# JORC Code, 2012 Edition – Table 1 report Kefi Minerals - Tulu Kapi February 2014

#### **Section 1 Sampling Techniques and Data**

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity</li> </ul>	<ul> <li>For diamond drill core, after delivery to a dedicated core yard, core was photographed and sample intervals were marked by a geologist and the core was split using Clipper diamond core saws. Core recovery and RQD were measured at the diamond drill site right out of the inner tube using trained technicians. Sampling of diamond core followed a well documented protocol and quality is considered to be of good industry standard.</li> <li>RC drill samples were bagged and riffle split at the drillhole if they were dry and a sample of approximately 3kg was kept for sample preparation and 3kg was kept for duplicate storage. Sampling of dry RC chips followed a well documented protocol and quality was considered to be of good industry standard.</li> <li>Wet RC samples were taken in their entirety to the sample storage facility and riffle split with a clean water wash between splits. Splitting of wet RC samples is not good procedure although care was taken to ensure riffle</li> </ul>
	and the appropriate calibration of any measurement tools or systems used.	<ul> <li>splitters were kept clean and sample quality was considered to be acceptable.</li> <li>appropriate care was taken by supervising geologists at the drillhole</li> </ul>
	• Aspects of the determination of mineralisation that are Material to the Public Report.	and at the sample storage facility to process both diamond core and RC chip samples following well documented procedure. Lithologies were respected as boundaries for sampling where a mineralized lithological unit was greater than 0.3 m drilled thickness.
	<ul> <li>In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required,</li> </ul>	<ul> <li>For diamond drill core and RC drill chips logging was carried out to determine mineralization intervals based on alteration type, presence of quartz veining and sulphide occurrence.</li> </ul>
	such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg	<ul> <li>both diamond drill core and RC chips samples were sample prepped and assayed via an industry standard procedure. Sample prep was</li> </ul>

Criteria	JORC Code explanation	Commentary
	submarine nodules) may warrant disclosure of detailed information.	carried out onsite and the resulting 100g pulp assayed by fire assay using a 50g charge and AAS finish.
Drilling techniques	• Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).	<ul> <li>Diamond drilling was carried out with typically 3 core diameters, PQ (85mm) in saprolite and through the saprolite to fresh transitional boundary, HQ (63mm) to a depth of 100 m and NQ (47mm) to depths beyond 100m. Downhole survey was carried out via an EZTrack survey system by Reflex with an initial survey carried out at 25m and then a survey carried out at every 50m from then on. Non vertical diamond drill holes following TKBH_080 were oriented using Reflex ACT II and ACT III orientation instruments. Three consecutive runs which lined up within 10 degrees of one another were considered to be of high confidence orientation.</li> <li>Reverse circulation drilling was carried out with a face sampling hammer and 8 inch bit in the saprolite layer reducing to a 3 ½ inch bit in the fresh material.</li> </ul>
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> </ul>	<ul> <li>Diamond drill core sample lengths were measured and lengths recoded after logging in order to be able to determine core recovery. Core recovery averaged 95% through all rock types and types of ground. Due to good recoveries, triple tubing was not used.</li> <li>RC drill chip samples of 1m were weighed and weight recorded to determine weight was within a satisfactory range compared to the expected 25kg.</li> </ul>
	<ul> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> </ul>	• recording of core sample lengths against drill meters and RC drill chip samples against expected weight was well documented and records available in a verified database. Sample recovery has never been a problem in Tulu Kapi due to the competent granitoid ground and relatively thin overburden and completely oxidized horizon. For diamond drilling, PQ diameter was used for collaring holes to maximize recovery in the clay rich ground. Also, water feed was turned down and down force increased to prevent material from washing out of the inner tube.

Criteria	JORC Code explanation	Commentary
	• Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	• Drilling of RC samples below the water table showed a variability in sample weights for wet samples. Previous statistical studies suggested wet RC samples tended to underestimate gold grade compared to diamond drill samples below the water table.
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.	• Diamond drill core was logged for lithology, structure, texture, mineralization, alteration type, color and weathering intensity and sulphide occurrence. Core was photographed in the trays at the sample storage facility. RMR and Q systems were logged for the geotechnical programs for all diamond drilling from TKBH_080, excluding the 20 by 20 m infill program.
	<ul> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul> <li>RC drill chips were logged for lithology, alteration and mineralization type and a small sample kept from each meter in plastic chip trays as a logging record.</li> <li>All sample intervals returned from drilling activities were logged</li> </ul>
Sub-sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> </ul>	<ul> <li>core was sawn with Clipper core saws and half taken for sample prep and assay.</li> <li>RC chips were riffle sampled at the drill site if dry and riffle sampled at the sample storage facility if wet.</li> <li>sample preparation was carried out onsite by trained staff following a well documented industry standard procedure and with the assistance of a professional laboratory manager to train and monitor performance.</li> </ul>
	<ul> <li>Quality control procedures adopted for all sub-sampling stages to maximize representivity of samples.</li> </ul>	• A total of four QAQC samples were inserted into the sample stream for every 20 samples processed and included a blank (local Ambo sandstone), standard, crush duplicate and pulp duplicate. A blank sample was also processed after every sample through the jaw crusher and pulveriser in order to prevent contamination.
	<ul> <li>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.</li> </ul>	• All diamond half core has been kept stored in a secure sample storage facility as has a 3kg duplicate from RC drill meters. Duplicate samples have not been processed but are available for processing.

Criteria	JORC Code explanation	Commentary
	<ul> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul> <li>sample sizes are industry standard for the type of rock and mineralization being sampled.</li> </ul>
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>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.</li> </ul>	<ul> <li>Assaying and laboratory procedures are industry standard, well documented and supervised and the technique is considered total</li> <li>Analysis of assays was carried out at a certified laboratory, ALS Laboratory Group, Johannesburg, South Africa using a certified method (Au-AA26) with certified instruments.</li> </ul>
	<ul> <li>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> </ul>	• ALS Laboratories Group internal checks as per their standard operating procedure were used for laboratory testwork. This results in the equivalent of 10% of the total samples received being independently re-assayed as QAQC samples. In 2012, 5% of mineralized samples were re assayed by SGS Perth and no material difference was found between the original ALS assays and the SGS umpire results.
Verification of sampling and assaying	• The verification of significant intersections by either independent or alternative company personnel.	<ul> <li>Significant intercepts were reviewed and verified by an independent consultancy, Wardell Armstrong, associated resource statement for a definitive feasibility study carried out in November 2012.</li> <li>Kefi Minerals Plc senior geological staff have also carried out in intensive 6 month review of significant intersections and associated data.</li> </ul>
	The use of twinned holes.	Twinned holes have not been used on significant intercepts.
	• Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	<ul> <li>Up to 2012, primary data gathered in the field were recorded on paper logging sheets which is then transferred to an electronic database via a trained database manager. Following 2012, electronic logging was carried out for geological and geotechnical logging.</li> <li>Assay results returned to the project from ALS were received in Excel format and copied in an in-house designed Access database. The</li> </ul>

Criteria	JORC Code explanation	Commentary
		database is constructed so that automatic checks on the input data are carried out with both crushed and pulp duplicates plotted against the primary sample value. Duplicate values greater than 2 standard deviations (STDEV) are considered an error by the project and batches with error duplicate values are highlighted and the analytical laboratory requested to repeat the assay. Standard and blank sample values are plotted in a similar manner and any values with greater than 2 STDEV are treated as an error and the analytical laboratory is requested to perform a repeat assay.
	Discuss any adjustment to assay data.	No adjustment to assay data has been carried out.
Location of data points	<ul> <li>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.</li> <li>Specification of the grid system used.</li> </ul>	<ul> <li>Drill hole collar co-ordinates are initially located using GPS. When drilling has been completed, the collar location is re-surveyed using a Total Station by a geological survey team from Addis Ababa.</li> </ul>
	• Specification of the grid system used.	WGS84–Zone 36N
	Quality and adequacy of topographic control.	<ul> <li>In2012, Light Detecting and Ranging ("LiDAR") survey of the Tulu Kapi area was commissioned and new color orthographic photos, covering some 52 km<sup>2</sup> (5,200ha), as this provides complete and accurate coverage of the project, given the remote and rugged terrain in the area. This survey was completed by Fugro MAPS of United Arab Emirates (Fugro).</li> </ul>
Data spacing and distribution	Data spacing for reporting of Exploration Results.	<ul> <li>40 x 40m to 40 x 20m through the central part of the deposit to 40 x 80m at the peripheries.</li> </ul>
	<ul> <li>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.</li> </ul>	<ul> <li>Variography was carried out to derive the spatial continuity of mineralization along the principal main anisotropic orientations. The principal direction of continuity was selected based on the 2012 definitive feasibility study work and the currently interpreted structural model for Tula Kapi and modeled with three-structure spherical models. The three orthogonal orientations represented the</li> </ul>

Criteria	JORC Code explanation	Commentary
		predominant along-strike, down-dip and cross-strike directions. These variograms indicated ranges of approximately 43 m in the along-strike direction (010°/00°), 30 m in the down-dip direction (280°/30°) and 5 m in the cross-strike (100°/60°) direction. These ranges indicate the data spacing and distribution of samples are appropriate for Mineral Resource estimation. From surface mapping, on strike continuity is on the 100m scale.
	• Whether sample compositing has been applied.	• A 1.0 m sample composite length downhole has been applied after histogram analysis of sample length indicates the predominant sample length to be 1.0m.
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.	<ul> <li>Drilling has generally been carried out on a 40 m grid orientated at an azimuth of 050° or vertically. The mineralization is interpreted to strike NNE-SSW and dip 30° to the northwest, the drilling orientation is not ideal for sampling the principal mineralization orientation however sufficient data density exists and sufficient work has been carried out via drillhole logging, detailed mapping and statistical analysis that the sampling is considered to be unbiased.</li> </ul>
	<ul> <li>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.</li> </ul>	<ul> <li>sampling is not considered to be biased.</li> </ul>
Sample security	The measures taken to ensure sample security.	<ul> <li>Previous quality assurance protocol documentation and independent QAQC audits undertaken by Venmyn Consultants (2009/10) indicate that all chain of custody procedures have been in place and followed from early on in the exploration process. Custody procedures included and cover the signing-off of sheets for the transfer of core from rig to core shed, core sampling to sample preparation and prepared samples from sample preparation facilities by air freight to ALS in Johannesburg and receipt of samples at the analytical laboratory.</li> </ul>
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	• A significant amount of independent auditing and review of sampling techniques and data have been carried out by a variety of consultants since 2009, most notably by Wardell Armstrong for the 2012 definitive feasibility study who considered no significant issues regarding the

### JORC Code explanation

## 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	<ul> <li>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.</li> <li>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.</li> </ul>	<ul> <li>KEFI Minerals Plc acquired 75% of the issued share capital of Nyota Minerals (Ethiopia) Limited (a wholly owned subsidiary of Nyota Minerals Limited ("Nyota") and the holder of the Tulu Kapi exploration licence and surrounding exploration licences. KEFI Minerals will fund 100% of exploration expenditure until an updated JORC Resource is published, upon which Nyota will contribute 25%.</li> <li>Under the terms of the Mining Proclamation precious metal production will be subject to a 7% Government Royalty and the Government has a right for 5% "free carry" equity in future operations.</li> <li>The Tulu Kapi Gold Project is located in Western Ethiopia, in the Western Wellega Zone of the Oromia Region approximately 360 km due west of the capital, Addis Ababa. The journey by road from Addis Ababa to Tulu Kapi covers a distance of about 520 km and takes approximately 12 hours. As an alternative a chartered aircraft from Addis Ababa to an airstrip near Ayra can be used, followed by road travel for 30 km on a mix of gravel and dirt roads. This takes about three hours in total. The project area is about 9 km south of the village of Keley, which is on the main Gimbi to Dembi Dollo road. Regional population centres within easy road travel distance of the license areas include Ayra, a small town about 20 km to the west, Gimbi, an important market town about 32 km to the east north east. The Sudanese border is approximately 150 km due west of the project area</li> </ul>
		<ul> <li>The Tulu Kapi license was originally granted to Golden Prospect Mining Company Limited ("GPMC") in May 2005 as the Tulu Kapi and Ankore Exploration License, number 127-128/97, covering an area of</li> </ul>

Criteria JO

#### Commentary

• integrity of the database and that it was fit for purpose.

Criteria	JORC Code explanation	Commentary
		<ul> <li>20.32 km2. GPMC was acquired by Nyota and became a wholly owned subsidiary in October 2009 and subsequently changed its name to Nyota Minerals (Ethiopia) Limited ("Nyota (Ethiopia)"). Since its grant in 2005 portions of the license area have been progressively relinquished as required under Ethiopian mining law, such that it now consists of an irregular polygonal shape having a total area of 8.44 km2.</li> <li>In addition to the Tulu Kapi license, the Tulu Kapi project and the conversion application include the adjacent Ankore license areas, for a total area covered, of 11.33 km<sup>2</sup></li> </ul>
		<ul> <li>The Tulu Kapi licence is currently an exploration licence. An application to convert it to a Large Scale Mining Licence was made on 11 May 2011. Under Ethiopian law an exploration licence gives the holder the exclusive right to explore for minerals within the area specified in the licence for an initial period of three years. The licence may be renewed twice for additional terms of one year each. The licencing authority may further allow extension or renewal to be made on each anniversary where the licensee proves the necessity to undertake exploration activity beyond the initial work programme, provided such period does not exceed a further five years in total.</li> <li>The Tulu Kapi licence was in its third renewal period (issued 25 May 2010 for a period of one year) when Nyota applied for a mining licence on 11 May 2011. Nyota has received assurances from the Ministry of Mines that title to the Tulu Kapi licence endures while the mining licence application is processed.</li> </ul>
		The Tulu Kapi licence was renewed by the Ministry of Mines to 27th May 2014 and can be renewed for a further year to 27th May 2015 upon successful submission of a work programme.
Exploration done by oth parties	Acknowledgment and appraisal of exploration by other parties. er	<ul> <li>The earliest formal exploration of the Tulu Kapi area took place in the 1970s under the guidance of the UNDP, which undertook reconnaissance exploration over a wide area of western Ethiopia</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul> <li>between 1969 and 1972. The work was largely reconnaissance level and regionally biased and included stream sediment and soil geochemical sampling, programmes, geophysical surveys, detailed geological mapping, and diamond drilling.</li> <li>Tan Range Exploration Company (TREC), a Canadian registered company, acquired an exploration licence over an area that incorporated the current Tulu Kapi licence and undertook further exploration between 1996 and 1998, including detailed geochemical soil sampling, mobile metal ion (MMI) soil geochemistry, and an induced polarisation (IP) survey. Five diamond drill holes totalling 366 m were drilled in a 200 m by 200 m area immediately north of the old SAPIE mining area which targeted coincident geochemical soil and IP anomalies.</li> <li>The Tulu Kapi - Ankore Exploration Licence (Tulu Kapi or Tulu Kapi Licence) was granted to Minerva Resources through its wholly owned subsidiary Golden Prospect Mining Company (GPMC) on 27 May 2005. GPMC undertook further detailed geological mapping, trenching, geophysics and diamond drilling within the licence area and the data generated by TREC was adopted subsequently by GPMC who geo-referenced it to UTM co ordinates from local grids. In 2006 GPMC excavated two new trenches and undertook geological mapping and sampling. It subsequently conducted IP-resistivity surveys (two profiles aligned along a NE- SW direction) covering an area of 400 m by 400 m in May 2009 and additional gradient resistivity work covering an area of 800 m by 400 m.</li> <li>Minerva Resources (GPMC's parent company) was acquired by Dwyka Resources (IPMC's parent company) acquired by Dwyka Resources Limited (now Nyota Minerals Limited) in July 2009, making GPMC a wholly owned subsidiary. Following this acquisition an aggressive exploration programme commenced, comprising some early trenches (14), exploration / resource definition drilling and infill resource drilling using both diamond drilling and reverse circulation</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul> <li>(RC) drilling.</li> <li>Up to December 2012 296 diamond drill holes (DD) for a total of 72,000 m, including the 34 diamond drill holes completed by GPMC and 38 diamond tails for 10,541 m; and 332 RC drill holes for a total of 45,000 m, have been completed at Tulu Kapi.</li> <li>Since acquisition of the Project by Nyota, JORC-compliant Mineral Resource estimates and a NI 43-101 PEA have been completed by independent geological and mining consultants, Hellman and Schofield ("H&amp;S") of Australia, Venmyn Rand (Pty) Ltd ("Venmyn") of South Africa , SRK Consulting ("SRK") of the UK and Wardell Armstrong ("WAI") of the UK.</li> </ul>
Geology	Deposit type, geological setting and style of mineralisation.	<ul> <li>The Tulu Kapi gold deposit is an orogenic gold deposit located in an area consisting of rocks ranging from Pre-Cambrian to Tertiary in age. The gold mineralisation at Tulu Kapi is hosted by an Upper Proterozoic age intrusive, which comprises a coarse grained syentite pluton. These rocks have been intruded into a volcanosedimentary sequence that was subsequently transformed to mafic and sericitic schists.</li> <li>The Tulu Kapi primary mineralisation is hosted in mafic syenite. The unaltered syenite is predominantly a medium to coarse grained rock composed of 60 to 70% pink to white alkali feldspar, 20 to 25% plagioclase, and 10 to 15% ferromagnesian minerals and minor interstitial quartz. The ferromagnesian minerals appear to consist mainly of biotite with minor amphibole and magnetite. The mineralisation is associated with shallow (approximately 30°) southeast dipping zones of quartz-veined, highly albitised, metasomatic alteration centred on the Bedele Shear zone.</li> <li>The albitised zones are of a lensoid nature comprising discrete stacked bodies that pinch and swell both along strike and down dip (Figure 4-4). A gradational contact of only a few centimetres with the unaltered mafic syenite is exhibited and the thickness of the individual albitised zones is highly variable. Mafic rocks (dolerite) representing dykes and / or sills are present within the syenite and</li> </ul>

Criteria	JORC Code explanation	Commentary
		are up to 10 m in thickness.
Drill hole Information	<ul> <li>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: <ul> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>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.</li> </ul>	<ul> <li>All drill hole information as required is tabled as an appendix to the Competent Person Report.</li> </ul>
Data aggregation methods	<ul> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>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.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	No exploration conducted during the period covered by the Resource statement.
Relationship between mineralisation widths and intercept lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</li> </ul>	<ul> <li>No exploration conducted during the period covered by the Resource statement.</li> </ul>
Diagrams	<ul> <li>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.</li> </ul>	<ul> <li>No exploration conducted during the period covered by the Resource statement.</li> </ul>
Balanced reporting	<ul> <li>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</li> </ul>	<ul> <li>No exploration conducted during the period covered by the Resource statement.</li> </ul>

Criteria	JORC Code explanation	Commentary
	Exploration Results.	
Other substantive exploration data	<ul> <li>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.</li> </ul>	<ul> <li>No exploration conducted during the period covered by the Resource statement.</li> </ul>
Further work	<ul> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul> <li>Currently 3,000 of resource infill drilling is planned in 40 reverse circulation holes.</li> </ul>

## Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	<ul> <li>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.</li> <li>Data validation procedures used.</li> </ul>	• Exploration work was conducted under a quality management system involving all stages of exploration, from the drilling and sample collection to resource estimation. All field data were either captured by hard copy and subsequently uploaded to a spread sheet system or captured electronically, checked for consistency and added to the database with all original entered spreadsheets stored. The database checked for input errors at different stages, from the field office to the head office in Addis Ababa. The master database is managed by a Geological Database / GIS Manager based at Tulu Kapi, with quality control and sampling protocol co-ordinated by a quality control manager.
Site visits	<ul> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	• Extensive site visits carried out over a period of 6 months for data verification and review including working with local staff on-site who have a long history with the project and qualified expatriate staff also familiar with the project. All relevant data, physical and digital were reviewed as well as technical procedures for cataloguing, recording, storing and using the results of data. No significant issues or problems were observed.

Criteria	JORC Code explanation	Commentary
Geological interpretation	<ul> <li>Confidence in (or conversely, the uncertainty of ) the geological interpretation of the mineral deposit.</li> <li>Nature of the data used and of any assumptions made.</li> </ul>	<ul> <li>Geological and structural interpretation of the Tulu Kapi area has been based on surface mapping and drill hole interpretation and logging by a variety of consultants and qualified national staff working for the project since 2009. All data available has been used and is also available for review in digital or analogue format and there is good confidence in the current interpretation.</li> </ul>
	• The effect, if any, of alternative interpretations on Mineral Resource estimation.	• An alternative interpretation is only likely to be regarding subtle controls on mineralization, particularly local variations in strike, dip and thickness of mineralized zones and is unlikely to materially affect the estimate.
	The use of geology in guiding and controlling Mineral Resource estimation.	• The dynamic anisotropy method was used to generate a block model directly from the drill hole data by using strike and dip strings to define the orientation of the mineralized structure. Strike and dip strings were generated from drill hole data based on a cut-off grade of 0.3 g/t Au. Dip strings were based on the updated 2012/3 structural interpretation in which the mineralization was defined by structures which dip around 30° to the northwest. Dip strings were generated on 20m section spacing and attempted to join intersections in which grade continuity was identified. Strike strings were generated on horizontal sections with a section density of 2.5m
	• The factors affecting continuity both of grade and geology.	<ul> <li>A complex structural environment and genesis with narrow shallowly dipping stacked veins which pinch and swell along strike and down dip.</li> <li>The relationship with grade, alteration, quartz veining and structure are not yet fully understood however structural geology interpretation and investigation is beginning to improve the understanding of the factors controlling grade continuity.</li> </ul>
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.	<ul> <li>Mineralization as modeled extends for some 980m along strike, 520m in width near surface and extending to a depth of some 560m. Mineralization narrows to the south and narrows to the north at depth within the currently interpreted mineralization boundaries.</li> </ul>

Criteria	JORC Code explanation	Commentary
and modelling techniques applied and key assumptions, including treatment values, domaining, interpolation parameters and i of extrapolation from data points. If a computer as	<ul> <li>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.</li> </ul>	<ul> <li>The dynamic anisotropy procedure involved running a nearest neighbor estimation on the sample composites to identify blocks within a defined prototype that satisfies the cut-off grade criteria identified in the mineralized zone interpretation. The mineralized zone model was generated based on a block model prototype of 5 by 5 m by 1 m block sizes. The vertical block height of 1 m was chosen to correspond with the down hole composite interval. The block model has been rotated to 190° to align with the general stril of the deposit.</li> <li>Top cutting was carried out to reduce the influence of any values that were outside of the general population. Top cutting was based upon log probability plots carried out by individual domain</li> <li>Mineralized samples were classified by ground competence and specific gravity (ORE), saprolite or fresh and sorted by major fault blocks (domains) (FZONE) Central or North (UNDP in local nomenclature).</li> </ul>
		<ul> <li>Grade estimation was carried out using ordinary kriging (OK) as the principal interpolation method. Inverse power of distance square (IDW2) and nearest neighbour (NN) were also used for comparation purposes. The OK method used estimation parameters defined the variography. The estimation was performed only on mineralise material defined within each domain (Central and North).</li> </ul>
		<ul> <li>OK estimation was run in a three pass kriging plan, the second and third passes using progressively larger search radii to enable the estimation of blocks un-estimated on the previous pass. The search parameters were derived from the variogram analysis, with the firs search distances corresponding to the distance at half of the variogram sill value and the second search distance approximating up to the variogram range. Sample weighting during grade estimation was determined by variogram model parameters for the OK method. Block discretisation was set to 3 by 3 by 1 to estimate block grades. Grade estimation was carried out by individual domain</li> </ul>

Criteria JORC Code explanation	Commentary
The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	<ul> <li>composites from adjacent domains were not used in the grade estimation of any other domain. Directional control strings defining the local variation in the strike and dip of the deposit were used. These orientations were used during the grade estimation to orient the search ellipses independently for each block.</li> <li>The maximum distance of extrapolation points within the method was 50m.</li> <li>The dynamic anisotropy procedure gives a more realistic reflection of the local variations in dip of the deposit.</li> <li>The maximum distance of extrapolation points within the method was 50m.</li> <li>The estimate was carried out in Datamine Studio 3 and Advanced Geostatistics Modules, registered mining and resource software using dynamic anisotropy.</li> </ul>

Criteria	JORC Code explanation	Commentary
		some of the 2012 database is seen to have provided better continuity within the data and is the explanation of a greater amount of indicated material being present in the 2014 estimate.
		<ul> <li>Additional tonnes and grade resulting in additional ounces is mainly a result of the additional exploration data available for the 2014 estimate and the increase in ounces is in line with what might be expected based on the additional data. Also the new data had additional higher grade intercepts at depth which have contributed to the overall increase in ounces.</li> </ul>
	• The assumptions made regarding recovery of by-products.	• In general the 2012 and 2014 estimates are seen as comparable with the 2014 estimate confirming the methodology of the 2012 estimate and increasing tonnes and grade in line with what was expected based on the additional data within the 2014 estimate.
		• Tulu Kapi is essentially a gold deposit and due to the low unit value of silver all exploration work and resource estimates have focussed on gold and no emphasis has been placed on the presence of, and estimate of a silver Mineral Resource. Kefi did not carry out an estimate of silver resources in this resource update.
	<ul> <li>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</li> </ul>	<ul> <li>No estimates have been carried out.</li> </ul>
	<ul> <li>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</li> <li>Any assumptions behind modelling of selective mining units.</li> </ul>	• The mineralized zone model was generated based on a block model prototype of 5 m by 5 m by 1 m block sizes. The vertical block height of 1 m was chosen to correspond with the down hole composite interval. Average sample spacing is approximately 40m x 40m x 1m in the bulk of the deposit.
	<ul> <li>Any assumptions bening modeling of selective mining units.</li> <li>Any assumptions about correlation between variables.</li> </ul>	<ul> <li>No studies have currently being carried out and are planned to be the subject of ongoing resource calculation and mining studies.</li> </ul>
	• Description of how the geological interpretation was used to control	<ul> <li>no assumptions have been made.</li> </ul>
	the resource estimates.	<ul> <li>The dynamic anisotropy method was used to generate a block model directly from the drill hole data by using strike and dip strings to define the orientation of the mineralized structure. Strike and dip</li> </ul>

Criteria	JORC Code explanation	Commentary
		strings were generated from drill hole data based on a cut-off grade of 0.3 g/t Au. Dip strings were based on the updated 2012/3 structural interpretation in which the mineralization was defined by structures which dip around 30° to the northwest. Dip strings were generated on 20m section spacing and attempted to join intersections in which grade continuity was identified
	Discussion of basis for using or not using grade cutting or capping.	• Top cutting was carried out to reduce the influence of any values that were outside of the general population. Top cutting was based upon log probability plots carried out by individual domain. Top cuts were applied by domain and ore type where values fell outside of the positively skewed distribution (sample values deemed as inconsistent). The overall effect of the top cuts on the Tulu Kapi dataset has not resulted in any significant reduction in the mean grade of the deposit.
	<ul> <li>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</li> </ul>	<ul> <li>Following grade estimation a statistical and visual assessment of the block model was undertaken for validation purposes. Visual comparison of composite sample grade and block grade was conducted in cross section and in plan. Visually the model was considered to spatially reflect the composite grades. Statistical analysis of the block model was carried out for comparison against the composited drill hole data. The mean block model grade for each domain and its corresponding mean composite grade compared well as did global averages.</li> <li>No obvious interpolation issues were identified and there is no evidence of significant over or under-estimation apparent in the model.</li> </ul>
Moisture	<ul> <li>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</li> </ul>	Tonnages were estimated on a dry basis.
Cut-off parameters	<ul> <li>The basis of the adopted cut-off grade(s) or quality parameters applied.</li> </ul>	<ul> <li>Previous mineralized zone interpretations from the November2012 resource estimate by Wardell Armstrong were based on contiguous length analyses to define the mineralization and identify a suitable grade boundary to separate mineralized from non-mineralized syenite. A cut-off grade of 0.3 g/t Au had been used in the 2012</li> </ul>

Criteria	JORC Code explanation	Commentary
		resource estimate to define the mineralization for both the saprolite and fresh material. Kefi have kept the same cut-off grade after reviewing the assumptions made for a possible economic breakeven cut-off grade of approximately 0.4 g/t and deciding the 0.3 g/t cut- off still applicable to include possible economic low grade mineralization and adequately define economic mineralization.
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.	<ul> <li>A block model of 5m x 5m x 2m was carried out as a test of a possible dilution scenario and resulted in approximately 16% less tonnes for 16% less grade with comparable ounces. The 2m block model is not reported in the Resource Report .</li> <li>the 2m block model was considered to approximate a reasonable mining scenario for the narrow vein type mineralization as well as account for possible internal waste within the 1m resource block model.</li> </ul>
Metallurgical factors or assumptions	• The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	<ul> <li>Metallurgical testwork was carried out to definitive feasibility study level during the November 2012 resource period and demonstrated feasible metallurgical recovery for the Tulu Kapi project. This information was reviewed by Kefi technical staff and confirmed to be technically and economically sound.</li> </ul>
Environmenta I factors or assumptions	<ul> <li>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.</li> </ul>	<ul> <li>A detailed Environment Impact Statement and plant and infrastructure design was carried out to definitive feasibility study level during the November 2012 resource period and demonstrated the project to be environmentally sound and sustainable. This information was reviewed by Kefi technical staff and confirmed to be technically and in compliance with relevant environmental laws and legislation.</li> </ul>
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.	• Kefi, after technical review, used the same procedures for density allocation within the saprolite and fresh zones within the block model as carried out by Wardell Armstrong in the November 2012

Criteria	JORC Code explanation	Commentary
	The bulk density for bulk material must have been measured by matheda that a degratate approximation of the second former of the second s	resource calculation.
	<ul> <li>methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.</li> <li>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</li> </ul>	<ul> <li>A global (dry) density value of 1.4 t/m<sup>3</sup> was used for all saprolite material. A global (dry) density value of 2.7 t/m<sup>3</sup> was used for all fresh material. From field measurements (over 10,000 samples) the average density of the mafic syenite (mineralisation) is 2.736 t/m<sup>3</sup> and so the use of 2.7 t/m<sup>3</sup> is robust and slightly conservative.</li> </ul>
		• Density values for the fresh material have been derived from density measurements carried out by ROCKLAB supplemented by additional density testing on site by Nyota. It is understood that the measurements represent a dry density (or specific gravity).
		• Saprolite density has been derived from limited work carried out by Nyota and testwork at ROCKLAB (2011). The value of 1.4 t/m3 was considered by Wardell Armstrong to be appropriate until a comprehensive study of density measurements of the saprolite material is completed.
		<ul> <li>In 2012 Nyota submitted 56 samples of saprolite material for analysis at Water Works and Supervision Enterprise Laboratory Service Sub Process, Addis Ababa, Ethiopia. The results of this testwork recorded an average bulk density of 1.86 gm/cc and dry density of 1.47 gm/cc. Wardell Armstrong considered the saprolite value of 1.4 t/m<sup>3</sup> to be relatively low compared to other saprolite projects and continued assessment should be practiced. Kefi has planned to implement an ongoing assessment of saprolite density checks</li> </ul>
Classification	<ul> <li>The basis for the classification of the Mineral Resources into varyin confidence categories.</li> <li>Whether appropriate account has been taken of all relevant factors 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).</li> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> </ul>	combination of the geostatistical studies (grade continuity), (ie interpreted structural continuity and drill hole spacing

Criteria	JORC Code explanation	Commentary
		drilled for the mineralization style. The nature of the geological and grade continuity encountered within the deposit means this area is considered to be suitable for reporting of Indicated mineral resources
		<ul> <li>In areas outside the central zone the orebody thickness and continuity of mineralisation appear to reduce and drillhole spacing in these areas ranges from 40 m by 80 m up to 80 m by 80 m. The drillhole spacing and nature of mineralization in these areas are suitable for reporting of Inferred mineral resources.</li> </ul>
		<ul> <li>For the central zone, search radii encountered during grade estimation were used to define Indicated resources as blocks estimated in the first and second searches and blocks estimated in the third search pass as inferred.</li> <li>All mineral resources contained within the north fault block, (UNDP site) were classified as wholly <i>Inferred</i>. This being the most peripheral zone has the greatest reduction in mineralized thickness and continuity and is the least extensively drilled.</li> </ul>
Audits or reviews	• The results of any audits or reviews of Mineral Resource estimates.	<ul> <li>An independent verification of the resource model will be performed by AMC Consultants Pty Ltd. AMC's preliminary reporting, using the same reporting criteria, confirms that the tonnes and grade match those in the reported resource tabulations.</li> <li>A final report is expected to make a number of technical recommendations including review of cut-off grade and revision of the interpretation to finesse the extent of the mineralisation defined by the mineralised zone model and to ensure that the blocks selected for use in the final grade estimate form contiguous zones where possible.</li> </ul>
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	

Criteria	JORC Code explanation	Commentary
	<ul> <li>discussion of the factors that could affect the relative accuracy and confidence of the estimate.</li> <li>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.</li> <li>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</li> </ul>	<ul> <li>Model validation, the drilling grid and observation of the grade and mineralization continuity lead Kefi to consider the central part of the deposit suitable for an Indicated resource category and peripheral areas suitable for an Inferred resource category.</li> <li>The nature of the mineralization and the relatively high nugget content may result in local grade estimates being of a relatively low confidence. Kefi, consider that the current drilling grid is insufficient for assigning of Measured mineral resources. It is likely that closely spaced channel sampling / bulk sampling or grade control drilling will be required for the classification of Measured mineral resources</li> </ul>

## Section 4 Estimation and Reporting of Ore Reserves

(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	<ul> <li>Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.</li> <li>Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.</li> </ul>	Insert your commentary here
Site visits	<ul> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	•
Study status	<ul> <li>The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.</li> <li>The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.</li> </ul>	•
Cut-off parameters	• The basis of the cut-off grade(s) or quality parameters applied.	•
Mining factors or assumptions	• The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by	•

Criteria	JORC Code explanation	Commentary
	<ul> <li>optimisation or by preliminary or detailed design).</li> <li>The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.</li> <li>The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.</li> <li>The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).</li> <li>The mining dilution factors used.</li> <li>Any minimum mining widths used.</li> <li>The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.</li> <li>The infrastructure requirements of the selected mining methods.</li> </ul>	
Metallurgical factors or assumptions	<ul> <li>The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.</li> <li>Whether the metallurgical process is well-tested technology or novel in nature.</li> <li>The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.</li> <li>Any assumptions or allowances made for deleterious elements.</li> <li>The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.</li> <li>For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?</li> </ul>	
Environmen- tal	• The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	•
Infrastructure	• The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	•
Costs	• The derivation of, or assumptions made, regarding projected capital	•

Criteria	JORC Code explanation	Commentary
	<ul> <li>costs in the study.</li> <li>The methodology used to estimate operating costs.</li> <li>Allowances made for the content of deleterious elements.</li> <li>The source of exchange rates used in the study.</li> <li>Derivation of transportation charges.</li> <li>The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.</li> <li>The allowances made for royalties payable, both Government and private.</li> </ul>	
Revenue factors	<ul> <li>The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.</li> <li>The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.</li> </ul>	•
Market assessment	<ul> <li>The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.</li> <li>A customer and competitor analysis along with the identification of likely market windows for the product.</li> <li>Price and volume forecasts and the basis for these forecasts.</li> <li>For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.</li> </ul>	
Economic	<ul> <li>The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.</li> <li>NPV ranges and sensitivity to variations in the significant assumptions and inputs.</li> </ul>	•
Social	<ul> <li>The status of agreements with key stakeholders and matters leading to social licence to operate.</li> </ul>	•
Other	<ul> <li>To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:</li> <li>Any identified material naturally occurring risks.</li> <li>The status of material legal agreements and marketing arrangements.</li> <li>The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be</li> </ul>	

Criteria	JORC Code explanation	Commentary
	received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	
Classification	<ul> <li>The basis for the classification of the Ore Reserves into varying confidence categories.</li> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> <li>The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).</li> </ul>	•
Audits or reviews	<ul> <li>The results of any audits or reviews of Ore Reserve estimates.</li> </ul>	•
Discussion of relative accuracy/ confidence	<ul> <li>Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.</li> <li>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.</li> <li>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.</li> <li>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.</li> </ul>	•

#### **Section 5 Estimation and Reporting of Diamonds and Other Gemstones**

(Criteria listed in other relevant sections also apply to this section. Additional guidelines are available in the 'Guidelines for the Reporting of Diamond Exploration Results' issued by the Diamond Exploration Best Practices Committee established by the Canadian Institute of Mining, Metallurgy and Petroleum.)

Criteria	JORC Code explanation	Commentary
Indicator minerals	<ul> <li>Reports of indicator minerals, such as chemically/physically distinctive garnet, ilmenite, chrome spinel and chrome diopside, should be prepared by a suitably qualified laboratory.</li> </ul>	Insert your commentary here
Source of diamonds	<ul> <li>Details of the form, shape, size and colour of the diamonds and the nature of the source of diamonds (primary or secondary) including the rock type and geological environment.</li> </ul>	•
Sample collection	<ul> <li>Type of sample, whether outcrop, boulders, drill core, reverse circulation drill cuttings, gravel, stream sediment or soil, and purpose (eg large diameter drilling to establish stones per unit of volume or bulk samples to establish stone size distribution).</li> <li>Sample size, distribution and representivity.</li> </ul>	•
Sample treatment	<ul> <li>Type of facility, treatment rate, and accreditation.</li> <li>Sample size reduction. Bottom screen size, top screen size and recrush.</li> <li>Processes (dense media separation, grease, X-ray, hand-sorting, etc).</li> <li>Process efficiency, tailings auditing and granulometry.</li> <li>Laboratory used, type of process for micro diamonds and accreditation.</li> </ul>	•
Carat	• One fifth (0.2) of a gram (often defined as a metric carat or MC).	•
Sample grade	<ul> <li>Sample grade in this section of Table 1 is used in the context of carats per units of mass, area or volume.</li> <li>The sample grade above the specified lower cut-off sieve size should be reported as carats per dry metric tonne and/or carats per 100 dry metric tonnes. For alluvial deposits, sample grades quoted in carats per square metre or carats per cubic metre are acceptable if accompanied by a volume to weight basis for calculation.</li> <li>In addition to general requirements to assess volume and density there is a need to relate stone frequency (stones per cubic metre or tonne) to stone size (carats per stone) to derive sample grade (carats per tonne).</li> </ul>	•
Reporting of Exploration	<ul> <li>Complete set of sieve data using a standard progression of sieve sizes per facies. Bulk sampling results, global sample grade per</li> </ul>	•

Criteria	JORC Code explanation	Commentary
Results	<ul> <li>facies. Spatial structure analysis and grade distribution. Stone size and number distribution. Sample head feed and tailings particle granulometry.</li> <li>Sample density determination.</li> <li>Per cent concentrate and undersize per sample.</li> <li>Sample grade with change in bottom cut-off screen size.</li> <li>Adjustments made to size distribution for sample plant performance and performance on a commercial scale.</li> <li>If appropriate or employed, geostatistical techniques applied to model stone size, distribution or frequency from size distribution of exploration diamond samples.</li> <li>The weight of diamonds may only be omitted from the report when the diamonds are considered too small to be of commercial significance. This lower cut-off size should be stated.</li> </ul>	
Grade estimation for reporting Mineral Resources and Ore Reserves	<ul> <li>Description of the sample type and the spatial arrangement of drilling or sampling designed for grade estimation.</li> <li>The sample crush size and its relationship to that achievable in a commercial treatment plant.</li> <li>Total number of diamonds greater than the specified and reported lower cut-off sieve size.</li> <li>Total weight of diamonds greater than the specified and reported lower cut-off sieve size.</li> <li>The sample grade above the specified lower cut-off sieve size.</li> </ul>	•
Value estimation	<ul> <li>Valuations should not be reported for samples of diamonds processed using total liberation method, which is commonly used for processing exploration samples.</li> <li>To the extent that such information is not deemed commercially sensitive, Public Reports should include: <ul> <li>diamonds quantities by appropriate screen size per facies or depth.</li> <li>details of parcel valued.</li> <li>number of stones, carats, lower size cut-off per facies or depth.</li> </ul> </li> <li>The average \$/carat and \$/tonne value at the selected bottom cut-off should be reported in US Dollars. The value per carat is of critical importance in demonstrating project value.</li> <li>The basis for the price (eg dealer buying price, dealer selling price, etc).</li> <li>An assessment of diamond breakage.</li> </ul>	•

Criteria	JORC Code explanation	Commentary
Security and integrity	<ul> <li>Accredited process audit.</li> <li>Whether samples were sealed after excavation.</li> <li>Valuer location, escort, delivery, cleaning losses, reconciliation with recorded sample carats and number of stones.</li> <li>Core samples washed prior to treatment for micro diamonds.</li> <li>Audit samples treated at alternative facility.</li> <li>Results of tailings checks.</li> <li>Recovery of tracer monitors used in sampling and treatment.</li> <li>Geophysical (logged) density and particle density.</li> <li>Cross validation of sample weights, wet and dry, with hole volume and density, moisture factor.</li> </ul>	•
Classification	<ul> <li>In addition to general requirements to assess volume and density there is a need to relate stone frequency (stones per cubic metre or tonne) to stone size (carats per stone) to derive grade (carats per tonne). The elements of uncertainty in these estimates should be considered, and classification developed accordingly.</li> </ul>	•