

ASX: AHN

Issued Capital

1,070,467,558 shares
75,000,000 @ \$0.020 options
352,656,853 @ \$0.018 options

Athena Resources Limited

ACN 113 758 900

Directors

Ed Edwards
Hau Wan Wai
Peter Newcomb

Company Secretary

Ed Edwards

About Athena Resources

AHN is an Australian ASX listed explorer and developer of high-grade iron ore assets in Western Australia.

The Company is focused on its Byro Project, strategically located in the Mid-West region 410km from the Port of Geraldton.

The Byro Iron Ore Project has potential to mine and supply premium grade, low impurity magnetite (>70% Iron Content) for the production of green steel, a fast-growing global market opportunity. The Byro Project also contains exciting base metal potential.

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EXPLORATION TARGET ESTIMATE FOR ADVANCED PROJECTS AT BYRO

Highlights

- Exploration Target Estimates prepared for high purity magnetite Prospects, including Byro South, Whistlejack, Whitmarsh Find, and Mt Narryer.
- High purity targets are based on diamond and RC drilling intersections supported by metallurgical test-work.
- Planning underway to carry out resource development drilling of high purity targets through staged drill campaigns over the next twelve months with aspirations to increase the Byro Project's Mineral Resource inventory.
- FE1 Pre-Feasibility Study well advanced.

BYRO MAGNETITE EXPLORATION TARGET ESTIMATE

Project	Million tonnes		Fe Grade	
	Minimum	Maximum	Minimum	Maximum
Byro South Region				
Byro South	9.43	42.42	24.0%	36.0%
Whistlejack	12.57	34.44	33.0%	38.0%
Whitmarsh Find	10.22	23.48	20.0%	36.0%
	32.22	100.34	26.2%	36.7%
Mt Narryer Region				
	16.38	40.32	24.0%	33.0%
Combined	48.6	140.66	25.5%	35.6%

Cautionary Statement

The Exploration Target has been prepared and reported in accordance with the 2012 edition of the JORC Code. The potential quantity and grade of the Exploration Target is conceptual in nature. There has been insufficient exploration to estimate a Mineral Resource. It is uncertain if further exploration will result in the estimation of a Mineral Resource.

Exploration Target Estimate

Athena Resources Limited (“the Company”) advises that an Exploration Target Estimate for the advanced magnetite targets at the Byro Project has been completed. The advanced targets include those with drilling and limited metallurgical test-work supporting the high purity of contained magnetite. The Exploration Target Estimate includes the Byro South, Whitmarsh Find, Whistlejack, and Mount Narryer Prospects. The Exploration Target Estimate builds on the foundation of the FE1 indicated [Mineral Resource Estimate](#) (MRE), released January 2023.

The overall target derived is from 48.60mt to 140.66mt at a grade between 25.5 % and 35.6 % Fe.

Advanced Targets were selected for estimation based on assay drilling intersections. Airborne magnetic imagery was also utilised to continuity of magnetite units in areas where drilling was not previously extended.

The Exploration Target Estimate for the Byro South and Mount Narryer Regions has been estimated in accordance with JORC 2012 guidelines as the following, (Table 1). Exploration Target Parameters for defining minimum / maximum ranges are shown in Table 2. Further explanation of the parameters follows Table 2.

Exploration Target Estimates were prepared in-house by Athena Resource’s Exploration Manager Mr Liam Kelly as the Competent Person.

Table 1. Byro Magnetite Exploration Target Estimate

Project	Million tonnes		Fe Grade	
	Minimum	Maximum	Minimum	Maximum
Byro South Region				
Byro South	9.43	42.42	24.0%	36.0%
Whistlejack	12.57	34.44	33.0%	38.0%
Whitmarsh Find	10.22	23.48	20.0%	36.0%
	32.22	100.34	26.2%	36.7%
Mt Narryer Region				
	16.38	40.32	24.0%	33.0%
Combined	48.6	140.66	25.5%	35.6%

The Targets are conceptual in nature, there has been insufficient exploration to estimate a Mineral Resource and it is uncertain that further exploration will result in the estimation of a Mineral Resource.

Previous drilling and metallurgical studies by the Company have increased the confidence in the four advanced Prospects with plans underway to implement further resource definition drilling campaigns scheduled for the coming year. This strategy enables the Company to increase the Mineral Resource inventory at the Byro Project and support future feasibility studies for a high purity magnetite product.

Exploration Target Parameters

Exploration Target Estimates were carried out by utilising the broadest and narrowest true width intersections and extrapolating along strike. The highest iron grade and lowest iron grade weighted average intersections within a target were also utilised to identify minimum and maximum ranges.

Table 2. Exploration Target Parameters

Parameter	Target Range	Byro South Region			Mt Narryer Narryer North
		Byro South	Whistlejack	Whitmarsh Find	
Width (m) <i>Estimated from drill intersections and cross section interpretation of true width</i>	Maximum	49	40	26	30
	Minimum	16	25	20	20
Vertical Depth (m) <i>Estimated from outcrop, drilling and regional stratigraphy</i>	Maximum	170	170	150	150
	Minimum	150	150	120	100
Strike Length (m) <i>Measurement from GPS and Aeromagnetic Geophysics</i>	Maximum	1,455	1,447	1,720	3,200
	Minimum	1,310	1,117	1,420	2,600
Average SG (t/m3)	Maximum	3.5	3.5	3.5	3.5
	Minimum	3.0	3.0	3.0	3.0
Fe% average (whole rock assay)	Maximum	36%	38%	36%	33%
	Minimum	24%	33%	20%	24%

Target Parameters for these mineral occurrences are based on maximum and minimum parameters in accordance with JORC (2012) guidelines and are as defined below.

Width (m)

True width intersections were calculated from drill angle against stratigraphic dip. Within a target area, the minimum was determined as the narrowest intersection along strike, while the maximum value was determined as the thickest intersection along strike.

Vertical Depth (m)

Depth was estimated vertically from surface RL to an arbitrary extent. Minimum parameter was determined by depth of drill intersection, while maximum was extended a nominal amount beyond. All drill intersections are considered open at depth.

Strike Length (m)

Strike length was determined by the extent of the drilling, typically open in each direction along strike, with a greater or lesser extension governed by airborne magnetic data greater than a 1,500 nanoTesla response. Strike length was also supported by presence of iron mineralisation in outcrops.

Average Specific Gravity (SG t/m3)

Specific Gravity was estimated from limited RC chip samples measured using the wet/ dry method within drilling intersections.

Fe Grades (%)

Fe grade was estimated using the calculated weighted average from XRF assayed intervals that made up each drill intersection within each target area. Table 3 below describes the number of data points used in each Exploration Target area. Minimums were determined as the lowest weighted average iron intersection along strike, while maximums were determined as the highest value weighted average drill intersection.

The above factors combined allow for reasonably assumed Exploration Target Estimates provided for the four Prospect areas.

Table 3. Drill and Assay Data

	Byro South Region			Mt Narryer
	Byro South	Whistlejack	Whitmarsh Find	Narryer North
Holes drilled	22	6	4	12
Meters drilled	3,030	926	520	1,187
Down hole intersection (m)	979	244	134	230
No of Intersections	36	6	6	9
Intersection Assays	490	122	67	115

Assays results for the intersections described above are historical results and were announced on the ASX platform as follows.

Byro South	Drilling Update Byro Iron South Ore	18 October 2011
Whistlejack	Drilling Whitmarsh and Whistlejack Iron Ore Projects Byro Iron Ore Projects	22 December 2011 19 October 2016
Whitmarsh Find	Drilling Whitmarsh and Whistlejack Iron Ore Projects	22 December 2011 June 2016 Quarterly
Mt Narryer	Byro Iron Ore Project	15 December 2014 June 2016 Quarterly

Some of the information contained in the announcements above are historic from holes drilled by Athena. Some 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.

Minimum Grades were estimated as the minimum grade of mineralised intersections.
Maximum grades were estimated as the maximum grade of mineralised intersections.
No averaging top cuts or bottom cuts were applied to minimum or maximum intersection grades.

Exploration Strategy and Proposed Drilling

Decarbonising the steel industry now includes the whole supply chain from exploration to mining to the final product. With this, interest, and demand in targeting for high-grade, low impurity discoveries is growing. Demand for increased removal of impurities and high purity concentrates before manufacturing is placing pressure on explorers and mine processing systems. In most cases necessitating logistically challenging and expensive upgrades causing concern over future demand and lagging supply trends.

The Company's exploration and targeting strategy is allied to industry decarbonising by exploring for and discovering high purity magnetite occurrences. The strategy of increasing high quality resources conforms with industry and social pressures for explorers to develop low impact projects in response to demand and quality requirements from established manufacturing, and new technologies. The Company is currently assessing detailed requirements for project specific drilling programs within the Byro South and Mt Narryer Regions to confirm the Exploration Target Estimate in support of the FE1 2023 Mineral Resource Estimate and aspire to the broader goal for the Byro Magnetite Project of 100mt.

Athena Resources anticipates an ongoing and comprehensive phase of drilling with a staged approach. The Company anticipates confirming the revised Exploration Target over the next 12 months with focus on the Byro South and Mt Narryer Regions. It is anticipated drilling will be undertaken incrementally while maintaining a focus on metallurgy, beneficiation and high purity as the project areas develop.

Program of work (PoW) approvals are granted to 2025 covering the proposed development of the magnetite occurrences as follows.

- Byro South, E09/1781, PoW Registration ID 95863
- Whitmarsh Find, E09/1781, PoW Registration ID 95863
- Whistlejack, E09/1781, PoW Registration ID 95863 and spans tenement E09/1507, PoW ID 92853
- Mt Narryer, M09/168, PoW Registration ID 96377

Drilling programs are currently being developed. This work is being undertaken in consultation with Entech Mining Limited to ensure sufficient data is acquired to support a future mineral resource estimate.

FE1 Mineral Resource Estimate (ASX: AHN 17/01/2023)

Table 4. Byro Open Pit Whole Rock Mineral Resource within mineralised domains interpreted at 10% Fe cut-off

Mineral Resource Category	Weathering	Tonnes (Mt)	Fe (%)	SiO ₂ (%)	Al ₂ O ₃ (%)	P (%)	S (%)	TiO ₂ (%)	LOI (%)	Density
Indicated	Fresh	24.0	25.1	49.3	5.48	0.052	0.079	0.32	-0.059	3.27
Inferred	Fresh	5.3	22.7	50.6	6.56	0.048	0.085	0.37	0.023	3.21
Total		29.3	24.7	49.6	5.68	0.051	0.080	0.33	-0.044	3.26

No cut-off grade used in the report.

Totals may not be able to be reproduced due to the effects of rounding.

Table 5. Byro Open Pit Magnetite Mineral Resource within mineralised domains interpreted at 20% DTR cut-off

Mineral Resource Category	Weathering	Tonnes (Mt)	DTR (%)	Fe (%)	SiO ₂ (%)	Al ₂ O ₃ (%)	P (%)	S (%)	LOI (%)	Density
Indicated	Fresh	17.7	33.6	70.7	1.23	0.32	0.003	0.021	-3.20	3.30
Inferred	Fresh	3.3	32.3	70.8	0.95	0.34	0.002	0.023	-3.17	3.26
Total		21.0	33.4	70.7	1.18	0.32	0.003	0.021	-3.19	3.29

No cut-off grade used in the report.

Totals may not be able to be reproduced due to the effects of rounding.

The estimated Magnetite Mineral Resource is contained within the whole rock Mineral Resource, and they are not cumulative.

The magnetite ore at FE1 commonly occurs in a near bimodal form of dominantly magnetite and quartz with low primary impurities. Metallurgical work demonstrates the FE1 ore can be processed to high purity with improved processing outcomes because processing bimodal ore is logistically simpler, uses lower energy, lower water requirements, and has lower environmental impacts. Within the Byro tenements the Company has identified magnetite mineralisation of similar characteristic to the FE1 resource in the Byro South Region and the Mt Narryer Region

The Byro South, Whistlejack and Whitmarsh Find, and the Mt Narryer North projects have been identified as prospective low impurity occurrences. The prospectivity of these occurrences have been identified through drilling and preliminary metallurgy with beneficiation tests demonstrating the occurrences have potential to be processed to a high purity concentrate of >70%Fe, Table 5.

Metallurgy on Byro South and Mt Narryer Satellite Occurrences

Metallurgical results have previously been completed to determine the ore quality at the four advanced Exploration Targets. The Byro South and Whistlejack projects have had grind optimisation techniques applied and Davis Tube Recovery analysis, (DTR) for concentrate grades to determine ore quality. This work is currently underway on the Whitmarsh Find Project. Metallurgy has also been completed on the Mt Narryer Project using grind optimisation techniques to determine concentrate grades from DTR of >71%Fe. Results of the completed analysis have been previously reported to the ASX as referenced below.

Table 6. Satellite occurrence beneficiation test data

Project	Type of Analysis	DTR (%)				ASX Announcement
		Fe	SiO ₂	P	S	
Narryer	DTR Grind Optimisation	71.04	1.38	0.002	0.003	ASX:19 Jan 2017
Byro South	DTR Grind + Flotation	70.61	1.36	0.001	0.264	ASX:19 August 2021
Whistlejack	DTR Grind + Flotation	70.22	1.51	0.001	0.122	ASX:19 August 2021
Whitmarsh Find	DTR Grind Optimisation	Underway	Underway	Underway	Underway	

Comparison: FE1 Grind Optimisation Results

FE1 Resource	DTR Grind Optimisation	71.02	0.83	0.003	0.01	ASX:7 Feb 2011
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Athena Resources Limited (ASX: AHN), which is based in Perth was listed on the ASX in 2006. Athena owns a 100% interest in the Byro Project through its subsidiaries Complex Exploration and Byro Exploration where it is exploring for iron ore, copper, nickel, and PGE's.



This announcement is authorised by Director Ed Edwards

Ed Edwards
Executive Director
13 February 2023

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 Report with reference to historical drilling have previously been reported on the ASX platform in compliance with the relevant JORC compliance reporting format at the time of data acquisition.

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. Some 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 has had over twenty years’ experience as a geologist in mining and exploration and is a Member of the Australasian Institute of Mining and Metallurgy, (306501). Mr Kelly 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.

JORC Code, 2012 Edition – Table 1

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <i>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</i> 	<ul style="list-style-type: none"> Drill core and cuttings were lithological logged and measured for magnetic susceptibility. Solid core was measured, and core recovery was recorded. All core runs where possible were ORI marked and an orientation line applied to the core. The measurement tool used for Magnetic susceptibility was a handheld KT-10 with serial number # 8791
	<ul style="list-style-type: none"> <i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i> 	<ul style="list-style-type: none"> Multiple magnetic susceptibility readings were taken over lithological units/intervals with the average reading noted from scanning mode. Mineralised intervals for assay were determined from magnetic response.
	<ul style="list-style-type: none"> <i>Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</i> 	<ul style="list-style-type: none"> Reverse Circulation drilling, (RC) was used to obtain 2m composite samples from which 5 kg samples were taken for assay per 2-meter interval. From samples submitted, 3 kg was pulverised to for XRF assay. Sampling from solid core did not overlap lithological boundaries. Although the nature of RC drilling includes reduced inherent contamination from previous intervals it is an appropriate drilling method to determine basic lithology and assay.
Drilling techniques	<ul style="list-style-type: none"> <i>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</i> 	<ul style="list-style-type: none"> Reverse Circulation Drilling, (RC) was used to pre-collar holes for diamond tails. Pre-collars were drilled through the regolith to interpreted depths above the ore body upper contact with the diamond tails coring through the ore body and up to 10m into the footwall.

Criteria	JORC Code explanation	Commentary
<i>Drill sample recovery</i>	<ul style="list-style-type: none"> • <i>Method of recording and assessing core and chip sample recoveries and results assessed.</i> • <i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i> • <i>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</i> 	<ul style="list-style-type: none"> • Original samples recovered from RC drill cuttings at 2m intervals. • Collection of RC cuttings both chips and fines were retrieved from a cyclone splitter. • No bias was observed between recovery and sample quality or loss or gain. • Solid core was measured, and core recovery was recorded. All core runs where possible were ORI marked and an orientation line applied to the core.
<i>Logging</i>	<ul style="list-style-type: none"> • <i>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</i> • <i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i> • <i>The total length and percentage of the relevant intersections logged.</i> 	<ul style="list-style-type: none"> • Original RC drill chips were geologically logged as well as recording geotechnical features observable in chip over the full depth of the holes by a qualified geologist. • RC Sample piles and chip trays were photographed. • All RC intercepts were logged to an accuracy of 1m intervals. • HQ diameter core have been geologically and geotechnically logged using standard techniques to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. • All core was photographed
<i>Sub-sampling techniques and sample preparation</i>	<ul style="list-style-type: none"> • <i>If core, whether cut or sawn and whether quarter, half or all core taken.</i> 	<ul style="list-style-type: none"> • HQ diamond core has been quarter cut for assay and DTR work. Remainder in storage for metallurgy.
	<ul style="list-style-type: none"> • <i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i> 	<ul style="list-style-type: none"> • Original RC sample splits were retrieved directly from dry rotary cyclone for assay
	<ul style="list-style-type: none"> • <i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i> 	<ul style="list-style-type: none"> • Samples were collected directly from cuttings and core and are representative of the interval. • Samples are suitable for application of best practice XRF and DTR analysis as per ALS Laboratories
	<ul style="list-style-type: none"> • <i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i> 	<ul style="list-style-type: none"> • Industry standard sampling preparation procedures were used such as Blanks, Standards and Repeat assays. Lab results will be reviewed and checked for deviation using lab certified references and in house analysis.

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling. 	<ul style="list-style-type: none"> 5kg splits were collected directly from cyclone using industry standard procedures and sent directly to lab. Core was cut representing lithological boundaries and ore variation. Blanks, Standards and Repeat assays have been included at set intervals throughout sampling.
	<ul style="list-style-type: none"> Whether sample sizes are appropriate to the grain size of the material being sampled. 	<ul style="list-style-type: none"> Original average RC drill sample size retrieved was 5kg, average chip size is 2-20mm. Sample sizes taken are large enough to be representative of the whole rock constituents. Diamond quarter core samples ranged from minimum interval 100mm to maximum interval of 2m and are appropriate to the grain size.
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established. 	<ul style="list-style-type: none"> All assays were completed using Xray Florescence (XRF) for an industry standard extended iron ore suite for 24 elements. The nominal DTR procedure used the following conditions: <ul style="list-style-type: none"> Stroke Frequency 60/minute Stroke length – 38mm Magnetic field strength – 3000 gauss Tube Angle – 45 degrees Tube Diameter – 25mm Water flow rate – 540ml/min Washing time 10 minutes or until the water runs clear. Concentrate collected and assayed. The tailings sample not collected
Verification of sampling and assaying	<ul style="list-style-type: none"> The verification of significant intersections by either independent or alternative company personnel. The use of twinned holes. Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. Discuss any adjustment to assay data. 	<ul style="list-style-type: none"> Initial inspection and logging by onsite Geologist Samples and assays verified using standard QA QC methods. All primary data from drilling is recorded in the Company data base. QA-QC completed on data contained in this announcement. Significant Intersections Reported by qualified company personnel. Documentation and QA QC review completed prior to final entry into database.
Location of data points	<ul style="list-style-type: none"> Accuracy and quality of surveys used to locate drill holes (collar and down-hole 	<ul style="list-style-type: none"> GPS +/- 10m Drill hole locations were measured with Garmin

Criteria	JORC Code explanation	Commentary
	<p><i>surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</i></p> <ul style="list-style-type: none"> <i>Specification of the grid system used.</i> <i>Quality and adequacy of topographic control.</i> 	<p>handheld GPS. Accuracy is within +/-5m.</p> <ul style="list-style-type: none"> MGA_GDA94 Zone 50 Topographic surface recorded with handheld Garmin.
Data spacing and distribution	<ul style="list-style-type: none"> <i>Data spacing for reporting of Exploration Results.</i> <i>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</i> <i>Whether sample compositing has been applied.</i> 	<ul style="list-style-type: none"> Initial sample intervals were routinely 2m or less dependent on geology and mineralisation and are appropriate for the mineralised estimation being considered. DTR composites were combined from sequential initial sample intervals for grind optimisation. DTR composites form up to 5m intervals.
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i> 	<ul style="list-style-type: none"> This report refers to testing down dip lithology with vertical hole orientations at -60° dip. The Exploration Target is conceptual in nature and makes no interpretation or reference to the shape or size of the overall structure.
	<ul style="list-style-type: none"> <i>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</i> 	<ul style="list-style-type: none"> No orientation-based sampling bias has been identified in this data at this point.
Sample security	<ul style="list-style-type: none"> <i>The measures taken to ensure sample security.</i> 	<ul style="list-style-type: none"> Chain of custody is being maintained from sample site to lab
Audits or reviews	<ul style="list-style-type: none"> <i>The results of any audits or reviews of sampling techniques and data.</i> 	<ul style="list-style-type: none"> No reviews of data management systems have been carried out

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul style="list-style-type: none"> Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings. 	<ul style="list-style-type: none"> The tenements referred to in this report, M09/166, M09/168, E09/1781 and E09/1507 are 100% Athena owned and operated within native title determined claim WAD 6033/98, made on behalf of the Wajarri Yamatji People.
	<ul style="list-style-type: none"> The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area. 	<ul style="list-style-type: none"> The tenements are in good standing. See tenement listing attached. Tenement E09/1507. An appeal is underway following recent Wardens court decision to refuse an application for exemption from expenditure. Announced 20 Dec 2022. It should be noted the DMIRS subsequently granted an extension of terms for E09/1507 while the appeal proceeds.
Exploration done by other parties	<ul style="list-style-type: none"> Acknowledgment and appraisal of exploration by other parties. 	<ul style="list-style-type: none"> Historic exploration within the greater project area largely confined to south of a line extending from Imagi Well to the Byro East intrusion (Melun Bore). The earliest work with any bearing on Athena's activities is that of Electrolis Zinc Co (1969) exploring for chromitite at Imagi Well, followed closely by Jododex Australia (1970-1974) at Byro East. Much of the exploration of a more regional nature is of limited use either because of the vagaries of the accuracy of positional information and the limited range of elements analysed. More recent surveys pertinent to Athena's current investigations include that of Redback Mining (1996-2002), Yilgarn Mining Limited (2003-2008) and Mithril (2007, JV with Yilgarn) at Byro East, and Western Mining Corporation (1976-1979) and Precious Metals Australia at Imagi Well. Newcrest Mining carried out a limited reconnaissance RAB drilling programme for platinum just to the east of Byro homestead (1998-1990).
Geology	<ul style="list-style-type: none"> Deposit type, geological setting and style of mineralisation. 	<ul style="list-style-type: none"> Upper amphibolite to granulite metamorphic facies with mafic to ultramafic intrusive. Granite and migmatite are common

Criteria	JORC Code explanation	Commentary
Drill hole Information	<ul style="list-style-type: none"> A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: <ul style="list-style-type: none"> easting and northing of the drill hole collar elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar dip and azimuth of the hole down hole length and interception depth hole length. 	<ul style="list-style-type: none"> All exploration drilling locations and results used in calculating the revised exploration target have been reported on the ASX platform and are referenced in the main body of the text.
	<ul style="list-style-type: none"> If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case. 	<ul style="list-style-type: none"> No information has been excluded
Data aggregation methods	<ul style="list-style-type: none"> In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated. 	<ul style="list-style-type: none"> No weighting or averaging techniques have been applied to minimum and maximum intersections. Original historical whole rock feed assay grades reported from above a 10%Fe cut-off.
	<ul style="list-style-type: none"> Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. 	<ul style="list-style-type: none"> Original historical aggregate intercepts have been calculated on a weighted average basis for each assay and the interval that make up the intersection.
	<ul style="list-style-type: none"> The assumptions used for any reporting of metal equivalent values should be clearly stated. 	<ul style="list-style-type: none"> For each project, maximum contained Fe is calculated on the basis of maximum estimated tonnes and maximum estimated grade. For each project minimum contained Fe is calculated on the basis of minimum estimated tonnes and minimum estimated grade.
Relationship between mineralisation widths and intercept lengths	<p>These relationships are particularly important in the reporting of Exploration Results.</p>	
	<ul style="list-style-type: none"> If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported 	<ul style="list-style-type: none"> Stratigraphic dip of the magnetite occurrences was measured from a minimum of two points. Dip was calculated from outcrop and drill intersection at the hanging wall and footwall

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known'). 	<ul style="list-style-type: none"> Width referred to in this announcement are estimated true width.
Diagrams	<ul style="list-style-type: none"> Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views. 	<ul style="list-style-type: none"> All exploration drilling locations and results used in calculating the revised exploration target have been reported on the ASX platform and are referenced in the main body of the text. Maps and sections and tabulations of intercepts are included within the announcements references above.
Balanced reporting	<ul style="list-style-type: none"> Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results. 	<ul style="list-style-type: none"> This report contains all meaningful results to date from original whole rock feed assays above a 10%Fe cut-off.
Other substantive exploration data	<ul style="list-style-type: none"> Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances. 	<ul style="list-style-type: none"> This report contains all meaningful results to date for whole rock feed assays grades above a 10%Fe cut-off. Grind optimisation for DTR analysis was completed by Bureau Veritas Laboratories and ALS Laboratories using industry standard procedures. Specific Gravity was estimated from whole rock and RC chip samples from within the intersections calculated using the wet/ dry method.
Further work	<ul style="list-style-type: none"> The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling). 	<ul style="list-style-type: none"> Further drilling is required and will be undertaken to gain better understanding of the shape, size and characteristic of the occurrences in the two regions. It is expected the drilling programs will take a minimum of 12 months to complete. Infill drilling programs are currently being detailed and budgeted to support work towards future mineral resource estimates. Further metallurgical work will be undertaken to obtain definitive and conclusive data to support work towards future mineral resource estimates.
	<ul style="list-style-type: none"> Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive. 	<ul style="list-style-type: none"> Planned drilling information is not complete. Budgets and future drilling programs are currently being developed and are not included in this report.