GROUP ANNUAL REPORT FOR EXPLORATION LICENCES 24915, 25146, 30729, 30730, 30731, 30732, 30733, 30739 AND 30740

GR485

LAKE MACKAY PROJECT

FROM 13 OCTOBER 2018 TO 12 OCTOBER 2019

Holder	Prodigy Gold NL
Operator	Independence Group NL
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	Central Land Council- digital
	Independence Group NL- digital

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1 Abstract

The Prodigy Gold NL (PRX) tenements EL24915, 25146, 30729, 30730, 30731, 30732, 30733, 30739 and 30740 are located approximately 400 km west-northwest of Alice Springs in the western Aileron Province of central Australia. EL24915 was granted on 23rd September 2013 and the rest of the tenements were granted on 13th October 2017.

These tenements form part of the Lake Mackay joint venture with Prodigy Gold NL (PRX), with ownership of the project split 70 % to IGO and 30 % to PRX. Each party contributes their share of the project expenditure. All on ground exploration since the tenement was granted has been conducted by IGO.

Exploration during the reporting period consisted of sacred site clearance surveys, collection of surface geochemistry (635 soil samples, 102 lag samples and 11 rock chip samples), collection of airborne electromagnetic (AEM) data (8157.1-line km), collection of ground electromagnetic data (1658 stations of moving loop electromagnetic (MLEM) survey) and drilling of 43 Reverse Circulation (RC) drill holes on which Down Hole electromagnetic (DHEM) survey was completed on 34.

2 Location, Title History, Physiography and Access

The tenements that make up GR485 are located 400 km west-northwest of Alice Springs in central Australia on Aboriginal Freehold Land (Figure 1). EL24915 was granted on 23rd September 2013 and the rest of the tenements were granted on 13th October 2017.

These tenements form part of the Lake Mackay Project joint venture with IGO controlling 70 % and being the operator and PRX controlling 30 % and funding their share of the project expenditure.

Most of the project area is dominated by sandy spinifex plains. An extensive east-west oriented dune field covers 70 % of the project area. Stands of scrubby mulga occur in areas with shallow sand cover.

Access to the western tenements from Alice Springs is north via the Stuart Highway, then west along the Tanami Road, before heading west at Gary Junction (Kintore) Road towards Kintore before using temporary cross-country tracks. Access to the eastern tenements is again via the Stuart Highway and Tanami Road but continues north before turning west at the Newhaven Access Road and taking a track heading south from Emu Bore.

3 Geological setting, exploration history and exploration rationale

3.1 Regional and local geology and mineralisation

The Lake Mackay Project is located at the southern margin of the Paleoproterozoic North Australian Craton, straddling the Warumpi Province to the south, and the Aileron Province to the north. These provinces are separated by the Central Australian Suture (CAS), a major deep crustal-scale structure comprising a series of east–west trending major faults and shear zones (Shaw et al 1992, Scrimgeour et al 2005a, Selway et al 2009, Joly et al 2013).

Outcropping geology across the project area is typically poorly exposed. The terrain comprises low hills of poorly exposed Paleoproterozoic metasedimentary rocks and intrusions, commonly covered by aeolian sand plains and dunes (Close et al 2005a). In some locations, Paleoproterozoic rocks are overlain by Neoproterozoic and Paleozoic sedimentary rocks of the Amadeus and Ngalia basins.

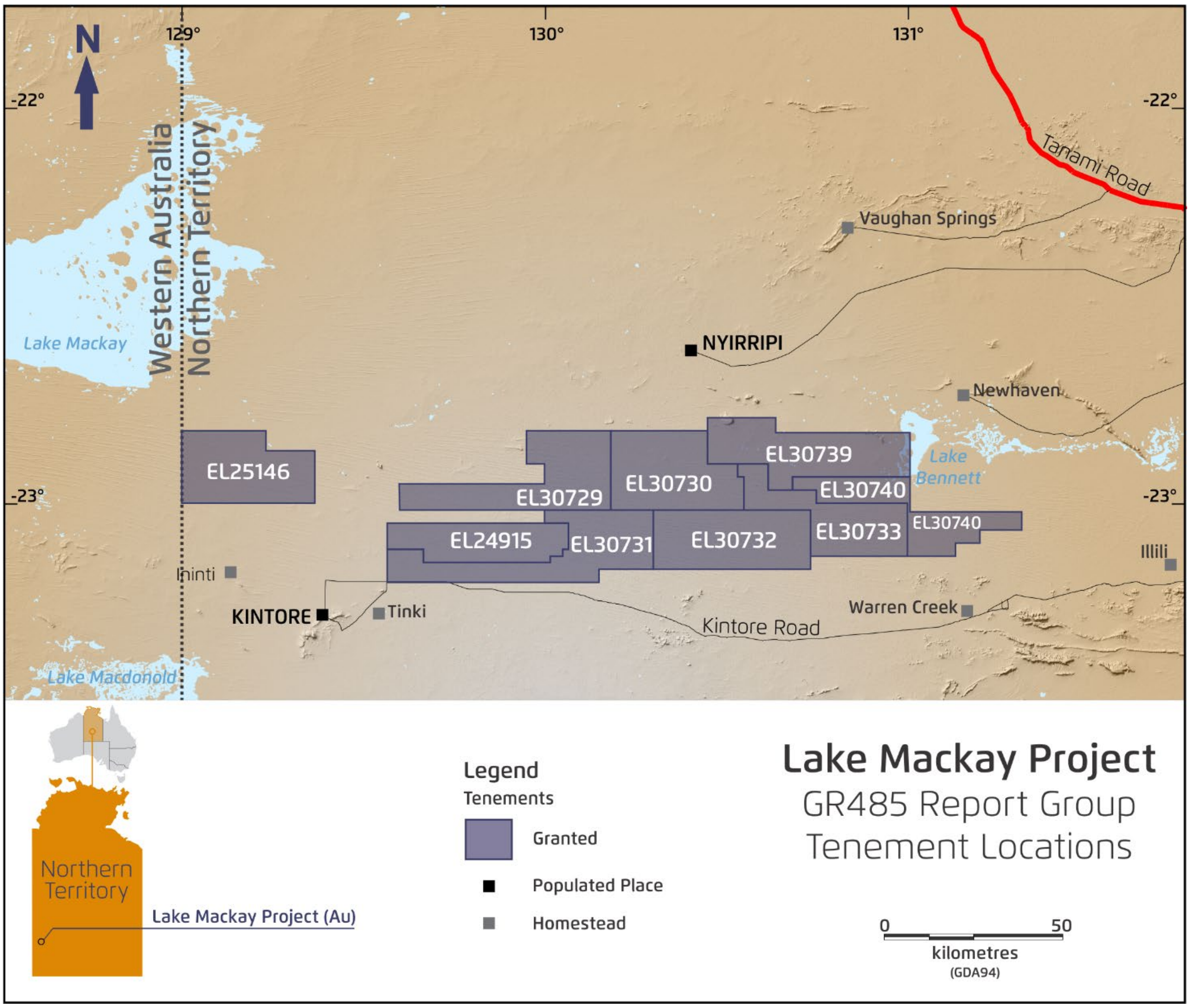

Figure 1: GR485 location map

Polymetallic base metal and gold mineralisation (Cu-Au-Ag-Zn-Pb-Co) at Grapple and Bumblebee (Winzar 2016, Reno et al 2018, McGloin et al 2019), and more recently at the Phreaker and Scuba prospects (Prodigy Gold, ASX Release, 17 July 2019), are located in the western Aileron Province. The ore-forming processes for these prospects remain poorly understood (Reno et al 2018, McGloin et al 2019). Nonetheless the observation of weakly magnetic pyrrhotite directly associated with base metal sulfides and precious metals (Cu-Au-Ag-Co-Zn-Pb), and anomalous enrichment in several elements (As, Bi, Te, Sn, Cd, Se, Sb) provides empirical geophysical and geochemical pathfinders that can be used to explore for similar mineralisation regionally.

The host rocks to the sulfide and gold mineralisation are ca 1.84–1.81 Ga metamudstone and metasandstone of the Lander Rock Formation, interpreted as a turbidite sequence (Close et al 2004, Close et al 2005a, Hollis et al 2013, McGloin et al 2019, Kositcin et al 2019). These siliciclastic metasedimentary rocks are strongly deformed and variably metamorphosed and interpreted to be lateral equivalents of similar metasedimentary rocks in the Tanami, Warramunga and Davenport Provinces (e.g., Claoue-Long et al. 2008); a regional lithostratigraphy is not however established because of a lack of continuous outcrop, few marker horizons, and the high metamorphic grade and deformation of these rocks in many locations.

Between ca 1.81–1.70 Ga, this metasedimentary succession was intruded and metamorphosed by several phases of magmatism (Scrimgeour 2013, Hollis et al 2013, Kositcin et al 2019). Such intrusions include phases of the loosely defined ca 1.81–1.77 Ga felsic Carrington Suite and the ca 1.80 Ga Du Faur mafic Suite (Close et al 2005b, Edgoose et al 2008, Kirkland et al 2009, Scrimgeour 2013, Hollis et al 2013). The Du Faur Suite encompasses metadolerite and metapyroxenite sills (typically recrystallized to hornblende amphibolite; Close et al 2005). The Du Faur Suite are low-K tholeiites; this chemistry is interpreted as evidence for their emplacement in an extensional tectonic setting (Close et al 2005, Scrimgeour 2013). The precise timing of emplacement remains unknown due to difficulties sampling mafic rocks for geochronology purposes (NTGS in prep); nonetheless these sills preserve the same folded regional fabric as the enclosing metasedimentary succession, dated at ca 1.67 Ga at the Grapple prospect (Reno et al. 2018), providing a minimum crystallization age.

The Warumpi Province records a ca 1.69–1.60 Ga history of voluminous, dominantly granitic felsic magmatism, crustal thickening, and high-thermal-gradient metamorphism along the southern margin of the Aileron Province (Scrimgeour et al 2005a,b). Felsic and lesser mafic rocks of the Argilke Igneous Event were emplaced between ca 1.69–1.66 Ga (Close et al 2005a, Scrimgeour et al 2005a, Kirkland et al 2009, Hollis et al 2013). Interpreted metasedimentary rocks with minimum ages of ca 1.66–1.64 Ga and 1.64–1.60 Ga (e.g., Yaya Metamorphic Complex) occur adjacent to these older igneous rocks (Scrimgeour 2005a-b, Close et al 2003, Scrimgeour et al 2005b, Hollis et al 2013).

Further felsic and mafic magmatism occurred in the Warumpi Province, and locally in the Aileron Province on Mount Rennie and Mount Doreen map sheets (e.g., Andrew Young Igneous Complex, Walungurru Volcanics, Waluwiya Suite) at ca 1.64–1.63 Ga contemporaneous with high-thermal gradient metamorphism (Wyborn et al 1998, Cross et al 2005b, Scrimgeour et al 2005a, Hollis et al 2013, Kositcin et al 2019). The Andrew Young Igneous Complex in particular, is dominated by ultramafic and mafic intrusions, but also contains subordinate biotite-granite and pegmatites (Close et al 2005, Scrimgeour 2013). The mafic and intermediate intrusions include coarse augite-bearing norite, porphyritic micro-crystalline norite, olivine and K-feldspar-bearing norite, biotite-bearing olivine gabbronorite, quartz-bearing microdiorite, anorthosite, and plagioclase-andradite-clinopyroxene rock.

Along with polymetallic base metal and gold mineralisation elsewhere in the project area, ultramafic intrusions of the Andrew Young Igneous Complex represent a potential economic target for orthomagmatic and lateritic nickel and cobalt mineralisation (Gregory et al 2004, Hoatson et al 2005, Prodigy Gold ASX Releases 26 July 2018, 30 May and 17 July 2019); IGO have confirmed an anomalous shallow zone of nickel and cobalt mineralisation in duricrust at the Grimlock prospect through reverse circulation drilling. Outcrops of weathered ultramafic are widespread in the project area (E.g., Swoop prospect) providing a viable additional exploration target.

The origin of the Warumpi Province remains a focus of study; one model based on U–Pb zircon chronology interprets the province as an exotic terrain that collided obliquely with the Aileron Province at ca 1.64 Ga (Close et al 2005b, Scrimgeour et al 2005b). An alternative model based on isotopic and chronological evidence for mantle-derived magmas and crustal inheritance proposes that the Warumpi Province represents rifting of the Aileron Province during this period (Hollis et al 2013, Wong et al 2015). Morrissey et al (2011) and Wong et al (2015) propose that the Warumpi Province was the upper plate to the Aileron Province during the Paleoproterozoic, and that the province was emplaced along the CAS at ca 1.1 Ga during the Grenvillian orogeny (e.g., Hollis et al 2013, Wong et al 2015). The timing of development for the CAS remains uncertain (Scrimgeour et al 2005) however it must have formed during or after the Liebig Orogeny (ca 1.64–1.63 Ma) and may have been re-activated several times.

3.2 Historical Exploration

Limited historical exploration in the 1990s-2000s by BHP Billiton on the nearby EL 24915 and other surrounding tenements targeted orthomagmatic and lateritic nickel-copper mineralisation associated with poorly exposed ultramafic and mafic rocks of the Andrew Young Igneous Complex (Gregory et al 2004). Rock chip sampling of Andrew Young Hills in 1997 confirmed the Ni-Cu prospectivity of the Andrew Young Igneous Complex near Lake Bennett. An aeromagnetic survey flown by NTGS in 1998 identified magnetic features consistent with the Andrew Young Igneous Complex were widespread to the southwest between Lake Bennett and Sandy Blight Junction, upgrading mineral prospectivity of this entire area.

BHP signed a joint venture with Southern Tanami Exploration who held the prospective ground to the west. BHP flew a GEOTEM 25Hz survey covering most of the area that they considered to be prospective in 1999 (**Figure 2**). Exploration Licence 9695 was granted on 14 May 2001.

Several years were taken gaining access to the ground with the Central Land Council. In 2003 ground moving loop EM follow-up was done on 8 sites. In 2004, orientation mag lag sampling, ground fixed loop EM and an RC drilling program consisting of 9 holes to test 8 targets for a total of 1062 m was completed. Metadolorite and gabbro in the northern areas were interpreted to be Du Faur Mafic Suite, whereas pyroxenite rocks in the south were interpreted to be part of the Andrew Young Igneous Complex (Gregory et al 2004). Two reverse circulation drill holes testing electromagnetic anomalies intercepted minor sulfide mineralisation (one of these drill holes was located 3.6 km west of IGO's subsequent Bumblebee discovery). The drilling was never followed-up despite intercepting minor pyrite, pyrrhotite and trace chalcopyrite in tourmaline-bearing quartz veins within a shear zone that cut metasedimentary rocks and hydrothermally altered mafic intrusions.

Reconciliation of the targets with downhole electromagnetic data were interpreted by BHP to indicate that the targets had been intersected in the drilling and that the conductive zones may relate to clays associated with shear zones or faults. BHP concluded that the GEOTEM system was an effective screen of the project area for conductive nickel-copper targets, and that the most prospective of these had been tested. BHP subsequently withdrew from the JV the following year.

Between 2002 and 2012, a joint venture between Teck Australia Pty and Kajeena Mining Company carried out preliminary exploration work, including on historical tenement EL 10383, that now comprises part of EL 29748, about 300 metres north of the Grapple and Bumblebee prospects (Kalma and Cawood 2009, Lee 2012); this work included field visits to collect sporadic rock chip, portable XRF, spinifex and soil samples where weakly anomalous gold, copper and zinc results were obtained. The Leg Gully anomaly, an east-west trending ironstone within mica schist, returned XRF readings of ≤1404 ppm Cu and rock chip assays of 323 ppm Cu. These results were never followed up.

With hindsight, these reports from BHP, Kajeena Mining Company and Teck match the setting and observed mineralisation now discovered at Bumblebee and Grapple.

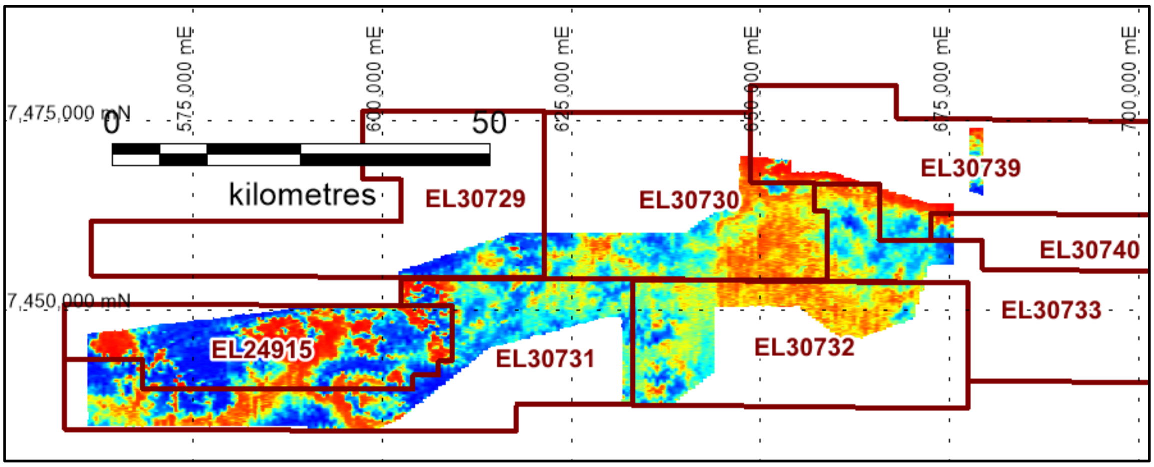

Figure 2: BHP Geotem Bx Ch 5 previously conducted on GR485 tenement areas (GDA94 Zn 52).

ABM Resources (now Prodigy Gold) purchased the Lake Mackay Project tenements including tenement applications from Tanami Gold NL in December 2009. A deed for exploration was negotiated with the Central Land Council for EL24915. This deed was granted on 23rd September 2013, approximately one month after IGO had signed an option agreement with ABM covering all of the Lake Mackay tenements.

The Bumblebee prospect was discovered by IGO in 2015 after drilling of soil geochemical anomalies (Winzar 2016). The soil sampling program was designed to test for both gold and base metal anomalism using the BLEG method of analysis (1 kg Raw BLEG, -2 µm ultrafine soil and lag sampling) with infill 10 g 25-50 µm BLEG sampling).

Furthermore, soil sampling, ground electromagnetic surveys and geological mapping between 2016 and 2019 identified the nearby Grapple prospect, and several new polymetallic sulfide and gold targets. Additionally, rock chip sampling and drilling of ultramafic duricrust from the Andrew Young Igneous Complex at the Grimlock prospect has yielded anomalous Co and Ni concentrations (Prodigy Gold ASX Releases 26 July 2018, 30 May, and 17 July 2019). The drilling confirmed the lateritic Ni-Co mineralisation may have economic potential and is pending metallurgical work.

The work that has been undertaken in previous years on EL24915 is summarised below:

3.2.1 Year 1 (23 Sep 2013 - 31 Oct 2014)

IGO conducted reconnaissance soil sampling of EL24915 in 2014. This involved the collection of 812 soil samples and 6 rock samples. Anomalous results were identified for Au, Cu and Ni within the tenement. Adjoining open ground was pegged covering the majority of the Andrew Young Igneous Complex in December 2014.

3.2.2 Year 2 (1 Nov 2014 – 31 Oct 2015)

In 2015, 1169 soil samples and 89 rock samples were collected within EL24915 to refine targeted areas. A first pass drilling program consisted of five prospects drilled with aircore and slimline reverse circulation drilling. 89 holes were drilled totaling 2781 m.

Mineralisation was identified in three of the targeted prospects. The Bumblebee prospect had a gold-rich base metal style of mineralisation that was considered to have affinities to a low iron endmember of the IOCG mineralisation style (Crawford, 2015). The Springer and Prowl prospects were interpreted as orogenic style gold mineralisation (Crawford, 2015).

Group reporting was withdrawn in 2015 once other granted tenements in the Lake Mackay Project joint venture were withdrawn from the agreement. This changed the reporting date from 1 November to 22 September.

3.2.3 Year 3 (1 Nov 2015 – 22 September 2016)

Regional mapping of EL24915 was completed in November 2015. Follow-up petrography was completed on 18 rock samples from the mapping program.

Surface geochemical sampling consisted of 634 soil samples collected over anomalous areas from previous sampling and 59 rock chip samples that were collected during these mapping and soil sampling programs.

MLEM was completed over the Bumblebee prospect and 7 additional soil anomalies within EL24915. A total of 90.8-line kilometres were collected.

A total of 10 drill holes were drilled for a total of 1380.5 m. This involved 7 holes at Bumblebee prospect, 1 hole at the Springer prospect and 2 water bores. Water was intersected in one water bore (established as RN19124).

DHEM was conducted on 8 drill holes completed during the reporting period. Seven of these were at Bumblebee, one hole was at Springer.

3.2.4 Year 4 (23 Sep 2016 – 22 Sep 2017)

5, 667 Line kilometres of aeromagnetic and radiometric surveying was completed over EL24915. 18 reverse circulation (RC) holes totaling 3,315 m were drilled. This drilling intersected Au, Ag, Cu, Pb, Zn, Bi and Co mineralisation at the Grapple prospect. 4.2-line kilometres of MLEM and 1.85-line kilometres of fixed loop electromagnetics (FLEM) were completed. The FLEM survey defined conductors to the west of the RC drilling. 6 diamond drill holes totaling 2,917.4 m were drilled at the Grapple prospect; mineralisation in drill core was observed over a strike length of 800 m and is still open to the west. DHEM was conducted on 11 RC holes and 6 diamond holes for a total of 4,474 m of DHEM.

3.2.5 Year 1 as entire tenement package in GR485.

Exploration during the reporting period consisted of sacred site clearance surveys, collection of surface geochemistry (2566 soil samples, 209 lag samples and 32 rock chip samples), collection of airborne geophysics data (6088-line km of airborne electromagnetic (AEM) surveying), collection of ground geophysics data (8-line km of moving loop electromagnetic (MLEM) surveying) and geological mapping of an area of 74.1 km^2.

3.3 Exploration rationale

The exploration rationale for the Lake Mackay Project is largely based on empirical observations from the recent discovery of base metal and gold mineralisation in the area. However, before the discovery of base metal sulfide and gold mineralisation at the Bumblebee prospect in 2015, the Lake Mackay Project area was largely untested for mineral potential using modern exploration methods.

Previous theoretical studies considered the general Lake Mackay area prospective for nickel mineralisation (Hoatson et al 2005, Miezitis et al 2006), orogenic and intrusion-related gold, sediment-hosted base metal deposits and uranium mineralisation (Joly et al. 2013), and copper-gold mineralisation including IOCG deposits (Skirrow et al. 2019).

IGO initially targeted the project for orogenic gold. The area was considered to have the key constituents identified by Joly et al (2013) in Western Australia. These included ca 1.80-1.70 Ga and 1.64 Ga intrusions that show evidence for local gold enrichment (potential sources), major deep crustal structures (fluid conduits) and potential physico-chemical boundaries (depositional traps). The trends of west-northwest gold anomalism from regional sampling in Western Australia, occurs parallel to D1 structures and the CAS, and continue into IGO Lake Mackay tenements in the Northern Territory.

The exploration concept for the Lake Mackay project is to target geochemical anomalies and/or electromagnetic conductors that likely relate to large:

1. “Bumblebee-Grapple style” pyrrhotite and associated base and precious metal mineralisation hosted in the Lander Rock Formation; and
2. Orthomagmatic or lateritic Ni-Co-Cu mineralisation hosted within ultramafic intrusions of the Andrew Young Igneous Complex.

Both mineralisation styles are of interest to IGO because deposits of this nature should be readily detectable using both modern airborne and follow-up ground electromagnetic surveys, and geochemical methods, even under shallow cover, and thus could provide economically viable deposits despite the remote location.

Additionally, given that much of the project is hosted in the Lander Rock Formation, and considering reported regional mineralisation styles, there is further scope to identify:

3. “Mount Hardy-Silver King style” sulfide mineralisation in breccia, stringers and quartz veins associated with Cu, Ag, Zn and Pb related to ca 1.82–1.77 Ga felsic intrusions emplaced within the Lander Rock Formation.

4. Minor to moderate sulfides (pyrrhotite, pyrite, arsenopyrite) associated with non-conductive “Tanami style” orogenic gold mineralisation hosted in the Lander Rock Formation or equivalent or correlative stratigraphy.

The Bumblebee and Grapple prospects produced strong geochemical anomalies using soil sampling, and strong electromagnetic conductors using airborne and ground surveys, providing empirical methods to target further mineralisation. Consequently, IGO have applied both soil geochemistry and airborne (AEM) and ground (MLEM) geophysical surveys as a way to delineate additional mineralisation across the project (Winzar 2016, Whitford 2019). These methods successfully generated multiple drilling targets in the 2019 field season, and led to the discovery of the Phreaker, Arcee and Scuba prospects. The successful discovery of these mineralised bodies confirms the mineral potential, and the applicability of these exploration methods, across the project area.

4 Exploration Completed

Exploration during the reporting period consisted of sacred site clearance surveys, collection of surface geochemistry (635 soil samples, 102 lag samples and 11 rock chip samples), collection of airborne geophysics data (8157-line km of airborne electromagnetic (AEM) surveying), collection of ground geophysics data (1658 stations of moving loop electromagnetic (MLEM) ground surveying) and drilling of 43 reverse circulation drill holes totaling 8640 metres. Down hole EM was also completed on a number of drill holes, following up on MLEM conductors. Table 1 summarises these activities per tenement.

5 Exploration Index Map

The Exploration Index Map is included as Appendix 1, Sheet 1.

6 Geological activities and office studies

A petrographic report on samples from mapping was completed by Dr Tony Crawford (Appendix 4). The rock samples (Table 2) were collected in the previous reporting period; however, the report was finished during this reporting year. These rocks came from the Grimlock, Springer and Blaze prospects.

Table 1: Exploration summary by tenement

Tenement	Soil Samples	Rock Samples	Lag Samples	Airborne EM (Line km)	MLEM Stations	Holes with DHEM	Number of drill holes	Metres Drilled
EL24915				1710.9	219	12	21	2836
EL25146	42			593.6	73	1	1	268
EL30729				1188.8	508	8	8	1858
EL30730		6	101	1810.6	100			
EL30731	18	1	1	310.7	401	13	13	3678
EL30732				423.6				
EL30733	41			423.6	74			
EL30739	85			990.6	170			
EL30740	449	4		704.7	113			
Total	**635**	**11**	**102**	**8157.1**	**1658**	**34**	**43**	**8640**

Table 2: List of samples and petrographical rock identifications by tenement.

Sample ID	Rock type	Tenement
A554725	Intrusive Feldspar Porphyry	EL30731
A554726	Gabbronorite	EL30731
A554727	Gabbronorite	EL24915
A554732	Microgabbronorite	EL24915
A553917	Co-Ni-Mn Laterite	EL24915
A554729	Pelitic paragneiss	EL24915
A554730	Phlogopite Gabbronorite	EL24915
A554731	Pelitic Paragneiss	EL24915
A554733	Pelitic paragneiss.	EL24915
A554722	Metapelitic hornfels	EL30729
A554723	Garnet para-amphibolite.	EL30729

7 Remote sensing

Nothing to report.

8 Geophysical activities

8157-line km of SPECTREM 25 Hz base frequency airborne electromagnetic surveying was completed during the reporting period. Reports and data from the co-funded blocks have been provided to the Northern Territory Geological Survey. The survey was flown on a 300 m line spacing with N-S lines and 90m mean terrain clearance.

1658 MLEM stations were completed on anomalous targets identified from the preliminary AEM data. The MLEM survey configuration is summarised in Table 3 and the data is provided in Appendix 2. All MLEM surveys that confirmed a conductive plate at depth of significant size were selected for drilling during the 2019 drilling campaign.

Table 3: Survey configuration for Lake Mackay Project MLEM

Configuration	Slingram
Loop size	200 m
Line spacing	200 m
Station spacing	100 m
Total line kms	80.4
Receiver system	Smartem24 EMIT Fluxgate – Bz (up), Bx (east), By (north)
Sensor location	200 m east or north (or in front) of loop centre
Transmitter	Transmitter Technologies TTX-1
Effective current	~60-80 A
Frequency	1 Hz

DHEM was completed on 34 of the 43 RC holes drilled, either as a direct confirmation that the MLEM plate had been intersected, or as an opportunistic test for sulphides where an EM anomaly had not been picked, but mineralisation in hole may have hinted at a sulphide body (Table 4).

9 Surface Geochemistry

9.1 Soil sampling

Areas identified from radiometric surveys that showed a bedrock response were selected for reconnaissance soil sampling. A sample spacing of 400 m (north-south) x 800 m (east-west) was selected. Prior to undertaking the soil sampling, a sacred site clearance survey was conducted by the Central Land Council.

Sampling was conducted by teams of two people, using All Terrain Vehicles (ATV), from mobile camps that were established at several locations throughout the project area along temporary access tracks.

The samples were collected from a depth of 0 to 20 cm after scraping the surface to remove any organic matter. Samples were screened on site to -0.4 mm for an approximate 2 kg of fine material. The samples were then submitted to the Intertek Genalysis laboratory in Alice Springs for additional screening to -50 µm. Samples were then dispatched to the Intertek laboratory in Perth for analysis.

635 soil samples were analysed during the reporting period. The BLEG technique was used for Au and Ag analysis initially with a 10 g aliquot (this was increased to 20g to try to prevent the nugget effect of gold) of -50 µm material used. A 0.5 g aqua regia digest was used for Al, As, B, Ba, Be, Bi, Ca, Cd, Ce, Co, Cr, Cs, Cu, Fe, Ga, Ge, Hf, Hg, In, K, La, Li, Mg, Mn, Mo, Na, Nb, Ni, P, Pb, Pd, Pt, Rb, Re, S, Sb, Sc, Se, Sn, Sr, Ta, Te, Th, Ti, Tl, U, V, W, Y, Zn and Zr (Table 5).

Initial soil sampling identified anomalous areas which were subsequently infilled at a 200 m (north-south) x 400 m (east-west) sample density and then on a 50 m (north-south) x 200 m (east-west) grid. Peak multi-element results are displayed in Table 7. All assay data are included in the digital appendices.

Table 4: DHEM Configuration and specifications.

Configuration	DHEM
Loop size	400 m (or as described in data file)
Station spacing	Average ~10 m
Receiver system	EMIT DigiAtlantis DHEM system 3 component (A, U, V)
Transmitter receiver system	IGO in house
Effective current	~50-60 A
	0.25-1Hz (as described in data file)
Frequency	0.25-1Hz (as described in data file) ~50-60A
Effective current	0.25-1Hz (as described in data file)

Table 5: Peak -50 µm soil sampling results (GDA 94 Zone 52)

Element	Sample Number	MGA East (m)	MGA North (m)	Value	Peak	Mean	Median	Standard Deviation
Ag	LM06510	677599	7460047	ppb	76.0	16.6	16.0	12.1
As	LM07530	703902	7458946	ppm	4.1	2.2	2.1	2.5
Au	LM07339	677471	7460351	ppb	25.5	1.2	1.0	4.8
Bi	LM07439	681491	7459849	ppm	4.1	0.4	0.4	0.8
Co	LM06508	677594	7460451	ppm	65.2	10.0	11.0	30.8
Cu	LM06534	677694	7460047	ppm	107.6	24.9	20.9	23.0
Mn	LM07337	677574	7460353	ppm	1405.1	402.4	450.6	260.9
Ni	LM07474	705299	7457851	ppm	49.0	12.2	12.1	7.5
Pb	LM07271	504745	7456799	ppm	25.5	11.8	12.1	5.2
Zn	LM07345	677174	7460352	ppm	88.9	26.0	23.2	9.85

9.2 Rock chip sampling

11 rock chip samples were collected during the soil sampling and geological mapping programs. These rock samples were collected to test for “Grapple-style” Cu-Au targets and Mn-Ni-Co duricrust from weathered ultramafic intrusions. 4 acid digestion was used for assaying with Pt and Pd included in the suite for Mn-Ni-Co samples (Table 6). The anomalous rock chip sampling results were considered for drill testing in the 2019 field season (Table 7).

Table 6: Analytical method used for rock chip samples

Sample Type	Digest (Lab Code)	Finish (Lab Code)	Element (Detection Limit)
Rock chip	Four Acid (4A)	Inductively coupled plasma optical emission spectrometry (OE33)	Ag (0.5 ppm), Al (50 ppm), As (10 ppm), Ba (2 ppm), Bi (5 ppm), Ca (50 ppm), Cd (0.5 ppm), Ce (20 ppm), Co (1 ppm), Cr (5 ppm), Cu (1 ppm), Fe (100 ppm), K (20 ppm), La (20 ppm), Li (1 ppm), Mg (20 ppm), Mn (1 ppm), Mo (2 ppm), Na (20 ppm), Ni (1 ppm), P (50 ppm), Pb (5 ppm), S (50 ppm), Sb (5 ppm), Sc (1 ppm), Sn (5 ppm), Sr (1 ppm), Te (5 ppm), Ti (5 ppm), Tl (5 ppm), V (1 ppm), W (5 ppm), Zn (1 ppm)
	25g lead collection fire assay (FA25)	Inductively coupled plasma optical emission spectrometry (OE04)	Au (1 ppb), Pt (0.5 ppb), Pd (0.5 ppb)

Table 7: Peak rock chip sampling results (GDA 94 Zone 52)

Element	Sample Number	MGA East (m)	MGA North (m)	Value	Peak	Mean	Median	Standard Deviation
Ag	LM06799	636199	7469443	ppb	19	5.2	4.0	0.6
As	LM10278	681682	7459824	ppm	17	7.7	0.0	20.2
Au	LM10278	681682	7459824	ppb	25.53	2.5	0.5	5.2
Bi	LM10278	681682	7459824	ppm	2808	283.7	0.0	887.0
Co	LM06799	636199	7469443	ppm	20193	2210.6	65.0	6331.9
Cu	LM06799	636199	7469443	ppm	469	104.8	63.5	141.8
Mn	LM06799	636199	7469443	ppm	111626	16227.9	588.5	36372.0
Ni	LM06799	636199	7469443	ppm	9966	1352.7	221.0	3067.2
Pb	LM10278	681682	7459824	ppm	59	24.6	22.5	19.5
Zn	LM06799	636199	7469443	ppm	763	215.8	139.0	224.8

9.3 Lag Sampling

A lag sampling grid was collected to define Mn-Ni-Co anomalism developed in the duricrust associated with ultramafic bodies of the Andrew Young Igneous Complex. The same geochemical techniques used for analysing rock samples was used (4 acid digest and fire assay for Au, Pt and Pd). These analyses defined anomalous zones at the Swoop prospect, for further investigation and possible drilling in 2020 (Table 8).

Table 8: Peak Lag sampling results (GDA 94 Zn 52)

Element	Sample Number	MGA East (m)	MGA North (m)	Value	Peak	Mean	Median	Standard Deviation
Co	LM06698	636196.925	7469499.71	ppm	1104	73.7	38.5	123.6
Cu	LM06636	635902.247	7468597.71	ppm	113	15.8	7	19.6
Mn	LM06671	635899.77	7469200.76	ppm	9262	1024.9	609	1375.1
Ni	LM06678	636593.697	7469194.28	ppm	2290	800.4	709	491.5
Pt	LM06712	636800.153	7469797.87	ppb	39	10	6.1	9.2
Zn	LM06644	636199.426	7468809.52	ppm	199	45.9	40.5	35.3

10 Drilling

Drilling occurred on four tenements within the reporting group as part of a first pass reverse circulation (RC) program across the entire tenement package. This program tested both prospective MLEM conductive plates and surface geochemical anomalies. Collar locations are provided in Table 9. A total of 43 holes were drilled for a total of 8640 m across EL24915, EL25146, EL30729 and EL30731 between April and September 2019. 9 of the holes drilled in the south of EL30731 were at the Phreaker prospect which was identified as a possible Grapple/ Bumblebee style correlative on the southern margin of the Andrew Young Igneous Complex with metasedimentary rocks of the Lander Rock Formation. 10 shallow RC holes were drilled around lateritic Co-Ni-Mn mineralisation at the Grimlock prospect in order to estimate the potential width and tenor of mineralisation below surface. Seven holes were drilled in the Blaze area. Four holes tested for possible extensions and repetition of mineralisation around the Bumblebee prospect.

28 of the 43 holes were drilled to test conductive plates modelled from moving loop EM surveys following up on initial airborne EM targets. The remaining 15 holes were geochemical targets following up on elevated gold and base metal concentrations in soil samples, as well as geological mapping completed in the previous year.

Drilling in EL24915 was mainly focused at the Grimlock laterite prospect following up on strong cobalt, nickel, and manganese grades in rock chip assays. The drilling confirmed that the cobalt occurs at depth, but at lower grades than seen at surface. The cobalt mineralisation is associated with increased manganese. Drilling also appears to show that there are two separate zones of cobalt enrichment, however the lower zone may be more closely associated with weathered saprolite as opposed to the manganiferous horizon above. Two holes were drilled to over 150 m depth to test below the laterite and sample potential primary sulfides at depth with use of the DHEM survey method. No sulfides were encountered, however.

Four holes were drilled at the Bumblebee prospect, one hole (19LMRC059) to test for a repeat lens, north of the main zone of known mineralisation. Three further holes tested for an easterly extension to mineralisation. The three holes that drilled to the east of the main prospect were targeted using soil and rock assays as well as previous mapping. All three holes identified minor sulfides, with a weak base metal association. DHEM failed to identify significant off hole conductors and consequently no additional holes were drilled.

One hole was drilled west along strike from the Grapple prospect, looking for a continuation of known mineralisation. This hole intersected two 2- to 3-metre-thick lenses of sulfides with low level base and precious metal anomalism. Follow-up DHEM surveys failed to identify any further conductive targets.

13 holes were drilled on EL30731 testing a range of conductive plates generated from MLEM surveys. Nine of these holes were drilled at the newly identified Phreaker prospect. The discovery hole 19LMRC028 intersected a true 80-metre-thick interval of garnet-mica schist before intersecting a broad zone of stringer chalcopyrite and minor pyrrhotite followed by a 2-3 m massive pyrrhotite lens. DHEM surveys identified areas for follow-up drilling (holes 19LMRC063-19LMRC068). These holes failed to adequately test the modelled DHEM plates despite intersecting small 2-5 m mineralised sulfide zones. The plates remain unconstrained at depth.

Eight holes were drilled on EL30729. These were mainly located on the north of the interpreted blaze anticlinal mega structure. No significant mineralisation was intersected, and all target plates could be explained by low level pyrrhotite in hole.

Table 9: Drill hole collar location data (next page)

Hole ID	Lease ID	Drill Hole Type	Easting (GDA94 Zone 52)	Northing (GDA94 Zone 52)	RL (m)	Azimuth (degrees, GDA94)	Dip (degrees)	Total Depth (m)	Prospect
19LMRC001	EL24915	RC	561234	7446984	455	311.6	-65.2	256	Prowl
19LMRC002	EL24915	RC	561662	7447266	455	306.7	-68.1	304	Prowl
19LMRC003	EL24915	RC	567365	7444637	488	146.0	-60.5	160	Grimlock
19LMRC004	EL24915	RC	567322	7444695	483	139.2	-59.4	52	Grimlock
19LMRC005	EL24915	RC	567449	7444775	481	142.2	-60.3	154	Grimlock
19LMRC018	EL24915	RC	566784	7445019	473	0.0	-90.0	34	Grimlock
19LMRC019	EL24915	RC	567668	7444677	478	0.0	-90.0	40	Grimlock
19LMRC020	EL24915	RC	568211	7443144	479	0.0	-90.0	34	Grimlock
19LMRC021	EL24915	RC	568277	7443342	475	0.0	-90.0	40	Grimlock
19LMRC022	EL24915	RC	566980	7445013	476	0.0	-90.0	34	Grimlock
19LMRC023	EL24915	RC	565990	7444115	470	0.0	-90.0	40	Grimlock
19LMRC024	EL24915	RC	566123	7444306	471	0.0	-90.0	34	Grimlock
19LMRC025	EL24915	RC	564915	7445554	458	140.6	-69.9	130	
19LMRC048	EL24915	RC	570090	7448839	464	269.5	-71.3	260	
19LMRC057	EL24915	RC	583302	7450373	469	0.0	-72.0	382	
19LMRC057A	EL24915	RC	583302	7450394	475	0.0	-72.0	88	
19LMRC058	EL24915	RC	582258	7448567	478	168.0	-60.2	238	Grapple
19LMRC059	EL24915	RC	588353	7450660	485	157.4	-59.9	154	Bumblebee
19LMRC060	EL24915	RC	588769	7450533	488	24.3	-60.0	118	Bumblebee
19LMRC061	EL24915	RC	588991	7450476	489	22.7	-60.0	154	Bumblebee
19LMRC062	EL24915	RC	589262	7450547	492	206.2	-59.9	130	Bumblebee
19LMRC016	EL25146	RC	530212	7456820	423	183.92	-60.4	268	
19LMRC034	EL30729	RC	592767	7454353	486	3.2	-60.1	150	Blaze
19LMRC043	EL30729	RC	589699	7454769	488	186.3	-60.3	196	Blaze
19LMRC051	EL30729	RC	592925	7457349	475	359.7	-65.2	300	Blaze
19LMRC052	EL30729	RC	590713	7456818	476	341.0	-60.6	230	Blaze
19LMRC053	EL30729	RC	591605	7457092	473	342.8	-59.9	268	Blaze
19LMRC054	EL30729	RC	588103	7457136	466	1.2	-60.9	220	Blaze
19LMRC055	EL30729	RC	586856	7455915	468	154.4	-58.6	208	Blaze
19LMRC056	EL30729	RC	604241	7457086	483	1.2	-60.9	286	
19LMRC006	EL30731	RC	562640	7441382	462	176.6	-60.2	210	
19LMRC007	EL30731	RC	563305	7441416	472	177.1	-59.8	272	
19LMRC028	EL30731	RC	586669	7435199	501	166.8	-60.4	398	Phreaker
19LMRC029	EL30731	RC	588169	7435980	503	352.5	-60.7	346	
19LMRC030	EL30731	RC	588297	7435506	502	355.2	-65.0	324	
19LMRC031	EL30731	RC	586657	7434922	499	334.4	-60.6	292	Phreaker
19LMRC032	EL30731	RC	586672	7434897	497	336.6	-64.6	240	Phreaker
19LMRC063	EL30731	RC	587230	7435390	500	159.6	-60.4	250	Phreaker
19LMRC064	EL30731	RC	586817	7435231	502	166.5	-60.3	258	Phreaker
19LMRC065	EL30731	RC	586514	7435114	502	163.5	-60.3	288	Phreaker
19LMRC066	EL30731	RC	586313	7435024	503	161.6	-64.1	162	Phreaker
19LMRC067	EL30731	RC	587136	7435108	504	341.7	-71.8	276	Phreaker
19LMRC068	EL30731	RC	586336	7435050	503	161.3	-72.3	362	Phreaker

10.1 Sampling and processing protocols

Geological logging of RC chips was completed on metre intervals, with 4 m composite samples collected from the rig cyclone for assay. One metre samples were collected from spoil piles using a scoop, from intervals displaying evidence of significant alteration or visible sulfide mineralisation. Portable XRF readings were collected from the 4 m composite bags and was used routinely to help with lithological identification and any non-visible or complex mineralisation (e.g. invisible gold or multiple fine-grained sulfide minerals). This data helped to guide where single metre in fill samples were collected for assay.

Samples selected for assay were prepared at the Intertek Genalysis laboratory in Alice Springs (NT) and then forwarded to their Maddington laboratory (WA) for analysis. Each sample (excluding standards) was crushed and pulverised. 1 m RC samples were subject to a four-acid digest with an optical emission spectrometry (OES) finish. Gold was additionally determined by fire assay (FA) using a 25 g charge. All RC samples were subject to an aqua regia digest with a mass spectrometry (MS) finish. All 4m composites and single metre split samples were submitted for 4 acid digestion with Pt and Pd included in the suite for Mn-Ni-Co samples, these then had the OE33 finish. Detection limits for each element are summarised in Table 10.

10.2 Drilling Results.

The dominant lithologies that occurred in most of the drill holes consisted of Lander Rock Formation metasedimentary schists and amphibolites, interpreted to be long to the Du Faur suite. Most of the sulphide was hosted in the metasedimentary packages, proximal to amphibolite contacts. All RC holes testing conductive MLEM generated plates were explained by sulphides, often pyrrhotite dominant. Some of these holes showed a week base metal enrichment, however over small intervals of 2-3m.

10.2.1 Phreaker

Base metal mineralisation was identified at Phreaker, and the plates generated from the subsequent DHEM survey were followed up with six further RC holes. The mineralisation appears to be hosted on the contact of a thick contact of garnet mica schist with metasedimentary schist (Figure 3). The whole package is sandwiched by two relatively thick amphibolites and then cross-cut by late stage quartzo-feldspathic, muscovite rich pegmatites.

Table 10: Summary of analytical methods used for RC drilling.

Sample Type	Digest (Lab Code)	Finish (Lab Code)	Element (Detection Limit)
1 m infill (reverse circulation)	Four Acid (4A)	Inductively coupled plasma optical emission spectrometry (OE33)	Ag (0.5 ppm), Al (50 ppm), As (10 ppm), Ba (2 ppm), Bi (5 ppm), Ca (50 ppm), Cd (0.5 ppm), Ce (20 ppm), Co (1 ppm), Cr (5 ppm), Cu (1 ppm), Fe (100 ppm), K (20 ppm), La (20 ppm), Li (1 ppm), Mg (20 ppm), Mn (1 ppm), Mo (2 ppm), Na (20 ppm), Ni (1 ppm), P (50 ppm), Pb (5 ppm), S (50 ppm), Sb (5 ppm), Sc (1 ppm), Sn (5 ppm), Sr (1 ppm), Te (5 ppm), Ti (5 ppm), Tl (5 ppm), V (1 ppm), W (5 ppm), Zn (1 ppm)
	25 g Lead collection fire assay (FA25)	Inductively coupled plasma optical emission spectrometry (OE04)	Au (1 ppb), Pt (0.5 ppb), Pd (0.5 ppb)
4 m composite (reverse circulation)	10 g aqua regia (AR10)	Inductively coupled plasma mass spectrometry (MS33)	Au (1 ppb), Ag (0.05 ppm), Al (20 ppm), As (1 ppm), B (10 ppm), Ba (1 ppm), Bi (0.05 ppm), Ca (100 ppm), Cd (0.05 ppm), Ce (0.01 ppm), Co (0.1 ppm), Cr (1 ppm), Cu (1 ppm), Fe (10 ppm), K (20 ppm), La (0.01 ppm), Mg (100 ppm), Mn (1 ppm), Mo (0.1 ppm), Na (100 ppm), Ni (1 ppm) P (20 ppm), Pb (0.5 ppm), S (500 ppm), Sb (0.05 ppm), Sc (1 ppm), Sr (0.2 ppm), Te (0.1 ppm), Ti (5 ppm), Tl (0.05 ppm), V (2 ppm), W (0.1 ppm), Zn (1 ppm)

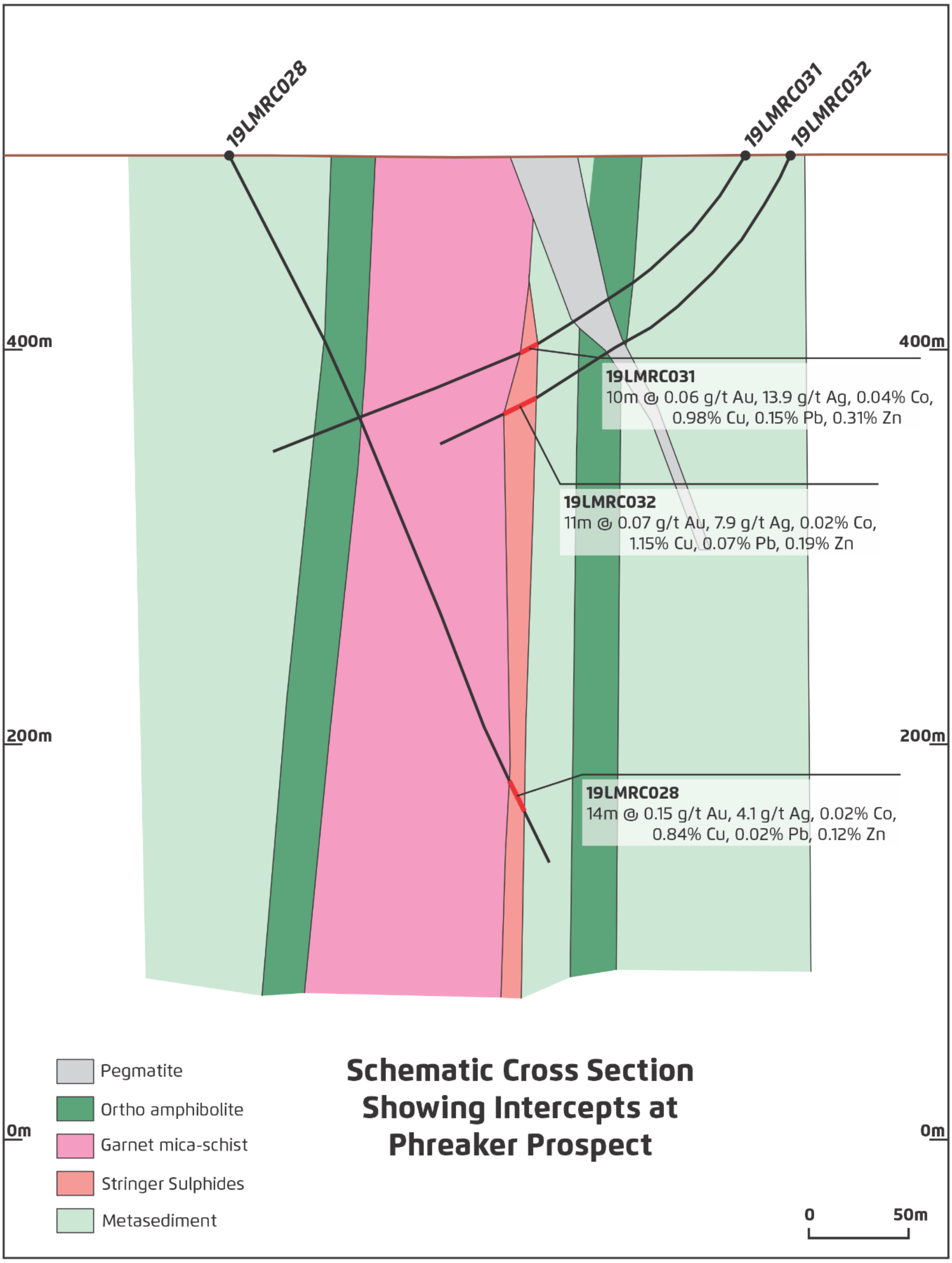

Figure 3: Schematic cross section of the Phreaker prospect looking east.

10.2.2 Grimlock

The Grimlock holes intersected a lateritic manganese oxide/ goethite duricrust often up to 4m thick within the first 10m. below this was weather clay saprolite enriched in nickel and cobalt, possibly derived from an ultramafic. In the bottom of hole in the deeper drillholes appeared to be weakly weathered gabbronorite similar to that seen in the centre of the Grimlock intrusive feature.

10.3 Mineralisation

Outside of the Phreaker and Grimlock prospect most holes intersected a small zone of minor pyrrhotite stringers, often with trace base and precious metal enrichment.

10.3.1 Phreaker

Phreaker intersected broad zones (>10m) of chalcopyrite mineralisation, containing at least 2m of massive to submassive pyrrhotite (Table 11). The best copper grade intersected was 3.1% Cu from 190 to 191m in 19LMRC032 and the best gold grade was seen from 203 to 204m in the same hole. Of note was a broad low level gold enrichment seen through the garnet zone with up to 72m @ 0.1g/t gold as a weighted average in 19LMRC028.

Table 11: Mineralised (>1g/t Au or >1% Cu) Intercepts from RC Drilling

Hole ID	From (m)	To (m)	Interval (m)	Au g/t	Ag g/t	Cu%	Zn%	Pb%	Bi ppm	S %
19LMRC032	203	204	1	1.8	2.3	0.28	0.011	0.005	495	1.066
19LMRC064	199	200	1	1	-0.5	0.08	0.009	0.003	254	0.148
19LMRC028	353	354	1	0.219	7.6	1.772	0.074	0.023	81	6.79
19LMRC028	356	357	1	0.027	4.2	1.13	0.072	0.02	25	7.892
19LMRC028	357	358	1	0.057	4.6	1.06	0.05	0.031	52	7.965
19LMRC028	358	359	1	0.061	5.4	1.324	0.037	0.023	56	8.401
19LMRC031	146	147	1	-	9	1.46	0.275	0.037	16	5.79
19LMRC031	147	148	1	0.105	17.2	1.138	0.409	0.243	119	9.9
19LMRC031	153	154	1	0.067	31	1.418	0.373	0.372	190	10.38
19LMRC031	154	155	1	0.093	11.3	2.073	0.259	0.038	14	7.902
19LMRC031	163	164	1	0.09	6.9	1.03	0.039	0.01	13	1.665
19LMRC032	189	190	1	0.108	15.5	1.812	0.626	0.194	112	10.87
19LMRC032	190	191	1	0.122	22.3	3.094	0.464	0.155	126	11.83
19LMRC032	191	192	1	0.059	8.8	1.336	0.243	0.079	47	10.99
19LMRC032	192	193	1	0.043	5.8	1.016	0.067	0.056	32	6.441
19LMRC032	198	199	1	0.063	9.4	1.772	0.102	0.073	50	9.165
19LMRC064	205	206	1	0.131	6.6	1.627	0.077	0.034	51	3.367
19LMRC067	237	238	1	0.304	3.3	1.1	0.35	0.053	44	4.025

10.3.2 Grimlock

Grimlock shallow RC drilling intersected low level cobalt in an upper horizon, close to surface, but proving the presence of cobalt enrichment at depth. The best cobalt grade came over a 1m interval from 8m, containing up to 1.87% Co (Table 12). A lower cobalt enrichment was also identified below the upper manganese associated horizon, but this appears to correlate with weathered green saprolitic mafic/ ultramafic clays and is generally of a lower grade.

Table 12:Mineralised (>0.5% Co) Intercepts from RC Drilling

Hole ID	From (m)	To (m)	Interval (m)	Co%	Mn%	Ni%	Pt ppb	Sc ppm
19LMRC003	2	3	1	0.88	6.69	0.52	122.7	93
19LMRC003	3	4	1	1.27	14.42	0.53	106.6	73
19LMRC004	8	9	1	1.87	17.83	0.84	129.5	135
19LMRC020	19	20	1	0.61	5.09	1.25	22.5	43

11 Geotechnical Studies

Nothing to report.

12 Resources and reserve estimation/modelling

Nothing to report.

13 Conclusion and recommendations

Drilling was effective in screening the tenements for the best conductors and the best geochemical anomalies. The Phreaker prospect was discovered in EL30731 and will require further drilling to test the potential for mineralisation at depth. All holes targeting a conductive EM plate intersected sulphides to some degree or another, however there is potential that Au which is not related to a conductive sulphide lens may have been missed.

Shallow drilling at Grimlock was effective in confirming some thickness to the surface cobalt, nickel, and manganese duricrust. The Cobalt grades are encouraging, and further work is required to understand the full potential for a lateritic Co-Mn-Ni deposit.

Lag sampling has successfully identified another potentially large Co-Ni laterite prospect in Swoop (EL30730) and provided further work at Grimlock is successful, it is likely this target will be upgraded and warrant shallow RC drilling.

As a next stage, deeper diamond drill holes should be drilled to test the Phreaker DHEM plates at depth and also to help with understanding the structure and relationships at the prospect. Should this show encouragement through economic mineralized intercepts, this could lead to a tighter spaced drill out.

Grimlock samples should be metallurgically tested to see whether it is feasible to extract the metals Cobalt and Nickel from the laterite with low pressure acid leach. If this shows encouragement, the prospect should be grid drilled at 100x100m with a small RC rig to start to prove up the potential scale of the cobalt enriched zones. The swoop prospect could be tested at the same time to prove up its potential for grade at depth.

Further analysis of all the other drill holes as well as petrography and other scientific study should be completed to assess the prospectivity of the ground where they are located with an aim to relinquish ground which is no longer thought to contain a large, mineralized deposit.

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