

#### **KORE POTASH PLC**

25 Moorgate, London EC2R 6AY United Kingdom

EMAIL AND WEBSITE info@korepotash.com www.korepotash.com

#### **DIRECTORS**

Chairman: David Hathorn CEO: Brad Sampson

Non-exec Director: Jonathan Trollip Non-exec Director: David Netherway Non-exec Director: Leonard Math Non-exec Director: Timothy Keating Non-exec Director: José Antonio Merino

#### **ISSUED CAPITAL**

(As at – 29 January 2019) 860,852,693 Ordinary Shares AIM Code: KP2 ASX Code: KP2 JSE Code: KP2

## **Kola Definitive Feasibility Study**

**London, England – 29 January 2019 – Kore Potash plc** (ASX, AIM, JSE: KP2) (**"Kore Potash", "Kore"** or the **"Company"**), is pleased to announce outcomes of the Kola Potash Project Definitive Feasibility Study ("**DFS**"). The Kola DFS was undertaken by a consortium of French engineering companies ("**FC**") during 2017 and 2018. A summary of the results is presented herein.

## Highlights:

## Business case highlights potential of the Kola asset

- Post-tax, NPV<sub>10</sub> (real) of US\$1,452M and a real ungeared IRR of 17% on an attributable basis at life-of-mine average Muriate of Potash ("MoP") prices for granular of US\$360/t CFR Brazil and standard of US\$350/t CFR Brazil
- Operating cash margin averaging 75%
- Average annual EBITDA of approx. US\$585M
- 24% annual free cash return on invested capital
- Average annual free cash flow, post-tax, post commissioning of approx. US\$500M
- 4.3-year post-tax payback period from first production

## Industry leading operating costs and cost of sales

- Mine gate operating cost (pre-transshipment) averaging US\$61.71/t, which is in the lowest cost quartile globally based on equivalent CRU market data
- Kola forecast to be lowest cost potash supplier CFR Brazil based on CRU market data
- Significant competitive advantage via low mine gate costs and short shipping distance to Brazil and West African markets
- Average cost of MoP delivered to Brazil of US\$102.47/t

#### Long life and high quality asset

- Nameplate production target of 2.2 Mtpa MoP over a 33 year life, with a scheduled life of 23 years based primarily on Ore Reserves and including 6% Inferred Mineral Resource and a further 10 years based entirely on Inferred Mineral Resources (in each case, reported in accordance with the JORC 2012)
- There is a low level of geological confidence associated with inferred mineral resources and there is no certainty that further exploration work will result in the determination of indicated mineral resource or that the production target itself will be realised
- Kola Project Ore Reserves of 152.4 Mt with average KCl grade of 32.5%, reported in accordance with JORC 2012
- Ore Reserves grade is in top quartile of all operating potash mines and potash development projects globally

## **Capital Program Aligned with Industry Averages**

- Pre-production capital cost of US\$2.1B (on EPCM basis) which includes US\$110M contingency, US\$106M of escalation and US\$89M EPCM margin
- Pre-production capital intensity of US\$956/t MoP annual capacity is in second quartile relative to MoP industry peers and suggests that further capital optimisation is possible (see Appendix A, Section 13 for further details)
- Capital cost includes value adding transshipment and overland conveyor costs of US\$120M, that were not
  considered in the Pre-Feasibility Study
- 46-month construction period, with a commencement date to be determined following advancement of construction contract negotiations and project financing

## **Upside Potential**

- Review of the DFS by Kore and its third party independent consultants have identified opportunities to further improve and optimise the project indicating that the work completed to date by the FC has not fully optimised the Kola Project. (see Appendix A, Section 14 for further details)
- These potential improvement opportunities are not included in the DFS economic evaluation and include:
  - Opportunities to reduce the technical capital cost by US\$117M
  - Further opportunity to reduce the capital costs noting that the DFS capital intensity lies in second quartile relative to MoP industry peers and in comparison to other projects, Kola has shallow shafts, low insolubles, high KCl grade and is next to the coast and the planned export jetty
  - Potential to improve KCl recovery in the process plant by 0.9% to 92.8%
  - o Potential to reduce the construction schedule by 6 months from 46 to 40 months
  - Potential to extend the life or scale of the project provided by the Sylvinite Mineral Resources at the nearby
     Dougou Extension deposit; 232Mt at 38.1% KCI (Table 4)
- Due to high operating margin and high free cash return on invested capital the Company's financial advisors (Rothschild & Co) has indicated that the project has a debt carrying potential of up to US\$1.4B
- Further work will be required to optimise the project and there is no certainty that the identified improvement opportunities can be realised

#### **Next Steps**

- The French Consortium (FC), who undertook the DFS, are contracted to deliver a proposal for an Engineering, Procurement and Construction (EPC) contract within 3 months of DFS completion. The FC have advised Kore that they expect to provide an EPC proposal to Kore within this quarter.
- Upon receipt of an EPC proposal, the existing contract between the parties provides up to two months for Kore and the FC to conclude the terms of an EPC contract.
- Kore has ability within the existing contract with the FC to seek competitive EPC proposals from European companies.
- The Company continues its engagement with the FC and Kore's consultants and technical experts with a view to further optimising the project.
- The DFS was delivered to Kore for review by the FC later than contracted, and the review of the DFS by
  consultants engaged by Kore indicates that the project design and capital cost can be further improved to reduce
  the capital cost. As a result, Kore has in accordance with the contractual terms, issued notices of deficiency to the
  FC seeking to address these matters.
- The company will continue to work with the RoC government to conclude the approval of the amended ESIA, while noting all other conventions, permits and rights to operate are in place.
- The Mining Convention requires transfer to the RoC Government of 10% of the shares in the local company that
  holds the Kola mining licence. The process to effect this transfer has not yet been clarified and Kore will progress
  this with the Government.

 The Company and its financial advisors will continue discussion with potential financiers to further the financing of the project.

**Brad Sampson, CEO of Kore, commented**, "Kore's review of the DFS confirms the high quality of this potash asset and its importance globally. Kola is designed to deliver potash to markets in Latin America and Africa at a significantly lower cost than other potash producers over a long timeframe. It stands out globally as a project that needs to be brought into operation to meet the growing global demand for MoP. In the near future, we expect the amended ESIA to be approved as the last step to full permitting of the Project".

"We look forward to receiving an EPC proposal from the French Consortium this quarter which will allow Kore to provide further detail to shareholders on the Company's plans for Kola."

## Analyst conference call and presentation

Kore will host an analyst conference call and presentation today, 29 January 2019, at 10:30am GMT. Participants can access the call by dialling one of the following numbers below approximately 10 minutes prior to the start of the call.

UK Toll-Free Number: 0800 358 9473 UK Toll Number: +44 3333 000 804

PIN: 77650625#

The presentation will be available live during the call at: https://event.on24.com/wcc/r/1925417-1/2ABD36868088F504EED26A4BF632D6F7.

A recording of the conference call will subsequently be available on the Company's website.

The presentation is also available for download from the Company's website www.korepotash.com.

**Table 1: Key Project Metrics:** 

Units	
Mt	71
% KCI	95.3
% KCI	96.8
Mtpa	2.20
Mtpa	7.12
US\$M	2,103
US\$/tpa	956
US\$/t	61.7
LIS\$/t	102.5
	% KCI % KCI Mtpa Mtpa US\$M US\$/tpa

Project financials	Units	
Total revenue	US\$M	25,508
Average Annual Revenue	US\$M	773
Average annual EBITDA	US\$M	583
EBITDA Margin	%	75%
Average post-construction post tax annual free cash flow	US\$M	499
Free cash flow Margin	%	65%
Total project post tax free cash flow (gross)	US\$M	14,545
Post tax, real un-geared NPV (10% real)	US\$M	1,452
Post tax, real un-geared IRR	%	17.2%
Payback period from date of first production	years	4.3
Average forecast MoP granular price (CFR Brazil)	US\$/t	360

#### **Ore Reserves and Mineral Resources**

The Kola Potash Ore Reserves (Table 2) are based on the Kola Sylvinite Mineral Resources as reported on 6 July 2017. Further detail on the Ore Reserve Estimate is provided in Appendix B: (Summary of Information required according to ASX listing Rule 5.9.1) and Appendix C (JORC (2012) Table 1 Section 4.) All of the Ore Reserves and Mineral Resources reported here for Kola and Dougou Extension are Sylvinite.

**Table 2: Kola Sylvinite Ore Reserves** 

Classification	Ore Reserves (Mt)	KCI grade Mg (% KCI) (% Mg)		Insolubles (% Insol.)
Proved	61.8	32.1	0.11	0.15
Probable	90.6	32.8	0.10	0.15
Total Ore Reserves	152.4	32.5	0.10	0.15

Table 3: Kola Sylvinite Mineral Resources (inclusive of Ore Reserves)

Classification	Million Tonnes (Mt)	KCI (% KCI)	Mg (% Mg)	Insoluble (% Insol.)
Total Measured	215.7	35.0	0.08	0.13
Total Indicated	292.0	35.7	0.06	0.14
Total Inferred	340.0	34.0	0.08	0.25
Total Mineral Resources	847.7	34.9	0.08	0.18

**Table 4: Dougou Extension Sylvinite Mineral Resources** 

Classification	Million Tonnes (Mt)	<b>KC</b> I %
Total Indicated	111	37.2
Total Inferred	121	38.9
Total Mineral Resources	232	38.1

The DFS and the economic evaluation do not consider any of the Mineral Resources at Dougou Extension and they are presented in Table 4 due to their potential to provide an additional source of feed into the Kola processing plant.

# Reasonable Basis for Forward-Looking Statements (including production target and forecast financial information) and Ore Reserves

This release, inclusive of *Appendix A: Summary results of Kola DFS*, contains a series of forward-looking statements. The Company has concluded that it has a reasonable basis for providing these forward-looking statements and the forecast financial information included in this release. This includes a reasonable basis to expect that it will be able to fund the development of the Kola Project when required.

The detailed reasons for these conclusions are outlined throughout this release, including in Section 20 of Appendix A. All material assumptions, including the JORC modifying factors, upon which the production target and forecast financial information is based are disclosed in this release (including the summary information in Appendix B and Appendix C). This announcement has been prepared in accordance with the requirements of the JORC 2012 and the ASX and LSE: AIM Listing Rules.

The estimated Ore Reserves (Proved and Probable) and Inferred Mineral Resources underpinning the production

target have been prepared by a competent person in accordance with the requirements of JORC 2012 Details of those Ore Reserves and Mineral Resources are set out in this release (including, in relation to the Ore Reserves, the details in Appendix B and C).

The production target of 2.2 Mtpa MoP over a 33 year life is underpinned by 66% of Ore Reserves and 34% of Inferred Mineral Resources. No exploration targets or qualifying foreign estimates underpin the production target. In particular, following exhaustion of the Ore Reserve during the first 23 years of the mine life, which includes the exploitation of 9.7 Mt of Inferred Mineral Resources (6% of the total production during that period), the Kola DFS plan includes the mining of Inferred Mineral Resources for a further 10 years. Each of the modifying factors was considered and applied to this material in preparing the DFS and associated production target.

There is a lower level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration will result in the determination of Indicated Mineral Resources or that the production target will be realised.

## - ENDS -

Brad Sampson	Jos Simson / Edward Lee	Martin Davison / James Asensio
Chief Executive Officer	Tavistock (UK media enquiries)	Canaccord Genuity (Nomad & Broker)
Tel: +27 (0) 11 469 9144	Tel: +44 (0) 207 920 3150	Tel: +44 (0) 207 523 4600
info@korepotash.com	kore@tavistock.co.uk	korepotash@canaccordgenuity.com

www.korepotash.com

## **Competent Persons Statement**

The estimated Ore Reserves and Mineral Resources underpinning the production target have been prepared by a competent person in accordance with the requirements of the JORC code.

The information relating to Exploration Results and Mineral Resources in this report is based on, or extracted from previous reports referred to herein, and available to view on the Company's website <a href="www.korepotash.com">www.korepotash.com</a>. The Kola Mineral Resource Estimate was reported on 6 July 2017 in an announcement titled 'Updated Mineral Resource for the High-Grade Kola Deposit'. The Dougou Extension sylvinite Mineral Resource Estimate was reported on 20 August 2018 in an announcement titled 'Maiden Sylvinite Mineral Resource at Dougou Extension'. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. 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.

The information in this report that relates to Ore Reserves is based on information compiled or reviewed by, Mo Molavi, P. Eng., who has read and understood the requirements of the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code, 2012 Edition). Mr. Molavi is a Competent Person as defined by the JORC Code 2012 Edition, having a minimum of five years of experience that is relevant to the style of mineralization and type of deposit described in this report, and to the activity for which he is accepting responsibility. Mr. Molavi is member of good standing of Engineers and Geoscientists of British Columbia (Registration Number 37594) which is an ASX-Recognized Professional Organization (RPO). Mr. Molavi is a consultant working as a sub-contractor to Met-Chem division of DRA Americas Inc., a subsidiary of the DRA Group and have been engaged by Met-Chem to review the documentation for Kola Deposit, on which this report Is based, for the period ended 29 October 2018. Mr. Molavi has verified that this report is based on and fairly and accurately reflects in the form and context in which it appears, the information in the supporting documentation relating to preparation of the geotechnical criteria and review of the Ore Reserves.

The information in the attached report that relates to Valuation of Mineral Assets reflects information compiled and conclusions derived by Mr. Cowen, who is a Member of The South African Institute of Mining and Metallurgy. Mr. Cowen is not a permanent employee of the company. Mr. Cowen has sufficient experience relevant to the Technical Assessment and Valuation of the Mineral Assets under consideration and to the activity which he is undertaking to qualify as a Practitioner as defined in the 2015 edition of the 'Australasian Code for the Public Reporting of Technical

Assessments and Valuations of Mineral Assets'. Mr. Cowen consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

## **Forward-Looking Statements**

This release contains certain statements that are "forward-looking" with respect to the financial condition, results of operations, projects and business of the Company and certain plans and objectives of the management of the Company. Forward-looking statements include those containing words such as: "anticipate", "believe", "expect," "forecast", "potential", "intends," "estimate," "will", "plan", "could", "may", "project", "target", "likely" and similar expressions identify forward-looking statements. By their very nature forward-looking statements are subject to known and unknown risks and uncertainties and other factors which are subject to change without notice and may involve significant elements of subjective judgement and assumptions as to future events which may or may not be correct, which may cause the Company's actual results, performance or achievements, to differ materially from those expressed or implied in any of our forward-looking statements, which are not guarantees of future performance.

Neither the Company, nor any other person, gives any representation, warranty, assurance or guarantee that the occurrence of the events expressed or implied in any forward-looking statement will actually occur. Except as required by law, and only to the extent so required, none of the Company, its subsidiaries or its or their directors, officers, employees, advisors or agents or any other person shall in any way be liable to any person or body for any loss, claim, demand, damages, costs or expenses of whatever nature arising in any way out of, or in connection with, the information contained in this document.

In particular, statements in this release regarding the Company's business or proposed business, which are not historical facts, are "forward-looking" statements that involve risks and uncertainties, such as Mineral Resource estimates market prices of potash, capital and operating costs, changes in project parameters as plans continue to be evaluated, continued availability of capital and financing and general economic, market or business conditions, and statements that describe the Company's future plans, objectives or goals, including words to the effect that the Company or management expects a stated condition or result to occur. Since forward-looking statements address future events and conditions, by their very nature, they involve inherent risks and uncertainties. Actual results in each case could differ materially from those currently anticipated in such statements. Shareholders are cautioned not to place undue reliance on forward-looking statements, which speak only as of the date they are made. The forward-looking statements are based on information available to the Company as at the date of this release. Except as required by law or regulation (including the ASX Listing Rules), the Company is under no obligation to provide any additional or updated information whether as a result of new information, future events or results or otherwise.

## **Summary information**

This announcement has been prepared by Kore Potash plc. This document contains general background information about Kore Potash plc current at the date of this announcement and does not constitute or form part of any offer or invitation to purchase, otherwise acquire, issue, subscribe for, sell or otherwise dispose of any securities, nor any solicitation of any offer to purchase, otherwise acquire, issue, subscribe for, sell, or otherwise dispose of any securities. The announcement is in summary form and does not purport to be all-inclusive or complete. It should be read in conjunction with the Company's other periodic and continuous disclosure announcements which are available to view on the Company's website <a href="https://www.korepotash.com">www.korepotash.com</a>.

The release, publication or distribution of this announcement in certain jurisdictions may be restricted by law and therefore persons in such jurisdictions into which this announcement is released, published or distributed should inform themselves about and observe such restrictions.

## Not financial advice

This document is for information purposes only and is not financial product or investment advice, nor a recommendation to acquire securities in Kore Potash plc. It has been prepared without taking into account the objectives, financial situation or needs of individuals. Before making any investment decision, prospective investors

should consider the appropriateness of the information having regard to their own objectives, financial situation and needs and seek legal and taxation advice appropriate to their jurisdiction.

## **Market Abuse Regulation**

This announcement is released by the Company and contains inside information for the purposes of the Market Abuse Regulation (EU) 596/2014 ("MAR") and is disclosed in accordance with the Company's obligations under Article 17 of MAR. The person who arranged for the release of this announcement on behalf of the Company was Brad Sampson, CEO.

# **APPENDIX A**

**Summary results of Kola DFS** 

## 1. Project Introduction:

Kore Potash Plc ("Kore", the "Company" or "KP2") is a mineral exploration and development company that is incorporated in the United Kingdom and listed on the AIM (a sub-market of the London Stock Exchange, as KP2), the Australian Securities Exchange (ASX, as KP2) and the Johannesburg Stock Exchange (JSE, as KP2).

The primary asset of Kore is the Sintoukola Potash Project which includes the flagship Kola Sylvinite deposit (the "**Kola Project**") in the Republic of Congo (RoC), held by the 97%-owned Sintoukola Potash SA (SPSA). SPSA has 100% ownership of the Kola Mining Lease, on which the Kola Project is located.

The Kola Project is situated in the Kouilou Province of the RoC, within 40 km of the Atlantic Coast and approximately 70 km north of the port city of Pointe Noire.

The Kola DFS considers the mining of the Kola Sylvinite, and the production of circa 2.2 million tons per annum (Mtpa) of Muriate of Potash (MoP) and its export and considers all associated infrastructure. It delivers an economic model based on life of project of 23 years based on Ore Reserves of 152.4Mt and 9.7 Mt of Inferred Mineral Resource, and an additional 10 years (for a 33 year life) when the exploitation of a portion (70Mt) of the Inferred Mineral Resources is included.

Kore commissioned a consortium of French companies ("FC") to conduct a DFS for the Kola Project. The FC comprises: Technip France (TPF), Vinci Construction Grands Projets (VCGP), Egis International (EGIS) and Louis Dreyfus Armateurs (LDA).

Met-Chem DRA Global (MTC) and AMC Consulting (AMC) were appointed by the FC as their specialist subconsultants.

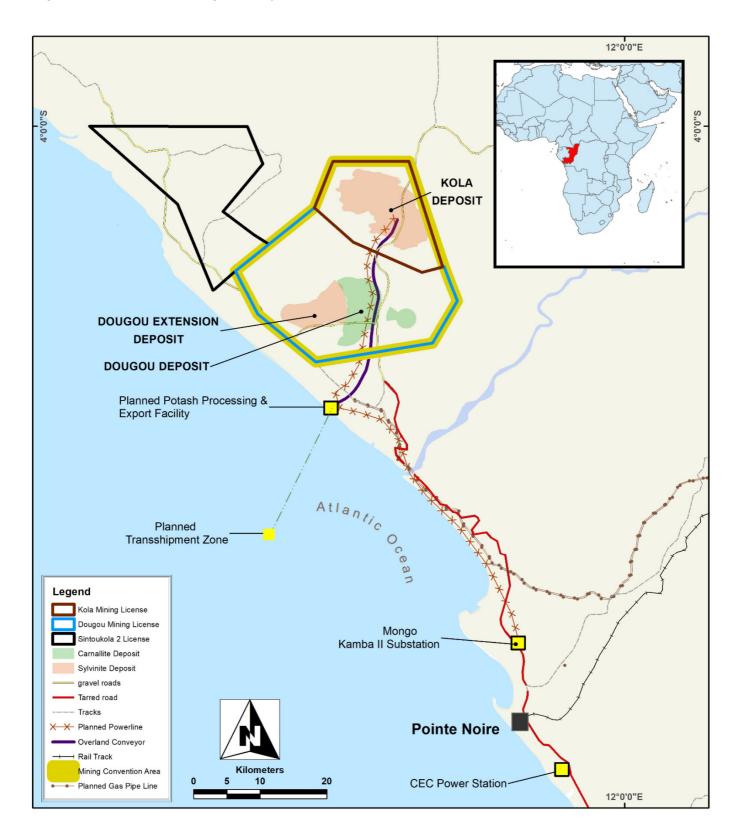
Kore directly contracted with Met-Chem DRA Global (MTC) for the Mineral Resource Estimate (MRE), and SRK Consulting (UK) Limited (SRK) for undertaking the Environmental and Social Impact Assessment (ESIA).

Kore further directly engaged Jukes Todd, Hatch and Wood to conduct reviews of the final draft DFS presented by the FC.

In accordance with JORC 2012, the Competent Persons (CP) for the Kola Project are:

- Mr. Kirkham P.Geo of MTC, for the Mineral Resource Estimate (MRE). Mr Kirkham is a member of good standing of the Association of Professional Engineers and Geoscientists of British Columbia.
- Mr. Molavi P.Eng of AMC, for the Reserve Review (RR). Mr Molavi is a member of good standing of the Association of Professional Engineers and Geoscientists of British Columbia.
- Mr. Larmour P.Eng for the Potash Process Review (PPR). Mr Larmour is a member of good standing of the Association of Professional Engineers and Geoscientists of Saskatchewan.
- Mr. Cowen, an Independent Consultant, for the Techno-Economic Modelling (TEM). Mr Cowen is a member of good standing of the South African Institute of Mining and Metallurgy.

Figure 1: Location Map showing Kola Project



The various aspects of the DFS were carried out by the companies involved as shown in Figure 2 below:

Figure 2: Scope of Project Parties



#### 2. Sylvinite Mineral Resource

The Mineral Resources at the Kola sylvinite deposit are shown in Table 1 below. The total Measured and Indicated Mineral Resources are 508 Mt with an average grade of 35.4% KCl and provides the basis for the Ore Reserve Estimate. Sections 1 to 3 of the JORC 2012 Table 1 Checklist of Assessment and Reporting Criteria for that Mineral Resource estimate were reported to shareholders on 6 July 2017. The Company confirms there has been no material change to those Mineral Resource since that date. The Company notes that the Mineral Resources estimates referred to in this section are inclusive of Mineral Resources that have been modified to produce Ore Reserves.

The Mineral Resources are hosted by four flat or gently dipping (<20 degrees) layers (referred to as 'seams') as follows from upper-most; Hanging wall Seam (HWS), Upper Seam (US), Lower Seam (LS), Footwall Seam (FWS). The Footwall Seam (FWS) hosts Inferred Mineral Resources only and does not form part of the Mine plan. The HWS, US and LS seams have an average thickness of between 3.3 m and 4.0 m. The HWS is approximately 60 m above the US. The US and the LS are separated by a layer of rock-salt (massive halite) typically 2.5-4.5 m thick.

The HWS, US and LS are at a depth of between 190 m and 320 m, hosted within the upper 70 m of a 400 m thick rock-salt dominated evaporite formation which is overlain by a layer of anhydrite and clay typically 5 m to 15 m thick. The sylvinite has a very low insoluble and magnesium content (both < than 0.2 %) which provides an advantage for processing. The host-rock of the sylvinite is massive rock-salt and in some areas the sylvinite is underlain by carnallitite (a rock-type comprised predominantly of the potash mineral carnallite (KMgCl3 6H<sub>2</sub>O) and halite. Bischofite, a geotechnically unstable rock-type, does not occur in proximity to the seams.

The Inferred Mineral Resources are 340 Mt grading 34% KCl, of which the HWS, US and LS hosts 299 Mt (grading 34.8% KCl). Beyond this, the deposit is open laterally in some directions and may support an expansion of the deposit should additional exploration be undertaken. Two wide-spaced holes drilled in 2017 support this, the most distant being 5 km southeast of the current Mineral Resource extent. Both intersected HWS grading over 60% KCl (announcement dated 7 December 2017). An Exploration Target for this area (Kola South) was announced on 20

November 2018.

Table 1 July 2017 Kola Mineral Resources for Sylvinite

July 2017 - Kola Dep	osit Potash Mineral Resources	SYLVINITE			
		Million Tonnes	KCI	Mg	Insoluble
		Mt	%	%	%
	Measured	_	-	_	-
Hanging wall Seam	Indicated	29.6	58.5	0.05	0.16
Tranging wan Seam	Inferred	18.2	55.1	0.05	0.16
	Total Mineral Resources	47.8	57.2	0.02	0.16
	Measured	153.7	36.7	0.04	0.14
Upper Seam	Indicated	169.9	34.6	0.04	0.14
	Inferred	220.7	34.3	0.04	0.15
	Total Mineral Resources	544.3	35.1	0.04	0.14
	Measured	62.0	30.7	0.19	0.12
Lower Seam	Indicated	92.5	30.5	0.13	0.13
Lower Seam	Inferred	59.9	30.5	0.08	0.11
	Total Mineral Resources	214.4	30.6	0.13	0.12
	Measured	_	_	_	1
F (    O	Indicated	-	_	_	1
Footwall Seam	Inferred	41.2	28.5	0.33	1.03
	Total Mineral Resources	41.2	28.5	0.33	1.03
Total Mineral Resou	rces	847.7	34.9	0.07	0.13

## 3. Ore Reserves

The Kola Sylvinite Ore Reserves are 152.4 Mt with average grade of 32.5% KCl. The estimate of Ore Reserves was completed by Met-Chem DRA Global and was prepared in accordance JORC 2012.

Appendix B contains a summary of information required according to ASX Listing Rule 5.9.1 and Appendix C contains section 4 of the JORC 2012 Table 1 Checklist of Assessment and Reporting Criteria.

Details of the Ore Reserve Estimate and is shown in Table 2 below.

Table 2: Kola Sylvinite Ore Reserves

Seam	Classification	Ore Reserves Tonnage (Mt)	KCI (%KCI)	Mg (%Mg)	Insolubles (%Insol)
	Proved	47.3	33.43	0.08	0.15
Upper Seam Sylvinite	Probable	58.7	31.83	0.06	0.15
Sylvinite	Total	106.0	32.54	0.07	0.15
	Proved	14.5	27.88	0.20	0.13
Lower Seam Sylvinite	Probable	23.4	28.35	0.08	0.14
Sylvinite	Total	37.9	28.17	0.13	0.14
	Proved				
Hanging Wall	Probable	8.4	52.09	0.47	0.19
Seam Sylvinite	Total	8.4	52.09	0.47	0.19
	Proved	61.8	32.13	0.11	0.15
	Probable	90.6	32.81	0.10	0.15

TOTAL	Total Ore Reserves	152.4	32.54	0.10	0.15
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All Sylvinite in the Measured and Indicated Resource category was considered for Ore Reserve conversion because of the sharp grade boundaries of the Sylvinite seams and the fact that the economic Cut- off Grade (CoG) is below the Mineral Resources CoG of 10% KCI.

**Table 3. Kore's Sylvinite Mineral Resources and Ore Reserves**, provided as Gross and Net Attributable (reflecting Kore's future holding of 90% and the RoC government 10%), prepared and reported according to the JORC Code, 2012 edition. Table entries are rounded to the appropriate significant figure.

KOLA SYLVINITE DEPOSIT							
		Gross			Net Attributable (90%)		
Mineral Resource Category	Million Tonnes	Grade KCI %	Contained KCI million tonnes	Million Tonnes	Grade KCI %	Contained KCI million tonnes	
Measured	216	34.9	75	194	34.9	68	
Indicated	292	35.7	104	263	35.7	94	
Sub-Total Measured + Indicated	508	35.4	180	457	35.4	162	
Inferred	340	34.0	116	306	34.0	104	
TOTAL	848	34.8	295	763	34.8	266	
		Gross		Net Attributable (90%)			
Ore Reserve Category	Million Tonnes	Grade KCI %	Contained KCI million tonnes	Million Tonnes	Grade KCI %	Contained KCI million tonnes	
Proven	62	32.1	20	56	34.9	19	
Probable	91	32.8	30	82	35.7	29	
		1					

Ore Reserves are not in addition to Mineral Resources but are derived from them by the application of modifying factors

DOUGOU EXTENSION SYLVINITE DEPOSIT						
		Gross		Ne	t Attributable (90%	<b>5</b> )
Mineral Resource Category	Million Tonnes	Grade KCI %	Contained KCI million tonnes	Million Tonnes	Grade KCI %	Contained KCI million tonnes
Measured	-	-	-	-	-	-
Indicated	111	37.2	41	100	34.9	35
Sub-Total Measured + Indicated	111	37.2	41	100	34.9	35
Inferred	121	38.9	47	109	34.9	38
TOTAL	232	38.1	88	209	34.9	73

Note: Table entries are rounded to the appropriate significant figure

#### 4. Mining

The Kola orebody is planned to be mined using conventional underground mechanised methods, extracting the ore within 'panels', using Continuous Miner (CM) machines of the drum-cutting type. This is the most widely used method of potash mining world-wide and is considered low-risk. The Mine design adopts a relatively typical layout including panels, comprised of rooms and pillars. Pillars are the support rock left in place to provide stable ground support during the operation of the mine.

The mine design is based on a minimum mining height of 2.5 m and a single type of CM is available which is capable of mining seam heights of between 2.5m and 6m. Each panel is accessed by 4 entries. Each entry is 8m wide and 3m to 6m high depending on the seam height. The rooms are mined in a chevron pattern at an angle of 65 degrees from

the middle entry, each with a length of approximately 150 m.

Key geotechnical parameters evaluated in the mine design were:

- o To mine both the US and LS, the support interval between the seams must be at least 3 m thick,
- Provide an 8 m wide pillar between two consecutive production rooms (of 8 m each)
- Provide a 50 m wide pillar between two Production Panels. Similarly, a 50 m wide pillar will be left in place between the side of the Production Panel and the Main Haulage Access Drift,
- Provide a minimum thickness of 10 m to 15 m of the Salt Member between the mine openings and the floor of the overlying Anhydrite Member (referred to as the 'salt back')
- Provide a stand-off distance of 20 m from any exploration holes
- Provide a stand-off distance of 30 m from Class 2 geological anomalies and 60 m from Class 3 geological anomalies
- o Provide a pillar of 300 m in radius around the Exhaust and Intake Shafts, and
- A mining loss of 10% has been applied, which allows for operational losses in material left in footwall, pillars and spillages from belts.

Mine access is provided by two vertical Shafts, each 7m in diameter. The shafts will be sunk in the center of the orebody. To provide access to the underground, the Intake Shaft will be equipped with a hoist and cage system for transportation of persons and material. The Exhaust Shaft will be equipped with a Pocket Lift conveyor system to continuously convey the mined-out ore to the surface. Both shafts are approximately 270m deep.

Mining equipment selected for the Kola Project Mine includes a fleet of 6 electrically powered continuous miners (CMs). Ore haulage from the CMs to the feeder breaker apron feeder will be done using electrically- powered Shuttle Cars, with a rated payload of 30 t and a 250 m power supply cable.

Underground conveyor belts will be used for ore transportation in all the areas of the Mine. The belt conveyors are distributed in the main and submain haulages and ultimately in the working panels near the CM working face. The ore will be placed on the belts from feeder breakers that are fed by the Shuttle Cars. Belt conveyors will carry the ore loaded by the feeder breakers to the Ore Bins. The ore is then conveyed from the Ore Bins to the Pocket Lift system located in the Exhaust Shaft.

## 5. Life of Project schedule

The project Life-of-Mine (LoM) production schedule, including tonnes of Sylvinite, tonnes of waste, tonnes of the Muriate of Potash (MoP) product, and the average KCl grade of the Run-Of-Mine (ROM) material, is summarized in Figure 3

The Life of Ore Reserves for the Kola Project is 23 years, and full-scale production of 2.2 Mt per annum of MoP occurs for approximately 20 years post commissioning and ramp up. During the exploitation of Ore Reserves, 9.7 Mt of Inferred Mineral Resources are scheduled to be mined and processed. This represents approximately 6.0% of the total amount of ROM material processed in the first 23 years. This portion of the Inferred Mineral Resources is at the periphery of the Mineral Resources envelope and immediately adjacent to the Ore Reserves and logically would be extracted in conjunction with the adjacent Ore Reserves. Figure 4 below shows panel sequencing for extraction of Ore Reserves.

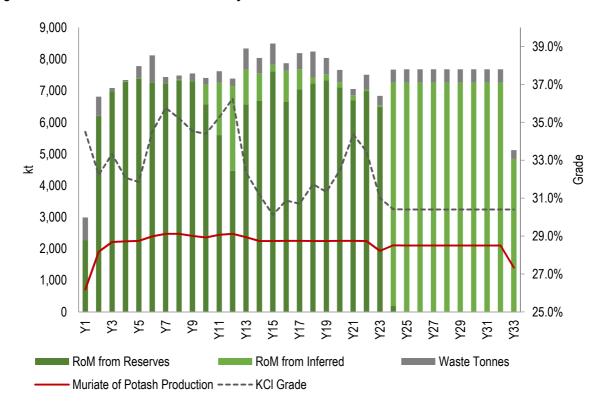


Figure 3 - Life-of-Mine Production Summary of the Kola Mine

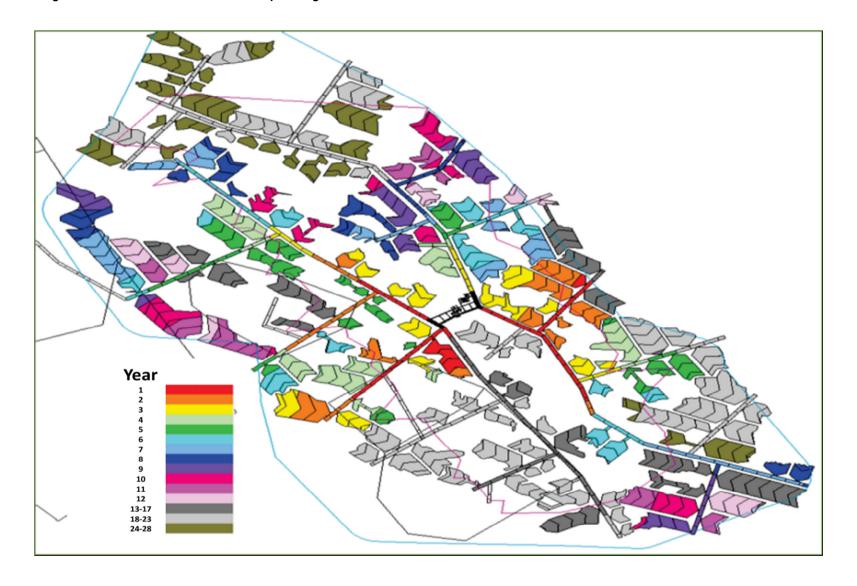
In addition, scheduling a further portion of Inferred Mineral Resources after the full depletion of Ore Reserves adds an additional 10 years to the project life. The extraction and processing of these Inferred Mineral Resources has been included in the Life of Project economic evaluation and extends the evaluated project life to 33 years.

Approximately 27% (79.7Mt) of the total Inferred Mineral Resources (298Mt) have been included in the economic evaluation. There is a low level of geological confidence associated with inferred mineral resources and there is no certainty that further exploration work will result in the determination of indicated mineral resources or that the production target itself will be realized. In preparing the production target and economic evaluation, each of the modifying factors was considered and applied and the Company consider there are reasonable grounds for the inclusion of Inferred Mineral Resources in the production target for the Kola Project.

Due to the lower level of confidence associated with Inferred Mineral Resources, a detailed mine design and extraction plan was not prepared for the Inferred Mineral Resources considered in the final 10 years of the economic evaluation. The same underlying operating cost and sustaining capital assumptions for the first 23 years were applied to the final 10 years of the economic evaluation.

No Exploration Target material has been included in the economic evaluation or production target for the Kola Project.

Figure 4: Life of Ore Reserves Panel Sequencing



## 6. Hydrogeology

During the DFS hydrogeological investigations were carried out to:

1. Identify sources of fresh water supply for construction and operations.

These tests concluded that process plant area water supply is available at required rate of 76m3/hr utilising 3-4 wells at a depth of 170m. Similarly, the required water supply at the mine site of 18m3/hr can be supplied via 3 wells sunk to 110m depth. Hydrogeological modelling indicates that extraction of these quantities of water over the project life will not adversely impact the aquifers and minor drawdown in the aquifers is expected over the life of the project.

2. Understand the risk that aquifer system poses to mining operations and how to mitigate this risk.

The risk of water ingress to the mining areas is a common risk in almost all salt and potash mines. These mines are typically overlain by water-bearing sediments. At operating potash mines in Canada and Europe, the hydrogeological risk is considered higher in areas of disturbance of the stratigraphy, referred to as geological or subsidence anomalies. At Kola, a detailed understanding of the aquifers overlying the evaporite rocks, as well as of the aquitards (or barriers to water flow), has been developed over a number of years. The conclusions drawn following hydrogeological testing were:

- A problematic water ingress is considered a low probability as no linear faults have been identified and all
  potential subsidence features can be accurately delineated using (proposed 50 m spaced line) 3D seismic
  surveying, to add to the existing 186 km of seismic survey data over the Deposit.
- No mining or shaft sinking is planned within areas of subsidence. In addition, horizontal 'cover drilling' and Ground Penetrating Radar (GPR) will be employed as forward-looking actions to improve understanding of ground conditions in advance of mining and further mitigate the risk of intersecting a structure or area of disturbance.
- The mine design incorporates a 10-15 m minimum 'salt-back' barrier between the mining area and the anhydrite acquitard, effectively reinforcing the anhydrite member aquitard layer.
- 3. Understand the impacts of groundwater composition and the aguifers on the shaft sinking operation.

The results of this testing confirmed:

- That ground freezing during shaft sinking will not be impacted by hydraulic flow or high salinity in the deep aquifer. In fact, low permeability, and low TDS (and salinity) in both aquifers is to be expected, supporting the planned freeze-hole spacing and comparatively low energy consumption for the ground freezing operation.
- The presence of a thick Anhydrite Member (12 m) overlying the salt member which acts as an aquitard and reduces risk of water inflow into the salt member.

## 7. Metallurgy and Process

Ore from underground is transported to the process plant via an overland conveyor approximately 35 kilometres long.

During the DFS an overland conveyor was selected in preference to trucking of ore as a lower operating cost solution that would have reduced environmental impacts.

A conventional potash flotation plant has been designed for the Kola Project. This is the optimum processing method and this decision is based on test work, projected mining grades and simulations and mass balance of the process. As

a result of the low insolubles content, no separate process circuit is required to remove insolubles.

A schematic of the full process to extract ore and produce MoP product is shown in Figure 5

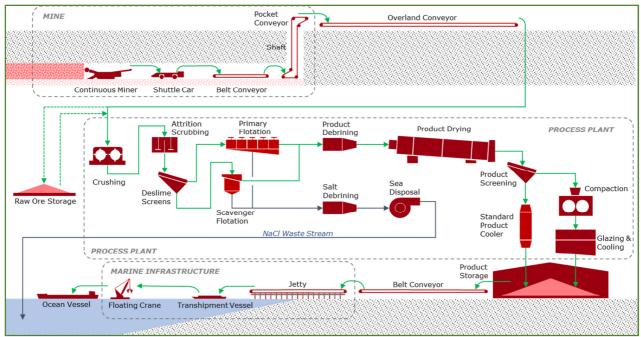


Figure 5: Process flow from mine to ship

The design strategy adopted delivers a Process Plant designed to produce 2.2 Mtpa of MoP at a KCl grade of 95%w and that will accommodate the variety of ROM feedstock characteristics expected to be encountered during the Life of the project.

Metallurgical testing was undertaken in 2017 and 2018 to confirm the flotation performance of the Ores and to allow design of the flotation process flowsheet.

Characterisation tests were performed on pure seam samples (USS, LSS and HWS) expected to be mined as part of the mine schedule. Composite samples of multiple seams, prepared to be as representative as possible of the expected range of Run of Mine Ore characteristics foreseen in the mine schedule, were prepared from the seam samples.

The insoluble content of the samples was less than 0.5%w and close to 0.1%w in the composite from the USS and LSS. The characterisation of both the composite samples and the pure seam samples established that the KCl content in the composite was 32.2%w.

The DFS process plant KCl recovery has been established as 91.9% of KCl and this recovery has been used in the economic evaluation. In addition, the review of the process test work has identified an opportunity to further improve KCl recovery by 0.9% through improved fines management. This potential improvement has not been included in the economic evaluation.

The overall recovery of KCl is sensitive to the proportion of fines in the feed. The DFS has adopted a conservative approach and selected a particle size distribution that contains a conservatively high proportion of fine KCl in the flotation feed. This exaggerates the quantity of material directed to the Scavenger Flotation circuit for fines flotation, which has much lower effectiveness than coarse flotation. During the review of the DFS, Kore's consultants have

advised that normal management of fines in the flotation feed will further enhance recovery of KCI.

## 8. Marine Facilities

A transshipment arrangement has been designed whereby MoP for export is loaded from a dedicated Jetty into self-propelled shuttle Barges (two units), which then travel to the Ocean-Going Vessels (OGVs) anchored 11 nautical miles (20 km) offshore at a dedicated transshipment zone. The MoP is transferred from the Barges to the OGVs using a Floating Crane Transhipper Unit (FCTU).

During the DFS transhipping was selected over direct ship loading from the export jetty. The ocean depth along the coastline is shallow and it was not considered feasible to construct the length of jetty required to facilitate direct shiploading.

To ensure sufficient year-round operational availability of the Jetty, a 210 m long steel combi-wall breakwater structure has been designed to shelter the berthing area for Barge loading operations.

The Jetty has been widened to accommodate both a Seawater Intake (SWI) and a Seawater Outfall (SWO) systems.

The Seawater Outfall (SWO) Diffuser head will be located on the seabed, 490 m from the point where the SWO pipe leaves the Jetty structure. The submerged SWO pipe will be positioned on the seabed and ballasted. The SWO Diffuser head will be confined in a 150 m radius exclusion zone to prevent unauthorized vessels from approaching the SWO Diffuser.

#### 9. Residue and Brine Disposal

The Kola Project's process residue is combined into a single waste stream composed of the NaCl (the brine from product and salt de-brining – bulk of the effluent) and the residue tails stream which originates from the insoluble de-brining circuit within the Process Plant. The effluent is collected in onshore dissolution/dilution tanks and then discharged at sea via the SWO pipe and diffuser. The effluent discharge dispersion characteristics comply with the applicable environmental criteria.

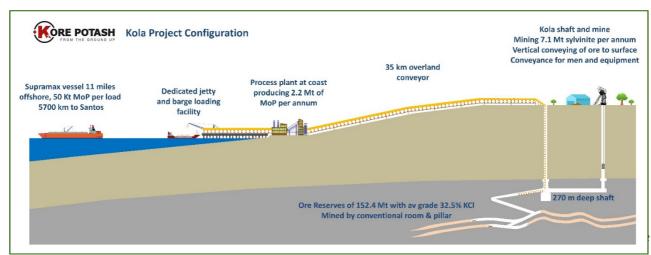
Ecotoxicological test work of the expected discharge effluent confirms that the discharge at sea of the combined salt and insoluble tails stream does not place undue stress on the marine environment.

No onshore tails storage facility is therefore required for the Kola Project.

#### 10. General Infrastructure

A schematic of the Kola project infrastructure is illustrated in Fig 6 below.

Figure 6: Kola Project Configuration



#### a. Mine Site - Infrastructure

The Mine Site is located 33 km north and inland of the Project Process Plant Site which is near the village of Koutou and the current KP2 Exploration Camp.

The site can be accessed from Pointe Noire on the existing National Highway "Routes Nationales" RN5 and RN6, via Madingo Kayes.

The Mine Site surface facilities and infrastructure provides access and support facilities for the Underground Mining operations.

No permanent living accommodation is planned at the Mine Site for the Operational phase of the Project.

#### b. Process Plant Site - Infrastructure

The Process Plant Site is located on gentle sloping ground next to the coast, approximately 60 km north west of Pointe Noire.

The Process Plant Site facilities and infrastructure produces Muriate of Potash (MoP) in granular and standard form by processing Run of Mine (ROM) ore, transferred from the Mine Site via the Overland Long Conveyor (OLC), for export via the adjacent Marine Facilities. The main administration, control and support functions (Maintenance, Storage, Logistics, Training, etc.) are also located within the Process Plant Site.

## c. Mining Complex & Off-Site - Infrastructure

The operation of the Kola Project's Mine and Process Plant sites are supported by ancillary sites (Accommodation Camp and Solid Waste Management Centre) and interconnecting infrastructures (Roads, Power, Water and Gas supply, and Communications).

The permanent accommodation camp will be located approximately 1.8 km from the Process Plant and will accommodate up to 850 people.

Electrical power will be sourced from the RoC national grid. A 59 km long 220 kV transmission line will be built from the Mongo Kamba II substation north of Pointe Noire to the Process Plant. The power demand is estimated to be 25 MVA at the Mine Site and 50 MVA at the Process Plant.

The natural gas needed for product drying will be supplied by a 75 km long pipeline from the M'Boundi gas treatment plant.

Memoranda of Understanding for the supply of electrical power and gas are in place with the intended suppliers. Supply contracts are planned to be formalized prior to the final investment decision for the project.

Raw water will be supplied from wells located at the Mine Site (3 wells) and at the Accommodation Camp (4 wells).

## 11. Environmental and Social Impact Assessment (ESIA)

To comply with RoC permitting requirements, an updated ESIA has been undertaken for the Kola Project. During 2012 and ESIA for the project (known then as Sintoukola) was completed. This ESIA was approved by the Ministry of Tourism and Environment (MTE) in August 2013. During the PFS and the DFS phases a number of changes were made to the project design, triggering the requirement for the updated ESIA.

In addition to complying with the RoC's national laws and regulations, the ESIA process was aligned with Good International Industry Practice (GIIP) guidelines, the IFC's Performance Standards and the Equator Principles.

The ESIA was managed by SRK Consulting (UK) Limited's environmental and social (E&S) team. SRK partnered with "Cabinet Management & Etudes Environnementales S.A.R.L." (CM2E), which acted as the Congolese-registered

consultancy.

ESIA-related stakeholder engagement included a "public enquiry" held in April 2017, "public hearings" held in July 2018 (feedback consultations on the draft ESIA, undertaken with communities, government and non-government organisations (NGOs)) and issue-specific consultations (for example, the underpasses below the conveyor were discussed with affected communities, while conservation NGOs were engaged on the minimization of impacts on marine turtles and mammals).

A Conceptual Rehabilitation and Closure Plan has been prepared by SRK (as part of the ESIA) in accordance with GIIP and incorporating the regulatory requirements in the RoC's Mining Code. The DFS includes a cost estimate to successfully implement the closure actions required by the plan.

The Environmental and Social Management Plan (ESMP), which is currently under development, will identify measures required to minimise and appropriately mitigate impacts. During the project design phase consideration has been given to all ESIA findings and recommendations.

The Kola Project will contribute positively to the diversification of the national economy, which is a key goal of the Government of the RoC, will provide an alternative livelihood to residents in the area and contribute to the sustainable management of the endangered species found in the project area.

## 12. Potash Marketing

Kore's potash marketing strategy recognises the supply opportunities arising from MoP market growth in Brazil, the project's proximity to Brazil and African markets and the cost competitiveness of the Kola Project. The DFS demonstrates that the Kola project can deliver MoP into Brazilian and ports on the west coast of Africa at lower cost than all other international suppliers.

The design of the processing plant allows Kore to produce red MOPG (Muriate of Potash - Granular) for the Brazil market and retain flexibility to produce both white MOPG and white MOPS (Muriate of Potash - Standard) to pursue higher potential netbacks in other markets.

The international competitiveness of the Kola Project was benchmarked by CRU against other producers and projects using data from CRU's Potash Cost Model, with results as follows:

- An ex-works operating cost of US\$83.25/t (real 2018) means the Kola Project will operate as the fourth lowest producer at the beginning of the second quartile of CRU's global ex-works (EXW) cost curve.
- The Kola Project's proximity to the ocean significantly strengthens its competitiveness on an export (FOB) cost basis. The DFS estimates the export (FOB) cost at US\$87.63/t (real 2018) which includes transshipment costs.
- On an export cost (FOB) basis, the Kola Project would rank as the second lowest cost operation when compared to existing producers as well as 'committed' projects.
- CFR Brazil costs of US\$102.47 (real 2018) would rank Kola as the lowest cost supplier to Brazil, with a
  potentially disruptive capability to compete on price.

## 13. Capital and Operating Costs

## a. Capital Cost

The pre-production Capital Cost for the Kola Project is estimated at US\$2,103m, which includes US\$110m of Contingency, US\$106m of Escalation and US\$89m EPCM margin.

The Capital Cost Estimates, expressed in US dollars, have been developed for each work breakdown area, and are based on July 2018 prices. The Capital Cost Estimates are based on Erected Quantities (which include Design Growth Allowances) determined by complete Material Take-Offs and the application of unit rates.

Written quotations from preferred suppliers have been received for 82.0% of the Main Equipment.

For the DFS, Capital Costs have been grouped into Initial, Deferred and Sustaining Capital Costs.

- o Initial Capital Costs: all costs incurred up to the completion of First Barge Load milestone.
- Deferred Capital Costs: all capital costs incurred from First Barge Load completion up to the Nominal production rate (Mine Steady State + 3 months of stabilized full production) achievement milestone.
- Sustaining Capital Costs: all capital costs incurred after this last milestone. They represent the costs of investments to be carried out to maintain nominal production capacity over the years.
- O Capital Costs (Initial and Deferred) are summarized in Table 4.

**Table 4 - Summary of Reviewed Capital Costs** 

Description	Initial Capex (kUSD)	Deferred Capex (kUSD)	Initial plus Deferred Capex (kUSD)
Mine Area	345,934	65,976	411,910
Process Area	494,597	3,070	497,667
Tailings Disposal	-	-	-
Roads	62,877	-	62,877
Marine Facilities	179,176	-	179,176
General Infrastructures	309,484	-	309,484
Sub-Total Direct Costs	1,392,068	69,046	1,461,114
Construction Supervision	79,292	77	79,369
Pre-Comm. / Comm- /Start-up Supervision	33,434	9	33,443
Home Office Services	164,397	-	164,397
Miscellaneous	10,388	-	10,388
Sub-Total Services & Misc.	287,511	86	287,597
Sub-Total Technical Cost	1,679,579	69,132	1,748,711
Owner's Costs	118,844	-	118,844
Escalation	106,293	2,947	109,240
Contingency	109,554	4,325	113,879
EPCM margin	88,907	-	88,907
Total Capital Costs	2,103,177	76,404	2,179,581

The pre-production capital cost of US\$2,103 million equates to a pre-production capital intensity of US\$956/t MoP annual capacity. This is in the second quartile (as illustrated in Fig. 7) relative to MoP industry peers and suggests further capital optimisation is possible.

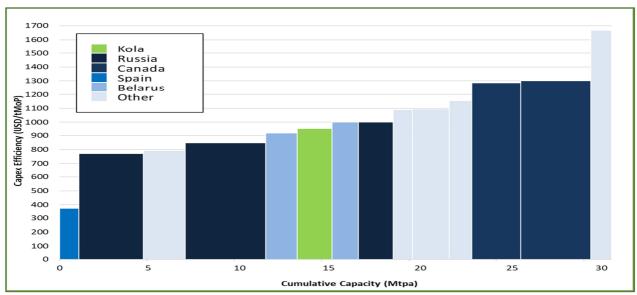


Figure 7 – MoP Project Capital Cost Curve (CRU report Aug 2018)

Sustaining capital costs cover expenditures required to ensure the operation can sustain the production at nameplate capacity. These costs include overhaul parts and labour, replacement of equipment, maintenance of infrastructures (road, jetty etc), shut down costs, additional continuous miner and additional underground conveyor costs, and the inspection and maintenance of the transshipment vessels.

The Sustaining Capital Costs are summarized in Table 5.

Table 5 – Summary of Sustaining Capital

Description	US\$/t MoP	%
UG Mining	3.99	36%
AG Mining	0.52	5%
Overland Conveyor	0.61	6%
Processing – Crushing	0.62	6%
Processing – Flotation	0.63	6%
Processing – Dewatering	0.34	3%
Processing - Tailings	0.15	1%
Processing – Finishing	1.30	12%
Processing - Storage/Loadout	0.26	2%
Processing – Infrastructure	0.56	5%
General Infrastructure	1.58	14%
Transshipment	0.42	4%
Total Sustaining Capital costs	10.98	100%

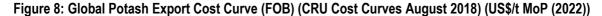
## b. Operating Cost

The DFS confirms that the Operating Cost of the Kola Project is highly competitive and potentially disruptive to all existing suppliers into Brazil and the west coast of Africa. The mine gate operating cost is estimated at US\$61.71/t and the export (FOB) cost is estimated at US\$87.63/t. This ranks the Kola Project as the second lowest cost operation when compared to existing producers as well as 'committed' projects. The estimated landed cost to Brazil (CFR) at US\$102.47/t would rank the Kola Project as the lowest cost supplier to Brazil.

The Operating Costs are expressed in US dollars on a real 2018 basis and are based on average annual production of 2.20Mtpa of MoP over the life of mine. All costs have been prepared on an owner operated basis and are shown in Table 6.

Table 6 - Summary of Operating Costs

Cost Category	Real 2018 cos	
Opex	(US\$/t MoP)	
	04.70	
Mining Cost	21.70	
Process Cost	25.77	
General Infrastructure costs	4.57	
Owners Costs	9.67	
Mine Gate Operating Costs	61.71	
Sustaining Capex	10.98	
Product Realisation Charges and Allowances	1.89	
Royalties	8.67	
Ex Works Cost	83.25	
Logistics to FOB point	4.37	
Ocean Shipping	14.84	
CFR Cost (Landed in Brazil)	102.47	



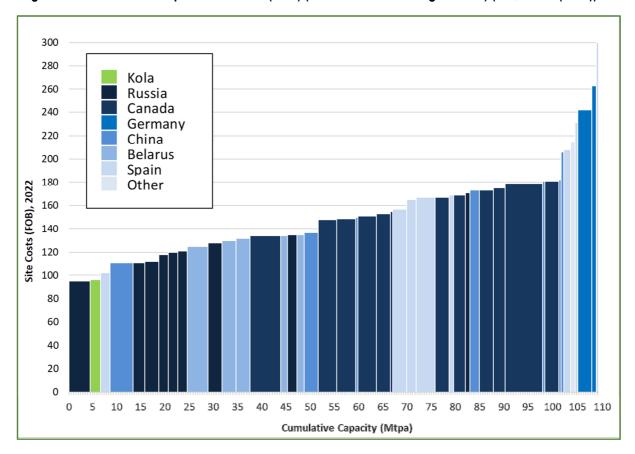
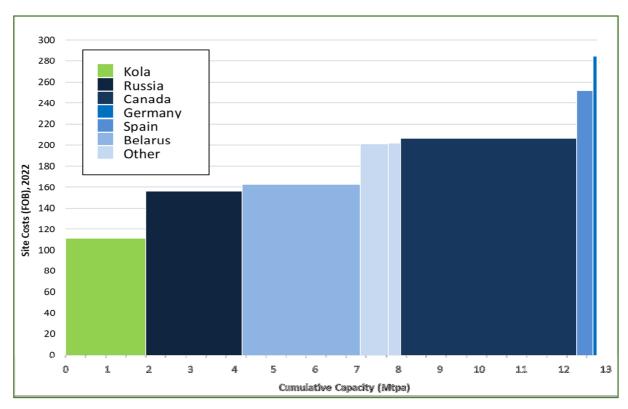


Figure 9: Brazil Potash Delivered Cost Curve (CFR Brazil) (CRU Cost Curves August 2018) (US\$/t MoP (2022))



## 14. Project Optimisation

During the review of the DFS by Kore staff and a team of international and industry leading consultants including Hatch, Wood and JukesTodd, various opportunities have been identified to further improve or optimise the Kola Project.

Hatch were engaged to assess the process design and modelling of the plant and requested to identify opportunities to improve the design and optimise the output based on a process model and industry norms. The results of their investigation were addressed in a detailed report on potential design changes based on their reasonable judgement and probable outcomes of the process model. The report detailed the potential to improve recovery by 0.9% and the list of areas that should be further investigated to potentially optimise the process design. This 0.9% recovery improvement has not been included in the base case project and economic evaluation.

JukesTodd were approached to assess the proposed construction schedule and the overall design from a perspective of optimising engineering to achieve the best capital efficiency. Opportunities were identified to reduce the construction schedule by 6 months along with opportunities to reduce capital costs through design changes to a value of between US\$80 million and US\$331 million on direct capital costs only. A further saving on indirect capital costs of between US\$19 million and US\$167 million was also identified. Higher than industry standard services and miscellaneous costs were also observed. The economic evaluation of the project does not incorporate any of these identified improvement opportunities.

Wood were engaged to undertake a comparative assessment of the Kola Project against equivalent potash projects executed and built in Canada. Their review found that the project site manhours were higher than comparable projects and the engineering and procurement components of "Home Office Services" capital costs which are higher than the expected norms for a project of this nature. This report affirms and strengthens the potential to achieve the savings identified in the Jukes Todd report. The economic evaluation of the project does not incorporate this improvement opportunity.

## 15. Economic Evaluation

#### a. Summary Economics

The economic evaluation delivers a post-tax, NPV<sub>10</sub> (real) of US\$1,452M and a real ungeared IRR of 17% on an attributable basis, The evaluation is based on a granular MoP price of US\$360/t MoP CFR Brazil (real 2018) which represents the current CFR Brazil spot price and a standard MoP price of US\$350/t CFR Brazil, which is well under the CRU forecast long term marginal cost of supply to Brazil (US\$447/t MoP).

The key assumptions underpinning the economic evaluation are as follows:

- 23-year initial project life from first production based on depletion of Ore Reserves;
- Subsequently an additional 10 years project life based on exploitation of a portion of the Inferred Mineral Resources
- 2.20 Mtpa average production of MoP;
- Granulated MoP represents approximately 86% of total MoP production and sales;
- All cashflows are on a real 2018 basis
- NPVs are ungeared and calculated after-tax applying a real discount rate of 10% (based on a review of 7 recent potash projects, 4 of which were in Africa and discussions with the Company's financial advisor a 10% discount rate was selected )
- NPVs are calculated at a base date of mid-2019 prior to the potential dates for commencement of project construction
- Average MoP price of US\$360/t MoP CFR Brazil (real 2018) for granular product (based on recent potash

price movements, current market prices, a review of recent releases by Potash producers and potash development companies and potash market research from CRU);

- Fiscal regime assumptions aligned with the recently finalised Mining Convention:
  - Corporate tax of 15% of taxable profit with concessions for the first 10 years of production (0% for the first 5 years and 7.5% for years 6 – 10);
  - Mining royalty of 3% of the Ex-Mine Market Value (defined as the value of the Product (determined by the export market price obtained for the Product when sold) less the cost of all Mining and Processing Operations including depreciation, all costs of Transport (including any demurrage), and all insurance costs);
  - Exemption from withholding taxes during the term of the Mining Convention;
  - Exemption from VAT and import duty during construction; and
  - Government receives a 10% free carried equity interest in the Kola Project company until the initial construction phase is completed.

The forecast project cash flow for 33 years of production is illustrated in Figure 10.

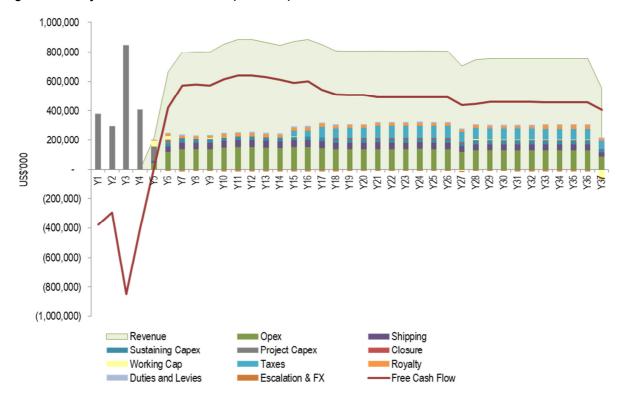


Figure 10 – Project Cash Flow Forecast (real 2018)

#### b. Sensitivity Analysis

The DFS economic evaluation demonstrates that the project economics are most sensitive to potash price and to project capital costs. Each percentage movement in Price has an approximate US\$40M movement in NPV<sub>10</sub>, and each percentage movement in Project Capital has an approximate US\$15 M impact on NPV<sub>10</sub>.

Sensitivity of the NPV to key input assumptions, on a -20%/+20% range is illustrated in Figure 11.

NPV impact (US\$m)
(1,000) (500) - 500 1,000

Potash Price +/- 20% (837)

Capex +/-20% (303) 303

Opex +/-20% (148) 148

Shipping cost +/-20% (45) 45

Sustaining Capex +/-20% (27) 27

Figure 11 - NPV<sub>10</sub> Sensitivity to key inputs

## c. Price Sensitivity

Table 7 below shows the sensitivity of the project NPV to Potash Price.

Table 7: Sensitivity to potash price

Granular MoP (US\$/t CFR Brazil)	NPV (US\$ million)
300	752
320	986
340	1,219
360	1,452
380	1,684
400	1,917
420	2,149

## d. Funding Sensitivity

The Company's financial advisors, Rothschild, have undertaken an assessment of the debt carrying capacity of the project. Rothschild's advice is that the project financials support debt financing of between US\$1.0 billion and US\$1.4 billion. The project's high operating margin and high free cash flow on invested capital have a strong influence on the ability of the project to support a high gearing. The sensitivity of the project NPV and IRR to the level of debt that could be potentially obtained is illustrated in Table 8 below.

Table 8: NPV<sub>10</sub> and IRR sensitivity to debt financing

Project Debt (US\$ million)	NPV (US\$ million)	IRR
0	1,452	17.2%
1,000	1,588	20.1%
1,400	1,643	22.1%

## e. Potential impact of Improvement Opportunities Identified in Review of the DFS

During Kore's review of the DFS using industry leading consultants a number of improvement opportunities have been identified. The potential impacts of the most significant of these opportunities are presented in Table 9.

Table 9: Influence of potential improvements on economic evaluation

	Impact on Economic Evaluation	
Potential Improvement	IRR %	NPV10 US\$
1. Improve KCl recovery by 0.9%	+0.17%	+ \$39M
2. Reduce construction schedule by 6 months	+0.99%	+\$135M
3. Reduce technical capex by US\$117M	+0.90%	+\$105M

## 16. Project Ownership and transfer of 10% to the RoC Government

The Kola Mining License is held by Kola Potash Mining SA, a 100% owned subsidiary of SPSA. In turn, SPSA is owned by the Kore Group (97%) and a RoC entity (Les Etablissements Congolais MGM) (3%). An existing Share Purchase Agreement enables Kore to purchase the remaining 3% of the shares in SPSA, with Kore shares to form the consideration.

In accordance with the Mining Convention, the RoC Government will be transferred 10% of the shares in Kola Potash Mining SA.

The Share Purchase Agreement provides for Kore to become the 100% owner of SPSA in advance of transferring the 10% interest in Kola Potash Mining S.A. to the RoC Government.

#### 17. Next Steps

The French Consortium (FC), who undertook the DFS, are contracted to deliver an Engineering, Procurement and Construction (EPC) proposal to Kore within 3 months of the DFS completion. The FC have advised Kore that they expect to provide an EPC proposal to Kore within this quarter.

Upon receipt of an EPC proposal, the existing contract between the parties provides two months for Kore and the FC to potentially reach an agreement on an EPC contract or Kore may exercise a right to seek competitive EPC binding proposals from European companies.

The Company continues its engagement with consultants and technical experts with a view to further optimising the project.

The DFS was delivered to Kore for review by the FC later than contracted, and the review of the DFS by consultants engaged by Kore indicates that the project design and capital cost can be further improved to reduce the capital cost. As a result, Kore has in accordance with the contractual terms, issued notices of deficiency to the FC seeking to address these matters.

The company will continue to work with the RoC Government to conclude the approval of the amended ESIA, while noting all other conventions, permits and rights to operate are in place.

The Mining Convention requires transfer to the RoC Government of 10% of the shares in the local company that holds the Kola mining licence. The process to effect this transfer has not yet been clarified and Kore will progress this with the Government.

The Company and its financial advisors will continue discussion with potential financiers to further the financing of the project.

#### 18. Risks

Key project and technical risks identified to the project's valuation and viability include, but are not limited to, those outlined in Table 10.

#### Table 10: Summary of Key Risks

## Key risks to achieving the outcome forecast for the Kola project

Ability to secure project funding

Global potash price change

Material changes to either capital or operational costs

Development of market and sales agreements for MoP

Geotechnical and geological design parameters not accurately predicting rock mass conditions and nature of orebody

Hydrogeological design parameters do not adequately control water influx

Proportions of Inferred Mineral Resources that convert to Ore Reserve

Conversion of MoUs for energy supply (electricity and gas) into commercial contracts.

RoC political risk

RoC government dispute sections of the Mining Convention

Changing community or local government expectations

Exchange rates

## 19. Permit progress

The Kola project has the majority of permits and agreements in place to facilitate commencement of construction and operations. Only the approval of the amended ESIA is currently outstanding.

The Mining Convention was gazetted into law on 7 December 2018

- The Maritime Authorisation approved by the Minister of Transport, Civil Aviation and Merchant Marine of the Republic of Congo was issued to the Company on 6 September 2018. The Authorisation covers the Kola, Dougou and Dougou Extension projects, is valid for twenty-five (25) years and renewable for the life of projects.
- The amended Environmental and Social Impact Assessment was submitted to the regulator for approval in Quarter 4 2018 and the Company currently awaits feedback from the regulator.

## 20. Project Funding

The Directors of Kore have formed the view that there is a reasonable basis to believe that requisite future debt and equity funding for development of the Kola Project will be available when required. Kore shareholders should be aware of the risk that future funding for development of the Kola Project is likely to dilute their ownership of the Company or Kore's economic interest in the Kola Project.

There are a number of grounds on which this reasonable basis is held:

- Kore has two large strategic shareholders on its register: (i) SQM (18%): a Chilean company with a market capitalisation in excess of US\$11B that is an integrated producer and distributor of specialty plant nutrients, including having an established business in the global potash market; and (ii) SGRF (19%): the sovereign wealth fund of Oman, which holds a range of natural resource investments, including on the African continent. These two groups invested a total of US\$40 million into Kore in late 2016. They collectively bring a considerable and highly relevant combination of substantial financial capacity, specific potash experience, Latin American, Middle Eastern and African influence, and financing expertise.
- The Kola Project DFS has been completed by a team of world-class project engineers and project managers, led by Vinci Construction Group, Technip France S.A., Egis Group and Louis Dreyfus Armateurs (the French Consortium). The DFS is comprehensive and inclusive of pre-engineering works. This level of definition in the study work is expected to provide a significant level of comfort for potential debt and equity project financiers of Kola.
- The French Consortium has contracted to provide Kore with an open-book, fixed price, binding EPC contract within three months of completion of the Kola DFS. This level of commitment from the French Consortium has the potential to significantly de-risk the construction phase for Kola. As such it is expected to provide a further level of comfort for potential debt and equity project financiers of Kola.
- The technical and financial parameters detailed in the Kola Project DFS are highly robust and economically attractive. Ongoing optimisation of the DFS parameters is expected to further improve the forecast DFS financial returns. Collectively, these elements are expected to enable the Kola Project to carry a significant level of gearing, thereby considerably reducing any required equity funding component to fund development. Rothschild has assessed the project and the economic evaluation to assess the level of debt funding that they believe the project will support and a range of between US\$1.0 and 1.4 billion has been identified as a realistic target.
- Kore is in advanced project finance discussions with a range of different global financiers, including many
  with considerable experience in funding bulk commodity projects and projects located on the African
  continent. Release of the Kola DFS also now provides a platform for Kore to advance these discussions
  with potential debt providers and equity investors.

- SQM and SGRF hold a right of first refusal to product offtake from Kola proportionate to their shareholding
  interest (with each having a floor of 20% of production). The residual 60% remains uncontracted and
  therefore a considerable attraction to other potential strategic financiers of the Kola Project. In this respect,
  Kore has held, and continues to hold, discussions with respect to possible offtake and project
  funding/ownership via additional strategic partners.
- As the future 90% owner of the Kola Potash Project, Kore's options for raising the required equity funding
  will include selling down part of its interest in the Kola Potash Project to a third party to form a joint venture.
  Introduction of a joint venture partner may also provide further comfort for potential debt project financiers
  and could reduce Kore's share of the equity funding requirements for the project. Kore shareholders should
  be aware that any sale of a joint venture interest in the project to a third party would most likely dilute
  Kore's economic ownership of the project.
- The Kore Board and management team is highly experienced in the broader resources industry. They
  have played leading roles previously in the exploration and development of several large and diverse
  mining projects in Africa. In this regard, key Kore personnel have a demonstrated track record of success
  in identifying, acquiring, defining, funding, developing and operating quality mineral assets of significant
  scale.
- Funding for Kola Project pre-production and initial working capital is not expected to be required until post
  conclusion of an EPC agreement and detailed engineering design. These items may be completed within
  2019 unless Kore exercises its right to seek a competitive EPC proposal in which case this timeline may
  extend by up to 12 months. Kore has reasonable grounds to believe that obtaining requisite funding within
  this timeline is achievable.

# **APPENDIX B**

**Summary of Information required under ASX** 

Appendix B: Summary of Information required under ASX Listing Rule 5.9.1(in relation to Ore Reserves), Listing Rule 5.16.1 (production target) and Listing Rule 15.7.1 (forecast financial information).

## Kola Project Ore Reserves and related production target and forecast financial information

Pursuant to Listing Rules 5.9.1, 5.16.1 and 15.7.1, and in addition to the information contained in the body of this release and in Appendix C below, the Company provides the following summary information. The assessment of the modifying factors to prepare the Ore Reserves Statement occurred as the DFS was being finalised, with the production target and forecast financial information based on the information contained in the finalised DFS described in this report. Differences between the material assumptions for the Ore Reserve Statement and the production target and financial forecast (referred to below) are attributable to: (i) improvements in the material assumptions in the course of finalising the DFS; and (ii) the inclusion of Inferred Mineral Resources in the production target and forecast financial information (which supports LoM of 33 years at nominal 2.2Mtpa MoP production).

## **Summary of Material Assumptions – Ore Reserves**

The material assumptions relating to the Ore Reserve Statement, for the Kola Project are summarised below:

- Production life (p37, Appendix C, p46 and p51)- LoM of the Ore Reserves 27 years at nominal 2 Mtpa MoP production, average 1.9 Mtpa MoP production, this was determined during the execution of the DFS and from an aligned production schedule for both mining and processing.
- Product Type (p37, Appendix C, p46, p47 and p50) process design was based on two MoP product types— Granular (86% of production) and Standard (14% of production). The marketed MoP will comprise at least 95% KCl, with a maximum of 0.2% Mg and 0.3% Insolubles.
- Product pricing (p35, Appendix C, p51) MoP prices were based on forecasts from CRU and Integer
  consulting. The Base Case sales price is forecast to increase at a compound annual real growth rate of
  2.3% per annum from USD260/tonne in 2023 to USD380/tonne in 2040 when equilibrium pricing is forecast
  by CRU to be reached. The average CIF sales price over the LoM is forecast at USD341 per tonne of MoP.
- Operating cost (p35, p38 and Appendix C, p49, p50 and p51) on-mine LoM average operating cost USD63/MoP t, real was calculated from first principles in the DFS
- Shipping costs (Appendix C, p51) LoM Shipping costs (trans-shipment and sea freight) of USD19/MoP t was based on information and estimates from both LDA and CRU.
- Project durations A project capital period 48 months was estimated in the DFS and the deferred capital period defined 25 months, with sustaining capital estimated in the DFS as 299 months
- Project Capital (Appendix C, p51) A total nominal Project Capital of USD2.1 billion (including EPCM costs and mark-up) was estimated in the DFS
- Fiscal parameters (p40, Appendix C, p51 and p52) The signed mining convention determined the relevant fiscal parameters as summarised below;
  - Company tax rate (15%),
  - O Tax holidays (5 years at 0% + 5 years at 7.5%)
  - Royalties (3%) (Mining Convention)
  - Government free carry (10%) (Mining Convention)
  - Other minor duties and taxes (Mining Convention)
- Working capital (Appendix C, p52) –Working capital based on 30 days Debtors and Creditors, 60 days Stores advised by Kore.

## Summary of Material Assumptions – production target and forecast financial information

The material assumptions relating to the production target and forecast financial information for the Kola Project which vary from the assumptions relating to the Ore Reserve Statement described above are summarised below:

- Production life (p14 and p15) LoM of 33 years at nominal 2.2 Mtpa MoP production, this was determined following the receipt of the DFS and the inclusion of Inferred Mineral Resource in the production target.
- Product pricing (p26) Average MoP price of US\$360/t MoP CFR Brazil (real 2018) for granular product (based on recent potash price movements, current market prices, a review of recent releases by Potash producers and potash development companies and potash market research from CRU).
- Operating cost (p24) mine gate operating cost is estimated at US\$61.71/t and the export (FOB) cost is estimated at US\$87.63/t.

#### Criteria for Mineral Resource and Ore Reserve Classification

The Ore Reserve estimate is based on the Indicated and Measured Mineral Resource estimate for sylvinite carried out by Met-Chem DRA and reported in accordance with the JORC Code (2012 edition), announced by the Company on 6 July 2017.

Drill-hole and seismic data are relied upon in the geological modelling and grade estimation. Across the deposit the reliability of the geological and grade data is high. Grade continuity is less reliant on data spacing as within each domain grade variation is small reflecting the continuity of the depositional environment and 'all or nothing' style of Sylvinite formation.

It is the data spacing that is the principal consideration as it determines the confidence in the interpretation of the seam continuity and therefore confidence and classification; the further away from seismic and drill-hole data the lower the confidence in the Mineral Resource classification. In the assigning confidence category, all relevant factors were considered, and the final assignment reflects the Competent Persons view of the deposit.

Table 1: Summary of Criteria used for the Classification of the Kola Mineral Resource

	Drill-hole required	Seismic data required	Classification extent
Measured	Average of 1 km spacing	Within area of close spaced 2010/2011 seismic data (100 – 200 m spacing)	Not beyond the seismic requirement
Indicated	1-1.5 km spacing	1 to 2.5 km spaced 2010/2011 seismic data and 1 to 2 km spaced oil industry seismic data	Maximum of 1.5 km beyond the seismic data requirement if sufficient drill-hole support
Inferred	Few holes, none more than 2 km from another	1-3 km spaced oil industry seismic data	Seismic data required and maximum of 3.5 km from drill-holes

The Measured and Indicated Mineral Resources for sylvinite are hosted by 3 layers (or 'seams') which are as follows from uppermost; the Hanging Wall Seam (HWS), the Upper Seam (US) and the Lower Seam (LS), each separated by rock-salt (a rock-type typically comprised of >95% halite).

Magnesium and insoluble content are considered deleterious but are present in only very small amounts in the ore (average of 0.07% and 0.14% respectively).

The Mineral Resource Estimate was delivered to the Ore Reserve consultants in the form of a standard block model, blocks having dimensions 250 x 250 x 1 m, each block having a KCl grade, a density, and magnesium and insoluble content.

The Mineral Resources are inclusive of the Ore Reserves i.e. the Ore Reserves are the mineable part of the Mineral Resources after the application of technical, economic and other modifying factors.

Areas of potential structural disturbance, referred to as geological anomalies were excluded from the Measured and Indicated Mineral Resource. They were identified from seismic data as is standard in potash mining districts elsewhere. A 10% cut-off grade (CoG) was used in the Mineral Resource Estimate.

## Mining Method and assumptions

Mining factors and assumptions have been derived from the historical information available for mature potash mines, and the current best mining practices. The Kola orebody will be mined using conventional underground (UG) mining method consisting of room and pillar in a 'chevron' (or herring-bone) pattern, with Continuous Miners (CM's) mining machines of the drum-cutting type.

Most of the mining will be one level only where only the US will be extracted. In some areas, both the US and the LS will be mined, in which case the LS will only be mined after the US. In other areas only the HWS will be mined.

In determining the Ore Reserves, a minimum mining height of 2.5 m was selected based on capability of the selected CM which is also capable of mining up to 6 m. Areas of the Mineral Resource with a seam height of less than 2.5 m were excluded from the Ore Reserves.

The mine design is typical of potash mines, having 4 entries for access drives. Each drive will typically be 8 m wide and 3 m to 6 m high depending on the seam height. The typical configuration for the chevron pattern is an angle of 65 degrees from the middle entry, and length of 150 m approximately.

The Mine design relies on geotechnical modelling, carried out in FLAC 3D software. The modelling was based on geotechnical test-work carried out on representative core samples from the sylvinite seams and host rocks (rock-salt and lesser carnallitite). The geotechnical modelling established that the mine is stable over the LoM for the DFS mine design which includes the following geotechnical parameters:

- Where both the US and LS seams are to be mined, the support interval between the US and LS must be at least 3 m thick.
- An 8 m wide pillar between two consecutive production rooms (of 8 m each).
- A 50 m wide pillar between two production panels. Similarly, a 50 m wide pillar will be left in place between the side of the production panel and the main haulage access drift.
- The interval of rock-salt between the mine openings and the floor of the overlying anhydrite member is referred to as the 'salt back'. This is typically over 30 m but is less in some areas. The DFS design allows that it may be a minimum of 15 m unless the Anhydrite Member is well developed where it may be 10 m. This is based on the results of the geotechnical model.
- A stand-off distance of 20 m radius from the exploration holes.
- A stand-off distance of 30 m radius from class 2 geological anomalies and 60 m radius from class 3 geological anomalies.
- o A pillar of 300 m in radius around the exhaust and intake shafts.

Based on the selected mining equipment (CMs), it is anticipated that a good cutting selectivity would be achieved, and that a maximum of 0.2 m of dilution material above and/or below the potash seam is likely. Carnallitite is present in the floor of the seam in some areas. The roof is always of rock-salt. On average, the dilution material is equivalent to approximately 10% of the tonnage of the Ore Reserves. Dilution material was assigned a grade of 3% KCl if rock-salt and 0% KCl if Carnallitite.

Based on the configuration of the proposed mining layout, and based on the anticipated fleet of mining equipment, it is assumed that the mining recovery in the different extraction chambers will be 90% on average (i.e. mining losses will be 10%). This considers the mining action which will lead to some losses such as material being excavated and left in the production chamber, or mineralized material left in the floor or roof, etc.

The Global extraction ratio is 30% (25% in the LS, 33% in the US and 28% in the HWS). This is after the removal of all pillars (pillars around the geological anomalies, the barrier pillars, the shaft pillar, the pillars between chevrons and main access drifts), the stand-off distance around boreholes, mining losses and the exclusion of sylvinite <2.5 m thick.

Two vertical shafts, each with 7 m internal diameter, will be sunk at a central location in the Ore Reserves, to provide access to the underground. The intake shaft will be equipped with a hoist and cage system for transportation of persons and material, while the exhaust shaft will be equipped with a vertical conveyor system to convey the mined-out ore to the surface. Both shafts are approximately 270 m deep.

Ore haulage from the CMs to the feeder breaker apron feeder will be done using electrically- powered Shuttle Cars.

Underground conveyor belts will be used for ore transportation in all the areas of the mine. The belts are distributed in the mains and submains and ultimately in the working panels near the CM working face. The ore will be placed on the belts from the feeder breakers that were fed by the shuttle cars. The belt conveyors will carry the ore loaded by the feeder breakers to the ore bins. Then the ore is conveyed from the ore bins to the Pocket Lift system located in the exhaust shaft.

The life-of mine (LoM) for the Kola Potash Project Mine is 27 years, of which full-scale 2.0 Mt per annum of MoP production is for 25 years.

For the LoM production plan and economic analysis an additional 9.7 Mt of sylvinite classified as Inferred Mineral Resource was included. This material contributes 6.0% of the total amount of ROM material and 7% of the total contained KCl and is planned to be materially extracted from year 12 onwards. Without the inclusion of this material the LoM is 24 years, with a reduction of NPV10 of approximately USD100 million and reduction in IRR of 0.5%.

#### **Processing Method and Assumptions**

The final product will be MoP K60, comprising at least 95% KCl. The DFS design allows for the production of this MoP in two forms, standard and granular. Granular material will be coloured red.

A conventional flotation process will be utilized for potash concentration. This method is well established, and the most widely used method in the potash industry.

The metallurgical test work campaigns were based on representative core samples of the three seams, collected from the exploration drill hole cores. They comprised US (114.5 kg), LS (102.0 kg) and HWS (10.3 kg). All test work was carried out at the Saskatchewan Research Council (SRC) laboratory in Saskatoon, Canada

The process flow sheets were optimised to meet the initial DFS target of 2.0Mtpa of Muriate of Potash (MoP), at 95.3% KCl purity, with a minimum KCl recovery of 89.5% of the KCl content in the ROM fed to the Process Plant.

Two metallurgical test work campaigns were conducted during the DFS in 2017 and 2018. The main philosophy of the first DFS test work campaign was to prepare representative test feedstocks for each seam, confirm KCl liberation, characterize the feedstock, perform flotation tests, optimize the operating conditions, optimize reagent consumption for optimum KCl recovery and grade performance, perform a sensitivity test on flotation.

The objective of the second test work campaign was to optimize the flotation process and improve the plant recovery from the initial flow sheet. The results of this second test work campaign, when processed in SYSCAD™ model, demonstrated that the new flotation process performed above the project performance minimum target.

The alternative flotation flow sheet was finally selected based on the second test works and SYSCAD™ modelling. With a raw ore feed grade of 31.3% KCl, the material balance confirmed that the project objectives can be met with a production of 2Mtpa with an expected product recovery of 89.9%, and a final product grade of 95.3% KCl.

To reflect the final DFS marketing assumption, the process plant will be designed to achieve a granular/standard ratio average over one year equal to 86%/14%.

Magnesium and insoluble material are considered deleterious. The extremely low content of these materials in the ore mean that their removal is relatively straightforward. Insoluble material is removed by attrition scrubbing and magnesium removed by brine purge.

The metallurgical test work campaigns provided a sound foundation for the development of the process design engineering and subsequent project performance, overall engineering studies and the cost estimate.

#### **Cut-off Grades**

A Cut-off grade (CoG) of 9.9% KCl has been calculated for the Ore Reserve Estimation based on forecast revenue and estimated operating costs. The cut-off calculation included all operating costs associated with the extraction, processing and marketing of ore material. The cut-offs are based on a Muriate of Potash (MoP) price of US\$250 per tonne of MoP. Inputs to the calculation of cut-off grades included:

- Mining costs
- Metallurgical recoveries
- Processing costs
- Shipping costs
- General and administrative costs

All sylvinite of the Measured and Indicated Resource is above 9.9% KCI (the Ore Reserve calculated CoG), therefore all the Measured and Indicated Sylvinite Resources have been considered for the Ore Reserve Estimate by application of the other modifying factors.

The uniformly very low content of deleterious elements (magnesium and insoluble material) meant that these did not require consideration in the CoG determination.

#### **Estimation Methodology**

#### Capital Cost:

Capital Cost Estimate has been developed for each scope area, expressed in United States dollars (USD) and based on July 2018 prices.

Currency Exchange Rates are sourced from Oanda (www.oanda.com) spot rates (September 2017).

Capital Cost Estimate is a full AACEI Class II Estimate (+/-10%), based on Erected quantities (which include Design Growth Allowances) determined from complete Material Take-Offs and application of unit rates. For Main Equipment, 82% of the cost is based on quotations from Vendors.

Escalation of 6.4% (up to project completion) has been considered, and a total Contingency of 6.0% has been added, resulting from the complete Risk Analysis performed.

Three capital periods have been defined: Initial (Construction and up to first barge loading, Month +47); Deferred (up to ramp-up completion, Month +65); Sustaining (after Month +65)

### Operating Cost:

Operating costs were estimated from first principles using quoted rates, estimated consumption, forecast labour complements and remuneration estimates.

Operating Cost covering the Life of Mine (25 years) has been estimated in USD based on 2<sup>nd</sup> quarter 2018 costs. They include costs for Electric power, Fuel, Gas, Labour, Maintenance parts, Operating Consumables, General and Administration costs and Contract for Employee Facilities.

The Operating Cost Estimate excludes Transshipment and Sea Transport.

Transshipment costs based on Louis Dreyfus Armateurs contract budget quotation for their barges and boats, including 5-years drydocking costs.

Ocean Freight Transportation estimate produced by CRU Consulting.

Mine Closure cost estimated in accordance with the Conceptual Rehabilitation and Closure Plan developed by SRK Consulting.

Mine Closure duration of 60 months (5 years), considering 24 months (2 years) for the effective dismantling, demolition and rehabilitation works and 36 months (3 years) for the Post-Closure Monitoring and Maintenance period.

Quantities of equipment, materials and works directly assessed from the Material Take-off prepared within the framework of the DFS for the Kola Potash Project.

Unit rates for dismantling, demolition and rehabilitation works directly based on the Construction Unit rates applied for the CAPEX estimate of the Kola Potash Project and adjusted by using ratios to assess the lower consuming time and means for dismantling, removing and demolition works.

State mineral royalties of 3% of Gross Revenue were applied

Measured Mineral Resources were used for the estimation of the Proved Ore Reserves. Indicated Mineral Resources were used for the estimation of Probable Ore Reserves.

The conversion of Measured and Indicated Mineral Resource to Proved and Probable Ore Reserve reflects the Competent Person's view of the deposit.

40.6% of the Ore Reserves are classified in the Proved category and 59.4% of the Ore Reserves are classified in the Probable category

#### **Material Modifying Factors**

#### • Status of Environmental Approvals

The Kola ESIA, initially approved on 10 October 2013, was amended to reflect the design changes made to the Kola Project as part of the Definitive Feasibility Study ("DFS") and has been amended to include the service corridors for a gas pipeline and overhead power line. The application and terms of reference for amending the ESIA were approved on 12 April 2018 by the Minister of Tourism and Environment. The amended ESIA approval covers the proposed mining and processing of the Kola sylvinite Deposit. The ESIA for the Kola Mining License is expected to be approved by the Minister of Tourism and Environment of the Republic of Congo shortly through the issuance of a certificate of environmental compliance (the "Compliance Certificate"). The Compliance Certificate is renewed annually until construction of a mine on the license is completed. The Company shall carry out their construction operations in compliance with the environmental and social management plan as part of the approved ESIA and will be subject to Regulator's environmental management compliance audits.

### **Status of Mining Tenements and Approvals**

Kore Potash Limited (which is 100% owned by Kore Potash Plc.) and formerly known as Elemental Minerals Limited (ELM), has a 97%-holding in Sintoukola Potash SA (SPSA), a company registered in the ROC. The remaining 3% in SPSA is held by "Les Establissements Congolais MGM" (Republic of Congo). SPSA in turn has a 100% interest in its two ROC subsidiaries, Kola Potash Mining SA and Dougou Potash Mining SA. The Kola Deposit is within the Kola Mining Lease which is 100% held by Kola Potash Mining SA

- In May 2008, a non-exclusive Prospecting Authorisation was granted to Sintoukola Potash covering an area of 1,436.5 km2. On 13 August 2009, this was changed to a "Permis de Recherches" (Exploration Permit) named 'Permis Sintoukola' under decree No. 2009-237 giving the Company exclusive rights to explore;
- On 27 November 2012, the first renewal of the permit was made, by decree No. 2012-1193 and reduced in size to 1,408 km2;
- On the 9 August 2013, a Mining Lease for Kola issued under decree No. 2013-312, totalling 204.52 km2 falling entirely within the Exploration Permit.

#### **Other Governmental Factors**

A mining convention entered into between the RoC government and the Companies on 8 June 2017 and gazetted into law on 7 December 2018 concludes the framework envisaged in the 25-year renewable Kola Mining License granted in August 2013. The Mining Convention provides certainty and enforceability of the key fiscal arrangements for the development and operation of Kola Mining Licenses, which amongst other items include import duty and VAT exemptions and agreed tax rates during mine operations. The Mining Convention provides strengthened legal protection of the Company's investments in the Republic of Congo through the settlement of disputes by international arbitration.

#### Infrastructure Requirements for Selected Mining, Processing and Product Transportation to Market

The project infrastructure is comprised of the mine-site (shaft and offices), the process plant on the coast (at Tchiboula), the 34 km infrastructure corridor between these (including the overland conveyor, service road and power line), the gas line from M'boundi gas field, overhead line from the MKII substation, the accommodation and administrative camp and the transshipment facilities.

Exclusive land acquisition rights have been granted to the Project company for plant development through ministerial order gazetted on 30 August 2018 (the "**Déclaration d'Utilité Publique**" or "**DUP**") valid for three years and renewable once for a two-year period.

The summarised infrastructure requirements are summarised below;

- Road access to the Kola Potash Project sites will be via the existing Route Nationale 5 (RN5) that is paved. An 11.6 km long, 8 m wide, paved road will be laid from the existing RN5 to the Process Plant Site. Road access to the Mine Site will be via a 6.5 m wide private Service Road which will run alongside the Overland Conveyor.
- Electrical Power will be sourced from the ROC national grid. A 59 km long 220 kV transmission line will be built from the Mongo Kamba II substation north of Pointe Noire to the Process Plant Site. A second 34 km long 220 kV transmission line will be built from the Process Plant Site to the Mine Site.
- The Natural Gas needed for product drying will be supplied by a 75 km long pipeline from the M'Boundi gas treatment plant.
- Raw Water will be supplied from wells located at the Mine Site (3 wells) and at the Accommodation Camp close to the Process Plant Site (4 wells).
- Ongoing operational labour will be a combination of permanent employees, permanent contract services, and
  part-time contract services for intermittent needs. The total requirement for permanent employees is expected
  to be 731. Local labour resources will be used for the majority of labour requirements, while some selected
  positions are planned as expat roles.
- The Accommodation Camp has been sized for a capacity of 850 beds and will be located on high ground to the northeast of the Process Plant.
- The Kola Potash Project intends to export 2.2 Mt MoP to world markets each year. A transshipment solution has been developed, whereby the material for export is loaded at a dedicated Jetty onto self-propelled shuttle barges (two units), which will then travel to Ocean Going Vessels (OGVs) anchored 11 nautical miles (20 km) offshore in a dedicated transshipment area. The cargo will be transferred from the Barges to the OGVs using a Floating Crane Transhipper Unit (FCTU).

# **APPENDIX C**

**JORC 2012 Table 1 Section 4 Ore Reserves** 

Appendix C: JORC 2012 - Table 1, Section 4 Ore Reserves

The Company has relied upon its previously reported information, in particular the announcement of 6 July 2017, in respect of the matters related to sections 1, 2 and 3.

The Company notes that the Ore Reserve estimate is based on a shorter mine life (27 years) and a lower production rate (full scale 2.0Mtpa MoP) compared to the Company's production target of 2.2Mtpa MoP over a 33 year life. This is a result of the assumptions for the Ore Reserve being developed during the DFS preparation phase (so does not incorporate improvements contained in the final DFS) and the inclusion of Inferred Mineral Resource in the production target.

The Company confirms that the information in sections 1, 2 and 3 has not changed since it was last reported and has been included in Appendix D of this report for compliance with ASX requirements and ease of reference.

## Section 4 Estimation and Reporting of Ore Reserves

(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section)

Criteria	JORC Code explanation	Commentary
	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.  Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	The Ore Reserve estimate is based on the Indicated and Measured Mineral Resource estimate for sylvinite carried out by Met-Chem DRA and reported in accordance with the JORC Code (2012 edition), announced by the Company on 6 July 2017.  The Measured Mineral Resource is 216 Mt with an average grade of 35.0% KCl. The Indicated Mineral Resource is 292 Mt with an average grade of 35.7% KCl.
		The total combined Measured and Indicated Mineral Resources are 508 Mt with an average grade of 35.4% KCl.
Mineral Resource estimate for conversion to Ore Reserves		The Measured and Indicated Mineral Resources for sylvinite are hosted by 3 layers (or 'seams') which are as follows from uppermost; the Hanging Wall Seam (HWS), the Upper Seam (US) and the Lower Seam (LS), each separated by rock-salt (a rock-type typically comprised of >95% halite).
		Magnesium and insoluble content are considered deleterious but are present in only very small amounts in the ore (average of 0.07% and 0.14%respectively).
		The Mineral Resource Estimate was delivered to the Ore Reserve consultants in the form of a standard block model, blocks having dimensions 250 x 250 x 1 m, each block having a KCl grade, a density, and magnesium and insoluble content.
		The Mineral Resources are inclusive of the Ore Reserves (i.e. the Ore Reserves are the mineable

Criteria	JORC Code explanation	Commentary
		part of the Mineral Resources after the application of technical, economic and other modifying factors.
		Areas of potential structural disturbance, referred to as geological anomalies were excluded from the Measured and Indicated Mineral Resource. They were identified from seismic data as is standard in potash mining districts elsewhere.)
		A 10% cut-off grade (CoG) was used in the Mineral Resource Estimate.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.  If no site visits have been undertaken indicate why this is the case.	A site visit was conducted by the Competent Person for the Ore Reserve Estimate between June 26 to June 28, 2017. The visit included exploration camp inspection, core viewing, site of shafts and process plant, access route from Pointe Noire. The site visit supported the findings of the Competent Person.
	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.	A comprehensive Definitive Feasibility Study (DFS) was undertaken including a Life of Mine (LoM) plan. The DFS considers all relevant modifying factors, to permit the conversion of the Mineral Resources to Ore Reserves.
Study status	The Code requires that a study to at least Pre- Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material modifying factors have been considered.	The DFS includes Early Contractor Involvement (ECI) by the construction company to ensure that a capital cost estimate of +/- 10% level of accuracy can be achieved.
	The basis of the cut-off grade(s) or quality parameters applied.	A cut-off grade (CoG) of 9.9% KCI has been calculated for the Ore Reserve Estimation based on forecast revenue and estimated operating costs. The cut-off calculation included all operating costs associated with the extraction, processing and marketing of ore material. The cut-offs are based on a Muriate of Potash (MoP) price of US\$250 per tonne of MoP. Inputs to the calculation of cut-off grades included:
Cut-off parameters		<ul> <li>Mining costs</li> <li>Metallurgical recoveries</li> <li>Processing costs</li> <li>Shipping costs</li> <li>General and administrative costs</li> </ul>

Criteria	JORC Code explanation	Commentary
		All sylvinite of the Measured and Indicated Resource is above 9.9% KCI (the Ore Reserve calculated CoG), therefore all the Measured and Indicated Sylvinite Resources have been
		considered for the Ore Reserve Estimate by application of the other modifying factors.
		The uniformly very low content of deleterious elements (magnesium and insoluble material) meant that these did not require consideration in the CoG determination.
	The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the	Mining factors and assumptions have been derived from the historical information available for mature potash mines, and the current best mining practices.
	Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).	The Kola orebody will be mined using conventional underground (UG) mining method consisting of room and pillar in a 'chevron' (or herring-bone) pattern, with Continuous Miners (CM's) mining machines of the drum-cutting type.
	The choice, nature and appropriateness of the	The mining equipment selected for the Kola Potash Project Mine are CM's.
	selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.	Most of the mining will be one level only where only the US will be extracted. In some areas, both the US and the LS will be mined, in which case the LS will only be mined after the US. In other areas only the HWS will be mined.
	The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.	In determining the Ore Reserves, a minimum mining height of 2.5 m was selected based on capability of the selected CM which is also capable of mining up to 6 m. Areas of the Mineral Resource with a seam height of less than 2.5 m were excluded from the Ore Reserves.
Mining factors or assumptions	The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	The mine design is typical of potash mines, having 4 entries for access drives. Each drive will typically be 8 m wide and 3 m to 6 m high depending on the seam height. The typical configuration for the chevron pattern is an angle of 65 degrees from the middle entry, and
	The mining dilution factors used.	length of 150 m approximately.
	The mining recovery factors used.	
	Any minimum mining widths used.	The Mine design relies on geotechnical modelling, carried out in FLAC 3D software. The modelling
	The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.	was based on geotechnical test-work carried out on representative core samples from the sylvinite seams and host rocks (rock-salt and lesser carnallitite). The geotechnical modelling established that the mine is stable over the LoM for the DFS mine design which includes the
	The infrastructure requirements of the selected mining	following geotechnical parameters:
	methods.	<ul> <li>Where both the US and LS seams are to be mined, the support interval between the US and LS must be at least 3 m thick.</li> </ul>
		o An 8 m wide pillar between two consecutive production rooms (of 8 m each).
		$_{\circ}$ A 50 m wide pillar between two production panels. Similarly, a 50 m wide pillar will be left in

Criteria	JORC Code explanation	Commentary
		place between the side of the production panel and the main haulage access drift.
		The interval of rock-salt between the mine openings and the floor of the overlying anhydrite member is referred to as the 'salt back'. This is typically over 30 m but is less in some areas. The DFS design allows that it may be a minimum of 15 m unless the Anhydrite Member is well developed where it may be 10 m. This is based on the results of the geotechnical model.
		<ul> <li>A stand-off distance of 20 m radius from the exploration holes.</li> </ul>
		<ul> <li>A stand-off distance of 30 m radius from class 2 geological anomalies and 60 m radius from class 3 geological anomalies.</li> </ul>
		<ul> <li>A pillar of 300 m in radius around the exhaust and intake shafts.</li> </ul>
		Based on the selected mining equipment (CMs), it is anticipated that a good cutting selectivity would be achieved, and that a maximum of 0.2 m of dilution material above and/or below the potash seam is likely. Carnallitite is present in the floor of the seam in some areas. The roof is always of rock-salt. On average, the dilution material is equivalent to approximately 10% of the tonnage of the Ore Reserves. Dilution material was assigned a grade of 3% KCl if rock-salt and 0% KCl if Carnallitite.
		Based on the configuration of the proposed mining layout, and based on the anticipated fleet of mining equipment, it is assumed that the mining recovery in the different extraction chambers will be 90% on average (i.e. mining losses will be 10%). This considers the mining action which will lead to some losses such as material being excavated and left in the production chamber, or mineralized material left in the floor or roof, etc.
		The Global extraction ratio is 30% (25% in the LS, 33% in the US and 28% in the HWS). This is after the removal of all pillars (pillars around the geological anomalies, the barrier pillars, the shaft pillar, the pillars between chevrons and main access drifts), the stand-off distance around boreholes, mining losses and the exclusion of sylvinite <2.5 m thick.
		Two vertical shafts, each with 7 m internal diameter, will be sunk at a central location in the Ore Reserves, to provide access to the underground. The intake shaft will be equipped with a hoist and cage system for transportation of persons and material, while the exhaust shaft will be equipped with a vertical conveyor system to convey the mined-out ore to the surface. Both shafts are approximately 270 m deep.
		One haulage from the CMs to the feeder breaker apron feeder will be done using electrically-

Criteria	JORC Code explanation	Commentary
		powered Shuttle Cars.
		Underground conveyor belts will be used for ore transportation in all the areas of the mine. The belts are distributed in the mains and submains and ultimately in the working panels near the CM working face. The ore will be placed on the belts from the feeder breakers that were fed by the shuttle cars. The belt conveyors will carry the ore loaded by the feeder breakers to the ore bins. Then the ore is conveyed from the ore bins to the Pocket Lift system located in the exhaust shaft.
		The life-of mine (LoM) for the Kola Potash Project Mine is 27 years, of which full-scale 2.0 Mt per annum of MoP production is for 25 years. For the LoM production plan and economic analysis an additional 9.7 Mt of sylvinite classified as Inferred Mineral Resource was included. This material contributes 6.0% of the total amount of ROM material and 7% of the total contained KCl and is planned to be materially extracted from year 12 onwards. Without the inclusion of this material the LoM is 24 years, with a reduction of NPV <sub>10</sub> of approximately USD100 million and reduction in IRR of 0.5%.
Metallurgical factors or assumptions	The metallurgical process proposed and the appropriateness of that process to the style of mineralization.	The final product will be MoP K60, comprising at least 95% KCl. The DFS design allows for the production of this MoP in two forms, standard and granular. Granular material will be coloured red.
	Whether the metallurgical process is well-tested technology or novel in nature.	A conventional flotation process will be utilized for potash concentration. This method is well established, and the most widely used method in the potash industry.
	The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors	The Metallurgical Test work Campaigns were based on representative core samples of the three seams, collected from the exploration drill hole cores. They comprised US (114.5 kg), LS (102.0 kg) and HWS (10.3 kg). All test work was carried out at the Saskatchewan Research Council (SRC) laboratory in Saskatoon, Canada.
	applied.  Any assumptions or allowances made for deleterious elements.	The process flow sheets were optimized to meet the Kola Potash Project targets of producing 2.0Mtpa of Muriate of Potash (MoP), at 95.3% KCl purity, with a minimum KCl recovery of 89.5% of the KCl content in the ROM fed to the Process Plant.
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.  For minerals that are defined by a specification, has	Two metallurgical test work campaigns were conducted during the DFS in 2017 and 2018. The main philosophy of the first DFS test work campaign was to prepare representative test feedstocks for each seam, confirm KCl liberation, characterize the feedstock, perform flotation tests, optimize the operating conditions, optimize reagent consumption for optimum KCl recovery and grade performance, perform a sensitivity test on flotation.
	the Ore Reserve estimation been based on the	The objective of the second test work campaign was to optimize the flotation process and improve

Criteria	JORC Code explanation	Commentary
	appropriate mineralogy to meet the specifications?	the plant recovery from the initial flow sheet. The results of this second test works processed in SYSCAD™ model demonstrated that the new flotation process performed above the project performance minimum target.
		The alternative flotation flow sheet was finally selected based on the second test works and SYSCAD™ modelling. With a raw ore feed grade of 31.3% KCl, the material balance confirmed that the project objectives can be met with a production of 2Mtpa with an expected product recovery of 89.9%, and a final product grade of 95.3% KCl.
		To reflect the final DFS marketing assumption, the process plant will be designed to achieve a granular/standard ratio average over one year equal to 86%/14%.
		Magnesium and insoluble material are considered deleterious. The extremely low content of these materials in the ore mean that their removal is relatively straightforward. Insoluble material is removed by attrition scrubbing and magnesium removed by brine purge.
		The metallurgical test work campaigns provided a sound foundation for the development of the process design engineering and subsequent project performance, overall engineering studies and the cost estimate.
	The status of studies of potential environmental impacts of the mining and processing operation.  Details of waste rock characterisation and the	Exploration and data acquisition and activities were undertaken under the auspices of an approved Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) set out to international best practice and approved by the RoC regulator.
	consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	The Environmental and Social Impact Assessment (ESIA) for the operation of the mining project was initially prepared by the consulting company SRK in Cardiff and approved by the RoC regulator in 2013.
Environmental		An amendment was prepared by SRK in parallel with the DFS to capture changes to the project description and was submitted to the ROC regulator in Q4 2018.
		An Environmental and Social Action Plan (ESAP) captured the differences between the national process required by the Congolese authorities and International Best Practice to Equator Principles and IFC Performance Standards.
		The ESIA addresses all impacts of the operation, from mine-site to exportation, as listed in the infrastructure section below.
		The mine-site and a portion of the infrastructure corridor are located within the economic development and buffer zones of the Conkouati-Douli National Park (CDNP). Project activity in

Criteria	JORC Code explanation	Commentary
		this area was minimized and influx is led away from the park through the siting of employee facilities outside the CDNP.
		Waste rock is very minimal, being only the <0.2% of insoluble material or just under 1Mt over the LoM. The bulk of the waste is dissolved halite in the form on an NaCl brine. All waste streams will be diluted with seawater to a concentration of 200mg/l and discharged via a diffuser into the ocean. This material has been characterised and ecotoxicological testing has been undertaken to confirm that no adverse impacts are caused at the edge of the mixing zone.
		The overall conclusion of the ESIA is that negative environmental impacts identified can be reduced to acceptable levels.
		A rehabilitation and closure plan has been prepared and included in owner's costs of the project.
		Biodiversity, air quality, social, archeological, water and noise baseline studies have been prepared and incorporated into the ESIA process.
	The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	The project infrastructure is comprised of the mine-site (shaft and offices), the process plant on the coast (at Tchiboula), the 34 km infrastructure corridor between these (including the overland conveyor, service road and power line), the gas line from M'boundi gas field, overhead line from the MKII substation, the accommodation and administrative camp and the transshipment facilities.
		Exclusive land acquisition rights have been granted to the Project company for plant development through ministerial order gazetted on 30 August 2018 (the "Déclaration d'Utilité Publique" or "DUP") valid for three years and renewable once for a two-year period.
Infrastructure		The Process Plant Site is located on the coast, approximately 60 km north west of Pointe Noire while the Mine Site is located inland and 33 km north and of the Project Process Plant.
		Road access to the Kola Potash Project sites will be via the existing Route Nationale 5 (RN5) that is paved. An 11.6 km long, 8 m wide, paved road will be laid from the existing RN5 to the Process Plant Site. Road access to the Mine Site will be via a 6.5 m wide private Service Road which will run alongside the Overland Conveyor.
		Electrical Power will be sourced from the ROC national grid. A 59 km long 220 kV transmission line will be built from the Mongo Kamba II substation north of Pointe Noire to the Process Plant Site. A second 34 km long 220 kV transmission line will be built from the Process Plant Site to the Mine Site.
		The Natural Gas needed for product drying will be supplied by a 75 km long pipeline from the

Criteria	JORC Code explanation	Commentary
		M'Boundi gas treatment plant.
		Raw Water will be supplied from wells located at the Mine Site (3 wells) and at the Accommodation Camp close to the Process Plant Site (4 wells).
		Ongoing operational labour will be a combination of permanent employees, permanent contract services, and part-time contract services for intermittent needs. The total requirement for permanent employees is expected to be 731. Local labour resources will be used for the majority of labour requirements, while some selected positions are planned as expat roles.
		The Accommodation Camp has been sized for a capacity of 850 beds and will be located on high ground to the northeast of the Process Plant.
		The Kola Potash Project intends to export 2Mt MoP to world markets each year. A transshipment solution has therefore been developed, whereby the material for export is loaded at a dedicated Jetty onto self-propelled shuttle Barges (two units), which will then travel to Ocean Going Vessels (OGVs) anchored 11 nautical miles (20 km) offshore in a dedicated transshipment area. The cargo will be transferred from the Barges to the OGVs using a Floating Crane Transhipper Unit (FCTU).
Costs	The derivation of, or assumptions made, regarding projected capital costs in the study.  The methodology used to estimate operating costs.	Capital Cost:
		Capital Cost Estimate has been developed for each scope area, expressed in United States dollars (USD) and based on July 2018 prices.
	Allowances made for the content of deleterious elements.	Currency Exchange Rates are sourced from Oanda ( <a href="www.oanda.com">www.oanda.com</a> ) spot rates (September 2017). Forecast exchange rates were based on World Bank.
	The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products.	Capital Cost Estimate is a full AACEI Class II Estimate (+/-10%), based on Erected quantities (which include Design Growth Allowances) determined from complete Material Take-Offs and application of unit rates. For Main Equipment, 82% of the cost is based on quotations from
	The source of exchange rates used in the study.	Vendors.
	Derivation of transportation charges.  The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Escalation of 6.4% (up to project completion) has been considered, and a total Contingency of 6.0% has been added, resulting from the complete Risk Analysis performed.
		Three capital periods have been defined: Initial (Construction and up to first barge loading, Month +47); Deferred (up to ramp-up completion, Month +65); Sustaining (after Month +65)
	The allowances made for royalties payable, both	Operating Cost:
	Government and private.	Operating costs were estimated from first principles using quoted rates, estimated consumption, forecast labour complements and remuneration estimates.

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		Operating Cost covering the Life of Mine (25 years) has been estimated in 2Q2018 USD. They include costs for Electric power, Fuel, Gas, Labour, Maintenance parts, Operating Consumables, General and Administration costs and Contract for Employee Facilities.
		The Operating Cost Estimate excludes Transshipment and Sea Transport.
		Transshipment costs based on Louis Dreyfus Armateurs contract budget quotation for their barges and boats, including 5-years drydocking costs.
		Ocean Freight Transportation estimate produced by CRU Consulting.
		Mine Closure cost estimated in accordance with the Conceptual Rehabilitation and Closure Plan developed by SRK Consulting.
		<ul> <li>Mine Closure duration of 60 months (5 years), considering 24 months (2 years) for the effective dismantling, demolition and rehabilitation works and 36 months (3 years) for the Post-Closure Monitoring and Maintenance period.</li> <li>Quantities of equipment, materials and works directly assessed from the Material Take-off prepared within the framework of the DFS for the Kola Potash Project.</li> <li>Unit rates for dismantling, demolition and rehabilitation works directly based on the Construction Unit rates applied for the CAPEX estimate of the Kola Potash Project and adjusted by using ratios to assess the lower consuming time and means for dismantling, removing and demolition works.</li> </ul>
		State mineral royalties of 3% of Gross Revenue applies
		Other criteria
		The marketed MoP will comprise at least 95% KCl, with a maximum of 0.2% Mg and 0.3% Insolubles.
Revenue factors	The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.	Head grade, recovery and product grade forecasts were based on the DFS results.  Commodity prices were informed by CRU and Integer reports.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	
Market assessment	The demand, supply and stock situation for the	Based on CRU estimates, global potash demand is forecast to grow from 74.9Mt in 2022 to exceed

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Criteria	particular commodity, consumption trends and factors likely to affect supply and demand into the future.  A customer and competitor analysis along with the identification of likely market windows for the product.  Price and volume forecasts and the basis for these forecasts.  For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	<ul> <li>100Mt by 2040 and global nameplate potash capacity to increase from 107.5Mt by the end of 2022, reaching 120Mt by 2040.</li> <li>The Company's current market strategy considers six key target markets in South America, Africa and Southern Europe.</li> <li>MoP prices were based on forecasts from CRU and Integer consulting. The Base Case sales price is forecast to increase at a compound annual real growth rate of 2.3% per annum from USD260/tonne in 2023 to USD380/tonne in 2040 when equilibrium pricing is forecast by CRU to be reached., The average CIF sales price over the LoM is forecast at USD341 per tonne of MoP.</li> <li>Customer specifications are based on K60 product, which means the MoP product has a minimum K2O content of 60%, corresponding to a KCl content of 95%. Product will be sampled regularly on site and tested in a site-based laboratory to ensure product grade is consistently met. Product that does not satisfy grade will be removed from the product stream and</li> </ul>
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.  NPV ranges and sensitivity to variations in the significant assumptions and inputs.	reprocessed.  Key valuation assumptions and (sources) Production - LoM of 27 years at nominal 2 Mtpa MoP production, average 1.9 Mtpa MoP production (DFS; mining and processing). Two MoP product types – Granular (86%) and Standard (14%) (Kore) Average LoM CFR price of USD341/MoP t (CRU/Integer) On-mine LoM average operating cost USD63/MoP t, Real (DFS estimate) LoM Shipping (transshipment and sea freight) of USD19/MoP t (LDA and CRU) Project capital period 48 months, deferred capital period 25 months, sustaining capital 299 months (DFS outcome) Total Nominal: Project Capital USD2.0 Bn (excluding EPC mark-up) (DFS estimate) Owners Capital USD76 million (DFS estimate) Sustaining Capital USD11/MoP t, Real (DFS estimate) Fiscal parameters: Company tax rate (15%), tax holidays (5 years at 0% + 5 years at 7.5%) (Mining Convention)

Criteria	JORC Code explanation	Commentary		
		Royalties 3% (Mining Convention)		
		Government free carry (10%) (Mining	g Convention)	
		Other minor duties and taxes (Mining	g Convention)	
		Working capital: 30 days Debtors an	d Creditors, 60 days Stores (Ko	re)
		The DFS Real NPV at real discount money terms), and Real IRR is		•
		The sensitivity to EPC Mark-up is:		
		EPC Mark-Up	NPV(10)	IRR
		0%	631	13.4%
		5%	563	12.9%
		10%	494	12.5%
		15%	426	12.1%
		20%	358	11.7%
		25%	290	11.4%
		*EPC Mark-Up subject to negotiation		
		Payback period: 10 years from first of	capital and 7 years from first pro	duction
		Pre-tax margin: 58%.		
		Highest sensitivities to Price and Ca USD30 M movement in NPV <sub>1</sub> approximate USD13 M impact of	o, and each percentage movel	ent in Price has an approximate ment in Project Capital has an
Social	The status of agreements with key stakeholders and matters leading to social license to operate.	design changes made to the Ko has been amended to include to The application and terms of re by the Minister of Tourism a proposed mining and processi License is expected to be ap Republic of Congo shortly thro	ally approved on 10 October 20 ola Project as part of the Definiti he service corridors for a gas pin ference for amending the ESIA and Environment. The amending of the Kola sylvinite Deposition of the Kola sylviniter of Toward the issuance of a certifical	a mining project in the Republic of 13, was amended to reflect the ve Feasibility Study ("DFS") and peline and overhead power line. were approved on 12 April 2018 led ESIA approval covers the t. The ESIA for the Kola Mining ourism and Environment of the te of environmental compliance ate is renewed annually until

Criteria	JORC Code explanation	Commentary
		construction of a mine on the license is completed. The Company shall carry out their construction operations in compliance with the environmental and social management plan as part of the approved ESIA and will be subject to Regulator's environmental management compliance audits. Upon construction completion, the Kola project will be subject to the Minister of Tourism and Environment's final approval of the construction activities environmental and social management compliance allowing the Company to effectively commission and start the mining and processing operations for the export of 2Mtpa from the Kola Mining license.
		The Kola Mining License is held within subsidiary which will be owned 10% by the ROC government.
		Socio-economic, cultural heritage, archeological and livelihood baseline reports have been prepared and approved as part of the ESIA baseline process.
		Sintoukola Potash has implemented a Stakeholder Engagement Process and is actively engaging with a wide range of project stakeholders, including conservation NGO's, adjacent National Parks, the regulator and communities.
		Three separate land take corridors have been identified, the Service Corridor, includes Mine Site, Conveyor Belt and Process Plant, the HV line and the Gas Pipeline:
		For each corridor a declaration d'utilite publique (DUP) has been declared by the Ministry of Land Affairs
		Consulting Company RSK undertook a Resettlement Action Plan (RAP) for the Service Corridor
		A Resettlement Policy Framework (RPF) was undertaken for the HV and Gas Corridors by RSK
		Physical displacement is minimal with most actions requiring livelihood restoration
		Resettlement Costs have been included in owner's costs and time in the implementation schedule
		There are believed to be no social related issues that do not have a reasonable likelihood of being resolved.
Other	To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:	Kola is currently compliant with all legal and regulatory requirements subject to final approval of the Kola Environmental and Social Impact Assessment Amendments (which was required following the project design changes implemented during the DFS) which is expected shortly.
	Any identified material naturally occurring risks.  The status of material legal agreements and marketing	A mining convention entered into between the RoC government and the Companies on 8 June 2017 and gazetted into law on 29 November 2018 concludes the framework envisaged in the 25-year renewable Kola Mining License granted in August 2013. The Mining Convention

Criteria	JORC Code explanation	Commentary
	arrangements.  The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	provides certainty and enforceability of the key fiscal arrangements for the development and operation of Kola Mining Licenses, which amongst other items include import duty and VAT exemptions and agreed tax rates during mine operations. The Mining Convention provides strengthened legal protection of the Company's investments in the Republic of Congo through the settlement of disputes by international arbitration.  To the best of the Competent Person's knowledge, there is no reason to assume any government permits and licenses or statutory approvals will not be granted. There are no unresolved matters upon which extraction is contingent.
	The basis for the classification of the Ore Reserves into varying confidence categories.  Whether the result appropriately reflects the	Measured Mineral Resources were used for the estimation of the Proved Ore Reserves. Indicated Mineral Resources were used for the estimation of Probable Ore Reserves.  The conversion of Measured and Indicated Mineral Resource to Proved and Probable Ore Reserve
Classification	Competent Person's view of the deposit.	reflects the Competent Person's view of the deposit.
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	40.6% of the Ore Reserves are classified in the Proved category and 59.4% of the Ore Reserves are classified in the Probable category
	The results of any audits or reviews of Ore Reserve estimates.	DFS deliverables were continually reviewed by an Owner's Team consisting of an inter-discipline engineering team, specialists in ESIA and economic modelling and construction experts.
		Specialist independent reviews were also conducted for Shaft Design, Process Design, Gas Pipeline, Marine and Transshipment Design and other specialised areas.
Audits or reviews		In addition, Kore utilised specialists from potash operations of SQM in Chile (a shareholder in Kore) for independent reviews.
		The DFS outcomes mostly support the PFS results, which were prepared by a different company in 2012.
		The Ore Reserve has been peer reviewed and is in line with the current industry standards.
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or	In the Competent Person's view, the Kola DFS achieves the required level of confidence in the modifying factors to justify the estimation of an Ore Reserve. All relevant modifying factors were considered in the Ore Reserve Estimation and deemed to be modelled at a level of

Criteria JORC Code explanation	Commentary
procedure deemed appropriate by the Cor Person. For example, the application of st or geostatistical procedures to quant relative accuracy of the reserve within confidence limits, or, if such an approach deemed appropriate, a qualitative discus the factors which could affect the accuracy and confidence of the estimate. The statement should specify whether it rel global or local estimates, and, if local, st relevant tonnages, which should be rele technical and economic eva	accuracy appropriate to the classification, that a global change of greater than 10% considered unlikely  The DFS determined a mine plan and production schedule that is technically achievable and economically viable.  The capital and operating costs are based on the outcome of a definitive feasibility study. An EPC proposal is due in January 2019 from the French Consortium.  Factors that could affect the Ore Reserves locally include; local change in salt-back, greater dip of the seam in some areas, local changes in the thickness of the rock-salt support layer between the seams, areas of unexpected carnallite in floor. The Mineral Resource model attempted to model these features to a high level of detail and are 'passed-on' into the Ore Reserve and mine plan. The Ore Reserve is also partially reliant on the model for the thickness of the overlying Anhydrite Member which was not part of the Mineral Resource.  While local variation from the mine plan in the above are expected, is considered unlikely that these would lead to significant negative change in the Ore Reserves, and that positive changes are equally likely.  For the DFS, data from a potash mining operation was used to guide and check the design, productivity assumptions, cost estimates and budgets. The input data and design are likely to be realistic and achievable in the Competent Persons view.

# **APPENDIX D**

Appendix D: JORC 2012 – Table 1, Sections 1 to 3[1]

 $^{[1]}$  Refer to ASX announcement dated 6 July 2017

# **Section 1 Sampling Techniques and Data**

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
1.1 Sampling techniques	<ul> <li>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> </ul>	Sampling was carried out according to a strict quality control protocol beginning at the drill rig. Holes were drilled to PQ size (85 mm core diameter) core, with a small number of holes drilled HQ size (63.5 mm core diameter). Sample intervals were between 0.1 and 2.0 metres and sampled to lithological boundaries. All were sampled as half-core except very recent holes (EK_49 to EK_51) which were sampled as quarter core. Core was cut using an Almonte© core cutter without water and blade and core holder cleaned down between samples. Sampling and preparation was carried out by trained geological and technical employees. Samples were individually bagged and sealed.
	<ul> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</li> </ul>	A small number of historic holes were used in the Mineral Resource model; K6, K18, K19, K20, K21. K6 and K18 were the original holes twinned by the Company in 2010. The grade data for these holes was not used for the Mineral Resource estimate but they were used to guide the seam model. The 2010 twin hole drilling exercise validated the reliability of the geological data for these holes (section 1.7).  KCl data for EK_49 to EK_51 was based on the conversion on calibrated API data from downhole geophysical logging, as is discussed in Section 6. Subsequent laboratory assay results for EK_49 and EK_51 support the API derived grades.
1.2 Drilling techniques	Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).	Holes were drilled by 12 and 8 inch diameter rotary Percussion through the 'cover sequence', stopping in the Anhydrite Member and cased and grouted to this depth. Holes were then advanced using diamond coring with the use of tri-salt (K, Na, Mg) mud to ensure excellent recovery. Coring was PQ (85 mm core diameter) as standard and HQ (64.5 mm core diameter) in a small number of the holes.
1.3 Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to</li> </ul>	Core recovery was recorded for all cored sections of the holes by recording the drilling advance against the length of core recovered. Recovery is between 95 and 100% for the evaporite and all potash intervals, except in EK_50 for the Carnallitite interval in that hole (as grade was determined using API data for that hole this is of no consequence). The use of tri-salt (Mg, Na, and K) chloride brine to maximize recovery was standard. A fulltime mud engineer was recruited to maintain drilling mud chemistry and physical properties. Core is wrapped in

Criteria	JORC Code explanation	Commentary
	preferential loss/gain of fine/coarse material.	cellophane sheet soon after it is removed from the core barrel, to avoid dissolution in the atmosphere, and is then transported at the end of each shift to a de-humidified core storage room where it is stored permanently.
1.4 Logging	<ul> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	The entire length of each hole was logged, from rotary chips in the 'cover sequence' and core in the evaporite. Logging is qualitative and supported by quantitative downhole geophysical data including gamma, acoustic televiewer images, density and caliper data which correlates well with the geological logging. Due to the conformable nature of the evaporite stratigraphy and the observed good continuity and abrupt contacts, recognition of the potash seams is straightforward and made with a high degree of confidence. Core was photographed to provide an additional reference for checking contacts at a later date.
1.5 Sub-sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	Excluding QA-QC samples 2368 samples were analysed at two labs in 44 batches, each batch comprising between 20 and 250 samples. Samples were submitted in 46 batches and are from 41 of the 47 holes drilled at Kola. The other 6 drill-holes (EK03, EK_21, EK_25, EK_30, EK_34, EK_37) were either stopped short of the evaporite rocks or did not intersect potash layers. Sample numbers were in sequence, starting with KO-DH-0001 to KO-DH-2650 (EK_01 to EK_44) then KO-DH-2741 to KO-DH-2845 (EK_46 and EK_47).  The initial 298 samples (EK_01 to EK_05) were analysed at K-UTEC in Sondershausen, Germany and thereon samples were sent to Intertek-Genalysis in Perth. Samples were crushed to nominal 2 mm then riffle split to derived a 100 g sample for analysis. K, Na, Ca, Mg, Li and S were determined by ICP-OES. CI is determined volumetrically. Insolubles (INSOL) were determined by filtration of the residual solution and slurry on 0.45 micron membrane filter, washing to remove residual salts, drying and weighing. Loss on drying by Gravimetric Determination (LOD/GR) was also competed as a check on the mass balance. Density was measured (along with other methods described in section 3.11) using a gas displacement Pycnometer.
1.6 Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> </ul>	For drill-holes EK_01 to EK_47, a total of 412 QAQC samples were inserted into the batches comprising 115 field duplicate samples, 84 blank samples and 213 certified reference material (CRM) samples. Duplicate samples are the other half of the core for the exact same interval as the original sample, after it is cut into two. CRMs were obtained from the Bureau of Reference (BCR), the reference material programme of the European Commission. Either river sand or later barren Rock-salt was used for blank samples. These QA-QC samples make up 17% of the total number of samples submitted which is in line with industry norms. Sample chain of

Criteria	JORC Code explanation	Commentary
	Nature of quality control procedures adopted (eg standards,      blooks duplicates systemed laboratory abouts) and whether	custody was secure from point of sampling to point of reporting.
	blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.	In addition two batches of 'umpire' analyses were submitted to a second lab. The first batch comprised 17 samples initially analysed at K-UTEC sent to Intertek-Genalysis for umpire. The second umpire batch comprised 23 samples from Intertek-Genalysis sent to SRC laboratory in Saskatoon for umpire. They demonstrate excellent validation of the primary laboratory analyses.
		Potash intersections for EK_49 to EK_51 were partially sampled for geotechnical test work and so were not available in full for chemical analysis. Gamma ray CPS data was converted to API units which were then converted to KCI % by the application of a conversion factor known, or K-factor. The geophysical logging was carried out by independent downhole geophysical logging company Wireline Workshop (WW) of South Africa, and data was processed by WW. Data collection, data processing and quality control and assurance followed a stringent operating procedure. API calibration of the tool was carried out at a test-well at WW's base in South Africa to convert raw gamma ray CPS to API using a coefficient for sonde NGRS6569 of 2.799 given a standard condition of a diameter 150mm bore in fresh water (1.00gm/cc mud weight).
		To provide a Kola-specific field based K-factor, log data were converted via a K-factor derived from a comparison with laboratory data for drill-holes EK_13, EK_14 and EK_24. In converting from API to KCI (%), a linear relationship is assumed (no dead time effects are present at the count rates being considered). In order to remove all depth and log resolution variables, an 'area-under-the-curve' method was used to derive the K factor. This overcomes the effect of narrow beds not being fully resolved as well as the shoulder effect at bed boundaries. For this, laboratory data was converted to a wireline log and all values between ore zones were assigned zero. A block was created that covered all data and both wireline gamma ray log (GAMC) and laboratory data log were summed in terms of area under the curves. From this like-for –like comparison a K factor of 0.074 was calculated. In support if this factor, it compares well with the theoretical K-factor derived using Schlumberger API to KCl conversion charts which would be 0.0767 for this tool in hole of PQ diameter (125 mm from caliper data. As a check on instrument stability over time, EK_24 is logged frequently. No drift in the gamma-ray data is observed.
		As confirmation of the accuracy of the API-derived KCl grades for EK_49 to EK_51, samples for the intervals that were not taken for geotechnical sampling, were sent to Intertek-Genalysis for analysis. The results are within 5% of the API-derived KCl and thickness, and so the latter was used unreservedly for the Mineral Resource estimation.

Criteria	JORC Code explanation	Commentary
1.7 Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	40 samples of a variety of grades and drill-holes were sent for umpire analysis and as described these support the validity of the original analysis. Other validation comes from the routine geophysical logging of the holes. Gamma data provides a very useful check on the geology and grade of the potash and for all holes a visual comparison is made in log form. API data for a selection of holes (EK_05, EK_13, EK_14, EK_24) were formally converted to KCl grades. In all cases the API derived KCl supports the reported intersections.
		As mentioned above; K6, K18, K19, K20, K21 were used in the geological modelling but not for the grade estimate. K6 and K18 were twinned in 2010 and the comparison of the geological data is excellent, providing validation that the geological information for the aforementioned holes could be used with a high degree of confidence.
1.8 Location of data points	<ul> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	A total of 50 Resource related drill-holes have been drilled by the Company; EK_01 to EK_52. EK_37 and EK_48 were geotechnical holes. Of the 50 Resource holes, 4 stopped short above the Salt Member due to drilling difficulties. Of the 46 Resource holes drilled into the Salt Member, all except 4 contained a significant Sylvinite intersection.  The collars of all drill-holes up to EK_47 including historic holes were surveyed by a
		professional land surveyor using a DGPS. EK_48 to EK_52 were positioned with a handheld GPS initially (with elevation from the LIDAR data) and later with a DGPS. All data is in UTM zone 32 S using WGS 84 datum.
		Topography for the bulk of the Mineral Resource area is provided by high resolution airborne LIDAR (Light Detection and Ranging) data collected in 2010, giving accuracy of the topography to <200 mm. Beyond this SRTM 90 satellite topographic data was used. Though of relatively low resolution, it is sufficient as the deposit is an underground mining project.
1.9 Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity</li> </ul>	In most cases drill-holes are 1-2 km apart. A small number of holes are much closer such as EK_01 and K18, EK_04 and K6, EK_14 and EK_24 which are between 50 and 200 m apart.
	<ul> <li>appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	The drill-hole data is well supported by 186 km of high frequency closely spaced seismic data acquired by the Company in 2010 and 2011 that was processed to a higher standard in 2016. This data provides much guidance of the geometry and indirectly the mineralogy of the potash seams between and away from the holes, as well as allowing the delineation of discontinuities affecting the potash seams. The combination of drill-hole data and the seismic data supports geological modelling with a level of confidence appropriate for the classification assigned to the Measured, Indicated and Inferred sections of the deposit. The seismic data is described in

Criteria	JORC Code explanation	Commentary
		greater detail below.
		Two sources of seismic data were used to support the Mineral Resource model:  1) Historical oil industry seismic data of various vintage and acquired by several companies, between 1989 and 2006. The data is of low frequency and as final SEG-Y files as PreStack Time Migrated (PreSTM) form. Data was converted to depth by applying a velocity to best tie the top-of-salt reflector with drill-hole data. The data allows the modelling of the top of the Salt Member (base of the Anhydrite Member) and some guidance of the geometry of the layers within the Salt Member.
		2) The Company acquired 55 lines totaling 185.5 km of data (excluding gaps on two lines) in 2010 and 2011. These surveys provide high frequency data specifically to provide quality images for the relatively shallow depths required (surface to approximately 800 m). Data was acquired on strike (tie lines) and dip lines. Within the Measured Mineral Resource area lines are between 100 and 200 m apart. Data was re-processed in 2016, for the 2017 Mineral Resource update, by DMT Petrologic GmbH (DMT) of Germany. DMT worked up the raw field data to poststack migration (PoSTM) and PreSTM format. By an iterative process of time interpretation of known reflectors (with reference to synthetic seismograms) the data was converted to Prestack depth migrated (PSDM) form. Finally, minor adjustments were made to tie the data exactly with the drill-hole data.
		The Competent Person reviewed the seismic data and processing and visited DMT in Germany for meetings around the final delivery of the data to the Company.
1.10 Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	All exploration drill-holes were drilled vertically and holes were surveyed to check for deviation. In almost all cases tilt was less than 1 degree (from vertical). Dip of the potash seam intersections ranges from 0 to 45 degrees with most dipping 20 degrees or less. All intersections with a dip of greater than 15 degrees were corrected to obtain the true thickness, which was used for the creation of the Mineral Resource model.
1.11 Sample security	The measures taken to ensure sample security.	At the rig, the core is under full time care of a Company geologist and end of each drilling shift, the core is transported by Kore Potash staff to a secure site where it is stored within a locked room. Sampling is carried out under the fulltime watch of Company staff; packed samples are transported directly from the site by Company staff to DHL couriers in Pointe Noire 3 hours away. From here DHL airfreight all samples to the laboratory. All core remaining at site is

Criteria	JORC Code explanation	Commentary
		stored is wrapped in plastic film and sealed tube bags, and within an air-conditioned room (17-18 degrees C) to minimize deterioration.
1.12 Audits or reviews	<ul> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	The Competent Person has visited site to review core and to observe sampling procedures. As part of the Mineral Resource estimation, the drill-hole data was thoroughly checked for errors including comparison of data with the original laboratory certificates; no errors were found.

# **Section 2 Reporting of Exploration Results**

(Criteria listed in the preceding section also apply to this section.)

(Onteria listed in the proceding section also apply to this section.)		
Criteria	JORC Code explanation	Commentary
2.1 Mineral tenement and land tenure status	<ul> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>	The Kola deposit is within the Kola Mining Lease which is held 100% under the local company Kola Mining SARL which is in turn held 100% by Sintoukola Potash SA RoC, of which Kore Potash holds a 97% share. The lease was issued August 2013 and is valid for 25 years. There are no impediments on the security of tenure.
2.2 Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Potash exploration was carried out in the area in the1960's by Mines de Potasse d' Alsace S.A in the 1960's. Holes K6, K18, K19, K20, K21 are in the general area. K6 and K18 are within the deposit itself and both intersected Sylvinite of the Upper and Lower Seam; it was the following up of these two holes by Kore Potash (then named Elemental Minerals) that led to the discovery of the deposit in 2012.
		Oil exploration in the area has taken place intermittently from the 1950's onwards by different workers including British Petroleum, Chevron, Morel et Prom and others. Seismic data collected by some of these companies was used to guide the evaporite depth and geometry within the Inferred Mineral Resource area. Some oil wells have been drilled in the wider area such as Kola-1 and Nkoko-1.
2.3 Geology	Deposit type, geological setting and style of mineralisation.	The potash seams are hosted by the 300-900 m thick Lower Cretaceous-aged (Aptian age) Loeme Evaporite formation These sedimentary evaporite rocks belong to the Congo (Coastal) Basin which extends from the Cabinda enclave of Angola to the south well into Gabon to the north, and from approximately 50 km inland to some 200-300 km offshore. The evaporites were deposited between 125 and 112 million years ago, within a post-rift 'proto Atlantic' sub-sea level basin following the break-up of Gondwana forming the Africa and South America

Criteria	JORC Code explanation	Commentary
		continents.
		The evaporite is covered by a thick sequence of carbonate rocks and clastic sediments of Cretaceous age to recent (Albian to Miocene), referred to as the 'Cover Sequence', which is between 170 and 270 m thick over the Kola deposit. The lower portion of this Cover Sequence is comprised of dolomitic rocks of the Sendji Formation. At the top of the Loeme Formation, separating the Cover Sequence and the underlying Salt Member is a layer of anhydrite and clay typically between 5 and 15 m thick and referred to as the Anhydrite Member. At Kola, this layer rests un-conformably over the Salt-Member, as described in more detail below.
		Within the Salt Member, ten sedimentary-evaporative cycles (I to X) are recognized with a vertical arrangement of mineralogy consistent with classical brine-evolution models; potash being close to the top of cycles. The Salt Member and potash layers formed by the seepage of brines into an extensive sub sea-level basin. Evaporation resulted in precipitation of evaporite minerals over a long period of time, principally <i>halite</i> (NaCl), <i>carnallite</i> (KMgCl <sub>3</sub> ·6H <sub>2</sub> O) and <i>bischofite</i> (MgCl <sub>2</sub> ·6H <sub>2</sub> O), which account for over 90% of the evaporite rocks. Sylvinite formed by the replacement of Carnallitite within certain areas. Small amounts of gypsum, anhydrite, dolomite and insoluble material (such as clay, quartz, organic material) is present, typically concentrated in relatively narrow layers at the base of the cycles (interlayered with Rock-salt), providing useful 'marker' layers. The layers making up the Salt Member are conformable and parallel or sub-parallel and of relatively uniform thickness across the basin, unless affected by some form of discontinuity.
		There are upwards of 100 potash layers within the Salt Member ranging from 0.1 m to over 10 m in thickness. The Kola deposit is hosted by 4 seams within cycles 7, 8 and 9, from uppermost these are; Hangingwall Seam (HWS), Upper Seam (US), Lower Seam (LS), Footwall Seam (FWS). Seams are separated by Rock-salt.
		Individual potash seams are stratiform layers that can be followed across the basin are of Carnallitite except where replaced by Sylvinite, as is described below. The potash mineralogy is simple; no other potash rock types have been recognized and Carnallitite and Sylvinite are not inter-mixed. The seams are consistent in their purity; all intersections of Sylvinite are comprised of over 97.5% euhedral or subhedral <i>halite</i> and <i>sylvite</i> of medium to very coarse grainsize (0.5 mm to ≥ 5 mm). Between 1.0 and 2.5% is comprised of anhydrite (CaSO₄) and a lesser amount of insoluble material. At Kola the potash layers are flat or gently dipping and at depths of between 190 and 340 m below surface.
		The contact between the Anhydrite Member and the underlying salt is an unconformity and due

Criteria	JORC Code explanation	Commentary
		to the undulation of the layers within the Salt Member at Kola, the thickness of the salt member beneath this contact varies. This is the principal control on the extent and distribution of the seams at Kola and the reason why the uppermost seams such as the Hangingwall Seam are sometimes absent, and the lower seams such as the Upper and Lower Seam are preserved over most of the deposit.
		The most widely distributed Sylvinite seams at Kola are the US and LS, hosted within cycle 8 of the Salt Member. These seams have an average grade of 35.5 and 30.5 % KCl respectively and average 3.7 and 4.0 m thick. The Sylvinite is thinned in proximity to leached zones or where they 'pinch out' against Carnallitite. They are separated by 2.5-4.5 m thick Rock-salt layer referred to as the interburden <i>halite</i> (IBH). Sylvinite Hangingwall Seam is extremely high grade (55-60% KCl) but is not as widely preserved as the Upper and Lower Seam being truncated by the Anhydrite Member over most of the deposit. Where it does occur it is approximately 60 m above the Upper Seam and is typically 2.5 to 4.0 m thick. The Top Seams are a collection of narrow high grade seams 10-15 m above the Hangingwall Seam but are not considered for extraction at Kola as they are absent (truncated by the Anhydrite Member) over almost all of the deposit.
		The Footwall Seam occurs 45 to 50 m below the Lower Seam. The mode of occurrence is different to the other seams in that it is not a laterally extensive seam, but rather elongate lenses with a preferred orientation, formed not by the replacement of a seam, but by the 'accumulation' of potassium at a particular stratigraphic position. It forms as lenses of Sylvinite up to 15 m thick and always beneath areas where the Upper and Lower seam have been leached. It is considered a product of re-precipitation of the leached potassium, into pre-existing Carnallitite-Bischofitite unit at the top of cycle 7.  The insoluble content of the seams and the Rock-salt immediately above and below them is uniformly low (<0.2%) except for the FWS which has an average insoluble content of 1%. Minor anhydrite is present throughout the Salt Member, as 0.5-3 mm thick laminations but comprise less than 2.5% of the rock mass of the potash layers.
		Reflecting the quiescence of the original depositional environment, the Sylvinite seams exhibit low variation in terms of grade, insoluble content, magnesium content; individual sub-layers and mm thick laminations within the seams can be followed across the deposit. The grade profile of the seams is consistent across the deposit except for the FWS; the US is slightly higher grade at its base, the LS slightly higher grade at its top. The HWS is 50 to 60% sylvite (KCI) throughout. The FWS, forming by introduction of potassium and more variable mode of formation has a higher degree of grade variation and thickness.
		The original sedimentary layer and 'precursor' potash rock type is Carnallitite and is preserved

Criteria	JORC Code explanation	Commentary
		in an unaltered state in many holes drill-holes, especially of LS and in holes that are lateral to the deposit. It is comprised of the minerals <i>carnallite</i> (KMgCl <sub>3</sub> ·6H <sub>2</sub> O), <i>halite</i> (NaCl) (these two minerals comprise 97.5% of the rock) and minor <i>anhydrite</i> and insolubles (<2.5%). The Carnallitite is replaced by Sylvinite by a process of 'outsalting' whereby brine (rich in dissolved NaCl) resulted in the dissolution of <i>carnallite</i> , and the formation of new <i>halite</i> (in addition to that which may already be present) and leaving residual KCl precipitating as <i>sylvite</i> . This 'outsalting' process produced a chloride brine rich in Mg and Na, which presumably continued filtering down and laterally through the Salt Member.
		The grade of the Sylvinite is proportional to the grade of the precursor Carnallitite. For example, in the case of the HWS when Carnallitite is 90 percent <i>carnallite</i> (and grades between 24 and 25 percent KCl), if all <i>carnallite</i> was replaced by <i>sylvite</i> the resulting Sylvinite would theoretically be 70.7 percent (by weight) <i>sylvite</i> . However, as described above the inflowing brine introduced new <i>halite</i> into the potash layer, reducing the grade so that the final grade of the Sylvinite of layer 3/IX is between 50 and 60 percent KCl ( <i>sylvite</i> ).
		Importantly, the replacement of Carnallitite by Sylvinite advanced laterally and always in a top-down sense within the seam. This Sylvinite-Carnallitite transition (contact) is observed in core and is very abrupt. Above the contact the rock is completely replaced (Sylvinite with no carnallite) and below the contact the rock is un-replaced (Carnallitite with no sylvite). In many instances the full thickness of the seam is replaced by Sylvinite, in others the Sylvinite replacement advanced only part-way down through the seam. Carnallitite is reliably distinguished from Sylvinite based on any one of the following:
		<ul> <li>Visually: Carnallitite is orange, Sylvinite is orange-red or pinkish-red in colour and less vibrant.</li> <li>Gamma data: Carnallitite &lt; 350 API, Sylvinite &gt;350 API</li> <li>Magnesium data: Sylvinite at Kola does not contain more than 0.1% Mg. Instances of up to 0.3% Mg within Sylvinite explained by 1-2 cm of Carnallitite included in the lowermost sample where underlain by Carnallitite. Carnallitite contains upwards to 5% Mg.</li> <li>Acoustic televeiwer and caliper data clearly identify Carnallitite from Sylvinite.</li> </ul>
		Based on the 'stage' of replacement, 5 seam types are recognized. The replacement process was extremely effective, no mixture of Carnallitite and Sylvinite is observed, and within a seam, Carnallitite is not found above Sylvinite.

Criteria	JORC Code explanation	Commentary
		It is thought that over geological time groundwater and/or water released by the dehydration of gypsum (during conversion to anhydrite in the Anhydrite Member) infiltrated the Salt Member under gravity, centred on areas of 'relatively disturbed stratigraphy' referred to as RDS zones (not to be confused with subsidence anomalies, see section 3.5). In these areas the salt appears to be gently undulating over broad zones, or forms more discrete strike extensive gentle antiformal features. There appears to be a correlation of these areas with small amounts undulation of the overlying strata and the Salt Member, and thickening of the Bischofitite at the top of Cycle 7 (some 45-50 m below the LS). The cause of the undulation appears to be related to immature salt-pillowing.
		The process of sylinite formation appears to have been very gradual and non-destructive; where leached, the salt remains in-tact and layering is preserved. Brine or voids are not observed. Fractures within the Salt Member appear to be restricted to areas of localized subsidence, as observed in potash deposits mined elsewhere, and described in more detail in section 3.5.
		Within and lateral to the RDS zones, brine moved downward then laterally, preferentially along the thicker higher porosity Carnallitite layers, replacing the <i>carnallite</i> with <i>sylvite</i> (as described in preceding text) 10s to 100's metres laterally and to a depth of 80-90 m below the Anhydrite Member. Beyond the zone affected by <i>sylvite</i> replacement, the potash is of unaltered primary Carnallitite. In the intermediate zone, the lower part of the layer may not be replaced supporting a lateral then 'top-down' replacement of the seams. For the most part the US is 'full' (fully replaced by Sylvinite), and the LS more often than not is Carnallitite especially within synformal areas giving rise to pockets or troughs of Carnallitite. The HWS, being close to the anhydrite is only preserved in synformal areas where it is always Sylvinite (being close to the top of the Salt Member), or lateral to the main deposit where it is likely to be Carnallitite, relating to the broader control on the zone of Sylvinite formation discussed below.
		Some of the longer seismic lines show that the relative disturbance of the salt over much of Kola relates to the 'elevation' of the stratigraphy due to the formation of a northwest-southeast orientated horst block, bound either side by half-graben. The horst block referred to as the 'Kola High' and is approximately 8 km wide and at least 20 km in length. Lateral to this 'high' Sylvinite is rarely found except immediately beneath (within 5-10 m of) the Anhydrite Member.
2.4 Drill hole Information	<ul> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:</li> <li>easting and northing of the drill hole collar</li> </ul>	

Criteria	JORC Code explanation	Commentary
	<ul> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	were surveyed with a gyroscope or magnetic deviation tool to obtain downhole survey data.
2.5 Data aggregation methods	<ul> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	For the calculation of the grade over the full thickness of the seams, the standard 'length-weighted' compositing method was used to combine individual results within each seam intersection.  No selective cutting of high or low grade material was carried out as it is not justified given the massive nature of the potash mineralization and absence of the localised high/low grade areas.  Results for short lengths of high grade material included in the Mineral Resource Estimate are justifiable based on their lateral continuity. They were included in the full seam grade by standard 'length-weighted' compositing.  No metal equivalents were calculated.
2.6 Relationship between mineralisation widths and intercept lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</li> </ul>	All mineralised intersections where the dip of the seam is 15 degrees or greater were corrected to obtain true thickness which was used in the Mineral Resource Estimate.
2.7 Diagrams	<ul> <li>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</li> </ul>	The original announcement (dated 6 July 2017) included appropriate maps and sections.
2.8 Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting	Not relevant to the reporting of the Mineral Resource Estimate.

Criteria	JORC Code explanation of Exploration Results.	Commentary
2.9 Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	All substantive data has been reported herein.
2.10 Further work	<ul> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	The exploration database should be updated with the most recent drilling data. No other further work is necessary at this time. If conversion of Indicated resources to Measured and Inferred to Indicated Mineral Resource is deemed important, additional seismic data would need to be acquired. Furthermore, the deposit is open laterally, in places to the west and east (though in the case of the latter is limited by the Mining Lease boundary) and probably to the greatest extent to the southeast, along the strike of the Kola High. Additional drilling and seismic data may allow the delineation of additional resources in these areas, if results of the work are positive.

# **Section 3 Estimation and Reporting of Mineral Resources**

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
3.1 Database integrity	<ul> <li>Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.</li> <li>Data validation procedures used.</li> </ul>	Geological data is collected in hardcopy then captured digitally by data entry. All entries are thoroughly checked. During import into Micromine® software, an error file is generated identifying any overlapping intervals, gaps and other forms of error. The data is then compared visually in the form of strip logs against geophysical data. Laboratory data was imported into an Access database using an SQL driven software, to sort QA-QC samples and a check for errors is part of the import. Original laboratory result files are kept as a secure record. For the Mineral Resource model a 'stratigraphic file' was generated, as synthesis of key geological units, based on geological, geophysical and assay data. The stratigraphic file was then used as a key input into the Mineral Resource model; every intersection and important contact was checked and re-checked, by visual comparison with the other data types in log format. Kore Potash is in the process of creating an updated database, to include the most recent geology and assay data.  For the process of setting up a Mineral Resource database, Met-Chem division of DRA Americas Inc., a subsidiary of the DRA Group underwent a rigorous exercise of checking the

Criteria	JORC Code explanation	Commentary
		database, including a comparison with the original laboratory certificates. Once an explanation of the files had had been provided, no errors were found with the assay or stratigraphic data, or with the other data types imported (collar, survey, geophysics). The database is considered as having a high degree of integrity.
3.2 Site visits	<ul> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	The Competent Person visited the project from the 5-7 November 2016 to view drill-hole sites, the core shed and sample preparation area. Explanation of all procedures were provided by the Company, and a procedural document for core logging, marking and sampling reviewed. Time was spent reviewing core and hard copy geological logs. All was found to meet or exceed the industry standards.
3.3 Geological interpretation	<ul> <li>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</li> <li>Nature of the data used and of any assumptions made.</li> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> <li>The factors affecting continuity both of grade and geology.</li> </ul>	Recognition and correlation of potash and other important layers or contacts between holes is straightforward and did not require assumptions to be made, due the continuity and unique characteristics of each of the evaporite layers; each being distinct when thickness, grade and grade distribution, and stratigraphic position relative to other layers is considered. Further support is provided by the reliable identification of 'marker' units within and at the base of the evaporite cycles. Correlation is further aided by the downhole geophysical data clearly shows changes in mineralogy of the evaporite layers and is used to validate or adjust the core logged depths of the important contacts. The abrupt nature of the contacts, particularly between the Rock-salt, Sylvinite and Carnallitite contributes to above.
		Between holes the seismic interpretation is the key control in the form and extent of the Sylvinite, in conjunction with the application of the geological model. The controls on the formation of the Sylvinite is well understood and the 'binary' nature of the potash mineralization allows an interpretation with a degree of confidence that relates to the support data spacing, which in turn is reflected in the classification. In this regard geology was relied upon to guide and control the model, as described in detail section 3.5. Alternative interpretations were tested as part of the modeling process but generated results that do not honor the drill-hole data as well as the adopted model.
		The following features affect the continuity of the Sylvinite or Carnallitite seams, all of which are described further in Section 3.5. By using the seismic data and the drill-hole data, the Mineral Resource model captures the discontinuities with a level of confidence reflected in the classification.  • where the seams are truncated by the anhydrite  • where the Sylvinite pinches out becoming Carnallitite or vice versa  • areas where the seams are leached within zones of subsidence

Criteria	JORC Code explanation	Commentary
		Outside of these features, grade continuity is high reflecting the small range in variation of grade of each seam, within each domain. Further description of grade variation is provided in later in text.
3.4 Dimensions	The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	In its entirety, the deposit is 14 km in length (deposit scale strike) and 9 km in width. The shallowest point of the upper most Sylvinite (of the HWS) is approximately 190 metres below surface. The depth to the deepest Sylvinite (of the FWS) is approximately 340 metres below surface. The thickness of the seams was summarized in Table 3 of the original announcement (dated 6 July 2017).
3.5 Estimation and modelling techniques	<ul> <li>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.</li> <li>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</li> <li>The assumptions made regarding recovery of by-products.</li> <li>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</li> <li>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</li> <li>Any assumptions behind modelling of selective mining units.</li> <li>Any assumptions about correlation between variables.</li> <li>Description of how the geological interpretation was used to control the resource estimates.</li> <li>Discussion of basis for using or not using grade cutting or capping.</li> <li>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</li> </ul>	Table 8 and Table 9 of the original announcement (dated 6 July 2017) provide the Mineral Resource for Sylvinite and Carnallitite at Kola. This Mineral Resource replaces that dated 21 August 2012, prepared by CSA Global Pty Ltd. This update incorporates reprocessed seismic data and additional drilling data. Table 10 and Table 11 of the original announcement (dated 6 July 2017) provide the Sylvinite and Carnallitite Mineral Resource from 2012. The updated Measured and Indicated Mineral Resource categories are not materially different from the 2012 estimate and is of slightly higher grade. The Inferred category has reduced due to the reduction in the FWSS tonnage, following the updated interpretation of it being present within relatively narrow lenses that are more constrained than in the previous interpretation. There is no current plan to consider the FWSS as a mining target and so the reduction in FWSS tonnage is of no consequence to the project's viability.  As described in section 3.3, the spatial application of the geological model was central to the creation of the Mineral Resource model. Geological controls were used in conjunction with the seismic data interpretation. The process commenced with the interpretation of the depth migrated drill-hole-tied seismic data in Micromine 2013 © involving the following. Table 7 of the original announcement (dated 6 July 2017) provides an explanation of abbreviations used in text.  1. Interpretation of the base of anhydrite surface or salt roof (SALT_R) which is typically a distinct seismic event.  2. Interpretation of base of salt, the 'intra-salt marker' and 'base cycle 8' (BoC8) markers. Based on synthetic seismograms the latter is a negative event picking out the contrast between the top of the Cy78 and overlying Rock-salt.
		Using Leapfrog Geo 4.0 (Leapfrog) surfaces were created for the SALT_R and BoC8 . In doing so, an assessment of directional control on the surfaces was made; following the observation

Criteria	JORC Code explanation	Commentary
		based on the sectional interpretation a WNW-ESE 'strike' is evident. Experimental semi-variograms were calculated for the surface elevation values at 10° azimuth increments. All experimental semi-variograms were plotted; 100° and 10° produce good semi-variograms for the directions of most and least continuity respectively. This directional control was adopted for the modelling of surfaces, created in Leapfrog on a 20 by 20 m 'mesh' using a 2:1 ellipsoid ratio (as indicated by the semi-variogram ranges).
		<ol> <li>The following steps were then carried out:         <ol> <li>The BoC8 surface was projected up to the position of the Upper Seam roof (US_R) by 'gridding' the interval between these units from drill-hole data. On seismic lines, The US_R interpretation was then adjusted to fit reflectors at that position, taking into account interference features common in the data in the Salt Member close to the SALT_R</li> <li>In all cases drill-hole intersections were honored. In addition to USS and USC intersections, the small number of leached US intersections, all within subsidence zones) were used to guide the seam model.</li> </ol> </li> <li>The new US_R interpretation along seismic lines, was then 'gridded' in Leapfrog, also into a mesh of 20 m by 20 m resolution making use of the 100° directional control and 2:1 anisotropy, to create a new US_R surface.</li> </ol>
		The Mineral Resource model has two potash domains in order to represent the geology I.e. Sylvinite or Carnallitite. A third non-potash domain areas of leaching and/or subsidence as described in the following text. Using the reference horizons the Sylvinite and Carnallitite seam model was developed as follows:
		<ol> <li>The US_R surface was fixed as the reference horizon for the modelling of the US, LS and HWS. The US_R surface was imported into Datamine Studio 3 (Datamine), using the same 20 by 20 m cells as described above.</li> <li>The US Sylvinite (USS) model was developed by analyzing the position of the cell in relation to the SALT_R and to the RDS zones. The latter were interpreted from seismic data. As described in section 2.3 these attributes are the main geological controls.</li> </ol>
		<ol> <li>To a lesser extent the dip of the seam and the relative elevation of each cell, relative to the cells within a 100 by 100 m area were also considered, to further identify Sylvinite with the understanding that areas of very low dip are more likely to be of Carnallitite.</li> <li>Beyond the 2010/2011 seismic data (within the Indicated Mineral Resource area) the influence of the distance from RDS zones was reduced and the proximity to the</li> </ol>

Criteria	JORC Code explanation	Commentary
		SALT_R and the dip and relative elevation were assigned greater consideration.  5. Seam thickness of the USS was determined by gridding the drill-hole data of the full Sylvinite intersections (excluding those that have a Carnallitite basal layer or are leached) using Inverse distance squared (IDW²) and adjusting it to account for the influence of 2 and 3 above. The Sylvinite thickness was then subtracted from the elevation of the US_R to create the USS floor (USS_F), on the 20m by 20m mesh.  6. Only the true thickness of drill-hole intersections were used (i.e. corrections for any dip were made) for the above. As the seam model thickness developed in a vertical sense, areas of the model with a dip were corrected so that the true thickness was always honored.  7. Even if the USS has zero thickness the surface for the USS_F was created, overlying exactly that of the US_R to facilitate the creation of DTMs for each surface.  8. The same method (effectively the inverse) was applied to create the US Carnallitite model (USC) below the USS. The roof of the USC (USC_R) is the same surface as the USS_F.  9. A number of iterations of the model were produced and assessed. The selected model was the one that produced a result that ties well with the drill-hole data and honors the proportional abundance of Sylvinite as intersected in the drill-holes.
		The Lower Seam model was created in a similar manner as follows:
		<ol> <li>The LS is separated by between 2 and 6 metres of barren Rock-salt, also referred to as the Interburden-halite or IBH. This layer is an important geotechnical consideration and so care was taken to model it. The IBH thickness from drill-hole data was 'gridded' in Datamine using IDW² into the 20 by 20 cells. This thickness was then subtracted from the elevation of the US_F to obtain the LS_R elevation from which a DTM was made.</li> <li>Unlike the USS the LSS is more often than not underlain by a layer of Carnallitite. For the LSS model the thickness of the LSS from drill-hole data was gridded using IDW² into the 20 x 20 mesh without influence from distance to the SALT_R or RDS zones. However, based on the geological understanding that LSS rarely occurs beneath USC the LSS model was cut accordingly, based on the USC model. Reflecting the model and based on analysis the following rule was also applied; that if the US is 'full' then the LSS is also full but only if the LS_R is within 30 m of the SALT_R. Finally, if the US_R is truncated by the SALT_R, then the remaining LS is modelled as full LSS due to its proximity to the SALT_R.</li> </ol>
		For the US and LS Inferred Resources, the distribution of Sylvinite and Carnallitite was by

Criteria	JORC Code explanation	Commentary
		manual interpretation based on available drill-hole data and plots of the distance between the seam and the SALT_R. The thickness of the USS and LSS was determined by gridding all USS drill-hole data. The Carnallitite was then modelled as the Inverse of the Sylvinite model, in adherence to the geological model.
		<ol> <li>The Hangingwall seam model was created as follows         <ol> <li>The distance between the US_R and HWS_R in drill-hole intersection was gridded using IDW² into the 20 by 20 m mesh. This data was then added to the elevation of the US_R to create a HWS_R.</li> <li>Being close to the SALT_R (within 30 m in all cases) there is less variation in domain type; in all areas except for the zone labelled 'A' on Figure 24 of the original announcement (dated 6 July 2017) the USS is full Sylvinite (not underlain by USC). For all HWS outside of zone A the model was created by gridding the thickness using IDW² into the 20 x 20 mesh.</li> </ol> </li> <li>The HWS model was created without input from distance to the SALT_R or RDS zones for the reasons stated above, by gridding of the drill-hole intersections.</li> <li>Within the area labelled 'A' on Figure 24 of the original announcement (dated 6 July 2017), the HWSS is underlain by HWSC and so this was incorporated into the model.</li> <li>Finally, the HWS was 'pinched' upwards from a distance of 4 m below the SALT_R to reflect the geological observation that close to this surface the seam is leached.</li> </ol>
		<ol> <li>Modelling of the Footwall Seam (FWS)</li> <li>A different approach was adopted for the modelling of the FWS as the mode of occurrence is different to the other seams as described in section 2.3. Only Sylvinite (FWSS) was modelled as Carnallitite FWS is poorly developed or absent, and low grade.</li> <li>Drill-hole and seismic data was used to identify areas of leaching of the Salt Member based on subsidence of the overlying strata signs of marked disturbance of the salt, within which FWSS is typically developed. These were delineated in plan view.         Where possible drill-hole data was used to guide thickness of the FWS, in other areas the thickness was interpreted using the seismic data. The FWS was 'constructed' from the top of the Cy7B upwards.     </li> </ol>
		As is standard practice in potash mining zones of subsidence which pose a potential risk to

Criteria	JORC Code explanation	Commentary
		mining were identified using seismic and drill-hole data and classified from 1 to 3 depending on severity where 3 is highest. Several drill-holes within or adjacent to these features show that the Salt Member is intact but has experienced some disturbance and leaching.
		The HWS, US and LS Mineral Resource models were 'cookie-cut' by these anomalies before calculation of the Mineral Resource estimate. The FWSS model was not cut as that Sylvinite is considered the product of potassium precipitation below the influence of the subsidence anomalies.
		Finally, all the potash seams were truncated (cut) by the SALT_R surface (base of the Anhydrite Member) as it is an unconformity.
		Traditional block modelling was employed for estimating %KCl, %Na, %Cl, %Mg, %S, %Ca and %Insols (insolubles). No assumptions were made regarding correlation between variables. The block model is orthogonal and rotated by 20 degrees reflecting the orientation of the deposit. The block size chosen was 250m x 250m x 1m to roughly reflect drill hole spacing, seam thickness and to adequately descretize the deposit without injecting error.
		Volumetric solids were created for the individual mineralized zones (i.e. Hangingwall Seam, Upper Seam, Lower Seam, Footwall Seam) for both Sylvinite and Carnallitite using drill hole data and re-processed depth migrated seismic data. The solids were adjusted by moving the nodes of the triangulated domain surfaces to exactly honour the drill hole intercepts. Numeric codes denoting the zones within the drill hole database were manually adjusted to ensure the accuracy of zonal intercepts. No assay values were edited or altered.
		Once the domain solids were created, they were used to code the drill hole assays and composites for subsequent statistical analysis. These solids or domains were then used to constrain the interpolation procedure for the mineral resource model, the solids zones were then used to constrain the block model by matching composites to those within the zones in a process called <i>geologic matching</i> . This ensures that only composites that lie within a particular zone are used to interpolate the blocks within that zone.
		Relative elevation interpolation methods were also employed which is helpful where the grade is layered or banded and is stratigraphically controlled. In the case of Kola, layering manifests itself as a relatively high-grade band at the footwall, which gradually decreases toward the hanging wall. Due to the undulations of the deposit, this estimation process accounts for changes in dip that are common in layered and stratified deposits.

Criteria	JORC Code explanation	Commentary
	·	The estimation plan includes the following:
		<ul> <li>Store the mineralized zone code and percentage of mineralization.</li> <li>Apply the density, based on calculated specific gravity.</li> <li>Estimate the grades for each of the metals using the relative elevation method and an inverse distance using three passes. The three estimation passes were used to estimate the Resource Model because a more realistic block-by-block estimation can be achieved by using more restrictions on those blocks that are closer to drill holes, and thus better informed.</li> <li>Include a minimum of one composites and a maximum of nine, with a maximum of three from any one drill hole.</li> </ul>
		The nature and distribution of the Kola Deposit shows uniform distribution of KCl grades without evidence of multiple populations which would require special treatment by either grade limiting or cutting. Therefore, it was determined that no outlier or grade capping was necessary.
		The grade models have been developed using inverse distance and anisotropic search ellipses measure $250 \times 150 \times 50$ m and have been oriented relative to the main direction of continuity within each domain. Anisotropic distances have been included during interpolation; in other words, weighting of a sample is relative to the range of the ellipse. A sample at a range of 250 m along the main axis is given the same weight as a sample at 50 m distance located across the strike of the zone.
		A full set of cross-sections, long sections, and plans were used to check the block model on the computer screen, showing the block grades and the composite. There was no evidence that any blocks were wrongly estimated. It appears that block grades can be explained as a function of: the surrounding composites, the solids models used, and the estimation plan applied. In addition, manual <i>ballpark</i> estimates for tonnage to determine reasonableness was confirmed along with comparisons against the nearest neighbor estimate.
		As a check on the global tonnage, an estimate was made in Microsoft Excel by using the average seam thickness and determining a volume based on the proportion of holes containing Sylvinite versus the total number of holes (excluding those that did not reach the target depth) then applying the mean density of 2.1 (t/m³) to determine the total tonnes. This was carried out for the USS and LSS within the Measured and Indicated categories. A deduction was made to account for loss within subsidence anomalies. The tonnage of this estimate is within 10% of the tonnage of the reported Mineral Resource.

Criteria	JC	DRC Code explanation	Commentary
3.6 Moisture	•	Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	Mineral Resource tonnages are reported on an insitu basis (with natural moisture content), Sylvinite containing almost no moisture and Carnallitite containing significant moisture within its molecular structure. Moisture content of samples was measured using the 'Loss on Drying' (LOD) method at Intertek Genalysis as part of the suite of analyses carried out. Data shows that for Sylvinite the average moisture content is 0.076 % and the maximum value was 0.6%. Representative moisture analyses of Carnallitite are difficult as it is so hygroscopic. 38% of the mass of the mineral <i>carnallite</i> is due to water (6 H <sub>2</sub> 0 groups within its structure). Using the KCI data to work out a mean <i>carnallite</i> content, the Carnallitite has an average moisture content approximately 25% insitu. It can be reliably assumed that this amount of moisture would have been held by the Carnallitite samples at the time of analysis of potassium, in a temperate atmosphere for the duration that they were exposed.
3.7 Cut-off parameters	•	The basis of the adopted cut-off grade(s) or quality parameters applied.	For Sylvinite, a cut-off grade (COG) of 10% was determined by an analysis of the Pre-feasibility and 'Phased Implementation study' operating costs analysis and a review of current potash pricing. The following operating costs were determined from previous studies per activity per tonne of MoP (95% KCI) produced from a 33% KCI ore, with a recovery of 89.5%:  • Mining \$30/t • Process \$20/t • Infrastructure \$20/t • Sustaining Capex \$15/t • Royalties \$10/t • Shipping \$15/t  For the purpose of the COG calculation, it was assumed that infrastructure, sustaining capex, royalty and shipping do not change with grade (i.e. are fixed) and that mining and processing costs vary linearly with grade. Using these assumptions of fixed costs (\$60/t) and variable costs at 33% (\$50/t) and a potash price of \$250/t, we can calculate a cut-off grade where the expected cost of operations equals the revenue. This is at a grade of 8.6% KCI. To allow some margin of safety, a COG of 10% is therefore proposed. For Carnallitite, reference was made to the Scoping Study for Dougou which determined similar operating costs for solution mining of Carnallitite and with the application ofa \$250/t potash price a COG of 10% KCI is determined.
3.8 Mining factors or assumptions	•	Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual	The Kola Sylvinite has been the subject of several scoping studies as well as a publicly available NI43-101 compliant PFS completed in September 2012 by SRK Consulting of Denver. The study found that economic extraction of 2 to 5m thick seams with conventional undergound mining machines is viable and that mining thickness as low as 1.8m can be

Criteria	JORC Code explanation	Commentary
	economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	supported. Globally, potash is mined in similar deposits with seams of similar geometry and form. The PFS determined an overall conversion of resources to reserves of 26%. A Definitive Feasibility Study is underway.  Mining of Carnallitite is not planned at this stage but in the form, grade and quantity of the
	an explanation of the basis of the mining assumptions made.	Carnallitite does support reasonable ground for eventual economic extraction. A Scoping Study complete in 2015 for the nearby Dougou Carnallitite deposit further supports this.
3.9 Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	The Kola Sylvinite ore represents a simple mineralogy, containing only sylvite, halite and minor fragments of other insoluble materials. Sylvinite of this nature is well understood globally and can be readily processed. Separation of the halite from sylvite by means of flotation has been proven in potash mining districts in Russia and Canadas. Furthermore, metallurgical testwork was performed on all Sylvinite seams (HWSS, USS, LSS and FWSS) at the Sasketchewan Research Council (SRC) which confirmed the viability of processing the Kola ore by conventional flotation.
3.10 Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	The Kola deposit is located in a sensitive environmental setting in an area that abuts the Conkouati-Douli National Park (CDNP. Approximately 60% of the deposit is located within the economic development zone of the CDNP, while the remainder is within the buffer zone around the park. The economic development zone does permit mining activities if it is shown that impact can be minimised. For these reasons, Sintoukola Potash has focussed its efforts on understanding the environmental baseline and the potential impacts that the project will have. Social, water, hydrobiology, cultural, archeological, biodiversity, noise, traffic and economic baseline studies were undertaken as part of the ESIA process between 2011 and 2013. This led to the preparation of an Equator Principles compliant ESIA in 2013 and approval of this study by the government in the same year.
		viable receptor for NaCl from the process plant. Impacts on the forest and fauna are minimised by locating the process plant and employee facilities at the coast, outside the CDNP. Relationships with the national parks, other NGO's and community and government stakeholders have been maintained continuously since 2011 and engagement is continuing for the ongoing DFS. All stakeholders remain supportive of the project.
3.11 Bulk density	Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or	The separation of Carnallitite and Sylvinite (no instances of a mixed ore-type have been observed) and that these rock types each comprise over 97.5% of only two minerals

Criteria	JORC Code explanation	Commentary
	<ul> <li>dry, the frequency of the measurements, the nature, size and representativeness of the samples.</li> <li>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.</li> <li>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</li> </ul>	(Carnallitite of <i>carnallite</i> and <i>halite</i> ; Sylvinite of <i>sylvite</i> and <i>halite</i> ) means that density is proportional to grade. The mineral <i>sylvite</i> has a specific gravity of 1.99 and <i>halite</i> of 2.17. Reflecting this, the density of Sylvinite is less if it contains more <i>sylvite</i> . The same is true of Carnallitite, <i>carnallite</i> having a density of 1.60.  Conventional density measurements using the weight in air and weight in water method were problematic due to the soluble nature of the core and difficulty applying wax to salt. As an alternative, gas pycnometer analyses were carried out (71 on Sylvinite and 37 on Carnallitite samples). Density by pycnometer was plotted against grade for each and a regression line was plotted, the formula of which was used in the Mineral Resource model to determine the bulk density of each block. As a check on the pycnometer data, the theoretical bulk density (assumes a porosity of nil) was plotted using the relationship between grade and density described above. As a further check, a 'field density' was determined for Sylvinite and Carnallitite from EK_49 and EK_51 on whole core, by weighing the core and measuring the volume using a calliper, before sending samples for analysis. An average field density of 2.10 was derived from the Sylvinite samples, with an average grade of 39% KCl, and 1.70 for Carnallitite with an average grade of 21% KCl, supporting the pycnometer data. The theoretical and field density data support the approach of determining bulk-density.
3.12 Classification	<ul> <li>The basis for the classification of the Mineral Resources into varying confidence categories.</li> <li>Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</li> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> </ul>	Drill-hole and seismic data are relied upon in the geological modelling and grade estimation. Across the deposit the reliability of the geological and grade data is high. Grade continuity is less reliant on data spacing as within each domain grade variation is small reflecting the continuity of the depositional environment and 'all or nothing' style of Sylvinite formation.  It is the data spacing that is the principal consideration as it determines the confidence in the interpretation of the seam continuity and therefore confidence and classification; the further away from seismic and drill-hole data the lower the confidence in the Mineral Resource classification, as summarized in Table 13 of the original announcement (dated 6 July 2017). In the assigning confidence category, all relevant factors were considered and the final assignment reflects the Competent Persons view of the deposit.
3.13 Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	No audits or reviews of the Mineral Resource have been carried out other than those of professionals working with Met-Chem division of DRA Americas Inc., a subsidiary of the DRA Group as part of the modelling and estimation work.
3.14 Discussion of relative accuracy/	Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an	The Competent Person has a very high degree of confidence in the data and the results of the Mineral Resource Estimate. The use of tightly spaced seismic that was reprocessed using

Criteria	JORC Code explanation	Commentary
confidence	<ul> <li>approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.</li> <li>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</li> <li>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</li> </ul>	state-of-the-art techniques combined with high quality drill data formed the solid basis from which to model the deposit. Industry standard best practices were followed throughout and rigorous quality assurance and quality control procedures were employed at all stages. The Competent Person was provided all information and results without exception and was involved in all aspects of the program leading up to the estimation of resources. The estimation strategy and method accurately depict tonnages and grades with a high degree of accuracy both locally and globally.  There is no production data from which to base an opinion with respect to accuracy and confidence.

## **APPENDIX E**

**Glossary of Terms & Abbreviations** 

Glossary of Terms	
Aquifer	An underground layer of water-bearing permeable rock, rock fractures or unconsolidated materials
chevron pattern	A commonly used pattern used for the layout of mine rooms and pillars, also referred to as 'herring-bone'.
combi-wall	A piled solution for construction of breakwaters
Competent Person	A 'Competent Person' is a minerals industry professional who is a Member or Fellow of The Australasian Institute of Mining and Metallurgy, or of the Australian Institute of Geoscientists, or of a 'Recognised Professional Organisation' (RPO), as included in a list available on the JORC and ASX websites.
Cost and Freight (CFR)	Cost and freight are a legal term in international trade. In a contract specifying that a sale is made CFR, the seller is required to arrange for the carriage of goods by sea to a port of destination and provide the buyer with the documents necessary to obtain the goods from the carrier
Cut-off-grade (CoG)	The lowest grade, or quality, of mineralised material that qualifies as economically mineable and available in a given deposit. May be defined on the basis of economic evaluation, or on physical or chemical attributes that define an acceptable product specification.
Definitive Feasibility Study	Definitive Feasibility Study
drum-cutting type	A type of mining machine that uses rotating drums onto which teeth are set to cuts the rock into pieces which can be transported
Engineering, Procurement, Construction (EPC) and Engineering, Procurement, Construction and Management (EPCM)	Forms of engineering contract where EPC is generally in the form of a fixed price with risk of delivery sitting with the contractor while EPCM the contractor acts for and behalf of the owner on a re-imbursible basis and the risk of project cost and time overruns sits more with the owner.
Exhaust and Intake Shafts	The Exhaust shaft is that from which the underground air moves out after it has ventilated the mine. The Intake shaft is the that into which fresh air is circulated into the mine
Ex-works	Cost of producing product excluding any transport and shipping costs
footwall	The floor of the seam or mine opening (room)
Inferred Mineral Resources	An 'Inferred Mineral Resource' is that part of a Mineral Resource for which quantity and grade (or quality) are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade (or quality) continuity. It is based on exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes.
JORC Code	(Australasian) Joint Ore Reserves Committee requirements for the reporting of Exploration Results, Mineral Resources and Ore Reserves (2012 edition)
Life-of-Mine (LoM)	The duration in years and months from commencement of mining to the end of mining
Main Haulage Access Drift	The tunnel (haulage) that provides the main access to each area of the mine
Metallurgical recoveries	The % of the contained KCl that can be extracted from the ore by the processing
Mine Gate Cost	Cost of getting product to mine gate, generally ex-works plus any additional storage and transport costs to mine gate

Mining royalty	Cost payable to the government of RoC as documented din the mining convention	
Muriate of Potash (MoP)	The saleable form of potassium chloride, comprising a minimum of 95% KCI	
Ore and orebody	Ore is the economically and technically mineable material. The orebody is the mineable part of the deposit comprising the Ore Reserves	
Ore Bins	Large storage containers into which ore is dumped and stored prior to further transport	
Ore haulage	The tunnels from which the ore is transported	
Ore Reserve	The economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which	
	may occur when the material is mined or extracted and is defined by studies at Pre-Feasibility or Feasibility level as appropriate that include	
	application of Modifying Factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified	
Pocket Lift conveyor	A type of conveyor belt with pockets allowing high-angle or vertical movement of material	
Production Panels	Sections or the mine that are worked by each mining team	
Geological Anomalies	Features that affect the integrity of the evaporite and overlying rocks found in many potash deposits and depending on the severity of the type and	
	severity of the anomaly, may represent a zone of hydrogeological risk due to connection between the evaporite (hosting the potash) and water	
	bearing cover rocks above. At Kola they were classified 1-3 according to severity. For the mine design the following was applied: within Class 1	
	anomalies, no production panels planned but development of main haulage roads acceptable, around Class 2 anomalies a stand-off distance of 30	
	m from any underground development was applied, around Class 3 anomalies a stand-off distance of 60 m from any underground development	
	was applied	
Sylvinite	A rock type comprised predominately of the mineral sylvite and halite. Sylvite is an evaporite mineral, potassium chloride (KCl). Halite is an	
	evaporite mineral, sodium chloride (NaCl).	
%w	Percentage by weight	

Abbreviations	
CFR	Cost and Freight
CoG	Cut-off Grade
СР	Competent Person
CRU	Commodities Research Unit owned by CRUGroup
DFS	Definitive Feasibility Study
EBITDA	Earnings before interest, tax, depreciation and amortization
EPC	Engineering, Procurement and Construction
EPCM	Engineering, Procurement and Construction Management
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
FC	The French Consortium
FCTU	Floating Crane Transhipper Unit

FWS	Footwall Seam
GIIP	Good International Industry Practice
HWS	Hangingwall Seam
IFC	International Finance Corporation
IRR	Internal rate of Return
JORC	(Australasian) Joint Ore Reserves Committee
KCI	Potassium Chloride
LoM	Life-of-Mine
LS	Lower Seam
MoP	Muriate of Potash
MOPG	Muriate of Potash - Granular
MOPS	Muriate of Potash - Standard
MRE	Mineral Resource Estimate
Mtpa	Million tons per annum
MVA	Mega Volt Amp
NPV10 (real)	Net Present Value
OGVs	Ocean Going Vessels
PFS	Pre-Feasibility Study
PPR	Potash Process Review
RoC	Republic of Congo
RPO	Recognized Professional Organization
RR	Reserve Review
SPSA	Sintoukola Potash SA
SWI	Seawater Intake
SWO	Seawater Outfall
TEM	Techno-Economic Modelling
US	Upper Seam