

Newfield Resources Limited 6/61 Hampden Rd Nedlands WA 6009

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# Company Update - June 2014

# **Highlights**

# **Australian Gold Projects**

- Planning commenced for first pass air core drilling program to test newly defined gold in auger anomalies on the Newfield Extended Project.
- Continued planning for the phase two air core drilling program at the Crest Yard Project.
- Option to acquire the remaining 30% interest in the Crest Yard Project extended to 30 June 2015.

## Sierra Leone Diamond Project

- Exploration bulk-sampling of alluvial gravels continued on the Allotropes Diamond Project in Sierra Leone.
- Encouraging results returned from initial bulk-sampling of Lower Terrace gravels with the recovery of 32.1 carats of diamonds from 74 tonnes of washed material for a recovered grade of 43.51 carats per hundred tonnes (cpht).
- A Dense Media Separation Plant ("DMS") plant ordered to enable an increased processing rate of the exploration bulksamples.
- Earthmoving equipment purchased to enable the acceleration of the exploration bulk-sampling program.
- Company is closely monitoring the impact of the Ebola virus disease outbreak in the eastern part of Sierra Leone.

## Corporate

• Operational team established for the Allotropes exploration program in Sierra Leone.

# **ASX Code: NWF**



ASX Release: 27 June 2014

ACN 153 219 848

### **DIRECTORS**

Mr Bryan Alexander (Executive Director)

Mr Anthony Ho (Executive Director)

Mr Joshua Letcher (Executive Director)

Mr Murray Kornweibel (Non-Executive Director)

Ms Sanny Nanang (Non-Executive Director)

Mr Giap Ch'ng Ooi (Non-Executive Director)

## CAPITAL STRUCTURE

Shares on Issue: 145.75M Options on Issue: 69M



# **Details**

# 1. NEWFIELD EXTENDED GOLD PROJECT (NEWFIELD EARNING UP TO 80%)

Newfield Resources Ltd ("Newfield" or "the Company") has commenced planning to undertake a first pass air core drilling program to test the recently defined gold-in-auger drilling anomalies in the western target area on the Newfield Extended Project.

The Newfield Extended Project comprises three granted exploration licences (E77/1394, E77/1674 and E77/1825) covering approximately 60 square kilometres, immediately to the north and west of the Newfield Mining Centre (Figure 2).

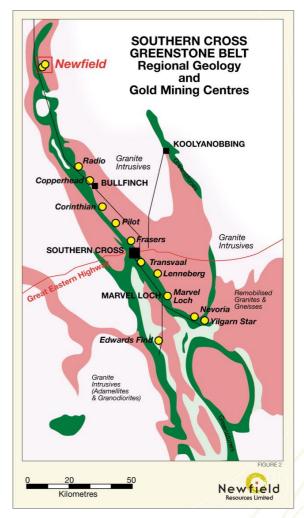
A historical broad-spaced auger soil geochemistry program completed by the tenement operators in 2011 - 2012 together with a detailed aeromagnetic survey, had outlined three high priority gold targets within the project area.

A recent infill and expanded auger soil sampling program completed by Newfield confirmed and extrapolated several gold anomalies in the western and north eastern target areas. (NWF ASX Release 29 April, 2014\*)

In the western target area several distinct, greater than 10ppb, gold-in-auger soil anomalies have been outlined (Figure 3). These low-order gold anomalies are considered significant as the majority of the western target area is covered by recent transported sands, which mask the surface geochemical response from any potential gold mineralisation at depth.

The western gold anomalies are also largely coincident with an area of anomalous nickel geochemistry (greater than 100ppm nickel) in the auger soil sampling (Figure 4). The anomalous nickel geochemistry supports the Company's recent interpretation that the granite – greenstone boundary may be located further west than had been inferred by previous explorers.

Planning has commenced for a first pass air core drilling program to test the coincident gold and nickel anomalies in the western target area. The proposed program will comprise several east – west orientated drill traverses across the auger anomalies and the interpreted position of the granite- greenstone contact.

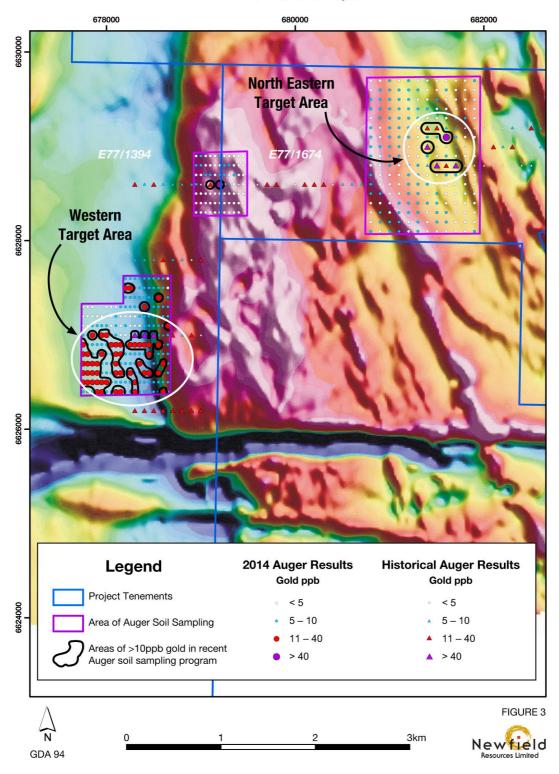


Once the planning for the program has been finalised then the relevant Program of Works – Exploration (PoW-E) approvals will be sought for the Department of Mines and Petroleum (DMP) to enable the program to be undertaken.

\*In accordance with Listing Rule 5.23.2, the Company confirms in the subsequent public report that it is not aware of any new information or data that materially affects the information included in the relevant market announcement and, in the case of estimates of mineral resources or ore reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant announcement continue to apply and have not materially changed.

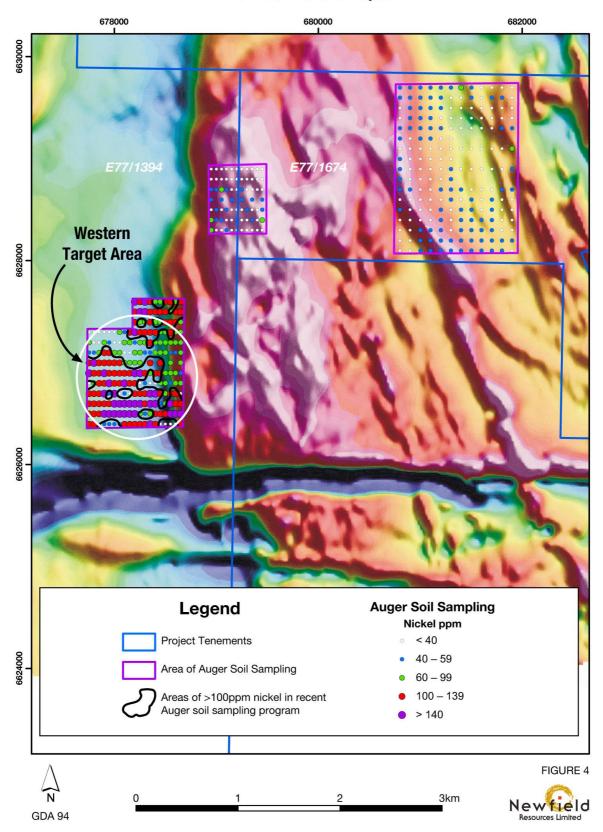


Auger Soil Sampling Program – Gold Results Over Total Magnetic Intensity Image Newfield Extended Project





Auger Soil Sampling Program – Nickel Results Over Total Magnetic Intensity Image Newfield Extended Project





# 2. CREST YARD GOLD PROJECT (NEWFIELD 70%, OPTION TO PURCHASE 30%)

Newfield continues to undertake planning for the second phase air core drilling program over gold targets at the Crest Yard Gold Project.

The Crest Yard Gold Project, covers 2,455 ha, centred between the historical gold mining centres of Kintore and Dunnsville, located approximately 60km northwest of Kalgoorlie, Western Australia.

Exploration undertaken by the Company on the project to date has included an aeromagnetic survey, a detailed auger geochemical program and a first pass aircore drilling program. This work has defined several areas of bedrock gold mineralisation associated with zones quartz veining (+/- Fe-staining, +/- sericite alteration, +/- haematite alteration) within the previously untested Doyle Dam Granodiorite.

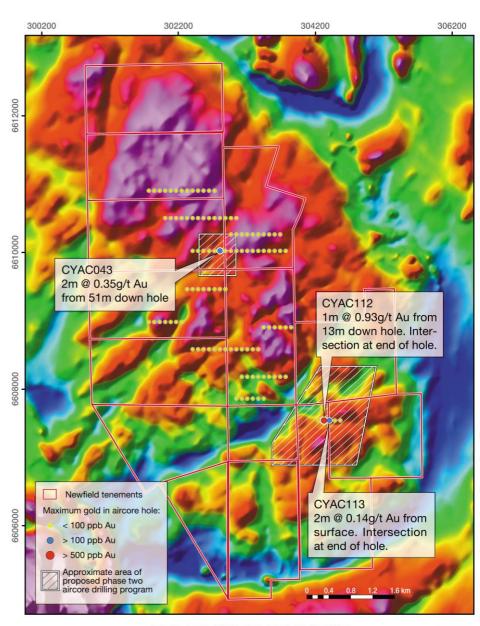
A follow up phase two aircore drilling program comprising infill and extended aircore drilling is planned with the aim of defining the lateral extent of the gold mineralisation intersected to date.

The proposed aircore drilling in the southern area adjacent to CYAC112 and CYAC113 will also test a series of magnetic anomalies and structural breaks that are evident in the aeromagnetic dataset. These magnetic anomalies and structural breaks may represent alteration and structures associated with primary gold mineralisation.

A summary plan of the anomalous gold intersections from the phase one aircore drilling program, together with the area of the proposed phase two aircore drilling is presented in Figure 5.

## **Option Extension**

The option to purchase the remaining 30% interest in the Crest Yard Project has been extended by an additional twelve months to 30 June 2015.



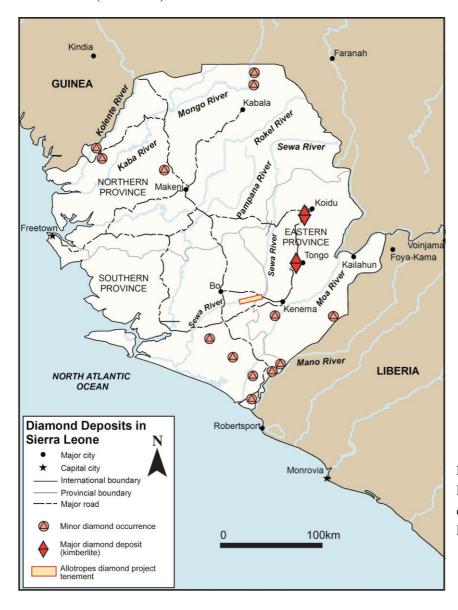
## CREST YARD PROJECT

Aircore holes over aeromagnetic image



# 3. ALLOTROPES DIAMOND PROJECT – SIERRA LEONE (NEWFIELD 100%)

Newfield has continued an exploration bulk-sampling program on its recently acquired Allotropes Diamond Project, located in the southern Bo District (Baoma Chiefdom) of Sierra Leone (Figure 6). The exploration program to date has been conducted at the Golu Node, which is located on the northern side of the Sewa River in the central portion of the tenement area (EL15/2012).



**Figure 6.** Locality of Allotropes' Exploration Licence along the diamondiferous Sewa River, Sierra Leone.

## **Exploration Program-Focus**

Several alluvial types (facies) have been identified within EL 15/2012, but the work program to date has focused on bulk-sampling activities within the fluvial Lower Terrace facies (Figure 7). The Lower Terrace comprises palaeo-river deposits within preserved embayments of the ancestral Sewa River. A *c.*4m thick sandy, and occasionally semilateritised fluvial clay overburden, adjacent to the modern Sewa River bank, overlies a thin (*c.*30cm) single-storey basal gravel lying directly on a bevelled and locally pot-holed, (fresh) gneissic bedrock. This basal gravel forms the diamondiferous horizon.



Exploratory cut lines, along which exploratory pitting has been conducted to assess gravel development in conjunction with the excavation of larger bulk-sample box-cuts to test for mineralisation, has also allowed the Company to identify areas of gravel development on the stratigraphically older but geographically higher, Middle and Upper Terraces and Swamp facies.

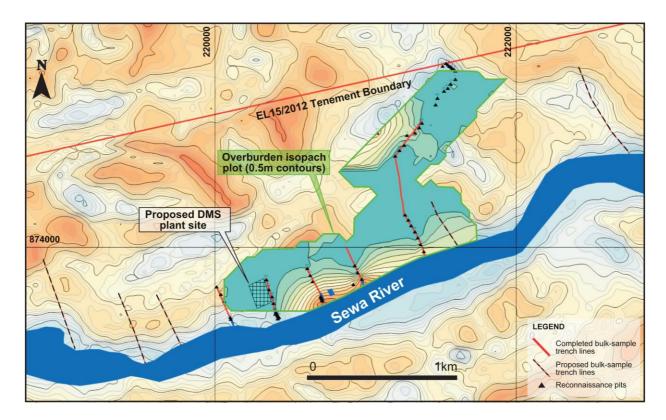


Figure 7. Digital Terrain Model (DTM) showing location of bulk-sample box-cuts (short bold red lines) completed on the Lower Terrace, Golu Node. Black triangles represent completed reconnaissance pit localities. Thin red-black dashed lines indicate planned cut-lines along east and west extensions of the Lower Terrace facies (indicated in light blue in the contoured DTM). An overburden isopach plot (0.5m contour intervals) has been superimposed on the DTM to portray the thickness of cover above the basal Lower Terrace gravels. The overburden once again thickens to the north of the plot in proximity of a swamp (an additional target facies in the light blue, low-lying, inland areas). The intervening dark-grey area of the isopach plot comprises a thin overburden zone, overlying lateritic Middle and Upper Terrace facies. The proposed site for the DMS is indicated in the blue hatched polygon.

## **Bulk-sampling Results-Lower Terrace (fluvial) Facies**

Initial bulk-sample results have been encouraging, with the recovery of 32.1 carats of diamonds in 74 tons of washed material (R.D. of basal gravels =  $1.8t/m^3$ ), for a recovered grade of c.44 carats per hundred tons (cpht). An average stone size of 0.48 carats per stone (cts/stn), is indicated for the Lower Terrace samples completed to date (Table 1). The location of the bulk sample box-cuts are shown in Figure 7. A photograph of several of the recovered diamonds from the Golu Node bulk-sampling is presented in Photograph 1.

In addition, density tracer tests (4mm and 8mm ceramic tracers) support recovery efficiencies above 80% (when closely monitored) for the Dove Explorer processing jig plant currently being utilised for the exploration program which lends veracity to these sample results.



LOWER TERRACE TONNES PROCESSED TO DATE: GOLU NODE			
Tons	Carats	Grade (cpht)	Av. Stone Size (cts/stn)
74	32.1	43.51	0.48

Table 1. Summary of bulk-sampling results to date from the Lower Terrace Facies Gravels



**Photograph 1**. Photographs of diamonds recovered from processing of bulk samples from the Lower Terrace Facies Gravels at the Golu Node. Note that the largest stone (extreme left of photograph) weighs approximately 4 (four) carats.

## **Middle and Upper Terrace Facies**

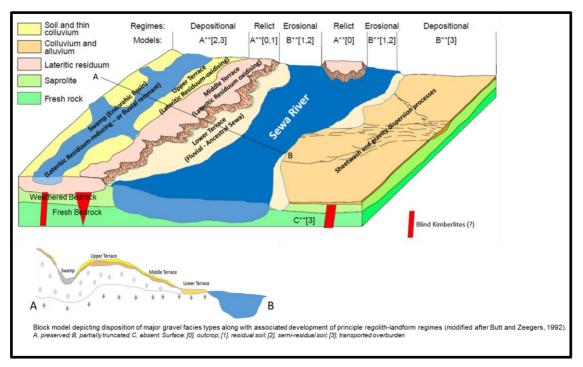
Exploratory pitting to define the areal extent of the prospective gravel horizons comprising the Middle and Upper Terrace facies has also been completed for the Golu Node. Both these terraces are terrestrial, chemically weathered and relatively *in situ*, regolith landforms that form a lateritic residuum comprising a ferruginous (haematite and goethite?) gravel horizon, containing abundant pisoliths and nodules, as well as diamonds. Unlike the Lower Terrace gravels, a relatively thin overburden allows easy access to these gravels, which attain a maximum thickness of *c*.2m. Initial bulk-sampling has commenced for the terrestrial facies with diamond grades to be determined by processing bulk-samples through the DMS plant.

Several occurrences of a buried, lateritic, Swamp facies occurring within the Golu Node are yet to be tested for their diamond content. The swamps, historically, are the most sought after areas by artisanal miners, and may be tested during the upcoming dry season depending on their accessibility.



#### Placer Genesis Model (PGM)

A provisional landform and lithology (morphostratigraphic) model and type-section, relative to the mode and occurrence of diamondiferous alluvial deposits, has been compiled in the interim (Figure 8).



**Figure 8.** Block model and type-section depicting the proposed morphostratigraphic (landform and lithology) for the Golu Node, in relation to the occurrence of alluvial (and primary) diamond deposits (after R Hall, 2014).

#### Dense Media Separation (DMS) Plant

A purpose-built DMS plant has been ordered to enable the increased throughput and processing of the exploration bulk-samples. A 20 ton per hour (tph) DMS (40 tph head-feed) plant is being constructed by processing plant specialists Dynamic Machinery, based in Klerksdorp, South Africa. The plant will replace the aging, low-technology, 3 tph Dove Explorer jig plant currently in use for exploration. DMS technology has a proven 95-100% recovery efficiency, utilising a ferrosilicon (FeSi) heavy medium (14-16% silicon), and is the preferred (i.e. high-technology) diamond processing methodology within the diamond industry. The Company plans to have the DMS plant on-site at the Golu Node and progressively commissioned in the final quarter of the current calendar year. This plant will expedite the areal extent and grade determination of the diamondiferous gravels within the greater project area. The DMS has a modular design and is mobile.

#### **Purchase of Earthmoving Equipment**

Consistent with Newfield's objective of accelerating its diamond exploration program in Sierra Leone, the Company has purchased a fleet of earthmoving equipment. The fleet comprises two excavators, two loaders, a bulldozer and two dump trucks.

The excavators and loaders have arrived in Sierra Leone and the balance of the earthmoving fleet will be delivered progressively over the coming months.



#### **Ebola Virus**

The Company notes the recorded outbreak of the Ebola virus disease (EVD) within the Eastern districts of Sierra Leone, approximately 110km from Newfield's exploration areas. The most recent report from the World Health Organisation (WHO) has stated that the total number of EVD clinical cases in Sierra Leone is 158 (147 confirmed, 8 probable, and 3 suspected) including 34 deaths. The vast majority of confirmed cases and deaths to date are localised in the Kailahun district, in the extreme eastern part of the country, and near to the Guinea border where the disease originated.

The WHO has not issued any recommendation against travel or trade restrictions for Sierra Leone based on the current information available for this event.

Newfield's operations in Sierra Leone are located approximately 110 km south-west of the main outbreak locality in the Kailahun district and the Company's current operations are unaffected by the outbreak.

The Company continues to closely monitor the situation and has implemented an appropriate response plan, which includes a membership with a leading medical and travel security services company, to ensure the health and safety of its employees.

## **Community Development**

The Company continues to implement an active community development program in Sierra Leone. The Company's incountry workforce is comprised predominantly of members from local communities, which are located in close proximity to its exploration operations.

The Company is actively engaged in assisting local community projects and has delivered regular updates of its operations through hosting community meetings.

Newfield, and its subsidiary Allotropes Diamond Company Ltd, acknowledges the consistent support and encouragement that they have received for their exploration activities from both the local community and government within Sierra Leone.



**Figure 9.** Photographs of a recent meeting hosted by Allotropes Diamond Company Ltd and attended by members of the local community, representatives of the National Minerals Agency, local Chiefdom leaders and government representatives.



# 4. CORPORATE

During the reporting period Newfield has continued to appoint key operational personnel to facilitate the successful implementation of the Company's diamond exploration program in Sierra Leone.

The recent appointments include an experienced process engineer/metallurgist who will be responsible for managing the commissioning and the operation of the exploration DMS plant once it arrives on-site later in the year. The Company has also engaged the services of an experienced consulting metallurgist to oversee the build and dry commissioning of the DMS plant in Klerksdorp, South Africa.

The Company has established an operational office in Bo City and site works have been commenced for the proposed on-site office and DMS plant site at the Golu Node area.

Newfield's Chief Financial Officer, Mr D Leavy, has left his employment as the Company's current focus is predominantly in exploration. Newfield records its appreciation for his contribution and wish him well for his future endeavours.

## COMPETENT PERSON'S STATEMENT- GOLD

The information in this report that relates to Exploration Results, Mineral Resources or Ore Reserves on the Newfield, Newfield Extended and Crest Yard Gold Projects is based on information compiled by Mr Bryan Alexander who is a member of the Australasian Institute of Mining and Metallurgy and is an employee of Newfield Resources Limited.

Mr Alexander is a director and substantial shareholder of Archaean Exploration Services Pty Ltd. Archaean Exploration Services Pty Ltd holds 499,500 fully paid ordinary shares in Newfield Resources Limited. Mr Alexander is the sole director and substantial shareholder of Crest Metals Pty Ltd. Crest Metals Pty Ltd holds 750,000 fully paid ordinary shares in Newfield Resources Limited. Crest Metals Pty Ltd holds a 30% direct equity interest in the Crest Yard Gold Project tenements. Newfield Resources Limited can elect to purchase Crest Metals Pty Ltd's 30% interest in the Crest Yard Project before 30 June 2015 by issuing Crest Metals Pty Ltd 1,250,000 fully paid ordinary shares in Newfield Resources Ltd.

Mr Alexander has sufficient experience which is relevant to the style of the mineralisation and type of deposit under consideration and to the activity which he is undertaking, to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Alexander consents to the inclusion in this ASX Release of this information in the form and context in which it appears.

## COMPETENT PERSON'S STATEMENT- DIAMONDS

The information in this report that relates to Exploration Results, Mineral Resources or Ore Reserves on the Allotropes Diamond's Sierra Leone Diamond Project, is based on information compiled by Mr Richard Hall who is a Member of the Australasian Institute of Mining and Metallurgy and a member of the Australian Geological Society and who is an employee of Allotropes Diamonds Pty Ltd and Newfield Resources Limited.

Mr Hall 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 as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Hall consents to the inclusion in this ASX release of this information in the form and context in which it appears.

# APPENDIX 1 – REPORTING OF EXPLORATION RESULTS - JORC (2012) TABLE 1

# NEWFIELD EXTENDED PROJECT

Section 1: Sampling Techniques and Data – NEWFIELD EXTENDED PROJECT

Criteria	apling Techniques and Data – NEWFIELD EX  JORC Code Explanation	Commentary
Sampling techniques		NEWFIELD EXTENDED PROJECT –
Sampung 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 and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (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.</li> </ul>	<ul> <li>NEWFIELD EXTENDED PROJECT – Historical auger samples were taken at approximate 100m centres on east west orientated traverses nominally spaced 800m apart.</li> <li>The samples were specifically taken from the pedogenic carbonate horizon where present.</li> <li>The recent auger samples were taken on 100m by 100m, and locally 50m by 50m grid spacing.</li> <li>The samples were taken from the pedogenic carbonate horizon where present.</li> </ul>
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>The historical auger samples over the Newfield Extended Project were taken using a bobcat mounted auger rig with a maximum hole depth of 1.7m.</li> <li>The recent auger samples over the Newfield Extended Project were taken using a landcruiser mounted auger rig with a maximum hole depth of 1.0m.</li> </ul>
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	<ul> <li>Sample recovery details are not specified in the historical data.</li> <li>Sample recovery in the recent auger program was monitored with all samples showing good recovery which ensures the representative nature of the samples.</li> </ul>
Logging	<ul> <li>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.</li> <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>The historical auger sample material was logged by the previous explorer for regolith, colour, grain size and lithology.</li> <li>The recent auger sample material was logged for regolith, colour, grain size, acid reaction and lithology.</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> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <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>	

Criteria	JORC Code Explanation	Commentary
	Whether sample sizes are appropriate to the grain size of the material being sampled.	
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> <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>	<ul> <li>The historical auger samples were bagged in the field and submitted to Kalgoorlie Assay Laboratories (KalAssay) in Perth for wet chemical analytical determination. The samples were crushed and pulverised and assayed for Cu, Pb, Zn, Ni, As, Co, Cr, Fe, Mg, Mn, Ti, Au, Pt &amp; Pd, base metals were determined by four acid digest (AT) then finished by ICP scan techniques and Au and PGE's by Fire Assay.</li> <li>The recent auger samples were bagged in the field and submitted to Intertek Genalysis Laboratory Services in Kalgoorlie and were assayed via an aqua regia digest by for low level gold (Method AR10/GF01), arsenic (Method AR10/OM) inckel (Method AR10/OM).</li> </ul>
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul> <li>Standard QA/QC procedures undertaken by Intertek Genalysis Laboratory Services as part of the sample analysis.</li> <li>No independent QA/QC undertaken.</li> </ul>
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> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>Sample points were surveyed by handheld GPS with horizontal accuracy (Easting and Northing values) of +-5m.</li> <li>Grid System – MGA94 Zone 50.</li> </ul>
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <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> <li>Whether sample compositing has been applied.</li> </ul>	<ul> <li>Infill and extensional auger soil sampling, on a 100m by 100m, and locally 50m by 100m grid spacing.</li> <li>No sample compositing applied.</li> </ul>
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <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>	East west orientated traverses designed to test for north to north westerly trending structures at, or adjacent to, the granite – greenstone contact.
Sample security	The measures taken to ensure sample security.	<ul> <li>Samples were securely stored in field and transported to the laboratory by an authorised company representative.</li> </ul>
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	No audits or reviews completed.

# Section 2: Reporting of Exploration Results – NEWFIELD EXTENDED PROJECT

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>The NEWFIELD EXTENDED PROJECT, located 70 km north of Bullfinch, Western Australia comprises three granted exploration licences (E77/1394, E77/1674 and E77/1825) covering approximately 60 square kilometres immediately the north and west of the Newfield Mining Centre.</li> <li>Newfield Resources Limited is earning an interest in the tenements via exploration</li> </ul>

Criteria	JORC Code Explanation	Commentary
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	expenditure. The terms of the Newfield Extended Project Farmin Agreement are: To earn an initial 51% interest in the tenements:  Newfield must undertake a detailed auger drilling program over the three priority target areas (minimum of 400 auger holes) within six months of execution of the agreement (and before any withdrawal), and; Newfield must undertake a minimum of 2,500m of aircore and/or RC drilling within 18 months of the execution of the agreement. Newfield may earn an additional 29% interest (taking its total interest to 80%) by: Undertaking an additional 2,500m of aircore and/or RC drilling or an additional \$200,000 of exploration expenditure within 30 months of the execution of the agreement. If Newfield earns 80% interest then the parties will enter an 80%/20% contributing joint venture. Newfield has the option, at its election, to acquire the remaining 20% interest in the tenements by the payment of \$200,000 within 24 months of the execution of the agreement. There is no Native Title Claim registered in respect of the project tenure. Accordingly, there is no requirement for a Regional Standard Heritage Agreement to be signed.  At time of writing, the tenements have expiry dates ranging between 08/02/2015 and 25/02/2018.  Recent historical exploration (2010 – 2012) has been undertaken by Western Areas Ltd as part of a nickel exploration program. This exploration included geological mapping, aeromagnetic survey and interpretation and auger sampling.  A limited program of soil sampling and localised aircore drilling was completed by
Geology	Deposit type, geological setting and style of mineralisation.	LionOre Australia (Nickel) Ltd in the period 2004 -2006.  • Wide spaced soil sampling and localised RAB drilling was undertaken in the early to mid 1990s by Sons of Gwalia Ltd- Burmine Operations Pty Ltd.  • Target is shear hosted gold mineralisation associated with the western granite-
Drill hole	A summary of all information material to the	greenstone contact of the Southern Cross – Bullfinch Greenstone Belt.  No drilling being reported.
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:</li> <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> <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>	Two drining being reported.

Criteria	JORC Code Explanation	Commentary
Data aggregation methods	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.	<ul> <li>No length weighting has been applied due to the nature of the sampling technique. No top- cuts have been applied.</li> </ul>
	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.	No metal equivalent values were reported.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	
Relationship between mineralisation widths and intercept lengths	reporting of Exploration Results.  • If the geometry of the mineralisation with respect to the	<ul> <li>The sampling technique used defines a near surface geochemical expression. No information is attainable relating to the geometry of any mineralisation based on</li> </ul>
	<ul> <li>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>	these results.
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	<ul> <li>Appropriate summary diagrams with Scale and MGA 94 coordinates are included in the accompanying report above.</li> </ul>
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	Diagrams show all of the auger sample points taken.
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	A detailed aeromagnetic survey flown by a previous explorer has been used to interpret relative positions of prospective structures in relation to defined gold anomalism in the auger sampling.
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>Based on the results of the auger sampling a first pass aircore program will be planned to further test the target areas.</li> <li>Target areas for future and follow-up exploration are shown on diagram(s) included in the accompanying report above.</li> </ul>

# APPENDIX 2 – REPORTING OF EXPLORATION RESULTS – JORC (2012) TABLE 1

# CREST YARD GOLD PROJECT

SECTION 1: SAMPLING TECHNIQUES AND DATA – CREST YARD GOLD PROJECT

Criteria	1: SAMPLING TECHNIQUES AND DATA – CR JORC Code Explanation	Commentary
Sampling techniques		CREST YARD PROJECT - No
zampanig isomiquo	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.	geochemistry samples collected.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	
	• Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (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.	
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>Aircore drilling completed by Raglan Drilling. Achieved hole diameter size of 104mm (4 ¼ inch).</li> </ul>
Drill sample recovery		Sample recovery size and sample condition
	<ul> <li>sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> </ul>	<ul> <li>(dry, wet, moist) recorded.</li> <li>Drilling with care (eg. clearing hole at start of rod, regular cyclone cleaning) if water</li> </ul>
	<ul> <li>Whether a relationship exists between sample recovery</li> </ul>	encountered to reduce incidence of wet
	and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	<ul> <li>Insufficient sample population to determine whether relationship exists between sample recovery and grade.</li> </ul>
Logging	<ul> <li>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.</li> <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>	Logging carried by inspection of washed cuttings at time of drilling with end-of-hole (EOH) samples and any unusual lithologies collected in plastic chip trays for future reference.
Sub-sampling	If core, whether cut or sawn and whether quarter, half or all core taken.	No core drilling
techniques and sample preparation	<ul> <li>or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> </ul>	<ul> <li>Composite samples of 1 -4m were collected by PVC spear in pre-numbered calico bags.</li> </ul>
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Sample weight 2.5 - 3 kg. Wet samples bagged separately in plastic bags prior to
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	placing in plastic and/or polyweave bags for despatch to assay laboratory. Scoop used for wet sample collection.
	<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> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul> <li>All samples are pulverised utilising Essa LM1, LM2 or LM5 grinding mills determined by the size of the sample. Samples are dried (nominal 110 degrees C), crushed and pulverized to produce a homogenous representative sub-sample for</li> </ul>
	of the material being sampled.	analysis. A grind quality target of 85% passing 75µm has been established and is relative to sample size, type and hardness.  • Field duplicates collected as part of QA/QC

Criteria	JORC Code Explanation	Commentary
		process which also involved the use of three STANDARD samples and one BLANK sample (supplied by Geostats Pty Ltd, Perth)
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> <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>	<ul> <li>The samples were collected for gold analysis work completed at Intertek Genalysis, Perth. Following the Sample Preparation outlined in the previous section above, all samples were analysed for gold by Intertek Genalysis Laboratory Services via a 50g Lead Collection Fire Assay with an AAS Finish (FA50/AA). (Detection Limit – 5ppb Au). Samples over 0.20g/t were resampled as one metre intervals and were re-assayed using the same technique.</li> <li>Gold intercepts are calculated with a 0.10g/t Au lower cut, no upper cut and maximum of 2m internal dilution.</li> <li>Quality control process and internal laboratory checks demonstrate acceptable levels of accuracy.</li> </ul>
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	QA/QC procedures include certified     Standard Sample(s), a Blank sample and a     field duplicate submitted to the Assay     Laboratory with the field samples as     described above.  The Ratio of Standards/ Blanks/Duplicates in     the soil sampling program is 1 in     approximately every 25 field samples.     Internal laboratory standards are completed     as a matter of course.  Sample data was captured in the field and     data entry completed in the Company's Perth     office. Sample data was then loaded into the     Company's database and validation checks     completed to ensure data accuracy.
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> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>Drill collars were surveyed by handheld Garmin 60 GPS with horizontal accuracy (Easting and Northing values) of +-5m.</li> <li>Grid System – MGA94 Zone 51.</li> <li>Topographic elevation using published GSWA geological maps and hand held GPS with Z range +-15m suitable for relatively flat terrain.</li> </ul>
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <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>	geochemistry anomalies. Traverses were spaced between 400 and 600m apart.
Orientation of data in relation to geological structure	<ul> <li>Whether sample compositing has been applied.</li> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <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>Aircore drill samples composite range 1-4m.</li> <li>East-west drill traverses considered effective to intersect interpreted north to north northwest and north northeast striking interpreted structures within the Dunnsville Granodiorite.</li> </ul>
Sample security	The measures taken to ensure sample security.	<ul> <li>Samples collected from the field delivered by field team direct to drop off point in Kalgoorlie for despatch to Perth.</li> </ul>
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	<ul> <li>No audits or reviews completed on this batch of samples.</li> </ul>

Section 2: REPORTING OF EXPLORATION RESULTS – CREST YARD GOLD PROJECT

	EPORTING OF EAPLORATION RESULTS -	
Criteria  Mineral tenement and land tenure status	• Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.  • The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	• The CREST YARD GOLD PROJECT, comprises 14 prospecting licences (P16/2722 – 2731, P16/2733 – 2736) covering approximately 24km2 and is located approximately 60km northwest of Kalgoorlie, Western Australia. The tenements are held 70% by Newfield Resources Limited. Crest Metals Pty Ltd holds a 30% direct equity interest in the Crest Yard Gold Project. Newfield Resources Limited can elect to purchase Crest Metals Pty Ltd's 30% interest in the Crest Yard Project before 30 June 2014 by issuing Crest Metals Pty Ltd 1,250,000 fully paid ordinary shares in Newfield Resources Ltd.  • There is no Native Title Claim registered in respect of the project tenure. Accordingly, there is no requirement for a Regional Standard Heritage Agreement to be signed.  • The tenements have an expiry date of 14/12/2015.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	<ul> <li>Prior to 1996 historical exploration over the Crest Yard Gold Project was very limited and unsystematic. The discovery of the Golden Cities-Federal Gold deposits in the Kanowna – Scotia Granodiorite, north of Kalgoorlie in 1996 provided the impetus for Centaur Mining and Exploration Ltd ("Centaur") to apply for the ground now covered by the Crest Yard Gold Project.</li> <li>Exploration completed by Centaur Mining and Exploration Ltd ("Centaur") on the project area comprised mapping, aeromagnetic interpretation and wide spaced auger drilling.</li> <li>The auger drilling program successfully outlined a 2.5 km long northwest-trending greater than 50ppb gold anomaly in the central area of the Crest Yard Gold Project. The overall anomalous (&gt;10ppb Au) zone extends for in excess of 6km within Crest Metals ground. The width of the anomaly varies from 250m to 1km.</li> </ul>
Geology	Deposit type, geological setting and style of mineralisation.	Target is shear hosted and structurally controlled gold mineralisation associated with northwesterly and north-northeasterly trending structures within the Dunnsville and Doyle Dam Granodiorite intrusions.
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:</li> <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> <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>	This is the first phase of drilling completed by Newfield Resources Limited. Collar information for the drill holes are included in NWF ASX Announcement dated 23/4/2013.

Criteria	JORC Code Explanation	Commentary
Data aggregation methods	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.	<ul> <li>Intercepts are reported as down-hole length (whole metres in the case of Aircore) and average gold intercept are calculated with a 0.10g/t Au lower cut, no upper cut and maximum of 2m internal dilution.</li> </ul>
	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.	No metal equivalent values or formulas used.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results.	<ul> <li>All results are based on whole down-hole metres.</li> </ul>
ana intercept tengins	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	
	• If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').	
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	<ul> <li>Appropriate summary diagram with Scale and MGA 94 coordinates shown is included in the accompanying report above.</li> </ul>
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	<ul> <li>All gold &gt;100 ppb results and location of all aircore holes drilled are shown on the diagram in the accompanying report above.</li> </ul>
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	<ul> <li>A recent auger sampling program (NWF ASX Release 17/10/2012) has assisted the recent aircore drill targeting.</li> </ul>
Further work	The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large- scale step-out drilling).	<ul> <li>A program of infill and extensional aircore drilling is proposed to test the extent of the gold mineralisation intersected to date.</li> </ul>
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	

# APPENDIX 3 – REPORTING ON EXPLORATION RESULTS-JORC (2012) TABLE 1 Allotropes Diamond's Alluvial Diamond Project -Sierra Leone.

# **Section 1 Sampling Techniques and Data**

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

Criteria	JORC Code explanation	Allotropes Diamonds 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 and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <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, 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.</li> </ul>	• Four (4) exploration bulk-samples (box-cuts) were completed in the Allotropes Exploration Licence EL 15/2012 (herein after referred to as the EL), on the fluvial Lower Terrace facies of the Golu Node. The dimension of the box-cuts is approximately 10 x 50m. Excavation was conducted mechanically to remove both overburden and the basal gravel horizon. Bedrock cleaning was required due to the perturbated nature of the footwall - this conducted under close supervision. An average thickness of c.30 cm of basal gravel was achieved, with an average thickness of 500-600 cm of overburden material comprising both fluvial and organic sediments. Approximately 74 tons of basal gravels were treated through a 3-5ton per hour Dove Explorer jig. The SG of the gravels was measured at 2.7g/cm <sup>3</sup> and tonnages through the plant were carefully monitored. The efficiency of the jig was c.80%, determined through the use of 4mm and 8mm density tracers. As such, the recoveries obtained are deemed suitable for reporting purposes and to provide an indicative estimation of the contained mineralisation within the Golu Lower Terrace facies.
Drilling techniques	<ul> <li>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).</li> </ul>	<ul> <li>Not applicable – no drilling methodologies employed as all reconnaissance activity to date has been conducted via mechanical and/or manual excavation of pits.</li> </ul>
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	Not applicable as no drilling methodologies employed

#### Criteria **JORC Code explanation Allotropes Diamonds Commentary** Logging Whether core and chip samples have been Sample pits (various dimensions) were lithologically logged to capture, among other parameters, overburden geologically and geotechnically logged to a level of detail to support appropriate and gravel thickness, depth to bedrock, footwall Mineral Resource estimation, mining contacts (sharp, gradual) and footwall lithology and studies and metallurgical studies. character (weathered, fresh). Whether logging is qualitative or Most pits were photographically recorded. quantitative in nature. Core (or costean, channel, etc) photography. The total length and percentage of the relevant intersections logged.

Criteria	JORC Code explanation	Allotropes Diamonds Commentary
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> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <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> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul> <li>All samples collected were <i>in situ</i> material and of sufficient size for sampling purposes. All samples were cleaned to bedrock i.e. the rationale being that much of the diamond concentration in alluvial deposits occupies this interface.</li> <li>All samples are transported and processed with minimum handling to ensure sample integrity and minimise loss of ore material.</li> <li>Sub-sampling techniques not applicable as no further reduction of sample required once excavated.</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> <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>	<ul> <li>Gravel samples were processed through Dove Explorer 3tph mechanical jig and sorted off-site. The efficiency of the jig was c.80%, determined through the use of 4mm and 8mm density tracers.</li> <li>All concentrates were visually sorted in the absence of x-ray or optical sorters. This was conducted under strict supervision.</li> <li>All diamonds recovered are weighed and categorised through an OGI Scannox i100 Tender machine.</li> </ul>
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul> <li>No independent verification of the sampling process was undertaken.</li> <li>No adjustments to sampling/grade data have been made.</li> </ul>

Criteria	JORC Code explanation	Allotropes Diamonds Commentary
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> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>Sample sites were captured with hand-held Garmin GPS with a nominal (horizontal) accuracy of 5m.</li> <li>In-pit measurements recorded with tape measures.</li> <li>The grid system utilised is WGS84, UTM Zone 29N.</li> <li>Waypoint and tracks were transferred to ExpertGPS, GlobalMapper and ArcGIS programs. DTM data utilised is the NASA Africa SRTM (90m cell). In addition, a DEM collected from a previous aeromagnetic survey (100m line spacing; 55m vertical height) is also available for topographic control purposes.</li> </ul>
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <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> <li>Whether sample compositing has been applied.</li> </ul>	<ul> <li>The spacing of the bulk-sample sites was regular and geo-statistically representative and considered appropriate for reconnaissance levels of sampling. Sample representivity, concerning geographical location and sample elevation took cognisance of the geological continuity within, and across, the various depositional (facies) environments in which the alluvial deposits are developed.</li> <li>No sample compositing has been applied.</li> </ul>
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> </ul>	• Sample orientation/bias is across strike of the regional footwall fabric and the alluvial gravel development. Samples intentionally cross-cut the surficial geology units, rather than parallel them in order to assess

Criteria	JORC Code explanation	Allotropes Diamonds Commentary
	• 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.	geological contact relationships and gravel distribution between juxtaposed alluvial facies types.  • No sampling bias has been introduced
Sample security	• The measures taken to ensure sample security.	<ul> <li>Adequate protection measures of the samples at source and off-site, was taken. 24 hour security on and off-site was provided during sample procurement and processing.</li> </ul>
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	No independent audits or reviews have been undertaken.

# **Section 2 Reporting of Exploration Results**

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

Criteria	JORC Code explanation	Allotropes Diamonds 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>The EL is 100% owned by Allotropes. In the ownership structure, there is no participation (free-carry or otherwise) with the Sierra Leone government other than a 6.5% royalty levied for precious stones (15% for specials valued over US\$0.5M per stone) as well as an export tax that is applied to all diamonds sent out of the country.</li> <li>The EL is issued initially for a 4 year period, and 2 subsequent renewals are permitted – the second renewal being for a 3 year period and the last being for a 2 year period, for a total of 9 years. There is no requirement at this stage for Allotropes to reduce their licence size.</li> <li>The EL tenure and planned work program for the forthcoming year is in good standing. Their secure status was confirmed in two letters received in December 2013 from the Deputy Minister of Mines and the Sierra Leone National Minerals Agency (NMA).</li> </ul>
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	<ul> <li>Sierra Leone Diamond Company (SLDC, now rebadged as African Minerals) conducted an extensive umbrella, multi-commodity and diamond exploration program, comprising an airborne magnetic survey for kimberlites (28 000 km²), a ground-based reconnaissance stream sediment sampling (RSS) and bulk-sample pitting program over their alluvial deposits, over approximately 40 000km² of the country. With respect to their alluvial diamond exploration program, the historic blocks 11 and 12 (Hall, 1969) of the Sewa River area, over which the Allotropes licence lies, were reasonably prospected by SLDC, who returned an average 'background' grade of 25 cpht and an average stone size of 0.5 carats per stone (cts/stn). Their exploration activities were conducted over the period 1996-2007, but effectively ceased for several years during the civil war, which ended in 2002. SLDC commenced some commercial production of alluvial diamonds in 2003 and even intersected a primary kimberlite dyke from a drilling campaign focused around the Lake Popei area, but decided to focus on developing their 13 billion ton JORC compliant Tonkilili iron ore deposit, now one of the largest magnetite deposits in the world.</li> <li>Artisinal miners have exploited significant diamondiferous swamps and river gravels in the EL over the years – however, these activities have not formally been documented or their depletions recorded.</li> </ul>

Criteria	JORC Code explanation	Allotropes Diamonds Commentary
Geology	<ul> <li>Deposit type, geological setting and style</li> </ul>	<ul> <li>Dominant diamondiferous alluvial facies types identified</li> </ul>
	of mineralisation.	are:
		<ul> <li>Modern River deposits;</li> </ul>
		<ul> <li>Swamps and Flats;</li> </ul>
		<ul> <li>Alluvial (fluvial) terraces (Low and High Terraces of</li> </ul>

Criteria	JORC Code explanation	Allotropes Diamonds Commentary
Drill hole		the ancestral river located in proximity to the Modern river);  Surface residual deposits (remnant regolith landforms) comprising colluvial/eluvial aprons (laterites) over, and adjacent to, interpreted kimberlite geophysical anomalies are considered the principal alluvial (host) gravel horizon.  Primary diamond ore bodies - geophysical anomalies/models indicate pipe and blows and lozenge-shape en-echelon kimberlite dyke swarms (considered of Jurassic (c.145Ma) age as per the known kimberlite occurrences. Local strike of interpreted kimberlitic fissuring coincides with both the Koidu and Tongo structural orientations and is considered a regional strike orientation for kimberlite emplacement (E.M.W. Skinner et al., 2004).
Drui hote 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>	There is no historic or current drill hole information available over the EL.
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>	<ul> <li>No weighting, averaging or grade truncation methods have been utilised to calculate the indicative evaluation and resource estimation.</li> <li>No metal equivalent values have been considered.</li> <li>Isopach models have utilised kriging to mitigate skewed data, due to the inherent 'nugget effect' in alluvial diamond deposits.</li> </ul>
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>	• Results, where quoted, are from surface pits, excavated to bedrock. The pervasive single storey (multi-storey in some of the fluvial deposits associated with the Modern river) basal gravels present over the EL represent the target horizon for diamond mineralisation.
Diagrams	• Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	<ul> <li>Appropriate maps and plans have been complied.         Historic and 3<sup>rd</sup> party maps are also available from government sources (e.g. Sierra Leone National Minerals Agency ([NMA]).     </li> </ul>

Criteria	JORC Code explanation	Allotropes Diamonds Commentary
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 Exploration Results.</li> </ul>	<ul> <li>The results reported encompass both low and high grade (i.e. actual) values and no compositing has taken place.</li> <li>The base-data has not been capped to reduce the 'nugget-effect' inherent in many diamond alluvial deposits. The modelling of these data however, has incorporated Kriging, a type of regression analysis, designed to reduce and smooth the effect of skewed data.</li> </ul>
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	Other substantive exploration data is available. The data obtained from a previous comprehensive exploration program (ex SLDC) has been obtained – this includes:     Reconnaissance resolution airborne magnetic data (100m line spacing; 55m flight height; 20m grid spacing)     Exploration bulk localities and sample grades     Maps of potential resource areas     Drilling and sampling programs
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>Future exploration work will be aimed at establishing the repeatability of historic diamond grades and further identifying the mode and occurrence (distribution and geographic locality) of diamondiferous gravels within the EL.</li> <li>Further bulk sample sites will be identified on the basis of the gravel distribution of additional facies types with the EL, with a view to evaluating the mineral content of these gravels in a systematic, geo-statistically representative manner, taking cognisance of both regional and local geology trends and structures.</li> <li>This work is an iterative process and the method planned is one that can be adapted and applied over each newly identified potential resource area.</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	Allotropes Diamonds 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>	<ul> <li>No code-compliant Mineral Resource estimation has been attempted, or mineral resource inventory reported.</li> <li>All work has been conducted at a reconnaissance level of confidence only.</li> <li>Any reference to resource parameters reported are indicative numbers only.</li> <li>A JORC compliant maiden resource is yet to be issued.</li> </ul>
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>	•
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> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> <li>The factors affecting continuity both of grade and geology.</li> </ul>	Not applicable as no formal resource estimation has been undertaken
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.	Not applicable as no formal resource estimation has been undertaken
Estimation and	The nature and appropriateness of the	Not applicable as no formal resource estimation has been

Criteria	JORC Code explanation	Allotropes Diamonds Commentary
Criteria modelling techniques	estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.  • The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.  • The assumptions made regarding recovery of by-products.  • Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).  • In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.  • Any assumptions behind modelling of selective mining units.  • Any assumptions about correlation between variables.  • Description of how the geological interpretation was used to control the resource estimates.  • Discussion of basis for using or not using grade cutting or capping.	Allotropes Diamonds Commentary undertaken
Moisture	<ul> <li>process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</li> <li>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the</li> </ul>	Not applicable as no formal resource estimation has been undertaken
Cut-off	<ul><li>moisture content.</li><li>The basis of the adopted cut-off grade(s)</li></ul>	Not applicable as no formal resource estimation has been
parameters  Mining factors  or assumptions	or quality parameters applied.  • 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>Not applicable as no formal resource estimation has been undertaken</li> <li>No mining methods or mine plans have been reported or submitted</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	Not applicable as no formal resource estimation has been undertaken

Criteria		JC	ORC Code explanation	All	lotropes Diamonds Commentary
			is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.		
Environmen-ta factors assumptions	ul or	•	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.	•	Not applicable as no formal resource estimation has been undertaken
Bulk density		•	Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples. The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.  Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	•	Not applicable as no formal resource estimation has been undertaken
Classification		•	The basis for the classification of the Mineral Resources into varying confidence categories.  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).  Whether the result appropriately reflects the Competent Person's view of the deposit.	•	Not applicable as no formal resource estimation has been undertaken
reviews	or of	•	The results of any audits or reviews of Mineral Resource estimates.  Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate. The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation.	•	Not applicable as no formal resource estimation has been undertaken  Not applicable as no formal resource estimation has been undertaken

Criteria	JORC Code explanation	Allotropes Diamonds Commentary
	Documentation should include assumptions made and the procedures used.  • These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	

# **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	Allotropes Diamonds 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>	No attempt at a code compliant Mineral Reserve has been reported as the data is at a reconnaissance level.
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>	Not applicable as no formal reserve estimation has been undertaken
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>	Not applicable as no formal reserve estimation has been undertaken
Cut-off	• The basis of the cut-off grade(s) or	
parameters Mining factors	<ul><li>quality parameters applied.</li><li>The method and assumptions used as</li></ul>	Not applicable as no formal reserve estimation has been
or assumptions	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).  The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as prestrip, access, etc.  The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and preproduction drilling.  The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).  The mining dilution factors used.  Any minimum mining widths used.  The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.  The infrastructure requirements of the selected mining methods.	Not applicable as no formal reserve estimation has been undertaken
Metallurgical	The metallurgical process proposed and	Not applicable as no formal reserve estimation has been
factors or	the appropriateness of that process to	undertaken

Criteria	JORC Code explanation	Allotropes Diamonds Commentary
assumptions	<ul> <li>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.	Not applicable as no formal reserve estimation has been undertaken
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.	Not applicable as no formal reserve estimation has been undertaken
Costs	<ul> <li>The derivation of, or assumptions made, regarding projected capital 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>	Not applicable as no formal reserve estimation has been undertaken
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 coproducts.</li> </ul>	Not applicable as no formal reserve estimation has been undertaken
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> </ul>	Not applicable as no formal reserve estimation has been undertaken

Criteria		JO	ORC Code explanation	AI	lotropes Diamonds Commentary
		•	Price and volume forecasts and the basis		
			for these forecasts.		
		•	For industrial minerals the customer		
			specification, testing and acceptance requirements prior to a supply contract.		
Economic		•	The inputs to the economic analysis to	•	Not applicable as no formal reserve estimation has been
Zeonomie			produce the net present value (NPV) in		undertaken
			the study, the source and confidence of		
			these economic inputs including		
		_	estimated inflation, discount rate, etc.		
		•	NPV ranges and sensitivity to variations in the significant assumptions and		
			inputs.		
Social		•	The status of agreements with key	•	Not applicable as no formal reserve estimation has been
			stakeholders and matters leading to		undertaken
			social licence to operate.		
Other		•	To the extent relevant, the impact of the	•	Not applicable as no formal reserve estimation has been
			following on the project and/or on the estimation and classification of the Ore		undertaken
			Reserves:		
		•	Any identified material naturally		
			occurring risks.		
		•	The status of material legal agreements		
		•	and marketing arrangements.		
		•	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		
Classification		•	the reserve is contingent.  The basis for the classification of the	•	Not applicable as no formal reserve estimation has been
Ciussification		-	Ore Reserves into varying confidence		undertaken
			categories.		
		•	Whether the result appropriately reflects		
			the Competent Person's view of the		
			deposit. The proportion of Probable Ore		
		•	The proportion of Probable Ore Reserves that have been derived from		
			Measured Mineral Resources (if any).		
Audits	or	•	The results of any audits or reviews of	•	Not applicable as no formal reserve estimation has been
reviews			Ore Reserve estimates.		undertaken
Discussion	of	•	Where appropriate a statement of the	•	Not applicable as no formal reserve estimation has been
relative accuracy/			relative accuracy and confidence level in the Ore Reserve estimate using an		undertaken
confidence			approach or procedure deemed		
Julian			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. The statement should specify whether it		
		•	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		

Criteria	JORC Code explanation	Allotropes Diamonds Commentary
Cineria	used.  • Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.  • It is recognised that this may not be possible or appropriate in all circumstances. These statements of	Anotropes Diamonus Commentary
	relative accuracy and confidence of the estimate should be compared with production data, where available.	

# **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 JO	ORC Code explanation	Allotropes Diamonds Commentary
Indicator • minerals	Reports of indicator minerals, such as chemically/physically distinctive garnet, ilmenite, chrome spinel and chrome diopside, should be prepared by a suitably qualified laboratory.	<ul> <li>Kimberlite Indicator Minerals (KIMs) have been reported by the previous owner/operator, SLDC.</li> <li>KIMs predominantly comprise kimberlitic ilmenites and chromites, with kimberlitic magnesian (picro-) ilmenite dominating the recoveries (90%).</li> <li>KIMs were recovered using standard laboratory techniques - heavy liquid separation (R.D. 2.9 g/cm³), followed by magnetic separation and then hand-picked mineral grain counts (most reported at 0.6mm size in +1 sieve fraction).</li> <li>An owner-operated RSS and soil loaming program for KIMs has been initiated. To date, no KIMs have been recovered from the EL by Allotropes as all samples have been stored on site, until sufficient material has been collected for export for laboratory purposes (mineral grain counts and microprobe work).</li> </ul>
Source of • diamonds	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.	<ul> <li>The EL contains a portion of the medial reach of the diamondiferous Sewa River.</li> <li>The diamonds contained in secondary or alluvial deposits adjacent and inland of, the Sewa River banks, are long thought to be derived from the weathering and erosion of primary ore bodies in its catchment area to the north, which straddles the known primary or kimberlite occurrences in the Kono District (Koidu and Tongo pipe and dykes clusters of Jurassic age [c.143-146 Ma]).</li> <li>Mass balance problems (c.50M carats recovered to date in the alluvials), coupled with anomalously large average stone sizes than at the supposed source, seem to refute this theory and point to a more localised source for the Sewa alluvial diamonds.</li> <li>Widespread colluvial/eluvial deposits derived from down-wasted (Late-Cretaceous?) primary kimberlite sources appear to be the main secondary (i.e. alluvial) host.</li> <li>Distribution of gravels by hill-slope and sheetwash processes probably account for the extensive laterally developed surface residual gravels, comprised predominantly of a locally derived lateritic clast assemblage.</li> <li>Inherited fluvial clasts (high-rounding; high-sphericity) are uncommon, except where alluvials are proximal to the Modern river or form palaeo deposits relating the</li> </ul>

ancestral river.

An endorheic component seems apparent for many of these diamondiferous drainages, thereby promoting the

Criteria	JORC Code explanation	Allotropes Diamonds Commentary
		view that the diamonds are sourced locally or from near-source deposits.
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>	<ul> <li>The bulk-samples comprised the basal gravel horizon of the fluvial Lower Terrace facies. Wash samples were obtained partly through mechanical excavation and manual labour and delivered to the plant via wheeled loaders.</li> <li>The purpose of the gravel processing is to establish the mineral (diamond) content of the gravels. The samples were treated through a 3-5tph jig processing plant to extract diamonds and provide Allotropes with a representative (indicative) grade (measured in carats per hundred tons or cpht) for that facies.</li> <li>Individual results are representative in relation to their sample size to allow an indicative (non-compliant) resource estimation.</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 re-crush.</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>	<ul> <li>Samples were treated through purpose-built mechanical jig, suitable for exploration work in the tropics.</li> <li>Bottom screen size (BSS) is 2mm cut-off (square slots).</li> <li>All sorting was hands-on, in the absence of a DMS and hands-off (glove-box) final recovery.</li> <li>Plant efficiencies were in the range of 80% (cf. ceramic density tracers) with careful supervision. All tailings have been retained for future processing through a purpose-built DMS plant.</li> </ul>
Carat	• One fifth (0.2) of a gram (often defined as a metric carat or MC).	Reported as carats.
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>	<ul> <li>Sample grades are reported as carats per hundred tons or cpht. The use of carats per ton (cpt) are used where the grade permits i.e. the mineral tenor is high enough to warrant it.</li> <li>Previous use of carats per cubic yard converted to carats per cubic metre and then cpt or cpht.</li> <li>Kimberlite samples as and when reported, are likely to be quoted as carats per ton (cpt) due to the inherent higher grades (mineral tenor) in these primary deposits.</li> </ul>
Reporting of Exploration Results	<ul> <li>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.</li> <li>Sample density determination.</li> <li>Per cent concentrate and undersize per sample.</li> <li>Sample grade with change in bottom cutoff 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</li> </ul>	<ul> <li>Insufficient diamond recoveries to date have warranted classification via sieve classes or the compilation of size frequency distribution (SFD) curves for the diamond population of the fluvial Lower Terrace facies.</li> <li>An approximation of the gravel relative density at this stage of exploration has been estimated in the range 1.6 tonnes per cubic metre to 1.8 tonnes per cubic metre, where more consolidated. Bulking factors have been applied.</li> <li>Reporting of percent concentrate and undersize are considered irrelevant at this stage and level of reporting.</li> <li>Grade variations associated with changes in BSS have not been determined, but will be assessed once the DMS plant is commissioned.</li> <li>The size and frequency of sampling is considered to be geo-statistically representative for this level of reporting (low-level inferred).</li> <li>There has been no recovery of owner-operated diamonds to date that are of commercial significance or quantity.</li> </ul>

Criteria	JORC Code explanation	Allotropes Diamonds Commentary
	diamonds are considered too small to be of commercial significance. This lower cut-off size should be stated.	
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>	No Mineral Resources or Mineral Ore Reserves are included in this report
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 \$\cap{carat}\$ and \$\frac{1}{2}\$ 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>	<ul> <li>No carat value estimates for the diamonds, or diamond footprinting determinations (e.g. diamond types, quality, size frequency distribution [SFD]) that are repeatable in nature, have been included in this report.</li> <li>Historic reports that refer to the commercial disposal of diamonds from the Sewa River, outlining \$/carat, average stone size and quality are available in the public domain.</li> </ul>
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>	Not applicable as no formal reserve estimation has been undertaken
Classification	• 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.	<ul> <li>To date, there has been insufficient recovery of diamonds by Allotropes Diamonds to assess stone frequency, size or continuity of grades over the EL area at any high level of confidence.</li> <li>In terms of resource classification criteria, low Inferred levels of confidence would be applicable for the fluvial Lower Terrace facies at the level of sampling conducted to date.</li> </ul>