



GOLDFIELDS EXPLORATION

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Partial Relinquishment Report

Tasmanian Gold Project

Anthony

EL 19/98

MICROFILMED
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HELD BY: Goldfields Exploration Pty Ltd

MANAGER & OPERATOR: Goldfields Exploration Pty Ltd

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28, August, 2001

PROSPECTS:, Lake Selina

MAP SHEETS: 1:250,000: 1:100,000:

GEOGRAPHIC COORDS Min East: Max East:
Min North: Max North:

COMMODITY(s): Au, Basemetals

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SUMMARY

The Anthony EL was granted on 10 October 1998 and is due renewal for its fourth year of tenure on 25 September 2001. To reduce the high expenditure commitments on EL 19/1998 in its final years of tenure it is recommended that 5 sq km in the Lake Selina area be relinquished.

CONTENTS

SUMMARY	i
1 INTRODUCTION	1
2 PREVIOUS EXPLORATION	3
2.1 Historical Exploration Activities (pre 1970s)	
2.2 Chronological Summary of Exploration by EL	
3 WORK COMPLETED BY GOLDFIELDS	12
4 CONCLUSION	12
5. REFERENCES	13

Figures

Figure 1 Location Map

Appendices

Appendix 1 Digital data compilation (CD)

1 INTRODUCTION

EL 19/98 - Anthony Road is held and explored by Goldfields Exploration Pty Ltd. It comprises two separate blocks: Anthony Road (8 sq km) and Lake Selina (5 sq km). This report summarises the exploration completed in the Lake Selina block, which was relinquished on 25 September 2001. Most of the following information has been sourced from a detailed review of the geology and exploration of the Lake Selina area by Godsall (1999).

The Lake Selina block forms the eastern portion of EL19/98. Access is via vehicular track at the southern end of the licence, or by foot access across the dam wall at the north end of Lake Plimsoll. Access to the licence is generally difficult, mainly due to dense forest and overgrowth of grid lines. Early exploration work (1950s to 1980s) involved road cutting and establishment of a field camp. Later work (1980s to 1990s) entailed helicopter supported field activities. Most of the old exploration tracks have been cut off by the waters of Lake Plimsoll.

The Lake Selina block is characterised by dense forest, poor outcrop and is difficult to access. The western side of the block (approximately 25% by area) is submerged under Lake Plimsoll, which was established in 1994 as part of the Anthony hydroelectric scheme. Location is shown in Figure 1.

Historical information pre 1950s is poorly documented. Post the 1950s several exploration licences have encompassed the Lake Selina area.

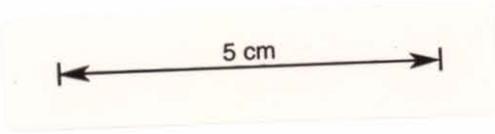
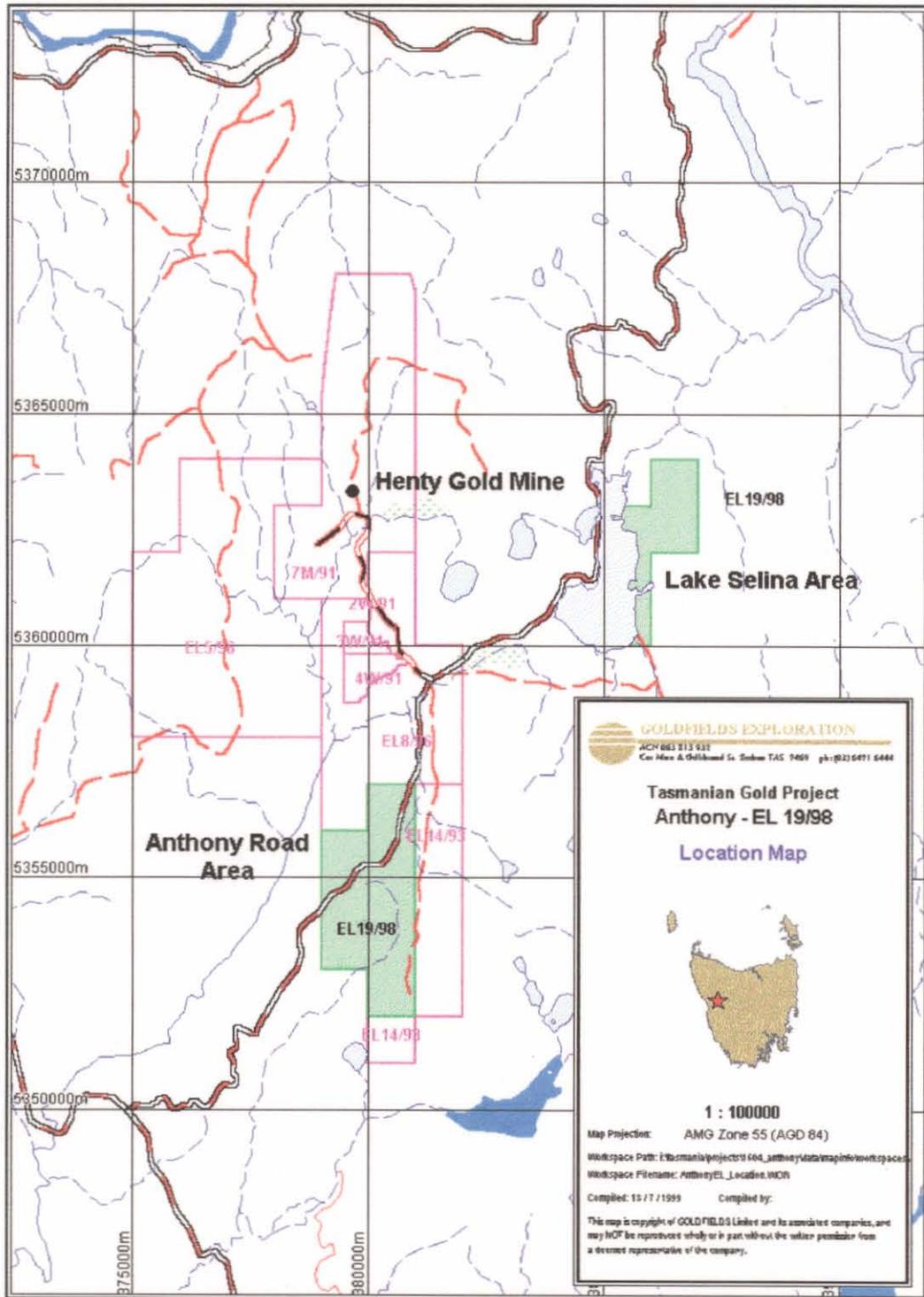
Contemporary coverage dates back to EL9/66 held by MLMRC for a considerable number of years. EL9/66 was explored initially by MLMRC, under JV as the Consolidated Syndicate and latterly as Gold Fields Exploration Pty Limited (GFPEL) (a subsidiary of RGC). Rationalisation of ground holdings by RGC and relinquishment requirements resulted in dropping of the Lake Selina ground by GFPEL in 1987.

Work in the Lake Selina area continued under EL103/87 – East Coast Range. Exploration was carried out initially by Billiton Australia (subsequently Acacia Minerals Pty Limited), and then by Aberfoyle Resources Limited under a JV arrangement formalised in 1991. Expansion of the JV to include Resolute Limited did not include any exploration activities in the Selina area. The ground was dropped as part of EL103/87 compulsory relinquishment in 1998.

Two other recent ELs adjacent to the block are of use in interpretation of the Selina area geology. EL5/85 – Lake Margaret was explored by Aberfoyle and saw work carried out to the north and south of the current Selina block. EL7/91 – Sticht Range was located to the east of the Selina area and was similarly explored by Aberfoyle.

The Lake Selina block lies within the Southwest Conservation Area and thus any exploration work in the area will need to be referred to MEWG.

Figure 1 - Location Map



2 PREVIOUS EXPLORATION

Prior to the granting of EL9/66 work in the Lake Selina area was variable, with erratic records and documentation of exploration activities. For the purposes of this report previous exploration detailed below is split into historical activities followed by a chronological summary by EL of contemporary exploration commencing in the late 1960s through to present time. A more comprehensive breakdown of the information is listed in the chronological summary is given in Godsall (1999).

2.1 Historical Exploration Activities (pre 1970s)

- 1898 Smith visited the Dora workings, described exploration work and mineralisation.
- 1900s Prospector activities at the turn of the century excavated adits and trenches between 5360000N and 5362000N (Lake Selina workings)
- 1903 (?) MLMRC tested these workings but with discouraging results.
- 1938 MLMRC sampled the old Dora workings.
- 1939 Blake and Henderson report on Lake Dora copper deposits (Blake, F., 1939, "Report on Lake Dora Copper Deposits", Mines Department transcript report).
- 1954 Bradley refers briefly to the Lake Dora area as the type area for the Dora Conglomerate.
- 1956 Bradley comments on structure and mineralisation of the Dora area and the geological similarities to Red Hills. Possibly the western limb of an overturned anticline.
- 1957/85 RTAE carried out an aeromagnetic survey and ground exploration mostly in the Lake Dora – Michael tarn area. Work comprised gridding, mapping, soil geochemistry, ground magnetics, ground EM (Turam), self-potential and gravity profiling. An aeromagnetic high was identified immediately west Lake Dora, several soil anomalies delineated and a Turam anomaly located south of Walford Peak.
- 1958 Campana et.al. discuss the Dora region.
- 1964 Solomon identified quartz keratophyres in the Dora area, and regional anticlinal folding.

2.2 Chronological Summary of Exploration by EL

EL9/66

1969 - 1970 EL9/66 Annual Report (Newnham, 1970)

Gridding: Road construction for access
Track cutting of Lake Dora –Lake Selina grid

Geology: Broad geology outlined with salient structural feature

Mineralisation: Associated with areas of strongest shearing

Geophysics: Ground magnetometry
Induced polarisation, combined IP-resistivity-SP
Anomalies A1 to A18 identified

Geochemistry: Soil and rock chip sampling, assayed for Cu Pb Zn

Drilling: LS1 completed (tested anomaly A1), petrographic descriptions
LS2 collared and in progress

1970 - 1971 EL9/66 Annual Report (McKibben, 1971)

Gridding: Extension to existing Dora-Selina grid
Some road development

Geology: Mapping as per previous year.

Structure: Faulting; tight echelon synclinal structures with steep/overturned eastern limbs

Mineralisation: More strongly developed in zones of stronger shearing
Disseminated and veinlet py, minor cpy mag hem, trace sph gal mo

Geophysics: Ground magnetometry, IP pole-dipole array

Geochemistry: Soils Cu Pb Zn by AAS (ineffective due to glacial moraine)
Costean excavated on line 120N

Drilling: LS 2, LS 3, LS 4 completed and LS 5 in progress

1971 - 1972 EL9/66 Annual Report (McKibben, 1972)

Geology: Aerial photography

Drilling: LS5 and LS6 completed

1972 - 1973 EL9/66 Annual Report (Wells, 1973)

Geology: Selina mineralisation lower in Cambrian than that at Mt Lyell

Geochemistry: Trace element study (Walshe) Hg vapour soil gas survey

Geophysics: Turair survey (North Selina)
Drill core petrophysics; susceptibility, conductivity, chargeability

Drilling: LS7 completed

**1975 EL 9/66 A Review of the Area East of the Tyndall Range
(Wells, 1975)**

Geology: Pleistocene glacials and fluvioglacials, with glacial erosion
 Cambrian Owen conglomerate, Jukes conglomerate, acid lavas and pyroclastics, granite to north (adamellite)
 PreCambrian Sticht Range sequence conglomerate, quartzites, shales, dolomites quartzite

Structure: Anticlinal fold, faulting and shearing

Geophysics: Magnetics three broad anomalous areas (two within EL19/98)
 Three types of IP – SP anomaly
 Turair semi-airborne EM not suited to this area

Geochemistry: Background soil values 20 ppm Cu 50 ppm Pb 50 ppm Zn
 Some correlation with IP anomalies, but depends on sample position

Drill holes: LS1 to LS7, drillhole logs with assay and survey data

1979 - 1980 EL9/66 Annual Report (Meares, Walter and Hutton, 1980)

Geology: Reconnaissance of costeans on line 48N
 Inspection of dumps at 124N/2900'W

Geochemistry: Rock chips assayed for Cu Pb Zn Ag Mo \pm Co S Au Ba Mn Fe

Geophysics: Dighem II airborne EM
 Gravity test survey (line 120N/3 200W-2000W) LS4

Drilling: Core re-assayed LS4, LS5 and LS6 for Ag Au Sn As Mo
 Petrographic analyses LS5 and LS6 (Ag in tetrahedrite)

**1980 - 1981 EL9/66 Annual Report
(Meares, Hutton and Komyschan, 1981)**

Gridding: Selina grid extended

Geology: Mapping. Geophysical anomalies related to geology

Mineralisation: Identification and delineation of EPZ between 184N and 136N
 EPZ mainly disseminated sulphides, WPZ mainly veinlets and patchy replacements in massive pink rhyolites, with magnetite common.

Geochemistry: Anomalous thresholds for soils: Cu 40ppm, Pb 450ppm, Zn 300ppm
 Rock chip samples (from pits on lines 128N, 144N and 184N)

Geophysics: Bishop geophysics review
 Gradient array IP, dipole-dipole IP, magnetics data re-interpreted
 Ground EM over LS5

Drilling: Re-assay of core

1981 - 1982 EL9/66 Annual Report
(Meares, Purvis, Hutton and Komysan, 1982)

Gridding:	Roadworks and grid extension
Geology:	Mapping
Structure:	Major NW-trending faults inferred from geophysical data and airphoto interpretation. Possible that EPZ and WPZ have been offset by these faults
Mineralisation:	Potential strike extensions to mineralisation Mineralisation related to granitic intrusions (Eastoe)
Geochemistry:	Mt Selina Geochemical Anomaly Zone delineated, Pb-Zn-Ag soil anomaly 128N - 104N straddling the baseline; 4000ppm Pb, 1400 ppm Zn, 8 ppm Ag, 75 ppm Cu. Disseminated mag, stringers of hem, rare/ trace/ occasional disseminated py grains. Rock chip samples; stream sediment sampling
Eastoe alteration:	Study concluded Selina mineralisation was related to Cambrian Murchison granite and not suitable to massive sulphide formation
Geophysics:	Gradient array IP, dipole-dipole IP (152N/2600'W), Ground magnetics – total field 104N – 136N Ground EM ("Genie") survey Petrographic descriptions Bishop reports
Drilling:	LS8 completed

June 1983 EL9/66 Geological Review
(Purvis, Jones, FitzGerald and Poltock, 1983)

Favourable considerations:	Alteration and mineralisation Ubiquitous presence of base metal sulphides
Unfavourable considerations:	Size constraints on size of prospective zones Low tenor of soil and drillcore geochemical results
Geology:	Geology of MSAZ poorly constrained <i>MSAZ coincides with a break in IP and magnetic trends</i>
Geochemistry:	Stratiform linear zones, WPZ stockwork with no syngenetic mineralisation. EPZ of possible syngenetic origin with subordinate stockwork mineralisation, or pyritic schist being footwall to overlying syngenetic banded mineralisation (Kuroko analogy) Minor values Cu, Pb, Zn, anomalous Ag, no Au, traces Mo Pb isotopes (Gulson and Porritt, 1987)

Drilling: Best values - LS3 6.1m at 1% Pb
 LS5 4.6m at 0.65% Zn 24g/t Ag
 LS6 3.1m at 0.82% Cu
 6.1m at 44g/t Ag
 1.5m at 0.67% Pb

Petrography

Recommendations: Detailed mapping
 (a) to place known mineralisation in its geological context
 (b) to define horizons that may contain massive sulphides
 Drill testing of Western Pyrite Zone
 Eastern Pyrite Zone not known well enough to define targets

1983 - 1984 EL9/66 Annual Report (Roberts and Cartwright, 1984)

Geology: Mapping of MSAZ, structural mapping
 Target: VMS mineralisation
 Drilling: Helicopter supported; LS9, LS10, LS11 and LS12 completed
 LS6 15' at 0.09% Cu, 57.2g/t Ag
 25' at 0.11% Cu, 16g/t Ag
 LS9 No significant assays recorded
 LS10 23.0m at 0.01g/t Au, 0.13% Cu, 0.26% Zn, 2.1g/t Ag
 6.0m at 0.04g/t Au, 0.44% Cu, 0.22% Zn, 3.5g/t Ag
 LS11 No significant assays
 (Sampled 107.0m - 361.2m and assayed for Au Ag Cu Pb Zn)
 LS12 Hole not sampled

1984 - 1985 EL9/66 Annual Report (FitzGerald and Pease, 1985)

Gridding: Clearing and repegging, helicopter-supported
 Geology: Mapping
 Similarities between Kuroko-style massive sulphides and Selina
 Geochemistry: Rock chips
 Geophysics: UTEM survey to immediate south of EPZ
 Drilling: Recommended drill testing of geochemical targets

1985 - 1986 EL9/66 Annual Report (FitzGerald, 1986)

Drilling: LS 13 completed (helicopter-supported)
 No significant assay results
 Geophysics Sirotem survey (LS 10 and LS 13)
 Conclusions: No additional exploration for VMS justified

1987 EL9/66 Relinquishment report (FitzGerald, 1987)

Selina area relinquished.

EL5/85 – Lake Margaret**1985 - 1986 EL5/85 Annual Report (Sheppard, 1986)**

Geology: Recommends review of previous exploration data in conjunction with rock chip and/or wacker sampling for UTEM survey and subsequent drill testing.

1986 - 1987 EL5/85 Annual Report (Funnell, 1987)

Geology: Recommends a thorough compilation of all available data. Limited rock chip sampling to delineate ground for UTEM survey prior to drill testing.

Target: Volcanogenic massive sulphide gold

1989 - 1990 EL5/85 Progress Report (Noonan, 1990)

Geology: North Selina Prospect (outside and to north of EL19/98)

Pb isotope study: Suggestive of 2 active hydrothermal systems

1993 EL5/85 Relinquishment Report (Sharpe, 1993)

Recommended relinquishment of North and South Selina. Reviews work and known information;- geological setting, structure, alteration and mineralisation

Drilling: Drill holes LS8, LS11 and LS12 fall within North Selina block

Geochemistry: Stream sediment

Rock chip - base and precious metals

Lithophiles: Dacitic to rhyolitic lava flows, volcanoclastic units returned highly variable Ti/Zr ratios

Granitic fluid study: Elevation in Rb (>200ppm) & F (>5600ppm) suggest interaction between granitic fluids and EQPS

Pb isotopes: Two groupings of data (a) Rosebery (b) Hellyer/Que River

No firm conclusions on nature of hydrothermal events

Geophysics: UTEM survey, no response attributable to massive sulphides

EL103/87 – East Coast Range**1989 EL103/87 Annual Report (Creagh and Hungerford, 1989)**

Gridding: Grid cut along AMG lines

Geology: Field mapping and reconnaissance and compilation of previous work

Geophysics: Ground magnetics (5358000N to 5364000N)

CSMAT lines 5358000N to 5359200N, 5361200N to 5362000N

TEM line 5359600N
EM-37 transient electromagnetic survey in progress

1990 EL103/87 Annual Report (Creagh and Hungerford, 1990)

Gridding: Grid extension
Geology: Outcrop mapping
Structure: Regional cleavage
Mineralisation: Three separate phases;
(a) disseminations
(b) pressure shadows
(c) x-cutting veins
Geochemistry: Rock chips over EPZ
Geophysics: EM-37 survey
Drilling: Relogging of LS10 and LS13
Target: Massive base metal sulphide mineralisation

Recommendations: Drill test EM anomalies

June 1991 EL103/87 (Randell, 1991)

JV between Aberfoyle Resources Limited and Billiton Australia, with Aberfoyle funding and managing exploration

1992 EL103/87 Annual Report (Richardson, 1992)

Geophysics: DHEM survey down LS10
Drilling: Extension to and completion of LS10; LS14 in progress

1993 EL103/87 Annual Report (Richardson, 1993a and 1993b)

Drilling: LS10 EM-37 and DHEM survey
LS14 completed – geology, geochemistry, no DHEM

Conclusions: Potential for improved grade and metal zonation to the north remains.

July 1997 EL103/87

JV between Resolute Limited – Aberfoyle Resources Ltd – Acacia Metal Pty Ltd. No work carried out in the Selina Block

1998 EL103/87 Final Report (McDonald and Ikstrums, 1998)

Licence relinquished 21st April 1998.

AMIRA and CODES Research Projects**1986 -1988 AMIRA 84/P210 Gold and Silver Controls in VHMS
(Hunns, 1986a,b 1897a,b and 1988)**

- Methods: field mapping with additional structural interpretation
re-logging of drill core
petrography and XRF for both majors and minors
± isotope studies and fluid inclusion work
comparison with nearby mineralised systems (e.g. Red Hills)
multi element analyses
- Geology: Quaternary moraine, scree, alluvium
Ordovician Owen Conglomerate,
Dora Conglomerate (Jukes Breccia correlate)
Cambrian granitic intrusives,
Selina volcanoclastics,
Sticht Range Beds
Precambrian quartzites and quartz mica schists
- Alteration minerals: k-feldspar, chlorite, sericite, quartz, magnetite,
pyrite, hematite, calcite dolomite, muscovite
and epidote.
- Alteration zones: k-feldspar zone, chlorite zone, sericite/quartz zone
- Paragenetic sequence: paragenetic sequences determined from thin
section work
- Genesis: deep granite intrusion with circulating hydrothermal fluids
Kuroko style, zonation representing stockwork mineralisation
Comparison with VMS deposits:
- Speculative model: basinal deposition, intrusion and mass flow volcanics,
deformation and uplift, reactivation and mobilisation

1987 Lake Selina Prospect) (CODES)

- Geology: Lavas, volcanoclastics, rhyo-dacite intrusive porphyries,
volcanic sediments
- Structure: Synformal
Anthony Fault a controlling influence on granite intrusion
*Devonian deformation/cleavage lower to middle greenschist
facies*
- Alteration: Potassium feldspar zone, chlorite zone, sericite/quartz zone
- Mineralisation: Related to Cambrian granite intrusion
Network of veins and disseminations
Concentrated in two linear zones EPZ and WPZ
MSAZ identified on soil responses
Three stage paragenetic sequence with three phases in the
first stage
- Styles: Copper associated with pyrite and magnetite
Lead and zinc associated with hydrothermal brecciation

Zinc and lead mineralisation in late stage x-cutting carbonate veining

Remobilised base metals associated with shearing (e.g. LS10)

Drillholes: LS5, LS6 and LS10 relogged

Geochemistry: Zn ratio not diagnostic
fluids at elevated temperatures (>250°C)
pH 3 to pH 5, log fO_2 33-40

Sulphur isotopes: 9.8‰ – 10.9‰ i.e. Cambrian
Magmatic origin/source (rather than seawater or meteoric water)

Pb isotopes: Similar to Que River and Rosebery

Genesis: Mass flow unit(s) in a narrow/restricted environment
Basinal uplift followed by rapid deposition of Owen beds
Devonian reactivation along the Anthony Fault

October 1995 **AMIRA P291A "Cambrian Growth Faults"**
(White, 1995)

Identification of the Selina Fault, either normal or reverse.
Cambrian movement during Upper Tyndall time.

3 WORK COMPLETED BY GOLDFIELDS

A detailed review of the geology and exploration potential of the Lake Selina block was made by Will Godsall in mid 1999 (Godsall, 1999). No additional exploration has been completed within the relinquished area since this date.

Digital data used in the production of the report by Godsall are included on the accompanying CD (Appendix 1).

4. CONCLUSION

The Anthony EL was granted on 10 October 1998 and is due renewal for its fourth year of tenure on 25 September 2001. To reduce the high expenditure commitments on EL 19/1998 in its final years of tenure it is recommended that 5 sq km in the Lake Selina area be relinquished.

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