

21 May 2019

Exceptional Metallurgical Results Returned Cape Coast Lithium Portfolio Ewoyaa Pegmatite Project Ghana, West Africa

IronRidge Resources Limited (AIM: IRR, 'IronRidge' or the 'Company'), the African focussed minerals exploration company, is pleased to announce exceptional metallurgical test-work results from the Ewoyaa Lithium Project ('Ewoyaa' or the 'Project'), just one of multiple pegmatite targets within the Cape Coast Lithium Portfolio, located in Ghana, West Africa.

HIGHLIGHTS:

- > Exceptional metallurgical results achieved for coarse grained pegmatite with concentrate grades consistently above 6% Li₂O, the current industry standard and recoveries up to 85% using Heavy Liquid Separation ('HLS') beneficiation at a coarse 6.3mm crush.
- > Spodumene confirmed as the dominant lithium mineral; the preferred hard-rock lithium feedstock to customers.
- Low contaminant levels in the coarse pegmatite concentrates; generally below the nominal 1% Fe₂O₃ currently preferred by customers.
- ➢ Fine grained pegmatite samples achieved HLS recoveries up to 60% and concentrate grades between 5.12% to 7.23% Li₂O at a coarse 6.3mm crush.
- Sighter flotation test-work at a nominal 106 micrometre ('μm') grind on fine grained pegmatite, incorporating a mica pre-flot and various collectors, achieved recoveries between 56.5% to 95.5% and concentrate grades between 6% to 4.16% Li₂O respectively.
- > Negligible lithium reporting to gravity rejects from the coarse pegmatite; this is significant as less material would need to be stockpiled or processed through a potential flotation plant.
- > Ewoyaa deposit amenable to simple crushing and gravity beneficiation to generate saleable concentrates, in addition to further recovery by flotation if warranted; low capital intensity start-up implied.
- > Metallurgical test-work completed on 17 diamond drill core composites from across the Ewoyaa deposit footprint for a total of 427kg of material tested.

Commenting on the Company's latest progress, Vincent Mascolo, CEO & Managing Director of IronRidge, said:

"Initial metallurgical test-work results on representative core samples from across the strike extent of the Ewoyaa deposit have delivered exceptional results.



"Test-work has demonstrated that the project can deliver a premium product; >6% Li₂O concentrates with low level contaminants using simple gravity beneficiation on a coarse 6.3mm crush.

"We are pleased to have confirmed that spodumene is the dominant lithium mineral, which is the preferred hard-rock lithium feedstock for customers.

"Further sighter flotation test-work at 106 μ m grind on fine pegmatite achieved exceptional recoveries up to 95.4% with concentrate grades between 4.2% to 6% Li₂O, which is a a great initial result and demonstrates further optionality for a processing plant.

"This suggests a simple flowsheet design with low capital intensity start-up, which can be further enhanced with a flotation cell to recover additional lithium credits at a later stage.

"We look forward to advancing our knowledge of the project with our Technical Consultant Mr Noel O'Brien."

Location:

The Ewoyaa deposit is well located within 1km of a bitumen highway and adjacent to grid power, within 100km of an operating deep-sea port and within the pro-mining, stable jurisdiction of Ghana (*refer Figure 1*). Multiple additional pegmatite targets occur adjacent to Ewoyaa including the drill tested Abonko deposit, the developing Ewoyaa West target and additional exploration targets, as well as the historical Egyasimanku Hill deposit (1.48Mt @ 1.66% Li₂O, non JORC) further to the east.



Figure 1 | Ewoyaa Project location relative to major infrastructure

Metallurgical Test-Work:

The Company completed first pass metallurgical test-work at NAGROM Laboratories in Perth, Western Australia on seventeen (17) composite samples for a total 427kg of material. Representative samples of coarse and fine pegmatite units were collected from nine evenly spaced PQ-HQ diameter diamond drill holes over the approximate 2km striking Ewoyaa deposit which remains open in several directions (*refer* **RNS** of **5**th **March 2019**).



Two types of pegmatite have been observed in drilling to date; coarse type 'P1' pegmatite and finer grained type 'P2' pegmatite. Diamond drilling to date suggests roughly equal proportions of both types and further work is underway to understand their distribution. Observations in outcrop at Abonko to date suggest a prevalence of type P1 coarse pegmatite.

Test-work was carried out to assess mineralisation amenability to gravity beneficiation using Heavy Liquid Separation ('HLS') and flotation beneficiation, and their associated concentrate grades. Work included initial HLS screening to determine preferred crush size on one composite of each P1 and P2, variability HLS test-work at the defined 6.3mm crush on sixteen P1 and P2 composites and flotation test-work on one P2 fine grained pegmatite. Composite locations are shown in *Figure 2*.



Figure 2 | Metallurgical test-work sample locations from nine diamond drill holes across the strike of the Ewoyaa deposit

1. Determination of crush size:

Two samples of the coarser P1 mineralisation and the finer P2 mineralisation were used for HLS screening to determine the preferred crush size for further evaluation. Each sample was crushed at 16mm, 10mm, 6.3mm and 4 mm and wet screened at 0.5mm.

The wet screening analysis indicated normal fines production for pegmatites (*refer Table 1*). The plus 0.5mm fractions from each sample and crush size were subjected to densimetric profiling at 2.9, 2.8, 2.7, 2.6 and 2.5



densities using heavy liquids (*refer Table 2*). The wet screening analysis indicates the mineralisation displays typical fracture behaviour to similar pegmatites.

The results clearly show an improvement in recovery and grade with finer crushing to 6.3mm and marginal improvement after that, which compares to a number of other lithium projects either in operation or under development. Therefore 6.3mm was chosen as the preferred crush size for the HLS variability work at 2.6 and 2.8 densities.

The HLS data also shows that the coarser P1 mineralisation responds very well to beneficiation by gravity, with 71.5% of the lithium being recovered into 18.6% of the mass at a grade of 6.2% Li_2O . After allowing for the removal of fines before gravity separation, the overall lithium recovery is still 63.6% (*refer Table 2*)

As expected the finer grained P2 mineralisation displayed lower gravity recoveries with 19.8% recovery being achieved at a grade of 6.4% Li₂O (*refer Table 2*). This recovery is still considered to be economic and when combined with flotation recovery on the middlings and fine material, is expected to result in much better and economic recoveries. The focus of the P2 mineralisation will be to increase overall recovery by using flotation as well as gravity.

Table 1: Wet Screen Analysis of grade, mass recovery and lithium recovery at various crush sizes for P1 and P2 material.

	Crush		Wet Screen						
	Size (mm)	Head Grade % Li ₂ O	Mass Yield % -0.5mm	Recovery % Li₂O -0.5mm	Grade % Li₂O +0.5mm	Grade % Li₂O -0.5mm			
	16mm	1.74	4.0	3.6	1.75	1.56			
P1 Coarse Fresh GMS0046-50	10mm	1.63	10.4	9.6	1.65	1.50			
	6.3mm	1.52	11.2	11.1	1.52	1.52			
	4mm	1.61	16.7	16.3	1.62	1.57			
	16mm	1.14	7.6	9.7	1.12	1.46			
P2 Fine Fresh GMS0036-41	10mm	1.15	10.3	12.9	1.12	1.43			
	6.3mm	1.23	14.2	17.0	1.19	1.47			
	4mm	1.21	19.5	23.5	1.15	1.45			

Table 2: HLS results for +0.5mm material at SG2.8 sink for P1 and P2 material at various crush sizes

		HLS +0.5mm							
	Crush		SG2.8	Sink		SG2.6 Flot			
	(mm)	Mass Yield %	Recovery % Li₂O	Grade % Li₂O	Grade % Fe ₂ O ₃	Mass Yield %	Recovery % Li₂O	Grade % Li ₂ O	Grade % Fe ₂ O ₃
	16mm	14.5	51.9	5.29	0.73	24.4	0.5	0.03	0.02
P1 Coarse Fresh GMS0046-50	10mm	15.2	57.5	5.71	0.82	29.9	0.6	0.03	0.02
	6.3mm	18.6	71.5	6.21	0.88	25.7	0.7	0.04	0.02
	4mm	18.6	72.3	6.33	0.96	27.1	0.5	0.03	0.02
	16mm	7.4	27.4	4.22	0.53	11.3	2.0	0.2	0.13
P2 Fine Fresh GMS0036-41	10mm	5.4	24.1	4.85	0.66	19.6	3.4	0.19	0.16
	6.3mm	8.0	34.0	5.03	0.69	14.1	1.7	0.14	0.12
	4mm	8.7	38.4	5.16	0.72	22.2	3.5	0.18	0.13



2. HLS Variability Results:

A total of fifteen (15) approximate 5m PQ-HQ drill core composites of P1 and P2 type pegmatites were crushed to 6.3mm and wet screened at 0.5mm with results summarised in *Table 3*.

From this, it is evident the coarse P1 mineralisation shows a significant upgrade in lithium content in the +0.5mm fraction which will naturally enhance the recovery of lithium by gravity and reduce the amount of lithium losses in reject fines. The finer P2 material is lower grade and does not display much variation in the amount of fines produced. The samples highlighted grey were very low grade and probably would not be processed in practice, but the results are included for comparison.

The HLS results are summarised in **Table 4**. All of the P1 samples have produced excellent results in terms of both grade; well above 6% in all cases and recovery, which ranges from 69% to 85%. Further work will be aimed at optimising the gravity recovery by lowering the grade, but still maintaining an overall grade greater than 6% Li_2O . It is also notable that the iron content of the concentrates is generally below the nominal threshold of 1% Fe_2O_3 .

The P2 material has again displayed a lesser response to gravity processing with lower recoveries of between 38% to 59% and lower grades between 5.12% to 7.23% Li_2O .However, the grades are generally above 5.5%, which means the concentrates could be blended with the higher grade P1 concentrates to achieve acceptable product for sale.

All HLS results are summarised in *Figure 3* which shows outstanding recoveries and concentrate grades for the P1 Coarse mineralisation composites and good recoveries and grades for the P2 type pegmatites. A selection of spodumene concentrates from the HLS test-work are shown in *Figure 4*.

	Head	Wet Screen			
	Grade % Li ₂ O	Mass Yield % -0.5mm	Recovery % Li₂O -0.5mm	Grade % Li ₂ O +0.5mm	Grade % Li ₂ O -0.5mm
P1 Weathered					
GMS0001-5	1.18	27.1	15	1.38	0.65
P1 Coarse Fresh					
GMS0006-10	2.01	11.3	8.5	2.07	1.52
GMS0021-25	2.38	7.6	5.9	2.43	1.83
GMS0031-35	1.20	7.9	7.5	1.21	1.14
GMS0056-60	1.73	20.8	14.9	1.86	1.24
GMS0076-80	1.50	17.2	10.1	1.62	0.88
P2 Weathered					
GMS0016-20	1.14	17.3	15.1	1.17	1.00
GMS0066-70	0.45	21.0	13.6	0.49	0.29
GMS0081-85	0.26	34.9	30.4	0.28	0.22
P2 Fine Fresh					
GMS0011-15	0.99	13.2	11.4	1.01	0.85
GMS0026-30	0.19	10.9	14.2	0.18	0.24
GMS0051-55	0.83	14.7	15.0	0.83	0.85
GMS0061-65	1.91	16.4	12.3	2.01	1.43
GMS0071-75	0.56	14.9	13.3	0.57	0.50
GMS0086-90	1.13	17.8	14.0	1.19	0.90

Table 3: Wet Screen Analysis of grade, mass recovery and lithium recovery for +0.5mm and -0.5mm size fractions at a 6.3mm crush for P1 and P2 variability samples

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Table 4: HLS results for 6.3mm +0.5mm size fraction at 6.3mm crush at SG2.85 sink and SG2.6 float for P1 andP2 variability samples

	HLS -6.3+0.5mm							
		SG2.8	SG2.6 Float					
	Mass	Recovery	Grade %	Grade %	Mass	Recovery	Grade	Grade %
	Yield %	% Li₂O	Li ₂ O	Fe ₂ O ₃	Yield %	% Li2O	% Li2O	Fe ₂ O ₃
P1 Weathered								
GMS0001-5	17.3	75.4	6.64	0.65	34.5	1.82	0.08	0.3
P1 Coarse Fresh								
GMS0006-10	24.4	77.0	6.58	0.90	27.5	0.91	0.07	0.04
GMS0021-25	28.9	82.8	6.85	0.98	13.7	0.36	0.06	0.09
GMS0031-35	13.3	69.3	6.53	0.92	15.6	0.60	0.05	0.09
GMS0056-60	21.4	72.5	6.71	0.91	16.6	0.44	0.05	0.07
GMS0076-80	21.4	85.5	6.92	1.15	37.3	0.84	0.04	0.06
P2 Weathered								
GMS0016-20	13.4	59.7	6.01	0.59	28.9	1.2	0.06	0.10
GMS0066-70	4.7	59.1	5.96	1.43	22.2	2.2	0.05	0.09
GMS0081-85	1.9	63.8	7.23	2.06	60.5	18.8	0.07	0.38
P2 Fine Fresh								
GMS0011-15	6.9	41.2	5.95	0.97	13.8	1.4	0.10	0.13
GMS0026-30	0.44	8.6	3.61	5.54	38.3	28.8	0.14	0.35
GMS0051-55	5.0	38.4	5.65	2.34	40.1	4.6	0.08	0.11
GMS0061-65	20.6	58.5	5.83	0.9	8.1	0.24	0.06	0.19
GMS0071-75	7.6	65.8	6.00	4.56	30.0	1.94	0.05	0.1
GMS0086-90	9.4	39.0	5.12	3.45	26.0	1.27	0.06	0.11



Figure 3 | *HLS variability results at 6.3mm crush for SG2.85 sinks showing head grade, concentrate grade and recovery*

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Figure 4 | Selection of spodumene concentrates from HLS test-work (clockwise from top left: GMS0006-10, GMS0021-25, GMS0011-15, GMS0061-65)

3. Flotation Results:

A sample of fine P2 mineralisation, which was considered to represent the most challenging for flotation, was ground to 106 microns for flotation testing. The pulp was deslimed at $20\mu m$ and then passed over a 3000-gauss magnet to remove magnetic material and lower the iron content. The resulting pulp was subjected to standard spodumene flotation conditions with results summarised in **Table 5**.

The first test did not incorporate a mica pre-flot and, whereas the lithium recovery was very good at 89.8%, the concentrate was contaminated and could only be raised to 4.37% Li₂O after several stages of cleaning.

The second test incorporated a mica pre-flot and the grade immediately increased to 6% Li2O, however there was a drop in recovery to 56.5%. It should also be noted the potassium content dropped through the removal of mica. This is important as potassium is potentially an impurity not wanted in downstream conversion plants.

The third test used a different collector and, although the grade dropped to 4.2% Li₂O, the recovery increased again to 95.4 %.

It is evident from these sighter tests, that very good recoveries can be generated from flotation, and that some optimisation is needed to get the grade/recovery balance right.



Table 5: Sighter	flotation	test-work	on P2 fine	pegmatite sample
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.				Li ₂ O				
lest # GM\$0036-41	Description	Collector	Mass yield	Recovery	Grade			
010150050 41			%	% Li ₂ O	% Li ₂ O	% Fe ₂ O ₃	% K2O	
1	No mica pre-flot	Oleic Acid	24.6	89.8	4.37	0.85	3.09	
2	Mica pre-flot	Oleic Acid	11.1	56.5	6.00	0.68	1.01	
3	Mica pre-flot	Flotinor 7801	27.3	95.4	4.16	0.59	1.34	

Next Steps:

The Company is planning follow-up metallurgical test-work on larger 20kg to 50kg composites from material already held at NAGROM Laboratories from the diamond drill programme. Test-work will include larger scale Dense Media Separation ('DMS') test-work including DMS100 cyclone gravity beneficiation on larger P1 coarse and P2 fine composites derived from across the deposit footprint.

Further work will aim to optimise the gravity recovery by lowering the grade whilst still maintaining a 6% Li₂O concentrate grade, but also increasing the concentrate tonnage. Further work will aim to optimise flotation to maximise recoveries for a 6% concentrate grade in the P2 fine pegmatite gravity circuit 'rejects' for future mine studies.

Field teams are advancing the Ewoyaa West target where pitting and trenching has defined pegmatites over a 700m strike and up to 100m width at surface, approximately 700m west of the main Ewoyaa deposit.

Certain information contained in this announcement would have been deemed inside information for the purposes of Article 7 of Regulation (EU) No 596/2014 until the release of this announcement.

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Competent Person Statement:

Information in this report relating to the exploration results is based on data reviewed by Mr Lennard Kolff (MEcon. Geol., BSc. Hons ARSM), Chief Geologist of the Company. Mr Kolff is a Member of the Australian Institute of Geoscientists who has in excess of 20 years' experience in mineral exploration and is a Qualified Person under the AIM Rules. Mr Kolff consents to the inclusion of the information in the form and context in which it appears.



The information in this announcement that relates to metallurgical results is based on information compiled by Mr Noel O'Brien, Director of Trinol Pty. Limited. Mr O'Brien is a Fellow 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 O'Brien consents to the inclusion in the report of the matters based upon the information in the form and context in which it appears.

Notes to Editors:

IronRidge Resources is an AIM-listed, Africa focussed minerals exploration company with a lithium pegmatite discovery in Ghana, extensive grassroots gold portfolio in Cote d'Ivoire and a potential new gold province discovery in Chad. The Company holds legacy iron ore assets in Gabon and a bauxite resource in Australia. IronRidge's strategy is to create and sustain shareholder value through the discovery and development of significant and globally demanded commodities.

Ghana

The Company entered into earn-in arrangements with Obotan Minerals Limited, Merlink Resources Limited, Barari Developments Limited and Joy Transporters Limited of Ghana, West Africa, securing the first access rights to acquire the historical Egyasimanku Hill spodumene rich lithium deposit, estimated to be in the order of 1.48Mt at 1.67% Li₂O and surrounding tenements. The portfolio covers some 684km² with the newly discovered Ewoyaa project including drill intersections of 128m @ 1.21% Li₂O from 3m and 111m @ 1.35% Li₂O from 37m, and a further identified 20km strike of pegmatite vein swarms. The tenure package is also highly prospective for tin, tantalum, niobium, caesium and gold, which occur as accessory minerals within the pegmatites and host formations.

Chad

The Company entered into an agreement with Tekton Minerals Pte Ltd of Singapore concerning its portfolio covering 900km² of highly prospective gold and other mineral projects in Chad, Central Africa. IronRidge acquired 100% of Tekton including its projects and team to advance the Dorothe, Echbara, Am Ouchar, Nabagay and Kalaka licenses, which host multiple, large scale gold projects. Trenching results at Dorothe, including 84m @ 1.66g/t Au (including 6m @ 5.49g/t & 8m @ 6.23g/t), 4m @ 18.77g/t Au (including 2m @ 36.2g/t), 32m @ 2.02g/t Au (including 18m @ 3.22g/t), 24m @ 2.53g/t Au (including 6m @ 4.1g/t (including 2m @ 6.2g/t) and 2m @ 6.14g/t), 14.12g/t Au over 4m, 34.1g/t over 2m and 63.2g/t over 1m, have defined significant gold mineralised quartz veining zones over a 3km by 1km area including the steep dipping 'Main Vein' and shallow dipping 'Sheeted Vein' zones.

Côte d'Ivoire

The Company entered into conditional joint venture arrangements in Côte d'Ivoire, West Africa; securing access rights to highly prospective gold mineralised structures and pegmatite occurrences covering a combined 3,187km² and 1,172km² area respectively. The projects are well located within access of an extensive bitumen road network and along strike from multi-million ounce gold projects and mines.

Australia

Monogorilby is prospective for province scale titanium and bauxite, with an initial maiden resource of 54.9MT of premium DSO bauxite. Monogorilby is located in central Queensland, within a short trucking distance of the rail system leading north to the Port of Bundaberg. It is also located within close proximity of the active Queensland Rail network heading south towards the Port of Brisbane.

May Queen is located in Central Queensland within IRR's wholly owned Monogorilby license package and is highly prospective for gold. Historic drilling completed during the 1980s intersected multiple high-grade gold



intervals, including 2m @ 73.4 g/t Au (including 1m at 145g/t), 4m @ 38.8g/t Au (at end of hole) and 3m @ 18.9g/t Au, over an approximate 100m strike hosting numerous parallel vein systems, open to the north-west and south-east.

Wholly owned Quaggy contains highly anomalous platinum, palladium, nickel, cobalt and copper exploration targets and is located in Central Queensland, within a short trucking distance of the dormant rail system to the Port of Bundaberg. It is also located within close proximity of the active Queensland Rail network heading south towards the Port of Brisbane.

Gabon

Tchibanga is located in south-western Gabon, in the Nyanga Province, within 10-60km of the Atlantic coastline. This project comprises two exploration licenses, Tchibanga and Tchibanga Nord, which cover a combined area of 3,396km² and include over 90km of prospective lithologies and the historic Mont Pele iron occurrence.

Belinga Sud is Located in the north east of Gabon in the Ogooue-Ivindo Province, approximately 400km east of the capital city of Libreville. IRR's licence lies between the main Belinga Iron Ore Deposit, believed to be one of the world's largest untapped reserves of iron ore with an estimated 1bt of iron ore at a grade >60% Fe, and the route of the Trans Gabonese railway, which currently carries manganese ore and timber from Franceville to the Port of Owendo in Libreville.

Corporate

IronRidge made its AIM debut in February 2015, successfully securing strategic alliances with three international companies: Assore Limited of South Africa, Sumitomo Corporation of Japan and DGR Global Limited of Australia. Assore is a high- grade iron, chrome and manganese mining specialist. Sumitomo Corporation is a global resources, mining marketing and trading conglomerate. DGR Global is a project generation and exploration specialist.