

UPDATE ON NEEDLES EXPLORATION PROJECT

Key Points

- Recent follow up rock chip sampling and target generation field work has identified a high priority target zone approximately 1.2km long and 600m wide.
- Gold and silver assays confirm low sulphidation epithermal deposit model.
- New target zone identified with altered and mineralised intrusive dykes not previously mapped.
- Geophysics is planned to begin in the North American Spring field season.

New Target Identified

Astro Resources NL (ASX: **ARO** or **the Company**) is pleased advise that target generative field work has identified a new high priority target zone with of gold and silver mineralisation associated with altered intrusive trachyte/dacite dykes in an area approximately 1.2km x 0.6km within the main caldera on the property (Figure 1).

The altered dykes identified are closely spatially and temporally related to the gold mineralization. The dykes are altered and host gold-silver mineralization, but also cut NW structures that host both dykes and Au mineralization supporting the hypothesis of a strong connection between the dykes and Au (Figure 2).

Geology and Mineralisation

The Needles licence area is located near the eastern margin of a mostly eroded shield-type volcano/caldera complex formed between ~32 and ~19 million years ago, as part of extensive continental magmatism. The caldera measures approximately 15 kilometres in diameter.

The principal deposit model sought on the Needles Property is a caldera type low sulphidation epithermal gold (\pm silver and base metals) deposit. Historical work focussed primarily on vein style gold-silver mineralisation and neglected the bulk tonnage low sulphidation type.

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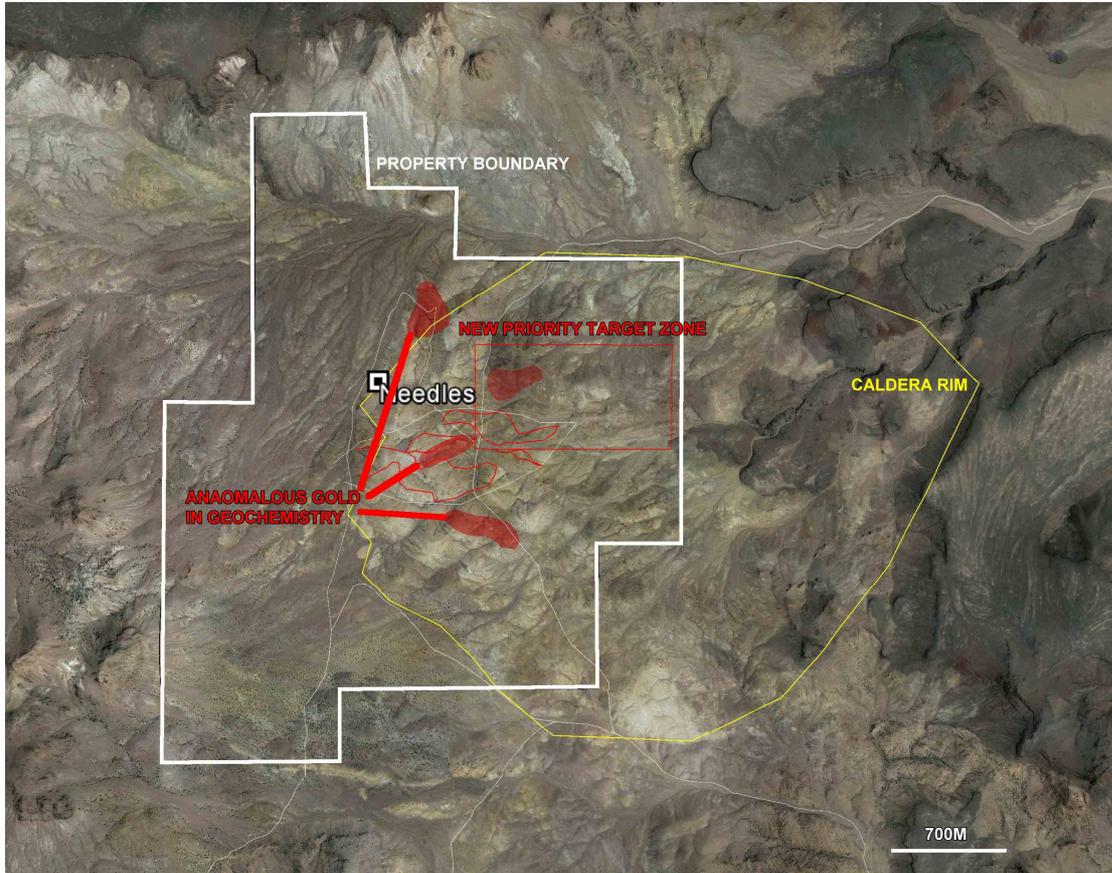


Figure 1: Google Earth Image showing Needles Property outline, caldera boundary and new target zones.

Sample #	N	E	Elev. (m)	Au g/t	Ag g/t
ND-1001	38.08650602	-116.165088	1869.321411	3.73	67.6
ND-1002	38.08653703	-116.165188	1868.692505	6.64	148
ND-1003	38.08649596	-116.165272	1867.82373	1.1	16.9
ND-1004	38.08672696	-116.164516	1866.889526	0.03	0.7
ND-1005	38.08636897	-116.164934	1868.588501	0.08	0.5
ND-1006	38.08678497	-116.164695	1867.633667	-0.01	0.2
ND-1007	38.08651499	-116.165057	1868.063232	0.46	12.2
ND-1008	38.08639999	-116.165994	1870.255249	0.08	5.5
ND-1009	38.08603403	-116.167388	1875.396851	0.29	2.2
ND-1010	38.086662	-116.165423	1864.760376	-0.01	0.2
ND-1011	38.086834	-116.163793	1861.383301	0.66	2.8
ND-1012	38.08691698	-116.168501	1883.19519	0.5	3.3
ND-1013	38.08867299	-116.170617	1889.897583	0.01	-0.2
ND-1014	38.08930398	-116.168036	1888.758667	0.02	0.5
ND-1015	38.08890299	-116.168174	1882.282349	0.03	0.4
ND-1016	38.08888899	-116.169501	1881.68457	0.05	0.6

Table 1: Needles Rock chip Assay Results

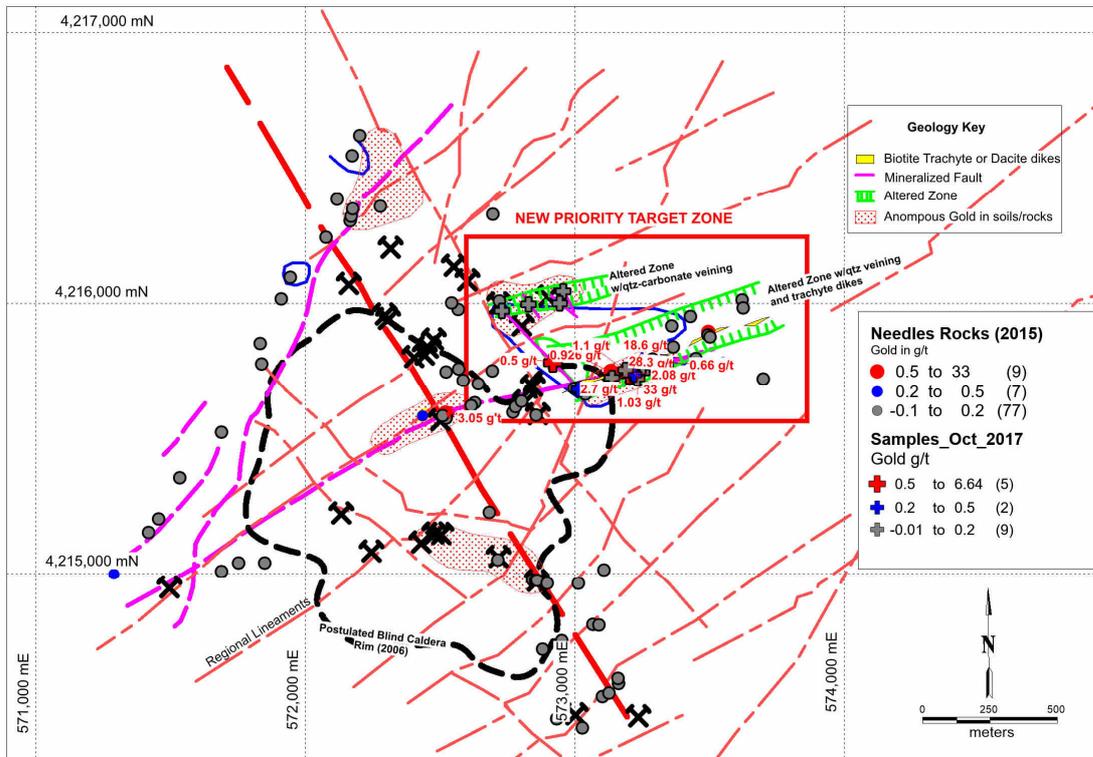


Figure 2: Needles Project ,gold in rock chips (2015-2017 sampling)

Location and Access

The Needles Property is situated in northern Nye County, Nevada, approximately 127 kilometres (79 miles) by road east of Tonopah, approximately 336 road kilometres northwest of Las Vegas. The project area consists of mineral rights over one hundred thirteen (113) unpatented lode mining claims, covering approximately 2,335 acres. Figure 1 below sets out a location map of the project:

Epithermal Au-Ag Deposits, northern Nye County, Nevada

Epithermal gold-silver deposits have been the largest producing deposits in northern Nye County since discovery of silver-rich veins in the Tonopah district in 1900, and numerous exploration programs for epithermal deposits are currently underway. Round Mountain Mine has the largest total production and is the largest current producer in the study area. With over 20 million ozs of gold contained within the deposit it has produced more than 373,000 kg (>12million ozs) of gold and 311,000 kg of silver since 1907. Map 3 below is a view of the region:

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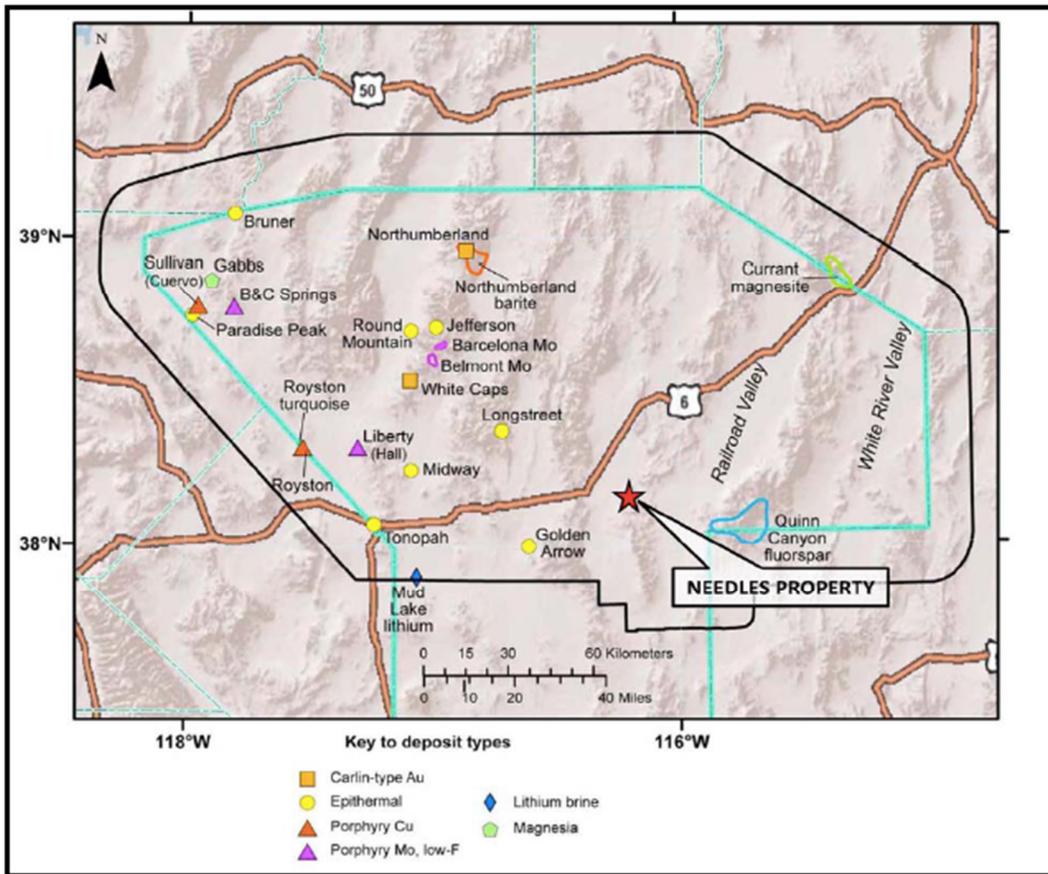


Figure 4: Nye County Nevada: Needles location and nearby mineral deposits

Follow-up Geophysical Work Programme

The Company intends to undertake a ground IP geophysical survey over the new priority target zone when weather permits in the Northern hemisphere spring. This survey will provide subsurface data on the resistivity and chargeability of the rocks to assist with the planning of a maiden **drilling programme**.

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Competent Person Statement

The information in this announcement is based on and fairly represents information and supporting documentation compiled by Charles Straw, a Director of Centric Minerals. Mr Straw who is a member of the Australian Institute of Mining and Metallurgy has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person under the 2012 Edition of the 'Australasian Code for reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr. Straw consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.

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JORC Code, 2012 Edition – Table 1 report template

Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
<i>Sampling techniques</i>	<ul style="list-style-type: none"> • <i>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.</i> • <i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i> • <i>Aspects of the determination of mineralisation that are Material to the Public Report.</i> • <i>In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</i> 	<ul style="list-style-type: none"> • Selective rock chip samples of approximately 3kg per sample. Samples taken from outcrop.
<i>Drilling techniques</i>	<ul style="list-style-type: none"> • <i>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).</i> 	<ul style="list-style-type: none"> • NA
<i>Drill sample recovery</i>	<ul style="list-style-type: none"> • <i>Method of recording and assessing core and chip sample recoveries and results assessed.</i> • <i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i> • <i>Whether a relationship exists between sample recovery and grade</i> 	<ul style="list-style-type: none"> • NA

Criteria	JORC Code explanation	Commentary
	<i>and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</i>	
Logging	<ul style="list-style-type: none"> • Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. • Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. • The total length and percentage of the relevant intersections logged. 	<ul style="list-style-type: none"> • NA
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> • If core, whether cut or sawn and whether quarter, half or all core taken. • If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. • For all sample types, the nature, quality and appropriateness of the sample preparation technique. • Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. • Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling. • Whether sample sizes are appropriate to the grain size of the material being sampled. 	<ul style="list-style-type: none"> • NA
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> • The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. • For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. • Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established. 	<ul style="list-style-type: none"> • Samples were sent to ALS in Reno and Method Prep-31 for sample preparation and analytical methods AA25 for gold and AA45 for silver. • ALS have their own internal QA/QC systems.
Verification of sampling and assaying	<ul style="list-style-type: none"> • The verification of significant intersections by either independent or alternative company personnel. • The use of twinned holes. • Documentation of primary data, data entry procedures, data 	<ul style="list-style-type: none"> • NA

Criteria	JORC Code explanation	Commentary
	<p>verification, data storage (physical and electronic) protocols.</p> <ul style="list-style-type: none"> Discuss any adjustment to assay data. 	
Location of data points	<ul style="list-style-type: none"> Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. Specification of the grid system used. Quality and adequacy of topographic control. 	<ul style="list-style-type: none"> Locations were collected using a handheld GPS with an estimated accuracy of 3m. NAD27 datum was used.
Data spacing and distribution	<ul style="list-style-type: none"> Data spacing for reporting of Exploration Results. Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. Whether sample compositing has been applied. 	<ul style="list-style-type: none"> Samples were not collected using a pre-determined spacing.
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material. 	<ul style="list-style-type: none"> Samples were collected on areas of alteration based on a low sulphidation epithermal deposit model. The scale and extent of any mineralisation is yet to be determined.
Sample security	<ul style="list-style-type: none"> The measures taken to ensure sample security. 	<ul style="list-style-type: none"> Samples were bagged onsite and driven to ALS in Reno.
Audits or reviews	<ul style="list-style-type: none"> The results of any audits or reviews of sampling techniques and data. 	<ul style="list-style-type: none"> NA

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 style="list-style-type: none"> Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings. The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area. 	<ul style="list-style-type: none"> ARO has 100% of the mineral rights, via a wholly owned US subsidiary, to 113 contiguous unpatented lode mining claims in Nevada, USA referred to as the "Needles Property". These claims encompass an area of 945 hectares. There is a 2% NSR on the Property held by District Gold Inc. The claims are renewed annually on or before September 1 each

Criteria	JORC Code explanation	Commentary
		year through the payment of an annual fee per claim to the BLM.
<i>Exploration done by other parties</i>	<ul style="list-style-type: none"> <i>Acknowledgment and appraisal of exploration by other parties.</i> 	Previous exploration has been summarised in the NI43-101 Report available on SEDAR titled “NI 43-101 TECHNICAL REPORT Concerning THE NEEDLES Au-Ag PROPERTY NYE COUNTY, NEVADA, USA” (2006)
<i>Geology</i>	<ul style="list-style-type: none"> <i>Deposit type, geological setting and style of mineralisation.</i> 	<ul style="list-style-type: none"> Primary target is a caldera type, low sulphidation gold silver epithermal deposit.
<i>Drill hole Information</i>	<ul style="list-style-type: none"> <i>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:</i> <ul style="list-style-type: none"> <i>easting and northing of the drill hole collar</i> <i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i> <i>dip and azimuth of the hole</i> <i>down hole length and interception depth</i> <i>hole length.</i> <i>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.</i> 	<ul style="list-style-type: none"> All information is available in the NI 43-101 report referenced above.
<i>Data aggregation methods</i>	<ul style="list-style-type: none"> <i>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.</i> <i>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.</i> <i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i> 	<ul style="list-style-type: none"> NA
<i>Relationship between mineralisation widths and intercept lengths</i>	<ul style="list-style-type: none"> <i>These relationships are particularly important in the reporting of Exploration Results.</i> <i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i> <i>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</i> 	<ul style="list-style-type: none"> NA

Criteria	JORC Code explanation	Commentary
	<i>width not known').</i>	
<i>Diagrams</i>	<ul style="list-style-type: none"> • <i>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.</i> 	<ul style="list-style-type: none"> • Included in ASX announcement
<i>Balanced reporting</i>	<ul style="list-style-type: none"> • <i>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</i> 	<ul style="list-style-type: none"> • See results in announcement and maps and table of results.
<i>Other substantive exploration data</i>	<ul style="list-style-type: none"> • <i>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.</i> 	<ul style="list-style-type: none"> • NA
<i>Further work</i>	<ul style="list-style-type: none"> • <i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i> • <i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i> 	<ul style="list-style-type: none"> • Follow mapping and sampling is recommended plus a ground based geophysical survey.

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
<i>Database integrity</i>	<ul style="list-style-type: none"> • <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> • <i>Data validation procedures used.</i> 	<ul style="list-style-type: none"> • NA
<i>Site visits</i>	<ul style="list-style-type: none"> • <i>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</i> • <i>If no site visits have been undertaken indicate why this is the case.</i> 	<ul style="list-style-type: none"> • NA
<i>Geological interpretation</i>	<ul style="list-style-type: none"> • <i>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</i> • <i>Nature of the data used and of any assumptions made.</i> • <i>The effect, if any, of alternative interpretations on Mineral Resource</i> 	<ul style="list-style-type: none"> • NA

Criteria	JORC Code explanation	Commentary
	<p><i>estimation.</i></p> <ul style="list-style-type: none"> <i>The use of geology in guiding and controlling Mineral Resource estimation.</i> <i>The factors affecting continuity both of grade and geology.</i> 	
<i>Dimensions</i>	<ul style="list-style-type: none"> <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> 	<ul style="list-style-type: none"> • NA
<i>Estimation and modelling techniques</i>	<ul style="list-style-type: none"> <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> <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> <i>The assumptions made regarding recovery of by-products.</i> <i>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</i> <i>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</i> <i>Any assumptions behind modelling of selective mining units.</i> <i>Any assumptions about correlation between variables.</i> <i>Description of how the geological interpretation was used to control the resource estimates.</i> <i>Discussion of basis for using or not using grade cutting or capping.</i> <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"> • NA
<i>Moisture</i>	<ul style="list-style-type: none"> <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"> • NA
<i>Cut-off parameters</i>	<ul style="list-style-type: none"> <i>The basis of the adopted cut-off grade(s) or quality parameters applied.</i> 	<ul style="list-style-type: none"> • NA
<i>Mining factors</i>	<ul style="list-style-type: none"> <i>Assumptions made regarding possible mining methods, minimum</i> 	<ul style="list-style-type: none"> • NA

Criteria	JORC Code explanation	Commentary
<i>or assumptions</i>	<i>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>	
<i>Metallurgical factors or assumptions</i>	<ul style="list-style-type: none"> <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"> • NA
<i>Environmental factors or assumptions</i>	<ul style="list-style-type: none"> <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"> • NA
<i>Bulk density</i>	<ul style="list-style-type: none"> <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 representativeness of the samples.</i> <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> <i>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</i> 	<ul style="list-style-type: none"> • NA

Criteria	JORC Code explanation	Commentary
<i>Classification</i>	<ul style="list-style-type: none"> • <i>The basis for the classification of the Mineral Resources into varying confidence categories.</i> • <i>Whether appropriate account has been taken of all relevant factors (ie 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> • <i>Whether the result appropriately reflects the Competent Person's view of the deposit.</i> 	<ul style="list-style-type: none"> • NA
<i>Audits or reviews</i>	<ul style="list-style-type: none"> • <i>The results of any audits or reviews of Mineral Resource estimates.</i> 	<ul style="list-style-type: none"> • NA
<i>Discussion of relative accuracy/confidence</i>	<ul style="list-style-type: none"> • <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> • <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> • <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"> • NA

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
<i>Mineral Resource estimate for conversion to Ore Reserves</i>	<ul style="list-style-type: none"> • <i>Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.</i> • <i>Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.</i> 	<ul style="list-style-type: none"> • NA
<i>Site visits</i>	<ul style="list-style-type: none"> • <i>Comment on any site visits undertaken by the Competent Person and</i> 	<ul style="list-style-type: none"> • NA

Criteria	JORC Code explanation	Commentary
	<p><i>the outcome of those visits.</i></p> <ul style="list-style-type: none"> • <i>If no site visits have been undertaken indicate why this is the case.</i> 	
<i>Study status</i>	<ul style="list-style-type: none"> • <i>The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.</i> • <i>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.</i> 	<ul style="list-style-type: none"> • NA
<i>Cut-off parameters</i>	<ul style="list-style-type: none"> • <i>The basis of the cut-off grade(s) or quality parameters applied.</i> 	<ul style="list-style-type: none"> • NA
<i>Mining factors or assumptions</i>	<ul style="list-style-type: none"> • <i>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 optimisation or by preliminary or detailed design).</i> • <i>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.</i> • <i>The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.</i> • <i>The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).</i> • <i>The mining dilution factors used.</i> • <i>The mining recovery factors used.</i> • <i>Any minimum mining widths used.</i> • <i>The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.</i> • <i>The infrastructure requirements of the selected mining methods.</i> 	<ul style="list-style-type: none"> • NA
<i>Metallurgical factors or assumptions</i>	<ul style="list-style-type: none"> • <i>The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.</i> • <i>Whether the metallurgical process is well-tested technology or novel in nature.</i> • <i>The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.</i> 	<ul style="list-style-type: none"> • NA

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> Any assumptions or allowances made for deleterious elements. 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. For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications? 	
<i>Environmental</i>	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> NA
<i>Infrastructure</i>	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> NA
<i>Costs</i>	<ul style="list-style-type: none"> The derivation of, or assumptions made, regarding projected capital costs in the study. The methodology used to estimate operating costs. Allowances made for the content of deleterious elements. The source of exchange rates used in the study. Derivation of transportation charges. The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc. The allowances made for royalties payable, both Government and private. 	<ul style="list-style-type: none"> NA
<i>Revenue factors</i>	<ul style="list-style-type: none"> 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. The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products. 	<ul style="list-style-type: none"> NA
<i>Market assessment</i>	<ul style="list-style-type: none"> The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future. A customer and competitor analysis along with the identification of 	<ul style="list-style-type: none"> NA

Criteria	JORC Code explanation	Commentary
	<p><i>likely market windows for the product.</i></p> <ul style="list-style-type: none"> • <i>Price and volume forecasts and the basis for these forecasts.</i> • <i>For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.</i> 	
<i>Economic</i>	<ul style="list-style-type: none"> • <i>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.</i> • <i>NPV ranges and sensitivity to variations in the significant assumptions and inputs.</i> 	<ul style="list-style-type: none"> • NA
<i>Social</i>	<ul style="list-style-type: none"> • <i>The status of agreements with key stakeholders and matters leading to social licence to operate.</i> 	<ul style="list-style-type: none"> • NA
<i>Other</i>	<ul style="list-style-type: none"> • <i>To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:</i> • <i>Any identified material naturally occurring risks.</i> • <i>The status of material legal agreements and marketing arrangements.</i> • <i>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 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.</i> 	<ul style="list-style-type: none"> • NA
<i>Classification</i>	<ul style="list-style-type: none"> • <i>The basis for the classification of the Ore Reserves into varying confidence categories.</i> • <i>Whether the result appropriately reflects the Competent Person's view of the deposit.</i> • <i>The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).</i> 	<ul style="list-style-type: none"> • NA
<i>Audits or reviews</i>	<ul style="list-style-type: none"> • <i>The results of any audits or reviews of Ore Reserve estimates.</i> 	<ul style="list-style-type: none"> • NA
<i>Discussion of relative accuracy/ confidence</i>	<ul style="list-style-type: none"> • <i>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</i> 	<ul style="list-style-type: none"> • NA

Criteria	JORC Code explanation	Commentary
	<p><i>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.</i></p> <ul style="list-style-type: none"> <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> <i>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.</i> <i>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.</i> 	

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
<i>Indicator minerals</i>	<ul style="list-style-type: none"> <i>Reports of indicator minerals, such as chemically/physically distinctive garnet, ilmenite, chrome spinel and chrome diopside, should be prepared by a suitably qualified laboratory.</i> 	<ul style="list-style-type: none"> NA
<i>Source of diamonds</i>	<ul style="list-style-type: none"> <i>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.</i> 	<ul style="list-style-type: none"> NA
<i>Sample collection</i>	<ul style="list-style-type: none"> <i>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).</i> <i>Sample size, distribution and representivity.</i> 	<ul style="list-style-type: none"> NA
<i>Sample</i>	<ul style="list-style-type: none"> <i>Type of facility, treatment rate, and accreditation.</i> <i>Sample size reduction. Bottom screen size, top screen size and re-</i> 	<ul style="list-style-type: none"> NA

Criteria	JORC Code explanation	Commentary
<i>treatment</i>	<p><i>crush.</i></p> <ul style="list-style-type: none"> Processes (dense media separation, grease, X-ray, hand-sorting, etc). Process efficiency, tailings auditing and granulometry. Laboratory used, type of process for micro diamonds and accreditation. 	
<i>Carat</i>	<ul style="list-style-type: none"> One fifth (0.2) of a gram (often defined as a metric carat or MC). 	<ul style="list-style-type: none"> NA
<i>Sample grade</i>	<ul style="list-style-type: none"> Sample grade in this section of Table 1 is used in the context of carats per units of mass, area or volume. 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. 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). 	<ul style="list-style-type: none"> NA
<i>Reporting of Exploration Results</i>	<ul style="list-style-type: none"> Complete set of sieve data using a standard progression of sieve sizes per facies. Bulk sampling results, global sample grade per facies. Spatial structure analysis and grade distribution. Stone size and number distribution. Sample head feed and tailings particle granulometry. Sample density determination. Per cent concentrate and undersize per sample. Sample grade with change in bottom cut-off screen size. Adjustments made to size distribution for sample plant performance and performance on a commercial scale. If appropriate or employed, geostatistical techniques applied to model stone size, distribution or frequency from size distribution of exploration diamond samples. 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. 	<ul style="list-style-type: none"> NA
<i>Grade</i>	<ul style="list-style-type: none"> Description of the sample type and the spatial arrangement of drilling 	<ul style="list-style-type: none"> NA

Criteria	JORC Code explanation	Commentary
<i>estimation for reporting Mineral Resources and Ore Reserves</i>	<p><i>or sampling designed for grade estimation.</i></p> <ul style="list-style-type: none"> • <i>The sample crush size and its relationship to that achievable in a commercial treatment plant.</i> • <i>Total number of diamonds greater than the specified and reported lower cut-off sieve size.</i> • <i>Total weight of diamonds greater than the specified and reported lower cut-off sieve size.</i> • <i>The sample grade above the specified lower cut-off sieve size.</i> 	
<i>Value estimation</i>	<ul style="list-style-type: none"> • <i>Valuations should not be reported for samples of diamonds processed using total liberation method, which is commonly used for processing exploration samples.</i> • <i>To the extent that such information is not deemed commercially sensitive, Public Reports should include:</i> <ul style="list-style-type: none"> ○ <i>diamonds quantities by appropriate screen size per facies or depth.</i> ○ <i>details of parcel valued.</i> ○ <i>number of stones, carats, lower size cut-off per facies or depth.</i> • <i>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.</i> • <i>The basis for the price (eg dealer buying price, dealer selling price, etc).</i> • <i>An assessment of diamond breakage.</i> 	<ul style="list-style-type: none"> • NA
<i>Security and integrity</i>	<ul style="list-style-type: none"> • <i>Accredited process audit.</i> • <i>Whether samples were sealed after excavation.</i> • <i>Valuer location, escort, delivery, cleaning losses, reconciliation with recorded sample carats and number of stones.</i> • <i>Core samples washed prior to treatment for micro diamonds.</i> • <i>Audit samples treated at alternative facility.</i> • <i>Results of tailings checks.</i> • <i>Recovery of tracer monitors used in sampling and treatment.</i> • <i>Geophysical (logged) density and particle density.</i> • <i>Cross validation of sample weights, wet and dry, with hole volume and density, moisture factor.</i> 	<ul style="list-style-type: none"> • NA
<i>Classification</i>	<ul style="list-style-type: none"> • <i>In addition to general requirements to assess volume and density there is a need to relate stone frequency (stones per cubic metre or</i> 	<ul style="list-style-type: none"> • NA

Criteria	JORC Code explanation	Commentary
	<i>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.</i>	