



GARDINER PROJECT

ANNUAL REPORT

**to the Department of Primary Industry and Resource
for the period 26/07/17 to 25/07/18 for
EL23932, EL25009, EL27367 and EL29593**

Combined Reporting Group No: GR-442

Date: September 2018

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TITLE PAGE AND BIBLIOGRAPHIC DATA SHEET

Project Name: Gardiner

Combined Report number: GR-442

Tenement: EL23932, EL25009, EL27367, EL29593

Tenement operator: Northern Star (Tanami) Pty Ltd

Tenement holder: Northern Star (Tanami) Pty Ltd (100%)

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Report title: Annual Report to the Department of Primary Industry and Resources for the period 26/07/17 to 25/07/18

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Author: D. Annison, Senior Exploration Geologist, Northern Star Resources Ltd

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1:250 000 map sheet: SE52-15 Tanami

1:100 000 map sheet: Mallee 4759, Pargee 4758

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Prospects drilled: N/A

List of assays: Ag, Al, As, Au, Ba, Be, Bi, Ca, Cd, Ce, Co, Cr, Cs, Cu, Fe, Ga, Ge, Hf, In, K, La, Li, Mg, Mn, Mo, Na, Nb, Ni, P, Pb, Rb, Re, S, Sb, Sc, Se, Sr, Ta, Te, Th, Ti, Tl, U, V, W, Y, Zn, Zr

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SUMMARY

This report is the annual technical report for Exploration Licences EL23932, EL25009, EL27367 and EL29593 which form the Gardiner Project located within the Granites-Tanami region of the Northern Territory. The tenements and associated project are reported under Group Report Number GR442.

This report covers exploration conducted on the project during the period 26th July 2017 to 25th July 2018.

Work completed in past 12 months:

- Re-processed historical airborne magnetic/radiometric data
- Processing regional airborne magnetic and radiometric survey
- Planned Ground Gravity Survey
- Helicopter assisted field reconnaissance and rock chip sampling
- Kookaburra East prospect targeting and drill program design

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1. INTRODUCTION

This report details the annual technical report for Exploration Licences EL23932, EL25009, EL27367 and EL29593 which form the Gardiner Project located within the Granites-Tanami region of the Northern Territory. The tenements and associated project are reported under Group Report Number GR-442.

This report covers exploration conducted on the project during the period 26th July 2017 to 25th July 2018.

The Gardiner Project is in the Granites-Tanami region approximately 600km north-west of Alice Springs, along the Western Australia (WA) and Northern Territory (NT) border (Figure 1). The project occupies land owned by the Purta, Mt Frederick 1 & 2 and Central Desert Land Trusts.

2. ACCESS AND LOCATION

Access to the project from Alice Springs can be made via the Tanami Road for approximately 600km. The Tanami Road passes along the southern margin of the projects between the Tanami Mine and the WA/NT border. From the Tanami Road, cleared lines, old exploration tracks and the 'old' Tanami Track pass through the project area.

Alternatively, the project can be reached travelling 300km along the Tanami Road eastwards from Halls Creek in WA. The northern portion of the Gardiner-Tanami Project is most easily accessed from Halls Creek eastwards along the Duncan and Gordon Downs Road to the Ringer Soak community.

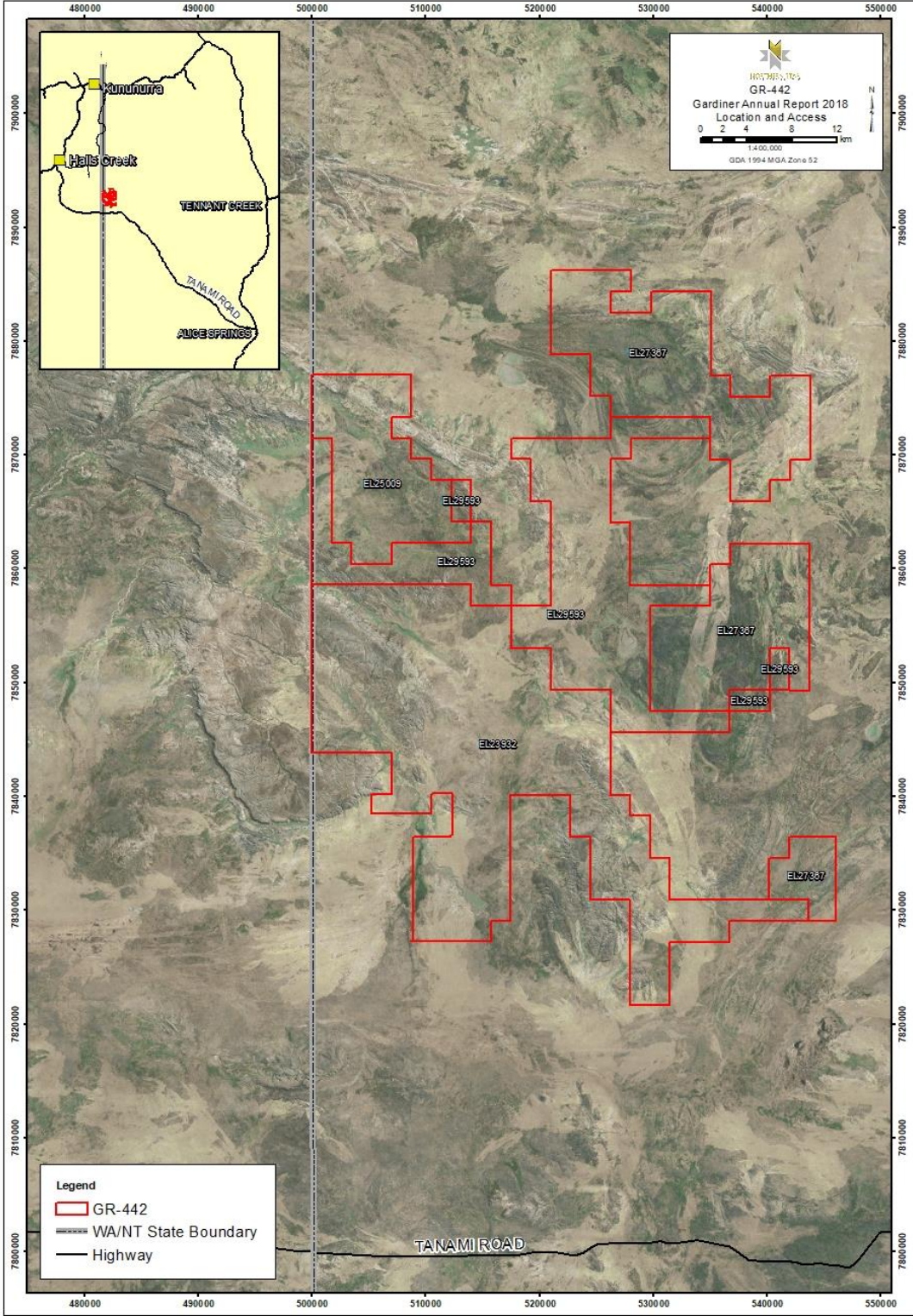


Figure 1: Location of GR-442 Gardiner Reporting Group

3. TENURE

This reporting group includes the Exploration Licences EL23932, EL25009, EL27367 and EL29593 as shown in Figure 1 and Table 1. The licenses are wholly owned and operated by Northern Star (Tanami) Pty Ltd, a wholly owned subsidiary of Northern Star Resources Ltd.

At date of grant in 2012, the licenses were held by Northern Minerals Limited, following the signing of a Deed for Exploration between the Central Land Council, Traditional Owners and Northern Minerals Limited on the 8 February 2012.

Pursuant to a Tenement Sale Agreement and Mineral Rights Agreement executed on 29 August 2016 with completion effective from 10th January 2017, Northern Star (Tanami) Pty Limited became the 100% beneficial owner of the licenses. The transfer of titles to Northern Star (Tanami) Pty Ltd was lodged and registered by the Department on 8 March 2017.

Northern Star accepted and assumed all Northern Minerals' interest and obligations under the abovementioned Deed for Exploration, with a Transferee's Deed of Covenant between the CLC and Northern Star executed on 9th January 2017.

Tenement	Holder	Current Area (blocks)	Grant Date	Expiry Date
EL23932	Northern Star (Tanami) Pty Ltd 100%	190	21/08/2012	20/08/2018**
EL25009	Northern Star (Tanami) Pty Ltd 100%	44	26/07/2012	25/07/2018**
EL27367	Northern Star (Tanami) Pty Ltd 100%	127	21/08/2012	20/08/2018**
EL29593	Northern Star (Tanami) Pty Ltd 100%	104	21/08/2012	20/08/2018**

Table 1 Tenement Schedule – Gardiner Project:

** renewal applied for 2018, pending approval

Group reporting was originally applied for on the Gardiner-Tanami Project, incorporating EL23932, EL25009, EL26498, EL26541, EL27367, EL29592, EL29593 and EL29595, on 30 August 2013, and was approved by the Northern Territory Department of Mines and Energy (NT DME) on 6th September 2013 (Reporting Group GR 318-13). An amendment to withdraw tenements EL26498, EL26541, EL29592 and EL29595 was lodged by Northern Star (Tanami) Pty Ltd and approved by DPIR on 23 February 2017

under a new Reporting Group GR-442 with a reporting period of 26 July – 25 July and submission date of 25 September.

4. REGIONAL AND LOCAL GEOLOGY

In the Tanami Region, one of the most important tectonic units in the North Australian Craton, the stratigraphic succession shows similarities with the Pine Creek and Halls Creek Orogens, other Palaeoproterozoic successions in northern Australia.

Within the region, Archaean rocks of the Browns Range Metamorphics and Billabong Complex are theorised to underlie the later Proterozoic sequences. The overlying Palaeoproterozoic Tanami Group is dominated by volcanic and volcanoclastic rocks, along with clastic and calc-silicate sediments. These are overlain by siltstone, carbonaceous shale, calc-silicates and BIF of the Dead Bullock Formation. This in turn is overlain by a thick sequence of turbidites, the Killi Killi Formation. Interbedded siltstone, greywacke and chert west of Tanami are included in the Twigg Formation.

The Pargee Sandstone and Mount Charles Formation have historically been identified as having been formed in short-lived, small extensional basins. A period of wider extension is believed to have followed, this was accompanied by felsic volcanism in the Mount Winnecke Group and Nanny Goat Volcanics.

Five main granitic suites are recognised in the Tanami Region, the most important being the Coomarie and Frederick Suites. The youngest granites in the area belong to The Granites Suite.

Deposition in the Birrindudu Basin began with sandstone transgressing over the metamorphic and crystalline basement probably at about 1.7 Ga. This was accompanied by regionally extensive north-trending growth faults and volcanism, possibly indicating rifting. The Birrindudu and Tolmer Groups represent the exposed basal section of this basin and may be as much as 6,000m thick. Apart from minor felsic volcanic rocks (tentatively assigned to undifferentiated Birrindudu Group) and carbonate rocks and shale in the upper Tolmer Group, these units are dominated by coarse clastic sedimentary rocks.

Neoproterozoic and younger sequences include the Redcliff Pound Group Neoproterozoic, Antrim Plateau Volcanics, Lucas Formation, Pedestal beds and Larranganni Beds.

The extensive flows of Neoproterozoic-Cambrian Antrim Plateau Volcanics consist primarily of tholeiitic basalt lava flows with minor sedimentary rocks. Flat lying sedimentary rocks of the Devonian Lucas Formation and Pedestal Beds and Cretaceous Larranganni Beds overlie Antrim Plateau Volcanics and older rocks.

Large areas of the Tanami region are covered by Cainozoic deposits of laterite and calcrete, and more recent, unconsolidated fluvial and aeolian sand and gravel.

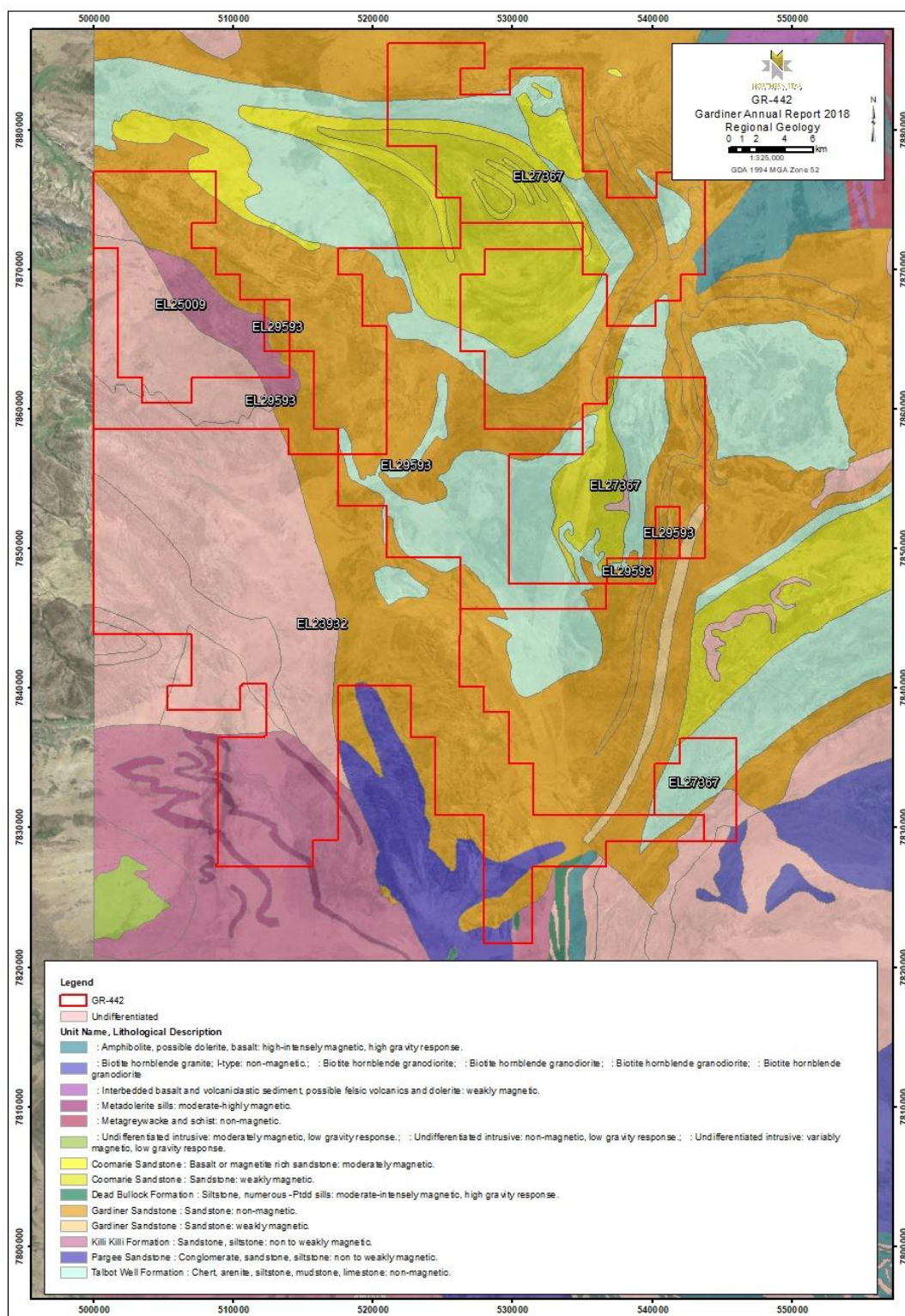


Figure 2: Regional Geology (NTGS Tanami Map Sheet SE 52-15)

5. PREVIOUS WORK COMPLETED

Work completed previously by Northern Star Resources includes:

- Reviewed historical surface geochemical and drilling data
- Re-processed historical airborne magnetic/radiometric data
- Flown regional airborne magnetic and radiometric survey
- Acquired RapidEye satellite aerial imagery
- A regional environmental survey
- Helicopter assisted field reconnaissance and rock chip sampling
- Kookaburra East and Supernova prospect targeting

Details of this work is available in the previous year Annual report (2017).

6. WORK COMPLETED BY NST

The Gardiner region is a relatively under-explored area due to its remoteness and limited accessibility. Vehicle track repairs, maintenance and establishment was undertaken to facilitate access into the greater region of EL 23932. This work will be ongoing throughout the accessible field season periods.

Systematic analysis and interpretation of aerial survey data, on both local and regional scales, has built a geological framework and understanding of the area that has allowed for on-ground exploration activities in the field season of 2018. Low-impact geological mapping, ground checking and rock chip sampling was completed this year to further compliment and build on the understanding of the area.

Using previously available private and government geophysical datasets, NST identified two main areas of interest in the Gardiner region, these have been denoted as Kookaburra East and Supernova. Kookaburra East lies in the southern portion of Gardiner tenement EL23932 and was drilled by Air Core in July 2018.

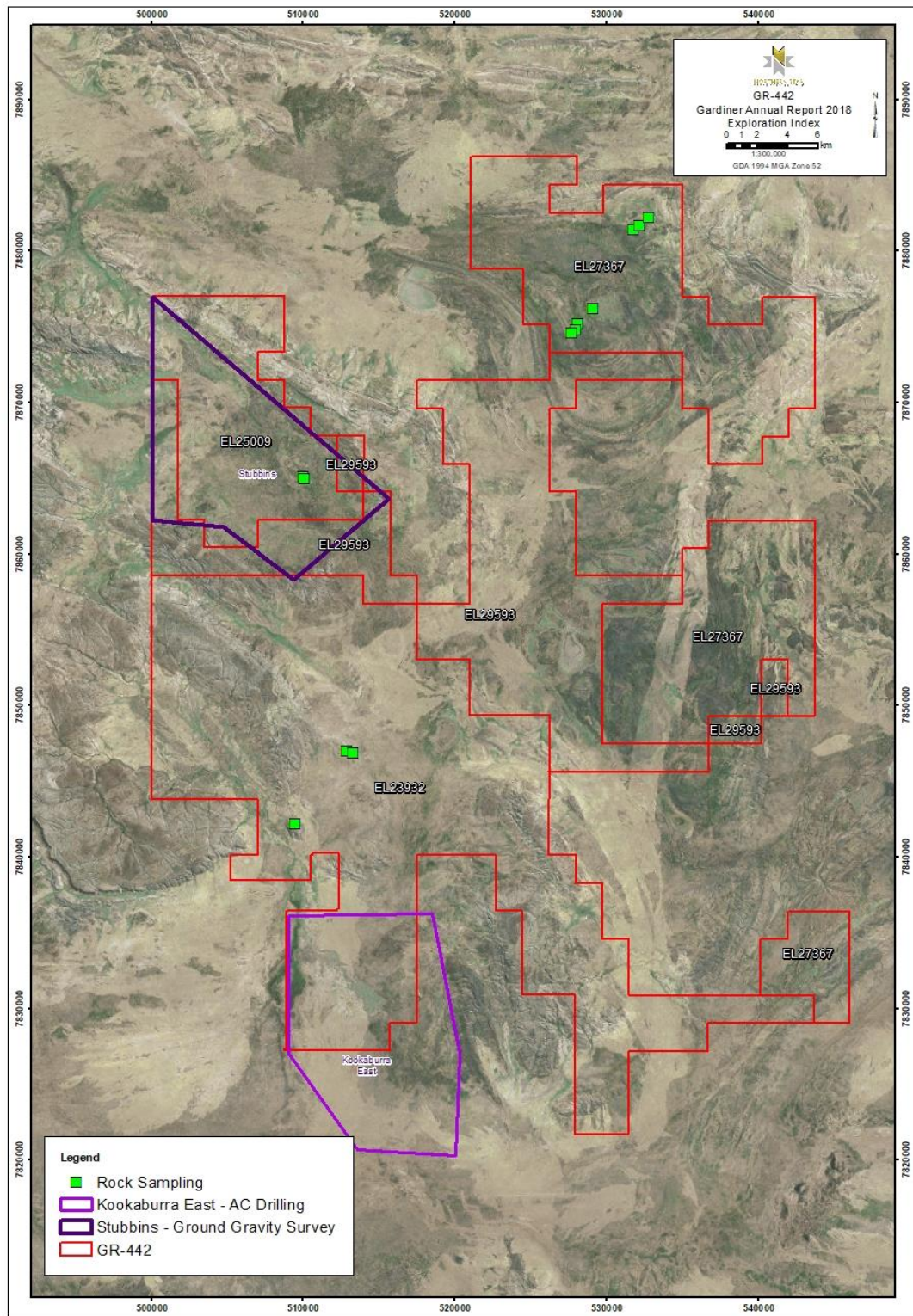


Figure 3: Exploration Index for GR-442

6.1 ROCK SAMPLING

Helicopter assisted field reconnaissance was undertaken in October 2017. A total of thirteen rock chip samples were taken.

Tenement	Surface Sample	No. of Samples
EL23932	Rock	3
EL25009	Rock	3
EL27367	Rock	7

All samples underwent ICPMS multi-element analysis (ME-MS61) at ALS-Perth but failed to return any anomalous results.

Field work completed to date has failed to discern the anomalous features identified in remote sensing datasets.

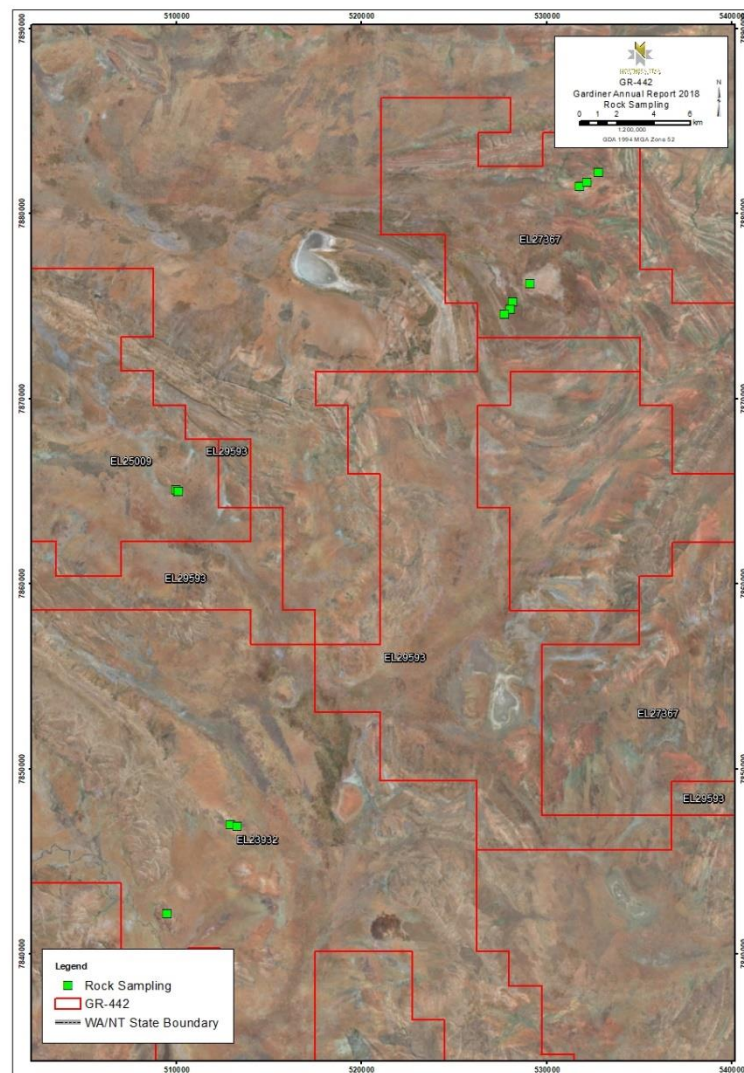


Figure 4: Rock Sampling on GR-442

6.2 DRILLING

Air Core/RAB drilling at the Kookaburra East was undertaken after Central Land Council and DPIR approvals were granted in early-2018.

The Kookaburra East Air Core program of 95 holes, took place from July to August 2018 (outside of the reporting period) and so will be described in detail in next year's annual report. The area drilled is shown in Figure 3: Exploration Index.

Drilling was focussed on interpreted iron-rich, folded sedimentary units of the Killi Killi Formation. Interpretation of airborne magnetic data showed moderate, west north-westerly plunging anticlines which are cross-cut by oblique second order structures of the adjacent Bluebush Fault. Regolith at Kookaburra East during the month consisted of deep transported duricrust, typically averaging 16-25m in thickness, with some areas including silcrete and/or calcrete horizons, typically several meters in thickness.

6.3 GROUND GRAVITY

A large swathe of ground on EL 25009, termed the Stubbins prospect, shows several anomalous magnetic features that were identified in initial AMAG interpretations last year. Geological reconnaissance was undertaken throughout the year to assess the anomalies, however significant transported cover was noted in areas of interest, making geological mapping difficult or impossible.

To further the understanding of the Stubbins prospect a detailed ground-based gravity survey was designed, this survey covers an area approximately 148km², utilises 3,764 gravity stations on a regular 200m by 200m grid and covers tenements EL 25009, and EL 29593. Preliminary works required to undertake this survey commenced in the current reporting period, with approximately 15km of track clearing and repairs required to access the area. Contractor gravity survey crews are currently working on nearby programs, the survey is anticipated to commence after July 2018 (into the next reporting period). The survey is expected to take approximately 6 to 8 weeks to complete.

Pending preliminary results of the Stubbins gravity surveys, the survey extents may be increased to cover additional areas on EL 23932.

7. CONCLUSIONS AND RECOMMENDATIONS

Analysis of the geological logging from the Kookaburra East Air Core drilling will continue throughout the next reporting period. Analysis and interpretation of assay results will contribute to the geological modelling and assessment process for the prospect. Should anomalism or points of interest be identified in the completed Phase 1 drilling, additional Air Core drilling is permitted to be undertaken.

Following acquisition of the Stubbins gravity survey detailed geological analysis and interpretation will be conducted. AMAG-Gravity Inversion trials will be undertaken to assess the structural architecture of the Stubbins prospect. Should the gravity survey delineate any further anomalies or points of interest, geological reconnaissance may be carried out to investigate these features, provided regolith conditions are suitable for geological mapping.

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