

Appendix 4

**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 Unpublished Report.**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, 30/2002 and 18/2002. *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.

Street Address
30 Patrick Street
Hobart, Tasmania
Australia 7000

Postal Address
PO Box 426
Rosny, Tasmania
Australia 7018

askme@lazyhound.com.au
Phone 03-6234-4177
Facsimile 03-6234-4755

EarthSearch is a trademark
of Ochre Australia Pty Ltd
ABN 62 084 385 919

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.

Summary findings

The Zeehan mineral field lies at the intersection of a number of major structures trending broadly NW and NE, and to a lesser extent E.

Mineralisation coincides with radiometric anomalism in Oonah Formation rocks, although this might also in part be due to variation in vegetation and topography.

There is a belt of mineralization extending from just NW of Comstock towards Oceana that is characterized by SE-trending linears and a similarly trending conductive belt. Second order NE-trending linears also seem to have some correlation with the clustering of mineral deposits in the Comstock area (and SE).

Street Address
30 Patrick Street
Hobart, Tasmania
Australia 7000

Postal Address
PO Box 426
Rosny, Tasmania
Australia 7018

askme@lazyhound.com.au
Phone 03-6234-4177
Facsimile 03-6234-4755

EarthSearch is a trademark
of Ochre Australia Pty Ltd
ABN 62 084 385 919

EARTHSEARCH

GIS

spatial data
analysis

geological
consulting

image
processing

interactive
maps

Oceana appears to lie at the southern end of a major NNW-trending structural corridor. Structures of similar orientation and magnitude extend from the SE corner of EL 20/2002. The ground between these linear belts coincides with thin-skinned thrusting at surface and it may be that the area around and to the east of Oceana represents a zone of transpression.

The highly magnetic Avebury deposit lies adjacent to an ENE-trending feature near the intersection with NW-trending linears. There do not appear to be any similar features within the area of interest of this investigation.

Areas for future investigation and that should be considered for priority are shown in red on the adjacent images. There are two broad regions:

- 1) The belt extending SE from and including Comstock down to and including Oceana, and including adjacent NE and N-trending linears. This belt also includes discrete magnetic features worthy of follow up.
- 2) A NE-trending belt extending from the southern parts of EL20/2002 and including the intersection of linear features with correlates of the Gordon Group.

Street Address
30 Patrick Street
Hobart, Tasmania
Australia 7000

Postal Address
PO Box 426
Rosny, Tasmania
Australia 7018

askme@lazyhound.com.au
Phone 03-6234-4177
Facsimile 03-6234-4755

EarthSearch is a trademark
of Ochre Australia Pty Ltd
ABN 62 084 385 919

Location & Licence Boundaries

Legend

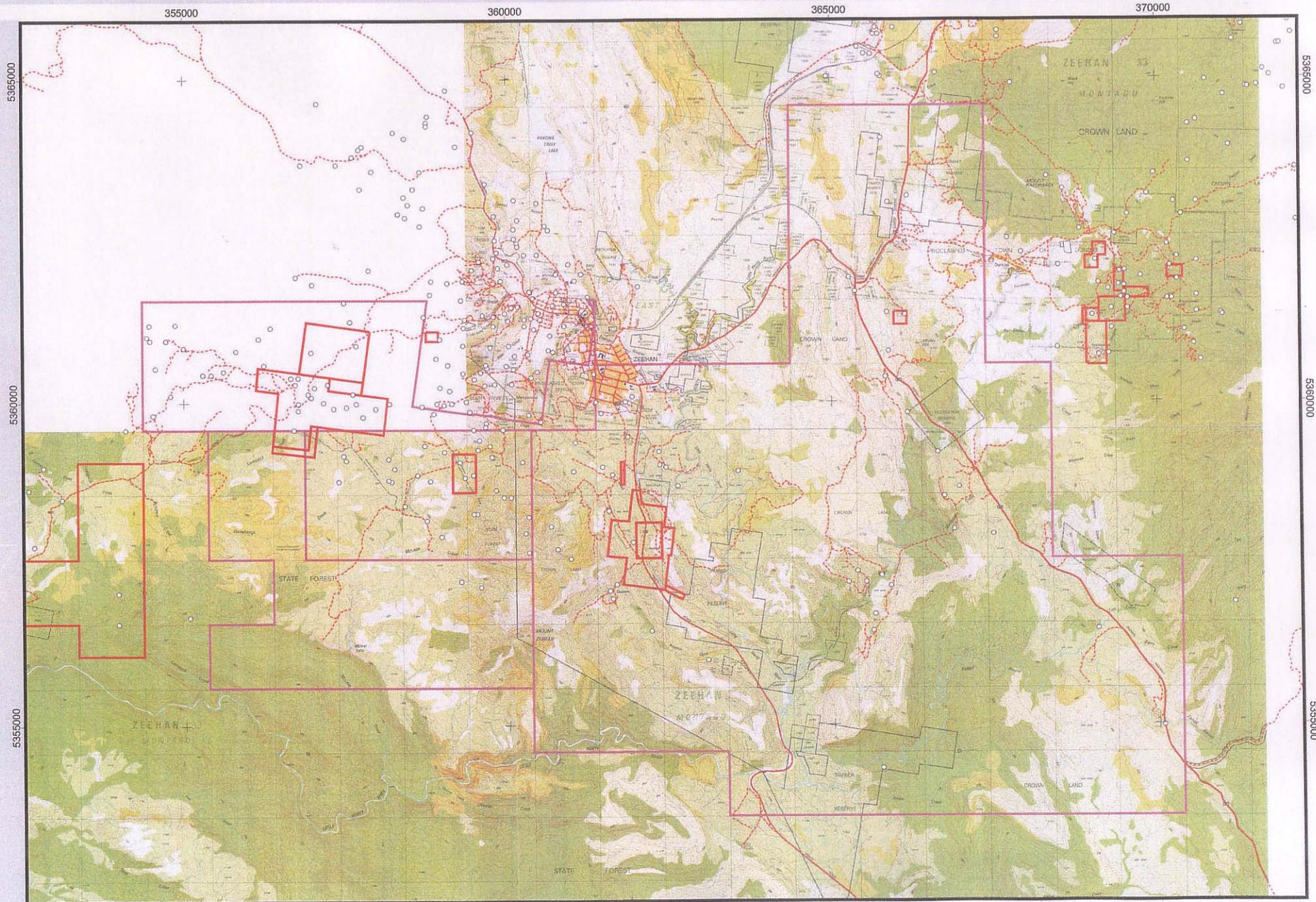
MIRLOCH mineral locations (All deposits except placer and VHMS)



ZZ EL's



ML's



ZZEXPLORATION

© 2003
Ochre Australia Pty. Ltd.
ABN 62084385919

DISCLAIMER

While every care has been taken in the development of this product, no warranty is given as to the correctness of the information and no liability is accepted by the creator for any statement, opinion, interpretation or for any error or omission. This material is provided upon that condition that the user, by receiving or viewing the material shown, agrees not to act in reliance upon it without first satisfying himself/herself as to the correctness, accuracy, relevance, currency, reliability or otherwise of the material displayed, including (without limitation) representations of fact, quality, nature and suitability.

Interpretation

355000

360000

365000

370000

5365000

5360000

5355000

Legend

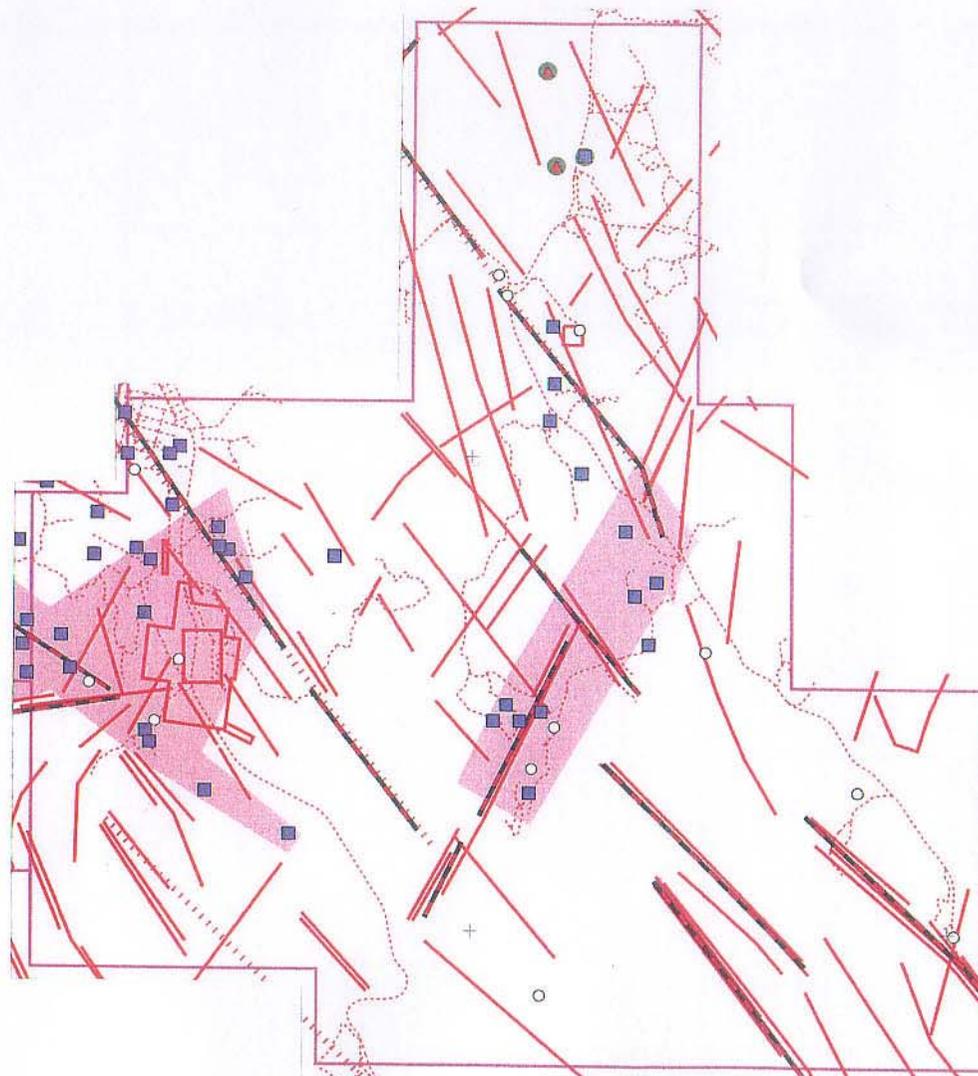
- MIRLOCH mineral locations (All deposits) ○
- Mirloch Fe ●
- Mirloch Ni ●
- Mirloch Ag, Zn, Pb ■
- Mirloch Cu ▲
- Identified linear —
- Priority linear —
- Priority target areas ■
- ZZ EL's □
- ML's □

ZZ EXPLORATION

© 2003
Ochre Australia Pty. Ltd.
ABN 62084385919

DISCLAIMER

While every care has been taken in the development of this product, no warranty is given as to the correctness of the information and no liability is accepted by the creator for any statement, opinion, interpretation or for any error or omission. This material is provided upon the condition that the user, by receiving or viewing the material shown, agrees not to act in reliance upon it without first satisfying himself/herself as to the correctness, accuracy, relevance, currency, reliability or otherwise of the material displayed, including (without limitation) representations of fact, quality, nature and suitability.



5365000

5360000

5355000

355000

360000

365000

370000

1VD WTRMP Aeromagnetics

355000

360000

365000

370000

Legend

High gradient



Low gradient

MIRLOCH mineral locations (All deposits)



ZZ EL's



ML's



5385000

5380000

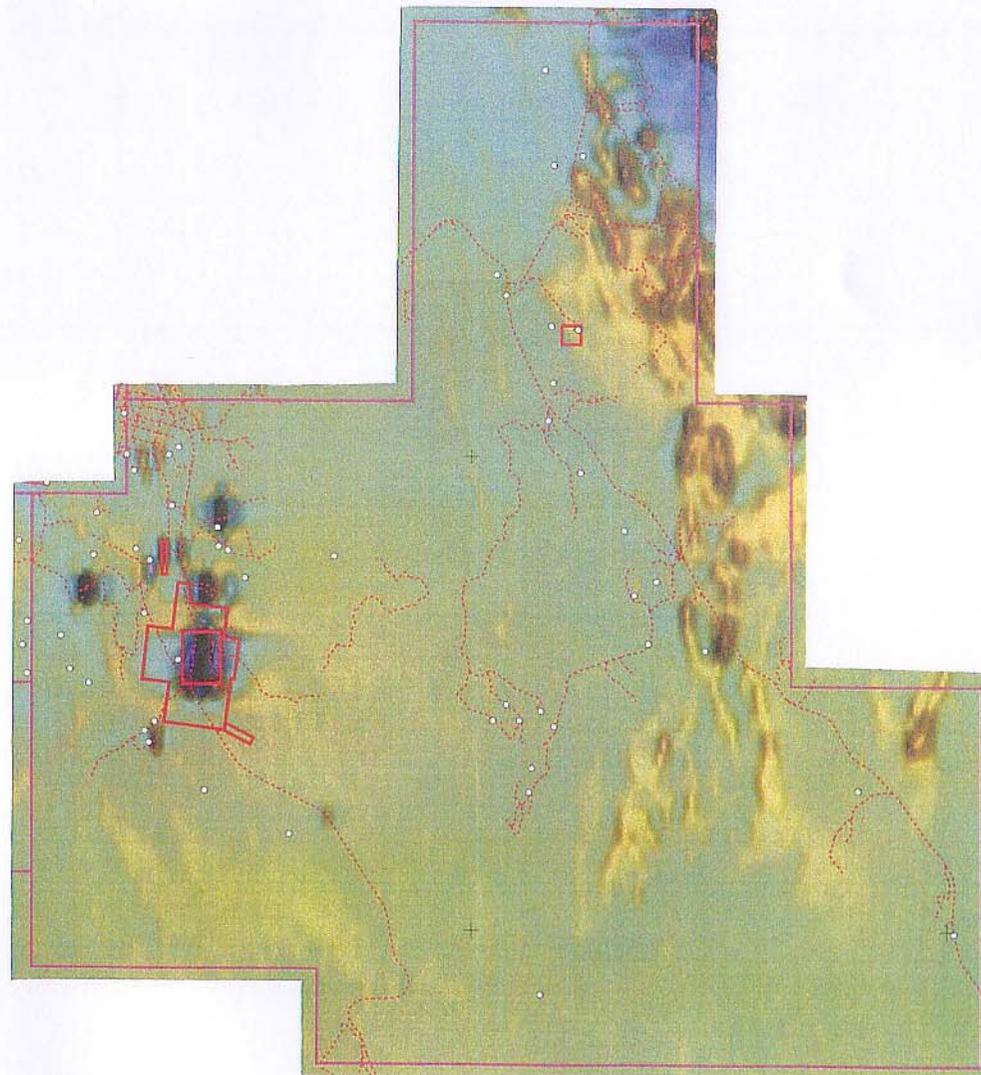
5375000

ZZEXPLORATION

© 2003
Ochre Australia Pty. Ltd.
ABN 62084385919

DISCLAIMER

While every care has been taken in the development of this product, no warranty is given as to the correctness of the information and no liability is accepted by the creator for any statement, opinion, interpretation or for any error or omission. This material is provided upon that condition that the user, by receiving or viewing the material shown, agrees not to act in reliance upon it without first satisfying himself/herself as to the correctness, accuracy, relevance, currency, reliability or otherwise of the material displayed, including (without limitation) representations of fact, quality, nature and suitability.



5385000

5380000

5375000

WTRMP Aeromagnetics - Total Magnetic Intensity

355000

360000

365000

370000

Legend

High TMI



Low TMI

MIRLOCH mineral locations (All deposits)



ZZ EL's



ML's



5365000

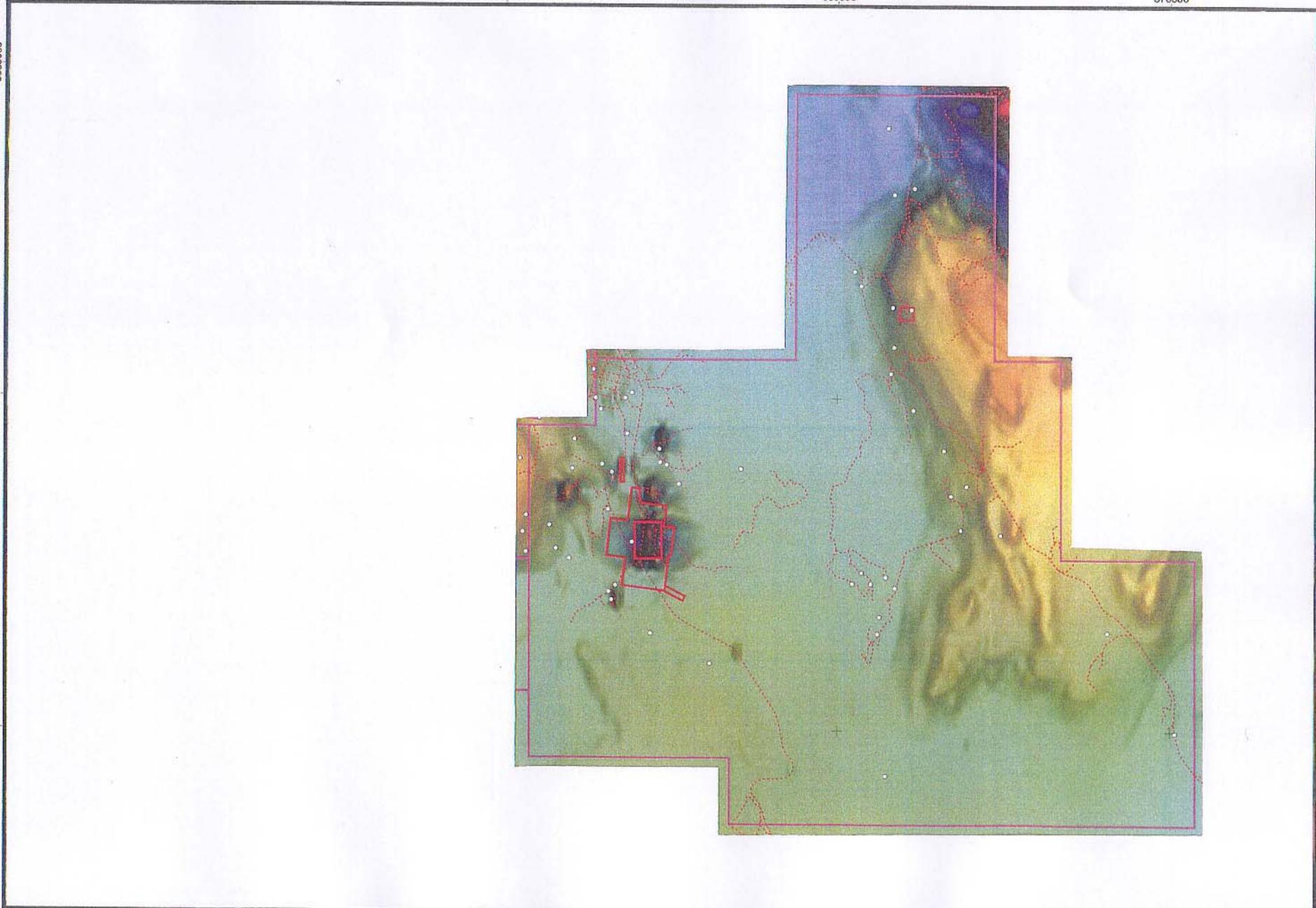
5360000

5355000

5365000

5360000

5355000



355000

360000

365000

370000

ZZEXPLORATION

© 2003
Ochre Australia Pty. Ltd.
ABN 62084385919

DISCLAIMER
While every care has been taken in the development of this product, no warranty is given as to the correctness of the information and no liability is accepted by the creator for any statement, opinion, interpretation or for any error or omission. This material is provided upon that condition that the user, by receiving or viewing the material shown, agrees not to act in reliance upon it without first satisfying themselves as to the correctness, accuracy, relevance, currency, reliability or otherwise of the material displayed, including (without limitation) representations of fact, quality, nature and suitability.

WTRMP Radiometrics

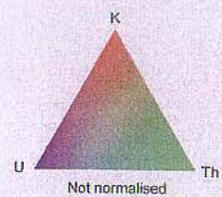
355000

360000

365000

370000

Legend



MIRLOCH mineral locations (All deposits) ○

ZZ EL's 

ML's 

5365000

5360000

5355000

5365000

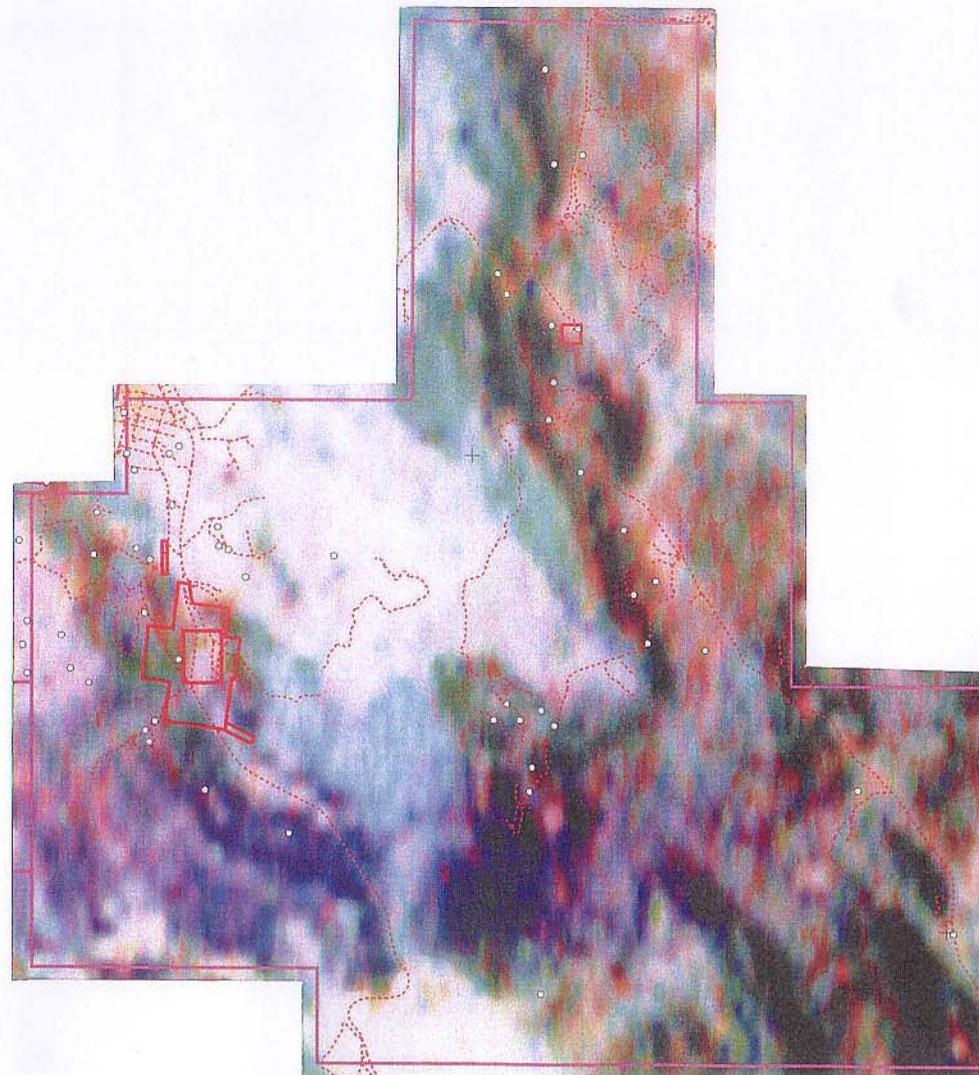
5360000

5355000

ZZEXPLORATION

© 2003
Ochre Australia Pty. Ltd.
ABN 62084385919

DISCLAIMER
While every care has been taken in the development of this product, no warranty is given as to the correctness of the information and no liability is accepted by the creator for any statement, opinion, interpretation or for any error or omission. This material is provided upon that condition that the user, by receiving or viewing the material shown, agrees not to act in reliance upon it without first satisfying himself/herself as to the correctness, accuracy, relevance, currency, reliability or otherwise of the material displayed, including (without limitation) representations of fact, quality, nature and suitability.



WTRMP Radiometrics - K

355000

360000

365000

370000

Legend

High K



Low K

MIRLOCH mineral locations (All deposits)



ZZ EL's



ML's



ZZ EXPLORATION

© 2003
Ochre Australia Pty. Ltd.
ABN 62084385919

DISCLAIMER

While every care has been taken in the development of this product, no warranty is given as to the correctness of the information and no liability is accepted by the creator for any statement, opinion, interpretation or for any error or omission. This material is provided upon that condition that the user, by receiving or viewing the material shown, agrees not to act in reliance upon it without first satisfying himself/herself as to the correctness, accuracy, relevance, currency, reliability or otherwise of the material displayed, including (without limitation) representations of fact, quality, nature and suitability.

5365000

5360000

5355000

355000

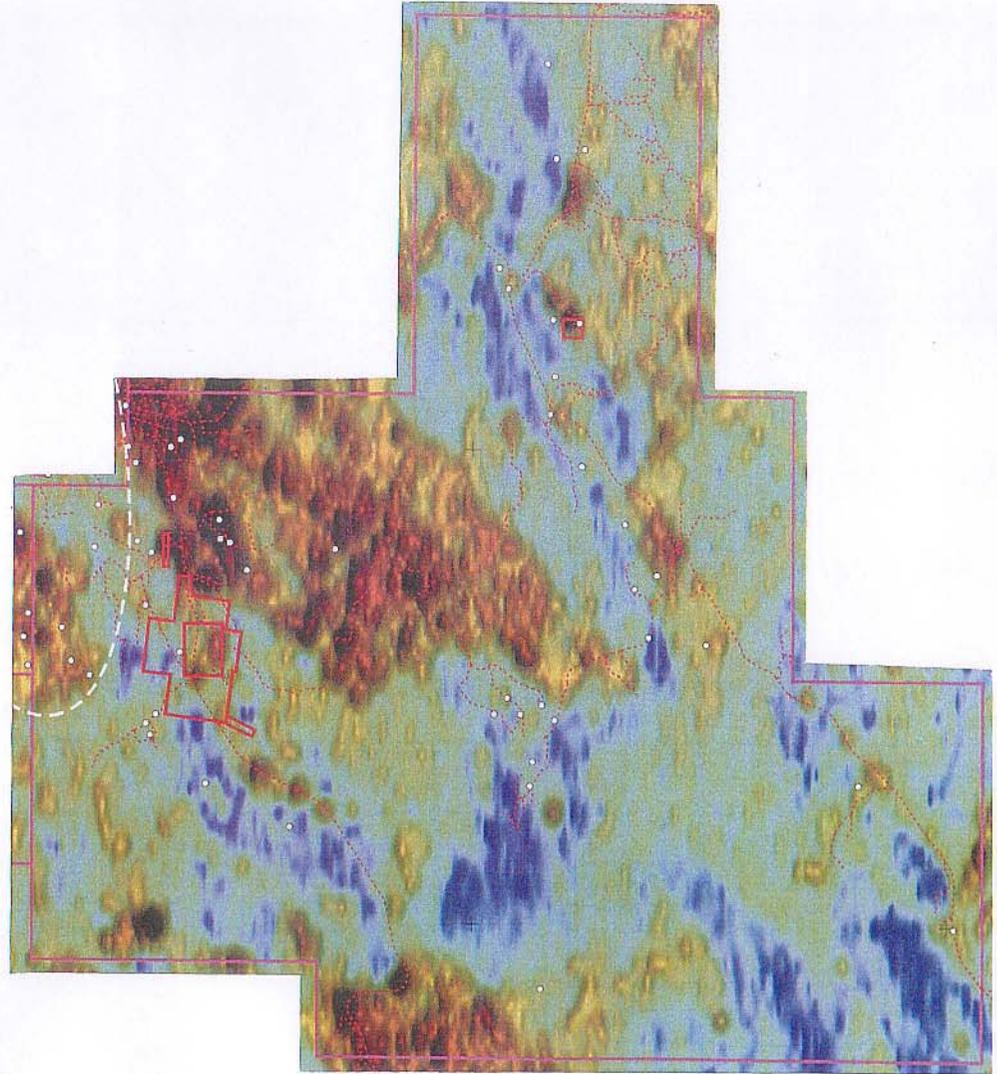
360000

365000

5365000

5360000

5355000



EM Resistivity (Log_cp880)

355000

360000

365000

370000

5365000

5360000

5355000

5365000

5360000

5355000

Legend

Resistive



Conductive

MIRLOCH mineral locations (All deposits)

ZZ EL's



ML's



Z EXPLORATION

© 2003
Ochre Australia Pty. Ltd.
ABN 62084385919

DISCLAIMER
While every care has been taken in the development of this product, no warranty is given as to the correctness of the information and no liability is accepted by the creator for any statement, opinion, interpretation or for any error or omission. This material is provided upon that condition that the user, by receiving or viewing the material shown, agrees not to act in reliance upon it without first satisfying himself/herself as to the correctness, accuracy, relevance, currency, reliability or otherwise of the material displayed, including (without limitation) representations of fact, quality, nature and suitability.

