Mineral Resource increases by 168% to 3.4 Mt lithium carbonate
Underscores growth potential for U.S. supply chain

Highlights:

- Rhyolite Ridge South Basin Mineral Resource of **360 Mt** containing **3.4 Mt of lithium carbonate equivalent (168% increase)** and **14.1 Mt of boric acid equivalent (18% increase)** [1]**.**
- The Mineral Resource now includes both high-boron lithium mineralisation and low-boron lithium mineralisation. The previous Mineral Resource estimate only included high-boron lithium mineralisation.
- Demonstrates optionality around future growth opportunities including increasing lithium production with or without increasing boron production.
- The March 2023 Mineral Resource lies entirely within the project boundary currently being permitted under the Mine Plan of Operation.
- All mineralised units remain open in three directions with approximately 60% of the South Basin remaining to be drilled, underscoring the potential for further increases in the Resource.
- Rhyolite Ridge is ideally placed to play a pivotal role in the electrification of transportation in the U.S. In production, it will support the rapidly developing domestic lithium battery supply chain and lead innovation and sustainability in the production of materials critical to a clean energy future.

Wednesday, 26 April 2023 – **Ioneer Ltd ("Ioneer" or the "Company") (ASX: INR, NASDAQ: IONR)** is pleased to announce an updated Mineral Resource estimate for the South Basin at the Rhyolite Ridge Lithium-Boron Project located in Nevada, USA. The effective date for the updated Mineral Resource estimate is March 31, 2023.

WSP USA Inc. ('WSP'; formerly Golder Associates Inc.) estimated the March 2023 Mineral Resource and provided the previous (2020) Mineral Resource and Ore Reserve estimates for the Rhyolite Ridge Definitive Feasibility Study ('DFS')[2] completed in April 2020.

The updated South Basin Mineral Resource estimate comprises:

- Tonnage increase from 146.5 Mt to 360.0 Mt (up 145%)
- Lithium carbonate equivalent (LCE) increase from 1.2 Mt to 3.4 Mt (up 168%)
- Boric acid equivalent (BAE) increase from 11.9 Mt to 14.1 Mt (up 18%)
- Cut-off grades unchanged at 1,090ppm Li and 5,000ppm B

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[1] See ASX announcement titled "Rhyolite Ridge Ore Reserve Increased 280% to 60 million tonnes" dated 30 April 2020.

[2] See ASX announcement titled "Ioneer delivers Definitive Feasibility Study that confirms Rhyolite Ridge as a world-class lithium and boron project" dated 30 April 2020.

Approximately 80% of the Mineral Resource is classified as Measured and Indicated. Approximately 44% of the Mineral Resource is classified as high-boron lithium mineralisation (HiB-Li) and 56% as low-boron lithium mineralisation (LoB-Li).

Background

The Rhyolite Ridge South Basin stratigraphy comprises lake-bed sedimentary rocks of the Cave Spring Formation overlaying volcanic rocks of the Rhyolite Ridge Volcanic unit. The Cave Spring Formation can reach total thickness in excess of 300 metres and comprises a series of 11 sub-horizontal sedimentary units.

The Cave Spring Formation units are generally laterally continuous over several kilometres across the extent of the South Basin; however, thickness of the units can vary due to both primary depositional and secondary structural features. The Cave Spring Formation is unconformably overlain by approximately 20 metres of unconsolidated alluvium.

Figure 1. Geological map showing South Basin (green), Mineral Resource area (grey) and location of east-west cross-section (black) shown below in Figure 2.

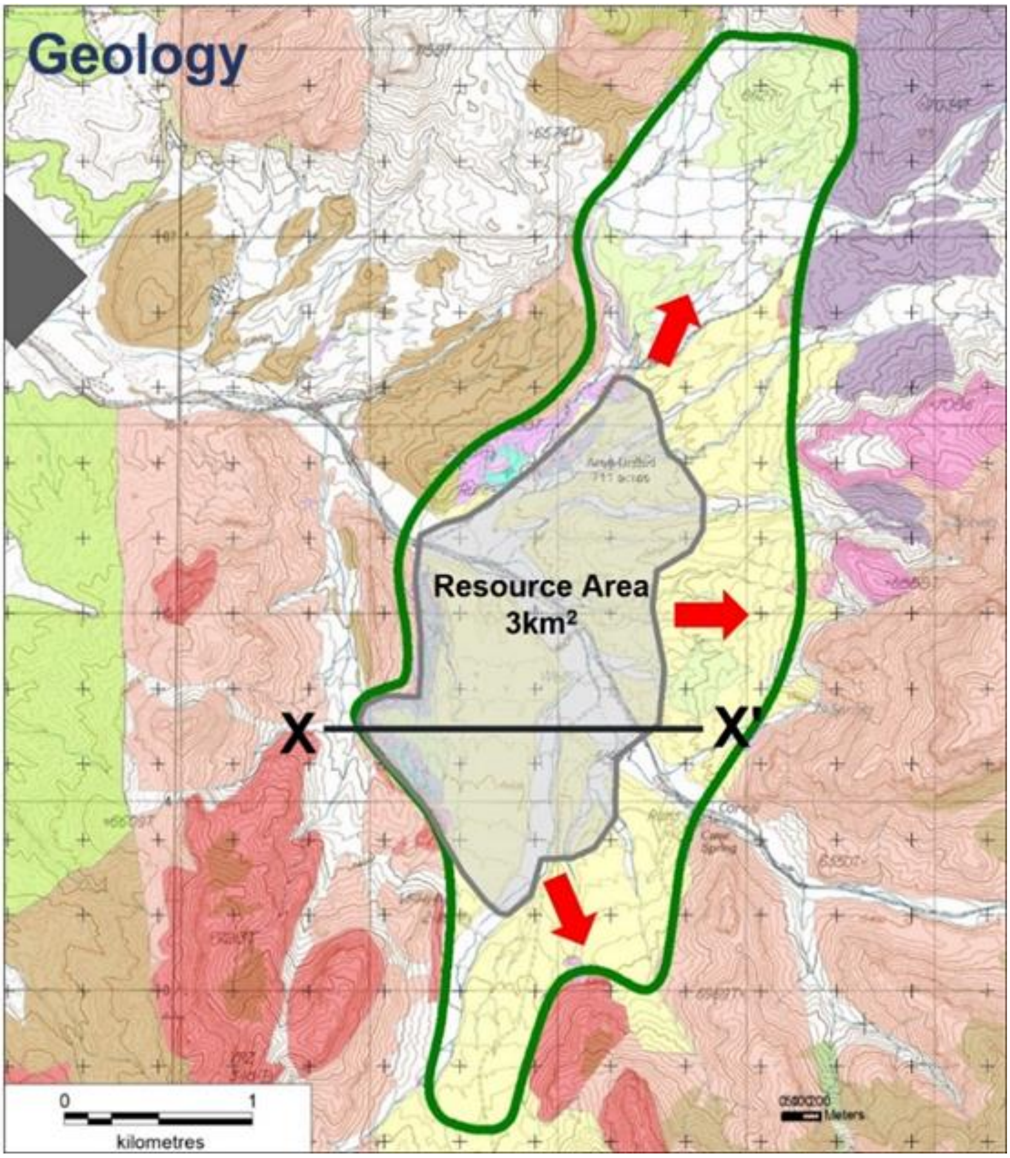
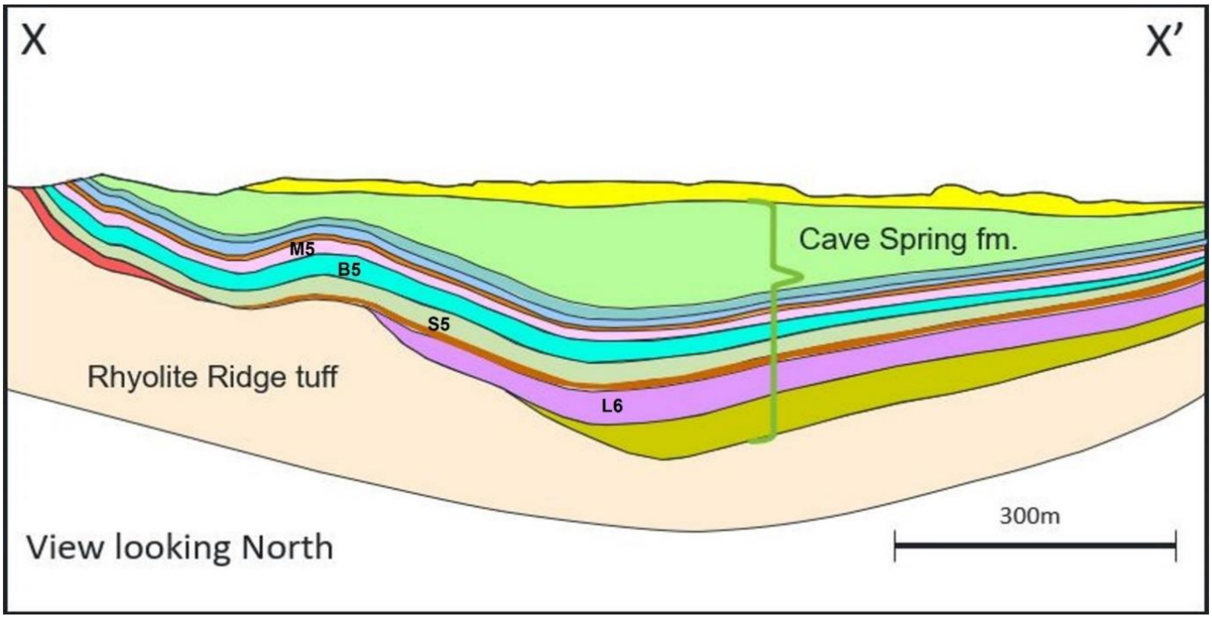
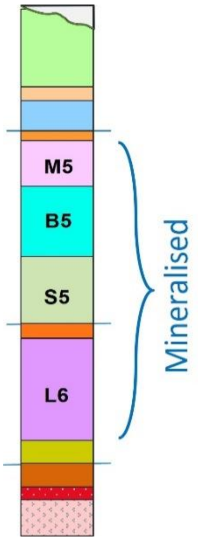


Figure 2 – Schematic east-west cross-section illustrating Cave Spring Formation and mineralised layers





The key mineralised units of the Cave Spring Formation in the sequence are as follows (illustrated in Fig. 2), from top to bottom:

- **M5** - high-grade lithium, low-grade boron, high-clay
- **B5** - high-grade lithium, high-grade boron, low-clay
- **S5** -moderate-grade lithium, low-grade boron, low-clay
- **L6** – moderate grade lithium, high and low-grade boron, low clay

Lithium mineralisation is present in all four units in the range of 1000-3000ppm. For the purpose of flowsheet design and ore characterisation, Ioneer classifies the lithium mineralisation into three basic types:

1. **Type 1**: High-boron lithium mineralisation where searlesite is the dominant minerals (B5 and L6)
2. **Type 2**: Low-boron lithium mineralisation where smectite-clay is the dominant mineral (M5)
3. **Type 3**: Low-boron lithium mineralisation where other minerals dominate and searlesite and smectite-clay are very low or absent (S5 and L6)

The April 2020 Mineral Resource estimate by Golder Associates USA Inc. (now WSP) only included Type 1 HiB-Li mineralisation from the B5 and L6 layers. The HiB-Li mineralisation was constrained by applying a 5,000 ppm Boron cut-off grade as well as a high-level optimised Mineral Resource pit shell.

Type 1 HiB-Li mineralisation (B5 and L6) was considered the most suitable and exclusively used in the Mineral Resource and Ore Reserve estimate for its superior metallurgical and process flowsheet properties.

As the ore zones that overlay and underlay the B5 ore zone, specifically the M5, S5 and L6 zones, are also lithium and to a lesser extent boron bearing, there is potential for processing as either feed material to the current design process stream or as a standalone process stream via a second processing facility.

The March 2023 Mineral Resource estimate has been updated and now includes all four stratigraphic layers to incorporate all previously drilled and assayed HiB-Li and LoB-Li mineralisation.

Updated Mineral Resource

The South Basin Mineral Resource estimate is now 360 million tonnes containing 3.4 million tonnes of lithium carbonate equivalent and 14.1 million tonnes of boric acid equivalent (5,000ppm B and 1,090ppm Li cut-offs applied for the HiB-Li and LoB-Li mineralization streams respectively).

Summary of March 2023 Mineral Resource Estimate – Rhyolite Ridge South Basin

Processing Stream	**Classification**	**Total Ore**	**Li**	**B**	**Li_2CO_3**	**H_3BO_3**	**Li_2CO_3**	**H_3BO_3**
		Million MT	ppm	ppm	wt%	wt%	kMt	kMt
Total Stream 1 (> 5,000 ppm B)	Measured	43.8	1,750	14,350	0.9	8.2	400	3,590
	Indicated	92.2	1,500	13,800	0.8	7.9	750	7,280
	Inferred	20.8	1,650	13,700	0.9	7.8	180	1,630
	Total Stream 1	156.8	1,600	13,950	0.8	8.0	1,330	12,500
Total Stream 2 (> 1,090 ppm Li, no B COG)	Indicated	158.5	1,850	1,450	1.0	0.8	1,570	1,330
	Inferred	44.9	1,900	900	1.0	0.5	450	230
	Total Stream 2	203.4	1,850	1,350	1.0	0.8	2,020	1,560
Stream 1 + 2	**Total**	**360.2**	**1,750**	**6,850**	**0.9**	**3.9**	**3,350**	**14,060**

The updated March 2023 Mineral Resource estimate was completed by WSP, to JORC Code (2012) standards and replaces the Mineral Resource estimate contained within the April 2020 Mineral Resource and Ore Reserves estimate.

The Ore Reserves referenced in this report have not been updated from the April 2020 Ore Reserves estimate. The Ore Reserves are based exclusively on HiB-Li mineralisation. The Mineral Resources are reported inclusive of the Ore Reserves.

The March 2023 Mineral Resource estimate has been constrained by applying a 5,000 ppm Boron cut-off grade to HiB-Li mineralisation within the B5, M5, and L6 geological units as well as a 1,090 ppm Lithium cut-off grade to LoB-Li mineralisation in the M5, S5 and L6 geological units. Both styles of mineralisation have also been constrained by the application of a single high-level optimised Mineral Resource pit shell.

Relative to the April 2020 Mineral Resource estimate, the updated March 2023 Mineral Resource estimate for the Project reflects a significant increase in the estimated Mineral Resource tonnes, including the reporting of the Mineral Resources for the LoB-Li mineralisation for the first time for the Project. The updated Mineral Resource estimate also presents a small increase to the HiB-Li Mineral Resource tonnes as the impact of the LoB-Li mineralisation resulted in a net expansion of the constraining Mineral Resource pit shell.

As all four mineralised layers are tabular and stacked vertically, the increased Mineral Resource sits entirely within the same 3 square kilometre (km^2) area as the April 2020 Mineral Resource estimate and represents only 38% of the 8km^2 South Basin total prospective area (as illustrated in Fig. 1). Additionally, all four mineralised layers remain open to the North, South and East providing significant further Resource growth potential with extension drilling, initially to the south, to be pursued immediately upon receipt of final permitting.

In December 2022, the United States Fish and Wildlife Service (USFWS) listed Tiehm's buckwheat as an endangered species under the Endangered Species Act (ESA) and has designated critical habitat by way of applying a 500 m radius around several distinct plant populations that occur on the Project site. Ioneer is committed to the protection and conservation of the Tiehm's buckwheat. The Project's Mine Plan of Operations submitted to the BLM in July 2022 and currently under NEPA review has no direct impact on Tiehm's buckwheat and includes measures to minimise and mitigate for indirect impacts within the designated critical habitat areas identified.

The mineral resource pit shell used to constrain the March 31, 2023, Mineral Resource estimate was not adjusted to account for any impacts from avoidance of Tiehm's buckwheat or minimisation of disturbance within the designated critical habitat. Estimates run inside the buckwheat avoidance areas identified 29.4 Mt at 1,650 ppm Li and 9,000 ppm B (both HiB-Li and LoB-Li streams combined), reflecting approximately 8% of the March 2023 global Mineral Resource estimate for the Project. The tonnes and grade within the avoidance polygons have not been removed from the Mineral Resources for the March 2023 estimate. Environmental and permitting assumptions and factors will be taken into consideration during future modifying factors studies for the Project. These permitting assumptions and factors may result in potential changes to the Mineral Resource footprint in the future.

Further detailed information is provided in:

- Appendix A - Mineral Resource Statement and Parameters
- Appendix B – Figures
- Appendix C – JORC Table 1

James Calaway, Executive Chairman of Ioneer commented:

> *"We are extremely pleased with the significant increase in the South Basin Mineral Resource estimate. It highlights Rhyolite Ridge's optionality and multi-generational scale potential to provide a secure, sustainable, and reliable domestic source of lithium for the growing electric vehicle battery supply chain."*

Bernard Rowe, Managing Director of Ioneer commented:

> *"To date, we have focussed heavily on progressing our development plan for Rhyolite Ridge. With binding offtakes in place, debt & equity commitments of nearly US$1.2 billion and the project in the final stage of permitting, we can now begin demonstrating the broader scale potential at Rhyolite Ridge. The updated Mineral Resource base for the South Basin is a fantastic start and we look forward to building on this further with significant growth potential through South Basin extensions as well as increased exploration efforts on the mineralised and much larger North Basin."*

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

-- ENDS --

Contacts:

Chad Yeftich
Ioneer USA Corporation

Investor Relations (USA)

T: +1 775 993 8509

E: ir@Ioneer.com

Jason Mack
Ioneer Limited

Investor Relations (AUS)

T: +61 410 611 709

E: jmack@Ioneer.com

Resource Estimate Advisers

Ioneer engaged the independent services of Golder Associates USA Inc. (now WSP) to compile and complete the updated South Basin Mineral Resource estimate, which has been verified and approved by their appointed Competent Person in compliance with JORC Code (2012).

Competent Persons Statement

The information in this report that relates to the March 2023 Mineral Resource estimate is based on information compiled by Jerry DeWolfe, a Competent Person who is a Professional Geologist (P.Geo.) with the Association of Professional Engineers and Geoscientists of Alberta (APEGA), a "Recognized Professional Organisation" included in a list promulgated by ASX from time to time. Mr DeWolfe is a full-time employee of WSP Canada Inc. (WSP, formerly Golder) and is independent of Ioneer and its affiliates. Mr DeWolfe 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). Mr DeWolfe consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to the 2020 Ore Reserve estimate is based on information compiled by Terry Kremmel, a Competent Person who is a certified Professional Engineer ('PE') in the US and a Registered Member of the Society for Mining, Metallurgy, & Exploration ('SME'), a "Recognized Professional Organisation" included in a list promulgated by ASX from time to time. Mr Kremmel is a full-time employee of WSP USA Inc. (WSP, formerly Golder) and is independent of Ioneer and its affiliates. Mr Kremmel 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). Mr Kremmel consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

About Ioneer

Ioneer Ltd is the 100% owner of the Rhyolite Ridge Lithium-Boron Project located in Nevada, USA, the only known lithium-boron deposit in North America and one of only two known such deposits in the world. The Definitive Feasibility Study (DFS) completed in 2020 confirmed Rhyolite Ridge as a world-class lithium and boron project that is expected to become a globally significant, long-life, low-cost source of lithium and boron vital to a sustainable future. In September 2021, Ioneer entered into an agreement with Sibanye-Stillwater where, following the satisfaction of conditions precedent, Sibanye-Stillwater will acquire a 50% interest in the Project, with Ioneer maintaining a 50% interest and retaining the operational management responsibility for the joint venture. In January 2023, Ioneer received a conditional commitment from the U.S. Department of Energy Loan Programs Office for up to $700 million of debt financing. Ioneer signed separate offtake agreements with Ford Motor Company and PPES (joint venture between Toyota and Panasonic) in 2022 and Korea's EcoPro Innovation in 2021.

Important notice and disclaimer

Forward-looking statements

This announcement contains certain forward-looking statements and comments about future events, including Ioneer's expectations about the Project and the performance of its businesses. Forward looking statements can generally be identified by the use of forward-looking words such as 'expect', 'anticipate', 'likely', 'intend', 'should', 'could', 'may', 'predict', 'plan', 'propose', 'will', 'believe', 'forecast', 'estimate', 'target' and other similar expressions within the meaning of securities laws of applicable jurisdictions. Indications of, and guidance on, the Conditional Commitment, financing plans, future earnings or financial position or performance are also forward-looking statements.

Forward-looking statements involve inherent risks and uncertainties, both general and specific, and there is a risk that such predictions, forecasts, projections and other forward-looking statements will not be achieved. Forward-looking statements are provided as a general guide only and should not be relied on as an indication or guarantee of future performance. Forward looking statements involve known and unknown risks, uncertainty and other factors which can cause Ioneer's actual results to differ materially from the plans, objectives, expectations, estimates, and intentions expressed in such forward-looking statements and many of these factors are outside the control of Ioneer. Such risks include, among others, uncertainties related to the finalisation, execution, and funding of the DOE financing, including our ability to successfully negotiate definitive agreements and to satisfy any funding conditions, as well as other uncertainties and risk factors set out in filings made from time to time with the U.S. Securities and Exchange Commission and the Australian Securities Exchange. As such, undue reliance should not be placed on any forward-looking statement. Past performance is not necessarily a guide to future performance and no representation or warranty is made by any person as to the likelihood of achievement or reasonableness of any forward-looking statements, forecast financial information or other forecast. Nothing contained in this announcement, nor any information made available to you is, or shall be relied upon as, a promise, representation, warranty or guarantee as to the past, present or the future performance of Ioneer.

Except as required by law or the ASX Listing Rules, Ioneer assumes no obligation to provide any additional or updated information or to update any forward-looking statements, whether as a result of new information, future events or results, or otherwise.

Appendix A
Mineral Resource Statement and Parameters

A summary of the March 2023 Mineral Resource estimate is provided in the table below. Note that Mineral Resources are reported inclusive of the Ore Reserve described in Appendix B.

March 2023 Mineral Resource Estimate for Rhyolite Ridge South Basin

Processing Stream	Group	Classification	Tonnage (Mt)	Li (ppm)	B (ppm)	Li_2CO_3 (wt. %)	H_3BO_3 (wt. %)	Li_2CO_3 (kt)	H_3BO_3 (kt)
Stream 1 (> 5,000 ppm B)	Upper Zone B5 Unit	Measured	29.0	1,900	17,850	1.0	10.2	290	2,950
		Indicated	41.0	1,750	17,300	0.9	9.9	380	4,050
		Inferred	9.2	1,950	14,900	1.0	8.5	100	780
		Total	**79.1**	**1,800**	**17,200**	**1.0**	**9.8**	**770**	**7,790**
	Upper Zone M5 Unit	Measured	0.5	2,450	5,450	1.3	3.1	10	20
		Indicated	1.8	1,600	6,550	0.9	3.8	20	70
		Inferred	0.0	0	0	0.0	0.0	0	0
		Total	**2.3**	**1,800**	**6,300**	**1.0**	**3.6**	**20**	**80**
	Upper Zone S5 Unit	Measured	0.7	1,800	6,250	0.9	3.6	10	30
		Indicated	2.2	950	6,700	0.5	3.8	10	90
		Inferred	0.0	0	0	0.0	0.0	0	0
		Total	**2.9**	**1,150**	**6,600**	**0.6**	**3.8**	**20**	**110**
	Upper Zone Total	Measured	30.2	1,900	17,350	1.0	9.9	310	2,990
		Indicated	45.0	1,700	16,350	0.9	9.4	400	4,210
		Inferred	9.2	1,950	14,900	1.0	8.5	100	780
		Total	**84.3**	**1,800**	**16,550**	**1.0**	**9.5**	**810**	**7,980**
	Lower Zone L6 Unit	Measured	13.6	1,350	7,650	0.7	4.4	100	590
		Indicated	47.3	1,350	11,400	0.7	6.5	350	3,080
		Inferred	11.6	1,350	12,750	0.7	7.3	80	850
		Total	**72.5**	**1,350**	**10,900**	**0.7**	**6.2**	**530**	**4,520**
	Total Stream 1 (all zones)	Measured	43.8	1,750	14,350	0.9	8.2	400	3,590
		Indicated	92.2	1,500	13,800	0.8	7.9	750	7,280
		Inferred	20.8	1,650	13,700	0.9	7.8	180	1,630
		Total	**156.8**	**1,600**	**13,950**	**0.8**	**8.0**	**1,330**	**12,500**
Stream 2 (> 1,090 ppm Li, no B COG)	Upper Zone B5 Unit	Indicated	0.0	2,200	4,150	1.2	2.4	0	0
		Inferred	0.0	0	0	0.0	0.0	0	0
		Total	**0.0**	**2,200**	**4,150**	**1.2**	**2.4**	**0**	**0**
	Upper Zone M5 Unit	Indicated	60.2	2,400	1,300	1.3	0.7	770	450
		Inferred	14.9	2,500	750	1.3	0.4	200	60
		Total	**75.1**	**2,450**	**1,200**	**1.3**	**0.7**	**970**	**510**
	Upper Zone S5 Unit	Indicated	16.6	1,700	1,350	0.9	0.8	150	130
		Inferred	3.5	1,500	400	0.8	0.2	30	10
		Total	**20.1**	**1,650**	**1,200**	**0.9**	**0.7**	**180**	**140**
	Upper Zone Total	Indicated	76.8	2,250	1,300	1.2	0.8	920	580
		Inferred	18.4	2,300	650	1.2	0.4	230	70
		Total	**95.2**	**2,250**	**1,200**	**1.2**	**0.7**	**1,150**	**650**
	Lower Zone L6 Unit	Indicated	81.7	1,500	1,600	0.8	0.9	650	750
		Inferred	26.5	1,600	1,050	0.8	0.6	220	160
		Total	**108.2**	**1,500**	**1,450**	**0.8**	**0.8**	**870**	**910**
	Total Stream 2 (all zones)	Indicated	158.5	1,850	1,450	1.0	0.8	1,570	1,330
		Inferred	44.9	1,900	900	1.0	0.5	450	230
		Total	**203.4**	**1,850**	**1,350**	**1.0**	**0.8**	**2,020**	**1,560**
Grand Total Both Streams and All Units			**360.2**	**1,750**	**6,850**	**0.9**	**3.9**	**3,350**	**14,060**

Notes:

1. mt = million tonnes; Li = lithium; B = boron; ppm = parts per million; Li_2CO_3 = lithium carbonate; H_3BO_3 = boric acid; kt = thousand tonnes.

2. Totals may differ due to rounding, Mineral Resources reported on a dry in-situ basis. Lithium is converted to Equivalent Contained Tonnes of Lithium Carbonate (Li_2CO_3) using a stochiometric conversion factor of 5.322, and boron is converted to Equivalent Contained Tonnes of Boric Acid (H_3BO_3) using a stochiometric conversion factor of 5.718. Equivalent stochiometric conversion factors are derived from the molecular weights of the individual elements which make up Lithium Carbonate (Li_2CO_3) and Boric Acid (H_3BO_3).

3. The statement of estimates of Mineral Resources has been compiled by Mr. Jerry DeWolfe, who is a full-time employee of WSP Canada Inc. (WSP; formerly Golder) and a Professional Geologist ('P.Geo'.) with the Association of Professional Engineers and Geoscientists of Alberta ('APEGA'), a "Recognized Professional Organization" included in a list promulgated by the ASX from time to time. Mr. DeWolfe has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity that he has undertaken to qualify as a Competent Person as defined in the JORC Code (2012).

4. All Mineral Resource figures reported in the table above represent estimates at March 31, 2023. Mineral Resource estimates are not precise calculations, being dependent on the interpretation of limited information on the location, shape and continuity of the occurrence and on the available sampling results. The totals contained in the above table have been rounded to reflect the relative uncertainty of the estimate.

5. Mineral Resources are reported in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (The Joint Ore Reserves Committee Code – JORC 2012 Edition).

6. The Mineral Resource estimate is the result of determining the mineralized material that has a reasonable prospect of economic extraction. In making this determination, constraints were applied to the geological model based upon a pit optimization analysis that defined a conceptual pit shell limit. The conceptual pit shell was based upon a 5,000ppm boron cut-off grade for HiB-Li mineralisation and 1,090ppm lithium cut-off grade for LoB-Li mineralization below 5,000ppm boron. The pit shell was constrained by a conceptual Mineral Resource optimized pit shell for the purpose of establishing reasonable prospects of eventual economic extraction based on potential mining, metallurgical and processing grade parameters identified by mining, metallurgical and processing studies performed to date on the Project. Key inputs in developing the Mineral Resource pit shell included a 5,000ppm boron cut-off grade for HiB-Li mineralisation and 1,090ppm lithium cut-off grade for LoB-Li mineralization; mining cost of US$2.67/tonne plus $0.0059/tonne-vertical metre of haulage; plant feed processing and grade control costs of US$45.45/tonne of plant feed; boron and lithium recovery of 83.5% and 81.8%, respectively; boric acid sales price of US$700/tonne; lithium carbonate sales price of US$10,000/tonne; and sales/transport costs of US$160/tonne of product.

In December 2022, the United States Fish and Wildlife Service (USFWS) listed Tiehm's buckwheat as an endangered species under the Endangered Species Act (ESA) and has designated critical habitat by way of applying a 500 m radius around several distinct plant populations that occur on the Project site. ioneer is committed to the protection and conservation of the Tiehm's buckwheat. The Project's Mine Plan of Operations submitted to the BLM in July 2022 and currently under NEPA review has no direct impact on Tiehm's buckwheat and includes measures to minimise and mitigate for indirect impacts within the designated critical habitat areas identified.

The mineral resource pit shell used to constrain the March 31, 2023, mineral resource estimate was not adjusted to account for any impacts from avoidance of Tiehm's buckwheat or minimisation of disturbance within the designated critical habitat. Estimates run inside the avoidance polygons identified 29.4 Mt at 1,650 ppm Li and 9,000 ppm B (both HiB-Li and LoB-Li streams combined), reflecting approximately 8% of the March 2023 global Mineral Resource estimate for the Project. The tonnes and grade within the avoidance polygons have not been removed from the Mineral Resources for the March 2023 estimate. Environmental and permitting assumptions and factors will be taken into consideration during future modifying factors studies for the Project. These permitting assumptions and factors may result in potential changes to the Mineral Resource footprint in the future.

Comparison with Previous Resource

The Table below presents a summary comparison of the current March 31, 2023 Mineral Resource estimate against the previous Mineral Resource estimate for the Project, prepared by Golder (now WSP) in April 2020 in association with the 2020 DFS.

Processing Stream	Group	Classification	Tonnes (Mt)	Li (ppm)	B (ppm)	Li_2CO_3 (wt. %)	H_3BO_3 (wt. %)	Li_2CO_3 (kt)	H_3BO_3 (kt)
Stream 1 (> 5,000 ppm B)	March 2023 Resource	Mea+Ind	136.0	1,600	13,950	0.8	8.0	1,150	10,850
		Inf	20.8	1,650	13,700	0.9	7.8	180	1,650
		Total	**156.8**	**1,600**	**13,950**	**0.8**	**8.0**	**1,330**	**12,500**
	April 2020 Resource	Mea+Ind	126.9	1,600	14,250	0.9	8.2	1,080	10,350
		Inf	19.4	1,600	13,800	0.9	7.9	170	1,550
		Total	**146.3**	**1,600**	**14,200**	**0.9**	**8.1**	**1,250**	**11,900**
	Variation	Mea+Ind	9.2	-10	-300	0.0	-0.2	70	520
		Inf	1.4	10	-110	0.0	-0.1	10	100
		Grand Total	**10.5**	**-10**	**-280**	**0.0**	**-0.2**	**80**	**610**
Stream 2 (> 1,090 ppm Li, no B COG)	March 2023 Resource	Ind	158.5	1,860	1,470	1.0	0.8	1,570	1,330
		Inf	44.9	1,880	890	1.0	0.5	450	230
		Total	**203.4**	**1,850**	**1,350**	**1.0**	**0.8**	**2,020**	**1,550**
	April 2020 Resource[1]	Ind	0.0	0	0	0.0	0.0	0	0
		Inf	0.0	0	0	0.0	0.0	0	0
		Total	**0.0**	**0**	**0**	**0.0**	**0.0**	**0**	**0**
	Variation	Ind	158.5	1,860	1,470	1.0	0.8	1,570	1,330
		Inf	44.9	1,880	890	1.0	0.5	450	230
		Grand Total	**203.4**	**1,860**	**1,340**	**1.0**	**0.8**	**2,020**	**1,550**

The updated March 31, 2023 Mineral Resource estimate has been constrained by applying a 5,000 ppm Boron cut-off grade to HiB-Li mineralisation within the B5, M5, and L6 geological units as well as a 1,090 ppm Lithium cut-off grade to LoB-Li mineralisation in the M5, S5 and L6 geological units. Both styles of mineralisation have also been constrained by the application of a single high-level optimised resource pit shell.

Relative to the April 2020 Mineral Resource estimate, the updated March 2023 Mineral Resource estimate for the Project reflects a significant increase in the estimated resource tonnes, including the reporting of the Mineral Resources for the LoB-Li mineralisation for the first time for the Project.

The updated Mineral Resource estimate also presents a small increase to the HiB-Li Mineral Resource tonnes as the impact of the LoB-Li mineralisation resulted in a net expansion of the constraining Mineral Resource pit shell.

As all four mineralised layers are tabular and stacked vertically, the increased Mineral Resource sits entirely within the same 3 square kilometre (km^2) area as the April 2020 Mineral Resource estimate.

Summary of Resource Estimate Parameters and Reporting Criteria

In accordance with ASX Listing Rules and the JORC Code (2012 Edition), a summary of the material information used to estimate the Mineral Resource is summarised below (for further information please refer to Table 1 in Appendix D).

- The Rhyolite Ridge Mineral Resource area extends over a north-south strike length of 2,450m (from 4,184,000 mN – 4,186,450 mN), has a maximum width of 1,250m (424,150 mE – 425,400 mE) and includes the 420m vertical interval from 1,920mRL to 1,500 mRL.
- The Rhyolite Ridge Project tenements (unpatented mining claims) are owned by ioneer Minerals Corporation, a company wholly owned by ioneer Ltd. The unpatented mining claims are located on US federal land administered by the Bureau of Land Management (**BLM**).

Geology and Geological Interpretation

- Lithium and boron mineralisation is stratiform in nature and is hosted within Tertiary-age carbonate-rich sedimentary rock, deposited in a lacustrine environment in the Basin and Range terrain of Nevada, USA.

Drilling Techniques and Hole Spacing

- Drill holes used in the Mineral Resource estimate included 42 reverse circulation (**RC**) holes and 65 core holes for a total of 8,952m within the defined mineralisation. The full database for the South Basin contains records for 109 drill holes for 24,300m of drilling.
- Drill hole spacing is 100m by 100m (or less) over most of the deposit. Spacing increases to approximately 200m by 300m along the eastern margin of the deposit.
- Drill holes were logged for a combination of geological and geotechnical attributes. The core has been photographed and measured for RQD and core recovery.

Sampling and Sub-Sampling Techniques

- Drilling was conducted by American Lithium Minerals Inc., the previous owner of the property between 2010 and 2011 and by ioneer in 2017 to 2019. For RC drilling, a 12.7-centimetre (**cm**) hammer was used with sampling conducted on 1.52m intervals and split using a rig mounted rotary splitter. The hammer was replaced with a tri-cone bit in instances of high groundwater flow. For diamond core, HQ core size diameter with standard tube was used. Core recoveries of 97% were achieved by ioneer at the project. The core was sampled as half core at 1.52m intervals using a standard electric core saw.

Sampling Analysis Method

- Samples were submitted to ALS Minerals Laboratory in Reno, Nevada for sample preparation and analysis. The entire sample was oven dried at 105˚ and crushed to -2 millimetre (**mm**). A sub-sample of the crushed material was then pulverised to better than 85% passing -75 microns (**µm**) using a LM5 pulveriser. The pulverised sample was split with multiple feed in a Jones riffle splitter until a 100-200 gram (**g**) sub-sample was obtained for analysis.
- Analysis of the samples was conducted using aqua regia 2-acid and 4-acid digest for ICP-MS on a multi-element suite. This method is appropriate for understanding sedimentary lithium deposits and is a total method.

- Standards for lithium, boron, strontium and arsenic and blanks were routinely inserted into sample batches and acceptable levels of accuracy were reportedly obtained. Based on an evaluation of the quality assurance and quality control (**QA/QC**) results all assay data has been deemed by the WSP Competent Person as suitable and fit for purpose in Mineral Resource estimation.

Cut-off Grades

- The Mineral Resource estimate presented in this Report has been constrained by the application of an optimized Mineral Resource pit shell. The Mineral Resource pit shell was developed using Maptek Vulcan Mine Planning software.

- The Mineral Resource estimate assumes the use of two processing streams: one which can process ore with boron content greater than 5,000 ppm and one which can process ore with boron content less than 5,000 ppm.

- The Mineral Resource estimate has been constrained by applying a 5,000 ppm Boron cut-off grade to HiB-Li mineralisation within the B5, M5, and L6 geological units as well as a 1,090 ppm Lithium cut-off grade to LoB-Li mineralisation in the M5, S5 and L6 geological units.

- Key input parameters and assumptions for the Mineral Resource pit shell included the following:
  - B cut-off grade of 5,000 ppm for HiB-Li processing stream and no B cut-off grade for LoB-Li processing stream
  - No Li cut-off grade for HiB-Li processing stream and Li cut-off grade of 1,090 ppm for LoB-Li processing stream
  - Overall pit slope angle of 35 degrees in the alluvium and 42 degrees in other rock units (wall angle guidance provided by EnviroMINE, Inc., who developed the geotechnical design).
  - Mining cost of US$2.67/tonne (t) plus US$0.0059/t-vertical foot of haulage.
  - Ore processing and grade control costs of US$45.45/t of ore for HiB-Li Processing Stream and US$40.69/t of ore for LoB-Li Processing Stream.
  - Boron and Li recovery of 83.5% and 81.8% respectively for HiB-Li Processing Stream.
  - Boron Recovery for LoB-Li Processing Stream variable by lithology as follows: 72% in M5 Unit, 79.5% in B5 unit, 75% in S5 unit, and 81% in L6 unit.
  - Lithium Recovery for LoB-Li Processing Stream variable by lithology as follows: 76% in M5 unit, 85% in B5 unit, 85% in S5 unit, and 86% in L6 unit.
  - Boric Acid sales price of US$700/t.
  - Lithium Carbonate sales price of US$10,000/t.
  - Sales/Transport costs of US$160/t of product.

Estimation Methodology

- Drill core samples were composited to 1.52m composite lengths prior to interpolation of grade data into the block model. Composite lengths honoured geological contacts (i.e. composites did not span unit contacts). The composite length was selected based on the median sample length from the drill hole assay database.

- Based on a statistical analysis, extreme B grade values were identified in some of the units other than the targeted B5, M5 and L6 units. As a result, restricted interpolation was applied to B grades in units other than the B5, M5 and L6.

- The geological model was developed as a gridded surface stratigraphic model and a stratigraphically constrained grade block model using MineScape (v6.1.1) StratModel and BlockModel, which are computer-assisted geological, grade modelling, and estimation software applications.
- Domaining in the model was constrained by the roof and floor surfaces of the geological units. The unit boundaries were modelled as hard boundaries, with samples interpolated only within the unit in which they occurred.
- The geological model used as the basis for estimating Mineral Resources was developed as a stratigraphic gridded surface model using a 7.6m regularized grid. The grade block model was developed using a 15.2m north-south by 15.2m east-west by 1.52m vertical parent block dimension with maximum sub-celling dimensions of 3.8m by 3.8m by 0.4m. The grid cell and block size dimensions represent 25 percent of the nominal drill hole spacing across the model area.
- Inverse Distance Squared ('ID^{2}') grade interpolation was used for the estimate, constrained by stratigraphic unit roof and floor surfaces from the geological model. Up to four passes were used to estimate the blocks in the model and more than 99% of blocks were filled in the first two passes.
- The density values used to convert volumes to tonnages were assigned on a by-geological unit basis using mean values calculated from 249 density samples collected from drill core during the 2010-2011 and drilling programs. The density values ranged from 1.80 grams per cubic centimetre ('g/cm^{3}') to 2.11g/cm^{3}. The density analyses were performed using the Archimedes-principle (water displacement) method for density determination, with values reported in dry basis.

Classification Criteria

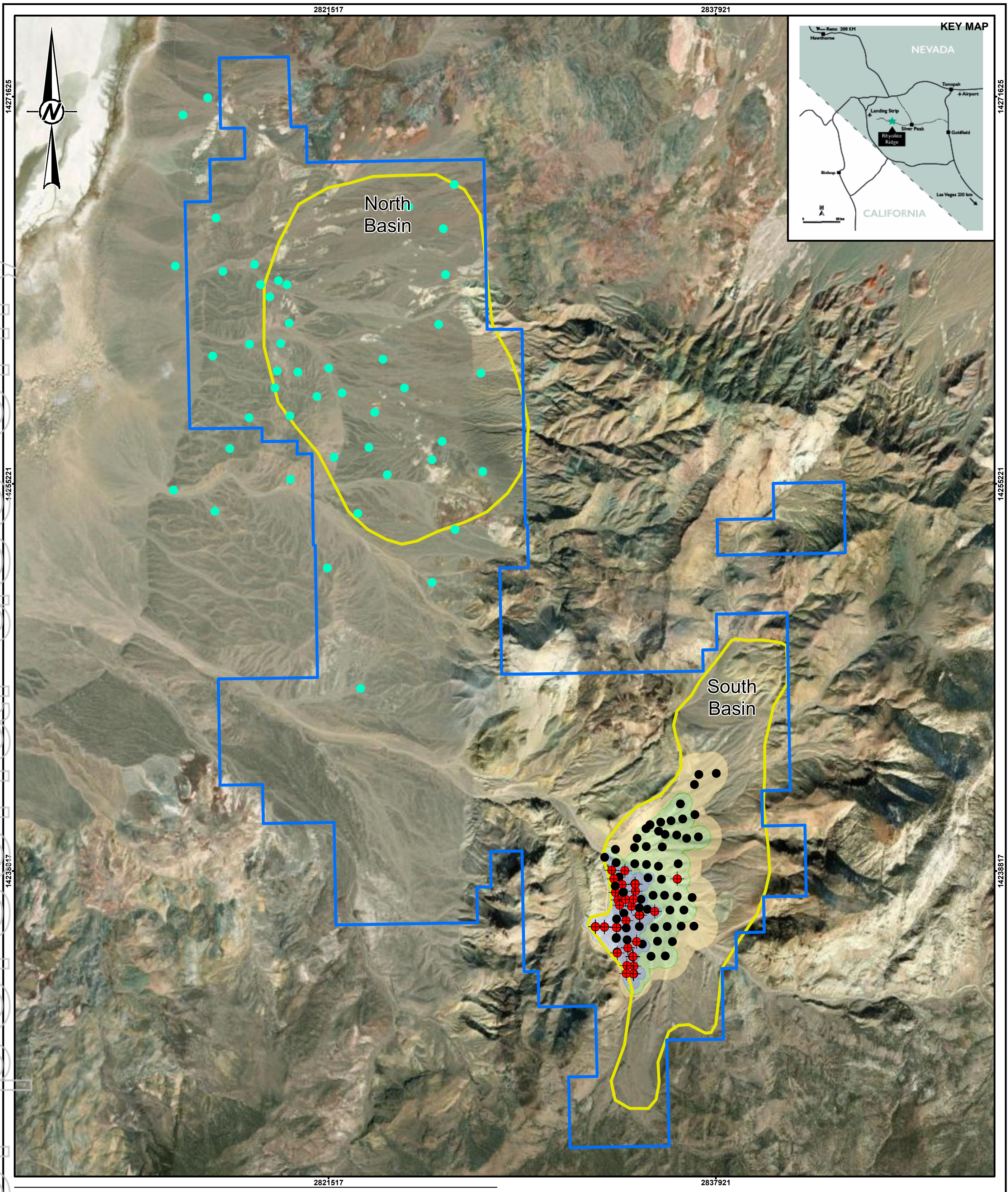
- Estimated Mineral Resources were classified as follows:
  - Measured: 152.5m spacing between points of observation, with sample interpolation from a minimum of two drill holes.
  - Indicated: 305m spacing between points of observation, with sample interpolation from a minimum of two drill holes.
  - Inferred: 610m spacing between points of observation, with sample interpolation from a minimum of two drill holes.
- The Mineral Resource classification has included the consideration of data reliability, spatial distribution and abundance of data and continuity of geology and grade parameters.

Mining and Metallurgical Methods and Parameters

- The Mineral Resource estimate presented in this Report was developed with the assumption that the HiB-Li mineralization within the Mineral Resource pit shell has a reasonable prospect for eventual economic extraction using current conventional open pit mining methods.
- The basis of the mining assumptions made in establishing the reasonable prospects for eventual economic extraction of the HiB-Li mineralization are based on preliminary results from mine design and planning work that is in-progress as part of an ongoing Feasibility Study for the Project.

- The basis of the metallurgical assumptions made in establishing the reasonable prospects for eventual economic extraction of the HiB-Li mineralization are based on results from metallurgical and material processing work that was developed as part of the ongoing Feasibility Study for the Project. This test work was performed using current processing and recovery methods for producing Boric acid and Lithium carbonate products.

A second process stream to recover Li from low boron mineralized (LoB-Li) units is being developed. Current results indicate a reasonable process and expectation for economic extraction of the LoB-Li from the S5, M5 and L6 units. This test work was performed using current processing and recovery methods for producing Boric acid and Lithium carbonate products.



LEGEND

Tenement Boundary	Measured Resource
Basin Outline	Indicated Resource
● 2018-2019 Drill Hole	Inferred Resource
● Pre-2018 Drill Hole	
● US Borax Drill Hole	

0 2,500 5,000

1:70,000 METRES

NOTE(S)

OUTLINE OF IONEER MINING CLAIMS OVER RHYOLITE RIDGE NORTH AND SOUTH BASINS

REFERENCE(S)

DATUM: NAD 83 STATE PLANE NEVADA WEST

CLIENT
IONEER LTD.

CONSULTANT

YYYY-MM-DD	2023-04-24
DESIGNED	JS
PREPARED	JS
REVIEWED	JDW
APPROVED	JDW

PROJECT
RHYOLITE RIDGE PROJECT - SOUTH BASIN
JORC RESOURCE REPORT

TITLE
NORTH & SOUTH BASIN PLAN MAP

PROJECT NO. 21490443
CONTROL NO.
FIGURE 01

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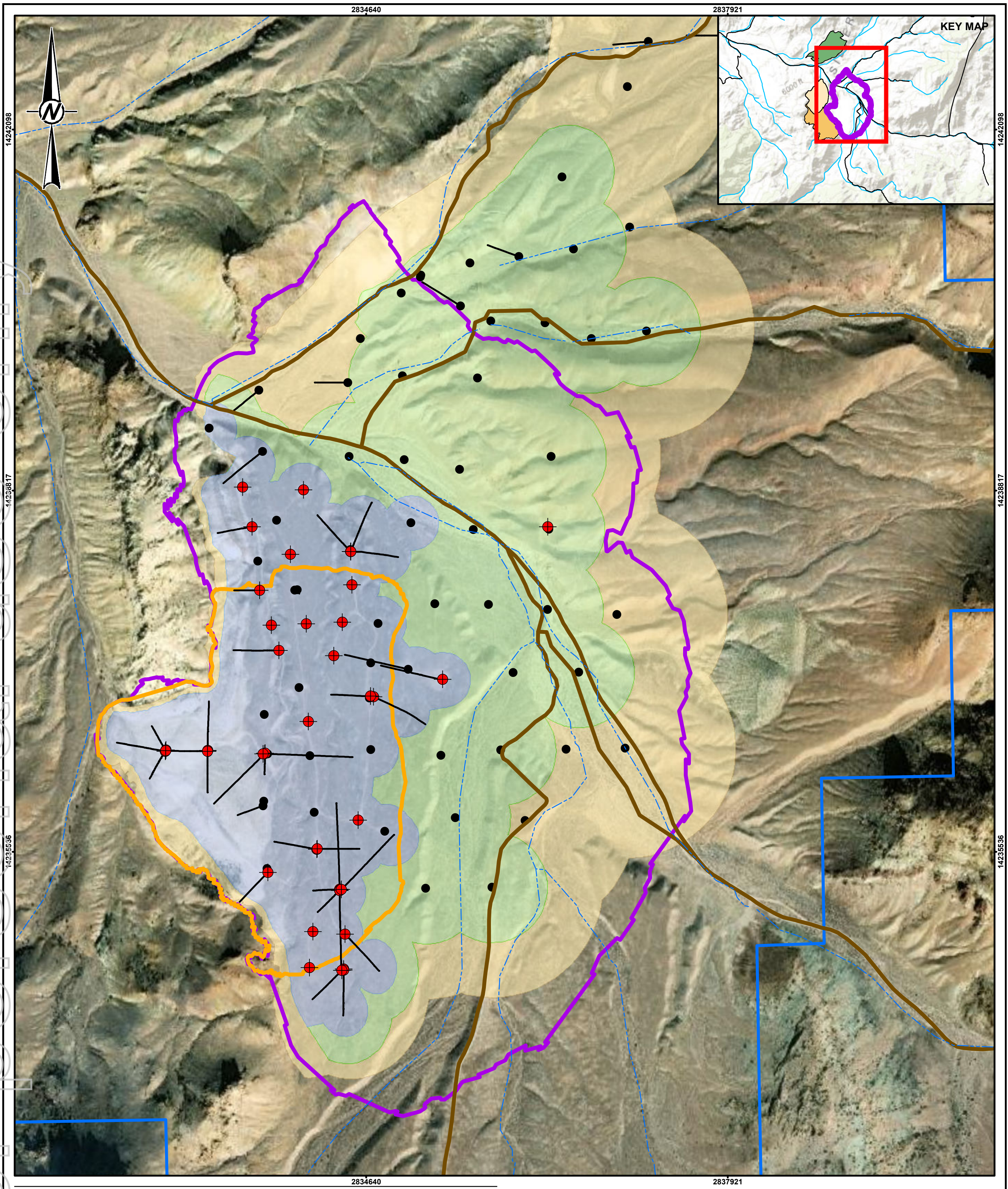

LEGEND

- Tenement Boundary
- 2018-2019 Drill Hole
- ● Pre-2018 Drill Hole
- Inclined Drill Hole Trace
- Conceptual Quarry 1
- Conceptual Quarry 2

Mineral Resource Classification

- Measured Resource
- Indicated Resource
- Inferred Resource
- Roads
- Stream

0 500 1,000

1:15,000 METRES

NOTE(S)

LOCATION OF CONCEPTUAL QUARRY AND SURFACE PROJECTION OF UPPER ZONE (B5) RESOURCES

REFERENCE(S)

DATUM: NAD 83 STATE PLANE NEVADA WEST

CLIENT
IONEER LTD.

ioneer

CONSULTANT

wsp

YYYY-MM-DD	2023-04-24
DESIGNED	JS
PREPARED	JS
REVIEWED	JDW
APPROVED	JDW

PROJECT
RHYOLITE RIDGE PROJECT - SOUTH BASIN
JORC RESOURCE REPORT

TITLE
MINERAL RESOURCE CLASSIFICATION,
DRILL HOLES AND CONCEPTUAL QUARRY OUTLINES

PROJECT NO.	CONTROL	FIGURE
21490443		02

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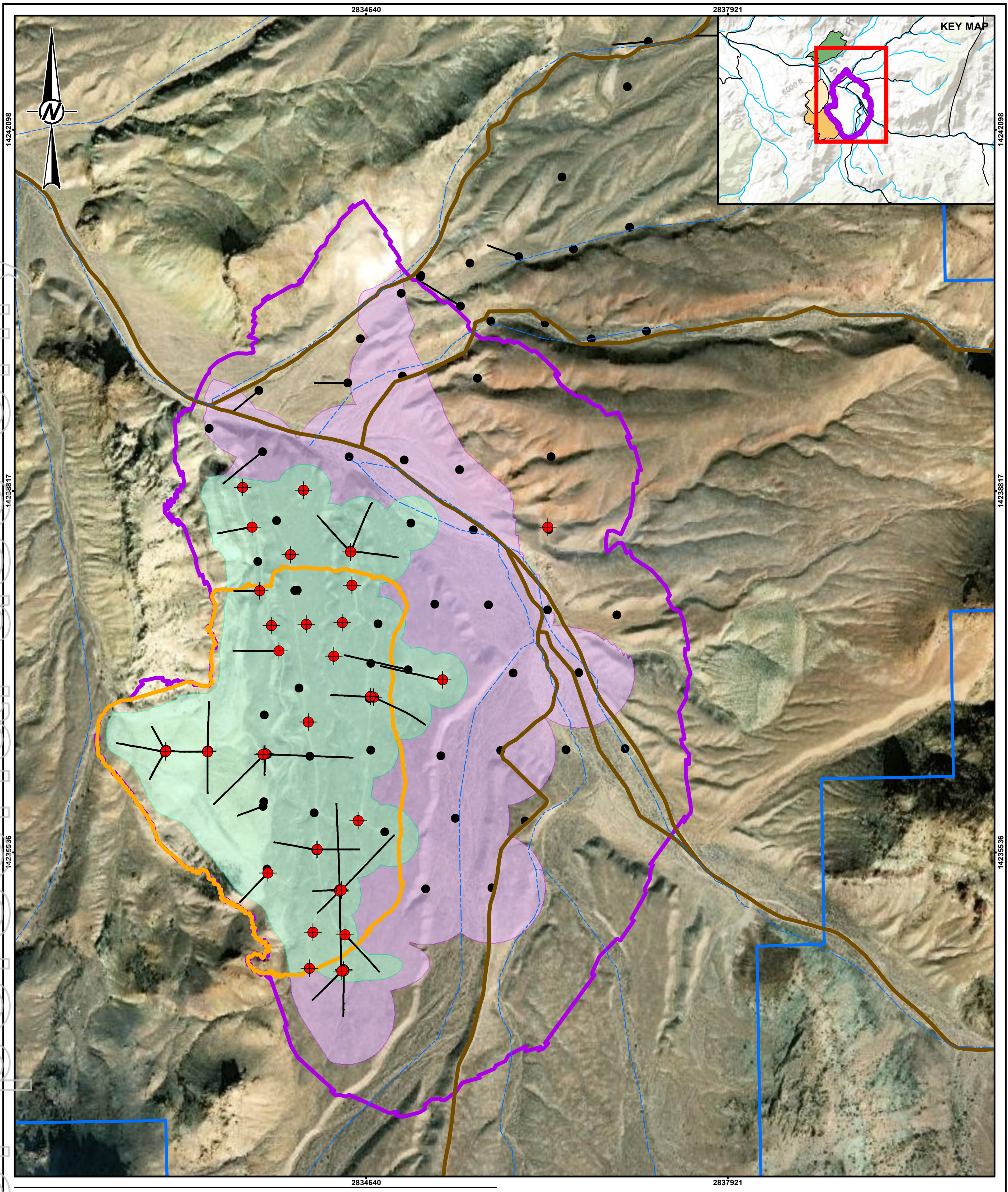

LEGEND

	Tenement Boundary
●	2018-2019 Drill Hole
●	Pre-2018 Drill Hole
—	Inclined Drill Hole Trace
	Conceptual Quarry 1
	Conceptual Quarry 2

Mineral Reserve Classification

🟩	Proven Reserves
🟪	Probable Reserves
—	Roads
- - -	Stream

0 500 1,000

1:15,000 METRES

NOTE(S)

LOCATION OF CONCEPTUAL QUARY AND SURFACE PROJECTION OF UPPER ZONE (B5) RESOURCES

REFERENCE(S)

DATUM: NAD 83 STATE PLANE NEVADA WEST

CLIENT
IONEER LTD.

PROJECT
RHYOLITE RIDGE PROJECT - SOUTH BASIN
JORC RESOURCE REPORT

CONSULTANT

YYYY-MM-DD	2023-04-24
DESIGNED	JS
PREPARED	JS
REVIEWED	JDW
APPROVED	JDW

TITLE
MINERAL RESERVE CLASSIFICATION,
DRILL HOLES AND CONCEPTUAL QUARRY OUTLINES

PROJECT NO. 21490443

CONTROL

FIGURE 03

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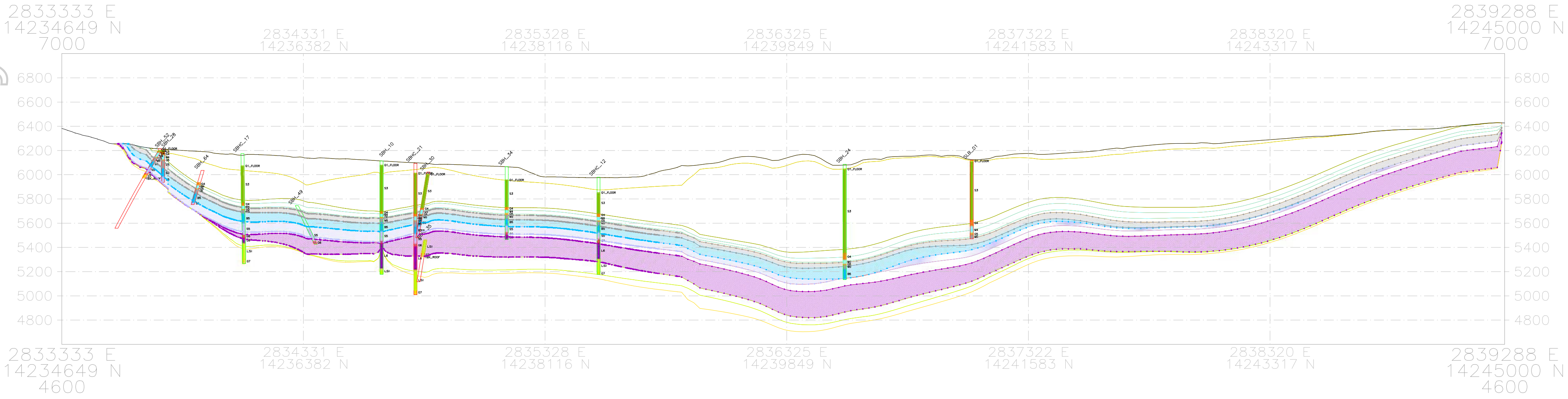


Looking Northwest

LEGEND

▨ M5

▨ B5 **Upper Zone**

▨ S5

▨ L6 **Lower Zone**

☐ Drill Hole (Back)

☐ Drill Hole (Front)

KEY MAP LEGEND

☐ Tenement Boundary

☐ Conceptual Quarry 1

☐ Conceptual Quarry 2

— Road

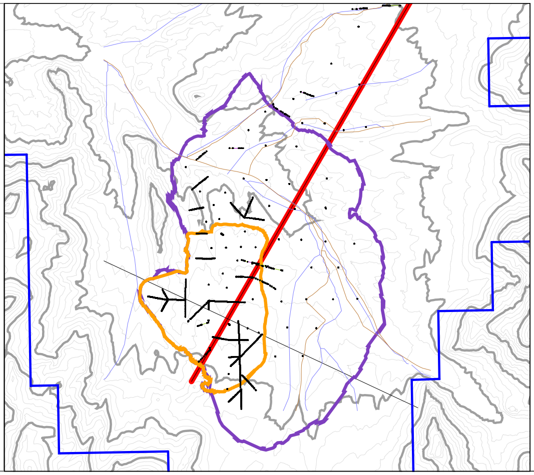
— Stream

— Active Section

• Drill Hole

— Major Contour (250 ft)

— Minor Contour (50 ft)



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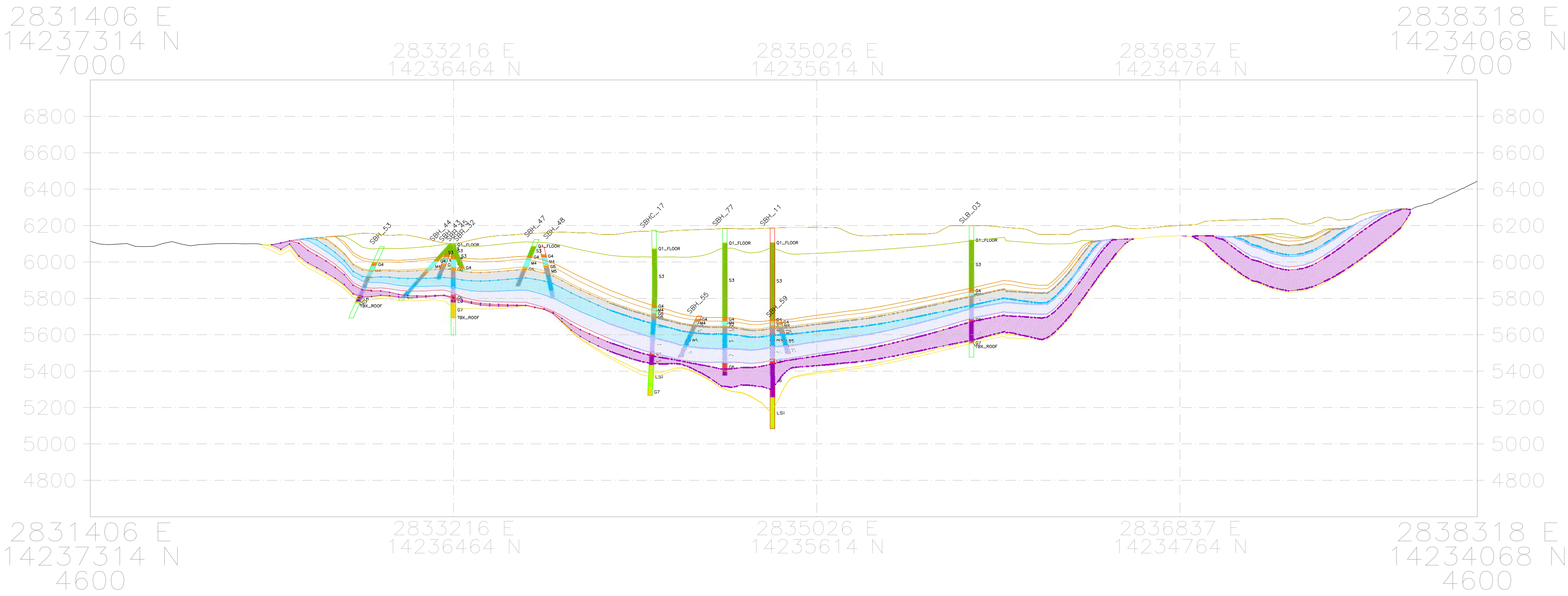
CLIENT	ioneer Ltd.
PROJECT	Rhyolite Ridge Project - South Basin JORC
TITLE	Cross-Section Looking Northwest

YYYY-MM-DD	2023-04-24
PREPARED	JS
DESIGN	JS
REVIEW	JDW
APPROVED	JDW

PROJECT NO. 21490443 FIGURE 04



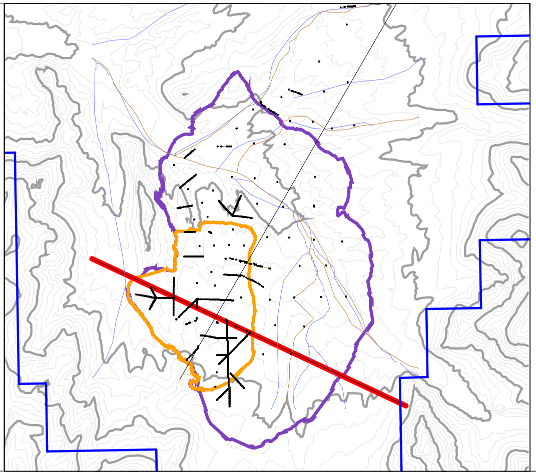
Looking Northeast

LEGEND

▨	M5	
🟦	B5	**Upper Zone**
▨	S5	
🟪	L6	**Lower Zone**
🟥	Drill Hole (Back)	
🟩	Drill Hole (Front)	

KEY MAP LEGEND

▨	Tenement Boundary
🟧	Conceptual Quarry 1
🟪	Conceptual Quarry 2
—	Road
—	Stream
—	Active Section
●	Drill Hole
—	Major Contour (250 ft)
—	Minor Contour (50 ft)



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CLIENT	ioneer Ltd.		
PROJECT	Rhyolite Ridge Project - South Basin JORC		
TITLE	Cross-Section Looking Northeast		
		YYYY-MM-DD	2023-04-24
		PREPARED	JS
		DESIGN	JS
		REVIEW	JDW
		APPROVED	JDW
PROJECT NO.	21490443	FIGURE	05

The following table provides a summary of important assessment and reporting criteria used at the ioneer Ltd. Rhyolite Ridge Project (the Project) for the reporting of exploration results and Lithium-Boron Mineral Resources and Ore Reserves in accordance with the Table 1 checklist in The Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code, 2012 Edition). Table 1 is a checklist or reference for use by those preparing Public Reports on Exploration Results, Mineral Resources, and Ore Reserves.

JORC TABLE 1

SECTION 1 SAMPLING TECHNIQUES AND DATA

(Criteria listed in this section apply to all succeeding sections.)

Criteria	JORC Code 2012 Explanation	Commentary

Sampling Techniques	• *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling*	• The nature and quality of the sampling from the various sampling programs includes the following:
		  • Reverse circulation (RC) Drilling: a sample was collected every 1.52 metre (m) from a 127-millimetre (**mm**) diameter drill hole and split using a rig-mounted rotary splitter. Samples, with a mean weight of 4.8 kilograms (**kg**) were submitted to ALS Minerals laboratory in Reno, NV where they were processed for assay. RC samples represent 55% of the total intervals sampled to date.
		  • Core Drilling: Core samples were collected from HQ (63.5 mm core diameter) and PQ (85.0 mm core diameter) drill core, on a mean interval of 1.52 m, and cut using a water-cooled diamond blade core saw. Samples, with a mean weight of 1.8 kg, were submitted to ALS where they were proceeded for assay.
		  • Drill Hole Deviation: Inclined core drill holes were surveyed to obtain downhole deviation by the survey company (Minex Surveying) or drilling company (Idea Drilling) with a downhole Reflex Mems Gyros tool, for all but three of the drill holes. One drill hole could not be surveyed due to tool error (SBH-72), and two were intentionally surveyed using an Acoustic Televiewer (SBH-60, SBH-79).
		• Trenches: In addition to sampling from drill holes, samples were collected from 19 mechanically excavated trenches in 2010. The trenches were excavated from the outcrop/subcrop using a backhoe and or hand tools. Chip samples were then collected from the floor of the trench. Due to concerns with correlation and

Criteria	JORC Code 2012 Explanation	Commentary
		reliability of the results from the trenches, The Competent Person has not included any of this data in the geological model or Mineral Resource estimate.

	• *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*	• Measures taken to ensure sample representivity include the following:
		  • Due to the nature of RC samples, lithological boundaries are not easily honoured; therefore, continuous 1.52 m sample intervals were taken to ensure as representative a sample as possible. Lithological boundaries were adjusted as needed by the senior ioneer geologist once the assay results were received.
		  • Core sample intervals were selected to reflect visually identifiable lithological boundaries wherever possible, to ensure sample representivity. In cases where the lithological boundaries were gradational, the best possible interval was chosen.
		• All chip and core sampling were completed by or supervised by a senior ioneer geologist. The senior ioneer and Newfields geologists referenced here, and throughout this Table 1, have sufficient relevant experience for the exploration methods employed, the type of mineralization being evaluated, and are registered professional geologists in their jurisdiction; however, they are not Competent Persons according to the definition presented in JORC as they are not members of one of the Recognized Professional Organization" included in the ASX list referenced by JORC.
		• The Competent Person was not directly involved during the exploration drilling programs and except for observing sampling procedures on two drill holes during the site visit, was not present to observe sample selection. Based on review of the procedures during the site visit and subsequent review of the data, it is the opinion of the Competent Person that the measures taken to ensure sample representivity were reasonable for the purpose of estimating Mineral Resources.

	• *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry*	• Aspects of the determination of mineralization included visual identification of mineralized intervals by a senior ioneer geologist

Criteria	JORC Code 2012 Explanation	Commentary
	standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information	using lithological characteristics including clay and carbonate content, grain size and the presence of key minerals such as Ulexite (hydrated sodium calcium borate hydroxide) and Searlesite (sodium borosilicate). A visual distinction between some units, particularly where geological contacts were gradational was initially made. Final unit contacts were then determined by a senior ioneer geologist once assay data were available. • The Competent Person was not directly involved during the exploration drilling programs; however, the visual identification of mineralized zones and the process for updating unit and mineralized contacts was reviewed with the ioneer senior geologist during the site visit. The Competent Person evaluated the identified mineralized intervals against the analytical results and agrees with the methodology used by ioneer to determine material mineralization.
Drilling techniques	• *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc..) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).*	• Both RC and core drilling techniques have been used on the Project. Exploration drilling programs targeting Lithium-Boron (**Li-B**) mineralization on the Project have been implemented by American Lithium Minerals Inc. (2010-2012) and ioneer (formerly Global Geoscience) in 2016, 2017, 2018 and 2019. • Prior to 2018, all RC drilling was conducted using a 127 mm hammer. All pre-2018 core drill holes were drilled using HQ sized core with a double-tube core barrel. • For the 2018-2019 drilling program, all core holes (vertical and inclined) were RC drilled through unconsolidated alluvium, then cored through to the end of the drill hole. All but two of the 41 core holes were drilled as PQ sized core, with the remaining two as HQ sized core. Drilling was completed using a triple-tube core barrel (split inner tube) which was preferred to a double-tube core barrel (solid inner tube) as the triple-tube improved core recovery and core integrity during core removal from the core barrel.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.*	• Prior to 2017, chip recovery was not recorded for the RC drilling therefore the Competent Person cannot comment on drill sample recovery for this period of drilling. • For the 2017 RC drilling program, the drill holes were geologically logged as they were being drilled; however, no estimates of chip

Criteria	JORC Code 2012 Explanation	Commentary
		recoveries were recorded. Therefore, the Competent Person cannot comment on drill sample recovery for this period of drilling. • For the 2010-2012 and 2016 core drilling programs, both core recovery and rock quality index (**RQD**) were recorded for each cored interval. Core recovery was determined by measuring the recovered linear core length and then calculating the recovered percentage against the total length of the core run from the drill advance. The core recovery for all the drilling ranged from 0% to 100%, with over 65 % of the drill holes having greater than 80% mean core recovery. The core recovery values were recorded by the logging geologist and reviewed by the senior ioneer geologist. The majority of the 2010-2012 and 2016 core drill holes reported greater than 95% recovery in the B5, M5 and L6 mineralized intervals. • For the 2018-2019 drilling program, both core recovery and RQD were recorded for each cored interval. Core recovery was determined by measuring the recovered linear core length and then calculating the recovered percentage against the total length of the core run from the drill advance. The core recovery for all the drilling ranged from 41% to 100%, with over 65% of the drill holes having greater than 90% mean core recovery. The core recovery values were recorded by the logging geologist and reviewed by the senior ioneer geologist. In the target mineralized intervals (M5, B5 & L6), the mean core recovery was 86% in the B5, 87% in the M5 and 95% in the L6 units, with most of the drill holes reporting greater than 90% recovery in the mineralized intervals. • The Competent Person considers the core recovery for the 2018-2019, 2016 and 2010-2012 core drilling programs to be acceptable based on statistical analysis which identified no grade bias between sample intervals with high versus low core recoveries. On this basis, the Competent Person has made the reasonable assumption that the sample results are reliable for use in estimating Mineral Resources.
	• *Measures taken to maximise sample recovery and ensure representative nature of the samples.*	• Chip recoveries were not recorded for the 2010-2012 and 2017 RC drilling programs, and there is no indication of measures taken to maximize sample recovery and ensure representative nature of samples.

Criteria	JORC Code 2012 Explanation	Commentary
		• No specific measures for maximizing sample recovery were documented for the 2010-2012 and 2016 core drilling programs. • During the 2018-2019 drilling program ioneer implemented the use of a triple-tube core barrel to maximize sample recovery and ensure representative nature of samples. A triple-tube core barrel generally provides improved core recovery over double-tube core barrels, resulting in more complete and representative intercepts for core logging, sampling and geotechnical evaluation. It also limited any potential sample bias due to preferential loss/gain of material.
	• *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• Chip recovery was not recorded for the 2010-2012 and 2017 RC drilling program and, therefore, there is no basis for evaluating the relationship between grade and sample recovery for samples from these programs. • Based on the Competent Person's review of the 2010-2012, 2016 and 2018-2019 drilling recovery and grade data there was no observable relationship between sample recovery and grade.
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.*	• All core and chip samples have been geologically logged to a level of detail to support appropriate Mineral Resource estimation, such that there are lithological intervals for each drill hole, with a correlatable geological/lithological unit assigned to each interval. • The 2018-2019 drilling was also geotechnically logged to a level of detail to support appropriate Mineral Resource estimation. • The Competent Person has reviewed all unit boundaries in conjunction with the ioneer senior geologist, and where applicable, adjustments have been made by the Competent Person to the mineralized units based on the assay results intervals to limit geological dilution.
	• *Whether logging is qualitative or quantitative in nature.*	• The RC and core logging were both qualitative (geological/lithological descriptions and observations) and quantitative (unit lengths, angles of contacts and structural features and fabrics).
	• *Core (or costean, channel, etc.) photography.*	• Core photography was completed on every core drill hole for the 2010-2012, 2016 and 2018-2019 core drilling programs. • All chip trays from the RC holes were also photographed during

Criteria	JORC Code 2012 Explanation	Commentary
		the various RC drilling programs.
	- *The total length and percentage of the relevant intersections logged.*	- Prior to 2018, a total length of 8,900 m of RC drilling and 6,000 m of core drilling was completed for the Project, 100% of which was geologically logged by a logging geologist and reviewed by the senior ioneer geologist. - For the 2018-2019 drilling, a total length of 300 m of RC drilling and 8,800 m of core drilling was completed for the Project, 100% of which was geologically logged by a logging geologist and reviewed by the senior ioneer geologist - For the 2018-2019 drilling, 86% of the 8,800 m of core was geotechnically logged by an engineering geologist/ geotechnical engineer and reviewed by the senior ioneer geologist. The Competent Person reviewed the geological core logging and sample selection for two complete drill holes.

Sub-sampling techniques and sample preparation	- *If core, whether cut or sawn and whether quarter, half or all core taken.*	- The following sub-sampling techniques and sample selection procedures apply to drill core samples:
		  - During the 2010-2012 and 2016 program, core samples were collected on a mean 1.52 m down hole interval and cut in two halves using a manual core splitter. The entire sample was submitted for analysis with no sub-sampling prior to submittal.
		  - During the 2018-2019 drilling program, core samples were collected for every 1.52 m down hole interval and cut using a water-cooled diamond blade core saw utilizing the following methodology for the two target units. For the M5 unit, ½ core samples were submitted for assay, while the remaining ½ core was retained for reference. For the B5 unit, ¼ core samples were submitted for assay, while ¼ was reserved for future metallurgical test work and ½ core was retained for reference.

	- *If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.*	- The following sub-sampling techniques and sample selection procedures apply to RC Chip Samples:
		  - Pre-2017 RC chips samples were collected using a wet rotary splitter approximately every 1.52 m depth interval. Two samples were collected for every interval (one main sample and one duplicate). Only the main sample was submitted for analysis.
		  - 2017 RC chip samples were collected using a wet rotary

Criteria	JORC Code 2012 Explanation	Commentary
		splitter attached to a cyclone. One, approximately 10 kg, sample was collected every 1.52 m depth interval. All samples were submitted for analysis.
	- *For all sample types, the nature, quality and appropriateness of the sample preparation technique.*	- The Competent Person considers the nature, type and quality of the sample preparation techniques to be appropriate based on the general homogeneous nature of the mineralized zones and the drilling methods employed to obtain each sample (i.e., RC and core).
	- *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*	- Quality control procedures adopted for sub-sampling to maximize representivity include the following: - During 2016-2017 and 2018-2019 drilling programs, field duplicate/replicate samples were obtained. For the 2017 RC drilling, a duplicate sample was collected every 20th sample. For the 2016 and 2018-2019 core drilling programs two ¼ core samples were taken at the same time and were analysed in sequence by the laboratory to assess the representivity. - Twin drill holes at the same site were drilled during the 2010-2012 drilling program. The twin drill hole pairing comprises one RC drill hole (SBH-04) and one core drill hole (SBHC-01). The Competent Person recommends twinning additional drill hole pairs as part of any future pre-production or infill drilling programs to allow for a more robust review of sample representivity. - The Competent Person reviewed the results of the duplicate/replicate sampling and twin drill holes. For the duplicate/replicate samples, the R^2 value is 0.99, which is very good. Visual observation of the lithological intervals and the assays for the twin drill holes show that they are very similar, despite the difference in drilling techniques.
	- *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.*	- The Competent Person considers the samples to be representative of the in-situ material as they conform to lithological boundaries determined during core logging. A review of the primary and duplicate sample analyses indicates a high degree of agreement between the two sample sets (R^2 value of 0.99).
	- *Whether sample sizes are appropriate to the grain size of*	- The Competent Person considers the sample sizes to be

Criteria	JORC Code 2012 Explanation	Commentary
	the material being sampled.	appropriate given the general homogeneous nature of the mineralized zones. The two main types of mineralization are lithium mineralization with high boron >/=5,000 parts per million (**ppm**) (**HiB-Li**) and lithium mineralization with low boron <5,000 ppm (**LoB-Li**). The HiB-Li mineralization occurs consistently throughout the B5, M5 and L6 target zones, while LoB-Li mineralization occurs throughout the M5, S5 and L6 units, and is not nuggety or confined to discreet high-grade and low-grade bands.

Quality of assay data and laboratory tests	- *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*	- The nature and quality of the assaying and laboratory procedures used include the following:
		  - All RC and core samples were processed, crushed, split, and then a sub-sample was pulverized by ALS Minerals in Reno, Nevada.
		  - All sub-samples were analysed by Aqua Regia with ICP mass spectrometry (**ICP-MS**) finish for 51 elements (including Lithium (**Li**)) and Boron (**B**) by NaOH fusion/ICP high grade analysis (>/=10,000 ppm B).
		  - Additionally, 95% of the 2018-2019 samples were analysed for Inorganic Carbon and 30% were analysed for Fluorine (**F**).
		  - The laboratory techniques are total.
		- The Competent Person considers the nature and quality of the laboratory analysis methods and procedures to be appropriate for the type of mineralization.

	- *For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc..*	- Not applicable to this Report, no geophysical tools, spectrometers, handheld XRF instruments were used on the Project.
	- *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	- The following Quality Assurance and Quality Control (**QA/QC**) procedures were adopted for the various drilling programs: - During the 2010-2012 program, Standard Reference Material (**SRM**) samples and a small number of field blanks were also inserted regularly into the sample sequence to QA/QC of the

Criteria	JORC Code 2012 Explanation	Commentary
		laboratory analysis. • For 2016-2017 program, a duplicate sample was collected every 20th primary sample. Field blanks and SRM's were also inserted approximately every 25 samples to assess QA/QC. • During the 2018-2019 program, QA/QC samples comprising 1 field blank and 1 SRM standard were inserted into each sample batch every 25 samples. Submission of field duplicates, laboratory coarse/pulp replicates and umpire assays were submitted in later stages of the 2018-2019 drilling program. • The Competent Person reviewed the SRM, field blanks and field duplicates and determined the following: • SRMs: Review of the five SRMs used determined that there was a reasonable variability for Li between the upper and lower control limits (± 2 standard deviation (**SD**)), however B shows an overall bias towards lower than expected values (i.e. less than the mean) for all sample programs. For each of the 5 SRMs, there were some sample outliers (both low and high); however, the majority fell within the control limits. There is a concern with the SRM sample submission protocol in that ioneer leaves the SRM standard name on the sample when submitting to the laboratory for analysis. This removes the blind nature from the SRM as the laboratory can readily identify which standard sample is being evaluated and confirm what the expected values are for that SRM. • Field Blanks: Review of the field blanks indicate that there is some variability in both the Li and B results. There are several samples that return higher than expected values, with an increased number being from the 2018-2019 drilling program. Further review is required to determine if this is a result of the material used for field blanks (coarse dolomite) or a problem with the laboratory analysis. • Field Duplicates: No field duplicates were submitted for the pre-2018 drilling programs. Review of the 230 field duplicate sample pairs from the 2018-2019 drilling program determined that there was a strong correlation between each pair, as evidenced by an R^2 value of 0.99 for Li. • Umpire Laboratory Duplicates: 20 assay pulp rejects were sent

Criteria	JORC Code 2012 Explanation	Commentary
		from ALS to American Assay Laboratories (**AAL**) in Sparks, NV for umpire laboratory analysis. Review of the 20 umpire duplicate pairs found a strong correlation between each pair, with B returning an R^2 value of 0.98. • The Competent Person reviewed the control charts produced for each SRM, field blank and field duplicate, and determined that there was an acceptable level of accuracy and precision for each for the purpose of estimating Mineral Resources.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.*	• Significant intersections have been verified by visual inspection of the drill core intervals by at least two ioneer geologists for all drilling programs.
	• *The use of twinned holes.*	• One pair of twin drill holes at the same site were drilled during the 2010-2012 drilling program. The twin drill hole pairing comprises one RC drill hole (SBH-04) and one core drill hole (SBHC-01). • The Competent Person reviewed and assessed two drill holes and the variance for thickness and grade parameters were within acceptable levels.
	• *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*	• For the 2018-2019 drilling program, Newfields developed a series of field protocols covering all aspects of the exploration program, including surveying, logging, sampling and data documentation. These protocols were followed throughout the 2018-2019 drilling program. Formal documentation of field protocols does not exist prior to the 2018-2019 program; however, the same senior personnel were involved in the earlier programs and field protocols employed were essentially the same as those documented in the 2018-2019 protocols. • Primary field data was captured on paper logs for the 2010-2012 drilling program, then transcribed into Microsoft (**MS**) Excel files. For the 2016 through 2019 drilling, all field data was captured directly into formatted MS Excel files by logging geologists. All primary field data was reviewed by the senior ioneer geologist. • Data is stored in digital format in a MS Access database. This database was compiled, updated and maintained by Newfields personnel during the 2018-2019 drilling program. • The Competent Person compiled all relevant information from various tabular data files provided by ioneer and Newfields into a

Criteria	JORC Code 2012 Explanation	Commentary
		MS Access database, which was reviewed and verified by the Competent Person prior to inclusion in the geological model.
	- *Discuss any adjustment to assay data.*	- There has been no adjustment to assay data.
Location of data points	- *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	- Accuracy and quality of surveys used to locate drill holes is as follows: - All inclined core drill holes were surveyed to obtain downhole deviation using a downhole Reflex Mems Gyros tool, except for SBH-72, which could not be surveyed due to tool error. Two core drill holes (SBH-60, SBH-79) were surveyed using an Acoustic Televiewer instead of the Gyros tool. - All 2018-2019 drill hole collars were surveyed using a differentially corrected GPS (**DGPS**). - Locatable pre-2018 drill holes that were previously only surveyed by handheld GPS have been re-surveyed in 2019 using DPGS. Some pre-2018 drill holes could not be located by the surveyor in 2019, and the original locations were assumed to be correct. - Upon completion, drill casing was removed, and drill collars were marked with a permanent concrete monument with the drill hole name and date recorded on a metal tag on the monument.
	- *Specification of the grid system used.*	- All pre-2018 and 2018-2019 drill holes were originally surveyed using handheld GPS units in UTM Zone 11 North, North American Datum 1983 (**NAD83**) coordinate system. Pre-2018 drill holes were re-surveyed using DPGS in NAD83 in 2017/2018. - All 2018-2019 drill holes and locatable pre-2018 drill holes were re-surveyed in 2019 using DPGS in NAD83 coordinate system. All surveyed coordinates were subsequently converted to Nevada State Plane Coordinate System of 1983, West Zone (**NVSPW 1983**) for use in developing the geological model. Those holes that could not be located had the original coordinates converted to NVSPW 1983 and their locations verified against the original locations.
	- *Quality and adequacy of topographic control.*	- The quality and adequacy of the topographic surface and the topographic control is very good based on comparison against

Criteria	JORC Code 2012 Explanation	Commentary
		survey monuments, surveyed drill hole collars and other surveyed surface features. • A 2018 satellite survey with an accuracy of ± 0.17 m was produced for the Project by PhotoSat Information Ltd. The final report generated by PhotoSat stated that the difference between the satellite and ioneer provided ground survey control points was less than 0.8 m. • The topographic survey was prepared in NAD83, which was converted to NVSPW 1983 by Newfields prior to geological modelling.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.*	• Drill holes are generally spaced between 90 m and 170 m on east-west cross-section lines spaced approximately 180 m apart. There was no distinction between RC and core holes for the purpose of drill hole spacing. • For the 2018-2019 drilling program, there were multiple occurrences where several inclined drill holes were drilled from the same drill pad and oriented at varying angles away from each other. The collar locations for these inclined drill holes drilled from the same pad varied in distance from 0.3 m to 6.0 m apart; intercept distances on the floors of the target units were typically in excess of 90 m spacing.
	• *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.*	• The spacing is considered sufficient to establish geological and grade continuity appropriate for a Mineral Resource estimation.
	• *Whether sample compositing has been applied.*	• Samples were composited to 1.52 m intervals honouring lithological boundaries prior to grade estimation. The 1.52 m sample composite length represents the modal value of the sample length distribution.
Orientation of data in relation to geological	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.*	• Drill holes were angled between -45 and -90 degrees from horizontal and at an azimuth of between 0- and 332-degrees. • Inclined drill holes orientated between 220- and 332-degrees azimuth introduced minimal sample bias, as they primarily intercepted the mineralization at angles near orthogonal (101 drill holes with intercept angles between 70-90 degrees) to the dip of

Criteria	JORC Code 2012 Explanation	Commentary
structure		the beds, approximating true-thickness.
	- *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	- Inclined drill holes orientated between 0- and 220-degrees azimuth, especially those that were drilled at between 20- and 135-degrees azimuth, generally intercepted the beds down dip (7 drill holes with intercept angles between 20-70 degrees), exaggerating the mineralized zone widths in these drill holes.

Sample security	- *The measures taken to ensure sample security.*	- The measures taken to ensure sample security include the following:
		  - For the 2010-2012 drill holes, samples were securely stored on-site and then collected from site by ALS. Chain of custody forms were maintained by ALS.
		  - For the 2016-2017 drill holes, samples were securely stored on-site and then collected from site by ALS and transported to the laboratory by truck. Chain of custody forms were maintained by ALS.
		  - For the 2018-2019 drill holes, core was transported daily by ioneer and/or Newfields personnel from the drill site to the ioneer secure core shed (core storage) facility in Tonopah. Core awaiting logging was stored in the core shed until it was logged and sampled, at which time it was stored in secured sea cans inside a fenced and locked core storage facility on site. Samples were sealed in poly-woven sample bags, labelled with a pre-form numbered and barcoded sample tag, and securely stored until shipped to or dropped off at the ALS laboratory in Reno by Newfields personnel. Chain of custody forms were maintained by Newfields and ALS.

Audits or reviews	- *The results of any audits or reviews of sampling techniques and data.*	- There were no audits performed on the RC sampling or for the pre-2018 drilling programs. - The Competent Person reviewed the core and sampling techniques during a site visit in December 2018. The Competent Person found that the sampling techniques were appropriate for collecting data for the purpose of preparing geological models and Mineral Resource estimates. The following recommendations were submitted to ioneer for consideration following the site visit: - Update 2018-2019 collar survey locations using high-resolution survey methods such as DGPS as soon as possible

Criteria	JORC Code 2012 Explanation	Commentary
		following completion of the 2018-2019 drilling. • Include survey pick-up of any pre-2018 drill holes identified in the drill hole database as being surveyed by handheld, non-differential GPS. • Update surface mapping to adjust surficial geological contacts and structures based on revised interpretation and understanding of geology from the current drilling program. • Revise QA/QC protocol to include field duplicates, laboratory replicates (coarse and pulp replicates) and check assay analyses at a second independent commercial laboratory. • Change SRM insertion procedure to remove the SRM name/number and identifiers other than the regular sample number prior to submitting the sample to the laboratory for analyses. • Exclude trench data from the modelling process based on visual inspection of the sub-crop trenches and the reliability and representativeness of trench analytical data used in previous model iterations.

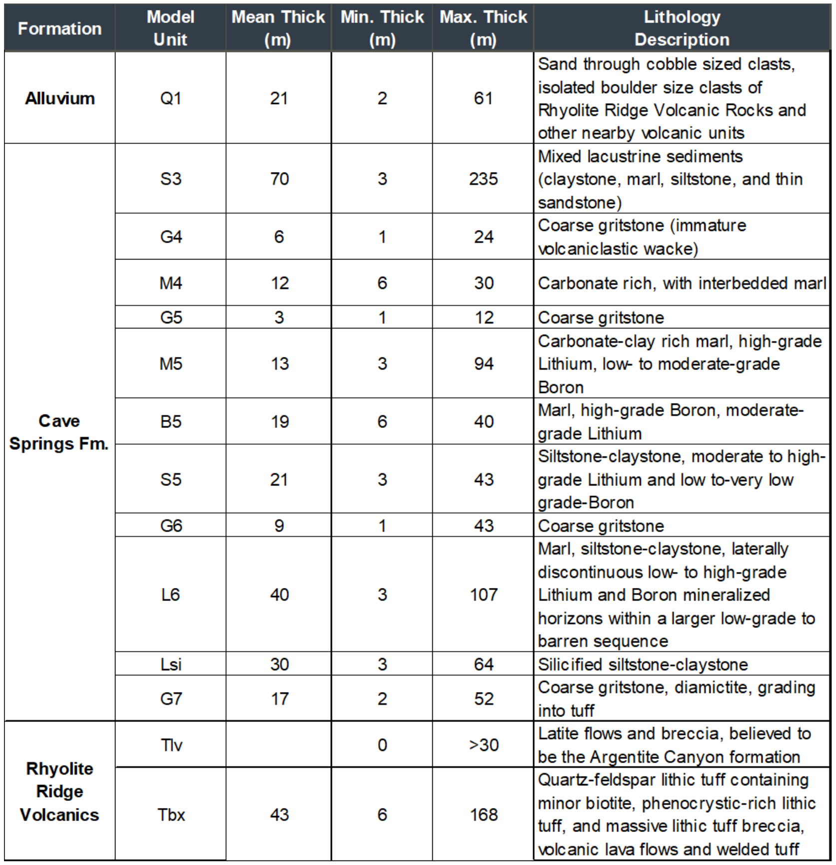
SECTION 2 REPORTING OF EXPLORATION RESULTS

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code 2012 Explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.*	• The mineral tenement and land tenure for the South Basin of Rhyolite Ridge (the Project) comprise 386 unpatented Lode Mining Claims (totalling approximately 3,150 hectare (**Ha**)); claim groups SLB, SLM and RR, spatial extents of which are presented in maps and tables within the body of the Report are held by ioneer Minerals Corporation, a wholly owned subsidiary of ioneer. The Competent Person has relied upon information provided by ioneer regarding mineral tenement and land tenure for the Project; the Competent Person has not performed any independent legal verification of the mineral tenement and land tenure. • ioneer has entered into a proposed joint venture agreement with Sibanye-Stillwater, the details of which are presented in the September 16, 2021, ASX press release by ioneer. • With the exception of the proposed joint venture agreement with Sibanye-Stillwater, the Competent Person is not aware of any agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings relating to the 386 Lode Mining Claims for the Project. • The mineral tenement and land tenure referenced above excludes 241 additional unpatented Lode Mining Claims (totalling approximately 2,000 Ha) for the North Basin which are located outside of the current South Basin Project Area presented in this Report. These additional claims are held by ioneer subsidiaries (NLB claim group; 160 claims) or ioneer holds an option to acquire 100% ownership of the claims (BH claim group; 81 claims).
	• *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• There are no identified concerns regarding the security of tenure nor are there any known impediments to obtaining a license to operate within the limits of the Project. The 386 unpatented Lode Mining Claims for the Project are located on federal land and are administered by the United States Department of the Interior - Bureau of Land Management (BLM).
Exploration	• *Acknowledgment and appraisal of exploration by other*	• There have been two previous exploration campaigns targeting Li-

Criteria	JORC Code 2012 Explanation	Commentary
done by other parties	*parties.*	B mineralization at the Project site. - US Borax conducted surface sampling and drilling in the 1980s, targeting B mineralization, with less emphasis on Li mineralization. A total of 57 drill holes (totalling approximately 14,900 m) were drilled in the North Borate Hills area, with an additional 12 drill holes (unknown total meterage) in the South Basin area. These drill holes were not available for use in the current Study. - American Lithium Minerals Inc and Japan Oil, Gas and Metals National Corporation (**JOGMEC**) conducted further Li exploration in the South Basin area in 2010-2012. The exploration included at least 465 surface and trench samples and 36 drill holes (totalling approximately 8,800 m), of which 21 were core and 15 were RC. Data collected from this program, including drill core, was made available to ioneer. The Competent Person reviewed the data available from this program and believes this exploration program, except for the trench data, was conducted appropriately and the information generated is of high enough quality to include in preparing the current geological model and Mineral Resource estimate. - Due to concerns regarding the ability to reliably correlate the trenches with specific geological units as well as concerns regarding representivity of samples taken from incomplete exposures of the units in the trenches, the Competent Person does not feel the trench sample analytical results are appropriate for use and has excluded them from use in preparing the geological model and Mineral Resource estimate.
Geology	- *Deposit type, geological setting and style of mineralisation.*	- The HiB-Li and LoB-Li mineralization at Rhyolite Ridge occurs in two separate Miocene sedimentary basins; the North Basin and the South Basin, located within the Silver Peak Range in the Basin and Range terrain of Nevada, USA. The South Basin is the focus of the Study presented in this Report and the following is focused on the geology and mineralization of the South Basin. - The South Basin stratigraphy comprises lacustrine sedimentary rocks of the Cave Spring Formation overlaying volcanic flows and volcaniclastic rocks of the Rhyolite Ridge Volcanic unit. The Rhyolite Ridge Volcanic unit is dated at approximately 6 mega-annum (**Ma**) and comprises rhyolite tuffs, tuff breccias and flows.

Criteria	JORC Code 2012 Explanation	Commentary
		The Rhyolite Ridge Volcanic rocks are underlain by sedimentary rocks of the Silver Peak Formation. • The Cave Spring Formation comprises a series of 11 sedimentary units deposited in a lacustrine environment, as shown in the following table. Within the study area the Cave Spring Formation can reach total thickness in excess of 400 m. Age dating of overlying units outside of the area and dates for the underlying Rhyolite Ridge Volcanic unit bracket deposition of the Cave Spring Formation between 4-6 Ma; this relatively young geological age indicates limited time for deep burial and compaction of the units. The Cave Spring Formation units are generally laterally continuous over several miles across the extent of the South Basin; however, thickness of the units can vary due to both primary depositional and secondary structural features. The sedimentary sequence generally fines upwards, from coarse clastic units at the base of the formation, upwards through siltstones, marls and carbonate units towards the top of the sequence. • The key mineralized units are in the Cave Spring Formation and are, from top to bottom, the M5 (high-grade Li, low- to moderate-grade B bearing carbonate-clay rich marl), the B5 (high-grade B, moderate-grade Li marl), the S5 (low- to moderate Li, very low B) and the L6 (broad zone of laterally discontinuous low- to high-grade Li and B mineralized horizons within a larger low-grade to barren sequence of siltstone-claystone). The sequence is marked by a series of four thin (generally on the scale of several meters or less) coarse gritstone layers (G4 through G7); these units are interpreted to be pyroclastic deposits that blanketed the area. The lateral continuity across the South Basin along with the distinctive visual appearance of the gritstone layers relative to the less distinguishable sequence of siltstone-claystone-marl that comprise the bulk of the Cave Spring Formation make the four grit stone units good marker horizons within the stratigraphic sequence. • The Cave Springs Formation is unconformably overlain by a unit of poorly sorted alluvium, ranging from 0 to 40 m (mean of 20 m) within the Study Area. The alluvium is unconsolidated and comprises sand through cobble sized clasts (with isolated occurrences of large boulder sized clasts) of the Rhyolite Ridge

<table>
<tr><th>Criteria</th><th>JORC Code 2012 Explanation</th><th>Commentary</th></tr>
<tr><td></td><td></td><td>
Volcanic Rocks and other nearby volcanic units.

<table>
<tr><th>Formation</th><th>Model Unit</th><th>Mean Thick (m)</th><th>Min. Thick (m)</th><th>Max. Thick (m)</th><th>Lithology Description</th></tr>
<tr><td>**Alluvium**</td><td>Q1</td><td>21</td><td>2</td><td>61</td><td>Sand through cobble sized clasts, isolated boulder size clasts of Rhyolite Ridge Volcanic Rocks and other nearby volcanic units</td></tr>
<tr><td>**Cave Springs Fm.**</td><td>S3</td><td>70</td><td>3</td><td>235</td><td>Mixed lacustrine sediments (claystone, marl, siltstone, and thin sandstone)</td></tr>
<tr><td></td><td>G4</td><td>6</td><td>1</td><td>24</td><td>Coarse gritstone (immature volcaniclastic wacke)</td></tr>
<tr><td></td><td>M4</td><td>12</td><td>6</td><td>30</td><td>Carbonate rich, with interbedded marl</td></tr>
<tr><td></td><td>G5</td><td>3</td><td>1</td><td>12</td><td>Coarse gritstone</td></tr>
<tr><td></td><td>M5</td><td>13</td><td>3</td><td>94</td><td>Carbonate-clay rich marl, high-grade Lithium, low- to moderate-grade Boron</td></tr>
<tr><td></td><td>B5</td><td>19</td><td>6</td><td>40</td><td>Marl, high-grade Boron, moderate-grade Lithium</td></tr>
<tr><td></td><td>S5</td><td>21</td><td>3</td><td>43</td><td>Siltstone-claystone, moderate to high-grade Lithium and low to-very low grade-Boron</td></tr>
<tr><td></td><td>G6</td><td>9</td><td>1</td><td>43</td><td>Coarse gritstone</td></tr>
<tr><td></td><td>L6</td><td>40</td><td>3</td><td>107</td><td>Marl, siltstone-claystone, laterally discontinuous low- to high-grade Lithium and Boron mineralized horizons within a larger low-grade to barren sequence</td></tr>
<tr><td></td><td>Lsi</td><td>30</td><td>3</td><td>64</td><td>Silicified siltstone-claystone</td></tr>
<tr><td></td><td>G7</td><td>17</td><td>2</td><td>52</td><td>Coarse gritstone, diamictite, grading into tuff</td></tr>
<tr><td>**Rhyolite Ridge Volcanics**</td><td>Tlv</td><td></td><td>0</td><td>>30</td><td>Latite flows and breccia, believed to be the Argentite Canyon formation</td></tr>
<tr><td></td><td>Tbx</td><td>43</td><td>6</td><td>168</td><td>Quartz-feldspar lithic tuff containing minor biotite, phenocrystic-rich lithic tuff, and massive lithic tuff breccia, volcanic lava flows and welded tuff</td></tr>
</table>
Structurally, the South Basin is folded into a broad, open syncline with the sub-horizontal fold axis oriented approximately north-south representing the long axis of the basin. The syncline is asymmetric, with moderate to locally steep dips along the western
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Criteria	JORC Code 2012 Explanation	Commentary
		limb, a flat central area, and interpreted steep dips on the eastern edge. The stratigraphy is further folded, including one significant southeast plunging syncline located in the southern part of the study area. The basin is bounded along its western and eastern margins by regional scale high angle faults of unknown displacement, while localized steeply dipping normal, reverse and strike-slip faults transect the Cave Spring formation throughout the basin. Displacement on these faults is generally poorly known but most appear to be on the order of tens of meters of displacement although several located along the edge of the basin may have displacements greater than 30 m. • HiB-Li and LoB-Li mineralization is interpreted to have been emplaced by hydrothermal/epithermal fluids travelling up the basin bounding faults; based on HiB-Li and LoB-Li grade distribution and continuity it is believed the primary fluid pathway was along the western bounding fault. Differential mineralogical and permeability characteristics of the various units within the Cave Spring Formation resulted in the preferential emplacement of HiB-Li bearing minerals in the B5 and L6 units and LoB-Li bearing minerals in the M5, S5 and L6 units. HiB-Li mineralization occurs in isolated locations in some of the other units in the sequence, but with nowhere near the grade and continuity observed in the aforementioned units.
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* ○ *easting and northing of the drill hole collar* ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* ○ *dip and azimuth of the hole* ○ *down hole length and interception depth* ○ *hole length.*	• Exploration Results are not being reported. • A summary table providing key details for all identified drill holes for the Project is presented by type and drilling campaign in the following table:

Drill Type	Year	Inclined Drill Hole		Vertical Drill Hole		Total Drill Holes	Total Depth (ft)
		Count	Total Depth (ft)	Count	Total Depth (ft)		
RC Drill Holes	2010-2012	6	1,355	9	2,313	15	3,668
	2016-2017	2	707	25	4,582	27	5,289
	2018-2019			4	474	4	474
Core Drill Holes	2010-2012	2	531	19	4,608	21	5,139
	2016-2017			3	853	3	853
	2018-2019	28	6,415	14	2,671	42	9,087
	Total	**38**	**9,008**	**74**	**15,502**	**112**	**24,510**

Criteria	JORC Code 2012 Explanation	Commentary
	• *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	• Of the 112 drill holes reviewed, 108 (42 RC and 66 core) were included in the geological model and 4 were omitted. One RC twin hole was omitted in favour of the cored hole at the same location. Three water/geotechnical drill holes were omitted due to a lack of lithology and quality data relevant to the geological model.
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.*	• Exploration Results are not being reported. • All grade parameters presented as part of the Mineral Resource estimates prepared by Golder are presented as mass weighted grades. • Drill core samples were composited to 1.52 m composite lengths prior to interpolation of grade data into the block model. Composite lengths honoured geological contacts (i.e. composites did not span unit contacts). The composite length was selected based on the median sample length from the drill hole assay database. • No minimum bottom cuts or maximum top cuts were applied to the thickness or grade data used to construct the geological models. Restricted interpolation was applied to B grade data for units other than the targeted mineralized units (B5, M5 and L6; discussed further in the Estimation and Modelling Techniques section of this Table 1). • A cut-off grade of 5,000 ppm B for the HiB-Li mineralization and 1,090 ppm Li for the LoB-Li mineralization was applied during the Mineral Resource estimation process for the purpose of establishing reasonable prospects of eventual economic extraction based on high level mining, metallurgical and processing grade parameters identified by mining, metallurgical and processing studies performed to date on the Project.
	• *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.*	• Not applicable as individual intercepts or Exploration Results are not being reported.
	• *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• Metal equivalents were not used in the Mineral Resource estimates prepared by Golder.

Criteria	JORC Code 2012 Explanation	Commentary
Relationship between mineralisation widths and intercept lengths	- *These relationships are particularly important in the reporting of Exploration Results.*	- All drill hole intercepts presented in the Report are down hole thickness not true thickness. As discussed in the Orientation of Data section of this Table 1, most drill hole intercepts are approximately orthogonal to the dip of the beds (intercept angles between 70-90 degrees).
	- *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.*	- Based on the geometry of the mineralization, it is reasonable to treat all samples collected from inclined drill holes at intercept angles of greater than 70 degrees as representative of the true thickness of the zone sampled.
	- *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').*	- Not applicable as individual down hole intercepts or Exploration Results are not being reported.
Diagrams	- *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	- Appropriate plan maps and sections are appended to the Report.
Balanced reporting	- *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	- Exploration Results are not being reported.
Other substantive exploration data	- *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	- Surficial geological mapping performed by a senior ioneer geologist was used in support of the drill holes to define the outcrops and subcrops as well as bedding dip attitudes in the geological modelling. Mapped geological contacts and faults were imported into the model and used as surface control points for the corresponding beds or structures.
Further work	- *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).*	- Additional in-fill drilling and sampling may be performed based on the results of current mining project studies
	- *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	- No diagrams are applicable as no additional areas within the South Basin are recommended for further exploration at this time.

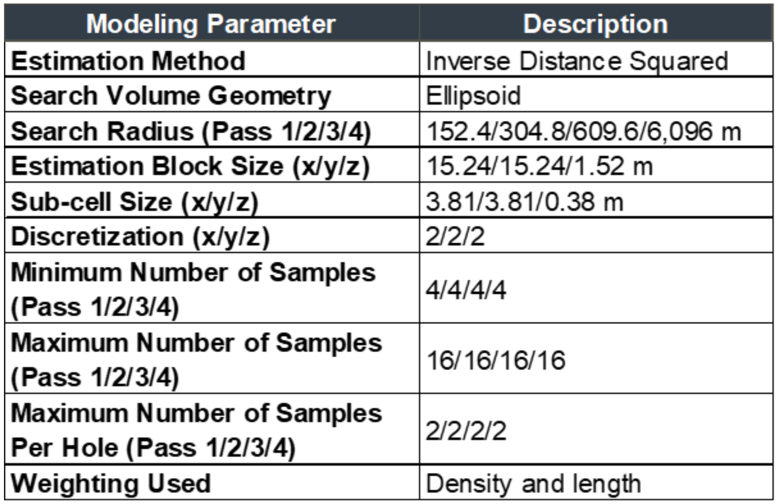
SECTION 3 ESTIMATION AND REPORTING OF MINERAL RESOURCES

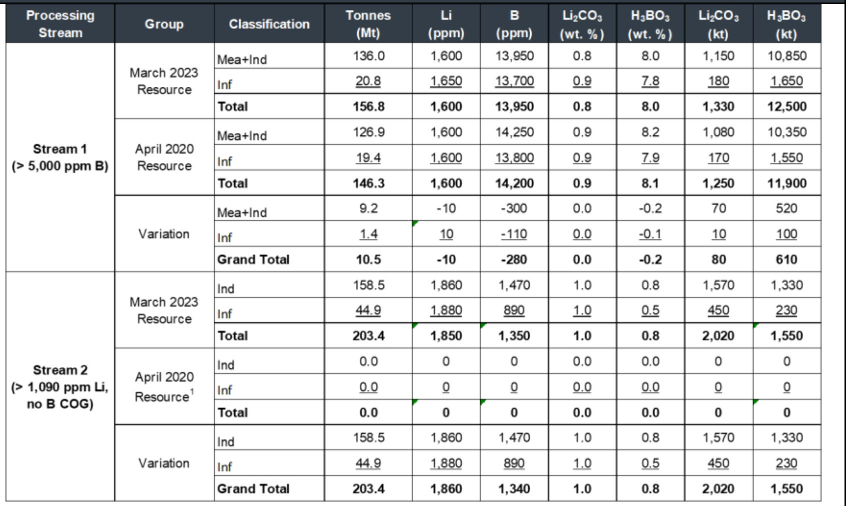
(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code 2012 explanation	Commentary
Database integrity	- *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.*	- Measures taken to ensure the data has not been corrupted by transcription or keying errors or omissions included recording of drill hole data and observations by the logging geologists using formatted logging sheets in Microsoft (**MS**) Excel. Data and observations entered into the logging sheets were reviewed by senior ioneer and Newfield's geologists prior to importing the data into the MS Access drill hole database. - Golder evaluated the tabular data provided by ioneer for errors or omissions as part of the data validation procedures described in the following section.
	- *Data validation procedures used.*	- Golder performed data validation on the drill hole database records using available underlying data and documentation including but not limited to original drill hole descriptive logs, core photos and laboratory assay certificates. Drill hole data validation checks were performed in MS Access using a series of in-house data checks to evaluate for common drill hole data errors including, but not limited to, data gaps and omissions, overlapping lithology or sample intervals, miscorrelated units, drill hole deviation errors and other indicators of data corruption including transcription and keying errors. - Database assay values for every sample were visually compared to the laboratory assay certificates to ensure the tabular assay data was free of errors or omissions. - Proposed corrections, additions or revisions to the data set were reviewed with ioneer and Newfield's senior geologists and any updates to the data were incorporated into the geological database
Site visits	- *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	- The WSP Competent Person Jerry DeWolfe, P.Geo. made a personal inspection site visit was performed on the Project site from December 3rd to 5th 2018 for the Project. - During the site visit the WSP Competent Person visited the ioneer core shed in Tonopah NV, and the South Basin area of the Rhyolite Ridge Project site, which is the focus of the current exploration and resource evaluation efforts by ioneer.

Criteria	JORC Code 2012 explanation	Commentary
		- The WSP Competent Person observed the active drilling, logging and sampling process and interviewed site personnel regarding exploration drilling, logging, sampling and chain of custody procedures. - The outcome of the site visit was that the WSP Competent Person developed an understanding of the general geology of the Rhyolite Ridge Project. The WSP Competent Person was also able to visually confirm the presence of a selection of monumented drill holes from each of the previous drilling programs as well as to observe drilling, logging and sampling procedures during the current drilling program and to review documentation for the logging, sampling and chain of custody protocols for previous drilling programs.
	- *If no site visits have been undertaken indicate why this is the case.*	- Not applicable.
Geological interpretation	- *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	- The WSP Competent Person is confident that the geological interpretation of the mineral deposit is reasonable for the purposes of Mineral Resource estimation.
	- *Nature of the data used and of any assumptions made.*	- The data used in the development of the geological interpretation included drill hole data and observations collected from 66 core and 42 RC drill holes, supplemented by surface mapping of outcrops and faults performed by ioneer personnel. Regional scale public domain geological maps and studies were also incorporated into the geological interpretation. - It is assumed that the mineralized zones are continuous between drill holes as well as between drill holes and surface mapping. It is also assumed that grades vary between drill holes based on a distance-weighted interpolator.
	- *The effect, if any, of alternative interpretations on Mineral Resource estimation.*	- There are no known alternative interpretations.
	- *The use of geology in guiding and controlling Mineral Resource estimation.*	- Geology was used directly in guiding and controlling the Mineral Resource estimation. The mineralized zones were modelled as stratigraphically controlled HiB-Li and LoB-Li deposits. As such, the primary directions of continuity for the mineralization are horizontally within the preferentially mineralized B5, M5, S5 and L6

Criteria	JORC Code 2012 explanation	Commentary
		geological units.
	- *The factors affecting continuity both of grade and geology.*	- The primary factor affecting the continuity of both geology and grade is the lithology of the geological units. HiB-Li mineralization is favourably concentrated in marl-claystone of the B5 and L6 units and LoB-Li in the M5, S5 and L6 units. Mineralogy of the units also has a direct effect on the continuity of the mineralization, with elevated B grades in the B5 and M5 units associated with a distinct reduction in carbonate and clay content in the units, while higher Li values tend to be associated with elevated carbonate content in these units and sometimes k-felspar. - Additional factors affecting the continuity of geology and grade include the spatial distribution and thickness of the host rocks which have been impacted by both syn-depositional and post-depositional geological processes (i.e. localized faulting, erosion and so forth).
Dimensions	- *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	- The Mineral Resource evaluation presented in this Report covers an area of approximately 275 Ha within the South Basin of Rhyolite Ridge. The Mineral Resource plan dimensions, defined by the spatial extent of the B5 unit Inferred classification limits, are approximately 2,900 m North-South by 1,600 m East-West. The upper and lower limits of the Mineral Resource span from surface, where the mineralized units outcrop locally, through to a maximum depth of 400 m below surface for the base of the lower mineralized zone (L6 unit). - Variability of the Mineral Resource is associated primarily with the petrophysical and geochemical properties of the individual geological units in the Cave Spring Formation. These properties played a key role in determining units that were favourable for hosting HiB-Li and LoB-Li mineralization versus those that weren't. - On a basin scale, proximity/distance relative to the interpreted source pathways for the mineralizing fluids is a key component in grade distribution and variability across the deposit; Li and B grades appear highest in the southwest portion of the South Basin, proximal to the western bounding fault of the basin.
Estimation	- *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including*	- Geological modelling and Mineral Resource estimation for the Project was performed under the supervision of the Competent

<table>
<tr><th>Criteria</th><th>JORC Code 2012 explanation</th><th>Commentary</th></tr>
<tr><td><i>and modelling techniques</i></td><td><i>treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.</i></td><td>Person.
Based on a statistical analysis, extreme B grade values were identified in some of the units other than the targeted B5, M5 and L6 units. As a result, restricted interpolation was applied to B grades in units other than the B5, M5 and L6.
The geological model was developed as a gridded surface stratigraphic model and a stratigraphically constrained grade block model using MineScape (v6.1.1) StratModel and BlockModel, which are computer-assisted geological, grade modelling, and estimation software applications.
Domaining in the model was constrained by the roof and floor surfaces of the geological units. The unit boundaries were modelled as hard boundaries, with samples interpolated only within the unit in which they occurred.
Key modelling and estimation parameters included the following:

<table>
<tr><th>Modeling Parameter</th><th>Description</th></tr>
<tr><td>Estimation Method</td><td>Inverse Distance Squared</td></tr>
<tr><td>Search Volume Geometry</td><td>Ellipsoid</td></tr>
<tr><td>Search Radius (Pass 1/2/3/4)</td><td>152.4/304.8/609.6/6,096 m</td></tr>
<tr><td>Estimation Block Size (x/y/z)</td><td>15.24/15.24/1.52 m</td></tr>
<tr><td>Sub-cell Size (x/y/z)</td><td>3.81/3.81/0.38 m</td></tr>
<tr><td>Discretization (x/y/z)</td><td>2/2/2</td></tr>
<tr><td>Minimum Number of Samples (Pass 1/2/3/4)</td><td>4/4/4/4</td></tr>
<tr><td>Maximum Number of Samples (Pass 1/2/3/4)</td><td>16/16/16/16</td></tr>
<tr><td>Maximum Number of Samples Per Hole (Pass 1/2/3/4)</td><td>2/2/2/2</td></tr>
<tr><td>Weighting Used</td><td>Density and length</td></tr>
</table></td></tr>
<tr><td></td><td><i>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</i></td><td>The Table below presents a summary comparison of the current March 31, 2023 Mineral Resource estimate against the previous Mineral Resource estimate for the Project, prepared by Golder (now WSP) in April 2020 in association with the 2020 DFS.</td></tr>
</table>

<table>
<tr><th>Criteria</th><th>JORC Code 2012 explanation</th><th>Commentary</th></tr>
<tr><td></td><td></td><td>

<table>
<tr><th>Processing Stream</th><th>Group</th><th>Classification</th><th>Tonnes (Mt)</th><th>Li (ppm)</th><th>B (ppm)</th><th>Li_2CO_3 (wt. %)</th><th>H_3BO_3 (wt. %)</th><th>Li_2CO_3 (kt)</th><th>H_3BO_3 (kt)</th></tr>
<tr><td>Stream 1
(> 5,000 ppm B)</td><td>March 2023 Resource</td><td>Mea+Ind</td><td>136.0</td><td>1,600</td><td>13,950</td><td>0.8</td><td>8.0</td><td>1,150</td><td>10,850</td></tr>
<tr><td></td><td></td><td>Inf</td><td>20.8</td><td>1,650</td><td>13,700</td><td>0.9</td><td>7.8</td><td>180</td><td>1,650</td></tr>
<tr><td></td><td></td><td>Total</td><td>156.8</td><td>1,600</td><td>13,950</td><td>0.8</td><td>8.0</td><td>1,330</td><td>12,500</td></tr>
<tr><td></td><td>April 2020 Resource</td><td>Mea+Ind</td><td>126.9</td><td>1,600</td><td>14,250</td><td>0.9</td><td>8.2</td><td>1,080</td><td>10,350</td></tr>
<tr><td></td><td></td><td>Inf</td><td>19.4</td><td>1,600</td><td>13,800</td><td>0.9</td><td>7.9</td><td>170</td><td>1,550</td></tr>
<tr><td></td><td></td><td>Total</td><td>146.3</td><td>1,600</td><td>14,200</td><td>0.9</td><td>8.1</td><td>1,250</td><td>11,900</td></tr>
<tr><td></td><td>Variation</td><td>Mea+Ind</td><td>9.2</td><td>-10</td><td>-300</td><td>0.0</td><td>-0.2</td><td>70</td><td>520</td></tr>
<tr><td></td><td></td><td>Inf</td><td>1.4</td><td>10</td><td>-110</td><td>0.0</td><td>-0.1</td><td>10</td><td>100</td></tr>
<tr><td></td><td></td><td>Grand Total</td><td>10.5</td><td>-10</td><td>-280</td><td>0.0</td><td>-0.2</td><td>80</td><td>610</td></tr>
<tr><td>Stream 2
(> 1,090 ppm Li, no B COG)</td><td>March 2023 Resource</td><td>Ind</td><td>158.5</td><td>1,860</td><td>1,470</td><td>1.0</td><td>0.8</td><td>1,570</td><td>1,330</td></tr>
<tr><td></td><td></td><td>Inf</td><td>44.9</td><td>1,880</td><td>890</td><td>1.0</td><td>0.5</td><td>450</td><td>230</td></tr>
<tr><td></td><td></td><td>Total</td><td>203.4</td><td>1,850</td><td>1,350</td><td>1.0</td><td>0.8</td><td>2,020</td><td>1,550</td></tr>
<tr><td></td><td>April 2020 Resource[1]</td><td>Ind</td><td>0.0</td><td>0</td><td>0</td><td>0.0</td><td>0.0</td><td>0</td><td>0</td></tr>
<tr><td></td><td></td><td>Inf</td><td>0.0</td><td>0</td><td>0</td><td>0.0</td><td>0.0</td><td>0</td><td>0</td></tr>
<tr><td></td><td></td><td>Total</td><td>0.0</td><td>0</td><td>0</td><td>0.0</td><td>0.0</td><td>0</td><td>0</td></tr>
<tr><td></td><td>Variation</td><td>Ind</td><td>158.5</td><td>1,860</td><td>1,470</td><td>1.0</td><td>0.8</td><td>1,570</td><td>1,330</td></tr>
<tr><td></td><td></td><td>Inf</td><td>44.9</td><td>1,880</td><td>890</td><td>1.0</td><td>0.5</td><td>450</td><td>230</td></tr>
<tr><td></td><td></td><td>Grand Total</td><td>203.4</td><td>1,860</td><td>1,340</td><td>1.0</td><td>0.8</td><td>2,020</td><td>1,550</td></tr>
</table>
There has been no HiB-Li or LoB-Li production on the Project to date.
</td></tr>
<tr><td></td><td><i>The assumptions made regarding recovery of by-products.</i></td><td>No by-products are being considered for recovery at present.</td></tr>
<tr><td></td><td><i>Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).</i></td><td>In addition to Li and B, the geological model also included 12 additional non-grade elements (Sr, Ca, Mg, Na, K, As, Rb, Cs, Mo, Fe, Al, W) to allow for calculation of acid consumption values for the metallurgical process. No deleterious elements were estimated.</td></tr>
<tr><td></td><td><i>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</i></td><td>The stratigraphic gridded surface model was developed using a 7.62 m regularized grid. The grade block model was developed from the stratigraphic model using a 15.24 m North-South by 15.24 m East-West by 1.52 m vertical parent block dimension with sub-cell dimensions of 3.81 m by 3.81 m by 0.38 m. The grid cell and block size dimensions represent 25 percent of the nominal drill hole spacing across the model area.
Grade interpolation into the model blocks was performed using an Inverse Distance Squared (ID^2) interpolator with up to four search passes with search distances of 152.4 m, 304.8 m, 609.6 m and 6,096 m.</td></tr>
</table>

Criteria	JORC Code 2012 explanation	Commentary
	- *Any assumptions behind modelling of selective mining units.*	- Assumptions relating to selective mining units were based on the interpretation that the HiB-Li mineralization encountered is stratigraphically constrained and that mineralized and non-mineralized units can be selectively separated by existing mining and processing methods.
	- *Any assumptions about correlation between variables.*	- No assumptions or calculations relating to the correlation between variables were made at this time.
	- *Description of how the geological interpretation was used to control the resource estimates.*	- The geological interpretation was used to control the Mineral Resource estimate by developing a contiguous stratigraphic model (all units in the sequence were modelled) of the host rock units deposited within the basin, the roof and floor contacts of which then served as hard contacts for constraining the grade interpolation. Grade values were interpolated within the geological units using only samples intersected within those units; sub-celling was applied to allow for improved definition of geological contacts relative to the model blocks at the upper and lower contacts of the units.
	- *Discussion of basis for using or not using grade cutting or capping.*	- Grade capping or cutting was not applied for the targeted mineralized units B5, M5, S5 and L6 as a statistical analysis of the grade data indicated there was no bias or influence by extreme outlier grade values. - Restricted interpolation of Boron grade data was applied in place of grade cutting or capping in the other units on the model besides the targeted mineralized units B5, M5 and L6; to allow for use of all validated grade values while limiting the potential impact of overestimating spatially isolated high-grade results in the generally unmineralized units. Restricted interpolation controls were not applied to any other grade parameters. Mineral Resources were not estimated for the other units however grade was interpolated to allow for potential mining dilution evaluations during later studies.
	- *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	- The geological model validation and review process involved visual inspection of drill hole data as compared to model geology and grade parameters using plan isopleth maps and 180 m spaced cross-sections through the model. Drill hole and model values were compared statistically as well as via along-strike and

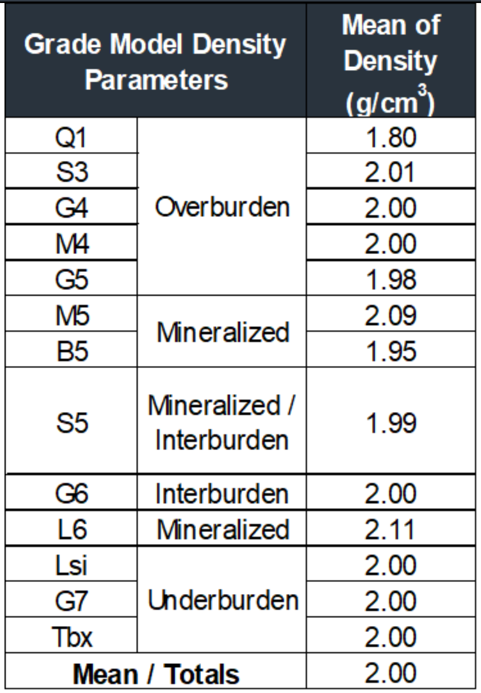
Criteria	JORC Code 2012 explanation	Commentary
		down-dip swath plots. - No reconciliation data is available because the property is not in production.
Moisture	- *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	- The estimated Mineral Resource tonnages are presented on a dry basis. - A moisture content of 5% for the mineralized units has been assumed for mining and other modifying factors studies currently underway but should be evaluated as part of future analytical programs.

Cut-off parameters	- *The basis of the adopted cut-off grade(s) or quality parameters applied.*	- The Mineral Resource estimate presented in this Report has been constrained by the application of an optimized Mineral Resource pit shell. The Mineral Resource pit shell was developed using Maptek Vulcan Mine Planning software.
		- The Mineral Resource estimate assumes the use of two processing streams: one which can process ore with boron content greater than 5,000 ppm and one which can process ore with boron content less than 5,000 ppm.
		- Key input parameters and assumptions for the Mineral Resource pit shell included the following:
		  - B cut-off grade of 5,000 ppm for HiB-Li processing stream and no B cut-off grade for LoB-Li processing stream
		  - No Li cut-off grade for HiB-Li processing stream and Li cut-off grade of 1,090 ppm for LoB-Li processing stream
		  - Overall pit slope angle of 35 degrees in the alluvium and 42 degrees in other rock units (wall angle guidance provided by EnviroMINE, Inc., who developed the geotechnical design).
		  - Mining cost of US$2.67/tonne (**t**) plus US$0.0059/t-vertical foot of haulage.
		  - Ore processing and grade control costs of US$45.45/t of ore for HiB-Li Processing Stream and US$40.69/t of ore for LoB-Li Processing Stream.
		  - Boron and Li recovery of 83.5% and 81.8% respectively for HiB-Li Processing Stream.
		  - Boron Recovery for LoB-Li Processing Stream variable by lithology as follows: 72% in M5 Unit, 79.5% in B5 unit, 75% in S5 unit, and 81% in L6 unit.

Criteria	JORC Code 2012 explanation	Commentary
		• Lithium Recovery for LoB-Li Processing Stream variable by lithology as follows: 76% in M5 unit, 85% in B5 unit, 85% in S5 unit, and 86% in L6 unit. • Boric Acid sales price of US$700/t. • Lithium Carbonate sales price of US$10,000/t. • Sales/Transport costs of US$160/t of product.
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	• The Mineral Resource estimate presented in this Report was developed with the assumption that the HiB-Li mineralization within the Mineral Resource pit shell, as described in the preceding section, has a reasonable prospect for eventual economic extraction using current conventional open pit mining methods. • The basis of the mining assumptions made in establishing the reasonable prospects for eventual economic extraction of the HiB-Li mineralization are based on preliminary results from mine design and planning work that is in-progress as part of an ongoing Feasibility Study for the Project. • Except for the Mineral Resource pit shell criteria discussed in the preceding section, no other mining factors, assumptions or mining parameters such as mining recovery, mining loss or dilution have been applied to the Mineral Resource estimate presented in this Report.
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• The basis of the metallurgical assumptions made in establishing the reasonable prospects for eventual economic extraction of the HiB-Li mineralization are based on results from metallurgical and material processing work that was developed as part of the ongoing Feasibility Study for the Project. This test work was performed using current processing and recovery methods for producing Boric acid and Lithium carbonate products • A second process stream to recover Li from low boron mineralized (LoB-Li) units is being developed. Current results indicate a reasonable process and expectation for economic extraction of the LoB-Li from the S5, M5 and L6 units. This test work was performed using current processing and recovery methods for producing Boric acid and Lithium carbonate products.
Environmental factors or	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of*	• The project will require waste and process residue disposal. Assumptions have been made that all environmental requirements

Criteria	JORC Code 2012 explanation	Commentary
assumptions	*the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	will be achieved through necessary studies, designs and permits. • Currently, baseline studies and detailed designs have been completed for both waste and process residue disposal facilities. • In December 2022, the United States Fish and Wildlife Service (USFWS) listed Tiehm's buckwheat as an endangered species under the Endangered Species Act (ESA) and has designated critical habitat by way of applying a 500 m radius around several distinct plant populations that occur on the Project site. Ioneer is committed to the protection and conservation of the Tiehm's buckwheat. The Project's Mine Plan of Operations submitted to the BLM in July 2022 and currently under NEPA review has no direct impact on Tiehm's buckwheat and includes measures to minimise and mitigate for indirect impacts within the designated critical habitat areas identified. • The mineral resource pit shell used to constrain the March 31, 2023, mineral resource estimate was not adjusted to account for any impacts from avoidance of Tiehm's buckwheat or minimisation of disturbance within the designated critical habitat. Estimates run inside the avoidance polygons identified 29.4 Mt at 1,650 ppm Li and 9,000 ppm B (both HiB-Li and LoB-Li streams combined), reflecting approximately 8% of the March 2023 global Mineral Resource estimate for the Project. The tonnes and grade within the avoidance polygons have not been removed from the Mineral Resources for the March 2023 estimate. Environmental and permitting assumptions and factors will be taken into consideration during future modifying factors studies for the Project. These permitting assumptions and factors may result in potential changes to the Mineral Resource footprint in the future.
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.*	• The density values used to convert volumes to tonnages were assigned on a by-geological unit basis using mean values calculated from 249 density samples collected from drill core during the 2010-2012 and 2018-2019 drilling programs. The density analyses were performed using the water displacement method for density determination, with values reported in dry basis. • The application of assigned densities by geological unit assumes

Criteria	JORC Code 2012 explanation	Commentary
		that there will be minimal variability in density within each of the units across their spatial extents within the Project area. The use of assigned density with a very low number of samples, as is the case with several waste units, is a factor that increases the uncertainty and represents a risk to the Mineral Resource estimate confidence.
	• *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit.*	• The Archimedes-principle method for density determination accounts for void spaces, moisture and differences in rock type.
	• *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• Density values were assigned for all geological units in the model, including mineralized units as well as overburden, interburden and underburden waste units. By-unit densities were assigned in the grade block model based on the block geological unit code as follows:

<table>
<tr><th>Criteria</th><th>JORC Code 2012 explanation</th><th>Commentary</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><th colspan="2">Grade Model Density Parameters</th><th>Mean of Density (g/cm^3)</th></tr>
<tr><td>Q1</td><td rowspan="5">Overburden</td><td>1.80</td></tr>
<tr><td>S3</td><td>2.01</td></tr>
<tr><td>G4</td><td>2.00</td></tr>
<tr><td>M4</td><td>2.00</td></tr>
<tr><td>G5</td><td>1.98</td></tr>
<tr><td>M5</td><td rowspan="2">Mineralized</td><td>2.09</td></tr>
<tr><td>B5</td><td>1.95</td></tr>
<tr><td>S5</td><td>Mineralized / Interburden</td><td>1.99</td></tr>
<tr><td>G6</td><td>Interburden</td><td>2.00</td></tr>
<tr><td>L6</td><td>Mineralized</td><td>2.11</td></tr>
<tr><td>Lsi</td><td rowspan="3">Underburden</td><td>2.00</td></tr>
<tr><td>G7</td><td>2.00</td></tr>
<tr><td>Tbx</td><td>2.00</td></tr>
<tr><td colspan="2">Mean / Totals</td><td>2.00</td></tr>
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</td></tr>
<tr><td><i>Classification</i></td><td><i>The basis for the classification of the Mineral Resources into varying confidence categories.</i></td><td>
The Mineral Resource estimate for the Project is reported here in accordance with the “Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves” as prepared by the Joint Ore Reserves Committee (the JORC Code, 2012 Edition).
Golder performed a statistical and geostatistical analysis for the purpose of evaluating the confidence of continuity of the geological units and grade parameters. The results of this analysis were applied to developing the Mineral Resource classification criteria.
Estimated Mineral Resources were classified as follows:

Measured: 152.5 m spacing between points of observation, with sample interpolation from a minimum of two drill holes.
Indicated: 305 m spacing between points of observation, with sample interpolation from a minimum of two drill holes.

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Criteria	JORC Code 2012 explanation	Commentary
		- Inferred: 610 m spacing between points of observation, with sample interpolation from a minimum of two drill holes.
	- *Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).*	- The Mineral Resource classification has included the consideration of data reliability, spatial distribution and abundance of data and continuity of geology and grade parameters.
	- *Whether the result appropriately reflects the Competent Person's view of the deposit.*	- It is the Competent Persons view that the classification criteria applied to the Mineral Resource estimate are appropriate for the reliability and spatial distribution of the base data and reflect the confidence of continuity of the modelled geology and grade parameters.
Audits or reviews	- *The results of any audits or reviews of Mineral Resource estimates.*	- Beyond high level review for the purpose of understanding the Project history, no formal audits or reviews of previous or historical Mineral Resource estimates were performed as part of the scope of work; Mineral Resource estimation evaluation is limited to the estimate prepared by Golder and presented in this Report.
Discussion of relative accuracy/ confidence	- *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.*	- Golder performed a statistical and geostatistical analysis and applied Mineral Resource classification criteria to reflect the relative confidence level of the estimated Mineral Resource tonnes and grades estimated globally across the model area for the Project.
	- *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.*	- The Mineral Resource tonnes and grade have been estimated globally across the model area for the Project.
	- *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	- Reconciliation against production data/results was not possible as the Project is currently in the development stage and there has been no production on the Project to date.

SECTION 4 ESTIMATION AND REPORTING OF ORE RESERVES

(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code 2012 Explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	• *Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.*	• The Ore Reserves for the Project have not been updated and remain as disclosed in April 2020. The 20 January 2020 Mineral Resources for the Rhyolite Ridge lithium-boron (**Li-B**) deposit remain as the basis of the 17 March 2020 Ore Reserve estimate. A description of the January 2020 Mineral Resource estimate is provided in ioneer's April 30, 2020 ASX release. The Mineral Resource statement is signed by Mr Jerry DeWolfe, who is a registered Professional Geologist (P.Geo.) with the Association of Professional Engineers and Geoscientists in Alberta (APEGA), a "Recognized Professional Organisation" included in a list promulgated by ASX. Mr. DeWolfe is a full-time employee of WSP (formerly Golder) and is independent of ioneer and its affiliates. Mr. DeWolfe has sufficient relevant experience to qualify as a Competent Person for Mineral Resources for the Project.
	• *Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.*	• The Mineral Resources are reported inclusive of the Ore Reserves.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	• The WSP Competent Person for Ore Reserves, Terry Kremmel, PE, is a full-time employee of WSP USA Inc. (WSP, formerly Golder). Mr. Kremmel performed a personal inspection of the Project site from December 3rd to 5th 2018. • During the site visit the WSP Competent Person. Mr. Kremmel visited the ioneer core shed in Tonopah NV, and the South Basin area of the Rhyolite Ridge Project site, which is the focus of the current Ore Reserve efforts by ioneer. • The Competent Person observed the active drilling, logging and sampling process and interviewed site personnel regarding exploration drilling, logging, sampling and chain of custody procedures. • The outcome of the site visit was that the Competent Person developed an understanding of the general geology of the Rhyolite Ridge Project (the Project). The Competent Person was also able to visually confirm the presence of a selection of monumented drill holes from each of the previous drilling programs as well as to observe drilling, logging and sampling procedures during the current

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		drilling program and to review documentation for the logging, sampling and chain of custody protocols for previous drilling programs. - During the site visit, the Competent Person confirmed that the type of data was applicable for Ore Reserve estimation. The Competent Person observed project surface conditions for the purpose of understanding project boundaries, physical characteristics of the resource for determining appropriate extraction methodology. drainage and infrastructure requirements, appropriate locations for overburden storage facilities (**OSFs**), as well as access from the proposed quarry to the proposed process plant site location.
	- *If no site visits have been undertaken indicate why this is the case.*	- Not Applicable
Study status	- *The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.*	- This Ore Reserve estimate is a result of the Definitive Feasibility Study completed in April 2020 (**DFS, or the Study**). - As part of the 17 March 2020 Ore Reserves estimate, an open-pit mine plan was developed that was technically achievable and economically viable. The mine plan considered material Modifying Factors such as dilution and ore loss, various boundary constraints, processing recoveries and all costs associated with mining, processing, transportation and selling product.
	- *The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.*	- The DFS was undertaken to convert Mineral Resources to Ore Reserves. The DFS determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors were considered. - The Mineral Resources have been converted to Ore Reserves by means of an open-pit optimisation and 26-year pit design supported by geotechnical studies undertaken by EnviroMINE Inc. (**EnviroMINE**). Only Measured and Indicated Mineral Resources within the 26-year mine plan have been included in the Ore Reserves. Modifying factors have been applied as stated below.
Cut-off parameters	- *The basis of the cut-off grade(s) or quality parameters applied.*	- A cut-off grade of 5,000 ppm boron was applied. No cut-off grade for lithium was used. The 5,000-ppm boron limit was set by leaching process test work.
Mining factors	- *The method and assumptions used as reported in the*	- This Ore Reserve estimate is based on work completed for the April

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or assumptions	*Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).*	2020 DFS. Ore Reserves were estimated from Golder's detailed pit designs that were prepared from the results of Golder's pit optimisations on the June 2019 Mineral Resource model with applied Modifying Factors (listed below) and EnviroMINE's geotechnical recommendations listed below. Golder's pit design was further analysed by EnviroMINE to check for pit slope stability. The analysis found that the pit design is predicted to be in a stable configuration excluding a small and isolated section of the pit (in Design Sector G) which may require some design modifications to correct. Additional drilling in this area will better define the geology along the proposed pit wall that could improve pit slope stability analysis in this area.
	- *The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.*	- The deposit is to be mined by open-pit mining methods with 9.1 m bench heights using 17 cubic metre (**m^3**) hydraulic excavators, a 12-m^3 wheel loader, and 136-tonne autonomous haul trucks (**AHTs**). This is the most appropriate mining method for extraction of the resource due to the moderately steep dip of the deposit, moderate stripping ratio, mining equipment access requirements to remove overburden and extract ore, and rock properties of the various stratigraphic units present in the deposit. - The M5a unit present throughout the deposit is described as a very weak, swelling clay that has low friction angle and cohesion (as tested in the laboratory). EnviroMINE's geotechnical analysis of numerous pit designs provided by Golder indicated that the resultant factor of safety is very sensitive to the dip and orientation of the M5a dip direction and dip angle anywhere behind the designed walls. Additional drilling data along the critical cross sections could significantly change the geologic interpretation regarding the nature of the folds and faults affecting the weak M5a (or any other weak bedding planes or geologic contacts) and that could materially impact the pit slope stability analysis. Once in operation, on-going wall monitoring will be required for any unexpected changes in the dip and orientation of the M5a unit that may cause pit wall instability or potential failure in advance of mining. - An unload of additional overburden material along the southeast and eastern extents of the Stage 2 Quarry is required to mitigate potential pit slope stability issues due to the dip and orientation of the M5a unit outside of the initial Stage 1 Quarry. Based on recommendations

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		provided by EnviroMINE, this requires that mining outside of the Stage 1 Quarry extents begin at the up-dip exposure of the eastern fold limbs with overburden removed down-dip to the west from the eastern extent of the Stage 2 Quarry limits. Additionally, the Stage 2 Quarry will be incrementally mined from south to north with the advancing face orientated roughly perpendicular to the dip of the M5a unit as mining advances. Based on the current mine plan, the unload of the Stage 2 Quarry will begin in the fourth year of production to facilitate continuous delivery of ore to the processing plant.
	• *The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc), grade control and pre-production drilling.*	• Pit slopes were designed based on the results of geotechnical studies performed by EnviroMINE using a 9.1 m bench height with single benching. The values, which assume the use of pre-split drilling to control face angles, vary by rock type (alluvium, lacustrine sediments, and volcanic rock) and average dip direction. A summary of bench face angle (**BFA**), catch bench width (**CBW**), and maximum inter-ramp angle (**IRA**) for single benching are as follows: ◦ Alluvium – BFA = 51°, CBW = 8.44 m, IRA = 30° ◦ Lacustrine Sediments – BFA = 46°, CBW = 6.40 m, IRA = 31° ◦ Volcanic Rock – BFA = 77°, CBW = 7.01 m, IRA = 45° • EnviroMINE's pit slope stability analysis of the Stage 1 Quarry, the initial starter pit that provides the first three years of ore production, was performed to a relative accuracy and confidence level consistent with a Feasibility Study. EnviroMINE's analysis of the Stage 2 Quarry, which is effectively an expansion of the Stage 1 Quarry, was performed to a relative accuracy and confidence level consistent with a Pre-Feasibility Study.
	• *The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).*	• Pit optimisations were performed on the June 2019 Mineral Resource model after application of Modifying Factors in Maptek's Vulcan software using the above geotechnical parameters and applied recovery, pro-forma mining cost, processing cost, transportation cost and sales price assumptions from the 2018 Pre-feasibility Study (**PFS**) listed below: ◦ Boron cut-off grade of 5,000 ppm ◦ Boron recovery of 83.5% per the 2018 PFS ◦ Lithium recovery of 81.8% per the 2018 PFS

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		• Mining cost of US$2.67/t • Additional haulage cost of US$0.0059/t per vertical metre • Processing and grade control costs of US$45.45/t of ore for HiB-Li Processing Stream and US$40.69/t of ore for LoB-Li Processing Stream • Transportation cost of US$160/t • Boric Acid sales price of US$700/t • Lithium Carbonate sales price of US$10,000/t
	• *The mining dilution factors used.*	• A mining dilution of 0.5 m was applied at each roof and floor interface of the ore seams based on the dip and orientation of the deposit. Grades of dilution material were determined from the adjacent units. Given the thickness of the ore seams, this equates to 9% dilution by weight within the designed 26-year pit. This mining dilution factor assumes the use of excavators and dozers outfitted with high-precision GPS and integrated Fleet Management Software (**FMS**) and competent operators.
	• *The mining recovery factors used.*	• Based on the dip and orientation of the deposit, a mining loss of 0.3 m was applied at each roof and floor contact of the ore seams. Given the thickness of the ore seams, this equates to a 6% mining loss by weight within the designed 26-year pit. This mining recovery factor assumes the use of excavators and dozers outfitted with high-precision GPS and integrated FMS and competent operators.
	• *Any minimum mining widths used.*	• A 30 m minimum mining width was applied in select areas of the pit where required to provide sufficient equipment operating width. • Due to the continuous thickness of the B5 and L6 seams within the designed pit, no minimum mining thickness was applied in the Ore Reserves estimate.
	• *The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.*	• Inferred Resources that represent 6% of the total plant feed were included in the 26-year DFS mine plan that formed the basis of the Ore Reserves estimate. Upon completion of the cost estimates and associated economic analysis, a sensitivity analysis was performed by removing the revenue generated by the Inferred tonnages from the cash flow. The outcome of this sensitivity analysis concluded that the Project viability is not dependent upon the inclusion of the

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		Inferred Resources. - Stated Ore Reserves have only been reported from the Measured and Indicated Resource categories with Modifying Factors applied.
	- *The infrastructure requirements of the selected mining methods.*	- The Project is currently in the design stage, and no site-specific infrastructure has been built to date. Infrastructure required for the Project includes haul roads, Overburden Storage Facilities (**OSFs**), Spent Ore Storage Facility (**SOSF**), Contact Water Ponds (**CWPs**), the processing plant which includes processing structures and facilities, maintenance facilities, warehousing, shipping and receiving, fuel island, Sulphuric Acid Plant (**SAP**), Steam Turbine Generator (**STG**) responsible for power generation/transmission, and administrative buildings.
Metallurgical factors or assumptions	- *The metallurgical process proposed and the appropriateness of that process to the style of mineralization.*	- The Rhyolite Ridge Li-B ore is unique, and no reference installations exist for processing this type of ore. Advanced scientific investigative and confirmatory test work was therefore required to optimise the process flowsheet for the DFS. Bench and pilot plant testing were conducted at Kemetco Research, Inc. (**Kemetco**) in Richmond, British Columbia, and overseen by Norm Chow and Anca Nacu PhD with Kemetco; Patrick Glynn P.E., Jaegan Mohan and Kyle Marte, PEng with Fluor; and Peter Ehren and Michael Osborne with ioneer. Kappes Cassiday Associates (**KCA**) performed baseline metallurgical test work for vat leaching test work, FLSmidth performed crushing and filtration test work, and Veolia performed evaporation and crystallisation test work that formed the basis of the DFS. - Ore will be processed by ore sizing, vat acid leaching, impurity removal, evaporation, and crystallisation using a flowsheet developed specifically for the Project to generate technical-grade lithium carbonate and boric acid. Test work has also confirmed that refining the technical-grade lithium carbonate to battery-grade lithium hydroxide is technically and commercially feasible through a liming route. No impediments have been identified to the technical and commercial feasibility for conversion of the technical-grade lithium carbonate to battery-grade lithium carbonate through the bicarbonation route. - Key process engineering deliverables completed include the block flow diagram (**BFD**), process flow diagrams (**PFDs**), process design

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		criteria, piping and instrumentation diagrams (**P&IDs**), and heat and mass balance (summarized on the PFDs). The heat and mass balance has been compiled using the Metsim process simulation software package and is a fully integrated model comprising all major process unit operations and recycle streams. The model tracks all elements/compounds of interest throughout the process. Notably lithium wash losses, which can be significant in lithium brine flowsheets, are estimated through detailed modelling of all dewatering and wash unit operations. • An on-site SAP will produce commercial-grade sulphuric acid for vat leaching the ore. The selection of the technology for the large SAP is based on a proven operating design and specialty technology provider. The SAP is a double conversion, double adsorption system that has proven to be reliable and predictable.
	• *Whether the metallurgical process is well-tested technology or novel in nature.*	• The Rhyolite Ridge Li-B ore is unique, and no reference installations exist for processing this type of ore. Advanced scientific investigative and confirmatory test work was therefore required to optimise the process flowsheet. Bench and pilot plant testing were performed by Kemetco, KCA performed baseline metallurgical test work for vat leaching test work, FLSmidth performed crushing and filtration test work, and Veolia performed evaporation and crystallisation test work that formed the basis of the DFS. However, the proposed metallurgical process uses known and commercially proven equipment and technology and is ready for commercialisation.
	• *The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.*	• The Rhyolite Ridge Li-B ore is unique, and no reference installations exist for processing this type of ore. Advanced scientific investigative and confirmatory test work was, therefore, required on bulk samples taken from the outcrop and on core samples. Bench and pilot plant testing were performed by Kemetco, KCA performed baseline metallurgical test work for vat leaching test work, FLSmidth performed crushing and filtration test work, and Veolia performed evaporation and crystallisation test work that formed the basis of the DFS. The metallurgical testing programs were fit for purpose and no standardized test methods were used to govern testing programs. Test work was structured and guided using the general principles and definition of the CIM Best Practice Guidelines for mineral processing. At a finer level each metallurgical laboratory has their

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		own standard operating procedures (**SOPs**) and use a wide range of standards for individual test procedures and assaying. A list of these procedures has not been compiled. The majority of metallurgical test work has been performed on material from the South Basin, which was the focus of the April 2020 DFS and the proposed location of the quarry, though some test work has also been done on core from the North Basin where operations could potentially expand in the future. • In-depth metallurgical test work and pilot plant programs were performed over the 18-month duration of the DFS on over 27 tonnes of material (primarily limited to the B5 unit) to optimise the process flowsheet. Some metallurgical test work is still ongoing to confirm and further reduce risk of specific areas in the process flowsheet. The results from the test work will be incorporated and updated during the detailed engineering phase, over the next year, based on the criticality of the effect on the current design. • The process flowsheet was customised to the metallurgical and chemical characteristics of the unique Rhyolite Ridge ore to reflect each unit operation of the proposed Rhyolite Ridge processing facilities. This extensive effort has resulted in achieving a high level of confidence in the process flowsheet and reducing process risk and uncertainty. The major unit operations of the Rhyolite Ridge flowsheet have been operated at pilot plant scale on over 27 tonnes of material. The metallurgical test work is representative of the process planned for treating the Rhyolite Ridge ore delivered from the mine. • Metallurgical test work was limited to the M5, B5, and L6 lithium bearing domains. Most test work was performed on B5 material as this represents all ore mined for the first 18 years of production, though a single test was performed on the L6 ore that will be mined from Year 19 onwards. A boron cut-off grade of 5,000 ppm has also been applied for metallurgical domaining purposes based on leaching test work. • Based on the metallurgical test work, Fluor reported corresponding recoveries of 84.6% for lithium and 78.7% for boron to be applied to all ore planned to be mined. These figures are cumulative recoveries for the unit processes that span from vat leaching to product production. These recoveries have been fixed over the 26-year mine

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		plan.
	- *Any assumptions or allowances made for deleterious elements.*	- In addition to lithium and boron, deleterious elements including magnesium, calcium, aluminium, potassium, and iron impact the amount of sulphuric acid consumed by processing plant feed material and annual ore throughputs. The process plant design is based on maximising the sulphuric acid output by the SAP. The ore throughput through the processing plant is therefore variable to counter the effect of varying acid consumptions to give a constant annual acid consumption. The ore throughput of the process plant is based on achieving the maximum ore throughput anticipated in the mine plan on a monthly basis.
	- *The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.*	- Extensive test work and pilot plant programs were performed as part of the April 2020 DFS on bulk samples taken from the outcrop and on core samples. The majority of metallurgical test work has been performed on material from the proposed quarry location in the South Basin, which was the focus of the April 2020 DFS. Most test work was performed on B5 ore material as this represents all ore mined for the first 18 years of production, though a single test was performed on the L6 ore that will be mined from Year 19 onwards. Test work has been performed on over 27 tonnes of material, and the samples are representative of the ore body as a whole.
	- *For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?*	- Kemetco, KCA, FLSmidth, and Veolia have performed sufficient bench scale and pilot plant test work to indicate that technical grade lithium carbonate with 99% purity, battery-grade lithium hydroxide with 99.5% purity, and boric acid with 99.9% purity can be produced from the Rhyolite Ridge ore. The Ore Reserves are of the mineralogy that the plant is designed to process and support these specifications based on metallurgical test work.
Environmental	- *The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.*	- The Project is designed to be a sustainable, environmentally sensitive operation with no grid energy requirements, low water usage, low emissions, and a modest surface footprint. - The BLM permitting process will require compliance with the National Environmental Policy Act (**NEPA**); ioneer is actively preparing to meet these requirements. The NEPA requirements include baseline reports for 14 different resource areas of the Project, including air quality, biology, cultural resources, groundwater, recreation,

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		socioeconomics, soils, and rangeland. • Baseline environmental studies were performed as part of the April 2020 DFS. • The permitting process for 28 separate permits is currently underway for the Stage 1 Quarry, an initial starter pit that supplies ore for the first years of production. The permits and submittals deemed critical to the advance of the overall Project include the Bureau of Land Management (**BLM**) Plan of Operations, the State of Nevada Water Pollution Control Permit (**WPCP**) required to construct, operate, and close a mining facility, and the Nevada Bureau of Air Pollution Control air quality permit. • A revised BLM Plan of Operations was submitted in the Third Quarter (**Q3**) of 2022. • ioneer has focused its efforts to refine the configuration of the Initial Stage 1 Quarry and associated stockpiles to avoid direct impacts to Tiehm's buckwheat and to securing permits for the initial Stage 1 Quarry that provides ore for thirteen years of production, and little work has been done to date on preparing permit applications for the larger Stage 2 Quarry. The permitting process for the Stage 2 Quarry should begin after production begins for the Stage 1 Quarry. • The State of Nevada WPCP was received 19 July 2021 • The Nevada Bureau of Air Pollution Air Quality Permit was received 24 June 2021 • The Plan of Operations filing triggered the environmental review process under the NEPA that is expected to follow an Environmental Impact Statement (**EIS**) pathway. The NEPA process will be guided by recently implemented guidelines specified in Secretarial Order 3355 by the US Department of the Interior which have been enacted to streamline the overall environmental review and permitting process. A draft and then final EIS will be completed by a BLM-approved third-party contractor selected by ioneer. Public comment periods are required as part of the EIS process, and the Project schedule assumes 12 months of EIS approval cycle. • During the EIS process the BLM will also consult with the USFWS regarding the effects of the Project on Tiehm's buckwheat including the critical habitat. • Preparation of all other permits, including federal, state, and local permits, are also in progress.

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		• Ioneer has focused its efforts to date on preparing permits for the initial Stage 1 Quarry, and little work has been done to date on preparing permit applications for the larger Stage 2 Quarry, which is effectively an expansion of the Stage 1 Quarry. The permitting process for the Stage 2 Quarry should begin after permits for the Stage 1 Quarry have been submitted in 2020. Based on the current mine plan, the Stage 2 Quarry permits will need to be secured by the end of the third year of production. • A geochemistry study was conducted as part of the April 2020 DFS to assess acid rock drainage (**ARD**), metals leaching (**ML**), and salinity generation potential of all major lithologic units and residual process materials. The study also aimed to understand mineral composition and geochemical controls on water quality, evaluate potential impacts from the project and associated protection measures, and provide information to support geochemical models and evaluations for water quality predictions. Overburden and ore samples were collected from existing exploration drill core and 137 samples representing 15 different units were geochemically analysed to characterise the potential of these materials to generate acidic drainage or to leach metals based on regulatory guidance documents published by the Nevada Division of Environmental Protection (**NDEP**) and the Nevada BLM. Testing included acid-base accounting (**ABA**), net acid generation pH, short-term leach testing by meteoric water mobility procedure, bulk elemental content, X-ray diffraction, optical mineralogy, and humidity cell testing (**HCT**). While most Project materials are non-potentially acid generating (**non-PAG**), HCTs for all major lithologic units are required because a post-closure quarry lake will develop. In February 2020, NDEP and BLM provided authorizations for termination of 11 HCTs and continuation of 8 HCTs. • Two ex-pit OSFs have been designed to accommodate the storage of overburden and low-grade M5 material, namely, the West OSF and the North OSF. The West OSF is located to the northwest of the Stage 1 Quarry. This site was selected due to its proximity to the Stage 1 Quarry to minimise haul distances and prevent sterilisation of Mineral Resources. The North OSF is located approximately 1.1-kilometer (**km**) northwest of the Stage 2 Quarry between the Stage 2 Quarry limits and the processing plant. The North OSF site was

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		selected due to boundary restrictions and the location of the Cave Springs Formation outcroppings. In-pit storage of overburden and low-grade M5 material can commence as soon as sufficient pit floor space is available and the orientation of the advancing mining face becomes conducive to in-pit backfilling. The initial West OSF with an estimated four years of capacity was designed to a relative accuracy and confidence level consistent with a Feasibility Study, whereas the West OSF expansion, North OSF, and In-Pit Overburden Backfill (**IOB**) designs were performed to a relative accuracy and confidence level consistent with a Pre-Feasibility Study. To date, no issues have been identified that would materially impact the proposed locations of the West and North OSFs. • A tail gas scrubber will be installed on the SAP to remove remaining sulphur dioxide (**SO_2**) from the gas stream to make certain that environmental emissions requirements are met. • Process residue will be stacked in a Spent Ore Storage Facility (**SOSF**) located 1.6 km south of the processing plant that has been designed to store a composite consisting of leached ore from the vats plus sulphate salts generated in the evaporation and crystallisation circuits. This material is suitable for dry stacking, so there is no need for a conventional tailings dam. A double-sided, textured high-density polyethylene (**HDPE**) geomembrane liner will provide containment and will be protected by a granular layer to facilitate long-term drainage. The SOSF engineering has been completed to a detailed design level with drawings issued for construction as this level of engineering completion is required by regulatory authorities and will be submitted as part of the overall permitting process. To date, no issues have been identified that would materially impact the proposed location of the SOSF.
Infrastructure	• *The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.*	• The Project is currently in the development stage, and no site-specific infrastructure has been built to date. • Sufficient land exists to locate all proposed infrastructure required for the Project, including haul roads, Overburden Storage Facilities (**OSFs**), Spent Ore Storage Facility (**SOSF**), Contact Water Ponds (**CWPs**), the processing plant (which includes processing structures and facilities), maintenance facilities, warehousing, shipping and receiving, fuel island, Sulphuric Acid Plant (**SAP**), Steam Turbine

Criteria	JORC Code 2012 Explanation	Commentary
		Generator (**STG**) responsible for power generation/transmission, and administrative buildings. • The STG is designed to generate 35.2 mega-Watts (**MW**) of electricity using steam generated by the waste heat boiler in the SAP. The STG power generation exceeds the current power requirements to run the entire facility and will be separate from the Nevada state power grid. A backup diesel generator will also be available to provide black-start capability and provide power to essential systems should the STG be down. • The Project has been designed to be an environmentally sensitive operation with low water usage and water recycling and reuse where possible. There is sufficient water available to meet processing and dust control requirements. • The Rhyolite Ridge site is currently accessed from the cities of Reno and Las Vegas, Nevada from Nevada Stage Highway 264 and the unpaved Hot Ditch and Cave Springs county roads. ioneer is working with Esmeralda County officials in developing a traffic management plan that will integrate new access roads to the facility with the existing county roads in the area. Consideration will be given to make certain that the safety of all users of county roads is not compromised through development of the Project. • Nevada is considered one of the world’s most favourable and stable mining jurisdictions, and there is a high degree of experienced, competent, and skilled personnel available to meet workforce requirements for the Project. • A workforce camp is not foreseen for use in housing operational and management personnel. ioneer staff conducted a study of local housing options. Local housing, apartments, motels, and recreational vehicle (**RV**) sites were located, evaluated, and quantified. Only a very limited amount of accommodation is available in the nearest residential areas, the small town of Dyer, Nevada, and Bishop, California. The next closest available accommodations are in the city of Tonopah, Nevada, which is roughly 1.5 hours to the Project site. A few inactive RV sites were located near the site, but re-activation potential was not evaluated, and these sites are limited to 25 RV units by regulation due to needs for infrastructure for larger RV areas. Due to the potential need to develop housing, ioneer may contribute individual housing support, which is included in the

Criteria	JORC Code 2012 Explanation	Commentary
		operating costs estimate for those employees hired before turnover. In addition, ioneer may invest over two years in local housing infrastructure under the assumption that roughly 20% of the ioneer workforce will be local hires and an additional 20% of employees will be drive-in/drive-out. • A project execution plan has been developed based on an Engineering, Procurement, and Construction Management (**EPCM**) delivery framework. Project execution is based on continuing with the same companies (Fluor, SNC-Lavalin, MECS, Kemetco, KCA, FLSmidth, Veolia, EM Strategies, NewFields, Trinity, EnviroMINE, and Golder) that completed the DFS to maintain continuity and retain project knowledge. Construction of processing plant, SAP, and SOSF facilities is planned to be facilitated by various consultants and contractors with ioneer oversight, whereas construction of the mine haul roads and initial box-cut is planned to be performed by ioneer.
Costs	• *The derivation of, or assumptions made, regarding projected capital costs in the study.*	• The capital cost estimate is based on work completed for the April 2020 DFS. An AACEI Class 3 capital cost estimate with an accuracy range of ±15% was produced for the DFS, and engineering design is 30% complete. The estimate reflects the Project's EPCM execution strategy and baseline project schedule. • Capital costs for various Work Breakdown Structure (**WBS**) codes were independently developed by third parties and consolidated by Fluor. More than 1,500 deliverables were produced during the DFS to support the capital costs estimate. • The capital cost estimate covers the period from DFS completion to commissioning and is reported in First Quarter (**Q1**) 2020 real US dollars without allowances for escalation or currency fluctuation. The estimate does not include sunk costs. • A contingency of 8% was applied to the capital costs estimate using a Monte Carlo simulation to achieve a P50 (i.e., the probability at the 50th percentile). • The capital schedule for mining equipment includes new equipment required to meet production targets of the 26-year mine plan and replacement equipment based on useful service lives provided by the vendor or based on other industry standards. Rebuilds have also been included in the capital schedule at regular intervals based on rebuild lives provided by the vendor or other industry standards.

Criteria	JORC Code 2012 Explanation	Commentary
		• Capital costs of mining equipment were derived from quotes received in July 2019 from an equipment vendor with offices in Nevada. Costs for the autonomous haul trucks (**AHTs**) that were ultimately used in the DFS were not included in the original quote, but additional base costs required to outfit a conventional 136 tonne haul truck with the components necessary to make it capable of autonomous haulage were verbally communicated by the vendor during a subsequent meeting. Taxes for the AHTs were estimated using a tax rate of 6.85%, but freight and assembly costs were assumed to remain unchanged from the conventional haul truck. • The capital cost estimates are not 100% equity based. Capital cost estimates for new and replacement mining equipment assume that 90% of the total equipment cost inclusive of the base cost, taxes, freight, and assembly would be financed and included in the operating costs estimate based on terms provided by the equipment manufacturer. The 10% down payment for equipment was included in the capital costs estimate. • Capital costs for the haul roads, OSFs, SOSF, CWPs, the processing plant (which includes processing structures and facilities), maintenance facilities, warehousing, shipping and receiving, fuel island, SAP, STG, and administrative buildings were estimated from material take-off (**MTO**) quantities developed for the DFS by various third parties. Each of the above have an engineering design that is at least 30% complete with some items with a level of design maturity completed to detailed engineering and issued for construction.
	• *The methodology used to estimate operating costs.*	• Operating costs are based on work completed for the April 2020 DFS. • Sustaining capital costs have been included in the operating costs estimate. • Operating cost estimates for the quarry and processing plant were independently developed by Golder and Fluor and consolidated by Fluor for input into the cash flow model. • Direct mine operating costs are zero-based and developed from first-principles from the mine plan production statistics using methodologies consistent with a DFS. Except for blasting, all production and preventative maintenance tasks are assumed to be self-performed by the owner (ioneer). Blasting is assumed to be

Criteria	JORC Code 2012 Explanation	Commentary
		performed by a qualified subcontractor. • Hourly operating costs for equipment were based on vendor guidelines and supported by budgetary quotes for consumable items from local vendors, including fuel, diesel exhaust fluid, lubricants and greases, rubber tyres, ground-engaging tools, and wear parts. Hourly undercarriage and general repair and replacement parts were estimated from a third-party cost database and escalated to 2019 US dollars. • Annual costs for an integrated Fleet Management System (**FMS**) have been included based on a budgetary quote provided by a local vendor. • Based on information provided by the equipment vendor, an annual license fee was applied to each AHT required to meet production in a given year. • The mine was assumed to operate two-shifts-per-day, 365 days per year with no scheduled off days for the first 19 years of production. The mine was then assumed to transition to a one-shift-per-day basis from Year 20 through the remaining mine life. • Labour costs assume 12-hour shifts with 2,080 straight-time hours and 104 overtime hours worked each year. • Labour wages are fully burdened and were developed based on a survey of local mining wages. • Costs for the five “License Team” personnel required to remotely monitor the AHTs each shift and make sure they are performing to specifications have been included in the mine operating costs. These personnel will likely be contracted through the equipment vendor. • Mining equipment financing costs are included in the operating costs. For the purposes of the estimate, 90% of the total equipment cost inclusive of the base cost, taxes, freight, and assembly are assumed to be financed based on terms provided by the equipment manufacturer. The 10% down payment was included in the capital costs estimate. • Processing costs, spent ore removal and SOSF costs, SAP costs, and other indirect operating costs were estimated by Fluor and SNC Lavalin from first principles using the ore production schedule from the mine plan. These costs were estimated using methodologies

Criteria	JORC Code 2012 Explanation	Commentary
		consistent with a DFS and included quoted firm pricing from major reagent suppliers, quoted freight costs from transport firms, and workforce costs based on industry norms for salary and wage data within the region consistent with the mine workforce costs. Reasonable scenarios for other requirements such as outsourced services with quoted rates or estimates were also included. Quantities of reagents were established during pilot testing with ore.
	• *Allowances made for the content of deleterious elements.*	• No penalties for deleterious elements were forecast in the economic analysis.
	• *The source of exchange rates used in the study.*	• Exchange rates were obtained digitally from XE.com Inc. on 27 August 2019.
	• *Derivation of transportation charges.*	• Transportation charges for all significant materials were derived from quotes. Historical data were used for some minor charges.
	• *The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.*	• Not applicable.
	• *The allowances made for royalties payable, both Government and private.*	• Net proceeds (in the form of taxes) were included in the economic analysis. No royalties are paid to private organisations or individuals.
Revenue factors	• *The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.*	• The revenue factors used in the economic analysis were based on work performed for the April 2020 DFS. • Annual saleable lithium carbonate, lithium hydroxide, and boric acid tonnages reflect the head grade dictated by the mine plan and anticipated metallurgical recoveries estimated from test work. • Consensus price forecasts for lithium carbonate and lithium hydroxide were obtained from a range of market research companies, investment banks, and other reputable sources. The commodity price for the first three years of technical-grade lithium carbonate production were estimated from the mean of the latest Roskill technical-grade published price forecast (in real terms) and Benchmark Mineral Intelligence (**Benchmark**) lithium hydroxide forecast (in real terms) adjusted to reflect the cost to upgrade the technical-grade lithium carbonate as published by Orocobre related to its venture with Toyota Tsusho. A consensus price forecast for lithium hydroxide, which will be produce from the fourth year of production and on, was estimated using the mean of the Roskill

Criteria	JORC Code 2012 Explanation	Commentary
		lithium hydroxide and Benchmark lithium hydroxide forecasts. • The estimated price for boric acid was based on an analysis by ioneer's Sales and Marketing team using 1) ioneer current contracts, and 2) pricing given boric acid supply and demand based on historical market data and discussions with potential customers. • No exchange rates were applied to metal or commodity prices. All commodity prices are stated in US Dollars. • Transportation charges for all significant materials were derived from quotes. Historical data were used for some minor charges not derived from quotes. • No penalties were forecast in the economic analysis.
	• *The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.*	• Consensus price forecasts for lithium carbonate and lithium hydroxide used in the economic analysis were obtained from a range of market research companies, investment banks, and other reputable sources. The commodity prices for the first three years of technical-grade lithium carbonate production were estimated from the mean of the latest Roskill technical-grade published price forecast (in real terms) and Benchmark Minerals lithium hydroxide forecast (in real terms) adjusted to reflect the cost to upgrade the technical-grade lithium carbonate as published by Orocobre related to its venture with Toyota Tsusho. Consensus price forecasts for battery-grade lithium hydroxide which will be produce from the fourth year of production and on, were estimated using the mean of the Roskill lithium hydroxide and Benchmark Minerals lithium hydroxide forecasts. • The estimated price for boric acid used in the economic analysis was based on an analysis by ioneer's Sales and Marketing team using 1) ioneer current contracts, and 2) pricing given boric acid supply and demand based on historical market data and discussions with potential customers.
Market assessment	• *The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.*	• Market demand and supply trends for lithium products and borates were completed by ioneer's Sales & Marketing team with assistance from Michael LePage, the former marketing leader for Rio Tinto Industrial Minerals (including US Borax) with 30+ years of experience, as part of a detailed analysis in the April 2020 DFS using data aggregated from a range of market research companies, investment banks, and other reputable sources.

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		• Ioneer's efforts were led by Yoshio Nagai, ioneer's Vice President of Sales & Marketing. Mr. Nagai has more than 20 years of chemical and mining industry sales and marketing experience, most recently as Sales Vice President at the Rio Tinto Group accountable for borates, salt, and talc products in Asia and the USA.
		• Lithium
		  • Lithium extraction produces lithium carbonate, lithium hydroxide, lithium chloride, butyl lithium, and lithium metal. Metallic lithium is produced in a multi-stage process starting from lithium carbonate. Lithium carbonate is typically produced in several grades – industrial grade (purity >/= 96%) for glass, fluxing agent, and lubricant; technical grade (purity >/= 99.0%) for ceramics, lubricants and batteries; and battery grade (purity >/= 99.5%) for high-end battery cathode use.
		  • Lithium demand is growing rapidly due to the increasing demand for lithium-ion batteries used in electric vehicles (**EVs**) throughout the world to meet increasingly stringent carbon dioxide (**CO_2**) emissions regulations. Automakers have been strengthening the electrification strategies to meet these toughening standards as a result, and one automaker is aiming to invest $60 billion USD into EV content. In 2019, Roskill estimated a compound annual growth rate (**CAGR**) of 22.9% for lithium carbonate equivalent (**LCE**) through 2028. Battery-grade lithium hydroxide shows the highest growth rate of all lithium products. Other end uses for lithium (e.g., glass, ceramics, lubricating grease, and metallurgy) are forecasted to have moderate gains.
		  • Lithium carbonate supply forecasts were prepared as part of the DFS using forecasts from Roskill and Benchmark. In each case, the companies forecasted a doubling of refined supply by 2021/22 and at least tripling by 2024/26. Despite this anticipated growth in supply, both Roskill and Benchmark predict a supply shortfall by 2028.
		• Boric acid
		  • Large-scale borate commercial production is confined to four main areas of the world, including the southwest US and Mexico, Andes belt of South America, the central area of Asia extending into eastern Europe, and the eastern region of Russia. The borates market is supplied principally by two major players, Eti

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		Mine Works (**Eti**) and Rio Tinto, though there are other smaller players. The term “borates” describes a commercial source of chemical boric oxide (**B_2O_3**) in the form of sodium borate compounds, minerals, refined (i.e., boric acid), calcined, or specialty forms of borate. • Borate is typically refined, but some producers sell some of the raw mineral or a concentrated form of the mineral as a substitute for the refined product at a lower price. Borates may be used for more than 300 applications, with 70% used as concentrates, refined borates, or boric acid in glass, ceramics, detergents, and fertilizers. Glass is the largest boric acid market and, according to Maia Research, it grew 4% in 2019 and an average 5% per year over the past 4 years. • Boric acid production growth between 2015 and 2019 has ranged between 4% and 6% annually. After 2019, the global supply of boric acid is projected to continue to meet demand as suppliers increase production to meet the market’s needs. Based on research by Maia Research and ioneer analysis, there was an excess of supply in 2019 due to the trade war between the US and China. However, their research also indicates that the market will start to tighten in 2020/21 and the demand will exceed supply by 2024. If ioneer’s boric acid production begins in the second quarter (**Q2**) of 2023 as planned and expands to full capacity, the market supply could still run short of demand by 2027. This indicates that the market needs additional supply, but no existing producers have formal, publicly announced plans for expansion. However, the underutilised Chinese boric acid supply capacity can ramp up production upon higher boric acid pricing.
	• *A customer and competitor analysis along with the identification of likely market windows for the product.*	• Customer and competitor analyses were performed as part of the DFS. • Lithium • Two Chilean brine producers have laid foundations for increased extraction rates over the next three to four years, but both producers have encountered technical challenges and delays. The expansions have been delayed due to Chinese production that has threatened to swing the market into excess supply. Of the 10 producers in the region, only a small amount of additional

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		lithium compounds has found its way to market, much of which has only reached technical-grade specifications. This indicates that a large proportion was either reprocessed (adding cost) or converted to hydroxide. • Lithium prices have recently declined, and as a result some existing spodumene producers have temporarily been shut down. However, lithium prices are anticipated to rebound as demand continues to grow. • Ioneer will be targeting 10 different customers in five different technical-grade and battery-grade large market segments spanning five different countries/regions. These market segments have significant growth rates, especially for battery-grade lithium. • A lithium compounds operating cost curve was developed as part of the DFS. If ioneer can produce as the anticipated all-in cost per tonne, it will be in the competitive end of the cost curve. • Boric acid • The borates market is supplied principally by two major players, Eti and Rio Tinto, though there are other smaller players. Eti, a Turkish state-owned mining and chemicals company, is the world's largest borate supplier by market share and Proven Ore Reserves and holds 72% of worldwide borate reserves. Rio Tinto has a large borates product portfolio but has not announced any plans to expand borate production. However, they are building a pilot plant to produce lithium from mine waste with a plan to invest additional money to produce a small amount of borate as a by-product of lithium production if the associated pilot production of boric acid is successful. MCC Russian Bor CJSC (**Bor**) in south-eastern Russia supplies 10% of boric acid demand and is regarded as the best quality in terms of impurities. However, Bor has historically struggled with production due to financial and employee relationship issues. Bor is reportedly receiving financial assistance from a major Japanese trading company and may be able to increase its boric acid production as a result, though no announcement has been made. • There is a total of five other boron greenfield projects, not including Rhyolite Ridge in varying stages of exploration and engineering development.

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	- *Price and volume forecasts and the basis for these forecasts.*	- Lithium - Consensus price (in real terms) and volume forecasts for lithium carbonate and lithium hydroxide were developed by ioneer with assistance from an independent consultant after discussion with potential Asian, European, and US customers. Sales forecasts from Benchmark and Roskill were also obtained along with open-source information from investment banks and other reputable sources to develop a consensus price. This effort was led by ioneer's Vice President of Sales & Marketing, Yoshio Nagai, and independent consultant, Michael LePage. Consensus price forecasts (in real terms) used in the economic analysis for technical-grade lithium carbonate range from 10,443 to 14,334 USD/t with a mean price of 12,388 USD/t for the first four years of sales. Consensus price forecasts (in real terms) used in the economic analysis for battery-grade lithium hydroxide range from 12,286 to 14,229 USD/t with a mean price of 13,382 USD/t after Year 4. The consensus price forecasts for the first three years of lithium carbonate production were the mean of the latest Roskill technical-grade published price forecast (in real terms) and Benchmark Minerals lithium hydroxide forecast (in real terms) adjusted to reflect the cost to upgrade the technical-grade lithium carbonate as published by Orocobre related to its venture with Toyota Tsusho. Consensus price forecasts for lithium hydroxide, which will be produce from the fourth year of production and on, were estimated from the mean of the Roskill lithium hydroxide and Benchmark Minerals lithium hydroxide forecasts. - In 2019, Roskill estimated a CAGR of 22.9% for LCE through 2028. Battery-grade lithium hydroxide shows the highest growth rate of all lithium products. Other end uses for lithium (e.g., glass, ceramics, lubricating grease, and metallurgy) are forecasted to have moderate gains. - Lithium carbonate supply forecasts were prepared as part of the DFS using forecasts from Roskill and Benchmark. In each case, the companies are forecasting a doubling of refined supply by 2021/22 and at least tripling by 2024/26. Despite this anticipated growth in supply, both Roskill and Benchmark predict a supply shortfall by 2028. - Boric acid

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		• The estimated price for boric acid was based on an analysis by ioneer's Sales and Marketing team using 1) ioneer current contracts, and 2) pricing given boric acid supply and demand based on historical market data and discussions with key potential customers in the Asia markets. This effort was led by ioneer's Vice President of Sales & Marketing, Yoshio Nagai, and independent consultant, Michael LePage. Mr. Nagai has more than 20 years of chemical and mining industry sales and marketing experience, most recently as Sales Vice President at the Rio Tinto Group accountable for borates, salt, and talc products in Asia and the USA. Mr. LePage is the former marketing leader for Rio Tinto Industrial Minerals, including US Borax, with 30+ years of experience. Mr. LePage previously developed the market assessments for US Borax and some work on Jadar. Boric acid prices used in the economic analysis (in real terms) range from 527 to 750 USD/t with a mean price of 710 USD/t. • Boric acid production growth between 2015 and 2019 has ranged between 4% and 6% annually. After 2019, the global supply of boric acid is projected to continue to meet demand as suppliers increase production to meet the market's needs. Based on research by Maia Research and ioneer analysis, there was an excess of supply in 2019 due to the trade war between the US and China. However, their research also indicates that the market will start to tighten in 2020/21 and the demand will exceed supply by 2024. If ioneer's boric acid production begins in the second quarter (**Q2**) of 2023 as planned and expands to full capacity, the market supply could still run short of demand by 2027. This indicates that the market needs additional supply, but no existing producers have formal, publicly announced plans for expansion. However, the underutilised Chinese boric acid supply capacity can ramp up production upon higher boric acid pricing.
	• *For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.*	• Not applicable.
Economic	• *The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated*	• The production schedule derived from the mine plan and associated capital and operating cost estimates were utilized to develop an economic model developed by Golder. The model was handed over

<table>
<tr><th>Criteria</th><th>JORC Code 2012 Explanation</th><th>Commentary</th></tr>
<tr><td></td><td><i>inflation, discount rate, etc.</i></td><td>to Fluor for finalisation, and Fluor produced the economic results. Inputs into the economic analysis include the capital and operating costs, saleable lithium carbonate, lithium hydroxide, and boric acid tonnages, commodity price and revenue forecasts, and transportation and management costs. The cost estimates are based on work completed for the April 2020 DFS. An AACEI Class 3 cost estimate with an accuracy range of ±15% was produced for the DFS, and engineering design is 30% complete. The estimate reflects the Project's EPCM execution strategy and baseline project schedule. The financial model uses post-tax nominal cashflows adjusted to real terms using a 2% inflation rate. An 8% discount rate was applied to estimate Project Net Present Value (NPV).</td></tr>
<tr><td></td><td>• NPV ranges and sensitivity to variations in the significant assumptions and inputs.</td><td>• Sensitivity analyses on fuel costs, labour costs, operating costs, capital costs, discount rate, lithium carbonate price, boric acid price, lithium recovery, and boron recovery were performed in the financial model. Based on +/-10% changes in factors, the Project Net Present Value (NPV) in real dollars with Inferred Resources included in revenue was calculated at an applied 8% discount rate. The outcomes of this analysis are shown in the table below in order of highest to lowest sensitivity.
<table>
<tr><th>Sensitivity Factor</th><th>NPV with -10% Adjustment Factor (US$ Millions)</th><th>NPV with +10% Adjustment Factor (US$ Millions)</th></tr>
<tr><td>Lithium Carbonate/Hydroxide Price</td><td>1,032</td><td>1,499</td></tr>
<tr><td>Lithium Recovery</td><td>1,032</td><td>1,499</td></tr>
<tr><td>Operating Costs</td><td>1,374</td><td>1,156</td></tr>
<tr><td>Boric Acid Price</td><td>1,173</td><td>1,357</td></tr>
<tr><td>Boric Acid Recovery</td><td>1,173</td><td>1,357</td></tr>
<tr><td>Capital Costs</td><td>1,334</td><td>1,196</td></tr>
<tr><td>Labor</td><td>1,280</td><td>1,249</td></tr>
<tr><td>Fuel</td><td>1,276</td><td>1,253</td></tr>
</table>
• A sensitivity analysis on the applied discount rate used to estimate</td></tr>
</table>

<table>
<tr><th>Criteria</th><th>JORC Code 2012 Explanation</th><th>Commentary</th></tr>
<tr><td></td><td></td><td>Project NPV below was also performed. The results of this analysis are summarised in the table below.
<table><tr><th>Discount Rate (%)</th><th>NPV (US$ Millions)</th></tr><tr><td>12%</td><td>626</td></tr><tr><td>11%</td><td>753</td></tr><tr><td>10%</td><td>899</td></tr><tr><td>9%</td><td>1,068</td></tr><tr><td>8%</td><td>1,265</td></tr></table>
• Based on the above sensitivity factors, the Project is most sensitive to increases in discount rate and least sensitive to changes in fuel cost.</td></tr>
<tr><td><i>Social</i></td><td>• <i>The status of agreements with key stakeholders and matters leading to social licence to operate.</i></td><td>• If the Project is selected for evaluation under an EIS, a draft and then final EIS would be completed by a BLM-approved third-party contractor selected by ioneer. Public comment periods are required as part of the EIS process, and the Project schedule assumes 12 months of EIS approval cycle.
• Ioneer has entered into three different water rights lease, purchase, and options agreements with a local corporation and LLC (limited liability corporation) along with local landowners that grant rights for water usage, primarily for irrigation.</td></tr>
<tr><td><i>Other</i></td><td>• <i>To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:</i></td><td>• No Comment</td></tr>
<tr><td></td><td>• <i>Any identified material naturally occurring risks.</i></td><td>• See the “Mining factors or assumptions” subsection above for a discussion on the risks associated with the M5a geological unit.
• No hydrogeological data was incorporated into the geotechnical analyses of the underlying geology, pit configurations, or pit design parameters. As such, EnviroMINE’s geotechnical analyses were completed under the assumption that the underlying geology and pit walls would be dry. Golder’s stability analyses of the OSFs also assumed the M5 unit would be stacked dry (unsaturated). If the pit walls cannot be fully dewatered, then the outcomes of EnviroMINE’s pit slope stability analyses will change and result in a decrease of the</td></tr>
</table>

Criteria	JORC Code 2012 Explanation	Commentary
		maximum allowable inter-ramp angle used to design the pit walls, thereby, increasing strip ratio and associated overburden tonnages. If the M5 material that is stockpiled within the OSFs is above 18% moisture saturation by weight, then the Engineer should be contacted to review and provide recommendations for design or material handling revisions. Actions that can be performed to remedy high moisture M5 are: spreading and drying prior to stockpiling; stacking and sequencing revisions; additional geotechnical testing and analyses to support higher moisture contents; or design revision to achieve geotechnical stability (which may result in reduced storage capacity of the OSFs). • The Project area is in a moderately high seismic zone as determined by the NewFields Seismic Hazard Assessment prepared for the SOSF. • The pit wall slope stability analyses have been performed assuming an earthquake with a peak ground acceleration of 0.25g, resulting from a seismic return period of 475-years as determined by the USGS. However, there is always as risk of larger earthquakes to occur. A 475-year event has a probability of annual exceedance of 2%. As the probability of recurrence is increased (e.g., from 475 years to 2,475 years) the probability decreases while intensity increases. Typically, pit walls are designed to remain stable during the 475-year earthquake. A larger earthquake than the 475-year event could cause pit wall failure in areas of the quarry where there is no in-pit backfill stacked against the pit walls. • The OSF slope stability analysis has been performed assuming an earthquake with a peak ground acceleration of 0.31g, resulting from a seismic return period of 475-years as determined by NewFields. However, there is always as risk of larger earthquakes to occur. A 475-year event has a probability of annual exceedance of 2%. As the probability of recurrence is increased (e.g., from 475 years to 2,475 years) the probability decreases while intensity increases. Dumps are typically designed to remain stable during the 475-year earthquake. • The Project area is in an area with low annual precipitation where most precipitation is obtained through short duration monsoon storms resulting in flash floods. Permanent surface water controls around the OSF, SOSF, and quarry have been designed to convey

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		the 500-year, 24-hour peak design storm event. Haul roads outside of permanent facilities risk being washed out during minor storm events that could cause a short-term disruption in ore delivery to the processing plant.
	• *The status of material legal agreements and marketing arrangements.*	• ioneer currently holds a Water Rights Lease Agreement, an Option and Purchase Agreement, and an Option for Water Rights Lease. These permits are for non-mining and milling purposes. The Water Rights Lease Agreement and the Option and Purchase Agreement allow for permitted use of water for irrigation. The Option for Water Rights Lease grants the rights to lease water for irrigation, stockwater, and commercial use on an annual basis with the option to increase leased water rights. • Ioneer has signed a binding offtake agreement with an integrated Chinese boron company, Dalian Jinma Boron Technology Group Co. Ltd. (**Jinma**), for a five-year supply contract for 105,000 tonnes of boric acid per year, commencing in the first quarter of 2023. This offtake agreement secures a key customer for more than 50% of the Project's expected annual boron production. Jinma will also act as ioneer's exclusive distributor and representative in China and Taiwan, excluding large multinationals with Chinese operations that will be supplied directly by ioneer. • ioneer has signed a binding offtake agreement with Korean EcoPro Innovation Company LTD (EcoPro) for a three-year supply contract for 7,000 tonnes per year representing 34% of the Projects expected annual lithium carbonate production. The binding offtake agreement was publicly announced by ioneer on June 29, 2021. • ioneer has signed a binding offtake agreement with Ford Motor Company (Ford) for a five-year supply contract for 7,000 tonnes per year, representing 34% of the Projects expected annual lithium carbonate production. The binding offtake agreement was publicly announced by ioneer on July 21, 2022. • ioneer has signed a binding offtake agreement with Prime Planet Energy & Solutions (PPES) for a five-year supply contract for 4,000 tonnes per year, representing 19% of the Projects expected annual lithium carbonate production. The binding offtake agreement was publicly announced by ioneer on August 01, 2022.
	• *The status of governmental agreements and approvals*	• Please refer to the "Environmental" subsection for a discussion on

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	critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	the status of government agreements and approvals for permits. • After completion of the 2020 FS, the US Fish and Wildlife Service (USFWS) proposed listing Tiehm's buckwheat as an endangered species in October 2021, and in February 2022 the USFWS proposed critical habitat for the species. In December 2022, the United States Fish and Wildlife Service (USFWS) listed Tiehm's buckwheat as an endangered species under the Endangered Species Act (ESA) and has designated critical habitat by way of applying a 500 m radius around several distinct plant populations that occur on the Project site. The BLM will be able to meet its ESA obligations and consult with the USFWS about potential effects to Tiehm's buckwheat and its proposed critical habitat during the EIS. In the revised Plan of Operations Stage 1 Quarry configuration Ioneer will avoid any direct impacts to Tiehm's buckwheat. Areas proposed for critical habitat designation are located within the current Stage 1 Quarry, Overburden Storage Facilities, Stage 2 Quarry design, and reserve limits. Future rulings may require an update to the current Plan of Operations and quarry designs, limits, and reserves.
Classification	• *The basis for the classification of the Ore Reserves into varying confidence categories.*	• The Ore Reserves estimate for the Project is reported in accordance with the "Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" as prepared by the Joint Ore Reserves Committee (the JORC Code, 2012 Edition). • Only Measured and Indicated Mineral Resources from the B5 and L6 domains within the final 26-year pit design with the above Modifying Factors applied have been included in the Ore Reserves and classified into Proved and Probable categories. Ore Reserves within the Measured Mineral Resource classification have been categorised as Proved Ore Reserves, whereas Ore Reserves within the Indicated Mineral Resource classification have been categorised as Probable Ore Reserves. • The Ore Reserves are stated as dry tonnes of ore delivered at the processing plant ore stockpile.
	• *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• The Ore Reserves consist of 48% Proved Reserve and 52% Probable Reserve. • The Competent Person is satisfied that the stated Ore Reserves

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		classification of the deposit appropriately reflects the outcome of the technical and economic studies performed as part of the DFS.
	- *The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).*	- No Probable Reserves have been derived from Measured Mineral Resources.
Audits or reviews	- *The results of any audits or reviews of Ore Reserve estimates*	- Not applicable.
Discussion of relative accuracy/ confidence	- *Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within staged confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.*	- The economic analysis supporting the Ore Reserve has been completed with a relative accuracy and confidence level consistent with a Feasibility Study. - The key inputs for the Ore Reserve were derived from the April 2020 DFS. An AACEI Class 3 cost estimate with an accuracy range of ±15% was produced for the DFS, and engineering design is 30% complete. - Appropriate assessments and studies have been carried out and include consideration of and modification by realistically assumed mining, metallurgical, economic, marketing, legal, environmental, social, and governmental factors. These assessments demonstrate at the time of reporting that the extraction could be reasonably justified. - Project economics were tested with a suite of sensitivities (described in the “Economics” subsection) which indicate that the Project is economic under reasonable variations in key cost and price parameters.
	- *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and procedures used.*	- The Ore Reserve tonnes and grade have been estimated globally across the model area (i.e., the South Basin) for the Project.
	- *Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.* - *It is recognised that this may not be possible or appropriate in all circumstances. These statements of*	- Reconciliation against production data/results was not possible as the Project is currently in the development stage and there has been no production on the Project to date. - Ore head grade, lithium recovery and price have the largest impacts on NPV and Ore Reserve viability.

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	relative accuracy and confidence of the estimate should be compared with production data, where available.	