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Middle Island
RESOURCES LIMITED

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

Capital Structure:
121 million ordinary shares
23 million unlisted options

Cash & Liquid Investments:
$5.0 million (as of 2 February 2021)

Directors & Management:
Peter Thomas
Non-Executive Chairman
Rick Yeates
Managing Director
Brad Marwood
Non-Executive Director
Dennis Wilkins
Company Secretary

Contact:
Linton Kirk
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ASX Release – 19 April 2021

Sandstone Gold Project Feasibility Study and Mill Upgrade Study - Results

- **Final contract mining costs have been incorporated into the Feasibility Study (FS) to re-commission the Sandstone gold project.**
- **The stand-alone FS economic outcome is marginal, although cash flow positive, at A$2,500/oz.**
- **The decrease in the gold price, exchange rate movements, and escalation in the cost of some capital items, personnel, contract mining and fuel since mid-2020 adversely impacted the then anticipated economic outcome.**
- **FS technical work on pit geotechnics, water supply, tailings storage, metallurgy and environmental aspects resulted in no material issues being identified.**
- **The mill upgrade study, which evaluated the plant being expanded to 750ktpa, has a modest capital cost and would significantly lower operating costs.**
- **Deriving additional mill feed via further open pit exploration success, advancing underground deposits and/or accessing third party deposits required.**

Comments by Managing Director, Mr Rick Yeates:

"The doubling and upgrading of the open pit Mineral Resources at the Sandstone project last year delivered a considerable improvement in the potential economic return, compared to the 2016 PFS, significantly increasing the value of your project and Company in the process.

"What the mill upgrade study suggests is that the 750ktpa upgrade, combining MDI's open pit Mineral Resources with those of peer companies situated within trucking distance of Sandstone, is worth pursuing as the path to rendering otherwise uneconomic projects viable.

"Irrespective of a consolidation or improved market conditions, the Company's other open pit targets and underground deposits represent the opportunity for organic growth, as amply demonstrated by the success of last year's feasibility drilling program, which delivered five new satellite deposits. Work on these opportunities is being considered."

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SANDSTONE GOLD PROJECT (WA) – FEASIBILITY STUDY

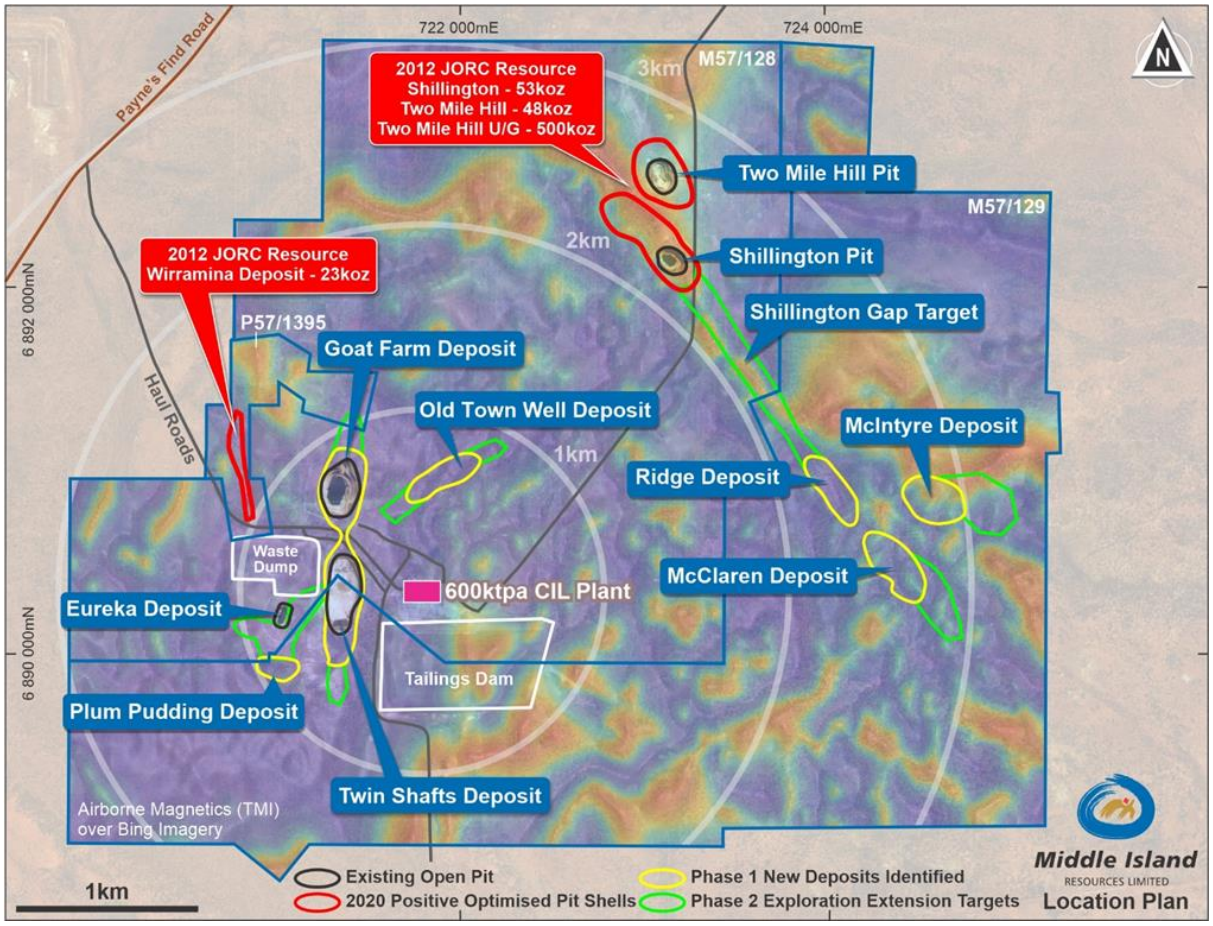
Introduction

Middle Island Resources Limited (**Middle Island**, **MDI** or **the Company**) wishes to advise shareholders and other stakeholders of results from the Feasibility Study (FS) into re-commissioning of the Sandstone gold project on a stand-alone basis.

The location of the mill and the various open pit deposits that comprise the FS are shown in Figure 1 below.

Figure 1

Open pit gold deposits and prospects assessed in the 2020 drilling campaign



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Exploration and Mineral Resources

As previously advised, the success of the 2020 exploration program increased the number of open pit deposits assessed in the stand-alone FS to ten (10) deposits. All Phase 2 drilling has been incorporated into the latest open pit Mineral Resource estimates, as summarised in Table 1.

Table 1
Sandstone Open Pit Deposits – Summary Mineral Resource Estimates (2012 JORC Code) at 0.5g/t cut-off

Deposit	Indicated			Inferred			Total		
	Tonnes kt	Au g/t	Au Oz	Tonnes kt	Au g/t	Au Oz	Tonnes kt	Au g/t	Au Oz
Two Mile Hill	1,901	1.1	66,000	178	0.8	5,000	2,078	1.1	71,000
Wirraminna	300	1.3	12,100	280	1.1	9,700	580	1.2	21,800
Shillington	1,440	1.2	57,200	830	1.1	29,300	2,270	1.2	86,500
Old Town Well	282	1.0	8,800	68	0.6	1,400	351	0.9	10,100
Plum Pudding	384	1.1	13,100	35	0.9	1,000	419	1.1	14,100
Twin Shafts	149	1.0	4,700	37	0.7	900	186	0.9	5,600
Goat Farm				398	1.0	13,200	398	1.0	13,200
McIntyre	496	1.2	19,400	67	0.9	1,900	562	1.2	21,300
Ridge	173	1.2	6,700	67	1.9	4,000	240	1.4	10,700
McClaren	236	1.4	10,600	60	1.7	3,200	296	1.5	13,800
TOTAL	**5,361**	**1.2**	**198,600**	**2,020**	**1.1**	**69,600**	**7,380**	**1.2**	**268,100**

All Mineral Resource estimates have been reported in ASX Releases, variously dated 14 April 2020, 24 July 2020, 14 August 2020, 2 October 2020, 21 October 2020 and 17 November 2020. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material and assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. The Company confirms that the form and context in which any Competent Person's findings are presented have not been materially modified from the original market announcements.

Pit Optimisation and Mine Design

All open pit deposits were optimised using Whittle software, applying the input parameters in Table 2 below. The input parameters were the best estimates as at June 2020, at which time the spot gold price was A$2,589/oz.

All resource models, with the exception of Two Mile Hill (which is a recoverable MIK model), were adjusted for ore loss and dilution as part of the optimisation process.

Optimisations completed for the FS were applied to all open pit Mineral Resources, including limited Inferred Resources.

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Table 2
Summary Whittle Four-X Input Parameters Error! Bookmark not defined.

Item		Unit	Value
Mill throughput		Mtpa	0.5
Au price		A$/oz	2,300
Royalty	- All deposits except Wirraminna - Wirraminna	%	4.5 2.5
Doré transport, insurance and refining costs		A$/oz	1.00
Processing cost (incl. ROM rehandle)	- BIF-hosted mill feed(1) - Non-BIF hosted mill feed	A$/t milled	31.00 28.00
General and Administration		A$/t milled	10.45
Owner's fixed mining costs		A$/t milled	5.00
Grade control		A$/t milled	0.55
Pit-dewatering		A$/t mined	0.05
Waste dump rehabilitation		A$/t mined	0.03
Average mining cost (variable by deposit with range provided)		A$/t mined	3.42 – 3.93
Processing recovery (variable by deposit with range provided)		%	92.0 – 95.3
Mining recovery (variable by deposit with range provided)		%	95 - 97
Mining dilution (variable by deposit with range provided)		%	0 - 20
Overall pit wall slope angle (inclusive of a ramp system)		degrees	36 - 40

Note 1: BIF-hosted mill feed comprises the Shillington, Ridge, McIntyre and McClaren deposits

Pit designs were completed on all deposits except for McClaren, which was deemed to be too high risk, relying heavily on a restricted zone of high grade mineralisation at the pit shell base.

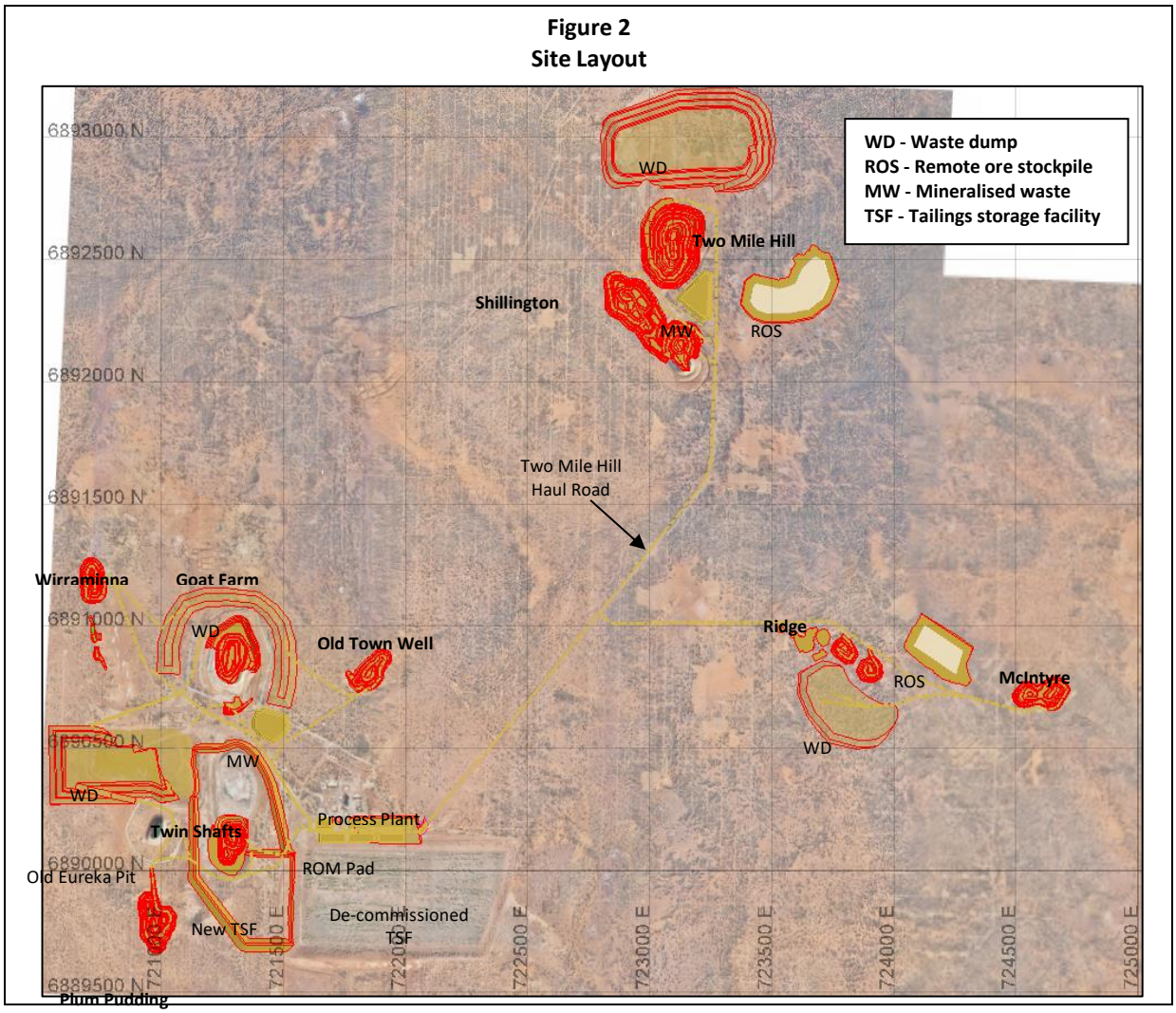
Other mine design work included waste dumps, stockpile areas and the new haul roads that will be required. The mine layout is shown in Figure 2.

The total quantities for all pit designs is 2,068kt of mill inventory at 1.32g/t Au, at an average waste to ore strip ratio of 5.9:1. Some 91% of the mill inventory tonnes within the pit designs comprises Indicated Mineral Resources and the balance (9%) Inferred Resources. Inferred material is mainly derived from the Goat Farm, Shillington (but subsequently infill drilled), Wirraminna and one of three small pits at Ridge (also subsequently infill drilled) deposits. Access for infill drilling is a problem for Goat Farm, but Inferred panels at the Shillington and Ridge deposits have since been infill drilled in advance of Mineral Resource updates.

Recommissioning as a stand-alone project is not justified at the current gold price of <A$2,300/oz, particularly when the Inferred Resources within the pit designs are excluded, therefore an Ore Reserve has not been declared.

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Figure 2
Site Layout



Pit Geotechnics, Hydrology, Hydrogeology and Water Supply

Diamond drilling was completed for all deposits and core was independently logged by Peter O'Bryan and Associates for geotechnical purposes. Strength testing was also completed, and recommended final pit slope parameters provided and checked against pit designs.

Golder Associates assessed ground water, pit dewatering requirements, water supply and surface water management. The Company has a current licence to extract up to 650kl of water per year and there is expected to be sufficient water available for ore processing, dust suppression and potable supplies derived from existing pit lakes, pit dewatering, tailings decant water and existing permitted site bores.

Metallurgy and Processing

Metallurgical testwork was completed at ALS under the supervision of Hugo Viviani and Associates on all deposits except for Goat Farm. This supplemented previous testwork and analysis of historical processing data for several of the deposits that have been processed by previous operators. Goat Farm was processed from July 1996 through to June 1997 and data indicates a free milling oxide ore with a plant recovery of approximately 94%.

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Testwork included Bond ball mill work index and gravity/leach recovery testwork using site water derived from the existing Shillington pit. Reagent consumptions were also estimated for each deposit.

The weighted average Bond ball mill work index is 14.6 kWh/t and a target grind size of P_{80} of 106µm is proposed.

The majority of the composite samples exhibited rapid leach kinetics for gold and silver, following gravity recoverable gold removal, to return acceptable leach extractions. The exception to this is the Old Town Well composite, which requires further evaluation. No carbon adsorption tests were undertaken as, for a plant throughput of 60tph, there is sufficient adsorption time and capacity available. The weighted average gold recovery is 92.9%, assuming Old Town Well proves to be ~92%.

GR Engineering Services (GRES) has reviewed and updated its 2016 plant refurbishment estimate and current prices were sourced for other capital items, such as a new carbon regeneration kiln, and processing reagents and consumables.

Tailings Storage

The existing licensed in-pit Twin Shafts tailings storage facility (TSF), located to the immediate west of the plant, has limited remaining capacity and Coffey has designed a new above-ground embankment to be constructed around the existing TSF. The new embankment, including the void created by mining a southern extension of Twin Shafts, will result in approximately 3.0 Mt of tailings capacity. Waste from mining the nearby pits will be used to construct the embankment, which will abut an existing waste rock dump and the old above-ground TSF1, located immediately south of the plant, providing for an extremely efficient, low-cost increase in tailings storage capacity (Figure 2), over which sterilisation drilling has been successfully completed.

Supporting Infrastructure

The supporting infrastructure includes offices, workshop, warehouses, laboratory and power station at the plant, and a 100-person camp on freehold title in the nearby town of Sandstone. Refurbishment and upgrades to this infrastructure were evaluated and costed as part of the FS.

The existing airstrip, immediately north of Sandstone town, is in good condition and can again be utilised for FIFO operations.

Sandstone town has a number of community facilities that will greatly enhance operations, including a nursing post and ambulance station, hotel, caravan park, other accommodation options, and a community centre that comprises a tennis court, bowling green and adjacent golf course.

Environmental Work

Detailed flora, fauna and subterranean fauna surveys have all been completed and no issues of environmental concern have been identified. Soil samples have been analysed and a waste rock characterisation program completed. All other requirements for an updated Mining Proposal and Mine Closure Plan have been compiled to satisfy both FS requirements and relevant statutory authorities.

Community Support

Discussions with the Sandstone Shire and other local stakeholders continues, and strong support for the project recommissioning has been received.

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Capital Cost Estimates

The overall capital cost estimate is based on various data sources, depending on materiality of the item or activity. Most cost items were obtained via formal quotations from relevant supply or service providers, plus some first principle or allowance estimates for other, less material, items.

Capital costs include contractor mobilisation, refurbishment/construction, mining pre-production costs, personnel build up, and all associated flight and accommodation costs up to commissioning.

The initial capital costs and sustaining capital for the stand-alone, refurbished 500 ktpa project is summarised in Table 3.

Table 3
FS Capital Cost Summary Error! Bookmark not defined.

Initial Capital		
Mining contractor mobilisation	AUD M	0.80
Plant refurbishment	AUD M	8.61
MDI plant equipment and services, first fill	AUD M	1.89
Crushing	AUD M	2.34
TSF expansion	AUD M	1.90
Infrastructure refurbishment	AUD M	3.72
Other initial capital spend	AUD M	2.75
Pre-production capitalised operating costs	AUD M	12.48
Contingency	AUD M	1.00
Initial Capital Costs: Total	**AUD M**	**35.49**
Sustaining Capital		
Deferred project acquisition payment	AUD M	0.50
Mining contractor demobilisation	AUD M	0.30
Mining		0.30
Processing, TSF		0.69
Infrastructure, G&A		1.00
Rehabilitation & closure costs	AUD M	1.35
Sustaining Capital & Closure Total	**AUD M**	**4.14**
Initial Capital & Sustaining Capital: Total	AUD M	**39.63**

The largest item, pre-production capitalised operating costs, is higher than previously assumed, as the FS determined that the new Twin Shafts pit extension must be fully mined out, over a 7 month period, before tailings can be deposited into the enlarged Twin Shafts TSF. Infrastructure refurbishment is also a higher cost than previously assumed, with the major difference being refurbishment and expansion costs of the camp in the town of Sandstone. These changes were identified as a result of more in depth investigations driven by the higher degree of rigor and certainty required of a FS vs a PFS.

Operating Cost Estimates and Financial Model

The operating cost estimate was based on various sources of data. Most cost items were obtained from formal tenders or quotations from relevant supply or service providers, plus some first principles or allowance estimates for other, less material, items.

Costs were estimated for each main operating department; mining, processing and administration, with all flights and accommodation included under administration.

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Operating costs were split into fixed and variable costs for each department.

A summary of operating costs by department is shown in Table 4 below.

Table 4
FS Operating Cost Summary

Cost Area	Unit	LOM (Total)	Fixed Cost/t	Variable Cost/t	Total/t feed
Mining Operating Cost	AUD M	67.84	10.46	22.32	32.78
Processing Operating Cost	AUD M	57.52	16.53	11.27	27.79
General & Administration	AUD M	23.41	11.31		11.31
Total Operating Costs	**AUD M**	**141.77**	**$38.30/t feed**	**$33.59/t feed**	**$71.88/t feed**
Proportion (%)			**53%**	**47%**	**100%**

In addition to the departmental operating costs, there are variable refining and doré transportation costs, third party royalties and the WA state royalty equivalent to $4.63/t.

One of the largest cost increases since the PFS in early 2017 are personnel costs. Contract mining costs have also increased significantly since the PFS and the current market is strong for contractors.

Fuel is another key cost input, for powering the on-site diesel generating sets as well as the mining fleet, TSF construction and other site works. The diesel price is now approximately $0.10/litre higher than the year-to-date average as at October 2020, which was applied in the FS.

A detailed financial model has been completed by Northshore Capital Advisors. Based on a gold price of A$2,500/oz, and the preliminary costs and physicals above, the project currently has an undiscounted post-tax cash flow of approximately A$4M, insufficient to consider a stand-alone development.

However, as discussed below, with a significant increase in potential mill feed tonnes (and ideally increased grade), a plant upgrade to 750,000tpa is a very encouraging prospect.

PROCESSING PLANT CAPACITY UPGRADE STUDY

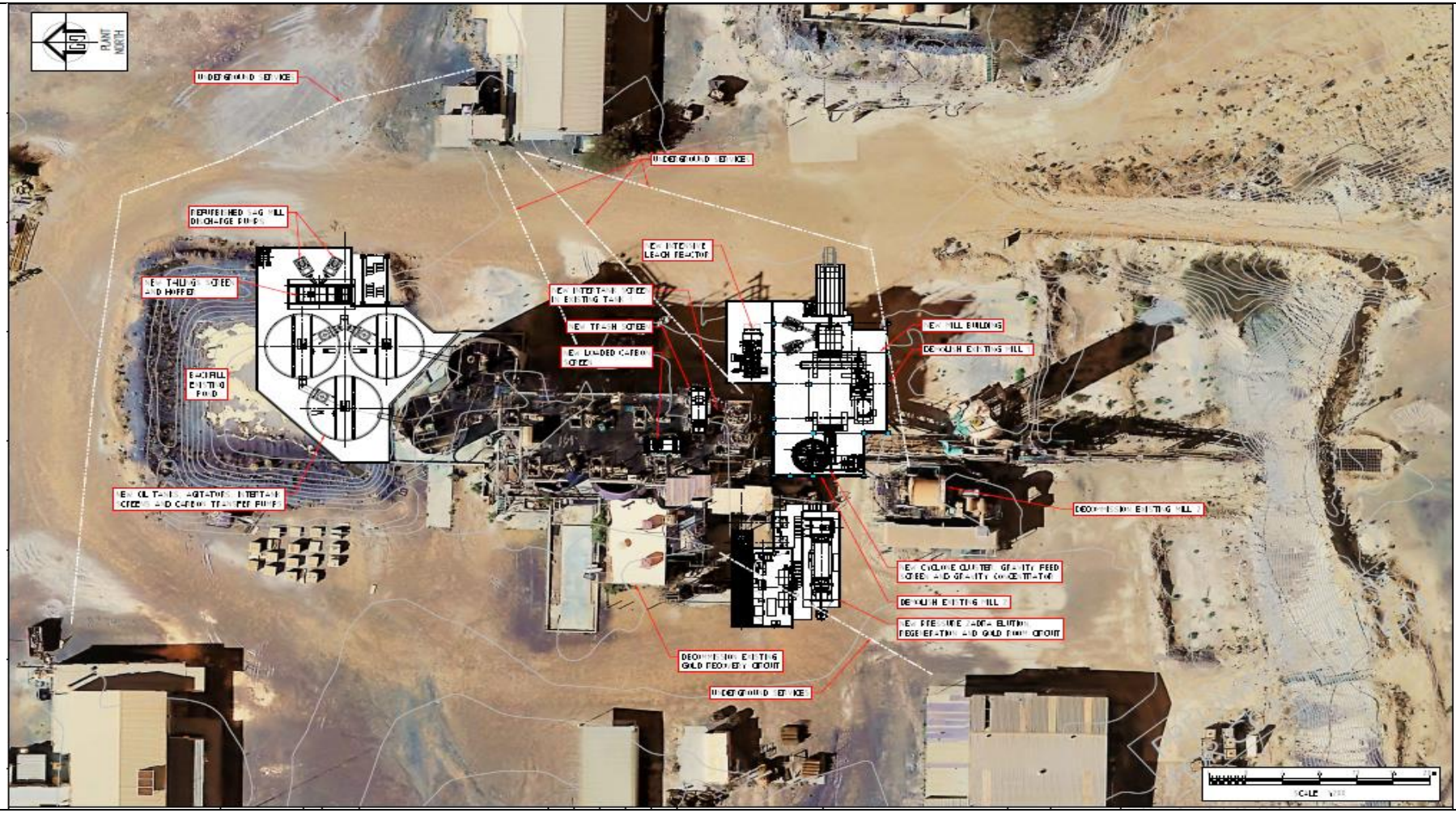
GRES Capacity Assessment

As a separate exercise, MDI and GRES investigated the existing plant throughput limitations and what changes are required to increase plant throughput to 750 ktpa.

The upgrade study, to a scoping study level of detail, finds that the front end of the existing plant (ROM bin/feeder, conveyors and lime silo) can accommodate the proposed 750ktpa capacity, following refurbishment and minor modifications.

Replacement of the existing comminution and classification circuits with a 1,600 kW rubber lined overflow ball mill and a 9 outlet cyclone distributor will allow milling of material averaging 15.0 kWh/t at a 750ktpa throughput rate. Upgrades to the gravity and elution circuits provide the option to treat higher grade ores. The provision of three new CIL tanks at the rear of the circuit maintains circuit residence time and allows conversion to two parallel trains of 6 tanks each. The general arrangement for the mill upgrade is shown in Figure 3 below.

Figure 3
Mill Upgrade General Arrangement



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Exclusions from GRES Scope of Work

The exclusions from the GRES work that was assessed by MDI and consultants from the FS are:

- Tailings storage facility
- Water supply and borefield
- Mining infrastructure and roads
- Permitting and approvals
- Mobile fire services
- Plant mobile equipment
- Buildings, offices and storage areas
- Sandstone accommodation camps
- Power supply and power station upgrade
- Consumable storage upgrade

All of these exclusions have been considered and costed as part of the FS, with only a minimal cost increase expected for the 750ktpa upgrade scenario.

Capital Cost Estimate

As provided in Table 3 above, refurbishment of the existing 500 ktpa plant comprises aggregate costs of $12.75 M for the GRES scope, the MDI plant equipment and services, and the crushing circuit. GRES has estimated that the 750 ktpa upgrade, if done after the 500kpta refurbishment, would cost approximately $25.7 M, as summarised in Table 5 below. However, MDI estimates that the incremental capital to upgrade, if competed simultaneously, would only be ~$18.3 M.

Table 5
GRES 750ktpa Upgrade Capital Cost Estimate – After Refurbishment

Area	Supply Cost	Install Cost	Man hours	Freight	Subtotal	Contingency	Total
Total ($M)	$14.4	$8.5	77,900	$0.5	$23.3	$2.3	$25.7

For a larger milling inventory, all other FS capital costs still apply, with some possible incremental costs for a larger TSF, additional ore haulage roads and pre-strip costs for the other more remote deposits, for example.

Operating Cost Estimate

High-level modelling of a larger throughput takes the simplistic, but reasonable, approach that variable costs per throughput tonne and absolute dollar fixed costs will remain the same. This means that fixed operating costs per tonne will fall by a third and overall operating costs per tonne will fall because of this more efficient fixed cost recovery. The resulting MDI costs per ore tonne used in the upgrade study are shown in Table 6, demonstrating a 17% reduction in total operating costs.

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Table 6

750ktpa Upgrade Operating Cost Estimate

		Standalone @ 500ktpa			@ 750ktpa		
Operating Cost	Unit	Fixed	Variable	Total	Fixed	Variable	Total
Refining & Dore Transportation	AUD/t	-	$0.40/t	$0.40/t	-	$0.40/t	$0.40/t
3rd Party Royalties (Ad Valorem)	AUD/t	-	$1.98/t	$1.98/t	-	$1.98/t	$1.98/t
3rd Party Royalties (Tonnage)	AUD/t	-	$0.15/t	$0.15/t	-	$0.15/t	$0.15/t
Mining Operating Cost	AUD/t	$10.46/t	$22.32/t	$32.78/t	$6.97/t	$22.32/t	$29.29/t
Crushing & Rehandling Cost	AUD/t	$1.52/t	$1.80/t	$3.32/t	$1.01/t	$1.80/t	$2.81/t
Processing Operating Cost	AUD/t	$15.01/t	$9.47/t	$24.48/t	$10.01/t	$9.47/t	$19.48/t
General & Administration	AUD/t	$11.31/t	-	$11.31/t	$7.54/t	-	$7.54/t
WA State Royalty	AUD/t	-	$2.10/t	$2.10/t	-	$2.10/t	$2.10/t
TOTAL	AUD/t	$38.30/t	$38.22/t	**$76.52/t**	$25.53/t	$38.22/t	**$63.75/t**

REPORTING

Both the FS and mill upgrade reports are at final draft stage.

AUTHORISED FOR RELEASE BY THE MDI BOARD:

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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

The Feasibility Study is being managed by Linton Kirk, a Fellow and Chartered Professional of the Australasian Institute of Mining and Metallurgy (AusIMM). Mr Kirk has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration, and to the activity being 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 Kirk is a director of Kirk Mining Consultants Pty Ltd (KMC). KMC and the Competent Person are independent of the Company and paid fees for services for managing the Feasibility Study. Through a related entity, Mr Kirk holds approximately 5.6 million shares in Middle Island Resources Limited.