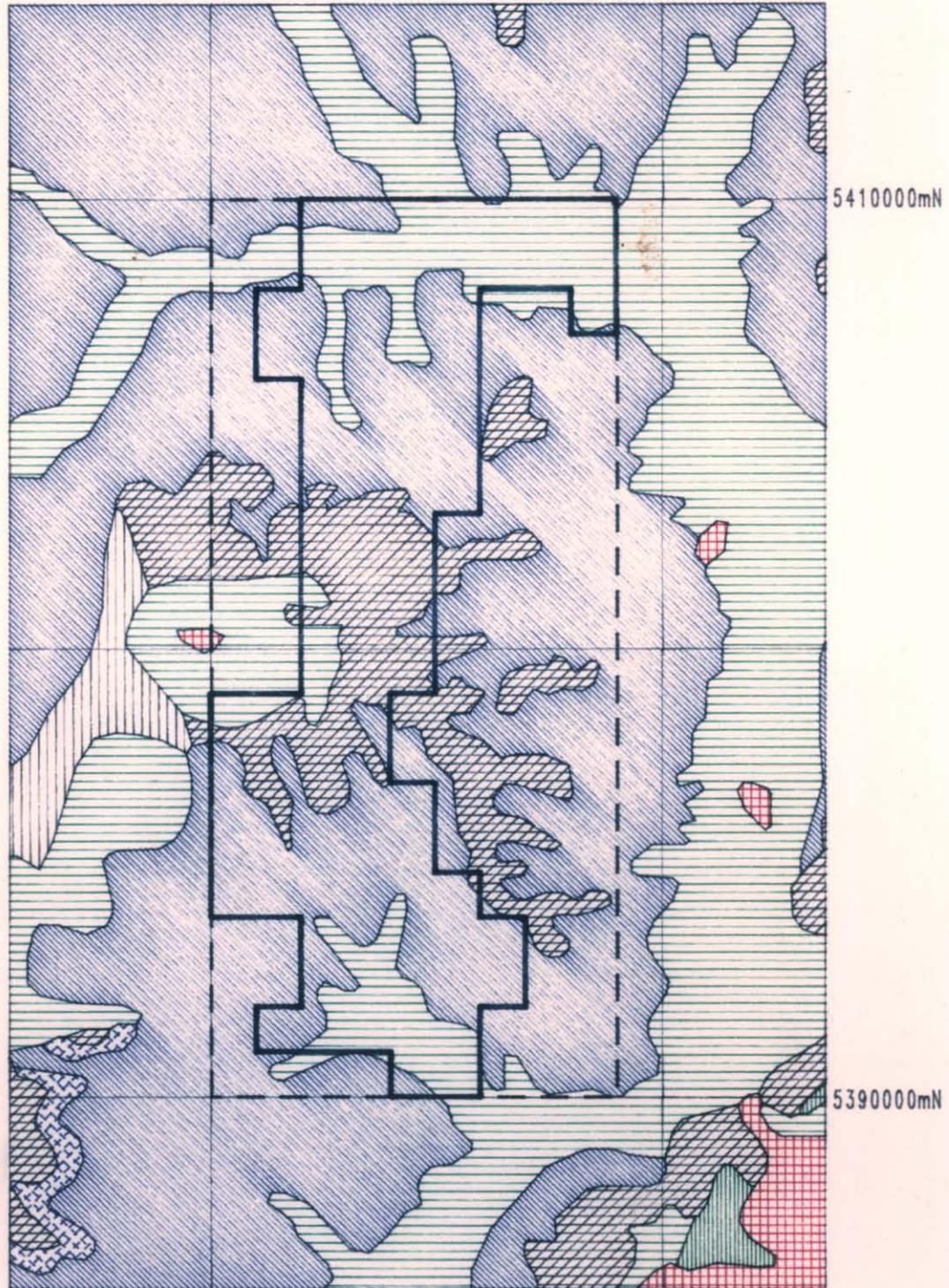
Geochemical stream sediment surveys (Cu, Pb, Zn, Ag, Bi, Mo) undertaken on a regional scale by Geophoto Resources Consultants covered the Mathinna - Tower Hill area, but records are poor (Rattigan, 1970). More detailed surveys (rockchip and soil), for limited commodities (mostly gold), have been conducted in and about specific mines and prospects by exploration companies as mentioned below.

(e) Drilling Coverage

Six diamond drill holes and 27 percussion holes have been drilled in the area, the deepest being a 203 m diamond drill hole at the Golden Gate Mine. Most of the drilling has been conducted around old mines, but some drilling has also

FIG 2

GEOLOGY - ETA 252 MANGANA
(MATHINNA - MANGANA AREA)
Scale - 1 : 150000

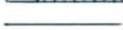


--- E.L. boundary as originally issued.

5 cm

FIG 3

LEGEND - 1:500,000 TASMANIA, GEOLOGY

HOLOCENE		Alluvium, sand, gravel and talus.	
PLEISTOCENE		Till, fluvioglacial, periglacial, and associated deposits.	
		Erosional surface.	
TERTIARY		Non-marine sequences (1); marine limestone (2); basalt and related igneous rock types (3).	
		Low angle unconformity.	
TRIASSIC		Fluvio-lacustrine sequences of sandstone, siltstone, mudstone (1) with carbonaceous sequences indicated (2).	UPPER PARMEENER SUPER GROUP LOWER
PERMIAN		Fresh water sequence with some coal measures.	
UPPER CARBONIFEROUS		Upper glacio-marine sequence of pebbly mudstone, pebbly sandstone and limestone. Fresh water sequence with some coal measures.	
		Lower glacio-marine sequence of pebbly mudstone, pebbly sandstone, minor limestone, Tasmanite oil shale and basal tillite.	

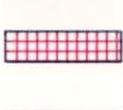
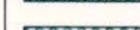
WESTERN TASMANIA

UPPER-MIDDLE DEVONIAN		Terrestrial cavern fillings (grid ref. 442 436)	EUGENANA BEDS
		Unconformity attributed to the Tabberabberan Orogeny.	
LOWER-DEVONIAN SILURIAN		Quartzite, sandstone, siltstone, and shale; Devonian limestone-siltstone (1)	ELDON GROUP & CORRELATES; SPERO BAY GROUP
ORDOVICIAN		Limestone sequence with siltstone in some areas. Siliceous conglomerate, shallow water quartzose sandstone & siltstone.	
			
CAMBRIAN		Middle-Upper Cambrian fossiliferous usually greywacke turbidite sequences (1); acid with intermediate volcanic and associated rocks dominant (2); basic-intermediate volcanic and associated rocks dominant (3); probably Cambrian unfossiliferous usually greywacke turbidite sequences (4); probably Cambrian unfossiliferous orthoquartzite sequence (5).	INCLUDING DUNDAS GROUP (fossiliferous); MT READ VOLCANICS AND OTHER FORMATIONS
		Usually unconformity attributed to Cambrian movements; occasionally unconformity e.g. parts of western Tasmania	
PRECAMBRIAN		Comparatively unmetamorphosed sequences. Orthoquartzite-mudstone sequences (1); quartzwacke turbidite successions (2); dolomite (3); basalt lava (4).	
		Metamorphic rocks of dominantly metaquartzite and pelitic sequences, amphibolite indicated (1).	

EASTERN TASMANIA

		Unconformity attributed to the Tabberabberan Orogeny.	
LOWER DEVONIAN TREMADOCIAN- CAMBRIAN(?)		Micaceous quartzwacke turbidite sequences dominant (1); mudstone sequences dominant (2).	MATHINNA BEDS

IGNEOUS ROCKS

TERTIARY		Basalt and related rock types.	
CRETACEOUS		Syenite.	CAMBRIAN
		Appinite.	
JURASSIC		Dolerite and related rock types.	
LOWER CARBONIFEROUS (?)-DEVONIAN		Dominantly adamellite-granite; biotite hypersthene-adamellite porphyry (1).	PRECAMBRIAN
		Dominantly granodiorite.	
		Granitic rocks.	
		Coarser grained basic rocks	
		Serpentine, peridotite and associated rocks.	
		Acid with intermediate volcanic and assoc. rocks.	
		Basic-intermediate volcanic and associated rocks.	
		Granite.	
		Dolerite.	

been done in the alluvials of the South Esk River, in the northeastern part of the area (Mellor, 1982).

(f) Mineralisation

The area is locally highly mineralised, with at least 71 known gold deposits within or in close proximity to the area (Appendix 1 and Fig. 4). These deposits form part of a "gold belt" running from about Fingal north to Waterhouse (almost on the north coast). The gold occurrences in the area can be subdivided into two main goldfields, namely the Mathinna and the Mangana Fields, plus some other sporadic occurrences (Noldart & Threader, 1965).

Gold occurs within the Mathinna Beds in numerous quartz veins, usually small and locally rich, but erratic in size and grade. It also has been recovered from placer deposits in associated Cainozoic alluvials, which have not been well tested. Most of the mining was done in the period 1860-1920, but sporadic prospecting and small scale mining continues to the present day.

The production records for the Mathinna and Mangana goldfields are incomplete but indicate a production of at least 8.595 t (276,344 oz) at an average grade of 25 g/t (Noldart & Threader, 1965). The largest mine in the area was the Golden Gate, which had a recorded production of 7.896 t (253,865 oz) at an average grade of 26 g/t (Noldart & Threader, 1965). Some of the other important deposits within the area include the Buckland, Golden Entrance, Mangana Gold Reefs, Eldorado, Tasmania Consols, Volunteer and Volunteer Consolidated workings. Most of the above related to reef gold, but considerable areas of alluvial gold were worked, and some are still producing gold.

(g) Previous Mineral Exploration

The goldfields described above have been the site of numerous small mining operations, but little extensive exploration using modern techniques. The principal exploration licences held over the area are summarised below:

EL 2/59 Electrolytic Zinc Co. of Aust. Ltd.

This company flew airborne Aeromagnetic surveys over the area, but apparently did little more other than ground checking a few anomalies (Hancock, 1959).

FIG 4

MIRLOCH / LEASE CENTROIDS - ETA 252 MATHINNA
(MATHINNA - MANGANA AREA)
Scale - 1 : 150000



5 cm

EL 6/68 Geophoto Resources Consultants, Texins Devt. Pty. Ltd.

This relatively large lease covered most of the area. Regional surveys conducted included airborne radiometric surveys (south to Tower Hill), geological mapping, fracture analysis, stream sediment geochemistry (south to Tower Hill), soil and rock geochemistry, costeaning of lodes and test pitting of alluvials (Mortimore, 1974). Detailed surveys included geophysics (IP and VLF) geological mapping, soil and rock geochemistry, costeaning of lodes and test pitting of alluvials. The Golden Gate tailings were also tested. The hardrock (quartz vein) prospects tested were deemed too small for cost-effective exploration or mining, while the alluvial prospects tested were of too low and erratic in grade to be of great interest. It was considered that, while some potential existed, the other prospects in the area would probably be similarly subeconomic (Mortimore, 1974).

EL 17/78 Tasminex

Exploration on this El investigated the alluvial, hard rock and tailings prospects. All of the old gold mines in the area were reportedly investigated, and alluvials around Mathinna and Mangana were trenched and bulk sampled. The Golden Gate mine tailings were found to be an attractive resource, and mining leases were applied for. The hard rock and alluvial prospects were considered to be too small or subeconomic (Charlton, 1982).

EL 22/80 Australian Anglo American Ltd.

This licence, covering the easternmost part of the area, concentrated on the search for alluvial gold and tin in the South Esk River Valley. Large areas of low grade, subeconomic gold were delineated, particularly in the Evercreech Rivulet area. Tin was mostly found to be generally low in tenor. (Mellor, 1982).

EL 55/83 Tasmanian Alluvials, Alcaston Mining NL, Pegasus Gold Aust. Ltd.

The explorers on this EL examined several hard rock and alluvial prospects. Lode prospects at Argyle and Tower Hill were prospected using mapping, rotary drilling, soil and rock geochemistry, and ground magnetics. An aeromagnetic survey was also flown, with some promising results. The lode prospects were considered to be low and erratic and probably subeconomic overall. Alluvial deposits were tested by bulk sampling and were more promising. One alluvial prospect (Majors Gully) was converted into a mining lease and is currently operating.

ASSESSMENT

(a) Quality of data

The bulk of the area is on the Ben Lomond 1:50,000 sheet, but most of the Mathinna goldfield is on the Alberton 1:50,000 sheet, being mapped at present. The geological knowledge of this area must, therefore, be considered as inadequate until mapping is complete. The geology of the Mathinna Beds is particularly poorly known, due mainly to poor outcrop and lack of marker beds. The structural controls on the gold mineralisation are also poorly understood.

Gravity station coverage is in the reconnaissance category, and aeromagnetic data in the regional category. No significant radiometric surveys are recorded for the area.

Geochemical surveys were rather poor and erratic in quality, concentrating mainly on rock-chip sampling of various mines.

Drilling coverage is poor, again concentrating mainly on various mines.

(b) Preliminary listing of possible resource models

Numbers (e.g. CS 15a) refer to the ore deposit models of Cox & Singer (1986) where applicable.

Metallic Resources

1. Gold in quartz veins and stockworks in Mathinna Beds (CS 36a).
2. Gold \pm tin \pm Rare earth mineral placers in Quaternary sediments (CS 39a, 39e).
3. Vein style tin-tungsten \pm copper in the Mathinna Beds (CS15a, 15b; Rossarden and Storys Ck. style mineralisation).
4. Siliciclastic sediment hosted base metals (e.g. Cobar style, 30b?, 31a)

The confidence level is very high for the vein-hosted gold deposits (1), due to the abundant known mineralisation of this type in the area, although most deposits appear small and/or low grade. The placer gold deposits (2) also have a high potential, especially in the deeper alluvials which have not been well tested. The potentials for tin (3) and base metals (4) are low, due to lack of

known indications and apparent distance from granites or volcanics, but they have not been extensively explored for.

Non-metallic and fuel resources

1. Gemstones (sapphires, topaz, etc.) in Quaternary alluvium.
2. Uranium in sandstones of the Parmeener Supergroup (CS 30c, analogous with equivalent deposits in South Africa).
3. Coal and oil shale in the Parmeener Supergroup.
4. Phosphate deposits in the Parmeener Supergroup (analogous with equivalent deposits in South Africa).

The gem minerals in (1) are known to occur in significant quantities to the north of the area, so they have a moderate potential, despite little or no specific exploration. Distances from known source rocks, however, lowers the potential. The potential for uranium (2) is low due to the restricted distribution of the Parmeener Supergroup, and poor results from radiometric surveys, although the nearby granites contain uranium minerals and would provide good source rocks. The potential for fuels (3) is also low due to the restricted distribution of the Parmeener Supergroup, and lack of known deposits. The potential for phosphates (4) is unknown due to an apparent lack of exploration for such minerals, but again probably low due to the restricted distribution of the Parmeener Supergroup.

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Rattigan, J.H., 1970. Summary, digital Geophysical and Geochemical data sheets at 1:100,000 scale, EL 6/68, N.E. Tas. Unpub. Report for Geophoto Resources Consultants. [TCR 70-700]

Richardson, R.G., & Leaman, D.E. 1987. TASGRAV - The Tasmanian gravity database. Unpub. Rep. Dep. Mines Tasm. 1987/02.

Appendix 1.

**Mines and Mineral Deposits of the
Mathinna - Mangana area**

From the MIRLOCH database

REFNO	MINE/DEPOSIT NAME	MAJOR - COMM - MINOR	mE	mN	ERROR SHEET	STAT	SIZE	HOSTROX	AGE	FORM	STK		
40001	BLACK HORSE GULLY	AU,	574000	5407000	<100	84152	MAR	ND	JCS,	QT	PLAC,	-99	
		EXPLORATION:PS,	,	,	REFS:	TWELVETREES(1914)	GSR5						
40002	CALEDONIAN WKGS/REECE & LAWSON	AU,	574700	5406800	<100	84152	AMX	ND	MAT,	LD	VEIN,	-99	
		EXPLORATION:PS,	,	,	REFS:								
40003	CHESTER & MURRAY/HATHERTON	AU,	573300	5407000	<100	84152	AMX	VS	MAT,	LD	VEIN,	-99	
		EXPLORATION:PS,	,	,	REFS:								
40004	CITY OF HOBART	AU,	573500	5406800	<100	84152	AMX	ND	MAT,	LD	VEIN,	-99	
		EXPLORATION:PS,	,	,	REFS:								
40005	EAST GOLDEN GATE	AU,	574900	5407000	<100	84152	AMX	ND	MAT,	LD	VEIN,	-99	
		EXPLORATION:PS,	,	,	REFS:								
40006	ENTERPRISE	AU,	574200	5407800	<100	84152	PEX	ND	MAT,	LD	VEIN,	-99	
		EXPLORATION:PS,	,	,	REFS:								
40007	GATE EXTENDED	AU,	574600	5407000	<100	84152	AMX	ND	MAT,	LD	VEIN,	-99	
		EXPLORATION:PS,	,	,	REFS:								
40008	GLADSTONE	AU,	574400	5405400	<100	84152	AMX	ND	MAT,	LD	VEIN,	-99	
		EXPLORATION:PS,	,	,	REFS:								
40009	GOLDEN HINGES	AU,	574300	5406600	<100	84152	PEX	ND	MAT,	LD	VEIN,	-99	
		EXPLORATION:PS,	,	,	REFS:								
40010	GOLDEN STAIRS	AU,	574300	5408100	<100	84152	AMX	ND	MAT,JCS	LD	VEIN,PLAC	-99	
		EXPLORATION:PS,	,	,	REFS:	TWELVETREES(1914)	GSR5						
40011	HEN AND CHICKENS	AU,	574100	5407700	<100	84152	AMX	ND	MAT,	LD	VEIN,	-99	
		EXPLORATION:PS,DR,	,	,	REFS:								
40012	ALLUVIAL FLATS/KENNEDY'S FLATS	AU,	SN	574000	5408000	<100	84152	MAR	ND	JCS,	QT	PLAC,	-99
		EXPLORATION:PS,DR,	,	,	REFS:	TWELVETREES(1914)	GSR5						
40013	LONG GULLY	AU,	574500	5407000	<100	84152	MAR	ND	JCS,	QT	PLAC,	-99	
		EXPLORATION:PS,	,	,	REFS:	TWELVETREES(1914)	GSR5						
40014	MINERS DREAM	AU,	574700	5405500	<100	84152	AMX	SM	MAT,	LD	VEIN,	-99	
		EXPLORATION:PS,	,	,	REFS:								
40015	(NEW) GOLDEN GATE MINE	AU,	574600	5406600	<100	84152	AMX	ME	MAT,	LD	VEIN,	-99	
		EXPLORATION:PS,DR,	,	,	REFS:								
40016	NEW ELDORADO (OPHIR)	AU,	574400	5406000	<100	84152	AMX	SM	MAT,	LD	VEIN,	-99	
		EXPLORATION:PS,	,	,	REFS:								
40017	NORTH ELDORADO	AU,	574300	5406200	<100	84152	AMX	ND	MAT,	LD	VEIN,	-99	
		EXPLORATION:PS,	,	,	REFS:								
40018	OLD BOYS/DAWN OF HOPE/BROCK B.	AU,	573300	5407200	<100	84152	AMX	SM	MAT,	LD	VEIN,	-99	
		EXPLORATION:PS,	,	,	REFS:								
40019	SOUTH GOLDEN GATE MINE	AU,	574700	5406300	<100	84152	PEX	ND	MAT,	LD	VEIN,	-99	
		EXPLORATION:PS,	,	,	REFS:								
40020	SOUTH MINERS DREAM	AU,	574700	5405400	<100	84152	PEX	ND	MAT,	LD	VEIN,	-99	
		EXPLORATION:PS,	,	,	REFS:								
40021	STAR OF MATHINNA	AU,	574600	5407200	<100	84152	AMX	ND	MAT,	LD	VEIN,	-99	
		EXPLORATION:PS,	,	,	REFS:								
40022	TAS. CONSOLS/NORTH GOLDEN GATE	AU,	574500	5406700	<100	84152	AMX	ME	MAT,	LD	VEIN,	-99	
		EXPLORATION:PS,DR,	,	,	REFS:								
40023	VICTORIAN GOLDEN GATE	AU,	574000	5406300	<100	84152	AMX	ND	MAT,	LD	VEIN,	-99	
		EXPLORATION:PS,	,	,	REFS:								
40024	VOLUNTEER MINE	AU,	572600	5408300	<100	84152	AMX	SM	MAT,	LD	VEIN,	-99	
		EXPLORATION:PS,	,	,	REFS:								
40025	VOLUNTEER CONS./ (E)/WHITE BOYS	AU,	AS,PB	573400	5407300	<100	84152	AMX	SM	MAT,	LD	VEIN,	-99
		EXPLORATION:PS,	,	,	REFS:								
40026	WELCOME STRANGER	AU,	574300	5408300	<100	84152	PEX	ND	MAT,	LD	VEIN,	-99	
		EXPLORATION:PS,	,	,	REFS:								
40027	YELLOW BOYS	AU,	573400	5407400	<100	84152	AMX	SM	MAT,	LD	VEIN,	-99	
		EXPLORATION:PS,	,	,	REFS:								
40028	MARTYNS SECTION	AU,	573500	5406300	<100	84152	AMX	ND	MAT,	LD	VEIN,	-99	
		EXPLORATION:PS,	,	,	REFS:								

REFNO	MINE/DEPOSIT NAME	MAJOR - COMM - MINOR	mE	mN	ERROR	SHEET	STAT	SIZE	HOSTROX	AGE	FORM	STK
48054	RICHARDSONS CK	AU,	571400	5395700	<100	84141	AMX	ND	MAT,	LD	VEIN,	-99
		EXPLORATION:PS,	, , ,									
		REFS:										
48056	BUCKLAND	AU,	571600	5395700	<100	84141	AMX	SM	MAT,	LD	VEIN,	-99
		EXPLORATION:PS,	, , ,									
		REFS:										
48057	CARDINAL	AU,	571700	5395300	<100	84141	AMX	ND	MAT,	LD	VEIN,	-99
		EXPLORATION:PS,	, , ,									
		REFS:										
48058	GOLDEN GULLY	AU,	573100	5396200	<100	84141	AMX	ND	MAT,	LD	VEIN,	-99
		EXPLORATION:PS,	, , ,									
		REFS:										
48059	FINGAL	AU,	574400	5394400	<100	84141	AMX	ND	MAT,	LD	VEIN,	-99
		EXPLORATION:PS,	, , ,									
		REFS:										
48060	PINCHER	AU,	573900	5393900	<100	84141	AMX	ND	MAT,	LD	VEIN,	-99
		EXPLORATION:PS,	, , ,									
		REFS:										
48061	UNION JACK	AU,	574400	5393600	<100	84141	AMX	ND	MAT,	LD	VEIN,	-99
		EXPLORATION:PS,	, , ,									
		REFS:										
48062	UNDERLAY	AU,	574300	5393000	<100	84141	AMX	ND	MAT,	LD	VEIN,	-99
		EXPLORATION:PS,	, , ,									
		REFS:										
48063	GOLDEN ENTRANCE	AU,	574700	5393000	<100	84141	AMX	ND	MAT,	LD	VEIN,	-99
		EXPLORATION:PS,	, , ,									
		REFS:										
48064	MANGANA GOLD REEFS	AU,	574400	5392800	<100	84141	AMX	ND	MAT,	LD	VEIN,	-99
		EXPLORATION:PS,	, , ,									
		REFS:										
48065	ARGYLE	AU,	574800	5392800	<100	84141	AMX	ND	MAT,	LD	VEIN,	-99
		EXPLORATION:PS,	, , ,									
		REFS:										
48066	SPECIMEN HILL	AU,	573100	5393300	<100	84141	AMX	ND	MAT,	LD	VEIN,	-99
		EXPLORATION:PS,	, , ,									
		REFS:										
48067	DTWAYS CK	AU,	571900	5393000	<100	84141	AMX	ND	MAT,	LD	VEIN,	-99
		EXPLORATION:PS,	, , ,									
		REFS:										
48068		AU,	570000	5390000	<100	84141	AMX	ND	MAT,	LD	VEIN,	-99
		EXPLORATION:PS,	, , ,									
		REFS:										
48069	SOUTH GOLDEN ENTRANCE	AU,	574900	5392600	<100	84141	AMX	ND	MAT,	LD	VEIN,	-99
		EXPLORATION:PS,	, , ,									
		REFS:										

SEARCH OPTIONS ARE:

SEARCH RECTANGLE FROM 568000mE TO 581000mE AND FROM 5388000mN TO 5410000mN

STATUS

OPM OPERATING MINE
 NOR NON-OPERATING MINE - RESERVES KNOWN
 NOX NON-OPERATING MINE - RESERVES UNKNOWN
 AMR ABANDONED MINE - RESERVES KNOWN
 AMX ABANDONED MINE - RESERVES UNKNOWN
 AMO ABANDONED - MINED OUT
 PEX PROSPECT - EXPLORED
 PUN PROSPECT - UNEXPLORED
 MAR MINERALIZED AREA
 MOC MINERAL OCCURRENCE

SIZE OF DEPOSIT

ND NOT DETERMINED
 VS VERY SMALL: < 100 TONNES (OR CUBIC METRES)
 SM SMALL: 100 T - 10 000 T
 ME MEDIUM: 10 000 T - 1 000 000 T
 LA LARGE: 1 000 000 T - 10 000 000 T
 VL VERY LARGE: > 10 000 000 T

HOST ROCK

PCS PRECAMBRIAN SEQUENCES
 CSS CAMBRIAN SEDIMENTARY SEQUENCES
 CIG CAMBRIAN IGNEOUS SEQUENCES
 MRV MOUNT READ VOLCANICS AND CORRELATES
 OMS OWEN CONGLOMERATE/MOINA SANDSTONE AND COR
 GLE GORDON LIMESTONE/ELDON GROUP AND CORRELATES
 MAT MATHINNA BEDS
 DGN DEVONIAN GRANITOID
 PSG PARMEENER SUPER GROUP
 JCS JURASSIC-CENOZOIC SEQUENCES

AGE OF MINERALIZATION

ND NOT DETERMINED
 PC PRECAMBRIAN
 EC EOCAMBRIAN-EARLY CAMBRIAN
 MC MIDDLE-LATE CAMBRIAN
 OD ORDOVICIAN-EARLY DEVONIAN
 LD LATE DEVONIAN (GRANITE ASSOCIATED)
 PT PERMO-TRIASSIC
 JC JURASSIC-CRETACEOUS
 TT TERTIARY
 QT QUATERNARY

FORM OF DEPOSIT

VMS VOLCANIC MASSIVE SULPHIDE
 STFM STRATIFORM
 VEIN VEIN(SINGLE,SHEET,SADDLE)
 STWK STOCKWORK
 DISS DISSEMINATED
 REPL REPLACEMENT
 PIPE PIPE
 PLAC PLACER
 RESD RESIDUAL
 OTHR OTHER (NOTED IN REFS)

EXPLORATION OF DEPOSIT

NO NIL OR NO KNOWN EXPLORATION
 PS PROSPECTING
 GM GEOLOGICAL MAPPING
 GC GEOCHEMICAL SURVEYS
 GP GEOPHYSICAL SURVEYS
 DR DRILLING