GEORGINA BASIN PROJECT

GR156/10
FINAL SURRENDER REPORT
FOR THE PERIOD
9 APRIL 2009 TO 12 APRIL 2013

Titleholder | Auvex Georgina Pty Ltd
Operator | Auvex Manganese Ltd
Tenement Manager/Agent | Australian Mining & Exploration Title Services Pty Ltd
Title/Tenements | EL26904 Tarlton Downs, EL27044 Algamba

Group ID | GR156/10
Mine/Project Name | Georgina Basin Project
Report Title and Reporting Period | Group Report for the Period 9 April 2009 to 12 April 2013
Author | Bryans, C
Corporate Author | Auvex Manganese Ltd
Target Commodities | Manganese, Base Metals
Date of Report | 8 April 2013
Datum/Zone | GDA 94/ Zone 53
250,000 Map Sheet(s) | Tobermorey SF53-12, Sandover River SF53-08
100,000 Map Sheet(s) | Algamba 6253, Alkea 6353, Marqua 6352

Contact Details
Postal | Chris Bryans, Auvex Manganese Ltd
| Level 4, Kirin Centre 15 Ogilvie Road
| Mt Pleasant WA 6153
Fax | 08 9316 4448
Phone | 08 9317 9700
Email for further Technical Details | chris.bryans@auvex.com.au
Email for Expenditure | chris.bryans@auvex.com.au
CONTENTS

1.0 EXECUTIVE SUMMARY 1
2.0 LOCATION AND ACCESS 2
3.0 TENURE HISTORY 2
4.0 REGIONAL GEOLOGY 2
5.0 EXPLORATION HISTORY 4
  5.1 Database Compilation 4
  5.2 Landsat TM Imagery Interpretation 4
  5.3 Reconnaissance Outcrop Sampling 4
  5.4 Petrophysics 7
  5.5 Aeromagnetics Reprocessing 7
  5.6 Airborne Electromagnetics Survey 7
  5.7 RC Drilling Programme 11
6.0 RESULTS 11
7.0 CONCLUSIONS 13
8.0 REFERENCES 13

FIGURES

Figure 1 Georgina Basin Project Location Plan 3
Figure 2 Georgina Basin Project Geology 5
Figure 3 Georgina Basin Project Landsat TM Imagery Interpretation 6
Figure 4 Georgina Basin Project Outcrop Sample Locations 8
Figure 5 Georgina Basin Project Aeromagnetics TMI 9
Figure 6 VTEM Targets over dB/dt CH35 NE Shade (LIN) 10
Figure 7 Drillhole Location Plan 12
1.0 EXECUTIVE SUMMARY

The Georgina Basin Project Reporting Group GR156/10 included up to eight Exploration Licenses located in the southern Georgina Basin. The Project area was considered prospective for base metals and manganese mineralization.

During the reporting period, exploration activities within the tenements included:

- the retrieval and compilation of previous data and the construction of a project database,
- an interpretation of Landsat TM imagery,
- reconnaissance outcrop sampling,
- reprocessing of available aeromagnetics survey data,
- an airborne electromagnetics survey,
- the completion of a RC drilling programme.

Exploration activities identified a priority base metal exploration target associated with northwest trending basement structures, positive magnetic anomalous (basement high) with a coincident gravity high, anomalous geochemical trends (including manganese anomalism), and a disconformity at the base of Cambro-Ordovician Tomahawk Formation (Delamerian Orogeny).

Detailed exploration over the priority target area, including an airborne electromagnetics survey and RC drilling, failed to locate any significant base metal mineralization.

Throughout the reporting period, the Project tenement package was reduced in size by relinquishment and/or partial reduction on the basis of diminishing prospectivity, with the last remaining tenements being surrendered on the 8 April 2013.
2.0 LOCATION AND ACCESS

The Georgina Basin Project area is situated approximately 400 kilometres east north-east of Alice Springs, in the southern Georgina Basin (Figure 1). Access to the Project area is gained via a network of station tracks and fences extending from the Plenty Highway.

3.0 TENURE HISTORY

The Georgina Basin Project included up to eleven Exploration Licenses, eight of which were part of Reporting Group GR156/10:

<table>
<thead>
<tr>
<th>Tenement</th>
<th>Grant Date</th>
<th>Group Inclusion Date</th>
<th>Surrender Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>EL26904</td>
<td>09/04/2009</td>
<td>30/04/2010</td>
<td>12/04/2013</td>
</tr>
<tr>
<td>EL27044</td>
<td>30/08/2009</td>
<td>30/04/2010</td>
<td>12/04/2013</td>
</tr>
<tr>
<td>EL27313</td>
<td>15/01/2010</td>
<td>30/04/2010</td>
<td>24/02/2012</td>
</tr>
<tr>
<td>EL27314</td>
<td>15/01/2010</td>
<td>30/04/2010</td>
<td>30/01/2013</td>
</tr>
<tr>
<td>EL27315</td>
<td>15/01/2010</td>
<td>30/04/2010</td>
<td>30/01/2013</td>
</tr>
<tr>
<td>EL27985</td>
<td>12/10/2010</td>
<td>17/11/2010</td>
<td>24/02/2012</td>
</tr>
<tr>
<td>EL28172</td>
<td>11/02/2011</td>
<td>03/06/2011</td>
<td>24/02/2012</td>
</tr>
<tr>
<td>EL28173</td>
<td>11/02/2011</td>
<td>03/06/2011</td>
<td>24/02/2012</td>
</tr>
</tbody>
</table>

Throughout the reporting period, the Project tenement package was reduced in size by relinquishment and/or partial reduction on the basis of diminishing prospectivity, with the last remaining tenements being surrendered on the 12 April 2013.

4.0 REGIONAL GEOLOGY

The Project tenements cover the central southern portion of the Georgina Basin (Figure 2). The basement stratigraphy is poorly understood, thought from geophysical data to consist of relatively undeformed Paleoproterozoic mafic and intermediate intrusives and younger non-magnetic granitoids assigned to the ≈1800Ma Altjawarra Domain.

Overlying the basement are sedimentary rocks assigned to the Neoproterozoic-Devonian Georgina Basin. Up to 1200m in vertical thickness, the sediments are folded in an open syncline (with dips generally less than 5°) about a west-northwest trending axis. Units present include (from oldest to youngest):

- Red Heart Dolostone – Lower Cambrian dolostone;
- Thorntonia Limestone – Middle Cambrian limestone with organic-rich black shale interbeds;
- Arthur Creek Formation – Upper Cambrian lower unit of organic-rich black shale, overlain by an upper unit of phosphatic and dolomitic siltstones;
- Steamboat Sandstone – Upper Cambrian quartz sandstone;
- Arrinthrunga Formation – Upper Cambrian dolostone and limestone;
Figure 1: Georgina Basin Project Location Plan
Tomahawk Formation – the predominant unit outcropping through the Project area, the Ordovician Tomahawk Formation consists of sandstones deposited in a shallow marine platform environment;

Kelly Creek Formation – quartz sandstones of Ordovician age.

Of note is the disconformity separating the predominantly carbonate sediment Arrinthrunga Formation from the overlying clastic sediment Tomahawk Formation. This disconformity may have acted as locus for mineralising fluid/wallrock interaction. Within the Project area, the disconformity is thought to lie 200-300m below surface.

The basement Altjawarra Domain and the Cambrian rocks of the Georgina Basin are cut by a series of northwest and northeast trending faults, which may have acted as pathways for mineralising fluids. The intersections of these faults with the Arrinthrunga Formation-Tomahawk Formation disconformity represent possible sites of MVT-style base metal and manganese mineralisation.

Jurassic-Cretaceous sediments of the Eromanga Basin form isolated mesas across the Project area.

Much of the outcrop is masked by a thin layer of unconsolidated alluvial, eolian and colluvial sands of Cenozoic age.

5.0 EXPLORATION HISTORY

5.1 Database Compilation
Database management group, rOREdata Pty Ltd, were contracted to collate pertinent historic data obtained through the Northern Territory Department of Mines and Energy.

5.2 Landsat TM Imagery Interpretation
Remote Sensing and Geological Services were commissioned to undertake a Landsat Thematic Mapper imagery interpretation across the Project area. Two mosaic strips were purchased from Geoimage Pty Ltd, Perth, WA. The TM imagery comprised six 30 metre resolution bands. The TM imagery was processed in ER Mapper to produce TIF files for importation into MapInfo for the interpretation. Interpretation of the images identified 70 absorptive targets across the Project (Figure 3).

5.3 Reconnaissance Outcrop Sampling
60 outcrop samples were collected from the Project area, of which 35 were assayed for Al$_2$O$_3$, CaO, Cr$_2$O$_3$, Fe, Fe$_2$O$_3$, K$_2$O, MgO, Mn, Na$_2$O, P$_2$O$_5$, SiO$_2$, S and TiO$_2$ content by SGS Laboratories, using fusion XRF (Figure 4). The majority of the manganese mineralisation observed comprised replacement of thin (generally 5-30cm thick) flat-lying horizons within a sandstone unit of the Tomahawk Formation.
Figure 3: Georgina Basin Project Landsat TM Imagery Interpretation
5.4 Petrophysics
Five samples of barren host sandstone and high grade manganese mineralized rock were forwarded to System Exploration (NSW) Pty Ltd for petrophysical analysis. Results indicated a good contrast in density, electrical conductivity and electrical resistivity properties exists between the sandstone and the high-grade manganese mineralised samples.

5.5 Aeromagnetics Reprocessing
Explore Pty Ltd, in collaboration with Southern Geoscience Consultants, were commissioned to retrieve existing open file aeromagnetic and radiometric data, process and produce a suite of images over the Project area (Figure 5).

The imagery highlighted a series of basement structures and features, potentially associated with mineralizing fluid flows.

5.6 Airborne Electromagnetics Survey
The previous exploration activities identified a priority base metal exploration target within EL27314 and EL27044. The priority target was associated with a northwest trending basement structures, positive magnetic anomalous (basement high) with a coincident gravity high, anomalous geochemical trends (including manganese anomalous), and a disconformity at the base of Cambro-Ordovician Tomahawk Formation (Delamerian Orogeny).

The base metal priority exploration target was evaluated by a 300km² VTEM system helicopter-borne time domain electromagnetic survey flown by Geotech Airborne PL. The data was processed and reviewed by Southern Geoscience Consultants, with several northeast trending conductive units identified. The conductors were generally fairly wide (several hundreds of metres) and had strike lengths of up to several kilometres. The broad multi-peaked EM response profiles indicated the conductive units were flat, tabular and are either horizontal to near horizontal bodies, occurring at depths ranging from sub-cropping to greater than 200 metres vertical depth. The conductors were interpreted to reflect regolith/oxidation or perhaps lithological variations, although some of the conductors correspond with higher time constant values, which suggested weakly conductive mineralisation. No discrete responses indicative of highly conductive massive sulphide type conductors were identified in the VTEM data. The VTEM also highlighted thin northwest trending zones in the survey area, which were interpreted as possible fracture zones. These fractures potentially represented primary conduits for hydrothermal fluids. 23 conductive anomalies were identified, five of which were considered high priority due to their geological placement and stronger representation in mid to late time EM response (Figure 6).
Figure 4: Georgina Basin Project Outcrop Sample Locations
Figure 5: Georgina Basin Project Aeromagnetics TMI
Figure 6: VTEM Targets over dB/dt CH35 NE Shade (LIN)
5.7   RC Drilling Programme
A RC drilling programme was completed to test three of the five priority VTEM targets (Figure 7).

Site preparations for the drilling included the clearing of approximately 15km of 4m wide access track, leading from the fenced corner boundary of the Lucy Creek / Manners Creek / Tarlton Downs pastoral leases, north to the proposed drillhole sites; the preparation of a 40m x 40m level drillpad clear of vegetation at each drillsite; and the excavation of a 5m wide x 5m long x 2m deep sump to contain any groundwater outflow at each drillsite.

Four RC holes were drilled:

**EL 27044**
AGRC001 (collar location 681375mE, 7534013mN (MGA94 Zone 53), total depth 250m, orientated -60/335) – testing VTEM target GB_VC 3;
AGRC002 (collar location 681417mE, 7533922mN (MGA94 Zone 53), total depth 250m, orientated -60/335) – testing VTEM target GB_VC 3;
AGRC003 (collar location 683480mE, 7533406mN (MGA94 Zone 53), total depth 300m, vertical) – testing VTEM target GB_VC 4;

**EL 26380**
AGRC004 (collar location 681315mE, 7529929mN (MGA94 Zone 53), total depth 233m, vertical) – testing VTEM target GB_VC 1.

Drill spoil samples were collected at metre intervals. Duplicate samples were collected at approximately 20 metre intervals. Blank samples were inserted into the sampling sequence at approximately 50 metre intervals.

Immediate rehabilitation works undertaken included the filling of sumps, the ripping of cleared tracks and drillpads, and the plugging of drillholes (hole AGRC003 was capped rather than plugged at the pastoralist’s request).

Selected samples from each hole were forwarded to ALS Alice Springs for Ag, As, Ba, Cu, Fe, Mn, P, Pb and Zn analysis by method ME-ICP61 (107 samples).

6.0  RESULTS
The priority VTEM targets were selected as possible areas of mineralisation but could equally be explained as areas of deeper conductive weathering or more conductive lithology such as silts, or clays.

The drilling to test the priority VTEM targets intersected sandstone and cherty sandstone, with minor siltstone units, assigned to the Tomahawk Formation.

A deep weathering profile, usually exceeding 100m vertical and stripped to upper saprolite, was present in all holes. The profile was characterised by narrow, sub-horizontal zones of iron/manganese oxide accumulation thought to represent paleo-watertable horizons.
Figure 7: Drillhole Location Plan
The groundwater table was intersected at 70-80m vertical. Generally volumes were very low, with quantities insufficient to warrant extraction. AGRC003 produced water at a rate estimated to be 4L/s. Visual inspection, tasting and the smell of the water produced indicated it should be suitable for stock consumption. AGRC003 was capped, rather than plugged, at the pastoralist’s request.

Elevated element assays are associated with the iron/manganese oxide accumulations at or near the base of the upper saprolite. None of the analytical results received were considered significant or representative of basement mineralisation.

7.0 CONCLUSIONS

The conductors identified in the VTEM survey are thought to represent weakly conductive regolith horizons associated with current groundwater table, within the deeply weathered profile over basement fault structures.

The targeted disconformity is thought to be present at depths exceeding 300m vertical in the drilling area.

No indicators of significant mineralisation were identified in the RC drilling. On the basis of this poor result, it was recommended the tenements be relinquished.

8.0 REFERENCES


Mackay D 2012: Possible Mineralisation Targets from the Georgina Basin VTEM Survey. Report for Auvex Manganese Ltd.
