Sandfire

ASX Release

ASX:SFR

15 December 2021

Maiden Mineral Resource Estimate for Old Highway Gold Deposit

Highlights

- Maiden Mineral Resource estimate completed for the Old Highway gold deposit, located approximately 20km WSW of Sandfire's DeGrussa Copper-Gold Mine in Western Australia:
    - Indicated Mineral Resource of **2.8Mt @ 2.5g/t Au for 223,000oz of contained gold**.
- Studies underway to evaluate potential development options including producing gold through modification of the existing DeGrussa processing infrastructure – on-track for delivery in the March 2022 Quarter.
- Drilling is continuing at Old Highway with a ~9,100m (24-hole) diamond drill program underway focused on extending the high-grade mineralisation in the 'Central Deeps' section of the Old Highway deposit.
    - Eight holes (~3,200m) completed to date, the majority of which have intersected quartz veins in the expected position down-dip from the known mineralisation – assays awaited.
    - The deepest holes will test ~200m below known mineralisation.

Sandfire Resources Limited (**Sandfire**, **the Company** or **the Group**) is pleased to announce a maiden Mineral Resource Estimate for the Old Highway Deposit, located 20km west-south-west of the Company's 100%-owned DeGrussa Copper-Gold Mine in Western Australia.

The Indicated Mineral Resource comprises **2.8 million tonnes grading 2.5g/t gold for 223,000 ounces** of contained gold.

Table 1: December 2021 Indicated Mineral Resource Estimate for Old Highway deposit

Area	Resource Category	Cut-off grade (g/t Au)	Tonnes (Mt)	Au (g/t)	Au (koz)
Non-Central Area (Open Pit)	Indicated	0.6	2.3	1.5	113
Central Area (Open Pit)	Indicated	0.6	0.1	2.9	7
Central Area (Underground)	Indicated	2.0	0.3	9.5	102
Grand Total	**Indicated**		**2.8**	**2.5**	**223**

Note:

Tonnes and grade have been rounded to one decimal figure, ounces have been rounded to nearest thousandth

Columns may not total exactly due to rounding differences.

Study work is currently underway to assess the potential development options for the Old Highway gold deposit. As part of the study Sandfire has completed preliminary design and costing for the addition of a gold recovery circuit to the existing DeGrussa copper concentrator. Study work is continuing and is expected to be completed in the March Quarter of 2022.

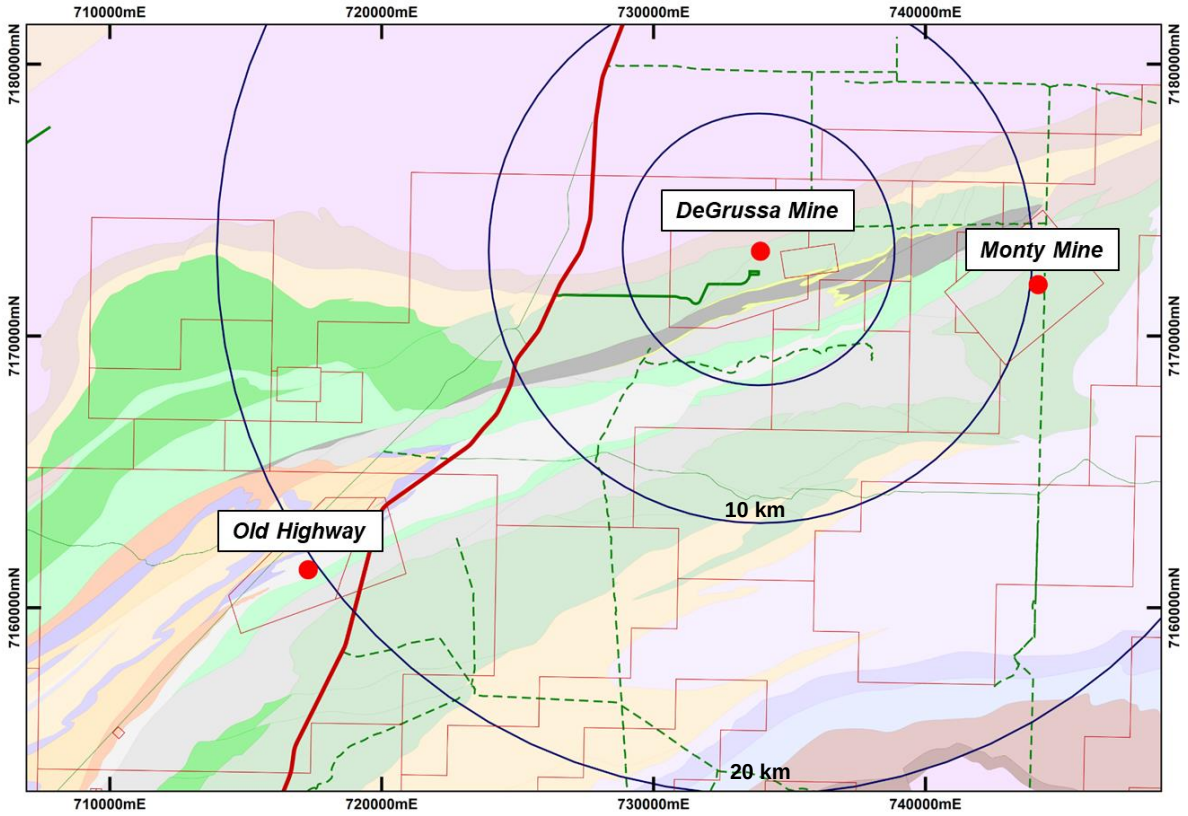

Figure 1: Regional Location Plan of the Old Highway Deposit, DeGrussa and Monty Copper Mines.

Drilling is continuing at Old Highway with a ~9,100m (24-hole) diamond drill program commenced, focused on extending the high-grade mineralisation in the central section of the Old Highway deposit – an area known as 'Central Deeps' – which remains open along strike and down dip. The deepest holes from this program will test ~200m below the currently defined extent of the mineralisation.

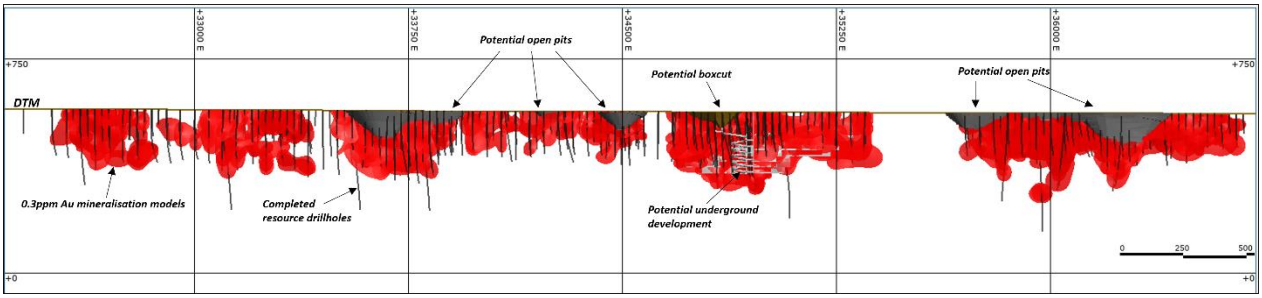

Figure 2: Old Highway Deposit long section showing completed drilling, 0.3g/t Au mineralisation models, proposed open pit and underground development (Local grid).

Eight holes (~3,200m) of this program have been completed to date, the majority of which have intersected quartz veins in the expected position down-dip of the known mineralisation. Assay results for these holes are awaited.

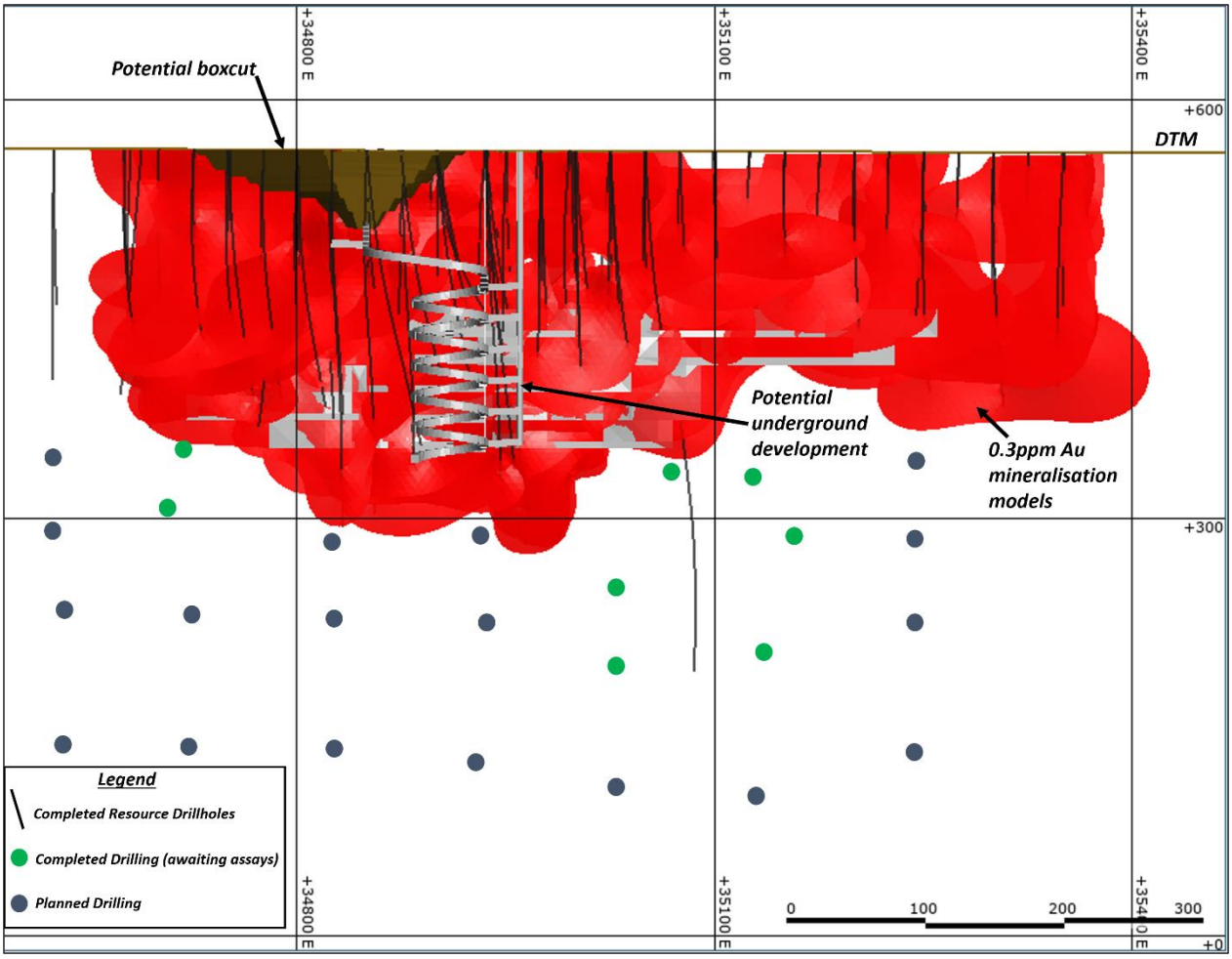

Figure 3: Old Highway Deposit Central Deeps long section showing completed and planned drilling, 0.3g/t Au mineralisation models, proposed open pit and underground development (Local grid).

Project Development Studies

Sandfire has completed a number of study elements to support the completion of the MRE and assess potential development options for the Old Highway deposit, including:

- Preliminary open pit and underground design work in progress, including geotechnical and hydrology studies.
- Metallurgical testwork including variability work on the different ore lithologies has been completed. The ore is free milling with overall very high gold recoveries exceeding 90% at moderate grind size of 106 microns and low reagent consumptions.
- Preliminary design and costing for the addition of a gold recovery plant to the existing DeGrussa copper concentrator. This would involve the addition of gravity, CIL and gold recovery circuits. The existing concentrator crushing and grinding circuits could be re-used with only minor modification required.
- All baseline environmental work at Old Highway has been completed and documentation for the various approvals is in progress.
- Ore haulage options for the transport of ore from Old Highway to DeGrussa have been investigated and preliminary costs for the options established.
- Various CIL tailings storage options including use of the existing DeGrussa TSF and in-pit deposition into the DeGrussa pit have been investigated.

Mining Leases M52/1080 and M52/1081 have been granted for the Old Highway project area.

General Overview of Location and Geology

The Old Highway Prospect is situated approximately 20km west-southwest of Sandfire's DeGrussa Copper-Gold Mine. It lies 900km north-east of Perth and 150km north of Meekatharra in the Peak Hill Mineral Field. Access is via the Great Northern Highway and a series of exploration tracks that link the prospect area to the 'Old Highway'.

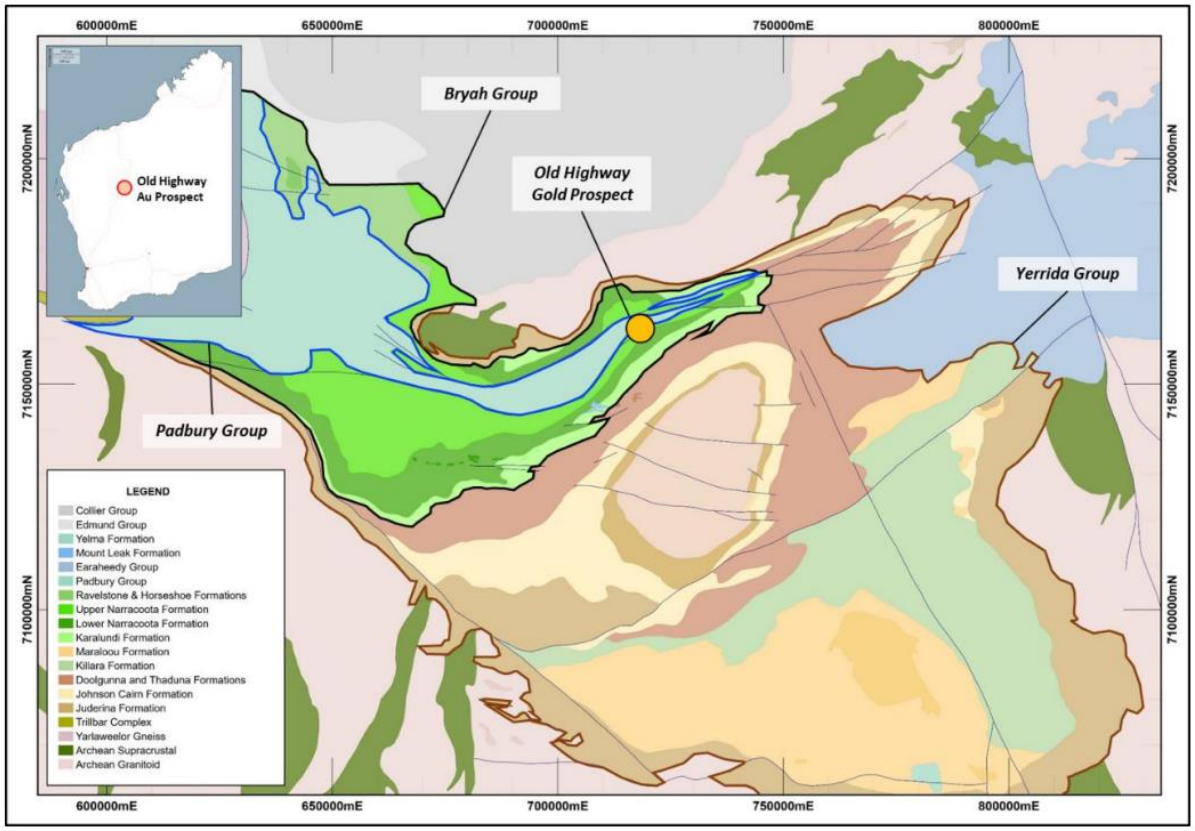

Figure 4: Map of the regional geology and the location of the Old Highway Deposit. Grid is shown in MGA94 Zone 50.

The Old Highway deposit occurs in the Bryah Group, an early-Proterozoic supercrustal sequence. The Byrah Group unconformably overlies the Yerrida Group, an early-Proterozoic supracrustal sequence that unconformabably overlies the Archean basement.

The Archean basement comprises the Yilgarn Craton, the Marymia Inlier and the Yarlaweelor Gneiss complex. The Padbury Group, an early to mid-Proterozoic sequence unconformably overlies the Bryah Group.

Ore vein mineralogy consists primarily of quartz, carbonate (likely to be ankerite or a ferroan dolomite), albite and pyrite. Trace (<1%) chalcopyrite, galena, haematite, native gold, bornite, chalcocite and goethite are also observed. Pyrite occurs as isolated grains within the veins but more typically in the selvages of the veins, where the wall rock (gangue minerals / rocks) dominates the rock mass (pyrite ranges from <1% to 10% of the selvage material). Native gold is noted to occur as both free grains on the margins of the pyrite grains (up to ~2mm observed in hand specimen) or as small inclusions within the pyrite (~2 µm). Likewise, chalcopyrite occurs as ragged grains on the edges of pyrite or as inclusions within the pyrite.

Goethite, malachite, copper hydroxide/oxy-hydroxide and/or chalcocite occur in weathered samples. Copper-bearing minerals have only been encountered in limited areas of the deposit and are interpreted to be a function of the weathering of the trace primary chalcopyrite.

Weathering within the transition zones (saprolite, saprock and joint weathered fresh rock) results in the development of goethite, bornite, malachite and/or chalcocite on the edges of the pyrite and chalcopyrite grains.

Gangue mineralogy is dominated by the host siliciclastic rock sequence and the weathering products therein and consists of muscovite, chlorite, leucoxene, rutile, quartz, plagioclase (albite), zircon and magnetite. Visual observations suggest the presence of hydrous aluminium phyllosilicates (such as smectite, kaolinite), goethite, haematite and quartz in the saprolite and saprock profiles. However, no petrology has been completed on saprolite samples at the current stage of the project.

Previous Work related to Resource Estimation and Future Work

The Old Highway Resource Estimate included a total of 94,167 metres of RC drilling and ten diamond holes for a total of 3,974 metres completed between May 2020 and April 2021. In addition, 12 diamond holes were drilled for geotechnical and specific gravity, totalling approximately 1,903 metres.

Further Resource definition drilling is now underway in the central area of the Old Highway Prospect to further delineate mineralisation at depth. This program comprises 11 Priority-1 and 13 Priority-2 holes on a 50m x 100m spacing for a total of 11,680m. The Priority-1 holes drilled to date have intersected the Cow Hole Bore Member sediments consisting of siltstones, wackes, arenites and minor conglomerates. Most of the holes intersected intervals of quartz-carbonate veining, some of which contain course-grained cubic pyrite and are associated with sericite alteration selvages. Some visible gold was also noticed, with assays still pending. It is envisaged that all Priority-1 drilling will be completed by the end of the calendar year.

25 RC holes on a 50m x 50m Resource definition pattern were completed for a total of ~2,408m to close out the central and eastern sections of the deposit. Several holes intercepted mineralisation with sericite, disseminated cubic pyrite and quartz veins. The RC program is now complete, with assays pending.

Old Highway Mineral Resource Methodology

Mineralisation domains were interpreted using a 0.3g/t Au cut-off grade. The grade estimation technique applied to these mineralisation domains was ordinary kriging. Mineralisation domains were estimated individually, using hard boundaries.

Regolith and fresh rock profile models were generated allowing the segregation of areas of different density. Density was assigned to the Resource model based on regolith and fresh rock values.

Old Highway Mineral Resource

The December 2021 Indicated Mineral Resource Estimate for Old Highway deposit is reported on a block cut-off basis. The “Central Pit Area” is reported based on a 0.6g/t and 2.0g/t Au cut-off grade for open pit (box cut) and underground respectively. Areas outside the “Central Pit Area” are reported based on a 0.6g/t Au cut-off grade, constrained within an AUD$2,500/oz Au price optimised pit shell and Mineable Stope Optimiser (MSO) generated stope shapes at a 2.0g/t Au cut-off grade.

The Old Highway Mineral Resource is reported as 2.8Mt at 2.5g/t Au for 223Koz Au. Details are presented in Table 2 below.

Table 2: November 2021 Indicated Mineral Resource Estimate for Old Highway deposit

Area	Resource Category	Cut-off grade (g/t Au)	Tonnes (Mt)	Au (g/t)	Au (koz)
Non-Central Area (Open Pit)	Indicated	0.6	2.3	1.5	113
Central Area (Open Pit)	Indicated	0.6	0.1	2.9	7
Central Area (Underground)	Indicated	2.0	0.3	9.5	102
Grand Total	**Indicated**		**2.8**	**2.5**	**223**

Note:

Tonnes and grade have been rounded to one decimal figure, ounces have been rounded to nearest thousandth.

Columns may not total exactly due to rounding differences.

Management Comment

Sandfire Managing Director & CEO Karl Simich said the maiden Resource provided a positive foundation for ongoing studies:

"With the scheduled completion of copper-gold production from DeGrussa in the September Quarter of next year, this maiden Mineral Resource for the Old Highway deposit provides a solid start for a potential future gold operation leveraging the existing processing infrastructure on site."

"Given that the infrastructure is already there, even a relatively small-scale gold Resource has the potential to deliver solid financial returns.

"Sandfire already has an exceptionally strong asset pipeline, with our acquisition of the world-class MATSA Mining Complex in Spain nearing completion and the development of our new Motheo Copper-Silver Mine in Botswana well underway.

"We will continue to progress feasibility studies for Old Highway in parallel with delivering these other global growth initiatives."

ENDS

For further information, please contact:
Sandfire Resources Ltd
Ben Crowley – Head of Investor Relations
Office: +61 8 6430 3800

Media Inquiries:
Read Corporate
Nicholas Read
Mobile: +61 419 929 046

This announcement is authorised for release by Sandfire's Managing Director and CEO, Karl Simich.

Competent Person's Statement – Mineral Resources

The information in this report that relates to Mineral Resources is based on information compiled by Mr Roger Stangler who is a Fellow of The Australasian Institute of Mining and Metallurgy. Mr Stangler is a full-time employee of Golder Associates Pty Ltd and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Stangler consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Forward-Looking Statements

Certain statements made during or in connection with this release contain or comprise certain forward-looking statements regarding Sandfire's Mineral Resources and Reserves, exploration and project development operations, production rates, life of mine, projected cash flow, capital expenditure, operating costs and other economic performance and financial condition as well as general market outlook. Although Sandfire believes that the expectations reflected in such forward-looking statements are reasonable, such expectations are only predictions and are subject to inherent risks and uncertainties which could cause actual values, results, performance or achievements

to differ materially from those expressed, implied or projected in any forward looking statements and no assurance can be given that such expectations will prove to have been correct.

There is continuing uncertainty as to the full impact of COVID-19 on Sandfire's business, the Australian economy, share markets and the economies in which Sandfire conducts business. Given the high degree of uncertainty surrounding the extent and duration of the COVID-19 pandemic, it is not currently possible to assess the full impact of COVID-19 on Sandfire's business or the price of Sandfire securities.

Accordingly, results could differ materially from those set out in the forward-looking statements as a result of, among other factors, changes in economic and market conditions, delays or changes in project development, success of business and operating initiatives, changes in the regulatory environment and other government actions, fluctuations in metals prices and exchange rates and business and operational risk management.

Except for statutory liability which cannot be excluded, each of Sandfire, its officers, employees and advisors expressly disclaim any responsibility for the accuracy or completeness of the material contained in these forward-looking statements and excludes all liability whatsoever (including in negligence) for any loss or damage which may be suffered by any person as a consequence of any information in forward-looking statements or any error or omission. Sandfire undertakes no obligation to update publicly or release any revisions to these forward-looking statements to reflect events or circumstances after today's date or to reflect the occurrence of unanticipated events other than required by the Corporations Act and ASX Listing Rules. Accordingly, you should not place undue reliance on any forward-looking statement.

APPENDIX 1: JORC 2012 CODE

JORC 2012 MINERAL RESOURCE PARAMETERS

OLD HIGHWAY GOLD PROJECT

JORC Code Assessment Criteria	Comment
Section 1 Sampling Techniques and Data	
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 downhole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.* *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* *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.*	• Drilling started in the OH Prospect in 2005/2006 with RAB and AC drilling campaigns when the deposit was discovered, and continued sporadically from 2006 through to 2014, including mainly AC, RAB, and RC drilling, plus minor DD drilling. • RC drill chips were the main sample type used as the basis for Mineral Resource evaluation. • At the beginning of the phase one drill program, a trial was conducted to compare the performance of riffle and cone splitters. Sample weights, visual observations and feedback from the drillers were all considered in this process. • The first 3-tiered riffle splitter was found to produce an over-sized primary split, with highly variable duplicate split weights. The splitter would also clog through the 'powdery' saprolite profile without frequent cleaning. A second riffle splitter was produced with wider riffles, a fourth tier was fitted with a pneumatic vibrator. This riffle was also flawed as the 'V – shaped' vanes resulted in sample build-up and the vibrator was inadequately powered to prevent the splitter from clogging. • 52% of primary riffle split samples were greater than the target range of 1.5 to 3 kg and the lack of adjustable sample ports resulted in higher field duplicate mass variability. Cone splitters were therefore adopted. In total 13 holes were drilled using a riffle splitter (OHRC0001 – OHRC0004 and OHRC0027 – OHRC0035). All other holes were drilled using a static cone splitter with adjustable sample chutes. • To maintain appropriate sample quality for resource estimation, wet samples were left to dry in polyweave bags before being re-sampled using a portable riffle splitter. Despite these samples being dry at the time of re-sampling, they are recorded in the database as *'Wet.'* This notes that the samples may be of poor or suspect quality due to sample Preparation Errors (PE) and the potential loss of fines.

JORC Code Assessment Criteria	Comment
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.).*	• RC drilling was the main method used, with a minor contribution from DD drilling (7% of the total). • Orlando Drilling Pty Ltd were contracted to complete RC drilling at Old Highway while DDH1 Drilling Pty Ltd completed DD drilling. • Resource definition drilling was completed using four Schramm T685 rigs, three of which are truck mounted with the other being track mounted. All rigs operate with Sullair Hurricane Booster (500psi/1,250cfm) and Auxiliary Compressor (1,000psi/2,200cfm) designed for deep exploration drilling. All rigs utilise 130mm Roschen PR54 RC hammer bits. • Oriented core was used for DD drilling, allowing the obtaining of key structural data for further interpretation.
Drill Sample Recovery *Method of recording and assessing core and chip sample recoveries and results assessed.* *Measures taken to maximise sample recovery and ensure representative nature of the samples.* *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.*	• Full sample weight data was collected for every tenth hole drilled during the first phase of drilling (up to OHRC0180). For these holes, field duplicates were collected from each metre to ensure that the full sample mass was being collected from the cone splitter. The weight of the primary calico, field duplicate and bulk sample bag were recorded and used to calculate the total sample weight. • For drilling completed during phase two, only the primary and field duplicate calico pairs (3 in every 100 samples) were weighed to monitor potential mass variability from the cone splitter. • Sample recoveries were visually monitored throughout the drill program and were considered to be good. Over the program, 27 entire holes were weighed (bulk sample, primary and duplicate splits) using Adam GBK 60 bench scales (+/-2g accuracy). When weighing an entire hole, sample weight control plots were used in the field to monitor for excessive variance, bias or trends. The drillers were instructed to regularly clean the cyclone and cone splitter to ensure proper sample delimitation and avoid mass bias across the 6-drill rod metres. • Over the course of drilling during phase one and two, a total of nine holes included intervals that has insufficient recovery for assaying. These samples were recorded as ‘No Sample’ in the sampling record and database, and display numerically as ‘-5555’ in database exports.

JORC Code Assessment Criteria	Comment
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.* *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.), photography.* *The total length and percentage of the relevant intersections logged.*	• Geological logging of RC chips and diamond core was completed by Sandfire Geologists, with lithology, alteration, mineralisation and veining parameters described in detail and captured directly to a digital format on a Field Toughbook. • All logs were validated to ensure there are no overlaps, missing intervals or discrepancies with drilled depth before being exported to the database. • Geological re-logging was completed where required if issues were identified in the modelling process. • In addition to the lithology and regolith profile recorded in the geological log, Geologists estimate the in-situ hardness and unconfined compressive strength of each logged interval. RQD was also measured on the core samples. • Once the RC holes and diamond holes have been sampled and logged, photographs are taken of the chip trays and core of each hole. Photographs are saved on the site server and are loaded against each hole in the database for future reference.
Sub-Sampling Techniques and Sample Preparation *If core, whether cut or sawn and whether quarter, half or all core taken.* *If non-core, whether riffled, tube sampled, rotary split, etc., and whether sampled wet or dry.* *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*	• All primary field samples were prepared offsite at the primary laboratory - Bureau Veritas (Perth) for historical assays, SGS (Perth) for Phase 1 of Sandfire drilling, and Bureau Veritas (Perth) for Phase 2 of the Sandfire resource definition program. • Samples are sorted, weighed and oven-dried as necessary. All samples are pulverised to 75µm with periodic checks to ensure nominal 85% pass rates. Samples greater than 3.5 kg are reduced by Riffle Splitter prior to pulverisation. • Grind specifications were set as part of the sample preparation protocol and the results of the laboratory checks were routinely monitored for compliance. • The grind size performance was highly satisfactory: a total of 2,956 pulps were tested with 100% of the samples meeting the 85% passing 75µm requirements. • At the main primary laboratory Bureau Veritas, the sample preparation consists on the following steps: (i) sorting and drying; (ii) weighing; (iii) if <3 kg, crushing to 3 mm, pulverising – robotic (to 2.5 kg) to nominal 85% passing 75 µm; (iv) if >3 kg, crushing to 3 mm, samples split using Riffle Splitter (to 2.5 kg) to nominal 85% passing 75 µm.

JORC Code Assessment Criteria	Comment
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. *Whether sample sizes are appropriate to the grain size of the material being sampled.*	
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.* *For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* *Nature of quality control procedures adopted (e.g., standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e., lack of bias) and precision have been established.*	• Analyses for historical assays were performed at Bureau Veritas (Perth), whereas for resource definition data (Phase 1 of Sandfire drilling) the analyses were performed at SGS (Perth), and Intertek Genalysis (Maddington) was used as the umpire laboratory. In response to the SGS QC issues encountered during Sandfire Phase 1, the primary laboratory was changed to Bureau Veritas (Perth) for Phase 2 of the Sandfire resource definition program. • Gold was determined by fire assay using the classical lead collection technique with a nominal 50 g charge. • Golder reviewed the QAQC section of Sandfire internal reports provided. The report describes the routine, comprehensive procedures applied for the recent resource drilling program, consistent with good industry standard for the proportion of control samples, plus the check assays carried out on DGRC historical data. • Golder concludes that while some precision and accuracy issues have been identified and addressed, and the historic RC drill holes seems of acceptable analytical accuracy level, there is still a tendency towards a positive bias in the standard fire assays, as identified in the coarse gold investigation. This is material (up to 7% bias on higher grades) and warrants being further addressed.
Verification of Sampling and Assaying *The verification of significant intersections by either independent or alternative company personnel.* *The use of twinned holes.* *Documentation of primary data, data entry procedures, data verification, data storage*	• All geological data for Sandfire is stored in an SQL database, maintained and updated on site at DeGrussa Operations and offsite in Perth. User access to the database is regulated by specific user permissions. • The SQL server database is configured for optimal validation through constraints, library tables, triggers and stored procedures. • Sandfire geologists are responsible for validating Old Highway drill holes and reporting errors. This process is completed within a drill hole validation tool which enables each hole to be subjected to the validation of collar pickups, collar Gyro Survey, sample method, wet samples, missing assays

JORC Code Assessment Criteria	Comment
(physical and electronic) protocols. *Discuss any adjustment to assay data.*	and missing surveys. Data corrections are managed to ensure that corrections are made to the central database and a log of all changes kept. ● Golder performed a high-level validation review of the drill data provided for this resource estimate. Basic checks such as overlapping, negative values for assays, gaps, maximum depth were completed. No material issues were identified. ● Golder considers the drill hole database as provided is of a good standard and suitable for resource modelling purposes. ● The drill hole database and all modelling were completed in the Old Highway Local Grid, for which North is rotated -20° from MGA North. ● No records of twin holes program were available.

JORC Code Assessment Criteria	Comment
Location of Data Points *Accuracy and quality of surveys used to locate drill holes (collar and downhole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* *Specification of the grid system used.* *Quality and adequacy of topographic control.*	• Planned collar locations are pegged out by the DeGrussa Survey Department using a RTKGPS. Two sighter pegs are marked out next to the proposed collar location, along the planned azimuth, to provide a set-up guide for the RC drill rig. An inclinometer is used to set up the drill mast to the planned dip of the hole. • Once the drill hole has been completed the collar position is picked up in MGA94 Zone 50 grid by a Sandfire Surveyor using a RTKGPS, with +/- 1cm accuracy. • Downhole surveys were performed by Orlando Drilling at the completion of each hole, with azimuth and inclination accuracy of ≤0.1º/100m and +/- 0.1º respectively. • MPC Kinetic were engaged to validate the DeviGyro surveys by performing a check on 10% of the Old Highway RC drill holes using a north-seeking gyro. • Due to the swelling clays present within the saprolitic profile at Old Highway, none of the surveys attempted by MPC Kinetic were able to reach end-of-hole depth, with the drill holes typically blocked at depths between 20m – 40m.
Data Spacing and Distribution *Data spacing for reporting of Exploration Results.* *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.* *Whether sample compositing has been applied.*	• Resource definition drilling first phase at Old Highway was predominately RC type on a nominal 50 × 50 m collar spacing with a very limited subset of DD holes. This drilling yielded an initial MRE at an Inferred level of confidence. • In late September 2020 through April 2021, RC and DD drilling campaigns were completed mostly for resource definition purpose. The infill resource definition drilling reduced the nominal spacing to 25 × 25 m collar spacing within the Scoping Study optimised pits. • Sample compositing has not been applied.
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.* *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias,*	• Given the subvertical geometry of the gold lodes, the predominant -60 degrees dip can be considered optimal to intercept the veining structure as close as possible to a perpendicular orientation, minimising any sampling bias.

JORC Code Assessment Criteria	Comment
this should be assessed and reported if material.	
Sample Security *The measures taken to ensure sample security.*	• Sample IDs are assigned to each metre at the time of drilling, following on from the last bag used on the previous hole. A box containing numbered calico bags is left with the driller's offsider and are used to collect the primary sample, in numerical sequence, from the primary sample chute on the base of the splitter. When the highlighted field duplicate calico pairs are next in sequence, the offsiders use sample chutes on opposite sides of the splitter to collect the sample pair. • The remaining bulk sample material is collected from the base of the splitter in green RC bags. These are placed in sample rows with their respective calico(s). The calico samples are checked by the field assistant to ensure that they are in sequence and correspond to the correct metre interval in the sampling record. Depending on the depth of drilling, oxide or fresh CRMs are selected at the discretion of the geologist to be inserted into the pre-defined Standard calicos. Approximately 2kg of coarse blank material is scooped into the Blank calicos and added to the sample sequence. • Once the sampling record has been verified, all sample calicos are collected into green bags to be loaded into bulka bags for dispatch. • After preparation and analysis, the bulk residues and pulp packets were stored at the laboratory to expedite QC re-assaying as required. At the completion of the drill program all residues and pulp packets will be returned to DeGrussa.
Audits and Reviews *The results of any audits or reviews of sampling techniques and data.*	• The sampling techniques and data collection processes are of industry standard and have been subjected to internal reviews by Sandfire personnel • There was a review of the performance of riffle and cone splitters in June 2020. Thirteen RC holes were sampled with either a triple or quadruple tier riffle splitter. All other holes in the resource were sampled with a static cone splitter. In the review process, sample weights, visual observations and feedback from the drillers were all considered. The internal review concluded that the quality of the sample returned from the cone splitter was superior to the riffle splitter.
Section 2 Reporting of Exploration Results	
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 Old Highway prospect consists of two mining leases, M52/1080 and M52/1081, which are partial conversions of E52/1715. Both mining leases are wholly owned by Sandifre and cover a cumulative area of 1,811 hectares or 18.11 km2. • The Old Highway prospect forms part of the 400 km² Doolgunna project which also includes the DeGrussa Copper Mine. The project area sits within the broader Bryah-Yerrida Basin area and includes further projects held or managed by Sandfire totalling approximately 7,200 km2.

JORC Code Assessment Criteria	Comment
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.	• M52/1080 was formally granted by the Department of Mines, Industry Regulation and Safety (DMIRS) on 10 February 2021, while M52/1081 was formally granted by DMIRS on 21 June 2021. • Each mining lease was granted for an initial 21-year term, expiring on 9 February 2042 and 20 June 2042, respectively. • The Old Highway prospect falls within the Nharnuwangga, Wajarri and Ngarlawangga (NWN) Native Title Determination and the Yugunga-Nya Native Title Determination. The Registered Native Title Body Corporate for the NWN is the Jidi Jidi Aboriginal Corporation (Jidi Jidi), while the Registered Native Title Body Corporate for the Yugunga-Nya is the Yugunga-Nya Native Title Aboriginal Corporation. • Two discreet heritage sites were registered with the Department of Planning, Land and Heritage on 5 May 2020 with Reference ID's 38331 and 38333. • Heritage site 38331 remains an exclusion area under the Aboriginal Heritage Act 1972 (WA), but its boundaries as provided by Sandfire were seen by Golder to not impact the Old Highway prospect. • Heritage site 38333 has been salvaged under Section 18 of the Aboriginal Heritage Act 1972 (WA) and no longer impacts the Old Highway prospect. • Golder has not independently verified the ownership and current standing and status of Sandfire's tenements and native titles and is not qualified to make any representations in this regard.
Exploration Done by Other Parties *Acknowledgment and appraisal of exploration by other parties.*	• No Exploration Results are included in this release.
Geology *Deposit type, geological setting and style of mineralisation.*	• The mineralisation at the Prospect occurs in zones of narrow, approximately east-west (local rotated grid) trending steeply dipping veins that obliquely transect the siltstone, lithic wacke and sandstone sequence of a unit informally referred to as the Cow Hole Bore Member. • Mineralisation is characterised by quartz-carbonate veins ± pyrite ± selvages of disseminated pyrite ± selvages of sericite alteration. The vein zones are variable in extent and thickness. The increase in width towards the surface is interpreted to have developed during the evolution of the regolith profile. • The Old Highway gold mineralisation is hosted within the east/west trending Old Highway Shear Zone (local rotated grid). Gold mineralisation is concentrated where the faults within the OH Shear Corridor cross-cut the coarse grained sediments (CG sediments). The CG sediments are likely to have provided a larger rheological contrast than the finer grained sediments and thus are key to the constraint of mineralisation.

JORC Code Assessment Criteria	Comment
	• Copper minerals are present but in trace abundance within the Old Highway Shear Zone. It is interpreted that the copper mineralisation is a later stage, structural emplacement of mineralisation.
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* ■ *Downhole 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.*	• No Exploration Results are included in this release.

JORC Code Assessment Criteria	Comment
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.* *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.* *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	■ No Exploration Results are included in this release.
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 downhole lengths are reported, there should be a clear statement to this effect (e.g., 'downhole length, true width not known').*	■ No Exploration Results are included in this release.
Diagrams *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These*	■ No Exploration Results are included in this release.

JORC Code Assessment Criteria	Comment
should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	
Balance reporting	■ No Exploration Results are included in this release.
Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	
Other substantive exploration data	■ No Exploration Results are included in this release.
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.	

JORC Code Assessment Criteria	Comment
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).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	■ Golder recommends complete outstanding assaying and update interpretation and grade modelling. ■ Golder also recommends implement infill drilling in the Inferred classified regions, to improve estimation quality on individual lode basis, and better delineate high grade shoots. ■ The verification and addressing of pending QAQC issues is required.
Section 3 Estimation and Reporting of Mineral Resources	
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.* *Data validation procedures used.*	■ All drill hole data used for modelling purposes at Old Highway, was collected and managed by Sandfire. ■ All applicable drill holes have undergone a validation process using the Sandfire Validation Tool. The tool is an Access front-end programme that utilises a series of SQL queries to check that the drilling data is fit for purpose for use in a resource model. ■ Historical drill holes where the collar was surveyed using an RTK-GPS or a DGPS and a downhole gyro survey was completed were used for the modelling. All other drill holes were excluded. ■ The database used as the basis of the resource estimate has been internally checked by Golder for referential integrity and completeness. ■ On loading the database for modelling, Golder performed additional checks that confirmed the database is free from significant data loading and recording errors.
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.*	■ The Competent Person has not undertaken a site visit as it was not part of the scope of work for the Mineral Resource estimate. A site visit is expected to be undertaken for subsequent resource updates.
Geological Interpretation *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	■ The geological interpretation and wireframe modelling were completed by Sandfire using Leapfrog GeoTM v 6.0.4, using the 'Vein' modelling function to produce geologically constrained low-grade (LG) 0.3 ppm gold mineralisation models (i.e., individual lode wireframes). ■ A cut-off grade of 0.3 ppm Au was chosen, yielding consistent geological continuity.

JORC Code Assessment Criteria	Comment
Nature of the data used and of any assumptions made. *The effect, if any, of alternative interpretations on Mineral Resource estimation. The use of geology in guiding and controlling Mineral Resource estimation.* *The factors affecting continuity both of grade and geology.*	■ Gold mineralisation, of potential economic significance, has been identified in six discrete LG regions at Old Highway. ■ Modelling of the regolith and fresh rock profiles was completed by Sandfire, based on logging information. The regolith modelling was observed by Golder to be appropriate, with separation in regolith profile horizons, below the top layer of transported or residual cover material. ■ Nine continuous and high-grade (HG) wireframes (≥4 drill holes and ≥3 ppm Au) have been constructed by Sandfire to model the gold high-grade shoots encapsulated by low grade vein zones at the Central domain (SECTOR 400). ■ The interpretations are based on geological and geochemical information mostly coming from reverse circulation drill holes. ■ The data density and regularity were considered adequate for the definition of the geological boundaries, which were used to define spatial zones for resource estimation.
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 Old Highway (OH) Shear Corridor to which the OH gold mineralisation is associated is approximately 400 m wide using the data to date. It is part of the Oban–Wilthorpe Zone which reaches up to 1,000 m wide. ■ The drilled, modelled deposit comprises a total of 4,200 m length by 200 m of average width, and average 250 m depth. Individual lodes have thicknesses ranging mostly between 1 and 3 m.

JORC Code Assessment Criteria	Comment
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.* *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* *The assumptions made regarding recovery of by-products.* *Estimation of deleterious elements or other non-grade variables of economic significance (e.g., sulphur for acid mine drainage characterisation).* *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* *Any assumptions behind modelling of selective mining units.* *Any assumptions about correlation between variables.*	■ The estimation method used for gold estimation in the mineralisation domains of the deposit was the geostatistical method of Ordinary Kriging. ■ Waste background blocks were assigned a default grade of 0.0005 ppm, which corresponds to half smallest assay detection limit. ■ the grade estimation was applied treating each lode individually, using a hard boundary for each of the 240 LG and nine HG mineralisation wireframes. ■ A parent block size of 25 m (X) by 25 m (Y) by 5 m (Z) with sub-celling of 1 m (X) by 1 m (Y) by 1 m (Z) was selected. The parent block size also formed the estimation panel size. ■ The probability plots for the three main SECTOR domains show inflexion points in the Au distribution - indicating a change in variance. Golder defined high-grade cuts of 20 ppm and 30 ppm Au for LG SECTOR domains 100_400 and 500 respectively, and 40 ppm Au for HG SECTOR 1400. ■ The resulting capped Au variable was AUUSETC, for both sample and block model estimates, and was used for subsequent variography, grade estimation and model validation steps. ■ The grade estimates were validated visually, statistically and for estimation smoothing effect using the Discrete Gaussian change of support approach. ■ The visual assessment of grade shows reasonable conformance between the block model estimates and sample grades. ■ Golder's validations concluded that the OK model shows reasonable conformance to the input data, but to some extent at the expense of local estimation quality due to the interpolation strategy applied that constrains the estimation to individual lodes with hard boundaries.

JORC Code Assessment Criteria	Comment
Description of how the geological interpretation was used to control the resource estimates. *Discussion of basis for using or not using grade cutting or capping.* *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	
Moisture *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	■ All tonnage and density are reported on a dry basis. ■ A total of twenty-seven in-situ moisture content measurements were taken externally by E-Precision, producing a mean moisture content of 6.47% with a standard deviation of 3.6%.

JORC Code Assessment Criteria	Comment
Cut-off Parameters *The basis of the adopted cut-off grade(s) or quality parameters applied.*	■ A cut-off grade of 0.3 ppm was chosen for modelling, considered by Sandfire as the highest cut-off grade that reasonably yields consistent geological continuity. ■ The cut-off grades applied to report the Old Highway Mineral Resource are as follows: ■ Open Pit – 0.6 ppm Au ■ Underground – 2.0 ppm Au ■ The cut-off grades represent a suitable assessment of a potential lower economic cut-off, when likely mining methods for the current Old Highway Mineral Resource are considered.
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.*	■ For the Central area, both open pit mining and underground open stoping with backfill are assumed. Non-central areas are assumed to be mined by open pit methods only. ■ For the open pits the selected smallest mining unit (SMU) was 5.0 m by 5.0 m by 5.0 m. The block model was regularised to these dimensions for optimisation purposes. No changes were made for underground mining. ■ Open pit dilution and recovery is accounted for in generating the SMU model. A minimum mining width of 3.0 m inclusive of 0.5m of hangingwall and footwall dilution was adopted for the underground. ■ In order to address the reasonable prospects for eventual economic extraction (“RPEEE”) requirements, the Old Highway Mineral Resource is reported within an optimised open pit shell run at an AUD$2,500/ounce Au price. For the Central area, an underground resource is reported within mineable stope optimiser (“MSO”) generated stope shapes at a 2.0 ppm Au cut-off grade. An optimised pit shell (AUD$1,550/ounce Au price) was also applied to this central area to report an open pit resource which represents the potential location of a box cut.
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*	■ Three met testing programs have been completed in scoping and DFS; ■ Program IMO#6182 comprised testing of four (4) RC chip sample master composite blends sourced from multiple RC holes. ■ Program IMO#6194 comprised testing of thirteen (13) diamond core samples for comminution parameters and (4) four diamond core samples for leach testing. These were sourced from three PQ core diamond holes (OHMT 0001, 0002 & 0003). ■ Program IMO#6295 comprised testing of 15 variability diamond core samples. Samples were sourced from the original met holes (OHMT 0001, 0002 & 0003), plus additional holes originally drilled for core density (OHSG0004, OHSG0009, OHSG0010) and geotechnical programs (OHGT0001). ■ Samples have tested the different ore types present which are defined by weathering lithology, which transitions from oxidized supergene saprolite ore to fresh hypogene ore at depth. Samples have been taken from preliminary pit shells spanning the full strike length to test spatial variability.

JORC Code Assessment Criteria	Comment
assumptions made.	■ In summary, testing shows the Old Highway deposit is a simple, non-refractory free milling gold ore with low reagent consumption. Combined gravity gold and leach test recoveries are typically >95% at a moderate grind size of p80 106um. The ore is amenable to standard, well established gold processes; Crush, Grind, Gravity Recovery & Cyanide (CIL) Leaching. ■ It is proposed to utilise the existing crushing and grinding circuits at DeGrussa for comminution purposes, and install new downstream plant applicable to gold processing including gravity, leaching, elution and gold room circuits.
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.*	■ At the present time, all work has been conducted under an exploration permit. Further permit applications are under preparation: ▪ Baseline environmental studies have been completed for the mining and processing operations. ▪ Impact assessments have commenced, and regulators have been engaged during the study phase. ■ On the basis of the work completed to date Sandfire is confident that identified impacts are able to be managed using standard industry accepted practices.

JORC Code Assessment Criteria	Comment
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 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.* *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	■ Representative core samples from both mineralised and waste zones were selected by Sandfire geologists for testing the specific gravity of lithological units throughout the weathering profile, in the form of dry bulk density (g/cm^3). ■ In addition, selected samples were sent to a third-party laboratory, E-Precision. Dry bulk density data from E-Precision was compared with results collected by Sandfire as a check on the quality of SG's confirming closely the results obtained on site. ■ The average results obtained from the main study are presented below: • 1.72 = Transported and Residual Cover • 1.72 = Upper Saprolite • 1.84 = Lower Saprolite • 2.16 = Sap Rock • 2.59 = Joint Weathered Fresh Rock • 2.79 = Fresh Rock
Classification *The basis for the classification of the Mineral Resources into varying confidence categories.* *Whether appropriate account has been taken of all relevant factors, i.e., relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data.* *Whether the result appropriately reflects the Competent Person(s)' view of the deposit.*	■ The Indicated classification applied by Golder for the majority of the deposit was based on: (i) closely infill drill spacing and reliable delineation of the majority of the gold lodes; (ii) addressing of some QAQC issues previously identified, with a more controlled quality of assays, and; (iii) availability of reasonably accurate density assignments. ■ Peripheral, isolated, less drilled, and less continuous (along the strike direction) wireframe lodes were flagged and assigned with an Inferred classification.
Audits or Reviews *The results of any audits or reviews of Mineral Resource estimates.*	■ The ≥0.3 ppm Au geologically constrained grade shells and the regolith models were externally reviewed by Hillard Geological Consulting Pty Ltd. Adjustments were completed where required as per the recommendations of the review.

JORC Code Assessment Criteria	Comment
	■ No audits or reviews have been undertaken on the Mineral Resource estimate. Only internal peer review was completed by Golder.

JORC Code Assessment Criteria	Comment
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 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.* *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.* ■ *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 that*	■ No studies of relative confidence have been carried out for OH Prospect resource. ■ The accuracy of the estimate is strongly dependent on accuracy of the drill hole data (location and values), accuracy of the interpretation and geological domaining, orientation of anisotropy and grade estimation parameters. There is moderate to high confidence in the location of the drill hole samples. ■ Swath plots show good reproduction of grade trends. ■ There were no major issues or bias detected with sampling and assaying.

JORC Code Assessment Criteria	Comment
could affect the relative accuracy and confidence of the estimate. ■ *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.* ■ *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.* *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.*	