



Middle Island
RESOURCES LIMITED

Middle Island Resources Ltd
ACN 142 361 608
ASX code: MDI
www.middleisland.com.au

Capital Structure:

469 million ordinary shares
800,000 unlisted options

Cash

\$2.53m (as at 30 September 2016)

Directors & Management:

Peter Thomas

Non-Executive Chairman

Rick Yeates

Managing Director

Beau Nicholls

Non-Executive Director

Dennis Wilkins

Company Secretary

Linton Kirk

Sandstone Project Manager

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ASX Release – 14 December 2016

Sandstone Gold Project, WA

Updated Mineral Resource estimate for the Shillington & Two Mile Hill open pit deposits

- Aggregate Indicated and Inferred Mineral Resources for the Shillington and Two Mile Hill deposits in isolation comprise 2.4Mt at 1.31g/t Au for ~100,000oz, with some 86% of the total resource now classified in the higher confidence Indicated category.
- The Mineral Resources are reported in accordance with the 2012 JORC Code guidelines for application in the Sandstone Project pre-feasibility study.
- The updated resource model has been estimated by multiple indicator kriging, which is a non-linear or 'recovered estimation' method that directly estimates the grade and tonnage of a targeted selective mining unit, inclusive of ore loss and dilution.
- Importantly, the updated Mineral Resource estimates are based on only a minority portion of the total Sandstone project resources previously reported under the 2004 JORC Code guidelines and expressly exclude remaining open pit deposits and deeper mineralisation at Two Mile Hill, comprising the previously estimated aggregate 480,000oz resource reported.
- The new estimates only relate to areas within and immediately proximal to the notional pit shells previously generated for the Shillington (including Shillington North) and Two Mile Hill deposits, to a maximum depth of approximately 140m below surface.



SANDSTONE GOLD PROJECT

Updated Resource Estimates

Middle Island Resources Limited (ASX: MDI, Middle Island, the Company) advises that updated Mineral Resource estimates, consistent with the 2012 JORC Code guidelines, have been completed for the Shillington, Shillington North (in a combined Shillington model) and Two Mile Hill open pit deposits within the Company's Sandstone gold project in Western Australia.

The updated Mineral Resource estimates are to a maximum depth of approximately 140m below surface (380mRL). These three specific deposits, targeted by Middle Island post its acquisition of the project, will be applied to the pre-feasibility study (PFS). As such, the new Mineral Resource expressly excludes remaining deposits and deeper mineralisation at Two Mile Hill comprising the aggregate 480,000oz resource previously estimated and reported under the 2004 JORC Code guidelines.

Following the completion of infill reverse circulation percussion (RC) drilling, resource estimation of the Shillington and Two Mile Hill open pit deposits was undertaken by independent consulting firm, EGRM Pty Ltd. The estimate is based on RC and diamond drilling variously undertaken by Sundowner Minerals NL, Herald Resources Limited, Troy Resources NL and Middle Island Resources Limited. Modelling and reconciliation of the relevant geology, weathering, oxidation and alteration was undertaken by MDI personnel, while modelling of the tonnage, grade and bulk density was undertaken by EGRM Consulting Pty Ltd.

The lithological constraints and weathering surfaces modelled by MDI technical staff were applied, after review and minor adjustment, to the grade estimation studies. The modelled lithology includes tonalite and basalt interpretations at Two Mile Hill, and banded iron formation (BIF) and basalt at Shillington. Superimposed weathering surfaces modelled comprise the base of laterite, base of mottled/pallid zone, base of complete weathering and base of slightly weathered.

The resource has been estimated using Multiple Indicator Kriging (MIK). MIK is a non-linear or 'recovered resource' grade estimation method which estimates grades and tonnages for a targeted selective mining unit (SMU) block size, inclusive of dilution and ore loss.

The grade estimate was constrained within a series of mineralisation constraints (estimation domains) defined on a notional 0.1g/t Au lower cut-off grade, cognisant of the lithology models. Separate zones were modelled for laterite, tonalite and basalt at Two Mile Hill, and separate zones for BIF and basalt at Shillington. A background basalt zone was also modelled at Shillington to incorporate anomalous intercepts not otherwise captured within the main modelled zones.

MIK) grade estimates were generated within these mineralisation zone constraints, based on 3m down-the-hole composites of the RC and diamond drilling. At Two Mile Hill, the high grade cuts applied were 18g/t Au for the tonalite, 15g/t Au for the eastern basalt domains, 4g/t Au for the western basalt domains and the laterite domain, and 3g/t Au for the minor southern basalt domains. At Shillington, the BIF and basalt estimation domain composites were respectively cut to 15g/t and 2g/t Au.



The resource was estimated into a block model for grade estimation, based on a 'parent' block size of 20mE by 20mN by 5mRL, with 'sub-celling' to a block size of 5mE by 5mN by 2.5mRL. The model was constrained by a topographic survey generated using DGPS survey control and an unmanned aerial vehicle (UAV) survey. Checks were undertaken against available historic data that indicates the topography, including the mined surfaces, is accurate.

The MIK estimate was generated using a multi-pass estimation approach, the details of which are provided in Appendix A. The majority of categorised blocks have been estimated searching to a maximum distance of 60m (estimation pass 1 or 2). The sample searches neighbourhoods have been optimised based on geostatistical investigations, with the sample search orientation based on the estimation zone geometry and modelled variography.

The MIK estimate targeted a selective mining unit block size of 5mE by 10mN by 2.5mRL. A change of support was applied to the MIK estimate using an indirect lognormal correction applying information effect, which models the likely error made when completing ore/waste selection based on grade control data. The SMU estimate was validated against the global change of support correction generated using the discrete Gaussian change of support method. Validation of the MIK model was undertaken both visually and statistically.

A bulk density data set of 178 determinations was available for review, which is comprised of 46 immersion tests of core billets and 132 core tray weight determinations. The core immersion tests have been completed by an independent laboratory using wax coating and are considered to be robust. Limited documentation is available on the collection method and quality of the core weight data. The available bulk density data was used in conjunction with the available historic documentation from mining operations and previous studies to determine appropriate density assignment coding for the different lithologies and modelled weathering groupings as shown in Table 1.

Table 1 Bulk Density Assignment		
Lithology	Weathering	Density (g/cc)
Basalt	Laterite	2.20
Basalt	Mottled/Pallid	1.80
Basalt	Weathered	1.80
Basalt	Slightly Weathered	2.40
Basalt	Fresh	2.90
Tonalite	Laterite	2.20
Tonalite	Mottled/Pallid	1.80
Tonalite	Weathered	1.90
Tonalite	Slightly Weathered	2.50
Tonalite	Fresh	2.70
BIF	Laterite	2.20
BIF	Mottled/Pallid	2.00
BIF	Weathered	2.00
BIF	Slightly Weathered	2.75
BIF	Fresh	3.00

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The Two Mile Hill and Shillington deposit grade estimates have been classified in accordance with the guidelines set out in the 2012 Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the 'JORC Code'). The assessment of confidence levels of the key categorisation criteria, including the confidence of the resource development data, the geological interpretation, the drilling density and grade estimation is summarised in Appendix 1.

In summary, blocks estimated based on the approximate 20mE by 20mN drill spacing or better are defined within high confidence mineralisation zones classified as Indicated Resource. Those blocks not classified as Indicated Resource, but estimated with acceptable confidence and within 40m of drilling data, are considered Inferred Resource. Only blocks above 380mRL are considered for reporting. Figures 1 and 2 provide a long section and cross section through the Two Mile Hill deposit showing the drill-hole data and distribution of indicated and inferred blocks. Figure 3 provides an oblique section through the Shillington deposit showing the distribution of the indicated and inferred blocks.

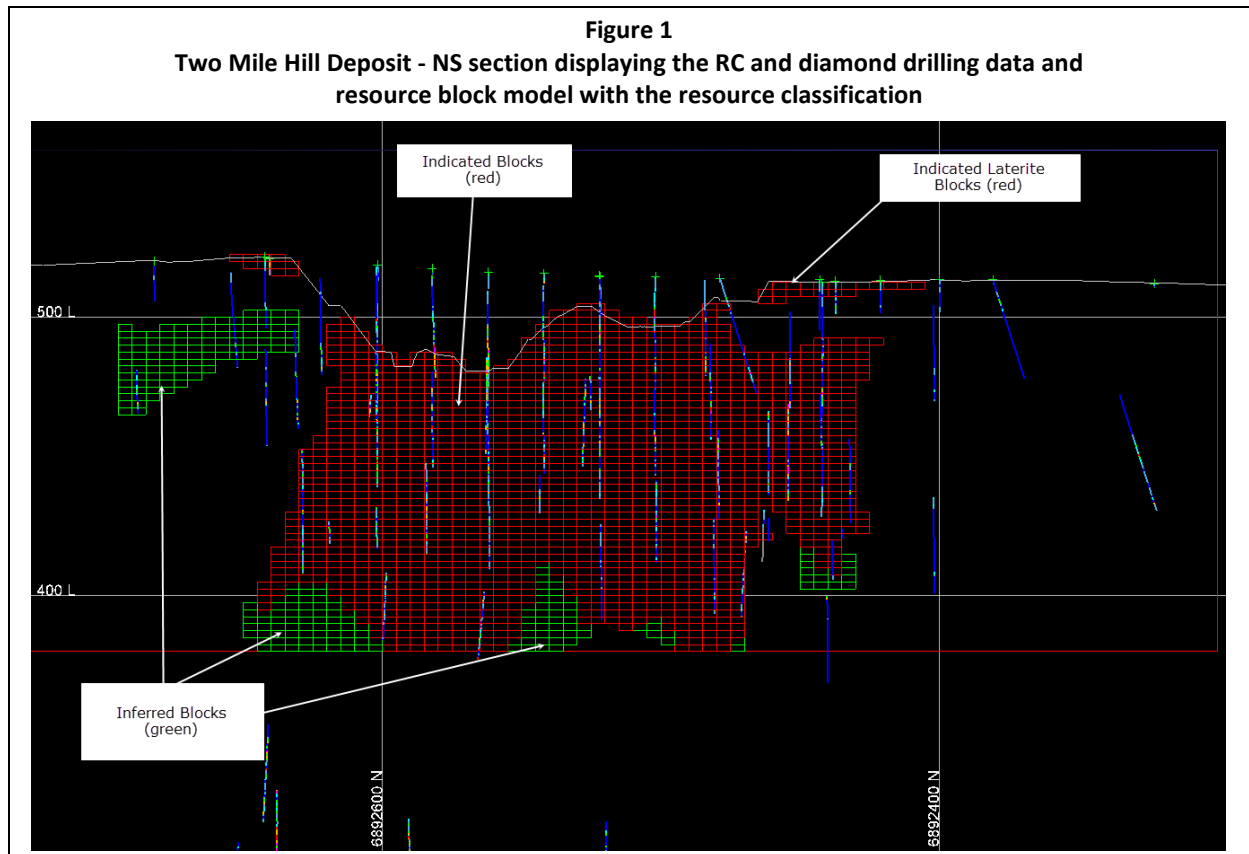




Figure 2
Two Mile Hill Deposit - Typical EW section displaying the RC and diamond drilling data and resource block model with the resource classification

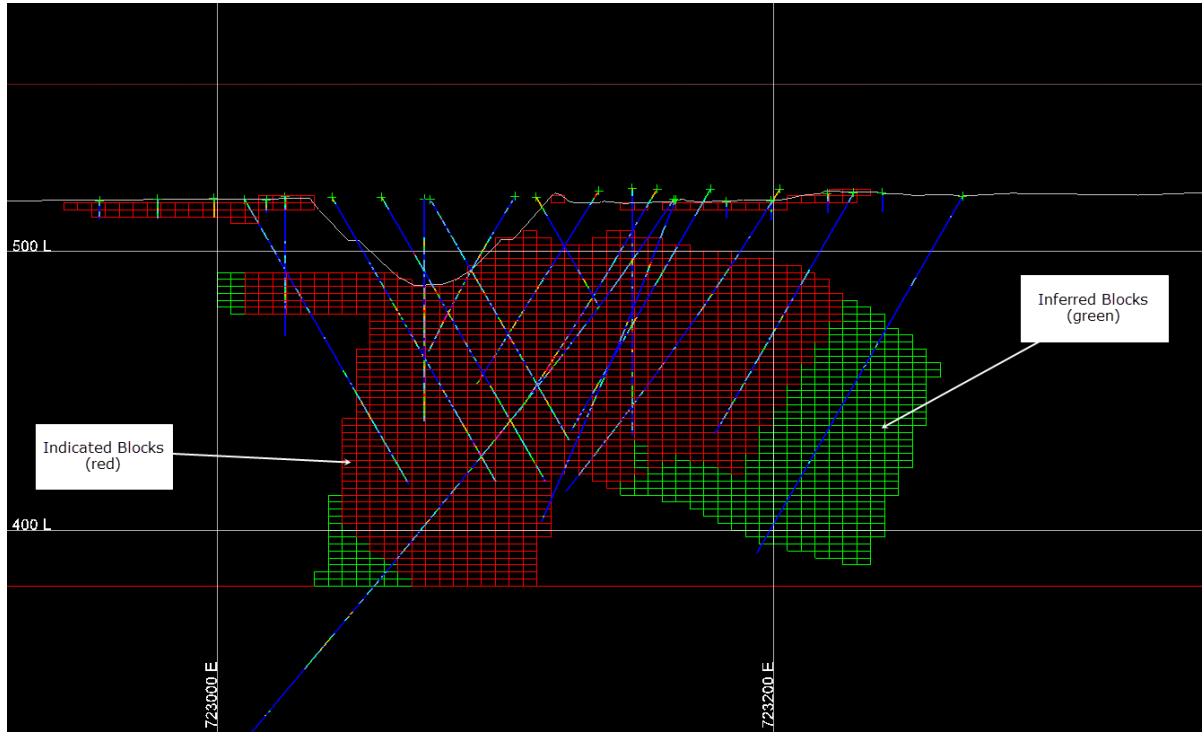
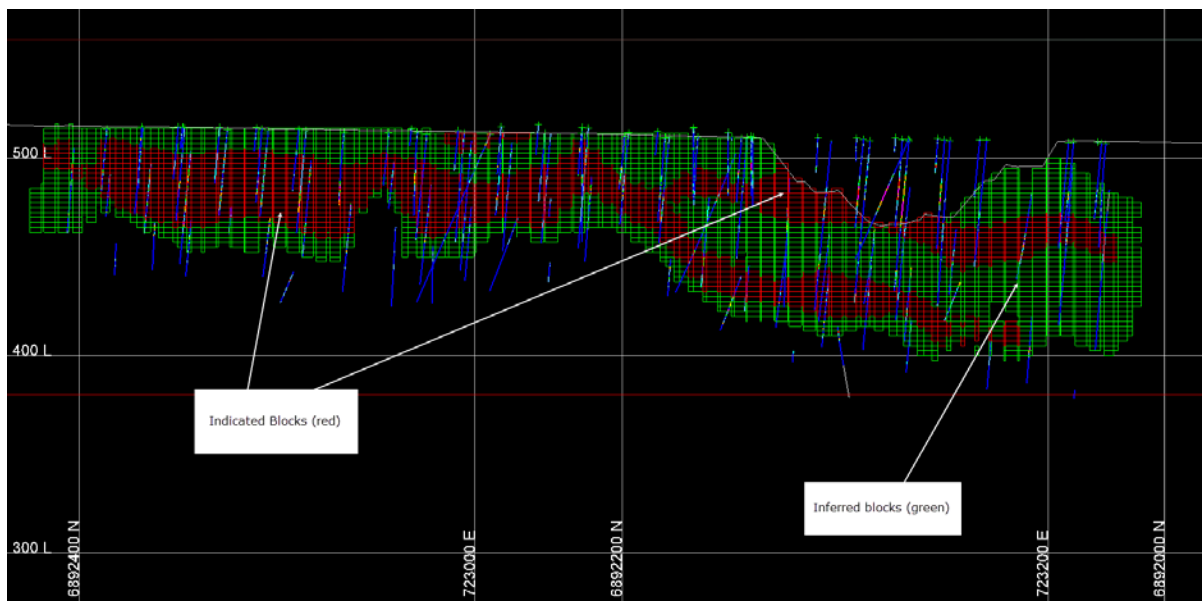


Figure 3
Shillington Deposit - Oblique section (orientation 316/136°) displaying the RC and diamond drilling data and resource block model with the resource classification.



Updated Mineral Resource estimates (2012 JORC Code) for the Shillington (comprising both Shillington & Shillington North) and Two Mile Hill deposits are respectively provided at a range of lower cut-off grades in Table 2 and Table 3 below, while the aggregate Mineral Resource estimate for all three deposits is summarised in Table 4.

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Table 2
Shillington Deposits - Updated Mineral Resource Estimate (2012 JORC Code)
Grade-Tonnage Report – Multiple Indicator Kriging with a Change Support Selective Mining Unit (5mE by 10mN by 2.5mRL)

Cut-off	Indicated			Inferred			Total			
	grade (g/t Au)	Tonnes (kt)	Au (g/t)	koz Au	Tonnes (kt)	Au (g/t)	koz Au	Tonnes (kt)	Au (g/t)	koz Au
0.50		1,591	1.06	54	478	0.93	14	2,069	1.03	69
0.60		1,255	1.20	48	370	1.03	12	1,625	1.16	61
0.70		1,015	1.33	43	272	1.17	10	1,288	1.30	54
0.80		830	1.45	39	211	1.30	9	1,041	1.42	48
0.90		684	1.58	35	168	1.42	8	852	1.55	42
1.00		582	1.70	32	141	1.50	7	723	1.66	39

Table 3
Two Mile Hill Deposit - Updated Mineral Resource Estimate (2012 JORC Code)
Grade-Tonnage Report – Multiple Indicator Kriging with a Change Support Selective Mining Unit (5mE by 10mN by 2.5mRL)

Cut-off	Indicated			Inferred			Total			
	grade (g/t Au)	Tonnes (kt)	Au (g/t)	koz Au	Tonnes (kt)	Au (g/t)	koz Au	Tonnes (kt)	Au (g/t)	koz Au
0.50		1,701	1.05	57	222	0.85	6	1,923	1.03	63
0.60		1,305	1.20	50	161	0.97	5	1,467	1.17	55
0.70		1,012	1.36	44	114	1.10	4	1,127	1.33	48
0.80		801	1.52	39	82	1.23	3	883	1.49	42
0.90		643	1.68	35	56	1.41	3	698	1.66	37
1.00		544	1.82	32	44	1.53	2	588	1.80	34

Table 4
Aggregate Mineral Resource Estimate (2012 JORC Code)
Grade-Tonnage Report – Multiple Indicator Kriging with a Change Support Selective Mining Unit (5mE by 10mN by 2.5mRL)

Cut-off	Indicated			Inferred			Total			
	grade (g/t Au)	Tonnes (kt)	Au (g/t)	koz Au	Tonnes (kt)	Au (g/t)	koz Au	Tonnes (kt)	Au (g/t)	koz Au
0.50		3,292	1.05	112	699	0.90	20	3,992	1.03	132
0.60		2,560	1.20	99	532	1.01	17	3,092	1.17	116
0.70		2,028	1.34	88	387	1.15	14	2,414	1.31	102
0.80		1,631	1.48	78	293	1.28	12	1,924	1.45	90
0.90		1,327	1.63	69	223	1.42	10	1,550	1.60	80
1.00		1,126	1.76	64	185	1.51	9	1,311	1.72	73

At a realistic and geologically preferred lower cut-off grade of 0.7g/t gold, the aggregate Mineral Resource comprises some 2.4Mt at 1.31g/t Au for ~100,000oz, with some 86% of the total resource now classified in the higher confidence, Indicated category.

The grade and tonnes are lower than the historic (2004 JORC Code) resource estimates, collectively resulting in a lower aggregate metal content. The differences are largely derived from the modelling approach adopted in each case, but are also influenced by the availability of additional infill drilling, updated weathering and lithological interpretations, and the differences in applied bulk density for tonnage reporting. The principal differences are summarised below:-

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- The updated resource model has been estimated by MIK which is a non-linear or 'recovered resource' estimate method which directly estimates the grade tonnage of a targeted selective mining unit inclusive of ore loss and dilution. The historic grade estimate was generated using ordinary kriging into a series of discrete mineralisation zones defined above a nominal lower cut-off grade of 0.3g/t Au for Two Mile Hill and 0.4g/t Au for Shillington. The historic resource was generated to be exclusive of dilution and ore loss. In addition, the historic estimate assumes strong grade continuity, thereby projecting higher grades within these zones over larger distances than the updated MIK estimate.
- The updated resource has been generated using refined weathering surfaces which include more detailed subdivisions versus a simplified weathering profile for the historic estimate. This modified weathering interpretation includes a greater proportion of more weathered material that, when combined with lower bulk densities applied to updated resource estimate, results in a lower relative tonnage and therefore contained metal.
- The updated Two Mile Hill estimate also applies a hard boundary at the tonalite contact in grade estimation (this was soft for the historic estimate), due to differences in tenor and the nature of mineralisation between the tonalite and the enveloping basalts. This approach limited extrapolation of high grade data from the tonalite into areas of the surrounding host rock basalts and reduced the high grade tonnes reported in these areas.
- The historic resource for Two Mile Hill was reported above 350mRL for the open pit component, and above 55mRL and below 350mRL at an elevated cut-off grade. The updated resource is reported above 380mRL only.

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Forward Looking Statements

Statements contained in this release, particularly those regarding possible or assumed future performance, costs, dividends, production levels or rates, prices, resources, reserves or potential growth of Middle Island, industry growth or other trend projections are, or may be, forward looking statements. Such statements relate to future events and expectations and, as such, involve known and unknown risks and uncertainties. Actual results and developments may differ materially from those expressed or implied by these forward looking statements depending on a variety of factors.

Competent Persons' Statement

Information in this report relates to exploration results, geological interpretation and data quality, that are based on information compiled by Mr Rick Yeates (Member of the Australasian Institute of Mining and Metallurgy). Mr Yeates is a fulltime employee of Middle Island and has sufficient experience which is relevant to the style of mineralisation and type of deposits under consideration and to the activities undertaken to qualify as a Competent Person as defined in the 2012 edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Yeates consents to the inclusion in the release of the statements based on his information in the form and context in which they appear.

Information in this release, which relates to the resource estimation of the Two Mile Hill and Shillington deposits is based on the work of Brett Gossage, MAusIMM, who has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and the activities being reported upon to qualify as a Competent Person, as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Gossage consents to the inclusion in this report of the statements based on the information in the form and context in which it appears

Appendix 1

The following Table is provided in compliance with the JORC Code

Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling. Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information. 	<ul style="list-style-type: none"> The results are derived from RC sampling by Middle Island Resources (Middle Island) and Sundowner Minerals (Sundowner). RC and diamond sampling completed by Herald Resources (Herald) and Troy Resources (Troy). Middle Island sampling was by collecting 2-3kg of RC chips off the drill rig's cone splitter at 1m intervals. Herald and Troy Resources RC sampling was by collecting 2-3kg of RC chips with a riffle splitter at 1m intervals. Sundowner collected 2m composites of unknown weight and unknown method. The diamond drill core samples were sampled as half HQ and NQ core at 1m intervals. Core recovery was excellent. Core was re-aligned prior to splitting and the right-hand side half core section was consistently sampled. Middle Island Resource's RC recovery was also excellent, with samples being a consistent weight of 2 – 3kg. The primary RC sample was taken from the same splitter chute for the entire program. Herald and Troy Resources samples were collected using a 3-tier riffle splitter to split the whole RC metre sample return to a 2-3kg sub-sample. Troy Resources and Herald Resources half HQ and NQ diamond core samples, weighing 1-2kg, were sent to the laboratory to be crushed (-10mm) and pulverised to produce a 300g pulp, then split to a 50g charge for fire assay analysis. Middle Island, Troy and Herald RC samples, comprising 2- 3kg, were sent to the laboratory to be crushed (-10mm) and pulverised to produce a 300g pulp, then split to a 50g charge for fire assay analysis.
Drilling techniques	<ul style="list-style-type: none"> Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc). 	<ul style="list-style-type: none"> The oriented diamond drill core is HQ (63.5mm) and NQ (47.6mm) in diameter. The Middle Island RC rig used a 5-inch bit to return a 1m sample. The Herald and Troy RC drilling was drilled at an unknown size to return a 1m sample.
Drill sample recovery	<ul style="list-style-type: none"> Method of recording and assessing core and chip sample recoveries and results assessed. 	<ul style="list-style-type: none"> Diamond core and RC chip recovery data was measured for each drill run/drill hole and captured in a digital logging software package. The data has been reviewed and the core recovery was effectively 100% throughout.

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> Measures taken to maximise sample recovery and ensure representative nature of the samples. 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. 	<ul style="list-style-type: none"> The water table was intersected at 40–60m hole depth. Middle Island had no issues in keeping the sample dry. Sundowner, Herald and Troy Resources drilling also intersected the water table at 40–60m. While some wet material was sampled, this accounts for less than 1% of their total sampling. No relationship between sample recovery and grade has been established.
Logging	<ul style="list-style-type: none"> Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. The total length and percentage of the relevant intersections logged. 	<ul style="list-style-type: none"> The diamond core and RC chips were logged for lithology, weathering, structure, mineralogy, mineralisation, alteration, colour, RQD and geotechnical features. Logging was carried out according to Herald Resources, Troy Resources and Middle Island Resources internal protocols at the time of drilling. Sundowner's geology logs are not present in this dataset. Each metre of all drill holes except for the 10 Sundowner RC holes was qualitatively logged from start to finish of the hole. All core was photographed within each core tray.
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> If core, whether cut or sawn and whether quarter, half or all core taken. If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. For all sample types, the nature, quality and appropriateness of the sample preparation technique Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. 	<ul style="list-style-type: none"> The diamond core was cut by diamond saw and half core was left in the core trays for reference purposes. Half core samples were bagged in 1m intervals. Middle Island RC chips were split dry using a cone splitter on the drill rig, samples were collected and bagged in 1m intervals. Troy and Herald RC chips were split dry by a 3-tier riffle splitter, samples were collected and bagged in 1m intervals. Sundowner 2m composites were collected by an unknown method. Middle Island samples were collected and taken to the Intertek lab in Kalgoorlie, W.A for sample preparation. The sample pulps were dispatched to Intertek Maddington, W.A for analysis. The samples were dried and crushed to -10mm before being split and then a 300g subsample pulverized to 95% passing 75 micron. This fraction was then split again to a 50g sample charge for fire assay. Troy samples were dispatched to SGS Minerals for analysis. The samples were dried and crushed to -10mm before being split and then a 300g subsample pulverized to 95% passing 75 micron. This fraction was then split again to a 50g sample charge for fire assay. Herald samples were sent to Analabs in Mt Magnet for 50g fire assay, however the precise preparation procedure is undocumented.

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> 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. 	<p>Sundowner samples were prepared and assayed by an unknown method. All of the laboratories stated above are internationally certified and accredited.</p> <ul style="list-style-type: none"> Middle Island collected an RC field duplicate (via a second split off the cone splitter) at a rate of 1:18 samples. Sundowner, Troy and Herald Resources completed no field duplicates on their RC samples, Troy completed duplicates on interesting samples within their core samples. For the diamond core the routine sample procedure was to consistently cut the core along the bedding apex and collect the same side of the cut core. For the RC chips, the routine sample procedure was to consistently take the primary split from the same chute. A secondary split was taken off the alternate chute for field duplicates. Sample size and assay charge size are considered appropriate for the style of mineralisation.
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established. 	<ul style="list-style-type: none"> Middle Island adopted a 50g fire assay method with an ICP-OES finish. Herald and Troy Resources adopted a 50g fire assay method with an AAS finish. The Sundowner method for gold analysis is undocumented. These techniques are considered suitable for gold mineralisation associated with sulphides and oxidised sulphides. No other measurement tools/instruments were used to derive assays. Middle Island included laboratory duplicates, field duplicates and certified standards routinely in the assay train at a 1:9 frequency, and a quartz wash used after each sample pulverised. Troy and Herald included standards and blanks inserted into each sample batch submitted.
Verification of sampling and assaying	<ul style="list-style-type: none"> The verification of significant intersections by either independent or alternative company personnel. The use of twinned holes. Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. Discuss any adjustment to assay data. 	<ul style="list-style-type: none"> Sampling was undertaken by experienced geologists from Middle Island, Sundowner, Herald and Troy who confirmed the intersections as prospective for gold mineralisation. No twinned holes were used as part of this programme. Sampling data were imported and validated using a GBIS database software system by an experienced database consultant. Assay data were not adjusted, however re-assays were requested on the single inconsistent result.
Location of data points	<ul style="list-style-type: none"> Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. 	<ul style="list-style-type: none"> Surface collar coordinates were surveyed via DGPS. Previous collar survey data in the database was verified by a survey pick up in 2012. Given magnetism inherent in the host rock, a high quality downhole gyro survey

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> • <i>Specification of the grid system used.</i> • <i>Quality and adequacy of topographic control.</i> 	<p>instrument was used to determine the dip and azimuth of the diamond holes at 5m intervals. RC drilling used a downhole camera tool, with adjustments made for magnetic intensity readings being out of specification for the tool. Historic downhole surveys also have been adjusted for high magnetic readings within the BIF, although the method of shot and magnetic intensity have not been recorded in the database.</p> <ul style="list-style-type: none"> • MGA94 Zone 50. • The topographic surface was calculated from the previous mine survey pickups.
Data spacing and distribution	<ul style="list-style-type: none"> • <i>Data spacing for reporting of Exploration Results.</i> • <i>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</i> • <i>Whether sample compositing has been applied.</i> 	<ul style="list-style-type: none"> • Results being reported are comprised of 1m sample/assay intervals, with holes drilled on a nominal 20m by 20m pattern. • The data spacing is adequate to provide continuity of geology and grade for the Mineral Resource, and any subsequent Ore Reserve, reported. • No compositing of samples was adopted for Middle Island, Troy and Herald drilling. Sundowner adopted 2m composites for its assay sampling.
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> • <i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i> • <i>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</i> 	<ul style="list-style-type: none"> • Drilling orientations were appropriate to intersect the mineralisation more or less orthogonal to provide a representative sample of essentially true width. • The company does not believe that any sample bias had been introduced which could have a material effect on the results.
Sample security	<ul style="list-style-type: none"> • <i>The measures taken to ensure sample security.</i> 	<ul style="list-style-type: none"> • Middle Island, Herald, Troy and Sundowner procedures ensured individual samples were given due attention. The samples were taken by experienced company geologists and collected by the laboratory's designated driver. Intertek, SGS Minerals and Analabs are all internationally accredited laboratories.
Audits or reviews	<ul style="list-style-type: none"> • <i>The results of any audits or reviews of sampling techniques and data.</i> 	<ul style="list-style-type: none"> • The historic database and current database were validated and audited by Expedito database consultants.

Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul style="list-style-type: none"> Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings. The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area. 	<ul style="list-style-type: none"> The sampled diamond core and RC chips is from Mining Lease M57/128 which is 100% owned by Sandstone Operations Pty Ltd, a wholly-owned subsidiary of Middle Island Resources Limited. As at the time of reporting Sandstone Operations Pty Ltd was the sole owner of the project, including Mining Lease M57/128.
Exploration done by other parties	<ul style="list-style-type: none"> Acknowledgment and appraisal of exploration by other parties. 	<ul style="list-style-type: none"> Drilling was undertaken and reported by Herald Resources Limited and Troy Resources Limited during their respective tenure of the Sandstone Gold project and appears to be to industry standard.
Geology	<ul style="list-style-type: none"> Deposit type, geological setting and style of mineralisation. 	<ul style="list-style-type: none"> The Shillington deposit is a BIF-hosted, meso-thermal quartz veining and pyrite replacement mineralisation within the Archaean Sandstone Greenstone Belt. The Two Mile Hill deposit is hosted within a late stage, near vertical intrusive tonalite stock which cuts the local stratigraphy of mafic volcanics and BIF.
Drill hole Information	<ul style="list-style-type: none"> A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: <ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> See table and plan within the release. All drill-hole information has been previously reported to the market by the respective entities.
Data aggregation methods	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Not applicable No internal intercepts are reported.

Criteria	JORC Code explanation	Commentary
	<p><i>aggregation should be stated and some typical examples of such aggregations should be shown in detail.</i></p> <ul style="list-style-type: none"> <i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i> 	<ul style="list-style-type: none"> Not applicable.
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> <i>These relationships are particularly important in the reporting of Exploration Results.</i> <i>If the geometry of the mineralisation with respect to the drillhole angle is known, its nature should be reported.</i> <i>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</i> 	<ul style="list-style-type: none"> Holes have been drilled orthogonally to the general dip and strike of the mineralised BIF and therefore down-hole intercepts approximate true widths. Gold mineralisation within the vertically disposed Two Mile Hill tonalite intrusive is associated with sub-horizontal quartz veins. The drilling is therefore oriented to ensure both adequate definition the tonalite contacts and an optimum angle of intersection on the mineralised quartz veins.
Diagrams	<ul style="list-style-type: none"> <i>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</i> 	<ul style="list-style-type: none"> See table and figures within the release.
Balanced reporting	<ul style="list-style-type: none"> <i>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</i> 	<ul style="list-style-type: none"> Not applicable.
Other substantive exploration data	<ul style="list-style-type: none"> <i>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</i> 	<ul style="list-style-type: none"> Geochemical data highlighted anomalous readings over the prospects which lead to Herald to drill the first exploration holes. Aeromagnetic, FLEM and DHEM geophysical surveys over Shillington and Two Mile Hill identified regional structures and sulphide mineralisation. Troy collected 132 representative bulk density determinations from diamond core to generate density values for mineralised and unmineralised material associated with the Shillington and Two Mile deposits. In addition, Middle Island Resources collected a further 52 bulk density determinations from both diamond core and air pycnometer to verify the Troy density values, with no anomalies identified.
Further work	<ul style="list-style-type: none"> <i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i> <i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i> 	<ul style="list-style-type: none"> Some further RC drilling is contemplated in order to clarify the nature of, and controls on, gold mineralisation hosted by basalt on the eastern periphery of the Two Mile Hill deposit.

Section 3 Estimation and Reporting of Mineral Resources

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

Criteria	JORC Code explanation	Commentary
Database integrity	<i>Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.</i>	<p>The historic database and current database were validated and audited by Expedio database consultants. Expedio manage the current database on behalf of MDI.</p> <p>All geological and field data is currently entered using data-loggers and software developed by OCRIS, that includes lookup tables and fixed formatting (and protected from modification) thus only allowing data to be entered using the Middle Island geological code system and sample protocol. Historical logging was carried out according to Herald Resources and Troy Resources internal protocols at the time of drilling. Sundowner's geology logs are not present in this dataset. The database is yet to be fully rationalised and therefore the different logging schemes persist in the database to a limited extent.</p> <p>Data is loaded and managed by independent database consultants in the Dashed database, which was managed by Expedio with access to Middle Island personnel. Middle Island technical personnel validated the database using Micromine software.</p> <p>The OCRIS database is then reviewed against the original logging spreadsheets and the assay data checked against the supplied assay certificates.</p>
	<i>Data validation procedures used.</i>	<p>Following importation the data goes through a series of digital checks for duplication and non-conformity, followed by validation by the relevant project geologist who manually checks the collar, survey, assay and geology for errors against the original field data and final paper copies of the assays. The process is documented, including the recording of holes checked, errors found, corrections made and the date of database update.</p>
Site visits	<i>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</i>	<p>Rick Yeates has completed site visits many times and has supervised recent data collection. MDI personnel have completed a review of the data quality. Drilling was in progress during each of these site visits and all work was being undertaken in a competent and appropriate manner. Observed sampling protocols were considered to meet high industry standards.</p>

Criteria	JORC Code explanation	Commentary
		<p>The site visit included a review of geological logging and supervision of independent check-assaying. The check assaying confirmed the location and tenor of the assaying contained within the database. Although some minor inconsistencies in the various generations of geological logging were rectified via re-logging of archived chip trays, the logging was generally found to be consistent and no material issues noted. The drill-hole collar surveys were confirmed by handheld GPS and DGPS surveys, with the drill collars well preserved.</p> <p>Brett Gossage, Principal for EGRM Consulting Pty Ltd, has not completed a site visit.</p>
	<p><i>If no site visits have been undertaken indicate why this is the case.</i></p>	<p>Not applicable.</p>
<p>Geological interpretation</p>	<p><i>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</i></p>	<p>The Shillington deposit is BIF-hosted, comprising meso-thermal quartz veining and pyrite replacement mineralisation within the Archaean Sandstone Greenstone Belt. The Two Mile Hill deposit is hosted within a late stage, near vertical intrusive tonalite stock which cuts the local stratigraphy of mafic volcanics and BIF.</p> <p>The confidence in the geological interpretation is considered high based on the majority of the resource area being drill tested to 20m by 20m drill spacing and knowledge gained through mining by previous operators.</p> <p>A model of the lithology and weathering was generated prior to the mineralisation domain interpretation commencing. This work was completed by Middle Island technical staff based review of the available geological logging and selective re-logging of archived diamond core and RC chip trays. Re-logging was required to ensure eliminate any inconsistencies between previous generations of logging.</p> <p>Mineralisation at the Two Mile Hill deposit project area is developed in tonalite and enveloping basalt. The overlying laterite at Two Mile Hill also hosts gold mineralisation. The Two Mile Hill mineralisation is generally hosted within sub-horizontal to shallow dipping sheeted quartz veins and intercalated BIF units at depth. The sheeted veins form broad, gradational zones of mineralisation with variable continuity that are defined by the application of a lower cut-off grade. Gold mineralisation within the tonalite</p>

Criteria	JORC Code explanation	Commentary
		<p>and basalt is variously accompanied by silica-sericite-carbonate-pyrite alteration.</p> <p>The Shillington deposits are primarily hosted within BIF, with minor mineralisation also found in the hangingwall and footwall basalts. The Shillington BIF-hosted mineralisation occurs as variable, moderate northeast dipping, lenses ranging from approximate 1m in width to in excess of 10m width. Mineralisation is variously associated with brecciation, quartz veining and pyrite replacement (and its oxidised equivalents) within the BIF and adjacent basalt.</p>
	<i>Nature of the data used and of any assumptions made.</i>	The geological data used to construct the geological model includes regional and surface mapping, logging of RC and diamond core drilling, down-hole and surface geophysical surveys, and knowledge from previous production records. A nominal 0.1g/t Au lower cut-off grade was applied to the mineralisation model.
	<i>The effect, if any, of alternative interpretations on Mineral Resource estimation.</i>	The geology of the deposit is relatively simple, and the interpretation is considered robust. There is no apparent alternative to the interpretation in the company's opinion at this point, and previous mining activities support the current interpretation.
	<i>The use of geology in guiding and controlling Mineral Resource estimation.</i>	<p>At both Two Mile Hill and Shillington, the mineralisation geometry has a strong relationship with the interpreted lithology, alteration and structure. The lithology controls the tenor and nature of mineralisation and has been considered when interpreting the mineralisation constraints. Weathering does not appear to materially impact the mineralisation with no sharp grade changes across the weathering boundaries although at Two Mile Hill minor supergene enrichment appears to occur in the area previously mined.</p> <p>The grade estimates are based on gold grades and the mineralisation package defined above a 0.1g/t Au lower cut-off grade. These estimation domains have been interpreted considering the lithology and are generally constrained by the lithology interpretation. The tonalite at Two Mile Hill is considered a hard boundary and truncates the mineralisation zones, ensuring only tonalite coded composites are used to estimate tonalite estimation domains and basalt composites the basalt domains.</p>

Criteria	JORC Code explanation	Commentary
	<p><i>The factors affecting continuity both of grade and geology.</i></p>	<p>A broad zone of anomalous mineralisation is interpreted at Two Mile Hill in the tonalite at a lower cut-off of 0.1g/t Au which includes sub-horizontal sheeted veins that can be variably interpreted at higher cut-off grades. The grade continuity at lower cut-off grades is good, however this grade continuity is materially reduced at higher cut-off grades above 0.6g/t Au. The basalt mineralisation at Two Mile Hill generally has reduced widths relative to the tonalite mineralisation and is often less continuous. The laterite mineralisation represents a laterally extensive flat zone of mineralisation above and immediately peripheral to the primary mineralisation.</p> <p>At the Shillington deposit, broader zones of mineralisation can be defined at a 0.1g/t Au lower cut-off grade. At elevated cut-off grades, for example 0.4 g/t Au, lenses range from approximately 1m in width to in excess of 10m width, but there is often significant variation between sections. The grade of the defined intercepts are often highly variable.</p> <p>At both Shillington and Two Mile Hill, it was considered appropriate to generate broad mineralisation zone constraints using a 0.1g/t Au lower cut-off grade and apply the non-linear multiple indicator kriging approach to account for the local spatial variability identified.</p>
<p>Dimensions</p>	<p><i>The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.</i></p>	<p>The approximate dimensions of the Two Mile Hill deposit modelled are 280m along strike (N-S), 250m across (E-W), and 140m below surface, although the mineralisation extends at depth. The majority of mineralisation is hosted within the tonalite body at Two Mile Hill, which is approximately 80m in width, some 250m in length and variably mineralised.</p> <p>The approximate dimensions of the modelled Shillington deposits (including Shillington North) are 580m along strike (SSE), 320m across (ENE) strike and 140m below surface. The zone thickness at Shillington is generally less than 20m.</p>

Criteria	JORC Code explanation	Commentary
Estimation and modelling techniques	<i>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.</i>	<p>The resource estimate has been generated via Multiple Indicator Kriging (MIK) with a change of support. The MIK estimation was constrained within the 0.1g/t Au mineralisation zone interpretation. MIK is considered an appropriate grade estimation method for both the Two Mile Hill and Shillington deposits given the high degree of spatial variability of the gold assay data (relative to the data spacing) present within the mineralisation zones.</p> <p>The grade estimate is based on 3m down-the-hole composites of the resource development drilling data. High grade cuts (as described below) have been applied to composites to limit the influence of higher grade data.</p> <p>Detailed statistical and geostatistical investigations have been completed on the captured estimation data set. This includes exploration data analysis, boundary analysis, variography, grade estimation trials and change of support studies. These investigations have been completed on an estimation domain by domain basis (grouped like domains e.g. tonalite, BIF, laterite, etc.).</p> <p>Grade estimation has been completed using multiple estimation passes with expanding sample search radii. A first higher confidence estimate was completed (Indicated Resource where other criteria were met) with sample search radii of 40m by 40m by 15m and a sample search orientation consistent with the major controls interpreted for each estimation domain. Subsequent estimation passes (passes 2 and 3) were generated with expanded sample searches of 50% increase in sample search radii. A maximum of 32 and with a minimum of 24 (passes 1 and 2) and 16 (pass 3) composites have been used in grade estimation. A maximum number of 8 composites from any drill-hole have been allowed to estimate a single block. A final estimation pass with extended ranges has been completed using sample search of 200m by 200m by 75m to ensure all un-estimated blocks are filled, noting that very small numbers of blocks are estimated within this final search and only blocks within 40m of drill-holes are considered for resource reporting. The laterite estimate at Two Mile Hill is completed with an isotropic search of 30m applying the sample search constraints and expansion described above.</p> <p>In addition to the high grade cuts applied in grade estimation, a sample search restriction was applied where samples above 8g/t Au at Shillington,</p>

Criteria	JORC Code explanation	Commentary
		<p>that are greater than 30m by 30m by 15m from the block being estimated, were excluded from the grade estimation process. For the basalt domains at Two Mile Hill, the same approach is applied, where data above 4g/t Au are excluded from estimating a block if those composites are located further than 20m by 20m by 10m from the block centroid.</p> <p>The grade estimation has been generated using a combination of mine planning and specialist geostatistical software packages. Vulcan has been used for geological modelling, block model construction and grade estimation. Isatis software has been used for statistical and geostatistical analysis.</p>
	<p><i>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</i></p>	<p>The deposits have been estimated multiple times by various groups, including in-house by the then operators of the project and by external consultants.</p> <p>Most recently Snowden Mining Industry Consultants estimated the Mineral Resource for both the Two Mile Hill and Shillington deposits in February 2013. The current estimates are based on additional data but globally report lower tonnes and metal at similar grades to the Snowden estimates at the 0.7g/t Au lower cut-off grade. The current resource reports more indicated resource relative to the previous estimate due to the infill drilling completed by MDI.</p> <p>The deposits have been partially mined by previous operators, although limited production records are available to allow reconciliation of the grade estimation data and production.</p>
	<p><i>The assumptions made regarding recovery of by-products.</i></p>	<p>No by-products are present or modelled.</p>
	<p><i>Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).</i></p>	<p>No deleterious elements have been identified or estimated at either Two Mile Hill or Shillington.</p>
	<p><i>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</i></p>	<p>The MIK estimates for both Two Mile Hill and Shillington are based on a block (panel) size of 20m (East) by 20m (North) by 5m (Elevation), which considers the drilling density for the vast majority of the deposits which have been drilled to an approximate 20m by 20m spacing. The sample search applied is discussed above.</p>

Criteria	JORC Code explanation	Commentary
		<p>From the MIK panel estimates, a selective mining unit (SMU) estimate has been generated based on a 5m (East) by 10m (North) and 2.5m (Elevation) block size. This SMU is based on the envisaged mining practices likely to be employed at Shillington and Two Mile Hill. The MIK SMU has been localised to SMU size blocks for visualisation and mine planning purposes.</p>
	<p><i>Any assumptions behind modelling of selective mining units.</i></p>	<p>A selective mining estimate has been generated for the MIK using a change of support targeting a 5m (East) by 10m (North) and 2.5m (Elevation) selective mining unit. The change of support has been completed using an indirect lognormal correction. The selective mining estimate (MIK) has been compared to a global change of support analysis, completed using a discrete Gaussian change of support model as part of the validation procedure.</p>
	<p><i>Any assumptions about correlation between variables.</i></p>	<p>No correlated variables have been investigated or estimated.</p>
	<p><i>Description of how the geological interpretation was used to control the resource estimates.</i></p>	<p>The grade estimate completed for both Two Mile Hill and Shillington is based on a nominal 0.1g/t Au lower cut-off grade mineralisation constraint, which uses lithology as the constraint.</p> <p>At Two Mile Hill, the Tonalite is considered a hard boundary for the gold mineralisation captured within this lithology with basalt-hosted mineralisation interpreted separately. Separate mineralisation zones have been interpreted for laterite.</p> <p>At Shillington, the mineralisation interpretation is based on cut-off grade and lithology. Mineralisation defined within the interpreted BIF is estimated separately to the basalt-hosted zones.</p> <p>For both deposits, the composite data were reviewed based on weathering interpretations. Statistical investigations have been completed to test the change in statistical and spatial characteristics of the domains grouped by weathering. The weathering was determined to not control the distribution of the gold mineralisation and therefore have been coded to the block model but not used as hard boundaries.</p>
	<p><i>Discussion of basis for using or not using grade cutting or capping.</i></p>	<p>A review of the high grade composite data captured within the mineralisation constraints was completed to assess the need for high grade cutting (capping). This assessment was completed both statistically and spatially to determine if the high grade data are clustered or isolated. On</p>

Criteria	JORC Code explanation	Commentary
	<p><i>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</i></p>	<p>the basis of the investigation, high grade cuts were applied to the estimation domain.</p> <p>The high grade cuts applied to Two Mile Hill by domain are: Laterite – 4g/t Au; Tonalite – 18g/t Au; western basalt domains – 4 g/t Au; eastern basalt domains – 15g/t Au, and southern basalt domains – 3g/t Au.</p> <p>The high grade cuts applied for the Shillington estimation domains are: BIF – 15g/t Au, and basalt domains – 2g/t Au.</p> <p>The grade estimate was checked against the input drilling/composite data both visually on section (cross and long section) and in plan, and statistically by means of swath plots, global statistical checks and via comparisons with global change of support analysis. The model is considered robust.</p> <p>Limited open pit mining has been completed at both Shillington and Two Mile Hill, however no consistently reliable production records have been unearthed. Therefore no reconciliation has been possible.</p>
Moisture	<p><i>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</i></p>	<p>The resource tonnage is reported using a dry bulk density and therefore represent dry tonnage excluding moisture content.</p>
Cut-off parameters	<p><i>The basis of the adopted cut-off grade(s) or quality parameters applied.</i></p>	<p>The grade estimate is based on mineralisation constraints which are designed to capture all anomalous mineralisation at a nominal 0.1g/t Au lower cut-off. The estimation approach produces a selective mining estimate based on the targeted SMU. The model is considered valid for reporting and mine planning at a range of lower cut-off grades up to a lower cut-off grade of 1.0g/t Au.</p>
Mining factors or assumptions	<p><i>Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.</i></p>	<p>The resource model assumes open cut mining is adopted and a moderate level of mining selectivity is achieved, targeting a 5mE by 10mN by 2mRL selective mining unit. It has been assumed that high quality grade control will be applied to ore/waste delineation processes using RC drilling, or similar, at a nominal spacing of 5m (north – along strike), 10m (east – across strike), and 2m downhole or better, applying a pattern sufficient to ensure adequate coverage of the mineralisation zones.</p>

Criteria	JORC Code explanation	Commentary
Metallurgical factors or assumptions	<i>The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.</i>	Historic production records from the Shillington and Two Mile Hill open pit deposits have been reviewed in detail. MDI has also undertaken further metallurgical testwork on samples derived from archived diamond drill core and a single HQ diamond core hole drilled by MDI at Shillington North. The metallurgical recoveries and conceptual operating costs have been incorporated in estimation to determine an appropriate range of cut-off grades for estimation and resource reporting purposes.
Environmental factors or assumptions	<i>Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.</i>	The deposits all lie within a granted Mining Lease, M57/128. Likewise the deposits are covered by an existing approved Mining Proposal, such that no further environmental studies or approvals are required. An RC sterilisation drilling programme has recently been completed by MDI to allow for extensions to the existing Two Mile Hill/Shillington waste dump.
Bulk density	<i>Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.</i>	<p>The bulk density values were derived from 178 measurements taken on the core, comprising 46 immersion tests of core billets and 132 core tray weight determinations. Limited documentation is available on the collection method and quality of core tray weight data. The 46 core billet immersion determinations have been completed by independent laboratory ALS using wax coating where applicable. The available bulk density data were used in conjunction with the available historic documentation from mining operations and previous studies to determine appropriate density assignment coding.</p> <p>The bulk density has been assigned based on a weathering and lithology groupings using the available data and knowledge of the project based on previous studies (production and resource/reserve investigations). Where insufficient bulk density data existed, the density was assumed based on like lithologies and weathering.</p> <p>The assigned basalt density was 2.2g/cc for laterite, 1.8g/cc for mottled/pallid and weathered material, 2.4g/cc for slightly weathered and 2.9g/cc for fresh rock.</p>

Criteria	JORC Code explanation	Commentary
	<p><i>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.</i></p> <p><i>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</i></p>	<p>The tonalite bulk density assignment was 2.2g/cc for laterite, 1.8g/cc for mottled/pallid, 1.9g/cc for weathered material, 2.5g/cc for slightly weathered and 2.7g/cc for fresh rock.</p> <p>The assigned density for BIF was 2.2g/cc for laterite, 2.0/cc for mottled/pallid, 2.0g/cc for weathered material, 2.75g/cc for slightly weathered and 3.0g/cc for fresh rock.</p> <p>The bulk density database is comprised of two different data sets. The core immersion data determinations have been completed by independent laboratory ALS using high quality methods, including wax coating of porous oxidised samples to account for void spaces.</p> <p>The remaining data has been generated by weighing runs of diamond core in trays. Little documentation exists for the core tray weight data (132 measurements) collection method and therefore the quality of this data is not known.</p> <p>Little data or information on bulk density is provided in the majority of historic production and resource/reserve documentation reviewed that can directly inform Two Mile Hill or Shillington (i.e. density testwork that is reported), however relatively consistent densities have been applied to similar lithologies and weathering subdivisions throughout the Sandstone Project and the assigned densities are consistent with those normally expected for the modelled lithologies and weathering classifications.</p> <p>Bulk density has been assigned on the basis of weathering and lithology groupings of the collected data and previous resource/reserve study reports compiled by the then operators and their consultants. Additional data collection is recommended for high confidence bulk density assignment.</p>
<p>Classification</p>	<p><i>The basis for the classification of the Mineral Resources into varying confidence categories.</i></p>	<p>The grade estimate has been categorised as a combination of Indicated and Inferred Resource based on an extensive review of input data quality, confidence in the geological understanding and modelling, grade estimation parameters and economic parameters (prospect of the resource blocks being economic). The grade estimation parameters include the number of data points informing the estimate, and the distance from drilling data.</p>

Criteria	JORC Code explanation	Commentary
	<p><i>Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</i></p>	<p>A cross sectional interpretation was completed using criteria listed above and a wireframe solid produced to capture those blocks that could be considered as Indicated Resource.</p> <p>Based on these factors, high confidence domains within the indicated solid wireframe that were drilled to a spacing of approximately 20mE x 20mN or better, as defined by a distance of 25m or less to the nearest drill-hole, and estimated with high confidence grade interpolation (estimation pass less than or equal to 3) were considered as Indicated Mineral Resource.</p> <p>Inferred Mineral Resource blocks represent those where estimates were not considered Indicated Resource, but still lie within the interpreted mineralisation zone, generally estimated with estimation pass 1 or 2 or 3 and within 40m of drilling data.</p> <p>As described above, the Mineral Resource classification has been based on the quality of the data collected (geology, survey and assaying data), the density of data, the confidence of the geological model and mineralisation model, and the grade estimation quality.</p> <p>The models have been reported to a maximum 380mRL as this depth was anticipated to exceed the maximum depth of open pit mining. Equally, little of the historic RC drilling includes downhole surveys and deviations are more likely to be material at greater depths.</p> <p>MDI has high confidence in its own recently completed infill RC drilling data. The historic Troy Resources and Herald Resources RC diamond drilling information is also generally considered very reliable, with strong supportive archive data, including, appropriate assaying protocols, chip trays and reference diamond core. With one or two exceptions, the limited number of older RC holes completed by Sundowner Minerals appear consistent with the remaining drilling information, however this data is not well documented in the archives.</p> <p>The only significant issue identified in modelling the deposits was an apparent inconsistency in the interpretation of the weathering profile between the various generations of logging. In order to rectify this, MDI technical personnel identified and re-logged the weathering from a substantial selection of historic chip trays in areas where an inconsistency was evident. MDI is confident that the final outcome is appropriate.</p>

Criteria	JORC Code explanation	Commentary
	<i>Whether the result appropriately reflects the Competent Person's view of the deposit.</i>	The reported resource is consistent with the Competent Person's view of the deposit.
Audits or reviews	<i>The results of any audits or reviews of Mineral Resource estimates.</i>	The resource estimate has not been audited by external parties.
Discussion of relative accuracy/confidence	<i>Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.</i>	<p>The resource has been classified based on the quality of the data collected, the density of data, the confidence of the geological model and mineralisation model, and the grade estimation quality. This has been applied to a relative confidence based on data density and zone confidence for resource classification.</p> <p>No relative statistical or geostatistical confidence or risk measure has been generated or applied.</p>
	<i>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</i>	<p>The Mineral Resource is considered to be of sufficient local confidence to allow mine planning studies to be completed. The estimate has been classified as a combination of Indicated and Inferred Resource with the Indicated Resource of a sufficient local confidence to allow optimisation studies and mine scheduling.</p> <p>Statistical checks have been completed to validate the grade estimation, which have robustly reproduced the grade trends in the drilling data at the scale of the panel estimate. Neighbourhood testing and optimisation has been completed to ensure the grade estimates are of high quality. Change of support analysis has been completed to ensure the grade tonnage is also appropriate for current mining practices.</p>
	<i>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</i>	While small scale mining and milling has been completed at both Shillington and Two Mill Hill, no sufficiently detailed production records can be sourced to compare to the resource blocks.