



**Zenith**  
**MINERALS**  
LIMITED

# Burro Creek Lithium Project Update

## Drill Results Provide Foundation for Maiden Mineral Resource

June 2018



*Drilling at Burro Creek – May 2018*

# Disclaimer

## Forward looking statements

Some statements in this presentation regarding estimates or future events are forward looking statements. They involve risk and uncertainties that could cause actual results to differ from estimated results. Forward-looking statements include estimates of future production, reserve and mineralised material estimates, capital costs, and other estimates or prediction of future activities. They include statements preceded by words such as "believe", "estimate", "expect", "intend", "will" and similar expressions. Actual results could differ materially depending on such things as political events, labour relations, currency fluctuations and other general economic conditions, market prices for Zenith Minerals Limited products, timing of permits and other government approvals and requirements, change in operating conditions, lower than expected ore grades, unexpected ground and mining conditions, availability and cost of materials and equipment, and risks generally inherent in the ownership and operation of mining properties and investment in foreign countries.

## Information presented is a summary

This presentation aims to provide a high level summary of various technical aspects of the Company's projects. For more details on the underlying technical parameters the reader is referred to the ASX Reports on the Zenith Minerals Limited's website: [www.zenithminerals.com.au](http://www.zenithminerals.com.au)

## JORC competent persons statements

The information in this report that relates to Zenith Exploration Results is based on information compiled by Mr Michael Clifford, who is a Member of the Australian Institute of Geoscientists and an employee of Zenith. Mr Clifford has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking 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'. Mr Clifford consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.



# Key Projects - 2018

## TURKEY



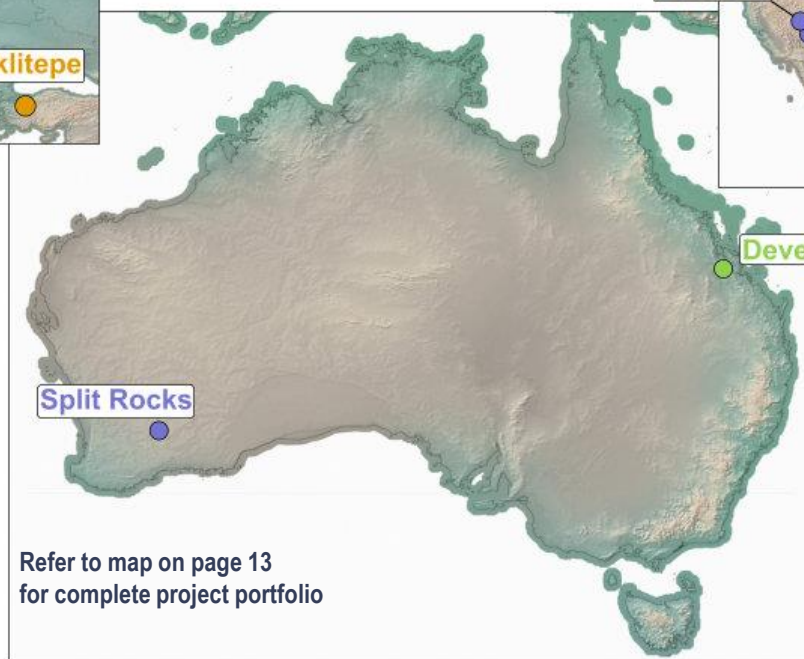
### Gold

**Kavaklitepe JV (Turkey)**  
ZNC 30%. New discovery:  
16m @ 4.7g/t Au and 9m @  
5.2g/t Au\*

### Cobalt

**Split Rocks (WA-100%)**  
22m @ 0.06% Co & 0.70% Ni  
incl: 8m @ 0.12% Co & 0.96% Ni#

## AUSTRALIA



Refer to map on page 13  
for complete project portfolio

### Copper/Zinc

**Develin Creek (QLD -100%)** - JORC massive sulphide resource 2.57Mt @ 1.76% Cu,  
2.01% Zn, 0.24g/t Au & 9.6g/t Ag (Feb '15). 50km of prospective strike.

## USA/MEXICO



**Burro Creek – focus of this presentation**

### Lithium

**USA / Mexico JV (90%)** – Five  
lithium projects (brines,  
pegmatite & clay) fully funded  
by Bradda Head/Jim Mellon  
farm-in.

**Split Rocks (WA-100%)** –  
10km from KDR/SQM Earl Grey  
Lithium Deposit

(\* Refer to ASX Releases 5<sup>th</sup> Oct 2016 & 16<sup>th</sup> June 2016, # Refer to ASX Release 9<sup>th</sup> January 2018)

- Burro Creek is 1 of 5 projects included in deal with UK billionaire Jim Mellon's Bradda Head Ltd\*
- Zenith carried for US\$5 million (A\$6.6 million) expenditure over 3 years by Bradda Head to earn 55% project interest, one off right for Zenith to contribute at 45%, or be free carried at 30% to the end of pre-feasibility studies on two projects;



- Bradda Head to list on the London AIM exchange – planning for later in 2018
- Potential for future spin out of Zenith's lithium portfolio on ASX, once projects are more advanced.

In relation to the recently announced Burro Creek drill results Bradda Head Executive Chairman John McGoldrick said *"these initial drill results from the Burro Creek project are very encouraging. The Bradda Head technical team are now compiling the necessary information to allow a mineral resource estimate to be calculated. This is a great start on the first project we have drill tested in our portfolio of exciting American lithium opportunities"*

\*For further details on the Bradda Head transaction refer to ASX Release 7<sup>th</sup> Mar 2017 & 27<sup>th</sup> April 2018

# Burro Creek Summary

Zenith 45%  
Bradda Head Ltd (Jim Mellon)  
initial 55%  
Location: USA  
Commodity: Lithium  
Stage: Drilled

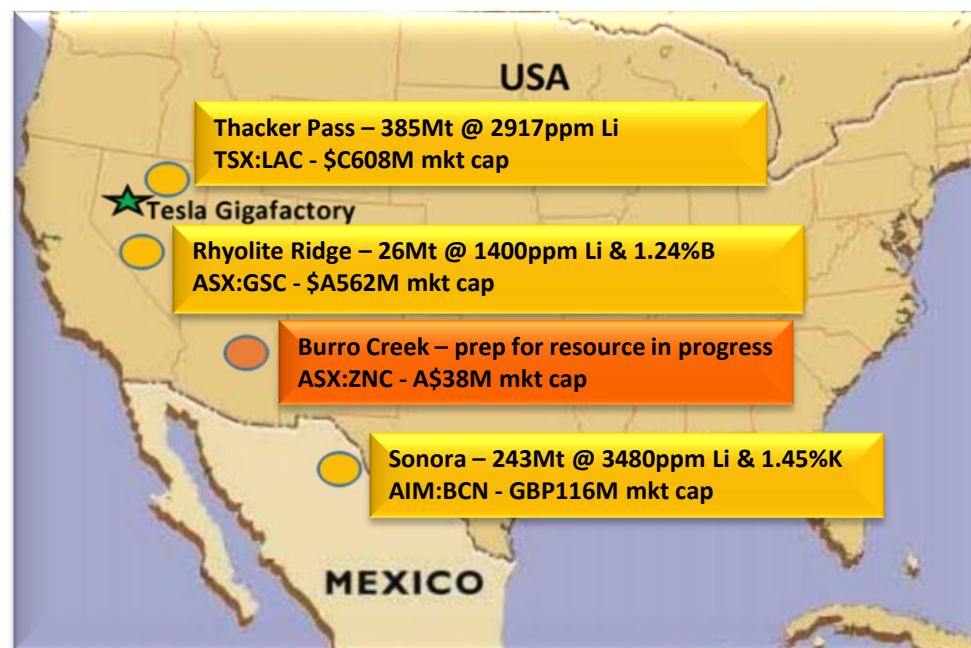
## Large scale lithium clay target under exclusive option in Arizona, USA

Drilling confirmed widespread, shallow thick zones of lithium bearing clay.

Drill results lay foundation for maiden mineral resource estimate.

Positive initial metallurgical testwork results.

Three similar projects provide project comparatives.



### Lithium Clay Projects :

BCN – NI43-101 Reserves (Source: [bacanoralithium.com](http://bacanoralithium.com) accessed 18/06/18);

LAC – NI43-101 - M&I Resources (Source: [lithiumamericas.com](http://lithiumamericas.com) accessed 18/06/2018);

GSC – Constrained starter pit resource (ASX release 15 Jun 2018).



# Logistics & Tenure

**Favourable jurisdiction - Arizona**

**Power and gas line located just north of project area**

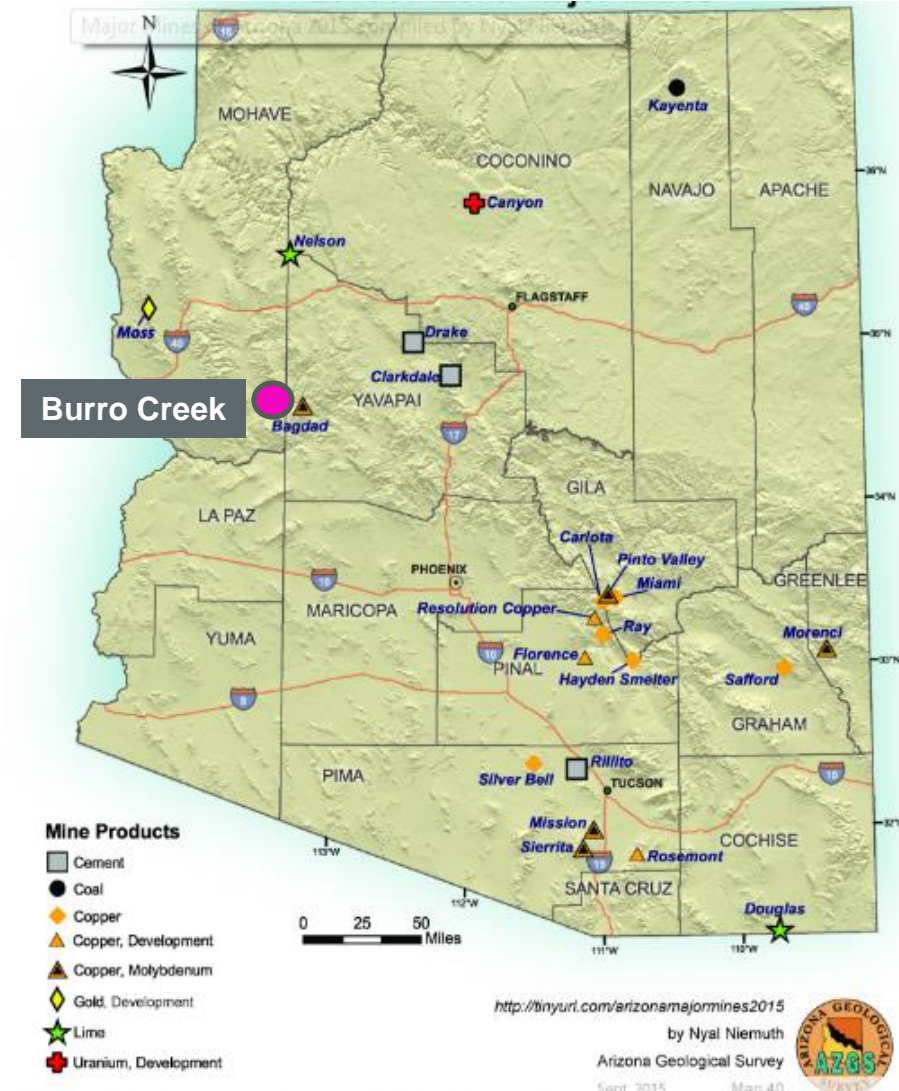
**Active mining district, Freeport M<sup>c</sup>MoRan's operating Bagdad porphyry copper mine is located 10km from the Burro Creek project.**

**Burro Creek east (area drilled to date) held under Arizona State Mineral Development Lease**

- Environmental approvals in place & fully permitted for clay production
- Flora, fauna, archaeological, surface water studies all completed
- Recent drilling intersected water below clay horizons – under State lease is available for future production requirements

**Burro Creek west held under federal placer claims**

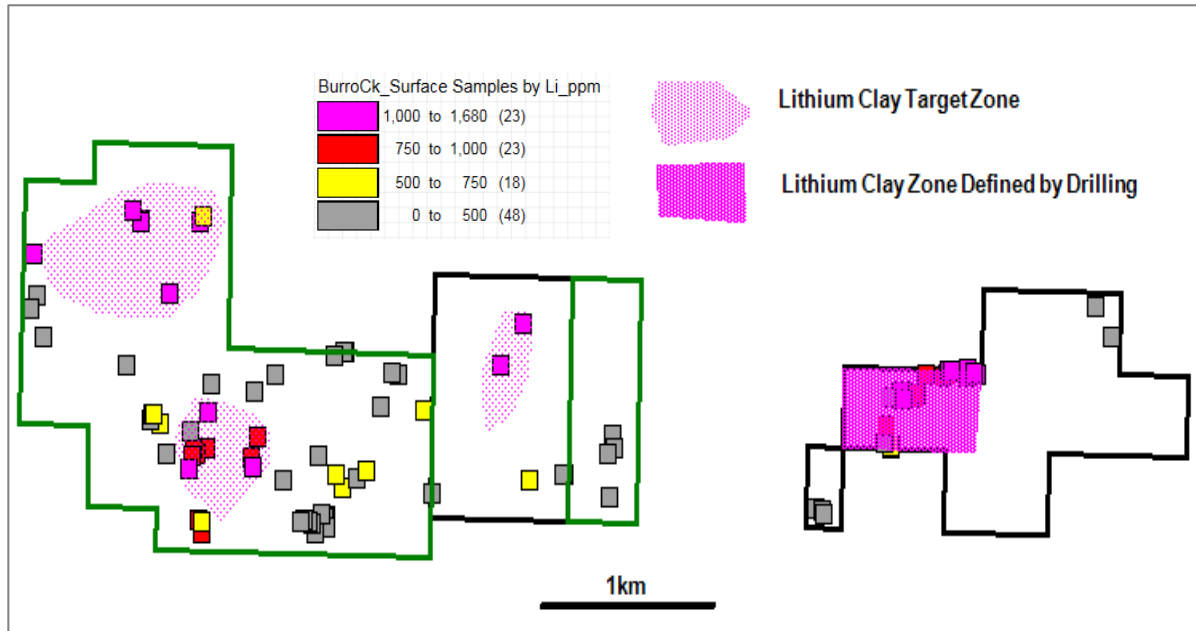
- Studies required to precede Notice of Intent submission to BLM for drilling



Major Mines of Arizona 2015 compiled by Nyal Niemuth

# Surface Results

**Strong results in new western claims similar to that recently drilled in east**



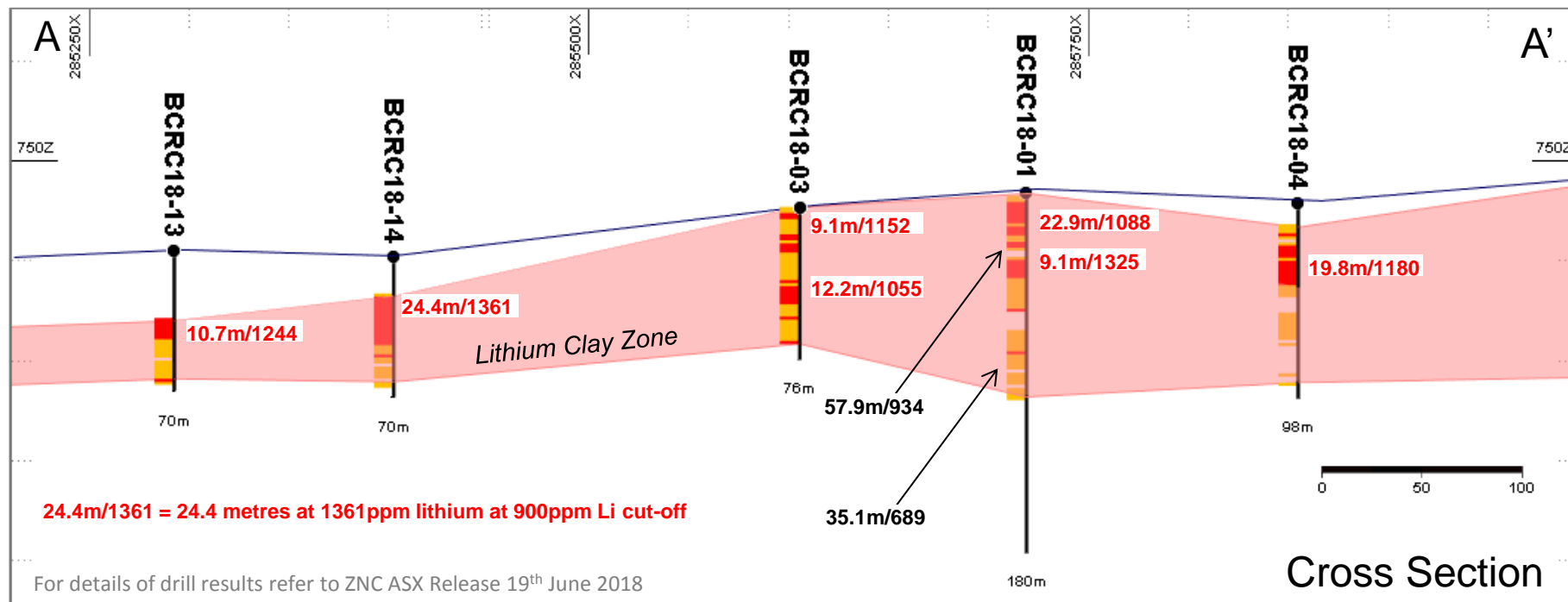
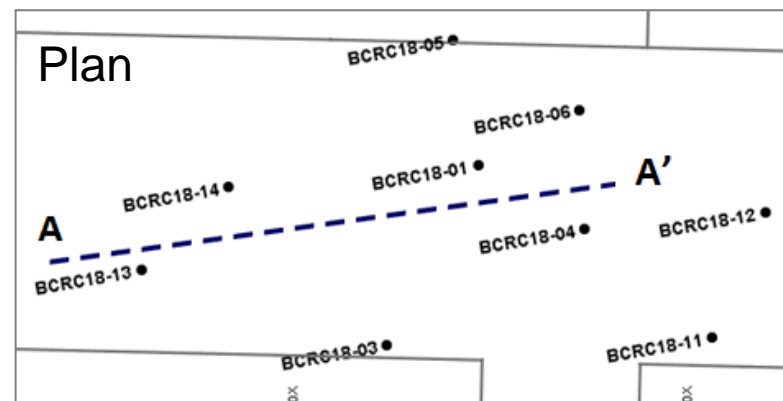
For details of surface results refer to ZNC ASX Release 19<sup>th</sup> June 2018

**Maiden drill program has tested only east side of project area**



# Drill Results

**Thick;  
Flat lying;  
Near surface;  
Widespread lithium clay beds; &  
High potassium levels throughout.**



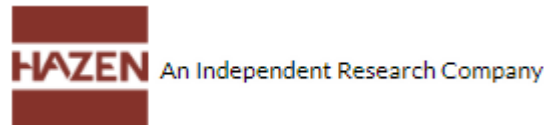


## Very encouraging initial metallurgical testwork<sup>#</sup>

- Up to 90% lithium recovery by acid leaching, with similar \*acid consumption to Rhyolite Ridge;
- Up to 89% lithium recovery using calcine & water leach - similar approach to Bacanora at Sonora in Mexico.

**Metallurgical testwork has recommenced on new drill samples**

***J. E. Litz & Associates. LLC***



<sup>#</sup> For details refer to ZNC ASX Release 27<sup>th</sup> Sep 2017

\* Reference GSC ASX Release 1<sup>st</sup> Jun 2017.

Note - Zenith metallurgy based on bulk surface sample which may or may not be representative of clays below surface

# Exploration Target

Exploration Target<sup>1</sup> for the Burro Creek project of 30-50 million tonnes at 1000 to 1100ppm lithium Li and 2% to 3% potassium, based on June 2018 drill results from eastern claims and from surface sampling - mapping in the western claim area .

Upcoming maiden resource estimate will report on the eastern claim area only, representing approximately 1/3 of the Exploration Target<sup>1</sup>. It is expected that the western claim area targets will be the subject of a future drill campaign.

Exploration Target <sup>1</sup>	Tonnes	Lithium Grade	Potassium Grade
<b>Burro Creek Project</b>	<b>30 – 50 million</b>	<b>1000 to 1100ppm</b>	<b>2 to 3%</b>

<sup>1</sup>The potential quantities and grades are conceptual in nature and there has been insufficient exploration to date to define a Mineral Resource. It is not certain that further exploration will result in the determination of a Mineral Resource under the “Australian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves, the JORC Code” (JORC 2012). The Exploration Target is not being reported as part of any Mineral Resource or Ore Reserve.



*Extensive outcrop shallow dipping lithium bearing clay beds with true thickness up to 50m*

# Project Comparatives

Global Geoscience Limited (**ASX:GSC - market capitalisation \$A562 million** as at 15<sup>th</sup> June 2018)

Rhyolite Ridge - 100% owned, Mineral Resource constrained by a starter pit - open pit shell of is focus of GSC's pre-feasibility study.

<sup>2</sup>For details refer to GSC – ASX Release 13<sup>th</sup> June 2018.

South Basin Resource – Constrained Starter Pit Shell <sup>2</sup>	Tonnes	Lithium Grade	Boron Grade
<b>Rhyolite Ridge – South Basin</b>	<b>26 million</b>	<b>1400ppm</b>	<b>1.24%</b>

Bacanora Minerals Limited (**AIM:BCN - market capitalisation GBP116 million** Source: BCN Corporate Presentation June 2018) are developing the Sonora lithium clay project in Mexico.

- Integrated plant has been designed at Sonora.
- Stage 1 processing 1.1 Mt of ore per year, - 17,500 tpa  $\text{LiCO}_3$
- Stage 2 processing 2.2 Mt of ore per year - 35,000 tpa  $\text{LiCO}_3$
- Plant design includes circuit to produce up to 30,000 tonnes per annum of potassium sulphate ( $\text{K}_2\text{SO}_4/\text{SOP}$ ) from resource grading 1.5%K - source Bacanora website accessed 15/06/18.



# Corporate and Other Projects





# Exposure to Exciting Portfolio

**Cardinals**  
Copper - Zinc

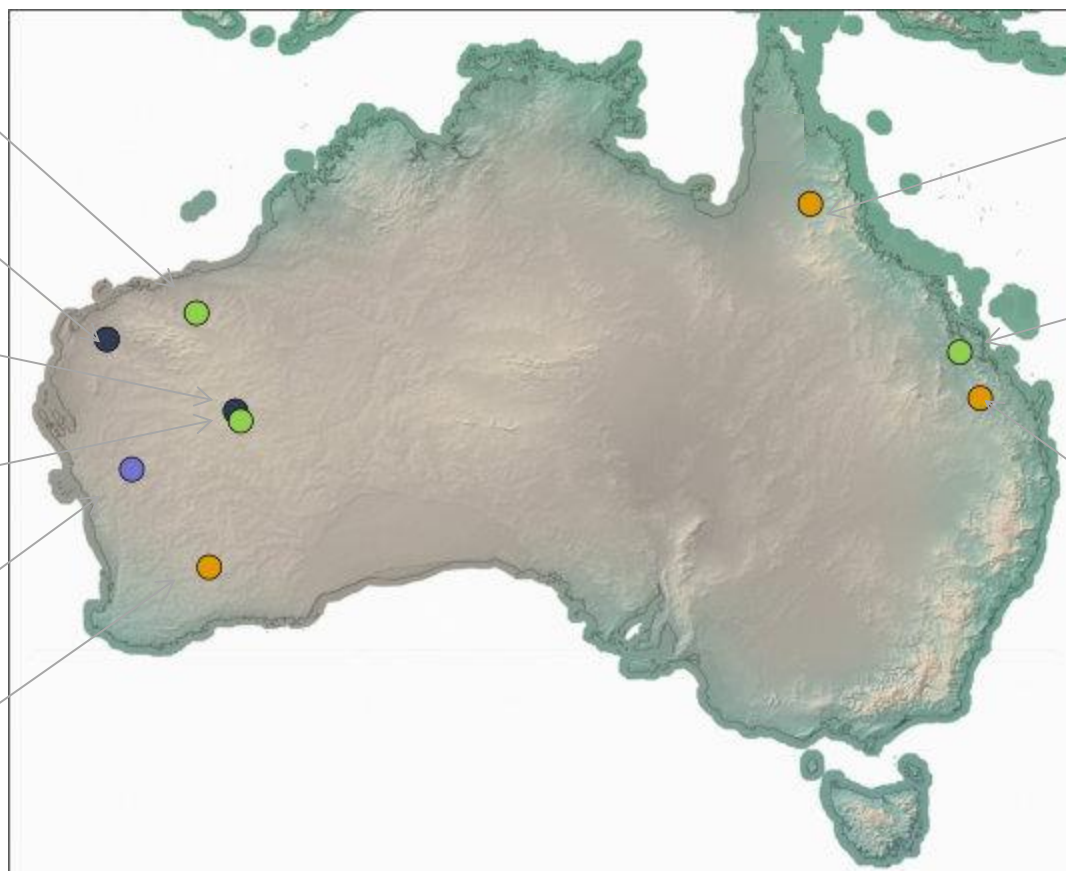
**Mt Alexander -**  
Magnetite Iron

**Earaheedy High-**  
Grade Manganese

**Earaheedy Zinc –**  
option to ASX:RTR

**Waratah Well**  
Lithium Peg Target

**Split Rocks Gold**



**Tate River Gold**  
Option – Trenching  
5m @ 3.9g/t Au\*

**Develin Creek**  
JORC Resource  
Copper-Zinc

**Red Mountain**  
Large Silver – Gold  
Anomaly

\*Refer to ASX Release 21<sup>st</sup> Sep 2017

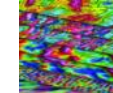


## Zenith has a clear strategy for adding shareholder value

1. Proven generative skills, move fast to acquire projects, Au, Li focus;
2. Smart, cost-effective exploration to progress projects and add value;
3. Use experience and corporate skills to deliver value-add to shareholders

## USA/Mexico Lithium – Jim Mellon/Bradda Head JV

- Burro Creek – mineral resource estimate
- Mexican brine project – geophysics completed – results awaited
- New brine projects from generative study



MRE

## Split Rocks

- Lithium pegmatite RC drilling completed – results awaited
- Further lithium surface geochem (~1000 samples – assays awaited)
- Cobalt-nickel aircore drilling completed – results awaited
- Gold – aircore drilling completed – results awaited



## Kavaklitepe-Teck JV

- Drilling 2018 to follow up on exciting first pass 2016 drill intersections

## Tate River

- Gold surface geochem - samples collected results awaited



## Develin Creek

- Copper-zinc surface geochem (~1000 samples)





# Corporate Structure

## ZNC Share Price

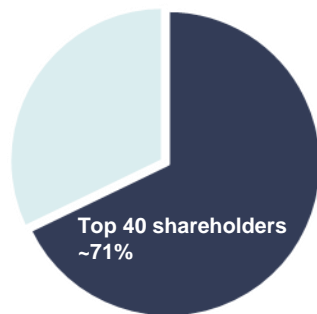


## Capital Structure – ASX: ZNC

Share Price (at 19 <sup>th</sup> Jun 2018)	\$0.18
Shares on Issue - ZNC fully paid ordinary	213m
Market Capitalisation	\$38m
Cash (31 <sup>st</sup> Mar 2018)	\$2.9m

## Major Shareholders

HSBC Custody. Nom	12.8%
Granich	5.4%
Miquilini	4.3%
J P Morgan Nom.	4.1%
Abingdon	4.1%
GDR PL	3.8%



**Tight supportive register**

**Directors ~14%**

**Top 40 ex-ASX:GIR holders & UK sophisticated**

**ASX:ZNC**



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