Successful Production of Premium Quality Boric Acid

Highlights

△ Premium quality boric acid produced from Rhyolite Ridge lithium-boron mineralisation using conventional process flowsheet developed for the Pre-Feasibility Study

△ Demonstrates the ability to produce premium end products at the mine site using a highly efficient and low-cost process that can be readily scaled up for commercial production

△ Very low levels of impurities combined with good crystal size suggest a highly desirable product that should attract customers in premium markets

△ Lithium carbonate production is in progress with results expected in the near term

△ Rhyolite Ridge is ideally positioned to become a major, low-cost supplier of both lithium and boron products to major markets within the USA and Asia

Tuesday, 28 August 2018 – Australian-based lithium-boron mine developer Global Geoscience Limited (“Global” or the “Company”) (ASX: GSC) today announced the production of premium quality boric acid from the Rhyolite Ridge Lithium-Boron Project (“Project”) in Nevada, USA. The boric acid contains very low levels of impurities and was produced using a conventional flowsheet developed for the Rhyolite Ridge Pre-Feasibility Study (“PFS”).

Rhyolite Ridge is one of only two known large lithium-boron deposits globally. The Project has the potential to supply approximately 160,000-220,000 tonnes of boric acid and 20,000-30,000 tonnes of lithium carbonate per annum in the initial phase and is readily expandable. In production, this would make the Company the world’s third largest producer of boric acid, behind only Turkish company Eti Maden and Rio Tinto who together supply approximately 80% of the world’s refined borates. The global market for borates is more than US$3 billion per annum with boric acid selling for around US$700 per tonne. The borates market is similar in value to the current lithium market.

The Project is ideally located to supply boric acid and lithium carbonate to the large American domestic market and into the large and more rapidly growing Asian markets with low-cost shipping from the west coast of the USA. There is only one major boron mine operating in the USA and none in the Asia-Pacific region.

Global Geoscience’s Managing Director, Bernard Rowe commented:

“These very pleasing results confirm that a high-quality boric acid product can be produced at the mine site using conventional commercial processes.

“We expect this, combined with low-cost mining and leaching, to translate into very competitive boric acid costs and likely to be at the lower end of our expectations.

“Over the past twelve months we have built a very strong borates team with many decades of experience and that has provided us with a deep understanding of the global borates market. This wealth of experience will be critical as we transform Rhyolite Ridge into a major producer of premium boron and lithium products.
“With the majority of global supply and reserves of borates being in Turkey, we are confident that Global Geoscience will be welcomed as the third major supplier of boric acid globally.

“The Rhyolite Ridge Pre-Feasibility Study (PFS) is on track for completion during the current quarter. The PFS is expected to demonstrate the strong economics of developing Rhyolite Ridge into a major, low-cost, near-term producer of lithium carbonate and boric acid.”

Metallurgical Testwork

Part of the ongoing metallurgical testwork program is the production of boric acid and lithium carbonate using the flowsheet developed for the PFS. This testwork is very important as it demonstrates the ability to produce marketable products using a process flowsheet that can be scaled up for commercial production.

In the current test program, lithium and boron are leached from the coarse crushed rock using sulphuric acid in 200 litre vats. The pregnant leach solution (“PLS”) then undergoes a series of evaporation and crystallisation steps to remove the boric acid. The boric acid is then purified using conventional steps including washing, filtration and recrystallisation. No reagents are used in the production of boric acid.

As detailed in the table below, the Rhyolite Ridge boric acid contains very low levels of impurities. Test work and analysis were conducted by Kemetco Research Inc. of Richmond, BC, Canada. Analyses were determined by ICP methods.

<table>
<thead>
<tr>
<th>Compound or Element</th>
<th>Units</th>
<th>Rhyolite Ridge Boric Acid</th>
<th>Typical Industry Specifications</th>
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<tbody>
<tr>
<td>Boric Oxide (B2O3)</td>
<td>%</td>
<td>&gt;56.5</td>
<td>&gt;56.25</td>
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<tr>
<td>Boric Acid (H3BO3)</td>
<td>%</td>
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</tr>
<tr>
<td>D50 particle size</td>
<td>microns</td>
<td>550</td>
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</tbody>
</table>
Boron – Essential for Modern Life

Boron is an important industrial mineral that is only produced in a few locations globally but plays an important role in the modern world.

Boron is used in hundreds of applications with the largest uses being for glass, insulation, ceramics and agriculture. There are often no substitutes for boron as it has many unique properties. The current US$3.2 billion market for borates is expected to grow at 4-5% per annum as global population grows and becomes more affluent, with the key demand drivers being urbanisation, energy efficiency and agriculture.

Boron is widely distributed but rarely found in economic concentrations. Approximately 80% of the global refined borates market is supplied by two companies - Eti Maden from several mines in Turkey and Rio Tinto from the Boron Mine in California. Over 70% of the current global reserves are located in Turkey.

Development of Rhyolite Ridge will provide a welcomed third major supplier of boric acid. The Project is ideally located to supply the North American and Asian markets, which together account for circa 80% of global borates demand.
Boric acid customers value consistent good quality and reliable supply. Global Geoscience has built a very strong and highly experienced borates team that includes Alan Davies (Non-Executive Director), Michael Le Page (Project Commercial Director) and Yoshi Nagai (Project Sales & Business Development Director). Utilising their wide range of experience in borates and other industrial minerals, the Company has completed a detailed study of the borates market and is developing relationships with potential customers in USA and Asia.

**Upcoming Company News**

- Further testwork on initial production of lithium carbonate and boric acid
- Release of the PFS in Q3 2018
- Results from infill and step-out drill program currently in progress
- Pilot plant to produce samples for customers

The Rhyolite Ridge Definitive Feasibility Study (DFS) and the environmental approval process are anticipated to be complete by 2H 2019.

**Background on Selected Processing Route**

Global Geoscience, together with Wood Group (Amec Foster Wheeler), is completing a pre-feasibility study on the 100%-owned Rhyolite Ridge Lithium-Boron Project.

The process flowsheet involves conventional, well understood processing technology that has been proven and is in use at commercial scale:

- **Sulphuric acid leach to extract lithium and boron from crushed rock into a Pregnant Leach Solution ("PLS").** This step is similar to acid leaching commonly used in oxide copper mines.

- **Evaporation and concentration of the PLS followed by crystallisation of boric acid.** Using mechanical evaporators, which provide substantial water savings, the PLS is concentrated. The boric acid product is then purified using conventional crystallisation and recrystallisation steps to produce high-purity boric acid. This step is similar to the process used at Rio Tinto's Boron Mine in California.

- **Further evaporation and concentration of the PLS removes the remaining impurities via precipitation and ion exchange, followed by precipitation of lithium carbonate.** This step is very similar to the process used in lithium brine operations.

The mineralisation will be crushed to 25mm (1 inch) followed by leaching in a series of vats using a sulphuric acid/water mix.

Sulphuric acid will be made on-site in an acid plant using sulphur and water. In addition to sulphuric acid, the acid plant will generate large amounts of steam. The steam will be used to provide heat to the vats and mechanical evaporators. Steam will also be used to drive turbines to produce electricity. The acid plant is expected to generate steam and electricity in excess of what is required by the operation. Excess electricity will be available for sale into the electricity grid.

Boron and lithium will be extracted from the PLS via a series of evaporation, crystallisation and purification steps.
A schematic overview of these proposed steps is provided below.

The proposed processing technologies are well understood and have been proven at commercial scale. An overview of the proposed processing flowsheet is provided below.
Key aspects of the proposed flowsheet are:

- On-site acid plant that produces sulphuric acid from sulphur and water. The process is exothermic and produces large amounts of steam. The steam is used for heating vats and evaporators and for driving a steam turbine to generate electricity.

- Crushed rock containing lithium and boron is added to lined concrete vats and then flooded with sulphuric acid and water solution.

- The acid and vats are heated to 50-60°C using steam from the acid plant. Heat is not necessary for the leaching process but does allow higher concentrations of boron and lithium in the PLS and subsequently, less concentration is required at the evaporation stage.

- Boron is removed from the PLS as boric acid via evaporation and crystallisation steps. The boric acid is purified using conventional steps including washing, filtration and recrystallisation.

- Impurities, including sodium, magnesium, calcium and iron, are removed from the PLS using evaporation and crystallisation/precipitation steps and ion exchange.

- Lithium is removed from the PLS as lithium carbonate using further evaporation and ultimately precipitation via the addition of soda ash (sodium carbonate).

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About Global Geoscience

**Global Geoscience Limited (ASX:GSC)** is an Australian-based lithium-boron mine developer focused on its 100%-owned Rhyolite Ridge Lithium-Boron Project in Nevada, USA.

Rhyolite Ridge is a large, shallow lithium-boron deposit located close to existing infrastructure. It is a unique sedimentary deposit that has many advantages over the brine and pegmatite deposits that currently provide the world’s lithium. Rhyolite Ridge is one of only two known large lithium-boron deposits globally.

Global Geoscience is aiming to capitalise on the growing global demand for lithium and boron. Lithium has a wide variety of applications that include glass, ceramics, lubricants and its main growth market, batteries. Boron is used in glass, fiberglass, insulation, ceramics, semiconductors, agriculture and many other applications.
Global Geoscience aims to develop the Rhyolite Ridge Lithium-Boron Project into a strategic, long-life, low-cost supplier of lithium and boron products. To learn more please visit:

Compliance Statement
The information in this report that relates to Exploration Results is based on information compiled by Bernard Rowe, a Competent Person who is a Member of the Australian Institute of Geoscientists. Bernard Rowe is a shareholder, employee and Managing Director of Global Geoscience Ltd. Mr Rowe has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the ‘Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves’. Bernard Rowe consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

In respect of Mineral Resources referred to in this report and previously reported by the Company in accordance with JORC Code 2012, the Company confirms that it is not aware of any new information or data that materially affects the information included in the public report titled “Global Geoscience Doubles High-Grade Lithium-Boron Mineral Resource” dated 31 October 2017 and released on ASX. Further information regarding the Mineral Resource estimate can be found in that report. All material assumptions and technical parameters underpinning the estimates in the report continue to apply and have not materially changed.

In respect of production targets referred to in this presentation and previously disclosed, the Company confirms that it is not aware of any new information or data that materially affects the information included in the public report titled “Start-up Phase of Mining to Target Higher Lithium Grades to Increase Cashflow in Early Years” dated 3 August 2018. Further information regarding the production estimates can be found in that report. All material assumptions and technical parameters underpinning the estimates in the report continue to apply and have not materially changed.

Forward Looking Statements
Various statements in this report constitute statements relating to intentions, future acts and events which are generally classified as “forward looking statements”. These forward looking statements are not guarantees or predictions of future performance and involve known and unknown risks, uncertainties and other important factors (many of which are beyond the Company’s control) that could cause those future acts, events and circumstances to differ materially from what is presented or implicitly portrayed in this presentation. Words such as “anticipates”, “expects”, “intends”, “plans”, “believes”, “seeks”, “estimates”, “potential” and similar expressions are intended to identify forward-looking statements.

Global cautions security holders and prospective security holders to not place undue reliance on these forward-looking statements, which reflect the view of Global only as of the date of this report. The forward-looking statements made in this report relate only to events as of the date on which the statements are made. Except as required by applicable regulations or by law, Global does not undertake any obligation to publicly update or review any forward-looking statements, whether as a result of new information or future events. Past performance cannot be relied on as a guide to future performance.