20 September 2021
ASX Market Announcements
Via e-lodgment

29 Year Mine Life for Lucky Bay Garnet Project

Resource Development Group Limited (**ASX: RDG**) (**RDG** or the **Company**) is pleased to announce a significant Ore Reserve estimate for its 100%-owned Lucky Bay Garnet Project (**Lucky Bay**), in the Mid-West region of Western Australia.

The Lucky Bay Garnet Ore Reserve as at 20th September 2021 has been estimated at 202Mt @ 5.4%HM with an average garnet grade of 86% in HM. Refer to Appendix A for JORC Table 1 and Appendix B for Entech Mining Consultants' Summary Ore Reserve Estimate Report dated 16 September 2021.

Highlights

- **Project NPV (8%) A$483m**
- **Project IRR 48%**
- **Total Ore Reserve of 202Mt @ 5.4%HM**
- **Total Ore Reserve of contained Heavy Minerals 10.9Mt**
- **Total Ore Reserve of contained Garnet 9.3Mt**
- **Ore Reserve mine life 29 years**
- **Mineralisation open to the north and south**

RDG acquired the Lucky Bay Garnet Project in February 2021. Lucky Bay's tenements, located between the coastal towns of Kalbarri and Port Gregory, are contiguous with the world's largest supplier of high-quality alluvial garnet.

High-quality alluvial garnet products are used in the abrasive blasting and waterjet cutting markets. RDG intends to target coarse-grade markets in the first instance, that are undersupplied and potentially in deficit.

Since acquiring Lucky Bay, RDG's focus has been on realising the full potential of the project by delivering a comprehensive update of the existing Mineral Resource (announced on 1st July 2021), Ore Reserve and Lucky Bay Garnet Project Feasibility Study.

Resource Development Group Managing Director Andrew Ellison commented:

"This is a significant milestone for the project and confirms the value that this project creates for RDG. With an NPV of almost half a billion dollars and an IRR of 48% the projects financial metrics are very robust."

"We have now confirmed our optimised mining schedule and look forward to bringing the project into production towards the end of Q1 2022."

Economic Assumptions and Analysis

A mining and processing strategy was developed based on an annual processing plant rougher head feed rate of 3.35Mt increasing to 6.7Mt in year 3. This equates to a base-case garnet production of approximately 130kt per year increasing to approximately 300ktpa when the planned second Wet Concentrator Plant (WCP) is commissioned, and higher-grade ore is mined.

Phase 1 capital costs have been completed with a -10/+10% accuracy for uncommitted items. Operating costs are considered to be to a -10%/+10% level of accuracy. A discount rate of 8% (real) has been used for financial modelling. This number was selected as a generic cost of capital and is considered suitable for economic forecasting. The financial model includes all project level operating costs as well as initial and sustaining capital costs. The Phase 1 capital expenditure of approximately A$60 million is forecast to be completed during Q1 2022 when commissioning commences.

The Australian Garnet corporate financial model generates an after-tax project NPV of A$483 million inclusive of allowances for depreciation as completed for the Ore Reserve case.

Table 1 Key LOM Financial Metrics

FINANCIAL	A$b**	A$/t Product Produced
PRODUCT REVENUE	5.15	523
MINING COSTS	0.4	39
PROCESSING COSTS	0.6	65
ADMIN	0.1	8
LOGISTICS	1.6	163
ROYALTIES	0.2	22
OPERATING CASHFLOW	2.2	225
EBIT	2.07	210
NPAT	1.42	144
NPV (8%)*	$483m	
IRR*	48%	

**Post Tax*
***Exchange rate AUD = 0.75 USD*

Overview

Lucky Bay is located approximately 530km north of Perth and 35km south of Kalbarri. RDG's wholly owned subsidiary Australian Garnet Pty Ltd (AGPL) holds two granted mining leases covering 1,572 ha and two Exploration Licences totalling 7,394 ha, which combined make up the Lucky Bay Garnet Project area. Lucky Bay is comprised of the Menari and Menari North Heavy Minerals (**HM**) deposits, as shown in Figure 1 below.

The Lucky Bay project area is north of GMA Garnet Group's existing garnet operation, which is the world's largest supplier of high-quality alluvial garnet.

Following the acquisition of Lucky Bay earlier this year, RDG executed a drilling program to upgrade and extend the project's garnet Mineral Resource. This updated resource has been the basis for the Ore Reserve that has been used in the updated Feasibility Study.

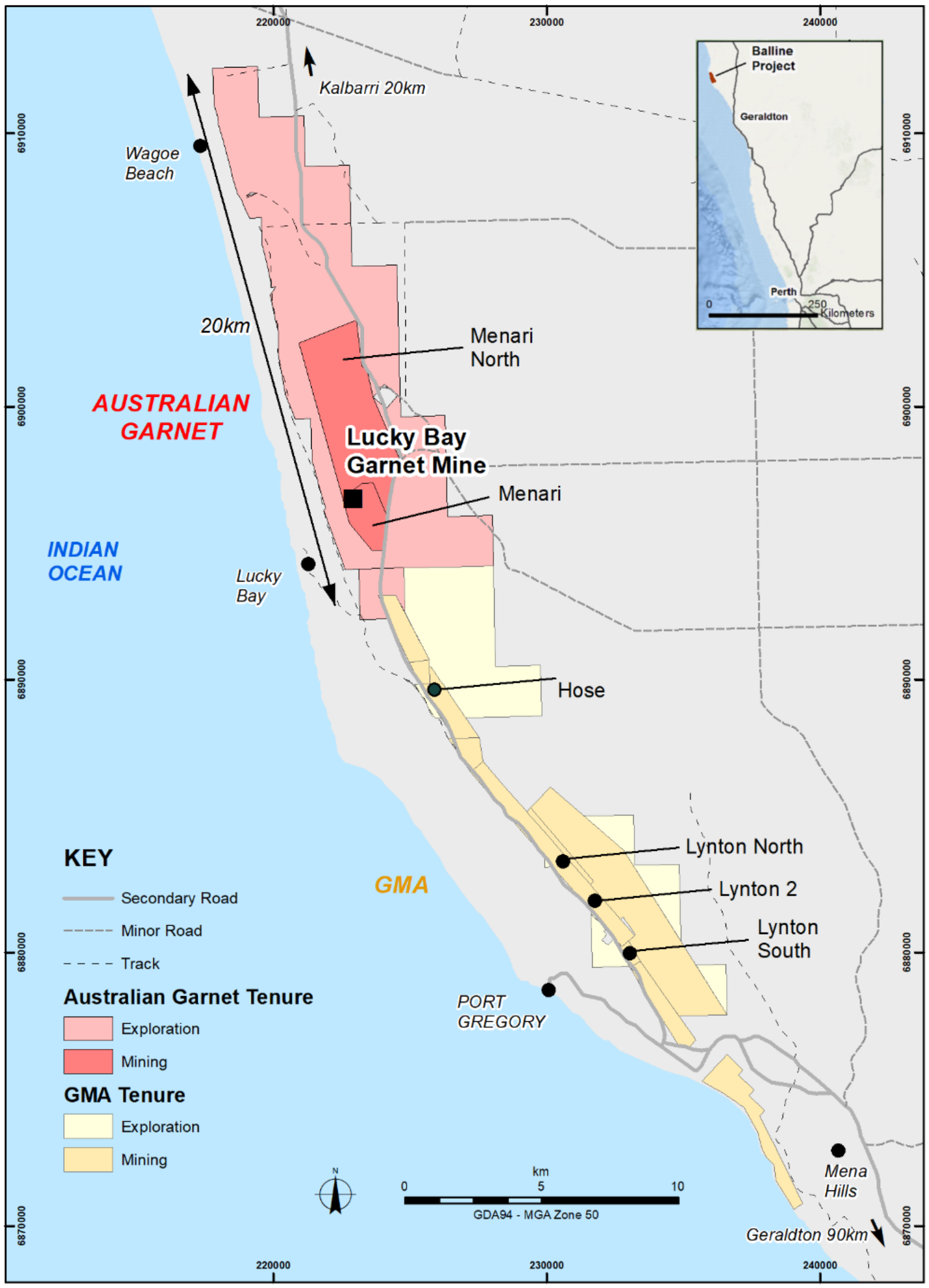


Figure 1: Lucky Bay Garnet Project location.

Material Assumptions

The Lucky Bay Garnet Project Ore Reserve has been underpinned by a technical study that is at feasibility level. The study confirms the project economics. The plant is initially designed to produce 125,000 - 135,000 t of screened garnet products and 25,000t of Heavy Mineral Concentrate (HMC) produced at the Mineral Separation Plant (MSP) per year. A planned expansion in Year 3 will see a doubling of capacity and more than doubling of production to an average of 300 ktpa of garnet products as the higher grade northern Menari area is brought into production.

All key permits have been granted including Works Approval, Mining Proposal, Project Management Plan, Native Vegetation Clearing Permits and Groundwater license. Other permitting is progressing as required and scheduled. The Competent Person knows of no reason why permitting would not be granted within a reasonable time frame.

Ore Reserve Classification

The Ore Reserve estimate is based on the Mineral Resources described in Table 2.

Table 2: Menari & Menari North Mineral Resource @ 2% HM cut-off (JORC2012) – July 2021.

Commodity: Mineral Sands								
Deposit	**Resource Category**	**Type**	**Tonnes** (Mt)	**HM** (%)	**HM** (Mt)	**Slimes** (%)	**Garnet** (%)	**Garnet** (Mt)
Menari	Measured	Dune	25.5	4.2	1.1	4.6	84.3	0.9
	Measured	Strand	6.8	8.6	0.6	5.9	79.1	0.5
Menari North	Indicated	Dune	334.2	4.1	13.6	5.9	86.7	11.8
	Indicated	Strand	13.0	10.3	1.3	5.8	86.7	1.2
	Inferred	Dune	59.2	3.8	2.2	5.2	85.0	1.9
	Inferred	Strand	0.2	4.3	0.01	5.9	80.7	0.01
TOTAL	Measured	All	32.3	5.1	1.6	4.9	83.2	1.4
	Indicated	All	347.2	4.3	14.9	5.9	86.7	13.0
	Inferred	All	59.3	3.8	2.2	5.2	85.0	1.9
TOTAL	**All**	**All**	**438.8**	**4.3**	**18.8**	**5.7**	**86.2**	**16.2**

Estimates subject to rounding differences

Measured and Indicated Mineral Resources have been classified as Ore Reserves based on the Competent Person's assessment of the modifying factors detailed in the JORC Table 1 Section 4 attached in Appendix A. The 2021 Lucky Bay Garnet Project Ore Reserve estimate summary is provided in Table 3.

Table 3 - Lucky Bay Project Ore Reserve Update (Entech 2021)

Area	Classification	Tonnes (Mt)	HM (% in Ore)	SL (% in Ore)	OS (% in Ore)	Garnet (% in HM)	Garnet (Mt)
Total Lucky Bay Project	***Proved***	*26*	*5.0*	*4*	*4*	*83*	*1.1*
	Probable	*176*	*5.4*	*6*	*3*	*87*	*8.3*
	Total	**202**	**5.4**	**6**	**3**	**86**	**9.3**

Estimates subject to rounding differences

Mining Method

The Mining Unit Plant (MUP) is designed to be fed by a Front-End Loader (FEL) at an average rate of 480 tph with the capacity to increase this up to 600 tph. This will easily achieve the 3.6 Mtpa required to feed the Wet Concentrator Plant (WCP) plant at its design capacity rougher head feed rate of 450 tph. The ore passes over a coarse vibrating screen and then conveyed to a trommel to remove remaining over size material greater than 2 mm. The fine sand is then slurried and pumped to the WCP. The mobile MUP is located on the mining pit floor and periodically relocated closer to the mining face as mining advances.

Table 4 Mining & Production Physicals

	Unit	Year 1&2	Year 3- LOM	LOM
Mining Rate	**Mtpa**	3.6	7.7	7.7
MUP Availability	**%**	85	85	85
MUP Feed	**Mt**	7.2	198.6	205.8
Overburden Mined	**Mt**	0	14.9	14.9
HM	**%**	4.9	5.4	5.4
Garnet % of HM	**%**	85.9	86.1	86.1
Slimes (-63µm)	**%**	3.8	5.6	5.5
Oversize (+2mm)	**%**	4.7	3.1	3.2
Processing Rate*	**tph**	450	900	884
WCP/MSP Availability	**%**	85	85	85
WCP Rougher Feed*	**Mt**	6.6	177.2	183.8
Garnet Products Produced	**kt**	277	8,168	8,445
MSP HMC Produced**	**kt**	38	1,343	1,381

**Rougher Head Feed (w/o mining loss (2%), Oversize & Slimes)*
***MSP HMC includes approx. 25% of material (including silica) that is not HM and unrecovered garnet from the MSP*

Processing Method

The MUP feed is passed through deslime cyclones whereas unmineralized sand, predominantly silica is removed in spiral circuits.

The HMC produced at the WCP is further processed at the MSP. The HMC is dried in a rotary drier then screened and fed through a series of magnets to separate the garnet from the HMC. The remaining MSP HMC that includes the ilmenite, zircon and other HM is stockpiled for future bulk shipping to customers.

The bulk garnet produced by the MSP is then screened into one of five different products of various size fractions that meet specific customer requirements for either abrasive blasting (20/40#, 30/60#, 80#) or water jet cutting (80#, 120#).

These screened products are stored in silos before being bagged or transferred to overhead storage bins allowing road trains to be loaded for bulk or bagged product transport.

Table 5 Metallurgical Recoveries

Grain Size	WCP HM Recovery	MSP Garnet Recovery
<125 Micron	90.9%	90.2%
125-250 Micron	90.8%	97.0%
250-500 Micron	86.1%	97.4%
>500 Micron	85.7%	100.0%

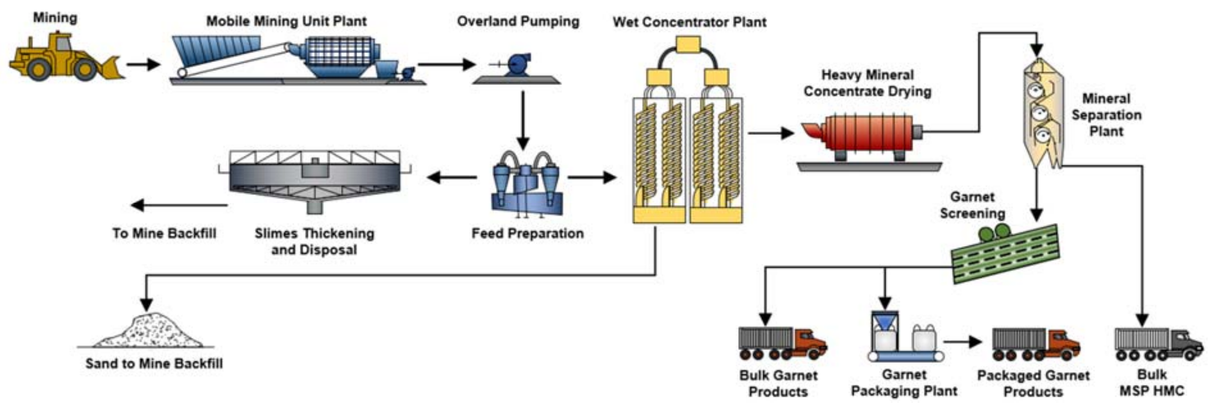


Figure 2 Lucky Bay Garnet Process Flow Diagram

Rehabilitation

Dewatered sand tailings are returned to the mining void where they are contoured. The clay fraction (slimes) is sent to a thickener to recover the water and then pumped to solar drying pads established atop the sand tailings. The slimes are then blended with the sand tails before returning the stockpiled soil and vegetation material as part of the post mining rehabilitation.

Sales & Distribution

The bagged products are stockpiled at site and despatched to a Perth based warehouse where they are loaded into shipping containers according to the customer's requirements. The containers are then trucked to Fremantle port where they are loaded and shipped to global distributors. Garnet destined for the domestic market is distributed from Perth by road and rail to distributors warehouses in the eastern states.

Bulk sales of garnet and MSP HMC are trucked to the industrial area of Geraldton (Narngulu) for storage before being loaded onto a bulk carrier at the port of Geraldton.

Capital Expenditure

Total Phase 1 capital expenditure for the Lucky Bay Garnet Project is forecast to be $60m. All long lead items have now been ordered and will be progressively delivered to site from October 2021 onwards. Fabrication of plant has been awarded and is now well underway. Site earthworks have commenced in addition to temporary accommodation being built in Kalbarri.

Total expenditure committed to date is $21.2m (7 September 2021). Capital cost estimate for the Phase 2 expansion, that is forecast to more than double garnet production, is $31.2m.

Table 6 Capital Cost Estimate

Area	Phase 1	Phase 2
Mining Unit & Earthworks	4.2	4.2
Wet Concentrator Plant	11.4	11.4
Mineral Separation Plant	3.6	3.5
Screening & Bagging Facility	12.0	-
Utilities	10.0	3.7
Infrastructure	4.5	1.2
Construction Indirects	8.5	4.2
Owners Costs	3.3	0.6
Contingency	2.5	2.2
TOTAL	**60.0**	**31.2**

Estimates subject to rounding differences

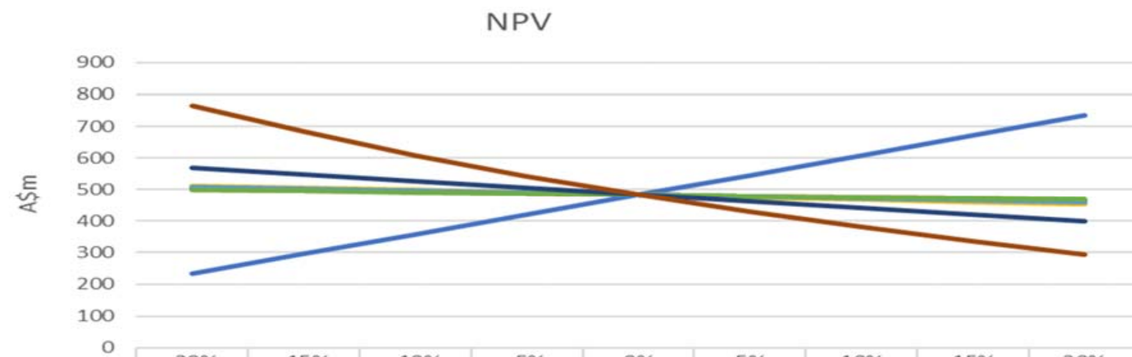
Figure 3 Lucky Bay Processing Facility

Cut-off Value

Cut off is economic, by cash flow and takes into consideration grade, assemblage, HM size distribution, recovery, operating costs, and product pricing. In regions where overburden is defined, all material above the defined overburden surface is considered waste regardless of individual block value, as practical mining considerations exclude selective mining. Likewise, in regions where a discrete overburden surface is not defined, all material above the pit design surface is considered ore regardless of individual block value and this may include small quantities of marginal or sub economic material where it is not practical to exclude.

Financial Sensitivity Analysis

The sensitivity of the Project NPV and IRR to changes in the key variables for the Lucky Bay Project is outlined in Figures 4 and 5, for ±20% changes. The greatest sensitivity to the project economics is driven by the realised garnet price and exchange rates; however, modelling suggests an unfavourable variance in either of these metrics of up to 20% still delivers a project with favourable economics.



	-20%	-15%	-10%	-5%	0%	5%	10%	15%	20%
Garnet Price	233.2	295.7	358.2	420.7	483.2	545.7	608.2	670.7	733.2
Capital Cost	500.0	495.8	491.6	487.4	483.2	479.0	474.8	470.7	466.5
Mining	503.2	498.2	493.2	488.2	483.2	478.2	473.2	468.2	463.2
Processing	512.6	505.2	497.9	490.6	483.2	475.9	468.5	461.2	453.9
Labour	507.6	501.5	495.4	489.3	483.2	477.1	471.1	465.0	458.9
Diesel	498.8	494.9	491.0	487.1	483.2	479.3	475.5	471.6	467.7
Logistics	568.1	546.9	525.7	504.4	483.2	462.0	440.8	419.6	398.3
Exchange Rate	765.6	682.6	608.7	542.7	483.2	429.4	380.5	335.9	295.0

Figure 4 Project NPV Sensitivity to variation in key parameters

	-20%	-15%	-10%	-5%	0%	5%	10%	15%	20%
Garnet Price	28.2	33.1	37.9	42.7	47.5	52.4	57.3	62.3	67.3
Capital Cost	56.4	53.8	51.5	49.4	47.5	45.8	44.2	42.7	41.3
Mining	49.1	48.7	48.3	47.9	47.5	47.1	46.7	46.3	45.9
Processing	50.0	49.4	48.8	48.1	47.5	46.9	46.3	45.7	45.1
Labour	49.7	49.1	48.6	48.1	47.5	47.0	46.5	45.9	45.4
Diesel	48.7	48.4	48.1	47.8	47.5	47.2	46.9	46.7	46.4
Logistics	54.1	52.5	50.8	49.2	47.5	45.9	44.2	42.6	41.0
Exchange Rate	68.7	62.5	56.9	52.0	47.5	43.5	39.8	36.5	33.3

Figure 5 Project IRR Sensitivity to variation in key parameters

ENDS

This announcement dated 20th September 2021 is authorised for market release by the Board of Resource Development Group Ltd.

Michael Kenyon
Company Secretary

For further information, please contact Michael Kenyon on (08) 9443 2928 or at michael.kenyon@resdevgroup.com.au

Competent Person's Statement

The information in this report that relates to the Mineral Resources is based upon work compiled by Mr Richard Glen Stockwell. Mr Stockwell is a full-time employee of Placer Consulting Pty Ltd and a Fellow of The Australian Institute of Geoscientists. Mr Stockwell has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity he has undertaken to qualify as a Competent Person as defined in the JORC Code, 2012. Mr Stockwell consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to Ore Reserves is based on information and supporting documentation prepared by Mr. Per Scrimshaw. Mr. Scrimshaw is a Member of The Australasian Institute of Mining and Metallurgy. Mr. Scrimshaw is employed by Entech, a mining consultancy engaged by Australian Garnet to prepare Ore Reserves estimation for the Lucky Bay Garnet Project. Mr. Scrimshaw has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'.

Forward Looking Statement

This ASX announcement may contain forward looking statements that are subject to risk factors associated with garnet exploration, mining and production businesses. It is believed that the expectations reflected in these statements are reasonable but they may be affected by a variety of variables and changes in underlying assumptions which could cause actual results or trends to differ materially, including but not limited to price fluctuations, actual demand, currency fluctuations, drilling and production results, metallurgy, Reserve estimations, loss of market, industry competition, environmental risks, physical risks, legislative, fiscal and regulatory changes, economic and financial market conditions in various countries and regions, political risks, project delay or advancement, approvals and cost estimate

Appendix A : JORC Table 1

Section 1: Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	*Nature and quality of sampling (e.g. 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.*	Sampling techniques are described in terms of historic works by Haddington and Westralian Sands prior to 2013 and modern techniques applied under the guidance of Placer Consulting Resource Geologists for Australian Garnet in subsequent years. The resource data set includes 82% modern and 18% historic samples. Historic samples inform Indicated and Inferred resource areas only. Historic Haddington samples were taken, in their entirety, at 1m down-hole intervals. These were then composited at 1 – 4m intervals for assay. Westralian Sands applied a 1-metre sampling interval for analysis. For the 2013 and 2016 drilling, sample sub-splits were collected at a 2m down-hole interval, using an on-board rotary splitter mounted beneath the Hornet Drilling rig cyclone. Sample gates are set at 12.5% of the splitter cycle, which delivers about 2kg of sample, dependant on ground conditions. The 2020 – 2021 drilling campaigns employed the same sampling regime with a sample interval of 1.5m.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	All drilling was completed above the water table using a Reverse Circulation Aircore (RCAC) drilling rig. Consistency in split sample weights is monitored via intermittent testing in the field with spring scales and through recording of air-dried sample weights at the sample preparation stage. Weights are generally between one and three kilograms, and this is considered representative for the detrital material being sampled.
	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 (e.g. '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 (e.g. submarine nodules) may warrant disclosure of detailed information.	RCAC drilling is used to obtain the sample as described above. Westralian Sands applied the Method A analysis technique whereby a 300g sub-sample split is attritioned by hand, slimes are estimated by drying and weighing the undersize and the sand fraction is dry sieve sized at 500micron. A 35g sub-sample split of the minus 500-micron sample is then subjected to a heavy mineral (HM) float/sink technique using Tetra-bromo Ethane (TBE: SG=2.96g/cm^3). Haddington samples were composited, riffle split at 50% and screened at +2mm to remove oversize. A 500g sub-sample was then generated by riffle splitter for de-sliming at -63 µm. All modern samples are dried and weighed. A rotary-split sub sample is then wet screened to determine slimes (-63 µm) and oversize material (+1mm). Approximately 100g of the resultant sample is then subjected to a heavy mineral (HM) float/sink technique using TBE. The resulting HM concentrate is then dried and weighed and reported as a percentage of the split and of the in-ground total sample weight. The in-ground HM analysis is then applied to the resource estimate.
Drilling techniques	*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.).*	All samples are generated by RCAC drilling utilising ~71 mm diameter (NQ) air-core drill tooling. Drill holes are oriented vertically by spirit level.

Criteria	JORC Code explanation	Commentary
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.*	Drilling of modern samples is conducted by Hornet Drilling with water injection to ensure fine material is retained. No record of drilling methodology could be determined for earlier programmes. There are no recorded intervals in the geology logs that indicate loss or contamination of samples. Sample weight analyses completed by Placer shows consistent sample weights are achieved by the drilling method employed. The configuration of drilling and nature of sediments encountered results in negligible sample loss.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Sampling on the drill rig is observed to ensure that the cyclone and rotary splitter remain clean and in functional operation delivering ~10 – 15 splits per sample interval. Water flush and manual cleaning of the cyclone occurs at regular intervals to ensure contamination is minimised. Drill penetration is halted at the end of each sample interval to allow time for the sample to return to surface and be collected. Drilling proceeds once sample delivery ceases. Applying a 2m sample interval (2013, 2016) required the splitter to be disengaged and diverted during the rod change (every 3m) to avoid additional sample being collected (sample can rill into the bit when air delivery is ceased for the rod change). Despite this practice, there is a minor sample size increase observed for every third sample (average less than 10% increase) from these generations of drilling. This is not considered material to the resource classifications as applied.
	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.	No relationship is believed to exist between grade and sample recovery. The high percentage of silt and absence of hydraulic inflow from groundwater at this deposit results in a sample size that is well within the expected size range.
Logging	*Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resources estimation, mining studies and metallurgical studies.*	Qualitative digital logs of geological characteristics are collected to allow a comprehensive geological interpretation to be carried out for the resource estimation. Samples are panned in the field to determine dominant and secondary host materials characteristics and heavy mineral content. Logging of the historic samples was less detailed and captured dominant host characteristics only. Westralian Sands relied on the driller to record gross geological character of drilled intervals.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Logging of RCAC samples is qualitative and includes description of sample colour, lithology, grainsize, sorting, induration type, hardness, estimated rock and estimated HM. A comments field is employed to allow further description or interpretation of materials/formation/sample quality. Logging of HM sinks generated from modern samples is completed by a mineralogist using a binocular microscope. Leica digital image sizing analysis is used to produce Garnet grain size information for the 2013 drill samples to inform the geological interpretation and optimisation/product split. Subsequently, all HM sink samples are sized by sieve analysis.
	The total length and percentage of the relevant intersections logged.	All drill holes are logged in full and all samples with observed HM (and designated for assay) are assayed.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	All samples are unconsolidated and comprise sand, silt, clay and rock fragments.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	Historic samples were taken, in their entirety, at 1m down-hole intervals. Modern samples are taken at a 2m down-hole interval (2013, 2016) and at a 1.5m down-hole interval (2020 onwards) using an on-board rotary splitter set at 12.5% of the splitter cycle, which delivers about 2kg of sample. Drill samples are dried and split for analysis.

Criteria	JORC Code explanation	Commentary
Sub-sampling techniques and sample preparation, cont'd.	*For all sample types, the nature, quality and appropriateness of the sample preparation technique.*	Little is known of the quality standards applied to historic samples. Modern sample preparation is recorded on a standard flow sheet and detailed QA/QC is undertaken on all samples. Sample preparation techniques and QA/QC protocols are appropriate for the heavy mineral determination and support the resource classifications as stated.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Includes the training of drill and field staff on managing the rotary splitter to ensure contamination or sample loss are avoided. Use of tightly-woven calico sample bags to remove the potential of sample loss from split samples. Review of laboratory techniques and flowsheet to ensure representative sample splitting. Inspection of laboratory procedure and equipment to ensure appropriate technique, good housekeeping and application of accurate sample handling and sample management procedures. Sample weight is recorded and monitored for outliers or spurious results. When these occur, they are investigated and re-assayed where fault is detected. Field Duplicate, laboratory replicate and standard sample geostatistical analysis is employed to manage sample precision and analysis accuracy.
Sub-sampling techniques and sample preparation, cont'd.	*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.*	Sample size analysis is completed as discussed above. Field duplicates are collected for precision analysis of the rotary splitting system on the rig. Results indicate a sufficient level of precision for the resource classifications. There was no field duplicate analysis completed during historic programmes. Twin drilling analysis of the Haddington programme indicate a sufficient level of precision was achieved and results support the resource classifications applied.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Given that the grain size of the material being sampled is sand and approximately 70 to 300 µm, an approximate sample size of 2 kg is more than adequate.
Quality of assay data and laboratory tests	*The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*	Laboratory analysis was completed in-house by Westralian Sands using a technique superseded by more accurate techniques in the early to mid-1990's. This data is used only to inform Inferred regions of the mineral resource estimate. Laboratory analysis of the Haddington drill samples included sample preparation at Nagrom Laboratory, followed by TBE separation at Western Geolabs and audit analysis by Diamantina laboratory. Laboratory replicates and audit assay procedures were used for QA/QC and results indicate sufficient precision and accuracy for the estimate. Sample preparation and analysis of modern drill samples is completed by Diamantina Laboratory. Laboratory replicates and laboratory standards are used for QA/QC and results indicate sufficient precision and accuracy for the estimate. All analysis is conducted according to a flow sheet that represents standard, best practice for the assessment of HM enrichment and is supported by robust QA/QC procedures (duplicates, replicates and standards).
	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.	None used.

Criteria	JORC Code explanation	Commentary
Quality of assay data and laboratory tests, cont'd.	*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.*	To maintain QA/QC in modern campaigns, a duplicate and standard assaying procedure was applied by Placer Resource geologists. Both standards and duplicates are submitted blind to the laboratory. A duplicate sample is collected at the rig at every 40th sample by the application of a second calico bag to the second, 12.5% splitter chute. Both samples are subjected to the complete sample preparation and assaying process. A certified standard sample is submitted in the field at a rate of 1:40, to monitor laboratory analysis accuracy. Diamantina laboratory submits an additional standard sample at a 1:40 frequency and analyse a laboratory replicate sample at a rate of 1:15 – 1:25. For the Haddington drill sampling programme, a laboratory replicate (1:20) and audit analysis programme was employed. No quality control procedures are known to have been employed by Westralian Sands. Analysis of sample duplicates is undertaken by standard geostatistical methodologies (Scatter, Pair Difference and QQ Plots) to test for bias and to ensure that sample splitting is representative. Standards determine assay accuracy performance, monitored on control charts, where failure (beyond 3SD from the mean) triggers re-assay of the affected batch. Acceptable levels of accuracy and precision are displayed in geostatistical analyses to support the resource classifications as applied to the estimate.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Results are reviewed in cross-section using Datamine software and any spurious results are investigated. The deposit type and consistency of mineralization leaves little room for unexplained variance.
	The use of twinned holes.	Twinned holes are drilled across a geographically dispersed area to determine short-range geological and assay field variability for the resource estimation. Twin drilling data account for a total of 5 – 10% of the drill database for the resource estimate. Acceptable levels of precision are displayed in the geostatistical analysis of twin drilling data to support the resource classifications as applied to the estimate.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Modern field logging data are entered digitally in the field using ruggedized computer with Micromine logging software (2013 – 2016) and Seequent logging software (2020 onwards). Data are automatically validated through reference to library tables on all fields entered. Data are uploaded via quarantine tables to the Seequent database - MX Deposit.
	Discuss any adjustment to assay data.	Assay data adjustments are made to convert laboratory collected weights to assay field percentages and to account for moisture.
Location of data points	*Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resources estimation.*	AGPL engages Hille, Thompson and Delfos Surveyors (HTD) and Heyhoe Surveys, Geraldton for real time kinematic global positioning system ('RTK GPS') set out of drill collar locations. Peg location adjustments are captured by Hornet during drilling and conveyed to HTD for re-survey at the completion of the programme. Topographical surveys are completed by HTD using a drone and RTK GPS. Surveys are completed using registered base stations referenced to local State Survey Markers.
	Specification of the grid system used.	UTM 50J GDA94 is the global grid reference. The survey geoid model utilised in the survey set-out/pick-up is Ausgeoid98 in both the recorder and in the post-processing. All survey data used in the resource estimate has undergone a transformation to a local mine grid. This seven-parameter grid transformation aligns the average strike direction of the shoreline placers with local north, which is useful for grade interpolation and mining reference for production.

Criteria	JORC Code explanation	Commentary
Location of data points, cont'd.	*Quality and adequacy of topographic control.*	The digital terrane model (DTM)was generated by land-based survey conducted in 2008 at a 10*10m and 20*20m grid pattern using a RTK GPS unit. This was extended in 2018, and again in 2021 using an un-manned aerial vehicle (UAV) mounted with similar survey equipment. Check lines were flown by HTD to verify the previous land-based survey and results are comparable. The DTM is suitable for the classification of the resource as stated.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	The drill data spacing is nominally 100m North, 40m East, and 2m down hole to inform areas of the resource classified at a Measured level of confidence. A maximum spacing of 400m North, 40m East and 1.5m down-hole inform areas of the resource classified at an Indicated level of confidence. Inferred areas of the resource include regions informed by historic data or at an 800m North, 80m East and 1.5m down-hole spacing by modern drilling.
	Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resources and Ore Reserves estimation procedure(s) and classifications applied.	Variography and Kriging Neighbourhood Analysis completed using Supervisor software informs the optimal drill and sample spacing for the resource estimate. Based on these results and the experience of the competent person, the data spacing and distribution is considered adequate for the definition of mineralisation and adequate for mineral resource estimation.
	Whether sample compositing has been applied.	All samples are regularised to a 2m interval for the interpolation based on contact analysis in Supervisor.
Orientation of data in relation to geological structure	*Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.*	Sample orientation is vertical and approximately perpendicular to the dip and strike of the mineralization, which results in true thickness estimates. Drilling and sampling are carried out on a regular rectangular grid that is broadly aligned and in a ratio consistent with the anisotropy of the mineralisation.
	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.	There is no apparent bias arising from the orientation of the drill holes with respect to the strike and dip of the deposit.
Sample security	*The measures taken to ensure sample security.*	All samples are numbered, with sample splits, residues and HM sinks stored securely at AGPL property.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	Field staff training and supervision is provided by Richard Stockwell (Director/Principal of Placer Consulting Pty Ltd). This includes driller, offsider and field Geologist training and development of sampling equipment. Drilling and sampling techniques are audited on a continual basis throughout the programme.

Section 2: Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	*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.*	The exploration results are coincident with the granted Mining Licences M70/1387, M70/1280 and granted Exploration Licences E70/2509 and E70/5117. All licences are wholly owned by Australian Garnet Pty Ltd. Upon mining, there is a customary 5%, state government royalty payable. An on-going $4/ tonne of HMC royalty payment is due to a third party and an annual payment of $225,000 is due to the landowner occupying the land in the north of the Project.
	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.	There are no known impediments to the security of tenure over the area containing the reported exploration results.

Criteria	JORC Code explanation	Commentary
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Previous workers had identified the mineral resources but completed insufficient work to quantify the extent and volume or the resource. Sample assay and lithology information from historic explorers is used for the resource estimate as qualified in Section 1.
Geology	*Deposit type, geological setting and style of mineralisation.*	Exploration results are indicative of aeolian (dunal) overlying palaeo-beach placer, detrital heavy mineral sand deposits. Heavy minerals are derived originally from the metamorphic rocks of the Northampton Complex, which were delivered to the coast via the Hutt River and smaller tributaries. A dominant northward-moving long-shore drift current has spread this mineral along the coast into beach and dune sequences.
Drill hole Information	*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:* • *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.* *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.*	An intercept table of all drilling relevant to the resource estimate is listed in the report and in previous releases. These can be viewed on the company website. There are no further drill hole results that are considered material to the understanding of the exploration results. Identification of the wide and thick zone of mineralisation is made via multiple intersections of drill holes and to list them all would not give the reader any further clarification of the distribution of mineralisation throughout the deposit.
Data aggregation methods	*In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.*	The Lucky Bay Resources are reported at a 2.0% HM bottom cut-off established by optimisation of the Lucky Bay resources during PFS. No top-cutting of data was required. Data distributions are normal with a positive skew and contain no observable spike or nugget effects.
	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.	No data aggregation was required.
Data aggregation methods, cont'd.	*The assumptions used for any reporting of metal equivalent values should be clearly stated.*	No metal equivalents were used for reporting of exploration results.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.*	All drill holes are vertical and perpendicular to the dip and strike of mineralisation and therefore all intercepts are approximately true thickness.
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. *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').*	Dune deposits typically approximate a horizontal accumulation over a variable basement topography.
Diagrams	*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.*	Refer to main body of the report.

Criteria	JORC Code explanation	Commentary
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.*	Reporting of results is restricted to Mineral Resources estimates generated from geological and grade block modelling. The grade and dimensions of the Resource and the extents of the exploration drilling results is outlined in the report. Intercepts are disclosed in an unambiguous way.
Other substantive exploration data	*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.*	The bulk density applied to the Lucky Bay Resource has been generated for each discrete geological domain. A component-based density algorithm, designed by Placer Resource Geologists, combines density characteristics from each textural and compositional component of the sample. This is then combined with laboratory-generated porosity data. Pore space is variable based on sample composition, hence the need to quantify the volume of the sample represented by saturated pores. A total of 17 porosity assessments were made on a minimum 4kg sample of each geological domain. Calculated density is then applied and recorded, for all intervals based on their geological domain. Garnet concentration is derived from mineralogical scanning of all modern drill sample HM sinks, verified by QEMSCAN analysis of composited HM samples within each geological domain. Garnet grain size analysis is completed on all drill samples. HM sinks are physically sized by sieve (2016 – 2021) and digital image analysis using Leica software (2013). A duplicate analysis of 2013 and 2016 sizing results was completed and showed adequate precision was achieved by the Leica digital image analysis to support their inclusion in the resource estimate. Mineralogical analysis of the Ilmenite by-product is completed on geologically domained HM composites by R.E.D. magnetic separation and XRF (2013). Subsequent analysis of Ilmenite and Zircon is completed on geologically domained HM composites by QEMSCAN and XRF. Calcite coatings on Garnet grains (where present) is established qualitatively by mineralogist logging of all drill sample HM sinks and by QEMSCAN analysis as described above. Mineralogical analysis conducted on historic samples is considered unsuitable for reporting.
Further work	*The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).*	QEMSCAN and XRF mineralogical analysis of by product VHM (described above) is in progress. These data require joining to the model, assessment and reporting. Substantial infill drilling is required to upgrade Inferred and Indicated resources. Minor infill and edge definition drilling is required to finalise pit design for Measured resources. Securing resource extensions to the north of M70/1387 under Retention or Mining Licence is recommended. Similarly, securing the Inferred resource areas south of M70/1280 should also proceed by application for Mining or Retention Licence.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Refer to main body of report.

Section 3: Estimation and Reporting of Mineral Resources

Criteria	JORC Code explanation	Commentary
Database integrity	*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.*	Logging, survey and sample data is captured by industry-leading hardware and software equipped with on-board validation and quarantine capability.
	Data validation procedures used.	Look-up tables are employed at data capture stage on logging software equipped with on-board validation and quarantine capability. Cross-validation between related tables is also systematically performed by field logging software. Historic data were reviewed and manually entered into database tables. Sample weight analysis and cross section interrogation of assay fields is conducted in Datamine Studio RM software. Statistical, out-of-range, distribution, error and missing data validation is completed on data sets before being compiled into a de-surveyed drill hole file for resource estimation.
Site visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	Placer Consulting Resource Geologists established procedures for data capture and storage and completed regular site visits during drilling and laboratory analysis. There were no issues observed that might be considered material to the Mineral Resource under consideration.
Geological interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	The geological interpretation is compiled from field geological observations during drill sample logging, microscope investigation of heavy mineral sinks and interpretation of sample assay and Garnet size data. A strong correlation between these three sources of information was observed and a high degree of confidence results.
	Nature of the data used and of any assumptions made.	Primary resource data comprises 82% generated by modern techniques and 18% by historic methods. Historic data inform the Indicated and Inferred resource areas only. No assumptions were made.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	No alternative interpretations on mineral resource estimation are offered.
	The use of geology in guiding and controlling Mineral Resource estimation.	The mineral resource is constrained by the topographical surface, which is a lightly consolidated, undulating dune field. The base to mineralisation comprises the Tamala Limestone and an abutting (to the west) clay-enriched, lagoonal lowland sequence. The deposit comprises two temporally distinct, mineralised palaeo-beach placer deposits overlain by two, mineralised dune sequences. The mineral resource is controlled by these surfaces/solids and the interpolation is controlled by the physical properties within each horizon.
	The factors affecting continuity both of grade and geology.	Heavy mineral grade is broadly distributed in dune sequences and enriched in strand deposits. Both heavy mineral grade and deposit geology are consistent along strike and are expected to be reinforced by further infill and extensional drilling to the north and south.
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.*	The Lucky Bay Deposit is approximately 10.7km long, 1.0 - 1.9km wide and is 27m thick on average. Mineralisation occurs from surface over the majority of the deposit to a maximum of 63m depth.

Criteria	JORC Code explanation	Commentary
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.*	Datamine Studio RM and Supervisor software was used for the resource estimation with key fields being interpolated into the volume model using the Inverse Distance weighting (power 3) method. Qualitative induration variables such as hardness and HM coatings were interpolated using nearest neighbour. Appropriate and industry standard search ellipses, informed by variography and kriging neighbourhood analysis, were used to search for data during the interpolation and suitable limitations on the number of samples, and the impact of those samples, was maintained. Extreme grade values were not identified by statistical analysis, nor were they anticipated in this style of deposit. No top cut is applied to the resource estimation. Interpolation was constrained by hard boundaries (domains) that result from the geological interpretation.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	Pilot plant-scale test work was completed by AML in 2013 and by IHC Robbins in 2019. The current report considers variations from the previous resource estimate (2018) and includes a lengthy comparison of informing data and of the resource estimate.
	The assumptions made regarding recovery of by-products.	No assumptions were made regarding the recovery of by-products.
	Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).	Deleterious calcite coatings of garnet grains are logged qualitatively by a mineralogist for all drill sample HM sinks and assessed by QEMSCAN image analysis on geologically-domained, HM composites. These will be included in the resource block model and reported. Conditioning of garnet and removal of calcite coatings is the subject of on-going trials and has been considered in plant design.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	The average parent cell size used was informed by Kriging Neighbourhood Analysis (KNA). It provides a statistically relevant spacing for all resource areas that are defined by a range of drill data spacings. This resulted in a parent cell size of 200m*50m*5m for the volume model. To provide for smooth transition of topography and geological domains between data points, parent sub-cells are used. Four cell splits are available in the X and Y orientations and five cell splits are available in the Z-orientation. Search orientation and range are guided by results of the KNA, augmented with the experience of the Competent Person.
	Any assumptions behind modelling of selective mining units.	No assumptions were made regarding the modelling of selective mining units. The cell size and the sub cell splitting will allow for an appropriate ore reserve to be prepared.
	Any assumptions about correlation between variables.	No assumptions were made regarding the correlation between variables.
	Description of how the geological interpretation was used to control the resource estimates.	Interpolation was constrained by hard boundaries (domains) that result from the geological interpretation.
	Discussion of basis for using or not using grade cutting or capping.	Extreme grade values were not identified by statistical analysis, nor were they anticipated in this style of deposit. No top cut is applied to the resource estimation.
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	Validation of grade interpolations was done visually In Datamine by loading model and drill hole files and annotating and colouring and using filtering to check for the appropriateness of interpolations. Statistical distributions were prepared for model zones from both drill holes and the model to compare the effectiveness of the interpolation. Distributions of section line averages (swath plots) for drill holes and models were also prepared for each zone and orientation for comparison purposes. The resource model has effectively averaged informing drill hole data and is considered suitable to support the resource classifications as applied to the estimate.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	Tonnages are estimated on a dry basis. No moisture content is factored.

Criteria	JORC Code explanation	Commentary
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	A 1.5% HM bottom cut has been applied to the Resource Estimate in consultation with mining professionals working on plant design and optimisation of the Lucky Bay Project at projected operational cost and product price.
Mining factors or assumptions	*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.*	Conventional dry mining methods are to be employed and will include a combination of loader and dozer feed to a mobile, in-pit mining unit. Dilution is considered to be minimal as mineralisation commonly occurs from surface. Recovery parameters have not been factored into the estimate. However, the valuable minerals are readily separable due to their SG differential and are expected to have a high recovery through the proposed, conventional wet concentration plant.
Metallurgical factors or assumptions	*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 treatment processes and parameters made when 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.*	The metallurgical recovery and separability factors are similar to other mineral sand operations. Conventional mining and processing techniques will be employed. Ore will be wet-slurried and pumped to a conventional wet concentration plant producing a heavy mineral concentrate for on-site, screening and magnetic separation into product lines. There are no fine grained lower shoreface, lagoonal or tidal sediments and HM grain size shows a normal distribution. The mineral separation plant has been designed to cater for anticipated calcite coatings on HM grains.
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 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.*	Wet processing typically uses no environmentally harmful chemicals. Sand and clay tailings are considered non-toxic. Thickened clay tailings will be pumped to solar drying dams and then blended upon return to pit voids. Sand tails will be returned to the pit void by pump and in-pit stacker. Overburden dumps are expected to be minimal as ore occurs at/near surface. Topsoil stockpiles are included in the mine plan and will reside off-path, proximal to the area of disturbance. The coincident land package is primarily open pastoral land with minor stands of acacia scrubland. Clearing for drilling purposes has been readily approved. Vegetation is well represented regionally and readily re-vegetated and no floral impediments to mining are anticipated. Water studies are on-going and include groundwater monitoring at a number of sites throughout the Lucky Bay Project area. A geographically dispersed bore field is proposed to reduce individual site drawdown. Waste water recycling is integral in the processing and tails disposal plan.
Bulk density	*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.*	The bulk density applied to the Lucky Bay Resource is determined. It has been generated for each discrete geological domain. A component-based density algorithm, designed by Placer Resource Geologists, combines density characteristics from each textural and compositional component of the sample. This is then combined with laboratory-generated porosity data. Pore space is variable based on sample composition, hence the need to quantify the volume of the sample represented by saturated pores.
	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.	A total of 17 porosity assessments were made on a minimum 4kg sample of each geological domain. Calculated density is then applied and recorded, for all intervals, based on their geological domain.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	No assumptions are made for bulk density.

Criteria	JORC Code explanation	Commentary
Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.*	The resource classification for the Lucky Bay Project is based on the confidence in informing data and the resultant geological interpretation; grade and geological continuity, demonstrated by variography and twin drilling analysis; drill hole spacing and accuracy of the model to predict informing drill hole data. Input data are generally of a high quality and are supported by robust QA/QC protocols. Sample HLS results are supported by individual sample composition and Garnet sizing analyses and mineral assemblage and mineral chemistry analysis on geologically-domained HM composites. Post-depositional modification was insignificant and did not influence domaining of geological units or resource classification.
	Whether appropriate account has been taken of all relevant factors (ie 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).	The classification of the Mineral Resource is supported by all of the criteria as noted above.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The results appropriately reflect the Competent Person's view of the deposit categorisation.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	The Competent Person, Richard Stockwell undertook an audit of the resource estimate, which was completed by an independent consultant, and found it to be suitable for reserve optimisation in the Indicated and Measured category areas.
Discussion of relative accuracy/ confidence	*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.*	The accuracy and confidence of the Lucky Bay Resource Estimate is conducive to reporting at a Measured, Indicated and Inferred Status. This is largely due to: The drilling and sampling density and the subsequent detailed geological interpretation, which offers good control and confidence for the mineralisation. The reconcilably high accuracy of the survey apparatus and methods applied to the drilling locations and the topographic surface. The demonstrable quality in the input assay and mineralogical data. The results of qualitative assessment of the Mineral Resources estimate and comparison with previous resource estimates indicates the robustness of this particular resource estimation exercise.
	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.	The estimates are global.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	No production data are currently available.

Section 4 Estimation and Reporting of Ore Reserves

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	*Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.*	The Ore Reserve estimate for Lucky Bay is based on the Mineral Resource estimate disclosed 1 July 2021, prepared by Placer Consulting Pty Ltd. The Resource block model used is ***bm3final2.dm***.
	Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	The Mineral Resources are reported inclusive of Ore Reserves.
Site visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* *If no site visits have been undertaken indicate why this is the case.*	Due to COVID-19 travel restrictions, a site visit was conducted on 27th July 2021 by a suitably qualified Entech representative (Mr Daniel Donald BEng (Hons) MBA MAusIMM MSME), on behalf of the Competent Person.

Criteria	*JORC Code explanation*	**Commentary**
Study status	*The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.* *The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.*	This study is supporting work to BFS level study document.
Cut-off parameters	*The basis of the cut-off grade(s) or quality parameters applied.*	Cut off is economic, by cash flow and takes into consideration grade, assemblage, HM size distribution, recovery, operating costs, and product pricing. In regions where overburden is defined, all material above the defined overburden surface is considered waste regardless of individual block value, as practical mining considerations exclude selective mining. Likewise, in regions where a discrete overburden surface is not defined, all material above the pit design surface is considered ore regardless of individual block value and this may include small quantities of marginal or sub economic material where it is not practical to exclude this material in the design process.
Mining factors or assumptions	*The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).*	Ore Reserves were estimated by a Competent Person employed by independent mining consultants Entech Pty Ltd (Entech). Block cost, recovery, and revenue parameters, together with exclusion and geotechnical assumptions were used to apply automated optimisation algorithms on the Mineral Resource to identify economic pit shells over a range of revenue factors. These shells were scheduled in a high-level extraction sequence representing the anticipated mining path and, after consideration of discounted operating surplus, a target shell was selected upon which to guide detailed pit design. A detailed pit design and schedule was then developed, and these were used as the basis of the Ore Reserve estimate.
	The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.	The Ore Reserve is planned to be mined using bulk mining methods including Front End Loader fed in-pit mining unit with Dozer support for ore, and truck and excavator for overburden. Ore mining includes provision for processing of lower grade material that cannot be selectively removed or practically excluded from the pit through the design process. The mining method chosen is well-known and widely used in the local mining industry, and production rates and costing can be predicted with a suitable degree of accuracy. The method has been chosen based on the spatial and physical characteristics of the orebody, and historical performance of similar methods used at analogous mines. Vegetation will be cleared and topsoil stripped in advance of mining activities. Topsoil will be stored in dedicated topsoil stockpiles adjacent the active mining area for later rehabilitation post mine void backfill. Ore will be fed by Front End Loader to a centrally located feed unit within each mining block from where it is screened and slurried for pumping to the wet concentrator plant (WCP). After depletion of ore in a defined mining block (nominally 200m by 100m dimension) the in-pit feed unit is relocated to the next scheduled mining block. Overburden (low grade mineralised Zone 1 material) is present in sufficient quantities to discretely segregate in an area overlying the eastern strand material, east of the proposed MSP and plant. This material is proposed to be excavated in advance of ore mining by utilising truck and shovel methods, with material preferentially direct placed in the west dune void or otherwise dumped in a surface stockpile adjacent the pit crest to be re-contoured in later post mine and rehabilitation activities. Other low grade mineralised material that is not considered to be amenable to selective mining under the chosen mining method is either excluded from the pit design (typically by raising the pit floor above the interpreted controlling geological domain surface) or fed through the mining unit as marginal ore.
	The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc), grade control and pre-production drilling.	Pit walls have been designed based on a wall angle of 30°. Initial mine development (i.e., first three years production) is focussed on developing the pit at the southwest of the deposit (previously 'Menari'). Typically, the pit development in this area can be described as mining 'into' the dune and so the boundary areas of the pit in this region show quite shallow pit depth (<10 m) due to the 'daylighting' effect of the dunal material. As such this region of the pit (and mine schedule) is very insensitive to batter angle assumptions.

Criteria	JORC Code explanation	Commentary
		Further geotechnical work will be required to better inform mine design parameters when the mine path advances to the deeper eastern strand and when the second MUP/WCP is proposed to commence mining in the deeper northern regions of the deposit. Geotechnical studies are currently being planned to assess these regions and Entech understand will be completed well in advance of mining in these areas as required by the mine plan. It is expected that the global wall angle assumption currently used is conservative and will likely be able to be steepened in regions pending additional Geotechnical studies. The predominantly ore-to-surface nature of the mineralisation and relatively shallow pit depth, however, does generally mean that the Ore Reserve is largely insensitive to pit wall angle assumptions. The pits will be progressively backfilled after mining of ore in each area is complete, so all walls will be temporary only. Batters will be pulled progressively as the mining front advances or dozed to design angle under survey control. Grade control will be assessed in pit by visual control and estimation methods. No grade control drilling is expected. A 50 m offset buffer has been maintained between pit, site access road and George Grey Drive road reserve.
	The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	The Mineral Resource models used for pit optimisation is as detailed previously in this table. The Resource block model used for mine planning studies (pit optimisation, design, and scheduling) is ***bm3final2.dm***.
	The mining dilution factors used.	No additional dilution factor has been applied to the Mineral Resource. The Ore Reserve physicals include provision for planned inclusion of lower grade material that is deemed unable to be selectively mined as waste in the mine plan.
	The mining recovery factors used.	A 98% mining recovery factor was applied. A 0.3 m provision has been made for topsoil and this material has been treated as non-recoverable in the ore mining process.
	Any minimum mining widths used.	Geometry of the orebody does not require consideration of minimum mining width as pit floor width is never less than 75m. Mine design has been cognisant of the size of the likely mining blocks and has excluded material that is considered to be too shallow a pit depth or presents as a localised spatially discrete pit outside the main economic mineralised zones. Detailed mining blocks have been nominally designed on a 200 m by 100 m dimension for the region representing the initial mining area to be mined by the first MUP/WCP (previously the 'Menari' pit), however, are modified somewhat to follow the design pit limits along boundary blocks. Pit shell selection considered the cohesiveness of the shell in terms of providing a continuous mining and backfill front.
	The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.	Only the Measured and Indicated portions of the Mineral Resource were used to estimate the Ore Reserve. Any Inferred material contained within the Ore Reserve design has been considered waste for the purposes of evaluation. The Ore Reserve is technically and economically viable without the inclusion of Inferred Mineral Resource material.
	The infrastructure requirements of the selected mining methods.	Infrastructure required for the operations has been determined in a Feasibility Study, including ore processing facilities and associated infrastructure, offices, workshops, power station and surface power reticulation, borefields, and port facilities. Adequate consideration of these requirements has been considered in the financial analysis.
Metallurgical factors or assumptions	*The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.*	The ore will be treated in a conventional Wet Concentration and Dry Mineral Separation Processing Plant. The process has been designed by independent consultants incorporating site test work. 85% availability is assumed.
	Whether the metallurgical process is well-tested technology or novel in nature.	This proposed processing circuit is conventional in nature and of a type commonly applied in similar operations.
	The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.	The Mineral Resource Estimate incorporates data generated by test work for Garnet within the mineral assemblage and HM size distribution. Overall Wet Concentration Plant (WCP) garnet recovery is assumed to be 88.4%. Overall MSP garnet recovery is assumed to be 97.2%. A recovery matrix is used to determine garnet product split into saleable product.
	Any assumptions or allowances made for deleterious elements.	No problematic levels of deleterious elements have been detected during test work.

Criteria	*JORC Code explanation*	**Commentary**
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.	Previous work conducted by Haddington included composited sample scanning, bulk sample magnetic separation and XRF and a spiral test-work sizing analysis. Metallurgical testwork on drilling composites was undertaken by Nagrom (2009) AML(2013) and IHCRobbins (2019). The updated Resource estimate also performed mineralogical and Garnet grainsize distribution from every sampled drill interval throughout the entire resource.
	For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?	Garnet product splits are defined by modelled size distribution and screen efficiency assumptions. Five grades of Garnet product are to be produced: three blast grade and two water jet grade products. Product specifications have been developed and processing flowsheets developed to deliver to these with respect to particle sizing and mineral composition.
Environmental	*The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.*	Environmental impacts and hazards are being considered as part of the statutory permit application process. All key permits have been granted including Works Approval, Mining Proposal, Project Management Plan, Native Vegetation clearing permit and Groundwater license. Other permitting is progressing as required and scheduled. The Competent Person knows of no reason why permitting would not be granted within a reasonable time frame. Waste, screened oversize, sand and slime tails will be progressively returned to mine void as part of the production cycle.
Infrastructure	*The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.*	Surface infrastructure has been determined in a Feasibility Study. All infrastructure required for the processing and mining of the Ore Reserve will be operational before the commencement of open pit operations. The Site is located 35 km south of the town of Kalbarri, 65km NW of the town of Northampton and 113 km from the city of Geraldton, the latter of which can provide significant labour, logistical and service support. A network of monitoring and production bores has been installed according to the approved groundwater operating strategy and groundwater license conditions. Sufficient water will be available for operations from this installed borefield.
Costs	*The derivation of, or assumptions made, regarding projected capital costs in the study.*	Project capital costs have been sourced from supplier and contractor quotes through the feasibility study. All long lead items and significant equipment orders have been placed with the selected vendors. For outstanding items a 10% contingency has been provided for, beyond these estimates, in the final financial modelling.
	The methodology used to estimate operating costs.	Operating costs have been based on supplier and contractor estimates, equipment manufacturer information and labour rates.
	Allowances made for the content of deleterious elements.	No allowance was made as no deleterious elements are expected, based on testwork.
	The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co- products.	Product prices used in the Ore Reserve estimate are based on average market price paid for garnet abrasive and negotiations with distributors in 2021. The Competent Person considers these to be appropriate price assumptions based on the current environment.
	The source of exchange rates used in the study.	All costs and revenues have been estimated in either United States or Australian dollars. An exchange rate adjustment of AUD:USD = 1.00:0.75 has been used where appropriate, based on the current exchange rate. For the purposes of Ore Reserve estimation all key financial metrics are reported in AUD.
	Derivation of transportation charges.	All product transportation charges are based on supplier quotes or worked up from first principles in the financial model. This cost component has been used to determine the economic cut-off as well as applied to the operating cash flow estimate.
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Refining and product transport costs have been provided by Australian Garnet based on Feasibility Study estimates. No penalties will be applicable to the shipped product.
	The allowances made for royalties payable, both Government and private.	Government Taxes and Royalties have been provided for. A 5% Royalty provision is included for State Government royalties and AUD 4.00 / product t for private royalties.
Revenue factors	*The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.*	Forecasts for head grade delivered to the plant are based on detailed mine plans and mining factors. Revenue has been based on the product prices described above and accounting for appropriate royalties.

Criteria	*JORC Code explanation*	Commentary
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	Financial evaluation was based on product prices representing the weighted average of market price paid for garnet abrasive and negotiations with distributors in 2021.
Market assessment	*The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.*	Australian Garnet commissioned a market study by independent consultants TZMI. TZMI estimates the global demand for industrial garnet to be 1.2 million tonnes (2019). The major markets are North America (24%), Europe (15%), Middle East (21%), China (21%) and other Asian markets (18%). TZMI forecasts the global market demand to grow by 2.7% CAGR between 2019 – 2030 ending at 1.65 million tonnes.
	A customer and competitor analysis along with the identification of likely market windows for the product.	The primary uses of garnet are • As an abrasive in the sand-blasting industry • As a supplementary media used by water jet cutters; and • In water filtration, abrasive papers, glass polishing, anti-skid surfaces, anti-slip paints and wear resistant industrial flooring TZMI estimated the major end-use markets in 2020 to be abrasive blasting (38%), water jet cutting (46%), water filtration (9%). There exists no substitute for garnet as water jet cutting media and the substitutes that exist for abrasive blasting offer generally less quality / performance and come with additional environmental and OH&S issues.
	Price and volume forecasts and the basis for these forecasts.	Product price assumptions are based on average market price paid for garnet abrasive and negotiations with distributors in 2021.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	Product Data Sheets and product samples have been prepared for each product based on independent test work at AML. These data sheets and product samples have contributed to negotiation of the 2021 Agreements.
Economic	*The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.*	The Ore Reserve estimate is based on a financial model that has been prepared from inputs at a minimum pre-feasibility study level of accuracy. All inputs from mining operations, processing, transportation and sustaining capital as well as contingencies have been scheduled and evaluated to generate a full life of mine cost model. Economic inputs have been sourced from suppliers or generated from database information relating to the relevant area of discipline. A discount rate of 8% has been applied. The NPV of the project is positive at the assumed product prices. The Competent Person is satisfied that the project economics based on mining the Ore Reserve retains a suitable margin of profitability against reasonably foreseeable commodity price movements.
	NPV ranges and sensitivity to variations in the significant assumptions and inputs.	Sensitivity analysis has been undertaken by flexing mining, process, labour, diesel, logistics and capital costs together with Garnet price and exchange rate over ranges +/- 20% from base and assessing the impact on project NPV. This analysis shows that the project is most sensitive to commodity price/exchange rate movements, followed by logistics and process costs, but maintains a positive NPV in all cases.
Social	*The status of agreements with key stakeholders and matters leading to social licence to operate.*	To the best of the Competent Persons knowledge all agreements are in place and are current with all key stakeholders including traditional owner claimants. Australian Garnet will continue to communicate and negotiate in good faith with key stakeholders. Based on advice provided to the Competent Person by Australian Garnet, it is not expected that there will be any significant impediments to the development and operation of the Lucky Bay Garnet Project.
Other	*To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:*	
	Any identified material naturally occurring risks.	A formal process to assess and mitigate naturally occurring risks will be undertaken prior to execution of the Ore Reserve mine plan. Currently, all naturally occurring risks are assumed to have adequate prospects for control and mitigation.
	The status of material legal agreements and marketing arrangements.	Australian Garnet owns the project and intends to sell products from the operation in line with the market assessment and Sales Agreements.

Criteria	JORC Code explanation	Commentary
	The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	The permitting process with DWER and DMIRS has been completed for the commencement of operations. Based on the information provided by Australian Garnet, the Competent Person sees no reason all required approvals will not be successfully granted within a reasonable timeframe.
Classification	*The basis for the classification of the Ore Reserves into varying confidence categories.*	The Proved Ore Reserve is based on that portion of the Measured Mineral Resource within the mine designs that may be economically extracted and includes an allowance for ore loss. The Probable Ore Reserve is based on that portion of the Indicated Mineral Resource within the mine designs that may be economically extracted and includes an allowance for ore loss. No Inferred material was reported in the Ore Reserve and any inferred material present in the mine plan is treated as waste for the purposes of scheduling and financial analysis.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The results appropriately reflect the Competent Person's view of the deposit
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	No Measured Mineral Resource contributes to Probable Ore Reserves.
Audits or reviews	*The results of any audits or reviews of Ore Reserve estimates.*	The Ore Reserves reporting processes has been subjected to an internal review by Entech's senior technical personnel in September 2021.
Discussion of relative accuracy/ confidence	*Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve 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 reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.*	The design, schedule, and financial model on which the Ore Reserve is based has been completed to a Feasibility Study standard, with a corresponding level of confidence.
	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.	All modifying factors have been applied to designed mining shapes on a global scale.
	Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.	Considerations in favour of a high confidence in the Ore Reserve include: • The mining process is well-known and utilises proven technology and methods widely used, with enough data to generate adequate costing estimates • The treatment process is conventional and has been successfully applied in analogous operations. Considerations in favour of a lower confidence in the Ore Reserve include: • Long range product price forecasts carry an inherent level of risk • There is a degree of uncertainty associated with geological estimates. The Ore Reserve classifications reflect the levels of geological confidence in the estimates. • There is a degree of uncertainty regarding estimates of impacts of natural phenomena including geotechnical assumptions, hydrological assumptions, and the modifying mining factors, commensurate with the level of study.
	It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	No historical production data is available.

Appendix B

entech.
MINING CONSULTANTS

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16 September 2021

Keith Mayes
General Manager
Australian Garnet Pty Ltd
electronic transmittal (*keith.mayes@australiangarnet.com.au*)

LUCKY BAY GARNET PROJECT – ORE RESERVE ESTIMATE SEPTEMBER 2021

Dear Mr Mayes,

The following letter report summarises the Ore Reserve estimate update (reported in accordance with the JORC Code 2012) for the Lucky Bay (formerly Balline) Garnet Project. It includes a populated supporting JORC Table 1, Section 4 and Ore Reserve Tabulation rounded as suitable for public reporting. The full Ore Reserve documentation, comprising an updated Mining Chapter for the supporting BFS document, is to follow separately.

This is a re-issue of the report previously dated 14 September 2021, which now aligns MSP Garnet recovery with the most recent application in the AGPL financial model. Overall MSP Garnet recovery now increases from 96.8% to 97.2%

Should you have any questions relating to this report please contact the undersigned.

Regards,

Entech Pty Ltd

Per Scrimshaw
Specialist Mining Consultant

SUMMARY

Australian Garnet Pty Ltd ("AGPL") engaged Entech Pty Ltd ("Entech") to undertake an Ore Reserve update for the Lucky Bay Garnet Project (formerly the "Balline Garnet Project"), located 113 km north of the town of Geraldton in Western Australia. This report summarises the Ore Reserve Estimate reported in accordance with the requirements of the *Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves 2012* ("the JORC Code"). This report will be followed by a separate document with additional detail to support the requirements of the Mining Chapter of the supporting technical study underpinning the Ore Reserve estimate (the "Updated BFS").

The most recent Lucky Bay (Balline) Project Ore Reserves were estimated by Entech in 2018 (Scrimshaw, 2018). Prior estimates were completed by Entech in 2015, limited to the Menari mine area only, and by AMC (AMC, 2009) for the entire Balline Garnet Project (comprising what was then Menari, Balline North and South deposits). The historical AMC estimates were reported in accordance with the JORC Code (2004).

The following material changes have been made to the mine plan inputs since the previous Ore Reserves were estimated:

- Mineral Resource update, incorporating additional drilling conducted since the 2018 Mineral Resource estimate. This drilling has targeted infill regions between the southern and northern sections of the deposit to establish economic continuity of the mineralisation along strike and to better define the southern extent of the mineralisation
- Updated process flowsheet and development scenario to remove offsite (Malaysia) screening & bagging of the bulk garnet now included in Phase 1 development and to be constructed onsite at Lucky Bay, and
- Updated economic inputs (operating cost and revenue) consistent with the current supporting technical study inputs and development strategy.

This Ore Reserve estimate is based on modifying factors and processing inputs determined as part of the Updated BFS prepared for the Lucky Bay Project. A 98% mining recovery has been used in estimating feed to the Mining Upgrade Plant (MUP). Overall Wet Concentration Plant (WCP) garnet recovery is assumed to be 88.4%. Overall MSP garnet recovery is assumed to be 97.2%.

The Ore Reserve estimate update is based on the Mineral Resource estimate prepared by Placer Consulting Pty Ltd (Placer) as at 1 July 2021 and disclosed to the market at that date (Resource Development Group, 2021). The Mineral Resource estimate used is separately reported in accordance with the JORC Code (2012).

Measured Resources have been converted to Proved Ore Reserve and Indicated Resources have been converted to Probable Ore Reserves subject to mine design physicals and an economic evaluation. Any Inferred material contained within the mine plan has been treated as waste. The Ore Reserves have been defined at delivery to the in-pit feed unit.

Pit optimisation was undertaken using Datamine NPV Scheduler software (NPVS). A value model was first prepared in Datamine Studio 5DP Mine Planning software and revenue and cost adjustment attributes subsequently imported into NPVS for Lerch-Grossmann optimisation. Because a value model was used to determine the pit limits, cut-off grades were not used. Cut off is economic (cash flow) and takes into consideration grade, assemblage, HM size distribution, recovery, operating costs, and product pricing. In regions

where overburden is defined (Figure 1), all material above the defined overburden surface is considered waste regardless of individual block value, as practical mining considerations exclude selective mining. Likewise, in regions where a discrete overburden surface is not defined, all material above the pit design surface is considered ore regardless of individual block value and this may include small quantities of marginal or sub economic material where it is not practical to exclude this material in the design process. The estimation methodology comprised developing nested pit limits at 1% revenue factor increments, selection of the most appropriate pit shell by comparison of several factors (including NPV, life of mine, revenue to cost ratios, incremental cash flow etc.), mine planning and scheduling of the selected pit shell.

Mine design assumes a non-selective bulk mining method will be employed but that flexibility to follow a somewhat undulating geological surface is maintained. All pit designs have included provision for a 50 m offset buffer to the George Grey drive road reserve and site access road. Environmental and Heritage offsets have also been considered (Figure 2). Pit walls have been designed based on a wall angle of 30°. Initial mine development (i.e. first three years production) is focussed on developing the pit at the south west of the deposit (previously 'Menari'). Typically, the pit development in this area can be described as mining 'into' the dune and so the boundary areas of the pit in this region show quite shallow pit depth (<10 m) due to the 'daylighting' effect of the dunal material. As such this region of the pit (and mine schedule) is very insensitive to batter angle assumptions. Further geotechnical work is being planned to better inform mine design parameters when the mine path advances to the deeper eastern strand and when the second MUP/WCP is proposed to commence mining in the deeper northern regions of the deposit.

Vegetation will be cleared and topsoil stripped in advance of mining activities. Topsoil will be stored in dedicated topsoil stockpiles adjacent the active mining area for later rehabilitation post mine void backfill. Ore will be fed by Front End Loader to a centrally located feed unit within each mining block from where it is screened and slurried for pumping to the WCP. After depletion of ore in a defined mining block (nominally 200m by 100m dimension) the in-pit feed unit is relocated to the next scheduled mining block. Overburden (low grade mineralised Zone 1 material) is present in sufficient quantities to discretely segregate in an area overlying the eastern strand material, east of the proposed MSP and plant. This material is proposed to be excavated in advance of ore mining by utilising truck and shovel methods, with material preferentially direct placed in the west dune void or otherwise dumped in a surface stockpile adjacent the pit crest to be re-contoured in later post mine and rehabilitation activities.

Mine scheduling is based on maintaining a WCP rougher head feed (i.e., de-slimed and oversize removed) rate of 450 tph (operating) per mining unit. A two-phase development strategy is proposed, initially with a single MUP and WCP commencing at the southern end of the project area (Menari) and mining the western strand and dune in a northerly direction. Once the western pit Ore Reserve is depleted, this MUP relocates to the southern end of the project area, this time mining the deeper eastern strand in a northerly direction. In production year three, the production rates double with the addition of a second MUP (Phase 2) and corresponding WCP. This MUP commences mining in the higher-grade region north of 15,000 mN, mines in a northerly direction before heading south to meet the initial MUP at depletion of the Ore Reserve. An 85% plant availability is assumed for 7,446 operating hours per annum. Figure 3 illustrates the starting location and generalised mining path for each MUP, together with annual mining schedule. Mine planning studies including pit optimisation, pit design and detailed production scheduling has established a project life-of-mine in excess of 28 years at the proposed production rates with garnet production of up to 430ktpa possible.

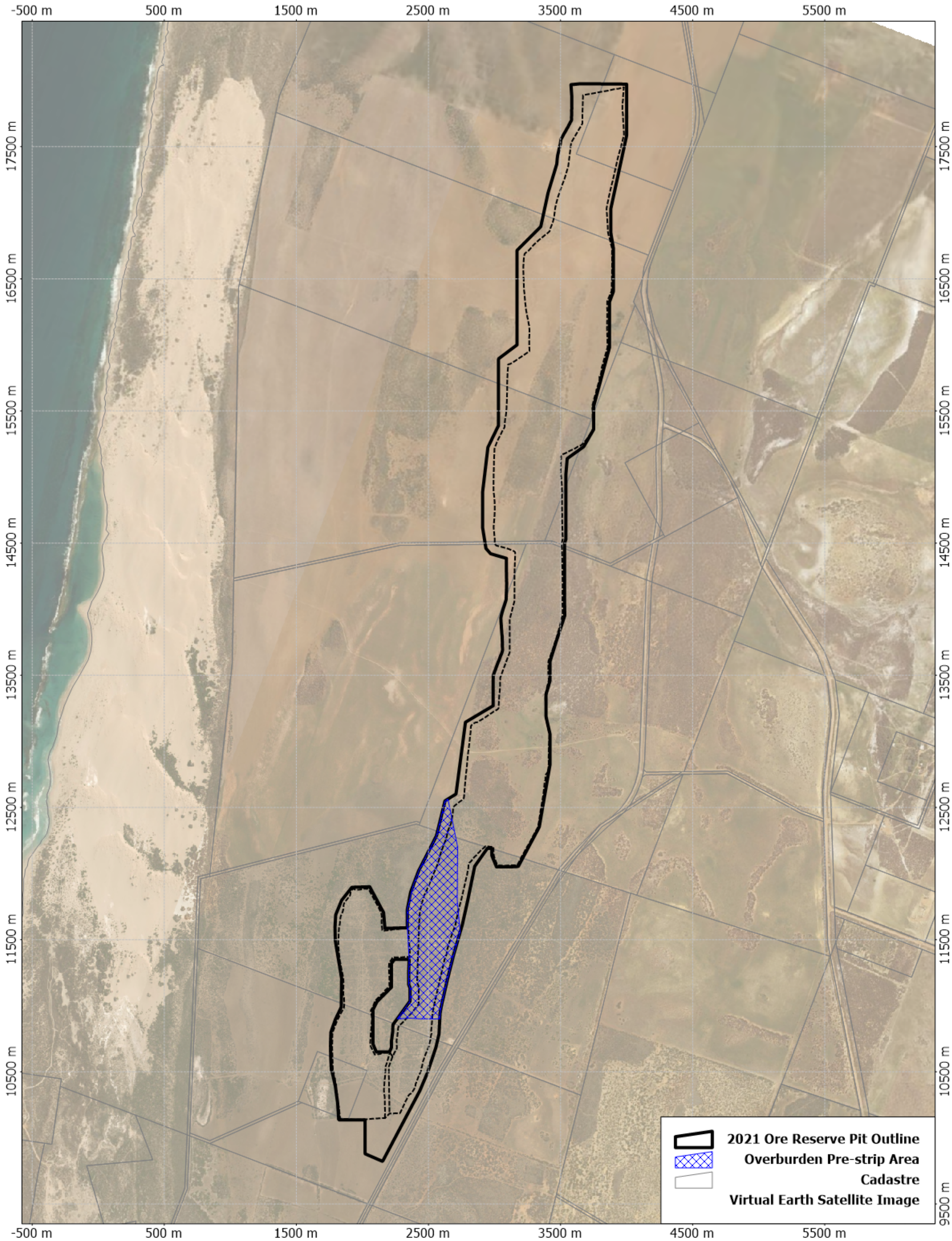

Figure 1 - Overburden Pre-Strip Area

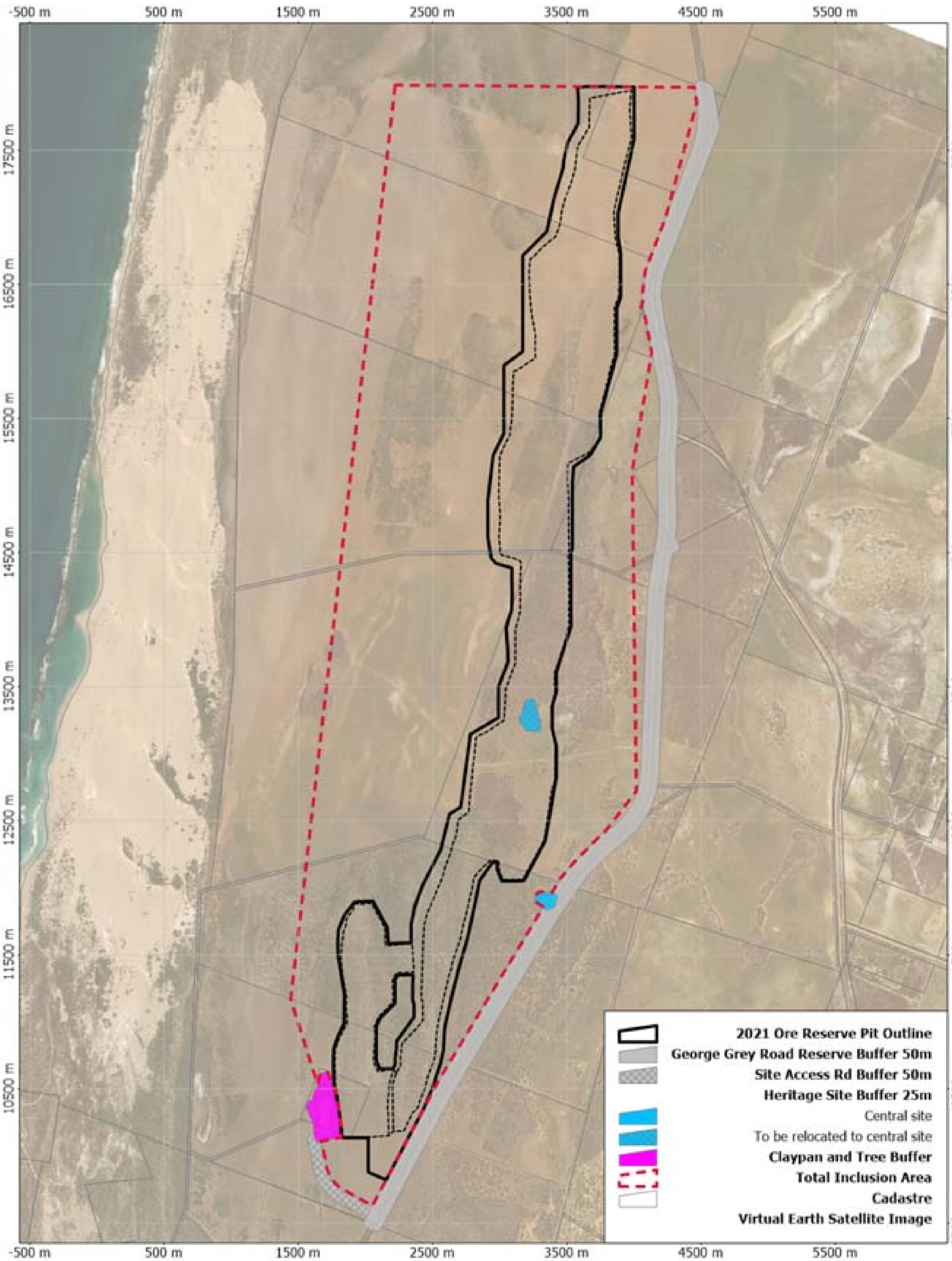

Figure 2 - Mine Design Offset Exclusions

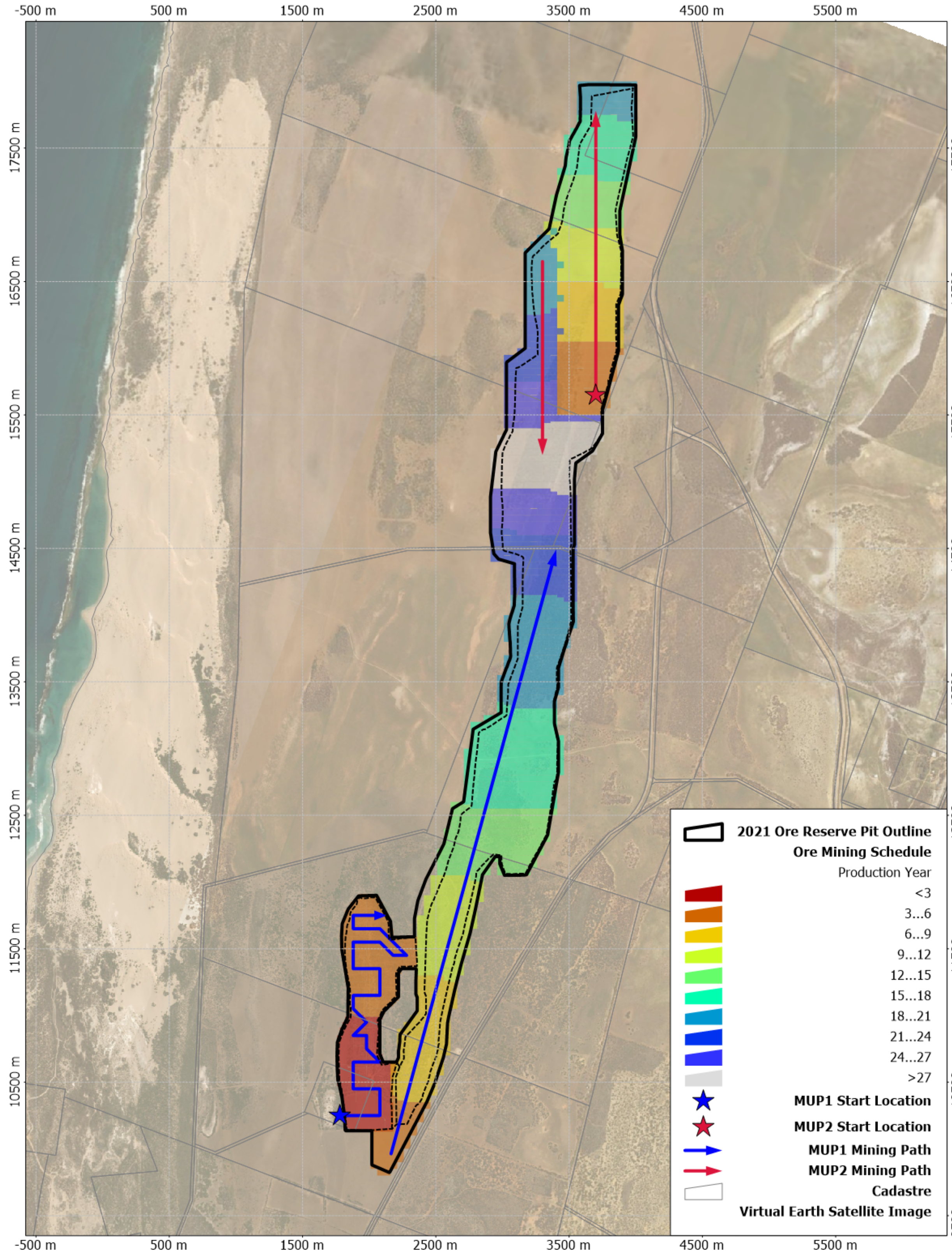

Figure 3 - Mining Direction and Annual Schedule

All material was subjected to an economic evaluation in a detailed financial model compiled by AGPL and reviewed by Entech. Operating costs have been based on supplier and contractor estimates, equipment manufacturer information and labour rates. The assumed product prices are based on product prices representing the weighted average of market price paid for garnet abrasive and negotiations with distributors in 2021. The mine plan is shown to be technically and financially feasible with a positive net present value assuming a discount rate of 8%. Sensitivity analysis has been undertaken by flexing mining, process, labour, diesel, logistics and capital costs together with Garnet price and exchange rate over ranges +/- 20% from base and assessing the impact on project NPV. This analysis shows that the project is most sensitive to commodity price/exchange rate movements, followed by logistics and process costs, but maintains a positive NPV in all cases.

The 2021 Lucky Bay Garnet Project Ore Reserve estimate summary is provided in Table 1.

Table 1 - Lucky Bay Project Ore Reserve Update (Entech 2021)

Area	Classification	Tonnes (Mt)	HM (% in Ore)	SL (% in Ore)	OS (% in Ore)	Garnet (% in HM)	Garnet (Mt)
Total Lucky Bay Project	***Proved***	***26***	***5.0***	***4***	***4***	***83***	***1.1***
	Probable	***176***	***5.4***	***6***	***3***	***87***	***8.3***
	Total	**202**	**5.4**	**6**	**3**	**86**	**9.3**

Estimates subject to rounding differences

The previous (2018) Lucky Bay Garnet Project Ore Reserve estimate summary is provided in Table 2.

Table 2 - Previous Lucky Bay (Balline) Project Ore Reserve Estimate (Entech 2018)

Area	Classification	Tonnes (Mt)	HM (% in Ore)	SL (% in Ore)	OS (% in Ore)	Garnet (% in HM)	Garnet (Mt)
Total Lucky Bay Project	***Proved***	***23***	***5.0***	***4***	***3***	***82***	***0.9***
	Probable	***81***	***5.3***	***6***	***4***	90	***3.8***
	Total	**104**	**5.2**	**5**	**4**	**88**	**4.8**

Estimates subject to rounding differences

Comparing to the 2018 estimate, the current estimate provides a small increase in Proved ore (+3 Mt) due to the extension of the pit with additional drilling south of the previous pit design and within the granted mining leases. An additional breakthrough between east and west pits (at approx. 11,500 mN) has been incorporated into the updated design to better provide haulage options for overburden materials from east pit to the west pit void. Both these extension areas target the near surface dune material only and are reasonably shallow (<10 m depth). There are no material variances in grades between estimates within the Proved category.

The more significant change between estimates is the increase in material within the Probable category (+95 Mt), which is directly related to the extension of continuity in the Measured and Indicated regions of the Mineral Resource due to incorporation of the most recent infill drilling (Figure 4). Figure 5 illustrates the current design pit overlaying the Measured and Indicated Resource footprint at a 3% HM cut off.

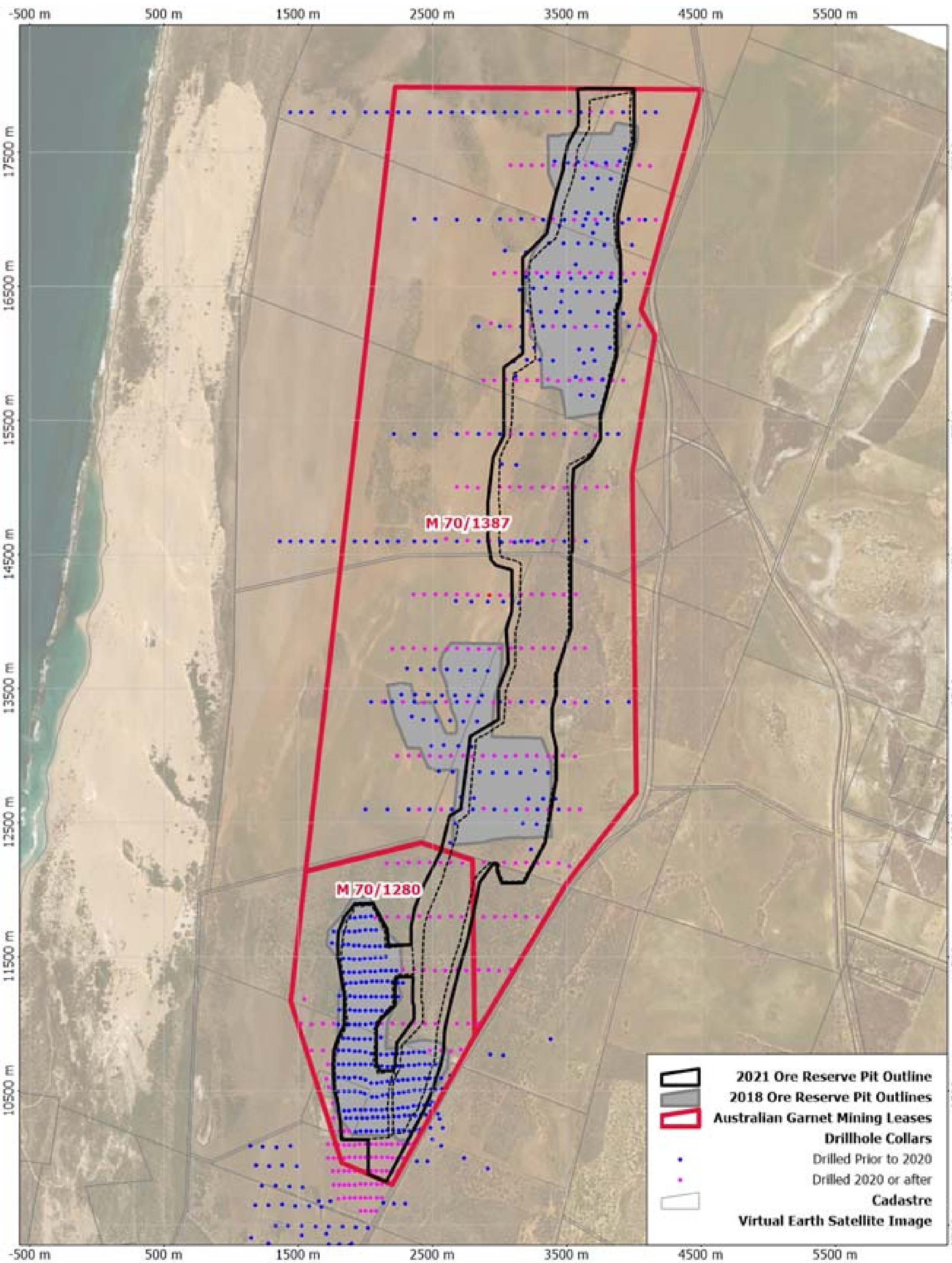

Figure 4 - Previous and Current Design Pits with Recent Drilling

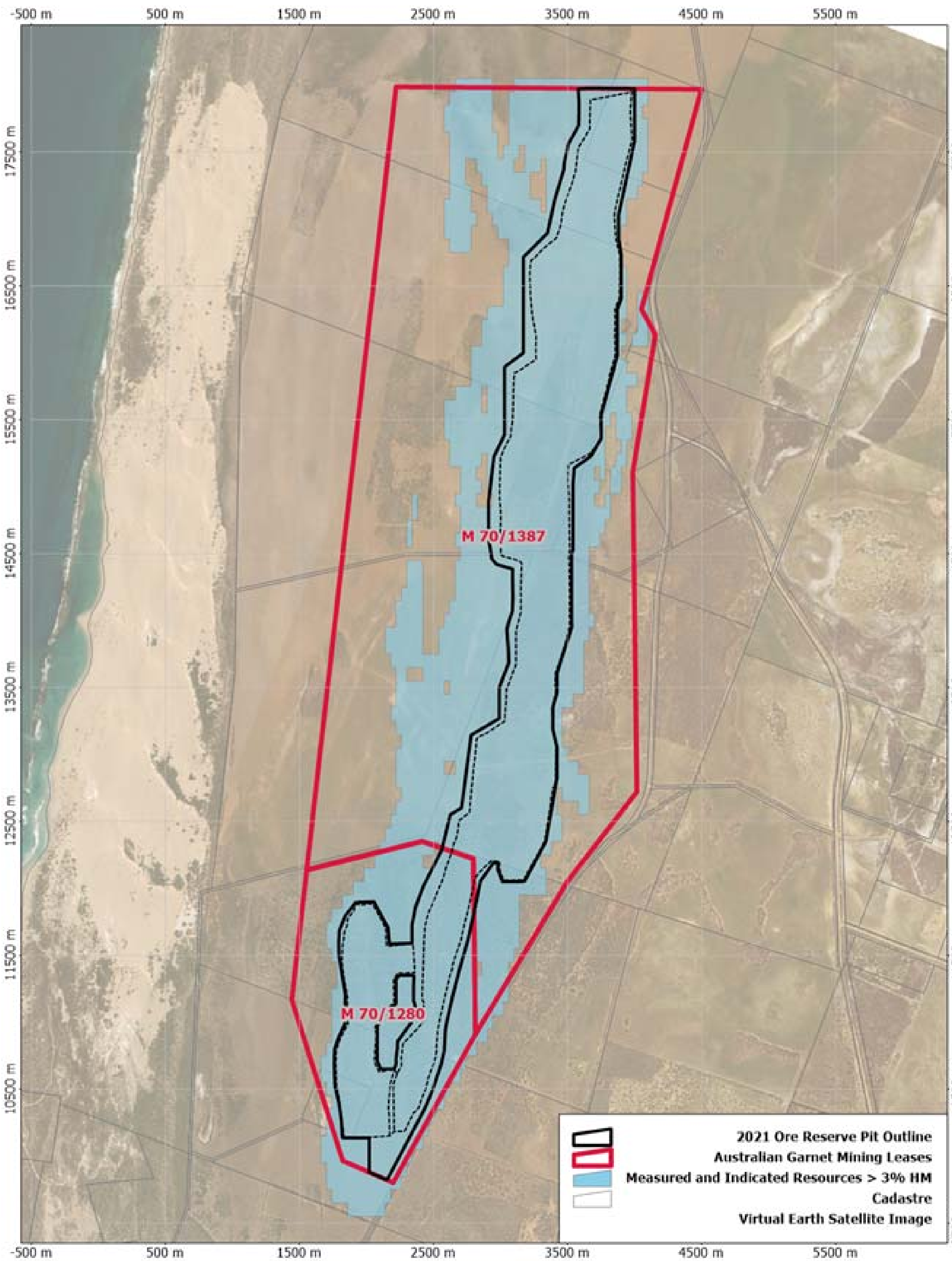

Figure 5 - Current Design with +3% HM Measured and Indicated Resources

The information in this report that relates to Ore Reserves is based on information and supporting documentation prepared by Mr. Per Scrimshaw. Mr. Scrimshaw is a Member of The Australasian Institute of Mining and Metallurgy. Mr. Scrimshaw is employed by Entech, a mining consultancy engaged by Australian Garnet to prepare Ore Reserves estimation for the Lucky Bay Garnet Project. Mr. Scrimshaw has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'.

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Ore Reserve Estimate and Proposed Mine Designs for the Balline Industrial Garnet Project, Haddington Resources Ltd [Report] / auth. AMC. - 2009.