

97-4091

Rio Tinto Exploration Pty. Limited

266001

A.C.N. 000 057 125

A member of the Rio Tinto Group

MICROFILMED
FICHE No. 014480 -

**EL 55/94 Gunns Plains
Final Report Including Exploration
for the Period 25 January to 11 November 1997
Tasmania Australia**

OPEN FILE

MINERAL RESOURCES
EL 55/94
11 DEC 1997
See folio 57

Author: SAJ Russell

Date: November 1997

Licence Holder: Rio Tinto Exploration Pty. Limited

Submitted to: Chief Geologist, South East District

Copies to: Mineral Resources Tasmania
Rio Tinto Exploration, GER - Bundoora
Rio Tinto Exploration, SE District - Bundoora

Submitted by: *pp R. Maitto*

Accepted by: *J. M. Conway*

This report and its contents are confidential. All rights to the report and its contents (including, without limitation, rights to confidential information and copyright in all works (including photographs, diagrams, charts, maps and graphs) comprised in the report) remain the property of Rio Tinto Exploration Pty. Limited. No part of this report nor of the information contained in it may be disclosed to any person without the consent of Rio Tinto Exploration Pty. Limited. No part of this report nor of the information contained in it may be reproduced (including by being stored in any form), transmitted, published or used for any purpose by Rio Tinto Exploration Pty. Limited.

97-4091

Exploration Report No. 23597

FINAL REPORT - EL 55/94
RIO TINTO - SAJ RUSSELL

Abstract

EL 55/94, Gunns Plains was granted to Rio Tinto Exploration Pty. Limited on 24th February 1995. The licence covers 71 sq km (Plan Tv1151) and lies 25km south-south east of Burnie.

Rio Tinto Exploration Pty. Limited acquired the Gunns Plains licence to explore for economic, Irish-style Pb-Zn mineralisation in the Ordovician Gordon Group carbonates. Rio Tinto Exploration Pty. Limited's preceding exploration of the Gordon Group carbonates in the Zeehan area resulted in several very encouraging Pb-Zn intersections. Exploration efforts were therefore expanded to other areas of poorly explored Gordon Group carbonates with potential to host economic Irish-style Pb-Zn mineralisation.

Following rationalisation and prioritisation of projects, Rio Tinto Exploration Pty. Limited has decided that the Ordovician carbonates of western Tasmania are no longer a priority target for zinc. Consequently EL 55/94 was recommended for relinquishment in August 1997.

Surrender in full of EL 55/94 was granted by Mineral Resources Tasmania on 11 November 1997.

No work was conducted on this licence since the last annual report.

Table of Contents

	Page No.
Abstract	
List of Plans	
1. Conclusions and Recommendations	1
2. Introduction	1
3. Review of Previous Work	1
3.1 Prior to Current Tenement	1
3.2 During Current Tenement	2
4. Exploration Completed in the Period from 25/1/97 to 11/11/97	3
5. Rehabilitation	4
6. Expenditure	4
7. References	4
8. Location	4
9. Keywords	4

List of Plans

Plan No.	Title	Scale
Tv1151	Gunns Plains EL 55/94 Location Plan	1:100,000

List of Tables

Table 1	EL 55/94 Gunns Plains, Expenditure Statement
---------	--

1. Conclusions and Recommendations

Rio Tinto Exploration Pty. Limited has concluded that the Ordovician carbonates of western Tasmania are not a priority target for zinc.

2. Introduction

The Gunns Plains EL 55/94 was granted to Rio Tinto Exploration Pty. Limited on 24th February 1995. The licence covers 71 sq km (Plan Tv1151) and lies 25km south-south east of Burnie.

Rio Tinto Exploration Pty. Limited acquired the Gunns Plains licence to explore for economic, Irish-style Pb-Zn mineralisation in the Ordovician Gordon Group carbonates. Rio Tinto Exploration Pty. Limited's preceding exploration of the Gordon Group carbonates in the Zeehan area resulted in several very encouraging Pb-Zn intersections. Hence Rio Tinto Exploration Pty. Limited expanded exploration efforts to other areas of poorly explored Gordon Group carbonates with potential to host economic Irish-style Pb-Zn mineralisation.

Following disappointing drilling results in the Zeehan area during 1996, Rio Tinto Exploration Pty. Limited concluded that the Ordovician carbonates of western Tasmania are not a priority target for zinc. Consequently EL 55/94 was recommended for relinquishment in August 1997. Surrender in full of EL 55/94 was granted by Mineral Resources Tasmania on 11 November 1997. This report constitutes the final report.

3. Review of Previous Work

3.1 Prior to Current Tenement

Review of previous exploration is not complete. Rio Tinto's open file database has shown that the following work has been carried out in the licence area:

Exploration for Fluorite Deposits:

Comalco, EL 8/77 Riana

EL 8/77 Riana covered most of the Gunns Plains EL 55/94 and large areas of outcropping Devonian Housatop Granite to the west and north. Exploration was for economic fluorite deposits. An extensive geochemical survey (conventional stream sediment, panned concentrate, magnetic and water sampling) was carried out over all areas where pre-Tertiary rocks crop out or are at shallow depths beneath Tertiary Basalt.

A magnetic sample acquired at grid reference 417200mE, 5467000mN in the current licence area, returned 1500ppm Sn, 2000ppm Pb, 200ppm Cu and 500ppm Zn. The anomaly is located in the Ordovician Gordon

Limestone near the contact with the overlying Silurian Crotty Quartzite. The -80# samples contained no anomalies indicating the Sn, Pb, Cu and Zn are strongly associated with magnetite. The association with magnetite suggests a possible fine Sn in skarn source.

A -80# Zn anomaly was located in a creek draining east from Loyetea Peak, near its confluence with the River Leven. The 1100ppm Zn anomaly occurs downstream of the inferred contact of the Denison Sub-group clastics and overlying Gordon Limestone. The contact is obscured by talus and scree where it is crossed by the drainage.

Another -80# Zn anomaly (630ppm Zn) was identified in a poorly defined drainage at 419025mE, 5429566mN (Gunns Plains). The creek drains hills capped by Tertiary Basalt and crosses Gordon Limestone outcrop into Quaternary marsh and gravel deposits.

Exploration for VMS and Gold Deposits:

Rio Tinto, Electrolytic Zinc Company and Geopeko, amongst others, have explored for VMS deposits and low sulphide gold deposits in the Middle Cambrian volcanics and volcanoclastics peripheral to the licence area.

3.2 During Current Tenement

Exploration during the current tenement has included;

- Literature review and data compilation.
- Formulation of exploration strategies and a familiarisation with local geology.
- No field work was conducted on EL 55/94.

A description of the exploration rationale and local geology follows;

Rio Tinto acquired EL 55/94, Gunns Plains to explore the Ordovician Gordon Limestone for Irish-style, carbonate hosted zinc deposits. Prospective horizons recognised in the Gordon Limestone in the Zeehan area include:

- The contact of the Gordon Limestone with the underlying Moina Sandstone.
- Clean carbonates beneath clastic equivalents of the Lords Siltstone 'seal' in the middle of the Gordon Limestone sequence.
- Dolomitised carbonates at the contact of the Gordon Limestone sequence and the overlying Crotty Sandstone.

The Gordon Limestone in the licence area has only seen conventional stream sediment, panned concentrate, magnetic and water sampling to

date. As much of the carbonate is concealed by scree, marsh deposits, residual gravels and basalt, stream sediment sampling is unlikely to be an effective exploration tool in this area. Hence bedrock sampling methods such as deep soil sampling, wacker sampling or RAB/aircore drilling must be employed to identify geochemically anomalous areas.

Ordovician growth faults are believed to have acted as conduits for mineralising fluids controlling the distribution of Zn-Pb mineralisation in the Zeehan carbonates. Several potential reactivated growth faults have been identified on the Sheffield 1 Mile geology map (see Plan Tv1118 Rio Tinto Report No 22157) in the Gunns Plains area including:

- An ESE-WNW trending fault interpreted in the southern licence area near Buttons Rivulet. The Roland Conglomerate appears to thicken to the north-east across the fault. The Gordon Limestone-Moina Sandstone contact is outcropping/subcropping in the vicinity of the fault.
- An ESE-WNW trending fault interpreted in the south-eastern corner of the licence. Rio Tinto's Castra Road Prospect (422800mE, 5423000mN) is proximal to the fault. A 500m long exposure of altered Cambrian acid volcanics and tuffaceous sediments occurs along the road. In places the volcanics are highly silicified and pyritic, with fist sized clots and stringers of barite (Purvis, 1978).
- A NNW-SSE trending fault cutting across the north-eastern corner of the licence. Preston's Ag-Pb workings occur within the Cambrian Gog Range Greywacke, adjacent to the faulted contact with the Ordovician Dial Range Conglomerate, about 3 kilometres south of Preston. The workings exploited parallel lines of lode consisting of galena, sphalerite and pyrite in cleavage planes and joints.
- The Copper Creek mine may lie on the same fault just north of the licence area. The vertical lode consists of quartz and calcite veinlets carrying pyrite, chalcopyrite, covellite, hematite and minor gold and silver. It is hosted by a brecciated slate, and occurs within a NNW-SSE trending fault between the Ordovician Dial Conglomerate and Cambrian rocks. Southeast of the mine, the Moina Sandstone has pinched out and the Gordon Limestone directly overlies the Dial Conglomerate.

Rio Tinto recognises a potential for Irish style carbonate hosted Pb-Zn mineralisation within EL 55/94, Gunns Plains. However, due to project rationalisation and prioritisation, a decision was made that this is not a zinc priority target for Rio Tinto.

4. Exploration Completed in the Period from 25/1/97 to 11/11/97

No work was conducted on EL 55/94 Gunns Plain.

Recommendation for relinquishment was made in August 1997, and surrender in full was granted on 11 November 1997.

5. Rehabilitation

No significant surface disturbing activities were conducted on EL 55/94 Gunns Plains during the tenure of the licence. No rehabilitation is required.

An assessment for clearance of the environmental/performance bonds will be carried out in December 1997 by a representative of Mineral Resources Tasmania.

6. Expenditure

Expenditure of EL 55/94, Gunns Plains for the period 1 February 1997 to 11 November 1997 is \$1,058. Total expenditure for the licence is \$17,645.

7. References

- | | | |
|------------------|------|---|
| Menpes, SA | 1996 | First Annual Report for the Period Ending 23 January 1996 EL 55/94 Gunns Plains, Tasmania
<i>Rio Tinto Report No. 22157</i> |
| von Strokirch, T | 1997 | Second Annual Report for the Period Ending 23 January 1997 EL 55/94 Gunns Plains, Tasmania
<i>Rio Tinto Report No. 23339</i> |

8. Location

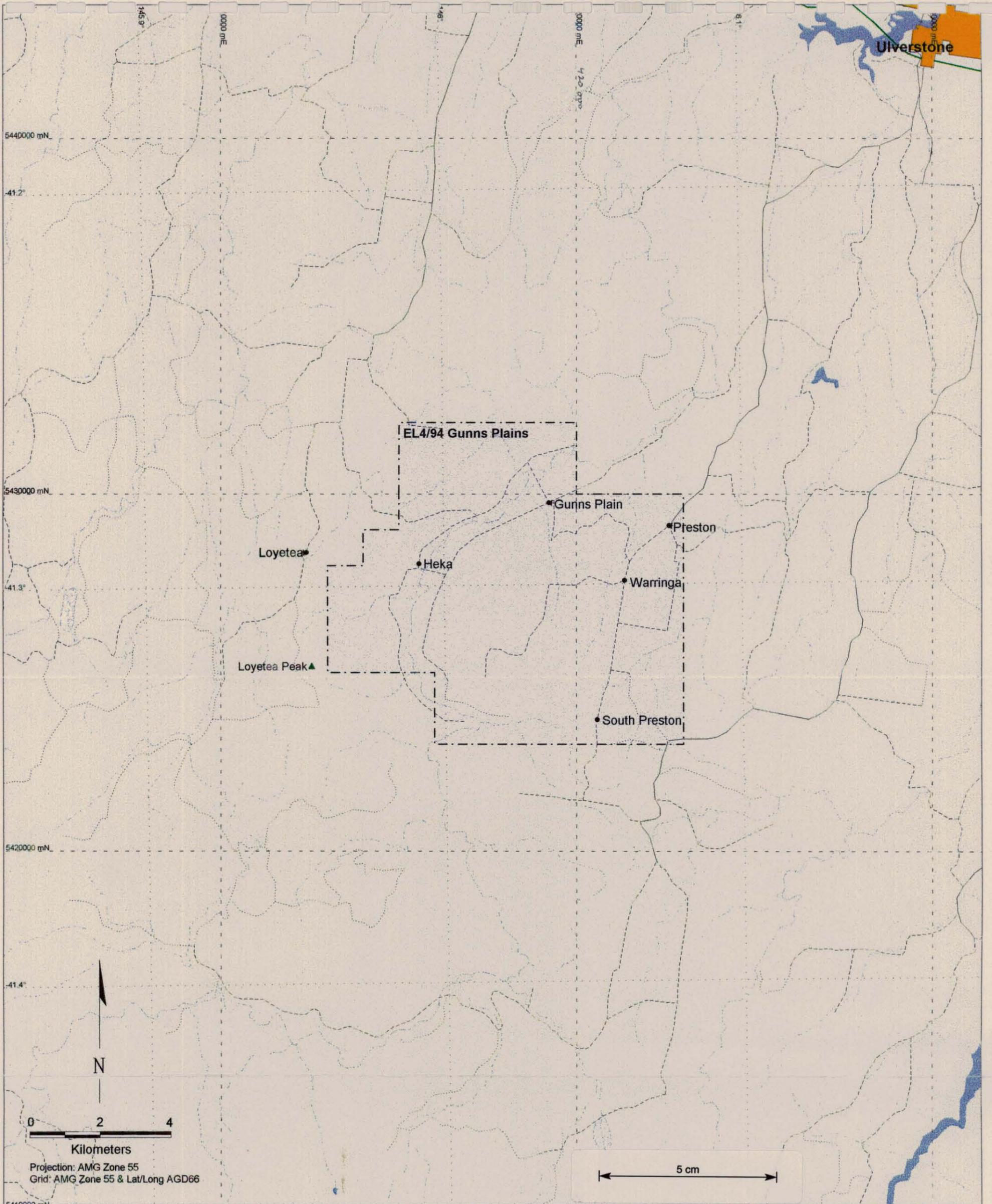
Burnie	SK55-03	1:250,000
Forth	8115	1:100,000
Inglis	8015	1:100,000
Castra	4242	1:25,000
Kindred	4243	1:25,000
Loyetea	4042	1:25,000
Riana	4043	1:25,000

9. Keywords

Tasmania * Base Metals * Ordovician * Carbonate Hosted * literature review

Table 1
EL 55/94 Gunns Plains
Expenditure Statement

	1/2/97 - 11/11/97	TOTAL
Drilling	0	0
Contractors	0	0
Laboratory	0	0
Rent & Property	0	1,475
Payroll & Benefits	0	3,067
Field & Transport	0	1,911
Travel & Accommodation	0	736
Computer Services	0	335
Professional	0	281
Office & Miscellaneous	968	2,141
District Administration	0	739
Regional Costs	0	1,303
Tenements	90	5,658
TOTAL	1,058	17,645



Mapsheets Reference

Circular Head 7919	Table Cape 8016	
SK55-20 NW-Tas		
Arthur River 7915	Hellyer 8015	Forth 8115

- Legend
- Town
 - ▲ Mountain
 - - - EL Boundary
 - Perennial Drainage
 - - - Non-Perennial Drainage
 - Highway
 - Secondary Road
 - Minor Road
 - Track
 - Railway
 - Lake
 - Swamp
 - Urban

RIO TINTO EXPLORATION PTY. LIMITED	
EL55/94 Gunns Plain Location Plan	
Author: Sandy Menpes	Reference: NW Tasmania SK55-20
Drawn: Tony Sargeant	File Name: Tv1151.wor
Date: July 1996	Report No: 23597
Scale: 1:100,000	Plan No: Tv1151

266010