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Exploration Licence 26434

FIRST ANNUAL REPORT
Period Ending 10th January 2009

Acacia Gap
Northern Territory

By
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For
Acacia Minerals Pty Limited

Batchelor
March 2009
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SUMMARY

Acacia Minerals P/L have successfully carried out the year’s planned exploration on EL 26434. Anomalous values in Cu, Co, Ni, Pt, Pd and Rh have been returned from gossan and/or soil samples.

Additional work is warranted and planned for Year 2.

1. INTRODUCTION

This document is the first annual report for Exploration Licence 26434 and covers the period up to 10 January 2009.

2. TENEMENT STATUS

The tenement was granted to Acacia Minerals Pty. Ltd on the 11th January 2008 for a period of 6 years. Its area is 2 sub-blocks and the expenditure covenant for the first year was set at $26,400.

3. LOCATION

EL 26434 is located in the Top End of the Northern Territory, 3 kms east of the Stuart Highway and the small community of Acacia Gap. It is easily accessible along all weather gravel roads from that highway and is bounded by Mocatto Road on the west and Whitstone Road on the north.

The tenement is on occupied freehold land (Sec 275) and is used for hobby farming. Most of the land is semi-cleared and has improved pasture.

More specifically the tenements centroid is at approximately 12 degrees 46.5 minutes South and 131 degrees 09.5 minutes East (GDA94).

4. GEOLOGY

EL 26434 falls within the geologically designated Rum Jungle Mineral Field (RJMF)/Rum Jungle Uranium Field (RJUF) and is situated 9 kms northeast of the Archaean Rum Jungle Complex and 7 kms west of the Giants Reef Fault.

On the most recent NTGS geological map of the RJMF (Lally 2003) the tenement plots straddling the north plunging Woodcutters Anticline. According to that map EL 26434 is underlain by the Early Proterozoic, Mt Partridge Group, Coomalie Dolostone and the Whites Formation.

The contact between the Coomalie carbonates and the Whites formation graphitic shales is the stratigraphic position hosting most of the significant uranium and base metal mineralisation of the RJMF.
Of possible other significance is the mapped presence of a faulted, north trending “late” dolerite dyke, traced from magnetics that is mapped within the anticlinal axis within EL 26434 (Lally 2003). In addition Zamu Dolerite dykes are shown within the Whites Formation to the east of EL 26434.

Reported mineralisation in the vicinity of EL 26434 include:-
- The Frazer Uranium Prospect, 3 kms to the southwest
- Zn-Pb mineralisation, 2 kms to the east
- Au associated with a dolerite/shale contact, 1 km to the east
- Zn-Pb mineralisation, 5 kms to the south.

All of the above prospects occur within the Whites Formation.

5. PREVIOUS EXPLORATION

Several exploration companies have been active in the regional area around EL 26434 in the last thirty years. Most of this work has been targeting the stratigraphy extrapolating to the north of the discovered Woodcutters Pb-Zn-Ag mine and Woodcutters U prospect.

In 1977/78 Geopeko on El 384 discovered the L4 Manton prospect (CRs 1977/126, 1978/64) far to the southwest.

In 1982/83, Mineral Reserves Group Inc carried out exploration over their ELs 2262, 2265, 2266, 2267 and 2280. This included some airborne INPUT survey but not over EL 26434. Their work is reported in CRs 1982/210 and 1983/264.

Northern Gold in 1989 explored their ELs 5854 and 5647 both to the north near Noonamah. Both were dropped after one year.

In 1989/1990, Newmont Australia worked on their EL 6074, far to the north of EL 26434.

During 1992 and 1993 Nicron / Aztec held ELs 6919, 7064 and 7522 in the general area. EL 6919 covered the ground to the west of EL 26434 and their sampling defined several anomalies within the Whites Formation with elevated Cu, Zn and Pb, one of them coinciding with the Frazer Uranium prospect.

More recently, in the 2007/2008 field season, Glengarry Resources Ltd completed their followup drilling on the Au prospect to the east of EL 26434. Earlier drilling had reported 6 metres @ 11.3 g/t gold on a dolerite / shale contact. Glengarry tested this contact over a 1.6 km strike length with 8 RC holes totaling 728 m. Their best intersection was reported at 5 meters @ 1.22 g/t. (Glengarry Resources Ltd- December 2008 Qtrly Report to the ASX).

6. EXPLORATION PROGRAM AND TARGETS
Acacia Minerals are targeting base metals, gold and uranium mineralisation primarily associated with the Whites Formation and Coomalie Dolostone.

The company also recognises the significant presence on EL 26434 of the “narrow, magnetically defined dolerite dykes” shown on the NTGS map. These may have a potential for platinum group metals and gold mineralisation.

7. METHODS

7.1 Reconnaissance Ground Traversing / Prospecting

After Acacia Minerals had applied for EL 26434, the directors of the company made contact with the freehold landowner of the property covered by the tenement as is encouraged by the Mines Department.

This resulted in several tours of the property with the landowner freely leading Acacia staff and directors to known outcrops and interesting rubble. Five samples (162098-162102) were collected on the first visit and a further six (162112 - 162117) on the second. Many of these samples were composites of rubble that had been pushed aside during clearing of the paddock. These samples had no GPS coordinates recorded.

Records of these samples are shown in Appendices 1 and 2. The location of those with GPS coordinates (162099, 162102) are shown on Fig 3.

7.2 Systematic Soil Sampling

As some of the composite rock samples from the prospecting visits had returned anomalous base metal values it was decided to do several eastwest soil sample traverses across the entire tenement.

Two phases of auger sampling were conducted: Phase 1 on 13th September 2008 and Phase 2 on 20th and 22nd November 2008.

Samples were taken using a tractor mounted auger from a maximum depth of 1 metre. The tractor auger was hired through the freehold land owner. Each site produced one sample sieved to -2mm and one course fraction, each weighing approximately 200 grams and each given the same sample number. The auger hole was backfilled immediately after sampling, that is, within 5 minutes of having been dug.

The fine fraction was sent to a laboratory in Darwin for assay. The course fraction has been retained for geological examination after assays are received, and for possible additional assaying.
Phase 1 of soil sampling comprised of three lines 400 metres apart: one each on the south and north boundaries and one through the middle of the tenement. Each line consisted of 17 (or 18) sample sites at 50 m centres. This produced 52 samples, numbered 110701 to 110752.

The Phase 2 of soil sampling comprised of an additional three lines 100 metres apart within the northern half of the tenement. Each line again consisted of sites 50m apart. A further 51 samples (111108-111141, 111205-111221) were collected. The sampling method was identical to Phase 1.

Appendix 3 gives details of all soil samples: their GPS location, date sampled, sample number and the Munsell Colour for each fine fraction.

Fig 3 is a plot of sample locations. The bends in the lines are due to the tractor avoiding treed areas in the otherwise cleared paddock.

7.3 Assaying

The fine fraction soil samples were sent to the Northern Territory Environmental Laboratories (NTEL) in Darwin.

Those first batch of gossan samples were assayed for Au, Pd, Pt, Ir, Os, Rh, Ag, Co, Cu, Ni, Pb, U and Zn as per NTEL report “EL 08772” in App.1.

The second batch of gossan samples were selectively assayed for Au, Ir, Os, Pd, Pt, Rh, Ag, Al, As, Ba, Be, Bi, Ca, Cd, Ce, Co, Cr, Cs, Cu, Dy, Er, Eu, Fe, Ga, Gd, Ge, Hf, Ho, In, K, La, Li, Lu, Mg, Mn, Mo, Nb, Nd, Ni, Pb, Pr, Rb, Re, S, Sb, Sc, Se, Sm, Sn, Sr, Ta, Tb, Te, Th, Ti, Tm, U, V, W, Yb, Zn and Zr. This data is shown in App 2 as NTEL report “EL09877”

The Phase 1 soil samples have been assayed for Au, Ag, Ca, Co, Cu, Fe, Mn, Ni, Pb, S and Zn as shown on NTEL report “EL11916” in App 4.

The Phase 2 soil samples have been with NTEL since the 25th November 2008 but assaying has not at the time of writing (6/3/2009) been completed.

7.4 Petrography

In an effort to identify the parent lithologies, 6 samples of the gossan were sent to Pontifex and Associates for thin section and polished section studies.

The samples selected were those that had shown anomalous Cu, Co, Ni, Pt and Pd….Samples 162099, 162102, 162118, 162120, 162121 and 162122. See App 5 and App 6.

7.5 Rehabilitation
As described above all soil sample auger holes were backfilled immediately after drilling. All survey control was by GPS so no grid pegs were used.

8. WORK DONE AND RESULTS

8.1 Prospecting and Gossan Sampling

Referring to App 1, clearly samples 162099 and 162102 returned highly anomalous values in Cu (3340ppm), Co (2360), Ni (1640), Pt (9ppb), Pd (10ppb) and Rh (5ppb).

These anomalous results were confirmed by the assays obtained from the second batch of gossan samples. Referring to App 2:- maxima for Cu (2390ppm), Co (2140), Ni (1630), Pt (14ppb), Pd (23ppb).

In addition there were anomalously high values in the following elements in one or more of the samples:- Ba (2340ppm), Be (10.4), Cd (8), Ce (146), Ho (3.69), Li (286), Mo (37.6), Sb (30.9), Se (4), Te (0.2), Yb (8.54) and Y (136).

8.2 Soil Sampling

Assay results for the 52 samples of Phase 1 of the soil sampling are shown in App 4. Results for each element are summarised herewith:-

<table>
<thead>
<tr>
<th>Element</th>
<th>No. Assays above DL</th>
<th>Max</th>
<th>Min</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gold</td>
<td>36</td>
<td>10ppb</td>
<td>1ppb</td>
<td>2.83ppb</td>
</tr>
<tr>
<td>Silver</td>
<td>15</td>
<td>0.15ppm</td>
<td>0.05ppm</td>
<td>0.07ppm</td>
</tr>
<tr>
<td>Calcium</td>
<td>52</td>
<td>2590ppm</td>
<td>130ppm</td>
<td>583ppm</td>
</tr>
<tr>
<td>Cobalt</td>
<td>52</td>
<td>162ppm</td>
<td>2.95ppm</td>
<td>31.9ppm</td>
</tr>
<tr>
<td>Copper</td>
<td>52</td>
<td>119ppm</td>
<td>8ppm</td>
<td>39.4ppm</td>
</tr>
<tr>
<td>Iron</td>
<td>52</td>
<td>12.6%</td>
<td>6720ppm</td>
<td>5.16%</td>
</tr>
<tr>
<td>Manganese</td>
<td>52</td>
<td>1.75%</td>
<td>52ppm</td>
<td>3208ppm</td>
</tr>
<tr>
<td>Nickel</td>
<td>52</td>
<td>123ppm</td>
<td>8.2ppm</td>
<td>43.2ppm</td>
</tr>
<tr>
<td>Lead</td>
<td>52</td>
<td>139ppm</td>
<td>6.2ppm</td>
<td>28.4ppm</td>
</tr>
<tr>
<td>Sulphur</td>
<td>30</td>
<td>60ppm</td>
<td>20ppm</td>
<td>37ppm</td>
</tr>
<tr>
<td>Zinc</td>
<td>52</td>
<td>131ppm</td>
<td>4.5ppm</td>
<td>21.5ppm</td>
</tr>
</tbody>
</table>

(Assay results for the 51 samples collected in Phase 2 of the soil sampling will be reported on in a following document)

8.3 Petrography
Referring to App 5 and 6, it can be seen from the text that very little useful information was gained from the four polished thin sections and the two polished sections reported on by Dr. Ian Pontifex.

8.4 Rehabilitation

As stated earlier, all auger holes were very shallow and were backfilled immediately after drilling. Sites were left rehabilitated to the satisfaction of the Company and the freehold landowner.

9. Conclusions

As seen in Sect 8.1 of this report, the initial gossan samples returned anomalous results in a diverse list of elements. The presence of the Cu, Co, Ni trio in the Whites Formation / Coomalie Dolostone environs can be expected in the RJMF. However the added presence of anomalous Pt, Pd is interesting.

Pt and Pd were reported from the Sargents Prospect on the east flank of the Waterhouse Complex in the 1980s from deeply weathered tremolitic carbonates.

The anomalous values in the other elements listed in 8.1 strongly suggest that there have been significant mineralising events in the stratigraphy within EL 26434.

Assay results from the soil sampling to date are not as dramatic as those from the surface gossan samples. Nevertheless several soil samples did return moderate yet significant Cu, Co, Ni, Pb and Au values. (No Pt, Pd or Rh assaying was done on soils)

Assay results from Phase 2 are awaited.

The interpreted narrow dolerite dykes as shown on the NTGS 2003 RJMF map (Lally 2003) may well be the reason for the presence of the anomalous Pt, Pd and the Rh is universally associated with platinum group elements. The Cu, Co, Ni values may or may not be related.

Unweathered samples of the rocks (dolerite dykes?) containing the elevated values of the base metal and platinum group elements must be sourced to properly test this prospect.

10. Recommendations

EL 26434 clearly warrants further work to follow up on the anomalous base metal and platinum group metals.

The following field exploration work is recommended for Year 2 of EL 26434:-

• Followup auger soil sampling of anomalies defined by Phases 1 and 2 soil sampling.
• A close spaced ground magnetic survey to locate and define the NTGS mapped dolerite? dykes. Consultant geophysicist Frank Lindeman to assist.

• A detailed radiometric survey to check for any uranium mineralisation associated with the Whites Formation / Coomalie Dolostone interface.

• RC or RAB drilling, with possible diamond drilled tails, to test any anomalies defined by the above geophysics and soil sampling.

In addition Acacia Minerals to acquire any GA airborne survey data currently being flown that is pertinent to this tenement.
11. Expenditure Statement

The expenditure covenant for EL 26434 for the first year of tenure was $26,400

Actual expenditure for the first year was as follows:

1. Research $2,500
2. Geological reconnaissance ................................................................. $2,500
3. Geophysical interpretation $2,600
4. Soil sampling ....................................................................................... $3,400
   Geological supervision $2,000
5. Field reconnaissance ............................................................................ $1,500
6. Geochemical analysis (estimate) .......................................................... $7,600
   Petrography $1,600
7. Map making $1,200
8. Land owner liaison ................................................................................ $0,800
9. Administration and overheads ............................................................... $2,100

Total ........................................................................................................ $29,600

12. Proposed Programme and Expenditure for Year 2

1. Ground magnetics and radiometrics ...................................................... $4,000
2. Geophysical interpretation ..................................................................... $2,000
3. Geological supervision .......................................................................... $3,500
4. Soil sampling $3,000
4. Shallow RAB drilling ............................................................................ $10,000
   Geochemical analysis $8,000
5. Land owner liaison ................................................................................ $0,500
6. Administration and overheads ............................................................... $3,100

Total $34,100
Figure 1: Location of EL 26434 on Cadastral Base
Figure 2: Location of EL 26434 on Geology Base
Figure 3: EL 26434: Gossan and Soil sample sites
Figure 4a: EL 26434: Phase 1 Soil Samples - Cu, Co, Ni
Figure 4b: EL 26434: Phase 1 Soil Samples - Pb, Zn
Figure 4c: EL 26434: Phase 1 Soil Samples- Fe, Mn, Ca
Appendix 1:  Rock Samples Assay Results: NTEL EL08772

Rock Sample Assay Results 1.txt

Appendix 2:  Rock Samples Assay Results: NTEL EL09877

Rock Sample Assay Results 2.txt

Appendix 3:  Soil Sample Data Spreadsheet

Soil Sample Locations Phases 1 & 2.txt

Appendix 4:  Soil Sample Assay Results: NTEL EL11916

Phase 1 Soil Sampling Assay Results.txt
Appendix 5: Letter to Pontifex and Associates re Petrography

ACACIA MINERALS PTY LIMITED ACN 127 419 729

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21st April 2008

Dr Ian Pontifex
Pontifex & Associates Pty Ltd
26 Kensington Road
Rose Park
SA 5067
Ph (08) 8332 6744

Dear Ian,

Thin section samples 162099, 162102, 162118, 162120 to 162122

Enclosed please find six surface rock specimens from the Batchelor-Adelaide River area of the Northern Territory.

Assay results for 162099 and 162102 showing anomalous Cu, Co and Ni are attached. These two are about 500m apart along strike. 162118, and 162120 to 162122 are in the immediate vicinity of 162099.

Would you please make thin sections and provide a basic description and identification of each one, with a note on any alteration or mineralisation you may observe.

Please send the descriptions and invoice to me at the above address.

As we are about to start our field season, it would be very much appreciated if the job could be done at your earliest convenience.

Thanks very much,

Nick Byrne
MINERALOGICAL REPORT No. 9339

by Ian R. Pontifex MSc.

June 11th, 2008

TO: Mr Nick Byrne
    Acacia Minerals Pty Ltd
    PO Box 4156
    ALICE SPRINGS NT 6871

YOUR REFERENCE: Your letter 21/4/08

MATERIAL: Outcrop samples, Batchelor/Adelaide River area, NT.

IDENTIFICATION: Numbers 162099, 102, 118, 120, 121, 122

WORK REQUESTED: Section preparation, description and report with comments as specified.

SAMPLES & SECTIONS: Returned to you with this report.

DIGITAL COPY: Enclosed with hard copy of this report.

PONTIFEX & ASSOCIATES PTY. LTD.
INTRODUCTION

Six rock oxidised/weathered outcrop samples from the Batchelor, Adelaide River area NT, are described in this report from four polished thin sections and two polished sections. The polished surfaces were required to examine the extensive goethitic (?gossanous) opaque iron oxide material. [Note sample number 162126 dominated by massive vein quartz, was received but not listed in your covering letter.]

Assay results for 162009 and 162102 are reported to contain anomalous Cu, Co and Ni. Samples 16118, 120 and 122 occur in the immediate vicinity of 162099. A request was made for basic description, particularly noting any alteration or mineralisation. Selected photomicrographs are integrated with the individual descriptions, as perhaps the best way of allowing comparisons, especially of textures (and composition), of the five “gossanous/pseudogossanous” samples, 162099, 162102, 118, 120 and 122.

In this regard, samples 162099 and 162122 have some comparable colloform/botryoidal textures and it is of interest that these are geochemically anomalous, but similar textures occur also in 162102. No textures diagnostic of precursor minerals were seen however. Sample 162122 is more “lateritic”.

Goethitic rock 16102 incorporates vein quartz crystals, also possible secondary hematite and Mn-oxide. Samples 162118 and 162120 are sandstones permeated respectively by limonite and very fine micaceous hematite. Sample 162121 is a siliceous/silicified breccia including hydrothermal vein quartz (possibly epithermal and mesothermal).
INDIVIDUAL DESCRIPTIONS

162099  Massive patchy merging domains of fine porous irregularly colloform goethite. Apparently ‘gossanous’ but no textures or structures diagnostic of precursor minerals.

Field Note:  Geochemistry (ppb)  Au 7, Pd 10, Ir <2, Os <2

This gossanous looking sample was examined in polished section, which indicates dominant individual and merging areas of irregularly colloform, fine to coarser porous goethite, at various scales from 0.2mm to 3mm. This is typical of accretionary accumulation of migratory supergene iron oxide as may occur in genuine gossans or in pseudo gossans such as laterite or miscellaneous open space (breccia) zones.

There is no evidence of boxwork, replica or other textures or structures, diagnostic of any recognisable precursor minerals and therefore nil or negligible scope to interpret a specific genesis, more than the generalised assessment above.

Fig 1  162099  Reflected light (RL), polished section (PS). Magnification (x100). Massive irregularly colloform/botryoidal goethite (grey).

Field Note:  

Geochemistry (ppb)  Au 2, Pd 7, Pt 7, Ir 2, Os <2

This handspecimen is also dominated by gossanous-looking goethite, with colloform/botryoidal irregular surfaces enclosing numerous irregular voids, also enclosing minor scattered vein quartz and pale patchy clays.

Reflected light microscopy confirms extensive irregularly colloform/botryoidal areas of “goethite” albeit variable in optical properties and microtexture, transitional from “limonite” through to possible secondary hematite. Minor possible Mn-oxide also occurs. As for 162099, there are no diagnostic relict textures (to indicate possible ex-primary mineralisation).

The goethite domains incorporate numerous random prismatic quartz crystals of various size, many with minor minute inclusions, along growth zones, of apparent sericite, carbonate and possible sulphate. These are interpreted to be of high level hydrothermal origin.

Other voids are occupied by superficial (supergene) clays ± silt.
Fig 2

162102

PS (x20). (x500). Irregularly botryoidal, grey goethite and brighter white possible secondary hematite ± possible Mn oxide.
Fig. 3 & 4
162102
0.18 mm

Transmitted light (TL), thin section (TS), (x50). Irregularly colloform botryoidal goethite incorporating euhedral crystals of hydrothermal vein quartz, with minute silicate inclusions.
“Host rock” of poorly indurated fine quartz sandstone, extensively permeated by clay-limonite (which may replace former interstitial sericite). No gossanous characteristics or colloform goethite as in 162099. Incorporates milky hydrothermal quartz veins and fragments.

Field Note: near 162099

Macroscopically, this is a mix of rather non-descript, apparent clay-rich limonite-goethite, incorporating numerous angular fragments to 10mm across of apparent vein quartz. Several continuous veins to 10mm wide of milky “buck” quartz also occur.

The polished thin section reveals an extensive “host rock” of largely clay-rich limonite interstitial to and crowded with, abundant fine quartz ‘grains’ which seem to mostly represent a poorly indurated fine quartz sandstone, now extensively permeated by limonite which possibly replaces former interstitial clay-sericite. Numerous scattered small to large (12mm) quartz fragments are partly vein quartz as in 162102, but not clearly defined/euhedral, commonly fractured and partly recrystallised to finer mosaic. Some of the fine disseminated quartz grains may be comminuted vein quartz.

There are no gossanous characteristics within the secondary iron oxides and no colloform botryoidal textures as seen in 162102 and 162099.
Figs 5 & 6

PS and TS. (x100). Reflected and transmitted light photos of unsorted diffuse quartz sand with coarser fragmental vein quartz in a matrix of patchy, streaky, earthy limonite.
162120

Medium to coarse grained hematised quartz sandstone. Weakly bedded at right angles to the macrolayering seen in handspecimen, therefore cut across by these layers rich in ultrafine micaceous hematite, alternating with bands of fine hematite cement, interstitial to the quartz grains.

Field Note: near 162099

This handspecimen is quite different to others in this suite. It is basically an irregularly layered ferruginous sandstone, with the iron oxide seen macroscopically and in polished section as apparently hematitic (rather than goethitic as in other ferruginous samples in this suite). Different bands are more or less alternatively “solid” due to ferruginous (hematitic) cement, between quartz grains, with intercalated bands between very soft friable, due to more dispersed ultrafine “micaceous hematite” interstitial to quartz grains.

The abundant quartz sand grains range in size from 0.2mm to 0.5mm (medium to coarse sand), loosely packed and fairly evenly disposed throughout the hematite cement/matrix to form about 65% of the rock. Hematite therefore about 35%. Petrographically, these quartz grains appear to be layered/bedded with an orientation at right angles to the macrolayering, indicating that the hematite has been introduced along a structural (layering) cutting across bedding (possible axial plane of a fold).
Fig 7

PS (x100). Loose packed quartz grains forming sandstone. Fine micaceous hematite sporadically intergranular.

Fig 8

PS (x200). Detail of micaceous hematite in Fig 7.
Complex siliceous/silicified breccia. Apparent ?host rock fragments (?epithermal) silicified, followed by permeation of coarser sparry (?mesothermal) vein quartz between fragments.

Field Note: Not given

This handspecimen slab reveals numerous mid grey, angular to subrounded (apparent breccia) fragments up to 10mm across (30% of the rock), also fragments of milky-white very fine crystalline milky-white “buck” (vein) quartz (40%). These are all randomly disposed through coarser but also milky vein quartz matrix (30%).

Petrographically, the grey fragments and indeed most areas in the paler fragments consist of compact extremely fine (prismatic) crystalline quartz, with a texture consistent with an epithermal genesis. The coarser vein quartz between and incorporating fragments consists of interlocking much coarser sparry/prismatic vein quartz, with dusty inclusions defining vague zoning in some and small incipient drusy void in the cores of some clusters.

The evidence suggests an original breccia, with (country?) rock fragments of uncertain but apparently very fine grained composition, pervasively silicified by early (?epithermal) quartz. Remaining spaces between fragments were then conceivably permeated by coarser sparry vein quartz.
Fig 9  162121
TS. Xnic (x50). Central rounded domains interpreted as silicified breccia fragments, conceivably epithermal silica, incorporating minor fine muscovite. Enveloped coarser sparry quartz (?mesothermal).
Heterogeneous mix of supergene limonite-goethite, variably colloform (forming “nodules”). Also patches and networks of goethite incorporating/cementing quartz grains/fragments, including residual sand? Probably a laterite, but some colloform material may relate to 162099 and to 162102.

Field Note: near 162099

Macroscopically, this sample consists of a heterogeneous aggregate of irregular to somewhat nodular domains of patchy-earthy ‘limonite’ 10mm to 30mm across. There is also incipient nodular to pisolithic extremely fine apparent crystalline goethite and quartz fragments. Objectively, this seems to be a laterite, or lateritised residual soil.

The polished section highlights the detail of the above heterogeneity. About 1/3 of the section area consists of fairly compact, irregularly colloform goethite bodies, up to 20mm size, similar to 162099 and 162102 but generally of a coarser scale and as individual entities rather than ubiquitous. Another 1/3 of the section consists of more irregular, porous, ragged patches and networks of limonite-goethite partly as a cement incorporating subrounded quartz grains (?residual sand).

The remaining third of the section area consists of quartz grains, as scattered subrounded individuals (?residual sand) and finer grains in patches of micromosaic (which seem to represent sandstone fragments).
Figs 10 & 11

162122

PS. (x20). Heterogeneous mix of supergene goethite-limonite, variously irregularly colloform, nodular, scattered quartz grains and quartzose fragments.