

Quarterly Exploration and Mining Activities Report

July to September 2019 (Q1 FY20)



Q1 Highlights

- Mineral Resources Limited (ASX: MIN, MRL) entered into revised arrangements with Albemarle Corporation (NYSE: ALB, Albemarle) on 1 August 2019 to increase the interest in the Wodgina Lithium Project to be sold to Albemarle from 50% to 60%.
- Iron ore shipments totalled 3.5 million wet metric tonnes (wmt) in Q1 FY20, in line with the previous quarter, and up 114% on the prior corresponding period in FY19.
- Mining operations at Koolyanobbing continued at the targeted rate of 7.5Mtpa in Q1 FY20. A fourth rail consist is now operating at full capacity, with additional rail capacity to be brought on line in Q2 FY20 with plans to further increase production to 11.0Mtpa by early Q3 FY20.
- Spodumene concentrate production from the Mt Marion Lithium Project in Q1 FY20 was 28% higher than the previous quarter.
- Construction of the Wodgina Lithium Project's three-stage 750,000 dry tonne per annum spodumene concentrate plant and associated non-process infrastructure is over 99% complete. Train 1 has been commissioned and is producing spodumene concentrate at design capacity specification at or above 6% grade.
- MRL finalised the acquisition of the assets that comprise the Parker Range Project from Cazaly Iron Pty Ltd. The acquisition of Parker Range expands MRL's iron ore presence in the Yilgarn region of Western Australia.

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Production and Commodity Shipments

'000 wet metric tonnes	Q1 FY20		Q4 FY19		Q1 FY19	
	PRODUCED	SHIPPED	PRODUCED	SHIPPED	PRODUCED	SHIPPED
IRON ORE						
Iron Valley	1,409	2,056	1,136	1,945	1,862	1,620
Koolyanobbing	1,679	1,413	1,398	1,346	92	-
TOTAL IRON ORE	3,088	3,468	2,534	3,291	1,954	1,620
SPODUMENE						
Mount Marion ¹	115	95	90	81	111	91
Wodgina ²	22	3	-	-	-	-
TOTAL SPODUMENE	138	99	90	81	111	91
DSO LITHIUM						
Wodgina ²	-	-	-	-	358	422
TOTAL DSO LITHIUM	-	-	-	-	358	422
GRAND TOTAL	3,225	3,567	2,624	3,372	2,423	2,133

¹ Volumes presented as 100% for the Mt Marion project. MRL operates 100% of the Mt Marion project, in which it owns a 50% interest

² Volumes presented as 100% for the Wodgina Lithium project. MRL currently owns and operates 100% of the Wodgina Lithium project. A 60% interest has been sold to Albemarle Corporation subject to regulatory approval, and is expected to be completed during the 2019 calendar year.

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LITHIUM

Wodgina Lithium Project

'000 wet metric tonnes	Q1 FY20	Q4 FY19	Q1 FY19
LITHIUM DSO			
Mined	-	-	738
Produced	-	-	358
Shipped	-	-	422
LITHIUM SPODUMENE			
Mined	307	253	-
Produced	22	-	-
Shipped	3	-	-

Volumes presented as 100% for the Wodgina Lithium project. MRL currently owns and operates 100% of the Wodgina Lithium project. A 60% interest has been sold to Albemarle Corporation subject to regulatory approval, and is expected to be completed during the 2019 calendar year.

Construction of the three-train 750,000 dry tonne per annum Wodgina spodumene concentrate plant and associated non-process infrastructure is over 99% complete. During the quarter, the focus was on the ramping up of the first train and mining continued to increase to support this ramp up. In September, a sample parcel of 3,300 tonnes was shipped to Albemarle. The second train is ready to receive feed and dry commissioning of the third train is scheduled to commence in November.

On 1 August 2019, MRL announced it had entered into revised arrangements with Albemarle Corporation (NYSE: ALB, Albemarle) to increase the interest in the Wodgina Lithium Project to be sold to Albemarle from 50% to 60% (ASX: MIN 01/08/19). Under the revised arrangements, an unincorporated joint venture (Albemarle 60% and MRL 40%) will be formed (Joint Venture) and Albemarle will pay US\$820 million in cash at closing and will transfer to MRL a 40% interest in the first two 25,000 dry tonne per annum lithium hydroxide conversion units currently being built by Albemarle in Kemerton, Western Australia. This deal introduces a global leader in lithium to Wodgina and provides MRL with fast-tracked access to lithium hydroxide production. The transaction has received unconditional approval from China's State Administration for Market Regulation (SAMR) but remains conditional on approval from the Australian Foreign Investment Review Board (FIRB) and from certain third parties with interests in the underlying tenements. Completion of the transaction is still expected to occur during the 2019 calendar year (CY19) and once this occurs, the Joint Venture between MRL and Albemarle will become effective. It is MRL's intention to operate one train until the transaction is complete, at which point it is expected that the Joint Venture will meet to evaluate alternative production profiles.

Mt Marion Lithium Project

'000 wet metric tonnes	Q1 FY20	Q4 FY19	Q1 FY19
LITHIUM SPODUMENE			
Mined	727	668	706
Produced	115	90	111
Shipped	95	81	91

Volumes presented as 100% for the Mt Marion project. MRL operates 100% of the Mt Marion project, in which it owns a 50% interest.

Mining activities increased during the quarter with 727,000 wmt of ore mined and 7.2 million wmt of total material moved. The mining activities provide ongoing access to the ore body to meet processing requirements.

During the quarter, the processing plant's utilisation increased by 7% up to 88% and the throughput rate increased from 334 tonnes per hour (tph) to 341 tph. This resulted in beneficiated feed tonnes increasing to 665,376 wmt compared to 600,216 wmt in the previous quarter.

Spodumene concentrate produced and shipped increased against the previous quarter. A total of 95,262 wmt was shipped during the quarter; an increase of 16% against the prior quarter's shipments. The proportion of high-grade (6%) spodumene concentrate was down to 64% compared to 69% in the previous quarter.

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During the quarter, production of both 6% and 4% spodumene concentrate was maintained while further work was undertaken to review the water and energy demands of various production alternatives. An updated production outlook for FY20 is expected to be completed in Q2 FY20 for review by the co-owners either later this year or early in calendar year 2020.

The MRL-operated Mt Marion Lithium Project is a joint project between MRL (50%) and one of the world's largest lithium producers, Jiangxi Ganfeng Lithium Co., Ltd (50%).

IRON ORE

Iron Valley

'000 wet metric tonnes	Q1 FY20	Q4 FY19	Q1 FY19
Mined	1,167	1,263	2,121
Produced	1,409	1,136	1,862
Shipped	2,056	1,945	1,620

Continued strong iron ore prices and high crusher throughputs underpinned the shipping of 2.1 million wmt from Iron Valley in the quarter.

Mining commenced in the C8 pit during the quarter for blended feed with groundwater inflows increasing with depth. Mining in C8 has concentrated on deepening sumps and pumping groundwater to dewater ore ahead of mining. An upgraded pumping arrangement and larger diameter discharge pipe were installed to manage the increasing flows. The improvement in dewatering capacity has facilitated mining high-grade ore from the base of C8 and this has been supplemented by the completion of C1 including a goodbye cut, commencement of C1 Mini and accessing ore in the C8 cutback. C9 pit mining continued to provide low-phosphate ore for blending.

The Iron Valley crushing operations produced 1.4 million wmt of product for the quarter with the change in crusher strategy to feed by source and blend post-crushing enabling optimisation of throughput. The demand for fines continued through the quarter with all produced fines shipped. The 2.1 million wmt of lump and fines product shipped for the quarter exceeded the prior quarter's shipments by 6%.

Koolyanobbing

'000 wet metric tonnes	Q1 FY20	Q4 FY19	Q1 FY19
Mined	1,852	1,467	263
Produced	1,679	1,398	92
Shipped	1,413	1,346	-

Koolyanobbing mined at the targeted rate of 7.5Mtpa, with the addition of an EX3600 excavator and additional road train haulage units in the quarter. This resulted in iron ore production increasing by 20% to 1.7 million wmt compared to the prior quarter.

Shipping volumes were consistent with the previous quarter, despite the final shipment scheduled for September falling into October, due to works carried out on the car dumper at Esperance Port to allow for both bottom and rotary car dumping.

A fourth rail consist is now at full capacity, with additional rail capacity to be brought on line in Q2 FY20. Inventory at the mine is building in preparation of the scheduled ramp-up by a further 3.5Mtpa to an 11.0Mtpa run rate by early Q3 FY20.

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MINING EXPLORATION AND DEVELOPMENT ACTIVITY

Kumina Iron Ore Project

MRL acquired the Kumina Iron Ore Project, located in the West Pilbara region, from BCI Minerals Limited (ASX: BCI, BCI) in December 2018. The acquisition of Kumina is consistent with MRL's strategy of identifying new value-adding development opportunities and will enable MRL to leverage its existing workforce and logistics supply chain in the Pilbara, with the ore to be exported out of Port Hedland.

The Kumina exploration camp was occupied for the full quarter and supported the pre-works for the drilling program that commenced on 22 September 2019. All drill pads required for the program have been cleared and the first 670 metres of planned work was completed in the last days of the quarter. Field mapping activities were carried out to support further exploration opportunities in the area during this period. Two more rigs have since arrived early in Q2 FY20 with drilling to be completed towards the end of that quarter.

Parker Range Project

On 30 August 2019, MRL finalised the acquisition of the assets that comprise the Parker Range Project from Cazaly Iron Pty Ltd, a wholly owned subsidiary of Cazaly Resources Limited (Cazaly, ASX: CAZ) (ASX: MIN 30/08/19). The acquisition of Parker Range expands MRL's iron ore presence in the Yilgarn region of Western Australia.

Site visits with a review of historic data and core samples were completed during the current quarter to gain a deeper understanding of the deposit before the commencement of mining.

McIntosh Joint Venture

MRL has notified Hexagon Resources Limited (Hexagon, ASX: HXG) that it is withdrawing from its 51% interest in the McIntosh Graphite Project (McIntosh Project) under the McIntosh Joint Venture (MJV) terminating the MJV with effect from 31 October 2019 (ASX: MIN 02/10/19). As a result, the MJV tenements covering the McIntosh Project in northern Western Australia will now revert 100% to Hexagon as of 31 October 2019.

MRL originally entered into the MJV to increase its exposure to battery materials with the inclusion of graphite as well as to create additional mining services contracting opportunities. However, MRL has determined that any future investment in the McIntosh Project will not meet MRL's minimum investment return threshold when compared to other significant projects currently undergoing evaluation that would require development capital. MRL will write off its investment in the McIntosh Project, of less than \$5 million, in FY20.

OIL AND GAS

Energy Resources Limited (ERL), a wholly owned MRL subsidiary, holds nine oil and gas exploration permits across the onshore Perth Basin, extending from south of the Perth metropolitan area to the Shire of Mingenew north of Perth and covering an area of 6,603 square kilometres. This makes ERL one of the largest permit holders in the onshore Perth Basin.

The exploration strategy is primarily to explore for gas resources and to provide MRL with self-sufficiency in gas supply. This strategy extends further to building a significant and profitable oil and gas portfolio, primarily focused within Western Australia.

During the quarter, ERL further progressed its exploration strategy by completing ecological surveys in preparation for future seismic acquisition programs. These ecological surveys are designed so that all exploration activities have minimal impact on the environment.

Further Information

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Competent Person's Statement

The information presented is extracted from previous MIN ASX announcements available on the company website at www.mrl.com.au. 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, in the case of estimates of Mineral Resources or Ore Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

About Mineral Resources

Mineral Resources Limited (ASX: MIN) is a Perth-based leading mining services provider, with a particular focus on the iron ore and hard-rock lithium sectors in Western Australia. Using technical know-how and an innovative approach to deliver exceptional outcomes, Mineral Resources has become one of the ASX's best-performing contractors since listing in 2006.

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