

## **EXPLORATION LICENCE 'EL8189'**

### **FIRST ANNUAL REPORT ENDING 6<sup>th</sup> OCTOBER 2004**

#### **1. INTRODUCTION**

EL 8189 is situated within the highly prospective Proterozoic McArthur Basin, host to the world class McArthur River (HYC) zinc-lead-silver deposit.

The application for EL 8189 was first submitted by Mount Isa Mines Ltd on 28th April 1993 over MLN's 1121, 1122, 1123 and 1124 held by McArthur River Mining Pty Ltd. The application was lodged because of concerns over:

- i) the adoption of the geodetic datum GDA94 leaving a 200m wide vacant strip of land between the Mineral Leases and adjoining MIM exploration licence EL 8078.
- ii) The validity of the Mineral leases post Mabo High Court decision in 1992

#### **2. LOCATION AND ACCESS**

EL 8189 is situated in the north-east of the Northern Territory, about 200 kilometres west of the Northern Territory-Queensland border and 100 kilometres south of the Gulf of Carpentaria within the McArthur River Station pastoral lease. It encompasses the entire mining and mineral leases associated with the McArthur River Mining Pty Ltd zinc-lead-silver mine. Access is via the adjacent Carpentaria Highway, McArthur River airport, mine access roads and formed station tracks.

#### **3. TENURE**

The licence, comprising 39 blocks totalling 109.3 sq km, was finally granted for a period of six years on 6<sup>th</sup> October 2003.

#### **4. PREVIOUS EXPLORATION**

The area over which the licence covers has been intensely explored over the past 50 years by Mount Isa Mines as part of investigations into the development and exploitation of the McArthur River (HYC) deposit and exploration of the surrounding highly prospective lithologies of the McArthur Basin. All of the prospects delineated, including the HYC deposit, have since been converted to Mining and Mineral Leases.

#### **5. WORK COMPLETED DURING the FIRST YEAR OF TENURE**

Geological investigations for 2004 centred on the diamond drilling of geophysical anomalies that were defined in the September 2001 MIMDAS (a high definition, high penetration induced polarisation technique developed by MIM Exploration) survey (unpublished internal MIM Exploration report). These anomalies were then ranked on their prospectivity by Logan (2004, internal company report) based on their geometry, intensity, depth, proximity to major regional structures and level of testing by previous drilling.

Of these 11 targets, five geophysical anomalies that have the potential to host structurally controlled, relatively shallow (275-300m) Cooley/Coxco style coarse -grained zinc mineralisation were selected for testing by diamond coring. All five targets lie within areas that will be irreversibly impacted upon by infrastructure associated with the Mine Expansion Project (for the proposed conversion of the McArthur River Underground Mine into an Open Pit operation with a mine life of 30 years).

## 6. DIAMOND DRILLING

Between 19<sup>th</sup> August and 27<sup>th</sup> September 2004, Major Pontil Drilling Pty Ltd completed 1581.0 metres of mostly HQ diamond drilling.

Table 1 below details the hole collars and the target anomaly name from the 2004 Logan report.

As Anomalies I and E were on the eastern side of the McArthur River, targets were drilled in reverse order to minimise the exposure of the drilling campaign to early wet season storms and associated sudden rises in the river level.

Table 1 – Drillhole Locations

| Anomaly   | HOLE No. | AMG East  | AMG North  | AMG RL  | Dip | Azimuth (AMG) | Proposed Depth | Actual Depth |
|-----------|----------|-----------|------------|---------|-----|---------------|----------------|--------------|
| Anomaly A | H58/30   | 617484.67 | 8186247.95 | 10034.7 | -80 | 90            | 300m           | 324.5        |
| Anomaly B | L49/90   | 617841.89 | 8185406.03 | 10035.4 | -80 | 90            | 350m           | 393.4        |
| Anomaly C | R38/00   | 618454.56 | 8184198.81 | 10025.2 | -80 | 90            | 250m           | 264.9        |
| Anomaly E | T26/00   | 618634.66 | 8183002.30 | 10028.3 | -80 | 270           | 300m           | 297.7        |
| Anomaly I | Y21/00   | 619059.13 | 8182495.65 | 10035.4 | -80 | 90            | 300m           | 300.5        |

### 6.1 Diamond Drilling Results- summary logs

#### 6.1.1 Hole Y21/00

0.0-141.92 Cooley Dolomite.  
 141.92-143.70 Patchy remobilised galena/sphalerite/pyrite mineralisation in thin veins  
 143.7-147.80 Cooley Dolomite.  
 147.80-283.70 Red and green W Fold shales  
 283.70-300.05 W-Fold Shales/Teena dolomite transitional facies?

#### 6.1.2 Hole T26/00

Hole not yet logged in detail – no mineralisation intersected. Source of target geophysical anomaly thought to be wide, intensely fractured graphitic shear zone at 255-258m. Interpreted to be a possible position for the Western fault.

#### 6.1.3 Hole R38/00

0.0-21.9 Weathered dolomite  
 21.9-33.6 Strongly pyritic black shale  
 33.6-70.0 Intensely hydraulically brecciated strongly pyritic black shale with anastomosing carbonate veining. Trace chalcopryite, galena and sphalerite  
 70.0-77.6 Intensely hydraulically brecciated dolomite.  
 77.6-251.0 Massive pale grey dolomite breccias  
 251.0-258.6 Weakly disseminated pyrite and galena in mottled grey-black dolomite  
 258.6-264.9 Dolomitic Breccias

#### 6.1.4 Hole L49/90

0.0-133.0 Inter-bedded weakly pyritic shales and dolomitic silts (Reward?)  
 133.0-353.4 Massive tectonic dolomitic breccias (Cooley?), extensively leached with solution cavities and karstic features. Minor secondary pyrite/marcasite lining solution cavities.  
 353.4-361.2 Brecciated strongly pyritic black shale clast within Cooley style breccias. Breccia infill dominantly fine dolomite with very minor chalcopryite, galena and sphalerite  
 361.2-393.4 Cooley style dolomitic breccias.

#### 6.1.5 Hole H58/30

Not yet logged in detail – no significant mineralisation intersected.

## 7.0 EXPENDITURE

Table 2 – Totals of expenditure against EL8189 for year ending 6<sup>th</sup> October 2004

| ACTIVITY                                                     | COST             |
|--------------------------------------------------------------|------------------|
| SITE PREPARATION                                             | \$5000           |
| DIAMOND DRILLING                                             | \$215,232        |
| FIELD ASSISTANTS (Core Handling, Photography, Sampling, etc) | \$9675           |
| REHABILITATION                                               | \$3500           |
| ASSAYING                                                     | \$1000           |
| <b>TOTAL</b>                                                 | <b>\$234,407</b> |

## 8.0 CONCLUSIONS

Diamond drilling of five prospective MIMDAS IP anomalies has resulted in no new significant occurrences of base metal sulphide mineralisation. However, each anomaly targeted was effectively explained by the intersection at the target depth, of either weak, Cooley style galena-sphalerite mineralisation associated with narrow brecciation zones in Cooley Dolomite, or by strongly pyritic, fault brecciated or bedded pyritic black shales within dolomitic, sedimentary breccias of the Emu Plains sub-basin. Visually, apart from coarse, (and highly reactive) blebby pyrite, the black shales appear unmineralised. Minor late stage, remobilised galena and sphalerite in dolomite veins are ubiquitous throughout the dolomitic and Cooley breccias. Significant mineralised intersections have been selected for cutting and analysis. At the time of writing these results have not yet been received.

## 9.0 PROPOSED WORK FOR 2005

Following on from the sterilisation drilling detailed above, it is proposed to complete a detailed feasibility study for the proposed McArthur River Expansion Project. The works to be studied by this investigation comprise major levees around the proposed mine pit and overburden storage facility, and major diversion channels for the McArthur River and Barney Creek, and construction materials sourcing for those facilities. This will involve:

- i) Geotechnical drilling along the line of the diversion channel and bund walls, to investigate the structure of the alluvium and weathered bedrock.
- ii) Detailed Seismic Profiling to accurately map depth to bedrock along the centre lines of the diversion channel and bund walls.
- iii) Water bore drilling of the alluvium near the McArthur River to investigate falling head permeability tests within the alluvium.
- iv) Groundwater and bedrock sampling and analysis
- v) Test Pitting to bedrock at selected locations as infill sites to the geotechnical drilling and to look for construction materials.
- vi) Large de-watering bores within Cooley Dolomite to investigate the water bearing potential and transmissivity of this lithology via pump testing.

Table 3. Estimated cost for proposed work

| <b>Activity</b>       | <b>Estimated Cost</b> |
|-----------------------|-----------------------|
| Geotech Drilling      | \$250,000             |
| Seismic Survey        | \$30,600              |
| Alluvial water bores  | \$46,800              |
| Test Pitting          | \$24,000              |
| Hard rock water bores | \$150,000             |
|                       |                       |
| <b>Total</b>          | <b>\$501,400</b>      |

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Fig.1 Location plan of EL 8189.

Fig.2 Location of diamond drill holes.

Fig.3 Location of diamond drill holes and MIMDAS geophysical anomalies, with anomaly names by Logan (2004).

#### REFERENCES

Exploration Targets, McArthur River Mineral Leases. Unpublished internal Xstrata Report by Ross Logan, March 2004.

Review of the McArthur River Mineral Leases, Northern Territory. Unpublished internal MIM report by Ross Logan, August 2000.

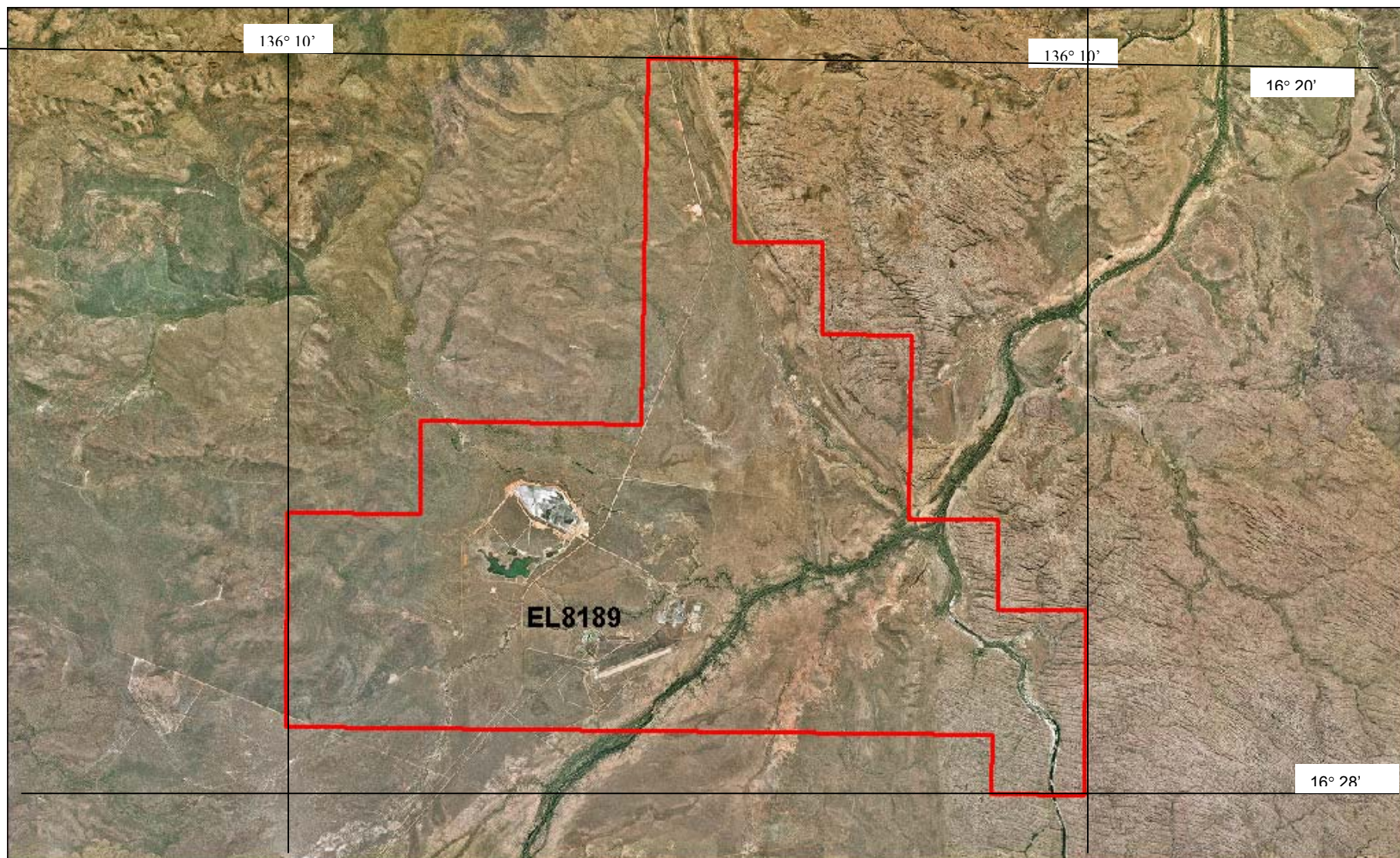
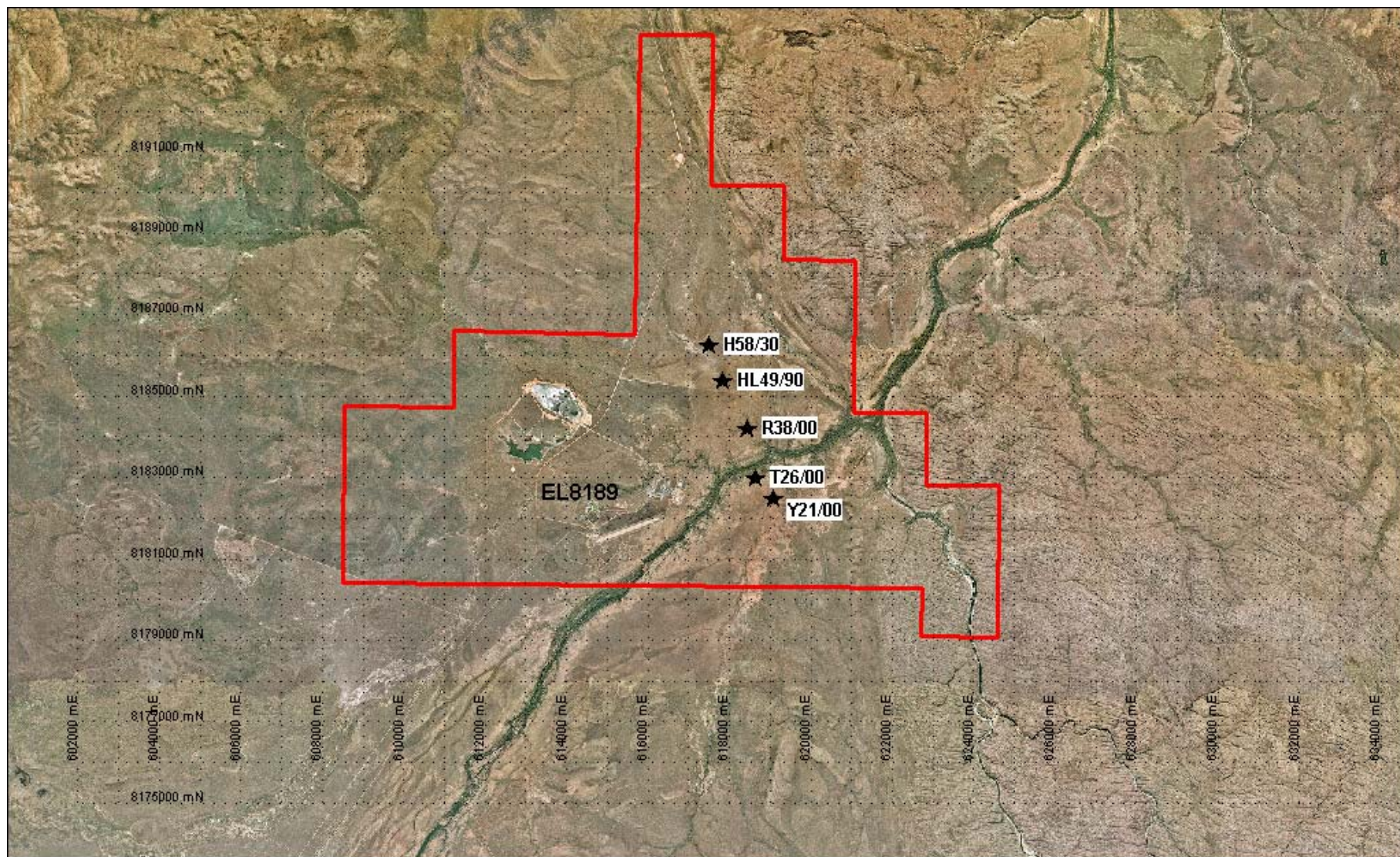


Fig.1 Location plan of EL 8189 .







Fig

2. Location of diamond drill holes with AMG grid.

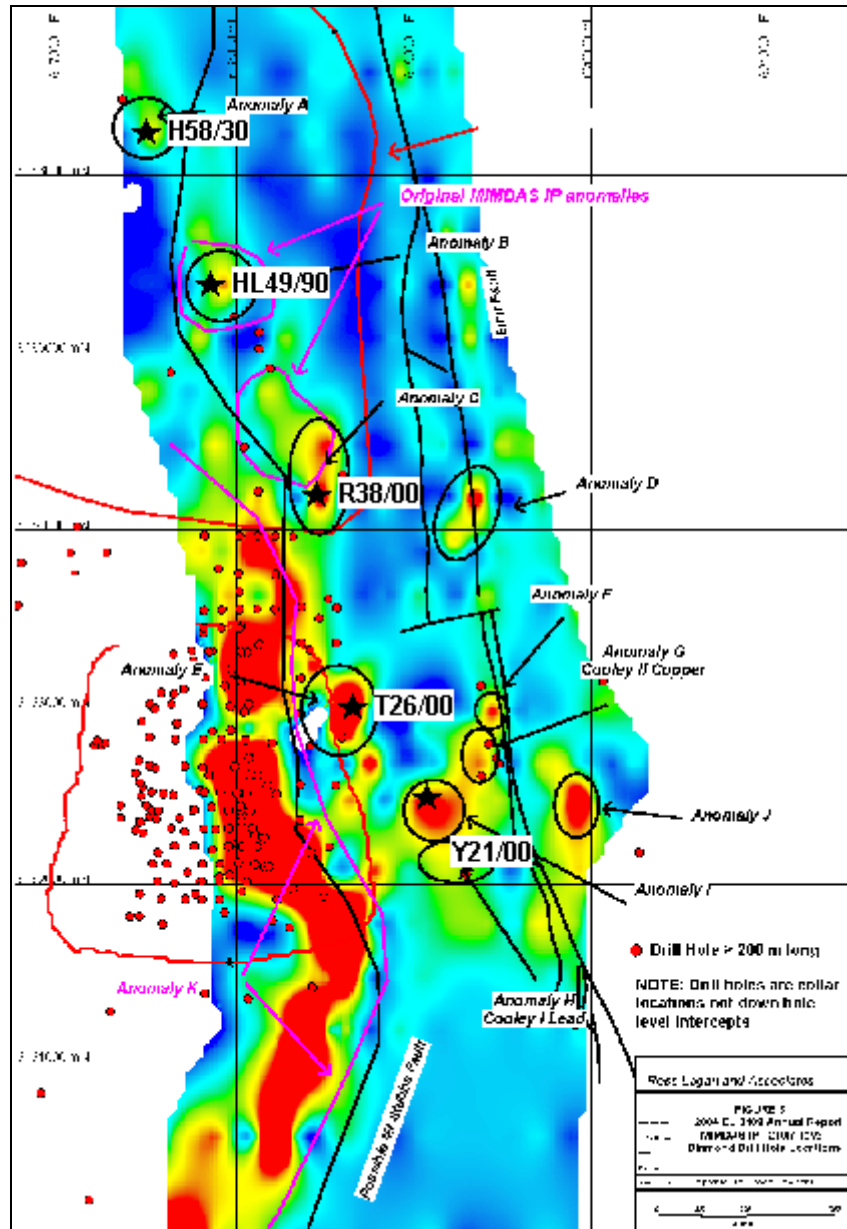


Fig.3 Location of diamond drill holes and MIMDAS geophysical anomalies, with anomaly names by Logan (2004).