

SEPTEMBER 2020 – QUARTERLY REPORT

ATHENA RESOURCES LIMITED

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CONTACTS

Mr Ed Edwards
Executive Director

PROJECTS

Byro Project (Athena 100%):

Industrial Minerals, Iron Ore,
Nickel-Copper-PGE's

SECURITIES

308 million Ordinary Shares

SHAREHOLDERS

Brilliant Glory	13.96%
Mr E Edwards	12.38%
Goldway Mega	12.04%
Mr P Newcomb	5.55%

CORPORATE

PLACEMENT

Placement to Raise \$260,000

OFFICE CLOSURE

Athena Resources office was closed and staff are working from home following practice in place since last quarter.

BYRO BASE METALS PROJECT

Milly Milly Intrusion (Cu/Ni/PGE)

Potential structural flow dynamics within the Milly Milly intrusion warrant an infill gravity survey planned to further define the anomaly. Gaps in ground EM data have also been highlighted warranting further moving loop EM data acquisition.

Review of diamond drill hole AHDH0007 drilled outside the interpreted intrusion boundary targeting a gravity anomaly. The hole remained in ultramafic to end of hole and showed variable geochemistry including sections of primitive ultramafic with signs of metal depletion towards the end of hole.

Moonborough Intrusion (Cu/Ni/PGE)

Recent appraisal of the central Byro, Moonborough Intrusion demonstrates compelling exploration potential. The project is at a greenfield stage hosting a significant gravity anomaly coincident with 10-year-old VTEM anomalies and drilling which intersected an ultramafic.

BYRO INDUSTRIAL MAGNETITE PROJECT

Athena Resources is continuing to advance its Industrial Magnetite Project seeking funding to complete work required for a JORC indicated resource estimate at the FE1 mining lease M09/166



This PDF is bookmarked for ease of navigation

BYRO BASE METAL PROJECT

BACKGROUND

Different ideas and technologies have been applied by previous explorers to explore the recognised copper/nickel occurrences at Byro. Historical near surface geochemistry from surface sampling and shallow drilling failed to locate and identify fertile source rock within the Byro layered intrusions. Athena has confirmed that the regional setting hosts layered intrusive occurrences containing elevated copper nickel and PGE mineralisation in source rock while reducing the search ellipse.

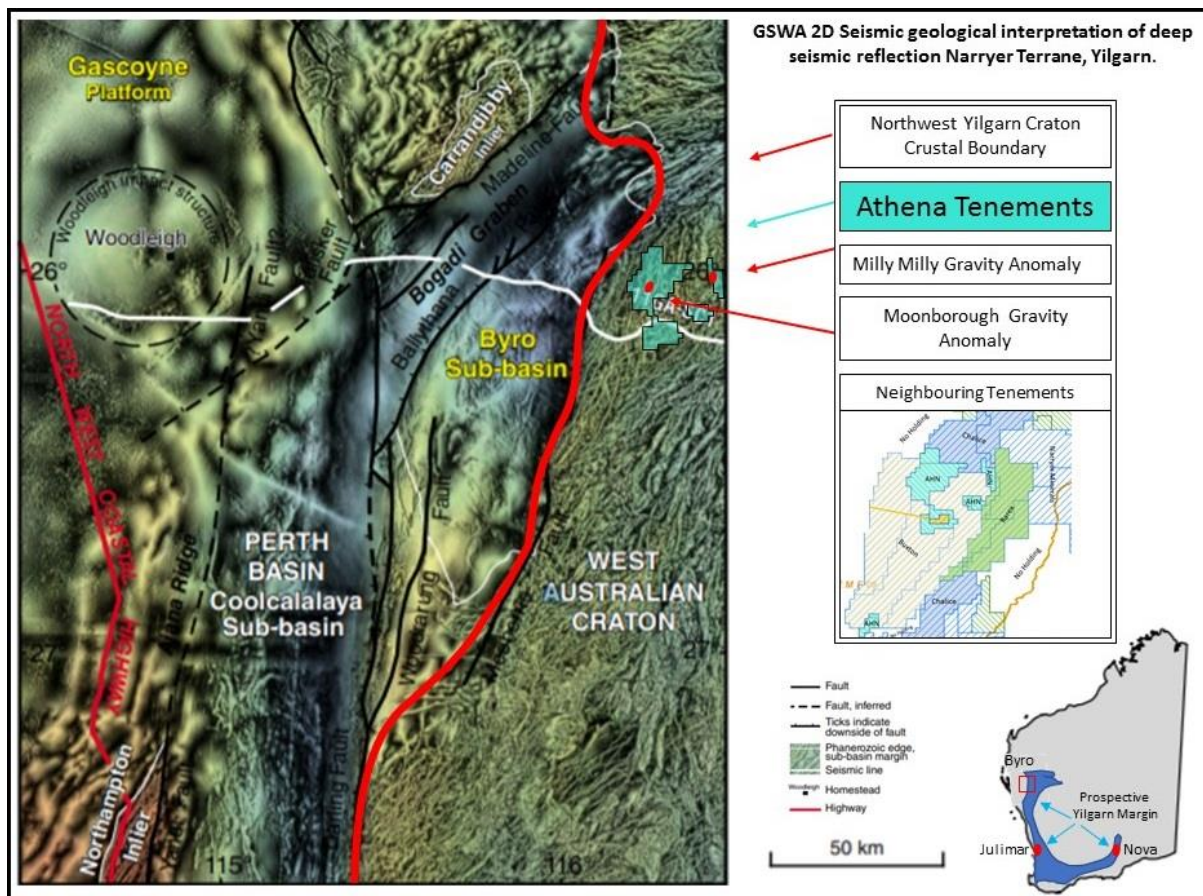


Figure 1. Project location and major terrane boundaries

Athena has attributed the four key elements that qualify a potential discovery at the Byro Base Metal Project.

1. Tectonic Setting: The intrusion is coincident with edge of the granitic Yilgarn Craton, intruding through the felsic Narryer Gneiss and pelitic sediments in an ancient spreading margin of Archean - Early Proterozoic tectonic setting. This setting is directly comparable to Norilsk, Kabanga, Jinchuan, Voisey's Bay, Raglan, Savannah, and Nebo-Babel, Mt Keith. Nova-Bollinger and most recently Julimar. These are all intrusive variants of orthomagmatic chonoliths.

2. Composition and fertility of source rock at the Milly Milly Intrusion: Athena has discovered high magnesium Ni-Cu-Co-PGE bearing dunite/peridotite source rock occupying the central

Athena Resources Limited – First Quarter Activities Report

lobe. Fertility has been confirmed from Athena deep drilling, assay, thin section and scanning electron microscopy, (SEM).

3. Availability of Ni-Cu-PGE in sulphide: Athena has discovered excess nickel contained in sulphides not locked in silicate identified from drill core, assay, scanning electron microscopy and thin section petrology all showing nickel sulphide development.

4. Quantity and concentration of sulphides: Athena has discovered distribution of sulphides as disseminated throughout the fertile central lobe; c/w remobilised nickel sulphide liquid observed in small veins in drill core and thin section.

Assay returns from drilling at Milly Milly are significantly elevated and range from 0.35%Ni to 0.64%Ni above the trace/background levels of 0.27%Ni at the periphery of the intrusion and require further investigation. It should be noted the orthomagmatic chonolith discoveries, in this setting, all demonstrate elevated mineralisation of 0.29-0.30%Ni during early exploration.

Best results from soil samples
(Saprolite)

- Rock/laterite samples up to: **2.5% Ni**
- Gossan samples up to: **9.0% Cu**

Best results from shallow drilling

- Best nickel: **13.7 m @ 1.2% Ni**
- Best copper: **67 m @ 0.7% Cu**
including: **18.3 m @ 1.14% Cu**

Best results from deep drilling (Athena)

1.73m@	0.31%Ni	From 157.4m	Including	0.06m @	0.57%Ni	from 159.07m
22.7m @	0.30%Ni	from 232.3m	Including	0.5m @	0.64%Ni	from 254.5m
6m @	0.30%Ni	from 271 m	Including	0.2m @	0.46%Ni	from 276.5m
1.5m @	0.31%Ni	from 320 m	Including	0.5m @	0.35%Ni	from 321.5m
2.5m @	0.31%Ni	from 328.5m	Including	0.5m @	0.38%Ni	from 328.5m

MILLY MILLY Cu / Ni / PGE INTRUSION

The company undertook high-resolution gravity data acquisition in 2014-15. This included a drilling campaign based on the early interpretation of gravity data. The methodology at that time was to target significant gravity highs but yielded disappointing results within the main intrusion. It was clear after drilling that a review of the exploration methodology was required to develop a better understanding before further deep drilling took place.

The review also considered a connection with the main body and a long-standing area of interest at the northern tip of the intrusion, (Figure 2. Right insert circled in red).

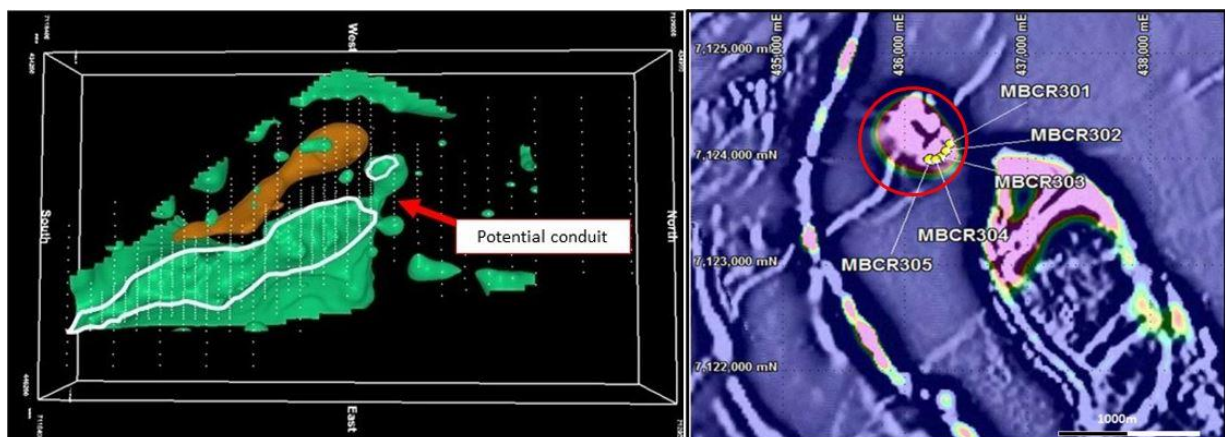


Figure 2. Milly Milly Intrusion potential conduit and northern magnetic anomaly. (Left - a gravity inversion indicating potential link to the northern tip of the intrusion, green. Right – Magnetic anomaly and surface sample locations at the northern tip of the intrusion).

Athena Resources Limited – First Quarter Activities Report

Table1. Surface rock chip assay results from Milly Milly Intrusion northern magnetic anomaly

Sample ID	East	North	Fe	SiO2	Al2O3	P XRF	MgO	Ni	LOI
	MGA94/50	MGA94/50	%	%	%	%	%	%	%
MBCR301	436370.64	7124138	47.34	13.32	5.14	0.024	0.49	0.228	11.53
MBCR302	436336.95	7124076.49	58.57	3.58	1.71	0.058	0.24	0.451	8.11
MBCR303	436291.54	7124022.29	53.83	7.61	4.13	0.045	0.19	0.149	8.45
MBCR304	436250.54	7123990.06	68.28	0.63	0.24	0.017	0.24	0.359	0.7
MBCR305	436200	7123990.24	63.06	4.62	2.12	0.02	0.29	0.122	1.04

Preliminary modelling of the gravity data revealed potential structural flow dynamics within the intrusion, Figure 2 (left insert). Review this Quarter focused on the intrusive architecture, and potential locations for formation of nickel sulphide accumulations such as changing dynamic flow zones or gravity traps. Southern Geoscience Consultants have evaluated the data set. It was determined infill and extension of the gravity survey is warranted to gain better constraint on the anomalies and reasonable interpretation of the conduit.

Drill hole AHDH0007 was drilled in September 2014 outside the interpreted Milly Milly intrusion west boundary, central within Figures 3 and 9, targeting a gravity anomaly. The hole was expected to encounter a metapelite but remained in ultramafic to end of hole and showed variable high MgO geochemistry including sections of primitive ultramafic with signs of metal depletion towards the end of hole. Cloudy nickel sulphides and secondary iron sulphides were reported in 2014 but no significant mineralisation was recorded.

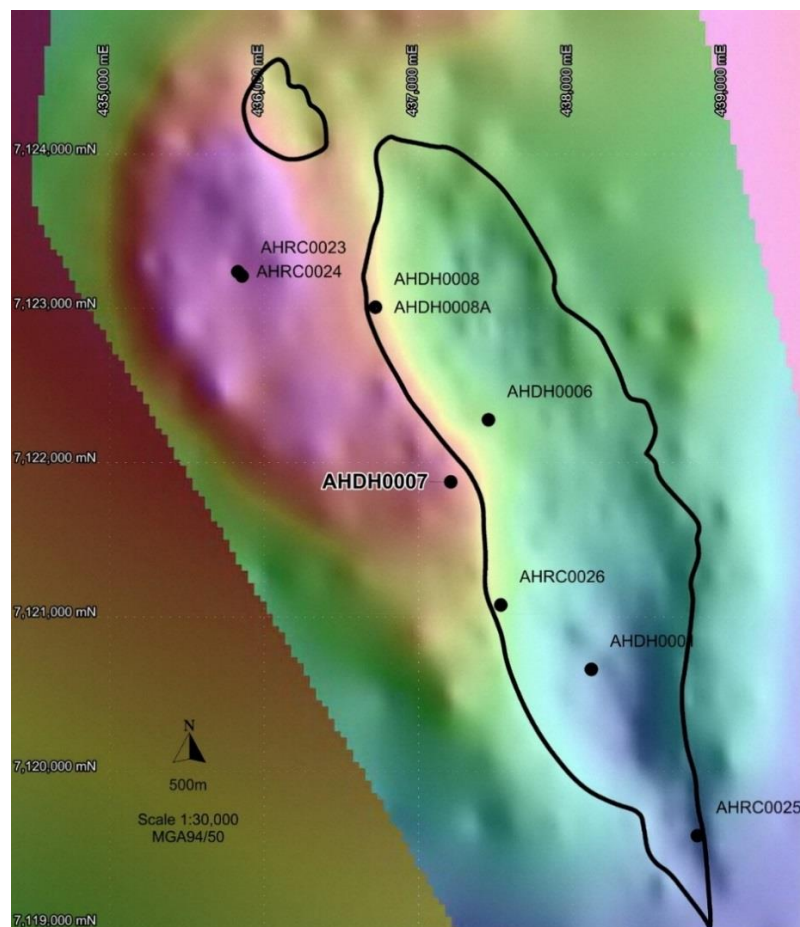


Figure 3. AHDH0007 Location (centre) outside the main intrusion on a gravity high.

Athena Resources Limited – First Quarter Activities Report

On assessing AHDH0001 geochemistry, magnetic and gravity data from within the central intrusion and drill hole AHDH0007 there are exciting observations. Figure 4 below shows AHDH0007 drill core from 478m to 499m. The darker ultramafic appears structurally bounded.

Assays and spectral logging of AHDH0007 (Figure 5), indicate the section is a more primitive ultramafic rock with chaotic geochemistry compared to AHDH0001 within the central intrusion, (Figure 6). The central intrusion is a relatively large sequence of homogenous serpentinised high MgO olivine dunnite.



Figure 4. Drill core from 478m-499m

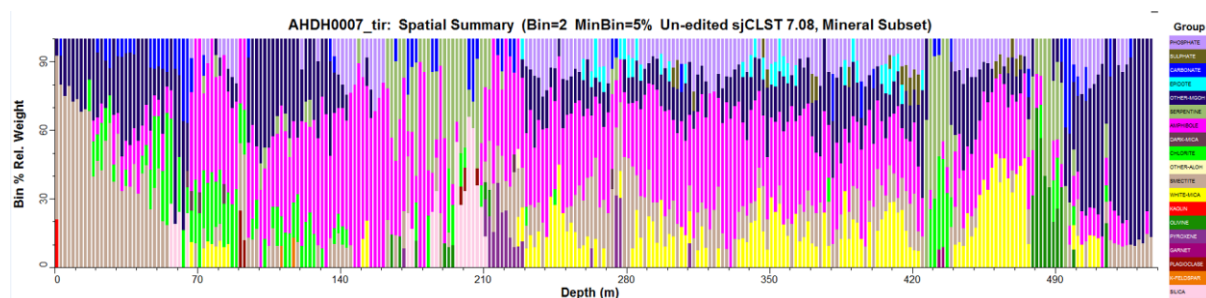


Figure 5. - AHDH0007 Spectral Log- west of the Milly Milly western contact.

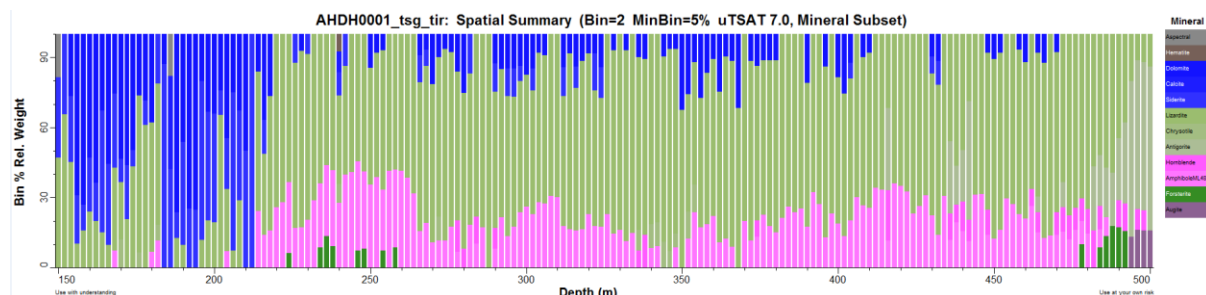


Figure 6. AHDH0001 Spectral Log - Central Milly Milly Intrusion.

The variable geochemistry up to 478m could be explained by magma mixing from the central intrusion with an intrusive pulse or by assimilation of country rock. The downhole geochemistry from 478m to 531m-EoH, suggests a separate assemblage of less evolved magma. It is to be

Athena Resources Limited – First Quarter Activities Report

explored if this flow could be a new discovery and a separate intrusion to the Milly Milly Intrusion and origin of the recently discovered gravity anomaly, (Figure 3).

It was also noted in the assessment that holes AHRC0023 and AHRC0024, drilled in 2010 through the sedimentary metapelite west of the Milly Milly intrusion, targeting the central gravity anomaly, intersected elevated sulphur from 88m and 92m respectively, Figures 7 and 8. Hole AHRC0024 also returned assays showing elevated Cu/Ni/Cr/MgO from 116m to 128m

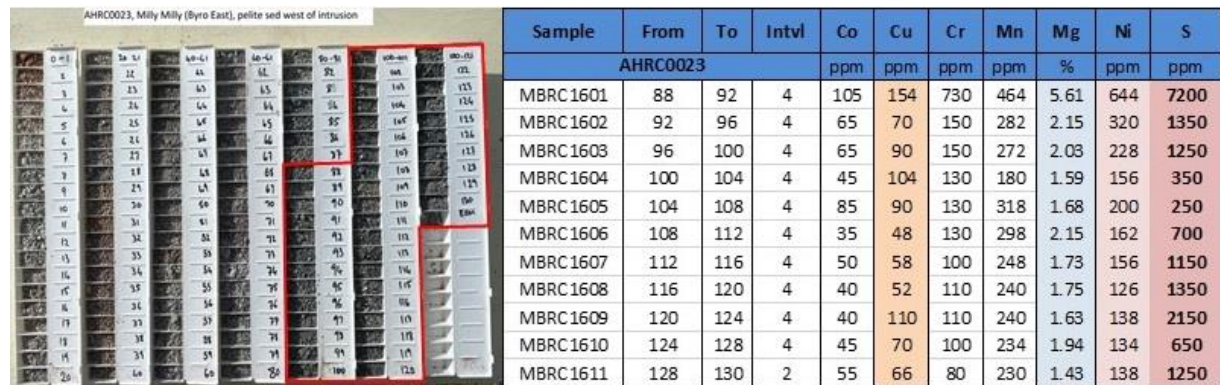


Figure 7. AHRC0023 Chip Trays and Assay.

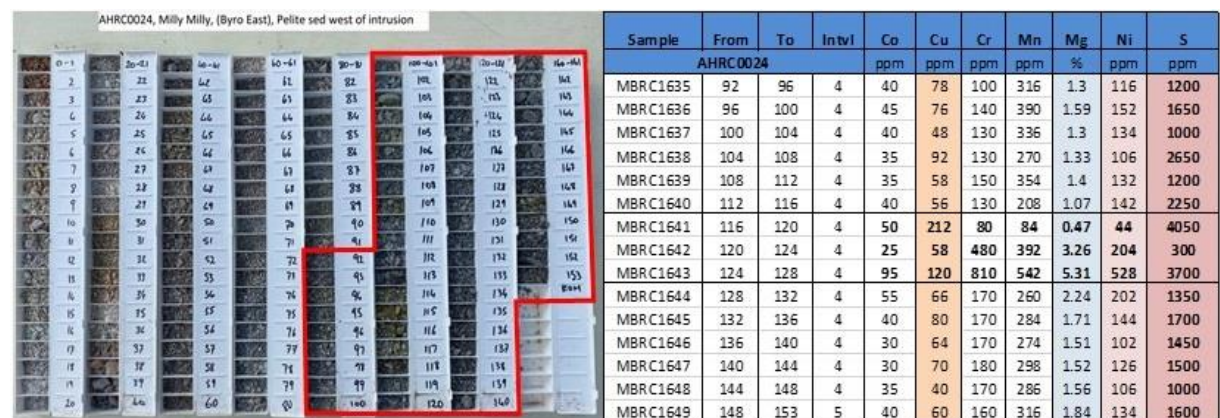


Figure 8. AHRC0024 Chip Trays and Assay.

In the regional context this is a good indication of sulphur availability close to an intrusive system at the Yilgarn margin. In terms of local geochemistry, the Cu/Ni/Cr/MgO signatures are a whiff of the right type of smoke. It is interpreted the sulphur is secondary to the metapelite. The coincidence of sulphur with elevated Cu/Ni/Cr/MgO signatures is intriguing given the gravity anomaly below.

REVIEW OUTCOMES - MILLY MILLY INTRUSION (Cu/Ni/PGE)

- Potential structural flow dynamics within the Milly Milly intrusion warrant an infill gravity survey planned to further define the potential conduit occurrence. Gaps in ground EM data have also been highlighted warranting further moving loop EM data acquisition using modern SQUID technology over the northern Milly Milly magnetic anomaly and in the area of drill holes AHRC0023-24. Figure 9 - Area A, shows the area recommended for infill gravity and moving loop EM.
- Review of diamond drill hole AHDH0007, targeting the gravity anomaly at Milly Milly discovered by Athena in 2014-15, has highlighted AHDH0007, which was drilled outside the interpreted intrusion boundary, remained in ultramafic to end of hole. Review also

Athena Resources Limited – First Quarter Activities Report

showed the hole contained variable geochemistry including sections of primitive ultramafic with signs of metal depletion towards the end of hole. Figure 9 (Area B), below shows the area to be covered by infill gravity and moving loop EM to further constrain the gravity and EM for target generation.

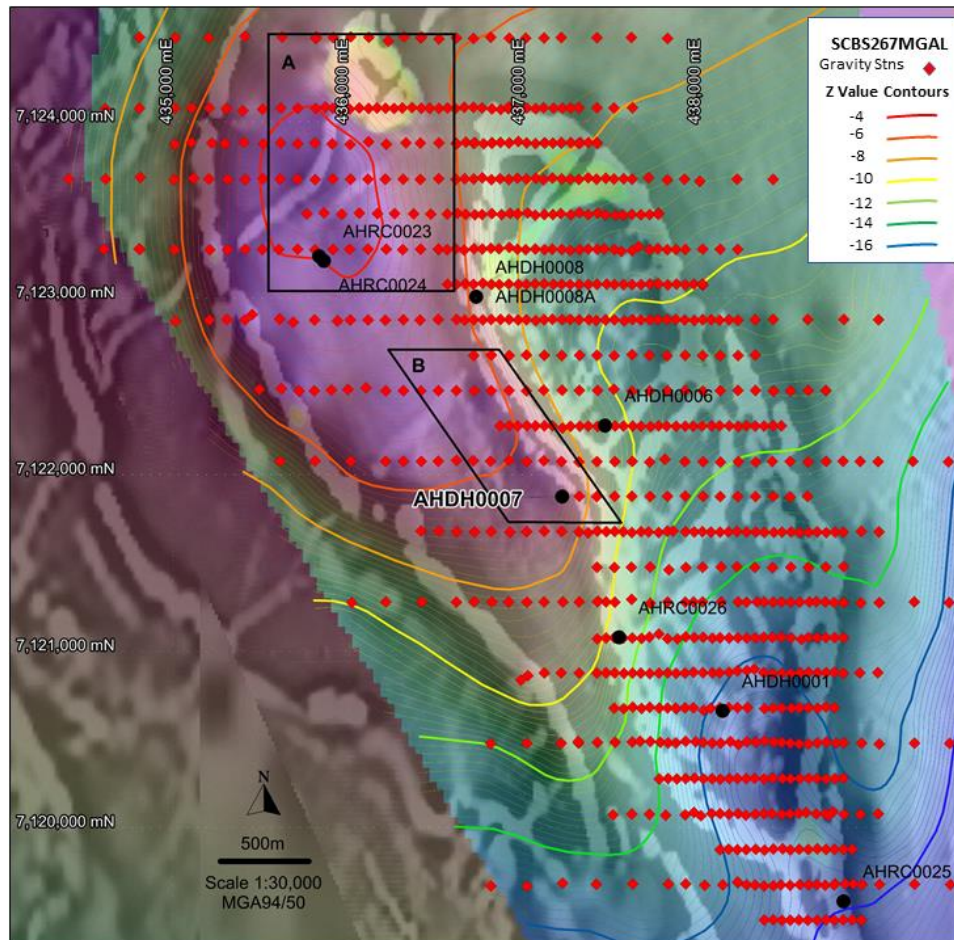


Figure 9. Existing Gravity stations to be infilled within areas A and B in consultation with Southern Geosciences.

MOONBOROUGH Cu/Ni/PGE INTRUSION

The Moonborough project is a greenfield project and contains Cu/PGE occurrences coincident with a regional scale gravity anomaly and several magnetic anomalies, (Figure 10). Athena Resources have partly constrained the gravity anomaly and drilled four holes in the area, VTEM and gravity survey results along with assays were reported to the ASX in 2010 and all data passed to the DIOR. This Quarter appraisal of the central Byro area demonstrates compelling exploration potential.

Athena Resources Limited – First Quarter Activities Report

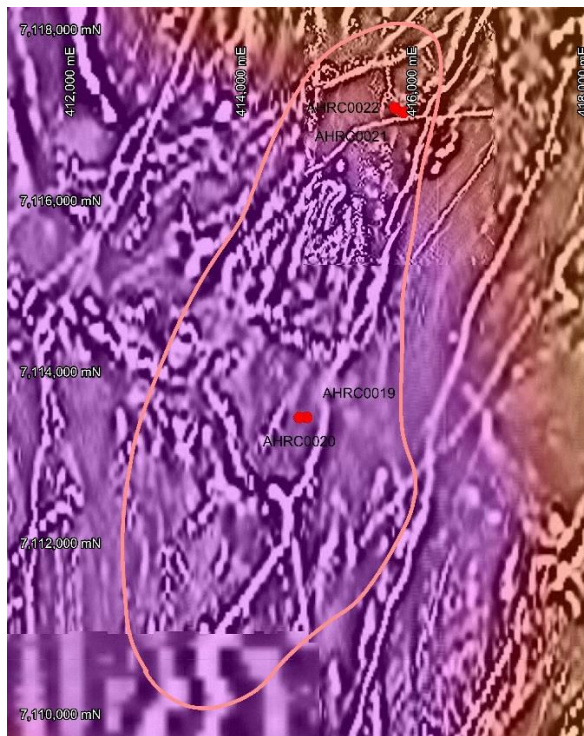


Figure 9. Moonborough Low Resolution Gravity Anomaly. (Pink line defines the interpreted domain of the layered intrusive complex).

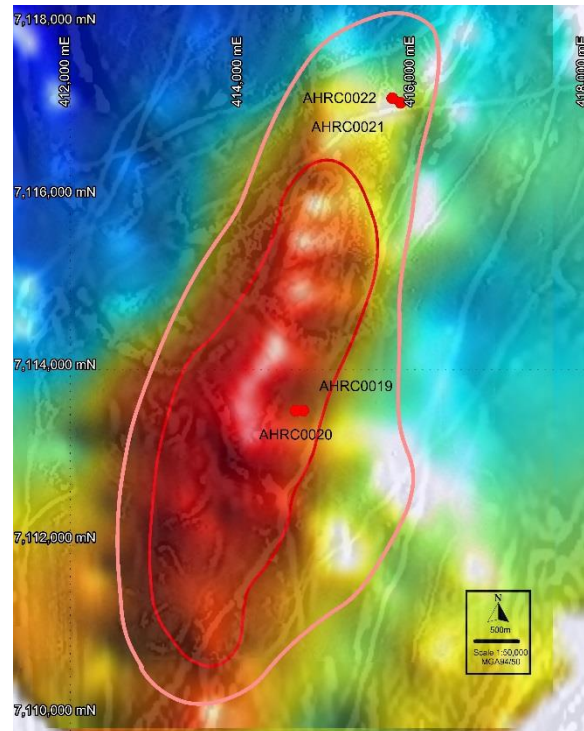


Figure 10. 2010 Gravity Anomaly at Moonborough. (Red line highlights constrained BG anomaly).

Drilling Review

At the northern extent of the Moonborough gravity anomaly, Figure 10, coincident with a known copper carbonate occurrence, Athena drilled two holes - AHRC0021 and AHRC0022, (reported to the ASX at that time). The holes intersected a layered mafic dolerite-gabbro sequence. The parent rock hosted only trace copper in fresh rock and elevated copper within the weathered zone. The holes also intersected a series of vein sets hosting anomalous gold, platinum, palladium and moderate sulphur, Table 2.

Table 2. Notable assays from AHRC0021, (reported on ASX platform 2010)

AHRC0021 Notable Assays - EoH 123m								
Elements			Au	Pt	Pd	Co	Cu	S
From	To	Interval	ppb	ppb	ppb	ppm	ppm	ppm
8	12	4	14	5	60	40	592	50
12	16	4	17	5	80	40	620	<50
20	24	4	6	10	35	50	424	250
28	32	4	5	<5	30	45	232	150
32	36	4	2	5	20	45	208	150
36	40	4	4	10	30	40	240	150

Athena Resources Limited – First Quarter Activities Report

Table 3. Notable assays from AHRC0022, (reported on ASX platform 2010)

AHRC0022 Notable Assays - EoH 92m								
Elements			Au	Pt	Pd	Co	Cu	S
From	To	Interval	ppb	ppb	ppb	ppm	ppm	ppm
8	12	4	6	10	145	10	1240	200
20	24	4	14	20	45	30	2640	150
24	28	4	199	30	60	240	2700	100
28	32	4	31	10	40	65	674	<50
32	36	4	16	5	35	55	484	150

At the mid-section of the gravity anomaly, Figure 10, Athena drilled two holes, AHRC0019 and AHRC0020. Both holes intersected an amphibole/chlorite ultramafic of moderate MgO and high sulphur with trace sulphide.

Table 4. Notable assays from AHRC0019 (reported on ASX platform 2010)

AHRC0019 Notable Assays - EoH 197m												
Element			Au	Pt	Pd	Co	Cr	Cu	MgO	Ni	S	Ti
From	To	Intvl	ppb	ppb	ppb	ppm	ppm	ppm	Calc	ppm	ppm	ppm
175	176	1	8	10	5	80	1450	62	23.265	924	700	2050
176	177	1	10	10	5	75	1430	48	22.275	878	800	1800
177	178	1	4	10	5	75	1250	28	21.285	834	450	1750
179	180	1	3	10	5	70	1610	56	21.12	814	650	1550
180	181	1	1	10	5	80	1630	50	23.76	964	850	2450
181	182	1	3	10	10	80	1600	56	23.43	976	700	2350
182	183	1	5	15	10	80	1520	56	22.935	906	950	2750
183	184	1	1	15	10	80	1430	80	23.925	968	1500	2350
184	185	1	3	10	10	80	1420	96	24.09	970	2050	2300
185	186	1	2	5	10	75	1280	48	22.77	910	700	2150

Table 5. Notable assays from AHRC0020 (reported on ASX platform 2010)

AHRC0020 Notable Assays - EoH 141m												
			Au	Pt	Pd	Co	Cr	Cu	MgO	Ni	S	Ti
From	To	Interval	ppb	ppb	ppb	ppm	ppm	ppm	Calc	ppm	ppm	ppm
128	132	4	4	5	5	65	700	96	15.279	526	1300	6350
132	136	4	1	5	5	65	710	108	13.6125	406	1400	7150
136	141	5	2	10	10	70	950	98	18.645	712	1150	3900

Drilling results showed the interpreted domain of the intrusion and gravity anomaly (Figure 10), hosts a sequence of mafic to ultramafic intrusive rocks interpreted to be a layered sequence, carrying anomalous Au/Pt/Pd/Cu/Ni/S. The geochemical signature and mineral assemblage within the Moonborough system shows a potential to host mineralisation.

Athena Resources Limited – First Quarter Activities Report

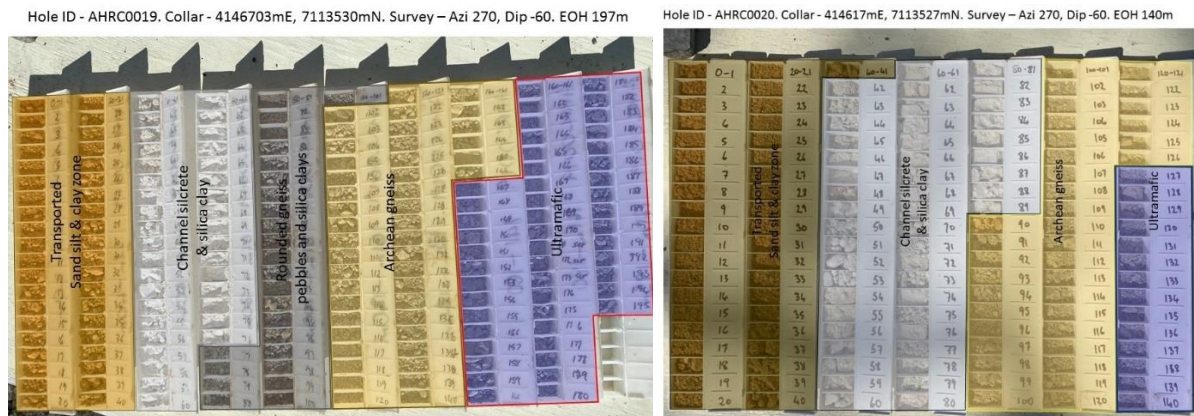


Figure 11. RC chip trays and summary log of holes AHRC0019 and AHRC0020

Holes AHRC0019 and AHRC0020 drilled in 2010 and reported to the ASX at that time, passed through a section of paleo channel encountering significant water volumes. It was decided to determine the extent of the paleo channel and complete further gravity and EM before further drilling was completed. The paleo channel has since been further constrained and identified as a potential water supply for processing at the Byro Industrial Minerals Project at the FE1 resource and mining lease M09/166.

Target Development.

Assessment of the 10-year-old VTEM survey completed over the Moonborough Intrusive has highlighted the need for application of technology available now to better constrain multiple magnetic anomalies generating high quality drill targets within the intrusion.

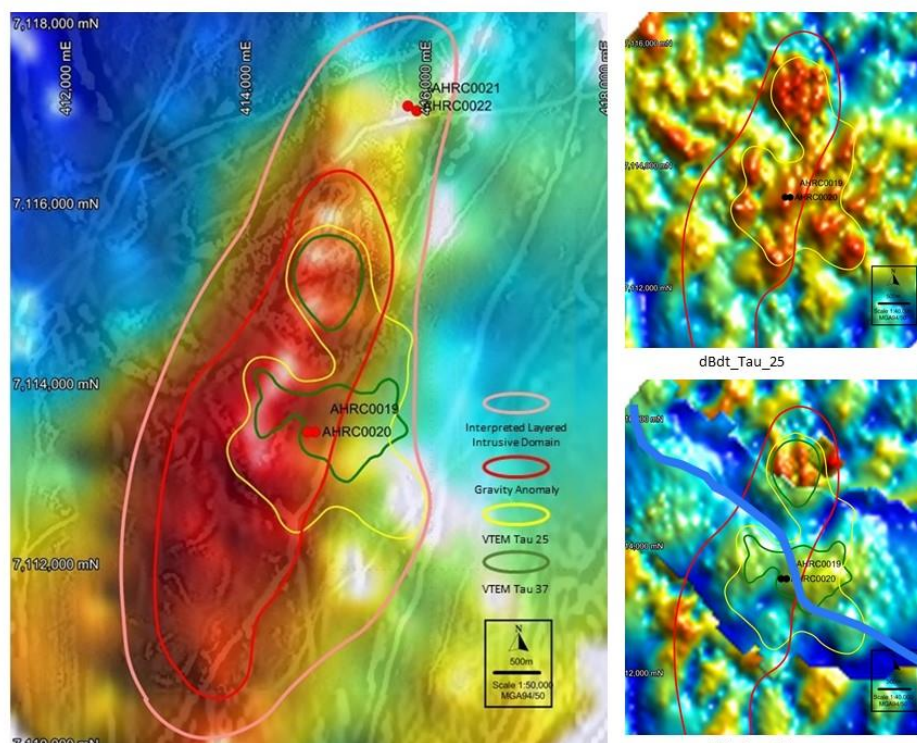


Figure 12. 2010 EM Anomalies on Gravity

VTEM channels, Tau 25 and Tau 37 show mid time responses that partially hold up through dBdt and B Fields. The paleochannel crosscutting through the gravity anomaly is represented by a blue line within the conductive zone highlighted in the Tau 37 dBdt (lower right inset), and creates an interference requiring further resolution.

Athena Resources Limited – First Quarter Activities Report

REVIEW OUTCOMES - MOONBOROUGH INTRUSION (Cu/Ni/PGE)

This Quarter appraisal of the central Byro, Moonborough Intrusion and Milly Milly Intrusion have demonstrated compelling exploration potential.

In Summary

The Moonborough project is at a greenfield stage hosting a significant gravity anomaly coincident with 10-year-old VTEM anomalies with two drill holes intersecting ultramafic in the central gravity anomaly and two holes at the northern extent of the anomaly which intersected a layered sequence of gabbro and dolerite with elevated Au/cu/S/Pt and Pd PGE's.

The Milly Milly Intrusion has been tested and demonstrates a geochemistry of high MgO olivine dunnite undersaturated in sulphur with nickel not in silicate holding the capacity to generate nickel sulphide given high volume flow through in a conduit setting with the addition of sulphur.

The review of holes AHDH0007 and AHRC0023 AHRC0024 show a possible second intrusion, adjacent to Milly Milly, of primitive olivine dunnite with high MgO intruding into a metapelite with sulphur content. The origin of the sulphur appears secondary to the metapelite and it is yet to be determined if the sulphur is related to the potential second intrusion.

Target Generation

The strategy for the next steps in exploration is simple. High powered modern technology to achieve better geophysical resolution of the various anomalies and will include,

- Airborne VTEM, Ground TDEM and moving loop using modern SQUID technology
- High definition infill gravity
- Assessment of targets

Athena Resources Limited – First Quarter Activities Report

CORPORATE

PLACEMENT

On 17 August 2020 Athena Resources Limited announce that it had completed a placement of 7,428,571 fully paid ordinary Athena shares at an issue price of \$0.035 each to raise \$260,000 (**Placement**).

The shares under the Placement (**Placement Shares**) were issued to Goldway Mega Trade Limited (**Goldway**), a Hong Kong registered company. Goldway is not a related party of Athena.

OFFICE CLOSURE AND COVID – 19 RESPONSE

Since early March 2020, the rapid global spread of Coronavirus (Covid-19) has necessitated significant and evolving responses by industry and government to slow the transmission rates of the virus. This had involved severe restrictions on the movement of people and the implementation of strict social distancing requirements.

As a result, the Athena Resources office at 24 Colin Street, West Perth had been unmanned since early March and is now closed. The new registered office is at 21 Millstream Rise, Hillarys, WA 6025. Telephone 08 9307 7902.

Staff continue to work from home remotely and can be reached by email at – ahn@athenaresources.com.au

As part of the Governments assistance for Covid-19 the Company has received \$10,530 for Cash Boost 1, \$15,795 for Cash Boost 2 and \$15,792 for cash Boost 3.

In addition the Company is eligible for JobKeeper for it's one full time employee and will be entitled to \$1,500 per fortnight from the beginning of April until the end of September under the current government proposals.

OTHER INFORMATION

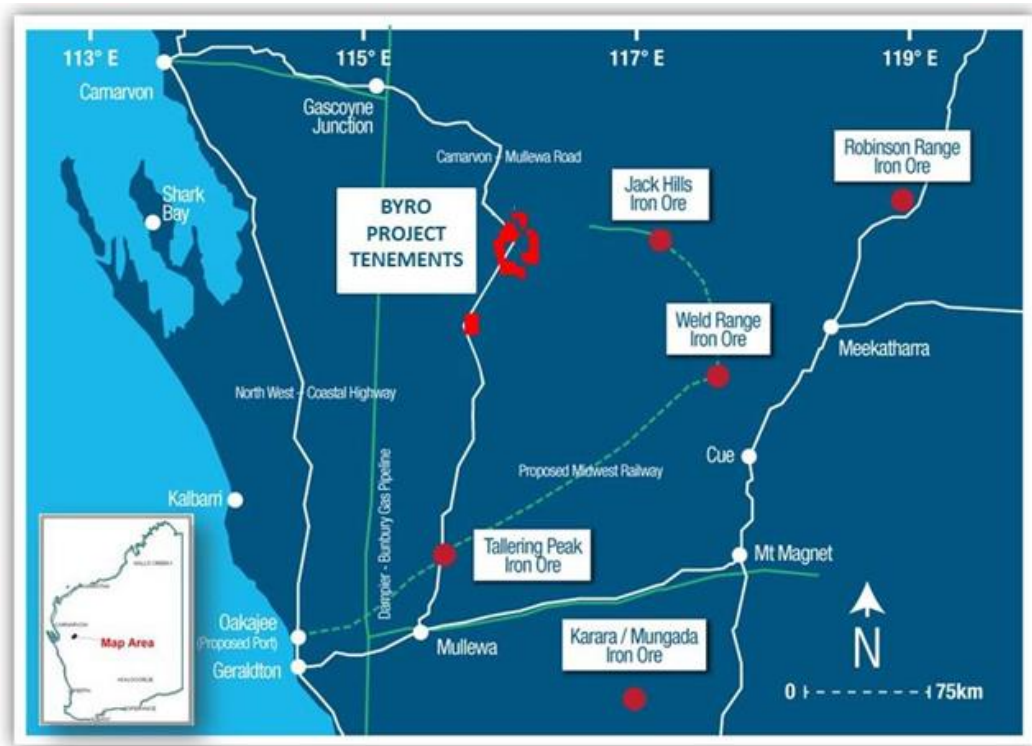
There was \$15,000 paid to related parties of the Company and their associates during the quarter.

Athena Resources Limited – First Quarter Activities Report

ABOUT ATHENA RESOURCES LIMITED

Athena Resources Limited (ASX:AHN), which is based in Perth was listed on the ASX in 2006 and currently has 308 million shares on issue. Athena owns a 100% interest in the Byro Project through its subsidiaries Complex Exploration and Byro Exploration where it is exploring for copper, nickel, PGE's and iron ore.

Regional Project Location



Edmond Edwards Executive Director of Athena has authorised release of this Quarterly Activities Report to the ASX.

Yours faithfully

Ed Edwards
Executive Director
ATHENA RESOURCES LIMITED
31 October 2020

Athena Resources Limited – First Quarter Activities Report

INTERESTS IN MINING TENEMENTS

Athena Resources Limited 100%	Tenement Type
Byro Exploration	E – Exploration License
E09/1507	
E09/1552	
E09/1637	
E09/1781	
E09/1938	
Byro Project Mining	M - Mining Lease
M09/166	
M09/168	

CAUTIONARY NOTES AND DISCLOSURES

Disclosures

All data and Information of material nature referred to within this Quarterly Report with reference to the Byro South Mineralisation Report and the Milly Milly intrusion have previously been reported on the ASX platform in compliance with the relevant JORC compliance reporting format at the time of data acquisition.

Announcements

30/01/2015 Quarterly Activities Report

09/11/2010 Byro Cu/PGE Project Results

19/8/2010 VTEM Targets

25/10/2014 Milly Milly Intrusion Detailed Gravity Survey

12/09/2014 Milly Milly Nickel Intrusion Gravity Survey Identifies Anomalous Gravity Zones

Cautionary Notes and Forward Looking Statements

This announcement contains certain statements that may constitute “forward looking statements”. Such statements are only predictions and are subject to inherent risks and uncertainties, which could cause actual values, results, performance achievements to differ materially from those expressed, implied or projected in any forward looking statements.

JORC Code Compliance Statement

Some of the information contained in this announcement is historic data that have not been updated to comply with the 2012 JORC Code. The information referred to in the announcement was prepared and first disclosed under the JORC Code 2004 edition. It has not been updated since to comply with the JORC Code 2012 edition on the basis that the information has not materially changed since it was last reported.

Competent Persons Disclosure

Mr Kelly is an employee of Athena Resources and currently holds securities in the company.

Competent Person Statement

The information included in the report was compiled by Mr Liam Kelly, an employee of Athena Resources Limited. Mr Kelly is a Member of the Australasian Institute of Mining and Metallurgy, and has sufficient relevant experience in the styles of mineralisation and deposit styles under consideration to qualify as a Competent Person as defined in “The Australasian

Athena Resources Limited – First Quarter Activities Report

Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code 2012 Edition)”. The historical information included is compliant with the relevant JORC Code, 2004 Edition, and new information announced post that version of the JORC Code is compliant with the JORC Code 2012 Edition. Mr Kelly consents to the inclusion of the information in the report in the context and format in which it appears