

AUSTRALIAN

# RESEARCH

INDEPENDENT INVESTMENT RESEARCH

## Liontown Resources Limited (ASX: LTR) Flash Note - World Class Kathleen Valley Li-Ta Mineral Resource Continues to Grow

May 14, 2020

## WHO IS IIR?

Independent Investment Research, "IIR", is an independent investment research house based in Australia and the United States. IIR specialises in the analysis of high quality commissioned research for Brokers, Family Offices and Fund Managers. IIR distributes its research in Asia, United States and the Americas. IIR does not participate in any corporate or capital raising activity and therefore it does not have any inherent bias that may result from research that is linked to any corporate/ capital raising activity.

IIR was established in 2004 under Aegis Equities Research Group of companies to provide investment research to a select group of retail and wholesale clients. Since March 2010, IIR (the Aegis Equities business was sold to Morningstar) has operated independently from Aegis by former Aegis senior executives/shareholders to provide clients with unparalleled research that covers listed and unlisted managed investments, listed companies, structured products, and IPOs.

IIR takes great pride in the quality and independence of our analysis, underpinned by high caliber staff and a transparent, proven and rigorous research methodology.

### INDEPENDENCE OF RESEARCH ANALYSTS

Research analysts are not directly supervised by personnel from other areas of the Firm whose interests or functions may conflict with those of the research analysts. The evaluation and appraisal of research analysts for purposes of career advancement, remuneration and promotion is structured so that non-research personnel do not exert inappropriate influence over analysts.

Supervision and reporting lines: Analysts who publish research reports are supervised by, and report to, Research Management. Research analysts do not report to, and are not supervised by, any sales personnel nor do they have dealings with Sales personnel

Evaluation and remuneration: The remuneration of research analysts is determined on the basis of a number of factors, including quality, accuracy and value of research, productivity, experience, individual reputation, and evaluations by investor clients.

### INDEPENDENCE – ACTIVITIES OF ANALYSTS

IIR restricts research analysts from performing roles that could prejudice, or appear to prejudice, the independence of their research.

Pitches: Research analysts are not permitted to participate in sales pitches for corporate mandates on behalf of a Broker and are not permitted to prepare or review materials for those pitches. Pitch materials by investor clients may not contain the promise of research coverage by IIR.

No promotion of issuers' transactions: Research analysts may not be involved in promotional or marketing activities of an issuer of a relevant investment that would reasonably be construed as representing the issuer. For this reason, analysts are not permitted to attend "road show" presentations by issuers that are corporate clients of the Firm relating to offerings of securities or any other investment banking transaction from that our clients may undertake from time to time. Analysts may, however, observe road shows remotely, without asking questions, by video link or telephone in order to help ensure that they have access to the same information as their investor clients.

Widely-attended conferences: Analysts are permitted to attend and speak at widely-attended conferences at which our firm has been invited to present our views. These widely-attended conferences may include investor presentations by corporate clients of the Firm.

Other permitted activities: Analysts may be consulted by Firm sales personnel on matters such as market and industry trends, conditions and developments and the structuring, pricing and expected market reception of securities offerings or other market operations. Analysts may also carry out preliminary due diligence and vetting of issuers that may be prospective research clients of ours.

### INDUCEMENTS AND INAPPROPRIATE INFLUENCES

IIR prohibits research analysts from soliciting or receiving any inducement in respect of their publication of research and restricts certain communications between research analysts and personnel from other business areas within the Firm including management, which might be perceived to result in inappropriate influence on analysts' views.

Remuneration and other benefits: IIR procedures prohibit analysts from accepting any remuneration or other benefit from an issuer or any other party in respect of the publication of research and from offering or accepting any inducement (including the selective disclosure by an issuer of material information not generally available) for the publication of favourable research. These restrictions do not preclude the acceptance of reasonable hospitality in accordance with the Firm's general policies on entertainment, gifts and corporate hospitality.

### DISCLAIMER

This publication has been prepared by Independent Investment Research (Aust) Pty Limited trading as Independent Investment Research ("IIR") (ABN 11 152 172 079), an corporate authorised representative of Australian Financial Services Licensee (AFSL no. 410381). IIR has been commissioned to prepare this independent research report (the "Report") and will receive fees for its preparation. Each company specified in the Report (the "Participants") has provided IIR with information about its current activities. While the information contained in this publication has been prepared with all reasonable care from sources that IIR believes are reliable, no responsibility or liability is accepted by IIR for any errors, omissions or misstatements however caused. In the event that updated or additional information is issued by the "Participants", subsequent to this publication, IIR is under no obligation to provide further research unless commissioned to do so. Any opinions, forecasts or recommendations reflects the judgment and assumptions of IIR as at the date of publication and may change without notice. IIR and each Participant in the Report, their officers, agents and employees exclude all liability whatsoever, in negligence or otherwise, for any loss or damage relating to this document to the full extent permitted by law. This publication is not and should not be construed as, an offer to sell or the solicitation of an offer to purchase or subscribe for any investment. Any opinion contained in the Report is unsolicited general information only. Neither IIR nor the Participants are aware that any recipient intends to rely on this Report or of the manner in which a recipient intends to use it. In preparing our information, it is not possible to take into consideration the investment objectives, financial situation or particular needs of any individual recipient. Investors should obtain individual financial advice from their investment advisor to determine whether opinions or recommendations (if any) contained in this publication are appropriate to their investment objectives, financial situation or particular needs before acting on such opinions or recommendations. This report is intended for the residents of Australia. It is not intended for any person(s) who is resident of any other country. This document does not constitute an offer of services in jurisdictions where IIR or its affiliates do not have the necessary licenses. IIR and/or the Participant, their officers, employees or its related bodies corporate may, from time to time hold positions in any securities included in this Report and may buy or sell such securities or engage in other transactions involving such securities. IIR and the Participant, their directors and associates declare that from time to time they may hold interests in and/or earn brokerage, fees or other benefits from the securities mentioned in this publication.

IIR, its officers, employees and its related bodies corporate have not and will not receive, whether directly or indirectly, any commission, fee, benefit or advantage, whether pecuniary or otherwise in connection with making any statements and/or recommendation (if any), contained in this Report. IIR discloses that from time to time it or its officers, employees and related bodies corporate may have an interest in the securities, directly or indirectly, which are the subject of these statements and/or recommendations (if any) and may buy or sell securities in the companies mentioned in this publication; may affect transactions which may not be consistent with the statements and/or recommendations (if any) in this publication; may have directorships in the companies mentioned in this publication; and/or may perform paid services for the companies that are the subject of such statements and/or recommendations (if any).

However, under no circumstances has IIR been influenced, either directly or indirectly, in making any statements and/or recommendations (if any) contained in this Report. The information contained in this publication must be read in conjunction with the Legal Notice that can be located at <http://www.independentresearch.com.au/Public/Disclaimer.aspx>.

### THIS IS A COMMISSIONED RESEARCH REPORT.

The research process includes the following protocols to ensure independence is maintained at all times:

- 1) The research process has complete editorial independence from the company and this included in the contract with the company;
- 2) Our analyst has independence from the firm's management, as in, management/ sales team cannot influence the research in any way;
- 3) Our research does not provide a recommendation, in that, we do not provide a "Buy, Sell or Hold" on any stocks. This is left to the Adviser who knows their client and the individual portfolio of the client.
- 4) Our research process for valuation is usually more conservative than what is adopted in Broking firms in general sense. Our firm has a conservative bias on assumptions provided by management as compared to Broking firms.
- 5) All research mandates are settled upfront so as to remove any influence on ultimate report conclusion;
- 6) All staff are not allowed to trade in any stock or accept stock options before, during and after (for a period of 6 weeks) the research process.

For more information regarding our services please refer to our website [www.independentresearch.com.au](http://www.independentresearch.com.au).

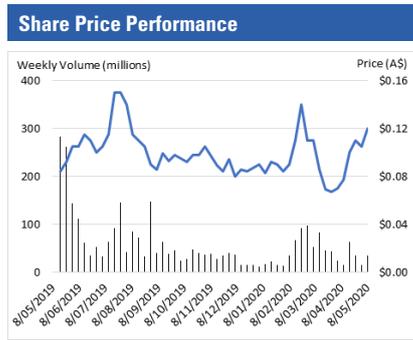


**Note:** This note is based on information provided by the company as at 14 May, 2020.

Investment Profile	
Share Price - 13 May, 2020	A\$0.105
12 month L/H	A\$0.053/ 0.180
Issued Capital:	
Ordinary Shares	1,694 m
Unlisted Options	93.4 m
Inc In Money Options	71.3 m
Diluted for In Money Options	1,765 m
Market Capitalisation - UD	A\$177.9 m
Current Cash	A\$5.83 m
Potential Cash From Option Conversion	A\$2.99 m
Cash Including Option Conversion	A\$8.82 m

Board and Management	
Mr Tim Goyder: Chairman	
Mr David Richards: Managing Director	
Mr Craig Williams: Non-Executive Director	
Mr Anthony Cipriano: Non-Executive Director	
Mr Stephen Chadwick: Non-Executive Director	
Mr Richard Hacker: Chief Financial Officer	
Mr Adam Smits: Chief Operating Officer	
Mr Craig Hasson: Finance Manager/Company Secretary	

Major Shareholders	
Mr Tim Goyder	17.3%
Board and Management	20.4%
Top 20	35.8%



The investment opinion in this report is current as at the date of publication. Investors and advisers should be aware that over time the circumstances of the issuer and/or product may change which may affect our investment opinion.

## KATHLEEN VALLEY RESOURCE UPGRADE DOUBLES AN ALREADY WORLD CLASS LITHIUM RESOURCE

- ◆ The most recent Mineral Resource Estimate ("MRE") for Kathleen Valley has delivered a world-class Resource of 156 Mt @ 1.4% Li<sub>2</sub>O and 130 ppm Ta<sub>2</sub>O<sub>5</sub>, for 2,100 kt of contained Li<sub>2</sub>O - this is over a 7x increase in tonnes of contained Li<sub>2</sub>O from the September, 2018 initial MRE of 21.2 Mt @ 1.37% Li<sub>2</sub>O, and more of a doubling of the July 2019 MRE of 74.9 Mt @ 1.3% Li<sub>2</sub>O.
- ◆ The Project is largely located over granted mining leases in a well serviced mining district of Western Australia ~350 km NNW of Kalgoorlie - Western Australia is the dominant producer of spodumene concentrates in the Western World.
- ◆ Kathleen Valley is ranked in the top tier of all deposits globally in terms of tonnage, grade and contained lithium; it is also one of the largest Resources globally in terms of contained Li<sub>2</sub>O that is either not currently supporting an operation or being developed.
- ◆ The deposit compares very favourably with regards to size and grade to the Resources of current Australian mining operations (including those on care and maintenance), including (ranked on contained Li<sub>2</sub>O):
  - Pilgangoora, Altura Mining - 45.7 Mt @ 1.06% Li<sub>2</sub>O, 480 kt Li<sub>2</sub>O,
  - Mt Marion, MinRes/Jianxi - 71.4 Mt @ 1.37% Li<sub>2</sub>O, 980 kt Li<sub>2</sub>O,
  - **Kathleen Valley - Liontown - 156 Mt @ 1.35% Li<sub>2</sub>O, 2,100 kt Li<sub>2</sub>O,**
  - Pilgangoora, Pilbara Resources - 223 Mt @ 1.26% Li<sub>2</sub>O, 2,810 kt Li<sub>2</sub>O
  - Wodgina, MinRes/Albemarle - 237 Mt @ 1.19% Li<sub>2</sub>O, 2,820 kt Li<sub>2</sub>O; and,
  - Greenbushes, Talison - 120.6 Mt @ 2.4% Li<sub>2</sub>O, 2,890 kt Li<sub>2</sub>O.
- ◆ Mineralisation, which outcrops and is fresh from surface, is open along strike to the north and down dip, and thus there is the potential for expansions with further drilling.
- ◆ Importantly, metallurgical test work to date has produced potentially saleable concentrates with grades of up to 6.1% Li<sub>2</sub>O, with this work, including optimisation test work, ongoing - metallurgy is a key factor in the success or otherwise of spodumene operations, and the ability to produce a +6% Li<sub>2</sub>O premium concentrate has a significant effect on the revenue of any potential operation.
- ◆ A positive and robust Pre-Feasibility Study ("PFS") was completed in December 2019, based on the July 2019 MRE; this will now be updated in view of the recent MRE - given the effect of the COVID-19 virus it has been decided to update the PFS rather than proceed directly to a Definitive Feasibility Study ("DFS").
- ◆ The PFS upgrade will incorporate the results of the ongoing metallurgical testwork and mining studies (both open cut and underground) that will improve on and optimise the production scenario as presented in the December 2019 study - the PFS is planned for completion by the end of 2020, with this then to progress to a DFS.
- ◆ The success of the lithium strategy, and the concomitant results from Kathleen Valley has seen Liontown's market capitalisation increase ~14-fold from ~A\$14 million in early 2017 to A\$194 million.
- ◆ In summary, our view is that the results of work to date confirm Kathleen Valley as a world class hard rock lithium project, and we expect positive news flow to continue with ongoing activities on the development studies.
- ◆ Although this note is focussed on Kathleen Valley, the Company also has a significant ground holding at Moora, some 150 km NNE of Perth, in the same emerging Ni-Cu-PGE province as Chalice Gold Mines' (ASX: CHN) recent Julimar discovery.
- ◆ Initial work at Moora has included auger geochemical sampling and gravity surveying for which very encouraging results have been received, including coincident geophysical and polymetallic (Ni-Cu-PGE-Au) geochemical anomalies which have defined a number of areas for follow up work, highlighting the prospectivity for intrusive related Ni-Cu-PGE-Au mineralisation.

## IIR'S COMMENTS

Our view is that the release of the updated MRE for Kathleen Valley highlights the world class quality of the Project, and places the Project in the top ranks of projects globally.

Although some limited surface work had historically been carried out for pegmatite hosted Li/Ta/Sn mineralisation on the tenements, Liontown was the first to target the pegmatites in drilling, with an initial programme in 2017, and follow up programmes in 2018, 2019 and 2020, with the results of work confirming the success of the Company's lithium strategy.

The MRE (Table 1) is based on 63,068 m of reverse circulation ("RC") and ~22,889 m of diamond drilling, and has defined 18 flat-lying to gently dipping parallel zones at Kathleen Corner, which coalesce into two steeply dipping pegmatites at Mt Mann in the south-west - mineralisation is open along strike to the north and down dip (Figures 1 and 2), with the potential to increase the Resources with additional drilling. The thick and high grade nature of the steeply dipping pegmatites at Mt Mann also raises the potential for underground mining.

What is also apparent is the presence of coherent blocks of higher grade mineralisation (Table 2 and Figure 3), with this providing flexibility in potential development plans.

**Table 1: Kathleen Valley MRE - 0.55% Li<sub>2</sub>O cut-off**

Kathleen Valley MRE - 0.55% Li <sub>2</sub> O cut-off			
Resource Category	Million tonnes	Li <sub>2</sub> O %	Ta <sub>2</sub> O <sub>5</sub> ppm
Measured	20	1.3	140
Indicated	105	1.4	130
Inferred	32	1.3	110
<b>Total</b>	<b>156</b>	<b>1.4</b>	<b>130</b>

Source: Liontown, note rounding

**Table 2: Kathleen Valley MRE at different cut-off grades**

Kathleen Valley MRE at different cut-off grades			
Cut-off Li <sub>2</sub> O%	Million tonnes	Li <sub>2</sub> O %	Ta <sub>2</sub> O <sub>5</sub> ppm
0.4	158	1.34	126
0.55	156	1.35	128
0.6	155	1.35	128
0.8	148	1.39	129
1.0	130	1.45	131
1.2	100	1.56	132
1.4	64	1.70	131

Source: Liontown.

One of the key take-outs from the MRE is the very positive comparison of the size and grade of Kathleen Valley with other spodumene-dominant hard rock projects, with Kathleen Valley now in the top tier of projects - this is shown in Figure 3.

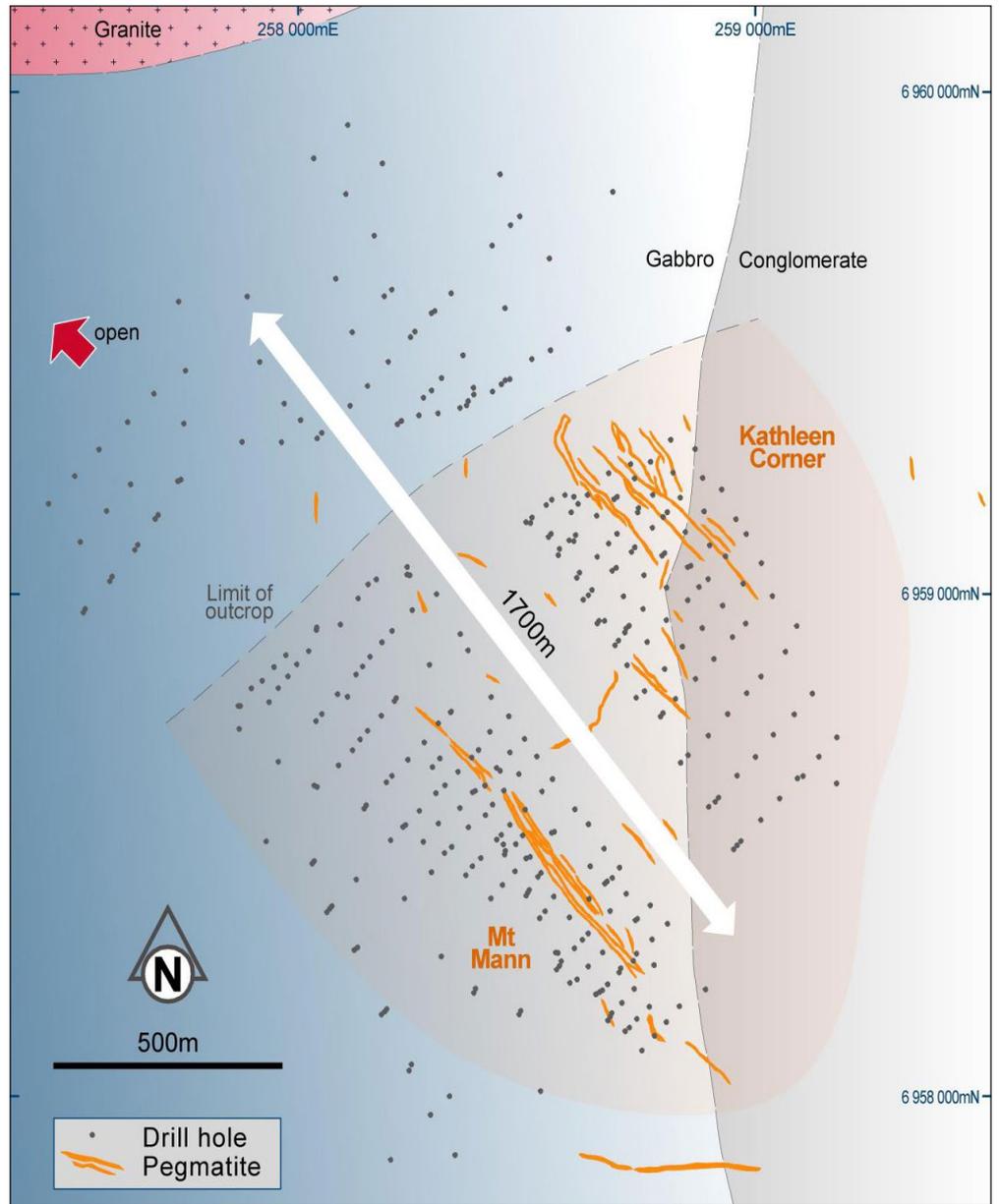
However, it is not only size and grade that counts, it is also the quality of the end product, with the potential quality of Kathleen Valley being confirmed by the results of preliminary and ongoing metallurgical testwork.

Metallurgy for the December 2019 PFS included 81 composited drill core samples covering a range of grades and depths across the deposit- work included grinding using high pressure grinding rolls ("HPGR"), and separation using dense media separation ("DMS") and flotation, processes typical of those used in Western Australian hard rock lithium mines. This produced a concentrate grading at 6.1% Li<sub>2</sub>O and 1.42% Fe<sub>2</sub>O<sub>3</sub> - the only iron removal included low intensity magnetic separation prior to flotation - these are within acceptable limits for saleable chemical grade spodumene concentrate.

The PFS metallurgical testwork however is to be considered as preliminary only, with optimisation work ongoing, including on recovery, removal of deleterious elements (including iron) and looking at further flowsheet development through a research and development programme.

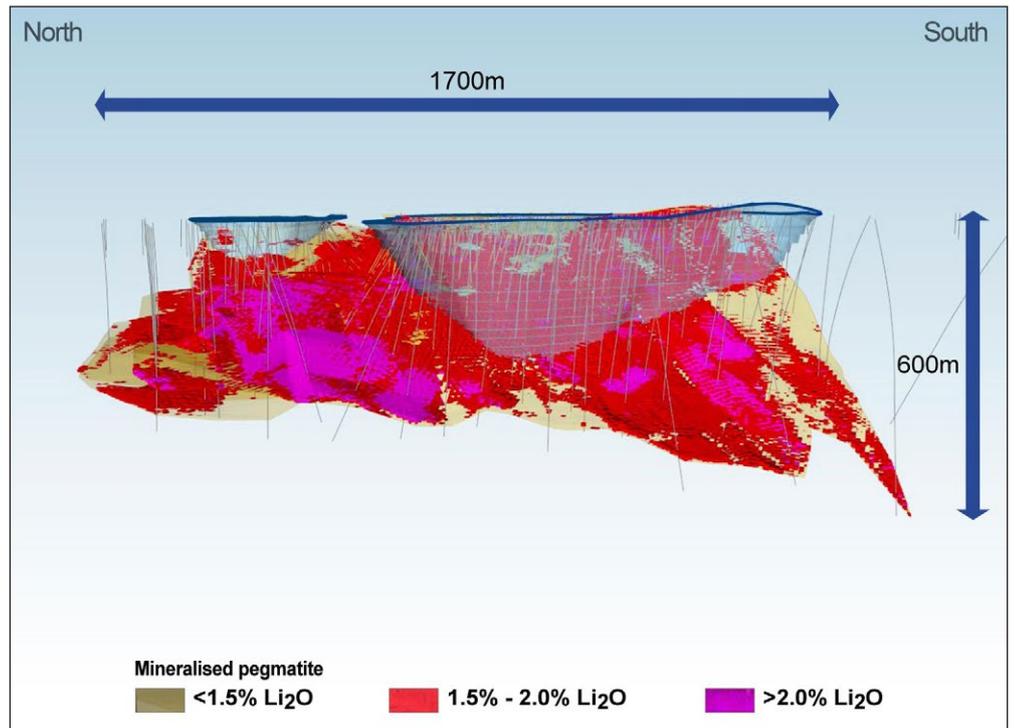
**In summary, our view is that the results of work to date confirm Kathleen Valley as a world class hard rock lithium project, and we expect positive news flow to continue with ongoing activities. We also look forward to ongoing results from Moora, for which initial exploration results have been very positive.**

Figure 1: Kathleen Valley plan showing drilling and geology.



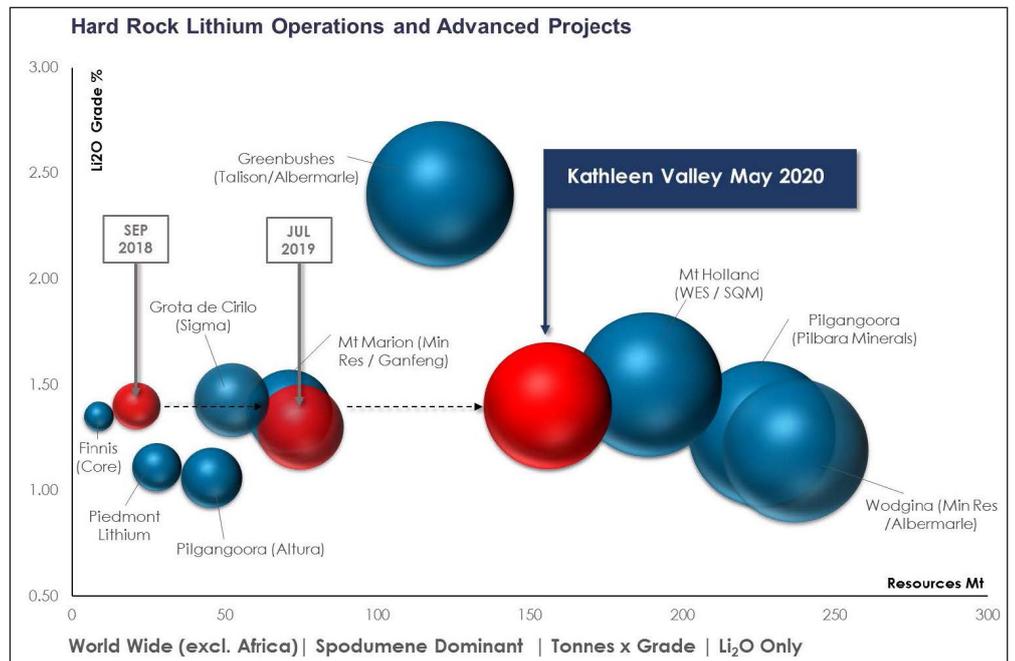
Source: Liontown

Figure 2: Kathleen Valley block model looking east - this shows the December 2019 PFS conceptual pits



Source: Liontown

Figure 3: Comparison of spodumene dominant lithium deposits and growth in Kathleen Valley Resource



Source: Liontown - data verified by IIR.

# DISCLAIMER

## (a) Disclaimer

The information, reports, financial models, forecasts, strategies, audio broadcasts and other media (referred to as "Content" throughout this Legal Notice), provided on this web site has been prepared and issued by Altavista Research Pty Ltd trading as Independent Investment Research "IIR," Independent Investment Research Holdings Pty Ltd (ACN 155 226 074), as authorised to publish research under an Australian Financial Securities Licence (AFSL No 420170) which allows Independent Investment Research to offer financial service advice to retail and wholesale clients. Users of this web site should not act on any Content without first seeking professional advice. Whilst the Content contained on this web site has been prepared with all reasonable care from sources which we believe are reliable, no responsibility or liability is accepted by Independent Investment Research, for any errors or omissions or misstatements however caused. Any opinions, forecasts or recommendations reflect our judgement and assumptions at the date of publication or broadcast and may change without notice. Content on this web site is not and should not be construed as an offer to sell or the solicitation of an offer to purchase or subscribe for any investment. We are not aware that any user intends to rely on the Content provided or of the manner in which a user intends to use it. In preparing our Content it is not possible to take into consideration the investment objectives, financial situation or particular needs of any individual user.

Access by any user to this website does not create a client relationship between Independent Investment Research and the user. Users seeking to invest must obtain individual financial advice to determine whether recommendations are appropriate to their investment objectives, personal financial situation or particular needs, before acting on any recommendations. Any Content is not for public circulation or reproduction, whether in whole or in part and is not to be disclosed to any person other than the intended user, without the prior written consent of Independent Investment Research.

## (b) Disclosure of Interest

### General

Independent Investment Research, its officers, employees, consultants and its related bodies corporate have not and will not receive, whether directly or indirectly: any commission; fee; benefit; or advantage, whether pecuniary or otherwise, in connection with making any recommendation contained on this web site. Independent Investment Research, discloses that from time to time, it or its officers, employees and its related bodies corporate: may have an interest in the securities, directly or indirectly, which are the subject of these recommendations; may buy or sell securities in the companies mentioned in the Content; may effect transactions which may not be consistent with the recommendations in the Content; may have directorships in the companies mentioned in the Content; and/or perform paid services for the companies that are the subject of such recommendations.

However, under no circumstances, has Independent Investment Research been influenced, either directly or indirectly, in making any recommendations contained on this web site.

### Corporate Research

Independent Investment Research has or may have, received a fee either directly by a company itself or by a third party, to provide coverage and/or corporate research (the "Fee"). Where a Fee has been received, Independent Investment Research does not publish:

Buy / Hold / Sell recommendations for the security or managed investment schemes.

## (c) Copyright Protection

All Content at this web site is protected by copyright. Apart from any use permitted under the Copyright Act (Cth) 1968, you must not copy, frame, modify, transmit or distribute the material at this web site, without seeking the prior written consent of the copyright owner. Content on this web site is owned by the business Independent Investment Research. Users are prohibited from copying, distributing, transmitting, displaying, publishing, selling, licensing, creating derivative works or using any content on the web site for commercial or public purposes

Copyright 2010 Independent Investment Research. All rights reserved.

## (d) Trade Marks

The trade marks and logos displayed on this web site belong to Independent Investment Research or other parties. Such trade marks include registered trade marks and trade marks pending registration. Users are prohibited from using any of these trade marks, without seeking the prior written consent of IIR or such third party, which may own the trade mark content on this web site.

## (e) Limitation of Liability

To the fullest extent permitted by the law, Independent Investment Research and any of its officers, employees, agents, consultants or related bodies corporate disclaim any liability, whether based in contract, tort, strict liability or otherwise, for any direct, indirect, incidental, consequential or special damages arising out of or in any way connected with the use of any Content made available on this web site by any person or entity.

## (f) No Warranties

Independent Investment Research does not make any claims, promises, guarantees, representations or warranties regarding the accuracy, completeness or fitness for purpose of the Content made available on this web site. All information on this web site is provided to you on an as is basis, without warranty of any kind either express or implied. To the extent that research can be provided by third parties, Independent Investment Research makes no warranty or representation as to the accuracy or completeness of such information displayed on this site, and accepts no liability for errors or omissions arising from such third party information. To the fullest extent permitted by law, under no circumstances will Independent Investment Research be liable for any loss or damage caused by users reliance upon information obtained through this web site. It is the responsibility of the user to evaluate the accuracy, completeness or usefulness of any information, opinion, general advice or other content made available through this web site. Furthermore, Independent Investment Research does not warrant or represent that this web site is error free or free from viruses or defects. A user must do all that is necessary (including using virus checking software) to satisfy itself that accessing this website will not adversely affect its system.

For further information, please contact IIR at: [client.services@independentresearch.com.au](mailto:client.services@independentresearch.com.au)



**Independent Investment Research LLC**  
**Independent Investment Research (Aust.) Pty Limited**

**DENVER OFFICE**

200 Quebec Street  
Suite 200  
Denver Colorado 80230 USA  
Phone: +1 720 355 0446

**NEWYORK OFFICE**

Phone: +1 917 336 0818

**SYDNEY OFFICE**

Level 1, 350 George Street  
Sydney NSW 2000  
Phone: +61 2 8001 6693  
Main Fax: +61 2 8072 2170  
ABN 11 152 172 079

**MELBOURNE OFFICE**

Level 7, 20-22 Albert Road  
South Melbourne VIC 3205  
Phone: +61 3 8678 1766  
Main Fax: +61 3 8678 1826

**MAILING ADDRESS**

PO Box H297 Australia Square  
NSW 1215