



# ASX ANNOUNCEMENT



9 MAY 2017

## PRE-FEASIBILITY STUDY UPDATE - WORK PROGRAMS AIMED AT ENHANCING AUTHIER VALUE

### Highlights

- Work programs aimed at increasing the value of the Authier project commence
- Targeting a significant reduction in the life-of-mine waste movement and improved metallurgical outcomes
- Updated Pre-Feasibility study paves the way to fast-track completion of the Definitive Feasibility Study, and finalisation of permitting and approvals
- Lithium pricing continues to surprise on the upside well above the 2017 PFS price forecasts

Sayona Mining Limited (ASX: SYA) ("Sayona" or the "Company") is pleased to announce that it has commenced work programs focused on significantly enhancing the value of the Authier project in Canada.

The new work programs will provide new technical information aimed at improving the base case economics outlined in the February 2017 Pre-Feasibility Study ("PFS") which included:

- Pre-tax NPV of C\$140 million and pre-tax IRR 39% (real terms at 8% discount rate);
- Annual average concentrate production of 99,000 tonnes at 5.75% Li<sub>2</sub>O;
- Average annual revenue of C\$67 million and EBITDA of C\$31 million;
- Life of mine strip ratio of 6:1 (waste to ore) and
- Cash costs of C\$367 (US \$280) FOB Montreal Port;
- Development capital expenditure of C\$66 million; and
- Maiden Ore Reserve of 10.2 Mt @ 1.02% Li<sub>2</sub>O (Proven Reserve 4.9Mt @ 0.97% Li<sub>2</sub>O and Probable Reserve 5.3Mt @ 1.06% Li<sub>2</sub>O) delivers a mine life of 13 years.

The work programs which are expected to be completed within three months, include:

- Resource upgrade following the completion of the Phase 2 drilling program;
- Geotechnical and hydrogeological programs to improve the pit wall slopes and reduce the life-of-mine waste movement;
- Further metallurgical testing to optimise recoveries and concentrate grades;
- Updating the February 2017 Pre-Feasibility Study and Ore Reserve estimate.

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Corey Nolan, Chief Executive Officer, commented *"The Company is targeting a significant improvement in the Authier value and returns, following the pending Authier resource upgrade and completion of the optimisation programs"*.

## **Authier Project Strategy**

The Company remains focused on rapidly developing Authier and capitalising on the strong pricing window available for new project entrants in the short-to-medium term. Authier is an advanced development project and cash flow generation opportunity with positive attributes, including:

- Extensively drilled (22,000 metres) and well understood geology;
- Well studied with the completion of a Pre-Feasibility study in February 2017;
- Maiden JORC Ore Reserves - 10.2 Mt @ 1.02% Li<sub>2</sub>O (Proven Reserve 4.9Mt @ 0.97% Li<sub>2</sub>O and Probable Reserve 5.3Mt @ 1.06% Li<sub>2</sub>O);
- Simple open-cut, truck and shovel mining operation;
- Proven process for recovery of spodumene into a saleable concentrate – low technology risk;
- World-class infrastructure and Quebec Government support;
- Low capital hurdle and attractive operating costs; and
- Potential to process and produce a lithium carbonate/hydroxide product through an integrated downstream processing facility at Authier.

## **Resource Upgrade**

Following the completion of the Phase 2 drilling program in April, the Company's plan is to increase the size and confidence levels of the 2016 JORC Resource and 2017 Ore Reserve estimates released as part of the February 2017 Pre-Feasibility Study. The new resource will be incorporated into an updated Pre-Feasibility Study following the completion of metallurgical and geotechnical programs, and allow an updated Ore Reserve estimate.

The new holes drilled east, west and deep in the gap zone of the main Authier pegmatite orebody have successfully demonstrated potential extensions of the mineralisation at open-cut mineable depths. Mineralisation within the main pegmatite orebody have been extended 150 metres to the east, up to 300 metres to the west within the deeper levels and 200 metres west at shallower levels, and at depth in the gap zone. The main pegmatite is now over 1,200 metres in total strike length and still open along strike.

Additionally, new holes in the northern pegmatite have delineated a narrow and gently dipping tabular body with the potential for shallow, open-cut mineable tonnage.

## **Geotechnical and Hydrogeology Work Programs**

A geotechnical work program will be completed to assess the potential for steepening the hanging wall pit slope. This would reduce the waste removal requirement especially during the early years of the operation. The PFS assumes a conservative hanging wall pit slope of 40 degrees over the 800 metre strike length. Pit walls inclined at 55-60 degrees or more are envisaged following the study.

As part of the Phase 1 and 2 drilling programs, detailed geotechnical work has been completed, including:

- All 49 HQ drill cores have been fully oriented, and geologically and structurally logged;
- Rock quality determination completed on 49 holes;
- Nine holes have been structurally logged in both the hanging wall and pegmatite zones;
- 400 point load tests have been completed; and
- 10 samples for uniaxial compression strength testing completed at the Université de Montréal.

Further geotechnical work will include permeability and strength testing, and preparation of geotechnical models to ascertain the final pit wall slopes. A hydrogeology study will also be completed to assess the impacts of ground water on the mining operations, and to plan the pumping activities that will be necessary during the mining operations.

### Metallurgical Optimisation

Further metallurgical test work will be completed aimed at improving processing recoveries and concentrate grades, and targeting lower operating costs. The PFS assumes a metallurgical recovery of 80% and a 5.75% Li<sub>2</sub>O concentrate grade. However, recovery rates of up to 88% and concentrate grades higher than 6% Li<sub>2</sub>O have been achieved in historical metallurgical testing on selected samples.

The program will initially address the impact of waste dilution on the concentrate grade. Previous metallurgical testing incorporated the anticipated 5% waste dilution in the ore. QEMSCAN analysis on the flotation concentrate indicates that mined waste material (amphibole) is reporting to the final flotation concentrate and some simple flow sheet modifications should be able to remove the amphibole. Testing will be undertaken to ascertain whether further process sheet improvement and/or mining to an ore boundary (0% dilution) to avoid waste dilution will result in an improvement of the concentrate grade.

Other metallurgical testing will be focused on improving recoveries and optimising the flow sheet to achieve lower costs. Table 1 demonstrates the sensitivity to improvements in the metallurgical recovery and processing costs from the PFS.

Table 1 - Sensitivity to Main Assumptions								
Variation		-30%	-20%	-10%	0%	10%	20%	30%
<b>Processing Recovery</b>								
Recovery	%	56%	64%	72%	80%	88%	96%	
NPV	\$M	-4	44	92	140	188	236	
IRR	%	7%	17%	27%	39%	51%	63%	
<b>Processing Costs</b>								
Unit Cost	\$/t	113.60	15.55	17.49	19.43	21.38	23.32	25.26
NPV	\$M	172	162	151	140	130	119	108
IRR	%	47%	44%	42%	39%	36%	34%	31%

## Updated Feasibility Study and Ore Reserve Estimate

Following completion of the updated Mineral Resource estimate and PFS, a new Ore Reserve estimate will be reported.

## Permitting and Approvals

Following recent discussions with the Provincial authorities, the biological environment species inventory and baseline surface water quality programs were defined. The inventory assessment will begin in June 2017 and will end in late 2017. At the same time, a drilling campaign to define the hydrogeological regime and the quality of groundwater will be initiated. It is anticipated the basic environmental studies required for permit applications will be completed by late 2017.

At the social level, a list of stakeholders has been completed and a communication strategy to present the project to the local community and First Nations has been developed. Meetings with stakeholders are expected to begin soon and continue throughout the life of the project.

In addition, the outline of the mining lease was approved by the Ministère de l'Énergie et des Ressources Naturelles ("MERN"). On-going work programs required to approve the mining lease include, completion of Definitive Feasibility Study, a formal location survey and environmental certification.

## Lithium Concentrate Pricing Surprising on the Upside

The pricing of lithium concentrates being sold from Australia to China continue to surprise on the upside. Recently announced pricing arrangements, including:

- Neometals has entered into contracts for 6% Li<sub>2</sub>O concentrates at US\$750 per tonne CFR China for shipments departing Australia before 30 June 2017. Pricing of subsequent shipments is to be set on a 6-month basis by a formula based on a weighted average price of Chinese imports of Lithium Carbonate and Lithium Hydroxide plus a floor price consistent with the original off-take agreement;
- Galaxy has entered into contracts for all of 2017 production of 120,000 tonnes at a base price of US\$830 per tonne FOB for 5.5% Li<sub>2</sub>O concentrate. The contract terms provided a payment bonus of US\$15 per tonne for every 0.1% improvement in the concentrate grade above the 5.5% Li<sub>2</sub>O base rate or US\$905 per tonne FOB for a 6% Li<sub>2</sub>O concentrate; and
- Tawana has agreed a fixed price for all production from no later than 15 March 2018 up to 31 December 2019 of US\$880/t FOB Esperance for 6% Li<sub>2</sub>O.

The new pricing regime reflects the much tighter market for concentrates as new projects commission slower than forecast and financing constraints slow the planned development timetables for other advanced projects.

The Company notes that its benchmark pricing assumptions for the recently completed PFS of US\$515/tonne FOB (5.75% Li<sub>2</sub>O concentrate) are well below the current prices of lithium concentrate contracts for 2017 and is considered conservative.

For more information, please contact:

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Sayona Mining Limited is an Australian, ASX-listed (SYA), company focused on sourcing and developing the raw materials required to construct lithium-ion batteries for use in the rapidly growing new and green technology sectors. Please visit us as at [www.sayonamining.com.au](http://www.sayonamining.com.au)

#### **Previous Disclosure - 2012 JORC Code**

Certain Information relating to Mineral Resources, Exploration Targets and Exploration Data associated with the Company's project has been extracted from the following ASX Announcement:

- Authier Lithium Project JORC Significantly Expanded, 23 November, 2016
- Authier Project Pre-Feasibility Study, 16 February 2017
- Authier Maiden JORC Ore Reserve, 16 February 2017
- Authier Phase 2 Drilling Program Expands Mineralised Zone, 10 April 2017

Copies of these reports are available to view on the Sayona Mining Limited website [www.sayonamining.com.au](http://www.sayonamining.com.au). These reports were issued in accordance with the 2012 Edition of the JORC Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.