WESTERN AREAS LTD

1 October 2015 **ASX: WSA**

WESTERN AREAS COMPLETES THE ACQUISITION OF THE COSMOS NICKEL COMPLEX

JORC 2012 Resource Compliance Completed by Western Areas

Western Areas Ltd (ASX:WSA, "Western Areas" or the "Company"), through its 100% owned subsidiary Australian Nickel Investments Pty Ltd, is pleased to announce that it has completed the previously announced acquisition of the Cosmos Nickel Complex ("CNC") from Xstrata Nickel Australasia Operations Pty Ltd ("XNAO"), a subsidiary of Glencore plc.

The completion of the transaction follows satisfaction of the conditions precedent. Accordingly, Western Areas has paid its first instalment of A$11.5m in cash, from the total consideration of A$24.5m. Future payments are due on 1 July 2016 (A$7.0m) and 1 April 2017 (A$6.0m).

The Company has also completed a review of the acquired nickel resources in accordance with JORC 2012, confirming a total of 567,297 nickel tonnes to the CNC Total Mineral Resources (see Table 1), which is a significant addition to the Company's resource portfolio.

Previously Announced Acquisition Highlights:

- **World class nickel belt which has yielded one of the highest grade nickel mines ever discovered and operated;**
- **Substantial exploration opportunities in areas which remain largely untested – 24 month program ready to commence on day one;**
- **Third potential underground mine with the undeveloped Odysseus high grade deposit hosting a total Mineral Resource of 7.3 million tonnes @ 2.4% nickel containing 174,000 tonnes of nickel;**
- **Extensive and well maintained operating infrastructure including a 450ktpa concentrator, a new SAG mill and large accommodation village to support an early start-up; and**
- **Consistent with Western Areas' core strengths – exploration, development, underground mining and conventional flotation utilising a well proven low cost operating model.**

Western Areas will now commence the formal process of registering the transfer of the associated mining and exploration tenements with the Department of Mines and Petroleum.

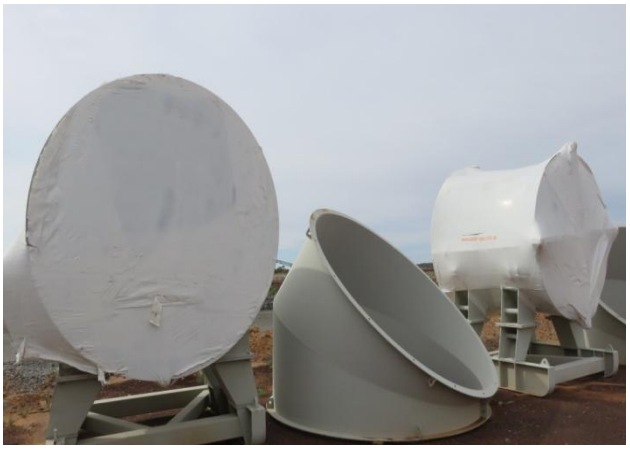
Western Areas Managing Director, Mr Dan Lougher, commented that the completion of the CNC acquisition is an exciting milestone for the Company.

"The completion of this acquisition meets one of our strategic objectives of acquiring a brownfields growth project, in addition to growth opportunities identified at Forrestania. We firmly believe that the Cosmos Nickel Complex provides the Company with significant upside from both an exploration front and a very attractive potential new mining operation."

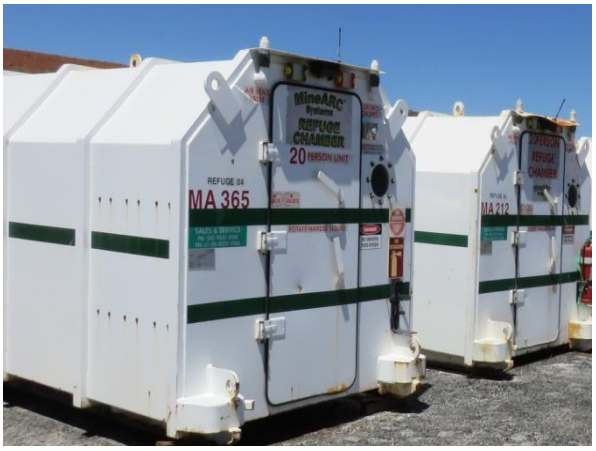
"The Cosmos Nickel Complex area has significant infrastructure in place, was under explored by the previous owner and hosts one of the world's premier high grade nickel belts. The Odysseus deposit holds some high grade massive sulphide intersections of up to 12% nickel which we will be looking to expand upon in the future. "

"We are working very closely with our geophysical partner, NewExco, on the surface geophysics program, whilst our in-house mining and project team looks to advance Odysseus as a potential new underground mine in a staged and disciplined manner using our low cost operating model."

"The operations team has already identified idle equipment, such as a new ventilation fan system and mine refuge chambers which can be transported to Forrestania and drive significant cost savings in excess of A$2m", said Mr Lougher.



Ventilation Fans



Mine Refuge Chambers

Immediate Plans for CNC

Today, the Company's operations team has taken control of the CNC, located just outside Leinster. During the time up to completion, detailed planning for activities from day one were completed and are now being implemented. Some of these plans include, but are not limited to the following:

- Implementing safety and other site operational protocols in line with Western Areas standards;
- Engagement with local contractors to complete initial site improvements;
- Engagement with local heritage groups;
- Tenement wide surface geophysical program using the latest deep sensing technology for additional target generation for calendar year 2015;
- Integration, review and commencement of study work associated with the Odysseus Project; and
- Evaluating and driving equipment synergies.

Western Areas will also now commence the formal process of registering the transfer of the associated mining and exploration tenements with the Department of Mines and Petroleum.

JORC 2012 Resource Statement

Western Areas has completed a thorough review of the previously reported resources for CNC and can now report these resources under the Company's JORC 2012 Compliance procedures (see attachments). The Company's review was not designed to optimise the resource, as this will be one of the workstreams carried out over the next 12 months.

Nickel Mineralisation is in the form of ultramafic-hosted disseminated and massive sulphides. The Mineral Resource is categorised according to drill hole spacing and geological confidence and has been reported in accordance with the JORC Code (2012). A 1.5% nickel cut off grade was applied to all

deposits except for the large low-grade Mt Goode deposit where a 0.4% nickel cut off grade was applied. All resource estimates are based on 3D block models generated using Ordinary Kriging, after applying geostatistical analysis to domained data sets. Further details pertaining to the Mineral Resources can be found in the associated Table 1 documents provided at the end of this report.

The Resource Table for CNC is as follows:

Western Areas Cosmos Ore Mineral Resource Statement - Effective date 1 October 2015

Deposit	Tonnes	Grade Ni%	Ni Tns	JORC Classification	JORC Code
Mineral Resources					
1.Cosmos Area					
AM5	479,914	2.6	12,430	Indicated Mineral Resource	2012
	26,922	1.9	509	Inferred Mineral Resource	2012
AM6	1,704,548	2.7	45,171	Indicated Mineral Resource	2012
	329,443	2.5	8,203	Inferred Mineral Resource	2012
Odysseus	3,884,857	2.2	84,301	Indicated Mineral Resource	2012
	169,165	2.1	3,603	Inferred Mineral Resource	2012
Odysseus North - Disseminated	1,631,495	2.8	45,519	Indicated Mineral Resource	2012
	1,586,175	2.2	35,054	Inferred Mineral Resource	2012
Odysseus North - Massive 1	48,043	11.6	5,563	Indicated Mineral Resource	2012
TOTAL COSMOS AREA	9,860,562	2.4	240,353		
2. Mt Goode Area					
Mt Goode	13,563,000	0.8	105,791	Measured Mineral Resource	2012
	27,363,000	0.6	158,705	Indicated Mineral Resource	2012
	12,009,000	0.5	62,447	Inferred Mineral Resource	2012
TOTAL MT GOODE AREA	52,935,000	0.6	326,944		
TOTAL MINERAL RESOURCES	**62,795,562**	**0.9**	**567,297**		

-ENDS-

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COMPETENT PERSON'S STATEMENT:
The information within this report as it relates to mineral resources is based on information compiled by Mr Andre Wulfse and Mr Charles Wilkinson of Western Areas Ltd. Mr Wulfse and Mr Wilkinson are members of AusIMM and are full time employees of the Company. Mr Wulfse and Mr Wilkinson have sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as Competent Persons as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves.' Mr Wulfse and Mr Wilkinson consent to the inclusion in the report of the matters based on the information in the form and context in which it appears.

FORWARD LOOKING STATEMENT:
This release contains certain forward-looking statements including nickel production targets. Often, but not always, forward looking statements can generally be identified by the use of forward looking words such as "may", "will", "expect", "intend", "plan", "estimate", "anticipate", "continue", and "guidance", or other similar words and may include, without limitation, statements regarding plans, strategies and objectives of management, anticipated production and expected costs.

Examples of forward looking statements used in this report include: "Third potential underground mine with the undeveloped Odysseus high grade deposit " and "The Odysseus deposit holds some high grade massive sulphide intersections of up to 12% nickel which we will be looking to expand upon in the future.", and "".

These forward-looking statements are subject to a variety of risks and uncertainties beyond the Company's ability to control or predict which could cause actual events or results to differ materially from those anticipated in such forward-looking statements.

This announcement does not include reference to all available information on the Company or the Cosmos Nickel Complex and should not be used in isolation as a basis to invest in Western Areas. Any potential investors should refer to Western Area's other public releases and statutory reports and consult their professional advisers before considering investing in the Company.

For Purposes of Clause 3.4 (e) in Canadian instrument 43-101, the Company warrants that Mineral Resources which are not Mineral Reserves do not have demonstrated economic viability.

Table 1
Mineral Resource Estimation
Odysseus
2012 Edition JORC Code

Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.*	• *The Odysseus deposit is defined by 36 diamond drill (DD) holes; 33 underground and 3 surface holes. The composite file used in the 2012 Mineral Resource Estimate (MRE) contains 1,990 samples.*
	• *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*	• *Sample representivity is assured by an industry standard internal QAQC program and assays were done by an independent commercial laboratory* • *All samples are prepared and assayed by an independent commercial laboratory whose instruments are regularly calibrated*
	• *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.*	• *Diamond core is marked at 1 m intervals and sample lengths are typically of this length.* • *Sample intervals marked up by geologists based on geology.* • *Sampled mineralisation intervals are sent to a commercial laboratory for crushing and grinding before assaying.*
Drilling techniques	• *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• *Diamond drilling is used to inform the Odysseus resources; data is derived from both surface and underground diamond drilling (NQ size core).*
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.*	• *Diamond core recoveries are logged and recorded in the database under a Geotechnical tab*
	• *Measures taken to maximise sample recovery and ensure representative nature of the samples.*	• *Sample recovery is high due to the nature of the mineralisation (sulphides) and the type of drilling* • *Diamond core recoveries are logged and recorded in the database under a Geotechnical tab*
	• *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.*	• *The resource is defined by diamond drilling which has high core recoveries.*
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.*	• *All geological logging was carried out to a high standard using well established geology codes in LogChief software.* • *All logging recorded Panasonic Toughbook PC logging.*
	• *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.*	• *Core is photographed in both dry and wet form and logging is done in detail*
	• *The total length and percentage of the relevant intersections logged.*	• *A total of 1,990 samples with an average length of approximately 1m was used to inform the estimate*
Sub-sampling techniques and	• *If core, whether cut or sawn and whether quarter, half or all core taken.*	• *Diamond core is sampled as quarter core only; cut by the field crew on site by diamond saw.*

Criteria	JORC Code explanation	Commentary
sample preparation	• *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.*	• *No non core used*
	• *For all sample types, the nature, quality and appropriateness of the sample preparation technique.*	• *The sample preparation of diamond core follows industry best practice involving oven drying, coarse crushing and pulverising.*
	• *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*	• *The field crew prepares and inserts the QAQC certified reference materials into the relevant calico bags.* • *OREAS and Geostats standards have been selected based on their grade range and mineralogical properties, with approximately 12 different standards used.*
	• *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.*	• *The bulk of the resource is defined by diamond drilling which has high core recoveries.*
	• *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• *All geological logging was carried out to a high standard using well established geology codes in LogChief software.*
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*	• *All samples are assayed by an independent certified commercial laboratory. The laboratory used is experienced in the preparation and analysis of nickel sulphide ores.* • *Samples are analysed by ALS Chemex in Perth for Ag, Al, As, Co, Cr, Cu, Fe, Mg, Mn, Ni, Pb, S, Ti, Zn and Zr.* • *Genalysis Laboratory Service (GLY) is the Umpire Laboratory used to check analysis on pulps provided by ALS.* • *The principal analytical method used incorporated a four acid digest with conventional ICP-AES analysis, which also includes gravimetric analysis for determining specific gravity.*
	• *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.*	• *No Geophysical tools or handheld XRF instruments were used to determine any element concentrations that were subsequently used for MRE purposes.*
	• *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	• *Certified reference materials are included in all batches dispatched at an approximate frequency of 1 per 25 samples, with a minimum of two per batch.* • *Field duplicates are inserted into submissions at an approximate frequency of 1 in 25, with placement determined by Nickel grade and homogeneity. Lab checks, both pulp and crush, are taken alternately by the lab at a frequency of 1 in 25.* • *Accuracy and precision were assessed using industry standard procedures such as control charts and scatter plots.* • *Evaluations of standards are completed on a monthly, quarterly and annual basis using QAQCR.*
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.*	• *Geological interpretation using intersections peer viewed by site geologists.*
	• *The use of twinned holes.*	• *No holes were twinned in the recent drilling programs.*
	• *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*	• *All geological logging was carried out to a high standard using well established geology codes in LogChief software.* • *All other data including assay results are imported via Datashed software.* • *Drillholes, sampling and assay data is stored in a SQL Server database located in a dedicated data center.*
	• *Discuss any adjustment to assay data.*	• *none*
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used*	• *Downhole surveys completed using gyroscopic instrument on all resource definition and exploration holes. Underground drillhole*

Criteria	JORC Code explanation	Commentary
	in Mineral Resource estimation.	*collar locations verified via survey pickup.*
	• *Specification of the grid system used.*	• *A two point transformation is used to convert the data from AMG84_51 mine grid and vice versa.* • *AMG84_51 points: easting = -250,000, northing = -6,900,000, elevation = 10,000.* • *Mine grid points: easting = 250,000, northing = 6,900,000, elevation = -10,000.*
	• *Quality and adequacy of topographic control.*	• *The project area is flat and the topo data density is adequate for MRE purposes of an underground deposit* • *Collar positions were picked up by suitably qualified surface and underground surveyors*
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.*	• *Drillhole spacing ranges from 22 m to 76 m, averaging 50 m.* • *The northern zone from 44,690mN to 44,760mN has a significant gap in data density coupled with intrusives into the mineralised corridor.*
	• *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.*	• *The available drill data demonstrates sufficient and appropriate continuity for both geology and grade within the Odysseus deposit to support the definition of a Mineral Resource as classified under the JORC Code (2012).*
	• *Whether sample compositing has been applied.*	• *The drillhole samples were composited to a regular downhole length of 1 m using the Straight compositing technique, following statistical analysis of the sample lengths.*
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.*	• *The disseminated Odysseus mineralisation strikes north-south, dips 45° east and plunges 35° north.*
	• *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.*	• *As exploration of the Odysseus Mineralised Corridor continues, a greater understanding is developing between the orientation of mineralisation and the complex relationship with structure and intrusives.*
Sample security	• *The measures taken to ensure sample security.*	• *Standard West Australian mining industry sample security measures were observed*
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• *Geological interpretation and data validation completed by Resource Department geologists.*

Section 2: Reporting of Exploration Results - Odysseus

(Criteria listed in Section 1, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• *Cosmos Nickel Complex comprises 26 tenements covering some 9,226Ha. The tenements include mining leases and miscellaneous licenses* • *Western Areas wholly owns 23 tenements, which were acquired from Xstrata Nickel Australasia in October 2015. The remainder of the tenements (3) are subject to a Joint Venture with Alkane Resources NL, where Western Areas has earned 80.6% interest* • *All tenements are in good standing*
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• *Not Applicable to the Resource and Reserves statement*
Geology	• *Deposit type, geological setting and style of mineralisation.*	• *The deposits form part of the Cosmos Nickel Complex, which lies within the Agnew-Wiluna Belt of the central Yilgarn Craton, Western Australia* • *The deposit style is komatiite hosted, disseminated to massive nickel sulphides.* • *The mineralisation typically occurs in association with the basal zone of high MgO cumulate ultramafic rocks.* • *Many of the higher grade ore bodies in the Cosmos Nickel Complex also show varying degrees of remobilisation, and do not occur in a typical mineralisation profile*
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* – *easting and northing of the drill hole collar* – *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* – *dip and azimuth of the hole* – *down hole length and interception depth* – *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	• *Not Applicable to the Resource and Reserves statement*
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.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• *Not Applicable to the Resource and Reserves statement*
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear*	• *Not Applicable to the Resource and Reserves statement*

Criteria	JORC Code explanation	Commentary
	statement to this effect (e.g. '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.*	• *Included within report*
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• *Not Applicable to the Resource and Reserves statement*
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.*	• *Not Applicable to the Resource and Reserves statement*
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• *Future work may aim to increase the resource and reserves in the vicinity of the known ore bodies* • *No plans are yet finalised*

Section 3 Estimation and Reporting of Mineral Resources - Odysseus

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

Criteria	JORC Code explanation	Commentary
Database integrity	• *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.*	• *Database validated by site geologists.* • *All data is entered utilising Maxwell's LogChief software for logging of drillhole data in the field on dedicated laptops.* • *Assay data in the form of csv files from the primary assay laboratory ALS Chemex and the umpire assay laboratory Genalysis received by exploration are imported directly into the database whenever possible.*
	• *Data validation procedures used.*	• *The LogChief software provides the first level of data validation, utilising locked lookup tables for all data fields which have set codes attributed to them.* • *The Datashed database utilises validation lookup tables and trigger scripts to ensure that all numeric, date and code information is correct.* • *All QAQC controls are reviewed after each submission. Notification of failures is immediately sent to Senior Geologist and results within until resolution.*
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• *The CP visited the site during the due diligence period*
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	• *Mineralised envelopes were digitised at 10 m sections in Vulcan and polygons were snapped to both underground and surface drillhole intercepts as appropriate. Wireframe triangulations were created from digitised polygons, and subdivided into domains as necessary, while taking into account geology and / or grade distribution. All triangulations were validated and checked to ensure they are closed and not crossing.* • *Six geological and geostatistical mineralised domains were created:* – *High grade (>2.0% Ni)* – *Medium grade (1.5 - 2.0% Ni)* – *Medium-low grade (1.0 – 1.5% Ni)* – *Low grade (0.4 – 1.0% Ni)* – *MG_S (single hit intersections) (1.5 – 2.0% Ni)* – *HG_S (single hit intersections (>2.0% Ni)* • *Four lithological waste domains were also created:* – *FV – Felsic Volcanic* – *FP – Felsic Porphyry* – *GP - Pegmatite* – *UM – non mineralised ultramafic* • *The Odysseus deposit is hosted within an ultramafic unit and consists of disseminated nickel sulphide mineralisation as a high grade core surrounded by medium and low grade shells. Late stage pegmatites sit above, below and also crosscut the modelled ore body, but have little continuity between drillholes.*
	• *Nature of the data used and of any assumptions made.*	• *Mineralised envelopes were digitised at 10 m sections in Vulcan and polygons were snapped to both underground and surface drillhole intercepts as appropriate. Wireframe triangulations were created from digitised polygons, and subdivided into domains as necessary, while taking into account geology and / or grade distribution. All triangulations were validated and checked to ensure they are closed and not crossing.*
	• *The effect, if any, of alternative interpretations on Mineral Resource estimation.*	• *As part of its due diligence WSA undertook a Mineral Resource Review which included volumetric checks of the wireframes from first principles using Implicit techniques – the volumes and global grade checks compared favourably with those that were reported.*
	• *The use of geology in guiding and controlling Mineral Resource estimation.*	• *All of the mineral resource was designed within the modelled massive sulphide domain* • *Faults and intrusive units were used when modeling the mineralized units and also used when classifying the deposit*

Criteria	JORC Code explanation	Commentary
	• *The factors affecting continuity both of grade and geology.*	• *The majority of the Odysseus Deposit remains unaffected by late stage intrusives, with minor intersections of pegmatite having little to no continuity between drill holes. A pegmatite intrusion/fault intersects the deposit between 44,700mN and 44,730mN and another truncates mineralisation at approximately 44,775mN, however the main corridor of mineralisation is not adequately closed off from 44,700mN to 44,775mN.* • *Currently the Odysseus Disseminated Nickel Deposit is poorly defined to the north. Mineralisation of potential economic grades and widths remain open down-plunge.*
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.*	• *Factors affecting geological continuity relate to a pegmatite intrusion/fault which intersects the deposit between 44,700mN and 44,730mN and another which truncates mineralisation at approximately 44,775mN.*
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.*	• *The strike length of the Odysseus deposit is approximately 350m. The largest distance from the top of the mineralisation to the base is approximately 225m. The width of the deposit varies between 0.8 m to 68 m averaging 27 m. Average grade and thickness increases down plunge to the north.*
	• *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.*	• *Wireframing of grade and geological domains using underground and surface drilling. Sample data was composited to 1m downhole lengths and flagged on domain codes generated from 3D mineralised wireframes (high, medium, medium-low, low, MG_S and HG_S) and 3D lithological wireframes (FV, FP, GP and UM).* • *Directional variography was performed for the Ni and density data from the combined six mineralised domains using Snowden Supervisor software. FV, FP, GP and UM Variograms were also modelled and used to estimate grades into the waste blocks. Due to the multiple orientations of GP units, an additional search ellipse was generated from geological wireframe orientations.* • *Grade estimation of Ni, As, Co, Fe, MgO, Pb, S, Zn and density using Ordinary Kriging was completed using Vulcan software. The domains have hard boundaries which ensured no grade smearing between domains and correlate well with raw data.* • *Due to missing density data, average values were assigned to the FV, FP, GP and non-estimated UM domains. The method is considered appropriate due to drill hole spacing and the nature of mineralisation.* • *All estimation was completed at the parent cell scale to avoid any potential geostatistical support issues.* • *Top cut investigations were completed and no top cuts were applied during estimation. Low and high grade Ni domains were used instead.*
	• *The assumptions made regarding recovery of by-products.*	• *This 2012 MRE is the sixth resource estimate for the Odysseus Disseminated Nickel Sulphide Deposit.* • *The resource model volumetrics were compared to the Sept 2011 results; a minor negative variance exists through the central area of the model.*
	• *Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).*	• *No assumptions were made about the recovery of by products in this estimate.*
	• *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.*	• *Deleterious elements S, As, Pb, Fe, Zn, Cu, Co and MgO were estimated using Ni variography.*
	• *Any assumptions behind modelling of selective mining units.*	• *A proto model was constructed using parent blocks of 10 mE x 15 mN x 5 mRL and sub-blocked to 1.25m x 2.5m x 1.25m.* • *Drillhole spacing ranges from 22 m to 76 m, averaging 50 m.* • *The size of the search ellipse was based on the Ni variography for each domain. Six search passes were used; 100% of blocks were estimated during the 1st pass Ni estimate for HG, MG and MLG domains, and over 99% for the LG domain. HG_S and MG_S*

Criteria	JORC Code explanation	Commentary
		domains achieved greater than 88% and 87% respectively during the 1st pass.
	• *Any assumptions about correlation between variables.*	• *No selective mining units were assumed in the estimate.*
	• *Description of how the geological interpretation was used to control the resource estimates.*	• *There is an assumed correlation between Ni% and density (SG), which has been quantified by a regression calculation and estimated in the block model.*
	• *Discussion of basis for using or not using grade cutting or capping.*	• *Mineralised zones were digitised and polygons were snapped to both underground and surface drilling intercepts. Each wireframe is representative of a grade domain, and used in compositing and estimating to ensure high grades are not smearing into the low grade zones and vice versa.* • *To ensure an accurate estimate, all high grade isolated intersections were placed in separate domains (MG_S,HG_S) to ensure they are still accounted for, but their contribution do not artificially inflate the final resource inventory. For reporting purposes, the MG_S and HG_S material are classified as non-JORC 'Mineral Inventory'.*
	• *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	• *Top cut investigations were completed and no top cuts were applied during estimation. Low and high grade Ni domains were used instead.*
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• *Estimation validation techniques included visual comparison of the composites and estimate blocks, graphs of pass number versus % filled, swathe plots of the composite grades vs the grade of the block model, and swathe plots of kriging variance, kriging efficiency and slope of regression.*
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• *Tonnages were estimated on a dry basis.*
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	• *The mineral envelope was determined by cut offs: High (>2.0%), Medium (1.5-2.0%), Medium-Low (1.0-1.5%), Low (0.4-1.0%), MG_S (1.5 – 2.0% Ni) and HG_S (>2.0% Ni).* • *The resource is reported above 1.5% Ni cut off grades.*
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• *No mining factors or assumptions were applied.*
Environmental factors or assumptions	• *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.*	• *No metallurgical factors or assumptions were applied.*

Criteria	JORC Code explanation	Commentary
	Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	
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.*	• *No environmental factors or assumptions were investigated.*
	• *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.*	• *The conventional ICP-AES analysis used for analysis at ALS also includes gravimetric analysis for determining specific gravity.*
	• *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• *The methods used by the laboratory and site personnel make adequate provision for the unlikely event of void spaces – only core samples were used for the MRE.*
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.*	• *Density values in the model include both measured and calculated values determined from regression formulas with the Ni% in each domain.*
	• *Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).*	• *Resource classification is based on a combination of Geological knowledge and confidence in the interpretation, data distribution, estimation passes, Kriging Efficiency (KE) and Slope of Regression (Slope) data analysis.* • *Drilling data north of 44,700mN is sparse, defining the boundary for Indicated/Inferred JORC categories.* • *The Odysseus deposit is classified as JORC Indicated and Inferred and non-JORC Mineral Inventory. No blocks were classified as Measured*
	• *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• *The definition of mineralised zones is based on a high level of geological understanding. It is believed that all relevant factors have been considered in this estimate, relevant to all available data.*
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• *WSA undertook a detailed resource review during the due diligence process and the results of this review indicates that the MRE is robust and was done in accordance with best industry standards.*
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.*	• *Internal review undertaken by site geologists.*
	• *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used*	• *The statement relates to local estimates of tonnes and grade.*
	• *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• *No production data available for comparison.*

Table 1
Mineral Resource Estimation
Odysseus North
2012 Edition JORC Code

Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.*	• *The Odysseus North Disseminated Nickel Sulphide deposit is defined by 47 surface diamond drill (DD) holes utilising directional drilling and gyroscopic survey technologies. The composite file used in the 2013 Mineral Resource Estimate (MRE) contains 2022 samples.*
	• *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*	• *Sample representivity is assured by an industry standard internal QAQC program.* • *All samples are prepared and assayed by an independent commercial laboratory whose instruments are regularly calibrated.*
	• *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.*	• *Diamond core is marked at 1 m intervals and sample lengths are typically of this length.* • *Sample intervals marked up by geologists based on geology.* • *Sampled mineralisation intervals are sent to a commercial laboratory for crushing and grinding before assaying.*
Drilling techniques	• *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• *Sample recovery is high due to the nature of the mineralisation (sulphides) and the type of drilling* • *Diamond core recoveries are logged and recorded in the database under a Geotechnical tab*
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.*	• *Diamond core recoveries are logged and recorded in the database.*
	• *Measures taken to maximise sample recovery and ensure representative nature of the samples.*	• *Sample recovery is high due to the nature of the mineralisation (sulphides) and the type of drilling* • *Diamond core recoveries are logged and recorded in the database under a Geotechnical tab*
	• *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.*	• *The resource is defined by diamond drilling which has high core recoveries.*
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.*	• *All geological logging was carried out to a high standard using well established geology codes in LogChief software.* • *All logging recorded Panasonic Toughbook PC logging.*
	• *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.*	• *Core is photographed in both dry and wet form.*
	• *The total length and percentage of the relevant intersections logged.*	• *A total of 2022 samples with an approximate average length of 1m were used for MRE purposes*
Sub-sampling techniques and	• *If core, whether cut or sawn and whether quarter, half or all core taken.*	• *Diamond core is sampled as quarter core only; cut by the field crew on site by diamond saw.*

Criteria	JORC Code explanation	Commentary
sample preparation	• *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.*	• *No non-core used in the estimate*
	• *For all sample types, the nature, quality and appropriateness of the sample preparation technique.*	• *The sample preparation of diamond core follows industry best practice involving oven drying, coarse crushing and pulverising.*
	• *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*	• *The field crew prepares and inserts the QAQC certified reference materials into the relevant calico bags.* • *OREAS and Geostats standards have been selected based on their grade range and mineralogical properties, with approximately 12 different standards used.*
	• *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.*	• *Sample intervals marked up by geologists based on geology.* • *Laboratory QAQC assaying, external field duplicates and standards are stored within the database, with all QAQC data reviewed and reported on a monthly basis.* • *All QAQC controls are reviewed after each submission. Notification of failures is immediately sent to the Senior Geologist and results within until resolution.*
	• *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• *The sample sizes are considered to be appropriate on the following basis: the style of mineralisation (disseminated and massive nickel sulphide), the thickness and consistency of the intersections and the sampling methodology.*
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*	• *All samples are assayed by an independent certified commercial laboratory. The laboratory used is experienced in the preparation and analysis of nickel sulphide ores.* • *Samples are analysed by ALS Chemex in Perth for Ag, Al, As, Co, Cr, Cu, Fe, Mg, Mn, Ni, Pb, S, Ti, Zn and Zr.* • *Genalysis Laboratory Service (GLY) is the Umpire Laboratory used to check analysis on pulps provided by ALS.* • *The principal analytical method used incorporated a four acid digest with conventional ICP-AES analysis, which also includes gravimetric analysis for determining specific gravity.*
	• *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.*	• *EM data was used as a guide to help define the thickness extent of the massive sulphide horizon located at the base of the ultramafic/felsic volcanic contact in 2012.*
	• *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	• *Certified reference materials are included in all batches dispatched at an approximate frequency of 1 per 25 samples, with a minimum of two per batch.* • *Field duplicates are inserted into submissions at an approximate frequency of 1 in 25, with placement determined by Nickel grade and homogeneity. Lab checks, both pulp and crush, are taken alternately by the lab at a frequency of 1 in 25.* • *Accuracy and precision were assessed using industry standard procedures such as control charts and scatter plots.* • *Evaluations of standards are completed on a monthly, quarterly and annual basis using QAQCR.*
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.*	• *Geological interpretation using intersections peer viewed by site geologists.*
	• *The use of twinned holes.*	• *none*
	• *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*	• *All geological logging was carried out to a high standard using well established geology codes in LogChief software.* • *All other data including assay results are imported via Datashed software.* • *Drillholes, sampling and assay data is stored in a SQL Server*

Criteria	JORC Code explanation	Commentary
		• *database located in a dedicated data center.*
	• *Discuss any adjustment to assay data.*	• *none*
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	• *Downhole surveys completed using gyroscopic instrument on all resource definition and exploration holes.*
	• *Specification of the grid system used.*	• *A two point transformation is used to convert the data from AMG84_51 mine grid and vice versa.* • *AMG84_51 points: easting = -250,000, northing = -6,900,000, elevation = 10,000.* • *Mine grid points: easting = 250,000, northing = 6,900,000, elevation = -10,000.*
	• *Quality and adequacy of topographic control.*	• *The project area is flat and the topo data density is adequate for MRE purposes of an underground deposit* • *Collar positions were picked up by suitably qualified surface and underground surveyors*
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.*	• *Drillhole spacing is approximately 25 m to 50 m.*
	• *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.*	• *The available drill data demonstrates sufficient and appropriate continuity for both geology and grade within the ODYN_D domains of the Odysseus North deposit to support the definition of a Mineral Resource as classified under the JORC Code (2012). Poor geological continuity in two of the four lenses of the ODYN_M domain, regardless of high data density, meant the lenses remained unclassified.*
	• *Whether sample compositing has been applied.*	• *The drillhole samples were composited to a regular downhole length of 1 m using the Straight compositing technique, following statistical analysis of the sample lengths. Both Ni% and SG were composited, within the wireframe domains.*
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.*	• *The Odysseus North mineralisation strikes approximately north-south, dips 13° west and plunges 9° south. The majority of drilling was conducted east to west.*
	• *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.*	• *No orientation based sampling bias has been observed in the data.*
Sample security	• *The measures taken to ensure sample security.*	• *Standard West Australian mining industry sample security measures were observed*
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• *QAQC reviewed quarterly by Xstrata Exploration Manager and Database*

Section 2: Reporting of Exploration Results – Odysseus North

(Criteria listed in Section 1, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• *Cosmos Nickel Complex comprises 26 tenements covering some 9,226Ha. The tenements include mining leases and miscellaneous licenses* • *Western Areas wholly owns 23 tenements, which were acquired from Xstrata Nickel Australasia in October 2015. The remainder of the tenements (3) are subject to a Joint Venture with Alkane Resources NL, where Western Areas has earned 80.6% interest* • *All tenements are in good standing*
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• *Not Applicable to the Resource and Reserves statement*
Geology	• *Deposit type, geological setting and style of mineralisation.*	• *The deposits form part of the Cosmos Nickel Complex, which lies within the Agnew-Wiluna Belt of the central Yilgarn Craton, Western Australia* • *The deposit style is komatiite hosted, disseminated to massive nickel sulphides.* • *The mineralisation typically occurs in association with the basal zone of high MgO cumulate ultramafic rocks.* • *Many of the higher grade ore bodies in the Cosmos Nickel Complex also show varying degrees of remobilisation, and do not occur in a typical mineralisation profile*
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* – *easting and northing of the drill hole collar* – *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* – *dip and azimuth of the hole* – *down hole length and interception depth* – *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	• *Not Applicable to the Resource and Reserves statement*
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.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• *Not Applicable to the Resource and Reserves statement*
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear*	• *Not Applicable to the Resource and Reserves statement*

Criteria	JORC Code explanation	Commentary
	statement to this effect (e.g. '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.*	• *Included within report*
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• *Not Applicable to the Resource and Reserves statement*
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.*	• *Not Applicable to the Resource and Reserves statement*
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• *Future work may aim to increase the resource and reserves in the vicinity of the known ore bodies* • *No plans are yet finalised*

Section 3 Estimation and Reporting of Mineral Resources – Odysseus North

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

Criteria	JORC Code explanation	Commentary
Database integrity	• *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.*	• *Database validated and entered into the database by qualified in house geologists using industry standard methods*
	• *Data validation procedures used.*	• *Standard data validation procedures including overlapping intersections, duplicate FROM and TO entries and Hole ID matching collar and downhole data*
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• *Site visit undertaken by the CP during the due diligence period*
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	• *Mineralised envelopes were digitised at 25 m sections in Vulcan and polygons were snapped to both underground and surface drillhole intercepts as appropriate. Wireframe triangulations were created from digitised polygons, and subdivided into domains as necessary, while taking into account geology and /or grade distribution. All triangulations were validated and checked to ensure they are closed and not crossing.* • *Five geological (disseminated and massive sulphide) and nickel sample populations grade shells were created:* • *SHG - Super High grade domain (>3.5% Ni)*

Criteria	JORC Code explanation	Commentary
		• *HG - High grade domain (1.5 – 3.5% Ni)* • *MG - Medium grade domain (1.0 – 1.5% Ni)* • *LG - Low grade domain (0.4 – 1.0% Ni)* • *MAS – Massive sulphide domain* • *Four lithological waste domains were also created:* • *FV – Felsic Volcanic* • *FP – Felsic Porphyry* • *GP – Pegmatite* • *UM - Ultramafic* • *The Odysseus North deposit is bound on all sides by pegmatite intrusions, with various orientations. The Southern zone pegmatites replace the disseminated mineralisation in places, and to the north the mineralisation is truncated by a northeast trending pegmatite. Massive sulphides have been observed within pegmatites units, however are generally hosted within felsics or on felsic/ultramafic contacts. Low-and medium grade mineralised halos are minimal, with high-grade (+1.5% Ni) domain dominating mineralisation. The corridor from the Central to Northern Zone has a continuous zone of mineralisation close to the basal contact, which averages 4.0% Ni, but is not well defined. The massive sulphide mineralisation is located on either the basal ultramafic/felsic volcanic contact, or ~100 m within the felsic unit.*
	• *Nature of the data used and of any assumptions made.*	• *Lithogeochemistry and stratigraphic interpretation have been used to assist the identification of rock types. No assumptions are made.*
	• *The effect, if any, of alternative interpretations on Mineral Resource estimation.*	• *Additional drilling in 2013 has localised adjustments to the interpretation, however the net change to tonnes, grade and contained nickel metal has been negligible.* • *Significant changes to previous Variography practices included ensuring each estimated grade selected assays from a minimum of two drill holes – this is done by setting the maximum number of samples per drill hole per estimate as half the maximum samples per estimate.* • *As part of its due diligence WSA undertook a Mineral Resource Review which included volumetric checks of the wireframes from first principles using Implicit techniques – the volumes and global grade checks compared favourably with those that were reported.*
	• *The use of geology in guiding and controlling Mineral Resource estimation.*	• *The Odysseus North deposit have late stage pegmatite intrusives cross-cutting the mineralisation in the south, which has downgraded the resource to Inferred classification.* • *Odysseus North has a higher average grade, with less geometric variability in the mineralised package compared to Odysseus. There is also less low-medium grade halo, particularly in the hanging wall.*
	• *The factors affecting continuity both of grade and geology.*	• *Factors affecting geological continuity relate to pegmatite intrusions cross-cutting the mineralisation in the southern zone.* • *Pegmatites have migrated along multi-phase faulting, some that bound contacts, others that cross-cut through mineralisation.* • *Structures have also re-mobilised nickel sulphides to form the discontinuous massive sulphide lenses (ODYN_M), and increase the grade of disseminated nickel sulphides, as defined by the ODYN_D SHG domain.*
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.*	• *The strike length of the Odysseus North deposit is approximately 325 m. The largest distance from the top of the mineralisation to the base is approximately 340m. The width of the deposit varies between 0.8 m to 71 m averaging 28 m (5 m cut off). Average grade and thickness increases to the north.*

Criteria	JORC Code explanation	Commentary
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.*	• *Wireframing of grade and geological domains using surface drilling. Sample data was composited to 1m downhole lengths and flagged on domain codes generated from 3D mineralised wireframes (four disseminated domains; super high grade, high grade, medium grade, low grade and one massive sulphide domain) and 3D lithological wireframes (Felsic Volcanic (FV), Felsic Porphyry (FP), Pegmatite (GP) and non-estimated Ultramafic (UM).* • *Due to a lack of samples, directional variography was performed for Ni using all data treated as one domain in Snowden Supervisor software.* • *Grade estimation of Ni, As, Co, Cu, MgO, and SG (density) using Ordinary Kriging for disseminated nickel domains and ultramafics using Vulcan software. Due to low sample populations and irregular spatial distribution, the Ni, As, Co, Cu, MgO, and SG (density) averages were assigned to lithological domains (FV, FP, GP). Un-estimated UM domain blocks were also assigned averages. Due to low sample populations, Ni, As Co, Cr, Cu, MgO used Inverse Distance (power two) estimation technique for the Massive Sulphide (MAS) nickel domains. High density value variability for MAS domains generated validation issues in early model versions, therefore each MAS lens was assigned an average.* • *The domains have hard boundaries which ensured no grade smearing between domains and correlate well with raw data.* • *Due to missing SG data, average values were assigned to the FV, FP, GP and non-estimated UM domains. The method is considered appropriate due to drill hole spacing and the nature of mineralisation.* • *All estimation was completed at the parent cell scale to avoid any potential geostatistical support issues.* • *Top cut investigations were completed and applied to Ni in the LG and UM domains and Lenses 1, 2, 3 and 4 in the MAS domain.*
	• *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.*	• *This April 2013 MRE is the second JORC-compliant resource estimate for the Odysseus North Disseminated Nickel Sulphide Deposit and Odysseus North Massive Nickel Sulphide Deposit.* • *The resource model was compared to the Dec 2012 and October 2012 volumetrics. A swathe plot of the April 2013 and Dec 2012 Ni metal tonnes showed a positive variance in the northern zone and mixed results in the central and central zones.*
	• *The assumptions made regarding recovery of by-products.*	• *No assumptions were made about the recovery of by products in this estimate.*
	• *Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).*	• *Deleterious elements As, Cu, Co, Cr and MgO were estimated using Ni variography.*
	• *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.*	• *A proto model was constructed using parent blocks of 10 mE x 15 mN x 5 mRL and sub-blocked to 1.25m x 2.5m x 1.25m.* • *Drill spacing is nominally 25 m x 50 m.* • *The size of the search ellipse was based on the Ni variography for each domain. Five search passes were used for each attribute with each pass either lowering the minimum number of samples or extended the search range.*
	• *Any assumptions behind modelling of selective mining units.*	• *No selective mining units were assumed in the estimate.*
	• *Any assumptions about correlation between variables.*	• *There is an assumed correlation between Ni% and density (SG), which has been quantified by a regression calculation and estimated in the block model.*
	• *Description of how the geological interpretation*	• *Mineralised zones were digitised and polygons were snapped to both*

Criteria	JORC Code explanation	Commentary
	was used to control the resource estimates.	*underground and surface drilling intercepts. Each wireframe is representative of a grade domain, and used in compositing the Ni and SG data for estimating to ensure high grades are not smearing into the low grade zones and vice versa.* • *Intrusive pegmatites remove many of the available assays for estimation, which has also lowered the kriging efficiency. The true thickness of these pegmatites cannot be determined because they also run semi-parallel to the direction of drilling.*
	• *Discussion of basis for using or not using grade cutting or capping.*	• *Top cut investigations were completed and applied to Ni within low grade and ultramafic domains which demonstrated no continuity between sections. Cut-off grades were also applied to Massive Sulphide domains to prevent smearing of high-grade outliers amongst low sample populations.*
	• *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	• *Estimation validation techniques included visual comparison of the composites and estimate blocks, swathe plots of the composite grades vs the grade of the block model, kriging efficiency, samples per block and slope of regression data.* • *An additional test method incorporated the Central Limit Theorem, which measures the distance from average when sampling a population (during kriging). When plotting the estimation results from the block model for the HG domain on a histogram, results confirm a single population and validate the existing nickel grade domain boundaries given the current drilling density.* • *To verify the negative weights produced during estimation, the functions "sum of negative weights" and "sum of positive weights" variables were activated within Vulcan as an examination tool. Three estimates were run with ODYN_D data, using 50, 30 and 20 maximum samples per block estimate (constrained by each domain) for Ni and SG. Results recommend the maximum samples per block estimate be reduced from 50 to 20.*
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• *Tonnages were estimated on a dry basis.*
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• *The mineral envelope was determined by cut offs: Super High Grade (>3.5%), High grade (1.5-3.5%), Medium grade (1.0-1.5%), Low grade (0.4-1.0%), the MAS domain was based on lithological logging of the massive nickel sulphide mineralisation.* • *The resource is reported above 1.5% Ni cut off grades and was investigated at cut-off grades 0.01%, 0.6%, 0.8%, 1.0%, 1.5%, 2.0% and 2.5% Ni.*
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	• *No mining factors or assumptions were applied.*
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*	• *No metallurgical factors or assumptions were applied.*

Criteria	JORC Code explanation	Commentary
	metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	
Environmental factors or assumptions	• *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.*	• *No environmental factors or assumptions were investigated.*
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 conventional ICP-AES analysis used for analysis at ALS also includes gravimetric analysis for determining specific gravity.*
	• *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.*	• *The methods used by the laboratory and site personnel make adequate provision for the unlikely event of void spaces – only core samples were used for the MRE.*
	• *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• *Density values in the model include both measured and calculated values determined from regression formulas with the Ni% in each domain.*
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.*	• *Intrusive pegmatites remove many of the available assays for estimation, which has also lowered the kriging efficiency. The true thickness of these pegmatites cannot be determined because they also run semi-parallel to the direction of drilling. Both factors have contributed to an Inferred Category for the southern zone of the deposit.* • *Resource classification is based on a combination of Geological Confidence, drilling density, samples per block and Kriging Efficiency. Geological Confidence is the key criteria utilised due to the presence of pegmatite bounding and cross-cutting mineralisation.* • *The Odysseus deposit is classified as JORC Indicated and Inferred. No blocks were classified as Measured.*
	• *Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).*	• *The Odysseus North Disseminated Nickel Sulphide Deposit (ODYN_D) mineralised domains (HG and SHG) are well defined and based on a high level of geological understanding. It is believed that all relevant factors have been considered in this estimate, relevant to all available data.* • *However, poor geological continuity along strike and down dip of the Odysseus North Massive Nickel Sulphide Deposit (ODYN_M) domains indicates low Geological Confidence, even with higher-density drilling. Only two lenses were classified as Inferred Category, the remaining two remain unclassified.*
	• *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• *The Mineral Resource Estimate appropriately reflects the view of the CP*
Audits or	• *The results of any audits or reviews of Mineral*	• *Internal review of interpretation undertaken by XNA exploration*

Criteria	JORC Code explanation	Commentary
reviews	*Resource estimates.*	*geologists, external review by Nicholas Jolly, Principal Geologist of Nicholas Jolly & Associates P/L. Statistical analysis reviewed by Jacqui Coombes (Principal Geologist) of Coombes Capability and Nicholas Jolly.*
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.*	• *Poor geological continuity along strike and down dip of the ODYN_M domains indicates low Geological Confidence, even with higher-density drilling. Only two lenses were classified as Inferred Category, the remaining two remain unclassified.* • *The grade continuity within the ODYN_D HG and SHG mineralised domains is well understood, and reasonable variograms were modelled for all directions and were used in grade estimate for all four disseminated nickel (and ultramafic) domains. Post processing block model validation was undertaken using geostatistical methods before the resource was reported. Kriged estimated average Ni grades correspond well to the composited grades.*
	• *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used*	• *The statement relates to local estimates of tonnes and grade.*
	• *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• *No production data available for comparison.*

Table 1
Mineral Resource Estimation
AM5
2012 Edition JORC Code

Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.*	• *The AM5 Massive deposit is defined by 88 underground diamond drill (DD) holes and the AM5 Disseminated deposit by 174 DD holes.* • *The composite file used in the 2009 Mineral Resource Estimate (MRE) of the AM5 Massive deposit contains 255 samples. The 2011 MRE for the AM5 Disseminated deposit contains 17,526 composites.*
	• *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*	• *Sample representivity is assured by an industry standard internal QAQC program.* • *All samples are prepared and assayed by an independent commercial laboratory whose instruments are regularly calibrated.*
	• *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.*	• *Diamond core is marked at 1 m intervals and sample lengths are typically of this length.* • *Sample boundaries selected to match the main mineralisation boundaries.* • *Sampled mineralisation intervals are sent to a commercial laboratory for crushing and grinding before assaying.*
Drilling techniques	• *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• *Only diamond drilling is used to inform both Massive and Disseminated AM5 resources, both NQ2 and HQ sized underground and surface exploration diamond drilling.*
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.*	• *Diamond core recoveries are logged and recorded in the database under a Geotechnical tab.*
	• *Measures taken to maximise sample recovery and ensure representative nature of the samples.*	• *Core recoveries are in accordance with industry best practice*
	• *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.*	• *The resource is defined by core drilling with high sample recoveries* • *The style of mineralisation and the consistency of mineralised intercepts are considered to preclude any issue of sample bias due to material loss or gain.*
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.*	• *All geological logging was carried out to a high standard using well established geology codes.* • *All logging recorded Panasonic Toughbook PC logging.*
	• *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.*	• *Core is photographed in both dry and wet form.*
	• *The total length and percentage of the relevant intersections logged.*	• *All drillholes are logged in full.*
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.*	• *Diamond core is sampled either whole core or cut by the field crew on site info half core or quarter core by diamond saw.*
	• *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.*	• *No non-core samples were used in the MRE*
	• *For all sample types, the nature, quality and appropriateness of the sample preparation technique.*	• *The sample preparation of diamond core follows industry best practice involving oven drying, coarse crushing and pulverising.* • *The sample preparation technique is well established and appropriate for Ni sulphide deposits.*
	• *Quality control procedures adopted for all sub-sampling stages to maximise representivity of*	• *The field crew prepares and inserts the QAQC certified reference materials into the relevant calico bags.*

Criteria	JORC Code explanation	Commentary
	samples.	• *OREAS and Geostats standards have been selected based on their grade range and mineralogical properties, with approximately 12 different standards used.*
	• *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.*	• *Sample intervals were marked up by geologists based on geology.* • *Laboratory QAQC assaying, external field duplicates and standards are stored within the database, with all QAQC data reviewed and reported on a monthly basis.* • *All QAQC controls are reviewed after each submission. Notification of failures is immediately sent to the Senior Geologist and results within until resolution.*
	• *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• *The sample sizes are considered to be appropriate on the following basis: the style of mineralisation (disseminated sulphide), the thickness and consistency of the intersections, the sampling methodology and percent value assay ranges for the primary elements.*
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*	• *All samples are assayed by an independent certified commercial laboratory. The laboratory used is experienced in the preparation and analysis of nickel sulphide ores.* • *Samples are analysed by ALS Chemex in Perth for Ag, Al, As, Co, Cr, Cu, Fe, Mg, Mn, Ni, Pb, S, Ti, Zn and Zr.* • *Genalysis Laboratory Service (GLY) is the Umpire Laboratory used to check analysis on pulps provided by ALS.* • *The principal analytical method used incorporated a four acid digest with conventional ICP-AES analysis, which also includes gravimetric analysis for determining specific gravity.*
	• *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.*	• *No Geophysical tools or handheld XRF instruments were used to determine any element concentrations that were subsequently used for MRE purposes.*
	• *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	• *Certified reference materials are included in all batches dispatched at an approximate frequency of 1 per 25 samples, with a minimum of two per batch.* • *Field duplicates are inserted into submissions at an approximate frequency of 1 in 25, with placement determined by Nickel grade and homogeneity. Lab checks, both pulp and crush, are taken alternately by the lab at a frequency of 1 in 25.* • *Accuracy and precision were assessed using industry standard procedures such as control charts and scatter plots.* • *Evaluations of standards are completed on a monthly, quarterly and annual basis using QAQCR.*
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.*	• *Western Areas qualified personnel and their nominated Consultants have verified significant intersections during the review and subsequent site visits*
	• *The use of twinned holes.*	• *No holes were twinned in the recent drilling programs.*
	• *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*	• *The exploration department use Panasonic Toughbook PC logging using well established geology codes.*
	• *Discuss any adjustment to assay data.*	• *Of the 174 DD holes used in the AM5 Disseminated resource interpretation and estimation, 43 underground DDH collar locations were corrected due to an identified special survey error. Corrections ranging from 0.2 – 1.1m.*
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	• *Downhole surveys completed using gyroscopic instrument.* • *AM5 Disseminate - underground holes via survey pickup. Two drillholes removed from interpretation and estimation, due to dubious downhole surveys and obliquity to the contact (AMD273, AMD275).*
	• *Specification of the grid system used.*	• *A two point transformation is used to convert the data from AMG84_51 mine grid and vice versa.* • *AMG84_51 points: easting = -250,000, northing = -6,900,000, elevation = 10,000.* • *Mine grid points: easting = 250,000, northing = 6,900,000, elevation = -10,000.*
	• *Quality and adequacy of topographic control.*	• *The project area is very flat* • *Surface and underground collar positions are surveyed in by qualified*

Criteria	JORC Code explanation	Commentary
		• surveyors
Data spacing and distribution	• Data spacing for reporting of Exploration Results.	• Drillholes were spaced at approximately 20 m (northing) x 15 m grid.
	• 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.	• There is insufficient drill data to demonstrate appropriate grade and geological continuity for the AM5 Disseminated deposit, and therefore it is not classified as a Mineral Resource under the JORC Code (2012).
	• Whether sample compositing has been applied.	• The drillhole samples were composited to a regular downhole length of 1 m using the Run length compositing technique, following statistical analysis of the sample lengths.
Orientation of data in relation to geological structure	• Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	• The AM5 Disseminated deposit strikes northwest-southeast and dips steeply north- east and plunges 55° to the southwest. The majority of drilling was conducted from west to east. • AM5 Massive deposit strikes northwest-southeast, dips approximately 65° to the east and plunges to the south approximately 30°.
	• 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.	• No orientation based sampling bias has been observed in the data.
Sample security	• The measures taken to ensure sample security.	• All core samples were delivered from site to Perth and then to the assay laboratory by an independent transport contractor.
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	• AM5 Disseminated - geological interpretation and data validation completed by Resource Department geologists. • AM5 Massive – model created by Senior Resource Geologist using all available data.

Section 2: Reporting of Exploration Results – AM5

(Criteria listed in Section 1, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings. • The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	• Cosmos Nickel Complex comprises 26 tenements covering some 9,226Ha. The tenements include mining leases and miscellaneous licenses • Western Areas wholly owns 23 tenements, which were acquired from Xstrata Nickel Australasia in October 2015. The remainder of the tenements (3) are subject to a Joint Venture with Alkane Resources NL, where Western Areas has earned 80.6% interest • All tenements are in good standing
Exploration done by other parties	• Acknowledgment and appraisal of exploration by other parties.	• Not Applicable to the Resource and Reserves statement
Geology	• Deposit type, geological setting and style of mineralisation.	• The deposits form part of the Cosmos Nickel Complex, which lies within the Agnew-Wiluna Belt of the central Yilgarn Craton, Western Australia • The deposit style is komatiite hosted, disseminated to massive nickel sulphides. • The mineralisation typically occurs in association with the basal zone of high MgO cumulate ultramafic rocks. • Many of the higher grade ore bodies in the Cosmos Nickel Complex also show varying degrees of remobilisation, and do not occur in a typical mineralisation profile
Drill hole Information	• A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: – easting and northing of the drill hole collar – elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar – dip and azimuth of the hole	• Not Applicable to the Resource and Reserves statement

Criteria	JORC Code explanation	Commentary
	– *down hole length and interception depth* – *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• *Not Applicable to the Resource and Reserves statement*
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').*	• *Not Applicable to the Resource and Reserves statement*
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.*	• *Included within report*
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• *Not Applicable to the Resource and Reserves statement*
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.*	• *Not Applicable to the Resource and Reserves statement*
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• *No work yet planned*

Section 3 Estimation and Reporting of Mineral Resources – AM5

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

Criteria	JORC Code explanation	Commentary
Database integrity	• *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.*	• *AM5 Disseminated - Database validated by Xstrata geologists. At time of estimating assays were pending for drillholes CGT29A and CGT030A. Duplicate coordinate issues were identified with drillholes AMD313/AMD313A and AMD310/AMD310A and therefore removed from the dataset. The following drillholes were also omitted due to conflicting data: AMD328, AMD555, AMD414, AMD409, AMD482, AMD418, AMD353, BJD048A.* • *AM5 Massive – database validated in Corporate format.*
	• *Data validation procedures used.*	• *Standard database validation procedures including Datamine proprietary techniques were employed*
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• *The CP completed a site visit during the due diligence period*
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	• *AM5 Disseminated – the geological interpretation of mineralised domains was completed on 10 m digital sections in Vulcan; polygons snapped to underground and surface drilling intercepts. For this 2011 MRE, an additional grade domain was included for a total of four domains; High grade domain (>2.0.%Ni), Medium grade domain (1.5-2.0)%Ni), Medium-Low grade domain (1.0-1.5)%Ni) and Low grade domain (0.4-1.0% Ni). To assist estimation, Medium-Low and Low grade domains were further split into east and west sub-domains.* • *The AM5 Disseminated deposit lies within an Ultramafic which is the Hangingwall unit to the AM5 Massive Nickel Sulphide deposit, located 100 m to the east.* • *AM5 Massive – the geological interpretation of mineralised domains was completed by a Senior Resource Geologist using all available data in Vulcan. Polygons were snapped to underground and surface drilling intercepts. Initially two domains were created on either side of the central felsic porphyry unit; one in the hangingwall and one in the footwall. Statistics for these domains revealed two grade populations within each lode, which could not be spatially reconciled due to the apparent random variability of grade. However, within a small area of the hangingwall some high grades were grouped and this area separated out for estimation and coded as HW. There are four footwall and fourteen hangingwall lodes, many of the smaller lodes have poor geological confidence.* • *The AM5 Massive deposit is composed of two sub-parallel lenses separated by a felsic porphyry, located on a faulted/sheared contact of a structurally emplaced cumulate ultramafic. The mineralisation is bound on the footwall by a felsic porphyry and predominately consists of pentlandite, pyrrhotite, pyrite and accessory chalcopyrite.*
	• *Nature of the data used and of any assumptions made.*	• *Lithogeochemistry and stratigraphic interpretation have been used to assist the identification of rock types. No assumptions are made.*
	• *The effect, if any, of alternative interpretations on Mineral Resource estimation.*	• *AM5 Disseminated – the 2011 MRE includes re-evaluated grade boundaries, with the total number of nickel grade domains increased to four. Additional drilling information has been included from limited geotechnical drilling, leading to minor re-interpretation of wireframes.* • *AM5 Massive – the December 2009 model is an update to the September 2009 model.*
	• *The use of geology in guiding and controlling Mineral Resource estimation.*	• *AM5 Disseminated – wireframe solids were created from digitised polygons, and subdivided into domains as necessary, while taking into account geology and / or grade distribution.* • *AM5 Massive – wireframe solids were created using geological knowledge of the ore zone located at the sheared contact between the ultramafic and felsic porphyry. Variograms were constantly checked back to raw data and geological interpretation to ensure the variograms reflected the geology.*
	• *The factors affecting continuity both of grade and geology.*	• *No factors affecting geological or grade continuity have been identified.*

Criteria	JORC Code explanation	Commentary
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.*	• *The strike length of the AM5 Disseminated deposit is up to 300 m. The largest distance from the top of the mineralisation to the base is approximately 400m.* • *The AM5 Massive deposit strikes approximately 220 m and 30m up dip with an average true width of 1 -3 m.*
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.*	• *AM5 Disseminated - wireframing of geological mineralised domains used underground and surface drilling only. Sample data was composited to 1m downhole lengths and flagged on domain codes generated from 3D mineralised wireframes (high, medium, medium-low and low).* • *AM5 Disseminated - Directional variography was performed for Ni within the four ore domains and three lithological waste domains; Felsic Porphry, Felsic Volcanics and Ultramafic using Snowden Visor software (Version 7.10.10). Ni grade continuity closely matched previous variography.* • *AM5 Disseminated - Grade estimation of Ni%, deleterious elements (As, Co, Cr, Cu, Fe, MgO, Pb, S, Zn) and SG (density) using Ordinary Kriging was completed using Vulcan software. Parameters from the Ni variography were used for the SG and Ni estimation. The method is considered appropriate due to drill hole spacing and the nature of mineralisation.* • *All estimation was completed at the parent cell scale to avoid any potential geostatistical support issues.* • *AM5 Disseminated - top cuts were applied to Ni in the Medium-low grade domain and Ultramafic, Felsic Porphyry and Felsic Volcanics waste domains during estimation.* • *AM5 Massive – wireframing of geological mineralised domains using a combination of drillholes and previous interpretations. Sample data was composited to 1m downhole lengths, blocks within solids coded as ore.* • *AM5 Massive – Directional variography was performed on Ni and As data from the combined HW and HW domains using Snowden Visor software (Version 7.10.10), due to insufficient data in each domain. The Ni variography was used to estimate all elements, except As for which the grades were too high. The Ni:As ratio was used instead.* • *AM5 Massive - Grade estimation of Ni% using Ordinary Kriging was completed using Vulcan software. Density (SG) values were estimated from regression formulae. Parameters from the Ni variography were used for the SG and Ni estimation. The method is considered appropriate due to drill hole spacing and the nature of mineralisation.*
	• *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 2011 MRE is the third block model and grade estimate for the AM5 Disseminated deposit.* • *The December 2009 MRE was an update to the September 2009 model for the AM5 Massive deposit.*
	• *The assumptions made regarding recovery of by-products.*	• *No assumptions were made about the recovery of byproducts.*
	• *Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).*	• *AM5 Disseminated - deleterious elements As, Co, Cr, Cu, Fe, MgO, Pb, S, Zn were estimated using Ni variography.* • *AM5 Massive - deleterious elements As, Co, Cr, Cu, MgO, Mn, Mg and Zn were estimated using Ni variography.*
	• *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.*	• *AM5 Disseminated – A proto model was constructed using parent blocks of 10 mE x 15 mN x 5 mRL and sub-blocked to 1.25m x 2.5m x 1.25m.* • *AM5 Disseminated - The size of the search ellipse was based on the Ni variography for each domain. Four search passes were used; the majority of estimation passes within the first pass (>95%) for the high and medium grade domains, (85%) for the low grade domains.* • *AM5 Massive – a proto model was constructed using parent blocks of 5 mE x 10 mN x 5 mRL and sub-blocked to 0.25m x 0.5m x 0.25m.* • *AM5 Massive – Four search passes were used to populate the block estimate. The size of the search ellipse was based on Ni variographic parameters, with the third pass increasing these ranges by 10% and the forth by 25%. The minimum number of samples was also reduced from five to two in the second pass. After four passes some blocks remained unpopulated and where therefore assigned the mean grade of the population of samples present in the relevant domains.*

Criteria	JORC Code explanation	Commentary
		This was completed for all elements in all domains and waste lithologies.
	• *Any assumptions behind modelling of selective mining units.*	• *No selective mining units were assumed in the estimate.*
	• *Any assumptions about correlation between variables.*	• *There is an assumed correlation between Ni% and density (SG), for both AM% block models, which has been quantified by a regression calculation and estimated in the block model.*
	• *Description of how the geological interpretation was used to control the resource estimates.*	• *AM5 Disseminated – Hard boundaries were required for the assay composite file due to minimal gradational changes between mineralisation domains.* • *AM5 Massive – hard boundaries were used to limit transfer of grade between domains, which are based on geology.*
	• *Discussion of basis for using or not using grade cutting or capping.*	• *AM5 Disseminated - Top cuts were applied to the MGL_W, UM, FP and FV Ni% variable during estimate.* • *AM5 Massive – no top cuts were applied.*
	• *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	• *AM5 Disseminated - Estimation validation techniques included swathe plots of the grade of the composites vs the grade of the block model and comparison between mean estimate and composite grades. Reconciliation data was used to compare the April 2011 model and reconciled hoisted tonnes (referred to as 'award' tonnes in the AM5D Reconciiation_2010_to_Current spreadsheet) from the 9650, 9625 and 9600 development levels. Actual tonnes undercalled by an average of 60%, actual grade overcalled by an average of 110% and actual metal tonnes overcalled the model by an average of 20%.* • *AM5 Massive - Estimation validation techniques included swathe plots of the grade of the composites vs the grade of the block model,I analysis of the kriging efficiency, slope of regression and kirging variance.*
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• *Tonnages were estimated on a dry basis.*
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• *AM5 Disseminated - the mineral envelope was determined 4 cut off: High (>2.0%), Medium (1.5-2.0%), Medium-Low (1.0-1.5%) and Low (0.4-1.0%) grade Ni domains were modelled and grades were written into those domains. The resource is reported above 1.5% Ni cut off grades and was investigated at cut-off grades 0.01%, 0.4%, 0.8%, 1.0%, 1.5% and 2.0% Ni.* • *AM5 Massive – due to the juxtaposing nature and inherent variability of the mineralisation, domains were based on spatial locations within the hangingwall and footwall units, rather than based on grade cut offs. The resource was not reported at a Ni cut off.*
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	• *No mining factors or assumptions were applied for either deposit.*
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• *No metallurgical factors or assumptions were applied for either deposit.*

Criteria	JORC Code explanation	Commentary
Environmental factors or assumptions	• *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.*	• *No environmental factors or assumptions were investigated for either deposit.*
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.*	• *Bulk densities were determined not assumed* • *BD work was undertaken primarily by ALS using a version of the Archimedes method using an organic liquid* • *Site based Geologists did verification BD work on site* • *Sufficient quantity of BD measurements were taken for MRE purposes and all are recorded in the database*
	• *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.*	• *The methods used to determine BD are industry standard and adequately account for the very low possibility of void spaces* • *Differences in Mineralogy was accounted for, in particular the density characteristics of Lizardite and Antigorite (olivine dominant host- denser material)*
	• *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• *Due to similarities in the location, tenor and sulphide mineralogy, the Cosmos linear regression formula for density was applied to both AM5 estimates. Waste densities were assigned to the model based upon rock type, based on long standing SG data from the Cosmos regions.*
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.*	• *AM5 Disseminated – none applied.* • *AM5 Massive – using kriging efficiency, slope of regression, kriging variance and geological continuity the classification of the deposit fits into an Inferred classification. However, due to the advanced level of mining present, the resource has been classified as Category 2.*
	• *Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).*	• *AM5 Disseminated - the definition of mineralised zones is based on a high level of geological understanding.*
	• *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• *It is believed that all relevant factors have been considered in this estimate, relevant to all available data.*
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• *AM5 Disseminated - Internal review undertaken by Xstrata site geologists.* • *AM5 Massive – Peer review by geology personnel.*
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.*	• *The geological and grade continuity of the AM5 Disseminated deposit is well understood and the mineralisation wireframes used to build the block model have been designed using all available drilling data. Post processing block model validation was extensively undertaken using geostatistical methods before the resource was reported.*
	• *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used*	• *Relative confidence is reflected in the resource classification*
	• *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• *AM5 Disseminated - no production data available for comparison.* • *AM5 Massive -*

Table 1 - 2012 Edition JORC Code
Mineral Resource Estimation
AM6

Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.*	• *The April 2011 AM6 Massive deposit is defined by LTK60 underground resource definition and NQ2 exploration surface drilling.* • *The April 2012 AM6 disseminated deposit is defined by 61 underground and 4 exploration holes from surface.* • *No RC chips or other types of sample was used in the MRE*
	• *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*	• *AM6 Disseminated and Massive deposit sample representivity is assured by an industry standard internal QAQC program.* • *All samples are prepared and assayed by an independent commercial laboratory whose instruments are regularly calibrated.*
	• *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.*	• *Diamond core is marked at 1 m intervals and sample lengths are typically of this length.* • *Sample boundaries are selected to match the main geological, alteration and mineralisation boundaries.*
Drilling techniques	• *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• *Diamond drilling is used to inform both Massive and Disseminated AM6 resources, both LTK47 sized underground core and NQ2 and HQ surface exploration and underground diamond drilling.*
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.*	• *Diamond core recoveries are logged and recorded in the database for both AM6 deposits.*
	• *Measures taken to maximise sample recovery and ensure representative nature of the samples.*	• *Diamond core is reconstructed into continuous runs on an angle iron cradle for orientation marking. Depths are checked against the depth given on the core blocks and rod counts are routinely carried out by the drillers.*
	• *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.*	• *The bulk of the resource is defined by diamond drilling which has high core recoveries.* • *The consistency of the mineralised intervals suggests there is no sample bias due to material loss or gain.*
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.*	• *All geological logging was carried out to a high standard using well established geology codes.* • *Geotechnical data is recorded including joints, RQD and core quality.* • *All logging recorded Panasonic Toughbook PC logging.*
	• *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.*	• *Core is photographed in both dry and wet form.*
	• *The total length and percentage of the relevant intersections logged.*	• *All 65 holes used in the MRE were logged in full*
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.*	• *Core is split by diamond saw and samples taken from half core, quarter core and whole core.*
	• *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.*	• *Not applicable*
	• *For all sample types, the nature, quality and appropriateness of the sample preparation technique.*	• *The sample preparation of diamond core follows industry best practice involving oven drying, coarse crushing and pulverising. Sample preparation is carried out by a commercial certified laboratory.* • *The sample preparation technique is well established and appropriate for Ni sulphide deposits.*

Criteria	JORC Code explanation	Commentary
	• *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*	• *QA/QC procedures with standard samples submitted in each assay batch*
	• *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.*	
	• *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• *The sample sizes are considered to be appropriate on the following basis: the style of mineralisation (disseminated sulphide), the thickness and consistency of the intersections, the sampling methodology and percent value assay ranges for the primary elements.*
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*	• *All samples are assayed by an independent certified commercial laboratory. The laboratory used is experienced in the preparation and analysis of nickel sulphide ores. Extraction is total.*
	• *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.*	• *No Geophysical tools or handheld XRF instruments were used to determine any element concentrations that were subsequently used for MRE purposes.*
	• *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	• *Certified reference materials are included in all batches dispatched* • *Evaluations of standards are completed on a monthly basis.*
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.*	• *Western Areas qualified personnel and their nominated Consultants have verified significant intersections during the due diligence review and subsequent site visits*
	• *The use of twinned holes.*	• *None*
	• *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*	• *The exploration department use Panasonic Toughbook PC logging using well established geology codes.* • *Validation failures highlighted via the Ni assaying are queried with the laboratory responsible, with explanations and actions reported in the following months' QAQC report.*
	• *Discuss any adjustment to assay data.*	• *No adjustments were made to assay data compiled for this MRE.*
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	• *Downhole surveys completed using gyroscopic instrument on all resource definition and exploration holes. Underground hole collar locations verified via survey pickup.*
	• *Specification of the grid system used.*	• *A two point transformation is used to convert the data from AMG84_51 mine grid and vice versa.*
	• *Quality and adequacy of topographic control.*	• *The project area is very flat surface and underground collar positions are surveyed in by qualified surveyors*
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.*	• *Drillholes were spaced at approximately 25 m (northing) x 30 m in the northern part of the deposit and approximately 50 m (northing) x 50 m in the southern extents for both AM6 deposits.*
	• *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.*	• *The available drill data demonstrates sufficient and appropriate continuity for both geology and grade within the AM6 deposits to support the definition of a Mineral Resource as classified under the JORC Code (2012).*
	• *Whether sample compositing has been applied.*	• *The drillhole samples of both AM6 deposits were composited to a regular downhole length of 1 m.*
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.*	• *The AM6 Disseminated orebody strikes approximately north-south, dips at approximately -75°, although localised variations are observed, and plunges to the south. Pegmatites appear to have two dominant orientations, north-south and east-west with various dips. Majority of pegmatites intruding the AM6D orebody are flat dipping.* • *The AM6 Massive orebody strikes approximately north-south and dips sub-vertically to the east.*
	• *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.*	• *No orientation based sampling bias has been observed in the data.*

Criteria	JORC Code explanation	Commentary
Sample security	• *The measures taken to ensure sample security.*	• *All core samples were delivered from site to Perth and then to the assay laboratory by an independent transport contractor.*
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• *Geological interpretation and data validation completed by site geologists.*

Section 2: Reporting of Exploration Results – AM6

(Criteria listed in Section 1, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• *Cosmos Nickel Complex comprises 26 tenements covering some 9,226Ha. The tenements include mining leases and miscellaneous licenses* • *Western Areas wholly owns 23 tenements, which were acquired from Xstrata Nickel Australasia in October 2015. The remainder of the tenements (3) are subject to a Joint Venture with Alkane Resources NL, where Western Areas has earned 80.6% interest* • *All tenements are in good standing*
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• *Not Applicable to the Resource and Reserves statement*
Geology	• *Deposit type, geological setting and style of mineralisation.*	• *The deposits form part of the Cosmos Nickel Complex, which lies within the Agnew-Wiluna Belt of the central Yilgarn Craton, Western Australia* • *The deposit style is komatiite hosted, disseminated to massive nickel sulphides.* • *The mineralisation typically occurs in association with the basal zone of high MgO cumulate ultramafic rocks.* • *Many of the higher grade ore bodies in the Cosmos Nickel Complex also show varying degrees of remobilisation, and do not occur in a typical mineralisation profile*
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* – *easting and northing of the drill hole collar* – *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* – *dip and azimuth of the hole* – *down hole length and interception depth* – *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	• *Not Applicable to the Resource and Reserves statement*
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.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• *Not Applicable to the Resource and Reserves statement*
Relationship between	• *These relationships are particularly*	• *Not Applicable to the Resource and Reserves statement*

Criteria	JORC Code explanation	Commentary
mineralisation widths and intercept lengths	*important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').*	
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.*	• *Included within report*
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• *Not Applicable to the Resource and Reserves statement*
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.*	• *Not Applicable to the Resource and Reserves statement*
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• *No work yet planned*

Section 3 Estimation and Reporting of Mineral Resources – AM6

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

Criteria	JORC Code explanation	Commentary
Database integrity	• *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.*	• *The Panasonic Toughbook PC logging software uses well established geology codes.*
	• *Data validation procedures used.*	• *For both AM6 deposits the collar, assay, survey and geology tables are validated by Xstrata geologists and any identified errors corrected prior to wireframe creation.*
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• *The CP completed a site visit during the due diligence period*
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	• *Geological interpretation of mineralised domains for AM6 Massive deposit on 12.5 m to 50 m digital sections in Vulcan.* • *Geological interpretation of mineralised domains for AM6 Disseminated deposit on 5m digital sections in Vulcan.*
	• *Nature of the data used and of any assumptions made.*	• *No assumptions were made.*

Criteria	JORC Code explanation	Commentary
	• *The effect, if any, of alternative interpretations on Mineral Resource estimation.*	• *The AM6 Massive April 2011 MRE had an alternative interpretation based on an updated intrusive pegmatite model and corrected surveys of underground drill holes.* • *The AM6 Disseminated April 2012 MRE had an alternative interpretation based on additional drilling which better defined the pegmatites in the central zone, and corrected wireframes from survey error corrections.*
	• *The use of geology in guiding and controlling Mineral Resource estimation.*	• *AM6 Disseminated – Ore zones were digitised and polygons were snapped to both underground and surface drilling intercepts. Each wireframe is representative of grade domain, and those were used in compositing and estimate to ensure high grades are not smearing into the low grade zones and vice versa.* • *To ensure a good estimate, all high grade isolated intersections, which mainly consist of massive sulphide stringers , were placed in a separate domain HG_S, to ensure they are still accounted for in the resource but their contribution to the overall resource inventory is monitored and they do not over-inflate the final resource inventory. Four geological and geostatistical domains were identified as outlined below:* • *High grade domain (>1.5 %Ni)* • *Medium grade domain (1.5-1.0%Ni)* • *Low grade domain (0.4-1.0% Ni)* • *HG_S (single hit intersections) (>1.5 Ni%)* • *AM6 Massive - Ore domains were digitised and polygons were snapped to underground drilling intercepts. Both grade and geology were used to determine domain boundaries. Each wireframe is representative of mineralised domain, and those were used in compositing and estimate to ensure high grades are not smearing into the low grade zones and vice versa.* • *Two mineralised domains were identified:* • *Massive Sulphide (HG) domain* • *Disseminated Sulphide (halo) domain*
	• *The factors affecting continuity both of grade and geology.*	• *Factors affecting geological continuity relate to pegmatites within the lithological sequence for both AM6 deposits. In the Disseminated deposit there is a major fault truncating mineralisation. These geological discontinuities have been modelled and any grade discontinuities have been accounted for in the estimation modelling.*
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.*	• *The AM6 Massive deposit is approximately 125m along strike and up to 60m down dip.* • *The AM6 Disseminated deposit is approximately 425m along strike and up to 240m down dip.*
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.*	• *AM6 Massive and Disseminated deposits were estimated and modelled using the same approach:* • *Wireframing of geological mineralised domains using underground and surface drilling, and limited UG mapping. 1.0m composites created from Isis file. Ordinary kriging used to assign Ni, As, Cu, Co Cr, Pb, Zn, Mn, Fe, S and MgO, and kriging process was executed. All elements used Ni variography. SG estimated using regression formula based on estimated block Ni values.*
	• *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 April 2011 MRE is the third block model and grade estimate for the AM6 Massive deposit.* • *The April 2012 MRE is the fourth block model and grade estimate for the AM6 Disseminated deposit.*
	• *The assumptions made regarding recovery of by-products.*	• *No assumptions were made about the recovery of by products in this estimate.*
	• *Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).*	• *Possible deleterious elements As, Pb, Zn, Fe, S, Cu, Co and MgO were estimated for both AM6 deposits.*
	• *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.*	• *Both AM6 deposits used the same parent blocks 10 m x15 m x 5 m and sub-blocking to 1.25 m x 2.5 m x 1.25 m.*
	• *Any assumptions behind modelling of selective mining units.*	• *No selective mining units were assumed in the estimate.*
	• *Any assumptions about correlation between variables.*	• *No assumptions were made about correlation between variables.*

Criteria	JORC Code explanation	Commentary
	• *Description of how the geological interpretation was used to control the resource estimates.*	• *AM6 Massive - Modelled Ni domains were based on grade and geology logging and grades written into those domains.* • *AM6 Disseminated – Low and high grade Ni domains were modelled and grades written into the four separate domains.*
	• *Discussion of basis for using or not using grade cutting or capping.*	• *AM6 Massive - No top cuts or high yield restrictions were applied to the Ni% variable during estimate.* • *AM6 Disseminated – No top cuts were applied.*
	• *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	• *Estimation validation techniques included swathe plots of the grade of the composites vs the grade of the block model, visual checks of the estimate grade and comparison of the percentage filled blocks for each pass.*
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• *Tonnages were estimated on a dry basis.*
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• *AM6 Massive – the resource was investigated at several cut off grades; 1%, 1.5% and 2% Ni.* • *AM6 Disseminated – the impact of various cut off grades was investigated and finally reported at 1.5% Ni*
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	• *No mining factors or assumptions were applied.*
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• *No metallurgical factors or assumptions were applied.*
Environmental factors or assumptions	• *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.*	• *No environmental factors or assumptions were investigated.*
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.*	• *Bulk density is determined the Pycnometer methods.* • *Sufficient quantity of BD measurements were taken for MRE purposes and all are recorded in the database*
	• *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.*	• *The methods used to determine BD are industry standard and adequately account for the very low possibility of void spaces*

Criteria	JORC Code explanation	Commentary
	• *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• *The methods used to determine BD are industry standard*
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.*	• *AM6 Massive – classification not applied, but criteria were defined* • *AM6 Disseminated – A significant conversion of Inferred to Indicated category was seen in the April 2012 MRE*
	• *Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).*	• *The definition of mineralised zones is based on a high level of geological understanding. It is believed that all relevant factors have been considered in this estimate, relevant to all available data.*
	• *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• *It is believed that all relevant factors have been considered in this estimate.*
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• *WSA reviewed all the Cosmos MRE's during the due diligence phase and is satisfied that the data used is robust and that the MRE itself is robust – standard industry techniques have been used*
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.*	• *The geological and grade continuity of the AM6 deposits is well understood and the mineralisation wireframes used to build the block model have been designed using all available drilling data. Post processing block model validation was extensively undertaken using geostatistical methods before the resource was reported.*
	• *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used*	• *The statement relates to local estimates of tonnes and grade.*
	• *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• *No production data available for comparison.*

Table 1 - 2012 Edition JORC Code
Mineral Resource Estimation
Mt Goode

Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.*	• *The Mt Goode deposit is defined by 97 diamond drill (DD) holes and 16 reverse circulation (RC) holes on nominal 40 m grid spacing.* • *The composite file used in the Mineral Resource Estimate (MRE) contains a total of 10,307 composites, split into 12 domains.*
	• *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*	• *Little information is available on the sampling protocols of Homestake Gold, who carried out exploration drilling at Mt Goode from 1997-2000. The majority (85%) of the data in the Mt Goode resource is from Jubilee Mines NL, whose sampling protocols are in accordance with industry standards.* • *Sample representivity is assured by an industry standard internal QAQC program.* • *All samples are prepared and assayed by an independent commercial laboratory whose instruments are regularly calibrated.*

Criteria	JORC Code explanation	Commentary
	• *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.*	• *Diamond core is marked at 1 m intervals and sample lengths are typically of this length.* • *Sample boundaries are selected to match the main geological, alteration and mineralisation boundaries.* • *Sampled mineralisation intervals are sent to a commercial laboratory for crushing and grinding before assaying.*
Drilling techniques	• *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• *A mixture of RC and Diamond. Diamond drilling makes up the main proportion of the resource and comprises NQ2 and HQ sized core.* • *Jubilee Mines drilled diamond core from surface.* • *Jubilee Mines orientated all core.*
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.*	• *Diamond core recoveries are logged and recorded in the database. Overall recoveries are >95% and there are no core loss issues or significant sample recovery problems.*
	• *Measures taken to maximise sample recovery and ensure representative nature of the samples.*	• *Diamond core is reconstructed into continuous runs on an angle iron cradle for orientation marking. Depths are checked against the depth given on the core blocks and rod counts are routinely carried out by the drillers.*
	• *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.*	• *The bulk of the resource is defined by diamond drilling which has high core recoveries.* • *The consistency of the mineralised intervals suggests there is no sample bias due to material loss or gain.*
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.*	• *All Homestake Gold diamond drillholes were re-logged by Jubilee Mines NL and selected intervals were resampled.* • *All geological logging was carried out to a high standard using well established geology codes.* • *Geotechnical data is recorded including joints, RQD and core quality.* • *From 2003 to 2005 all logging was recorded in hard copy and 'tough-book' PC logging.*
	• *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.*	• *Core is photographed in both dry and wet form.*
	• *The total length and percentage of the relevant intersections logged.*	• *All drillholes are logged in full.*
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.*	• *Diamond core is cut by the field crew on site utilising either an Almonte or manual core saw; ore zones are sampled as quarter core and surrounding rock is sampled as half core, in both cases the right-hand piece of core is taken as the sample.* • *The field crew prepares and inserts the QAQC certified reference materials into the relevant calico bags which are prepared for the sample string prior to core cutting. In the case of ore zone sampling, the piece of quarter core which usually remains is taken as the duplicate sample.* • *To create a field duplicate the core is cut again, into quarter core.* • *Additional procedures were instigated for sampling ore zone batches to ensure confidence in the accuracy of our sampling for these crucial batches.* • *Homestake Gold Diamond core sampling method unknown.*
	• *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.*	• *Homestake Gold RC sampling method unknown.*
	• *For all sample types, the nature, quality and appropriateness of the sample preparation technique.*	• *The sample preparation of diamond core follows industry best practice involving oven drying, coarse crushing and pulverising. Sample preparation is carried out by a commercial certified laboratory.* • *The sample preparation technique is well established and appropriate for Ni sulphide deposits.*

Criteria	JORC Code explanation	Commentary
	• *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*	• *Selected Geostats and ORE certified reference materials are used to cover the known grade range.* • *Field duplicates are routinely submitted to test sample precision.* • *Blank samples are routinely submitted to test sample contamination.* • *Pulp duplicates obtained from ALS lab are sent to Genalysis (GLY) for umpire check analysis.*
	• *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.*	• *Sample representatively is assured through the methods previously discussed.* • *Laboratory QAQC assaying, external field duplicates and standards are stored within the database, with all QAQC data reviewed and reported on a monthly basis for Ni and Cu.* • *Validation failures highlighted via the Ni assaying are queried with the laboratory responsible, with explanations and actions reported in the following months' QAQC report.*
	• *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• *The sample sizes are considered to be appropriate on the following basis: the style of mineralisation (disseminated sulphide), the thickness and consistency of the intersections, the sampling methodology and percent value assay ranges for the primary elements.*
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*	• *All samples are assayed by an independent certified commercial laboratory. The laboratory used is experienced in the preparation and analysis of nickel sulphide ores.* • *Samples are analysed by ALS in Perth for Ag, Al, As, Co, Cr, Cu, Fe, Mg, Mn, Ni, Pb, S, Ti, Zn and Zr. Selection of this laboratory is based on a historical working relationship.* • *Genalysis Laboratory Service (GLY), in Maddington is the Umpire Laboratory used for multielement (Ag, Al, As, Co, Cr, Cu, Fe, Mg, Mn, Ni, Pb, S, Ti and Zn) umpire check analysis on pulps provided by ALS.* • *The selection of this laboratory for umpire QAQC purposes was based on this laboratories ability to handle low level PGM detection analysis and on its performance during Geostats global round-robin laboratory rankings.* • *The principal analytical method used is ME-ICP61s, an analysis of 15 elements to provide data for geological, metallurgical, mining and environmental modelling. The samples are analysed by HF-HNO3_HCLO4 acid digestion, HCL leach and a combination of ICPMS and ICPAES finishes. If any base metal exceeds 1% concentration, these elements are assayed using OG62 analysis. Ore grade determinations (>1% trigger) are used for Ni, Cu, Pb and Zn or when specified by Jubilee Mines NL geologists. This method uses HF-HNO3_HCLO4 digestion with an ICP or AAS finish.* • *The only information available for the analytical method for the historic holes relates to the holes drilled in the 2000 period. From the annual report the method of analysis was using Multi Acid digestion with an ICP-OES for the determination of Ni, Cu, Co, Cr, Mg, Al, As in fresh samples and Fe, Mn in oxide samples.* • *Test work by Jubilee Mines NL re-assayed the selected ore intercepts and found them to be comparable to historic intercepts.*
	• *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.*	• *No Geophysical tools or handheld XRF instruments were used to determine any element concentrations that were subsequently used for MRE purposes.*
	• *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	• *Certified reference materials are included in all batches dispatched at an approximate frequency of 1 per 25 samples. Field duplicates are collected frequently and duplicate pulps submitted regularly to umpire laboratory.* • *Accuracy and precision were assessed using industry standard procedures such as control charts and scatter plots.* • *Evaluations of standards are completed on a monthly basis; control plots and a paper trail of action taken on issues arising are stored at Jubilee Mines NL Head Office.*
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.*	• *Jubilee Mines NL resampled strategic intercepts to check grades and intercept widths from Homestake Gold core.*

Criteria	JORC Code explanation	Commentary
	• *The use of twinned holes.*	• *No holes were twinned in the recent drilling programs.*
	• *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*	• *The exploration department makes use of Field Marshall software (produced by Micromine Pty Ltd) for logging of drillhole data in the field on dedicated laptops. This software provides the first level of data validation, utilising locked lookup tables for all data fields which have set code sets attributed to them.* • *The SQL database utilises validation lookup tables and trigger scripts to ensure that all numeric, date and code information is correct. The database will also reject duplication of the key sample number and hole number fields within a broader project area.* • *Validation failures highlighted via the Ni assaying are queried with the laboratory responsible, with explanations and actions reported in the following months' QAQC report*
	• *Discuss any adjustment to assay data.*	• *No adjustments were made to assay data compiled for this MRE.*
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	• *The method to determine collar surveys for historic drillholes is unknown, apart from two BERC generation holes which have been picked up by Cosmos Survey. Apart from these two holes the exact location of the drillholes is unknown since the survey type is not described in the database and the holes could not be picked up after acquisition because the area had been rehabilitated.* • *The original surface survey control was established by Spectrum Surveys of Kalgoorlie. Installation of several DGPS stations have been utilised by exploration and mining. Control has been checked by the Jubilee Mines NL surveyors traversing from Cosmos to Mt Goode using conventional traversing techniques.* • *Survey control has been established to within industry standards, typically 1 in 500. The survey instrument used is a Leica TCRA1105 with instrument specifications for survey station control of 2mm + 2ppm and 5". During the collar pick up the instrument specifications are 10mm + 2ppm and 5". Interpretation of the collar position can be +/-0.1m with a 25mm centering error during normal pickup operations. Normal convention is to pick up the hangingwall side of the drillhole collar.* • *Jubilee Mines NL surface holes are initially orientated based on GPS and DGPS locations and compass setup, using the AGD 84 datum. After the completion of the holes, the holes have been picked up by GPS/DGPS, but the majority of holes have been picked up by the Jubilee Mines NL surveyors or Spectrum Surveys using local survey control datum points installed by Spectrum Surveys.* • *All of the downhole surveys from the historical holes have an unknown downhole survey method except for BERC0319, which have been surveyed by gyro. The downhole surveys from the Jubilee Mines NL programs are mainly gyro surveys.*
	• *Specification of the grid system used.*	• *A Gemcom database was defined to manage the data for the estimation. The AMG location data provided is maintained, however a transformation to mine grid for Northing and Easting is applied [AMG to Mine Grid, AMG X -250,000; AMG Y -6,900,000]. Elevation remains the same.*
	• *Quality and adequacy of topographic control.*	• *No specific topographic control.*
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.*	• *Drillholes were spaced at approximately 40 m (northing) x 40 m grid for the majority of Resource.*
	• *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.*	• *The available drill data demonstrates sufficient and appropriate continuity for both geology and grade within the Mt Goode deposit to support the definition of a Mineral Resource as classified under the JORC Code (2012).*
	• *Whether sample compositing has been applied.*	• *The drillhole samples were composited to a regular downhole length of 1 m within the 12 domains.*
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.*	• *The Mt Goode deposit is composed of 12 domains which have varying strikes and dips:* • *Domain1 and 2 strike 5°, dip ~76° east and plunge ~40° toward the south.* • *Domain 3 and 4 strike 140°, dip ~74° east and plunge ~13° toward the southeast.* • *Domain 5 and 6 strike 120° and dip ~80° southwest.*

Criteria	JORC Code explanation	Commentary
		• *Domain 7 and 8 strike 150° and dip ~47° northeast.* • *Domain 9 and 10 strike 160°, dip ~72° and plunge ~13° toward the southeast.* • *Domain 11 and 12 strike 140° and dip ~75° northeast.* • *The majority of drilling was conducted from east to west.*
	• *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.*	• *No orientation based sampling bias has been observed in the data.*
Sample security	• *The measures taken to ensure sample security.*	• *All core samples were delivered from site to Perth and then to the assay laboratory by an independent transport contractor.*
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• *Detailed geological interpretation and data validation provided by Digital Rock Services and reviewed independently by TSG personnel.*

Section 2: Reporting of Exploration Results – Mt Goode

(Criteria listed in Section 1, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• *Cosmos Nickel Complex comprises 26 tenements covering some 9,226Ha. The tenements include mining leases and miscellaneous licenses* • *Western Areas wholly owns 23 tenements, which were acquired from Xstrata Nickel Australasia in October 2015. The remainder of the tenements (3) are subject to a Joint Venture with Alkane Resources NL, where Western Areas has earned 80.6% interest* • *All tenements are in good standing*
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• *Not Applicable to the Resource and Reserves statement*
Geology	• *Deposit type, geological setting and style of mineralisation.*	• *The deposits form part of the Cosmos Nickel Complex, which lies within the Agnew-Wiluna Belt of the central Yilgarn Craton, Western Australia* • *The deposit style is komatiite hosted, disseminated to massive nickel sulphides.* • *The mineralisation typically occurs in association with the basal zone of high MgO cumulate ultramafic rocks.* • *Many of the higher grade ore bodies in the Cosmos Nickel Complex also show varying degrees of remobilisation, and do not occur in a typical mineralisation profile*
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* – *easting and northing of the drill hole collar* – *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* – *dip and azimuth of the hole* – *down hole length and interception depth* – *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	• *Not Applicable to the Resource and Reserves statement*

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.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• *Not Applicable to the Resource and Reserves statement*
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').*	• *Not Applicable to the Resource and Reserves statement*
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.*	• *Included within report*
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• *Not Applicable to the Resource and Reserves statement*
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.*	• *Not Applicable to the Resource and Reserves statement*
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• *No work yet planned*

Section 3 Estimation and Reporting of Mineral Resources – Mt Goode

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

Criteria	JORC Code explanation	Commentary
Database integrity	• *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.*	• *All data is entered utilising Field Marshall software (produced by Micromine Pty Ltd) for logging of drillhole data in the field on dedicated laptops.* • *Assay data in the form of csv and sif files from the primary assay laboratory ALS Chemex and the umpire assay laboratory Genalysis received by exploration are imported directly into the database whenever possible.*
	• *Data validation procedures used.*	• *The Field Marshall software provides the first level of data validation, utilising locked lookup tables for all data fields which have set codes attributed to them.* • *The SQL database utilises validation lookup tables and trigger scripts to ensure that all numeric, date and code information is correct. The database will also reject duplication of the key sample number and hole number fields within a broader project area.*
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• *MRE was completed by site personnel.*
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	• *Due to the drilling spacing and the understanding of similar deposits within the Mt Goode metadunite area, the geological interpretation is considered to be sound. The geological interpretation was created by Digital Rock Services (DRS) on 40m spaced sections and 20 m spaced flitch plans, using defined geological coding system based on long term exploration in the project area.* • *The deposit lies within a south-west kink of a generally north-south striking western ultramafic and is bound to the east by a felsic porphyry. The disseminated nickel sulphide mineralisation forms a broad lens shape within the Mt Goode metadunite, a common locus for sulphide deposition within an intrusive ultramafic. The original primary magmatic nickel-sulphide mineralisation is fine grained lobate disseminated pentlandite grains. Subsequent serpentinisation has had an impact on the form, distribution and liberation characteristics of these magmatic nickel sulphides.*
	• *Nature of the data used and of any assumptions made.*	• *Lithogeochemistry and stratigraphic interpretation have been used to assist the identification of rock types. No assumptions are made.*
	• *The effect, if any, of alternative interpretations on Mineral Resource estimation.*	• *The 0406 model was built on a new interpretation by Digital Rock Services. This interpretation differed from the previous interpretation (John Hicks) in the geometry of the main and footwall higher grade zones. The interpretation by DRS includes a more detailed analysis of the different domains based on Ni% and the S:Ni ratios. These parameters suggested changes to the location of ore boundaries and geometry of the ore zone.*
	• *The use of geology in guiding and controlling Mineral Resource estimation.*	• *The MRE is based upon a robust geological model which was created internally by the Technical Services Group (TSG). Domaining involved definition of the hanging wall and footwall contacts of the mineralised zone, which were used to constrain the low grade halo and high grade core boundaries. Oxide and transition boundaries modelled from drillhole logging were also used to subdomain the mineralisation. Modelling was completed with a level of confidence proportionate to the resource classification category. The extents of the geological model were constrained by drillhole intercepts and extrapolation of the geological contacts beyond the drill data was minimal.*
	• *The factors affecting continuity both of grade and geology.*	• *Factors affecting geological continuity relate to felsic dykes within the ultramafic sequence and faulting. These geological discontinuities have been modelled and any grade discontinuities have been accounted for in the estimation modelling.*
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.*	• *The strike length of the Mt Goode deposit varies considerably but is up to 525 m in domain 9/10. The largest distance from the top of the mineralisation to the base (in domain 9/10) is approximately 560m. The width of the deposit varies between domains, from a minimum of 2m to a maximum of 100 m, with a mean of 40 m.*

Criteria	JORC Code explanation	Commentary
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.*	• *Grade estimation of Ni% and S% using Ordinary Kriging was completed using GEMS software Version 6.0. The method is considered appropriate due to drill hole spacing and the nature of mineralisation.* • *All estimation was completed at the parent cell scale to avoid any potential geostatistical support issues.* • *Sample data was composited to 1m downhole lengths and flagged on domain codes.* • *Top cut investigations were completed and no top cuts were applied on the basis of grade distribution, Coefficient of Variation and previous methodology used at Cosmos.* • *Sample data was flagged using domain codes generated from DRS's 3D mineralised wireframes based on 0.45% Ni (low grade halo) and 0.75% Ni (high grade core).* • *Directional variography was performed for Ni using Snowden Visor software (Version 6.00.16). Nugget values are typical for the type of mineralisation (Ni = 20% - 40% of the total variance). Ranges of continuity for Ni vary from 50 m to 90 m in the direction of preferred orientation of mineralisation.*
	• *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.*	• *This MRE is an update of an MRE that was undertaken in June 2004 and was extensively validated against the June 2004 MRE.*
	• *The assumptions made regarding recovery of by-products.*	• *No assumptions were made about the recovery of by products in this estimate.*
	• *Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).*	• *No elements are considered to be deleterious elements in the Mt Goode deposit.*
	• *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.*	• *A proto model was constructed using a 10 mE x 20 mN x 10 mRL parent size. The model was built using a separate folder for each domain which was then combined for reporting. Each block can then have multiple domains and grades. This eliminates grade bleeding into other domains as it honours both geological and grade continuity. Drill spacing varies but is nominally 40 m by 40 m.* • *The size of the search ellipse was based on the Ni variography for each domain. Three search passes were used; the first and second vary between 60m x 90m x 20m and 90m x 130m x 40m in the X, Y and Z directions respectively. The third pass used a search volume between 80m x 120m x 26m and 150m x 160m x 52m in the X, y and Z directions, respectively.*
	• *Any assumptions behind modelling of selective mining units.*	• *No selective mining units were assumed in the estimate.*
	• *Any assumptions about correlation between variables.*	• *No assumptions were made about correlation between variables.*
	• *Description of how the geological interpretation was used to control the resource estimates.*	• *The geological interpretation was developed using geological, structural and lithogeochemical elements. The extent of the ultramafic boundary, ductile and brittle structural deformation and presence of felsic intrusives were used to refine the mineralised domains.* • *The hangingwall and footwall mineralisation contacts, as well as the oxide/fresh surfaces were used as hard boundaries during the estimation process, and only blocks within the grade wireframes were informed with Ni grades.*
	• *Discussion of basis for using or not using grade cutting or capping.*	• *Geostatistical investigation of the grade distribution negated the need for grade cutting or capping.*
	• *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	• *Estimation validation techniques included swathe plots of the grade of the composites vs the grade of the block model, and visual checks of the kriging variance, kriging efficiency and slope of regression*
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• *Tonnages were estimated on a dry basis.*
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• *The mineral envelope was determined using a 0.45% Ni cutoff for the low grade halo and 0.75% Ni for the high grade core. The resource is reported above 0.45% Ni and 0.75% Ni cut off grades, which was based upon cut off grades from the previous resource.*

Criteria	JORC Code explanation	Commentary
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	• *No mining factors or assumptions were applied.*
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• *No metallurgical factors were applied to the final grade reported. Metallurgical characteristics calculated in the block model are from information provided by Dunstan Metallurgical Services.* • *Regression analysis was used to calculate the Estimated Sulphide Grade (SONI), Estimated Recovery and Estimated Concentrate Grade from the estimated Ni and S grades. These are included in the final block model, but are not reported on.*
Environmental factors or assumptions	• *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.*	• *No environmental factors or assumptions were investigated.*
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.*	• *Bulk density is determined using both Water Immersion (1.5% measurements) and Pycnometer methods (98.5% measurements). Bulk Density determination has been calculated on a mixture of solid and pulverised material.*
	• *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.*	• *The methods described above adequately account for potential void spaces and moisture*
	• *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• *Majority of assay intervals have bulk density measurements from the pycnometer method. The bulk density in the model is determined by an algorithm which was developed for the relationship between Ni grades and bulk density.*
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.*	• *The Mt Goode Resource is classified as Measured, Indicated and Inferred on the basis of drillhole spacing, geological continuity and Kriging quality parameters.*
	• *Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).*	• *The definition of mineralised zones is based on a high level of geological understanding.*
	• *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• *It is believed that all relevant factors have been considered in this estimate, relevant to all available data.*
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• *Internal review undertaken by Russell Panting and Peter Langworthy. Multi-element variography review by Jacqui Coombes of Snowden Consulting.*

Criteria	JORC Code explanation	Commentary
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.*	• *The geological and grade continuity of the Mt Goode deposit is well understood and the mineralisation wireframes used to build the block model have been designed using all available drilling data. Post processing block model validation was extensively undertaken using geostatistical methods before the resource was reported.*
	• *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used*	• *The statement relates to local estimates of tonnes and grade.*
	• *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• *No production data available for comparison.*