



## Middle Island

RESOURCES LIMITED

**Middle Island Resources Ltd**

ACN 142 361 608

ASX code: MDI

[www.middleisland.com.au](http://www.middleisland.com.au)

**Capital Structure:**

586 million ordinary shares

38,300,000 unlisted options

**Cash**

\$1.3m (as at 30 September 2017)

**Directors & Management:**

**Peter Thomas**

Non-Executive Chairman

**Rick Yeates**

Managing Director

**Beau Nicholls**

Non-Executive Director

**Dennis Wilkins**

Company Secretary

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## ASX Release – 29 November 2017

### Substantial Exploration Target announced for key deposit at Sandstone gold project, WA

- An Exploration Target of **24Mt to 34Mt at 1.1g/t to 1.4g/t Au, comprising between 0.9Moz & 1.5Moz of gold** has been estimated between 140m and 700m depth for the Two Mile Hill tonalite deeps deposit at Middle Island's Sandstone gold project in WA.

*The potential quantity and grade of the Exploration Target is conceptual in nature, as there has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource.*

- The estimated Exploration Target follows the incorporation of results from diamond core hole MSDD156, which generated a gold intercept of **508.3m at 1.38g/t Au, including 160m at 2.31g/t Au.**
- The Exploration Target confirms the presence of a substantial and ubiquitously mineralised system **measuring ~250m in strike and up to 90m in width at surface, which is mineralised to at least 713m depth** and remains open beneath this level.
- Within the Exploration Target, broader, sub-horizontal zones of higher grade mineralisation include approximate true width intercepts of **22m at 5.95g/t, 37m at 4.46g/t, 50m at 2.71g/t, 13m at 6.39g/t and 11m at 6.89g/t Au.**
- The new Exploration Target, along with encouraging results derived from recent metallurgical and mineralogical testwork, increases the potential for bulk underground mining beneath the proposed open-pit cutback on the Two Mile Hill tonalite deposit.
- Formal resource updates for both the Two Mile Hill tonalite deeps and BIF deposits are being prepared by an independent consultant prior to completing the underground mining concept study.



## **SANDSTONE GOLD PROJECT (WA)**

### **Two Mile Hill Tonalite Deeps Exploration Target**

An Exploration Target of **24Mt to 34Mt at 1.1g/t to 1.4g/t Au** has been estimated for the Two Mile Hill tonalite deeps deposit, representing **between 0.9Moz and 1.5Moz of contained gold**. The estimate extends from the base of the previously estimated open pit resource at 140m vertical depth down to 700m, below which depth the mineralised tonalite plug remains open.

The previously estimated Indicated and Inferred Mineral Resource above 140m depth at Two Mile Hill comprises a further **1.13Mt at 1.33g/t Au for 48,000oz gold** (refer ASX Release of 14 December 2016).

The Exploration Target is derived from 18 diamond holes drilled on a notional 40m section spacing, comprising 2,897m drilled within the tonalite and 3,052 gold assays. Gold assays are based on maximum 1m sample intervals of half NQ diamond core and analysed via 50g fire assay by recognised, independent and internationally certified assay laboratories.

The Exploration Target comprises a lower volume estimate that is reasonably conservatively based on the modelled surface and drilled dimensions of the tonalite plug, projected to 700m depth. The upper volume estimate is based on the gravity inversion modelling that indicates the tonalite plug bells-out at depth in the northeast quadrant, where it is poorly constrained by drilling. As such, a 40% increase in the plan area of the plug has been modelled in at 700m depth to derive the upper estimate of mineralised volume. Some 114 bulk density determinations, which consistently approximate 2.7t/m<sup>3</sup>, have been applied to both the upper and lower volume estimates to derive a tonnage range from 24Mt to 34Mt.

The lower end of the grade range (1.1g/t Au) represents the average of all gold grades captured within the tonalite wireframe between 140m and 700m vertical depth, somewhat biased by the more densely drilled, but generally lower gold grades, encountered to approximately 200m depth. The upper end of the grade range (1.4g/t Au) reflects the average grade of hole MSDD156, which provides the only intersection down the axis of the tonalite plug, normal to the dominant quartz vein orientation, to in excess of 700m depth.

Within the Exploration Target, broader, sub-horizontal zones of higher grade mineralisation traverse the tonalite plug, including approximate true width intercepts of **22m at 5.95g/t, 37m at 4.46g/t, 50m at 2.71g/t, 13m at 6.39g/t and 11m at 6.89g/t Au**.

An isometric image of the more conservative, lower estimate of volume/tonnage comprising the modelled Two Mile Hill tonalite deposit Exploration Target is provided in Figure 1 below.

The Exploration Target has been derived following receipt of results from diamond core hole MSDD156 (refer ASX Release of 14 November 2017), which generated an intercept of **508.2m at 1.38g/t Au** from the commencement of coring at 83.7m to 592m down-hole, **including an intercept of 160m at 2.31g/t Au**.

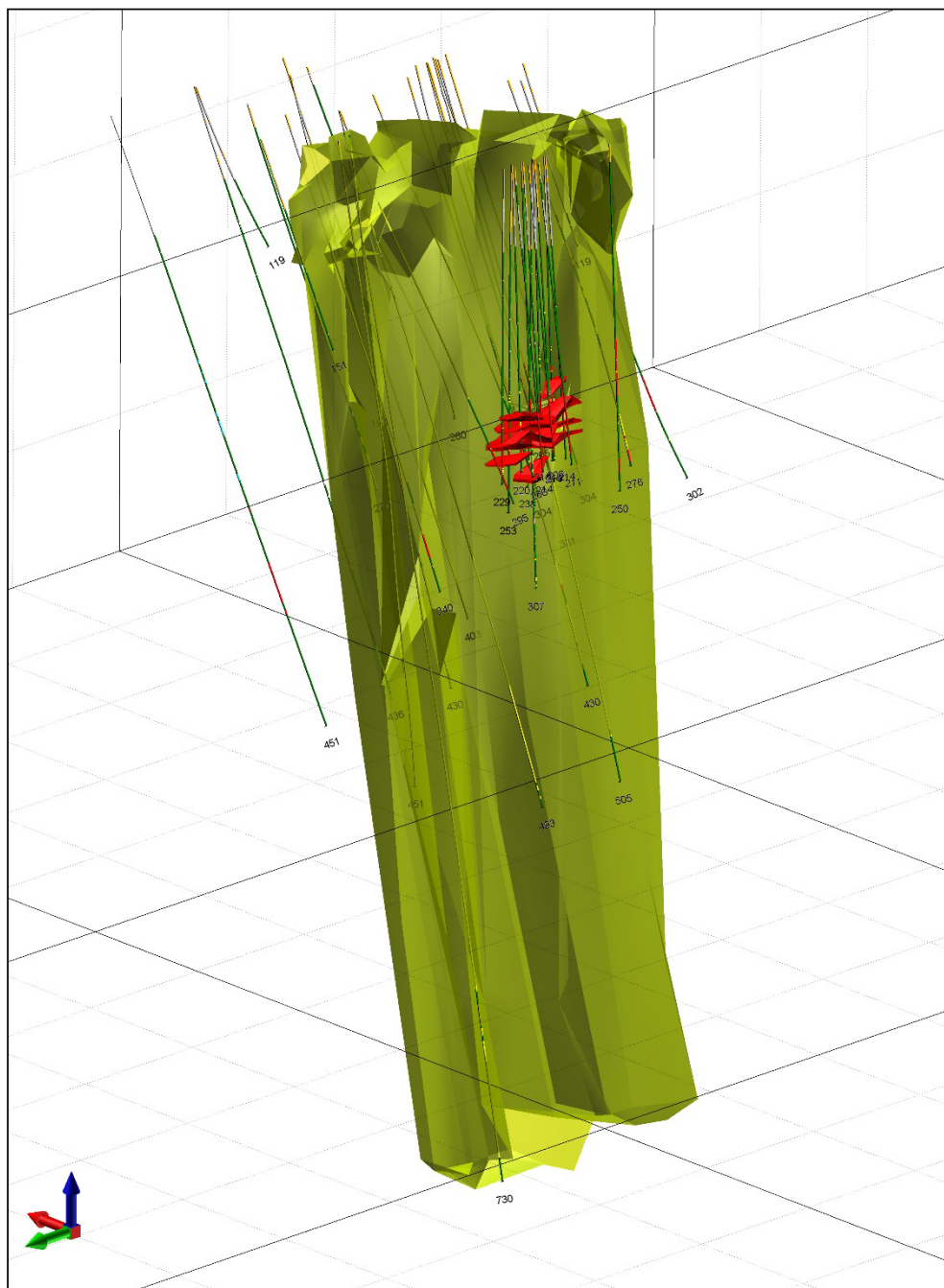
A formal Mineral Resource is being estimated by an external consultant for the Two Mile Hill tonalite deeps deposit. This estimate is anticipated to be completed late in the December quarter. The revised Mineral Resource will likely comprise a combination of Inferred material, immediately below Mineral Resources previously estimated to ~140m depth, with the remainder comprising an Exploration Target due to the relatively limited drilling completed at deeper levels.



Further exploration to upgrade the entire Exploration Target to a Mineral Resource will entail extensive diamond drilling, primarily between 200m and 700m depth where the data density is considerably sparser. Assuming access to adequate funding, it is planned that this work will progress over the course of 2018.

**Figure 1**

**An isometric model (lower end of volume range) of the Two Mile Hill tonalite deposit (looking southeast), showing all diamond drill holes applied in estimating the Exploration Target.**



|  |                          |  |                            |                  |   |                                 |
|--|--------------------------|--|----------------------------|------------------|---|---------------------------------|
|  | <b>Legend</b><br>Geology | Laterite<br>Basalt<br>BIF Mineralisation<br>Tonalite<br>Quartz | Plot Date<br>28 Nov 2017   | Sheet<br>1 of 1  | <b>Isometric view<br/>of Two Mile Hill<br/>Tonalite</b> | <b>Sandstone<br/>Operations</b> |
|  |                          |  | Scale<br>is<br>Approximate | Plot File: Vizex |   |                                 |

20 0 20m





### **Two Mile Hill Geology**

The Two Mile Hill deposit comprises an ovoid (elongate north-south), intrusive tonalite stock or plug that measures some 250m long and up to 90m wide at surface that plunges steeply to the west. The intrusive appears to be ubiquitously mineralised to at least 713m and remains open below this depth. Gold mineralisation is associated with sheeted quartz veining comprising two, essentially sub-horizontal, vein sets. Free gold is frequently evident in quartz veins, with a possible bias towards veins that include chlorite and/or galena. Quartz veining is associated with pervasive sericite-carbonate alteration (imparting a pale apple-green colour to the tonalite), frequently accompanied by disseminated pyrite. A selection of typical core is provided as Figure 2 below.

**Figure 2**  
**A selection of core trays from the Two Mile Hill tonalite deeps deposit**





Although now classified as a tonalite, having been corrupted by intense alteration, the original composition of the plug is interpreted to have once been more consistent with a granodiorite. The style of mineralisation at Two Mile Hill is broadly akin to Gold Road Resources Limited/Gold Fields Limited's Gruyere deposit, reported to be a tonalite that was originally a monzonite porphyry.

#### **Two Mile Hill Tonalite Deeps Metallurgy & Mineralogy**

Initial metallurgical testwork on the tonalite deeps deposit indicates that overall **gold recoveries of 93% to 97% can be anticipated, with >58% recoverable via gravity concentration** prior to leaching. Testwork exhibits rapid leach kinetics, with **90% of total gold extraction achieved within the first two hours** on run-of-mine (ROM) composite samples following gravity gold recovery.

A **moderate Bond ball mill work index of 16.4kWh/t, low reagent consumptions and the absence of deleterious elements** confirms technical amenability for treatment through the Company's Sandstone gold processing plant, located 4km to the south of Two Mile Hill.

Details of the metallurgical testwork are provided in the Company's ASX release dated 6 September 2017.

#### **Two Mile Hill Ore Sorting Trials**

Initial mineralogical testwork on separate composite samples of quartz veining and tonalite from the Two Mile Hill deeps deposit indicates that **in excess of 99% of the gold is hosted by the quartz veins**. The composite sample of **quartz vein material averaged 34.8g/t Au**, while tonalite-only composites averaged 0.15g/t Au.

Details of the mineralogical testwork are provided in the Company's ASX release dated 11 October 2017.

Initial ore sorting trials are now well advanced on a 78kg representative composite sample of quarter NQ diamond core derived from the Two Mile Hill tonalite deeps deposit. **Ore sorting offers the potential to separate the strongly mineralised quartz vein material from the weakly mineralised tonalite host rock, thereby upgrading the mill feed, in turn lowering the haulage and process operating costs (and consequently the mining cut-off grade) for a possible bulk underground mining operation.** Despite the substantial scale of the Two Mile Hill tonalite deposit, if successful, ore sorting has the potential to provide significantly higher grade mill feed at a rate compatible with the available capacity of the Company's 600,000tpa Sandstone processing plant.

Results from the initial ore sorting trials are anticipated in December.

#### **Two Mile Hill Underground Mining Concept Study**

Formal resource updates for Sandstone's Two Mile Hill tonalite deeps and BIF deposits are being prepared by an independent consultant. Once resource estimates are updated and trial ore sorting results become available, the Company will immediately recommence the underground mining concept study at Two Mile Hill, the results of which are anticipated late in the December quarter.



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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 and an Exploration Target that are based on information compiled by Mr Rick Yeates (a 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 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.