

## Quarterly Activities Report for the period ending 31 December 2019

### Highlights

- Completion of \$40 million fully underwritten institutional placement with cornerstone investment from Centaurus Capital LP
- Binding boric acid offtake agreement signed with the Dalian Jinma Group; a large diversified private Chinese company focused on boron related products
- Non-binding Letter of Intent ('LOI') to purchase up to 250,000 tonnes annually of high-quality sulphur from Shell Canada Energy
- Lithium carbonate confirmed to contain exceptionally low levels of impurities, meeting or exceeding customer specifications, in addition to previously announced high-purity lithium hydroxide
- Completion of integrated process flowsheet at pilot plant with key modifications and improvements incorporated into the DFS engineering design
- The Definitive Feasibility Study ('DFS') is on track for completion in Q1 2020

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Thursday, 30 January 2020 – Emerging lithium-boron supplier, ioneer Ltd ('ioneer' or the 'Company') (ASX:INR) provides an update on the development of its 100%-owned Rhyolite Ridge Lithium-Boron Project ('Rhyolite Ridge' or 'the Project') in Nevada, USA, for the quarter ending 31 December 2019.

Commenting on progress made during the December quarter, ioneer's Managing Director Bernard Rowe said:

*"Our team has made great progress at both a corporate and operational level throughout the December quarter. We have strengthened our balance sheet raising an additional \$40 million in equity and welcomed Centaurus Capital as a cornerstone investor.*

*"At an operational level, we have taken a number of key steps toward production. We signed a 5-year binding offtake agreement for more than 50% of Rhyolite Ridge's expected boric acid production with Jinma, the world's largest provider of boron products. ioneer also signed a Letter of Intent with Shell Canada Energy for the purchase of approximately 60% of our sulphur requirements.*

*"In addition we validated the quality of the lithium carbonate produced at Rhyolite Ridge, which contains exceptionally low levels of impurities, reinforcing the opportunity for Rhyolite Ridge to become a major, low cost producer of lithium and boron products to major markets in the USA, Europe and Asia.*

*"Our focus now is on completing the DFS, permitting and advancing customer and strategic partner discussions."*

Rhyolite Ridge is well positioned to supply lithium in an environmentally sustainable manner to the growing number of proposed lithium-ion battery megafactories in the USA.

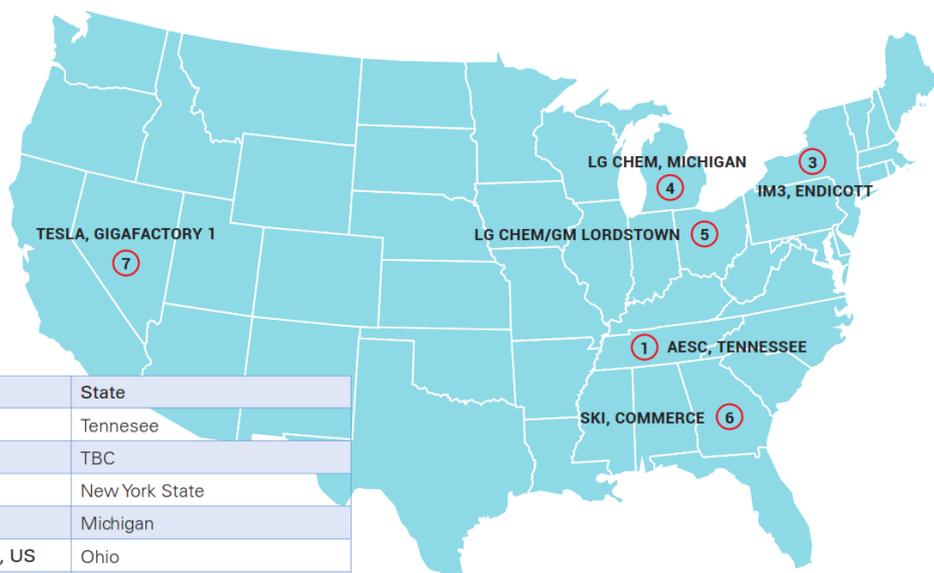
Albemarle’s Clayton Valley brine operation is currently the only domestic source of lithium, producing only circa 4,000 tonnes per annum of lithium carbonate.

Rhyolite Ridge, the most advanced lithium development project in the USA, is expected to become a major USA producer with production of more than 20,000 tonnes per annum.

### Operating and Proposed Battery Megafactories in the USA

#### THE USA'S MEGAFACTORY MAP

With the addition of the LG Chem-GM Megafactory in Ohio the USA now has 7 battery megafactories in the pipeline across 6 different states. Farasis Energy is yet to confirm the location of its US megafactory



Megafactory	State
1 AESC, Tennessee, US	Tennessee
2 Farasis, TBC, US	TBC
3 IM3, Endicott, US	New York State
4 LG Chem, Michigan, US	Michigan
5 LG Chem/GM Lordstown, US	Ohio
6 SKI, Commerce, US	Georgia
7 Tesla, Gigafactory 1, US	Nevada

Source: Benchmark Mineral Intelligence, Q4 Review 2019.

### Binding boric acid offtake agreement signed with Dalian Jinma Group

In December 2019, Ioneer signed a binding offtake agreement with Dalian Jinma Boron Technology Group ('Jinma'). Jinma is headquartered in Dalian City and has approximately 10,000 employees across 120 offices and subsidiary companies throughout China.

Jinma is a diversified company with a focus on the boron industry. It is the owner of two major boron-magnesium mines and six medium-sized mines, which together account for approximately 60% of China’s boron-magnesium resources, making Jinma the world’s largest provider of boron products (boron carbide and ferro boron). With its boron assets reaching maturity, Jinma is strategically securing new sources of boron.

The offtake agreement is for the five-year supply of 105,000 tonnes of boric acid per annum, commencing in Q1 2023. The agreement secures a key customer for more than 50% of Rhyolite Ridge’s expected annual boron production<sup>1</sup> and validates the world-class quality of Rhyolite Ridge’s boric acid products.

<sup>1</sup> The Rhyolite Ridge Pre-Feasibility Study ('PFS') estimated average annual production of 20,200 tonnes of lithium carbonate and 173,000 tonnes of boric acid. Boric acid production levels in the Rhyolite Ridge DFS will reflect the higher boron grades in the updated Mineral Resource estimate (refer ASX announcement "Rhyolite Ridge Mineral Resource Upgrade" released 26 June 2019), specifically the Measured and Indicated Resource for the Upper Zone which has boron grades 21% higher than the Resource used for the PFS.

In addition to its substantial internal consumption, Jinma will also act as Ioneer's exclusive distributor and representative in the regions of China and Taiwan, excluding large multinationals with Chinese operations that will be supplied directly by Ioneer.

## Pilot Plant Operations

Ioneer continued to operate its full-simulation pilot plant in Vancouver, Canada. Extensive testwork has been undertaken to test and optimise the proposed commercial flowsheet. This work has continued to play a critical role in ensuring a comprehensive understanding of the process flowsheet and has resulted in improved engineering design and operating plans. The modifications and improvements are being incorporated into the detailed engineering plans for the DFS.

Kemetco Research Inc is operating the pilot plant and is one of Canada's largest privately-owned contract research and development laboratories, specialising in extractive metallurgy, chemical processing and specialty chemical analysis.

### Rhyolite Ridge Pilot Plant at Kemetco in Vancouver, Canada



A video of the Rhyolite Ridge pilot plant is available at [www.ioneer.com/investors/videos](http://www.ioneer.com/investors/videos).

As detailed in the table below, the lithium carbonate produced at the pilot plant contains low levels of impurities and has met or exceeded the specifications required by customers for technical grade lithium carbonate.

### Chemical Analysis of Technical Grade Lithium Carbonate

Compound or Element	Units	Rhyolite Ridge*	Typical Industry Specifications (Brine)	Typical Industry Specifications (Spodumene)
Lithium Carbonate	%	>99.0	>99.0	>99.0
Calcium	ppm	381	350	400
Chloride	ppm	<10	200	200
Iron	ppm	13	<20	35
Potassium	ppm	149	300	50
Magnesium	ppm	265	300	100
Sodium	ppm	378	1,000	1,500
Sulphate	ppm	2,400	1,000	3,500

\*Analyses were conducted by SGS Canada using ICP and Dionex for sulphate. See Ioneer announcement "Quality of Rhyolite Ridge Lithium Carbonate Confirmed" dated 8 November 2019 for more information.

Unlike lithium carbonate produced from brines, the Rhyolite Ridge lithium carbonate is very low in chloride, potassium and sodium. Calcium and magnesium can be further reduced by ion exchange if required by customers.

Lithium carbonate and boric acid produced in the pilot plant has been very well received by potential offtake partners as evidenced by the binding boric acid offtake agreement signed with Jinma during the quarter.

Output from the pilot plant has provided lithium and boron products that have been and will continue to be used to advance discussions with potential customers as part of ongoing offtake discussions, as the Company builds on its boron offtake agreement with Jinma.

## Definitive Feasibility Study Progress and Completion

ioneer and Fluor Corporation commenced the Rhyolite Ridge DFS in late 2018 and the study is due to be completed and released in Q1 2020.

Recent flowsheet enhancements have been incorporated in the engineering design which is planned to be circa 30% completed in the DFS.

### Schematic of Rhyolite Ridge Process Plant



## Letter of Intent with Shell Canada Energy for Sulphur Supply

In December 2019,ioneer signed a non-binding Letter of Intent ('LOI') with Shell Canada Energy ('Shell') for the purchase of up to 250,000 tonnes of high-quality sulphur annually from Shell. The agreement represents approximately 60% of Rhyolite Ridge's estimated annual sulphur requirement. Both parties are actively working to progress the non-binding LOI into a binding supply agreement. Ample additional sulphur is available on the west coast of the USA and Canada.

The signing of the LOI is one of the first steps toward securing key reagents for the proposed acid leaching of the Project's lithium-boron Searlesite ore. The Company is actively engaging with key potential suppliers to Rhyolite Ridge and expects to announce further commitments in the near future.

## State and Federal Permitting Process

ioneer continues to engage with communities near Rhyolite Ridge and other stakeholders, as well as constructively working with state and federal regulatory authorities.

Following completion of environmental baseline studies and other work undertaken over the past two years, ioneer is currently finalising the reports comprising the Plan of Operations for the development of the Project. The Company intends to file the Plan of Operations with the U.S. Department of the Interior - Bureau of Land Management ('BLM') soon. This filing will trigger the environmental review process under the National Environmental Policy Act ('NEPA') and is expected to follow an Environmental Impact Statement ('EIS') pathway.

ioneer held public meetings in two communities near Rhyolite Ridge in January 2020. The meetings were well attended by local residents, business leaders, elected officials. Support for the Rhyolite Ridge project continues to be strong.

### Community Meeting in Dyer, Nevada on 23 January 2020



## Strategic Partner and Offtake Discussions

ioneer and its financial advisor are in active discussions with multiple strategic financial and offtake partners regarding the project's development funding.

The pilot plant has supported numerous strategic partner and finance discussions with approximately twenty potential strategic partners and financiers having toured the plant.

The tours provide potential partners with an opportunity to extensively interact with key members of ioneer's technical and commercial teams and gain a deeper understanding of ioneer's commitment to technical excellence.

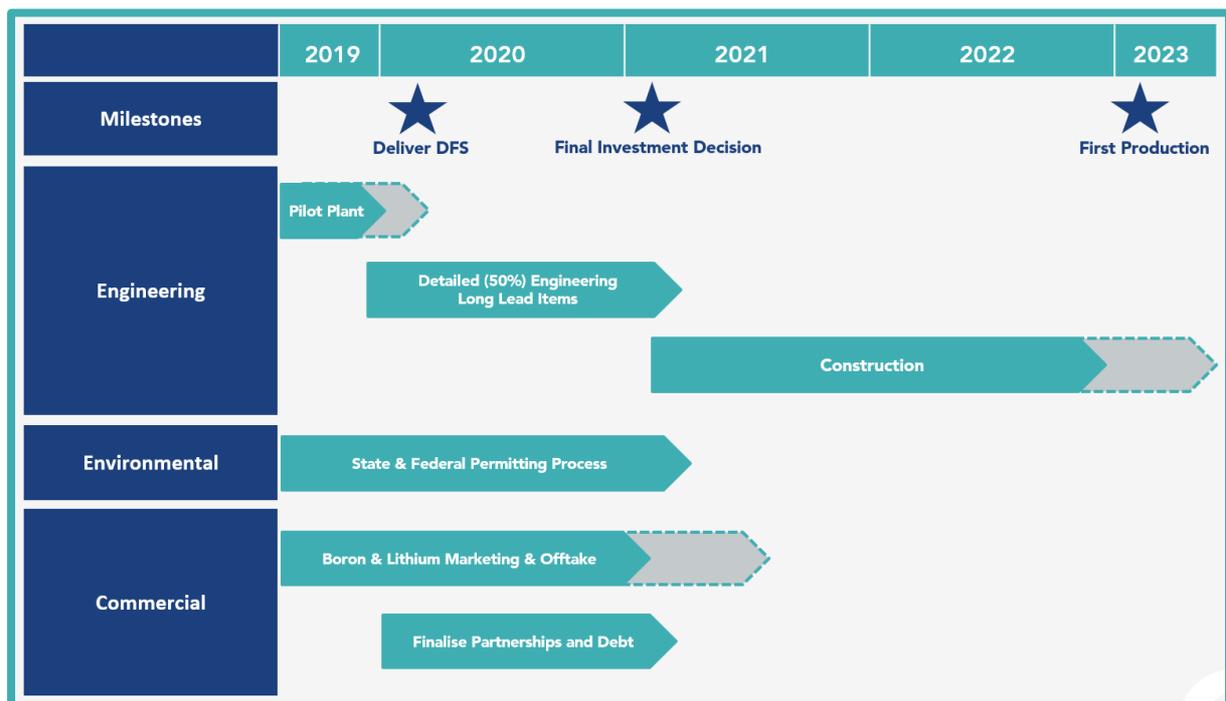
Product samples from the pilot plant have been sent to over 30 potential customers around the world for evaluation as part of multiple off-take negotiations which are currently ongoing. These samples contain >99.9% premium quality boric acid and >99.0% technical-grade lithium carbonate.

## Upcoming Work Program

The work program over the coming months includes:

- Completion of the Rhyolite Ridge DFS in Q1 2020
- Submission of Rhyolite Ridge Plan of Operation to the BLM and commencement of formal EIS permitting process
- Progressing discussions with potential off-take, financial and strategic partners with the assistance of a global investment bank. The range of partners includes lithium, boron, electricity and acid plant partners
- Supply contracts relating to reagents, long lead time items and detailed engineering
- Updated Ore Reserve estimate

The anticipated timing of key milestones to first production in 2023 are highlighted in the figure below.



*Note: All dates and times are indicative and subject to change. The NEPA determination of permitting path not expected to be made until Q1 2020. The EIS approval timeframe assumed to be twelve months.*

## Corporate Activities

### Completion of \$40 million placement

In November 2019, Ioneer announced the completion of a placement raising \$40 million which was strongly supported by existing shareholders and new investors including high quality domestic and offshore institutions. Centaurus Capital L.P. provided a cornerstone investment as part of the placement.

Proceeds from the placement are being used to advance the development of the Project by funding the Company through to FID, including:

- Completion of the Definitive Feasibility Study (DFS);
- Advance detailed engineering beyond the DFS to approximately 50% completion;
- Completion of the environmental approval process; and
- Ongoing working capital and potential long lead time items.

### Annual General Meeting

Ioneer held its 2019 Annual General Meeting on 8 November 2019. All resolutions proposed at the Annual General Meeting were passed on a poll and without amendment.

### Expenditure

Expenditure during the December quarter totalled:

- \$11.9 million on exploration and evaluation; and
- \$1.4 million on corporate/administration/salaries (net of interest received).

Cash on hand at 31 December 2019 was \$59.5 million.

### Capital Structure

At the end of the quarter, Ioneer had on issue:

- 1.68 billion ordinary shares;
- 46.2 million options; and
- 7.9 million performance rights.

### Contacts

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*This ASX release has been authorised by ioneer Managing Director Bernard Rowe.*

## About ioneer

The Company's 100%-owned Rhyolite Ridge Lithium-Boron Project in Nevada, USA provides a substantial foundation for ioneer to become a responsible and profitable producer of the materials necessary for a sustainable future.

The Rhyolite Ridge PFS demonstrated the Project's scale, long life and potential to become the lowest cost lithium producer in the world as well as the largest lithium producer in the United States.

Lithium and boron are both used in a diverse range of everyday items and innovative technologies that are essential to modern life and emerging clean technologies such as electric vehicles.

## Recent Announcements

The table below lists announcements made by the Company during the quarter.

<b>Date Released</b>	<b>Title</b>
01/10/2019	Pilot Plant & DFS Developments
04/10/2019	Notice of Annual General Meeting
28/10/2019	September Quarterly Activities Report
28/10/2019	September Quarterly Cashflow Report
08/11/2019	Issue price of options in connection with AGM resolution 4
08/11/2019	2019 AGM Presentation & Chairman's speech
08/11/2019	Quality of Rhyolite Ridge Lithium Carbonate confirmed
08/11/2019	Results of 2019 AGM
21/11/2019	Fully underwritten placement
22/11/2019	Successful completion of A\$40m Placement
03/12/2019	Presentation at RRS conference
09/12/2019	ioneer signs LOI with Shell Canada Energy for Sulphur Supply
18/12/2019	Binding Boric Acid Offtake Agreement

## Competent Persons Statement

The information in this report that relates to Exploration Results is based on information compiled by Bernard Rowe, a Competent Person who is a Member of the Australian Institute of Geoscientists. Bernard Rowe is a shareholder, employee and Managing Director ofioneer Ltd. Mr Rowe 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' ('JORC Code 2012'). Bernard Rowe consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

In respect of Mineral Resources referred to in this report and previously reported by the Company in accordance with JORC Code 2012, the Company confirms that it is not aware of any new information or data that materially affects the information included in the public report titled "Rhyolite Ridge Mineral Resource Upgrade" dated 26 June 2019. Further information regarding the Mineral Resource estimate can be found in that report. All material assumptions and technical parameters underpinning the estimates in the report continue to apply and have not materially changed.

In respect of production targets referred to in this report and previously disclosed, the Company confirms that it is not aware of any new information or data that materially affects the information included in the public report titled "Outstanding Results from Rhyolite Ridge Pre-Feasibility" dated 23 October 2018. Further information regarding the production estimates can be found in that report. All material assumptions and technical parameters underpinning the estimates in the report continue to apply and have not materially changed.



## Appendix 1 - Schedule of Tenements

Country	Project	Tenement ID	Tenement Name	Area (km <sup>2</sup> )	Interest at beginning of quarter	Interest at end of quarter	Note
USA	Rhyolite Ridge	NMC1118666	NLB claims (160)	13	100%	100%	No change
USA	Rhyolite Ridge	NMC1117360	SLB claims (199)	16.5	100%	100%	No change
USA	Rhyolite Ridge	NMC1171536	SLM claims (122)	9.7	100%	100%	No change
USA	Rhyolite Ridge	NMC 1179516	RR claims (65)	5.4	100%	100%	No change
USA	Rhyolite Ridge	NMC 1129523	BH claims (81)	7	0%	0%, option to purchase 100%	No change
USA	SM	NMC1166813	SM claims (96)	7.7	100%	100%	No change
USA	GD	NMC1166909	GD claims (13)	1.1	100%	100%	No change
USA	CLD	NMC1167799	CLD claims (65)	5.2	100%	100%	No change
USA	New Morenci	AMC393550	MP claims (2)	0.12	100%	100%	No change
USA	Tokop	NMC883619	TK claims (73)	4.82	100%	100%	No change
USA	Tokop	NMC285234	Path Patents (11)	0.74	0%, option to purchase 100%	0%, option to purchase 100%	No change
USA	Tokop	NMC814692	Path Unpatented (5)	0.40	0%, option to purchase 100%	0%, option to purchase 100%	No change
USA	Bartlett	NMC938020	PEARL claims (8)	0.67	0%, option to purchase 100%	0%,	Terminated
USA	Lone Mt	NMC913404	NAMMCO claims (71)	5.43	0%, earning 100%	0%, earning 100%	No change
USA	Lone Mt	NMC1071591	LMG claims (37)	2.80	100%	0%	Relinquished
USA	Lone Mt	NMC1094601	SW claims (24)	2.0	100%	0%	Relinquished
USA	Towers Mt	AMC426407	CK claims (32)	2.54	100%	0%	Relinquished