Resource Development Group

Thursday, 10 December 2020

ASX Market Announcements
Via e-lodgment

RDG TO ACQUIRE A 100% INTEREST IN THE BALLINE GARNET PROJECT

- **RDG to acquire a 100% interest in the Balline Garnet Project ("Balline" or "the Project") through the acquisition of Australian Garnet Pty Ltd ("AGPL")("Proposed Transaction")**
- **The Project has all the necessary approvals required to commence construction and RDG intends to finalise the design and scope of the project infrastructure before mid-2021**
- **The Project is expected to produce high quality alluvial garnet products used in the blasting and waterjet cutting markets. RDG intends to target coarse grade markets in the first instance which are undersupplied and potentially in deficit**
- **The acquisition is subject to certain conditions precedent including the completion of legal and commercial due diligence and AGPL agreeing settlement terms with its creditors to the satisfaction of RDG**
- **The acquisition of Balline is consistent with RDG's strategy of building a portfolio of attractive development projects and complements its existing Ant Hill and Sunday Hill Manganese Projects**
- **RDG's major shareholder, Mineral Resources Limited is supportive of the Proposed Transaction**

Resource Development Group Ltd ("RDG" or "Company") is pleased to announce that it has entered into a binding agreement with the shareholders of Australian Garnet Pty Ltd ("AGPL") to acquire 100% of the Balline Garnet Project. Balline is located in the mid-west district of Western Australia between the coastal town sites of Kalbarri and Port Gregory. The tenements are contiguous with the world's largest supplier of high quality alluvial garnet.

Managing Director of the Company, Andrew Ellison commented: ***"Balline is a high-quality shovel ready project that is expected to produce a suite of highly sought after alluvial garnet products. We believe these products are undersupplied in global markets and are in high demand. This is supported by our initial engagement with potential customers. Balline is one of only a handful of garnet projects globally capable of supplying high quality alluvial garnet products."***

RATIONALE FOR THE PROPOSED TRANSACTION

The Proposed Transaction is consistent with RDG's strategy of pursuing opportunities in the resources industry both as a service provider and owner of resources projects. Balline is a construction ready mineral sands project with an attractive assemblage of garnet grades. Based on initial discussions with potential customers, these products are highly sought after by end users.

Balline consists of the Menari and Menari North deposits (refer to Figure 1). Menari contains a measured resource (JORC 2012) of 23.0Mt (Figure 2 and Appendix A) which will support the initial years of operation. An extensive drilling program has been completed at Menari North (assays pending) and RDG intends to prepare an updated resource estimate once all assays and relevant data becomes available which is expected to occur in early 2021. RDG will also acquire a highly prospective tenement package that remains relatively underexplored.

Figure 1 – Balline Project Location and Tenure

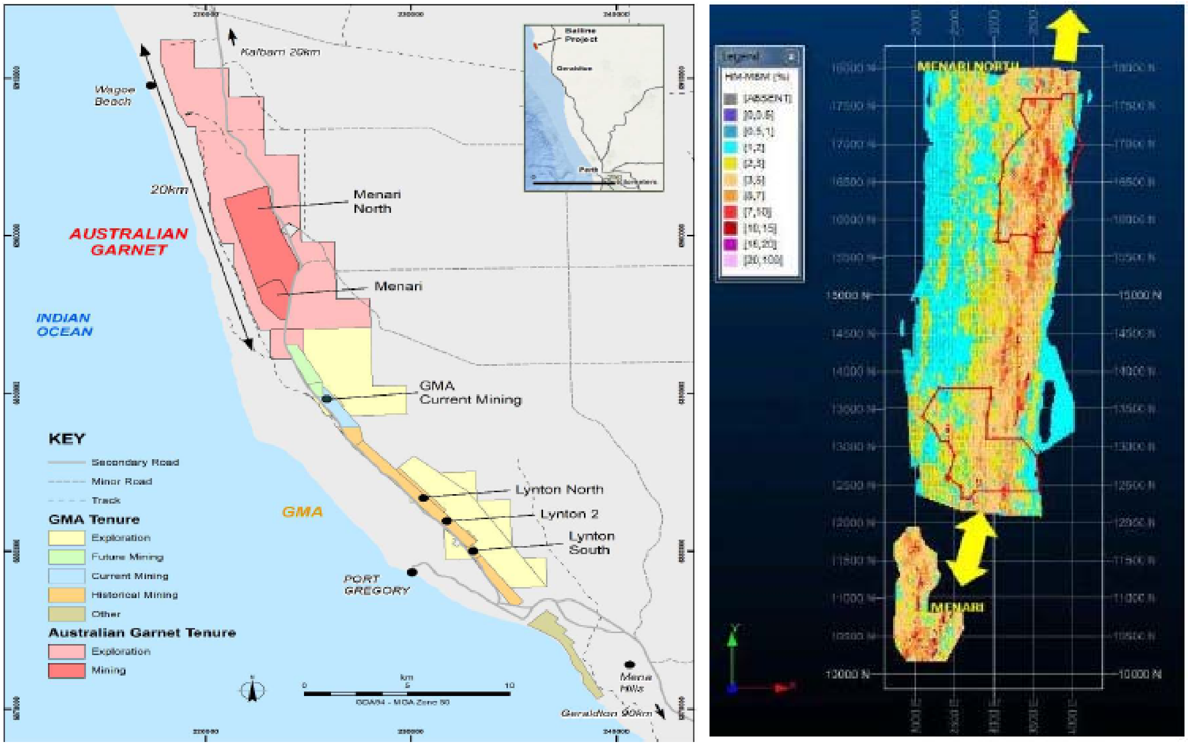

Figure 2 – Menari Mineral Resource (JORC 2012)

	Commodity: Mineral Sands							
Deposit	**Type**	**Tonnes (Mt)**	**HM (%)**	**HM (Mt)**	**Slimes (%)**	**Garnet (%)**	**Garnet (Mt)**	**Resource Category**
Menari	Dune	20.0	4.4	0.9	3.8	83.6	0.7	Measured
	Strand	3.0	11.2	0.3	6.4	76.6	0.3	Measured
Total		**23.0**	**5.3**	**1.2**	**4.1**	**82.7**	**1.0**	**All**

After settlement of Proposed Transaction, RDG intends to finalise the scope and design of the project infrastructure including a wet concentration plant, mineral separation plant and non-process infrastructure. RDG intends to fund this work using its existing cash reserves. In addition, Mineral Resources Limited (**MRL)** has agreed to extend the scope of the existing loan from MRL (refer to ASX announcement 19 March 2020) to include the Project, providing RDG with the flexibility to develop the Project or it manganese assets, subject to market conditions and a final investment decision by the Company. MRL is supportive of the Proposed Transaction and RDG's strategy to advance its portfolio of development projects.

TRANSACTION OVERVIEW

RDG has executed a binding agreement to acquire 100% of AGPL, the owner of Balline. The agreement grants RDG the exclusive right up until 31 January 2021 (with an option to extend for an additional two months) to agree upon and execute binding transaction documents (**Definitive Documents**) embodying the following commercially agreed terms:

- RDG to acquire 100% of AGPL on a cash free debt free basis
- Purchase price for 100% of AGPL is 345,000,000 shares in RDG (**Vendor Shares**), to be issued in two tranches as follows:
  - **Tranche 1:** 270,000,000 RDG shares issued at completion of the Proposed Transaction:
  - **Tranche 2:** 75,000,000 RDG shares following FIRB approval of the Proposed Transaction. Should FIRB not approve the Proposed Transaction, RDG will settle Tranche 2 by paying the vendors in cash based on a RDG share price equal to a 10% discount to the 30 day volume weighted average price calculated at that time. Tranche 2 will be subject to a voluntary escrow period for a period of 12 months from the execution of Definitive Documents.
- In addition, RDG has agreed to settle all existing debt and creditors of AGPL through the payment of no more than $4.0 million in cash and the issue of up to 10,000,000 shares in RDG (**Creditor Shares**). The settlement of debt and creditors on behalf of AGPL is subject to AGPL entering into Deeds of Settlement with certain creditors.

The Proposed Transaction does not require the approval by RDG Shareholders and the proposed issue of the Vendor Shares and Creditor Shares will be completed under RDG's existing placement capacity.

The parties are targeting the execution of Definitive Documents during January 2021 and closing of the transaction shortly after. RDG management and its consultants have completed technical due diligence on the Project however the Proposed Transaction remains subject to legal and commercial due diligence with respect to AGPL.

Forward Looking Statement

This ASX announcement may contain forward looking statements that are subject to risk factors associated with 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, resource and 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 estimates.

This announcement 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

Resource Development Group

APPENDIX A: JORC COMPLIANT GARNET RESOURCES

The following information has been provided in accordance with Table 1 of Appendix 5A of the JORC Code 2012 – Section 1 (Sampling Techniques and Data), Section 2 (Reporting of Exploration Results) and Section 3 (Estimation and Reporting).

Section 4 (Estimation and Reporting of Ore Reserves) is not being reported in this document.

RESOURCE DEVELOPMENT LIMITED

MENARI MINERAL RESOURCE

AS AT 10th DECEMBER 2020

MINERAL RESOURCE SUMMARY

The Menari Mineral Resource, which has been reported in accordance with the JORC Code (2012) as at 1st December 2020, is estimated to be 23.0 million dry metric tonnes containing 1.2 million tonnes of Heavy Minerals at an average grade of 5.3%, and an associated 1 million tonnes of contained Garnet, using a nominal Heavy Minerals cut-off grade of 2%.

The Menari Deposit is located on M70/1280, located approximately 35 km north of the township of Port Gregory, Western Australia. The current registered holder of the tenement is Australian Garnet Pty Ltd.

There is a small royalty payment to a previous tenement owner and a 5% state government royalty.

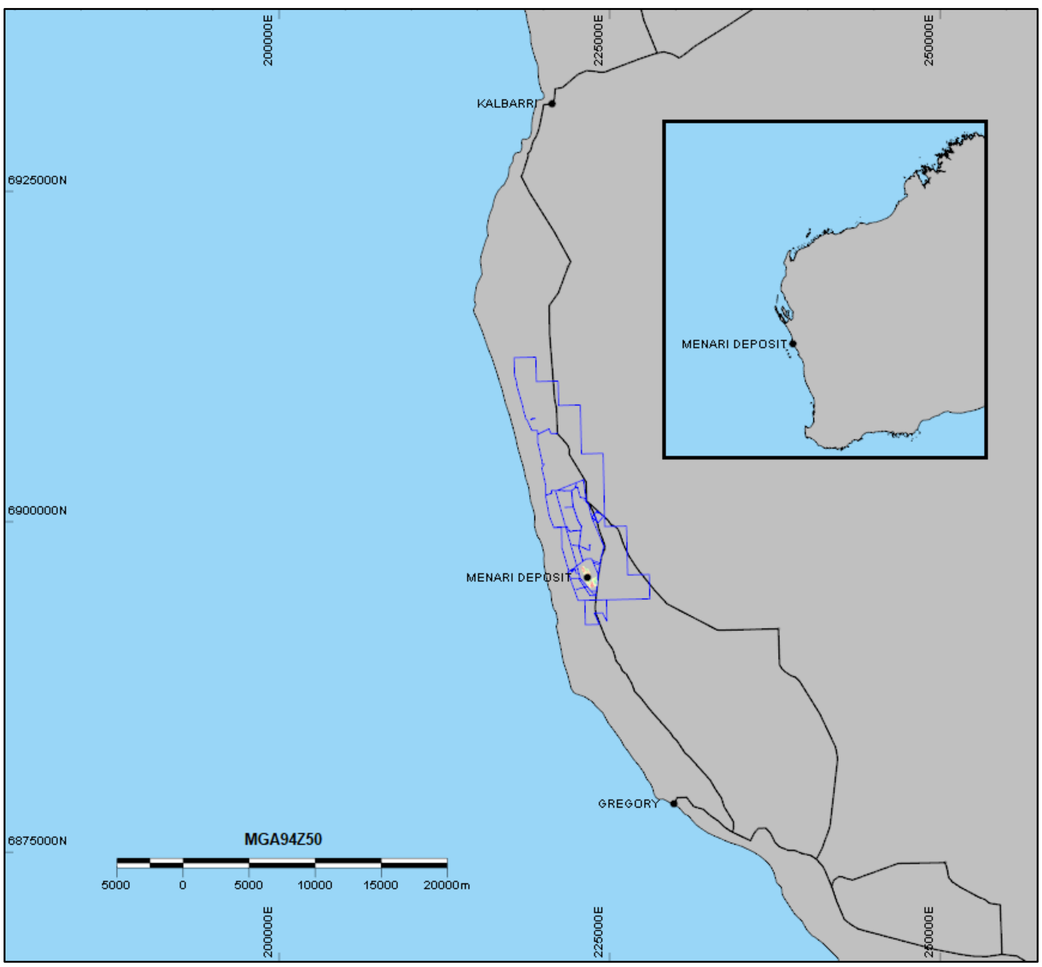

Figure 1 Regional location of The Menari deposit and associated tenement package held by Australian Garnet Pty Ltd (in blue)

Mineral Resource Estimate

The following Mineral Resource estimate was generated by Mr. Richard Glen Stockwell, who a full-time employee of Placer Consulting PL. Mr. Stockwell is acting as the Competent Person as defined by JORC 2012.

Geology and Geological Interpretation

The Menari Deposit resides in the Lucky Bay area, which is dominated by the Tamala Limestone, a belt of coastal limestone extending up to 8 km inland. 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, as shown in Figure 2. During the Late Pleistocene a dominant northward-moving long-shore drift current has spread the heavy mineral sands along the coast into beach and dune sequences that overlie the Tamala Limestone.

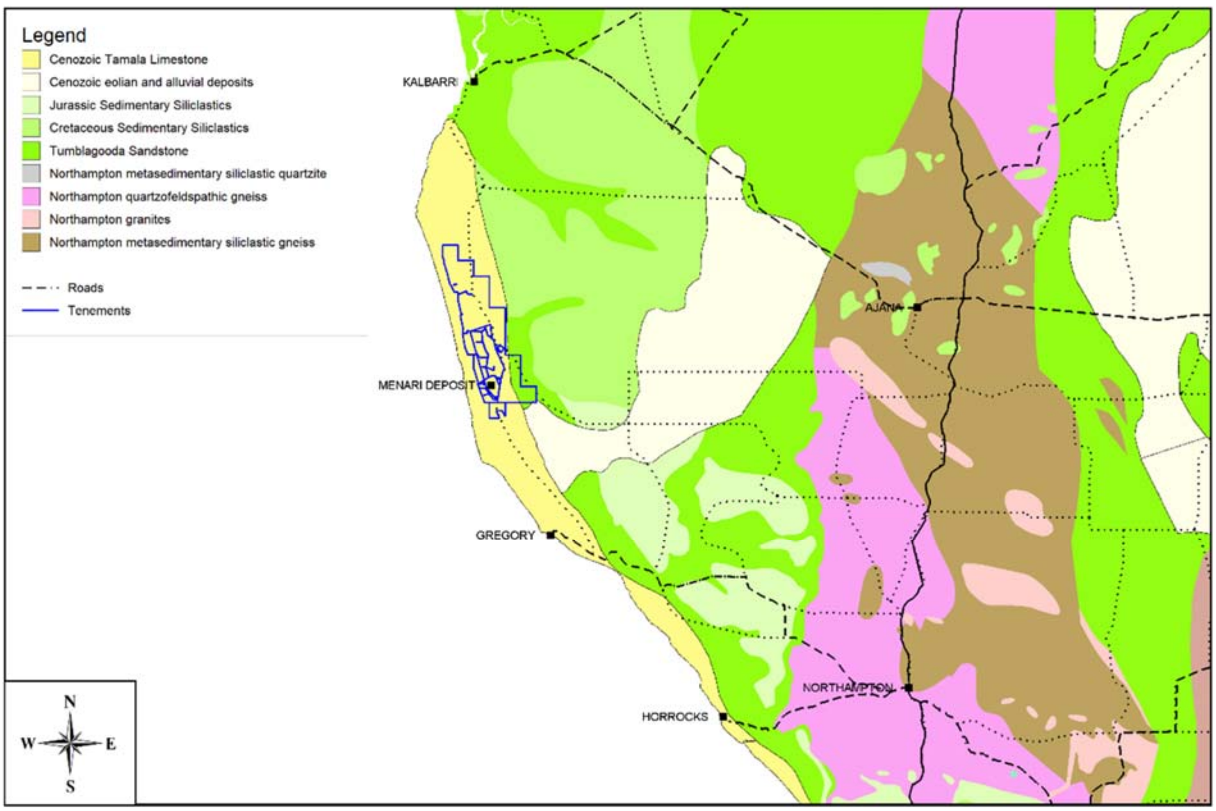

Figure 2 Regional Map showing Cenozoic Regolith and Bedrock Geology

The local interpreted geology of the Menari deposit is comprised of Topsoil, Dunes, Strands, Claypan, Caprock and Basement rock, as shown in Figure 3.

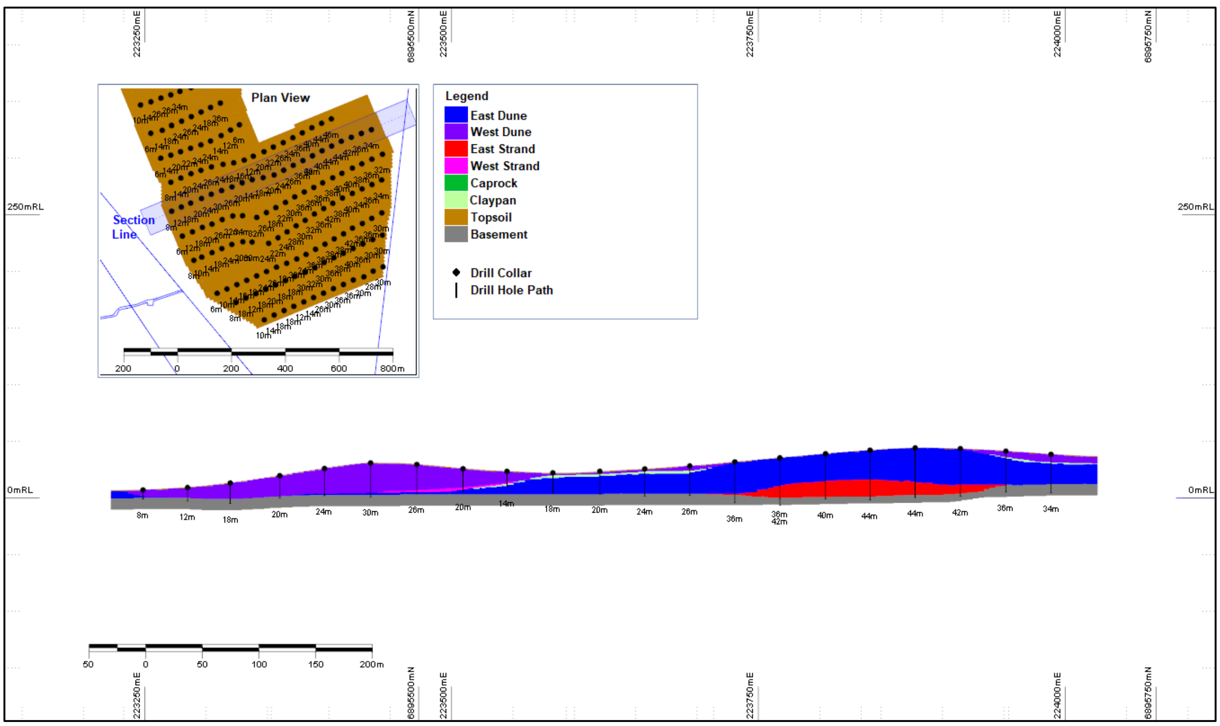

Figure 3 Type Section of Interpreted Geology with Drill Hole Support

The Heavy Mineral Sands are concentrated in Dune and Strand deposits. The Dune deposits typically approximate a mounded accumulation over a variable basement topography. The Strand deposits reside on a paleo wave-cut platform that is generally flat to gently-seaward dipping. The heavy mineral grade is broadly distributed in the dune sequences and enriched in the strand deposits.

The mineralisation is 1.6 km long and up to 750 m wide and averages 16 m true thickness. The mineral envelope is generally near/at surface and is lobate in shape, pinching to the North and West. Grades generally increase from 2 % to 20 % Heavy Minerals (HM) with depth. Clay content is typically 0 % to 10 % and HM logging data indicates only minor calcite induration and coatings are associated with valuable minerals.

Drilling Techniques

The current Menari Resource is support by a single drill program carried out in 2013.

Drilling was carried out using reverse circulation Aircore (RCAC). A total of 245 drill holes were completed using NQ sized (71mm diameter) drill tools for a total of 5920 m.

Drill hole spacing is generally 40 m east by 100 m north and sampled at 2 m down-hole intervals. Drill hole locations have been established using a real time kinematic global positioning system (RTKGPS).

All 2013 drill holes were drilled at -90 degrees and are approximately perpendicular to the dip and strike plane of the mineralisation, which results in true thickness estimates. The maximum hole depth is only 46m. Drill hole deviation is not expected to be material at these depths, therefore no down hole gyro surveys were completed.

Drilling was conducted with water injection to ensure fine material is retained. All drilling was above the water table.

Sampling and Sub-sampling

All RCAC drill holes were down-hole sampled via an on-board rotary splitter attached to the rig's cyclone underflow. The rotary splitter was set at 12.5% of the splitter cycle, which delivered about 2 kg of sub-sample.

The sub-samples were dried, then rotary split to produce ~100g for wet screening and oversize and slimes determination. The remainder was delivered for heavy-liquid (TBE) separation.

Detailed QA/QC was undertaken on all samples, including sample preparation techniques, field staff training, choice of sample receptacle, choice of laboratory preparation and analysis technique, monitoring of sample weights, field duplicates, laboratory replicates and certified reference materials, for outliers, spurious results, bias, precision and accuracy.

Sample Analysis Method

Sample preparation and analysis was carried out by Diamantina Laboratory in Perth. Samples were analysed for Sand %, Slimes %, Oversize %, Heavy Mineral in Sand % and in-ground Heavy Minerals %.

Garnet percentage and calcite coatings were qualitatively recorded by a mineralogist during microscope investigation of heavy mineral sinks. Garnet grainsize was determined by Leica Digital Image Analysis software, verified by physical screen sizing analysis of a representative sample subset.

Estimation Methodology

The geological interpretation was compiled from field geological observations during drill sample logging, microscope investigation of heavy mineral sinks and interpretation of sample assay data.

The mineral resource was constrained by the topographical surface and the underlying Tamala Limestone basement.

The estimation methodology used was Inverse Distance Weighting (power 3). Qualitative induration variables such as hardness and heavy mineral coatings were interpolated using nearest neighbour.

Block model dimensions used are 20 m (east) by 50 m (north) by 2 m (elevation) with sub-blocking down to 5 m (east) by 12.5 m (north) by 0.5 m (elevation).

Interpolation was constrained by hard boundaries (domains) that resulted from the geological interpretation.

No top cut has been applied to the resource estimate.

A linear trend formula based on 12 water displacement density determinations was used to calculate Bulk Density (BD): BD = 0.899 x HM% + 1.533

A west-east section showing HM block estimates and informing drill hole data is shown in Figure 4.

A summary of significant HM intercepts occurring within the 'mineralised domains' is tabulated in Appendix 1. The sample data have been weight averaged by assayed sample length to generate a single HM value and corresponding intercept length for each occasion that a drill hole passes through the interpreted mineralisation domain.

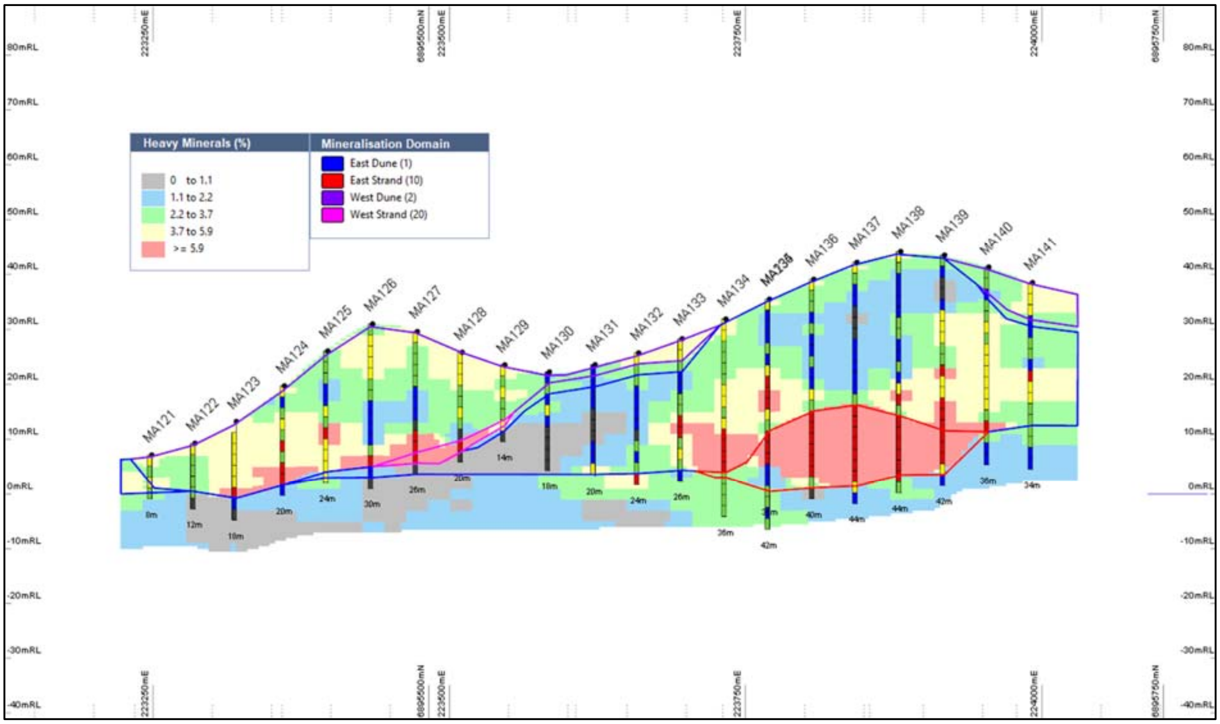

Figure 4 Example west-east type section through the Menari deposit showing block model and drill hole heavy mineral grades (using 5 times vertical exaggeration in the z-axis)

Resource Classification

The Resource has been classified as Measured, in accordance with the 2012 Australasian Code for Reporting of Mineral Resources and Ore Reserves (JORC Code).

A range of criteria has been considered in determining the Resource classification including:

- Drill hole spacing
- Geological domain and mineralisation continuity;
- Quality of QA/QC processes;
- High quality of the input data;
- Representative and consistent nature of the mineralogy and domained Garnet grain size throughout the deposit.

A plan view showing the resource classification across The Menari deposit area is displayed in Figure 5.

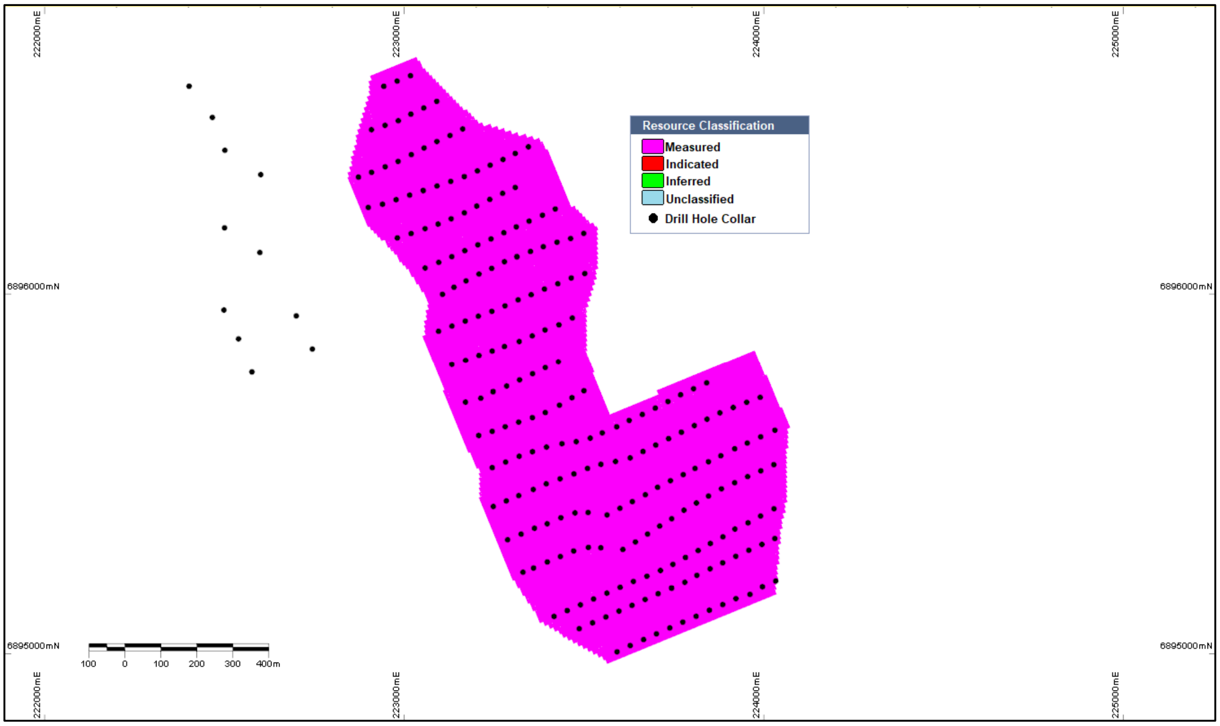

Figure 5 Plan view showing the mineral resource classification scheme at the Menari deposit

Cut-off Grade

A cut-off grade of 2%, in-ground Heavy Minerals (HM) has been used for the stated Mineral Resource estimate, in line with industry standard reporting. The Menari Mineral Resources as at 1st December 2020 are tabulated in Table 1. Topsoil and basement domains are excluded from the reported mineral resource.

The sensitivity of the Mineral Resource to the reporting cut-off grade is minimal at cut-off grades below 2% HM. There is only a 10% difference in the reported HM tonnage between using a 0% HM cut-off versus a 2% HM cut-off.

Table 1 Menari Mineral Resource at 1st December 2020, reported above 2% Heavy Minerals cut-off

	Commodity: Mineral Sands							
Deposit	**Type**	**Tonnes (Mt)**	**HM (%)**	**HM (Mt)**	**Slimes (%)**	**Garnet (%)**	**Garnet (Mt)**	**Resource Category**
Menari	Dune	20.0	4.4	0.9	3.8	83.6	0.7	Measured
	Strand	3.0	11.2	0.3	6.4	76.6	0.3	Measured
Total		**23.0**	**5.3**	**1.2**	**4.1**	**82.7**	**1.0**	**All**

Note: Small discrepancies may occur due to rounding

Metallurgical considerations

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, magnetic separation into product lines.

Environmental considerations

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 stockpiled by pump and 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.

Competent Person's Statement

The information in this report that relates to the Mineral Resources listed in the previous table is based upon work compiled by Mr Richard Glen Stockwell. Mr Stockwell is a full-time employee of Placer Consulting PL 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.

Forward Looking Statement

This ASX announcement may contain forward looking statements that are subject to risk factors associated with mineral sand 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 estimates.

APPENDIX 1: Intercepts by drill hole and mineralisation domain

HOLE_ID	EASTING MGA94Z50 (m)	NORTHING MGA94Z50 (m)	RL AHD (m)	AZI (°)	DIP (°)	FROM (m)	TO (m)	INTERVAL LENGTH (m)	HM (%)	MINZONE DOMAIN
MA001	222,943.2	6,896,578.3	36.5	0	-90	0	14	14	2.5	West Dune
MA001	222,943.2	6,896,578.3	36.5	0	-90	16	18	2	0.4	East Dune
MA002	222,980.3	6,896,592.7	36.8	0	-90	0	12	12	4.3	West Dune
MA002	222,980.3	6,896,592.7	36.8	0	-90	14	18	4	0.5	East Dune
MA003	223,017.4	6,896,607.8	36.6	0	-90	0	10	10	3.3	West Dune
MA003	223,017.4	6,896,607.8	36.6	0	-90	12	16	4	1.5	East Dune
MA004	222,908.8	6,896,457.4	40.2	0	-90	0	22	22	2.7	West Dune
MA005	222,946.6	6,896,469.6	45.6	0	-90	0	26	26	4.2	West Dune
MA005	222,946.6	6,896,469.6	45.6	0	-90	28	30	2	0.6	East Dune
MA006	222,983.5	6,896,482.5	47.4	0	-90	0	26	26	4.9	West Dune
MA006	222,983.5	6,896,482.5	47.4	0	-90	28	32	4	0.7	East Dune
MA007	223,018.4	6,896,500.7	45.0	0	-90	0	22	22	1.5	West Dune
MA007	223,018.4	6,896,500.7	45.0	0	-90	24	30	6	0.6	East Dune
MA008	223,054.2	6,896,518.0	42.0	0	-90	0	16	16	2.8	West Dune
MA008	223,054.2	6,896,518.0	42.0	0	-90	18	24	6	0.6	East Dune
MA009	223,090.5	6,896,536.4	40.5	0	-90	0	12	12	5.1	West Dune
MA009	223,090.5	6,896,536.4	40.5	0	-90	14	18	4	0.7	East Dune
MA010	222,872.8	6,896,325.5	31.1	0	-90	0	18	18	2.4	West Dune
MA010	222,872.8	6,896,325.5	31.1	0	-90	18	28	10	0.6	East Dune
MA011	222,908.9	6,896,338.8	36.2	0	-90	0	22	22	3.3	West Dune
MA011	222,908.9	6,896,338.8	36.2	0	-90	24	28	4	0.3	East Dune
MA012	222,947.0	6,896,354.3	40.5	0	-90	0	26	26	3.0	West Dune
MA012	222,947.0	6,896,354.3	40.5	0	-90	28	30	2	0.8	East Dune
MA013	222,983.0	6,896,369.3	43.3	0	-90	0	28	28	3.3	West Dune
MA013	222,983.0	6,896,369.3	43.3	0	-90	28	30	2	0.4	East Dune
MA014	223,019.8	6,896,388.1	46.2	0	-90	0	26	26	4.2	West Dune
MA014	223,019.8	6,896,388.1	46.2	0	-90	28	32	4	0.5	East Dune
MA015	223,055.1	6,896,406.6	45.3	0	-90	0	24	24	3.8	West Dune
MA015	223,055.1	6,896,406.6	45.3	0	-90	26	30	4	0.5	East Dune
MA016	223,090.7	6,896,424.6	42.3	0	-90	0	18	18	7.3	West Dune
MA016	223,090.7	6,896,424.6	42.3	0	-90	20	24	4	0.6	East Dune
MA017	223,127.3	6,896,441.4	40.9	0	-90	0	14	14	6.9	West Dune
MA017	223,127.3	6,896,441.4	40.9	0	-90	16	34	18	1.5	East Dune
MA018	223,162.5	6,896,459.5	42.0	0	-90	0	10	10	4.7	West Dune
MA018	223,162.5	6,896,459.5	42.0	0	-90	12	30	18	0.5	East Dune
MA019	222,900.1	6,896,240.9	29.8	0	-90	0	18	18	4.2	West Dune
MA019	222,900.1	6,896,240.9	29.8	0	-90	20	24	4	0.3	East Dune
MA020	222,939.5	6,896,250.1	29.9	0	-90	0	18	18	2.8	West Dune
MA020	222,939.5	6,896,250.1	29.9	0	-90	20	24	4	0.6	East Dune
MA021	222,977.4	6,896,262.6	31.0	0	-90	0	18	18	5.3	West Dune
MA021	222,977.4	6,896,262.6	31.0	0	-90	20	26	6	0.7	East Dune
MA022	223,015.1	6,896,275.3	33.2	0	-90	0	16	16	3.2	West Dune
MA022	223,015.1	6,896,275.3	33.2	0	-90	16	20	4	6.1	West Strand
MA022	223,015.1	6,896,275.3	33.2	0	-90	22	26	4	0.6	East Dune
MA023	223,053.1	6,896,287.6	36.4	0	-90	0	22	22	4.3	West Dune
MA023	223,053.1	6,896,287.6	36.4	0	-90	24	30	6	0.5	East Dune
MA024	223,090.9	6,896,300.8	38.2	0	-90	0	20	20	5.0	West Dune
MA024	223,090.9	6,896,300.8	38.2	0	-90	22	24	2	0.7	East Dune
MA025	223,129.2	6,896,313.6	38.1	0	-90	0	18	18	5.3	West Dune

HOLE_ID	EASTING MGA94Z50 (m)	NORTHING MGA94Z50 (m)	RL AHD (m)	AZI (°)	DIP (°)	FROM (m)	TO (m)	INTERVAL LENGTH (m)	HM (%)	MINZONE DOMAIN
MA025	223,129.2	6,896,313.6	38.1	0	-90	20	24	4	0.4	East Dune
MA026	223,167.0	6,896,327.0	37.6	0	-90	0	14	14	5.4	West Dune
MA026	223,167.0	6,896,327.0	37.6	0	-90	16	18	2	0.4	East Dune
MA027	223,203.4	6,896,342.8	39.2	0	-90	0	10	10	3.5	West Dune
MA027	223,203.4	6,896,342.8	39.2	0	-90	12	26	14	0.4	East Dune
MA028	223,238.7	6,896,358.7	42.6	0	-90	0	8	8	4.4	West Dune
MA028	223,238.7	6,896,358.7	42.6	0	-90	10	14	4	0.5	East Dune
MA029	223,274.6	6,896,374.6	45.8	0	-90	0	8	8	4.4	West Dune
MA029	223,274.6	6,896,374.6	45.8	0	-90	10	18	8	0.3	East Dune
MA030	223,308.7	6,896,391.3	50.0	0	-90	0	8	8	2.4	West Dune
MA030	223,308.7	6,896,391.3	50.0	0	-90	10	18	8	0.4	East Dune
MA031	223,345.3	6,896,409.9	54.6	0	-90	0	10	10	2.3	West Dune
MA031	223,345.3	6,896,409.9	54.6	0	-90	10	18	8	0.5	East Dune
MA032	222,980.7	6,896,156.3	20.7	0	-90	0	12	12	2.1	West Dune
MA032	222,980.7	6,896,156.3	20.7	0	-90	14	18	4	0.4	East Dune
MA033	223,019.0	6,896,168.4	21.2	0	-90	0	14	14	4.9	West Dune
MA033	223,019.0	6,896,168.4	21.2	0	-90	16	18	2	0.5	East Dune
MA034	223,057.8	6,896,182.0	23.9	0	-90	0	16	16	5.6	West Dune
MA034	223,057.8	6,896,182.0	23.9	0	-90	18	20	2	0.9	East Dune
MA035	223,094.1	6,896,194.9	27.7	0	-90	0	10	10	5.5	West Dune
MA035	223,094.1	6,896,194.9	27.7	0	-90	10	18	8	6.0	West Strand
MA035	223,094.1	6,896,194.9	27.7	0	-90	20	24	4	1.5	East Dune
MA036	223,130.4	6,896,209.4	31.7	0	-90	0	16	16	3.5	West Dune
MA036	223,130.4	6,896,209.4	31.7	0	-90	16	18	2	7.4	West Strand
MA036	223,130.4	6,896,209.4	31.7	0	-90	20	24	4	0.8	East Dune
MA037	223,167.2	6,896,226.0	34.6	0	-90	0	18	18	4.0	West Dune
MA037	223,167.2	6,896,226.0	34.6	0	-90	20	24	4	0.4	East Dune
MA038	223,201.5	6,896,244.9	35.6	0	-90	0	16	16	2.9	West Dune
MA038	223,201.5	6,896,244.9	35.6	0	-90	18	30	12	0.5	East Dune
MA039	223,237.9	6,896,263.5	37.2	0	-90	0	12	12	4.1	West Dune
MA039	223,237.9	6,896,263.5	37.2	0	-90	14	20	6	0.8	East Dune
MA040	223,273.5	6,896,280.3	40.3	0	-90	0	12	12	5.8	West Dune
MA040	223,273.5	6,896,280.3	40.3	0	-90	14	22	8	0.5	East Dune
MA041	223,308.6	6,896,296.8	43.5	0	-90	0	10	10	4.0	West Dune
MA041	223,308.6	6,896,296.8	43.5	0	-90	12	18	6	0.4	East Dune
MA042	223,058.1	6,896,072.6	15.6	0	-90	0	8	8	3.8	West Dune
MA042	223,058.1	6,896,072.6	15.6	0	-90	10	14	4	0.9	East Dune
MA043	223,095.9	6,896,088.2	19.9	0	-90	0	14	14	4.3	West Dune
MA043	223,095.9	6,896,088.2	19.9	0	-90	16	18	2	0.8	East Dune
MA044	223,132.3	6,896,104.0	25.4	0	-90	0	18	18	4.8	West Dune
MA044	223,132.3	6,896,104.0	25.4	0	-90	20	22	2	0.9	East Dune
MA045	223,168.4	6,896,120.7	31.3	0	-90	0	14	14	3.3	West Dune
MA045	223,168.4	6,896,120.7	31.3	0	-90	14	20	6	6.0	West Strand
MA045	223,168.4	6,896,120.7	31.3	0	-90	22	24	2	0.8	East Dune
MA046	223,204.7	6,896,137.2	34.5	0	-90	0	10	10	4.3	West Dune
MA046	223,204.7	6,896,137.2	34.5	0	-90	10	20	10	10.4	West Strand
MA046	223,204.7	6,896,137.2	34.5	0	-90	22	26	4	0.4	East Dune
MA047	223,241.1	6,896,153.4	34.0	0	-90	0	12	12	2.7	West Dune
MA047	223,241.1	6,896,153.4	34.0	0	-90	12	16	4	9.8	West Strand

HOLE_ID	EASTING MGA94Z50 (m)	NORTHING MGA94Z50 (m)	RL AHD (m)	AZI (°)	DIP (°)	FROM (m)	TO (m)	INTERVAL LENGTH (m)	HM (%)	MINZONE DOMAIN
MA047	223,241.1	6,896,153.4	34.0	0	-90	18	24	6	0.5	East Dune
MA048	223,276.9	6,896,170.6	34.6	0	-90	0	14	14	2.8	West Dune
MA048	223,276.9	6,896,170.6	34.6	0	-90	16	24	8	0.7	East Dune
MA049	223,311.5	6,896,187.0	37.0	0	-90	0	12	12	4.7	West Dune
MA049	223,311.5	6,896,187.0	37.0	0	-90	14	22	8	0.9	East Dune
MA050	223,347.2	6,896,202.9	39.9	0	-90	0	12	12	6.3	West Dune
MA050	223,347.2	6,896,202.9	39.9	0	-90	14	22	8	0.9	East Dune
MA051	223,384.3	6,896,219.6	42.9	0	-90	0	10	10	3.1	West Dune
MA051	223,384.3	6,896,219.6	42.9	0	-90	12	18	6	0.7	East Dune
MA052	223,420.0	6,896,236.8	46.4	0	-90	0	12	12	3.7	West Dune
MA052	223,420.0	6,896,236.8	46.4	0	-90	14	18	4	0.5	East Dune
MA053	223,106.2	6,895,999.2	16.4	0	-90	0	8	8	3.6	West Dune
MA053	223,106.2	6,895,999.2	16.4	0	-90	10	14	4	0.7	East Dune
MA054	223,138.2	6,896,018.8	21.1	0	-90	0	14	14	5.6	West Dune
MA054	223,138.2	6,896,018.8	21.1	0	-90	16	18	2	0.5	East Dune
MA055	223,171.8	6,896,036.6	26.5	0	-90	0	18	18	4.9	West Dune
MA055	223,171.8	6,896,036.6	26.5	0	-90	20	24	4	0.4	East Dune
MA056	223,207.9	6,896,055.7	32.1	0	-90	0	22	22	4.3	West Dune
MA056	223,207.9	6,896,055.7	32.1	0	-90	24	26	2	0.9	East Dune
MA057	223,243.2	6,896,071.5	33.2	0	-90	0	18	18	3.7	West Dune
MA057	223,243.2	6,896,071.5	33.2	0	-90	18	22	4	14.4	West Strand
MA057	223,243.2	6,896,071.5	33.2	0	-90	24	28	4	0.6	East Dune
MA058	223,278.6	6,896,090.0	31.7	0	-90	0	16	16	5.7	West Dune
MA058	223,278.6	6,896,090.0	31.7	0	-90	16	18	2	0.8	West Strand
MA058	223,278.6	6,896,090.0	31.7	0	-90	20	24	4	0.4	East Dune
MA059	223,313.1	6,896,104.6	32.0	0	-90	0	8	8	3.2	West Dune
MA059	223,313.1	6,896,104.6	32.0	0	-90	8	14	6	9.0	West Strand
MA059	223,313.1	6,896,104.6	32.0	0	-90	16	24	8	1.1	East Dune
MA060	223,350.8	6,896,118.6	33.7	0	-90	0	12	12	6.0	West Dune
MA060	223,350.8	6,896,118.6	33.7	0	-90	14	24	10	0.8	East Dune
MA061	223,386.7	6,896,132.0	36.6	0	-90	0	12	12	6.8	West Dune
MA061	223,386.7	6,896,132.0	36.6	0	-90	14	18	4	1.0	East Dune
MA062	223,425.0	6,896,144.3	39.7	0	-90	0	10	10	2.7	West Dune
MA062	223,425.0	6,896,144.3	39.7	0	-90	12	16	4	0.6	East Dune
MA063	223,462.8	6,896,154.6	42.0	0	-90	0	10	10	1.5	West Dune
MA063	223,462.8	6,896,154.6	42.0	0	-90	12	18	6	0.4	East Dune
MA064	223,499.1	6,896,168.9	45.1	0	-90	0	8	8	2.8	West Dune
MA065	223,095.5	6,895,896.2	12.2	0	-90	0	2	2	3.5	West Dune
MA065	223,095.5	6,895,896.2	12.2	0	-90	4	8	4	1.2	East Dune
MA066	223,132.7	6,895,910.8	16.1	0	-90	0	8	8	3.4	West Dune
MA066	223,132.7	6,895,910.8	16.1	0	-90	10	14	4	0.9	East Dune
MA067	223,169.7	6,895,924.7	21.2	0	-90	0	14	14	4.0	West Dune
MA067	223,169.7	6,895,924.7	21.2	0	-90	16	18	2	0.8	East Dune
MA068	223,206.1	6,895,938.3	27.0	0	-90	0	20	20	4.7	West Dune
MA068	223,206.1	6,895,938.3	27.0	0	-90	22	24	2	0.4	East Dune
MA069	223,243.4	6,895,951.8	32.3	0	-90	0	24	24	4.3	West Dune
MA069	223,243.4	6,895,951.8	32.3	0	-90	26	28	2	0.8	East Dune
MA070	223,280.2	6,895,967.1	32.9	0	-90	0	24	24	7.2	West Dune
MA070	223,280.2	6,895,967.1	32.9	0	-90	26	28	2	0.7	East Dune

HOLE_ID	EASTING MGA94Z50 (m)	NORTHING MGA94Z50 (m)	RL AHD (m)	AZI (°)	DIP (°)	FROM (m)	TO (m)	INTERVAL LENGTH (m)	HM (%)	MINZONE DOMAIN
MA071	223,316.6	6,895,983.7	30.0	0	-90	0	20	20	7.7	West Dune
MA071	223,316.6	6,895,983.7	30.0	0	-90	20	22	2	8.5	West Strand
MA071	223,316.6	6,895,983.7	30.0	0	-90	24	26	2	0.9	East Dune
MA072	223,353.0	6,895,998.2	28.0	0	-90	0	8	8	5.4	West Dune
MA072	223,353.0	6,895,998.2	28.0	0	-90	8	14	6	16.8	West Strand
MA072	223,353.0	6,895,998.2	28.0	0	-90	16	22	6	0.9	East Dune
MA073	223,390.0	6,896,013.8	28.8	0	-90	0	12	12	4.6	West Dune
MA073	223,390.0	6,896,013.8	28.8	0	-90	14	18	4	1.0	East Dune
MA074	223,427.1	6,896,028.7	30.9	0	-90	0	10	10	5.2	West Dune
MA074	223,427.1	6,896,028.7	30.9	0	-90	12	18	6	1.0	East Dune
MA075	223,464.6	6,896,044.7	34.1	0	-90	0	8	8	4.6	West Dune
MA075	223,464.6	6,896,044.7	34.1	0	-90	10	18	8	0.7	East Dune
MA076	223,502.2	6,896,057.2	37.0	0	-90	0	10	10	2.9	West Dune
MA076	223,502.2	6,896,057.2	37.0	0	-90	12	18	6	0.5	East Dune
MA077	223,132.4	6,895,803.3	12.9	0	-90	0	2	2	3.9	West Dune
MA077	223,132.4	6,895,803.3	12.9	0	-90	4	10	6	1.0	East Dune
MA078	223,170.7	6,895,814.9	16.4	0	-90	0	8	8	2.9	West Dune
MA078	223,170.7	6,895,814.9	16.4	0	-90	10	12	2	0.6	East Dune
MA079	223,208.0	6,895,828.8	21.6	0	-90	0	14	14	5.5	West Dune
MA079	223,208.0	6,895,828.8	21.6	0	-90	16	18	2	1.5	East Dune
MA080	223,244.5	6,895,841.1	27.5	0	-90	0	22	22	2.8	West Dune
MA080	223,244.5	6,895,841.1	27.5	0	-90	22	24	2	0.6	East Dune
MA081	223,278.4	6,895,853.9	32.1	0	-90	0	24	24	5.6	West Dune
MA081	223,278.4	6,895,853.9	32.1	0	-90	24	26	2	9.3	West Strand
MA082	223,319.8	6,895,867.8	31.3	0	-90	0	18	18	2.5	West Dune
MA082	223,319.8	6,895,867.8	31.3	0	-90	18	24	6	4.2	West Strand
MA083	223,356.0	6,895,883.5	27.5	0	-90	0	10	10	3.0	West Dune
MA083	223,356.0	6,895,883.5	27.5	0	-90	10	18	8	8.8	West Strand
MA083	223,356.0	6,895,883.5	27.5	0	-90	20	24	4	0.6	East Dune
MA084	223,391.5	6,895,900.2	24.6	0	-90	0	8	8	4.8	West Dune
MA084	223,391.5	6,895,900.2	24.6	0	-90	8	12	4	9.7	West Strand
MA084	223,391.5	6,895,900.2	24.6	0	-90	14	20	6	0.8	East Dune
MA085	223,430.1	6,895,914.3	24.8	0	-90	0	8	8	2.7	West Dune
MA085	223,430.1	6,895,914.3	24.8	0	-90	10	20	10	0.8	East Dune
MA086	223,467.3	6,895,933.3	27.0	0	-90	0	6	6	4.4	West Dune
MA086	223,467.3	6,895,933.3	27.0	0	-90	8	22	14	0.8	East Dune
MA087	223,170.3	6,895,698.2	10.9	0	-90	0	2	2	3.3	West Dune
MA087	223,170.3	6,895,698.2	10.9	0	-90	2	6	4	1.9	East Dune
MA088	223,212.9	6,895,709.0	14.1	0	-90	0	8	8	3.1	West Dune
MA088	223,212.9	6,895,709.0	14.1	0	-90	8	12	4	3.6	East Dune
MA089	223,247.3	6,895,727.8	18.8	0	-90	0	14	14	4.9	West Dune
MA089	223,247.3	6,895,727.8	18.8	0	-90	14	16	2	3.1	East Dune
MA090	223,284.8	6,895,743.0	24.0	0	-90	0	18	18	6.4	West Dune
MA090	223,284.8	6,895,743.0	24.0	0	-90	18	20	2	7.5	East Dune
MA091	223,320.7	6,895,760.0	27.8	0	-90	0	22	22	3.7	West Dune
MA091	223,320.7	6,895,760.0	27.8	0	-90	22	24	2	6.2	East Dune
MA092	223,357.0	6,895,777.2	26.7	0	-90	0	20	20	6.2	West Dune
MA092	223,357.0	6,895,777.2	26.7	0	-90	20	22	2	6.0	East Dune
MA093	223,392.4	6,895,794.3	23.3	0	-90	0	6	6	5.3	West Dune

HOLE_ID	EASTING MGA94Z50 (m)	NORTHING MGA94Z50 (m)	RL AHD (m)	AZI (°)	DIP (°)	FROM (m)	TO (m)	INTERVAL LENGTH (m)	HM (%)	MINZONE DOMAIN
MA093	223,392.4	6,895,794.3	23.3	0	-90	6	14	8	11.4	West Strand
MA093	223,392.4	6,895,794.3	23.3	0	-90	16	18	2	0.9	East Dune
MA094	223,428.6	6,895,810.7	21.0	0	-90	0	6	6	3.8	West Dune
MA094	223,428.6	6,895,810.7	21.0	0	-90	6	8	2	4.0	West Strand
MA094	223,428.6	6,895,810.7	21.0	0	-90	10	16	6	0.6	East Dune
MA095	223,207.1	6,895,605.6	9.8	0	-90	0	2	2	2.7	West Dune
MA095	223,207.1	6,895,605.6	9.8	0	-90	2	6	4	2.7	East Dune
MA096	223,244.7	6,895,617.2	13.0	0	-90	0	8	8	2.9	West Dune
MA096	223,244.7	6,895,617.2	13.0	0	-90	8	12	4	2.8	East Dune
MA097	223,280.7	6,895,630.0	17.4	0	-90	0	14	14	4.3	West Dune
MA097	223,280.7	6,895,630.0	17.4	0	-90	14	16	2	2.1	East Dune
MA098	223,318.1	6,895,642.8	23.2	0	-90	0	18	18	4.6	West Dune
MA098	223,318.1	6,895,642.8	23.2	0	-90	18	22	4	1.0	East Dune
MA099	223,356.4	6,895,655.4	27.1	0	-90	0	22	22	4.0	West Dune
MA099	223,356.4	6,895,655.4	27.1	0	-90	22	24	2	0.7	East Dune
MA100	223,392.3	6,895,669.4	26.1	0	-90	0	20	20	3.6	West Dune
MA100	223,392.3	6,895,669.4	26.1	0	-90	20	22	2	1.3	East Dune
MA101	223,431.6	6,895,689.6	22.0	0	-90	0	6	6	4.5	West Dune
MA101	223,431.6	6,895,689.6	22.0	0	-90	6	10	4	16.0	West Strand
MA101	223,431.6	6,895,689.6	22.0	0	-90	12	14	2	1.1	East Dune
MA102	223,466.4	6,895,710.5	19.6	0	-90	0	2	2	3.6	West Dune
MA102	223,466.4	6,895,710.5	19.6	0	-90	4	12	8	1.1	East Dune
MA103	223,499.8	6,895,730.0	20.1	0	-90	0	2	2	2.9	West Dune
MA103	223,499.8	6,895,730.0	20.1	0	-90	4	6	2	0.5	East Dune
MA104	223,244.7	6,895,516.5	9.7	0	-90	0	2	2	4.1	West Dune
MA104	223,244.7	6,895,516.5	9.7	0	-90	2	8	6	2.7	East Dune
MA105	223,282.0	6,895,532.0	13.8	0	-90	0	10	10	5.0	West Dune
MA105	223,282.0	6,895,532.0	13.8	0	-90	10	12	2	1.4	East Dune
MA106	223,319.7	6,895,548.2	19.4	0	-90	0	16	16	5.3	West Dune
MA106	223,319.7	6,895,548.2	19.4	0	-90	16	18	2	1.5	East Dune
MA107	223,356.5	6,895,560.7	25.4	0	-90	0	20	20	4.6	West Dune
MA107	223,356.5	6,895,560.7	25.4	0	-90	20	22	2	9.9	East Dune
MA108	223,395.6	6,895,573.5	28.4	0	-90	0	22	22	4.4	West Dune
MA108	223,395.6	6,895,573.5	28.4	0	-90	22	24	2	1.1	East Dune
MA109	223,438.6	6,895,582.9	26.6	0	-90	0	16	16	2.3	West Dune
MA109	223,438.6	6,895,582.9	26.6	0	-90	16	20	4	8.9	West Strand
MA109	223,438.6	6,895,582.9	26.6	0	-90	20	24	4	0.6	East Dune
MA110	223,478.2	6,895,588.5	23.1	0	-90	0	12	12	4.1	West Dune
MA110	223,478.2	6,895,588.5	23.1	0	-90	12	14	2	12.8	West Strand
MA110	223,478.2	6,895,588.5	23.1	0	-90	16	18	2	0.5	East Dune
MA111	223,517.2	6,895,598.4	20.6	0	-90	0	8	8	2.9	West Dune
MA111	223,517.2	6,895,598.4	20.6	0	-90	10	16	6	0.7	East Dune
MA112	223,550.7	6,895,613.0	20.1	0	-90	0	2	2	1.9	West Dune
MA112	223,550.7	6,895,613.0	20.1	0	-90	4	12	8	1.3	East Dune
MA113	223,590.7	6,895,629.8	22.3	0	-90	0	2	2	3.2	West Dune
MA113	223,590.7	6,895,629.8	22.3	0	-90	4	18	14	1.0	East Dune
MA114	223,625.4	6,895,647.3	25.3	0	-90	0	2	2	4.0	West Dune
MA114	223,625.4	6,895,647.3	25.3	0	-90	4	20	16	1.2	East Dune
MA115	223,662.2	6,895,663.9	28.7	0	-90	0	2	2	4.4	West Dune

HOLE_ID	EASTING MGA94Z50 (m)	NORTHING MGA94Z50 (m)	RL AHD (m)	AZI (°)	DIP (°)	FROM (m)	TO (m)	INTERVAL LENGTH (m)	HM (%)	MINZONE DOMAIN
MA115	223,662.2	6,895,663.9	28.7	0	-90	6	22	16	2.4	East Dune
MA116	223,697.9	6,895,681.6	32.4	0	-90	0	26	26	3.8	East Dune
MA117	223,733.3	6,895,699.9	36.1	0	-90	0	30	30	3.7	East Dune
MA117	223,733.3	6,895,699.9	36.1	0	-90	30	32	2	2.3	East Strand
MA118	223,768.4	6,895,718.5	40.3	0	-90	0	28	28	3.7	East Dune
MA118	223,768.4	6,895,718.5	40.3	0	-90	28	36	8	10.3	East Strand
MA119	223,804.5	6,895,735.4	43.8	0	-90	0	28	28	1.9	East Dune
MA119	223,804.5	6,895,735.4	43.8	0	-90	28	42	14	17.6	East Strand
MA120	223,841.0	6,895,751.7	45.5	0	-90	0	30	30	2.6	East Dune
MA120	223,841.0	6,895,751.7	45.5	0	-90	30	44	14	14.8	East Strand
MA121	223,247.7	6,895,408.7	7.1	0	-90	0	6	6	3.6	West Dune
MA122	223,283.8	6,895,424.3	9.2	0	-90	0	8	8	3.5	West Dune
MA123	223,318.4	6,895,439.0	13.2	0	-90	2	14	12	5.0	West Dune
MA124	223,358.8	6,895,456.0	19.7	0	-90	0	18	18	4.5	West Dune
MA125	223,395.0	6,895,471.6	26.1	0	-90	0	22	22	4.2	West Dune
MA125	223,395.0	6,895,471.6	26.1	0	-90	22	24	2	4.4	East Dune
MA126	223,433.3	6,895,485.5	31.0	0	-90	0	26	26	3.6	West Dune
MA126	223,433.3	6,895,485.5	31.0	0	-90	26	28	2	1.8	East Dune
MA127	223,471.8	6,895,499.2	29.6	0	-90	0	22	22	3.4	West Dune
MA127	223,471.8	6,895,499.2	29.6	0	-90	22	24	2	10.1	West Strand
MA127	223,471.8	6,895,499.2	29.6	0	-90	24	26	2	0.6	East Dune
MA128	223,509.6	6,895,514.3	25.8	0	-90	0	16	16	3.5	West Dune
MA128	223,509.6	6,895,514.3	25.8	0	-90	16	18	2	12.3	West Strand
MA128	223,509.6	6,895,514.3	25.8	0	-90	18	20	2	0.8	East Dune
MA129	223,546.9	6,895,525.8	23.5	0	-90	0	10	10	3.8	West Dune
MA129	223,546.9	6,895,525.8	23.5	0	-90	10	12	2	4.8	West Strand
MA129	223,546.9	6,895,525.8	23.5	0	-90	12	14	2	0.9	East Dune
MA130	223,587.5	6,895,533.5	22.3	0	-90	0	2	2	2.2	West Dune
MA130	223,587.5	6,895,533.5	22.3	0	-90	4	18	14	1.3	East Dune
MA131	223,628.3	6,895,543.6	23.6	0	-90	0	2	2	2.1	West Dune
MA131	223,628.3	6,895,543.6	23.6	0	-90	4	20	16	1.5	East Dune
MA132	223,663.9	6,895,561.2	25.7	0	-90	0	2	2	4.1	West Dune
MA132	223,663.9	6,895,561.2	25.7	0	-90	4	22	18	1.8	East Dune
MA133	223,699.4	6,895,579.1	28.3	0	-90	0	4	4	4.6	West Dune
MA133	223,699.4	6,895,579.1	28.3	0	-90	6	24	18	4.1	East Dune
MA134	223,735.2	6,895,596.8	31.9	0	-90	0	28	28	5.4	East Dune
MA135	223,770.6	6,895,615.0	35.5	0	-90	0	24	24	3.9	East Dune
MA135	223,770.6	6,895,615.0	35.5	0	-90	24	36	12	4.8	East Strand
MA136	223,806.7	6,895,633.2	39.1	0	-90	0	24	24	2.6	East Dune
MA136	223,806.7	6,895,633.2	39.1	0	-90	24	38	14	16.7	East Strand
MA137	223,841.9	6,895,650.8	42.2	0	-90	0	26	26	1.8	East Dune
MA137	223,841.9	6,895,650.8	42.2	0	-90	26	40	14	16.8	East Strand
MA138	223,877.7	6,895,668.5	44.2	0	-90	0	30	30	2.7	East Dune
MA138	223,877.7	6,895,668.5	44.2	0	-90	30	42	12	14.9	East Strand
MA139	223,914.8	6,895,683.3	43.5	0	-90	0	32	32	4.3	East Dune
MA139	223,914.8	6,895,683.3	43.5	0	-90	32	40	8	7.5	East Strand
MA140	223,952.2	6,895,697.7	41.4	0	-90	0	4	4	2.9	West Dune
MA140	223,952.2	6,895,697.7	41.4	0	-90	6	30	24	4.3	East Dune
MA141	223,989.7	6,895,711.5	38.5	0	-90	0	8	8	3.8	West Dune

HOLE_ID	EASTING MGA94Z50 (m)	NORTHING MGA94Z50 (m)	RL AHD (m)	AZI (°)	DIP (°)	FROM (m)	TO (m)	INTERVAL LENGTH (m)	HM (%)	MINZONE DOMAIN
MA141	223,989.7	6,895,711.5	38.5	0	-90	8	26	18	3.3	East Dune
MA142	223,287.4	6,895,316.6	7.8	0	-90	0	2	2	4.1	West Dune
MA142	223,287.4	6,895,316.6	7.8	0	-90	2	6	4	3.9	East Dune
MA143	223,325.1	6,895,332.2	10.4	0	-90	0	8	8	3.8	West Dune
MA143	223,325.1	6,895,332.2	10.4	0	-90	8	10	2	4.5	East Dune
MA144	223,362.1	6,895,348.6	14.8	0	-90	0	12	12	5.6	West Dune
MA144	223,362.1	6,895,348.6	14.8	0	-90	12	14	2	6.5	East Dune
MA145	223,397.5	6,895,360.9	20.4	0	-90	0	18	18	3.5	West Dune
MA146	223,435.5	6,895,377.7	27.2	0	-90	0	24	24	4.4	West Dune
MA147	223,474.7	6,895,391.1	33.3	0	-90	0	28	28	4.5	West Dune
MA147	223,474.7	6,895,391.1	33.3	0	-90	28	30	2	0.8	East Dune
MA148	223,511.1	6,895,392.1	35.6	0	-90	0	30	30	5.6	West Dune
MA148	223,511.1	6,895,392.1	35.6	0	-90	30	32	2	1.7	West Strand
MA149	223,563.9	6,895,385.6	35.6	0	-90	0	20	20	5.6	West Dune
MA149	223,563.9	6,895,385.6	35.6	0	-90	20	28	8	10.3	West Strand
MA149	223,563.9	6,895,385.6	35.6	0	-90	28	32	4	0.7	East Dune
MA150	223,599.9	6,895,403.9	32.0	0	-90	0	18	18	3.8	West Dune
MA150	223,599.9	6,895,403.9	32.0	0	-90	20	26	6	0.8	East Dune
MA151	223,634.4	6,895,422.3	29.1	0	-90	0	12	12	6.5	West Dune
MA151	223,634.4	6,895,422.3	29.1	0	-90	14	18	4	1.2	East Dune
MA152	223,670.5	6,895,441.4	28.2	0	-90	0	8	8	7.3	West Dune
MA152	223,670.5	6,895,441.4	28.2	0	-90	10	22	12	1.4	East Dune
MA153	223,704.5	6,895,462.1	28.9	0	-90	0	6	6	3.4	West Dune
MA153	223,704.5	6,895,462.1	28.9	0	-90	8	24	16	1.7	East Dune
MA154	223,740.2	6,895,480.4	30.7	0	-90	0	2	2	4.4	West Dune
MA154	223,740.2	6,895,480.4	30.7	0	-90	6	26	20	7.6	East Dune
MA154	223,740.2	6,895,480.4	30.7	0	-90	26	28	2	3.5	East Strand
MA155	223,775.6	6,895,497.2	33.4	0	-90	0	28	28	6.7	East Dune
MA155	223,775.6	6,895,497.2	33.4	0	-90	28	30	2	7.4	East Strand
MA156	223,808.4	6,895,514.3	36.2	0	-90	0	16	16	3.0	East Dune
MA156	223,808.4	6,895,514.3	36.2	0	-90	16	28	12	13.7	East Strand
MA157	223,845.9	6,895,533.0	39.1	0	-90	0	18	18	2.2	East Dune
MA157	223,845.9	6,895,533.0	39.1	0	-90	18	30	12	13.2	East Strand
MA158	223,880.2	6,895,549.5	41.7	0	-90	0	24	24	1.5	East Dune
MA158	223,880.2	6,895,549.5	41.7	0	-90	24	36	12	11.6	East Strand
MA159	223,918.9	6,895,568.8	43.4	0	-90	2	28	26	4.8	East Dune
MA159	223,918.9	6,895,568.8	43.4	0	-90	28	38	10	7.4	East Strand
MA160	223,954.0	6,895,584.7	42.7	0	-90	0	4	4	3.0	West Dune
MA160	223,954.0	6,895,584.7	42.7	0	-90	6	30	24	3.4	East Dune
MA160	223,954.0	6,895,584.7	42.7	0	-90	30	32	2	4.2	East Strand
MA161	223,991.3	6,895,601.9	40.9	0	-90	0	6	6	3.5	West Dune
MA161	223,991.3	6,895,601.9	40.9	0	-90	8	30	22	3.6	East Dune
MA162	224,030.7	6,895,620.4	39.3	0	-90	0	8	8	4.8	West Dune
MA162	224,030.7	6,895,620.4	39.3	0	-90	10	26	16	2.6	East Dune
MA163	223,330.2	6,895,226.6	7.8	0	-90	0	6	6	5.7	West Dune
MA164	223,359.7	6,895,238.2	10.0	0	-90	0	8	8	4.7	West Dune
MA164	223,359.7	6,895,238.2	10.0	0	-90	8	10	2	3.3	East Dune
MA165	223,397.8	6,895,255.1	14.5	0	-90	0	12	12	5.7	West Dune
MA166	223,434.2	6,895,270.0	20.3	0	-90	0	16	16	6.6	West Dune

HOLE_ID	EASTING MGA94Z50 (m)	NORTHING MGA94Z50 (m)	RL AHD (m)	AZI (°)	DIP (°)	FROM (m)	TO (m)	INTERVAL LENGTH (m)	HM (%)	MINZONE DOMAIN
MA166	223,434.2	6,895,270.0	20.3	0	-90	16	18	2	0.8	East Dune
MA167	223,471.0	6,895,285.5	26.5	0	-90	0	22	22	4.2	West Dune
MA167	223,471.0	6,895,285.5	26.5	0	-90	22	24	2	1.2	East Dune
MA168	223,512.1	6,895,295.5	32.3	0	-90	0	24	24	4.6	West Dune
MA168	223,512.1	6,895,295.5	32.3	0	-90	24	26	2	9.5	West Strand
MA168	223,512.1	6,895,295.5	32.3	0	-90	26	28	2	0.7	East Dune
MA169	223,546.6	6,895,294.2	34.4	0	-90	0	22	22	5.0	West Dune
MA169	223,546.6	6,895,294.2	34.4	0	-90	22	26	4	11.5	West Strand
MA169	223,546.6	6,895,294.2	34.4	0	-90	28	30	2	0.4	East Dune
MA170	223,607.9	6,895,289.8	32.1	0	-90	0	20	20	7.1	West Dune
MA170	223,607.9	6,895,289.8	32.1	0	-90	22	24	2	0.6	East Dune
MA171	223,642.8	6,895,310.4	32.0	0	-90	0	16	16	6.0	West Dune
MA171	223,642.8	6,895,310.4	32.0	0	-90	18	22	4	0.9	East Dune
MA172	223,676.6	6,895,332.3	32.0	0	-90	0	14	14	3.5	West Dune
MA172	223,676.6	6,895,332.3	32.0	0	-90	16	24	8	1.0	East Dune
MA173	223,710.2	6,895,354.6	31.5	0	-90	0	10	10	6.1	West Dune
MA173	223,710.2	6,895,354.6	31.5	0	-90	10	24	14	1.1	East Dune
MA173	223,710.2	6,895,354.6	31.5	0	-90	24	26	2	2.2	East Strand
MA174	223,743.7	6,895,374.9	32.0	0	-90	0	6	6	4.3	West Dune
MA174	223,743.7	6,895,374.9	32.0	0	-90	8	20	12	2.6	East Dune
MA174	223,743.7	6,895,374.9	32.0	0	-90	20	26	6	5.7	East Strand
MA175	223,777.8	6,895,398.5	33.9	0	-90	0	6	6	4.7	West Dune
MA175	223,777.8	6,895,398.5	33.9	0	-90	8	10	2	5.7	East Dune
MA175	223,777.8	6,895,398.5	33.9	0	-90	10	28	18	10.2	East Strand
MA176	223,812.4	6,895,418.5	36.6	0	-90	0	4	4	4.1	West Dune
MA176	223,812.4	6,895,418.5	36.6	0	-90	6	10	4	1.6	East Dune
MA176	223,812.4	6,895,418.5	36.6	0	-90	10	30	20	12.6	East Strand
MA177	223,846.1	6,895,437.9	39.0	0	-90	0	12	12	1.7	East Dune
MA177	223,846.1	6,895,437.9	39.0	0	-90	12	28	16	11.6	East Strand
MA178	223,882.0	6,895,457.8	41.5	0	-90	2	22	20	1.9	East Dune
MA178	223,882.0	6,895,457.8	41.5	0	-90	22	26	4	4.8	East Strand
MA179	223,918.8	6,895,474.7	44.7	0	-90	2	28	26	2.5	East Dune
MA180	223,954.9	6,895,491.7	45.2	0	-90	0	32	32	3.3	East Dune
MA181	223,991.6	6,895,507.7	43.4	0	-90	0	6	6	4.5	West Dune
MA181	223,991.6	6,895,507.7	43.4	0	-90	8	30	22	3.7	East Dune
MA182	224,027.6	6,895,524.8	41.4	0	-90	0	8	8	4.2	West Dune
MA182	224,027.6	6,895,524.8	41.4	0	-90	10	28	18	3.2	East Dune
MA183	223,416.6	6,895,104.1	4.1	0	-90	0	2	2	5.9	West Dune
MA183	223,416.6	6,895,104.1	4.1	0	-90	2	4	2	5.1	East Dune
MA184	223,453.2	6,895,120.1	8.4	0	-90	0	6	6	4.9	West Dune
MA184	223,453.2	6,895,120.1	8.4	0	-90	6	8	2	5.4	East Dune
MA185	223,490.0	6,895,136.3	13.4	0	-90	0	10	10	5.2	West Dune
MA185	223,490.0	6,895,136.3	13.4	0	-90	10	12	2	5.6	East Dune
MA186	223,526.5	6,895,152.2	16.8	0	-90	0	12	12	7.5	West Dune
MA186	223,526.5	6,895,152.2	16.8	0	-90	12	14	2	5.5	West Strand
MA187	223,563.6	6,895,168.6	19.7	0	-90	0	12	12	3.7	West Dune
MA187	223,563.6	6,895,168.6	19.7	0	-90	12	16	4	8.7	West Strand
MA187	223,563.6	6,895,168.6	19.7	0	-90	16	18	2	0.6	East Dune
MA188	223,600.3	6,895,184.7	21.9	0	-90	0	14	14	6.5	West Dune

HOLE_ID	EASTING MGA94Z50 (m)	NORTHING MGA94Z50 (m)	RL AHD (m)	AZI (°)	DIP (°)	FROM (m)	TO (m)	INTERVAL LENGTH (m)	HM (%)	MINZONE DOMAIN
MA188	223,600.3	6,895,184.7	21.9	0	-90	16	18	2	0.5	East Dune
MA189	223,637.2	6,895,201.0	24.3	0	-90	0	12	12	5.6	West Dune
MA189	223,637.2	6,895,201.0	24.3	0	-90	14	20	6	1.0	East Dune
MA190	223,674.9	6,895,215.5	27.0	0	-90	0	10	10	7.1	West Dune
MA190	223,674.9	6,895,215.5	27.0	0	-90	12	18	6	0.9	East Dune
MA191	223,712.4	6,895,231.4	30.1	0	-90	0	12	12	6.4	West Dune
MA191	223,712.4	6,895,231.4	30.1	0	-90	12	26	14	0.6	East Dune
MA192	223,747.0	6,895,248.3	31.9	0	-90	0	8	8	6.6	West Dune
MA192	223,747.0	6,895,248.3	31.9	0	-90	10	24	14	0.7	East Dune
MA193	223,782.0	6,895,267.5	33.0	0	-90	0	2	2	4.2	West Dune
MA193	223,782.0	6,895,267.5	33.0	0	-90	4	26	22	1.8	East Dune
MA193	223,782.0	6,895,267.5	33.0	0	-90	26	32	6	4.1	East Strand
MA194	223,817.3	6,895,286.6	35.4	0	-90	0	18	18	4.4	East Dune
MA194	223,817.3	6,895,286.6	35.4	0	-90	18	32	14	17.0	East Strand
MA195	223,851.3	6,895,306.3	38.2	0	-90	0	18	18	2.0	East Dune
MA195	223,851.3	6,895,306.3	38.2	0	-90	18	34	16	13.5	East Strand
MA196	223,886.1	6,895,324.7	41.5	0	-90	0	24	24	1.6	East Dune
MA196	223,886.1	6,895,324.7	41.5	0	-90	24	34	10	12.4	East Strand
MA197	223,919.4	6,895,346.2	44.1	0	-90	0	30	30	1.6	East Dune
MA197	223,919.4	6,895,346.2	44.1	0	-90	30	38	8	5.0	East Strand
MA198	223,956.1	6,895,363.5	44.4	0	-90	2	30	28	2.4	East Dune
MA199	223,990.9	6,895,382.3	43.0	0	-90	0	28	28	3.3	East Dune
MA200	224,028.2	6,895,402.7	40.9	0	-90	0	4	4	4.9	West Dune
MA200	224,028.2	6,895,402.7	40.9	0	-90	6	26	20	3.2	East Dune
MA201	223,486.6	6,895,070.0	8.0	0	-90	0	6	6	7.1	West Dune
MA201	223,486.6	6,895,070.0	8.0	0	-90	6	8	2	7.9	East Dune
MA202	223,523.6	6,895,086.4	11.9	0	-90	0	8	8	8.7	West Dune
MA202	223,523.6	6,895,086.4	11.9	0	-90	8	10	2	9.4	West Strand
MA202	223,523.6	6,895,086.4	11.9	0	-90	10	12	2	1.4	East Dune
MA203	223,560.5	6,895,102.6	14.2	0	-90	0	8	8	7.2	West Dune
MA203	223,560.5	6,895,102.6	14.2	0	-90	8	10	2	11.3	West Strand
MA203	223,560.5	6,895,102.6	14.2	0	-90	10	12	2	0.9	East Dune
MA204	223,597.2	6,895,118.8	16.5	0	-90	0	10	10	5.9	West Dune
MA204	223,597.2	6,895,118.8	16.5	0	-90	10	16	6	1.4	East Dune
MA205	223,633.3	6,895,134.6	19.4	0	-90	0	8	8	8.3	West Dune
MA205	223,633.3	6,895,134.6	19.4	0	-90	10	16	6	0.8	East Dune
MA206	223,669.9	6,895,151.1	23.3	0	-90	0	10	10	5.5	West Dune
MA206	223,669.9	6,895,151.1	23.3	0	-90	12	18	6	0.6	East Dune
MA207	223,705.8	6,895,167.0	27.4	0	-90	0	10	10	4.7	West Dune
MA207	223,705.8	6,895,167.0	27.4	0	-90	12	18	6	0.4	East Dune
MA209	223,780.1	6,895,198.7	31.9	0	-90	0	8	8	5.9	West Dune
MA209	223,780.1	6,895,198.7	31.9	0	-90	10	26	16	0.9	East Dune
MA209	223,780.1	6,895,198.7	31.9	0	-90	26	28	2	2.8	East Strand
MA210	223,813.7	6,895,218.0	32.8	0	-90	0	4	4	3.3	West Dune
MA210	223,813.7	6,895,218.0	32.8	0	-90	4	20	16	1.4	East Dune
MA210	223,813.7	6,895,218.0	32.8	0	-90	20	30	10	7.9	East Strand
MA211	223,850.5	6,895,236.1	34.6	0	-90	0	4	4	5.0	West Dune
MA211	223,850.5	6,895,236.1	34.6	0	-90	4	16	12	1.6	East Dune
MA211	223,850.5	6,895,236.1	34.6	0	-90	16	36	20	12.6	East Strand

HOLE_ID	EASTING MGA94Z50 (m)	NORTHING MGA94Z50 (m)	RL AHD (m)	AZI (°)	DIP (°)	FROM (m)	TO (m)	INTERVAL LENGTH (m)	HM (%)	MINZONE DOMAIN
MA212	223,885.3	6,895,252.7	37.4	0	-90	0	4	4	4.0	West Dune
MA212	223,885.3	6,895,252.7	37.4	0	-90	4	22	18	1.8	East Dune
MA212	223,885.3	6,895,252.7	37.4	0	-90	22	34	12	13.5	East Strand
MA213	223,921.9	6,895,270.6	39.9	0	-90	0	26	26	2.8	East Dune
MA213	223,921.9	6,895,270.6	39.9	0	-90	26	36	10	7.3	East Strand
MA214	223,958.0	6,895,287.4	41.9	0	-90	0	28	28	3.5	East Dune
MA215	223,994.6	6,895,303.7	40.7	0	-90	2	26	24	4.4	East Dune
MA216	224,030.3	6,895,320.0	39.0	0	-90	0	2	2	3.8	West Dune
MA216	224,030.3	6,895,320.0	39.0	0	-90	6	24	18	4.0	East Dune
MA218	223,591.7	6,895,005.8	10.4	0	-90	0	2	2	3.6	West Dune
MA218	223,591.7	6,895,005.8	10.4	0	-90	2	8	6	2.8	East Dune
MA219	223,628.3	6,895,023.4	13.0	0	-90	0	2	2	5.2	West Dune
MA219	223,628.3	6,895,023.4	13.0	0	-90	2	10	8	1.4	East Dune
MA220	223,665.3	6,895,039.9	16.4	0	-90	0	4	4	5.1	West Dune
MA220	223,665.3	6,895,039.9	16.4	0	-90	4	14	10	1.0	East Dune
MA221	223,701.4	6,895,055.8	20.0	0	-90	0	4	4	6.0	West Dune
MA221	223,701.4	6,895,055.8	20.0	0	-90	6	18	12	0.5	East Dune
MA222	223,738.4	6,895,072.0	24.0	0	-90	0	6	6	7.2	West Dune
MA222	223,738.4	6,895,072.0	24.0	0	-90	8	12	4	0.6	East Dune
MA223	223,774.6	6,895,088.3	27.5	0	-90	0	8	8	3.9	West Dune
MA223	223,774.6	6,895,088.3	27.5	0	-90	10	14	4	0.7	East Dune
MA224	223,811.6	6,895,104.3	29.5	0	-90	0	8	8	6.2	West Dune
MA224	223,811.6	6,895,104.3	29.5	0	-90	10	26	16	1.0	East Dune
MA225	223,848.5	6,895,121.2	30.6	0	-90	0	6	6	3.8	West Dune
MA225	223,848.5	6,895,121.2	30.6	0	-90	8	26	18	2.2	East Dune
MA225	223,848.5	6,895,121.2	30.6	0	-90	26	28	2	5.1	East Strand
MA226	223,885.6	6,895,136.7	31.6	0	-90	0	6	6	3.1	West Dune
MA226	223,885.6	6,895,136.7	31.6	0	-90	8	20	12	1.6	East Dune
MA226	223,885.6	6,895,136.7	31.6	0	-90	20	32	12	11.7	East Strand
MA227	223,922.3	6,895,153.4	33.3	0	-90	0	4	4	4.0	West Dune
MA227	223,922.3	6,895,153.4	33.3	0	-90	6	20	14	1.5	East Dune
MA227	223,922.3	6,895,153.4	33.3	0	-90	20	30	10	8.5	East Strand
MA228	223,961.5	6,895,165.3	36.1	0	-90	0	24	24	2.5	East Dune
MA229	223,996.0	6,895,186.3	38.0	0	-90	0	24	24	4.5	East Dune
MA235	223,743.4	6,895,182.1	30.8	0	-90	0	10	10	6.1	West Dune
MA235	223,743.4	6,895,182.1	30.8	0	-90	12	28	16	0.6	East Dune

APPENDIX 2

THE MENARI DEPOSIT

JORC Code 2012 Edition – Table 1

Section 1 - Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	*Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.*	For the 2013 drilling, sample sub-splits were collected at a 2m down-hole interval, using an on-board rotary splitter mounted beneath the drill rig cyclone. Sample gates are set at 12.5% of the splitter cycle, which delivers about 2kg of sample, dependant on ground conditions.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Samples were collected in line with the Cliffs APIO 'Geological Legend & Sampling Procedure Manual' and the Mineral Resources Limited 'RC Logging and Sampling Procedure' document.
	Aspects of the determination of mineralisation that are Material to the Public Report. *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	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. All drill samples were dried and weighed. A ~100g, rotary-split sub sample is then wet screened to determine slimes (-63 µm and oversize material (+1mm).

Criteria	JORC Code explanation	Commentary
		Approximately 100g of the resultant samples is then subjected to a heavy mineral (HM) float/sink technique using Tetra-bromo Ethane (TBE: SG=2.96g/cm3). The resulting HM concentrate is then dried and weighed.
Drilling techniques	*Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	All samples are generated by RCAC drilling utilising ~71 mm diameter (NQ) aircore drill tooling. Drill holes are oriented vertically by spirit level.
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.*	Drilling is conducted with water injection to ensure fine material is retained. There are no recorded intervals in the geology logs that indicate loss or contamination of samples. The sample weight analysis conducted shows consistent sample weights. 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 where fitted) remains clean. 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. Drilling airflow is stifled for the first metre to promote sample return but these samples are generally lighter than those subsequent due to low ground compaction. This is not considered material to the resource classifications as applied.

Criteria	JORC Code explanation	Commentary
	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 Resource estimation, mining studies and metallurgical studies.*	Detailed, qualitative digital logs are collected of geological characteristics to allow a comprehensive geological interpretation to be carried out. Samples are panned in the field to determine dominant and secondary host materials characteristics and heavy mineral content.
	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 all HM sinks, is completed by a mineralogist to determine qualitative Garnet % and Calcite coatings. HM sinks are then sized by screen to characterise the Garnet product and inform the geological interpretation.
	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.	For the 2013 drilling, samples were collected at a 2m down-hole interval, using an on-board rotary splitter set at 12.5% of the splitter cycle, which delivers about 2kg of sample. Drill samples were dried then rotary split to produce ~100g for wet screening and oversize and slimes determination. The remainder is delivered for heavy-liquid (TBE) separation.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation detailed above is recorded on a standard flow sheet and detailed QA/QC is undertaken on all samples. Sample preparation

Criteria	JORC Code explanation	Commentary
		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.
	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.	Drill 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.
	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.*	All drill sample preparation and analysis is completed by Diamantina Laboratory. Laboratory replicates and laboratory standards were 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).

Criteria	JORC Code explanation	Commentary
	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.
	Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.	To maintain QA/QC during drilling, a duplicate and standard assaying procedure is applied. 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 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. 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 drill holes represent about 5% of the drill database.

Criteria	JORC Code explanation	Commentary
		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.	Data collected are entered digitally in the field using ruggedized computer with Micromine logging software. Data are automatically validated through reference to library tables on all fields entered. Data are downloaded daily to the Geologists computer and migrated to the site server at the end of the programme. Migration to a secure, SQL Database has been recommended.
	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 Resource estimation.*	Hille, Thompson and Delfos Surveyors (HTD), and Heyhoe Surveys, both of Geraldton, WA were engaged for real time kinematic global positioning system ('RTK GPS') set out of drill collar locations. Peg location adjustments are captured by the field Geologist during drilling and conveyed to the surveyor 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.
	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 to cover additional mineralisation discovered in 2016 by HTD using an un-manned aerial vehicle (UAV) mounted with similar survey equipment. Check lines were flown by HTD to verify the previous land-based

Criteria	JORC Code explanation	Commentary
		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 at Menari is 100m North, 40m East and 2m down-hole.
	Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.	Based on 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 sample intervals are regularised to 1m for the interpolation.
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 is 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 at a secure shed near Gingin and at the Chairman's residence.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	Richard Stockwell (contract Exploration Manager – Australian Garnet Pty Ltd and Director of Placer Consulting Pty Ltd) manages the quality of drilling and sampling equipment, driller training and sampling and was on site, acting as field Geologist from 2013 – 2016 and then as supervisor in the 2020 exploration programme. Drilling and sampling techniques were managed on a continual basis throughout the programme according to Placer's ISO certified, quality management system.

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 mineral resource is coincident with the granted Mining Licence M70/1280, wholly owned by Australian Garnet Pty Ltd. Upon mining of the project, there is a small royalty payment to a previous tenement owner and a 5%, state government royalty.
	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 mining tenure over the area containing the reported mineral resources.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Substantial areas of resource were left un-tested by previous workers. Drill sample and assay data generated by previous workers (pre-2013) are excluded from the Menari Resource estimate.
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 such as the Tamala Limestone and Safety Bay Sand.
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:* o *easting and northing of the drill hole collar* o *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* o *dip and azimuth of the hole*	Refer to Appendix 1 above.

Criteria	JORC Code explanation	Commentary
	o *down hole length and interception depth* o *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.	Drill hole information not used to inform the mineralisation interpretation and estimation has been excluded from Appendix 1.
Data aggregation methods	*In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.*	Data was aggregated based on mineralisation domain. Grade for HM was weight averaged based on sample interval length. No grade cutting has been applied.
	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.
	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.* *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 (eg 'down hole length, true width not known').*	All drill holes are vertical and perpendicular to the dip and strike of mineralisation and therefore all intercepts are approximately true thickness. Dune deposits typically approximate a mounded accumulation over a variable basement topography. Strand deposits reside on a paleo wave-cut platform that is generally flat to gently-seaward dipping.

Criteria	JORC Code explanation	Commentary
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.*	The resource report includes a cross-sectional display of critical resource fields and tabulated results.
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 Resource 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 resource report. Intercepts are disclosed based on average domain grades.
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.*	Bulk density is derived from 12 samples submitted for water displacement analysis, as detailed in the resource reports. Mineralogy is derived from mineralogical scanning of drill samples and Garnet grain size analysis is generated by physical screen separation. Mineralogy and Ilmenite mineral chemistry is determined by magnetic separation and XRF of the Mag 1 fraction.
Further work	*The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).*	Substantial infill drilling has been completed during early 2020 to discover mineralisation between the Menari Deposit and Menari North. Infill drilling of Menari North was also completed. Some 2500 samples remain to be assayed from this programme and a resource estimate is also pending. Further sample collection for mineralogical analysis of accessory minerals (Ilmenite, Zircon, Rutile) and confirmation of bulk Garnet grainsize is proposed for Menari North. Application of a component-based Density algorithm (developed by Placer Consulting) is recommended for future resource estimates.

Criteria	JORC Code explanation	Commentary
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	The deposit remains open to the south and north east.

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 was conducted in Datamine Studio 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.*	Richard Stockwell established procedures for data capture and storage and was present for the 2013 programme. There were no issues observed that might be considered material to the Mineral Resource under consideration.
	If no site visits have been undertaken indicate why this is the case.	Not applicable.

Criteria	JORC Code explanation	Commentary
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 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 data, generated by work programmes and from historic exploration was used exclusively for the resource estimation. 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. Geology and mineral distribution are comparable across the Balline Project.
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.*	Mineralisation at Menari is 1.6km long and up to 750m wide and averages 16m true thickness. The mineral envelope is generally near/at surface and is lobate in shape, pinching to the North and West. Grades generally increase from 2% to 20% HM with depth. Clay content is typically 0-10% and HM logging data indicates only minor induration and coatings are associated with valuable minerals.

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 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 were used to search for data for 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.	Haddington Resources engaged AMC Consultants in 2009 for the previous resource estimate and report. The current resource estimation considers variations from the previous resource estimate (2009).
	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 by a mineralogist for all drill sample HM sinks. These are included in the resource block model and can be 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 parent cell size was purposefully chosen to fit to the drilling array with one floating cell in the east and north directions with respect to drilling information. The z-direction (elevation) has no floating cell in the Z-axis. This resulted in a parent cell size of 50m*20m*2m for the Menari volume model.

Criteria	JORC Code explanation	Commentary
	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. Along strike distributions of section line averages (swath plots) for drill holes and models were also prepared for comparison purposes.
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.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	A 2% HM bottom cut has been applied to the Resource Estimate in consultation with mining professionals working on plant design and optimisation of the Menari Deposit 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*	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.

Criteria	JORC Code explanation	Commentary
	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.	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, 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.
Environmen-tal 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 stockpiled by pump and 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 regrowth 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 Balline Project area. A geographically-dispersed bore field

Criteria	JORC Code explanation	Commentary
		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 Menari model is based on the SG determination of 12 Balline samples established by AMC during resource estimation in 2009. Bulk density sample sites are described by AMC as having been taken from within the Menari North and Menari deposit areas.
	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.	Bulk density measurements were obtained by the water displacement method.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	A linear regression formula was derived from the plotted results: Bulk Density (BD) = 0.899 x HM% + 1.533. The formula retrospectively displays a coefficient of determination equalling 91.5% in respect to HM% which indicates an adequate level of fit for the associated Resource Estimate. Trial of a component-based density algorithm is planned and further test work is to be included in the next phase of work.
Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.*	The resource classification for the Menari Deposit is based on drill hole spacing, geological domain and mineralisation continuity and the quality of QA/QC processes. Input data are of a high quality, mineralogy and Garnet grain size information is well represented and consistent throughout the deposit. 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	The classification of the Measured Mineral Resource is supported by all of the criteria as noted above.

Criteria	JORC Code explanation	Commentary
	continuity of geology and metal values, quality, quantity and distribution of the data).	
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The Competent Person, Richard Stockwell, considers that the result appropriately reflects a reasonable view of the deposit categorisation.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	An independent review of the interpolation of HM (in particular) from the drill hole data to the resource model, by Zone, was completed by Greg Jones (GNJ Consulting Pty Ltd). Greg is a recognised Competent Person in mineral sands and has an appropriate level of expertise to achieve industry best practice in block model construction and resource estimation. Review of the construction of the Menari block model and of the search volume and estimation parameters was also completed.
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 Menari Resource Estimate is conducive to reporting at a Measured 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	The estimates are global.

Criteria	JORC Code explanation	Commentary
	and economic evaluation. Documentation should include assumptions made and the procedures used.	
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	No production data are currently available.