

Appendix 3

**Heath, P. 2004 Zeehan Mineral field –
Exploration Licence 20-2002 (Part Relinquishment)**

ZZ EXPLORATION_{Pty Ltd}

**PO Box 1603
Hobart, Tasmania**

**Zeehan Mineral Field
Exploration Licence 20-2002
Part Relinquishment Report**

Prepared by
Paul Heath
Senior Geologist

June 2004

ZZ EXPLORATION Pty Ltd

ABN 45 092 488 214

24 August 2004

Registrar of Mines
Mineral Resources Tasmania
PO Box 56
ROSNY PARK TAS 7018

Attention: Dennis Burgess

Dear Sir,

Re: 2004 Part-relinquishment report for EL20/2002

I have the pleasure in forwarding ZZ Exploration's Pty Ltd (ZZE) part-relinquishment report for Exploration Licence 20/2002.

ZZE has reviewed all relevant data with respect to EL 20/2002 and prioritised areas of interest (Oceana and Mariposa deposits) to be retained for future exploration. The table below represents area size to be retained and surrendered.

	area (km ²)	% of total area
Total area held by ZZE (EL20/2002)	71	100%
Area to be retained by ZZE	12	17%
Area to be surrendered by ZZE	59	83%

Should you require any further information to meet your specific requirements, please contact our Exploration Geologist, Paul Heath, on 6231 9339.

Yours faithfully,



David Tanner
Managing Director
ZZ Exploration Pty. Ltd.

Encl. Part-relinquishment report for EL20/2002

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web site: www.zeehanzinc.com.au

PART I - TOTAL SURRENDER

I/We totally surrender	TICK	Number(s)
Mining Lease	<input type="checkbox"/>	
Retention Licence	<input type="checkbox"/>	
Exploration Licence	<input type="checkbox"/>	

PART II - PARTIAL SURRENDER
NB. A Final Rehabilitation Report for the area surrendered must be lodged.

1. I/We surrender an area of 59 km² Ha/km²

of	TICK	Number(s)
Mining Lease	<input type="checkbox"/>	
Retention Licence	<input type="checkbox"/>	
Exploration Licence	<input checked="" type="checkbox"/>	<u>EL 20 / 2002</u>

and that part of the tenement to be retained is described as follows:

2.

- sketch map showing the boundaries of the area of the tenement to be retained TICK
- OR
- a plan of survey of that part of the mining lease to remain in force

PART III - TOTAL OR PARTIAL SURRENDER IN FAVOUR NEW MINING LEASE RETENTION LICENCE OR EXPLORATION LICENCE

This application for surrender is made to enable me/us to make application for a new

	TICK	AREA (Ha / Km ²)
Mining Lease	<input type="checkbox"/>	
Retention Licence	<input type="checkbox"/>	
Exploration Licence	<input type="checkbox"/>	

in respect of land being surrendered herein and I/We understand that the surrender is not to take effect until immediately prior to the grant of the new licence or lease.

The following must accompany this form

- Prescribed fee (Exploration Licences and Retention Licences only : 57 ~~\$55.50~~) TICK
- **The lease or licence document issued for the tenement**
- Sketch map or survey plan as specified in 2 of PART II
- If surrender is in favour of a new Mining Lease, Exploration Licence or Retention Licence then the appropriate application form for the new Mining Lease, Exploration Licence or Retention Licence must accompany this form.
- If tenement is an Exploration Licence or Retention Licence a Relinquishment report for the area being surrendered must be lodged.

N.B. Please lodge surrender form with: Registrar of Mines
 P. O. Box 56
 Rosny Park Tasmania 7018
 Facsimile: (03) 6233 8338

Table of Contents

INTRODUCTION..... 3
 LOCATION..... 4
 TENURE..... 5
EXPLORATION OBJECTIVES 6
WORK COMPLETED..... 6
RESULTS 6
ENVIRONMENTAL DISTURBANCE AND REHABILITATION..... 6
CONCLUSIONS 6

FIGURES

Figure 1 - Location of ZZ Exploration Pty Ltd EL20/2002..... 4
Figure 2 - Land Tenure within and around EL20/2002 5

- Appendix 1** Ochre Australia., 2003. Investigation of geophysical and image data over the Zeehan field. Unpublished Report.
- Appendix 2** Target Summaries (Blackjacks, Sunny Corner-Bannockburn, Pyramid, Tom Creek, Westerway, Leatherwood).
- Appendix 3** Location sketch map of EL20/2002

Introduction

The relinquished area of Exploration Licence 20/2002 (EL 20/2002) covers 59 square kilometres and is located one kilometre southeast from Zeehan, western Tasmania (Figure 1, Appendix 3). ZZ Exploration Pty Ltd (ZZ Exploration) is a wholly owned subsidiary of Zeehan Zinc Limited, and holds 100% interest.

Work completed covers the period from January 2003 to June 2004.

- 1) Collation and evaluation of historical data over EL 20/2002.
- 2) A summary list of target concepts over various deposits and old workings over EL 20/2002.
- 3) Preliminary investigation of geophysical, image, company and map data to determine a) areas of greater significance for future exploration b) prioritise ground held under EL 20/2002 and c) facilitate decisions regarding future possible relinquishments (Refer to Appendix 1).

The Murchison Hwy, Zeehan Hwy and Henty Rd provide access to EL 20/2002. The Emu Bay Railway and the Murchison Hwy connect Zeehan with the Port of Burnie, located 140 kilometres to the north.

Vegetation cover is sparse over EL 20/2002, dominated by button grass and banksias on the ridges and button grass and gorse in the marshy valley. Dense tea tree and eucalypt scrub occur along the creeks.

Location

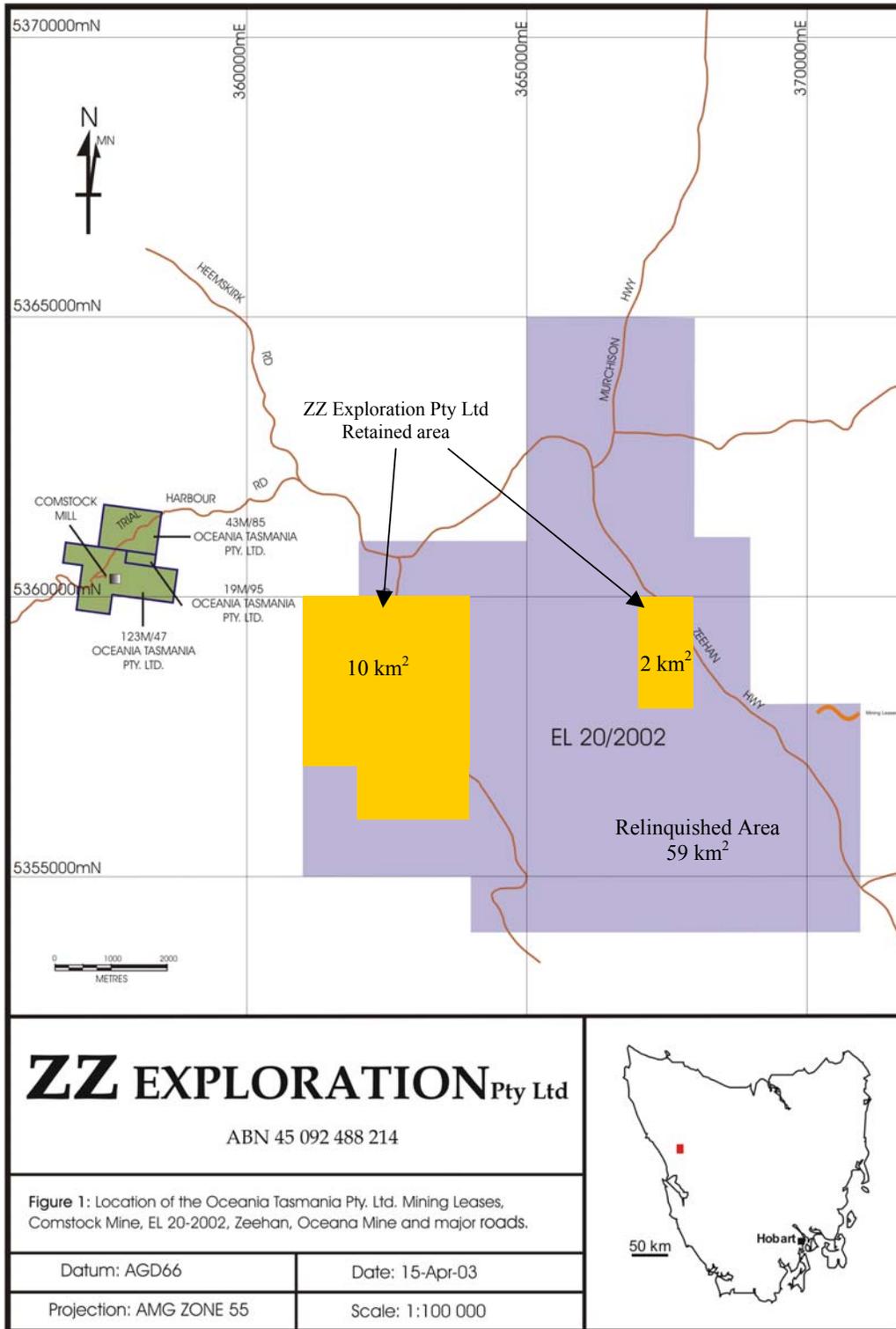


Figure 1. Original EL20/2002 - 71km² (combined purple & yellow areas). Total area (yellow) retained by ZZ Exploration (12 km²). Total area (purple) relinquished by ZZ Exploration - 59km².

Tenure

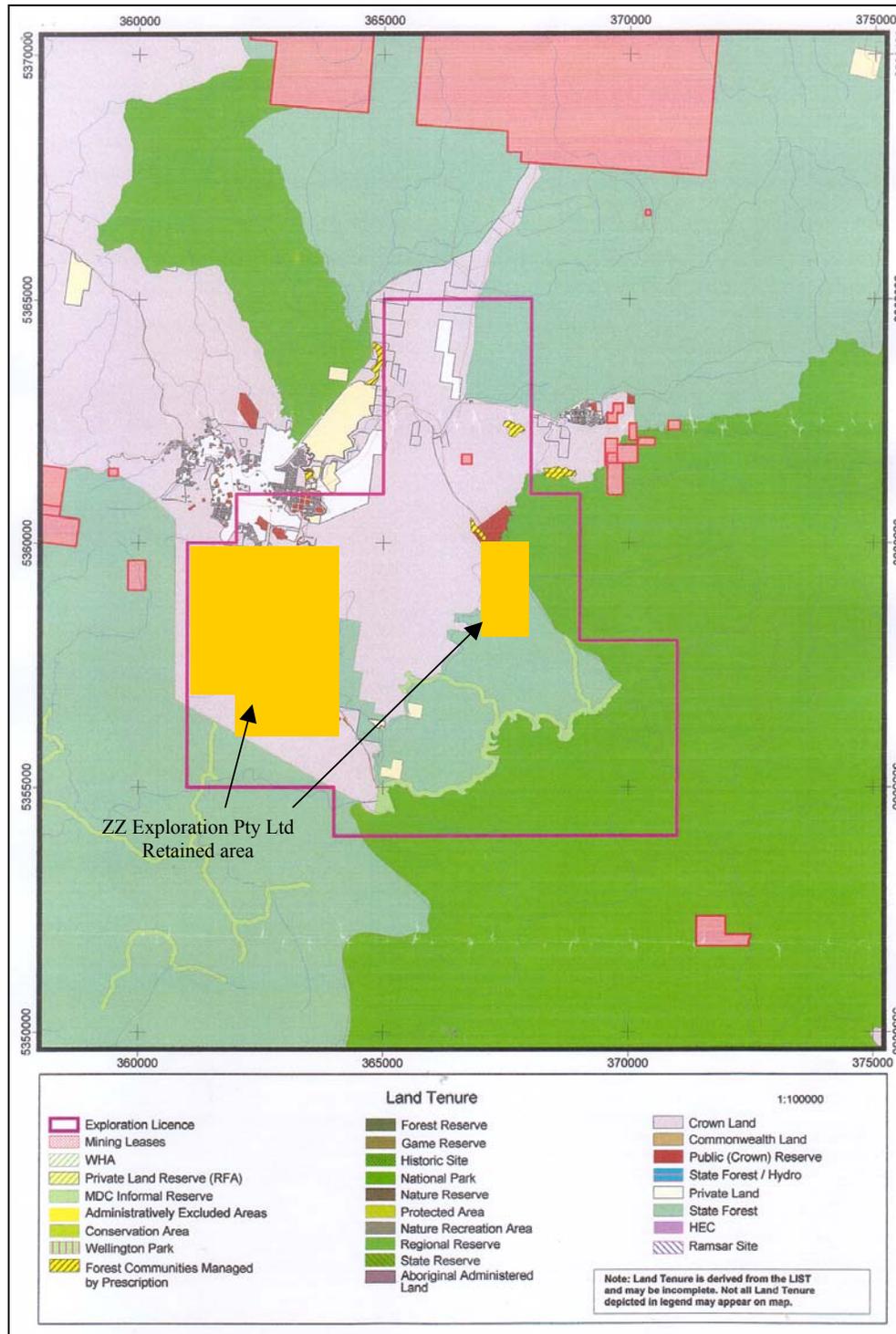


Figure 2. Land Tenure within and around EL20/2002. The area to be retained by ZZ Exploration is represented by the yellow area (12 km²).

Exploration Objectives

The principal commodities sought by ZZ Exploration within the relinquished area of EL20/2002 (Figures 1 & 2) was zinc, lead and silver. ZZ Exploration focussed on exploring for small (<0.5Mt) to large-scale (>100Mt) economic resources based on previously identified anomalies. The exploration program included the search for carbonate-hosted metallic minerals of possible Devonian granite-related origin (similar to those located on the Comstock mining leases) and Ordovician Irish-type (such as Oceana deposit).

Work Completed

Prospective-based exploration

In December 2003, ZZ Exploration commissioned Ochre Australia Pty. Ltd. to complete a Phase 1: 'Image Processing and Target generation' map over EL20/2002 (Appendix 1).

Collation and review of pre-existing data – Target summaries of Blackjacks, Sunny Corner – Bannockburn, Tom Creek, Westerway, and Leatherwood are included in Appendix 2.

Results

See Appendix 1 and 2

Environmental disturbance and rehabilitation

Exploration over the relinquished area of EL20/2002 was environmentally low impact due to the existence of numerous sealed and unsealed roads and tracks. No rehabilitation work is required.

Conclusions

ZZ Exploration has reviewed previous studies within the relinquished area of EL20/2002, some of which include geological mapping, geophysical surveys, costeaning, rock-chip, soil, stream and bedrock geochemistry, basin analysis studies, aircore, and diamond drilling. Additionally, a geophysical evaluation has highlighted areas of greatest interest to ZZ Exploration in the short to medium term.

Appendix 1

**Ochre Australia, 2003
Investigation of geophysical and image data over the
Zeehan field. Unpublished Report.**

EARTHSEARCH

Confidential between you as a representative of ZZ and
Ochre Australia Pty. Ltd. (TA EarthSearch)

GIS

spatial data
analysis

geological
consulting

image
processing

interactive
maps

Introduction

The following is a summary of findings resulting from a preliminary investigation of 20/2002, [REDACTED]. This investigation is regarded as cursory only and is the first of four phases of investigation of geophysical and image data as well as company and map data.

The aim of this investigation was to highlight areas likely to be of greater importance for future exploration thus allowing the prioritization of ground held under license and facilitate decisions regarding future relinquishments. This investigation thus highlights only broad-scale features within selective data sets.

Data used in this investigation included:

2000 WTRMP geophysical data including 200m line spacing (E-W flight lines) magnetic, radiometric and electromagnetic (EM) data. Radiometric and magnetic data cover all of the EL's of interest. EM data do not cover about 35% of the SE portion of EL20/2002.

Composite gravity data provided by MRT in a grid format. These data have been compiled from public and company data over time. The location of some ground stations is subject to confidentiality and has not been released by the Tasmanian Government. In general, the gravity data over this area of interest can be considered good.

1:25,000 geological maps from Mineral Resources Tasmanian were used to assess trends observed in image and geophysical data. Geological data are published as the 1:50,000 Zeehan map sheet.

MIRLOCH Mineral location data were used to assess the recorded location of known mineralization with linear and point features observed in image and geophysical data.

Topographic maps published by the Dept. Primary Industries, Water & Environment were used to check features observed in image and geophysical data with mapped cultural features such as roads, settlements, and industrial infrastructure.

Geological maps from selected TCR reports were used to check detailed geological mapping against features observed in image and geophysical data. Reports were downloaded from Mineral Resources Tasmania.

Error and uncertainty

Geophysical and image data provided by the government are well located to within an estimated 100m of their true location. Georeferenced geological maps showed measurements in error of less than 100m compared with the same features provided in digital format by the Tasmanian Government. Mirloch data are of variable accuracy with errors of location exceeding 1km in rare instances. Most mineral occurrences are likely within 250m of their true location.

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EARTHSEARCH

GIS

spatial data
analysis

geological
consulting

image
processing

interactive
maps

Processing

Target concepts were detailed by Paul Heath via facsimile (fax 1-12-2003) are shown below, together with interpreted features useful for targeting such deposits (using the data at hand).

Granite-related sediment-hosted Zn-Pb-Ag deposits	Linears Magnetic features on linears Conductive zones adjacent to linears Oonah Formation
Granite-related Ni-enrichment	UMC contacts Linears intersecting contacts Point magnetic features on or near linears (at surface or at depth)
Carbonate-hosted Pb-Zn-Ag	Linears intersecting carbonate-bearing sequences including correlates of the Gordon Group

Conceptual targets consistently related to linear geological features in plan and included stratigraphic contacts, faults or the surface trace of deformed stratigraphic packages.

Image data were processed to show linear features of any orientation without bias. This was done by highlighting the data using a noon sun angle thus highlight variations in image gradient without emphasizing a particular structural orientation.

Image data were combined into a GIS and linears drawn for each processed image. There is a higher confidence in linears that appear in more than one dataset. Areas of interest were also highlighted and included magnetic and radiometric features not easily explained using geological or topographic maps.

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Interpretation

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Legend

- MIRLOCH mineral locations (All deposits) ○
- Mirloch Fe ●
- Mirloch Ni ●
- Mirloch Ag, Zn, Pb ■
- Mirloch Cu ▲
- Identified linear —
- Priority linear —
- Priority target areas ■
- ZZ EL's □
- ML's □



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Location & Licence Boundaries

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Legend

MIRLOCH mineral locations (All deposits except placer and VHMS)



ZZ EL's



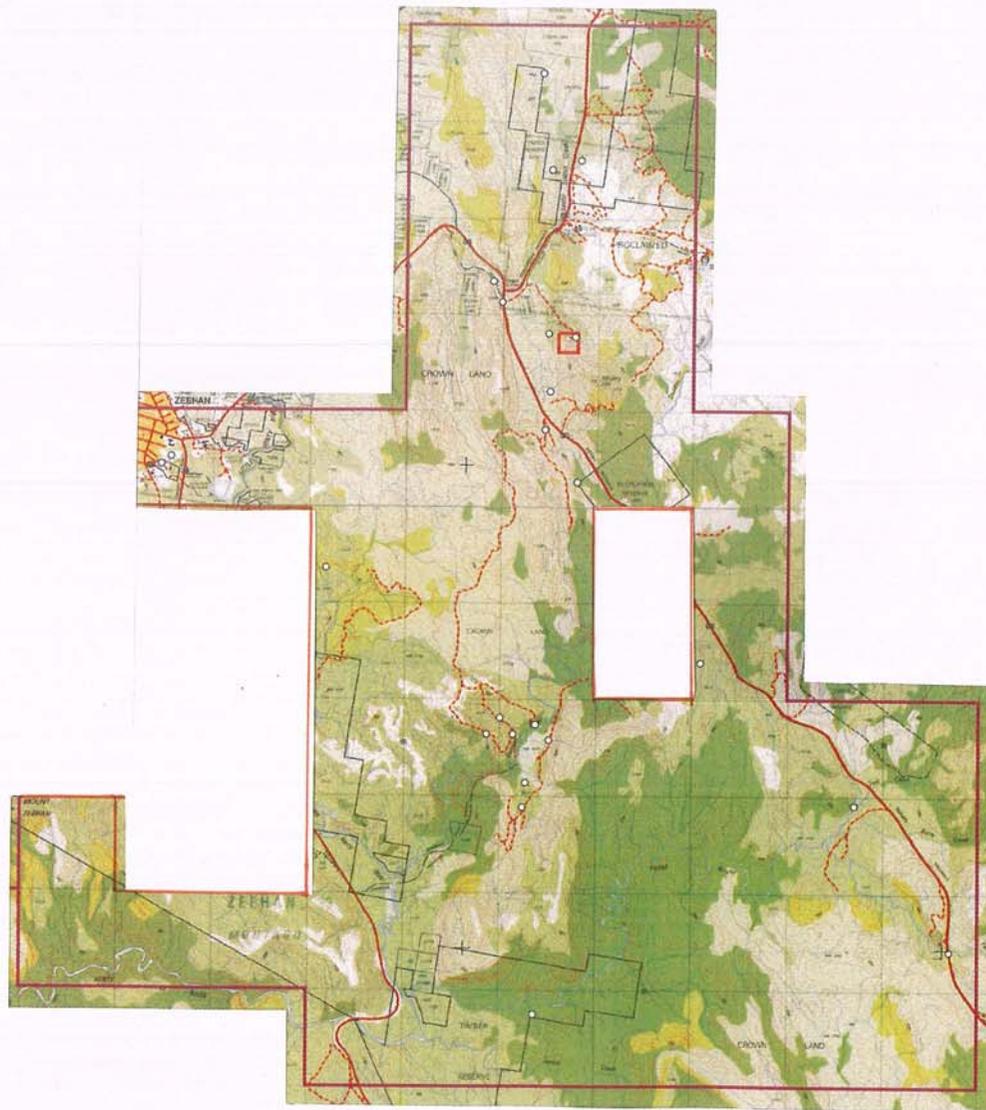
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WTRMP Aeromagnetics - Total Magnetic INTensity

Legend

High TMI



Low TMI

MIRLOCH mineral locations (All deposits)



ZZ EL's



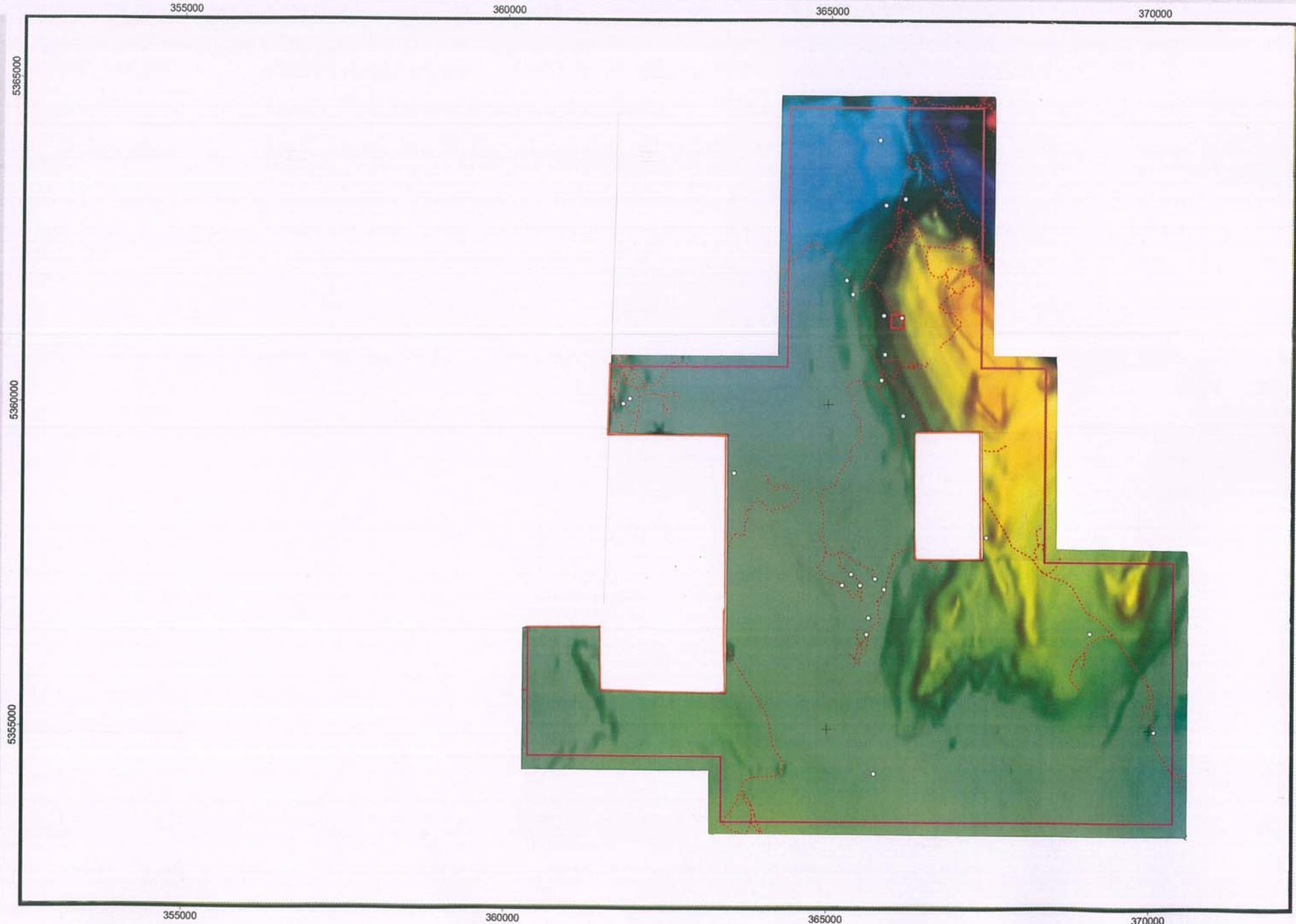
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EM Resistivity (Log_cp880)

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Legend

Resistive



Conductive

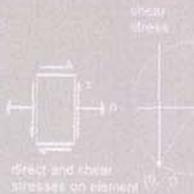
MIRLOCH mineral locations (All deposits)



ZZ EL's



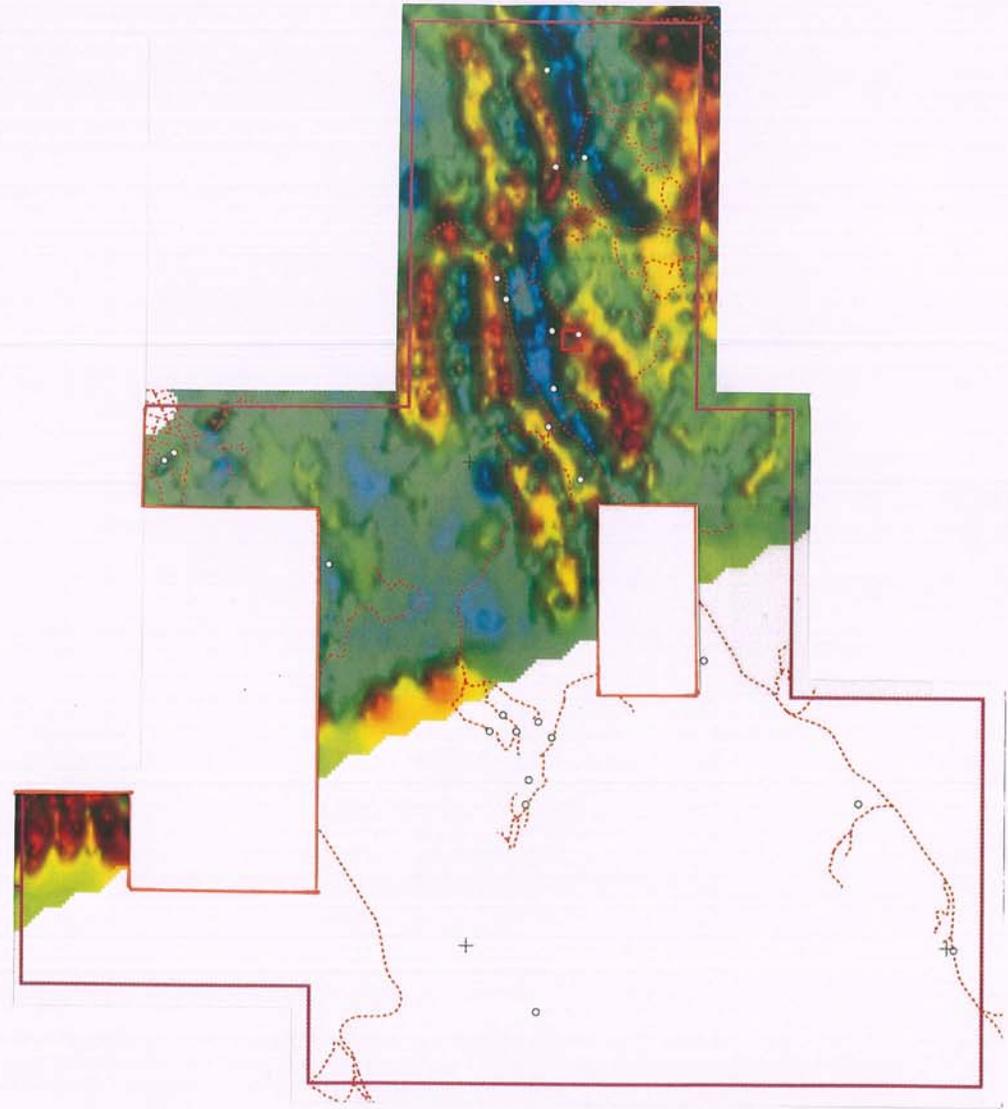
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1VD WTRMP Aeromagnetics

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Legend

High gradient



Low gradient

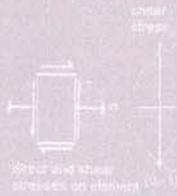
MIRLOCH mineral locations (All deposits)



ZZ EL's



ML's

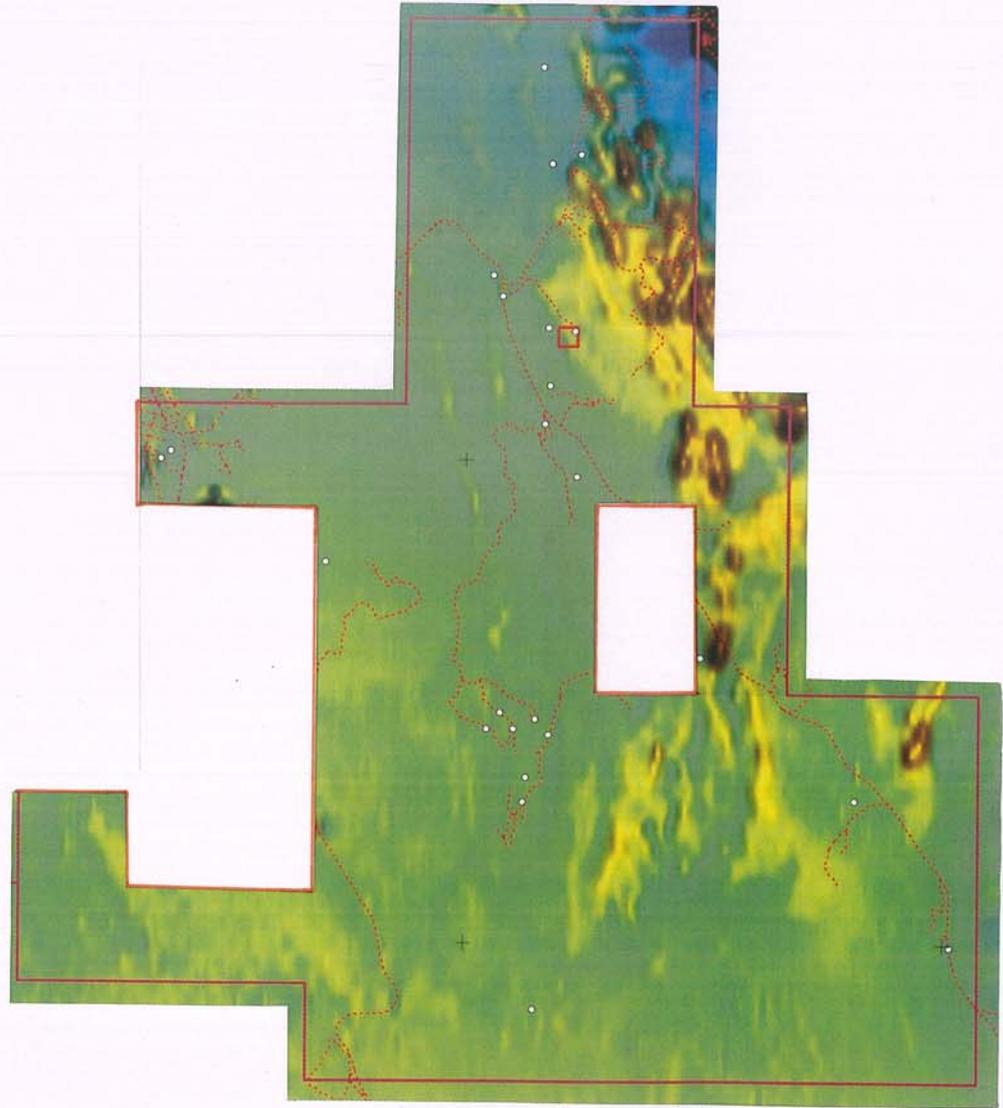


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WTRMP Radiometrics

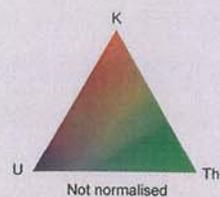
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Legend



MIRLOCH mineral locations (All deposits) ○

ZZ EL's 

ML's 



ZZEXPLORATION

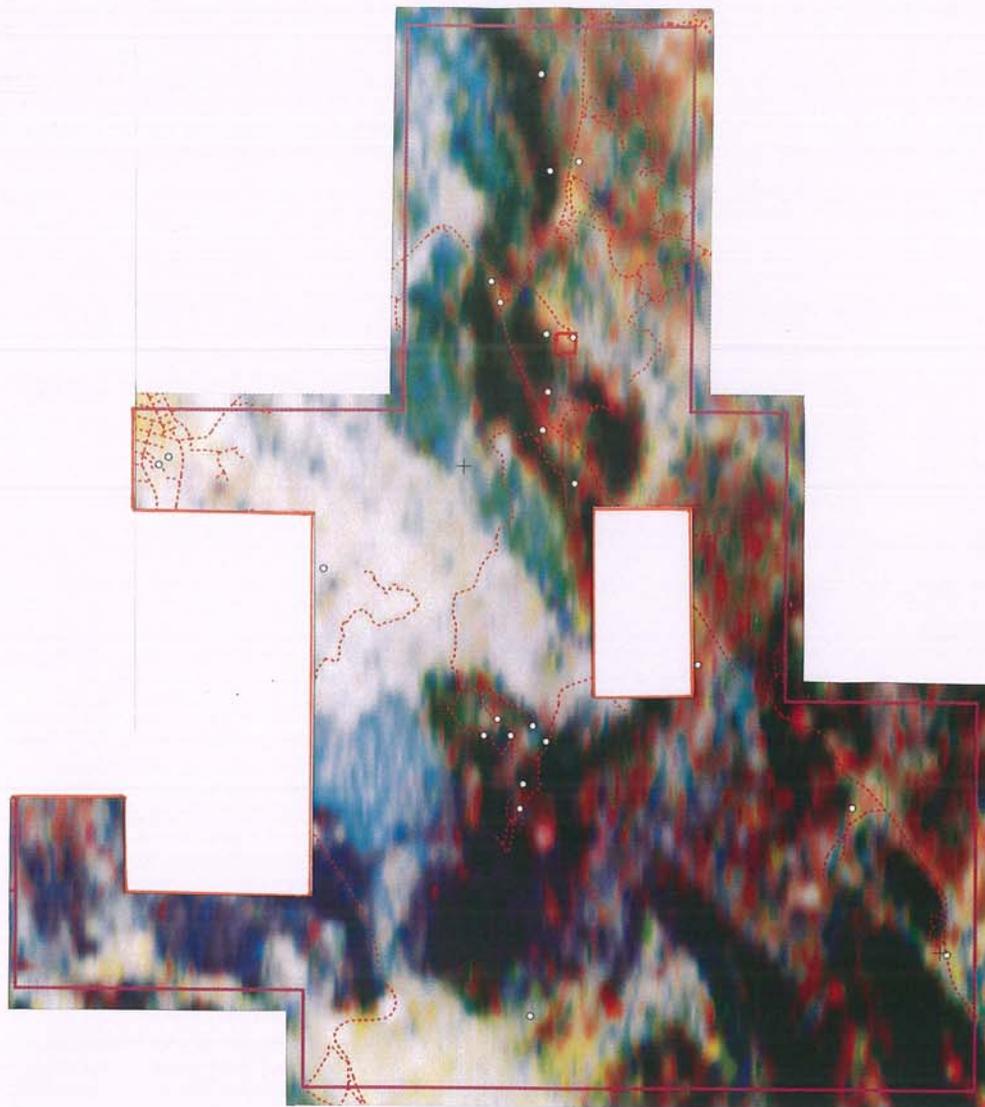
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WTRMP Radiometrics - K

Legend



MIRLOCH mineral locations (All deposits)

ZZ EL's

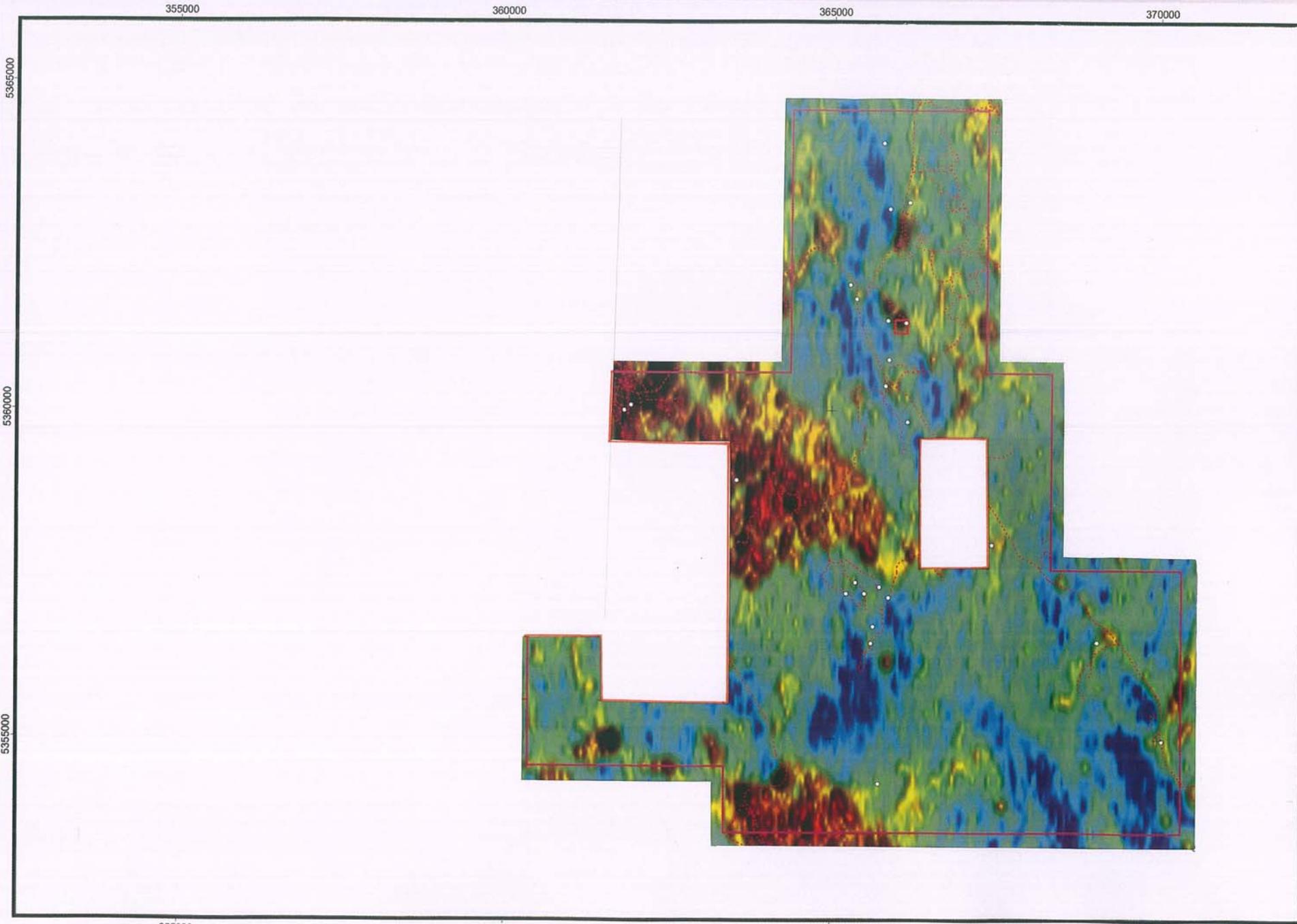
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Appendix 2

Target Summaries

**(Blackjacks, Sunny Corner-Bannockburn,
Tom Creek, Westerway, Leatherwood)**

BLACKJACKS

- Gordon Limestone dips steeply west.

DIAMOND DRILLING

- **DD95DB110**
 - Siderite alteration at Lower Gordon Group Limestone contact (2.9m @ 0.39%Zn).
 - Siderite alteration at Upper Gordon Group Limestone contact (2.7m @ 0.83%Zn).
 - >30m dolomite breccia associated with siltstone (up to 0.3%Zn over 3.6m).
- **DD95DB111**
 - Siderite alteration at Lower Gordon Group Limestone contact (~50m).
 - Sphalerite and calcite breccia zone (0.3m @ 4.46%Zn, 1.84%Pb).
- **DD95DB112**
 - Poor grade.

AIRCORE DRILLING

- 109 Aircore drillholes, BEST:
 - **DB11:** 14m@1.4%Zn.
 - **DB35:** 3m@1.6%Zn.
 - **DB78:** 3m@1.6%Zn.
 - **DB99:** 3m@1.9%Zn.
 - **DB11:** 1.5m@2.2%Zn (ended in mineralisation).
- Wacker sampling also undertaken.

SUNNY CORNER-BANNOCKBURN

DIAMOND DRILLING

- **DD95DS97**
 - Extensive dolomitisation, possibly ferroan dolomite including broad intense breccia zones.
 - Major zones of siderite alteration.
 - Best intercept: 1.4m @ 1.02%Zn and 6.13%Pb from 182.6m.

- **DD95DS98**
 - High-grade Zn: 0.92m @ 10%Zn from 310.8m and 0.82m @ 6.2%Zn from 313.0m – both intercepts are associated with the siltstone unit of the Gordon Group.
 - Shear-vein type mineralisation.
 - Major clay at surficial contact of the Gordon Group. Elevated Zn: 2.85m @ 0.52%Zn (Pb 0.12% from 75.15m).

- **DD95DS99**
 - Best: 1.6m@4.99%Zn 0.8%Pb, 5.7 g/t Ag (114.5m).

- **DD95DS100**
 - Poor grade

- **DD95DS101**
 - Best: 0.2m@4.2%Zn 9.2%Pb, 27.3 g/t Ag (121.3m).

AIRCORE DRILLING

- **DS37:** 6m @ 3.2%Zn, 1.8%Pb, 23 g/t Ag.
- **DS38:** 15m @ 3.6%Zn, 2.2%Pb, 18 g/t Ag.
- **DS53:** 3m @ 5.4%Zn, 4.8%Pb, 23 g/t Ag.
- **DS68:** 12m @ 1.3%Zn, 6.7%Pb, 27 g/t Ag.

COSTEANING

- 22m @ 3.9%Zn, including 6m@9.7%Zn, 74 g/t Ag.

TOM CREEK

- Wacker sampling undertaken.

WESTERWAY

- Wacker sampling undertaken.

LEATHERWOOD

AIRCORE DRILLING

- A total of 53 aircore holes were drilled on two traverses. Best:
 - AC95DL7: 3m @ 0.15% Zn.
 - AC95DL8: 6m @ 0.1% Zn.
 - AC95DL53: 2m @ 0.1% Zn (minor siderite alteration inferred).

Appendix 3

Sketch Map of EL20/2002

