



JUNE 2020 – QUARTERLY REPORT

ATHENA RESOURCES LIMITED

ASX: AHN
Symbol:
ACN: 113 758 900
Address: 24 Colin Street
West Perth
WA 6005

Telephone: (08) 9222 5888
Email: ahn@athenaresources.com.au
Website: www.athenaresources.com.au

CONTACTS

Mr Ed Edwards
Executive Director

PROJECTS

Byro Project (Athena 100%):

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

SECURITIES

301 million Ordinary Shares

SHAREHOLDERS

Brilliant Glory	14.30%
Mr E Edwards	12.68%
Goldway Mega	9.86%
Mr P Newcomb	5.69%

BYRO INDUSTRIAL MAGNETITE PROJECT

COVID -19 RESPONSE

Athena Resources office was closed and staff were working from home during much of the quarter.

BYRO SOUTH MINERALISATION REPORT

Athena completed and submitted to Mines Department a Mineralisation Report for Byro South (E09/1781-I) in preparation for the application of a Mining Lease.

MILLY MILLY Intrusion

Initial remodelling of gravity data has been completed revealing potential structural flow dynamics within the intrusion.



This PDF is bookmarked for ease of navigation

Athena Resources Limited – Fourth Quarter Activities Report

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 has 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 has been unmanned since early March and is currently attended on a limited basis.

Staff have been working from home remotely and can be reached by email at – ahn@athenaresources.com.au

Directors and Officers fees were suspended for the June quarter.

In addition the Company has negotiated a 50% cut in premises rent for the quarter saving \$8,700 and various other small reductions have been made.

As part of the Governments assistance for Covid-19 the Company has received \$10,530 for Cash Boost 1 and \$15,795 for Cash Boost 2 and expects similar amounts for subsequent Cash Boosts.

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. To date \$9,000 has been received.

BYRO SOUTH MINERALISATION REPORT

During the quarter Athena Resources have completed and submitted to the Mines Department of Western Australia a Mineralisation Report for the Byro South ore body within the Byro Industrial Magnetite Project. This work was completed in preparation for application for a mining lease.

In summary since grant of tenement E09/1781-I in 2010, exploration activities completed by Athena Resources Ltd towards the submission of a Mineralisation Report have included the following:

Geological Mapping and Rock-chip Sampling

A number of surface rock-chip samples were targeted over several high amplitude magnetic anomalies above 1,500nT. Iron oxide minerals from fresh outcrop were noted and recorded. The sampling program targeted base metals within ultramafic lithologies as well as the magnetic highs related to iron formations.

Athena Resources Limited – Fourth Quarter Activities Report

Table 1 Rock Chip Samples and XRF assays

Sample	East	North	Fe	SiO ₂	Al ₂ O ₃	TiO ₂	MnO	CaO	P
	MGA94z50	MGA94z50	XRF 202	XRF 202	XRF 202	XRF 202	XRF 202	XRF 202	XRF 202
MBCR255	417040.04	7099349.38	44.66	32.63	0.74	0.03	0.02	0.11	0.04
MBCR256	417125.01	7099914.94	49.82	23.94	0.91	0.01	0.02	0.11	0.046
MBCR257	416890.17	7099707.7	49.12	20.91	1.79	0.15	0.04	0.09	0.065
MBCR258	416774.53	7099806.54	46.87	29.89	0.68	0.01	0.01	0.05	0.026
MBCR260	414966.49	7101514.71	43.48	34.91	0.93	0.08	0.02	0.1	0.036
MBCR268	414605	7101181	35.5	45.98	0.24	0.007	0.08	0.81	0.033
MBCR269	414605	7101181	36.47	44.93	0.36	0.009	0.08	0.52	0.039
MBCR270	423740	7095023	44.12	36.04	0.48	0.02	0.01	0.03	0.03
MBCR272	417269	7104503	42.31	35.82	1.47	0.036	0.01	0.04	0.037

A number of samples returned ore grade magnetite concentrations where magnetic highs were situated. These provided targets for reverse circulation and diamond drilling. Within the proposed Mining Lease Application area AHN has completed reconnaissance mapping as well as detailed surface geological mapping to 1:2500 scale. Following drill programs, a series of detailed cross sectional and long sectional interpretations were also completed at 1:500 scale.

Drilling: Reverse Circulation (RC) and Diamond

During 2011 two campaigns of RC and diamond drilling were completed at the Byro South Project. From the two campaigns of drilling a total of 3031.4m were completed, being 2,333.7m of RC and 697.7m of diamond coring. A total of 22 RC holes were drilled, three of which were diamond tailed. A further three holes were diamond drilled from the surface.

The purpose of the drilling program was to test the high amplitude magnetic anomalies coincident with outcropping and sub-cropping magnetite rich iron formations which were sampled yielding high grade magnetite/hematite iron assays.

The Magnetite ore at Byro South appears within upper amphibolite facies gneissic rock in the form of a migmatite. The ore is matrix to massive localized in seams that range in thicknesses from 10m up to 50m width, dipping steeply to the west and strike dominantly north. Drilling has confirmed the high amplitude aeromagnetic anomalies are a direct result of the magnetite

Athena Resources Limited – Fourth Quarter Activities Report



Figure 1 Byro South RC Drill Hole Cuttings

The drilling returned a number of significant intersections of magnetite mineralization. Table 2 below details the collar positions of each drill hole and Table 3 below lists the significant iron intersections.

From the drilling it is evident that the magnetite iron formations, occurring within a migmatite host, are steeply dipping to the west and exhibit a shallow plunge to the SSW. The upper parts of many of the holes were significantly more hematitic and magnetic susceptibility readings were, as expected, much lower in these zones. The upper zones also contain a high degree of pisolitic iron that indicates a channelized deposition of hematitic pisolites from the surface to a depth of up to 40m.

The magnetite mineralization at Byro South is analogous to the magnetite hosted iron bearing formations found locally at the company's Fe1 iron project. High magnetic susceptibility readings, coarse Mnt grain size up to 1.5mm, X-ray Fluorescence (XRF) assay from surface sampling and X-ray Fluorescence (XRF) assay, grind size optimisation and Davis Tube results from the drilling all support the ore being of similar grade, quality and grain size to the magnetite ore as discovered within Byro North at the FE1 Resource.

All samples from the drilling were sent to Amdel-Ultratrace Laboratories in Canningvale, WA for X-Ray Fluorescence analysis (XRF202) spectrometry. All drill intersections are given as down-hole intersections and all coordinates given as Map Grid of Australia 94, zone 50.

Athena Resources Limited – Fourth Quarter Activities Report

Table 2 Byro South Drill Collars

Tenement	Hole ID	Type	Depth	East (MGA94)	North (MGA94)	RL	Dip	Azimuth
E09/1781-I	AHRC0045	RC	150	416881	7099644	334	-60	90
E09/1781-I	AHRC0046	RC	150	416774	7099661	339	-60	90
E09/1781-I	AHRC0047	RC	78	416676	7099590	334	-60	90
E09/1781-I	AHRC0048	RC	12	416711	7099780	337	-60	90
E09/1781-I	AHRC0048a	RC	87	416719	7099780	337	-60	90
E09/1781-I	AHRC0049	RC	150	416778	7099558	336	-60	90
E09/1781-I	AHRC0050	RC	132	416864	7099567	333	-60	90
E09/1781-I	AHRC0051	RC	150	416987	7099632	341	-60	90
E09/1781-I	AHRC0052	RC	150	417004	7099730	340	-60	90
E09/1781-I	AHRC0053	RC	106	416591	7099691	338	-60	90
E09/1781-I	AHRC0053D	DD	80.6	416591	7099691	338	-60	90
E09/1781-I	AHRC0054	RC	108	419535	7099352	335	-60	90
E09/1781-I	AHRC0054D	DD	92.1	419535	7099352	335	-60	90
E09/1781-I	AHRC0055	RC	130	416932	7099278	334	-60	90
E09/1781-I	AHRC0057	RC	150	416950	7099426	338	-60	90
E09/1781-I	AHRC0058	RC	154	416953	7099201	339	-60	90
E09/1781-I	AHRC0059	RC	160	417021	7099216	335	-70	90
E09/1781-I	AHRC0060	RC	100	416978	7099528	362	-70	90
E09/1781-I	AHRC0061	RC	150	417032	7099953	343	-60	90
E09/1781-I	AHRC0062	RC	136	416635	7099275	344	-60	90
E09/1781-I	AHRC0063	RC	80.7	416573	7099593	338	-60	90
E09/1781-I	AHRC0063D	DD	75.9	416573	7099593	338	-60	90
E09/1781-I	AHDH0003	DD	98.3	416710	7099707	339	-90	0
E09/1781-I	AHDH0004	DD	172	416951	7099530	325	-90	0
E09/1781-I	AHDH0005	DD	178.8	416753	7100269	339	-60	120

Athena Resources Limited – Fourth Quarter Activities Report

Table 3 Byro South Significant Drill Intersections

Hole ID	Type	Total Depth	Depth From	Depth To	Width	Fe Grade
AHRC0045	RC	150	6	46	40	30.79
			95	114	19	31.67
			133	144	11	36.72
AHRC0046	RC	150	0	40	40	31.61
AHRC0047	RC	78	4	16	12	27.6
AHRC0048	RC	12	0	12	12	37.57
AHRC0048a	RC	87	0	16	16	33.66
			24	72	48	34.54
AHRC0049	RC	150	0	12	12	31.73
			88	106	18	27.15
AHRC0050	RC	132	0	44	44	30.65
			80	132	52	31.56
AHRC0051	RC	150	48	72	24	37.58
AHRC0052	RC	150	58	68	10	31.48
AHRC0053	RC	106	80	106	26	31.54
AHRC0053D	DD	80.6	106.5	143	36.5	37.01
AHRC0054D	RC/DD	108	92	117.18	25.18	35.96
			121.18	135.17	13.99	35.79
			171.93	183	11.07	27.51
AHRC0055	RC	130	0	32	32	20.32
			94	124	30	34.7
AHRC0057	RC	150	68	92	24	20.52
AHRC0058	RC	154	0	32	32	21.81
			64	142	78	21.54
AHRC0059	RC	160	0	60	60	21.07
AHRC0060	RC	100	36	80	44	24.32
AHRC0061	RC	150	36	68	32	33.9
AHRC0062	RC	136	72	81	9	30.41
AHRC0063	RC	80.7	8	33	25	24.56
AHRC0063D	DD	75.9	86	148	62	31.06
AHDH0004	DD	172	54	97	43	30.2
			127	143	16	36.84
AHDH0005	DD	178.8	29.9	52.4	22.5	26.36
			116	134	18	31.7

Athena Resources Limited – Fourth Quarter Activities Report

Ore Characterisation and Metallurgical Summary

Drill chips containing magnetite samples from RC drill hole AHRC0045 were submitted to Amdel-Ultratrace Laboratories for Davis Tube Recovery and a ball mill test to achieve optimum grind times for differing size ranges. Tables 4-5 and Figure 2 below display the results of this work.

Drill cutting samples were also examined under a reflected light microscope in order to compare the ration of silicate to magnetite crystals, and also to compare the magnetite grain size to that previously located at the Fe1 Project nearby. The samples were found to be comparable in terms grain size, being course grained 2mm-5mm in range.

Table 4 Grind Establishment Times

BYRO SOUTH Grind Establishment Times		
Sample ID	AHRC0045	
Mill Number	1	
P80 Size	Time (min)	Time (sec)
250 µm	4.39	263
150 µm	:	:
125 µm	14	840
106 µm	:	:
90 µm	:	:
75 µm	27.52	1651
45 µm	66.6	3996

Table 5 Grind Times at nearby AHN Projects

	FE1	Mt NARRYER	WHISTLJACK	BYRO SOUTH
P80 Size	Time (sec)	Time (sec)	Time (sec)	Time (sec)
250 µm	101	156		263
150 µm	274			
125 µm	395	345		840
106 µm	508	441	1541	
90 µm		563	1913	
75 µm	869	744	2180	1651
45 µm		1640		3996

Athena Resources Limited – Fourth Quarter Activities Report

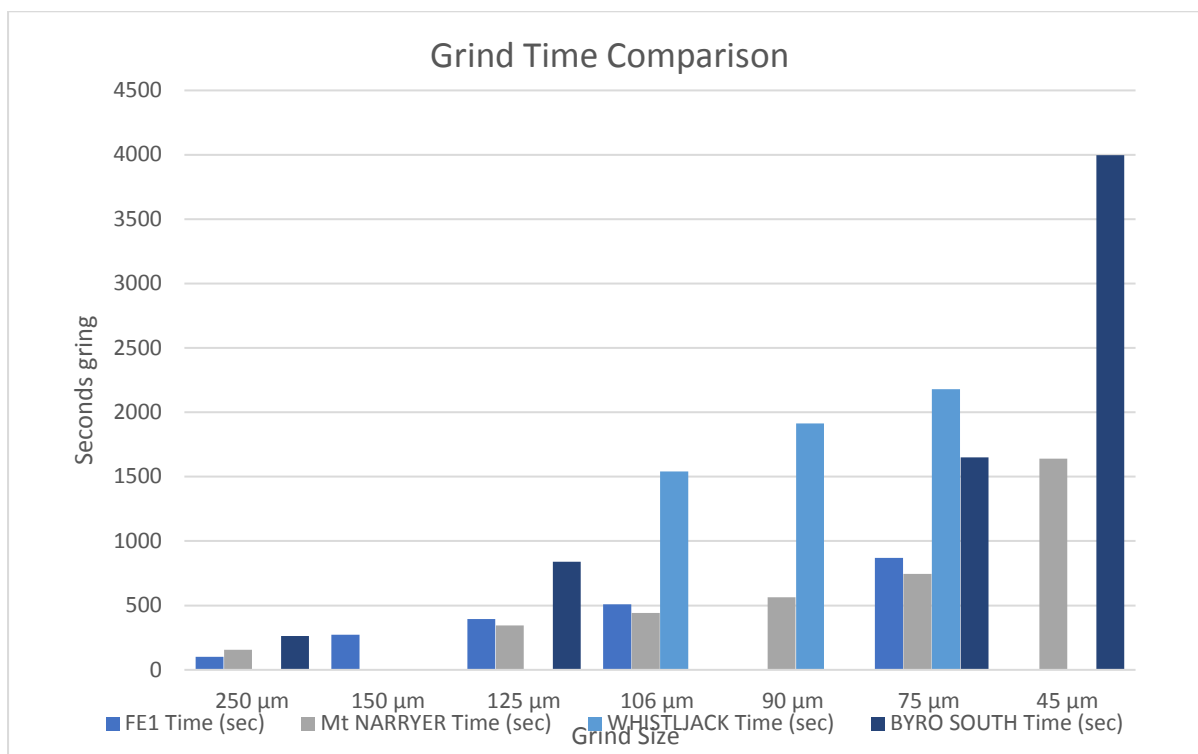


Figure 2 Grind Time Comparison

The coarse nature and purity of the magnetite at Byro South allows for a high degree of liberation of the magnetite at a relative coarse grind size P80 of 125 micron. This contributes to a significant reduction grind time and in power required for grinding. A processing plant can be built to produce a high value concentrate at a very competitive cost per tonne with effective logistics solutions.

Athena Resources Ltd, through its wholly owned subsidiaries Complex Exploration Pty Ltd and Byro Exploration Pty Ltd, have to date completed work in discovering and delineating significant magnetite mineralisation at the Byro South Project within E09/1781-I. Strong similarities exist between this project and the companies nearby mining lease M09/166 at the Fe1 Project in terms of grade, grain size, alteration and other physical characteristics.

Athena Resources Ltd has reasonable confidence that the Byro South Ore Body contains a significant thickness and depth of magnetite iron ore. Confidence is derived from 22 assayed drill intersections sufficient to support and inferred resource of sufficient quality and grade which is believed to be economically viable in the current market.

The Company feels the information presented in the Mineralisation Report meets sufficiently the definition and requirements of significant mineralisation pursuant to **section 74A of the Mining Act 1978**, and compliant with the guidelines set out by the DMP for **Mineralisation Report and Supporting Statement for a Mining Lease Application**, (updated march 2013).

Athena Resources Limited – Fourth Quarter Activities Report

MILLY MILLY Cu/Ni/PGE INTRUSION

During the quarter the Company's exploration at the Milly Milly Intrusion has focused on review of data acquired to date, to develop an exploration methodology as a pathway to identify prospective copper nickel accumulation in the context of a fluid system. Southern Geoscience Consultants are currently working with Athena Resources to re-evaluate the data set and assist with interpretation and application of exploration methodologies.

Different ideas and technologies have been applied by previous explorers to explore this recognised copper/nickel occurrence. Early near surface geochemistry from surface sampling and shallow drilling by previous explorers failed to locate and identify the fertility and tenor of the Milly Milly intrusion. Athena has established that the system is a fertile ultramafic occurrence containing significantly elevated copper nickel mineralisation in the central lobe.

To date Athena has taken appropriate steps to identify and refine understanding of the mineralisation through deep diamond drilling, assay, geophysical data collection, compilation and interpretation. This work has been supported and acknowledged by third party professionals and specialists refining the Milly Milly mineralisation constraints and reducing the search ellipse.

On review, Athena has attributed the four key elements that qualify a potential discovery at the Milly Milly Intrusion.

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 Kieth and the Nova-Bollinger nickel mines. These are all intrusive variants of orthomagmatic chonoliths.

2. Composition and fertility of source rock: Athena has discovered high magnesium Ni-Cu-Co-PGE bearing dunite/peridotite source rock occupies the central 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 nickel contained in sulphides not locked in silicate identified from drill core, assay, scanning electron microscopy and thin section petrology all showing 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 within the central lobe 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, in this same tectonic setting.

Athena Resources Limited – Fourth Quarter Activities Report

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

The company undertook high-resolution gravity data acquisition in 2015. 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. It was clear after drilling that a review of the exploration methodology was required to develop a better understanding before any further deep drilling took place.

From review the periphery of the intrusion is well constrained from outcrop, drilling, chemistry and magnetic data. The gravity data is currently being interrogated to achieve constraints on the pyroxenitic outer layer. Comparing data at the peripheral contact will create a platform to compare drilling, chemistry and magnetic and gravity data from within the central lobe.

The company is looking for a connection with the main body and a long-standing area of interest at the northern tip of the intrusion, (Figure 3. circled in red).



Figure 3. Milly Milly Intrusion northern magnetic anomaly.

Athena Resources Limited – Fourth Quarter Activities Report

Table 6. 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

Initial remodelling of the gravity data has been completed in the June quarter revealing potential structural flow dynamics within the intrusion. Work is focused on the intrusive architecture, and potential locations for formation of nickel sulphide accumulations such as changing dynamic flow zones or gravity traps. Further work is focused on recognition of these elements, defining methodologies and application of those methodologies, key to the discovery process and is ongoing.

OTHER INFORMATION

There were no Payments to related parties of the Company and their associates during the quarter.

ABOUT ATHENA RESOURCES LIMITED

Athena Resources Limited (ASX:AHN), which is based in Perth was listed on the ASX in 2006 and currently has 301 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.

Athena Resources Limited – Fourth Quarter Activities Report

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 July 2020

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	

Athena Resources Limited – Fourth Quarter Activities Report

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

03/09/2012 Assay Results From Whitmarsh Find, Whistlejack and Byro South Iron ore Projects

18/10/2011 Byro Iron Ore Project Growth

02/02/2012 Byro Nickel Copper Project

06/10/2012 High Grade Fe Results at Byro East

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 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