

## 4Q 2017 OPERATIONS REVIEW

MDL's primary asset is a 50% interest in the TiZir joint venture (**TiZir**), which owns the Grande Côte mineral sands operation (**GCO**) in Senegal, West Africa and the TiZir Titanium & Iron ilmenite upgrading facility (**TTI**) in Tyssedal, Norway. ERAMET of France is MDL's 50% joint venture partner in TiZir.

### KEY POINTS

#### GCO

- 18.1% increase in HMC production in FY 2017 to 724.8kt (FY 2016 – 613.7kt)
- Significant increase in production for all finished goods in FY 2017
- Record zircon sales volume for 4Q 2017
- Positive cash flows driven by strengthening prices and increasing sales volumes
- December represents fifth consecutive injury free month

#### TTI

- Furnace operating near expanded capacity rates
- Return to positive cash flow in 4Q 2017 following working capital build

#### Market

- Market conditions continued to strengthen throughout 4Q 2017
- Further price increases for zircon have been achieved for 1Q 2018

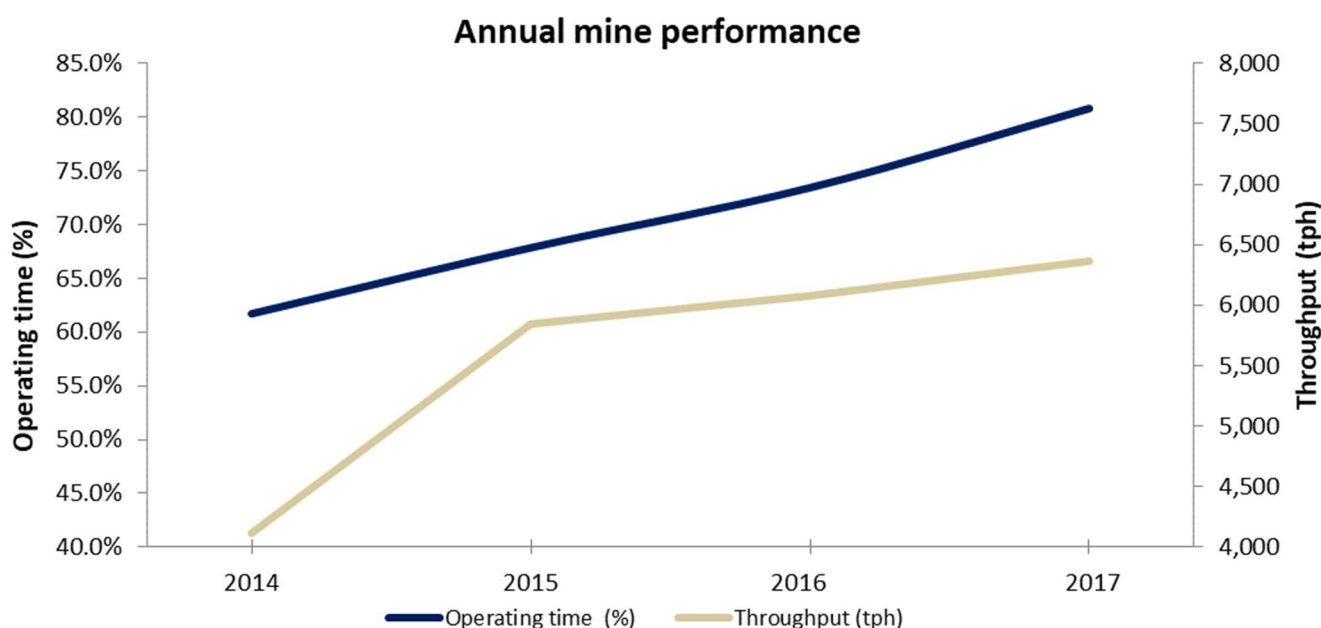
### GCO

GCO operations continued to perform on a consistent basis and are benefiting from improvement in commodity prices, particularly ongoing improvements in the zircon price. The high quality of GCO's zircon products is attracting strong demand in the current market.

Ore mined was lower than previous quarters as average mining rates were impacted by a period of reduced power capacity. A mechanical failure in the power station reduced ore throughput for a period of four weeks while repairs were completed. This largely accounted for the reduction in average runtime and throughput rates to 79.5% and 5,911tph respectively. The effect of these lower rates on heavy mineral concentrate (**HMC**) production was partly offset by the mining of higher grade ore zones during the quarter.

On an annual basis, GCO set new production records for ore mined and HMC production of 45.1Mt (14.9% higher than FY 2016) and 724.8kt (18.1% higher than FY 2016) respectively. Importantly, there was an overall improvement in the key operating parameters of runtime (2017: 80.8% compared to 2016: 73.4%) and throughput (2017: 6,373tph compared to 2016: 6,078tph). These results are a direct consequence of the continued optimisation initiatives implemented at GCO throughout the year.

The graph below demonstrates the continued improvement and progression of the mining operation since commissioning in 2014:



The mineral separation plant (MSP) continued to operate steadily throughout the quarter with availability remaining consistent with previous quarters at 95.1%. Lower HMC production led to slightly lower finished goods production in the quarter with ilmenite production down by 14.4kt and zircon production down by 0.9kt.

The MSP has maintained its strong performance levels over a number of years, as evidenced by the plant’s availability history (2017: 96.9% compared to 2016: 96.8% and 2015: 95.8%). Annual finished goods production in FY 2017 set new records, with ilmenite production increasing by 18.3% to 492.4kt and zircon production increasing by 17.0% to 61.6kt (compared to FY 2016).

#### GCO production volumes

100% basis		4Q 2016	1Q 2017	2Q 2017	3Q 2017	4Q 2017	FY 2016	FY 2017
<b>Mining</b>								
Ore mined	(kt)	11,258	11,661	11,793	11,234	<b>10,374</b>	39,203	<b>45,063</b>
HMC produced	(kt)	194.1	140.5	204.2	196.4	<b>183.7</b>	613.7	<b>724.8</b>
<b>Finished goods production</b>								
Ilmenite	(t)	119,882	99,400	126,030	140,713	<b>126,298</b>	416,249	<b>492,440</b>
Zircon	(t)	16,462	11,688	16,203	17,271	<b>16,400</b>	52,627	<b>61,563</b>
Medium grade zircon sands	(t)	-	7,179	2,927	5,235	<b>4,846</b>	-	<b>20,187</b>
Rutile & leucoxene	(t)	3,042	2,152	2,384	3,047	<b>2,392</b>	9,664	<b>9,975</b>

#### GCO sales volumes

100% basis		4Q 2016	1Q 2017	2Q 2017	3Q 2017	4Q 2017	FY 2016	FY 2017
<b>Sales volume</b>								
Ilmenite	(t)	142,408	81,636	129,713	123,474	<b>129,053</b>	410,915	<b>463,879</b>
Zircon	(t)	15,961	13,030	13,722	16,331	<b>17,614</b>	53,101	<b>60,696</b>
Medium grade zircon sands	(t)	-	2,711	8,043	3,549	<b>4,010</b>	-	<b>18,313</b>
Rutile & leucoxene	(t)	2,159	2,588	3,208	2,398	<b>2,064</b>	8,819	<b>10,258</b>

GCO sales volumes remained robust in 4Q 2017, with a new quarterly record for zircon sales of 17.6kt shipped. Ilmenite sales continued to be strong and consistent shipment levels have now been realised in three consecutive quarters.

Consistent with increased production, sales volumes for FY 2017 were significantly higher than FY 2016, with ilmenite increasing by 12.9%, zircon by 14.3% and rutile and leucoxene (combined) by 16.3%. Also, the introduction of the medium grade zircon sands product to GCO's product suite in 2017 was a success, with a further 18.3kt of finished goods sold to global customers.

With additional improvements in pricing achieved in 4Q 2017, GCO generated strong profitability and further record quarterly cash flows leading to a record cash flow performance for FY 2017.

The Republic of Senegal has approved construction of a new high-speed rail link between Dakar and the recently opened Blaise Diagne International Airport situated east of the city. Construction works are likely to have some impact on rail traffic governed by GCO's rail concession. GCO is working with the construction contractor and government representatives as well as optimising logistics and warehousing processes in order to minimise any potential impact during the construction period, particularly with regard to bulk transport of ilmenite to TTI.

GCO continued its active community and social program during the quarter, with a highlight being the opening of a new market in Mboro in December. Activities associated with the relocation of Foth village are progressing in earnest. The Foth relocation project, which entails the relocation of 79 households, will build on the successful community engagement and liaison programs established during development of the site's first relocation village which, as previously reported, was inaugurated in 1Q 2017.



*Grande Côte Operations, Senegal*

## TTI

Production at TTI continued to perform to expectations, despite a slight decrease in production in 4Q 2017.

Operating time of the furnace was adversely impacted by two scheduled maintenance shutdowns in November. The impact of the planned shutdowns resulted in titanium slag production of 50.7kt (compared to 53.2kt in 3Q 2017) and high-purity pig iron (HPPI) production of 20.8kt (compared to 21.6kt in 3Q 2017).

Despite the shutdowns completed in November, October and December production remained strong, with December titanium slag production only 0.6kt lower than the record production levels achieved in August 2017.

As foreshadowed in the 3Q 2017 Operations Review (*ASX release: 24 October 2017*), shipments of both titanium slag and HPPI in 4Q 2017 were significantly higher than 3Q 2017 as previously delayed shipments were delivered during the quarter.

Sales volumes for FY 2017 for both titanium slag and HPPI were significantly higher than FY 2016, primarily due to the 2016 furnace shutdown and the availability of product. TTI's products continue to be well received in the market with a significant majority of production for 2018 contracted to global customers.

With the completion of the working capital build following the furnace restart in January, TTI returned to positive cash flow in 4Q 2017.

**TTI physical volumes**

100% basis		4Q 2016	1Q 2017	2Q 2017	3Q 2017	4Q 2017	FY 2016	FY 2017
<b>Titanium slag</b>								
Produced	(kt)	-	27.8	49.5	53.2	50.7	103.6	181.1
Sold	(kt)	3.9	11.5	47.1	39.0	62.1	121.8	159.8
<b>High-purity pig iron</b>								
Produced	(kt)	-	11.2	20.1	21.6	20.8	42.6	73.8
Sold	(kt)	3.7	7.0	20.0	15.2	23.3	47.3	65.5

Note: 4Q 2016 production performance was impacted by furnace repairs following an operational incident in August 2016.



TiZir Titanium & Iron ilmenite upgrading facility, Tyssedal, Norway

**MARKETS**

Pricing for the mineral sands product suite continued to improve over 4Q 2017 with the zircon market, in particular, exhibiting robust demand.

**Titanium dioxide feedstocks:** Industry forecasts indicate an increase in TiO<sub>2</sub> demand in 2018. The seasonal slow-down in pigment production experienced during the northern hemisphere winter was not as pronounced as usual, with western pigment producers continuing to operate at high utilisation levels due to higher demand and tighter supply in Europe and North America. Lower inventory levels, together with improving spot prices for rutile, are strong indicators of strengthening market conditions in the high-grade feedstock sector, which bodes well for TiZir’s titanium feedstock sales outlook.

**Zircon:** Pricing levels improved above expectations throughout 4Q 2017 and into 1Q 2018. Demand remains strong, particularly for high-quality zircon with low impurities as supplied by GCO. Such demand exceeds the company’s ability to deliver, placing further upward pressure on pricing for GCO zircon.

**High-purity pig iron:** The pressure on pig iron prices experienced in 3Q 2017 has eased, with relatively stable conditions expected in the coming months. Slight upward pressure is expected on pricing given iron ore and coal price increases.

**TIZIR**

In October 2017, TiZir announced a management restructure whereby TiZir will be managed by a committee of the TiZir board. The Joint Operating Committee (**JOC**) comprises one member of each of the shareholders, including Rob Sennitt from MDL. The JOC aims to provide clear leadership and strategy to the organisation as well as greater accountability for site management teams.

In January 2018, the US\$300 million TiZir senior secured bonds were successfully listed on the Oslo Børs. Documentation pertaining to the bond is available on the Oslo Børs platform and the TiZir website.

At 31 December 2017, external borrowings (excluding shareholder loans) by TiZir amounted to US\$370.9 million, comprising the abovementioned US\$300 million senior secured bonds (including accrued interest) and amounts drawn under TTI’s and GCO’s working capital facilities.

TiZir’s cash and cash equivalents at 31 December 2017 were US\$48.1 million, giving external net debt of US\$322.8 million.

**OUTLOOK**

With GCO and TTI producing at record levels, MDL is poised to generate positive earnings without the need for any major capital investment commitment.

In 2018, the Company's focus will be:

- continuing the production trajectory of 2017 through consolidating and optimising production processes at both GCO and TTI
- fostering and enriching a culture of safety, operational excellence and cost reduction at GCO and TTI
- maintaining balance sheet discipline and maximising cash flows to improve TiZir's capital structure

**MDL CORPORATE**

At 31 December 2017:

- issued shares were 196,985,649
- unlisted unvested performance rights totalled 2,338,209
- cash was US\$12.6 million (approx. A\$16.2 million)
- zero debt

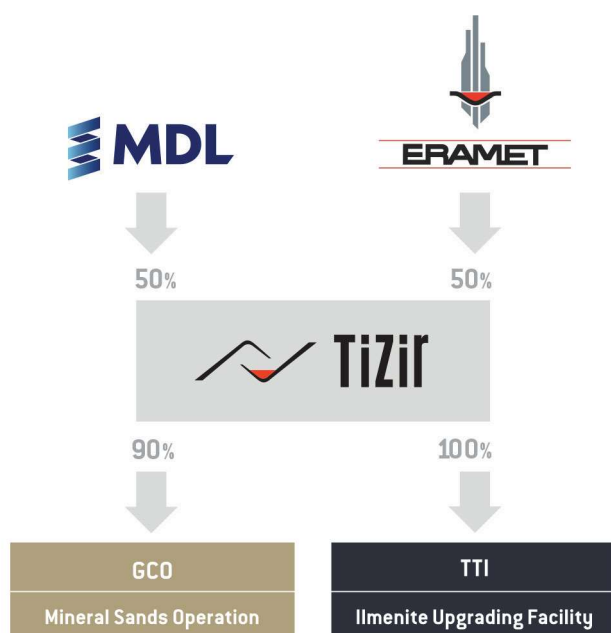
**ABOUT MDL**

Mineral Deposits Limited (ASX: **MDL**) is an established, ASX-listed, integrated mining company with a 50% equity interest in TiZir Limited (**TiZir**) in partnership with ERAMET of France.

The TiZir joint venture comprises two integrated, operating assets – the Grande Côte mineral sands operation (**GCO**) in Senegal, West Africa and the TiZir Titanium & Iron ilmenite upgrading facility (**TTI**) in Tyssedal, Norway.

GCO is a large-scale, cost competitive mineral sands operation that is fully integrated from mine-to-ship, using owned or controlled infrastructure. GCO commenced mining activities in March 2014 and, over an expected mine life of at least 25 years, will primarily produce high-quality zircon and ilmenite. A majority of GCO’s ilmenite is sold to TTI. GCO also produces small amounts of rutile and leucoxene.

TTI upgrades GCO ilmenite to produce high-quality titanium feedstocks, primarily sold to pigment producers, and a high-purity pig iron, a valuable co-product, which is sold to ductile iron foundries. TTI benefits from access to cheap and clean power, and excellent logistics, in particular, year-round shipping capacity and customer proximity.



**Forward looking statements**

Certain information contained in this report, including any information on MDL’s plans or future financial or operating performance and other statements that express management’s expectations or estimates of future performance, constitute forward-looking statements.

Such statements are based on a number of estimates and assumptions that, while considered reasonable by management at the time, are subject to significant business, economic and competitive uncertainties. MDL cautions that such statements involve known and unknown risks, uncertainties and other factors that may cause the actual financial results, performance or achievements of MDL to be materially different from the Company’s estimated future results, performance or achievements expressed or implied by those forward-looking statements. These factors include the inherent risks involved in mining and mineral processing operations, exploration and development of mineral properties, financing risks, changes in economic conditions, changes in the worldwide price of zircon, ilmenite and other key inputs, changes in the regulatory environment and other government actions, changes in mine plans and other factors, such as business and operational risk management, many of which are beyond the control of MDL.

Except as required by applicable regulations or by law, MDL does not undertake any obligation to publicly update, review or release any revisions to any forward-looking statements to reflect new information, future events or circumstances after the date of this report.

Nothing in this report should be construed as either an offer to sell or a solicitation to buy or sell MDL securities.

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