ASX ANNOUNCEMENT
21 September 2021

High gold recoveries also achieved at Falcon and Crow

Highlights

- Average metallurgical recovery of 94.2% was achieved on five separate (two oxide, three primary) composites of mineralisation at Falcon:
  - The average head grade of the Falcon composites was 1.4g/t Au ranging from 0.9g/t Au to 2.1g/t Au and achieved an overall average tail grade of less than 0.1g/t Au.
  - The average recovery from the oxide composites was 96.0% and from the primary composites, 92.9%.
- Average metallurgical recovery of 96.8% was achieved on five separate composites of primary mineralisation at Crow:
  - The average head grade of the Crow composites was 2.0g/t Au ranging from 1.3g/t Au to 3.8g/t Au, with some samples taken from the higher grade McLeod lode at Crow. The overall average tail grade achieved from the 5 composites was less than 0.1g/t Au.
- The tail grades achieved at Falcon and Crow of less than 0.1g/t Au are very encouraging and have resulted from optimisation of the process flowsheet and testwork parameters since testing commenced on Brolga and Aquila samples. Further testwork will be undertaken at head grades that are in line with expected process plant feed grades emanating from the scoping study.
- The flowsheet for the testwork comprises sulphide flotation followed by sulphide oxidation of the flotation concentrate and then cyanide leaching of the pressure oxidation residue. Flotation tailings are treated by cyanide leaching.
- Testwork continues across all deposits at Hemi and will include Diucon and Eagle, where diamond core samples are becoming available with extensional drilling at depth. Mineralisation at Diucon and Eagle is considered to be similar to the previously tested zones at Hemi.

De Grey Managing Director, Glenn Jardine, commented:

"The new metallurgical testwork from the Falcon and Crow deposits at Hemi continues to demonstrate encouraging gold recoveries. These results from Falcon and Crow are consistent with the positive results previously achieved from the Brolga and Aquila zones at Hemi. The consistently low tail grades achieved in testwork at Hemi will be carried through into project studies and evaluations.

Metallurgical testwork continues to provide confidence in the multiple pathways available to achieve high gold recoveries from Hemi and the regional deposits across the Mallina gold project.

Each of the three potential oxidation processes (pressure oxidation, biological oxidation and Albion) have delivered high gold recoveries and will be carried forward into future studies. Further testwork and trade off studies will optimise capital, operating costs, recoveries and operability to enable the Company to select the preferred sulphide oxidation route for the project."

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De Grey Mining Limited (ASX: DEG, "De Grey", "Company") is pleased to report metallurgical testwork results from its Falcon and Crow zones at Hemi. Hemi is located approximately 60km south of Port Hedland in Western Australia. The new testwork follows previously reported positive metallurgy results at Brolga and Aquila zones at Hemi.

Testwork was conducted on five individual composites from Falcon comprising two oxide composites and three primary composites and on five individual primary composites from Crow. The locations of the composite samples from four drill holes at Falcon and five drill holes from Crow are shown in Figure 1. Additional sampling will be conducted across Hemi for ongoing variability and composite testwork.

The Company is utilising multi-element analysis to determine mineralogical variability across and within the main intrusion zones at Hemi. Multi-element analysis indicates that the mineralisation tested at Falcon and Crow is similar to the mineralisation at Brolga and Aquila. Diucon and Eagle zones, which are yet to be tested, also display similar mineralogy to the other zones at Hemi. Metallurgical testing is demonstrating consistently positive recoveries across and within each of the zones tested.

The flowsheet utilised for the testwork on Falcon and Crow was the same as that previously used on composites from Brolga and Aquila which provided successful results. The flowsheet comprises:

- crushing
- grinding
- flotation
  - flotation concentrate to oxidation
  - flotation tails to cyanide leach
- oxidised flotation concentrate residue to cyanide leach

The flowsheet proposed for the processing plant at Hemi is shown in Figure 2.

The Company is continuing its comprehensive metallurgical testwork program across each of the mineralised zones at Hemi as well as the regional deposits from the Withnell and Wingina mining centres.

Falcon composite testwork

The results of testwork conducted on the composite samples from Falcon are summarised in Table 1 using the same presentation format for previously released metallurgical testwork results for Brolga and Aquila. Flotation testwork was conducted at P_{80} grind sizes of 150, 106 and 75 microns. The results in Table 1 represent the average recoveries across the three grind sizes. The average recovery for composite MC7 at Falcon is relatively low compared to the results achieved for the other Falcon composites. The average recovery for MC7 is influenced by the recovery reported of 77% at P_{80} grind size of 150 micron. The recoveries for composite MC7 at P_{80} grind sizes of 106 and 75 microns were respectively 95.9% and 93.8%.

Table 1: Falcon Testwork

Gold Recovery (%)					
Composite	**Flotation**	**POX***	**Flotation Concentrate x POX**	**Flotation Tail x CIL**	**Overall**
MC1 – oxide	90.7	95.1	87.2	9.1	96.3
MC4 – oxide	93.1	98.0	91.3	4.5	95.8
MC5 – primary	92.7	96.8	89.7	5.6	95.3
MC6 – primary	92.1	96.5	88.9	5.7	94.6
MC7 – primary	85.9	97.6	83.8	5.2	88.9

**0.4g/t Au POX residue tail grade*

The average recovery of the oxide composites was 96.0% and of the primary composites, 92.9%.

The average head grade of the Falcon composites was 1.4g/t Au ranging from 0.9g/t Au to 2.1g/t Au with an overall average tail grade achieved of less than 0.1g/t Au.

Further testwork will be undertaken at a variety of head grades in line with expected process plant feed grades emanating from the scoping study.

Crow composite testwork

The results of testwork conducted on the composite samples from Crow are summarised in Table 2 using the same presentation format for previously released metallurgical testwork results for Brolga and Aquila. Flotation testwork was conducted at P_{80} grind sizes of 150, 106 and 75 microns. The results in Table 2 represent the average recoveries across the three grind sizes.

Table 2: Crow Testwork

Gold Recovery (%)					
Composite	**Flotation**	**POX***	**Flotation Concentrate x POX**	**Flotation Tail x CIL**	**Overall**
MC1 – primary	97.9	96.7	94.7	1.6	96.3
MC2 – primary	98.4	98.0	96.4	1.2	97.6
MC3 – primary	97.0	96.7	93.8	2.7	96.5
MC4 – primary	95.9	97.5	93.5	3.4	96.9
MC5 – primary	95.1	97.9	93.1	3.7	96.7

**0.4g/t Au POX residue tail grade*

The average head grade of the Crow composites was 2.0g/t Au ranging from 1.3g/t Au to 3.8g/t Au including samples from the higher grade McLeod lode at Crow. The overall average tail grade achieved was less than 0.10g/t Au. Further testwork will be undertaken at a variety of head grades in line with expected process plant feed grades emanating from the scoping study.

Testwork Underway

Oxidation testwork utilising pressure oxidation (POX), biological oxidation and Albion continues on flotation concentrate samples from the Crow and Falcon testwork. Testwork will be conducted on core samples being collected this month from diamond drilling at Diucon and Eagle.

Testwork over the coming months will expand to include pilot scale testwork to further optimise the bench scale testwork conducted to date.

Figure 1: Location of metallurgical testwork samples at Hemi

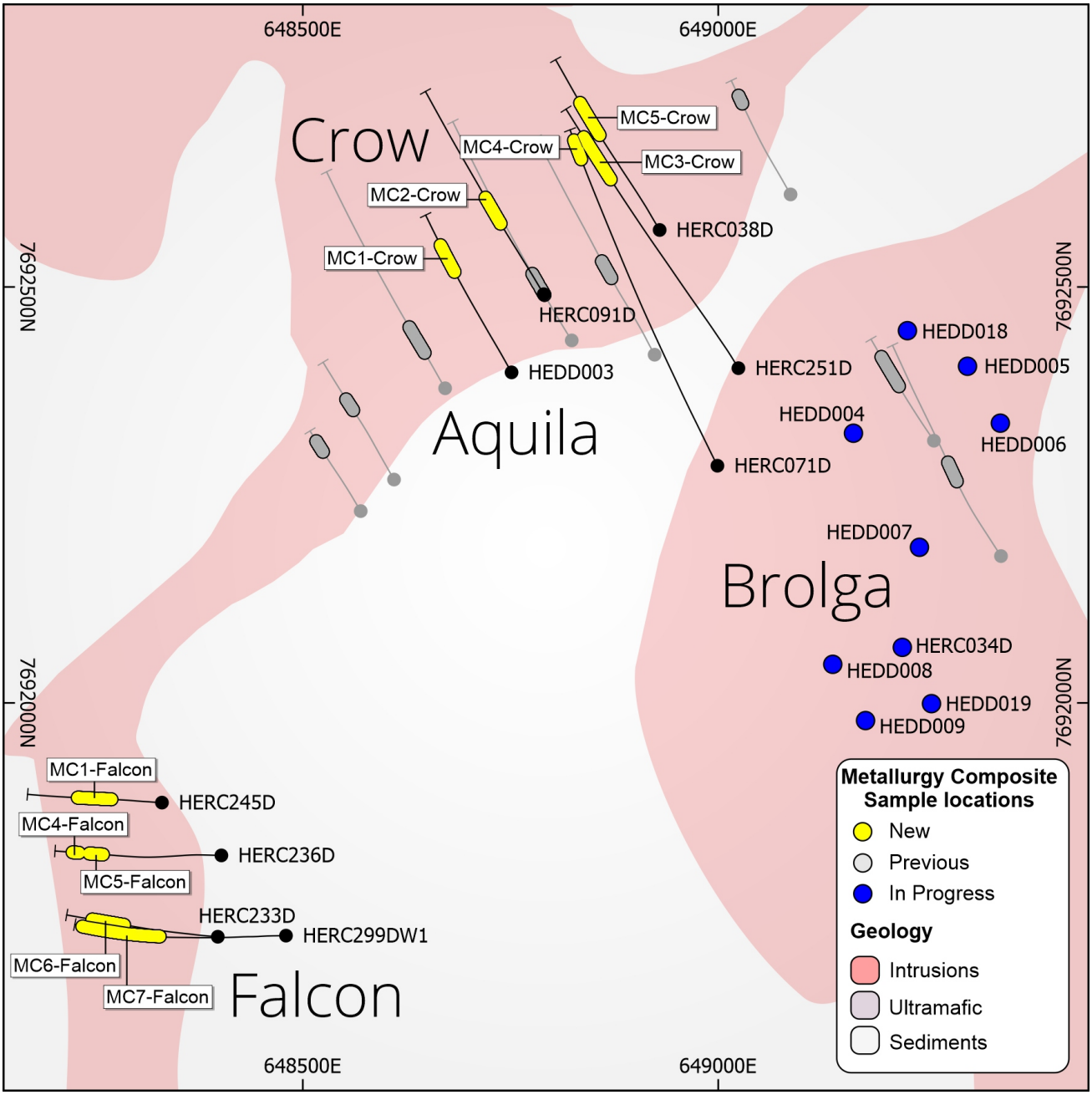
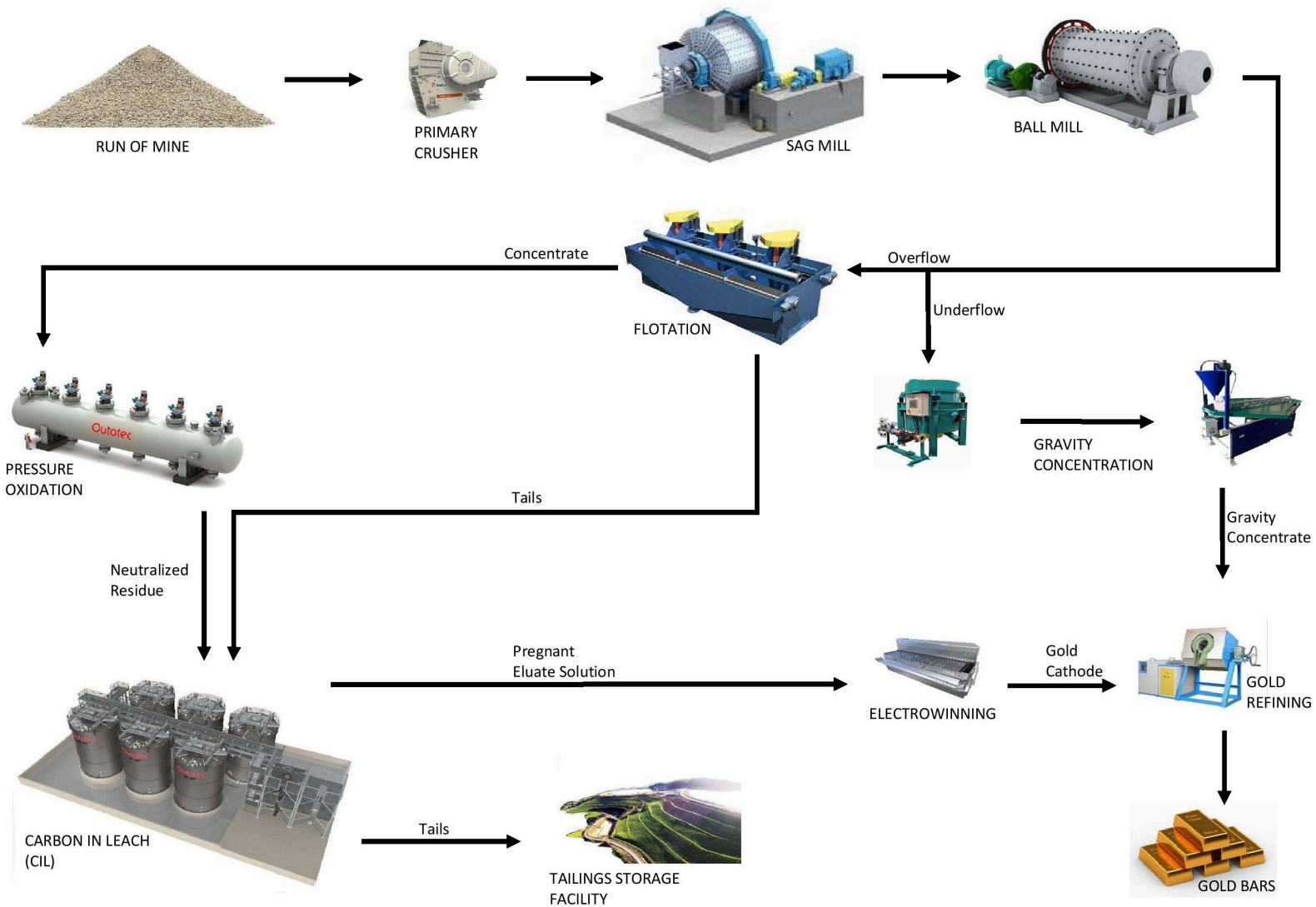


Figure 2: Simplified process flowsheet showing the pressure oxidation (POX) treatment option



This announcement has been authorised for release by the De Grey Board.
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Competent Person's Statement

The information in this announcement was compiled by Mr. Rod Smith, who has been a qualified metallurgist and a member of the Australasian Institute of Mining and Metallurgy for approximately 40 years. Mr. Smith is a full time employee of Sailsbury Enterprises Pty Ltd. Mr. Smith has sufficient experience in the metallurgical testing and assessment of gold deposits and, in particular ,those that display refractory or semi refractory characteristics and consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to exploration results is based on, and fairly represents information and supporting documentation prepared by Mr. Phil Tornatora, a Competent Person who is a member of The Australasian Institute of Mining and Metallurgy. Mr. Tornatora is an employee of De Grey Mining Limited. Mr. Tornatora has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resource and Ore Reserves". Mr. Tornatora consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

Previously released ASX Material References *that relates to Hemi Prospect includes:*

Resources:

- *2020 Mallina Gold Project Resource update, 2 April 2020*
- *6.8Moz Hemi Maiden Mineral Resource drives Mallina Gold Project, 23 June 2021*

Exploration results at Hemi, announced during calendar year 2021:

- *Consistent extensive gold endowment at Falcon, 13 January 2021*
- *Diucon and Eagle: Two new intrusion hosted gold discoveries at Hemi, 29 January 2021*
- *Further metallurgical testwork confirms high gold recoveries, 16 February 2021*
- *Major depth extensions and new footwall lodes emerge at Falcon, 23 February 2021*
- *Crow – Aquila gold system continue to expand, 4 March 2021*
- *Rapid growth at Diucon and Eagle, 9 March 2021*
- *Extensional results show Brolga plunge potential, 16 March 2021*
- *Depth and strike extensions at Falcon, 8 April 2021*
- *Impressive resource definition drilling at Brolga, 13 April 2021*
- *Strong extension to Diucon and Eagle, 15 April 2021*
- *Strong mineralisation intersected at Crow and Aquila, 23 April 2021*
- *Large mineralised system confirmed at Diucon – Eagle, 4 May 2021*
- *High gold recoveries achieved at Aquila, 10 May 2021*
- *Significant extensional and impressive resource definition results at Falcon, 27 May 2021*
- *Encouraging results continue at Diucon-Eagle, 1 June 2021*
- *Diucon - compelling new results, 22 July 2021*
- *New results substantially extend Eagle, 9 August 2021*
- *Diucon – depth, width and strike extensions, 1 September 2021*
- *Eagle extensions to the west and at depth, 9 September 2021*

JORC Code, 2012 Edition – Table 1

Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.* • *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.*	• All drilling and sampling was undertaken in an industry standard manner • Core samples were collected with a diamond rig drilling mainly NQ2 diameter core. • After logging and photographing, NQ2 drill core was cut in half, with one half sent to the laboratory for assay and the other half retained. HQ and PQ core was quartered, with one quarter sent for assay. Holes were sampled over mineralised intervals to geological boundaries on a nominal 1m basis. • Sample weights ranged from 2-4kg • RC holes were sampled on a 1m basis with samples collected from a cone splitter mounted on the drill rig cyclone. 1m sample ranges from a typical 2.5-3.5kg • Aircore samples were collected by spear from 1m sample piles and composited over 4m intervals. Samples for selected holes were collected on a 1m basis by spear from 1m sample piles. Sample weights ranges from around 1-3kg. • The independent laboratory pulverises the entire sample for analysis as described below. • Industry prepared independent standards are inserted approximately 1 in 20 samples. • The independent laboratory then takes the samples which are dried, split, crushed and pulverized prior to analysis as described below. • Sample sizes are considered appropriate for the material sampled. • The samples are considered representative and appropriate for this type of drilling. Diamond core and RC samples are appropriate for use in a resource estimate.
Drilling techniques	• *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).*	• Diamond core diameters are - NQ2 (51mm), HQ3 (61mm), PQ (85mm). • Reverse Circulation (RC) holes were drilled with a 5 1/2-inch bit and face sampling hammer. • Aircore holes were drilled with an 83mm diameter blade bit.

Criteria	JORC Code explanation	Commentary
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.*	• Core recovery is measured for each drilling run by the driller and then checked by the Company geological team during the mark up and logging process. • RC and aircore samples were visually assessed for recovery. • Samples are considered representative with generally good recovery. Deeper RC and aircore holes encountered water, with some intervals having less than optimal recovery and possible contamination. • No sample bias is observed.
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.*	• The entire hole has been geologically logged and core was photographed by Company geologists, with systematic sampling undertaken based on rock type and alteration observed • RC and diamond sample results are appropriate for use in a resource estimation, except where sample recovery is poor. • The aircore results provide a good indication of mineralisation but are not used in resource estimation.
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.* • *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.*	• Core samples were collected with a diamond drill rig drilling NQ2, HQ3 or PQ diameter core. After logging and photographing, NQ2 drill core was cut in half, with one half sent to the laboratory for assay and the other half retained. HQ and PQ core was quartered, with one quarter sent for assay. Holes were sampled over mineralised intervals to geological boundaries on a nominal 1m basis. • RC sampling was carried out by a cone splitter on the rig cyclone and drill cuttings were sampled on a 1m basis in bedrock and 4m composite basis in cover. • Aircore samples were collected by spear from 1m sample piles and composited over 4m intervals. Samples for selected holes were collected on a 1m basis by spear from 1m sample piles. • Industry prepared independent standards are inserted approximately 1 in 20 samples. • Each sample was dried, split, crushed and pulverised. • Sample sizes are considered appropriate for the material sampled. • The samples are considered representative and appropriate for this type of drilling • Core and RC samples are appropriate for use in a resource estimate. • Aircore samples are generally of good quality and appropriate for delineation of geochemical trends but are not generally used in resource estimates.

Criteria	JORC Code explanation	Commentary
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.*	• The samples were submitted to a commercial independent laboratory in Perth, Australia. • For diamond core and RC samples Au was analysed by a 50g charge Fire assay fusion technique with an AAS finish and multi-elements by ICPAES and ICPMS • Aircore samples were analysed for Au using 25g aqua regia extraction with ICPMS finish and multi-elements by ICPAES and ICPMS using aqua regia digestion • The techniques are considered quantitative in nature. • As discussed previously certified reference standards were inserted by the Company and the laboratory also carries out internal standards in individual batches • The standards and duplicates were considered satisfactory
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 (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• Sample results have been merged by the company's database consultants. • Results have been uploaded into the company database, checked and verified. • No adjustments have been made to the assay data. • Results are reported on a length weighted basis.
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.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• Diamond and RC drill hole collar locations are located by DGPS to an accuracy of +/-10cm. • Aircore hole collar locations are located by DGPS to an accuracy of +/-10cm., or by handheld GPS to an accuracy of 3m. • Locations are given in GDA94 zone 50 projection • Diagrams and location table are provided in the report • Topographic control is by detailed airphoto and Differential GPS data.
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.*	• Drill spacing varies from 80m x 40m to 320m x 80m. • All holes have been geologically logged and provide a strong basis for geological control and continuity of mineralisation. • It has not yet been determined if data spacing and distribution of RC and diamond drilling is sufficient to provide support for the results to be used in a resource estimate. • Sample compositing has not been applied except in reporting of drill intercepts, as described in this Table
Orientation of data in relation to	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.*	• The drilling is believed to be approximately perpendicular to the strike of mineralisation where known and therefore the sampling is considered representative

Criteria	JORC Code explanation	Commentary
geological structure	• *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.*	of the mineralised zone. • In some cases, drilling is not at right angles to the dip of mineralised structures and as such true widths are less than downhole widths. This is allowed for when geological interpretations are completed.
Sample security	• *The measures taken to ensure sample security.*	• Samples were collected by company personnel and delivered direct to the laboratory via a transport contractor.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• No audits have been completed. Review of QAQC data has been carried out by database consultants and company geologists.

Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *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 security of the tenure held at the time of reporting along with any known impediments to obtaining a license to operate in the area.*	• Drilling occurs on various tenements held by De Grey Mining Ltd or its 100% owned subsidiaries. • The Hemi Prospect is approximately 60km SSW of Port Hedland.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• The tenements have had various levels of previous surface geochemical sampling and wide spaced aircore and RAB drilling by De Grey Mining. Limited previous RC drilling was carried out at the Scooby Prospect. Airborne aeromagnetics/radiometrics has been flown previously.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The mineralisation style is not well understood to date but is thought to be hydrothermally emplaced gold mineralisation within structures and intrusions. Host rocks comprise igneous rocks intruding Mallina Basin metasediments. Style is similar to some other Western Australian gold deposits.
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding*	• Drill hole location and directional information provide in the report.

Criteria	JORC Code explanation	Commentary
	of the report, the Competent Person should clearly explain why this is the case.	
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.*	• Results are reported to a minimum cutoff grade of 0.5g/t gold with an internal dilution of 4m maximum. • Higher grade intervals included in the above intercepts are reported at a 3g/t Au lower cut with an internal dilution of 2m maximum. • Intercepts are length weighted averaged. • No maximum cuts have been made.
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 (e.g. 'down hole length, true width not known').*	• The drill holes are interpreted to be approximately perpendicular to the strike of mineralisation. • Drilling is not always perpendicular to the dip of mineralisation and true widths are less than downhole widths. Estimates of true widths will only be possible when all results are received, and final geological interpretations have been completed.
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.*	• Plans and sections are provided in the report.
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.*	• All drill collar locations are shown in figures and all significant results are provided in this report. • The report is considered balanced and provided in context.
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.*	• Drilling is currently widely spaced and further details will be reported in future releases when data is available.
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.*	• Follow up aircore drilling will be undertaken to test for strike extensions to mineralisation. • Programs of follow up RC and diamond drilling aimed at extending resources at depth and laterally are underway.