

May 30, 2018

POWER & INDUSTRIAL TECHNOLOGY

## Olaroz-Cauchari Basin

### Portfolio Approach To Lithium In A Single World-Class Basin

Unless otherwise denoted, all figures in US\$  
We are using a \$0.78 US\$/C\$ exchange rate

#### We are initiating coverage on:

##### **Advantage Lithium Corp.**

Recommendation: Buy  
Target: C\$1.85

#### We are reiterating coverage on:

##### **Lithium Americas Corp.**

Recommendation: Buy (from Top Pick)  
Target: C\$13.25

##### **Orocobre Limited**

Recommendation: Buy (from Market Perform)  
Target: C\$6.25

Stock prices of lithium producers and developers have been volatile over the past 6 months as investors struggle to form a consensus as to how long the supply/demand mismatch will remain tight. Pricing remains high and production guidance remains well below the large capacity expansions being projected by the majors. Meanwhile downstream activities provide plenty of evidence for why security of supply remains the key priority of the users of battery materials.

#### Portfolio Approach For A Volatile Period

We advocate owning not just a basket of stocks, but to focus on large resources, with production at the low end of the cost curve, with industry-leading partners, high quality offtakers, and positive political jurisdictions.

#### Emergence Of A New Producing Region

The Olaroz-Cauchari Basin is home to a world-class asset with an aggregate M&I resource of 18.2 MM t LCE today. The deep drilling activities in Cauchari suggest the resource could grow well over 30 MM t LCE. With production capacity currently at 17,500 tpa LCE, 25,000 tpa LCE in construction, and other expansions in engineering, the Basin could have more than 110,000 tpa in a decade. With royalties rising in Chile, this Basin will be the low-cost supplier with a blended cost well below \$3,500 / t.

#### Expanding Our Lithium Coverage

We are adding Advantage Lithium Corp. to our lithium companies under coverage. With operating assets at Orocobre's Olaroz facility in the north of the Basin and with construction ongoing at Lithium Americas' Cauchari-Olaroz project in the south, we believe the three companies offer a compelling investment opportunity with exposure to the entire Basin, at every point in the project development cycle, with upside for potential consolidation of the Basin.

Disclosure statements located on  
pages 33 – 36 of this report

## Investment Summary

### Taking A Portfolio Approach

Although lithium stocks as a group are down significantly in 2018, lithium prices remain high, and the demand outlook is also strong both in the near term and the long term. Worries of weaker prices as the upstream supply increases started the selloff in December, which was given momentum in January as Chile expanded quotas to the producers, SQM and ALB. A recently broader commodity sell-off and expectations of the end of a long global economic expansion provided the coup de grace.

**Yet Valuations Are Rational For Majors:** Interestingly, however, the major lithium producers are now back to long term historical EV to EBITDA multiples of 10.7x on their diversified businesses. Albemarle has given up nearly all its stock gains from early 2017, while SQM dropped back much of the way to where it was in the summer of 2017. For the juniors we cover, which are half to two-thirds their market capitalization from December/January, they are all still modestly higher than last summer.

**Investors Want More Clarity On Supply/Demand:** Over countless calls and meetings through the past quarter with both generalists and materials-focused investors with a decent knowledge of the battery materials space, a common refrain has developed: “We understand the long term potential upside from the EV and power storage markets for lithium ion batteries; we accept the views that supply expansion has been difficult to achieve in a timely and cost effective way; but we need to see some data that demonstrates demand is continuing to rise and that the supply response is in fact slow.”

**Evidence To Take Time To Accumulate:** Readers familiar with our research will know that we track the news through our Weekly to provide just such evidence. We also are advocates of tracking the Asian Metal lithium price, which is our proxy for the tightness in the market, as it reports prices in Asia for shorter term contracts and/or smaller lots. But obviously, the real evidence that supply is slower to come on line and ramp (an expectation broadly held by industry consultants and managements) will take time to accumulate.

**We Advocate A Portfolio Approach:** In this report, we offer an investment approach that we believe helps to mitigate some of these risks to supply and demand and gives investors the ability to shift weightings between a lithium producer (Orocobre Ltd, ORL-TSX), a developer in construction (Lithium Americas Corp. LAC-TSX), and an explorer (Advantage Lithium Corp., AAL-TSXV). Furthermore, these three companies cover the entire Olaroz-Cauchari Basin, which has a resource just under 20 MM t LCE, but could go well over 30 MM t LCE when factoring in deeper lithium bearing layers, with noteworthy grades and chemistry. This would rival SQM’s 43 MM t LCE reserve in the Atacama.

**Birth Of A New Major Producing Region:** As this basin is truly a long life, high quality regional play, and Argentina’s royalty regime is more favourable than Chile’s, we believe our report makes a strong case that over the next decade this basin will be a major producing area at the very low end of the cost curve, an essential asset to serve the growing needs of the lithium ion battery industry. There is, therefore, a strong likelihood that all three companies stand a very real chance of being consolidated and/or owned by other producers or downstream processors.

**A World-Class Resource That Could Grow Beyond 30 MM t LCE**

**Existing Resource Just Under 20 MM T LCE:** With three projects covering more than 218 sq. km of the Olaroz-Cauchari Basin, it is worthwhile considering the potential of the region as a single resource. As we note below, the measured and indicated resources

combined as reported in the various 43-101 compliant reports add to 18.2 MM t LCE, on an M&I basis and 21.2 MM t LCE including AAL's resource, as we note below.

- In Olaroz, ORL drilled to 200 m, doing most sampling within the top 50 m. The assessment was based on 93 sq. km, a 200-m thickness for the aquifer, with a 9.6% specific yield, resulting in 6.4 MM t LCE M&I resource.
- LAC's Cauchari-Olaroz project has an 11.8 MM t LCE M&I resource at approximately 600 mg/litre), with a small number of samples being taken below 200 m.
- AAL's Cauchari resource of 3 MM t LCE was based on sections of 240 m thickness in the SE sector and 185 m in the NW. Further drilling expects to add another 1.4-3 MM t LCE at greater depths.

**Going Deeper In The Basin Points To Much Larger Resource:** However, we note that the ORL resource was based on lower grades that have subsequently been measured during production, and depth of the sampling was below 200 m. For Lithium Americas' Cauchari-Olaroz project, only a few samples below 200 m contributed to the resource. As a result, if we consider that the signs of high grades at more than 400 m identified by Advantage Lithium work, these two resources could potentially be 2x as large. As a result, the entire Olaroz-Cauchari Basin could have a resource in excess of 30 MM t LCE.

SQM's total reserves on its 82,000 ha in the Atacama total 43 MM t LCE based on 28% to 40% recoveries, going down to 300 m. This is a large salar with very high grades in excess of 1,800 mg / litre. With 3x the grade and higher evaporation rates, the Atacama reserve is large for the relatively smaller area, but we believe as a single resource, the Olaroz-Cauchari Basin is a very attractive regional play.

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#### **Growing Production Base Higher Than 110,000 tpa**

Current production on the Basin is 17,500 tpa LCE (ORL's Olaroz), with 25,000 tpa in construction (LAC's Cauchari-Olaroz), and another 50,000 tpa at various stages of planning. As we note below, there are plans that could put 112,500 tpa LCE production capacity in operation by the middle of next decade.

- ORL has 17,500 tpa LCE in operation and is expanding to 42,500 tpa LCE.
- LAC has 25,000 tpa LCE capacity in construction with a plan to double to 50,000 tpa.
- AAL is expecting to base its PEA for Cauchari on 20,000 tpa, with a feasibility in 2019.

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#### **Experienced International Partners/Investors**

The Basin has attracted the attention of a number of important technical partners, financial investors and strategic partners:

- ORL's Olaroz project has Toyota Tsusho as an investor and Mizhuo Corporate Bank as a debt provider.
- LAC's Cauchari-Olaroz project has SQM (and by extension through their stake in SQM, Tianqi Lithium) as a JV investor and project developer, as well as Ganfeng Lithium and Bangchak as equity investors and debt providers.

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#### **Royalty Regime Makes A Difference**

Earlier this year, the Chilean government through CORFO increased the lease payments from 6.8% FOB sales of lithium carbonate to a progressive structure, which is 6.8% below \$4,000/t, 8% for the pricing up to \$5,000/t, 10% up to \$6,000/t, 17% up to 7,000/t, 25% up to \$10,000 and 40% for more than \$10,000/t.

The higher royalty rate will impact the margin that SQM will realize from the expansion. For instance, at \$12,600/t the lease payment will amount to 19.14% up from 6.8%, which removes \$1,555 / t of margin. This is similar to costs increasing from \$2,150 to \$3,700 / t.

As a result, SQM is likely to stage its capacity expansion to maintain its market share and optimize the effect on pricing (and therefore margin) prudently.

- ORL is producing at operating cost between \$3,500 / t and \$4,000 / t at Olaroz.
- LAC's feasibility study projects costs of \$2,495 / t cash operating costs.

The royalty rate in Argentina can be as high as 3% at the provincial level, but currently a 1% rate is being paid by Orocobre's JV in Jujuy, as a result, the effective operating costs for the facilities in Olaroz-Cauchari Basin are in line with those in the Atacama.

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**Production, Expansion  
And Exploration At A Low  
Multiple**

AAL, LAC and ORL taken together have a combined market capitalization of C\$2 BB and EV of C\$ 2.1 BB. This translates to an attractive multiple relative to peers on several metrics:

- 17,500 tpa LCE operational today with total of 67,500 tpa by 2021 (at earliest)
- \$210 MM in EBITDA by 2021 when LAC's Stage 1 and ORL's Phase 2 operational
- Expansion to \$332 MM in EBITDA when both operations expanded to both phases.
- Exploration exposure to AAL's Cauchari project

This implies as a group, the stocks trade at EV to EBITDA of 7.7x (4.8x with LAC and ORL both at 2 phases) versus major producers of 11, yet capacity is growing more quickly, and P/NAV of 0.54, without upside from LAC's Lithium Nevada or AAL's Cauchari project.

In the remaining sections of this report, we provide our initiating coverage on Advantage Lithium Corp. and provide summaries of our ongoing coverage of Lithium Americas and Orocobre Ltd.

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**Advantage Lithium Corp.  
(AAL-TSXV)  
Buy – C\$1.85**

Advantage Lithium is an early-stage lithium exploration company with properties in Argentina. Over the past year, its flagship project, Cauchari, has rapidly evolved with drilling, pump tests and other development work that has led to the release of an updated resource estimate.

**Cauchari Project Benefits From Neighbors' Work:** AAL's 28,000 ha project is located to the northwest and southeast of Lithium Americas' Cauchari-Olaroz project which is in construction. AAL also benefits from the work of its largest shareholder, Orocobre, which is operating a plant a handful of km to the north of the Olaroz salar.

**Proving Up An Earlier Resource:** Last week, AAL released an updated resource estimate of 3 MM t LCE, growing from the smaller inferred resource of 470,000 t LCE established solely on the SE sector.

**Phase III Drilling To Deepen The Resource:** Drilling over two phases, in the NW and SE sectors, has confirmed high grades and good chemistry to greater depths than previously discovered elsewhere in the basin. Rigs have been mobilized to explore beyond 400 m, suggesting that Cauchari could host a much larger resource

**PEA Expected In Q2/18:** AAL has performed the necessary work to complete a PEA based on 20,000 tpa LCE plant. The results are expected this quarter.

We are initiating coverage on Advantage Lithium with a Buy recommendation and a target price of C\$1.85. Our target is based on a 1x multiple to our C\$1.85 per share NAV, which is valued on \$100/t LCE, a resource of 3 MM t LCE on Cauchari, and the assumption of a C\$10 MM raise at C\$1.00 to bring cash to a level sufficient to complete the feasibility study in 2019.

**Lithium Americas Corp.**  
**(LAC-T)**  
**Buy – C\$13.25**

Lithium Americas is an advanced-stage lithium developer whose large-scale and low-cost Cauchari-Olaroz brine project in Argentina is in construction with the support of its 50/50 JV partner SQM. The company also owns 100% of the Lithium Nevada clay project and a plant producing rheological materials, both located in Nevada.

**High Grades And Good Chemistry:** As expected, LAC's project benefits from similar advantages as those projects elsewhere in the basin: high grades (~700 mg/l in the reserve), good chemistry (Mg:Li 2.5) and great scale: 11.8 MM t LCE M&I resource.

**SQM Cuts Risk Profile:** SQM is a 50/50 partner in the Cauchari-Olaroz project, and as the largest lithium brine producer with more than 20 years of experience in nearby Atacama, brings significant experience, greatly reducing execution risk.

**Excellent Strategic Partners:** Ganfeng Lithium, a large lithium chemicals user, has a 20% equity stake in LAC and entitlement to 70% of phase 1 output from Cauchari-Olaroz. Ganfeng is also providing \$125 MM in project level debt.

**Cauchari-Olaroz In Construction:** With all financing and permitting in place, the first 25,000 tpa phase of the project is at the early construction stage.

**PFS Coming For Clay Project:** The Lithium Nevada clay project in Nevada, potentially one of the largest lithium resources globally, is at an early stage of development.

We are maintaining our coverage on Lithium Americas with a C\$13.25 target and Buy recommendation (from Top Pick). Our target is based on a 0.9x multiple to our C\$13.25 per share NAV. LAC trades at 0.5x P/NAV versus ORL's 0.77x multiple. On an EV to EBITDA basis of phase 1, LAC is below 6x versus ORL above 10x.

**Orocobre Limited**  
**(ORL-T)**  
**Buy – C\$6.25**

Orocobre is the developer of the only new lithium brine project to reach operation in several decades, owning 66.5% of the project on the Salar de Olaroz with 25% owned by its partner Toyota Tsusho and 8.5% owned by JEMSE (Jujuy Provincial Government Mining Company).

**Production Ramping – Moving To Expand:** With the primary circuit operating relatively consistently, ORL has embarked on a plan to grow capacity to 42,500 tpa from 17,500 tpa nameplate, with much of the expansion aimed at the industrial grade market.

**Lithium Hydroxide Plant In Planning Stage:** ORL is planning a 10,000 tpa LiOH plant in Japan that will convert 9,000 tpa of the lower grade Li<sub>2</sub>CO<sub>3</sub> production to battery grade material.

**Operating Costs Higher Than Expected:** Management moved its expected cash costs to \$3,500/t from \$2,500/t excluding potash credits. If achieved, this is in line with world-leading production at Chile's Atacama brines following the royalty increase.

**A Producer With A Larger Expansion At Half The Multiple:** In contrast with the large, publicly traded specialty chemicals companies, Albemarle, FMC and SQM, Orocobre offers investors pure exposure to lithium, with more than a doubling of production at a multiple less than 2/3rds that of the majors.

**C\$6.25 Target And a Buy Recommendation.** Our target price of C\$6.25 is based on 0.8x multiple of NAV. We expect completion of the ramp of Stage 1 to nameplate capacity and the continued development of the expansion at Olaroz to be catalysts over the next 12 months.

Figure 1 Lithium Comps – Producers &amp; Developers

Company	Ticker	Share Price (\$)	Market Cap (US\$MM)	EV (US\$MM)	Stage	Lithium Project(s)	Location	Trading Metrics	
								EV / EBITDA	
								2018	2019
<b>Producers</b>									
Tianqi Lithium Corp	SZ:002466	¥54.99	¥62,801	¥62,742	Producer	Talison (51%)	Australia	13.7x	10.7x
Soc. Qui. y Min. de Chile	NYSE:SQM	\$50.71	\$13,347	\$14,037	Producer	Atacama / Cauchari (50%)	Chile / Argentina	14.4x	11.9x
Albemarle Corp	NYSE:ALB	\$93.03	\$10,304	\$11,154	Producer	Atacama / Talison (49%)	Chile / Australia / US	11.2x	10.2x
FMC Corp	NYSE:FMC	\$87.33	\$11,747	\$14,695	Producer	Hombre Muerto	Argentina	11.1x	10.3x
Galaxy Resources Ltd	ASX:GXY	A\$3.34	A\$1,353	A\$1,306	Producer	Mt Cattlin / Sal de Vida	Australia / Argentina	11.6x	10.4x
<b>Orocobre Ltd</b>	<b>ASX:ORE</b>	<b>A\$5.58</b>	<b>A\$1,180</b>	<b>A\$1,177</b>	<b>Producer</b>	<b>Olaroz (66.5%)</b>	<b>Argentina</b>	<b>205.9x</b>	<b>28.0x</b>
<b>Average (Excluding Orocobre)</b>							<b>excl. Orocobre</b>	<b>12.4x</b>	<b>10.7x</b>
								<b>Attributable LCE</b>	<b>EV</b>
								<b>(000t)</b>	<b>/t LCE</b>
<b>Hard Rock Developers / Explorers</b>									
Pilbara Minerals Ltd	ASX:PLS	A\$0.90	\$1,109	\$1,137	FS	Pilgangoora	Australia	3,887	\$293
Galaxy Resources Ltd	ASX:GXY	A\$3.34	\$1,019	\$972	Construction	Mt Cattlin / Sal de Vida	Australia / Argentina	9,669	\$101
Altura Mining Ltd	ASX:AJM	A\$0.38	\$512	\$514	FS	Pilgangoora	Australia	989	\$520
Kidman Resources Ltd	ASX:KDR	A\$2.22	\$586	\$590	Exploration	Earl Grey	Australia	7,009	\$84
♦ <b>Nemaska Lithium Inc</b>	<b>TSX:NMX</b>	<b>C\$0.96</b>	<b>\$297</b>	<b>\$335</b>	<b>FS</b>	<b>Whabouchi</b>	<b>Canada</b>	<b>3,367</b>	<b>\$99</b>
Neometals Ltd	ASX:NMT	A\$0.34	\$139	\$107	Construction	Mt Marion (13.8%)	Australia	281	\$381
Critical Elements Corp	TSXV:CRE	C\$0.90	\$104	\$105	PEA	Rose	Canada	447	\$235
<b>Average</b>								<b>Attrib. LCE Res.</b>	<b>EV</b>
								<b>(000t)</b>	<b>/t LCE</b>
<b>Brine Developers / Explorers</b>									
<b>Orocobre Ltd</b>	<b>ASX:ORE</b>	<b>A\$5.58</b>	<b>\$889</b>	<b>\$886</b>	<b>Producer</b>	<b>Olaroz (66.5%)</b>	<b>Argentina</b>	<b>4,879</b>	<b>\$182</b>
<b>Lithium Americas Corp</b>	<b>TSX:LAC</b>	<b>C\$6.88</b>	<b>\$479</b>	<b>\$425</b>	<b>FS</b>	<b>Cauchari (50%) / LNC</b>	<b>Argentina / US</b>	<b>5,876</b>	<b>\$72 +</b>
♦ Millennial Lithium Corp	TSXV:ML	C\$2.50	\$158	\$155	Exploration	Multiple Assets	Argentina	3,009	\$52
Wealth Minerals Ltd	TSXV:WML	C\$1.20	\$104	\$102	Exploration	Multiple Assets	Chile	-	-
♦ <b>LSC Lithium Corp</b>	<b>TSXV:LSC</b>	<b>C\$0.82</b>	<b>\$97</b>	<b>\$88</b>	<b>FS/PFS</b>	<b>Multiple Assets</b>	<b>Argentina</b>	<b>1,609</b>	<b>\$54</b>
♦ <b>Neo Lithium Corp</b>	<b>TSXV:NLC</b>	<b>C\$1.44</b>	<b>\$98</b>	<b>\$98</b>	<b>Exploration</b>	<b>Tres Quebradas</b>	<b>Argentina</b>	<b>2,014</b>	<b>\$49</b>
Advantage Lithium Corp	TSXV:AAL	C\$1.01	\$110	\$97	Exploration	Cauchari	Argentina	2,268	\$43 *
<b>Average</b>									<b>\$69</b>

+ Cauchari-Olaroz only; \* only inferred resource

♦ During the past twenty-four months, Cormark Securities Inc., either on its own or as a syndicate member, participated in the underwriting of securities for these companies

Source: Cormark Securities Inc., Company reports, Bloomberg

# Advantage Lithium Corp.

(AAL – C\$1.06, TSXV)

**Recommendation: BUY**

**Target Price: C\$1.85**

**Figure 2** **Statistics and Estimates**

Current Price	C\$1.06	Shares Outstanding (MM)	
52 Wk High	C\$1.42	Basic	141.0
52 Wk Low	C\$0.36	Diluted	166.9
Cash (MM)	\$13.2	Mngt. & Dir.	47.8
Total Debt (MM)	\$0.0	Market Cap. (diluted)	C\$177
NAVPS	C\$1.85	Float	C\$99
P/NAV	0.57x	EV	C\$177
Shares o/s and cash as of Jan. 31, 2017			

Sources: Cormark Securities Inc. and Company reports

**Figure 3** **Price Chart**



Sources: BigCharts (May 29/18)

Advantage Lithium is a rapidly advancing lithium development company with properties in Argentina. In little more than a year, its flagship project, Cauchari, has rapidly evolved with drilling, pump tests and other work that has led to the release of an updated resource estimate.

**Cauchari Project Benefits From Adjoining JV Partner:** AAL's 28,000 ha project is located to the northwest and southeast of Lithium Americas' Cauchari-Olaroz project which is in construction. AAL also benefits from the work of its largest shareholder, Orocobre, which is operating a plant a handful of km to the north on the Olaroz salar.

**Proving Up An Earlier Resource:** Last week, AAL released an updated resource estimate of 3 MM t LCE, growing six times from the smaller inferred resource of 470,000 t LCE established solely on the SE sector.

**Phase III Drilling To Deepen And Uplift The Resource to M&I:** Drilling over two phases, in the NW and SE sectors, has confirmed high grades and good chemistry to greater depths than previously discovered elsewhere in the basin. Rigs have been mobilized to explore beyond 400 m in Phase III, suggesting that Cauchari could host a much larger resource.

**PEA Expected In July/Aug 2018:** AAL has performed the necessary work to complete a PEA based on 20,000 tpa LCE plant. The results are expected July/Aug 2018. The assessment should benefit from the substantial existing infrastructure, which makes Cauchari essentially a brownfield project.

**We are initiating coverage on Advantage Lithium with a Buy recommendation and a target price of C\$1.85.** Our target is based on a 1x multiple to our C\$1.85 per share NAV, which is valued on \$100/t LCE, a resource of 3 MM t LCE on Cauchari, and the assumption of a small raise of capital (equity or strategic investment) to bring cash to a level sufficient to complete the feasibility study in 2019.

Advantage Lithium is a rapidly advancing stage lithium development company focused on its flagship brine project, Cauchari, located in the Jujuy province of Argentina. The corporation has its head office in Vancouver, BC, and owns 100% of South American Salars SA, incorporated in Argentina, the holder of the properties being developed in Argentina.

As of January 2018, the company had net working capital of C\$13.2 MM and C\$41.9 MM in capitalized exploration assets having raised C\$29.1 MM (gross) through equity issues in three raises in 2017. Advantage trades on the TSX Venture under the symbol AAL and has a financial year ending July. The stock was originally a CPC, whose qualifying transaction included lithium properties in Nevada. Following the acquisition of a 50% interest (now 75%) in Orocobre's Cauchari project in March 2017, Advantage has focused its efforts on the development of this project, having divested of the Nevada properties. AAL has 141 MM shares outstanding, 17.4 MM warrants with a weighted average exercise price of C\$0.95 per share, and 8.27 MM options with a weighted average exercise price of C\$0.63 per share.

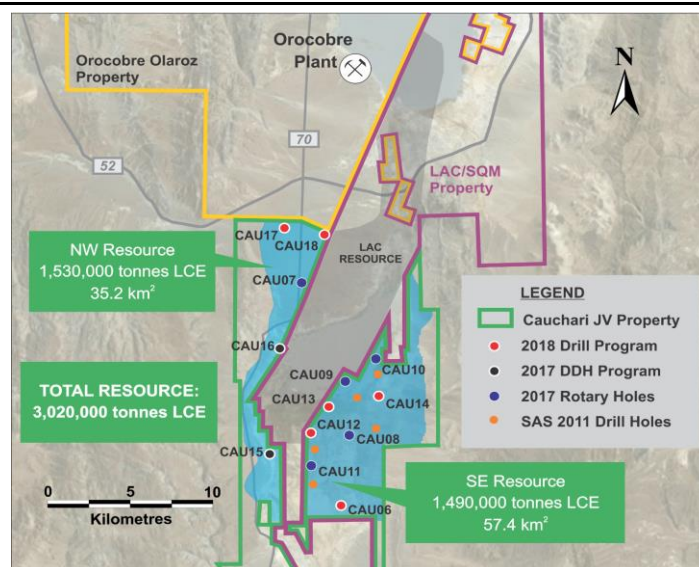
### Flagship Project Occupies South Portion Of The Cauchari-Olaroz Basin

The Cauchari lithium project consists of approximately 28,000 ha, located to the northwest and southeast of Lithium America's Cauchari-Olaroz project and less than 20 km to the south of Orocobre's producing Olaroz plant, as shown in the figure below. The project area has attractive infrastructure with the presence of a paved highway and nearby gas pipeline, which has been enhanced by infrastructure installed by Orocobre including water supply and building strong relationships with the local communities, which Advantage is poised to lever off.

- Route 51 passes to the south and heads to the border with Chile 55 km to the west. Two other routes provide access to the area from San Salvador and Purmamarca.
- Consideration of re-opening the railway, which runs 20 km south of the project, is underway. This railway connects to ports on the coast of Chile.
- A gas pipeline and high voltage transmission line also cross the region.
- A few local villages are situated within 50 km providing a source of local labour.

Figure 4

Cauchari Project – Property Layout



Source: Company Reports



The Cauchari and Olaroz salars are located in a closed basin, which is split in two by the delta of the Archibarca River, with the Olaroz salar to the north of the delta and the Cauchari salar to the south at approximately 3,900 m of elevation. The Cauchari salar is likely hydraulically connected to the Olaroz salar to the north, and water inflows from both the north and south. The basin has a total area of 6,000 sq. km with the Cauchari salar occupying approximately 450 sq. km extending from the North of the Cauchari properties to the South of the Cauchari salar.

### Cauchari Brine Project

Sampling of brines for lithium dates, in this region, to the 1970s, when salt and borates were the chief minerals being exploited. Studies carried out by local universities were among the earliest efforts to establish a resource. Orocobre conducted more extensive exploration in 2009. However, this work was largely limited to the edges of the salar, where the trend in pit brine samples were lower around the edges and trended higher near the center of the salar. Pit sampling, though limited, was the main exploration activity undertaken by Orocobre prior to AAL's work.

**Initial Drilling Established A Small Resource In The SE:** In the south-east there is an existing 43-101 compliant inferred resource estimate of 470,000 t LCE on a small, shallow portion of the target. The resource is based on 147 samples from 5 diamond drill holes that included geochemical data and assays, with additional samples analyzed at a non-certified laboratory in Salta. In the north of the SE zone a depth of 170 m was used while in the south, a 50-m depth was used to establish the inferred resource of 470,000 t LCE and 1.62 MM t potash.

**Figure 5 Cauchari Project – Initial Resource On SE Segment**

Inferred Resource Area	Brine Body Parameters				Avg Resource Concentration		Resource Contained, t			
	Area, sq. km	Avg Thickness, m	Mean Specific Yield	Brine Vol., MM cu. m	Li, mg/l	K, mg/l	Li metal	K	LCE	Potash, KCl
North 0-170	19.69	170	6.10%	204	400	3,800	81,000	780,000	430,000	1,500,000
South 0-50	11.35	50	4.60%	26	260	2,500	7,000	60,000	40,000	120,000
<b>Combined</b>	31.04			230	660	6,300	88,000	840,000	<b>470,000</b>	1,620,000

Source: Company Reports

**Attractive Chemistry:** This assessment was clearly limited by the relatively shallow depth of the southern area, but chemistry is attractive with Mg/Li averaging 2.8, although SO<sub>4</sub>/Li averages 118 across 184 samples. Excluding CAU005D and 6R where lithium concentrations are low at the fringe, the sulphate ratio averages 61. In the latest drilling results, sulphates are running at the 35 level. Typically, to be economically viable, resources need to have Mg/Li below 8 and sulphates ratios below 40, with the magnesium level being more critical.

**Larger Target Defined:** A key conclusion of the work completed was that the 2012 drilling campaign was insufficient to establish a deeper assessment of the resource and that drilling in the NW where there was some evidence that aquifers hosting brine could extend beneath the Archibarca alluvial fan should be conducted. The report defined an exploration target with a range of 250,000 t to 5,600,000 t of lithium carbonate and 900,000 t to 19,000,000 t of potash (KCl) for the lower and upper ranges applied for the exploration target.

**JV With Orocobre Leads To Greater Focus On Tenements:** In March 2017, a JV between Advantage and Orocobre was finalized whereby AAL gained 50% of the project and has since earned in a 75% interest after having invested \$5 MM in drilling activities.

The JV obviously is in a position to benefit from Orocobre's experience in exploring and developing in Olaroz as well as its relationships with government and communities in the regions. AAL contributed to funding the JV, having raised C\$20 MM in a financing completed in February 2017, with two smaller raises subsequently.

- March 2017: Original 50% interest in Cauchari project
- April 2017: Phase I (5 rotary holes, aimed to go to 400 m) drilling commences with drill rig mobilized. By June results on the first hole reported and two more rigs added in summer, drilling in both the SE and NW.
- Summer 2017: Phase II drilling on up to 12 diamond drill holes commences.
- Initial pump tests in September show average 678 mg / l, much higher than previously. By November results from several other holes are released, showing high grades continue in NW with samples up to 200 m at 619 mg / l.
- December 2017: In previously undrilled NW, brine body extends over 284 m, with brines at 529, low Mg/Li. In mid 2:1
- February/March/April 2018: Pumping rates look attractive: 19 l/s over 48 hrs CAU11, averaging 515 mg/l and 2.6:1 Mg/Li. Drilling down to 400 m. Step tests and constant rate tests are positive, consistent with early results on CAU07. Results from NW section: CAU18 drilled to 359 m, with 9 samples at 476 mg / l, and good Mg/Li in same 2.5:1 range.
- Phase III Drilling began in May: Additional deeper drilling with ability to go beyond 600m and will include production well drilling. Attempt to define the full extent of the lower sand unit.
- May 2018: Highlights of updated resource of 3 MM t LCE issued
- PEA work ongoing (engaged WorleyParsons)

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## Recent Progress On Drilling

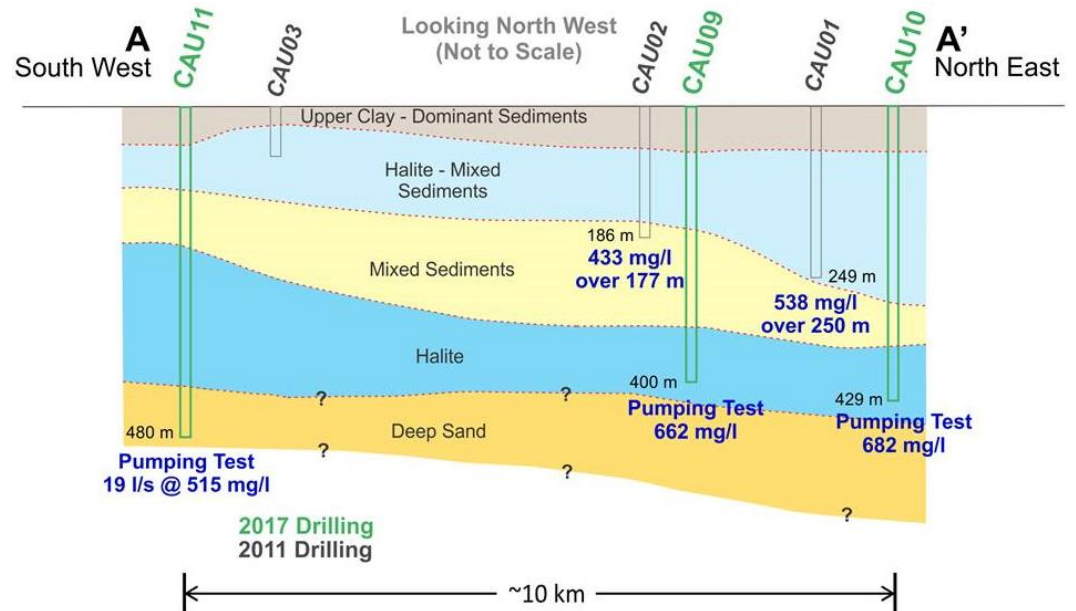
**South-east Zone Shows Extension At Depth:** AAL's Cauchari project has two main target zones, referred to as the North-west and South-east. Recent drilling demonstrates that the resource does extend at depth and laterally.

- CAU10: brine grade of 682 mg / litre lithium from 50-340 m in 48-hr pump test
- CAU9: brine grade of 662 mg / litre lithium from 50-400 m in 2.5-hr pump test
- CAU8: brine grade of 517 mg / litre lithium at 60-400 m in 48-hr pump test
- CAU11: reached 480 m with dep sandy units below 400 m and pumping rates sustained at 19 l / producing 515 mg / litre

AAL is exploring at depth in the south-east in order to grow the resource and further define the stratigraphic interpretation. Recent drilling indicates thick intervals of sandy sediments, which are typically strong indicators for favourable porosity and good permeability characteristics.

Figure 6

## Cauchari Project – Resource On SE Segment



Source: Company Reports

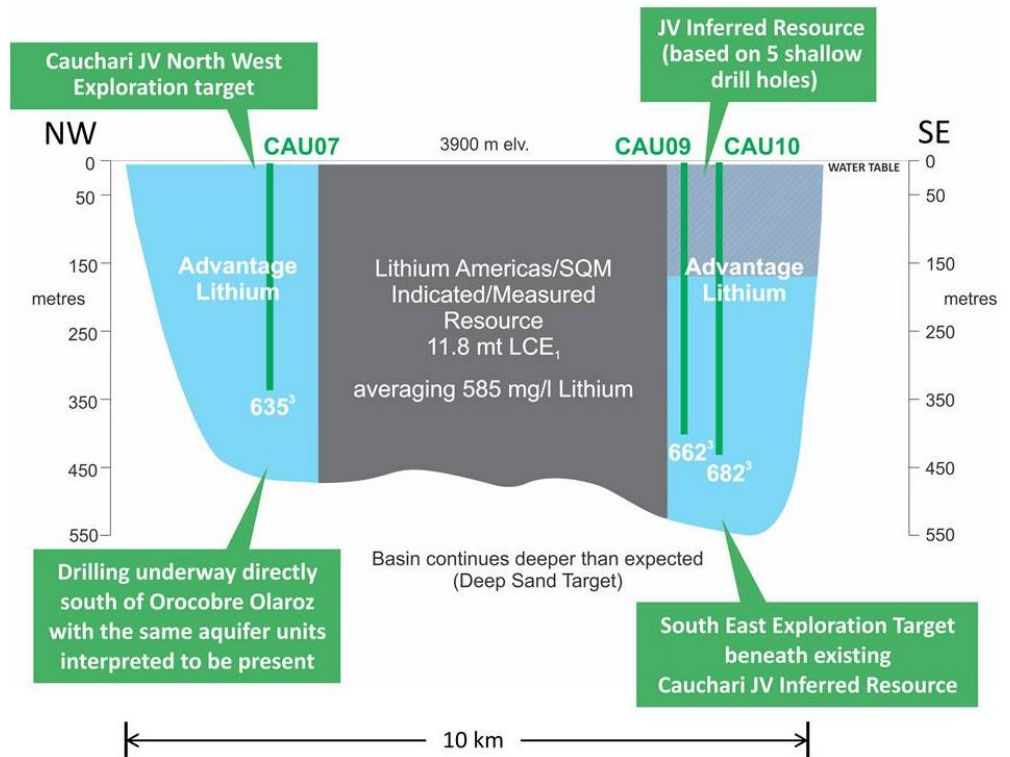
In the north-west zone, where no previous drilling had been carried out, three holes in 2017 intersected thick intervals, bearing lithium. The north-west zone appears to have thick sand packages, where the surface sediments give way to loose sand, with new brine horizons lower. Test work continues to establish the thickness of these units at depth.

- CAU7: initial brine assay of 601 mg / litre lithium at 135-343 m with a pump test of 17 litre/s for 48 hrs
- CAU16: brine grade of 619 mg / litre lithium from 169-199 m, within a broader interval of 529 mg / litres from 118 m to 199 m.
- CAU15: brine grade of 407 mg / litre lithium from 102-234 m, in predominantly sand units with clay intervals, slightly higher Mg/Li of 3.1:1

As we noted above, magnesium ratios in the results have confirmed the relatively low levels (below 3) determined in the work that established the inferred resource in the SE section. Sulphate levels are relatively high, but trending to below 40 as they are now lower than is generally perceived to be necessary for an economic project. Sulphate levels are similar to the Olaroz project in much of the Cauchari area and in particular in the more permeable sediments in the NW sector and in the SE sector deep sand unit. The sulphate levels and SO<sub>4</sub>/Li is higher in the overlying halite-clay unit in the SE sector.

**Latest Work Shifts The Focus Deeper In The Basin:** The work to establish deeper resources on the basin bring important implications for the long-term potential of the Olaroz-Cauchari Basin. As shown in the figure below, evidence for an interpretation of the basin, which is broader and is building. The conceptual view that AAL is building is that the brine continues down past 400 m between the NW and SE sectors. The earlier work established by Lithium Americas was generally up to 300 m deep. Orocobre in Olaroz previously defined resources to only 200 m, although they have subsequently conducted some deeper drilling. The relatively little work done by Orocobre brought the view that the areas owned by AAL were therefore not as attractive as they are proving to be.

**Figure 7 Cauchari Project – Going Deep**



Source: Company Reports

**Updated Resource Estimate**

**Updated Resource Rises To 3 MM t LCE:** AAL announced an updated resource estimate for Cauchari that featured a 6-fold increase on the previous resource, though the average grade is lower than we expected. Historical grades are dragging down the average, but the grades appear to support grades better at depth in the SE. we can expect grades to improve as the Phase III drilling will target depths in the NW and SE. The 43-101 compliant resource includes the NW section and spatially larger section in the SE.

- Inferred resource based on 1.2 MM cu. m brine at average grade of 450 mg/l lithium, 4,028 mg/l potassium
- Chemistry remains attractive at 2.5 Mg:Li, sulphates below 30 in NW sector (though near 70 in SE) and the deep sand unity in the SE sector where sandy units span 80 m in CAU11

**Figure 8 Cauchari Project – Updated Resource**

Inferred Resource Area	Brine Body Parameters				Avg Resource Concentration		Resource Contained, t			
	Area, sq. km	Aquifer Vol, cu. km	Mean Specific Yield	Brine Vol., MM cu. m	Li, mg/l	K, mg/l	Li metal	K	LCE	Potash, KCl
NW	35.2	6.5	9.0%	585	465	3,920	288,000	2,420,000	1,530,000	4,600,000
SE	57.4	13.9	4.0%	556	443	4,078	280,000	2,560,000	1,490,000	4,900,000
<b>Combined</b>	92.6	20.4	6.0%	1,224	450	4,028	568,000	4,980,000	<b>3,020,000</b>	9,500,000

Source: Company Reports

The key takeaway from the update is that there is a much larger resource for AAL on its Cauchari property. We had anticipated higher grades in an average sense given the Phase II drilling results; however, there are signs of higher grades with depth in some of the

pumping results, which could bring grades overall higher in the Phase III exploration. Also note that any future production is likely to target high grade areas (the historical 380 mg/l lithium resource will not be a focus of the production/pumping). LAC/SQM's project and ORL's facility have higher grade resources, so there is evidence nearby that further drilling can see improved grades.

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**Work Program  
Ongoing Through  
2018**

**Phase II in H1/18:** In the first half of 2018, AAL has made progress on its program, which includes completion of holes in both the NW and SE sectors. In addition, installation of monitoring wells and the completion of pumping tests was envisioned. AAL also anticipates the assessment of processing options. The end deliverable for this work is a PEA for the project by the end of July/Aug 2018, which will be based on a capacity of 20,000 tpa lithium carbonate facility.

**Phase III In Progress:** Advantage has initiated their 2,000 m Phase III drilling program with the goal of defining the Cauchari salar resource limits. By Q1/19 (calendar year), AAL expects to complete rotary and diamond drilling with a view to define deeper sand units in both sectors. In addition, AAL expects to conclude two 30-day pumping tests to simulate production wells. This will enable a new reserve estimate and possibly a 43-101 compliant feasibility study. AAL's consultants suggested that potentially could see another 1.4-3 MM t LCE by going deeper.

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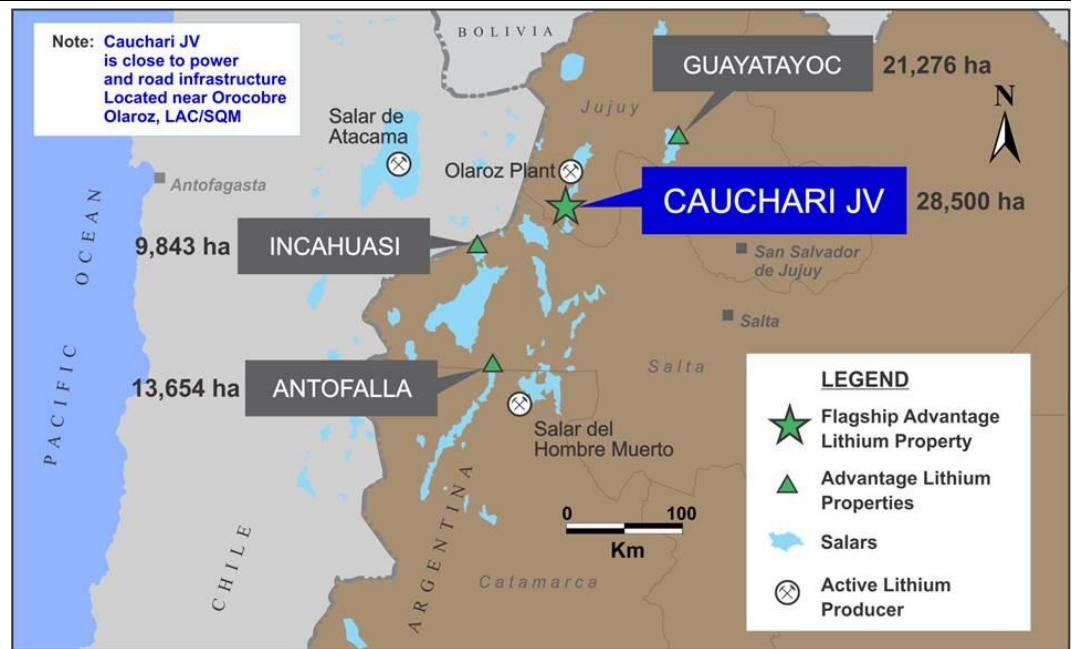
**Additional  
Properties**

**Three Other Early Stage Projects:** AAL owns three other projects in Argentina that are at a relatively early stage of exploration. On the Antofalla salar that straddles both the Salta and Catamarca provinces in Argentina, AAL holds 10,653 ha, where pit samples returned results showing 250 ppm lithium and 2,500 ppm potassium. Albemarle is also active nearby on the salar, suggesting attractive prospects in the region.

In Incahuasi, AAL has 9,843 ha located in the Salta province, where pit sampling has provided indication of 326 ppm lithium and 13,200 ppm potassium, the highest levels of potassium in Argentina.

In Guayatayoc, AAL has a large property ownership covering 21,276 ha, which is 80 km due east of the Cauchari property in Jujuy province. This location benefits from many of the same infrastructure benefits being enjoyed by the Cauchari and Olaroz projects. Initial sampling indicates good chemistry with low magnesium.

Figure 9 Other Projects – Property Layout



Source: Company Reports

## Valuation

We hold the view that the most meaningful and valuable method to value early stage brine developers is to perform a DCF on the cash flow generated by an operation of a specific size over a number of years. This allows for taking into consideration important modeling parameters such as a brine resource flow rates, impact of microclimate on evaporation rates, the effect of chemistry on reagent use (and therefore operating costs), as well as cost of capital, and changes in lithium prices. With the Phase III drilling program underway, the full extent of the resource will be made known soon. Until we have a better indication of practical pumping rates and results from evaporation tests, we will base our valuation on the updated resource, rather than a full DCF as management is rapidly progressing to an economic assessment.

As shown in Figure 10, we estimate that the Phase III drilling would need to support an additional 80m of aquifer thickness with no change in average grades to support a resource of more than 4 MM t LCE. To see a total resource as large as 6 MM t LCE the deeper drilling would need to add 200 m of thickness with a grade for these new layers above 500 mg / litre.

Figure 10 Cauchari Project Resource – Small Thickness

Inferred Resource Area	Brine Body Parameters				Avg Resource Concentration		Resource Contained, t			
	Area, sq. km	Aquifer Vol, cu. km	Mean Specific Yield	Brine Vol., MM cu. m	Li, mg/l	K, mg/l	Li metal	K	LCE	Potash, KCl
NW Update Res.	35.2	6.5	9.0%	585	465	3,920	288,000	2,420,000	1,530,000	4,600,000
NW Deep	35.2	2.8	9.0%	253	465	3,920	117,850	993,485	627,313	1,910,471
SE Updated Res.	57.4	13.9	4.0%	556	443	4,078	280,000	2,560,000	1,490,000	4,900,000
SE Deep	57.4	4.6	4.0%	184	443	3,900	81,370	716,352	433,134	1,377,545
<b>Combined</b>				1,578		7,820	767,220	6,689,837	<b>4,080,447</b>	12,788,016

Source: Company Reports

**Figure 11 Cauchari Project Resource – Larger Thickness**

Inferred Resource Area	Brine Body Parameters				Avg Resource Concentration		Resource Contained, t			
	Area, sq. km	Aquifer Vol, cu. km	Mean Specific Yield	Brine Vol., MM cu. m	Li, mg/l	K, mg/l	Li metal	K	LCE	Potash, KCl
NW Update Res.	35.2	6.5	9.0%	585	465	3,920	288,000	2,420,000	1,530,000	4,600,000
NW Deep	35.2	7.0	9.0%	634	510	3,920	323,136	2,483,712	1,720,053	4,776,178
SE Updated Res.	57.4	13.9	4.0%	556	443	4,078	280,000	2,560,000	1,490,000	4,900,000
SE Deep	57.4	11.5	4.0%	459	510	3,900	234,192	1,790,880	1,246,604	3,443,862
<b>Combined</b>				2,234		7,820	1,125,328	9,254,592	<b>5,986,657</b>	17,720,040

Source: Company Reports

### Initiating Coverage With A Buy Rating And C\$1.85 Target

In Figure 1, we see that there is a relatively tight range of stock valuations for early stage companies that have fallen considerably this year. Millennial Lithium, LSC Lithium, and Neo Lithium are grouped \$55-\$60/t LCE on the basis of basic shares outstanding. Lithium Americas being in construction on a fully financed project with partners trades at a higher level, near \$80/t, but does not factor in Lithium Nevada. Including the 3.3 MM t LCE M&I resource of Lithium Nevada, LAC is trading at \$50 EV per t LCE resource. Our targets for LSC and NLC, which are based on full DCF's imply \$90 to \$100 / t LCE. On this basis we expect that as Advantage Lithium completes drilling to expand the resource and move through PEA to FS, the stock will rise accordingly.

We are initiating coverage on Advantage Lithium with a C\$1.85 target and Buy recommendation. Our target is based on a 1x multiple to our C\$1.85 per share NAV, which is based on \$95/t LCE, a resource of 3.02 MM t LCE on Cauchari, and the assumption of a C\$10 MM raise at C\$1.00 to bring cash to a level sufficient to complete the feasibility study in 2019.

### Upcoming Events / Catalysts

There are a number of potential milestones coming in the next few quarters that we expect will move the stock higher.

- Phase III Drilling: Q1/19 (Calendar)
- Preliminary Economic Assessment: July/Aug 2018
- Updated Resource Estimate: Q1/19 (Calendar)
- Feasibility Study: Q2/19 (Calendar)

Striking a deal with strategic partners with/without financing has also acted as a major catalyst in the junior space. In general, these types of investments are completed either just before or after feasibility studies have been completed. As the supply/demand remains tight and with the development elsewhere in the Olaroz-Cauchari Basin very active, AAL could benefit from interest that occurs at an earlier stage, as comfort builds with the project and risk is understood to a higher degree at neighboring projects.

## Appendix A – Management & Directors

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**David Sidoo**  
President, CEO, Director

Mr. David Sidoo is a successful businessman based in Vancouver where he oversees a successful private investment banking and financial management firm. Upon graduating from the University of British Columbia in 1982 where he held a four-year football scholarship with the UBC Thunderbirds, he was drafted to play professional football with the Canadian Football League. David retired from football in 1988 and joined Yorkton Securities rising to become Partner and Advisory Board Member. In 1999, he left Yorkton to pursue private investment banking. He currently sits on the Board of Governors for the University of British Columbia. In 2016, David was appointed to the Order of British Columbia, the Province's highest form of recognition. He has also been honored by the Government of Canada with the Queen Elizabeth II Diamond Jubilee Medal and the NRI Award, presented at the House of Lords in London, England, for his tireless work in the community.

**Callum Grant**  
Director, and Technical Advisor

Mr. Grant graduated with B.Sc. Honors Geology from the University of Aberdeen, Scotland, in 1971 followed by an M.Eng. (Mining) degree from McGill University in 1977. He is a Registered Professional Engineer (P.Eng.) in Ontario & British Columbia, Canada, has served as Qualified Person for mineral resource and mining sign-offs and delivery of scoping through feasibility studies. Mr. Grant is fluent in Spanish and English. He has broad perspective and experience of the minerals industry from exploration to production with a focus on South America and Argentina in particular. Extensive experience in the exploration, development and production of a broad range of metalliferous and industrial commodities including lithium. Technical manager for delivery of numerous scoping, pre-feasibility, bankable feasibility, and development/operating projects to NI43-101 standards.

**Richard Seville**  
Director

Mr. Seville joined the Board of Orocobre as Managing Director in 2007, when it was an unlisted Argentinian explorer, chaired by Neil Stuart. Richard took Orocobre through to listing on the ASX in December 2007. He is a mining geologist and geotechnical engineer and has over 30 years' experience in exploration, development and production, and over 20 years in the corporate field as a Director involved in resource development funding. Mr. Seville has managed Orocobre's growth from an explorer in Argentina to become a successful producer of lithium carbonate at the Olaroz project and he was instrumental in negotiating the Toyota Tsusho Joint Venture in 2010. He is a graduate of the Royal School of Mines and James Cook University in North Queensland and holds a Bachelor of Science Degree with Honors in Mining and Geology and a Master of Engineering Science.

**Rick Anthon**  
Director

Mr. Anthon was appointed Joint Company Secretary on 10 March 2015. He is a practicing lawyer with over 30 years' experience in both corporate and commercial law. Mr. Anthon also has extensive experience in the resource sector, as a director of a number of resource companies and as legal adviser, including project acquisition and development, capital raising and corporate governance.



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**Nick Demare**  
CFO and Director

Mr. DeMare, a chartered professional accountant, has been President of Chase Management Inc. since 1991, providing accounting, management, securities regulatory compliance and corporate secretarial services to private and public-listed companies. Mr. DeMare also serves as an officer and/or director of a number of public-listed companies. Mr. DeMare holds a Bachelor of Commerce degree from the University of British Columbia and is a member in good standing of the Institute of Chartered Accountants of British Columbia.

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**Miguel Peral**  
Non-executive Director and VP  
Exploration

Mr. Peral has worked as a professional geologist for more than 25 years in Greenfield exploration, geological consulting, accomplished prospector and exploration manager for numerous projects including CRA / Rio Tinto, Paramount Ventures, Mansfield Minerals, Teck Cominco, Admiralty Resources (ADY), Condor Resources, Cascadero Copper, and Orocobre. He was an exploration geologist for five years for Salta Exploraciones (SESA), formerly a wholly owned subsidiary of Cascadero Copper where he assisted, developed and implemented property identification and acquisition of projects with the TR Prospecting Group from British Columbia and Calgary, Alberta. Mr. Peral's recent focus is lithium brine deposits with an emphasis on the discovery and development of new brine deposits including Salar de Olaroz, which is now in production. In 2012, Miguel was nominated as one of the most Outstanding Geologists in Argentina.

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**Andy Robb**  
Vice President, Project  
Development

Mr. Robb joins as Technical Advisor, Projects, bringing significant senior technical and management depth to the Cauchari JV. In addition to senior roles with BHP Billiton and AMC Consulting, during the period 2013-16 Andy was VP South America and Project Director for Enirgi Group Corporation. In this role, Mr. Robb had responsibility for over 200 Operational and Project staff and was instrumental in the completion of the NI43-101 compliant Definitive Feasibility Study for the Rincon lithium brine project located in Salta.

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**Sam Pigott**  
Vice President, Corporate  
Development

Mr. Pigott has over 8 years of experience in the capital markets – spanning Investment Banking, Equity Research and Portfolio Management. Mr. Pigott joined Advantage Lithium in March 2018 from a Canadian-based Alternative Asset Manager where he spent 3 years as an Associate Portfolio Manager cover basic materials with a focus on lithium and cathode materials. Mr. Pigott has previously worked as an Investment Banker covering the mining sector for an Independent Broker-Dealer and as an analyst with a China-based Merchant Bank. Mr. Pigott holds an MBA from the University of Oxford, a BA in economics from McGill University and is a CFA Charterholder.

# Lithium Americas Corp.

(LAC – C\$7.22, TSX)

**Recommendation: BUY**

**Target Price: C\$13.25**

**Figure 12 Statistics and Estimates**

Current Price	C\$6.88	Shares Outstanding (MM)	
52 Wk High	C\$14.06	Basic	85.8
52 Wk Low	C\$3.90	Diluted	90.7
Cash* (MM)	\$78.5	Mngt. & Dir.	38.4
Total Debt** (MM)	\$205.0	Market Cap. (diluted)	C\$624
NAVPS	C\$14.14	Float	C\$326
P/NAV	0.49x	EV***	C\$767
Ann. EBITDA Stage 1	C\$122.5	EV/EBITDA Stg 1	6.26x
Ann. EBITDA Stage 2	C\$124.0	EV/EBITDA Stg 1+2	3.11x

\* Cash includes warrant & options and amount exceeding LAC's portion of the capex for Cauchari Stage 1 less full debt drawdowns

\*\* Debt includes amounts drawdown to finance Stage 1 Cauchari

\*\*\* EV reflects full debt drawdowns less cash from equity investments for Stage 1 and EBITDA shown for LAC's interest at \$11,000 / t pricing

Sources: Cormark Securities Inc. and Company reports

**Figure 13 Price Chart**



Sources: BigCharts (May 29/18)

Lithium Americas is an advanced-stage lithium developer whose large-scale and low-cost Cauchari-Olaroz brine project in Argentina is in construction with the support of its 50/50 JV partner SQM. The company also owns 100% of the Lithium Nevada clay project and a plant producing rheological materials, both located in Nevada.

**High Grades And Good Chemistry:** As expected, LAC's project benefits from similar advantages as those projects elsewhere in the basin: high grades (~700 mg/l in the reserve), good chemistry (Mg:Li 2.5) and great scale: 11.8 MM t LCE M&I resource.

**SQM Cuts Risk Profile:** SQM is a 50/50 partner in the Cauchari-Olaroz project, and as the largest lithium brine producer with more than 20 years of experience in nearby Atacama brings significant experience, greatly reducing execution risk.

**Excellent Strategic Partners:** Ganfeng Lithium, a large lithium chemicals user, has a 20% equity stake in LAC and entitlement to 70% of phase 1 output from Cauchari-Olaroz. Ganfeng is also providing \$125 MM in project level debt.

**Cauchari-Olaroz In Construction:** With all financing and permitting in place, the first 25,000 tpa phase of the project is at the early construction stage.

**PFS Coming For Clay Project:** The Lithium Nevada clay project in Nevada is at an early stage of development. Although processing lithium from clays has proven difficult, Lithium Nevada is one of the largest lithium resources globally, offering significant option value.

**We are maintaining our coverage on Lithium Americas with a C\$13.25 target and Buy (from Top Pick) recommendation.** Our target is based on a 0.9x multiple to our C\$13.25 per share NAV. LAC trades at 0.5x P/NAV versus ORL's 0.77x multiple. On an EV to EBITDA basis of phase 1, LAC is below 6x versus ORL above 10x.

For more detailed background information on, LAC and its projects, please see our initiating coverage report on January 19, 2017, [Battery Value Chain Part One: Batteries Drive Lithium Demand](#). We also include below a list with links to our individual research reports on Lithium Americas.

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#### Our Reports On LAC

September 8, 2017, [Cauchari Gets Boost From SQM Analyst Day](#)  
 August 17, 2017, [Construction Progress Should Raise Multiple](#)  
 July 7, 2017, [Cauchari-Olaroz In Construction](#)  
 June 8, 2017, [Announces Closing Of Ganfeng Investment](#)  
 March 30, 2017, [Feasibility Highlights Released](#)  
 March 1, 2017, [Cauchari Update Confirms Capex](#)  
 February 17, 2017, [Cauchari Project Site Visit](#)  
 January 20, 2017, [Financing Complete For Cauchari Phase 1](#)

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#### Cauchari-Olaroz Brine Project

LAC's Cauchari-Olaroz project, as noted in the Advantage Lithium section, is located in the same basin as Orocobre's Olaroz project and Advantage Lithium's Cauchari project, covering 70,000 ha in the central area of the large Cauchari salar and the eastern section of the Olaroz salar.

- **High Grades And Good Chemistry:** Proven (712 mg/litre) and probable (695 mg/litre) reserve of 1,499,131 t LCE and a measured (630 mg / litre) and indicated (570 mg / litre) resource of 11,752,000 t LCE. Mg:Li 2.5, SO<sub>4</sub>:Li of 28.5.
- **Stage 1 DFS With Attractive Economics:** The stage 1 DFS for 25,000 tpa lithium carbonate plant running for 40 years is to cost \$425 MM, with \$2,495 / t lithium carbonate operating cost provides average annual EBITDA of \$233 MM at \$12,000 / t selling price and delivered a 28.4% after tax IRR.
- **JV With SQM Reduces Execution Risk:** LAC entered into a JV with SQM to jointly develop the project, bringing more than 20 years of brine experience.
- **Strategic Investment Secures Significant Financing:** Ganfeng Lithium, a Shenzhen-listed lithium materials producer, invested directly in LAC as they provided debt for the project.
- **Permitting Status Affirmed:** In 2017, the Province of Jujuy affirmed that the necessary permits are in place to commence construction and operate the facility, subject to the environmental impact statement issued in 2012.

The Cauchari-Olaroz project is in construction, having been fully financed. Please see out individual research reports and the short notes below for more details.

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#### Thacker Pass – Clay Project In Nevada

LAC is nearing the end of a process to update the economics on its Lithium Nevada project, located near Winnemucca in Humboldt County. The first phase of that project, called Thacker Pass project, occupies 15,233 ha of land for which a mineral resource was provided earlier this year. The results of the work indicate that the project has the highest grade and largest lithium claystone deposit in North America.

- **Large Resource And Reserve Potential:** 43-101 compliant report established a measured (2,948 ppm Li) and indicated (2,864 ppm Li) resource of 5,982,000 t LCE.

The inferred resource totaled 2,301,000 t LCE with an average grade of 2,930 ppm. The estimate was based on a cutoff grade of 2,000 ppm.

- **PFS Expected By The End Of Q2/18:** As part of the resource update, LAC updated a timeline, which anticipates a preliminary feasibility study in Q2/18.
- **Initiating Mine Plan Permitting:** A number of permits at federal, state, and local levels remain outstanding. In H2/18, LAC plans on initiating the mine plan permitting process and commence detailed engineering.
- **PFS Should Highlight Results From Process Testing:** The claystone material in which lithium is contained is soft and can be mined using trucks and shovel methods with blasting not expected to be a requirement day-to-day. In the updated resource report, LAC indicated that the process test work was successful in validating the leaching process without need for roasting. LAC expects that this will allow the production of battery-grade lithium hydroxide, in a less energy-intensive manner and with much lower amounts of tailings and higher recoveries than previously considered technologies.

## Highlights From The Past 18 Months

In the paragraphs that follow, we provide a summary of the major highlights over the past year and half, with the most recent first. LAC has made significant progress in the time frame, closing the financing for Phase 1 of the Cauchari-Olaroz project, starting construction on the project, issuing an updated resource for the Lithium Nevada project, completing a listing on the NYSE, hosting several site visits, and continuing work that should culminate in a PFS for the Lithium Nevada project.

**Provides Q1/18 Highlights As It Reports Quarterly Results – May 14:** As part of its Q1/18 results reporting, LAC provided a brief review of highlights for the quarter, which features the project development in Cauchari and a recap of the activities in Nevada. In Argentina, with the pond construction begun in Q1/18, filling is anticipated to start in H2/18, while well drilling is underway. A further \$13 MM was advanced to the JV, bringing the total to \$61.6 MM from both partners, which is somewhat less than we would have expected by March 2018. 400 people are active in Argentina with a doubling of the camp underway. As we discussed earlier in Q2/18, LAC provided an updated resource for the Lithium Nevada project bringing the M&I resource to 6 MM t LCE, with significant extensions identified. A PFS is expected by the end of June.

**Reports Q4/17 And Provides Update – March 29:** As part of its annual financial reporting, LAC provided the highlights of development activities and provided expectations for the coming year. At Cauchari-Olaroz, evaporation pond construction has begun and filling of the ponds is planned to begin in H2/18. A camp expansion is well advanced with the remaining half to be commissioned in April. Meanwhile, engineering for the infrastructure is nearly 50% complete and scheduled to be completed in H1/18, followed by plant design later this year. Early procurement contracts have been signed and bids have been received for the critical items. As reported earlier, to accommodate wellfield optimization and the pond construction/filling schedule, production is expected to commence in 2020.

**Pond Construction Has Commenced – February 5:** As production pond construction has begun at LAC's Cauchari-Olaroz project in Argentina, the company has posted photographs of the work on its Twitter feed ([link](#)). We expect the continuation of updates throughout the construction should help assuage fears that activities at the project have slowed following the announcement that SQM and CORFO have a new royalty and quota agreement. As we have written previously, we expect SQM's actual expansion plans in the Atacama to be considerably more modest than CORFO's statements suggest.

**Stock Sells Off After SQM-CORFO Deal – January 18:** LAC's stock was weak following news that its partner, SQM, struck a deal with Chile's CORFO agency over a long-standing dispute regarding royalties and quota on its operations in Atacama. As we discussed in a [note in January](#), we expect SQM will not only stage its capacity increases in the Atacama to protect market share and bow to environmental constraints, but will continue to pursue its plans for Cauchari with LAC. There is a growing need for SQM to diversify its operations geographically as the end users of lithium are increasingly risk-averse global automakers that keenly manage supply chains rather than small regional industrial glass and grease makers. Although the development activities at Cauchari are progressing, the latest schedule means first production will be in 2020.

**Added To S&P/TSX Global Indices – December 8:** Effective before the open on December 18, 2017, LAC was added to both the S&P/TSX Global Mining Index and the Global Base Metals Index, reflecting the strong performance of the stock this year.

**5:1 Share Consolidation – November 14:** In conjunction with a listing on the NYSE, LAC announced a 5-for-1 share price consolidation. As a result, the number of shares outstanding has dropped to approximately 90 MM on a diluted basis from more than 453 MM previously.

**More Value For Nevada Lithium Project – November 14:** We are anticipating an updated resource for the clay-based lithium project in Nevada this spring, which will likely underpin a higher level of certainty in the size of the resource. We note that our valuation for LAC is based on the market capitalization of Bacanora Minerals (BCN-TSXV, Not Rated), which has a clay-based lithium project in Mexico of similar size. As that stock has risen sharply in recent weeks, we are increasing the contribution of the Nevada project in our NAV to \$150 MM from \$85 MM, based on the 5.3 MM t LCE resource in Nevada.

**Pond And Plant Flowsheet Taking Shape At LAC's Cauchari – November 14:** By far the most important and obvious takeaway from our visit was that SQM is advancing the JV project with LAC in substantial ways. We had visited the site in January of 2017, and the activity has increased significantly.

- On site we toured the 6-pond test complex where lithium was being concentrated on a small scale from 870 mg / l to more than 12,500 mg / l. Halite precipitation and Mg elimination are being achieved to levels that make the brine suitable for plant processing.
- A very small proof-of-concept processing system was in place with a cold and hot processing train, producing an acceptable grade lithium carbonate. It was not apparent if reagent ratios were at levels consistent with the costs in the feasibility study.
- A handful of pond liners were installed in several ponds to determine performance and suitability for the full-scale operations.
- LAC maintained expectations to begin filling the first pond in Q1/18 and start of production by the end of 2019.

While the full-scale ponds were not yet in construction, there was a fairly large amount of progress on the site, compared with our trip in February when there was only a single test pond and half a camp. Now the activity levels are high, and the increase in personnel and materiel onsite was significantly ramped up.

**Expect PFS Q2/18 For Lithium Nevada Project – October 23:** Lithium Americas provided an update regarding its clay-based lithium project in Nevada. We view the update positively, as it highlights that LAC has in place a reasonable budget, an experienced multi-disciplinary team, and a focused drill and testing program. In

summary, LAC expects to complete a 43-101 compliant preliminary feasibility study by end Q2/18 on its 100% owned clay-based lithium project in McDermitt Caldera in Nevada. There is a budget of \$10.5 MM for the 2017 drill program and test work. Furthermore, there is an experienced team with depth in place, which includes a process manager from FMC Corp, an engineer from Albemarle (Silver Peak), geologists with experience in clay-related deposits, plus professionals associated with Tesla and Nevada environmental issues.

The fully permitted 70-target drill hole program is 65% complete, which Management is conducting to increase size of and confidence in the resource. Work on the flow sheet process, which includes test work is well underway. It is expected that the focus will be on leaching without need for roasting. The objective is to produce lithium hydroxide of sufficient quality for battery manufacturing applications. A successful exploration program and PFS could drive significant value.

**SQM Maintains 2019 Startup for Cauchari – August 25:** During SQM's Q2/17 results conference call, SQM indicated that its development of the lithium brine project at Cauchari is going as planned. Management reiterated expectations to produce lithium near the end of 2019. Drilling at the salar is progressing on both production wells and holes for testing that will allow the completion of the hydrological model. In addition, work on the camp continues, and detailed engineering is in the final stages.

**Closes Strategic Financing With Bangchak – July 17:** In line with expectations, Lithium Americas announced that the \$113 MM debt and equity financing agreed to with Bangchak Corporation Public Company, a Thai-based energy company, has closed successfully. The investment was made to fund a portion of LAC's funding obligation for the Cauchari-Olaroz JV with SQM. The debt portion amounts to \$80 MM, and Bangchak received 50 MM shares (valued at C\$0.85 per share). As a result, Bangchak now owns a total of 70.3 MM shares of LAC, approximately 16.4% of the outstanding shares. Bangchak has an offtake contract to purchase 20% of LAC's share of the first stage of production of Cauchari. Along with Ganfeng, LAC has successfully closed on \$285 MM of debt and equity, putting it in a very strong position regarding the JV, with more than its share of the funding requirements in place.

**Construction Underway At Cauchari – June 29:** Although there had been no detailed press release on the actual work being executed at Cauchari by SQM, LAC's Twitter posts were more active than usual in June. Pictures of drilling and tests of pond liners were provided, illustrating the early stage work that is being carried out at Cauchari. Recall that SQM told analysts last fall that \$100 MM had been approved by SQM's board to be spent in 2017 on the Cauchari project, with construction to commence in H1/17.

We understand that SQM is approving spending on a month-to-month basis, with approximately \$10 MM having been approved or being spent in the near term. LAC indicated that the specific activities and level of spend are in keeping with the original plan to complete construction in time for production in 2019. Although we had been awaiting an official announcement of a final investment decision (FID) for Cauchari by SQM shortly after the closing of the Ganfeng investment in LAC, we would not be surprised, given the short time left before SQM's typical August/September timeframe for discussing capex plans to get no substantial update from SQM until the late summer.

**Management Meets With Government In Argentina – June 30:** LAC and SQM executives met with Argentina's President Macri and Governor Morales of Jujuy Province. A Bloomberg article that quotes SQM's CEO, Patricio de Solminihac, highlighted the meeting, pointing out that SQM has invested \$17 MM in the project in the past 18 months, and that SQM is interested in diversifying geographically. LAC has indicated to us that the environmental approval discussed in the article was a misquote. While LAC is awaiting a normal update of the EIS, the EIS issued in 2012 was confirmed

in March 2017 by the Jujuy government as still valid for the commencement of infrastructure construction.

**SQM Provides Update On Cauchari Project – June 13:** In a brief press release, SQM highlighted that LAC had closed its financing with Ganfeng Lithium, allowing LAC to meet its funding obligations for the JV with SQM on Cauchari. SQM went on to indicate that detailed engineering is being executed and that campsite construction, additional hydrological tests, drilling campaigns and equipment quoting work are all ongoing. We view the comment that LAC's funding milestone is "a positive sign of future development of lithium industry and of the project Exar in particular" as commitment from SQM for the project.

In discussing the press release with LAC, Management highlighted that the project work continues to move forward with funding being provided by both partners in the JV. We note that SQM has approval from its board to spend \$100 MM on the Cauchari project in 2017, which is in keeping with a timeline to bring Cauchari into production in 2019. We expect that SQM will provide a substantial update on the project, particularly regarding the 2018 budget, by the time of the analyst day in early September 2017. Recall that last year, the board of SQM approved the 2017 spend on Cauchari at the time of the August earnings release, which then formed a key element of the discussions on the analyst day that took place shortly after. With a 2019 target for production at Cauchari, SQM would be expected to articulate a substantial work plan and budget for 2018 in order for the 2019 to be perceived as achievable.

**Documentation Completed For Funding Agreements With Ganfeng - May 10:** LAC announced that all documentation is settled for closing of debt and equity investments agreed to with Jiangxi Ganfeng Lithium Co. Recall that as announced in January, LAC has two strategic investments being made that provide all of the funding required for constructing 25,000 tpa LCE for Cauchari Stage 1. Ganfeng's investment amounts to funding of \$171 MM, with C\$54 MM (gross) as equity at C\$0.85 per share and \$125 MM as a debt facility. Last week's announcement confirms that all documentation is complete between LAC and Ganfeng, which means the debt, equity and offtake terms are fully agreed to and signed. The \$50 MM in remaining equity still needs provincial government acceptance, and the government sign-off was expected to be concurrent with the announcement. The Bangchak financing is expected to close subsequent to the closing of the Ganfeng transaction.

**Appoints President, South American Operations – May 9:** LAC announced that Gabriel Rubacha has been appointed the President, South American Operations. Mr. Rubacha brings operational experience to LAC having served at the director level at engineering firms active in Argentina, Chile and Uruguay. He was the Project Director for the Pascua Lama Project. As LAC moves toward construction from financing, this is an important position for LAC to fill, helping to lower construction and operational risk.

**Held Analyst Event- April 25:** At the end of April, LAC held an event to provide a forum to discuss the details concerning the recently released Cauchari feasibility study. In addition, details regarding the latest work on its Nevada clay project were also provided. In terms of the Cauchari project, the details of the feasibility, which we wrote up previously in our March 30, 2017, report, were largely repeated, highlighting a long-life asset with low cash costs at \$2,495/t.

**Valuation**

As we show in Figure 14 below, we include \$7.86 per share (C\$10.08) of value for the Cauchari-Olaroz project as well as \$2.21 per share (C\$2.83) for the Lithium Nevada project in our C\$13.25 target for LAC, which uses \$25/t Measured, Indicated & Inferred, allowing for a premium, given that Global Geoscience is trading at \$88.1/t on its inferred resourced of its Rhyolite Ridge project in Nevada.

We expect as LAC de-risks the uncertainty about the resource size of assets within Lithium Nevada, its economic recoverability, and more importantly the process flow sheet and capex that this contribution will move higher. To put it into context, a 25,000 t LCE lithium hydroxide processing plant would provide more than \$150 MM in EBITDA at today's prices and \$4,000 / t operating costs. With capex in the range of \$400 MM to \$500 MM and a 15% discount rate, Lithium Nevada would have an NPV of \$175 MM to \$235 MM. This level of capex would put it at a lower level of capital intensity of a hard rock (plus processing) operation and brine operations, with opex also between the two. This could add considerably to LAC's valuation, particularly at a lower discount rate.

**Maintaining Target And Moving To Buy Recommendation:** We have made no changes to our valuation parameters, maintaining our C\$13.25 target. We use a Stage 1 discount rate of 8% with 11% on Stage 2. Our C\$13.25 target implies a target NAV multiple of 0.94x, reflecting the fact that Cauchari is in construction. As we advocate owning all three of these companies operating in the Basin, we are moving our recommendation to Buy from Top Pick. We expect news flow and other upcoming developments or catalysts to suggest going underweight or overweight the relative positions for each of these stocks. As a result, we are putting our recommendation on an equal basis at this point, despite the fact that there is more upside right now with LAC than with the other two companies.

**Figure 14****Lithium Americas Corp. - NAV Breakdown**

<b>Mining Assets</b>	<b>Ownership</b>	<b>Discount</b>	<b>\$MM</b>	<b>\$/Share</b>
Cauchari Stage 1	45.8%	8%	\$461	\$4.91
Cauchari Stage 2	45.8%	11%	\$277	\$2.95
RheoMinerals Inc.	100%	-	\$11	\$0.12
Lithium Nevada Corp.	100%	-	\$208	\$2.21
<b>Total</b>			<b>\$956</b>	<b>\$10.19</b>
<b>Financial Assets</b>				\$1.73
Excess Cash (post construction investments)			\$74	\$0.78
Warrants & Options			\$5	\$0.05
Debt				\$-
<b>Net Financial Assets</b>			<b>\$78</b>	<b>\$0.84</b>
Net Asset Value (US\$)			\$1,034	\$11.03
<b>Net Asset Value (C\$)</b>			<b>\$1,326</b>	<b>\$14.14</b>

Note: Cash includes Ganfeng investment and diluted share count of 403 MM  
Source: Cormark Securities Inc.



# Orocobre Limited

(ORL – C\$5.64, TSX; ORE – A\$5.74, ASX)

**Recommendation: BUY**

**Target Price: C\$6.25**

**Figure 15 Statistics and Estimates**

Current Price	C\$5.69	Shares Outstanding (MM)	
52 Wk High	C\$7.36	Basic	261.7
52 Wk Low	C\$3.04	Diluted	263.5
Cash (MM)	\$338	Mngt. & Dir.	24.8
Total Debt (MM)	\$100	Market Cap.	C\$1,489
NAVPS	C\$7.05	Float	C\$1,348
Price/NAV	0.81x	EV	\$909

Fiscal YE Jun. 30		2017A	2018E	2019E
Lithium Carbonate	Q1	3,013	2,810	
(tonnes)	Q2	3,529	3,306	
100% Basis	Q3	2,784	3,388	
	Q4	2,536	3,099	
	FY	11,862	12,603	15,610

Realized Price (\$/t LCE)	\$10,678	\$13,300	\$12,500
Net Cash Cost (\$/t LCE)	\$3,738	\$3,338	\$3,450
EBITDA (% Olaroz Ph 1) (MM \$)		\$58.9	\$90.1
EV/EBITDA (Ph 1)		16.07	10.36
EV/EBITDA (Ph 1+2)		5.33	4.51

- balance sheet and share count reflect Toyota Tsusho investment and entitlement offer as well as financing for Phase 2 Olaroz

Sources: Cormark Securities Inc. and Company reports

**Figure 16 Price Chart**



Sources: BigCharts (May 29/18)

Orocobre is the developer of the only new lithium brine project to reach operation in several decades, owning 66.5% of the project on the Salar de Olaroz with 25% owned by its partner Toyota Tsusho and 8.5% owned by JEMSE (Jujuy Provincial Government Mining Company).

**Production Ramping – Moving To Expand:** With the primary circuit operating relatively consistently, ORL has embarked on a plan to grow capacity to 42,500 tpa from 17,500 tpa nameplate, with much of the expansion aimed at the industrial grade market.

**Lithium Hydroxide Plant In Planning Stage:** ORL is planning a 10,000 tpa LiOH plant in Japan that will convert 9,000 tpa of the lower grade Li<sub>2</sub>CO<sub>3</sub> production to battery grade material.

**Operating Costs Higher Than Expected:** Management moved its expected cash costs to \$3,500/t from \$2,500/t excluding potash credits. If achieved, this is in line with world-leading production at Chile's Atacama brines following the royalty increase.

**A Producer With A Larger Expansion At Half The Multiple:** In contrast with the large, publicly traded specialty chemicals companies, Albemarle, FMC and SQM, Orocobre offers investors pure exposure to lithium, with more than a doubling of production at a multiple less than 2/3rds that of the majors.

**C\$6.25 Target And a Buy Recommendation.** Our target price of C\$6.25 includes C\$2.90 valuation of the operating assets and 80% of the NAV per share of C\$4.15. We expect completion of the ramp of Stage 1 to nameplate capacity and the continued development of the expansion at Olaroz to be catalysts over the next 12 months.

For more detailed background information on, ORL and its projects, please see our initiating coverage report on January 19, 2017, [Battery Value Chain Part One: Batteries Drive Lithium Demand](#). We also include below a list with links to our individual research reports on Orocobre Ltd.

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#### Our Reports On ORL

April 6, 2018, [Weather Impacts Production Outlook](#)  
 January 19, 2018, [Olaroz Phase 2 Expansion Gets Financed](#)  
 September 6, 2017, [Raising Outlook As Brine Inventory Improves](#)  
 July 21, 2017, [Waiting For The Brine Inventory To Improve](#)  
 April 28, 2017, [Quarterly Report Shows Improvement](#)  
 March 2, 2017, [Cutting Outlook As Pond Management](#)  
 February 17, 2017, [Olaroz Plant Tour Highlights](#)

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#### Salar de Olaroz Brine Operation

Orocobre's lithium facility on the Salar de Olaroz, the first new brine operation in over 20 years, is located on 51,000 ha of tenements in the north end of the Olaroz-Cauchari Basin in the Jujuy Province of Argentina. After 7 years of planning, development and construction, this flagship asset for Orocobre began to produce in April 2015. Below are some key highlights of the operation.

- **Like In Cauchari High Grades And Good Chemistry:** Measured and indicated (690 mg / litre) resource of 6,400,000 t LCE. Mg:Li 2.4, SO<sub>4</sub>:Li of 25. High grade zones of 1,200 mg / litre occur over a significant portion of the salar and average 700 mg/l at depth.
  - **Expanded Production Rate:** Subsequent modelling has indicated an improved lithium brine grade of 825 mg / litre, allowing for an expanded production rate.
  - **Operating Costs Improving After Long Ramp:** Orocobre expects a long-term cash operating cost of \$3,500 / t. Over the past 18 months, the costs have generally improved, but several periods of rebalancing were necessary, resulting in higher production costs on a temporary basis.
  - **JV With Toyota Tsusho:** The partnership with Toyota Tsusho Corporation (TTC) to jointly develop Olaroz began in 2012. TTC holds a 25% interest in the JV that owns the facility. The provincial Government of Jujuy, Jujuy Energia y Minería Sociedad del Estado (JEMSE) owns 8.5%. ORL owns 66.5% of the economic interest.
  - **Project Financing From Mizuho:** The original project debt financing of \$192 MM was provided by Mizuho Corporate Bank, with principal repayments every 6 months to September 2024, and average rate of 4.25%.
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#### Salar del Olaroz – Expansion Plan

The final investment decision regarding the Phase 2 expansion plan is expected to be made in H2/18. Following the plan articulated in late 2016 to double production to 25,000 tpa, for \$192 MM in capex, Orocobre has decided to remove the purification circuit for the incremental production and increase the size of the output.

- 25,000 tpa industrial grade lithium carbonate (99.0%)
- 9,000 tpa of this will be fed to the planned 10,000 tpa lithium hydroxide plant being developed in Japan
- Capex of \$160 MM with \$25 MM in contingency for a duplication of the ponds and primary circuit of Phase 1. The ponds constitute \$75 MM of the capex.

- The project finance is supported by a \$287 MM capital raise, which included \$224 MM from Toyota Tsusho directly in ORL, with the remainder being a 1 for 20 rights offering.
- ORL and TTC plan to build a 10,000 tpa lithium hydroxide plant in Fukushima, Japan, that is expected to have a \$1,500 / t operating costs. ORL will contribute \$6 MM in capex for the plant estimated to cost from \$60 MM to \$70 MM, with the balance from government subsidies, grants and debt.

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### Other Lithium Projects

Orocobre has a 25% ownership of the equity of Advantage Lithium, which is developing the Cauchari project to the south in the same basin and owns three other early stage projects. Orocobre also owns a 25% stake in the JV that owns the Cauchari project. See the first section of this report for more detail regarding Advantage Lithium.

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### Highlights From The Past 18 Months

In the paragraphs that follow, we provide a summary of the major highlights over the past year and half, with the most recent first. ORL has been primarily focused on the ramp up of the Olaroz project. In addition, work on the expansion in Jujuy as well as the hydroxide plant in Japan has accelerated more recently.

**Reports Record Prices In Q1/18 Update – April 29:** Orocobre provides its Q1/C18 results highlights. There were a number of operational positives reported, including record quarterly sales of \$41.1 MM on 3,052 t Li<sub>2</sub>CO<sub>3</sub>, and record gross margin, up 21%. The positive results were driven by high prices, which were a record at \$13,533/t FOB up 17%. Management indicated that pricing for the June Q is expected to rise further from the March Q. On the negative side, cash costs were up 10% to \$4,356/t, not surprising as production was lower.

**CEO To Step Down – April 16:** Orocobre announced that the current CEO, Richard Seville, will step down from the role of Managing Director and CEO. He will remain on the board of Orocobre. After 11 years of bringing Olaroz from early stage development into production, ORL appears to be aiming to bring on a new head as the company embarks on the Phase 2 expansion in Argentina and the planned LiOH plant in Japan. Given the time required to recruit a manager with the required expertise, Mr. Seville will remain in his role for approximately the next 12 months. This appears to be an unexpected development. However, as noted in the press release, the timing of such a transition “was always going to be difficult”. With a major expansion underway in Argentina and a new project in Japan, the timing, it could be argued, is aligned with the need to have an executive team in place to lead an expanded ORL through the next decade.

**Weather Impacts Production Outlook – April 6:** Orocobre indicated that owing to poor weather in February, its Olaroz facility experienced a 29% drop in production from the December quarter. Although the brine concentration in the harvest ponds is recovering, the levels remain below expectations entering into the quarter ending June. As a result, Management expects production for the year to be 10% lower than the previous guidance of 14,000 t. After the news, we moved our target to C\$6.25 from C\$7.00 as we lowered the level of production at Olaroz.

**Reports Strong Margins In 1H/F18 Results – February 23:** ORL’s results for the first half of F2018 reflected the large increase in realized prices from production at its Olaroz asset in Argentina. EBITDAIX (EBITDA excluding impairments and FX) was \$37.1 MM as shipments of lithium carbonate reached 5,532 t, averaging \$11,415/t up from \$9,186/t a year ago. ORL reported production costs of \$4,336/t excluding royalties, driving gross margin to 62%. Management highlighted that the market fundamentals remain very positive: demand is strong, the supply is tight and prices are rising. (All in

direct contrast to the Morgan Stanley report out this week.) Management remains bullish and highlighted that they expect pricing in H2/F18 would be 25% higher than those realized in H1/F18. Following the investment by Toyota Tsusho, ORL will move forward on its expansion to 42,500 tpa LCE, and its 10,000 tpa LiOH plant in Japan, which are now both fully funded.

**Investment From Toyota And Larger Phase 2 Expansion Of Olaroz – January 16:**

ORL announced an equity investment from Toyota Tsusho and a larger Phase Expansion of Olaroz. The second phase of Olaroz will be 25,000 tpa LCE (was expected to double by adding 17,500), bringing total capacity to go to 42,500 tpa LCE. Construction is anticipated to start mid-2018, and will cost \$271 MM, including \$25 MM contingency. Along with seeking to secure \$100 MM debt, Toyota Tsusho will invest A\$282 MM in Orocobre for 15% stake at A\$7.50, a 17% premium to the 30-day VWAP. ORL is also seeking to raise \$63 MM through a 1 for 20 entitlement offer at A\$6.55 (stock at A\$6.99). The stock will remain halted this week until it is completed.

**Record Product And Revenues In Latest Quarter, Though Costs Remain High:**

In the December quarter, costs remain high as production rises. The quarter saw record production of 3,970 t, up 84% from September, and record sales of \$40 MM, up 72% from September. However, cash costs were \$3,946/t, which still remain high. ORL maintained guidance of 14,000 t in 2018, well below nameplate.

Although Management had downplayed the need to raise equity for an expansion, we do expect shareholders and the stock to react positively: Orocobre maintains its ownership of Olaroz, further enhances the partnership with Toyota Tsusho and reduces risks for the financing of the hydroxide plant in Japan. Although Olaroz is still not at capacity, nor is it hitting its originally expected cash costs or purity levels, the cash margin is strong and in the current demand environment, being able to produce is paramount.

**Announces 25% Increase To Contract Pricing – December 18:**

ORL announced that 85% of its lithium carbonate capacity is now contracted for H1/C2018. Because of tight market conditions contract pricing for H1/C2018 will be 25% higher than that for H2/C2017. Orocobre also confirmed previous guidance that it expects to receive \$11,000 / t for the December quarter. This is obviously positive news. For ORL, the EBITDA projection increases materially as does the NAV of the expansion project at Olaroz. Simply running pricing at \$13,750/t, for example, in our model boosts the valuation to close to C\$9.00 from the C\$6.60.

There is a positive read through for the industry. Part of ORL's increase may have come from achieving a higher purity material being shipped than realized last year, but most of the increase is likely due to the tight market. All the majors are likely to experience similar increases of more than 20%.

**Realizing Higher Prices For Lithium Production – November 14:**

As illustrated by the lithium carbonate prices of shipments reported by the Jujuy province in Argentina, pricing being realized by ORL appears to be rising. Over the past several weeks the average prices have risen above \$12,500 / t, up from \$11,000 / t over the previously several months. The data certainly is being skewed by high value shipments at low total tonnage, but even larger lots are consistently rising above \$12,500 / t. Because the purification circuit had not been running at high utilization rates, we had applied a discount to our long-term pricing on our DCF for ORL's Olaroz project.

**Olaroz Production Ramping Up – But We Still Have Questions – November 14:**

ORL is realizing higher prices on its shipments of Lithium carbonate, the best piece of evidence that the operations are improving at Olaroz. Much of the insight gleaned reflected what was discussed on the recently quarterly update and conference call.

- Lithium inventory is now at the targeted inventory profile, and the pond system is approaching steady state operations.
- Production is now averaging 46 tpd, which is nearly at full capacity.
- The purification circuit has reached a maximum throughput of 43 tpd, and is currently averaging 35-40 tpd.
- The plant's finished product inventory was high, and shipments of finished product are ongoing, reflecting that throughput levels are robust.

We were not expecting a significant amount of new information to be available from our visit to ORL's plant. The operations are improving, and Management's confidence in its management of the pond system is increasing and high. ORL expects to double the size of the ponds as well as duplicate the primary circuit to produce a lithium carbonate suitable for shipment to Japan for processing into Lithium Hydroxide.

**No Big Surprises In Quarterly Results - October 26:** Following the quarterly update that had little surprising developments, ORL's stock gained modestly, though much of that was given up yesterday. In the quarter, one harvest pond was taken out of the circuit for maintenance work, but is now back in operation. This was the main reason for production in the September quarter being lower than our estimate. ORL reported production of 2,135 t LCE and sales of 2,072, but we had modelled 3,122 and higher pricing helped to offset the lower production. However, as we have seen since operations at Olaroz have begun, pricing and costs are not at levels that should be achievable. This quarter weather and soda ash costs had a negative impact on the cost of goods sold. On the positive side, production guidance for F2018 was maintained at 14,000 t up from 11,862 t in FY17, though this is below nameplate of 17,500 tpa. A third-party engineering review of the pond system found nothing to prevent production to reach 17,500 tpa LCE.

**Restructures Brine Extraction Rights At Diablillos – October 4:** Last week, Lithium X announced it will acquire 2,700 ha of tenements from Orocobre over which Lithium X currently holds rights for the extraction of lithium brines. A further 700 ha, acquired from SAS, which had been excluded from the Advantage Lithium transaction, will be consolidated into the PLASA project, Sal de los Angeles in Salta Province, Argentina. Orocobre will receive approximately \$1 MM and 650,000 common shares of Lithium X. Furthermore, the existing 1.5% Mine Mouth Royalty on the Borax held tenements will be cancelled, in consideration of a 1% Net Revenue Royalty over the entire SDLA project.

**Raising Outlook As Brine Inventory Improves – September 6:** Investors reacted positively to Orocobre's latest inventory update provided last week with year-end results. While the update was not completely transparent, as the model provided focuses on the harvest ponds, Management's total inventory estimate rose 15% from the lows in July. This has provided Management with more confidence in its outlook, which includes guidance of 14,000 t LCE production for F2018. For now, this appears likely to increase investor confidence.

**Cuts Q2 Production Citing Severe Weather Conditions – June 22:** Orocobre suspended production for three days at Olaroz earlier in June after exhausting all of its on-site stocks of soda ash. ORL drew attention to the heavy snowfall in the Andes this winter season that forced the closure of the Paso de Jama for 3 weeks. As this is the major route to Chile through which most soda ash is delivered and lithium carbonate shipped, logistics disruptions have had an impact on operations.

ORL had prepared for such disruption by increasing stock piles but the closure was exceptionally long. Management indicated the weather was the most severe in the region since the 1980s. The snowfall is less at the Olaroz site, but cloudy conditions have negatively impacted evaporation rates. As a result, ORL cut production in the quarter ending in June to 2,400-3,500 t. This implies 11,700-11,800 t lithium carbonate for F2017. We had been modelling 12,200 t for the year which ends June, so will need to cut our near-term outlook. Obviously, this is a negative coming on top of a re-balancing effort underway at Olaroz. It should be noted; however, this is quite exceptional weather and obviously out of Management's control. Steps to mitigate severe weather appear to have been adequate given the historical weather patterns.

**Receives Cash From Sale Of Assets To LSC And SLBCs Released – June 6:** In conjunction with the sale of the tenements to LSC as noted above, ORL announced the receipt of \$4 MM from LSC and the transfer of tenements on the Salar de Olaroz. In addition, ORL indicated that \$3.85 MM of standby letters of credit were also released to ORL as the subsidiary operating the brine operation in Jujuy repaid \$5.3 MM of its working capital facility. With payments on the facility have reached \$21 MM, ORL anticipates the remaining \$18.9 MM it expects to receive will be released by the end of 2017.

**Quarterly Report Shows Improvement – April 28:** Orocobre's stock has improved subsequent to reporting quarterly results, as strong lithium prices brought revenue and margin higher than our expectations. Although production was down sequentially as anticipated to allow for the inventory rebalancing, realized pricing was above \$10,200/t, bringing gross cash margin to 65%, stronger than expected. We updated our estimates to reflect higher prices, which bring our estimates higher. Until the evidence that the inventory rebalancing has been successful, we remain cautious, but note that for longer term investors the share price may have found a bottom.

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## Valuation

The impact on our estimates from the issues related to weather in Q1/18 was rather modest as our expectations were already carrying a relatively low production rate and pricing assumption. However, we expect the latest developments to bring back concerns over the pond design/operation, which impacted last year's results.

- We are using 8x EV to EBITDA (unchanged) less the debt balance for ORL's 66.5% of Olaroz to arrive at a value of C\$2.90 for the phase 1 operations at Olaroz currently producing. Note that this uses our 2019 forecast price assumption of \$12,500/t and costs of \$3,450 / t and production of 15,600 t rather than 16,700 t previously. These assumptions lead to EBITDA of \$135 MM.
- Our NAV for the other assets includes, as shown in the figure below, the Phase 2 expansion of Olaroz, Borax Argentina, Cauchari and the ownership stake in Advantage Lithium.
- For Phase 2 of Olaroz, our NAV falls to \$463 MM from \$474 MM, which reflects a higher operating cost to account for the ongoing issues around the ramp to full capacity and optimize operations for weather. Our estimates use our long term price assumption of \$11,000 / t LCE.

Our C\$6.25 target includes the C\$2.90 valuation of the operating assets and 80% of the NAV per share of C\$4.15 for the development assets as shown in the figure below.

As we advocate owning all three of these companies operating in the Basin, we are moving our recommendation to Buy from Market Perform. We expect news flow and other upcoming developments or catalysts to suggest going underweight or overweight the relative positions for each of these stocks. As a result, we are putting our recommendation on an equal basis at this point, despite the fact that there is less upside right now with ORL than with the other two companies. However, with some investors preferring exposure to operating assets relative to exploration or development, we expect such investors to prefer to have a higher waiting for ORL despite the richer valuation because of the exposure to the currently high spot prices for lithium.

Figure 17

**Orocobre Limited - NAV Valuation**

<b>Development Assets</b>	<b>Ownership</b>	<b>Discount Rate</b>	<b>\$MM</b>	<b>\$/Share</b>
Salar de Olaroz Phase 2	66.5%	9.0%	\$463	\$1.77
Borax Argentina SA	100%	9.0%	\$32	\$0.12
Cauchari	25.0%	15.0%	\$62	\$0.24
Advantage Lithium	35%		\$51	\$0.20
<b>Total Mining Assets</b>			<b>\$609</b>	<b>\$2.33</b>
Cash and Cash Equivalents			\$338	\$1.29
Debt			\$(100)	\$(0.38)
<b>Total Financial Assets</b>			<b>\$238</b>	<b>\$0.91</b>
Net Asset Value For Development Assets (US\$)			\$847	\$3.24
<b>Net Asset Value For Development Assets (C\$)</b>			<b>\$1,086</b>	<b>C\$4.15</b>

Source: Cormark Securities Inc.

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**Recommendation Terminology**

Cormark's recommendation terminology is as follows:

**Top Pick**                      our best investment ideas, the greatest potential value appreciation  
**Buy**    expected to outperform its peer group  
**Market Perform**                      expected to perform with its peer group  
**Reduce**    expected to underperform its peer group

Our ratings may be followed by "(S)" which denotes that the investment is *speculative* and has a higher degree of risk associated with it.

Additionally, our target prices are based on a 12-month investment horizon.

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**Analyst Certification**

I, MacMurray Whale, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject company(ies) and its (their) securities. I also certify that I have not been, and will not be receiving direct or indirect compensation in exchange for expressing the specific recommendation(s) in this report.



**Figure 18 Advantage Lithium Corp. – Disclosure Chart**

**Advantage Lithium Corp.**

Updated May 29, 2018

**Price Chart and Disclosure Statement**

\*Information updated monthly on or about the 5th of each month



\*Cormark has this percentage of its universe assigned as the following:

Buy or Top Pick	65%	*Over the past 24 months, the following percentage of issuers whose securities received a "Top Pick" or "Buy", a "Market Perform", or a "Reduce" rating from Cormark Securities Inc., have engaged Cormark to provide investment-banking services during this period.	
Market Perform	13%	Buy or Top Pick	50%
Reduce	1%	Market Perform	37%
Not Rated	21%	Reduce	25%

Recommendation / Target Chg	Date	C\$
	30-May-18	1.85 (B)

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If YES, name of person(s) who provided services:

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Source: Cormark Securities Inc.

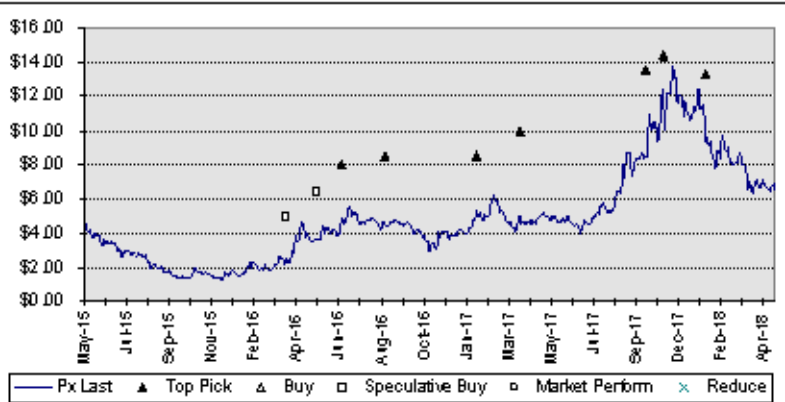
**Figure 19 Lithium Americas Corp. – Disclosure Chart**

**Lithium Americas Corp.**

Updated May 29, 2018

**Price Chart and Disclosure Statement**

\*Information updated monthly on or about the 5th of each month.



\*Cormark has this percentage of its universe assigned as the following:

Buy or Top Pick	65%
Market Perform	13%
Reduce	1%
Not Rated	21%

\*Over the past 24 months, the following percentage of issuers whose securities received a "Top Pick" or "Buy", a "Market Perform", or a "Reduce" rating from Cormark Securities Inc., have engaged Cormark to provide investment-banking services during this period.

Buy or Top Pick	50%
Market Perform	37%
Reduce	25%

Recommendation / Target Chg	Date	C\$
	19-Jan-18	13.25 (TP)
	14-Nov-17	14.40 (TP)
	16-Oct-17	13.50 (TP)
	30-Mar-17	10.00 (TP)
	19-Jan-17	8.50 (TP)
	19-Jan-17	8.50 (Chng Cover)
	04-Nov-16	- (U.R.)
	29-Aug-16	8.50 (TP)
	21-Jun-16	8.00 (TP)
	10-May-16	6.50 (B-S)
	23-Mar-16	5.00 (B-S)

During the last 24 months, has Cormark provided financial advice to and/or, either on its own or as a syndicate member, participated in a public offering, or private placement of securities of this issuer?  Yes  No

During the last 24 months, has Cormark received or is expected to receive compensation for having provided investment banking services to this issuer?  Yes  No

During the last 24 months, has the analyst of this company received compensation from a pool that included investment banking revenue from this issuer earned by Cormark or entities affiliated with it?  Yes  No

Does the analyst, associate or any individual responsible for the preparation of this research, or a member of that person's household, have a financial interest in the securities of this company?  Yes  No

If YES

1) Is it a long and/or short position?

2) What type of security is it?

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Source: Cormark Securities Inc.

**Figure 20 Orocobre Limited – Disclosure Chart**

**Orocobre Limited**

Updated May 29, 2018

**Price Chart and Disclosure Statement**

\*Information updated monthly on or about the 5th of each month.



\*Over the past 24 months, the following percentage of issuers whose securities received a "Top Pick" or "Buy", a "Market Perform", or a "Reduce" rating from Cormark Securities Inc., have engaged Cormark to provide investment-banking services during this period.

<i>Buy or Top Pick</i>	65%	<i>Buy or Top Pick</i>	50%
<i>Market Perform</i>	13%	<i>Market Perform</i>	37%
<i>Reduce</i>	1%	<i>Reduce</i>	25%
<i>Not Rated</i>	21%		

Recommendation / Target Chg	Date	C\$
	06-Apr-18	6.25 (MP)
	19-Jan-18	7.00 (MP)
	14-Nov-17	6.60 (B)
	16-Oct-17	5.80 (B)
	06-Sep-17	5.60 (B)
	28-Apr-17	4.10 (MP)
	03-Feb-17	4.00 (MP)
	19-Jan-17	5.30 (B)
	19-Jan-17	5.30 (Chng Cover)
	04-Nov-16	- (U.R.)
	20-Jul-16	5.00 (MP)
	31-May-16	5.25 (B)
	23-Mar-16	4.00 (B)
	23-Mar-16	4.00 (Chng Cover)

During the last 24 months, has Cormark provided financial advice to and/or, either on its own or as a syndicate member, participated in a public offering, or private placement of securities of this issuer?  Yes  No

During the last 24 months, has Cormark received or is expected to receive compensation for having provided investment banking services to this issuer?  Yes  No

During the last 24 months, has the analyst of this company received compensation from a pool that included investment banking revenue from this issuer earned by Cormark or entities affiliated with it?  Yes  No

Does the analyst, associate or any individual responsible for the preparation of this research, or a member of that person's household, have a financial interest in the securities of this company?  Yes  No

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If YES  2) What type of security is it?

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## TORONTO

Royal Bank Plaza South Tower  
Suite 2800  
Toronto ON  
M5J 2J2  
Tel: (416) 362-7485  
Fax: (416) 943-6499  
Toll Free: (800) 461-2275

## CALGARY

Eighth Avenue Place SW  
Suite 4800  
Calgary AB  
T2P 1G1  
Tel: (403) 266-4240  
Fax: (403) 266-4250  
Toll Free: (800) 461-9491

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