



AmericanPacific

BORATE & LITHIUM  
LIMITED

CORPORATE PRESENTATION  
121 MINING CONFERENCE – HONG KONG  
OCTOBER 2018





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## COMPETENT PERSON

The information in this release that relates to Exploration Results and Mineral Resource Estimates is based on information prepared by Mr Louis Fourie, P.Geo of Terra Modelling Services. Mr Fourie is a licensed Professional Geoscientist registered with APEGS (Association of Professional Engineers and Geoscientists of Saskatchewan) in the Province of Saskatchewan, Canada and a Professional Natural Scientist (Geological Science) with SACNASP (South African Council for Natural Scientific Professions). APEGS and SACNASP are a Joint Ore Reserves

Committee (JORC) Code 'Recognized Professional Organization' (RPO). An RPO is an accredited organization to which the Competent Person (CP) under JORC Code Reporting Standards must belong in order to report Exploration Results, Mineral Resources, or Ore Reserves through the ASX. Mr Fourie has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as a CP as defined in the 2012 Edition of the JORC Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Fourie consents to the inclusion in this presentation of the matters based on their information in the form and context in which it appears.

## CAUTIONARY STATEMENT ON FORT CADY BORIC ACID SCOPING STUDY

The Boric Acid Scoping Study referred to in this presentation has been undertaken to ascertain whether a business case can be made for raising the further funding needed to proceed to more definitive studies on the viability of the Fort Cady Borate and Lithium Project. It is a preliminary technical and economic study of the potential viability of the Fort Cady Project. It is based on low level technical and economic assessments that are not sufficient to support the estimation of ore reserves. Further confirmatory resource drilling and evaluation work and appropriate studies are required before the Company will be in a position to estimate any ore reserves or to provide any assurance of an economic development case. The Boric Acid Scoping Study is based on the material assumptions outlined in the ASX Release dated 27 December 2017. These include assumptions about the availability of funding. While the Company considers all of the material assumptions to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated by the Scoping Study will be achieved.

To achieve the range of outcomes indicated in the Scoping Study, the Company estimates funding in the order of US\$98m (Phase 1) will likely be required for commercial-scale operations. Investors should note that there is no certainty that the Company will be able to raise that amount of funding when needed. It is also possible that such funding may only be available on terms that may be dilutive to or otherwise affect the value of the Company's existing shares. It is also possible that the Company could pursue other 'value realisation' strategies such as a sale, partial sale or joint venture of the project. If it does, this could materially reduce the Company's proportionate ownership of the project. Given the uncertainties involved, investors should not make any investment decisions based solely on the results of the Scoping Study.



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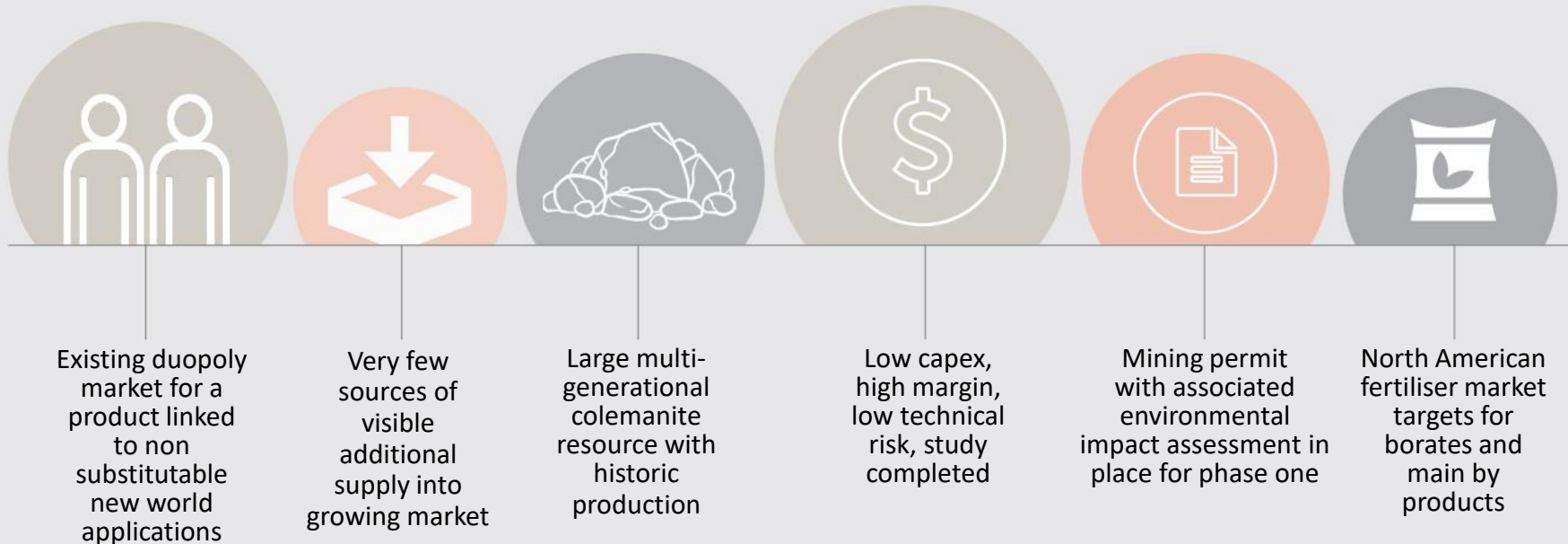
# Investment Highlights



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## American Pacific Borate and Lithium is an ASX listed Borate and Lithium developer

The Company is developing the Fort Cady Borate Project in California and exploring for borates and lithium at Salt Wells in Nevada. The flagship Fort Cady Borate Project has many strengths including:



The Company has a compressed development timeline that takes advantage of prior production, in place permits and the US\$60m spent on the project to date. Focus is on being construction ready quickly.

# 1. American Pacific Borate & Lithium

## Focused on becoming a globally significant producer of borates

- Developing the advantaged Fort Cady Borate Project located in Southern California
- Experienced team of professionals based in Apple Valley, California
- Compressed timeline to construction ready taking advantage of historic production, in place permits and over US\$60m spent on the project to date
- Scoping Study results on boric acid operation for 245k tonne per annum operation are encouraging and demonstrate:
  - **Low capex**
  - **High operating margins**
- By product credits for SOP, gypsum and potentially lithium
- The Salt Wells' borate and lithium exploration project provides upside opportunity and is consistent with target of becoming a globally significant producer of borates



Map showing the location of the Company's projects in North America



# 1. American Pacific Borate & Lithium

## Corporate Information

ASX Ticker	ABR
Share Price at 30 September 2018	A\$0.16
Shares on Issue	190.1m
Options (20c, 25c, 30c, 40c & 60c strike)	21.5m
Fully Diluted Shares	211.6m
Undiluted Market Cap.	A\$30.4m
Diluted Market Cap.	A\$33.9m
Cash at Bank - 30 September 2018	~ A\$4m
Major shareholder: Atlas Precious Metals	26%

## Share Price



## Key Executives

### Michael X. Schlumpberger

Managing Director and CEO, BEng (Mining), MBA

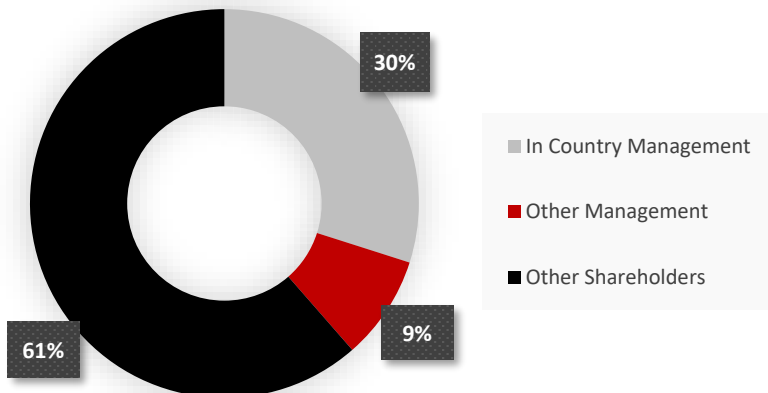
Mike is a qualified mining engineer with over 30 years' experience in industrial minerals. His background includes management, operations, and maintenance in all aspects of mining, processing, reclamation, and permitting. He has held senior roles with Potash Corporation of Saskatchewan, Passport Potash, and Highfield Resources, and has worked in the United States, Canada, and Europe.

### Anthony Hall

Executive Director, LLB(Hons), BBus, AGIA

Anthony is a qualified lawyer with 20 years' commercial experience in venture capital, risk management, strategy and business development. He was Managing Director of ASX listed Highfield Resources Ltd from 2011 to 2016. During his tenure the company's market cap grew from \$10m to \$500m & over \$140m was raised to progress potash projects in Spain

## Fully Diluted Shares





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## 2. What are Borates?

### Fiberglass & Specialty Glass

Making glass resistant to heat and chemicals

### Detergents

Used as a cleaning and bleaching agent to increase the performance of products

### Nuclear Reactors

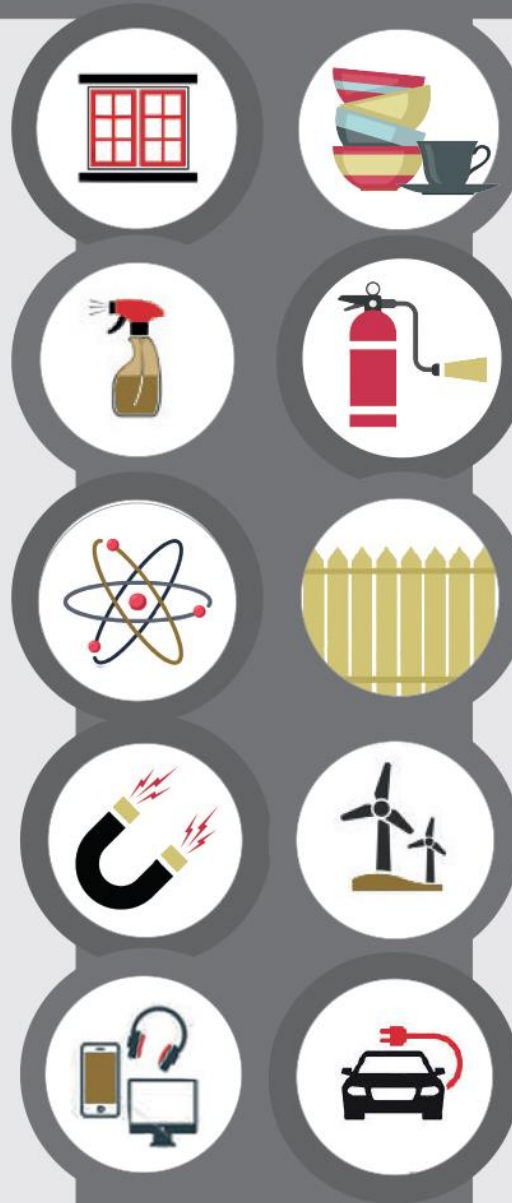
Absorbs neutrons increasing nuclear reactor safety

### Permanent Magnets

Boron laden permanent magnets are used in hundreds of different end-uses and applications

### Other Uses

Borates are used across an wide range of other applications including, Abrasives, Cellulose Insulation, Charcoal Briquettes, Corrosion Inhibitors, Dyestuffs, Electrolytic Capacitors and Condensers, and a wide range of consumer electronics



### Ceramic Frits, Enamels & Glazes

Enhances the chemical and mechanical strength, and helps to form smooth surfaces

### Flame Retardant

Used in all dry powder fire extinguishers and fire retardant paints

### Wood Treatment

Used in wood as a preservative preventing decay, and slows the spread of flames if burning occurs

### Wind Turbines

Cannot operate without the help of boron laden permanent magnets

### Electric vehicles & clean technologies

Borates are uniquely applied in permanent magnets, the most commonly used magnets in EV's

### Agriculture

An essential micro nutrient for growth and used to increase yields

### 3. Global Borate Market

#### Duopoly market with very few global sources of borates

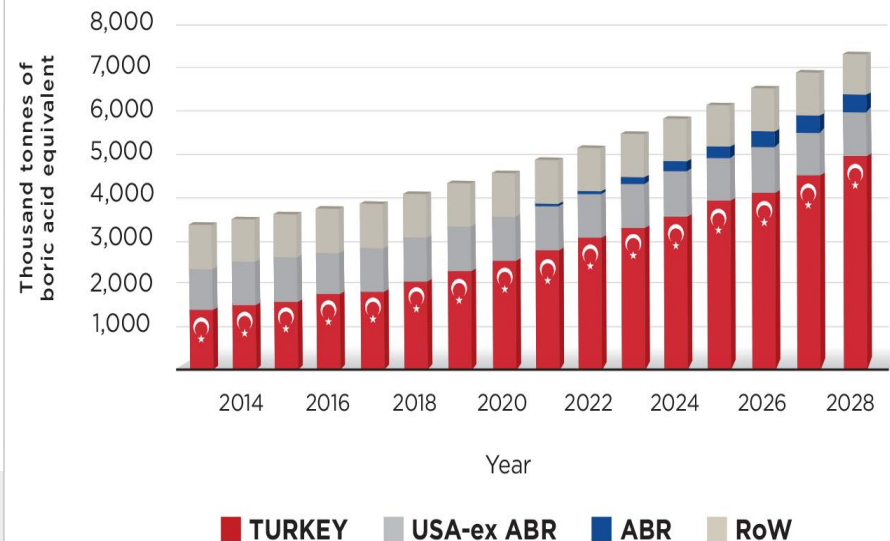
- Boric Acid equivalent demand in 2017 was 3.9m tonnes which represents a 3% CAGR on Roskill's 2013 forecast supply
- Turkish Government owned Eti Maden controls the marginal unit of supply and will continue to meet demand
- Eti Maden appears to be the only borate producer with meaningful additional capacity capable of meeting additional supply requirements
- Rio Tinto Borates (majority of US production) appears to be operating at full capacity
- There appears to be minimal nett additional global operating capacity, if any

Borates production  
'000 tonnes  $B_2O_3$



Graph showing Rio Tinto annual production in  $B_2O_3$  between 2011 and 2017

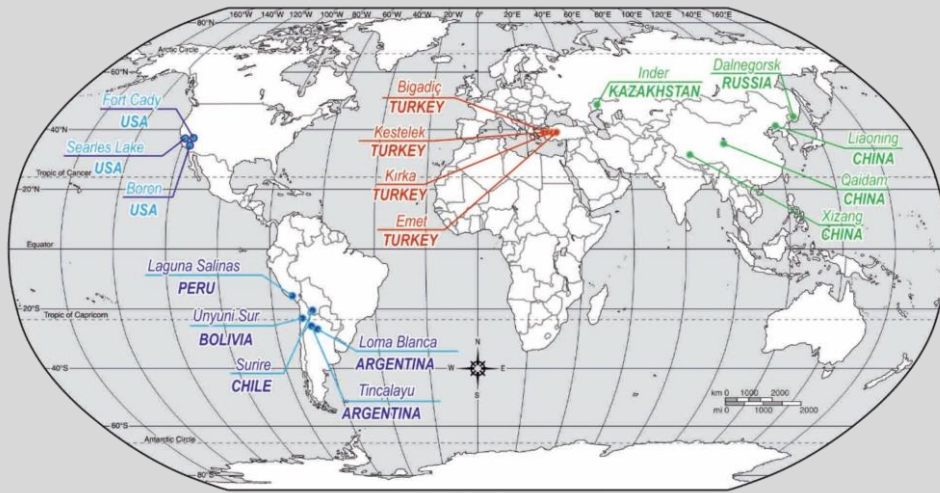
BORATE SUPPLY CURVE



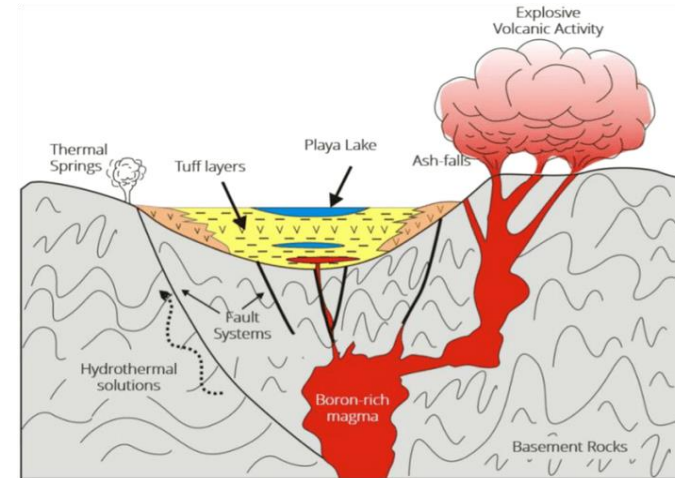
Graph showing predicted global supply curve based on Roskill, Eti Maden and Rio Tinto analysis

## 4. Global Deposits

Over 80% of global supply comes from borate salt operations in California and Turkey



Map showing global production centers for borates



Schematic showing genetic geological model for borate deposit formation (Helvacı, 2015)

Borate Mineral	Chemical Composition	% B <sub>2</sub> O <sub>3</sub>	Where Mined
Borax (Tincal)	Na <sub>2</sub> B <sub>4</sub> O <sub>7</sub> · 10H <sub>2</sub> O	36.5%	California & Turkey
Kernite	Na <sub>2</sub> B <sub>4</sub> O <sub>7</sub> · 4H <sub>2</sub> O	51.0%	California
Ulexite	NaCaB <sub>5</sub> O <sub>9</sub> · 8H <sub>2</sub> O	43.0%	California & Turkey
Colemanite	Ca <sub>2</sub> B <sub>6</sub> O <sub>11</sub> · 5H <sub>2</sub> O	50.8%	Turkey

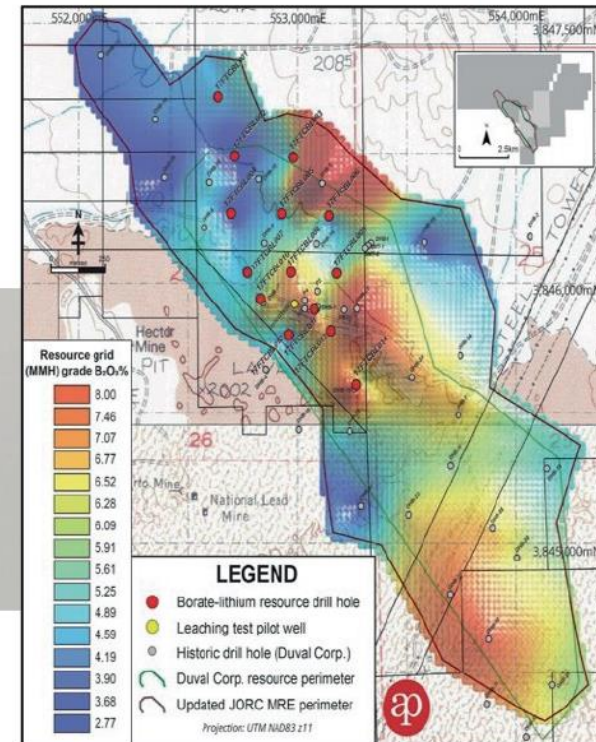
Table showing the main mined borate minerals globally



Photo of colemanite mineralisation

## 5. Fort Cady Borate Project

### Large multi-generational colemanite resource strategically located



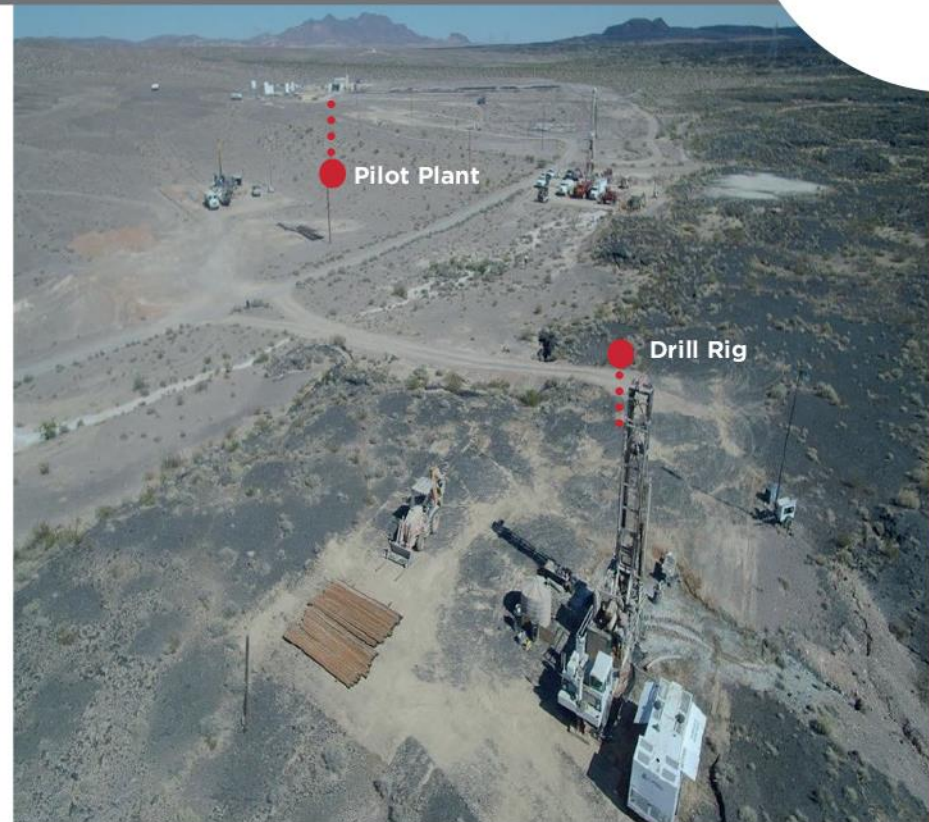
- JORC Mineral Resource Estimate of 120.4m tonnes at 6.5% B<sub>2</sub>O<sub>3</sub> (11.6% boric acid equivalent) and 340 ppm lithium\*
- Contained boric acid of 13.9m tonnes
- Indicated Resource of 58.6m tonnes at 6.59% B<sub>2</sub>O<sub>3</sub> and 367 ppm lithium
- Inferred Resource of 61.9m tonnes at 6.43% B<sub>2</sub>O<sub>3</sub> and 315 ppm lithium
- 72% of total MRE contained within Operating Permit region awarded to ABR's wholly owned subsidiary

\* Refer ASX Release of 1 February 2018

## 6. Compelling Boric Acid Scoping Study\*

### Brilliant financial metrics using realistic commodity pricing

- Boric Acid Scoping Study delivered in December 2017
- 25 year mine life using 68% Indicated and 32% Inferred Resources
- Phase two funded predominantly from cash flow and increases production to 246k tonnes of boric acid and 54k tonnes of SOP pa
- Target EBITDA of over US\$150m pa
- Post tax, unlevered IRR of 41.1%, NPV<sub>10</sub> of US\$747m (NPV8 of US\$935m)
- Pre production capex in AUD only A\$122m for NPV<sub>8</sub> of A\$1.22bn\*



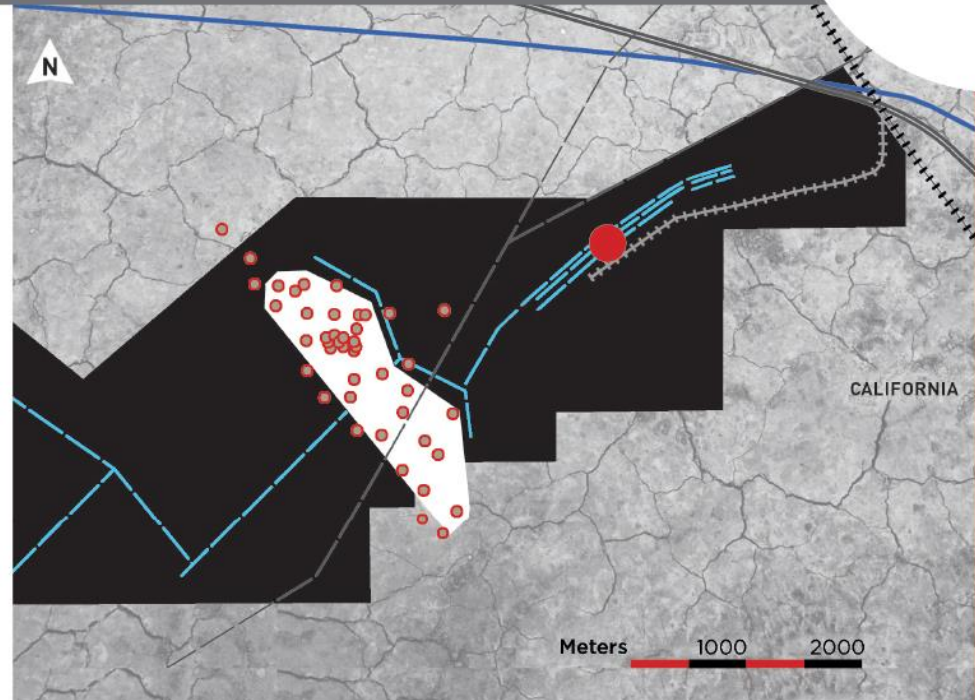
Fort Cady Site photo taken in October 2017 showing drilling activity and pilot plant

\* Refer ASX Release of 27 December 2017 and 24 January 2018, USD1.00, AUD0.80

## 7. Mining and Environmental Permits in Place

### Approved Plan of Operations (Mining Permit) includes EIA that does not expire

- Mining permit and associated Environmental Impact Assessment in place for initial boric acid operation of 90k tons per annum for up to 130 years
- Covers production of by product gypsum for Californian market
- Approval includes rights to establish up to five wells into an aquifer unit located near the deposit
- Railroad spur for bulk shipments is also incorporated into approval
- Applications in train for subsidiary permits necessary to commence operations



Map showing operating permit boundary, deposit and proposed process plant location

### LEGEND

- |   |                           |
|---|---------------------------|
| Drill Holes   | High Voltage Power Line   |
| Approved Plant Site                                 | Gas Line                  |
| Historic Resource & Approved Solution Mining Region | Approved Water Well Field |
| Operating Permit Boundary                           | Rail Line                 |
|   | Approved Rail Spur Line   |
|   | Interstate Highway        |



Photo showing proposed process plant site looking south east

## 8. Focus on Fertiliser Market

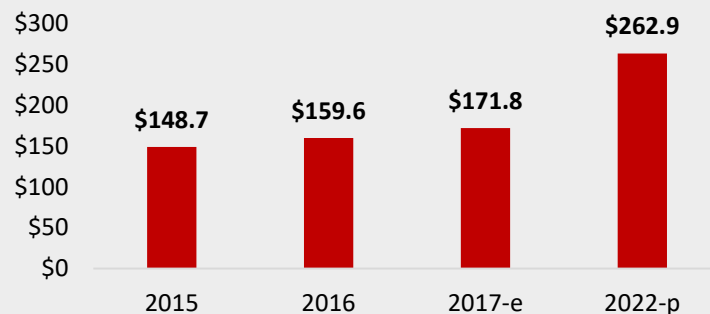
### Borates, Gypsum and SOP all play into North American fertiliser market

- Borates, gypsum and SOP are all used in local agricultural
- Borate demand for agricultural purposes is predicted to grow at 9% CAGR from 2017 and 2022
- Fort Cady is ideally placed in California to take advantage of a large and growing agricultural market for its products

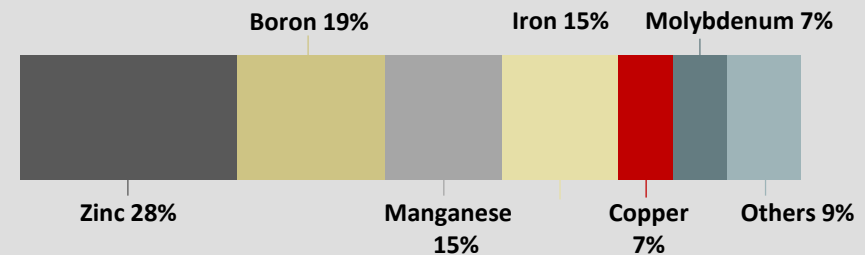
Product	Target Market
Borates	<ul style="list-style-type: none"> <li>• Californian specialty fertilisers</li> <li>• North American fibre glass and ceramics</li> <li>• Chinese electric vehicle and clean technologies</li> </ul>
Gypsum	<ul style="list-style-type: none"> <li>• Local Californian soil enhancement market to mitigate effect of high sodium (Na) content soils (will attract a premium given boron content)</li> </ul>
SOP	<ul style="list-style-type: none"> <li>• Local Californian specialty fertiliser market targeting nut and specialty fruit producers</li> </ul>
Lithium	<ul style="list-style-type: none"> <li>• North American li-ion battery manufacturers</li> <li>• North American glass industry</li> </ul>

Table showing targeted products and markets

#### US Boron Market Value (\$M)



#### US Market Value by Micronutrient



- The US boron agricultural micronutrient market is projected to grow at ~9% CAGR from 2017 to 2022

## 9. Globally Significant Partners Established

### Developing the path to market for boric acid sales



Strategic Cooperation Agreements\* in place with two Chinese State-Owned Enterprises, (***both Global Fortune 500 companies***), supporting the path to market for our boric acid sales

#### Fortune Global 500 Companies<sup>§</sup> - July 2018

Rank	Company
98	Sinochem Group
256	Sinomach
278	Rio Tinto Group
296	BHP Billiton

\* Refer ASX Releases dated 29 & 30 May 2018

§ Source : <http://fortune.com/global500/>

## 10. DFS Nearing Completion

### Compressed timeline due to significant historical work and in place permits

#### 2H 2018

**Project** – targeting completing of DFS and move into detailed engineering phase

**People** – Experienced professional team built out

**Products and Partners** – Progress discussions with potential Chinese partners whilst initiating North American partner discussions post completion of DFS

**Permits** – initial air related permit obtained and applications in train for water related permits required for operations

**Corporate** – Company marketing activities completed in Australia, Hong Kong and North America

#### 1H 2019

**Project** – Detailed engineering in train, construction partners engaged, key equipment vendors determined and construction decision targeted for Q3 CY2019

**People** – Establishment of site office and balance of owners' team in place for construction activities

**Products and Partners** – offtakes in place for boric acid, gypsum and SOP

**Permits** – All permits in place for construction and operations of phase one (90k tons of boric acid per annum)

**Corporate** – project financing discussions progressed with potential partners, debt and equity capital markets options progressed

ITEM	18	2019				2020				2021				2022				2023				2024				2025			
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
DFS																													
Detailed Engineering Phase One																													
Permitting Phase One																													
Project Financing																													
Construction Phase One																													
Production Phase One at 60%																													
Full Production Phase One																													
Permitting Phase Two and Three																													
Detailed Engineering Phase Two																													
Construction Phase Two																													
Production Phase Two at 60%																													
Full Production Phase Two																													
Detailed Engineering Phase Three																													
Construction Phase Three																													
Production Phase Three at 60%																													
Full Production																													

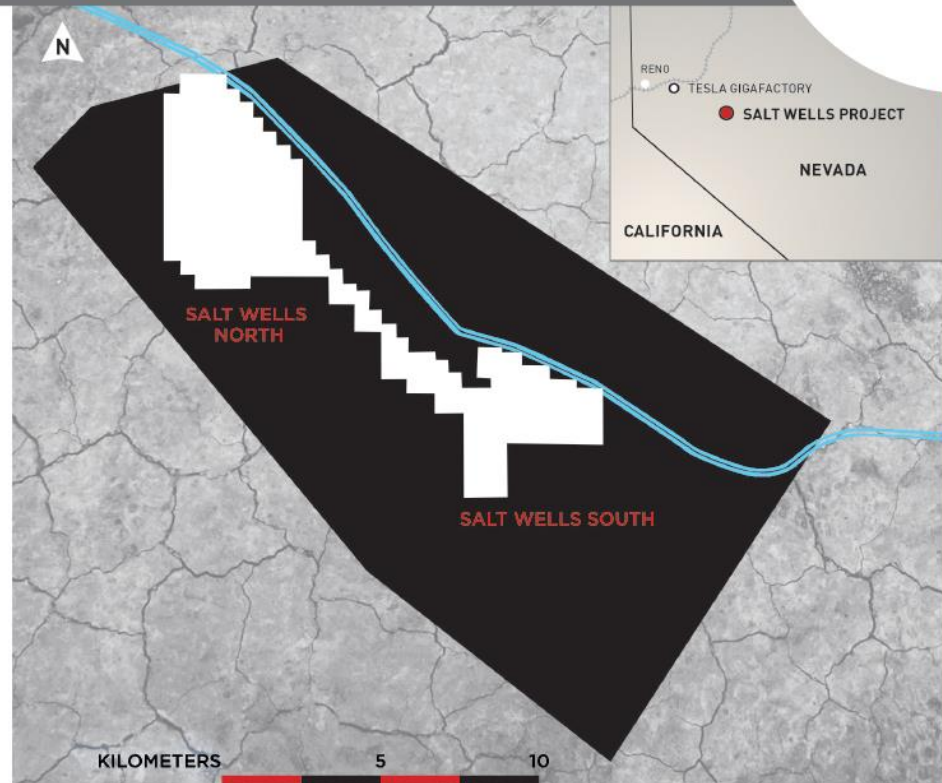
Project timeline as at September 2018 showing major actions

## 11. Salt Wells, Nevada – Additional Borate Target

### Agrees earn in rights to acquire 100% interest in two Borate & Lithium exploration Projects in Nevada, USA

#### Key Terms

- Modest earn in agreement over the first two years
- Prospective for borates and lithium with recent sampling returning up to 810 ppm Lithium and over 1% Boron (over 5.2% boric acid equivalent)
- Borates were previously produced from Salt Wells North
- Near term exploration activities can be supported from head office in California



#### LEGEND

- Interpreted Basin
- ABR Claims
- Highway

Recently Acquired SALT WELLS Projects



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# Investment Highlights

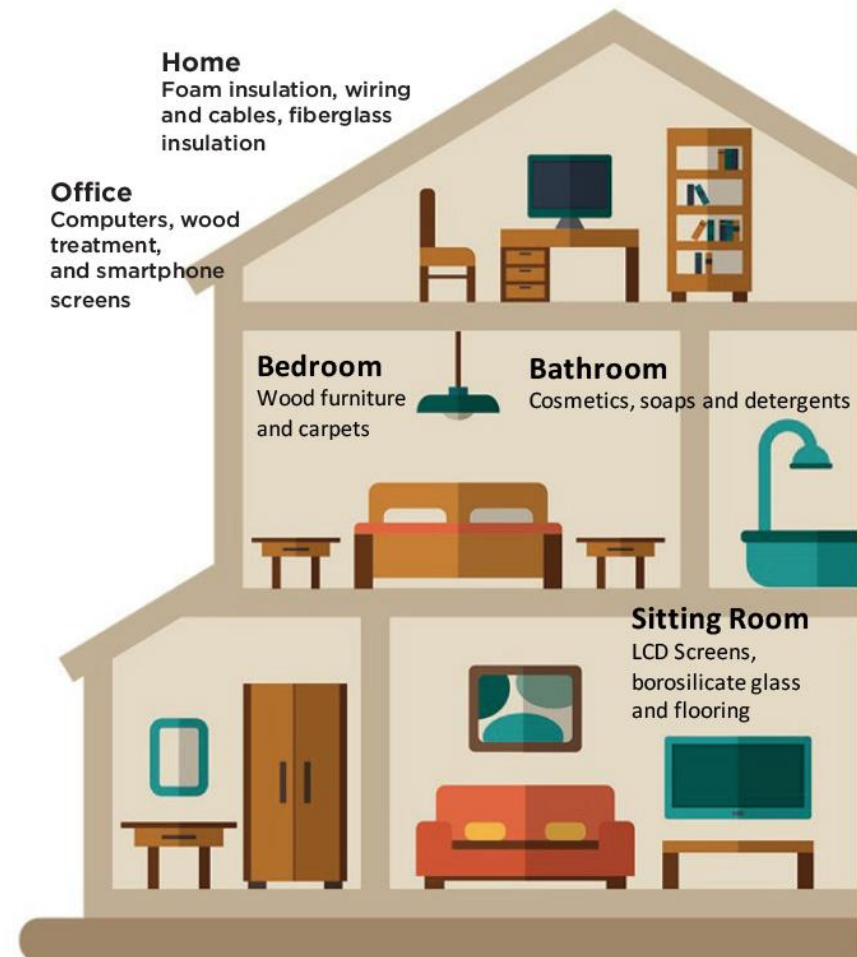
**American Pacific Borate & Lithium** is developing the Fort Cady Borate Project in California and exploring for borates and lithium at Salt Wells in Nevada. The flagship Fort Cady Borate Project has many strengths including:

- Existing duopoly market for a product linked to non substitutable new world applications
- **Very few sources of visible additional supply into growing market**
- Large multi-generational colemanite resource with historic production
- **Low capex, high margin, low technical risk, study completed**
- Mining permit with associated environmental impact assessment in place for phase one
- North American fertiliser market targets for borates and main by products

The Company has a compressed development timeline that takes advantage of prior production, in place permits and the US\$60m spent on the project to date with milestones continuing to be achieved

Focus is on being construction ready quickly

## Borates Appear All Around Us





## Appendix – Environmental Impact Statement Proposed Action

### **Final Environmental Impact Statement / Environmental Impact Report**

The purpose of the proposed action to establish a commercial “in-situ” mine to recover boric acid for domestic and foreign use.

The proposed action is on a 343-acre site and would extract boric acid through the injection and extraction of a weak hydrochloric acid and/ or sulphuric acid solution in the alkaline ore body. The extracted solution would be processed to precipitate boric acid crystals, and the crystals would be packaged for shipment or loaded for bulk delivery. The acid would be removed from the ground through an in-situ mining process, which in simplified terms, involves (1) the pumping of a weak acid solution into the ore body 1,400 feet below the surface; (2) a chemical reaction between the acid and the alkaline elements in the ore body which forms boric acid in the solution; and (3) an extraction of the solution by a reverse-pumping process.

The mining operation would produce gypsum as a by-product, which would be potentially be sold to the local cement industry or to producers of drywall or soil conditioners

In addition to the wells and piping located on the ore body, a variety of other facilities would be constructed as part of the project, including:

- a series of water wells and waterlines used to produce and route process water;
- a 10 acre beneficiation plant (435,600 square feet) consisting of equipment to extract the boric acid from the injected solution, purify and crystallize the boric acid, regenerate the acids used in the injection/extraction process, load and ship the boric acid crystals, generate electricity (natural gas cogeneration unit) and process/store chemicals and products;
- ancillary facilities, including a natural gas pipeline to serve the cogeneration power facility; and an electrical transmission line to link the plant with outside utility systems;
- a deposition area to store gypsum;
- a railroad spur to provide bulk shipment capability; and
- a system of access roads to connect site facilities providing access to local road and highway corridors.

The project would employ approximately 80 full-time employees, who would work in alternating shifts 24 hours per day. Based on the size and the accessibility of the ore body, the project is expected to be in operation for approximately 130 years

# Contact



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