



SANDFIRE RESOURCES NL

A QUALITY COPPER-GOLD COMPANY ASX Code- SFR

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ASX Limited
Level 40, Central Park
152-158 St George's Terrace
Perth WA 6000

JORC 2012 MINERAL RESOURCE PARAMETERS – MONTY PROJECT

Further to the announcement *Sandfire Announce Positive Monty Feasibility Study* on 6 April 2017 we attach additional information with respect to the Monty Project Mineral Resource (as announced on 13 April 2016).

Yours sincerely,

Matt Fitzgerald
Chief Financial Officer
and Company Secretary

Section 1: Sampling Techniques and Data

Criteria	JORC Code Explanation	Commentary
Sampling techniques	<i>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.</i>	<ul style="list-style-type: none"> The Monty Mineral Resource area has been sampled by a combination of diamond (DD), reverse circulation (RC) and aircore (AC) drillholes. The Mineral Resource evaluation considered only DD data from historic and recent drilling of PQ3, HQ, HQ2, HQ3, NQ2 and NQ core sizes for a total 32,653m. None of the historic DD drilling intersected mineralisation. These have only been included in the density evaluation of the deposit in the waste zones. Sampling method used for recent DD drilling is half-core samples of HQ2 and NQ2 core sizes.
	<i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i>	<ul style="list-style-type: none"> Sampling and sample preparation method for recent drilling followed guidelines established by Sandfire as per industry standard.
	<i>Aspects of the determination of mineralisation that are Material to the Public Report.</i>	<ul style="list-style-type: none"> The determination of mineralisation is based on observed amount of sulphides and lithological differences.
	<i>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.</i>	<ul style="list-style-type: none"> DD core samples submitted to the laboratory are stage crushed firstly to -10mm via Jaw Crusher and homogenised through Rotary Splitting Devise (RSD). These are further crushed through Boyd crusher to -4mm to produce less than 2.5kg sub samples which are pulverised using LM2/LM5 mill to 90% passing 75µm. 0.3g and 0.15g charge portions of the sub-sample are collected and used for Mixed 4 Acid Digest (MAD) and MAD Hotbox methods respectively with ICPOES/MS. A 40g portion of the sub-sample is used for Pb collection Fire Assay.
Drilling techniques	<i>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).</i>	<ul style="list-style-type: none"> All DD core used for the Mineral Resource estimation is HQ2 and NQ2 core sizes. 124 drillholes were completed for a total of 32,653m with inclination between -38° to -66° to achieve intersections at the required depth. The minority of the drillholes are almost to the northwest. All recent DD drill collar locations are surveyed using RTK GPS with downhole surveys completed using high speed gyroscopic survey tools at regular intervals. All core where possible is oriented using a Reflex ACT II RD orientation tool with stated accuracy of +/-1% in the range 0 to 88°.
Drill sample recovery	<i>Method of recording and assessing core and chip sample recoveries and results assessed.</i>	<ul style="list-style-type: none"> Diamond core recovery is logged and captured into the database with overall weighted core recoveries greater than 97%.

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	<i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i>	<ul style="list-style-type: none"> Appropriate measures have been taken to maximise sample recovery and to ensure the representative nature of recent samples. This includes diamond core being reconstructed into continuous intervals on angle iron racks for orientation and reconciled against core block markers. Samples are routinely weighed and captured into the central database.
	<i>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</i>	<ul style="list-style-type: none"> No known sample recovery issues have impacted on potential sample bias.
Logging	<i>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.</i>	<ul style="list-style-type: none"> Geological logging is completed for all holes and representative across the orebody. The lithology, alteration and structural characteristics of core are logged directly to a digital format following procedures and using Sandfire NL geologic codes. Data is imported into Sandfire NL's central database after validation in LogChief™.
	<i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i>	<ul style="list-style-type: none"> Logging is both qualitative and quantitative depending on the field being logged. All core is photographed.
	<i>The total length and percentage of the relevant intersections logged.</i>	<ul style="list-style-type: none"> All drillholes are fully logged.
Sub-sampling techniques and sample preparation	<i>If core, whether cut or sawn and whether quarter, half or all core taken.</i>	<ul style="list-style-type: none"> Core orientation is completed where possible and all are marked prior to sampling. Half core samples are produced using an Almonte or a Corewise Pty Ltd Core Saw. All samples are weighed and recorded.
	<i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i>	<ul style="list-style-type: none"> No RC or AC sample is included in this Mineral Resource estimate.
	<i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i>	<ul style="list-style-type: none"> Sample preparation for the initial exploration drilling was completed at Bureau Veritas laboratory in Perth and the majority of the infill Mineral Resource drilling were completed at the onsite laboratory: <ul style="list-style-type: none"> Sample preparation at the onsite laboratory involves weighing and drying the original sample at 80° for up to 24 hours. Samples are then crushed through Jaques crusher to nominal -10mm followed by a second stage crushing through Boyd crusher to nominal -4mm. Samples are split to less than 2kg through linear splitter and excess retained. Sample splits are weighed at a frequency of 1:20 and entered into the job results file. Pulverising is completed using a LM2 mill to 90% passing 75µm. Pulp fines test is completed at a minimum of 1:20. A 1.5kg barren wash is performed after pulverising each mineralised. Pulverised packets are shipped externally to Bureau Veritas laboratory in Perth for analysis. Coarse rejects are retained for QC checks.

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		<ul style="list-style-type: none"> Sample preparation at the Bureau Veritas laboratory in Perth involves weighing and drying the original sample at 80° for up to 24 hours. DD samples are first crushed through a Jaques crusher to nominal -10mm. A second stage crushing is completed via Boyd crusher to a nominal -4mm. Samples are then split to less than 2.5kg through linear splitter and excess retained. Sample splits are weighed at a frequency of 1:20 and entered into the job. Pulverising is completed using a LM5 mill to 90% passing 75µm. Grind size checks are completed at a minimum of 1 per batch. A 1.5kg barren quartz wash is pulverised after mineralised samples. Coarse rejects are stored and returned to Sandfire.
	<i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i>	<ul style="list-style-type: none"> Sandfire has protocols that cover auditing of sample preparation at the laboratories and the collection and assessment of data to ensure accurate steps are used in producing representative samples for the analytical process. Key performance indices include: <ul style="list-style-type: none"> Contamination index of 90% (that is 90% blanks pass); Crush Size index of P95-10mm; Grind Size index of P90-75µm and; Check Samples returning at worst 20% precision at 90% confidence and bias of 5% or better. Weekly onsite laboratory inspections are completed to ensure the laboratory conforms to standards. Additional grind size checks are completed via check laboratories. The analytical laboratories conduct their own internal QC checks to ensure representativeness of the sub-sampling stages.
	<i>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.</i>	<ul style="list-style-type: none"> Sampling is to industry standard. No field duplicates have been taken.
	<i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i>	<ul style="list-style-type: none"> The sample sizes are considered appropriate for the massive sulphide Cu-Ag-Zn mineralisation style.
Quality of assay data and laboratory tests	<i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i>	<ul style="list-style-type: none"> Primary assays are analysed through Bureau Veritas laboratory (Primary laboratory) in Perth using Mixed 4-Acid Digest (MAD) and X-ray fluorescence (XRF) analytical methods: <ul style="list-style-type: none"> Base metal and extra element analysis are via MAD ICPOES/MS using 0.3g charge and 0.15g charge MAD Hotbox methods. The samples are digested and refluxed with a mixture of acids including Hydrofluoric, Nitric, Hydrochloric and Perchloric acids and conducted for multi elements including Cu, Pb, Zn, Ag, As, Fe, S, Sb, Bi, Mo, Re, Mn, Co, Cd, Cr, Ni, Se, Te, Ti, Zr, V, Sn, W and Ba. The MAD Hotbox method is an extended digest method that approaches a total digest for many elements however some refractory minerals are not completely attacked. The elements S, Cu, Zn, Co, Fe, Ca, Mg, Mn, Ni, Cr, Ti, K, Na, V are determined by ICPOES, and Ag, Pb, As, Sb, Bi, Cd, Se, Te, Mo, Re, Zr, Ba, Sn, W are determined by ICPMS. Samples are analysed for Au,

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		<p>Pd and Pt by firing a 40g portion of the sample with ICPMS finish. Lower sample weights are employed where samples have very high S contents.</p> <ul style="list-style-type: none"> ○ The XRF analytical protocol comprises the fusion of 0.4g sample into a glass bead with a 9g flux comprising of 1% Tantalum Oxide; 12.825 Sodium Nitrate and 0.5% Lithium Bromide) – 66:34 LT; LM+1% Ta. XRF is used to analyse for a suite of elements including Cu, Fe, SiO₂, Al, Ca, K, MgO, P, S, Ti, Mn, Co, Zn, As and Pb. XRF results are used for comparative studies only and have not been used for the Mineral Resources estimate. ● Selected coarse rejects are analysed through the primary laboratory to test the precision at the initial sample splitting stage. These follow the same analytical protocol described above. ● Selected pulp rejects submitted are analysed by Intertek Genalysis Laboratory Services (Check Laboratory) as QC checks against the primary Bureau Veritas laboratory results. Analysis include: <ul style="list-style-type: none"> ○ Multi-element 4-Acid Digest with ICPOES/MS instrument finish. In cases where copper concentration exceeds the upper limit of 2% Cu, they are re-assayed by an ore grade ICPOES analytical method. Elements analysed include Ag, Al, As, Ba, Bi, Ca, Cd, Co, Cr, Cs, Cu, Fe, Ga, Ge, Hf, In, K, Li, Mg, Mn, Mo, Na, Nb, Ni, P, Pb, Re, S, Sb, Sc, Se, Si, Sr, Ta, Th, Ti, U, V, W, Y, Zn and Zr; ○ Sodium Peroxide Fusion in zirconia crucible with hydrochloric acid. Elements analysed by ICPOES/MS. This method is useful in identifying elements hosted in the minerals that may be resistant to acid digestions. Elements analysed under this method include Ca, As, Cu, Fe, K, Mg, Mn, Pb, S, Si, Ti and Zn; and ○ 50g Pb collection Fire Assay in new pots with ICPMS finish for Au, Pt and Pd. ● A third laboratory, MinAnalytical Laboratory Services Australia (Umpire Laboratory) analysed selected pulp rejects (Umpire Checks) submissions on a quarterly basis. Analysis include: <ul style="list-style-type: none"> ○ Multi-element 4-Acid Digest with ICPOES/MS instrument finish for Ag, Al, As, Ba, Bi, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Sc, Sr, Te, Ti, V, Zn and Zr; ○ Sodium Peroxide Fusion in zirconia crucible with hydrochloric acid with ICPOES/MS finish. Elements analysed include Cu, Fe, Si, Al, Ca, K, Mg, S, Ti, Mn and Zn; and ○ Pb collection Fire Assay for Au, Pt and Pd using specially formulated flux to accommodate a variety of sample matrices. Some reduction in sample charge sometimes occur due to the fusion of difficult sample matrices. ● All the analytical methods are considered appropriate for the mineralisation style and the intended purposes.

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	<p><i>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.</i></p>	<ul style="list-style-type: none"> No handheld XRF determined element concentrations have been used in the Mineral Resource estimate.
	<p><i>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.</i></p>	<ul style="list-style-type: none"> Sandfire Quality Control (QC) protocol is considered industry standard with Certified Reference Materials (CRM) submitted on regular basis with routine samples. CRMs and blanks are inserted at a minimum of 5% frequency rate. A minimum of 2% of assays are routinely re-submitted as Check Samples and Check Assays through blind submittals to the primary and secondary laboratory respectively. Additionally, Umpire Checks are completed on quarterly basis through a third laboratory. QC data returned is automatically checked against set pass/fail limits within SQL database and are either passed or failed on import on a batch to batch basis. On import a first pass automatic QC report is generated and sent to QAQC Geologists for recommended action. Results of all QC samples for every laboratory batch received are analysed to determine assay accuracy and repeatability. Only data that demonstrate sufficient accuracy and precision of assays are used for Mineral Resource updates. The participating laboratories conduct their own internal quality checks including the use of certified reference materials and/or in house controls, blanks and replicates. These quality results are reported along with sample results in the final reports. Sandfire has not verified the laboratory internal QC data.
Verification of sampling and assaying	<p><i>The verification of significant intersections by either independent or alternative company personnel.</i></p>	<ul style="list-style-type: none"> Significant intersections have been verified by alternative company personnel and the Competent Person.
	<p><i>The use of twinned holes.</i></p>	<ul style="list-style-type: none"> There are no twinned holes drilled for the Mineral Resource.
	<p><i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></p>	<ul style="list-style-type: none"> Drillhole data are captured on field tough book laptops using Logchief™ Software. The software has validation routines and data is then imported into a secure central database.
	<p><i>Discuss any adjustment to assay data.</i></p>	<ul style="list-style-type: none"> The primary data for drilling is always kept and is never replaced by adjusted or interpreted data.
Location of data points	<p><i>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.</i></p>	<ul style="list-style-type: none"> Collar coordinates for all recent drill holes are accurately surveyed using RTK GPS system within +/-50mm accuracy (X,Y,Z). Different downhole survey methods are used for the recent drilling including Eastman Single Shot (ESS) and high speed gyroscopic downhole methods (GYRO). The ESS surveys are completed by the drilling companies. GYRO surveys are completed by Surtron Technologies with different sets of instruments. The GYRO surveys completed by SPT GyroTracer Directional™ 42 mm (north seeker) instrument supercedes all other surveys.

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	<i>Specification of the grid system used.</i>	<ul style="list-style-type: none"> Coordinate and azimuth are reported in MGA 94 Zone 50.
	<i>Quality and adequacy of topographic control.</i>	<ul style="list-style-type: none"> Topographic control was established from aerial photography using a series of surveyed control points.
Data spacing and distribution	<i>Data spacing for reporting of Exploration Results.</i>	<ul style="list-style-type: none"> No Exploration Results are included in this release.
	<i>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.</i>	<ul style="list-style-type: none"> Data spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for JORC 2012 classifications applied.
	<i>Whether sample compositing has been applied.</i>	<ul style="list-style-type: none"> No sample compositing is applied during the sampling process.
Orientation of data in relation to geological structure	<i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i>	<ul style="list-style-type: none"> All drillholes are oriented to achieve high angles of intersection.
	<i>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.</i>	<ul style="list-style-type: none"> No orientation based sampling bias is known at this stage.
Sample security	<i>The measures taken to ensure sample security.</i>	<ul style="list-style-type: none"> Appropriate security measures are taken to dispatch samples to the laboratory. Chain of custody of samples is being managed by Sandfire. Samples are stored onsite and transported to the laboratory by a licenced transport company in sealed bulka bags. The laboratory receipts received samples against the sample dispatch documents and issues a reconciliation report for every sample batch. The laboratory stores the excess material (coarse residue) and return to Sandfire after 30 days unless instructed otherwise. The laboratory returns all pulp samples within 60 days.
Audits or reviews	<i>The results of any audits or reviews of sampling techniques and data.</i>	<ul style="list-style-type: none"> Sandfire sampling techniques and data collection processes are of industry standard and have been subjected to multiple internal and external reviews. Cube Consulting Pty completed a review during 18th - 20th February 2014 and found procedures to be consistent with industry standard and appropriate with minor recommendations for enhancement as part of continuous improvement.

Section 2: Not applicable

Section 3: Estimation and Reporting of Mineral Resources

Criteria	JORC Code Explanation	Commentary
Database integrity	<i>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.</i>	<ul style="list-style-type: none"> Sandfire employs SQL as the central data storage system using Datashed software front end. User access to the database is regulated by specific user permissions. Existing protocols maximise data functionality and quality whilst minimising the likelihood of error introduction at primary data collection points and subsequent database upload, storage and retrieval points. The primary data for historic drilling was collected using LogChief™ software. The historic master database was then supplied to Sandfire in SQL format which was then imported into the Sandfire relational SQL drilling database.
	<i>Data validation procedures used.</i>	<ul style="list-style-type: none"> Data templates with lookup tables and fixed formatting are used for collecting primary data on field Toughbook laptops. The software has validation routines and data is subsequently imported into a secure central database. The SQL server database is configured for optimal validation through constraints, library tables, triggers and stored procedures. Data that fails these rules on import is rejected or quarantined until it is corrected. Database is centrally managed by a Database Manager who is responsible for all aspects of data entry, validation, development, quality control and specialist queries. There is a standard suite of vigorous validation checks for all data. The supplied historic database was subjected to standard validation checks using SQL and DataShed relational database.
Site Visits	<i>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</i>	<ul style="list-style-type: none"> The Competent Person for this Mineral Resource update is a full time employee of Sandfire Resources NL and undertakes regular site visits.
	<i>If no site visits have been undertaken indicate why this is the case.</i>	<ul style="list-style-type: none"> Site visits are undertaken.
Geological interpretation	<i>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</i>	<ul style="list-style-type: none"> The interpretation is based only on recent DD drilling on a nominal 40m x 30m spacing outlining Cu-Au-Zn mineralisation associated with massive sulphide and halo-style mineralisation and is based on a fully validated drill data. Where massive sulphide domain wireframes terminate between drillholes they do not extend more than half way between the mineralised and barren intercepts thus preventing excessive extrapolated of mineralisation. This interpretation is considered geologically and volumetrically realistic and is considered fit for purpose for estimating Mineral Resources in the Indicated/Inferred categories
	<i>Nature of the data used and of any assumptions made.</i>	<ul style="list-style-type: none"> All geological modelling was undertaken using Leapfrog Mining v2.6. In order to model the massive sulphide lenses, points were snapped to contacts between massive sulphide and the surrounding host sequence rocks. Isotropic, implicit interpolation was used to construct surfaces for these contacts. Where required,

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		<p>polylines were used to guide interpolation in a geologically realistic manner and to ensure that the upper and lower contacts converged, and crossed, at drill-indicated terminations of massive sulphide units. The output surfaces included drillhole contact points, such that the surfaces honored all drillhole data. Domaining between upper and lower contacts was undertaken to create solids between contact surfaces. A similar process was used to create the internal halo solids and external halo solids.</p> <ul style="list-style-type: none"> Seven (7) 3D wireframes solids have been modelled that encapsulate the massive sulphide mineralisation. Some of these solids contain internal zones of halo mineralisation. Five (5) internal halo solids have been modelled to constrain these zones.
	<p><i>The effect, if any, of alternative interpretations on Mineral Resource estimation.</i></p>	<ul style="list-style-type: none"> The geological interpretation of the mineralised boundaries are considered robust and alternative interpretations do not have the potential to impact significantly on the Mineral Resources at the time. The interpretation has undergone site and corporate peer reviews ensuring that the geological interpretation is robust.
	<p><i>The use of geology in guiding and controlling Mineral Resource estimation.</i></p>	<ul style="list-style-type: none"> The interpreted wireframe models are used as hard boundaries for the Mineral Resource estimate.
	<p><i>The factors affecting continuity both of grade and geology.</i></p>	<ul style="list-style-type: none"> Mineralisation at Monty is contained within a host sequence of sediments (siltstone, sandstone, conglomerate) and basalts in multiple sulphide lenses, at different stratigraphic levels, surrounded by disseminated and/or blebby sulphide (halo mineralisation) in chlorite-altered host sequence litho-types. Based on similarities with the DeGrussa deposit, the Monty deposit is interpreted to be a Volcanogenic Massive Sulphide (VMS) deposit that formed during sub-sea floor replacement of host sequence stratigraphy by mineralising hydrothermal fluids. The host sequence is bounded both above, and below, by dolerite sills. These dolerite sills are interpreted to post-date mineralisation. The massive sulphide mineralisation typically comprises chalcopyrite ± pyrite ± pyrite ± pyrrhotite ± sphalerite. In isolated areas within the lowermost massive sulphide lense, bornite is present which have been constrained by incorporating continuity characteristics into two sub-domains. These have not been extended beyond 20m (½ drill-spacing) beyond drill intersections. The regolith profile at Monty comprises transported cover, saprolite (>25% weathering) followed by saprock (<25% weathering). Mineralisation at Monty does not extend to surface, terminating at a depth of approximately 72m from surface. At this depth the regolith comprises saprock (<25% weathering) with weathering affecting the rock mass. This interval only extends for an interval of approximately 10m (to 82m below surface).
<p>Dimensions</p>	<p><i>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.</i></p>	<ul style="list-style-type: none"> All known Monty deposit mineralisation extends from 743,400mE to 743,800mE, 7,170,800mN to 7,171,300mN and 600m below surface. The Monty massive sulphide mineralisation generally strikes northeast and steeply dips to the northwest between 70-85°.

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Estimation and modelling techniques	<i>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.</i>	<ul style="list-style-type: none"> The Mineral Resource estimation was completed within Datamine™ Studio 3 Resource Modelling software. The Mineral Resource database was uniquely flagged with mineralised zone codes as defined by the wireframe boundaries and then composited into 1m density weighted lengths. The composite drillhole data was used for statistical and geostatistical analysis. Histograms, log-probability plots and mean variance plots were considered in determining the appropriate cut-offs for each mineralised zone. The points of inflexion in the upper tail of the distribution on the log-probability plots as well as their spatial locations were examined to help identify outliers and decide on the treatments applied. All grade values greater than the cut-off grade are set to the cut-off value (capped). Deterministic high-grade wireframes to restrict the influence of the high-grade bornite intercepts within the massive sulphide were modelled by factoring in the continuity characteristics of the bornite mineralisation using an Indicator Probability approach. Variography studies included analysing series of fans in three principal directions of horizontal, across-strike vertical and dip planes. The selected strike, plunge and dip directions were used to locate the three directions for which experimental variogram models were fitted. The nugget variance was modelled first by the use of down-hole variograms based on 1m lag, reflecting the downhole composite spacing. Variograms were estimated by fitting spherical models in the three principal directions using the nugget variance modelled. Quantitative Kriging Neighbourhood Analysis (QKNA) using goodness of fit statistics was completed to optimise estimation parameters. Elements estimated include Cu, Au, Ag, Fe, S, Pb and Zn. Grade estimation of the Monty deposit was completed using the geostatistical method of Ordinary Kriging (OK).
	<i>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</i>	<ul style="list-style-type: none"> This a maiden Mineral Resource estimate.
	<i>The assumptions made regarding recovery of by-products.</i>	<ul style="list-style-type: none"> No assumptions are made regarding recovery of by-products during the Mineral Resource estimation.
	<i>Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).</i>	<ul style="list-style-type: none"> Estimates includes deleterious or penalty elements Pb, Bi, Zn, As, and MgO.
	<i>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</i>	<ul style="list-style-type: none"> The estimated grades are based on interpolation into three dimensional parent blocks of sizes X=20m by Y=10m by Z=10m sub-blocked into X=1m by Y=1m by Z=1m sizes. Sub-blocks are assigned parent block estimates. The block size is the optimum based on QKNA and takes into consideration the mineralisation drill hole intercept spacing that are within 40m. Given that the orientation of mineralisation varies within the Monty deposit and to

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		<p>preserve the orientation of mineralisation, “Dynamic Anisotropy” option of Datamine Studio3™ was used. This option, allows orienting the search volume precisely such that it follows the trend of the mineralisation.</p> <ul style="list-style-type: none"> • Directional ranges are determined from variogram modelling and are used to constrain the search distances. The search neighborhood strategy implemented involves the use of two estimation search runs with initial short-search set to approximately 75% of the variogram range of the element being estimated (within 40m, in the majority of cases) and extending the sample influence in later runs. To estimate a block, a minimum of 3 and maximum 15 composites are used. • All blocks are interpolated after the second pass. Searches have not exceeded 1½ of the range of continuity. • High grade restriction of the bornite intercept within the massive sulphide zone was achieved by the use of a tightly constrained wireframe that was modelled to respect the continuity characteristics of the bornite mineralisation.
	<i>Any assumptions behind modelling of selective mining units.</i>	<ul style="list-style-type: none"> • No selective mining units have been assumed in this current Mineral Resource.
	<i>Any assumptions about correlation between variables.</i>	<ul style="list-style-type: none"> • Within the massive sulphides there is a very good and consistent correlation between Cu, Fe, S and density which has been analysed separately for the top and bottom zones using multiple regression to fit the density, Cu, and S relationship. • Due to multicollinearity issues, Fe was removed from the regression models. • The regressed formula was then applied to the block model estimated S and Cu values to assign densities for each block. • The bornite sub-domains are assigned their average Archimedean measured core density values due to limited data to fit a regression.
	<i>Description of how the geological interpretation was used to control the resource estimates.</i>	<ul style="list-style-type: none"> • The block model is assigned unique mineralisation zone codes that correspond with the interpreted geological zones as defined by wireframes. This enabled each mineralisation zone to be estimated separately using only corresponding composite data.
	<i>Discussion of basis for using or not using grade cutting or capping.</i>	<ul style="list-style-type: none"> • Statistical analysis in conjunction with the spatial configuration of samples were used to assist in identifying outliers and decide on the treatments applied. High-grade restrictions are either as a top-cut or deterministic high grade spatial restriction (bornite sub-domains) to minimise the smoothing of very high-grades in areas not supported by data.
	<i>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</i>	<ul style="list-style-type: none"> • Standard model validation is completed using visual and numerical methods: <ul style="list-style-type: none"> ○ Checks to ensure the block model is appropriately flagged with domain codes as defined by wireframes; ○ Assessment of wireframe - block model variance for all domains; ○ Interrogation of block model on screen comparing individual block model grades with input data values; ○ Assessment of block model estimate global mean variances to the declustered input data composite mean grades for each mineralised zone; ○ Assessment of the estimation kriging variance and theoretical slope of regression for individual model blocks within each geological domain to

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		<ul style="list-style-type: none"> ○ monitor the degree of smoothing and to control conditional bias; ○ Assessment of swath plots of the estimated block grades and composite mean grades by eastings, northings and elevations; and ○ Peer reviews. ● This is a maiden Mineral Resource estimate; there is no reconciliation data available for use as a check on the estimates.
Moisture	<i>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</i>	<ul style="list-style-type: none"> ● Tonnages are estimated on a dry basis.
Cut-off parameters	<i>The basis of the adopted cut-off grade(s) or quality parameters applied.</i>	<ul style="list-style-type: none"> ● Based upon data review a notional lower cut-off of 1% Copper appear to be a natural grade boundary between ore and trace assay values.
Mining factors or assumptions	<i>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.</i>	<ul style="list-style-type: none"> ● It is anticipated that the Monty Mineral Resource will be accessed through underground mining using open stoping and fill methods.
Metallurgical factors or assumptions	<i>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.</i>	<ul style="list-style-type: none"> ● The current Mineral Resource does not include any metallurgical assumptions. ● It is envisaged that the DeGrussa processing plant will be used to treat the ore and preliminary test work reflecting the DeGrussa flowsheet has been completed by ALS Metallurgy on 4 discrete areas identified to date (upper portion, wide high grade zones, narrow very high grade zones and halo style zones). All testing to date has validated that the DeGrussa plant is a viable option for the treatment of the Monty ore with high recoveries expected.
Environmental factors or assumptions	<i>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.</i>	<ul style="list-style-type: none"> ● No environmental assumptions have been made at this stage.
Bulk density	<i>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</i>	<ul style="list-style-type: none"> ● Water immersion is the current methodology used in the measurement of densities from DD core. Regular and systematic density measurements are taken on representative number of diamond drill core according to a formal protocol. This data is included in the database.

Criteria	JORC Code Explanation	Commentary
	<p><i>representativeness of the samples.</i></p>	<ul style="list-style-type: none"> • Overall, a total of 6,307 Archimedian density measurements have been completed within the Mineral Resource area within the sulphide and the non-sulphide bearing rocks for the various weathering profiles. The breakdown is as follows: <ul style="list-style-type: none"> ○ A total of 5,993 measurements completed by Sandfire with readings from 1.1 g/cm³ to 4.7 g/cm³ averaging at 2.9 g/cm³ and ○ A total of 314 density determinations completed historically by Talisman Resources at Monty. These measurements were undertaken in non-sulphide bearing zones with the majority in weathered rock. Measurements range from 1.1 g/cm³ to 3.1 g/cm³ averaging at 1.8 g/cm³. • Within the halo and massive sulphides density varies from 2.4 g/cm³ to 4.7 g/cm³, with an average density reading of 3.6 g/cm³. • Within the non-sulphide bearing waste rocks density varies from 1.1 g/cm³ to 2.8 g/cm³, with an average density reading of 2.6 g/cm³. Following the evaluation of waste rock density data, the following average densities are assigned: <ul style="list-style-type: none"> ○ An average density of 1.7 g/cm³ assigned to the saprolite waste rock; and ○ An average of 2.8 g/cm³ assigned to fresh waste rock. • To test the methodology and accuracy of the density measurements, regular samples totalling about 540 samples were submitted to an independent laboratory for measurements. The results of the external checks are very consistent with the Sandfire measurements.
	<p><i>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.</i></p>	<ul style="list-style-type: none"> • The density determinations have accounted for void spaces, moisture and differences between alteration zones.
	<p><i>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</i></p>	<ul style="list-style-type: none"> • The regolith profile at Monty comprises transported cover, saprolite (>25% weathering) flowed by saprock (<25% weathering). At approximately 72m below surface, the regolith comprises saprock with weathering affecting the rock mass. This interval only extends for an interval of approximately 10m (to approximately 82m below surface) below which the nature of the saprock changes with weathering only occurring adjacent to fractures but otherwise not affecting the rock mass. Fracture related weathering of the Monty mineralisation extends to depths of up to 185m from surface. • Modelling of top of fresh rock and the base at which oxidation occurs along fractures accounted for these variations and are used in the Mineral Resource evaluation process.

Criteria	JORC Code Explanation	Commentary
Classification	<i>The basis for the classification of the Mineral Resources into varying confidence categories.</i>	<ul style="list-style-type: none"> The current Mineral Resource has been classified into Indicated and Inferred categories following the guidelines of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code 2012). The classification is based on drillhole orebody intercept spacing, geological confidence, grade continuity and estimation quality. Indicated Mineral Resources are within areas with drill hole intercept spacing of within 40m by 30m.
	<i>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).</i>	<ul style="list-style-type: none"> The Mineral Resource classification has appropriately taken into account data spacing, distribution, reliability, quality and quantity of input data as well as the confidence in predicting grade and geological continuity.
	<i>Whether the result appropriately reflects the Competent Person's view of the deposit.</i>	<ul style="list-style-type: none"> The Mineral Resource reflects the Competent Person's view of the deposit.
Audits or reviews	<i>The results of any audits or reviews of Mineral Resource estimates.</i>	<ul style="list-style-type: none"> The Sandfire Monty Database has been subject to an independent data and assay audit. Maxwell Geoservices completed an audit in January 2016 and found the SQL database to be of industry standard, with minor issues noted such as unmatched data, missing data and noted minor schema limitations. The process for geological modelling, estimation and reporting of Mineral Resources is industry standard and has been subject to an independent external review. Cube Consulting Pty undertook a review of the estimation in April 2016 and found the process to be of industry standard with no fatal issues noted.
Discussion of relative accuracy/ confidence	<i>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.</i>	<ul style="list-style-type: none"> The Mineral Resource has been reported in accordance with the guidelines of the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves and the relative accuracy is reflected in the categorisation into Indicated and Inferred.
	<i>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.</i>	<ul style="list-style-type: none"> The statements relates to global estimates of tonnes and grade.
	<i>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</i>	<ul style="list-style-type: none"> At this stage there is no production data to assess the relative accuracy and confidence of the Mineral Resource. The precision of the estimate is globally acceptable assuming that more detailed grade control drilling will be undertaken at the production stage.

Competent Person's Statement – Mineral Resources

The information in this report that relates to Mineral Resources is based on information compiled by Mr. Ekow Taylor who is a Member of The Australasian Institute of Mining and Metallurgy. Mr. Taylor is a permanent employee of Sandfire Resources and has sufficient experience that is relevant to the style of mineralization 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 Taylor 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 statement contain or comprise certain forward-looking statements regarding Sandfire's Mineral Resources and Reserves, exploration operations, 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. 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 this statement 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 this statement 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.

Exploration and Resource Targets

Any discussion in relation to the potential quantity and grade of Exploration Targets is only conceptual in nature. While Sandfire is confident that it will report additional JORC compliant resources for the DeGrussa Project, there has been insufficient exploration to define mineral resources in addition to the current JORC compliant Mineral Resource inventory and it is uncertain if further exploration will result in the determination of additional JORC compliant Mineral Resources.