

**FOURTH ANNUAL REPORT FOR EXPLORATION LICENCE  
TWO THREE FOUR FIVE NINE**

**EL23459**

**APRIL 2007**

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## Summary

Exploration licence 23459 has several occurrences of manganese mineralisation within its boundaries discovered during intensive base metal mineralisation during the 1980's. Recent exploration on EL 23459 has expanded the work done in the 1980's with a modest drilling program and extensive ground em surveys using both the e31 and e34 instruments.

For the exploration program for this season, a follow up e31 program was planned, together with the construction of drill access roads across the incised terrain. The final stage of the exploration was to be a drilling program.

Delays in getting sacred site clearance for the drill access roads meant that only the e31 program was completed.

The e31 follow up program gave the following results:

- Two areas indicating shallow em anomalism on the east and west of the Carruthers dome show similarities and may belong to the same stratigraphic horizon. The anomalies are not necessarily related to shallow manganese mineralisation.
- An e31 survey in the vicinity of hole W48 indicated the hole may be in the wrong place to intersect shallow em anomalism which may be manganese. The survey also tied in em anomalism located to the north of the e31 survey.

Now all clearances are in place for the area an extensive and hopefully successful drilling program is envisaged for the 2007 – 2008 field season.

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## **1. Introduction**

Exploration licence no.23459 was granted to Neil Henry Scriven on the 4<sup>th</sup> of March 2003. The licence is located approximately 10 kilometres south west of Renner Springs Roadhouse. The roadhouse is located approximately 160 kilometres north of Tennant Creek.

The western boundary of the exploration licence is approximately 20 km east of the Alice Springs-Darwin railway. Access to the exploration licence from the Stuart Highway is by a rough station track in the north and by a serviced dirt road designed to maintain the natural gas pipeline in the south. A north south road traverses the centre of the exploration licence commencing on the east west natural gas service road.

The physiography of the exploration licence consists of hilly terrain in the central east of the exploration licence, of which the highest point is Mount Willieray (361m). Several incised creeks head west across the exploration licence before dissipating into the sand covered plains commencing in the west of the exploration licence.

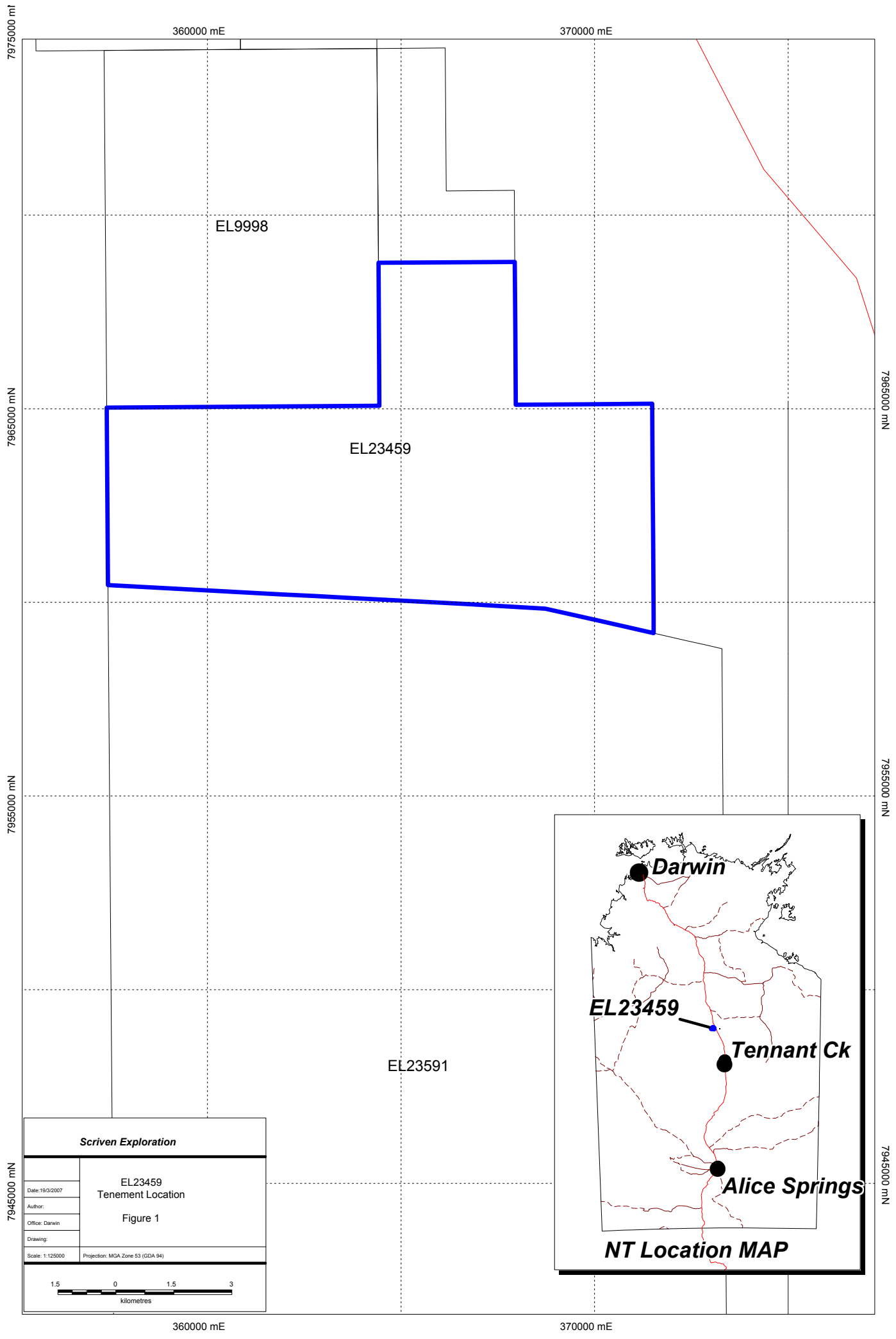
The reader is directed to the tenement location map, which is overlain on the published Helen Springs 1:250,000 sheet which among other geological information locates the manganese occurrences in the region in relation to the regional geology.

## **2. Previous Exploration Activities**

### ***2.1 Exploration Activities 2003 – 04***

Exploration carried out on the exploration licence in the period 2003- 2004 consisted of:

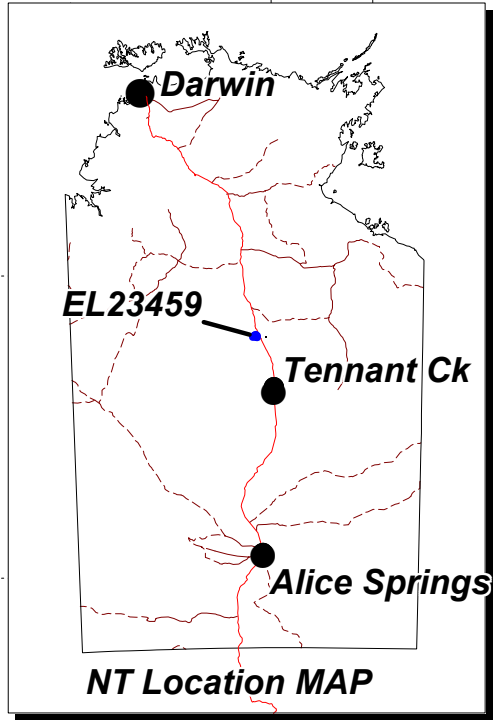
1. Literature research which located manganese occurrences previously mapped on the exploration licence.
2. Field inspection of the exploration licence to locate the manganese occurrences located in the literature research.
3. EM survey of known manganese occurrences using an EM31 instrument.

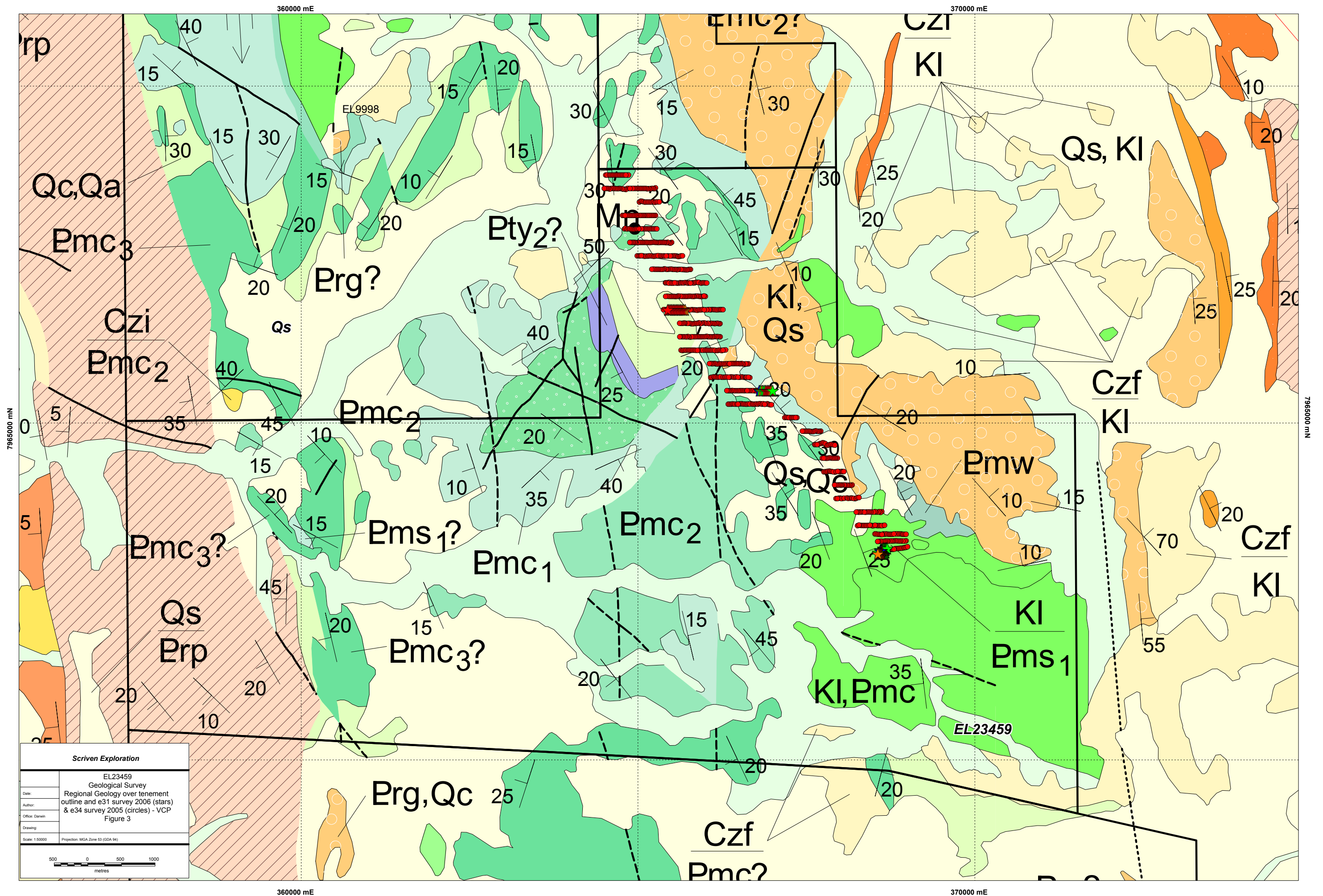


Scriven Exploration	
Date: 19/3/2007	EL23459 Tenement Location Figure 1
Author:	
Office: Darwin	
Drawing:	
Scale: 1:125000	Projection: MGA Zone 53 (GDA 94)

1.501.503

kilometres





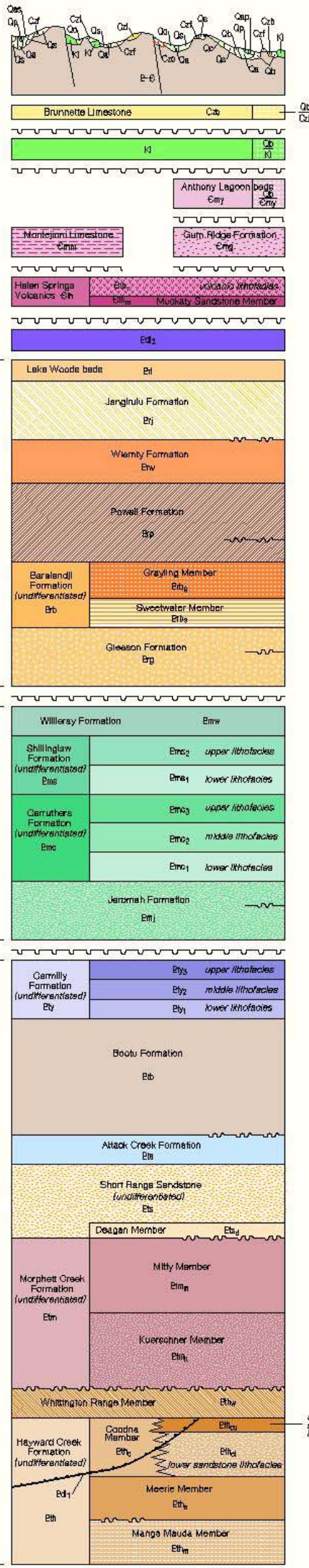


CENOZOIC  
MIOCENE  
CRETACEOUS

CAMBRIAN

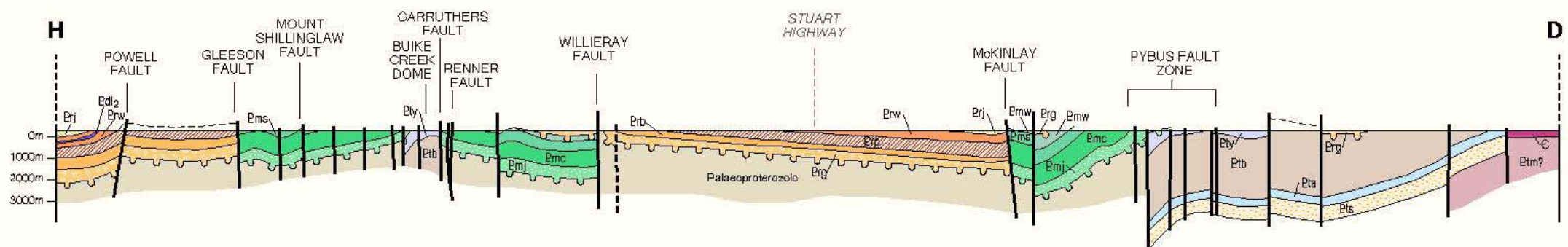
MESOPROTEROZOIC

PALAEOPROTEROZOIC



- Qa Alluvium, some colluvium
- Qp Claypans: clay-rich soils developed in depressions
- Qq Clay-rich soils in alluvial floodouts and depressions; lacustrine, some alluvium and colluvium
- Qb Undifferentiated grey clay-rich soils; expanding clay, desiccated, some sand and gravel, chertified, silicified rock
- Qas Relict alluvial deposits; covered by sand and silt
- Qcb White chalkedonic limestone with chert nodules and chalkedony; minor sandstone
- K1 Undifferentiated; sandstone; planar to lensing, thin to thick bedded, pebbly sandstone to conglomerate, mudstone; crossbedded, rippled, desiccated, graded, plant fossils, shelly coquina fossils; mesa and bench forming
- Emy Fine grained sandstone and siliclastic mudstone; minor dolomite and chert; nodular evaporite pseudomorphs; silicified, recessive
- Emg Limestone; thin grained sandstone and siliclastic mudstone; bioclast, oncoid, cylindrical and cryptomicrobial limestone, rarely limestone; fossiliferous, nodular chert; carbonate and evaporite pseudomorphs; silicified, recessive
- Emm Limestone and dolomite; minor fine grained sandstone and siliclastic mudstone; fossiliferous; chert and nodular evaporite pseudomorphs; silicified outcrop, recessive
- E1h1 Basalt; tholalitic, massive, aphanitic to coarse grained; calcite or smoky quartz amygdaloids; paperlike margin; ferruginised, recessive to ridge forming
- E1h2 Sandstone; quartz arenite; thin to very thick bedded, fine to coarse grained; very well sorted, laminated, climbing rippled, high angle crossbedded, dune forms, asymmetric rippled, lava impressions, pebbles, basal granular to cobbly sandstone or breccia; silicified, low relief
- E1h3 Undifferentiated basalt, sandstone, pebble to cobble bearing sandstone and breccia
- Bd1 Dolomite, coarse grained; ferruginised, recessive
- E1 Sandstone; laminated to medium bedded; mudstone, dolomite, stromatolitic bioherms, cauliflower chert, granula conglomerate, graded, evaporite pseudomorphs, rippled, crossbedded, desiccated, silicified, recessive
- Brj Sandstone; quartz arenite, lensing thin to very thick bedded, medium grained to pebbly; crossbedded, rippled, graded, convolute laminated; mudstone; laminated, desiccated, silicified, jointed, ridge forming
- Bw Sandstone; lithic to quartz arenite; lensing, very thin to medium bedded, very fine to medium grained; micaceous; mudstone, granula conglomerate; silicified dolomitic mudstone; rip-up clasts, crossbedded, ripple cross laminated, rippled, graded, current lineated, desiccated, halite pseudomorphs, cauliflower chert; recessive intervals with benching outcrop
- Bp Sandstone; quartz arenite; lensing, medium to very thick bedded, medium grained to granular; quartz-rich; micaceous mudstone, rip-up clasts and breccia; laminated; crossbedded, rippled, graded, desiccated, halite pseudomorphs; silicified, silicified, jointed, ridge forming
- Bbg Sandstone; sublitic to quartz arenite; laminated to thick bedded, fine to medium grained; micaceous, glauconitic; mudstone, quasi-planar and hummocky crossbedded; current lineated; ferruginous, recessive intervals, benching upper interval
- Bbs Sandstone; laminated to very thick bedded, medium to very coarse grained; micaceous, crossbedded, current lineated, rippled, desiccated, halite pseudomorphs, gutter casts; conglomerate, graded, megarippled, recessive lower intervals and ridges forming upper interval
- Btb Undifferentiated; sandstone, micaceous; mudstone; conglomerate
- Bg Conglomerate; lithic to quartz arenite; lensing, thin to very thick bedded, granular to cobble; micaceous sandstone, pebbly sandstone, lag conglomerate; mudstone, convolute laminated, graded, crossbedded, current lineated, megarippled, desiccated, parallel ridge forming
- Emw Sandstone; parallel, thin to medium bedded; rippled; mudstone, rip-up clasts, ripple cross laminated, current lineated, desiccated, halite pseudomorphs; conglomerate, crossbedded, graded; basal dolomitic sandstone; flaggy, strike ridges
- Emc2 Dolomite; thin to thick bedded; laminated or massive; dolomitic-siliclastic mudstone, quartz dolomite, dolomitic sandstone and dolowackestone; sandstone and conglomerate, micaceous, graded, rippled, crossbedded; recessive with benching outcrop
- Emc1 Mudstone; dolomitic-siliclastic; laminated, thin bedded; sandstone and dolomite, stromatolitic bioherms; pebbly sandstone, conglomerate, tuffaceous siltstone; parallel, lenticular, wavy and finger laminated; rippled; desiccated; current lineated; rip-up clasts; mud drapes; chert nodules; sole marked, convolute laminated, evaporite pseudomorphs, aragonite pseudomorphs; silicified or leached; recessive, outcropping where silicified
- Emc3 Undifferentiated; dolomite, laminated to massive; dolomite, quartz dolomite, siliclastic mudstone and sandstone; minor conglomerate and tuffaceous siltstone; stromatolitic bioherms, evaporite pseudomorphs, solution breccia; recessive
- Emc2 Sandstone; thin to medium bedded, fine to coarse grained; rippled, desiccated, crossbedded, mudstone, pebbly sandstone; dolomite, stromatolitic bioherms, laminated, halite and gypsum pseudomorphs; ridge forming
- Emc1 Sandstone; lithic arenite; medium bedded, fine grained, well sorted; mudstone, dolomitic mudstone, dolowackestone, dolomite and chert; abundant evaporite pseudomorphs; stromatolitic bioherms; silicified or leached, recessive
- Emc3 Mudstone; laminated to thin bedded; parallel, lenticular, wavy and finger laminated; fine grained sandstone; rippled, current lineated, evaporite pseudomorphs, dolomitic mudstone, dolowackestone, dolomite, stromatolitic bioherms; silicified or leached, recessive
- Emc1 Undifferentiated; sandstone, mudstone, chert and dolomite; laminated to medium bedded; stromatolitic bioherms; evaporite pseudomorphs; recessive
- Bty Pebble sandstone; lithic to quartz arenite, lensing, thin to thick bedded; crossbedded; graded bedded; fluid escape structures; rip-up clasts; current lineated, halite pseudomorphs; micaceous mudstone, convolute laminated, rippled, desiccated, conglomerate; dissected ridge forming
- Bty3 Mudstone; laminated to thin bedded, variably dolomitic, dolomite and stromatolitic bioherms; fine to medium grained sandstone; graded, parallel and cross laminated; rippled; rip-up clasts; desiccated; evaporite pseudomorphs; recessive
- Bty2 Sandstone; quartz arenite; thin to medium bedded, medium grained, laminated, graded, rippled, crossbedded; mudstone, desiccated; rip-up clasts; ridge forming
- Bty1 Sandstone; laminated to thin bedded; graded, evaporite pseudomorphs, ripple cross laminated, rippled, desiccated; mudstone, micaceous, dolomite, stromatolitic bioherms; leached or silicified, recessive
- Bty Undifferentiated; mudstone, sandstone, dolomite and chert; laminated to thin bedded; stromatolitic bioherms, evaporite pseudomorphs
- Btb Sandstone; quartz arenite; thin to massively bedded, medium grained to granular; pebbly sandstone, crossbedded; mudstone, basal litharenite, dolomite, stromatolitic bioherms and graphic shale, manganese, ridge forming
- Bta Limestone, dolomitic, massive and laminated; oncoid, stylolitic and cryptomicrobial boundstone and stromatolitic bioherms; minor siliclastic mudstone and rarely dolomite, fine grained sandstone and mudstone, graded, desiccated, rippled, ripple cross laminated, rip-up breccia; recessive
- Btd1 Sandstone; sublitic to quartz arenite; lensing, thin to very thick bedded; well sorted, grain size laminated, crossbedded; lag conglomerate, rippled, current lineated, desiccated, micaceous, halite pseudomorphs; ridge forming lower part, recessive upper part
- Btd2 Undifferentiated; quartz arenite; lensing, thin to very thick bedded, fine grained to pebbly; rippled, crossbedded; current lineated, convolute laminated, desiccated; mudstone, micaceous, rip-up clasts, laminated; pebbly sandstone, lag conglomerate; ridge forming
- Btm1 Mudstone; sandstone, dolomitic mudstone and sandstone, dolomite, pebble conglomerate, tuffaceous siltstone, laminated to medium bedded; stromatolitic bioherms, oolitic grains, lensing beds, ripple cross laminated, current lineated, desiccated, rip-up clasts, crossbedded, cauliflower and enterolithic chert, halite, gypsum and aragonite pseudomorphs; silicified or leached; low relief ridges, recessive
- Btm2 Sandstone; sublitic to quartz arenite; thin to very thick bedded, medium grained to pebbly; crossbedded, laminated, rippled, desiccated, pebbly sandstone, conglomerate, mudstone; rip-up clasts, halite pseudomorphs; rounded and dissected ridge forming
- Btm Undifferentiated; sandstone, pebbly sandstone, siliclastic mudstone, silicified stromatolitic dolomite; evaporite pseudomorphs
- Bth1 Basalt, aphanitic to medium grained, amygdaloidal to massive, deeply weathered and ferruginised; recessive; sandstone and tuffaceous mudstone; thin bedded, ripple cross laminated, graded bedded, desiccated, rip-up clasts, halite pseudomorphs, basal blue-gray laminated chert, dolomite and stromatolitic bioherms
- Btd1 Dolomite; medium to coarse grained silt; intrusive equivalents of basalt in E1h1; ferruginised, recessive
- Bth2 Sandstone; quartz arenite; thin to medium bedded; graded, well sorted, laminated, tabular crossbedded, rippled, desiccated; mudstone; silicified, benching, ridge forming
- Bth3 Sandstone; lithic to quartz arenite; lensing, thin to very thick beds, granular to pebbly; poorly sorted, laminated, rippled, desiccated; mudstone; conglomerate; trough cross bedded, lag conglomerate; ridge forming
- Bth4 Sandstone; sublitic to quartz arenite; planar, thin to medium bedded, medium to coarse grained; laminated, well sorted, tabular cross bedded, rippled, desiccated; pebbly sandstone; desiccated ridge forming
- Bth5 Sandstone; lithic to quartz arenite; lensing or planar, thin to thick bedded, granular to pebbly; laminated, trough or tabular cross bedded, rippled, desiccated; mudstone; silicified; ridge forming
- Bth Undifferentiated; sandstone, pebbly sandstone, mudstone, conglomerate







## ***2.2 Exploration Activities 2004 – 05***

Exploration carried out in 2004 and 2005 consisted of:

1. Locating an isolated manganese occurrence first designated by mapping by Keystone Resources in the 1980's.
2. EM34 survey of the area around 1980's drill hole W38. A further survey planned for the manganese occurrences in the north of the exploration licence was abandoned due to mechanical failure.
3. Open hole percussion drilling principally carried out in the vicinity of manganese occurrences in the north of the exploration licence.

Results of exploration on ELK23459 by this stage have been peace meal at best. This has resulted in a fairly fragmented attitude to exploration. The area has somehow managed to divide itself in two with the sheared manganese outcrops in the north forming one part of the equation and the economic manganese intersection (hole W38) forming the other.

## ***2.3 Exploration Activities 2005 – 06***

Exploration activities in the period 2005 – 06 consisted of an e34 program which essentially joined the manganese outcrops in the north of the licence with the drill hole which encountered economic manganese mineralisation in the south (W38).

Reconnaissance was also carried out in the central eastern portion of the licence to try to locate barium rich cherts located in the 1980's. Traverses done in the area failed to locate the cherts.

Three areas of interest were outlined by the survey based on the criteria of moderately to strongly anomalous vertical and horizontal readings together with moderately to strongly anomalous difference and edge effects. These were

1. An area in the Carruthers/Bourke dome underlain by non outcropping Bootu Creek Formation, based on NTGS regional mapping. The area is located on the western side of 7966680N.
2. An area to the east of line 7965500N shows anomalous readings in the vertical (shallow) mode and also has a good edge effect.
3. A confusion of results around drill hole W38, which was drilled in the 1980's and intersected superior manganese mineralisation at depth.

### 3. Current Exploration Activities 2006 – 07

Exploration activities in 2006 – 07 consisted of a follow up e31 electro magnetic survey of areas designated by the e34 electro magnetic survey carried out in field season 2005– 2006.

The areas designated for follow up were anomalies on lines 7966680N as shown below.

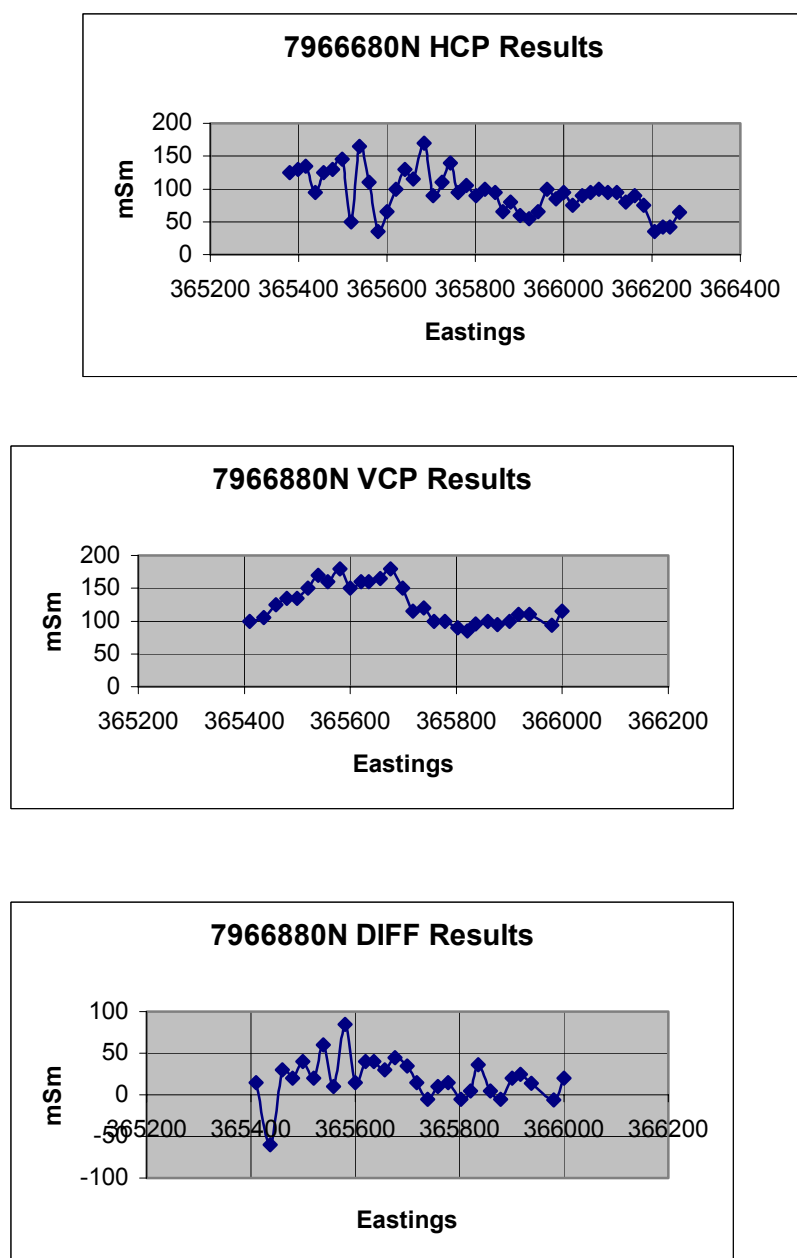


Figure 5 Anomalies located on line 7966680N

The line shows consistent anomalous results in the horizontal mode in the west of the line with good contrasted (adjacent) readings of 165/50 and 115/30. These readings may indicate shallow mineralisation. In the vertical mode also in the west of the line the readings were of a similar tenor to that encountered on shallow manganese mineralisation on EL 23495. The difference between the vertical and horizontal readings also provided an anomalous response.

The area described above was ground checked using the e31 em instrument to further pinpoint the anomaly and determine what is triggering the electromagnetic response is close to surface.

The traverse below was east to west over a low hill devoid of vegetation and covered with float consisting of clean sandstone. Also located on the anomalous low hill were polished laterite pebbles almost tektite in nature.

The readings obtained in the 2005 – 2006 e34 survey show very high vertical mode readings to the east which indicate a shallow em response. The horizontal mode has a good edge effect co-incident with the anomalous vertical mode response. There is also a very high difference between the vertical and horizontal modes.

Follow up in 2006-2007 using the e31 electromagnetic instrument to pinpoint the anomaly located the anomaly in a small clearing with sandstone float. The clearing is only 100-200 metres from an escarpment so the sandstone float is presumably scree from the nearby escarpment.

Also followed up was the eastern side of line 7965480N as shown below

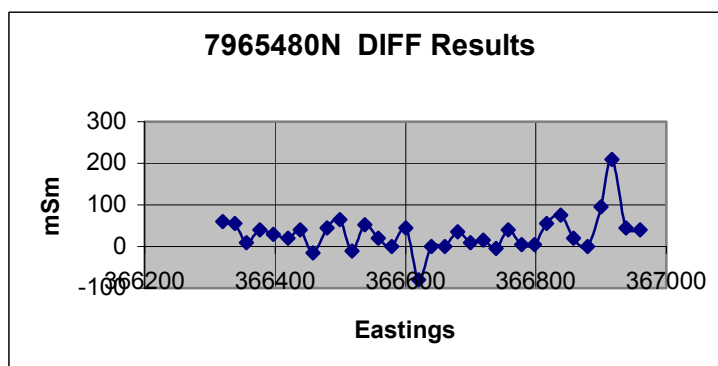
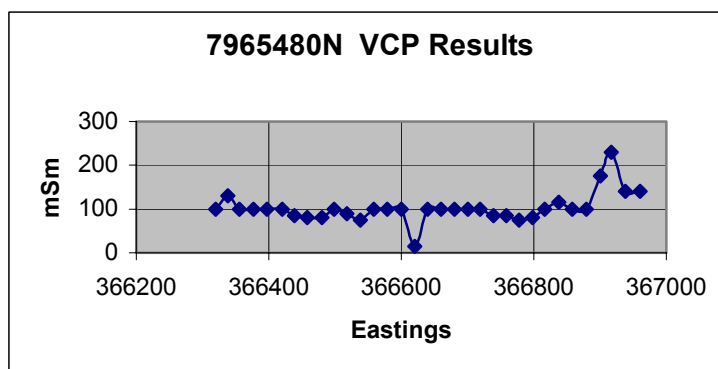
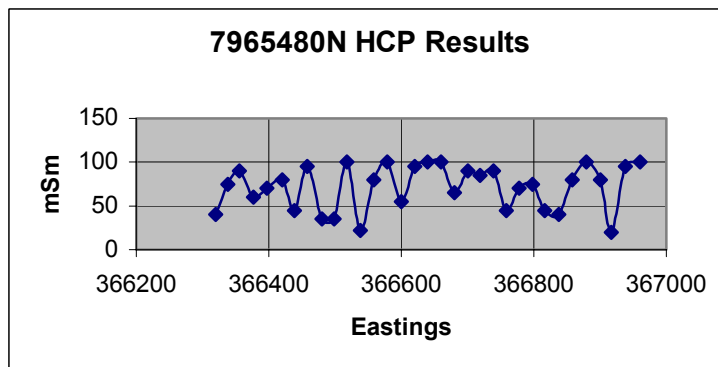
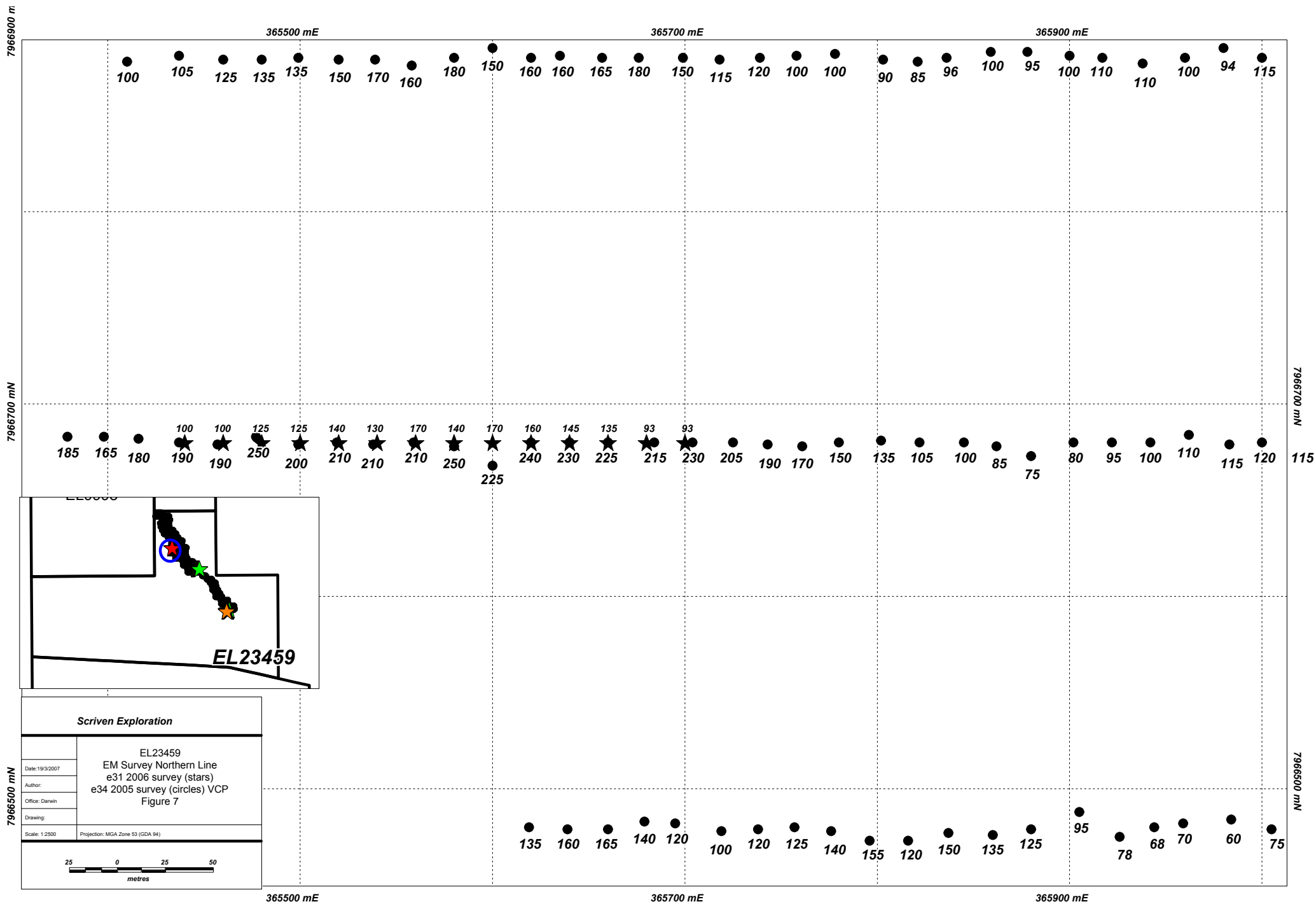
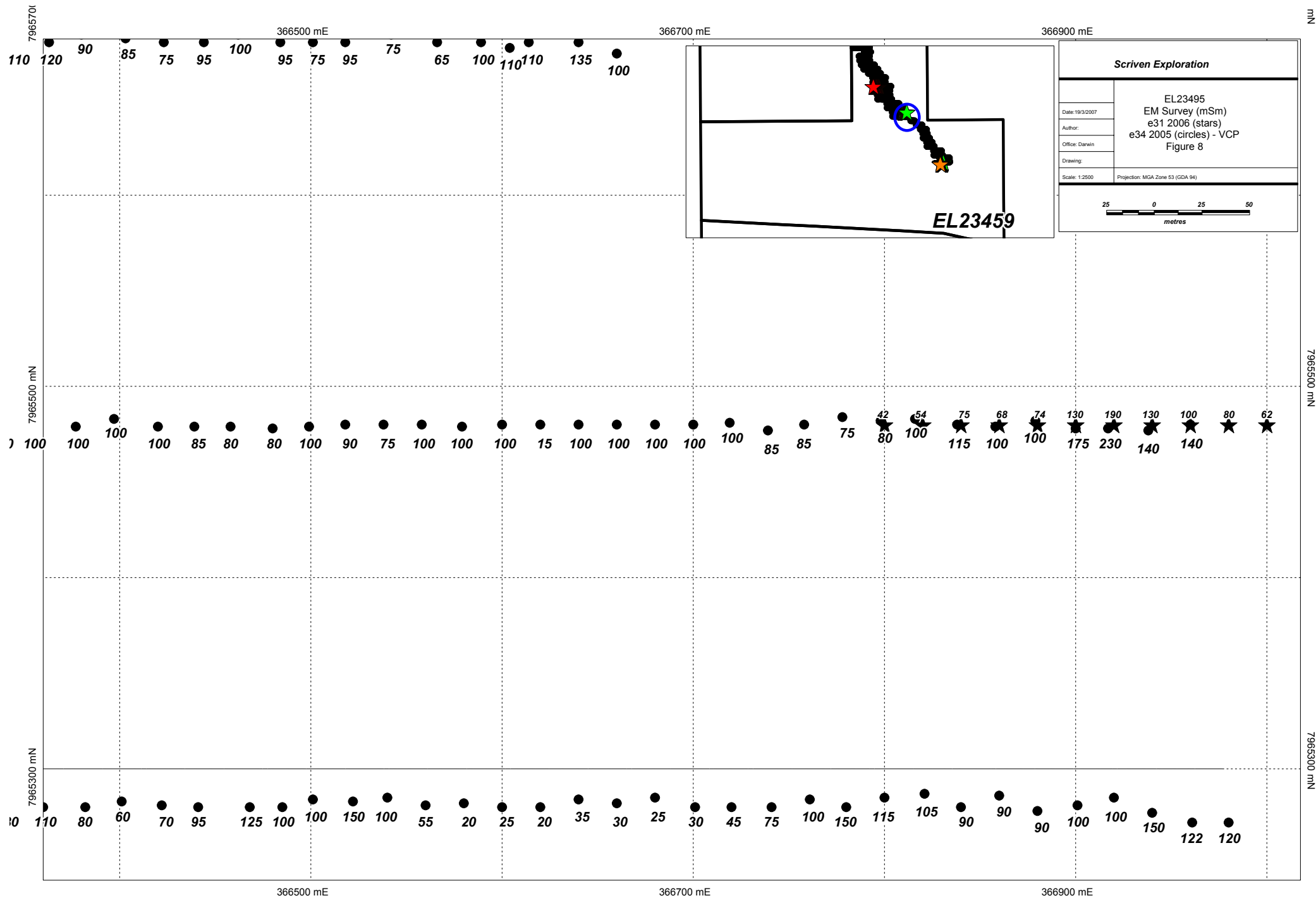
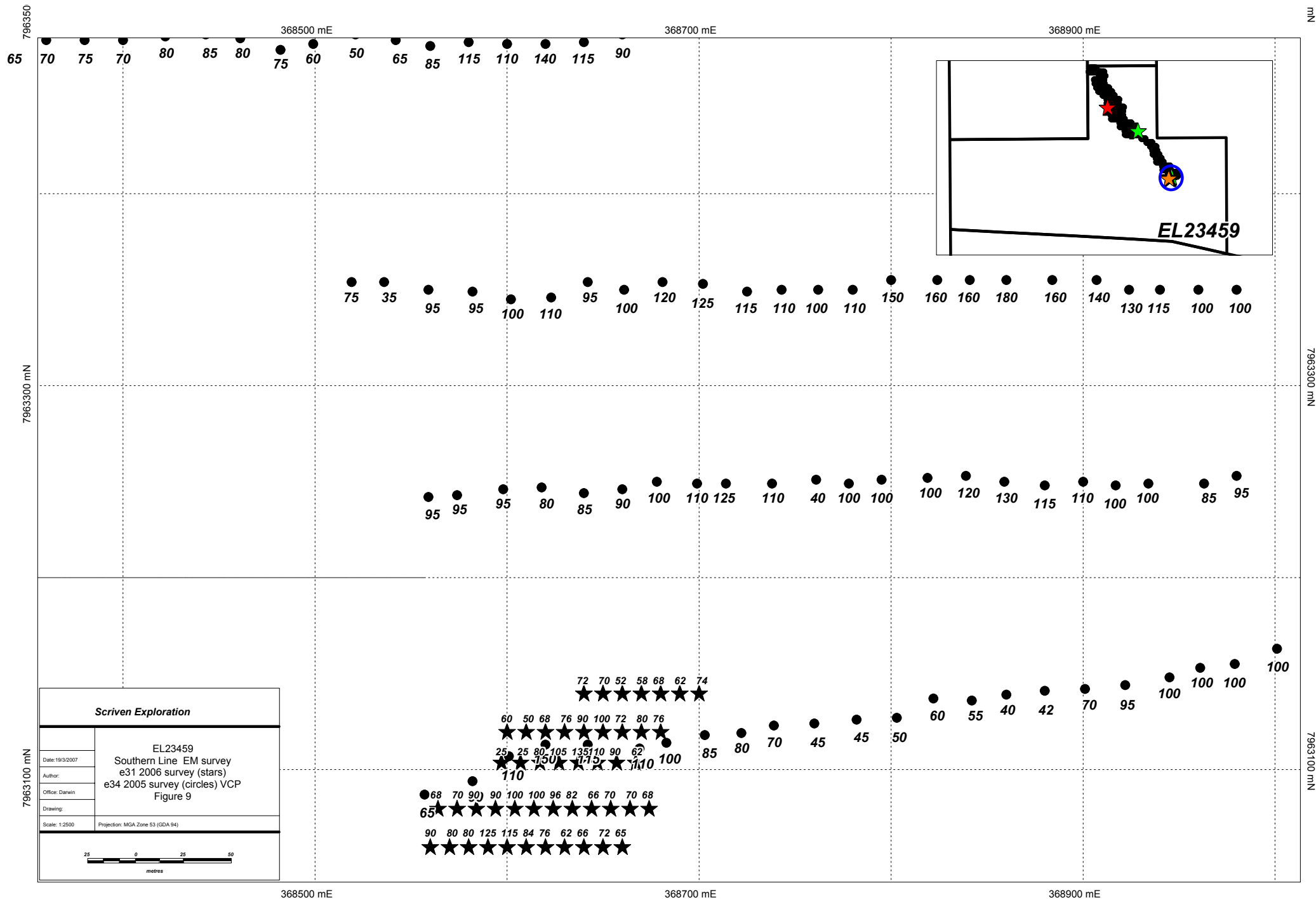


Figure 6 Anomalies followed up on the eastern side of line 7965480N









## 4. Conclusion

The em anomalies found on both lines 7966680N and 7965480N could both be attributed to the same stratigraphic boundary in the Carruthers dome. Both em anomalies are shallow and are in areas which are devoid of vegetation.

The third area followed up using the e31 instrument was the area around former drill hole W48. The traverses resulted in high readings in several of the traverses indicating a shallow conductor. Significantly in the vicinity of drill hole W48 the readings are offset from the hole and may indicate it was drilled in the wrong place.

Extrapolation of the anomalous readings in order to correlate the anomalous readings with manganese mineralisation located at depth 300 metres to the east gave the following conclusion.

1. The strike of the em anomaly through the traverses is 035°.
2. The strike approximately lines up with an e34 anomaly on line 29 consisting of adjacent high/low 100/40 reading in the vertical plane. The high low readings can indicate shallow manganese mineralisation.
3. If the possible shallow manganese mineralisation is further projected to be located opposite the Mn mineralised drill hole W38 then a dip of 25 - 30° for the manganese mineralisation is predicted. The low dip is fairly characteristic of manganese mineralisation in the Helen Springs manganese province.



## 5. Expenditures for current year 2006 - 2007

### *Field expenses*

Sustenance.....	\$1,300
Vehicle.....	\$1,200
Labour.....	\$2,000
Instrument hire.....	\$500

### *Administration*

Wages.....	\$2,000
Clearances/guarantees....	\$5,300

**Total** .....\$12,300

## 6. Proposed Expenditure for 2007 - 2008

### *Field expenses*

Drilling.....	\$15,000
Earthmoving.....	\$10,000

### *Administration*

Includes wages, report writing, liason.....\$15,000

**TOTAL** .....\$40,000

## **APPENDIX 1**

e31 EM survey Data