

# Quarterly Exploration and Mining Activities Report

## October to December 2019 (Q2 FY19)

---



### Q2 FY19 Highlights

- Announcement of binding Asset Sale and Share Subscription Agreement with Albemarle Corporation (NYSE:ALB, Albemarle) in relation to the sale of a 50% interest in the Wodgina Lithium Project, expected to be completed during the 2019 calendar year (CY19)
- Announcement that Jiangxi Ganfeng Lithium Co., Ltd (Ganfeng) and Mineral Resources Limited (ASX:MIN, MRL) have executed a sale agreement with Neometals Limited (ASX:NEO, Neometals) to jointly and equally acquire Neometals' 13.8% share in the Mount Marion Lithium Project. Upon completion MRL's equity interest will increase to 50%
- Announcement and completion of the acquisition of the Kumina Iron Ore Project
- First iron ore produced from re-commenced operations at Koolyanobbing, and shipped out of Esperance in December 2019
- Construction of the Wodgina concentrate plant and associated non-process infrastructure, and Mount Marion All-in-6% concentrate upgrade; progressed with commissioning of both projects
- 12 month rolling average Total Recordable Injury Frequency Rate (TRIFR) reduced from 2.94 to 2.87
- Spodumene concentrate production from the Mt Marion project remained in line with Q1 FY19, shipping 94kt with 71% of output being high-grade 6% Li<sub>2</sub>O product
- Lithium Direct Shipping Ore (DSO) export volumes from Wodgina ceased in the quarter to retain ore for use in future spodumene concentrate production.

## Production and Commodity Shipments

'000 WMTs	Q2 FY19		Q1 FY19		Q2 FY18	
	PRODUCED	SHIPPED	PRODUCED	SHIPPED	PRODUCED	SHIPPED
<b>IRON ORE</b>						
Iron Valley	1,767	2,053	1,862	1,620	2,021	1,513
Koolyanobbing	560	292	92	-	-	-
Carina & J4	-	-	-	-	999	936
<b>TOTAL IRON ORE</b>	<b>2,327</b>	<b>2,345</b>	<b>1,954</b>	<b>1,620</b>	<b>3,020</b>	<b>2,449</b>
<b>SPODUMENE</b>						
Mount Marion <sup>1</sup>	115	94	111	91	109	111
<b>TOTAL SPODUMENE</b>	<b>115</b>	<b>94</b>	<b>111</b>	<b>91</b>	<b>109</b>	<b>111</b>
<b>DSO LITHIUM</b>						
Wodgina	40	-	358	422	1,104	1,044
<b>TOTAL DSO LITHIUM</b>	<b>40</b>	<b>-</b>	<b>358</b>	<b>422</b>	<b>1,104</b>	<b>1,044</b>
<b>GRAND TOTAL</b>	<b>2,482</b>	<b>2,439</b>	<b>2,423</b>	<b>2,133</b>	<b>4,233</b>	<b>3,604</b>

<sup>1</sup> Volume produced and shipped is presented as 100% for the Mt Marion project.

MRL's ownership interest in the Mt Marion project for the quarters shown above is 43.10%, increasing to 50% in calendar year 2019 (ASX: 211218).

# LITHIUM

## Wodgina Lithium

'000 WMTs	Q2 FY19	Q1 FY19	Q2 FY18
<b>LITHIUM DSO</b>			
Mined	8	738	1,039
Produced	40	358	1,104
Shipped	-	422	1,044

Production of lithium DSO was downscaled during the quarter and shipments of lithium DSO suspended in line with plans to maximise future value from the ore body by retaining the ore for use in spodumene concentrate production.

Construction and commissioning of the 750,000 dry tonne per annum spodumene processing plant, along with the associated crushing and non-process infrastructure upgrades, continued during the quarter. Commissioning of the first-stage 250,000 tonne module is underway with first concentrate expected by the end of February 2019. All supporting non-process infrastructure to support the production of first concentrate is in place.

A further resource exploration drilling program was completed in Q1 FY19, targeting the Cassiterite Pit resource at depths up to 500m. The 60-day program consisted of approximately 12,000 metres drilled. A separate JORC resource and ore reserve update statement was released in October 2018 (ASX: 231018) with a 25.3 Mt increase in the Wodgina mineral resource from the May 2018 update.

During the quarter, the execution of a binding Asset Sale and Share Subscription Agreement with Albemarle in relation to the sale of a 50% interest in the Wodgina Lithium Project, and formation of a 50:50 joint venture that will produce spodumene concentrate and lithium hydroxide was announced (ASX: 141218). Completion of the sale and formation of the joint venture is subject to conditions precedent relating to regulatory approvals, including Foreign Investments Review Board (FIRB) Chinese anti-trust approvals, Western Australian Ministerial Consent and the consents of certain third parties with interests in the underlying tenements.

## Mt Marion Project

'000 WMTs	Q2 FY19	Q1 FY19	Q2 FY18
<b>LITHIUM SPODUMENE</b>			
Mined	738	706	722
Produced	115	111	109
Shipped	94	91	111

MRL operates 100% of the Mt Marion project, in which it presently owns a 43.1% interest, increasing to 50% in CY19 (ASX: 211218)

Mining continued in both C1 and N6 pits with total material movement of 4.9 WMT achieved during the quarter. The mining movements have provided consistent access to the ore body for processing.

The processing plant's utilisation increased to 85%, up 2% from the previous quarter, with a corresponding increase in the throughput rate from 322 tph to 332 tph. This has resulted in the beneficiated tonnes increasing to 627,049 WMT compared to 612,782WMT in the previous quarter.

Spodumene concentrate production improved against the previous quarter with a total production of 114,994 WMT with the proportion of high-grade (6%) spodumene concentrate increasing to 71% compared to 69% in the previous quarter. A total of 94,170 WMT was shipped during the quarter.

Mt Marion Upgrade Project construction is in advanced stages of completion. Construction is 95% complete and Stage 1 dry commissioning works commenced in Q2 FY19. Stage 2 Water Commissioning and Stage 3 Product commissioning are planned for completion in February 2019. Production is expected to commence during the latter half of Q3 FY19, ramping up to full production by end of Q4 FY19.



A separate JORC resource update statement was released in October 2018 (ASX: 311018) to update the previous reported Mt Marion Mineral Resource dated 21 October 2016. Taking into account the additional delineated mineralisation and mining depletion during the period ending 30 September 2018, indicated and inferred resources now total 71.3Mt at 1.37% Li<sub>2</sub>O and 1.09% Fe; reported above a cut-off grade of 0.5% Li<sub>2</sub>O.

The previous Mineral Resource estimate as at 21 October 2016 was 77.8Mt at 1.37% Li<sub>2</sub>O and 1.09% Fe; reported above a cut-off grade of 0.5% Li<sub>2</sub>O. The changes reflect an addition of 0.5Mt of spodumene bearing pegmatite and mining depletion of 6.9Mt over the intervening period.

A new RC drilling program commenced in late November that will focus on exploration and resource development drilling around the current resources, as well as sterilisation drilling for future waste dump footprints. 4,800m of the 15,770m planned was completed during the quarter, with the remainder scheduled for January and February 2019. Outcomes from this drilling are expected early Q4 FY19.

The MRL-operated Mt Marion Project is currently a joint project between MRL (43.1%), Neometals (13.8%) and one of the world's largest lithium producers, Ganfeng (43.1%). During the quarter, a sale agreement was executed with Neometals for MRL and Ganfeng to jointly and equally acquire Neometals' 13.8% equity interest in the Mt Marion Project, which will see MRL's equity interest increase to 50% (ASX: 211218).

The sale agreement is subject to FIRB and Chinese regulatory approvals, with completion anticipated in February 2019.

## IRON ORE

### Iron Valley

'000 WMTs	Q2 FY19	Q1 FY19	Q2 FY18
Mined	1,791	2,121	1,868
Produced	1,767	1,862	2,021
Shipped	2,053	1,620	1,513

Mining was completed in the C2 and C4 pits with goodbye cuts contributing an additional 124kt of ore for blending. Mining continued in the C1 and C7 pits during the quarter for blended feed with both encountering groundwater at the 440mRL, requiring the development of sumps and in pit pumping systems. The C9 pit and C8 cutback on the central pit commenced to provide crusher feed into the second half of 2019. Ongoing optimisation of drill and blast parameters has continued and resulted in savings.

The Iron Valley crushing operations performed at budget throughput to produce 1.8Mt of product for the quarter. 2.05Mt of lump and fines product was shipped for the quarter, exceeding the forecast 1.95Mt. The demand for fines continued through the quarter with all produced fines shipped.

The low grade iron ore business remains marginal, with growing impurities making it challenging. Management continues to monitor the iron ore operations closely.

## Koolyanobbing

'000 WMTs	Q2 FY19	Q1 FY19	Q2 FY18
Mined	1,167	263	-
Produced	560	92	-
Shipped	292	-	-

Mining continued in the W7 and W10 Open pits at Windarling with all pioneering and clearing completed. F pit at Koolyanobbing was brought on line during November which will bring higher grade and lower phosphorous levels into the blend once the area is fully developed. Development works commenced at Deception, to the north of Windarling, with a communication tower being installed, facilities area being completed and the waste dump being cleared.

Crushing operations performed well, based on ore supply from the mine. First trains were in November 2018, with first shipments out of Esperance during December.

## MINING EXPLORATION AND DEVELOPMENT ACTIVITY

### Kumina Iron Ore Project

During the quarter, MRL announced the completion of the acquisition of the Kumina Iron Ore Project (Kumina Project) from BCI Minerals Limited (ASX: BCI, BCI) (ASX: 211218). Under the terms of the Sale and Purchase Agreement, MRL has paid A\$27 million to BCI and will pay a further A\$4 million to BCI when MRL achieves the first export of iron ore from the Kumina Project, and an additional A\$4 million 12 months after first export.

The Kumina Project is located in the West Pilbara region approximately 100km south of Karratha and has a JORC Inferred Mineral Resource of 78.3 million tonnes at 59.1% Fe at a 57% Fe cut-off (refer BCI ASX announcement 280618). The acquisition of the Kumina Project 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.

Work continues on progressing the project with environmental studies continuing and drill programs being planned for Q3 FY19. Drilling is planned to extend known resources and increase confidence in existing resources. Environmental studies will support the required regulatory approvals and assist in planning appropriate infrastructure development.



## Hexagon Resources Limited – McIntosh Graphite Development

MRL and Hexagon Resources Limited announced the execution of the Joint Venture Agreement (JVA) covering the development of the McIntosh Graphite Project in the East Kimberley region of Western Australia (ASX: 081118). The joint venture, managed and funded by MRL, has operated since Hexagon shareholders approved the transaction on 14 May 2018 under the terms of the binding Heads of Agreement (ASX: 270318).

Under the JVA, MRL will earn a 51% interest in the McIntosh Graphite Project after confirmation that MRL has completed its initial farm-in expenditure of A\$300,000.

From the effective date of 14 May 2018, MRL is solely responsible to:

- undertake feasibility studies within 18 months (before 14 October 2019)
- commence activities for the development of the project within 24 months (before 13 April 2020) and
- complete project development activities and achieve commercial production of graphite concentrate within 36 months (before 14 April 2021).

MRL will provide all mining, processing and logistical services for the project under a life-of-mine Project Services Agreement.

Drilling of 7,700m RC and 2,900m Diamond program was successfully completed in October 2018. The program was designed to confirm existing resources, explore for extensions and additional deposits, and supply samples for metallurgical testing. Logging and processing of all samples was completed in December 2018 and model updates are currently underway. Metallurgical samples are being compiled and will be processed during Q3 FY19 to assist in finalisation of an optimised concentrate flow sheet.

## OIL AND GAS

Exploration permits 389 and 440 have been renewed for another 5-year term by the Department of Mines, Industry Regulation and Safety (DMIRS); all permits are in good standing.

Continued planning and preparation for the drilling of the exploration well in permit 368, targeting CY19, is progressing on schedule.

Industry collaboration continues, with the aim of utilising the Easternwell 106 drilling rig within the Perth Basin in CY19.



## Further Information

### Investor Relations

Mark Wilson  
CFO/Company Secretary  
T: +61 8 9329 3600  
E: [mark.wilson@mrl.com.au](mailto:mark.wilson@mrl.com.au)

### Media

Peter Klinger  
Cannings Purple  
T: +61 411 251 540  
E: [pklinger@canningspurple.com.au](mailto:pklinger@canningspurple.com.au)

### Competent Person's Statement

*The information is extracted from previous MIN ASX announcements available on the company website at [www.mineralresources.com.au](http://www.mineralresources.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.*

Mineral Resources Limited  
1 Sleat Road  
Applecross, WA 6153  
Australia

T: +61 8 9329 3600  
E: [investorrelations@mrl.com.au](mailto:investorrelations@mrl.com.au)  
W: [www.mineralresources.com.au](http://www.mineralresources.com.au)

Follow us on:

