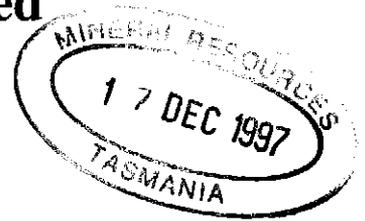


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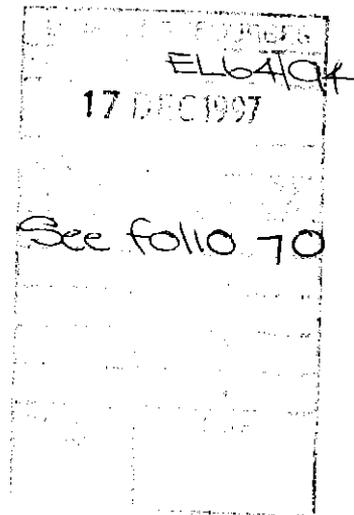
EL 64/94 Swift Creek
Final Report Incorporating Exploration
for the Period from 3 February to 11 November 1997
Queenstown SK55-05
Tasmania, Australia

Author: SAJ Russell

Date: November 1997

Submitted to: Chief Geologist - South East District

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



Submitted by: pp. RJ Matto

Accepted by: Mr. Carney

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Rio Tinto Report No. 23641

97-4095

Abstract

Swift Creek, EL 64/94 was granted to Rio Tinto Exploration Pty. Limited on 3 March 1995. The EL covers 56 sq km and lies predominantly within the Teepookana State Forest, approximately 7 km south-south west of Queenstown on the west coast of Tasmania (Plan Tv 1075)

Rio Tinto acquired EL 64/94 in 1994 to explore Gordon Group carbonates in the Swift Creek and Newall Creek areas for Irish-type, carbonate hosted zinc deposits.

To date, 14.3 line km of grid lines have been cut in the Swift Creek area to allow the acquisition of 504 wacker bedrock samples, 30 rockchip samples and 3 stream sediment samples. This work identified two target areas as summarised below:

Target Area 1 This area is associated with an interpreted fault between reconnaissance grid line 10800N and follow up grid line 10900N. The overall limestone thickness (320m in plan section) does not change across the fault however facies changes are apparent. A geochemically anomalous zone 25-50m wide, at least 100m strike extent, parallel to stratigraphy, with variably anomalous Pb, Zn, Fe, Mn, Ba and As may be related to the fault. A fence of 5 diamond holes (329m total) tested this geological and geochemical anomaly. The best intersections were: 1.5m x 0.12% Pb from 12.2m in DD96SW4 and 0.2m x 0.78% Pb from 16.2m in DD96SW5.

Target Area 2 This area is associated with a significant (reactivated) growth fault between follow up grid lines 20700N and 20800N. The carbonate sequence thickens from 60m to 150m (in plan section) across the fault and most significantly a thick sequence (at least 70m) of potentially mineralised, Zn anomalous black-clays is developed on the downthrown side of the fault. A rockchip sample of dolomite breccia from the middle of the carbonate sequence, adjacent to the fault, returned 0.7% Pb and 1.0% Zn. This area remains untested.

During recent project rationalisation and prioritisation, Rio Tinto Exploration Pty. Limited downgraded priority of this EL.

No work has been conducted on the licence since the last annual report.

Recommendation for relinquishment was made to Mineral Resources Tasmania in August 1997, and surrender in full was ratified on 11 November 1997.

The field camp at Swift Creek has been demobilised by helicopter and all gear lifted back to Zeehan. Arrangements were made with Mineral Resources Tasmania to assess environmental rehabilitation and performance within EL 64/94 in December 1997.

Table of Contents

	Page No.
Abstract	
List of Plans	
List of Tables	
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 Activities During Period from 3/2/97 to 11/11/97	4
5. Rehabilitation	4
6. Expenditure	5
7. References	6
8. Location	6
9. Keywords	6

List of Plans

Plan No.	Title	Scale
Tv1075	EL 64/94 Swift Creek Location Plan	1:100,000
Tv1059	EL 64/94 Swift Creek Summary Geology	1:100,000

List of Tables

Table 1	Expenditure Statement for EL 64/94 Swift Creek for Period 3/2/97 to 11/11/97
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1. Conclusions and Recommendations

Following a detailed project review, Rio Tinto Exploration Pty. Limited downgraded its western Tasmania zinc programme in Ordovician carbonates. It was concluded that no further work should be done at Swift Creek.

Accordingly, recommendation for relinquishment of EL 64/94 was made to Mineral Resources Tasmania in August 1997, and surrender in full occurred on 11 November 1997.

2. Introduction

Swift Creek, EL 64/94 was granted to Rio Tinto Exploration Pty. Limited on 3 March 1995. The EL covers 56 sq km and lies predominantly within the Teepookana State Forest, approximately 7 km south-south west of Queenstown on the west coast of Tasmania (Plan Tv 1075)

Rio Tinto acquired the licence area to explore for Irish-type zinc mineralisation in the Ordovician Gordon Group carbonates. Rio Tinto's preceding exploration of the Gordon Group carbonates in the Zeehan area has resulted in several encouraging zinc intersections. Hence Rio Tinto expanded its efforts to other areas of poorly explored Gordon Group.

The Swift Creek licence area was considered prospective as a fault east of the licence area is interpreted as a reactivated, basin bounding growth fault (see Plan Tv 1059). Ordovician Denison Group clastics appear to thicken significantly across the fault (typically 200m in the Newall Creek area east of the fault, and ≥ 1500 m in the Swift Creek area west of the fault). The interpreted basin bounding fault may have acted as a conduit tapping deep, mineralising fluids and feeding smaller syn-sedimentary faults in the Swift Creek area.

No work has been conducted on the licence since the last annual report.

Recommendation for relinquishment was made to Mineral Resources Tasmania in August 1997, and surrender in full occurred on 11 November 1997.

3. Review of Previous Work

3.1 Prior to Current Tenement

A brief summary of historic exploration conducted over the area of EL 64/94, Swift Creek is given below;

1970-72 Fimiston Minerals - Cyprus

- Small orientation stream sediment survey.

1983-85 EZ - Cyprus

- Geological mapping in the Swift Creek and Rinadeena areas.
- Reconnaissance stream sediment (plus panned concentrate and rock chip) survey in the Swift Creek area.
- Grid based soil, rock chip, stream sediment, and ground magnetic surveys in the Rinadeena area.

1987-89 Rio Tinto - Aberfoyle

- Patchy stream sediment (plus rock chip) survey in the Swift Creek and Rinadeena areas.
- Re-assay of EZ stream sediment pulps for Au.
- Grid based soil and rock chip surveys in the Rinadeena area.

1985-90 Rio Tinto - Aberfoyle

- Geological mapping in the Newall Creek area.
- Reconnaissance stream sediment (plus rock chip) survey in the Newall creek area.
- GENIE EM traverse in the Newall Creek area.

3.2 During Current Tenement**1995 - 1996**

A comprehensive literature review was carried out during permit year 1. The potential for carbonate hosted Pb-Zn mineralisation within EL 64/94 was concluded to be favourable given:

- Pb-Zn mineralisation occurs within the Gordon Group carbonates at Oceana and Grieves near Zeehan. Mineralisation is interpreted to be Irish-type.
- Carbonate hosted vein style galena-sphalerite mineralisation is noted in the NE of the licence area.
- Ordovician growth faults are mapped in the NE of the licence area.
- A major Ordovician basin bounding fault crosses the licence area.
- No systematic bedrock sampling of Gordon Group has been undertaken within the licence area.
- There is some evidence for deep weathering of Gordon Group carbonates (Genie EM data, seismic refraction data, absence of outcrop) particularly near the lower contact, suggesting a high sulphide content (comparable to the situation at Grieves near Zeehan).
- Detailed stream sediment data collected over Gordon Group carbonates indicates several areas with elevated Pb-Zn values that have not been adequately followed up.
- The Gordon Group carbonates in the Swift Creek area have only received reconnaissance stream sediment and some rockchip sampling in the past (Rio Tinto and EZ). Rio Tinto's exploration experience in other Gordon Limestone areas suggests that stream sediment sampling is not always appropriate as the unit tends to form valleys with a variable thickness of transported cover.

1996-1997

- Collection and multi-element analysis of 9 rockchip samples from mapped outcrops of the Gordon Group Limestone. No significant results were returned.
- Using a reconnaissance grid established late in permit year one, a systematic approach to exploration of the Swift Creek Prospect commenced.
- Collection of 263 Wacker bedrock samples at 25m spacing along grid lines. The samples were analysed by Analabs in Townsville and assayed by ICPOES for Ag, Al, As, Ba, Ca, Cu, Fe, K, Mg, Mn, Pb, Zn.
- 2 target areas were defined by this programme of Wacker drilling;
 - Target Area 1* In the vicinity of 5275E on line 10800N where a nugget of coarse grained sphalerite was retrieved in a wacker sample.
 - Target Area 2* At the eastern end of line 11600N where geochemical analyses indicated anomalous Zn in non-calcareous pyritic clays near the top and base of the Gordon Group sequence.
- 4 x 500m grid lines at 100m spacing were cut over Target Area 1. 78 Wacker bedrock samples were acquired at 25m spacing on these lines and a further 8 samples were acquired from 5250E to 5330E at 5 to 10m spacing on line 10800N. This defined a variably anomalous zone of Pb, Zn, Fe, Mn, Ba and As, approximately 25-50m wide and at least 100m in strike extent parallel to stratigraphy.
- At Target Area 2, 10 grid lines at 100m spacing were cut to test strike extensions of the potential mineralisation on line 11600N and test potentially mineralised carbonates between the two target areas. 163 wacker bedrock samples were acquired at 25m sample spacing along the grid lines. Geological logging of the wacker samples showed anomalous geochemistry recorded previously for Target Area 2 is associated with an interpreted (reactivated) growth fault between lines 20700N and 20800N.
- Geological mapping was restricted to cut lines and creeks as dense undergrowth prevented access elsewhere. Bedrock exposure was poor; however structural measurements were recorded at a few locations. 30 rockchip samples and 3 stream sediment samples were acquired during grid mapping exercises.
- Geochemically anomalous results were returned from three samples of mineralised (very fine pyrite, galena, sphalerite in fracture porosity) dolomite breccia acquired in a creek proximal to the interpreted growth fault in Target Area 2. One sample returned 0.7% Pb and 1.0% Zn. A stream sediment sample collected approximately 50m downstream of the mineralised carbonate did not return anomalous geochemistry.

- A fence of 5 shallow diamond drillholes (329m in total) were drilled on line 10800N to test wacker geochemical anomalies at Target Area 1, and prospective horizons adjacent to an interpreted fault. A summary of diamond drilling over Target Area 1 is given below;

Hole No.	GE	GN	TD	Target	Mineralisation
DD96SW1	5420	10800	73.5	Potential mineralisation developed at the base of the Gordon Group carbonates proximal to an interpreted fault.	No mineralisation intersected. Hole abandoned 20m above Gordon Group-Moina Sandstone contact due to drilling difficulties.
DD96SW2	5330	10800	81.2	Potential mineralisation developed below the "middle siltstone" unit.	No mineralisation intersected.
DD96SW3	5280	10800	61.6	0.15% Pb in wacker sample.	No mineralisation intersected.
DD96SW4	5250	10800	54.5	0.37% Pb, 0.15% Pb and sphalerite nugget in wacker samples.	1.5m at 0.12% Pb from 12.2m.
DD96SW5	5250	10800	58.0	0.37% Pb, 0.15% Pb and sphalerite nugget in wacker samples.	0.2m at 0.78% Pb from 16.2m.
	5220	10800		Potential mineralisation downdip of Hole D.	Not drilled.

- These holes sufficiently tested Target Area 1 and no further drilling is recommended.
- Target Area 2 remains untested.

4. Exploration Activities During Period From 3/2/97 To 11/11/97

No work was conducted on EL 64/94, Swift Creek.

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

5. Rehabilitation

The following procedures were implemented to reduce environmental impact and enhance rehabilitation:

- Grid lines were cut in accordance with the Mineral Exploration Code of Practice and will revegetate naturally with time.
- A field camp and helipad were established on the western end of line 20100N in accordance with the guidelines set out in the Mineral Exploration Code of Practice.

- All potentially soil contaminated equipment (camp equipment, wacker, wacker rods, diamond drilling equipment) was cleaned prior to entering the area to prevent the introduction of weeds or the vegetation fungus *Phytophthora cinnamomi*.
- Wacker drill holes close over naturally.
- A small and lightweight 'Gopher' diamond drill rig was used to drill the 5 diamond holes. The rig was heli-transported to a small slinging site at the first drill site and winched along the grid line to subsequent drill sites with minimal widening of the track. Drill sites are difficult to detect from the air and will revegetate naturally with time.
- Drill cuttings were contained by running returns into a polyweave bag and employing sand-bagging techniques.
- During drilling, oil absorbent matting was placed under fuel containers, and biodegradable hydraulic fluid was used.
- Upon completion of drilling, water flows were plugged to prevent surface discharge of ground water, with the exception of DD96SW1 and DD96SW5. These holes could not be plugged in bedrock as surface casing moved off the holes (at 12m) during drilling operations and they could not be re-entered. Water flow from the holes is very minor and at the suggestion of a representative from Mineral Resources Tasmania, a small drainage channel has been established to alleviate the problem. Holes were cased with PVC or steel casing, and temporarily capped with tape and plastic wrap. Holes will be permanently capped with PVC caps in the near future.
- Drill cuttings were trapped in polyweave bags were removed from site.
- All rubbish was removed from drill sites.
- An area approximately 10m x 15m (150 sq m) was cleared at 5500E, 20715N in preparation for a deep diamond hole to test potential mineralisation at Target Area 2.

All cleared sites were periodically monitored to ensure that hygiene measures prevented weed infestation, and that regeneration is proceeding.

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

Total expenditure for EL 64/94, Swift Creek for the period from 1 March 1997 to 11 November 1997 is \$3,614. Total expenditure on the licence is \$462,915.

7. References

- | | | |
|-----------------------------|------|--|
| Menpes, S A and
Maher, S | 1996 | First Annual Report for the Period Ending 2
February 1996 EL 64/94 Swift Creek,
Tasmania
<i>Rio Tinto Exploration Report No. 21978</i> |
| Menpes, S A | 1997 | Second Annual Report for the Period
Ending 2 February 1997 EL 64/94 Swift
Creek, Tasmania
<i>Rio Tinto Exploration Report No. 22154</i> |

8. Location

Queenstown	SK55-05	1:250,000
Cape Sorell	7913	1:100,000
Franklin	8013	1:100,000
Teepookana	3632	1:25,000
Strahan	3633	1:25,000

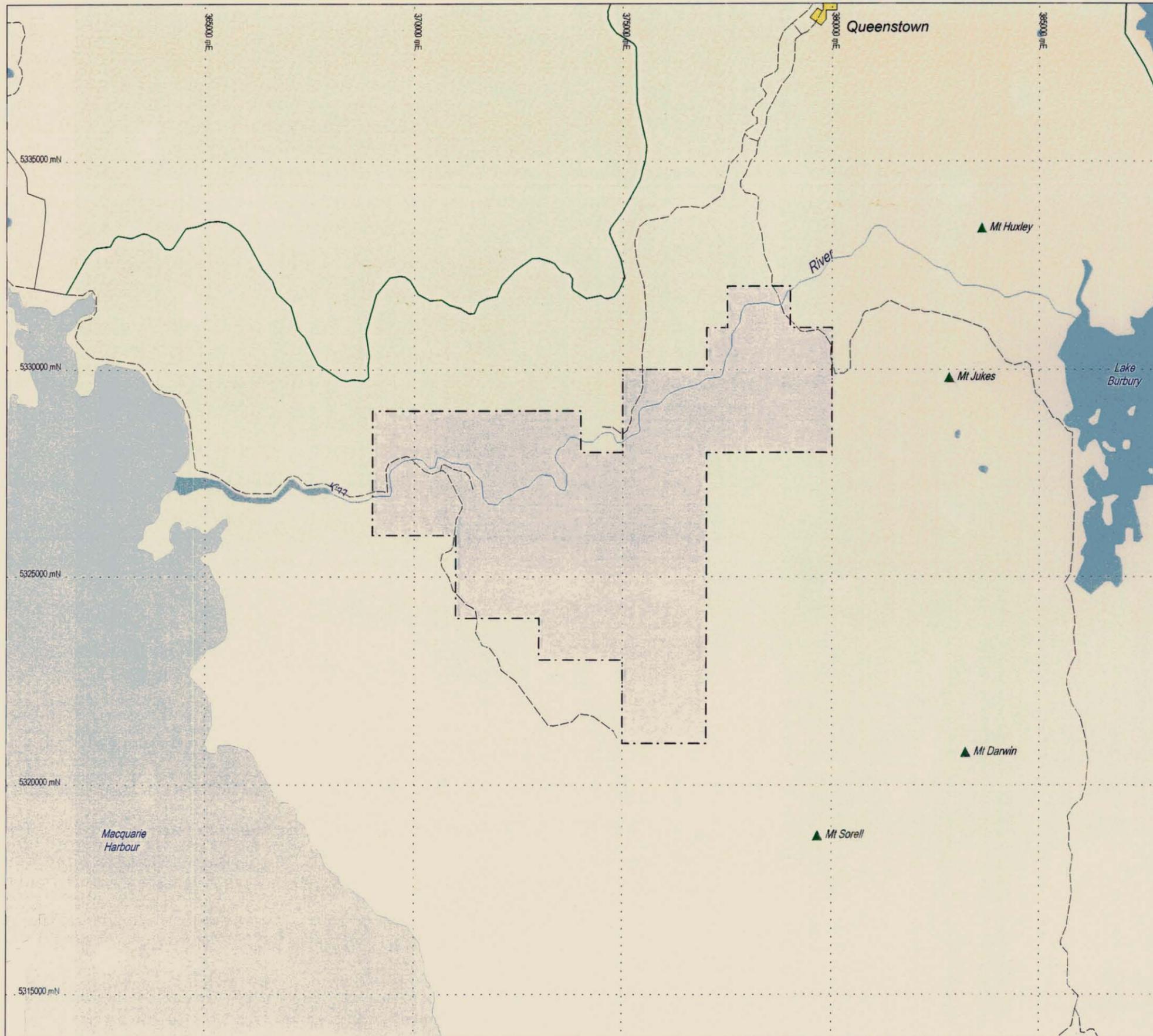
9. Keywords

Tasmania * Zinc * Lead * Gold * Ordovician * Carbonate Hosted * Irish-style
* Soil Sampling

Table 1

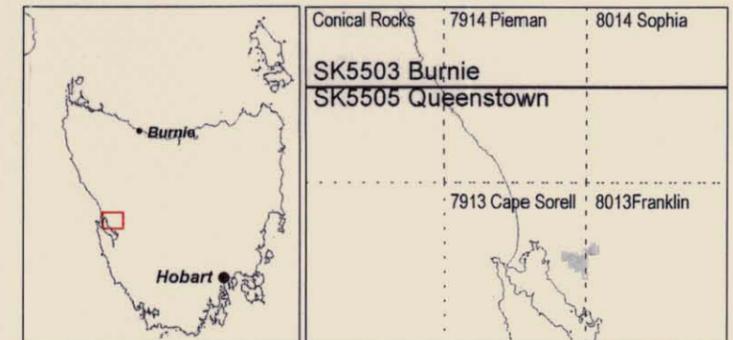
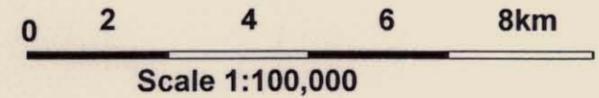
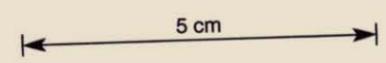
**Expenditure Statement for EL 64/94 Swift Creek
for Period 3/2/97 to 11/11/97**

	1/3/97 - 11/11/97	TOTAL
Drilling	0	54,953
Contractors	0	48,995
Laboratory	0	13,769
Rent & Property	89	4,389
Payroll & Benefits	1,105	94,925
Field & Transport	126	128,341
Travel & Accommodation	0	15,482
Computer Services	87	1,947
Professional	163	1,878
Office & Miscellaneous	1,091	10,599
District Administration	344	52,192
Regional Costs	519	31,858
Tenements	90	3,587
TOTAL	3,614	462,915



Key

- ▲ mountain
- main/secondary road
- - - minor road/track
- highway
- + + + railway
- river (perennial)
- lake
- urban area
- EL64/94 Swift Creek

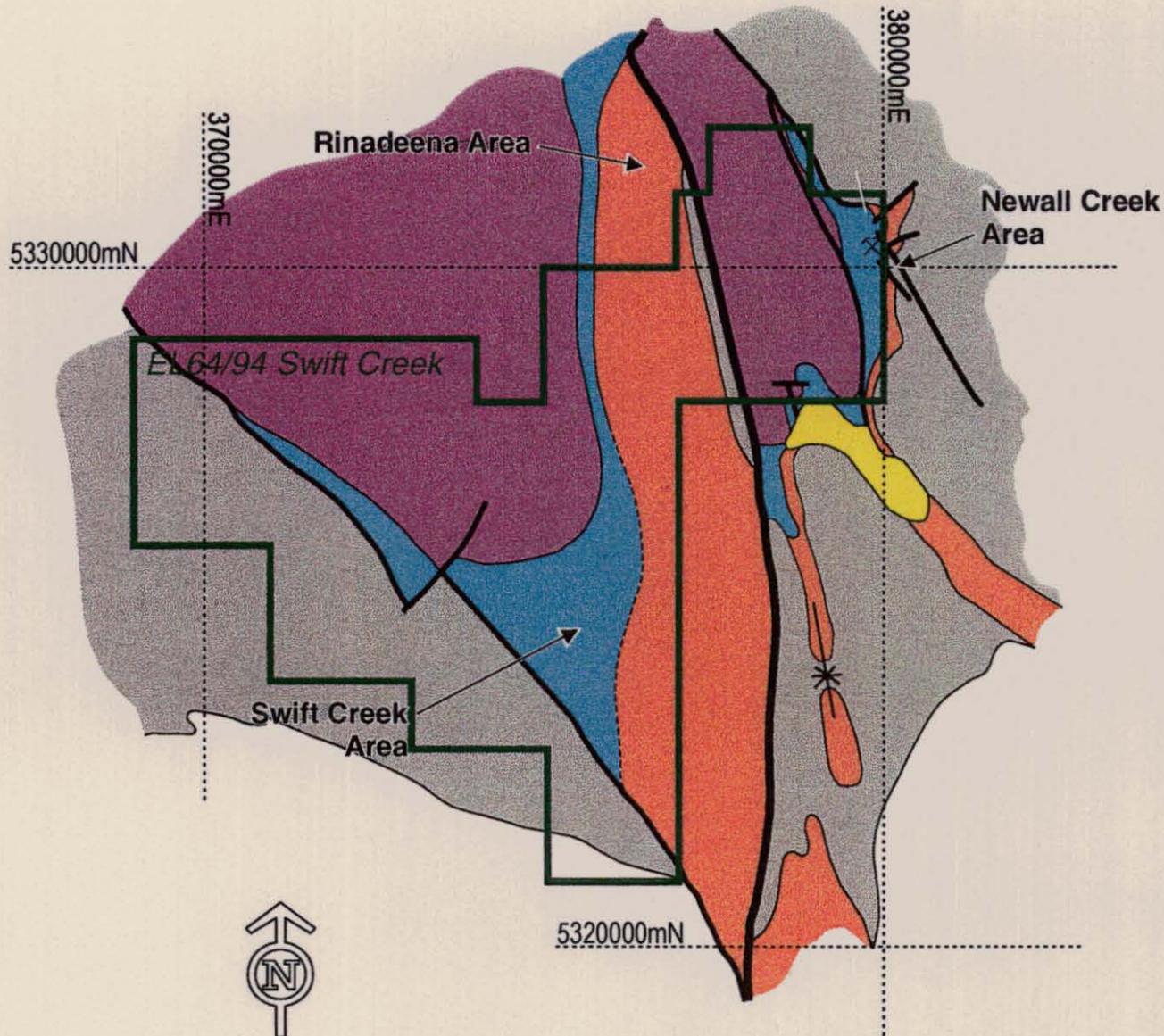


Location Diagram Map Sheet Reference

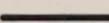
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EL64/94 Swift Creek
Location Plan

Author: Tony Sargeant	Reference: SK55-05 Queenstown
Drawn: Tony Sargeant	File Name: Tv1075.wor
Date: March 1997	Report No: 23641
Scale: 1:100,000	Plan No: Tv1075



Stratigraphy

-  Quaternary gravel-sand-clay
-  Undifferentiated Siluro-Devonian
-  Ordovician Gordon Group
-  Cambro-Ord. clastic sequences
-  Undifferentiated Cambrian
-  Fault
-  Interpreted basin bounding fault (reactivated growth fault)
-  Discordant Pb-Zn working

263013

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Swift Creek EL64/94
Summary Geology

Author: Sandy Menpes	Reference: SK55-05 Queenstown
Drawn: Tony Sargeant	File Name: Tv1059.cdr
Date: May 1996	Report No: 23641
Scale: 1:100,000	Plan No: Tv1059

Scale 1:100,000
Projection : AMG Zone 55