NORTHERN MINERALS LIMITED

AMADEUS BASIN PROJECT

ANNUAL GROUP TECHNICAL REPORT for the period

1st December 2011 to 30th November 2012

Amalgamated technical reporting group: GR170/10

Exploration Licenses EL26920, 27016, 27017, 27018, 27019, 27020, 28530 and 28531

OPERATED BY

NORTHERN MINERALS LIMITED
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1.0 SUMMARY

The Amadeus Basin Project comprises the tenements EL26920, 27016, 27017, 27018, 27019, 27020, 28530 & 28531, and is located approximately 65km to the east of the township of Alice Springs, in the Northern Territory. The project covers an area of 1445.33km².

The license areas were granted to Northern Minerals Limited on the 20th April 2009 (EL26920); 2nd September 2009 (EL27016; 27017; 27018; 27 019 & 270 20) & 31st August 2011 (EL28530 & 28531) for a period of 6 years. Group technical reporting status was granted by the NT Department of Resources for the Amadeus Basin Project on 6 October 2010.

Two further tenements (EL28530 and EL28531) were incorporated into the combined reporting group (GR170/10) for the Amadeus Basin Project on the 24th February 2012.

Northern Minerals Limited is targeting Cambrian aged phosphorite deposits, base metal and Rare Earth mineralisation within the Amadeus Basin project. The Todd River Dolomite, which outcrops throughout the tenements, is considered to be a potential host for economic phosphate mineralisation.

2.0 INTRODUCTION

Several phosphate occurrences have been recorded within the Cambrian sediments of the Amadeus Basin. All major Australian phosphate deposits occur in the world-class Georgina Basin, a sedimentary Cambrian phosphorite province. The Cambrian Todd River Dolomite which outcrops in the north eastern margin of the Amadeus Basin is noted to contain significant phosphatic occurrences.

A literature review has also found reports of Cambrian phosphorite occurrences within the (Middle Cambrian) Tempe Formation (Late Cambrian – Ordovician) Pacoota Sandstone and (Early Cambrian) Todd River Dolomite, all of which are located in the central and eastern portion of the Amadeus Basin. The Todd River Dolomite is of Cambrianage and is considered the most prospective unit for hosting phosphate mineralisation.

This report details the exploration activities conducted by Northern Minerals Limited on exploration licenses 26920, 27016, 27017, 27018, 27019, 27020, 28530 & 28531 between 1st December 2011 and 30 November 2012. No fieldwork was conducted during the reporting period.

3.0 LOCATION & ACCESS

The Amadeus Basin Project is located approximately 65km to the east of the township of Alice Springs in the Northern Territory (Figure 1).

Access to the tenements is via the sealed Ross Highway and Numery Road which crosses the Ross River several times and is impassable after heavy rain. Graded gravel tracks provide limited access within the tenement areas. The Project is located within close proximity to existing rail and road infrastructure (Figure 1).
Figure 1: Amadeus Basin Project Tenement Location and Access Map
4.0 TENURE

The Project area consists of 486 blocks and covers an area of 1445.33km². The license areas were granted to Northern Minerals Limited on the 20th April 2009 (EL26920); 2nd September 2009 (EL27016; 27017; 27018; 27019 & 27020) & 31st August 2011 (EL28530 & 28531) for a period of 6 years.

<table>
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<tr>
<th>Project</th>
<th>Tenement</th>
<th>Blocks</th>
<th>Grant Date</th>
<th>Expiry Date</th>
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<td>31/08/2011</td>
<td>30/08/2017</td>
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</tbody>
</table>

A request to incorporate EL28530 and EL28531 into the combined reporting group (GR170/10) for the Amadeus Basin Project was successful and both tenements were added to the amalgamated technical reporting group on the 24th February 2012.

The third annual review for EL26920 was completed (2nd July 2012) and a request for a variation of expenditure condition approved, with the tenement area remaining unchanged at 214 blocks. The third annual review for EL27016, 27017, 27018, 27019 & 27020 was completed (15th October 2012) and a request for a variation of expenditure condition approved, with the tenement areas also remaining unchanged. The first annual review for EL28530 and EL28531 was completed (15th October 2012) and a request for a variation of expenditure condition approved, with the tenement areas remaining unchanged at 40 blocks and 108 blocks respectively.

Expenditure condition and area retained on Amadeus Basin Project tenements are summarised in Table 2.

An Extractive Mineral Permit (28831) for sand was made by North Concrete (NT) Pty Ltd over part (3.84Ha) of EL27019.

<table>
<thead>
<tr>
<th>Tenement</th>
<th>Area Retained</th>
<th>Expenditure Condition</th>
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</thead>
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<td>EL26920</td>
<td>214 blocks</td>
<td>$171,000</td>
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<tr>
<td>EL27016</td>
<td>7 blocks</td>
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<tr>
<td>EL27017</td>
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<tr>
<td>EL27018</td>
<td>22 blocks</td>
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<td>EL28530</td>
<td>41 blocks</td>
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<tr>
<td>EL28531</td>
<td>108 blocks</td>
<td>$38,000</td>
</tr>
</tbody>
</table>
5.0 REGIONAL GEOLOGY

The Project lies within the northeast portion of the elongated Proterozoic Amadeus Basin and is located within the Alice Springs 1:250,000 map sheet, number SF 53-14.

The Amadeus Basin is a large east-west trending intra-cratic Basin of Late Proterozoic to Carboniferous aged marine and continental sediments. These sediments were derived from the surrounding early to mid Proterozoic granites and metamorphic rocks of the Arunta Block to the north and Musgrave Block to the south.

Sedimentary lithologies include dolostone, limestone, shale, sandstone, siltstone, quartzite, evaporite, diamictite and conglomerate. The rocks are deformed by broad folding and faulting. The main trends are east-west, while faulting is both normal and thrusting styles. The Amadeus Basin is generally unmetamorphosed, although minor highly deformed rocks interleaved with basement in the northeast and southwest are greenschist to amphibolites facies.

The Early Cambrian basal deltaic sediments of the Arumbera Sandstone underlie the lower Cambrian Todd River Dolomite which itself is overlain by the Giles Creek Dolomite and subsequently the Chandler Limestone. The siltstone, shale and limestone Shannon Formation is overlain by Goyder Formation which is subsequently overlain by the Pacoota Sandstone. The sediments of the Larapinta Group can be separated into the Carmichael and Stairway Sandstones which are overlain by the cross-bedded Mereenie Sandstone. The valleys floors and creek lines primarily consist of Quaternary and Tertiary aged transported sediment cover.

Historical reports describe Cambrian phosphorite occurrences within the (Early Cambrian) Todd River Dolomite, (Middle Cambrian) Tempe Formation (Late Cambrian – Ordovician) and Pacoota Sandstone, all of which are located in the central and eastern portion of the Amadeus Basin.

Phosphate in the Amadeus Basin is confirmed with historic Broken Hill Pty Ltd (BHP) drilling intercepting 6m @ 22.8% P₂O₅ composed of calcareous silty sandstones associated with minor limestone, chert and ferruginous siltstone in the Todd River Dolomite. Sporadic values of up to 5% P₂O₅ also occur in the overlying red siltstone.

Historical drilling (PD2) has also intercepted the Todd River Dolomite and returned assay values of 4.13% P₂O₅ @ 30-32m and 1.28% P₂O₅ @ 32-34m.

The Amadeus basin also contains sandstone-type uranium deposits, and gold at White Range in the Arltunga Nappe Complex. Minor base metal and small-scale mines are also present. BHP, CRA, MIM and other companies have explored the north-western part of the basin for base metals and evaporites. Extensive uranium exploration has been undertaken. More than thirty wells have been drilled to investigate petroleum in a 170000km² area.

Significant rock chip results up to 1.66% TREO from the Hale River Project (Kidman Resources 150kms East of Alice Springs) in 3.5km of outcropping carbonate-rich veins in dykes located in the Arunta complex, to the south-east of the project area, are of note given Northern Minerals strategic focus on Heavy Rare Earths exploration.
Figure 2: Amadeus Basin Project Geology
6.0 EXPLORATION ACTIVITIES

To date exploration work completed by Northern Minerals Limited has been a review of the previous completed historical exploration work and compilation of all publicly available government data sets including geological and geophysical data, and reconnaissance geological mapping and rock chip sampling. An Aboriginal sacred site desktop study/inspection was also carried out through the Aboriginal Areas Protection Authority (AAPA). The results of the review are described below.

No fieldwork was conducted during the reporting period, exploration completed in the first three years of tenure includes:

6.1 Data Compilation and Review

A detailed review of previous work has been completed on all available data relevant to the EL area’s which was compiled into GIS format using MapInfo/Discover software. The data included topographical, cadastral, geological, geophysical, geochemical and drillhole information sourced from NT government agencies and reports of historical exploration activities. The data was interpreted to identify exploration target areas for follow-up geological reconnaissance mapping, surface geochemical sampling where appropriate, and drill target areas.

6.2 Sacred Site Inspection

An Aboriginal sacred site database inspection through the Aboriginal Areas Protection Authority (AAPA) was carried over the Project area. The inspection comprised a search of all recorded sacred sites within the Project area on the AAPA register.

6.3 Geophysical Data Compilation

All available government geophysical data over the northeastern Amadeus Basin has been acquired for processing and interpretation. The data has been interpreted by Northern Minerals Limited geologists to identify potential exploration target areas for follow-up geological reconnaissance mapping and surface geochemical sampling. A Regional radiometric (U) plan outlines numerous radiometric anomalies throughout the Project area (Figure 3).

6.4 Reconnaissance Geological Mapping and Rock chip sampling

A reconnaissance fieldtrip was made to the project in August 2011. Several prospective phosphate horizons (Todd River dolomite) and base metal geochemical anomalies were investigated.

A total of 40 rockchip samples were taken from several possible phosphate prospective horizons, and base metal anomalous areas (Figures 4 & 5). Numerous other scree rockchip samples were collected from dry river and creek beds for future analysis.

Samples were submitted to ALS Laboratory in Perth. Analytes requested include: Al₂O₃; As; BaO; CaO; Cl; Co; Cr₂O₃; Cu; Fe₂O₃; K₂O; MgO; MnO; Mo; Na₂O; Ni; P₂O₅; Pb; SiO₂; SO₃; TiO₂; V₂O₅ and Zn.
Figure 3: Amadeus Basin Project - Radiometries (U)
Phosphate results up to 1.82% P_2O_5 and 430ppm Zn (NMABRK040); anomalous zinc up to 1730ppm Zn (NMABRK039 also 7680ppm P_2O_5) and 1950ppm Zn (NMABRK030) were reported.

Several >100ppm Cu in soil anomalous areas were identified with XRF analysis, at the Sevens prospect in the Fergusson Range (Figure 4 - EL27018); along a narrow east-west Valley at the Ross River prospect, and in the north-eastern area of the project (EL26920) South of White Range.

Visible copper (malachite/azurite) was located in minor alluvium found in dry creek at Sevens Prospect, but was not assayed.

Historical geochemistry has been compiled into thematic maps in Mapinfo to assess regional mineralisation prospectivity.
7.0 PROPOSED EXPLORATION

7.1 Geological Mapping and Geochemical Sampling

The tenement areas with outcropping Todd River Dolomite will be subject to further geological mapping and improved access will aid detailed mapping of phosphorite occurrences.

The mapping programs will be focused on identifying target zones for systematic geochemical rock chip and soil sampling programs in areas of outcrop and/or in-situ soil cover respectively.

Target generation will include more detailed mapping and geochemical sampling where appropriate to refine target areas in preparation for drilling.

Future field programs will prioritise known phosphate and base metal mineralisation, and prospective REE areas, within the project to further enhance the exploration potential of the region.
7.2 Aircore / RAB / RC Drilling

Regional aircore (AC), Rotary Air Blast (RAB) or Reverse Circulation (RC) drilling will be carried out over target areas defined from exploration work. Drilling will be reconnaissance in nature with holes wide-spaced (1km) and to depths of 40-50m. Drilling is proposed following on-ground Aboriginal heritage surveys.

Some site preparation is required in order to facilitate drill rig access, due to overgrowth in some tracks, and difficult terrain to some anomalies. Existing tracks will be used wherever possible.

8.0 CONCLUSIONS & RECOMMENDATIONS

Based on the work and results of previous exploration, areas with outcropping Todd River Dolomite and phosphorite occurrences will be subject to further detailed geological mapping. Mapping programs will be focused on identifying target zones for systematic geochemical rock chip and soil sampling programs in areas of outcrop and/or in-situ soil cover respectively.

Future field programs will prioritise known phosphate and base metal mineralisation, and prospective REE areas, within the project to further enhance the exploration potential of the region.

A geophysical interpretation of the magnetic and gravity data will be undertaken to determine depth to bedrock in order to determine further potential phosphate targets for drilling, and radiometrics will be used to prioritise initial targets and prospective areas which warrant on-ground investigation for prospective REE mineralisation.

Target generation will include more detailed mapping and geochemical sampling where appropriate to refine target areas in preparation for drilling.

Regional drilling will be carried out over target areas defined for drill testing. Drilling is recommended to be reconnaissance in nature.

9.0 REFERENCES

Alice Springs (Second Edition), NT 1:250,000 Geological Series Explanatory Notes, Sheet SF/53-14
