



27th July 2017

Exploration Update – USA & Mexico Lithium Projects

Zacatecas Lithium Brine Project - Mexico

- ✦ Shallow auger drill program completed testing for lithium in near surface sediments and brines;
- ✦ Drilling successfully intersects brine in all holes at shallow depths;
- ✦ Assay results anticipated late-August.

Burro Creek Lithium Clay Project – Arizona USA

- ✦ Metallurgical testwork to date has returned positive results on Burro Creek clay samples, with lithium recoveries to 90% from simple acid leach, and to 75% via calcine-water leach process. Testwork is ongoing to assess:
 - potential for upgrade by screening to various clay size fractions. This may enable lower grade portions of the clay to be discarded, reducing reagent consumption; and
 - if varying the additives in the alternative calcine-water leach approach will further improve recoveries;
- ✦ Further metallurgical test results are anticipated shortly;
- ✦ Permitting to allow resource drilling to commence is progressing well.

Wilson Salt Flat Lithium Brine Project – Nevada USA

- ✦ Magnetotellurics (MT) geophysical survey completed with results showing a strong conductive layer in the upper 200 – 300 metres from surface that confirms the lithium brine target interpreted from the previously reported passive seismic survey and gravity modelling.

Zenith Minerals Limited (“Zenith” or “the Company”) is pleased to provide an update on its USA and Mexican lithium exploration projects. Shallow auger drilling has recently been completed at the Zacatecas lithium brine project, metallurgical testwork is ongoing on Burro Creek samples whilst the permitting process to allow resource drilling to commence at Burro Creek is progressing well. In addition, new geophysical results from the Wilson Salt Flat project provide a robust lithium brine drill target. All work was fully funded by Bradda Head Ltd under the American Lithium Joint Venture.

Zacatecas Lithium Brine Project - Mexico

A program of shallow drilling has been completed at the Zacatecas Lithium Project in central Mexico as described in the ASX Release on the 26th June 2017. The aim of the short hole auger drill program was to provide an initial test for lithium in near surface brines and sediments of the San Juan salt pans where recent systematic, infill sampling returned highly encouraging surface sediment results up to 1046ppm lithium in the top 1 metre. As previously advised (ASX Release 24th May 2017) the surface sampling program has to date, outlined a large 4km by 2km strong lithium anomaly (values greater than 300ppm lithium) on the San Juan concession. The drill program consisted of 11 short drill holes (27m maximum hole depth) from which sediment samples were collected as the hole was drilled. Upon completion of each drill hole slotted casing was inserted allowing for the sampling of sub-surface brines. Encouragingly all drill holes interested

Corporate Details

ASX: ZNC

Issued Shares (ZNC)	189 M
Listed options (ZNC)	24 M
Unlisted options	3.5M
Mkt. Cap. (\$0.10)	A\$19 M
Cash (Mar 2017)	A\$2.2 M
Debt	Nil

Directors

Michael Clifford:
Managing Director

Mike Joyce:
Non Exec Chairman

Stan Macdonald:
Non Exec Director

Julian Goldsworthy:
Non Exec Director

Major Shareholders

HSBC Custody, Nom.	6.6%
City Corp Nom	6.2%
Nada Granich	6.1%
Abingdon	4.1%
Miquilini	4.1%

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brine at depths ranging from 5 metres to 15 metres. The holes intersected clay and sand horizons with salt and gypsum, basement was not reached in any of the holes.

A delay in shipping appropriate quality assurance and quality control, blanks and certified lithium reference material into Mexico has resulted in a corresponding delay in submitting both the brine and sediment samples to the laboratory for analysis. It is anticipated that the samples will be dispatched to the laboratory before the end of July. Sediment sample assays will be available approximately 3 weeks thereafter, whilst brine analyses will take approximately 4 weeks.



Shallow Auger Drilling at San Juan Project



Brine Sampling at San Juan Project

Burro Creek Lithium Clay Project – Arizona USA

On the 10th November the Company announced that it had secured an exclusive option to acquire a 100% interest in the Burro Creek lithium clay project located in central western Arizona, USA. Located in an active mining district, Freeport McMoRan's operating Bagdad porphyry copper mine is located 10km from the Burro Creek project.

Surface sampling by the Company of the lithium clay exposures (ASX releases 10th November 2016 & 13th January 2017) returned results up to 33.6m @ 980ppm Li whilst grab samples of relict drill spoil from shallow holes completed during a small, historical program to test the clay for industrial purposes returned results including: 1650ppm Li and 1290ppm Li. The lithium bearing clay zone is a near surface, flat lying horizon, with a true thickness greater than 30 metres, indicating excellent potential for large tonnages of lithium bearing clay within the Burro Creek project.

Metallurgical testwork to date has achieved high lithium recoveries of 90% by leaching using a simple sulphuric acid leach at a temperature of 80°C. Acid consumption was similar to that of raw ore from the Rhyolite Ridge lithium project in Nevada owned by Global Geoscience Limited (ASX:GSC, market capitalisation \$A210 million) as documented in a release dated 1st June 2017.

Additional initial testwork using a water leach after calcining as proposed for the Sonora lithium clay project located in Mexico owned by Bacanora Minerals Limited (TSX:BCN, market capitalisation \$C175 million) has also been completed. Calcined clay from Burro Creek with various additives was leached by water and up to 75% lithium recovery has been achieved to date.

Ongoing metallurgical testwork is assessing if:

- o lithium reports to various clay size fractions. This may enable lower grade portions of the clay to be discarded through screening, resulting in lower reagent consumption; and
- o further variations to additives in the calcine-water leach approach will improve overall lithium recovery;

Further metallurgical test results are anticipated shortly whilst permitting to allow resource drilling to commence is progressing well.



Wilson Salt Flat Lithium Brine Project – Nevada USA

The Wilson Salt Flat Project is located in Nye County, Nevada 140km east from the lithium production area of Silver Peak- Clayton Valley. The Project is 100% owned by Zenolith and is located in the Railroad Basin. The property is comprised of 168 unpatented placer claims in a single claim block totalling 3,360 acres that were located in November 2016 to encompass highly anomalous lithium in surface sediment samples up to 192ppm lithium coincident with a salt lake and discrete gravity low interpreted to be a closed basin.

During December 2016 Zenith completed a passive seismic geophysical survey that confirmed the presence of a thick, sedimentary sequence bounded by basin margin faults. The geophysical modelling identified structures and architecture that are consistent with the lithium-bearing brine deposit models identified in the nearby Clayton Valley lithium production area.

An MT geophysical survey has now been completed by geophysical consultants Zonge with results just received showing a strong conductive layer in the upper 200 – 300 metres from surface that confirms the lithium brine target interpreted from the previously reported passive seismic survey and gravity modelling (Figure 1).

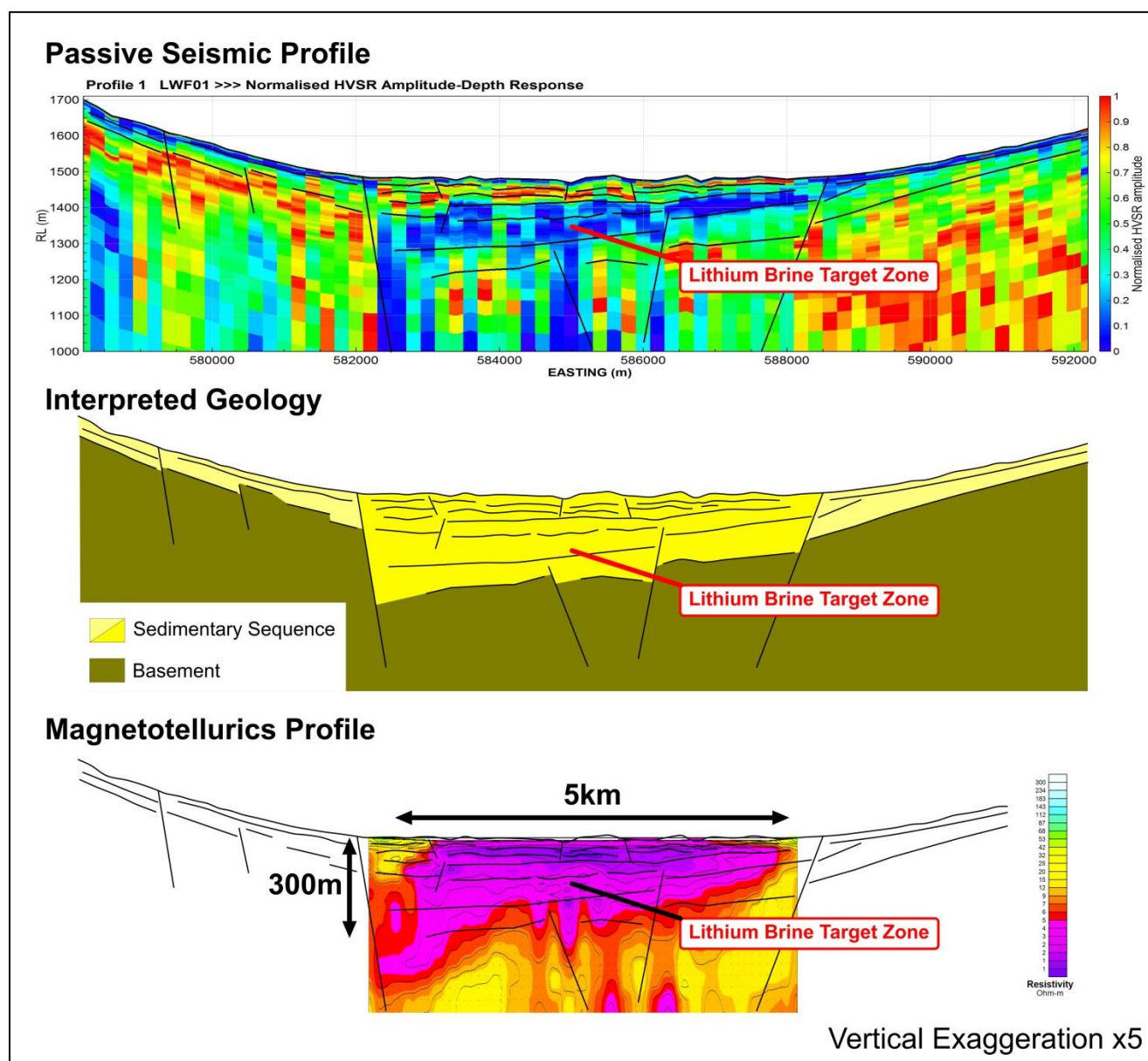
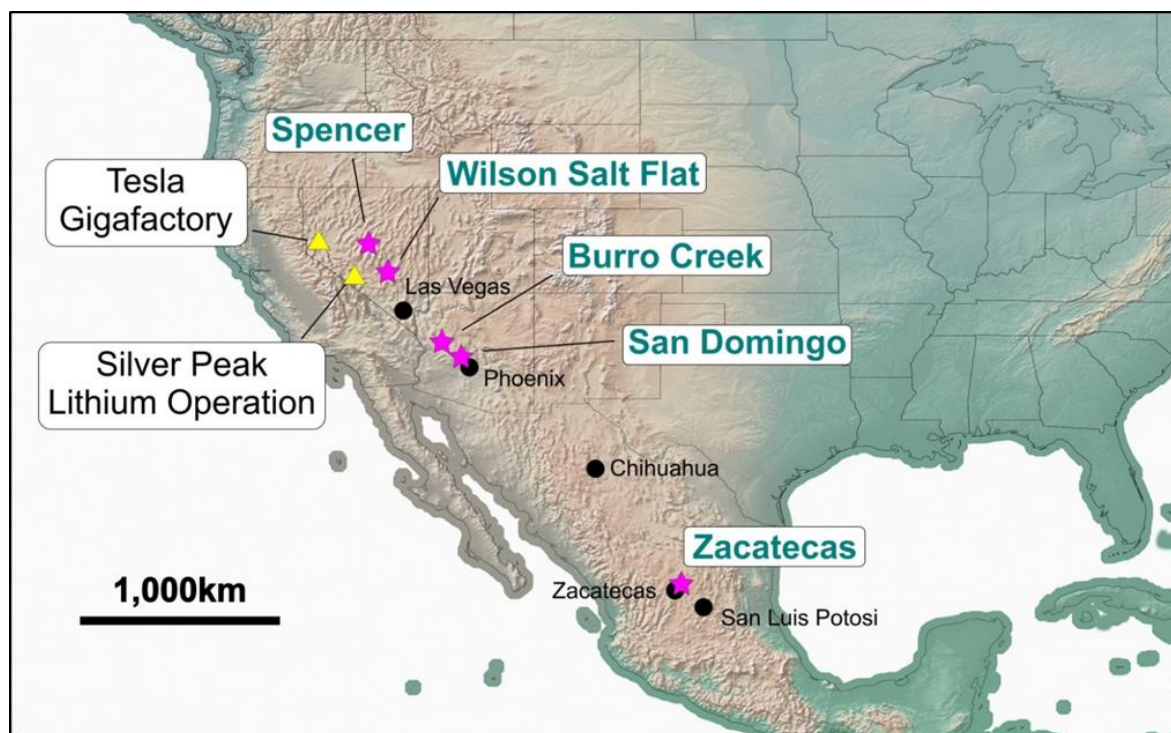


Figure 1: Wilson Salt Flat Composite Cross Section Including New Magnetotellurics Profile (bottom) Showing Strong Conductive Anomaly (purple zone) confirms the Lithium Brine Target Zone



American Lithium Portfolio

Zenith has assembled an outstanding 100% owned lithium project portfolio including lithium brine, lithium pegmatite and lithium clay targets in the USA and Mexico.



Location Map - Zenith's USA & Mexico Lithium Projects

Lithium projects worldwide are of three types: brines, pegmatites and clays. The major lithium brine operations are located in South America (Chile, Argentina and Bolivia), China and Nevada, USA. Traditionally lithium brines are extracted from salt lakes into surface ponds where they are concentrated by solar evaporation and then fed into a processing facility with output as lithium carbonate for sale to battery manufacturers. Zenith's Mexican and Nevada lithium projects are lithium brine plays. Zenith's **Spencer** and **Wilson Salt Flat** brine projects in Nevada, USA are close to both Tesla's Gigafactory and to Albermarle Corporation's Silver Peak-Clayton Valley lithium brine operation, the only operational lithium project in the USA. Zenith's three new concessions: Illescas, San Juan and San Vicente make up the **Zacatecas** lithium brine project in the emerging lithium brine district of San Luis Potosi State, Mexico.

Lithium pegmatite projects are exploited as traditional hard rock open pit mines (eg Australia's Greenbushes Mine) where concentrates of the primary lithium mineral spodumene are sold to third party processors who convert the concentrates to lithium compounds suitable for use by battery manufacturers. Zenith's **San Domingo** project in Arizona contains abundant spodumene bearing lithium pegmatites over 9 km strike.

Zenith's **Burro Creek** lithium clay project in Arizona is comparable to other lithium clay projects in the USA and Mexico subject to resource and development studies (e.g: Sonora project (Banacora –TSX).

Zenith's Nevada, Arizona and Mexico lithium projects are perfectly positioned to provide future supply to the growing USA domestic lithium battery market. Tesla Corporation has commenced construction of its lithium battery manufacturing facility (Gigafactory) outside Reno Nevada.

Bradda Head Joint Venture

The American lithium transaction with Bradda Head included a cash refund of Zenith's historic expenditure of US\$500,000 (~A\$660,000), US\$5 million (A\$6.6 million) in exploration expenditures over 3 years by Bradda Head to earn 55% project interest, a 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 must spend a minimum of US\$500,000 on exploration on the projects and drill at least one project before it can withdraw.



In addition, Jim Mellon and other sophisticated investors completed a concurrent share placement of A\$1.5 million (ASX Release 15th March 2017) comprising 15 million ZNC ordinary shares @ 10c plus one free attaching ZNCO listed option for every 5 shares issued.

Key Zenith personnel will initially dedicate up to 25% of their time to the advancement of the American lithium projects at cost, to ensure seamless progression of the projects and allow transfer of the technical knowledge base. The partners have also agreed to collaborate on any additional lithium projects that either party acquires within the same jurisdictions.

The transaction brings together the financial strength and market contacts of Bradda Head with the strong technical knowledge of the Zenith team and its USA and Mexican associates to advance these exciting lithium projects.

The Board of Zenith will also continue to consider whether shareholders' interests might be best served by the possible future spin out of this now well-funded lithium portfolio, once the projects are more advanced.

Competent Persons Statement

The information in this report that relates to 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 Minerals Limited. 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.

27th July 2017

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Zenith is advancing its project portfolio of high-quality, gold, lithium and base metal projects:

Kavaklitepe Gold Project, Turkey (ZNC 30%, Teck 70%)

- Recent (2013) grass roots gold discovery in Tethyan Belt
- Continuous rock chip sampling to: 54m @ 3.33g/t gold, including 21.5m @ 7.2 g/t gold
- Initial 2016 drill results include: 9 m @ 5.2 g/t Au from surface, 7.8 m @ 7.3 g/t Au from 3.3 m and 16.4m @ 4.7 g/t Au from 82.1m depth

American Lithium Projects (Bradda Head earning initial 55%)

Zacatecas Lithium Brine Project, Mexico

- New tenure (26,000 acres) over extensive system of salt lakes within an emerging lithium brine district
- Lithium brines to 2.1% lithium reported in sampling conducted by the Mexican Government from solar evaporation ponds for salt production (10km west of Zenith's new tenure).
- Near surface drilling completed - results awaited, electrical geophysical surveys planned

San Domingo Lithium, Arizona USA

- 9km x 1.5km lithium pegmatite field, initial surface sampling returned: 5m @ 1.97%Li₂O including 2.4m @ 2.49% Li₂O - Surface sampling and mapping prior to drill testing

Spencer & Wilson Salt Flat Lithium Brine Projects, Nevada USA

- Two lithium brine targets in producing lithium region - Geophysical surveys & infill sampling prior to drilling

Burro Creek Lithium, Arizona USA (ZNC option to acquire)

- Large scale lithium (Li) clay target under exclusive option - Metallurgical testwork to assess ease of extracting lithium – ongoing, permitting for trenching and drilling in progress

Australian Projects

Develin Creek Copper-Zinc-Silver-Gold, QLD (ZNC 100%)

- 3 known VHMS massive sulphide deposits - JORC resources, 50km of strike of host rocks.
- 2011 drilling: 13.2m @ 3.3% copper, 4.0% zinc, 30g/t silver & 0.4g/t gold - Drilling planned to extend known deposits, geophysics, geochemistry to detect new targets

Split Rocks Lithium & Gold, WA (ZNC 100%)

- 100% owned exploration licences covering 500km² in emerging Forresteria lithium district - Surface sampling in progress to precede drill testing

Red Mountain Gold-Silver Project QLD (ZNC 100%)

- Initial reconnaissance rock chip sampling results up to 114 g/t silver and 0.69 g/t gold, associated with strong, open ended silver soil anomaly. Follow-up sampling planned

Waratah Well Lithium -Tantalum Project WA (ZNC 100%)

- Extensive outcropping pegmatites (3km x 2km) in north east of tenure, encouraging lithium rock chip sample results up to 0.34% Li₂O as well as widespread, high-grade tantalum up to 1166ppm Ta₂O₅. Additional copper-zinc target being assessed.

Earaheedy Manganese Project, WA (ZNC 100%) - New manganese province discovered by ZNC, potential DSO drill intersections (+40%Mn)

Mt Alexander Iron Ore, WA (ZNC 100%) - JORC magnetite Resource 566 Mt @ 30.0% Fe close to West Pilbara coast, 50% of target untested - Seeking development partner/ buyer for iron project