

Trading Symbols AIM: UFO FWB: I3A1

# 22 September 2021

# Alien Metals Ltd ("Alien" or "the Company")

# Alien Metals announces maiden Inferred iron ore Resource in excess of 10Mt at 60.4% Fe

Alien Metals Ltd (LSE AIM:UFO), a global minerals exploration and development company, is pleased to update the market on the Hancock Iron Ore Project in the Pilbara region of Western Australia and specifically the publication of a maiden Inferred Resource in excess of 10Mt.

### Highlights

- The initial Inferred JORC compliant resource stands at **10.4Mt** @ **60.4%** Fe including **7.8Mt** @ **60.1%** at the Sirius Extension target, 1.5Mt @ **61.2%** at the Ridge E target and 1.1Mt @ **61.9%** Fe at the Ridge C target.
- The Mineral Resource Statement ("MRE") has been restricted to material that falls within an optimised open pit shell and within the tenement boundary.
- Low levels of deleterious elements indicating that Hancock could produce high-quality Direct Shipping Ore (DSO) product.
- Ridges E and C are only partially tested to date, and the Company feel they have considerable potential to define further DSO grade material.

# Bill Brodie Good, CEO & Technical Director of Alien Metals, commented:

"We are really pleased to have delineated in excess of 10Mt of DSO iron ore with our initial MRE at Hancock. With only a quarter of the Western Ridges targets tested to date, we believe there is considerable scope to grow the DSO resource over the next 6 months.

"Having a sizeable maiden resource is encouraging; having DSO material with low impurities is even more pleasing and we are pushing ahead on the scoping study work with Mining Plus and continued planning for the Phase 3 drilling programme."

Figure 1 shows the location of the Hancock Project and Table 1 shows the mineral resource statement. The Hancock Project, tenement number E47/3954, is approximately 10 km north of Newman in the prolific iron ore producing Pilbara region of Western Australia.

A description of the Mineral Resource Estimate is given in the following section with the work summarised in JORC Table 1 located in Appendix 1.



Figure 1: Location of Hancock Iron Ore Project, Western Australia

	M <i>Target</i> (Mi ton	Mass			Average Value			
Classification Category		(Million tonnes)	SiO₂	Al <sub>2</sub> O <sub>3</sub>	<b>P</b>	LOI	MnO %	
			/0	/0	/0	/0	/0	/0
Inferred	Sirius Extension	7.8	60.1	4.1	3.72	0.17	5.2	0.05
	Ridge E	1.5	61.2	4.8	3.38	0.13	3.5	0.02
	Ridge C	1.1	61.9	4.4	2.93	0.12	3.5	0.03
Total		10.4	60.4	4.2	3.6	0.16	4.8	0.04

### **Mineral Resource Estimation Summary**

The Mineral Resource Estimate was completed by Baker Geological Services Ltd ("BGS"), being an independent consultancy to Alien. The Mineral Resource Statement has been classified by Competent Person, Howard Baker (FAusIMM(CP)) in accordance with guidelines contained in the JORC Code. Due to the Covid-19 Pandemic, Mr Baker of BGS has not been able to visit the project and observe the exploration activities. As such, BGS has relied upon the experience of the team employed by Alien and the QA/QC practices adopted. The Mineral Resource Statement has an effective date of 16 September 2021. Mineral Resources that are not Mineral Reserves have no demonstrated economic viability. BGS and Alien are not aware of any factors (environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors) that have materially affected the Mineral Resource Estimate.

The Mineral Resource Estimate covers three targets within the tenement boundary. These are the Sirius Extension Target, Ridge C and Ridge E, that form part of the Western Ridges prospect. All targets are shown in Figure 2 and Figure 3, along with the drill collars / traces and the final optimised pit shell used for reporting the final Mineral Resource Statement. The topographic surface shown in Figure 2 highlights the prominent ridges within the tenement.



Figure 2: Tenement boundary and target location. Drill collars shown in green, and the optimised pits shown in red



Figure 3: Tenement boundary and target location. Drill traces coloured by Fe% and the optimised pits shown in red

# **Geology and Geological Interpretation**

The tenement area consists of a series of low east/west running rocky ridge lines separated by shallow valleys. The area has been structurally deformed with the presence of numerous fold hinges, some isoclinal, but all trending east/west with a shallow (<34°) plunge.

Most of the ridge lines consist of Banded Iron which is part of the Weeli Wolli Formation. The Weeli Wolli Formation is described as a thick succession of jaspilite, shale, and dolerite overlying the Brockman Iron Formation. The iron formations stand out as ridges on which there is some exposure, but the intervening shale and dolerite are rarely exposed.

The logging and assay data has been used to define the mineralised Banded Iron Formation ("BIF") units along with a weathered cap located at surface where possible. At the Sirius Extension target, a steeply dipping BIF unit has been modelled along with a weathered cap domain. The BIF domain has been further subdivided into low / high silica domains following a review of geochemical data. Figure 4 shows the BIF/ Cap domains with Figure 5 showing the division of the BIF domain into high and low silica domains.



Figure 4: Sirius Extension BIF (Brown) and Weathered Cap (Blue)



Figure 5: Sirius Extension High Silica domain (purple) and Low Silica domain (red)

At the Western Ridges Prospect, Ridge C has been modelled to contain a single BIF domain and a weathered cap domain, while Ridge E has been modelled to contain two separate BIF domains. No weathered cap has been modelled at Ridge E. At both Ridge C and Ridge E, limited data restricts the

interpretation with the overall dip of the mineralised units being reliant on mapping data with a dip of between 15° and 20° being used to guide the modelling process.



Figure 6: Ridge C and Ridge E BIF and Cap domains

### **Exploration Summary**

Alien undertook two Reverse Circulation (RC) drilling programs at the project between January and June 2021. Table 2 summarises the drilling meters completed at each target along with the number of Fe assays collected. The data presented for the Sirius Extension target includes four historic drillholes completed by Volta Mining Pty Ltd in 2014. The drillhole locations are shown in Figure 2 to Figure 6.

Target	No. of Drillholes	Total Meters Drilled (m)	No. Fe Assays
Sirius Extension*	20	1,956	1,506
Ridge C	20	796	550
Ridge E	27	1,665	925
Total	67	4,417	2,981

#### Table 2: Drilling meters completed at each target

\*incl. four historic drillholes completed by Volta Mining Pty Ltd for 475m

The RC drilling was used to obtain 1 m samples via a 4-way splitter from which 3 kg was pulverized to produce a 30 g charge for fire assay. Logging was completed on all RC chips. Drilling challenges including sample recovery and the presence of water. In addition, logging was not consistent across drill programmes with clay and mineralised BIF material being interchanged. As such, the modelling has placed a reliance on the geochemical data.

All samples generated by Alien were dispatched to Intertek Genalysis at Maddington, Perth, WA, and analysed for their Standard Iron Ore Package Analysis with XRF finish, which includes elements Fe, Al, Ca, K, Mg, Mn, Na, P, S and Si. This is the same as the analysis and laboratory used in all Alien's analysis work on these projects to date, to maintain consistency and comparability between all analyses.

In addition, Alien used the industry standard of inserting 5% Certified Reference Material ("CRM") samples and 5% duplicate samples at source. The CRMs are sourced from Geostats Pty Ltd, Perth, WA, a global leader in the manufacture and sale of CRMs.

All QA/QC results are deemed acceptable with adequate variation from the standard acceptable CRM grades received. Duplicate samples also returned acceptable results to ensure that all laboratory analysis results are within international standards and are fit for use in the Mineral Resource Estimate.

Alien did not collect density data as part of this programme with density being applied through a review of analogous project.

Downhole surveys were completed at 30 m downhole intervals and all drillhole collars were surveyed through differential GPS.

<image>

Figure 7 shows the RC drilling in progress.

Figure 7: RC drilling in progress, Hancock Iron Ore Project, June 2021

Overall, the data collected has been deemed suitable for use in a Mineral Resource Estimate for the project.

### **Mineral Resource Estimation**

The Mineral Resource Estimate was completed in Leapfrog Software with additional statistical studies completed in Supervisor. Samples were composited into 2 m lengths prior to geostatistical studies and grade estimation.

The composite files for each target were used in a geostatistical study that enabled Ordinary Kriging ("OK") to be used as the main interpolation method for the Sirius Extension target. Robust variograms could not be produced at Ridge C and Ridge E due to the limited data and as such, an Inverse Distance Weighting interpolation was carried out for these targets.

The interpolation used an elliptical search following the predominant dip and dip direction of the geological zones with a variable orientation used within the surficial Cap domains where the topographic surface is a contributing factor to the domain and grade distribution.

For each domain where variography was possible, variography was completed on all assay fields being estimated into the block model, these being Fe, SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, P, MnO and LOI. Figure 8 shows the Sirius Extension block model with the model and drillhole file coloured by Fe grade.

A density of 3.0 t/m<sup>3</sup> was applied to all mineralised BIF material with a density of 2.5 t/m<sup>3</sup> applied to the weathered Cap. A density of 2.8 t/m<sup>3</sup> was applied to all external host material.



Figure 8: Sirius Extension Block model and drillhole file coloured by Fe %

The interpolated block model was validated through visual checks and a comparison of the mean input composite and output model grades. As an example, Figure 9 and Figure 10 show SWATH plots for the Sirius Extension high and low silica domains. As shown, a strong correlation exists between the input composite and output block model grades in the easting direction shown.

BGS is confident that the interpolated block grades are a reasonable reflection of the available sample data available.



Figure 9: Sirius Extension Fe SWATH plot, high SiO2 domain



Figure 10: Sirius Extension Fe SWATH plot, low SiO2 domain

# **Mineral Resource Classification**

All deposits have been classified as Inferred Mineral Resources. Primarily, this is due to the lack of density data, the limited data at Ridge C and Ridge E, and the lack of verification diamond drilling to confirm the grade identified through the RC drilling and the drilling challenges observed. That said,

continuous packages of mineralised BIF have been identified and BGS is confident that future drilling will increase the classification confidence category assigned.

At the Sirius Extension Target, the base of the Inferred Mineral Resources was restricted to the deepest drillhole intersections within the mineralised body, shown in Figure 11. All mineralised BIF material modelled at Ridge C and Ridge E was classified as an Inferred Mineral Resource with no depth restriction, due to the limited down dip extent of the models, shown in Figure 12 and Figure 13.



Figure 11: Sirius Extension classified model and drillhole traces



Figure 12: Ridge C classified model and drillhole traces



Figure 13: Ridge E classified model and drillhole traces

# **Open Pit Optimisation**

To determine the final Mineral Resource Statement, the model has been subjected to an optimisation exercise to determine the proportion of the material defined that has a reasonable prospect of economic extraction via open-pit mining methods. The optimisation was carried out by independent consultants Mining Plus. In addition, Mining Plus undertook an audit of the Mineral Resource Estimate carried out by BGS with no material issues identified.

The optimisation was based on the mineralised BIF material only. The Cap was excluded from the optimisation and is not currently being reported as a mineralised domain. The optimisation used a baseline metal price of USD210/t, a price that has been exceeded over the course of the previous 12 months. BGS comment that Mining Plus also provided optimised pit shells at a baseline price of USD100/t and USD150/t with very little sensitivity shown in the final Mineral Resource Statement.

The interpretation of the word 'eventual' in this context relates to a bulk commodity where it is reasonable to envisage 'eventual economic extraction' as covering time periods more than 50 years.

No cut-off grade has been applied to the final Mineral Resource Statement due to the general lack of grade sensitivity and the optimisation process undertaken.

At the Sirius Extension Target, approximately 200k tonnes of material has been excluded from the final Mineral Resource Statement as it lies outside of the tenement boundary. The optimisation process did however allow the pit crest to extend beyond the tenement boundary.

This represents the material considered by BGS to have reasonable prospects for eventual economic extraction potential.



Figure 14 to Figure 16 shows the final Mineral Resource within the USD210/t optimised pit shells.

Figure 14: Sirius Extension Mineral Resource within the optimised pit



Figure 15: Ridge C Mineral Resource within the optimised pit



Figure 16: Ridge E Mineral Resource within the optimised pit

### **Background to Inferred Resource**

The statements have been classified by Competent Person, Howard Baker (FAusIMM(CP)) in accordance with the JORC Code. The Mineral Resource Statement has an effective date of 16 September 2021. Mineral Resources that are not Mineral Reserves have no demonstrated economic viability. BGS and Alien are not aware of any factors (environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors) that have materially affected the Mineral Resource Estimate.

The quantity and grade of reported Inferred Mineral Resources in this estimation are uncertain in nature and there has been insufficient exploration to define these Inferred Mineral Resources as an Indicated or Measured Mineral Resource; and it is uncertain if further exploration will result in upgrading them to an Indicated or Measured Mineral Resource Category.

BGS notes that the Mineral Resource has a reasonable prospect for eventual economic extraction but are not considered Mineral Reserves. Mineral Reserves are estimates of the tonnage and grade or quality of material contained in a Mineral Resource that can be economically mined and processed. To be considered a Mineral Reserve, modifying factors must be applied to the Mineral Resource estimate as part of the preparation of a prefeasibility study (PFS) or a feasibility study (FS). The estimated amount of saleable material contained in the final product must demonstrate a positive Net Present Value (NPV) using an appropriate discount rate and must demonstrate that eventual extraction could be reasonably justified. The major categories of modifying factors include:

- Mining,
- Processing,
- Metallurgical,
- Environmental,
- Location and infrastructure,
- Market factors,
- Legal (including land tenure and third-party ownership),
- Economic,
- Social, and
- Governmental

# **Mineral Resource Statement**

Table 3 shows the resulting Mineral Resource Statement for the Hancock Project. All material is reported within the optimised pit shells and within the tenement boundary.

# Table 3: Mineral Resource Statement at a 0% Fe cut-off grade, Hancock Iron Ore Project, AlienMetals, September 2021

	Target	Mass	Average Value					
Classification Category		(Million tonnes)	Fe %	SiO2 %	Al₂O₃ %	P %	LOI %	MnO %
Inferred	Sirius Extension	7.8	60.1	4.1	3.72	0.17	5.2	0.05
	Ridge E	1.5	61.2	4.8	3.38	0.13	3.5	0.02
	Ridge C	1.1	61.9	4.4	2.93	0.12	3.5	0.03
Total		10.4	60.4	4.2	3.6	0.16	4.8	0.04

### **Upside Potential and next phase**

With the improved understanding of the enrichment horizon and the large extent of untested highly prospective ridges still to be tested and hopefully added into an updated and enlarged future resource, Alien plans to target the specific horizons in the next drilling programme, with the hope to increase both volume and confidence in these initial mineral resources. Figure 17 shows the location of the current drilling and the future ridge lines to be drill tested.



Figure 17: Target areas for further ground reconnaissance, Hancock Tenement, Hamersley Iron Ore Project, August 2021

For further information please visit the Company's website at www.alienmetals.uk, or contact:

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### Notes to Editors

Alien Metals Ltd is a mining exploration and development company listed on AIM of the London Stock Exchange (LSE: UFO). The Company's focus is on precious and base metal commodities, with its operations located in proven mining jurisdictions and it has embarked upon an acquisition-led strategy headed by a high-quality geological team to build a strong portfolio of diversified assets.

In 2019, the company acquired 51% of the Brockman and Hancock Ranges high-grade (Direct Shipping Ore) iron ore projects and increased its holding to 90% in May 2021 while in 2020 acquired 100% of the Elizabeth Hill Silver Project, which consists of the Elizabeth Hill Historic Silver Mine Mining Lease and the surrounding Munni Munni North Exploration Tenement. The Australian projects are located in the world-renowned Pilbara region of Western Australia.

The Company also holds two silver projects, San Celso and Los Santos, located in Zacatecas State, Mexico's largest silver producing state, which produced over 190m oz of silver in 2018 alone, accounting for 45% of the total silver production of Mexico for that year. The Company holds a Copper Gold project in the same region, Donovan 2.

The company was also awarded an Exploration Licence in Greenland in late 2020, which surrounds the world class Citronen Zinc-Lead deposit.

In addition to progressing and developing its portfolio of assets and following its strategic review of its portfolio of silver and precious metals projects, Alien Metals has identified priority exploration targets within all of its projects which it is working to advance systematically.

# **Competent Person**

The information in this report that relates to Mineral Resources is based on information compiled by Mr Howard Baker, a Competent Person who is a Fellow of the Australasian Institute of Mining and Metallurgy and is employee by Baker Geological Services Ltd. Mr Baker has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as a Competent Person as defined in the 2012 edition of the Australasian Code for the Reporting of Exploration Results, Mineral Resources, and Ore Reserves (JORC Code). Mr Baker consents to the disclosure of information in this report in the form and context in which it appears.

Mr Baker of BGS is a resource geologist with 25 years' experience covering multiple commodities from early-stage exploration through to definitive feasibility studies. Mr Baker is the Managing Director of BGS and previously worked for the International Mining Consultancy, SRK Consulting (UK) Ltd ("SRK") where he was employed for eight years as a Principal Consultant and Practice Leader. In his time at SRK, he focussed on the management of Mineral Resource Estimates with a strong focus on technical quality management and compliance to international reporting codes. In addition, he played a key role in advising on suitable exploration protocols and drill programmes and effectively assisted clients

in the development of numerous large-scale iron ore projects. Prior to his time at SRK, Mr Baker lived and worked in Australia, working for Rio Tinto, BHP Billiton, Iluka Resources and Anaconda Nickel.

Mr Baker has extensive global experience in the geology and Mineral Resource Estimation of iron ore projects and worked as a mine geologist and specialist resource geologist in the iron ore Pilbara district of Western Australia.

### **Glossary:**

**Mineral Resource** - A concentration or occurrence of solid or liquid material of economic interest in or on the Earth's crust in such form, grade (or quality), and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade (or quality), continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling. Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories.

**Inferred Mineral Resource** - that part of a Mineral Resource for which quantity and grade (or quality) are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological grade (or quality) continuity. It is based on exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes. An inferred Mineral Resource has a lower level of confidence that that applying to an Indicated Mineral Resources and must not be converted to an Ore Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.

**Reverse Circulation Drilling** - Often referred to as RC drilling, is a method of drilling which uses dual wall drill rods that consist of an outer drill rod with an inner tube. These hollow inner tubes allow the drill cuttings to be transported back to the surface in a continuous, steady flow. Drill results using this method with adequate QA/QC can be used in Mineral Resource Calculations

**DSO** – Direct Shipping Ore

**XRF** - X-ray fluorescence, used for elemental analysis and chemical analysis, particularly in the investigation of metals in the resource industry.

**QA/QC** – Quality Assurance/Quality Control - This is the combination of quality assurance, the process or set of processes used to measure and assure the quality of a product, and quality control, the process of ensuring products and services meet consumer expectations. In this case an independent verification of the laboratory analysis result.

Deleterious Elements – Elements that can be detrimental to the overall product, such as Phosphorus.

Fe - Iron Al – Aluminium Ca – Calcium K – Potassium Mg – Magnesium Mn – Manganese Na – Sodium P – Phosphorus S – Sulphur Si - Silica

SWATH - Standard term in Mineral Resource Estimation studies, similar to a slice or cross section

Mt – Million Tonnes

**BIF** – Banded Iron Formation

Cap – the upper portion of the deposit, at surface and enriched in clay material and organics

# Appendix 1 – JORC Table 1

# Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	
Sampling techniques	<ul> <li>Nature and quality of sampling (e.g. cut channels, random chips, or specific specialized 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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (e.g.). 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 (e.g. submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul> <li>Reverse circulation drilling was used to obtain 1 m samples via a 4 way splitter from which 3 kg was pulverized to produce a 30 g charge for fire assay.</li> <li>A tri-cone splitter at the cyclone was used to provide two samples splits and a bulk sample per metre.</li> <li>When water was produced by the hole, samples were continued to be taken with care to get as representative a sample per meter as possible. Water was expelled after rod change to reduce the amount of water in the ensuing samples. All efforts were made to ensure representative samples in wet conditions were taken. Notes were made on logging sheets for large volumes of water to ensure interpretation was consistent in the holes. 1 m samples were taken in the majority of every hole unless obvious non iron ore bearing lithology was identified, such as associated dolerite mainly in the ridge area in the west of the project.</li> </ul>
Drilling techniques	<ul> <li>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. 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.).</li> </ul>	<ul> <li>1 x Schramm track mounted T450 Reverse Circulation (RC) drill machine, rated to 350 m RC with 6.0 m pullback, 4" rod string, on- -board 350psi / 900 cfm compressor was used for all drilling done by Alien.</li> <li>A Hurricane 636 Booster for extra air was also available and used when required for deeper holes to ensure consistent sample quality.</li> <li>Alien do not have the specifics of the RC drill rig used by Volta in 2013 available but can confirm it was RC method.</li> </ul>

Criteria	JORC Code explanation	
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	<ul> <li>Where sample recovery was deemed to be less than the average a note was made on the logging sheets.</li> <li>Where very little sample was recovered in a meter interval this was noted on log sheet.</li> <li>Where water was deemed a factor to sample recovery this was noted on the log sheet.</li> <li>Every meter was sampled directly from a tricone splitter into a pre-labelled calico sample bag mounted on the rig cyclone. Any additional splitting was carried out at the analysis laboratory.</li> <li>96% of samples were taken dry, with any wet samples being recorded on the rig log sheet.</li> <li>The cyclone was air flushed to clean after each 6-metre run to minimise contamination.</li> </ul>
Logging	<ul> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul> <li>Main lithology for each meter logged along with notes on visible hematite or magnetite or other.</li> <li>Chip trays of RC samples were taken and photographed.</li> <li>Logging mainly qualitative in nature.</li> <li>Early logging in some cases logged clay rather than BIF where BIF appears dominant lithology.</li> <li>Review to be done on spoils and chip trays once return to site to verify logging.</li> </ul>
Sub- sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the insitu material collected, including for instance results for field duplicate/second-half sampling.</li> <li>Whether sample sizes are</li> </ul>	<ul> <li>Tri-cone splitter attached to cyclone produced 2 samples for laboratory submission plus larger remaining fraction per meter drilled.</li> <li>If sample interval not deemed necessary for laboratory submission, the sample was left on site for later collection.</li> <li>1 in 20 average field duplicates taken.</li> <li>Certified Reference Samples also inserted on a 1 in 20 sample average.</li> <li>Laboratory sample preparation was to dry and pulverize.</li> </ul>

Criteria	JORC Code explanation	
	appropriate to the grain size of the	
	material being sampled.	
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>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.</li> <li>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</li> </ul>	Intertek Genalysis, Perth, used for sample preparation and analysis, Basic Iron Ore Package/XRF single point LOI analysis method. Laboratory also used Certified Reference Materials and/or in-house controls, blanks and replicates analysed with each batch of samples with these quality control results reported along with the sample values in the final report. Industry Standard CRM's from Geostats PTY Ltd, Perth were inserted 1 in 20 samples on average. Duplicate samples from the drilling inserted on average 1 in 20 samples Acceptable levels of accuracy obtained from all QA/QC results.
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data</li> <li>verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul><li>4 historic drill holes drilled by Volta Mining in 2013 included in this work were tested by a twin RC drill hole traversing across the line of Volta drilling.</li><li>All data managed into central database.</li><li>All data verified for errors.</li><li>No adjustment to laboratory assay data done.</li></ul>
Location of data points	<ul> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	Differential GPS used to locate and survey drillhole collars. Topographic survey acquired for area at accuracy of 50 cm.
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>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.</li> <li>Whether sample compositing has</li> </ul>	<ul> <li>Drill Spacing is variable.</li> <li>Sirius Extension = approximately 50 to 100 m section spacing with on fence spacing from 30 to 50 m.</li> <li>Ridge C = approximately 70 to 150 m spacing, mostly single drillholes per fence.</li> <li>Ridge E = approximately 100 to 150 m spacing, mostly single drillholes per fence.</li> </ul>

Criteria	JORC Code explanation	
	been applied.	<ul> <li>Single meter sample intervals in all drilling.</li> <li>Single meter analysis of all samples.</li> <li>No sample composites generated for sampling and assaying purposes.</li> </ul>
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	<ul> <li>No bias indicated through the dill orientation.</li> <li>Where possible drill holes drilled as perpendicular to assumed geological units to ensure minimum sampling bias.</li> </ul>
Sample security	The measures taken to ensure sample security.	Samples secured in sealed bags from sample location to laboratory
Audits or reviews	<ul> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul> <li>Drilling reported here based on 2 drilling programs, the initial program managed by 3<sup>rd</sup> party consultants.</li> <li>Company recruited Exploration Manager managed the second drilling phase and tied in any outstanding survey and geological issues from the phase one program managed by 3<sup>rd</sup> party contractors.</li> <li>Same drilling company and drillers used for both drilling programs</li> </ul>

# Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation
Mineral tenement and land tenure status	<ul> <li><i>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.</i></li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a license to operate in the area.</li> <li>Type, reference name/number, location and ownership including agreements or material issues within the E47/3953 tenement and is approximately 10km north of Newman in the Pilbara region of Western Australia.</li> </ul>

Criteria	JORC Code explanation	
Exploration done by other parties	<ul> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	• The Mineral Resource Estimate includes 4 drillholes completed by Volta Mining in 2013. This accounts for 32% of the drill data available at the Sirius Extension target with all historic holes being located on a single fence line.
Geology	Deposit type, geological setting and style of mineralisation.	<ul> <li>The tenement area consists of a series of low east/west running rocky ridge lines separated by shallow valleys. The area has been structurally deformed with the presence of numerous fold hinges, some isoclinal, but all trending east/west with a shallow (&lt;34°) plunge.</li> <li>Most of the ridge lines consist of Banded Iron which is part of the Weeli Woolli Formation. The Weeli Wolli Formation is described as a thick succession of jaspilite, shale, and dolerite overlying the Brockman Iron Formation. The iron formations stand out as ridges on which there is some exposure, but the intervening shale and dolerite are rarely exposed.</li> </ul>
Drill hole Information	<ul> <li>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> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>If the exclusion of this 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.</li> </ul>	<ul> <li>Alien undertook Reverse Circulation (RC) drilling at the project between January and June 2021. The table below summarises the number of drillholes, and total meters of drilling completed at each target along with the number of Fe assays collected from the 1m samples. An equal number of assays was generated for all other elements as part of the XRF suite.</li> <li>All drillholes were drilled at an orientation to target as perpendicular an intercept to the BIF as possible.</li> <li> <b>Target No. of Drillholes Total Meters No. Fe Assays Sirius 20 1,956 1,506 Ridge C 20 796 550 Ridge E 27 1,665 925 Total 67 4,417 2,981</b></li></ul>
Data aggregation methods	<ul> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high</li> </ul>	<ul> <li>No data aggregation methods have been used in the reporting of the exploration results.</li> </ul>

Criteria	JORC Code explanation	
	<ul> <li>grades) and cut-off grades are usually Material and should be stated.</li> <li>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.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	
Relationship between mineralisation widths and intercept lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</li> </ul>	<ul> <li>All drillholes were drilled at an orientation to target as perpendicular an intercept to the BIF as possible.</li> </ul>
Diagrams	<ul> <li>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.</li> </ul>	<ul> <li>Appropriate images have been put in the main body of the report.</li> </ul>
Balanced reporting	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.	
Other substantive exploration data	<ul> <li>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,</li> </ul>	<ul> <li>Prior to the drill programs, Alien conducted ground reconnaissance and grab sampling within the tenement. This has been reported in previous press releases and does not impact the work undertaken in generating the Mineral Resource Estimate.</li> </ul>

Criteria	JORC Code explanation	
	groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	
Further work	<ul> <li>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	• With the improved understanding of the enrichment horizon and the large extent of untested highly prospective ridges still to be tested and hopefully added into an updated and enlarged future resource, Alien plans to target the specific horizons in the next drilling programme, with the hope to increase both volume and confidence in these initial mineral resources.

# Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	
Database integrity	<ul> <li>Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.</li> <li>Data validation procedures used.</li> </ul>	<ul> <li>All data has been validated to heck for gross errors with original assay certificates being supplied by Alien.</li> <li>Minor transcript errors identified were reported to Alien with corrective measures taking place.</li> <li>Regular database updates were provided throughout the drilling and assaying programme so that continual monitoring could be carried out.</li> </ul>
Site visits	<ul> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	• Due to the Covid-19 Pandemic, Mr Baker of BGS has not been able to visit the project and observe the exploration activities. As such, BGS has relied upon the experience of the team employed by Alien and the QA/QC practices adopted.
Geological interpretation	<ul> <li>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</li> <li>Nature of the data used and of any assumptions made.</li> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> <li>The factors affecting continuity both of grade and geology.</li> </ul>	<ul> <li>A simple interpretation of the mineralised BIF unit has been created for each target area with a single BIF unit being created at Sirius Extension and Ridge C with two BIF units created at Ridge E. The modelling was based on the lithology and geochemical data.</li> <li>At Ridge C and Ridge E, the dip of the BIF unit was inferred from the ridge topography and the onsite observations with a shallow dip of 15 to 20 ° used.</li> <li>At Sirius Extension, a steeply dipping BIF unit was created based on the HW / FW contacts with the assumption that the unit forms part of syncline extended from the neighbouring</li> </ul>

		<ul> <li>licence and where a resource has previously been reported.</li> <li>An overlying weathered cap has been created at Sirius Extension and Ridge C. This is based on logging and geochemical data where an increase in LOI, AL2O3 is observed along with a decrease in Fe.</li> <li>At Sirius Extension, the geochemical data was used to define high / low Silica domains within the BIF unit. This was based on the scatterplots of Fe vs SiO2 and approximates to a SiO2 cut-off of +/-4%.</li> </ul>
Dimensions •	The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	<ul> <li>Sirius Extension = ~450m strike by 60m width by 150m down dip</li> <li>Ridge C = ~600m strike by 12m width by 150m down dip</li> <li>Ridge E = ~900m strike by 10m width by 60m down dip</li> </ul>
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	<ul> <li>At Sirius Extension, geostatistical studies were undertaken to determine appropriate estimation parameters.</li> <li>A primary search ellipse of 100m by 50m by 20m was used with a minimum of 4 samples and a maximum of 12 samples. Samples were limited to 3 per drillhole.</li> <li>The search ellipse was doubled for a second pass and then increased to 1000m to estimate any unestimated blocks.</li> <li>Estimation was completed within the cap domain and the high / low SiO2 domains with each domain treated as a separate estimate with drillhole data coded accordingly.</li> <li>Modelling and grade estimation was undertaken in Leapfrog Edge.</li> <li>A composite length of 2m was used.</li> <li>Fe, SiO2, Al2O3, P, MnO and LOI were estimated into the model using Ordinary Kriging.</li> <li>The average distance of samples to estimate the block grade was between 50 and 70m.</li> <li>At Ridge C and Ridge E, geostatistical studies were not possible due to the limited data available.</li> <li>A primary search ellipse of 300m by 150m by 40m was used with a minimum of 4 samples and a maximum of 12 samples. Samples were limited to 2 per drillhole.</li> <li>A single estimation pass was required to estimate all blocks.</li> </ul>

with each domain treated as a separate estimate with drillhole data coded accordingly.

- Modelling and grade estimation was undertaken in Leapfrog Edge.
- A composite length of 2m was used.
- Fe, SiO2, Al2O3, P, MnO and LOI were estimated into the model using Inverse Distance Weighting.
- The average distance of samples to estimate the block grade was between 120 and 135m.
- This work represents the Maiden Mineral Resource Estimate for the area.
- Besides Fe, SiO2, Al2O3, P, MnO and LOI were also estimated into the model.
- A block size of 20m X x 10m Y x 10m Z was used with sub-cells of 2.5m in the X direction and 1.25m in the Y and Z direction. This is less than the sample spacing in the X direction.
- No assumptions have currently been made regarding the SMU.
- Grade correlation has been used in the modelling and domaining strategies with statistical checks primarily on the F and SiO2 being used to guide the interpretation. No regression-based assumptions have been applied to the estimated model.
- The geological interpretation was used to guide the orientation of the search ellipse used in the estimate.
- No top capping has been applied due to the homogenous nature of the mineralisation.
- Visual and statistical validation checks have been completed comparing the input sample grades and the output block model grades. No bias has been observed. Checks were also completed on the number of blocks estimated in each estimation run and the average distance of the samples used to estimate the block grade.
- No reconciliation data is available.

- The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.
- The assumptions made regarding recovery of byproducts.
- Estimation of deleterious elements or other non-grade variables of economic significance (e.g. Sulphur for acid mine drainage characterization).
- In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.
- Any assumptions behind modelling of selective mining units.
- Any assumptions about correlation between variables.
- Description of how the geological interpretation was used to control the resource estimates.
- Discussion of basis for using or not using grade cutting or capping.
- The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.
- Moisture Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.
- Tonnage is assumed to be on a dry basis. No density data has been collected to data and an average of 3.0 t/m3 was applied to all mineralised BIF material with a density of 2.5 t/m3 applied to the weathered Cap. A density of 2.8 t/m3 was applied to all external host material.

Cut-off parameters	<ul> <li>The basis of the adopted cut-off grade(s) or quality parameters applied.</li> </ul>	<ul> <li>No cut-off has been used in the reporting of the Mineral Resource with an open pit optimisation being applied to determine the material with reasonable prospects for eventual economic extraction potential.</li> </ul>
Mining factors or assumptions	<ul> <li>Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.</li> <li>The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical metallurgical metallurgical metallurgical metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when</li> </ul>	<ul> <li>An open pit operation has been assumed with an optimisation study being completed to enable the reporting of the Mineral Resource Statement. The optimisation was undertaken by Mining Plus.</li> <li>The following assumptions were used in the optimisation:         <ul> <li>Mining Cost: USD3.2/t</li> <li>Open Pit Recovery: 100%</li> <li>Open pit dilution: 0%</li> <li>Crushing and screening costs: USD3.5/t</li> <li>Loading and Haulage to Port Hedland: USD31.32/t</li> <li>Port Handling Costs: USD6.86/t</li> <li>Pit wall slope angle: 45°</li> <li>Iron Ore Price – 62%: USD210/t</li> </ul> </li> <li>No metallurgical testwork has been completed to data with material assumed to be a DSO product.</li> </ul>
	reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the	BGS and Alien are not aware of any factors (environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors) that have materially affected the Mineral Resource Estimate.

	mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	
Bulk density	<ul> <li>Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.</li> <li>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit.</li> <li>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</li> </ul>	<ul> <li>No density data has been collected to data and an average of 3.0 t/m3 was applied to all mineralised BIF material with a density of 2.5 t/m3 applied to the weathered Cap. A density of 2.8 t/m3 was applied to all external host material.</li> </ul>
Classification	<ul> <li>The basis for the classification of the Mineral Resources into varying confidence categories.</li> <li>Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</li> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> </ul>	<ul> <li>All deposits have been classified as Inferred Mineral Resources. Primarily, this is due to the lack of density data, the limited data at Ridge C and Ridge E, and the lack of verification diamond drilling to confirm the grade identified through the RC drilling and the drilling challenges observed. That said, continuous packages of mineralised BIF have been identified and BGS is confident that future drilling will increase the classification confidence category assigned.</li> <li>At the Sirius Extension Target, the base of the Inferred Mineral Resources was restricted to the deepest drillhole intersections within the mineralised body. All mineralised BIF material modelled at Ridge C and Ridge E was classified as an Inferred Mineral Resource with no depth restriction, due to the limited</li> </ul>

		down dip extent of the models.
Audits or reviews	<ul> <li>The results of any audits or reviews of Mineral Resource estimates.</li> </ul>	<ul> <li>Prior to undertaken the optimisation study, Mining Plus audited the Mineral Resource Estimate completed by BGS.</li> </ul>
relative accuracy/ confidence	<ul> <li>where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.</li> <li>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</li> <li>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</li> </ul>	<ul> <li>Given the early-stage nature of the project, the Inferred category is deemed appropriate. Further work is required to determine the accuracy of the drilling method in terms of recovery and grade bias in addition to the requirement for the collection of density data.</li> <li>Overall, the dimensions and volumes of the BIF packages are robust although changes to the overall geometry can be expected at Ridge C and Ridge E once further drill data is collected.</li> <li>Given the quantity of data at Ridge C and Ridge E, the estimate can only be considered as global estimates. More data exists at the Sirius Extension target with the grade distribution being better defined with the application of additional SiO2 domaining within the BIF unit. However, it is advised that the grade distribution be tested with diamond drilling to ensure that the distribution observed is not attributable to RC drilling recovery.</li> <li>The density could also impact the overall tonnage. Should variations in density being determined, due to such things as the compactness and porosity of the stratum, then the final tonnage could be impacted.</li> </ul>