EPENARRA PROJECT

COMBINED ANNUAL REPORT for the period

1 January 2012 to 31 December 2012

Exploration License EL26818, EL26775, EL26776, EL27085, EL27554, EL27072 and EL29321

OPERATED BY

NORTHERN MINERALS LIMITED
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1.0 SUMMARY

The Epenarra exploration licenses EL26818, 26775, 26776, 27072, 27085, 27554 and 29321 lie approximately 50-210km to the south-east of the township of Tennant Creek. At the start of the reporting period the package of tenements consisted of a total of 1176 blocks and covered an area of 3714km². The licenses were granted to Northern Minerals between 2008 and 2012 for a period of 6 years.

EL27072 and EL26776 were surrendered on the 18th September and 14th December 2012, respectively.

EL27554 currently comprises 40 blocks and covers an area of 125.8 km², due to a 50% reduction which covered an area of 161 km² (48 blocks).

As of the end of the reporting period, the Epenarra exploration licenses (EL26775, 26818, 27085, 27554 and 29321) consist of a total of 1048 blocks covering an area of 3297km².

Northern Minerals Limited is targeting Cambrian phosphorite deposits within the Georgina Basin. The Cambrian Gum Ridge Formation has been interpreted to underlie parts of the license areas and is considered to be a potential host for phosphate mineralisation.

The Middle Cambrian Wonará Formation, which underlies EL27085, hosts significant regional phosphate resources, such as Minemakers' Wonarah and Arruwurra deposits.

It is anticipated that further areas will be relinquished and that the proposed exploration activities will be undertaken in the remaining tenements during 2013.

2.0 INTRODUCTION

This report details exploration activities conducted by Northern Minerals Ltd for the combined reporting group of Epenarra between 1 January 2012 and 31 December 2012.

Northern Minerals Limited is targeting phosphorite deposits of the Middle Cambrian within the Georgina Basin. Major phosphate deposits within the Georgina Basin include the Wonarah deposit, which is Australia's largest undeveloped phosphate resource. Other deposits include Arruwarra, Alexandria and Alroy deposits which are also hosted by the Middle Cambrian Wonarah Formation. The Cambrian Gum Ridge has been interpreted to underlie the parts of the license areas and is considered to be a potential host for significant phosphate mineralisation.
3.0 LOCATION, ACCESS and CLIMATE

The package of license areas are located approximately 50 through to 210km to the south-east of the township of Tennant Creek (Figure 1), EL27072 being the closest and EL27085 the furthest respectively. The Tennant Creek Pastoral Lease covers the western area of EL27072.

Access to the exploration area is via the unsealed Wauchope-Epenarra road which passes in an easterly direction and is located to the south of EL26776 which is located on the Epenarra Pastoral Station. A well developed set of station tracks provides access to the north and south from this road. Off-road driving is relatively easy as most of the exploration area is flat with minor drainage. All streams flow intermittently during the ‘wet’ season and only minor amounts of rain are necessary to prevent vehicle movement.

Vehicular access to the central tenement areas and EL27085 is difficult, with few tracks. Access to these exploration areas is via the Barkly Highway and then unsealed station tracks south. As most of the exploration area is flat with minor drainage, off-road access is possible. All streams flow intermittently during the ‘wet’ season and only minor amounts of rain are necessary to prevent vehicle access across ‘black soils’.

The Epenarra region has a long, dry and hot summer with a cooler winter period. Rainfall is limited but can be heavy in the monsoon season (November through to March), and particularly when associated with cyclone activity. During winter strong easterly winds predominate.
Figure 1: Tenement Location and Access Map
4.0 TENURE

The Epenarra exploration licenses EL26818, 26775, 26776, 27072, 27085, 27554 and 29321 consisted of 1176 blocks and covered an area of 3714km². The license areas were granted to Northern Minerals Ltd in 2008 through to 2012 for a period of 6 years.

EL27072 was surrendered on the 18th September 2012. EL27072 consisted of 95 blocks and covered an area of 290.60 km².

EL27085 consists of 38 blocks and covers an area of 122.34km². The license was granted to Northern Minerals in 2009.

EL26776 was surrendered on the 14th December 2012.

EL27554 originally covered an area of approximately 287 km². The license was granted to Northern Minerals on the 12th April 2010. The partial surrender of EL27554 relinquished an area of 48 blocks (161 km²). EL27554 currently consists of 40 blocks and covers an area of 125.80km².

NTGS have approved the inclusion of EL29321 into the Epenarra Combined Reporting Group. EL29321 was granted on the 29th April 2012.

As of the end of the reporting period, the Epenarra exploration licenses (EL26775, 26818, 27085, 27554 and 29321) consist of a total of 1048 blocks covering an area of 3297km².

Tenement EL27555 is currently under application and will also be incorporated into the combined reporting group upon granting.

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<th>Blocks Relinq.</th>
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<th>Expiry Date</th>
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**Table 1: Tenement Schedule**
5.0 REGIONAL GEOLOGY

The majority of the exploration licenses, with exception to EL27072 lie within the Frew River and Alroy 1:250,000 map sheet. License EL27072 lies with the Tennant Creek 1:250,000 map sheet. The 1:250,000 explanatory notes, prepared by the NTGS, describe and map the majority of the license areas as being covered by Quaternary soil, sand and alluvium cover.

The relinquished portion of EL27554 are within the Dalmore (6058) 1:100,000 scale map sheets.

The Palaeozoic rocks in the Frew River sheet area are of Cambrian age and include the shallow marine and sub-aerial sediments which overlie the earlier lithologies in the north-western part of the Georgina Sedimentary Basin. The Cambrian sediments extend from the Frew River sheet area north and east towards the Barkly Tablelands.

The Gum Ridge Formation, comprised of chert, shale, sandstone, conglomerate, limestone and dolomite phases at subsurface, is the oldest Cambrian unit. The Wonarah beds overlie the Gum Ridge Formation and are considered to be slightly younger in age, comprising of chert, oolitic chert and silicified coquinite. An unnamed Cambrian unit which comprises of a grey dolomitic and brown oolitic chert sub-crops in the central-east and south–east of the Frew River map sheet area. It is uncertain, but this unit may be part of the Wonarah beds.

The Lower Proterozoic rocks include the Warramunga and Hatches Creek Groups and intrusive igneous rocks. The Warramunga Group is the oldest unit in the Frew river sheet and comprises of yellow-red-purple coloured thin bedded sandstone, greywacke and siltstone. The Hatches Creek Group overlies the Warramunga Group and comprises a grey-pink-brown, coarse grained thin to medium bedded quartz sandstone, quartz greywacke, quartzite, siltstone, shale, pebble conglomerate, basic and acid lavas (Figure 2).
Figure 2: Regional Geology
6.0 EXPLORATION ACTIVITIES

During 2012 publicly available regional data sets such as aeromagnetics, radiometrics, gravity, geological mapping and known regional mineralisation were reviewed.

Interpretation and analysis of this data has prioritised initial targets and prospective areas which warrant on-ground investigation. The review and interpretation has also guided the surrendering of less prospective tenement areas, and tenements where it has not been possible to complete the proposed mapping, sampling or drilling activities that were scheduled.

A fifty percent reduction on EL27554 tenement holding was due before work was completed on the ground.

Despite the prospectivity for economic phosphate mineralisation, as indicated by the data review and compilation, the areas covered by tenement EL26776 and 27072 effectively remain untested. Due to Northern Minerals focus on other commodities, the tenements have been surrendered.

7 PROPOSED EXPLORATION

7.1 Geophysical Modeling

In order to obtain a better regional and local understanding of the Georgina Basin depositional environment, a geophysical interpretation of the magnetic and gravity data will be undertaken to determine depth to bedrock in order to determine potential phosphate targets for drilling. Phosphate deposits such as Wonarah are known to be spatially associated with basement highs reflecting palaeotopographic highs.

The geophysical work is incorporating structural interpretation and depth modeling of windowed areas which encompasses the Epenarra tenements. Previous interpretation of the regional magnetic data has identified potential targets around possible magnetic highs that are favorable depositional environments for phosphate mineralisation.

The geophysical modeling will be able to contribute valuable information which will help validate these magnetic features and provide a better understanding of the basement depths that surround them, and help define economic phosphate mineralisation.

7.2 Geological Mapping and Geochemical Sampling

The remaining tenement license areas will be subject to reconnaissance geological mapping and detailed mapping of target areas. The mapping programs will be focused on identifying target zones for surface geochemical sampling (rock chip and soil sampling) where appropriate. Following the identification of targets, systematic geochemical sampling programs will be implemented where appropriate (i.e. areas of outcrop and/or in-situ soil cover).
The follow-up mapping and sampling of target areas defined from the initial reconnaissance work will be initiated. This will include more detailed mapping and geochemical sampling where appropriate to refine target areas in preparation for drilling.

7.3 Aircore Drilling

Regional Aircore (AC) or Rotary Air Blast (RAB) Drilling will be carried out over target areas defined for drill testing. Drilling will be reconnaissance in nature with holes wide-spaced (1km) and to depths of 40-50m. Some site preparation may be required in order to facilitate drill rig access, although existing tracks will be used wherever possible.

8.0 CONCLUSIONS & RECOMMENDATIONS

Based on the work and results of the last 12 months, 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. Interpretation and analysis of this data has prioritised initial targets and prospective areas which warrant on-ground investigation.

The remaining tenement license areas will be subject to reconnaissance geological mapping and detailed mapping of target areas. The mapping programs will be focused on identifying target zones for surface geochemical sampling (rock chip and soil sampling) where appropriate. Following the identification of targets, systematic geochemical sampling programs will be implemented where appropriate (i.e. areas of outcrop and/or in-situ soil cover).

The follow-up mapping and sampling of target areas defined from the initial reconnaissance work will be initiated, and 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 will be reconnaissance in nature with holes wide-spaced (1km) and to depths of 40-50m.

9.0 REFERENCES

Frew River, NT 1:250,000 Geological Series Explanatory Notes, Sheet SF/53-3
Alroy, NT 1:250,000 Geological Series Explanatory Notes, Sheet SF/53-15
Tennant Creek, NT 1:250,000 Geological Series Explanatory Notes, Sheet SF/53-14
Bonney Well, NT 1:250,000 Geological Series Explanatory Notes, Sheet SF/53-2