

NORWEST MINERALS LIMITED

CO-FUNDED DRILLING REPORT

For the Period

10 May 2019 to 10 September 2019

Norwest Minerals Ltd, Final EIS Technical Report, E 80/4820

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REPORT DATE: 20 September 2019
DISTRIBUTION:

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Appendices as Attachment

Attachment 1

NWM_LoggingCodes.pdf
AW_Verification_List_2019.txt

LIST OF ATTACHMENTS

Attachment 1

Drilling Attachments
AW_drill_2019C.zip

ATTACHMENTS SUBMITTED SEPARATELY

1. Bibliographic Data Sheet

Project Name: Arunta West
Combined Reporting Number:
Tenement Numbers: E 80/04820
Tenement Operator(s): NORWEST MINERALS LIMITED
Report Type: Co-Funded Drilling
Report Title: Norwest Minerals Ltd, Final EIS Technical Report, E 80/4820

Report Period: 10 May 2019 to 10 September 2019
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Map Sheets: *1:250,000 Map Sheet* *1:100,000 Map Sheet*
SF52-14 (MACDONALD) 4651 (MACDONALD)

Target Commodity: COPPER, GOLD
Prospects Drilled: North Dovers
PoW Number: 74078
Geophysical Survey Reg No:
Assays: Yes

Abstract

Location: Tenement E 80/4820 is situated just inside the Western Australia border with the Northern Territory, 530 km west of Alice Springs and 530 km south-southeast of Halls Creek in the Lake Mackay district, Western Australia.

Geology: The Arunta West project area lies within the geologically complex West Arunta Orogen, along the margin of the Central Australian Suture. The region has long been considered prospective for iron oxide copper gold type mineralisation given the presence of large, crustal-scale structures, and the Mount Webb granites' similar characteristics to the Gawler Craton Hiltaba Suite Granites, which host the Olympic Dam deposit. The tenement is positioned between the Palaeozoic Western Arunta Orogen to the north and the Warumpi Complex to the south, with the Mount Webb Shear Zone (Central Australian Suture) dissecting the project.

Work Done: In May of 2019, Norwest Minerals undertook a co-funded diamond drilling project at the high-priority North Dovers geophysical target, with the aim of intersecting the large coincident magnetic and gravity anomaly, a wide variety of lithologies, and interpreted zones of magnetite destruction.

Results: While the drilling returned mixed results for potential IOCG mineralisation, the drill program only tested a small portion of the 8 x 4 km anomaly. The North Dovers anomaly further requires broad spaced drilling to identify structural and magmatic controls on the hydrothermal systems causing mineralisation. Drilling has confirmed that basement is relatively close to surface (which would contribute to making a potential deposit economic), and that the bedrock carries low-level base metal mineralisation.

Conclusion: With these results, Norwest Minerals considers that the North Dovers target retains potential for IOCG-style mineralisation. Norwest Minerals has commenced shallow (100-200 m) reverse circulation drilling at the North Dovers target, to test the shallow, more prospective zones of the geophysical anomaly. The broad spaced drilling will be prioritised over structures visible in the magnetics or over geochemical anomalies. Norwest is continuing to define and test soil and rock chip anomalies from the broader tenement packages to delineate further drill targets for IOCG mineralisation.

2. Introduction

In early 2016, Australian Mines Limited entered into a joint venture agreement with Jervois Mining Limited for a large tenement package in the highly prospective Iron Oxide Copper gold ("IOCG") region of the Lake Mackay district, Western Australia. This report describes the co-funded drilling activities undertaken by Norwest Minerals Limited ("Norwest Minerals", or "Norwest"), formerly a wholly owned subsidiary of Australian Mines Limited, during 2019 at the Arunta West Project ("Arunta West").

The Arunta West Project is currently a joint venture between Norwest and Jervois Mining Ltd comprising three tenements covering 345 km² in the Lake Mackay district. Norwest holds a 51% interest in the three tenements of the joint venture. Additionally, Norwest holds 100% interest in two other tenements that are contiguous with the joint venture area (Figure 1).

The Arunta West project area lies along the margin of the Central Australian Suture within a geologically complex region in the west Arunta Orogen. The region has long been considered prospective for IOCG-type mineralisation, given the presence of large, crustal-scale structures, and the Mount Webb granites' similar characteristics to the Gawler Craton Hiltaba Suite Granites, which host the Olympic Dam deposit. The tenement is positioned between the Palaeozoic Western Arunta Orogen to the north and the Warumpi Complex to the south, with the Mount Webb Shear Zone (part of the Central Australian Suture) dissecting the project.

In May of 2019, Norwest Minerals undertook a co-funded diamond drilling project at the high-priority North Dovers geophysical target, with the aim of intersecting the large coincident magnetic and gravity anomaly, a wide variety of lithologies, and interpreted zones of magnetite destruction. While the drilling showed encouraging signs for potential IOCG mineralisation, the drill program only tested a small portion of the 8 x 4 km anomaly. The North Dovers anomaly requires broad spaced drilling to identify structural and magmatic controls on the hydrothermal systems causing mineralisation.

3. Location and Access Details

Tenement E 80/4820 is situated just inside the Western Australia border with the Northern Territory, 530 km west of Alice Springs and 530 km south-southeast of Halls Creek in the Lake McKay district, Western Australia. The tenement is covered by the Macdonald 1:250,000 map sheet and the Macdonald 1:100,000 map sheet.

Access to the project area is via Desert Road (Kiwirrkurra Road/Gary Junction Road) and station tracks. The nearest airport is in Kintore, Northern Territory, approximately 50 km to the southeast. The nearest community is the Kiwirrkurra community, 35 km to the northwest (Figure 1).

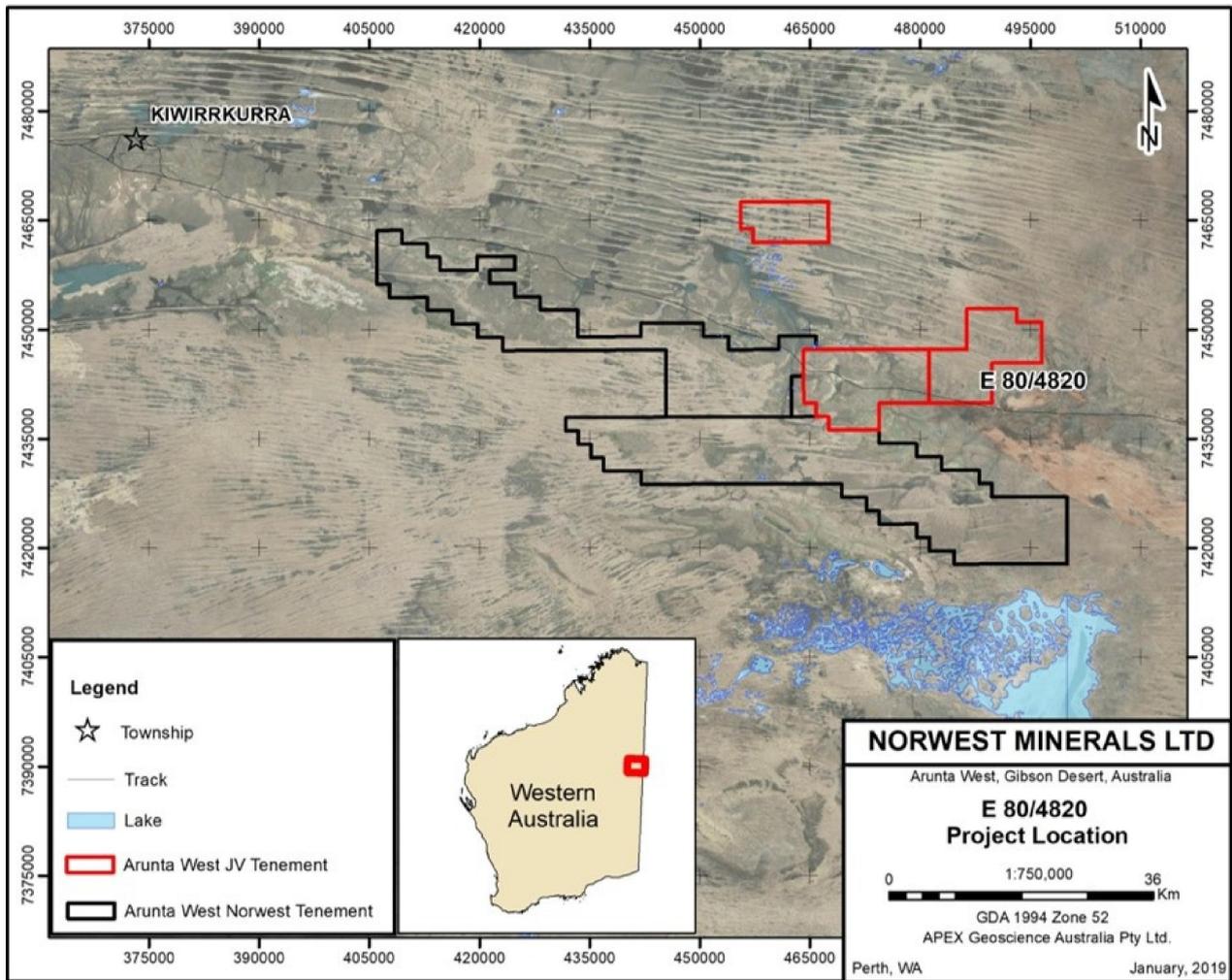


Figure 1: Project location map, tenement E 80/4820.

4. Tenement Details

Tenement Information

Tenement	Grant Date	Expiry Date	Holder	Expenditure (\$)	Area Size (KM2)	Area Size (BLK)
E 80/4820	14/11/2014	13/11/2019	JERVOIS MINING LIMITED	60000	112	40

The Arunta West Project comprises five granted tenements and one application tenement, with Norwest's interest comprising 51% in three exploration licenses (E 80/4820, E 80/4986 and E 80/4987) in a joint venture with Jervois Mining Ltd, and 100% in two exploration licences (E 80/5031 and E 80/5032). The joint venture exploration licences cover an area of approximately 345 km².

5. Geology

5.1 Regional Geology

The Arunta West project area geology comprises Proterozoic Aileron and Warumpi Provinces, Neoproterozoic Amadeus basin sedimentary rocks, Permian Patterson Formation sedimentary rocks that are variably overlain by quaternary aeolian sands. The Proterozoic Aileron Province is part of the North Australian Craton ("NAC"). The Proterozoic Warumpi province post-dates the 1730-1720 Ma Strangways Orogeny, and is juxtaposed with the Aileron Province along the Central Australian Suture ("CAS"). The CAS is a major east-west trending structural zone interpreted as the accretionary margin between the Warumpi Province (interpreted as an exotic terrane) and the NAC (Aileron Province). The suture itself is strongly re-worked, defined by a series of faults and thrusts that include the Desert Bore Shear Zone, Redbank Thrust and Charles River Thrust in the Northern Territory, and the Mt Webb Shear zone in Western Australia (Scrimgeour, 2013b). The Aileron Province is Paleoproterozoic NAC formed from 1860-1700 Ma and includes granitic rocks of the Carrington Suite which intruded the Lander Rock Formation from 1805-1770 Ma. A mafic event occurred ca 1635 Ma with the intrusion of the Andrew Young Igneous complex (gabbro, tonalite and diorite) east of the Western Australia-northern Territory border (Scrimgeour, 2013a).

Rocks of the Warumpi Province are aged 1700-1600 Ma, and include 1660-1640 Ma metasedimentary successions and several magmatic suites (1680-1660 Ma, 1640-1630 Ma, 1610-1600 Ma). The province is divided into three domains; the westernmost (of relevance to this project) is the Lintore Domain that extends to the Mount Webb and Pollock Hills areas in Western Australia. This domain primarily comprises granites of 1690-1685 Ma age (including the Ininti Granite; a strongly foliated syenogranite), and a younger supracrustal succession that includes felsic, intermediate and mafic volcanic's (Walungurru Volcanic's) and a quartzite-phyllite unit (Sandy Blight Quartzite) that have been metamorphosed to greenschist facies. The Mount Webb Granite intrudes the Warumpi Province at its western end. This suite has been dated at 1640 Ma and was interpreted as co-magmatic with the Pollock Hills formation (metadacitic and metarhyodacitic rocks); however recent dating of these volcanic's indicates a depositional age of ca 1670 Ma (Joly et al. 2013).

The regional geology of the Arunta West Project is shown in Figure 2.

5.2 Local Geology

The Project region has long been considered prospective for IOCG-type mineralisation given the presence of large, crustal-scale structures, and the Mount Webb granites' similar characteristics to the Gawler Craton Hiltaba Suite Granites, which host the Olympic Dam deposit. The Arunta West Project is 100 km west of the Bumblebee polymetallic discovery (IOCG/volcanogenic massive sulphide, "VMS", style mineralisation) by ABM Resources and Independence Group NL, and 23 km east of the Pokali Cu-Au prospect (IOCG-affinity). Bumblebee has returned drill intercepts on the order of 5-7 m at 2-3.5 g/t gold and 1-3.5% Cu, whereas Pokali has historic intercepts including 36 m at 0.42% Cu and up to 0.55 ppm Au (Joly et al., 2013).

Tenement E 80/4820 hosts the North Dovers anomaly (WA-01), which is currently Norwest's highest priority target for IOCG mineralisation. A joint venture between Aurora Gold Pty Ltd and BHP Minerals Pty Ltd first identified this coincident magnetic-gravity-radiometric geophysical anomaly in the mid-1990's. The North Dovers prospect is considered as a potential intrusive/IOCG target based on its favourable structural setting near a major crustal structure and its large coincident gravity and magnetic responses that are interpreted to have coincident causative sources possibly analogous to Olympic Dam or Ernest Henry. Property geology at the Arunta West project is shown in Figure 3.

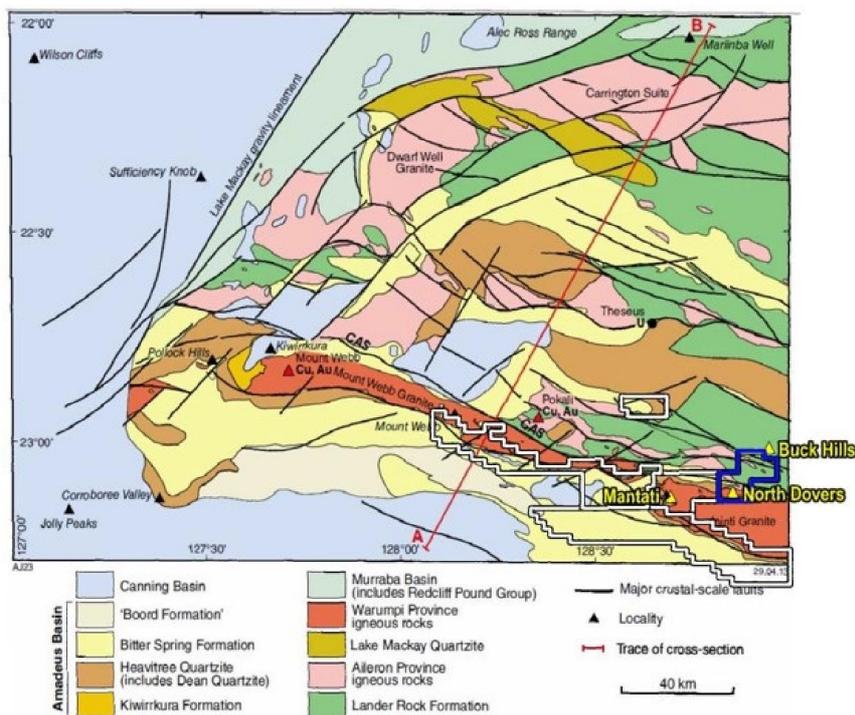


Figure 2. Regional geology of the Project area (After Joly et al., 2013).

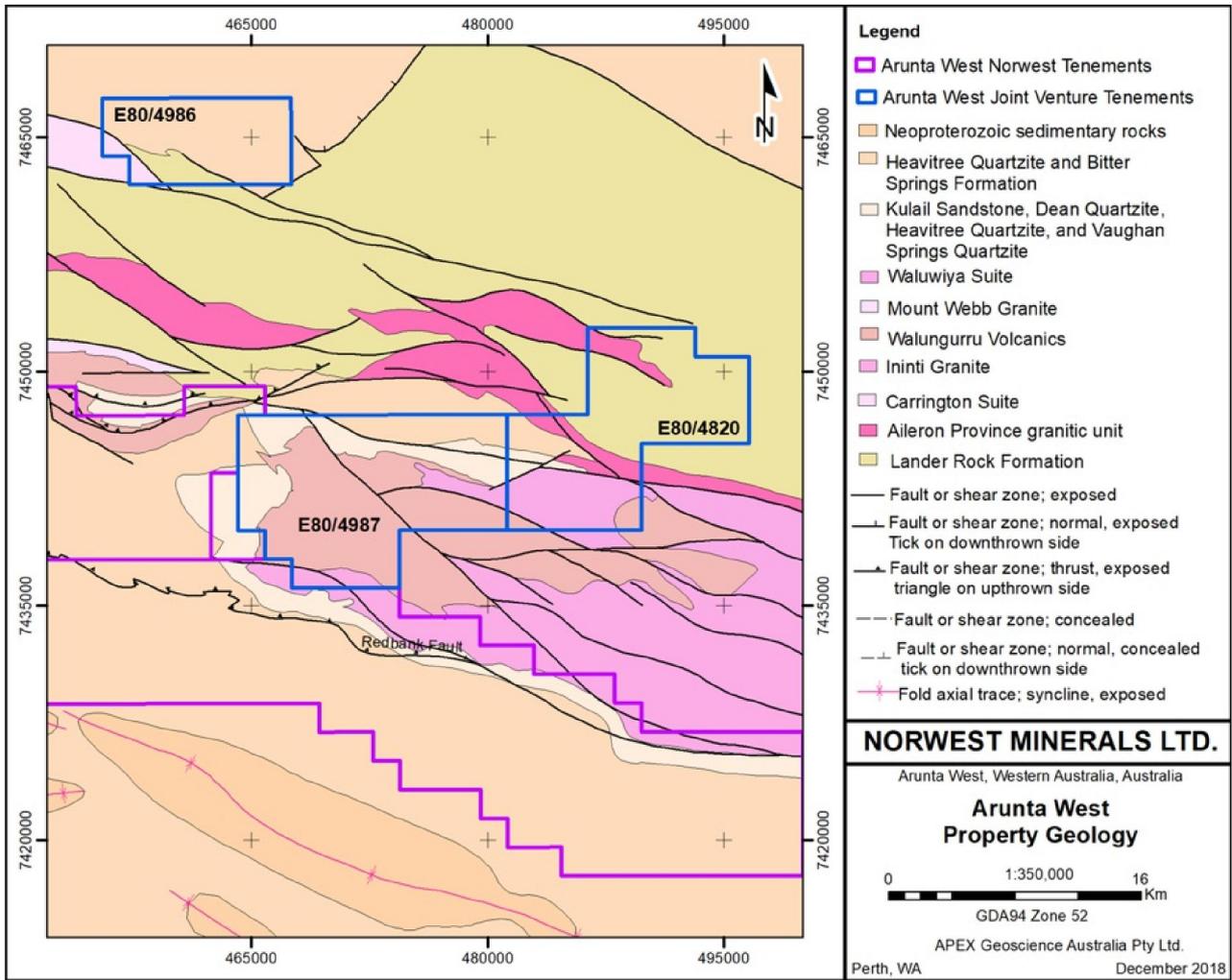


Figure 3. Arunta West Property Geology.

6. Previous Exploration

The following information is derived from the 2016 preliminary data review conducted by Exploration & Discovery Services Pty Ltd. on behalf of Australian Mines Limited:

Aurora Gold (WA) Pty Ltd (& BHP Minerals Pty Ltd) – 1996-2000.

- Four licences were held initially which was expanded to over 15, covering more than 2,800 sq. km
- BHP Minerals joint ventured into the project,
- The focus of exploration was IOCG mineralisation,
- Several prospects were investigated, but the Pokali mineralisation was the primary focus,
- The North Dovers target – a coincident gravity-magnetic anomaly with probable structural associations – remained the main interest for BHP. Unsettled access arrangements with the traditional owners prevented effective exploration and the project was surrendered.

Ashburton Minerals Ltd (subsequently Platypus Minerals Ltd & Bestgold Investments Pty Ltd) – 2005-2015.

- Ashburton Minerals farmed-in to several licences originally held by Bestgold, acquired more tenements, and undertook the role of project manager,
- At its maximum, the tenement group (combined group no. C 33/2008) covered at least 1,700 sq. km,
- The licences covered several of the prospects formerly explored by Aurora/BHP, but not the North Dovers target,
- Exploration focused on the Pokali prospect, with good drill results of thick copper(-gold) mineralisation, but (evidently) not economic,
- In 2012-2013 Ashburton surrendered most of the project, including Pokali, when it purchased Platypus Resources, changed its name, and shifted focus to projects in Peru,
- At about the same time, however, Ashburton applied for E 80/4820 over the North Dovers prospect (which had become available) and retained that single licence until late 2015 when it was sold to Jervois Mining Limited.

Riedel Resources Limited (operator) and Audax Minerals Pty Ltd (licence holder) – 2009-2011.

- Audax Minerals held two small adjoining licences close to the Northern Territory border (licence group C 45/2011),
- The western licence (E 80/4167) covered the North Dovers target of Aurora/BHP,
- Riedel conducted a considerable amount of desktop work, including geophysical reprocessing and interpretation but was unsuccessful in gaining adequate access for on-ground activities,
- A single (surrender) report was submitted, for the period 15/06/2009 to 09/12/2011.

Toro Energy Ltd – 2005-2015.

- Toro held a large suite of licences to the north and south of Lake Mackay from about 2005 until recently. A few are still held in the name of Toro subsidiary Nova Energy. Much of the rest of this area is now under licence to Agrimin Potash,
- E 80/4986 (currently held by Jervois Mining Ltd) was covered by the southernmost of Toro's licences, but was peripheral to its main focus area. This southern area was amongst the first to be relinquished,
- Toro's reported focus was uranium and copper-gold, though the former appears to have been the principal target.

Australian Mines Limited (AUZ) – 2015-2017

- AUZ entered into a joint venture agreement with Jervois Mining Ltd over E 80/4820 in May 2016,
- Negotiations regarding land access with the native title holders, Tjamu Tjamu, began in May 2016 with an agreement signed on 19 October 2016 and sent to the WA Department of Aboriginal Affairs for authorization,
- A geophysical review of the Arunta West project was conducted by Southern Geoscience Consultants (SGC), as well as a compilation of historic data. A number of anomalies were identified including the high priority North Dover anomaly,
- AUZ was granted approval for a 1,000 m co-funded diamond drill hole,
- Haines Surveys carried out a ground gravity survey on behalf of AUZ over portions of E 80/4820 in October 2017, confirming the presence of anomalies WA-01 and WA-03.

7. Current Exploration

Arunta West and the larger region, as a whole, has seen very limited exploration owing to the lack of geological understanding, its remote location, the presence of significant overburden, and the difficulty of infrastructure and access. The area has renewed IOCG exploration since Geoscience Australia (Schofield et al. 2013) conducted a review of the geothermal and uranium prospectivity of southern Northern Territory, which extended to Arunta in Western Australia, and encompassed Australian Mines' North Dovers prospect.

The North Dovers prospect was identified as a potential intrusive/IOCG target based on its favourable structural setting near a major crustal structure and its large coincident gravity and magnetic responses that are interpreted to have coincident causative sources, possibly analogous to Olympic Dam or Ernest Henry. The geophysical anomaly was confirmed by the 2017 ground gravity survey and interpretation commissioned from Southern Geoscience.

To further the North Dovers (WA-01) prospect, diamond drilling was planned and completed to optimally intersect the key modelled gravity bodies, with the intent to intersect various lithologies and interpreted magnetite destruction zones. The geophysical modelling and magnetic inversion modelling were completed by Southern Geoscience Consultants.

8. Current Exploration Summary

8.1 Drilling

Water Bore:

A water bore (NDWB1901) was drilled to provide a source of fresh ground water required for the diamond drilling exploration program. The water bore hole was drilled at the site of the BHP RC hole (NDVRC01); the pre-existing hole could not be located so a new hole was drilled from surface. The bore was drilled to 110 m using a PCD bit and roller to create the bore hole. PVC casing was inserted in the top 80 m, slotted between 50-70 m. The bore is packed with gravel and sealed with bentonite. No down hole samples or surveys were collected for analysis.

Diamond Drilling:

Diamond Drilling was conducted to test the large coincident magnetic/gravity geophysical anomaly identified as the North Dovers IOCG prospect (BHP 1999). North Dovers is a 6 mGal gravity, 1,000 nT magnetic anomaly that extends over a 4 x 8 km area of the Aileron Province prospective for IOCG deposits (GSWA). Three, HQ to NQ diameter diamond holes were drilled by contractor Terra Drilling Pty Ltd between May 17 and June 5, 2019, for a total of 1,525.77 m (Table 1, Figure 4). Drilling was completed using a KWL 1600 diamond drill rig.

Table 1: Summary of 2019 drilling at North Dovers prospect.

Hole Id	Type	Easting (GDA94z52)	Northing (GDA94z52)	Elevation (m)	Maximum Depth (m)	Dip (I)	Azimuth (I)	PCD (m)	HQ3 (m)	NQ2 (m)
NDVRC01	WB	484933	7445116	450	110	-90	0	110	-	-
NDD1901	DD	485001	7443092	466	696.97	-80	180	-	359.6	335.4
NDD1902	DD	485008	7443115	466	624.4	-55	360	-	428.4	196
NDD1903	DD	484996	7443887	460	204.4	-80	360	-	204.4	
TOTAL	-	-	-	-	1,635.77	-	-	110	992.4	531.4

All core was cut to geologically defined intervals and submitted to Australian Laboratory Services Pty Ltd (ALS) Perth for analysis. The core underwent 25 g Aqua regia (partial) digest with multi element ICP-AES/MS finish to cover the broad suite of potentially anomalous elements. The elements analysed under the multi element analysis comprised Au (0.001ppm), Bi (0.01ppm), Hg (0.01ppm), Sb (0.05ppm), Se (0.2ppm), Sn (0.1ppm), Te (0.01ppm), Th (0.05ppm), Tl (0.02ppm), U (0.05ppm), W (0.05ppm), Ag (0.1 ppm), Al (0.01%), As (0.5ppm), B (1ppm), Ba (1ppm), Be (0.1ppm), Ca (0.01%), Cd (0.2ppm), Ce (1ppm), Co (0.5ppm), Cr (1ppm), Cu (0.2ppm), Fe (0.01%), Ga (1ppm), K (0.01%) La (1ppm), Mg (0.01%), Mn (1ppm), Mo (0.5ppm), Na (0.01%), Ni (0.5ppm), P (10ppm), Pb (0.5ppm), S (0.01%), Sc (0.1ppm), Sr (1ppm), Ti (0.01%), V (0.5ppm) and Zn (1ppm). Rhodium 30 g Fire assay was also conducted on 12 samples from NDD1901 at selected intervals where Rhodium was detected via handheld XRF (Rhodium in tube of instrument). These rhodium assays are pending.

Results

NDD1901

Drill hole NDD19001 was targeted at the core of the coincident magnetic-gravity geophysical anomaly defining the North Dovers Prospect. The hole was collared into 1.4 m of loosely consolidated quaternary sand cover with a minor conglomerate at the basal contact with Proterozoic basement. Below this, is a unit of diorite with gradually varying grain size, texture and mafic mineral composition. This unit has gradational and sharp contacts with a monzo- to syeno-granite becoming dominantly biotite-syenogranite downhole (Figure 5). These units were variably altered to magnetite-chlorite and hematite-sericite-chlorite varying relative to structural features. Alteration is generally stronger but more localised in the diorite and more pervasive and diffuse in the underlying granite (Figure 6).

Sub-units within the syeno-granite are very coarse grained with granophyric intergrowths of quartz and K-feldspar. These are associated with increased alteration (hematite-sericite-chlorite). Some of these altered zones have relatively high chloride indicating the presence of halides. There are also sub-units of intermediate to mafic porphyry (Figure 7). Pyrite is weakly disseminated in the strongly altered units and discrete veins contain minor pyrite, and chalcopyrite mineralisation (trace percentages). It was felt that the magnetic and gravity anomalies were explained by the change from the magnetic diorite to the hematite altered granite.

There were encouraging IOCG characteristics in the first drill hole; however, there is a lack of brecciation and broad zones of strong mineralisation.

NDD1902

Drill hole NDD1902 was collared from the pad of NDD1901 (only two pads were cleared) and drilled with a -55° dip toward the north. The first hole was uniformly altered with minor structure noted to be sub-parallel with the core axis. The rationale of drilling NDD1902 to the north was that NDD1901 noted the right alteration (magnetite then hematite) but was lacking the structure/brecciation and mineralising fluids. The large break in the gravity and magnetics (between the highs) was interpreted to be a deep crustal structure cutting through the geophysical anomalies (Figure 4). As such NDD1902 was drilled to the north with the hope of intersecting more breccia and fluid flow

caused by this interpreted fault. This was interpreted as the source of alteration-causing fluid and weak mineralisation seen in NDD1901.

NDD1902 was collared into a magnetic diorite, with minor localised alteration around minor structures coinciding with minor pyrite and chalcopyrite (Figure 8). At 200 m depth, the hole intercepted a sedimentary sequence of quartzite, meta-sandstone, meta-siltstone, meta shale and graphitic shale (Figure 9). The graphitic shale contained extensive pyrite and minor disseminated chalcopyrite. At 320 m depth the sedimentary sequence had a sharp boundary with a weakly hematite-altered syeno-granite. Alteration was weaker downhole and decreased with depth. The hole was terminated before intercepting the targeted geophysical structure.

NDD1903

NDD1903 (Like NDD191) was designed to test a co-incident gravity/magnetic inversion anomaly on the north side of the west-trending geophysical anomaly near the core of the North Dovers prospect. The top 22 m of NDD1903 comprised loosely consolidated, strongly weathered sand and clays that represent a quaternary cover sequence. Beneath the cover is predominantly strongly magnetic diorite with narrow alteration (hematite-sericite-chlorite) and mineralisation (pyrite-chalcopyrite) adjacent to brittle structures. Mineralisation was observed to be not strong enough to be significant, and the gravity anomaly was explained by the denser diorite unit, so the hole was terminated at 204.4 m.

Structural Observations

The core is dominated by brittle structures filled with quartz or coarse fractionated felsic intrusive with epithermal textures. These features generally dip moderately SSW, co-planar with contacts and observed structures (Figure 10). Late hematite-carbonate filled veins are predominantly steeply dipping in various directions in a pattern resembling radial extension.

Assays

Assays of the drillcore did not return significant gold or base metal mineralisation from any of the three drilled holes. There was moderate enrichment (up to 500 ppm) of copper in zones of strong hematite alteration from holes NDD1901 and NDD1902 (Figure 11), and one minor zone of Zn enrichment in diorite from hole NDD1902. Best intersections from the drilling are presented in Table 2.

Table 2: Best intersections from diamond drilling at North Dovers prospect.

Hole ID	Depth From (m)	Depth To (m)	Interval (m)	Cu (ppm)	Zn (ppm)
NDD1901	471.14	471.54	0.4	366	93
NDD1902	132.00	132.85	0.85	86	505
NDD1902	179.00	180.00	1	521	133
NDD1902	246.9	248.12	1.22	250	10

Interpretation

The alteration and mineralisation at North Dovers appear to be related to the fractionation and complex crystallisation history within the intrusive defining the anomaly. Textural evidence indicates this occurred at relatively high crustal level (epithermal) and halides indicate that the fluid mixed with a saline basinal fluid that was probably near surface. This has a lot of the characteristics of an IOCG type system however no major breccia feature has been intercepted to date.

The key features of the north Dovers working geological model are summarized as follows, and in Figure 12:

- Andesite-diorites of the Walungurru volcanics are intruded, close to coevally, by biotite-syenogranite of the Mt Webb suite,
- The granite extends to near-surface, mixing with saline basinal fluids and crystallising late-phase in a brittle-epithermal environment,
- Intermediate porphyries and lamprophyric rocks drive magmatic-hydrothermal systems, resulting in extensive, preferential hematite-sericite-chlorite alteration within the brittle syeno-granite,
- Neo-Proterozoic sediments overlay bedrock lithologies and are deformed within the basement.

Alteration at North Dovers included early, distal reduced Fe-oxide alteration (magnetite-chlorite-leucoxene), late and proximal oxidized Fe-oxide alteration (hematite-sericite-chlorite), and late carbonate-hematite alteration along fractures. Apart from the hematite alteration and IOCG characteristics, there is evidence for mineralisation occurring via chalcopyrite (observed mainly in andesite), disseminated pyrite in altered and fractured granite, and minor sphalerite.

A comparison of the North Dovers target model at the conclusion of the 2019 diamond drilling with the Olympic Dam model is provided as Table 3.

Table 3: Comparison of the Olympic Dam and North Dovers mineralisation and geological models.

Olympic Dam	North Dovers
6 x 6 km mag/grav anomaly (breccia complex is 6 x 4 km)	4x8km mag/grav anomaly
17 mGal gravity, 1,600 nT magnetic	6 mGal gravity, 1,000 nT magnetic
1593.87 Ma granite intruded, 1589.91 Ma alteration	Inferred mid Proterozoic age (1640ma assuming Mt Webb suite).
Copper source interpreted as Roopena Basalt (copper-depleted continental tholeiite or equivalent)	No obvious mafic or ultramafic copper source nearby.
Roxby Downs granite, A-type, quartz-poor syenogranite is comagmatic with mineralisation intruded at high crustal levels	I-type biotite-syenogranite gradational into coarse fractured felsic sub-units intruded at high crustal level.
Breccia complex mix of magmatic and tectonic processes coeval with granite	No breccia complex, identified to date.
Mafic and felsic intrusives drive hydrothermal system and create mineralised breccia in diatreme and craters	Mafic to intermediate porphyries and biotite lamprophyres indicate deep seated magmatic system, timing uncertain relative to granite.
Magma fluid mixing causes majority of mineralisation, extends into sedimentary sequences overlying intrusive	Evidence of magma fluid mixing and crystallisation in the presence of volatiles and halides.
Unconformably overlain by Stuart Shelf sediments (late Proterozoic to Cambrian)	Overlying sediments interpreted as unconformable late Proterozoic sequence (Heavitree Quartzite), though have elevated copper in patches.

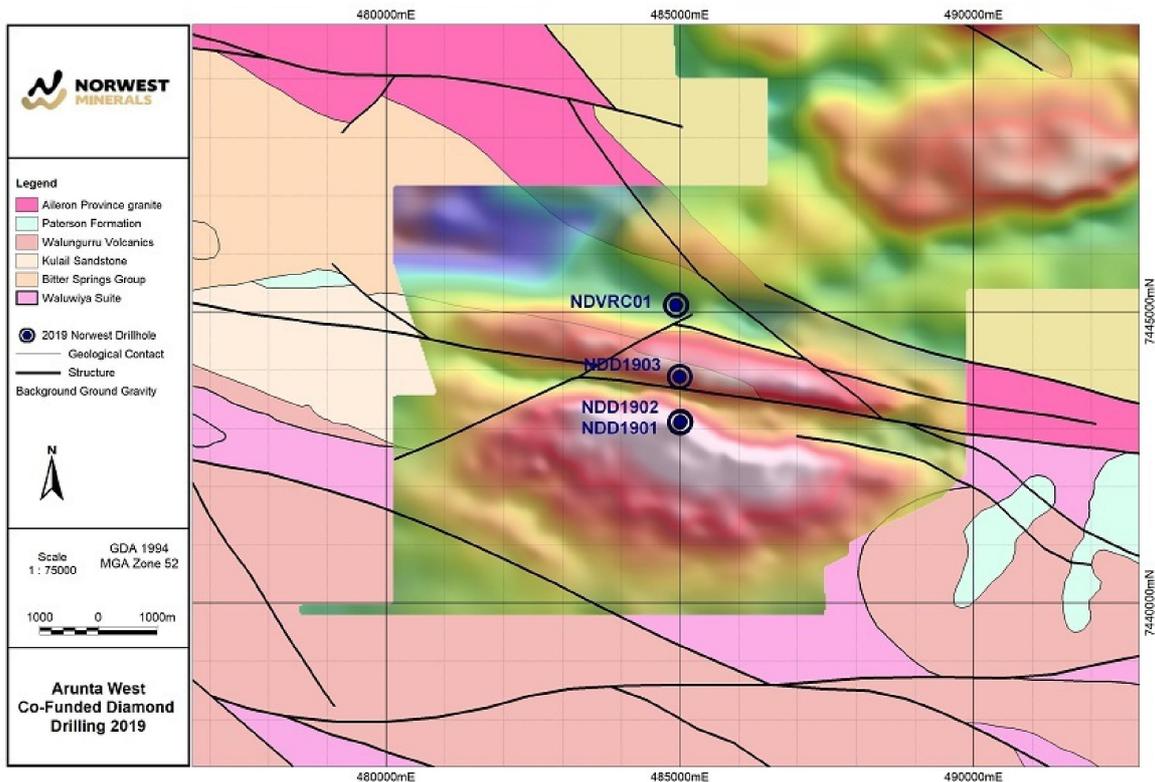


Figure 4: Collar locations of 2019 co-funded drilling at the Arunta West Project.

Basement rock groups NDD1901

Biotite syenogranite- Varies in composition, texture and grain size, gradational to sharp boundaries with more mafic sub units.



Diorite- May be early magma segregation or recrystallised andesitic enclaves within granite (relatively sharp but some gradational margins with granite, no sheared margins)



Figure 5: Dominant basement rock groups identified downhole in NDD1901.

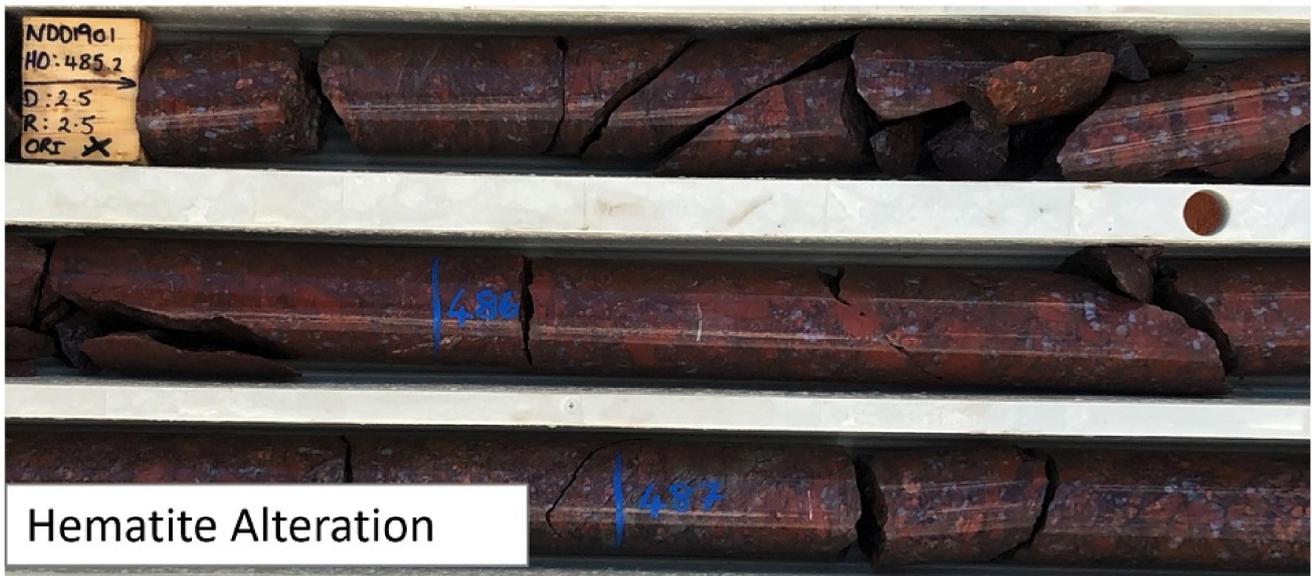


Figure 6: Hematite altered syeno-granite in NDD1901.



Figure 7: Mafic-intermediate porphyry in NDD1901.

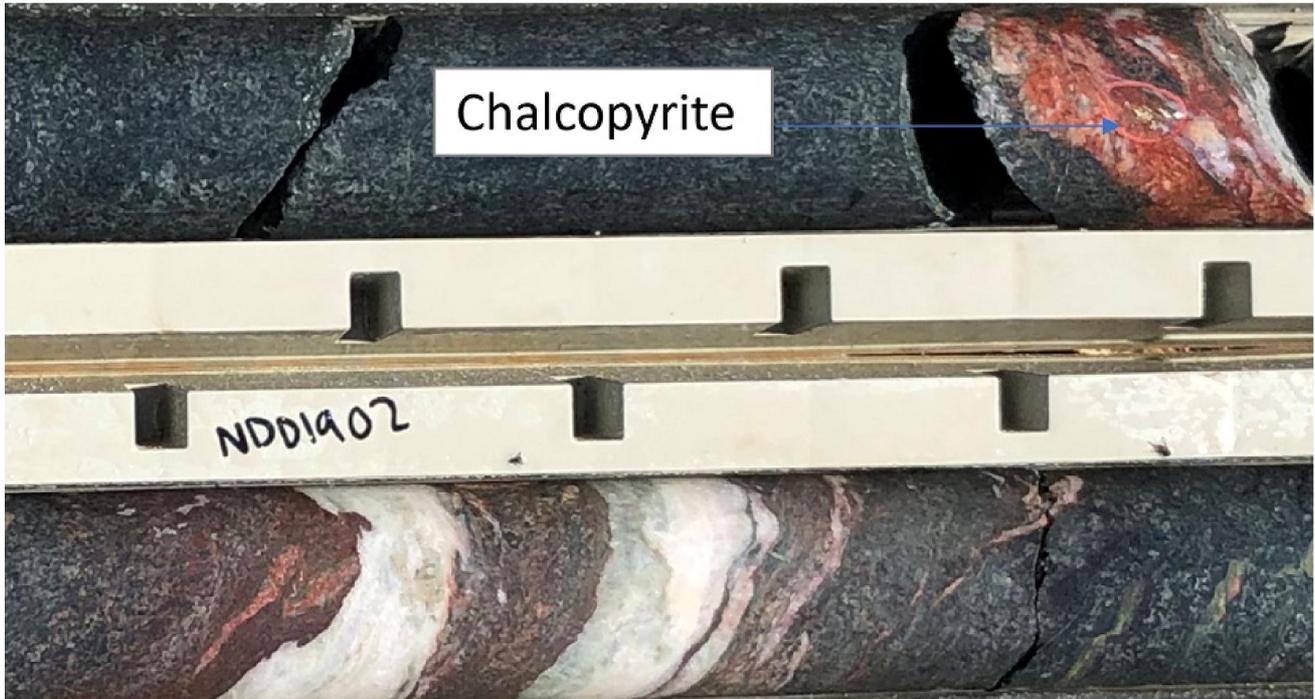
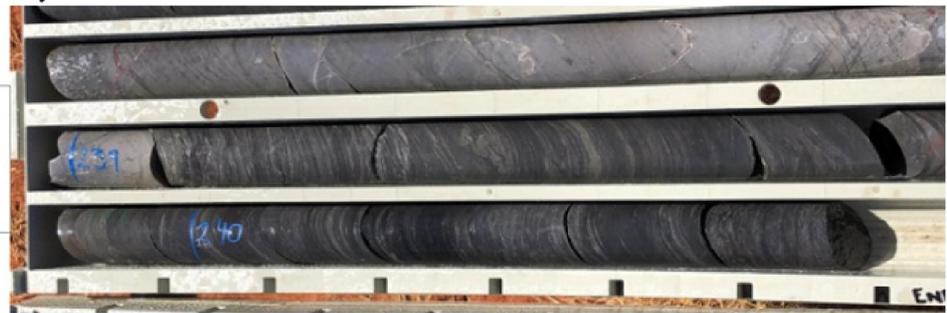


Figure 8: Chalcopyrite and hematite alteration within diorite in hole NDD1902.

Sedimentary units NDD1902

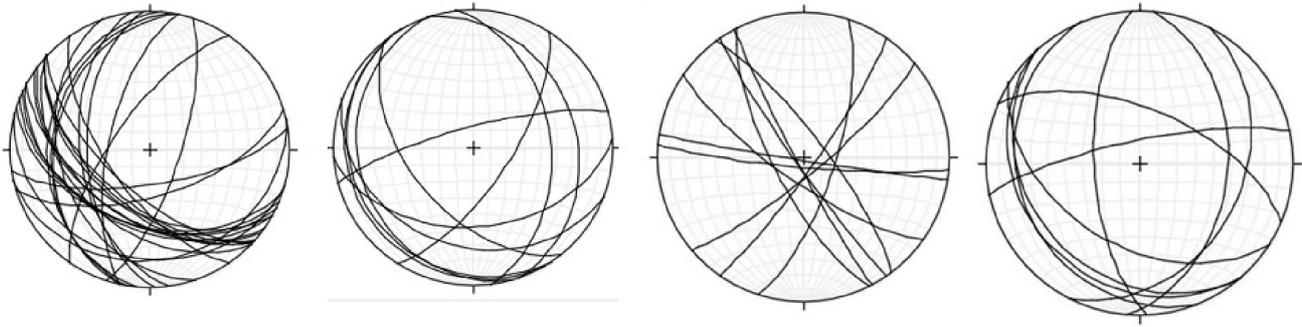
Graphitic Shale- pyrite is abundant and chalcopyrite is also present. Sharp boundary with granite.



Quartzite-metasandstone/siltstone interbedded with patchy hematite alteration. Conformable with shale, sharp boundary with granite.



Figure 9: Sedimentary units intersected in NDD1902.



Vein and late felsic orientation

Contacts (andesite to granite)

Late hematite-carbonate fracture fill

Fault and shear zones

Figure 10: Stereo-net diagrams of structural features encountered downhole.

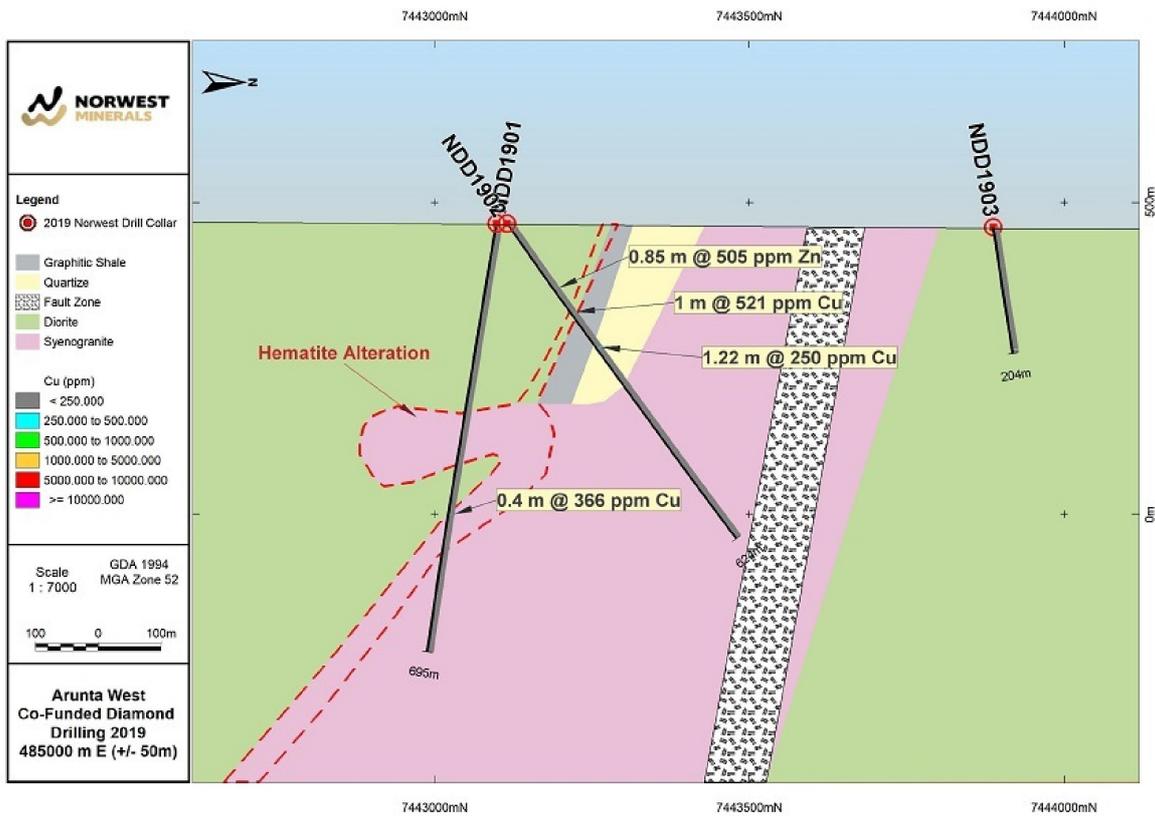


Figure 11: Cross section of 2019 co-funded drilling and best intersections.

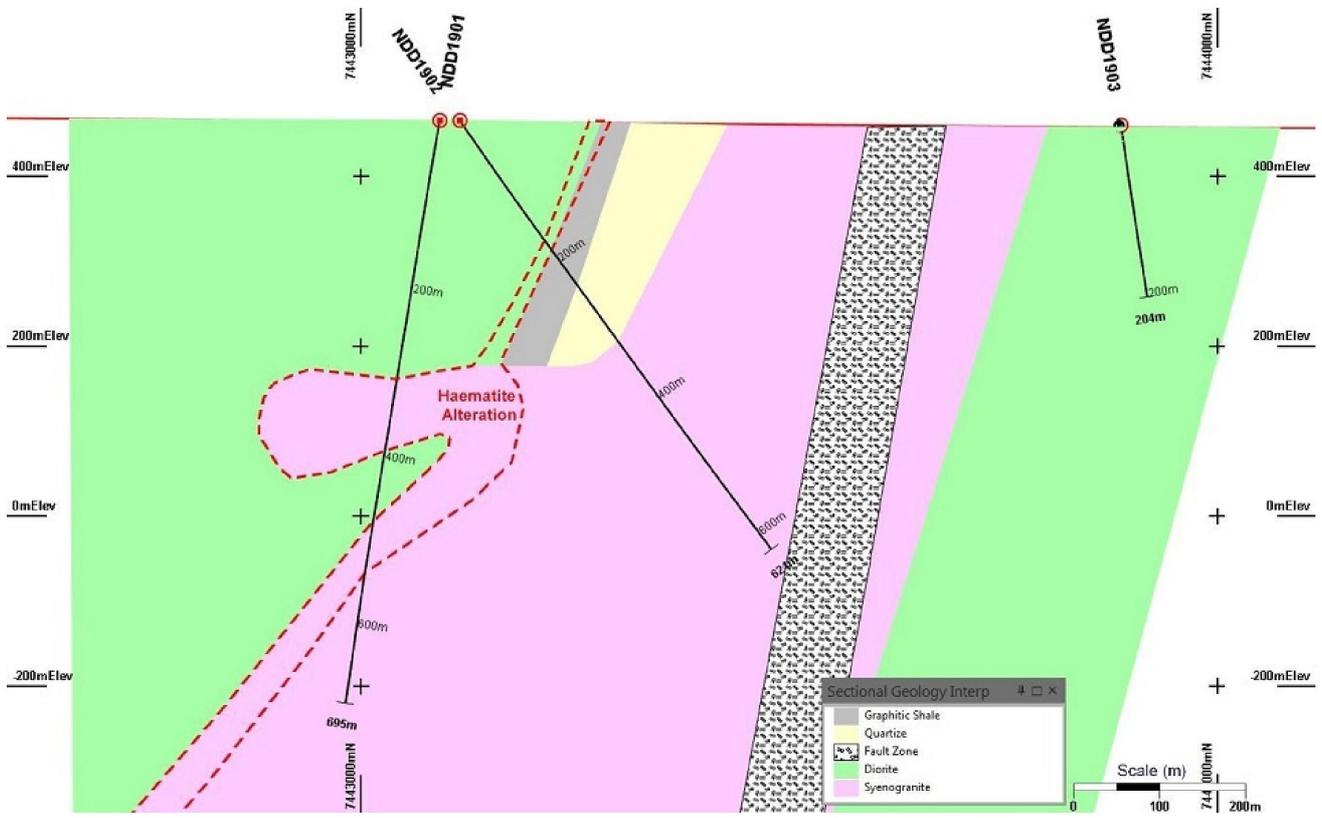


Figure 12: Cross section of the working geological model for the North Dovers target.

9. Conclusion and Recommendations

In May 2019, Norwest Minerals Ltd began drilling at the highly prospective North Dovers IOCG target; a coincident magnetic-gravity anomaly.

Drilling has determined:

- The depth to the Proterozoic basement is shallower than was expected, though the contact with the overburden was not horizontal (over 195 m of variation within the drilled area),
- There is a relatively high concentration of magnetite in the intersected units (could be magmatic or an alteration product) which could explain the magnetic anomaly, and a portion of the gravity anomaly, and
- The encountered diorite is denser and more magnetic than expected for the granite, partly explaining the gravity anomaly.

While the North Dovers anomaly is of significant size (8 x 4 km) and the region has many structural similarities with major IOCG deposits, the drilling at North Dovers delineated some characteristics of the bedrock geology which could limit the potential of there being a significant IOCG deposit in the area. For example, the lack of significant brecciation, the lack of soil anomalies above the target despite the shallow basement, and the lack of mafic or ultramafic units in the area which could source significant copper. Furthermore, the depth of the hydrothermal system at North Dovers (chalcopyrite-pyrite zone) is deeper than a more economically significant IOCG setting (bornite-chalcocite zone).

However, this preliminary drilling has only tested a small portion of a very large anomaly, and has confirmed that basement is relatively close to surface (which would contribute to making a potential deposit economic), and that the bedrock carries low-level base metal mineralisation. With these results, Norwest Minerals considers that the North Dovers target retains significant potential for IOCG-style mineralisation.

Norwest Minerals has commenced shallow (100-200 m) reverse circulation at the North Dovers target, to identify the structural and magmatic architecture which controlled the hydrothermal system causing mineralisation. The broad spaced drilling will be prioritised over structures visible in the magnetics or over geochemical anomalies. Norwest is continuing to define and test soil and rock chip anomalies from the broader tenement packages to delineate further drill targets for IOCG mineralisation.

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11. Appendices

No Appendices as text are available