

Mina do Barroso Lithium Project

14th NOVEMBER 2019

Robust Results from Grandao Variability Test Work and Encouraging Preliminary Metallurgical Test Work Results from both Pinheiro and Aldeia Deposits

Savannah Resources plc (AIM: SAV, FWB: SAV and SWB: SAV) ('Savannah' or the 'Company'), the AIM quoted resource development company, which is focused on becoming Europe's most significant producer of spodumene lithium from its Mina do Barroso Project in Portugal ('Mina do Barroso', 'MdB' or 'the Project'), is pleased to announce that its ongoing metallurgical test work programme continues to successfully produce saleable grades of spodumene lithium concentrate with excellent recoveries.

Highlights:

- Excellent progress made with metallurgical test work, underlining the Mina do Barroso Project's potential to become a key supplier of spodumene lithium to the European electric vehicle supply chain
- Savannah has successfully produced high quality spodumene concentrates from the Grandao, Pinheiro and Aldeia deposits at the Project, using a "whole of ore flotation" process developed during the previous test work programmes
- The recovery rates and the purity of spodumene concentrates produced from varying samples taken from the Grandao orebody vindicates Savannah's decision to expand its test work programme to produce a robust processing flowsheet
- Savannah continues to de-risk the Project by building up a comprehensive understanding of how best to manage the metallurgical outcomes for the Mina do Barroso deposits

Grandao deposit:

- To confirm that a robust process flow sheet can be developed to achieve saleable lithium concentrate grades from all parts of the deposit, a variability test work programme was conducted to assess the metallurgical performance of various lithologies, lithium grades and weathering states. The 'whole-of-ore' laboratory bench scale flotation test work results, on the fresh and transitional Grandao variability samples tested, excluding the transitional aplite sample (which represents less than 3% of the deposit), indicates lithia (Li₂O) recoveries and concentrate grades of:
 - 76% recovery and 6% concentrate grades for the fresh samples
 - 74% recovery and 6% concentrate grades for the transitional samples

Pinheiro & Aldeia deposits:

- Preliminary metallurgical whole of ore float tests on both deposits confirm the potential to produce saleable concentrate grades
- Testing, which is yet to be optimised, produced concentrates grades of up to 6.1% Li₂O, with recoveries in excess of 77% at Pinheiro and 5.5% Li₂O, with recoveries in excess of 73% at Aldeia

Conclusions & Next steps:

- Geometallurgical modelling highlighted that c.93% of the global Mineral Resources for the Project are considered fresh mineralisation
- The predominance of fresh mineralisation provides a significant advantage to the Project as it would allow bulk mining techniques to be used, which limits dilution or contamination
- The lithium concentrates produced from all deposits have low iron and impurity levels making for a very saleable concentrate
- Significant scope remains to further optimise and improve upon these results which Savannah is doing through its ongoing metallurgical test work programmes - further results will be announced as they become available.

Savannah's CEO, David Archer said: *"These are excellent results which validate the application of the recently defined, "whole-of-ore" flotation circuit to the Grandao, Pinheiro and Aldeia deposits at the Mina do Barroso Lithium Project. They are broadly consistent with the recovery and grade assumptions in last year's Scoping Study of 80% recoveries and 6% Li₂O grades in the concentrate. The Scoping Study results were based on the then preferred flow sheet of initial concentration by Dense Media Separation followed by flotation. However, the subsequent Definitive Feasibility Study test work has shown that "whole-of-ore" float has the potential to provide the best overall economic outcomes for the Project. Additionally, the current work resulted in low levels of the iron, potassium and sodium making for a very saleable concentrate.*

"We have put an enormous amount of effort into validating the new flow sheet. While flotation is a venerable processing technique in the mining industry, we have sought to ensure the application of the technique to Mina do Barroso spodumene mineralisation is optimised. The work was designed to test the performance of the flow sheet with different weathering states of the mineralisation, dealing with the presence of micas and to test the performance from lower grade lithium mineralisation. Our results vindicate the extra time and investment we have put into the metallurgical test work programmes, which will now continue, culminating in a final stage of pilot plant scale testing."

Test Work Overview

Details of the test work programme are detailed in Appendix A.

Further Work

Following the robust results from the **Grandao** "whole-of-ore" laboratory programme, flotation work will now focus on final process flowsheet refinements prior to pilot plant test work.

The results produced from these preliminary tests on both **Pinheiro and Aldeia** have demonstrated that commercially acceptable grades and recoveries can be generated using a standard flotation process. Optimisation and variability testing are ongoing as further samples become available.

Savannah is progressing the metallurgical test programme at laboratory scale to focus on the following:

- Screening new reagents to improve the recoveries and concentrate grades
- To test the variability
- To achieve further optimisation by doing locked cycle testing
- To test the recovery of acceptable feldspar and quartz concentrates

Competent Person Statement

The information in this announcement that relates to exploration results is based upon information compiled by Mr Dale Ferguson, Technical Director of Savannah Resources Limited. Mr Ferguson is a Member of the Australasian Institute of Mining and Metallurgy (AusIMM) and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the December 2012 edition of the “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves” (JORC Code). Mr Ferguson consents to the inclusion in the report of the matters based upon the information in the form and context in which it appears.

The information in this release that relates to metallurgy and metallurgical test work has been reviewed by Mr Noel O’Brien, FAusIMM, MBA, B. Met Eng. Mr O’Brien is not an employee of the Company but is employed as a contract consultant. Mr O’Brien is a Fellow of the Australasian Institute of Mining and Metallurgy and has sufficient experience with the style of processing response and type of deposit under consideration, and to the activities undertaken, to qualify as a competent person as defined in the 2012 edition of the “Australian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves” (The JORC Code). Mr O’Brien consents to the inclusion in this report of the contained technical information in the form and context as it appears.

Regulatory Information

This announcement contains inside information for the purposes of Article 7 of Regulation (EU) 596/2014.

****ENDS****

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About Savannah

Savannah is a diversified resources group (AIM: SAV) with a portfolio of energy metals projects - lithium in Portugal and copper in Oman - together with the world-class Mutamba Heavy Mineral Sands Project in Mozambique, which is being developed in a consortium with the global major Rio Tinto. The Board is committed to serving the interests of its shareholders and to delivering outcomes that will improve the lives of the communities we work with and our staff.

The Company is listed and regulated on AIM and the Company's ordinary shares are also available on the Quotation Board of the Frankfurt Stock Exchange (FWB) under the symbol FWB: SAV, and the Börse Stuttgart (SWB) under the ticker "SAV".

APPENDIX A

Test Work Overview

Savannah has successfully produced good quality spodumene concentrates from all of the Grandao, Pinheiro and Aldeia deposits, using a “whole of ore flotation” process developed during the previous test work programmes.

Grandao

277 diamond drill core bagged samples, from the Grandao deposit, Mina do Barroso Project, were provided as whole cores. Each supplied bagged core section was crushed at 19 mm with a sub-split taken for head assay to avoid assay variation from twin hole assay data (Geology drill hole database) prior to compositing.

The samples were composited based on assay data and geological logging descriptions on the material type and degree of oxidation/weathering profile. Samples were typically selected along contiguous drill hole intercepts, and also with some edge material included. The head assay data and geology descriptions for the composite samples is summarised in Table 1, with the samples sorted by weathering profile.

Table 1. Grandao Head Assay and Sample Summary Table

Composite ID	Hole ID	From (m)	To (m)	Sample Mass (kg)	Li ₂ O (%)	Fe ₂ O ₃ (%)	Na ₂ O (%)	K ₂ O (%)	Description
GRA-M009	18GRADD021/22/28	38.0	47.0	81	1.24	1.15	3.30	3.21	Fresh with ~12% schist, mixture of banded and pegmatite
GRA-M010	18GRADD022/28	47.9	70.0	96	1.04	0.42	4.63	2.60	all Fresh, ~85% banded and rest pegmatite
GRA-M012	18GRADD020/28	47.0	63.7	75	0.88	0.35	4.35	2.86	55% Fresh, primarily pegmatite with ~30% aplite and banded
GRA-M016	18GRADD020/22/28	45.0	62.0	78	1.26	1.62	3.33	2.73	Mixture (60%) Fresh with a higher (~20%) of schist, rest pegmatite
GRA-M007	18GRADD008/23	24.0	53.2	81	0.82	1.02	3.90	3.26	all Transitional, all pegmatite
GRA-M008	18GRADD020/21/28	10.0	60.0	93	1.28	0.29	4.14	2.39	all Transitional, mixture of banded and pegmatite
GRA-M011	18GRADD019/23	18.7	24.7	84	0.96	0.33	3.81	2.84	all Transitional, all pegmatite
GRA-M014	18GRADD019/23/25	6.1	29.0	91	0.79	0.39	4.57	2.83	Banded Transitional
GRA-M013	18GRADD019/20/25/28	11.2	43.5	56	0.79	0.38	4.58	2.67	Aplite Transitional
GRA-M015	18GRADD008/19/23/25	0.5	50.35	72	0.76	0.50	4.53	2.82	all Transitional, primarily pegmatite with <10% each aplite and banded

'Whole of ore' laboratory bench scale flotation tests were performed on each of the composited Grandao variability samples, and test work conditions comprised:

- Grind to P₈₀ 106 µm
- Deslime (at ~P₈₀ 20 µm),
- Wet high intensity magnetic separation
- Rougher mica pre-float
- Rougher/cleaner/re-cleaner stage spodumene flotation,

The ‘whole-of-ore’ laboratory bench scale flotation test work results, for the combined spodumene re-cleaner 1 to 3 concentrates, are presented in Table 2.

Table 2: Global Summary of Spodumene Re-Cleaner Flotation (Con 1-3), Grandao Composites

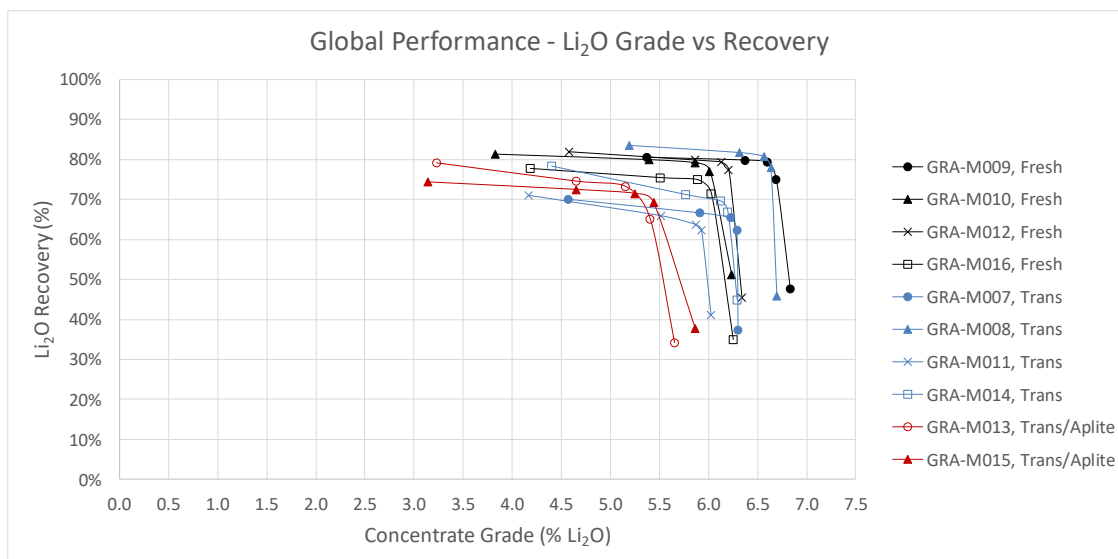
Composite ID	Mass* Deport. (%)	Li ₂ O* Deport. (%)	Li ₂ O (%)	Fe ₂ O ₃ (%)	Na ₂ O (%)	K ₂ O (%)	LOI ₁₀₀₀ (%)**	Description
GRA-M009	15.1%	79.3%	6.60	0.66	0.41	0.46	1.25	Fresh, ~10% schist
GRA-M010	13.6%	79.1%	5.86	0.44	0.83	1.00	1.61	Fresh
GRA-M012	11.7%	79.3%	6.13	0.38	0.63	0.56	1.53	Fresh
GRA-M016	13.8%	74.9%	5.89	0.72	0.57	0.63	1.51	Fresh, ~20% schist
GRA-M007	9.7%	65.4%	6.23	0.88	0.56	0.48	1.55	Transitional
GRA-M008	14.9%	80.8%	6.57	0.38	0.66	0.61	1.26	Transitional
GRA-M011	10.0%	63.7%	5.87	0.54	0.83	0.65	1.84	Transitional
GRA-M014	9.1%	69.6%	6.13	0.61	0.63	0.71	1.63	Transitional
GRA-M013	11.5%	73.3%	5.15	0.54	1.24	0.81	1.64	Transitional / Aplite
GRA-M015	10.1%	71.4%	5.25	0.47	1.36	0.60	1.73	Transitional / Aplite

* Global deportment

**LOI = Loss on Ignition (Moisture)

The lithia flotation kinetic grade and recovery curves for each Grandao composite sample are illustrated in Figure 1, with the samples sorted on the material type and degree of oxidation/weathering profile.

Figure 1: Spodumene Flotation Concentrate Grade and Recovery Curves, Grandao Composites



- The fresh and transitional Grandao variability samples assessed in this work produced a 6.0% Li₂O concentrate grade via the ‘whole-of-ore’ flotation process flowsheet.
- The summarised flotation concentrate data, extrapolated at a 6.0% Li₂O concentrate grade on the fresh and transitional Grandao variability samples tested, indicates lithia recoveries of:
 - 72% - 80% for the fresh samples
 - 66% - 83% for the transitional samples, excluding the transitional aplite sample which represents less than 3% of the deposit
- Circa 80% to 90% of the iron was removed in the three stages of feed preparation prior to spodumene flotation – via desliming, magnetic separation and mica removal via flotation.
- Spodumene flotation concentrate produced in this work, and ranging between 5.5% to 6.0% Li₂O, contained less than 1% Fe₂O₃ in all cases.
- At a flotation concentrate grade of 6.0% Li₂O, the halide content was less than 1.0% Na₂O and 1.0% K₂O in the fresh and transitional samples.
- At a flotation concentrate grade of 5.5% Li₂O, the halide content was less than 1.3% Na₂O and 1.1% K₂O in all samples (fresh, transitional and transitional/aplite).

Pinheiro

Two samples (Table 3) from the Pinheiro deposit were subjected to standard metallurgical tests to enable evaluation of the potential final products.

Table 3. Pinheiro Head Assay and Sample Summary Table

Composite ID	Hole ID	From (m)	To (m)	Sample Mass (kg)	Li ₂ O (%)	Fe ₂ O ₃ (%)	Na ₂ O (%)	K ₂ O (%)	LOI ₁₀₀₀ (%)	Description
PNR – M001	18PNRDD001	15.10	22.50	73	1.29	0.65	3.41	2.65	0.96	Fresh pegmatite with ~10% schist
PNR – M004	18PNRDD002	39.00	50.25	103	1.12	0.62	3.36	2.84	1.41	Transitional

‘Whole of ore’ laboratory scale flotation test work was performed on the Pinheiro samples, using standard conditions:

- Grind to P80 106 µm
- Deslime (at P80 20 µm), followed by wet high intensity magnetic separation
- Rougher/cleaner mica pre-float
- Rougher and single cleaner stage spodumene flotation

The influence of collector type was also investigated:

- Alternative spodumene collector, Clariant Flotisor 7801, with 750 g/t dosage
- Oleic acid, a common monounsaturated fat in the human diet, with 2400 g/t dosage

The high-level summary of spodumene flotation concentrate produced from this suite of tests is presented in Table 4 and Figure 2.

Table 4: Global Summary of Spodumene Flotation, Pinheiro Composites

Composite ID	Mass Deport. (%)	Li ₂ O Deport. (%)	Li ₂ O (%)	Fe ₂ O ₃ (%)	Na ₂ O (%)	K ₂ O (%)	LOI ₁₀₀₀ (%)
PNR – M001*	13.2	56.3	5.36	0.71	0.71	0.86	0.99
PNR – M004**	13.6	77.2	6.08	0.43	0.60	0.37	0.83

*Spodumene rougher concentrate grade, 2400 g/t oleic acid, **Spodumene Re-cleaner 1-2 Concentrate, 750 g/t Flotisor 7801

LOI = Loss on ignition (moisture)

The results produced by the flotation conditions for PNRM004 produced the best results of 6.1% Li₂O at 77% recoveries and further test work will focus on other samples from the Project using these flotation conditions and looking to further optimise and improve the flotation performance.

Aldeia

Two samples (Table 3) from the Aldeia deposit were subjected to standard metallurgical tests to enable evaluation of the potential final products.

Table 5. Aldeia Composite Head Assay and Sample Summary Table

Composite ID	Hole ID	From (m)	To (m)	Sample Mass (kg)	Li ₂ O (%)	Fe ₂ O ₃ (%)	Na ₂ O (%)	K ₂ O (%)	LOI ₁₀₀₀ (%)	Description
ALD-M005	19ALADD001	5.65	23.50	117	0.84	1.26	3.05	3.02	1.56	~75% Fresh with oxides on fractures, ~25% schist material
ALD-M006	19ALADD003	23.00	36.00	113	1.10	0.81	3.70	3.14	1.06	~25% Fresh, ~75% Fresh with oxides on fractures

‘Whole of ore’ laboratory bench scale flotation test work was performed on the Aldeia composite samples (Table 5), and preliminary conditions comprised:

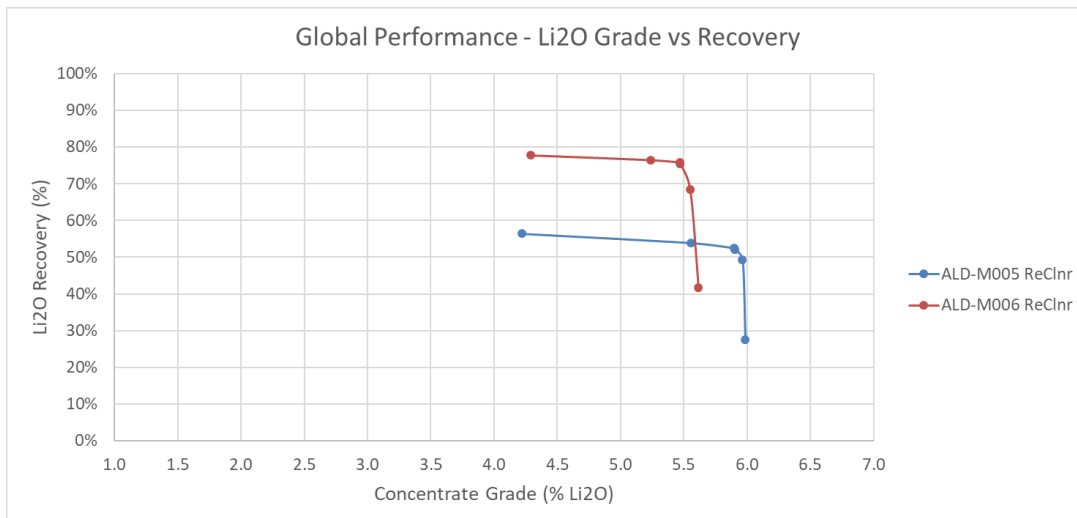
- Grind to P80 106 µm
- Deslime (at P80 20 µm), followed by wet high intensity magnetic separation
- Rougher mica pre-float
- Rougher/cleaner/re-cleaner stage spodumene flotation

The laboratory bench scale re-cleaner flotation test work results for the Aldeia composites are summarised in Table 6 and Figure 3.

Table 6: Global Summary of Spodumene Flotation, Aldeia Composites

Composite ID	Mass Deport. (%)	Li ₂ O Deport. (%)	Li ₂ O (%)	Fe ₂ O ₃ (%)	Na ₂ O (%)	K ₂ O (%)	LOI ₁₀₀₀ (%)
ALD-M005	8.6	53.9	5.56	0.85	0.65	0.85	2.67
ALD-M006	12.9	68.4	5.55	0.78	0.47	1.81	2.38

Figure 2. Spodumene Re-Cleaner Flotation Performance, Aldeia Composites



Further development test work is now required to optimise and improve the Aldeia flotation performance.

Geometallurgy

A detailed geometallurgical model for each deposit is under construction to ensure that the Company has a thorough understanding of how each deposit is likely to perform when processed. As part of the variability test work, samples from each rock type were processed including samples of different grade and weathering as well as introducing up to 10% of the host schist. This process was completed to ensure that a robust flow sheet can be developed which can treat all rock types and produce a saleable concentrate at acceptable recoveries.

Geometallurgical modelling has highlighted:

- The major rock type (over 80%) in the deposits is pegmatite which has routinely reported very good recoveries and concentrate grades (Table 7)
- Around 93% of the global resources for the Project are considered fresh with only limited transitional material present (Table 8)
- The geometallurgical model has highlighted the distribution of the transitional material where metallurgical performance is more variable than in the fresh material - having a strong understanding of the distribution of these areas will enable optimal mine scheduling to maximise recoveries and cash flows and to reduce metallurgical risk.
- A significant advantage of the Project is the predominance of fresh rock type which means bulk mining can be done which limits dilution or contamination

Table 7. May 2019 Resource Summary Based on Rock Type

Rock Type	Mineralisation %	Minimum Li ₂ O%	Maximum Li ₂ O%	Average Li ₂ O%
FGP	80.6	0.50	3.19	1.23
FGB	5.65	0.03	2.95	0.94
FGA	3.75	0.03	1.91	0.53
SCH	10.0	0.00	1.91	0.53
	100.0			

FGP = Pegmatite, FGB = Banded Pegmatite/Aplite, FGA = Aplite, SCH=Schist

Table 8. May 2019 Resource Summary Based on Weathering Types

Deposit	Total (t)	Fresh (t)	Fresh (%)	Transitional (t)	Transitional (%)
Grandao	17,739,100	16,288,200	91	1,450,900	9
Pinheiro	1,958,600	1,845,000	94	113,600	6
Reservatorio	3,190,100	2,940,800	98	250,100	9
Aldeia	3,468,900	3,465,500	>99	3400	<0
NOA	640,600	574,500	88	66,100	12
Total	26,997,300	25,113,200	93	1,884,200	7