

# Kore Potash plc 25 Moorgate, London EC2R 6AY United Kingdom

27 June 2022

#### Kore Potash Plc

("Kore Potash" or the "Company")

### Kola Project optimisation study outcomes

Kore Potash, the potash development company with 97% ownership of the Kola and DX Potash Projects in the Sintoukola Basin, located within the Republic of Congo ("RoC"), is pleased to provide additional information on the outcomes of the optimisation study ("Study") for the Kola Potash Project ("Kola" or the "Project").

The Company has completed its review of the Study undertaken by the engineering partner of the Summit Consortium ("Consortium"), SEPCO Electric Power Construction Corporation ("SEPCO") as announced in "Kola optimisation study received" on 1<sup>st</sup> April 2022.

The Kola production target and forecast financial information has now been updated to incorporate the results of the optimisation study.

#### Highlights

- Capital cost is reduced by US\$520 million to US\$1.83 billion on an engineering, procurement and construction ("EPC") basis compared to the DFS capital cost of US\$2.35 billion on an equivalent EPC basis.
- Construction period reduced to 40 months from the DFS construction period of 46 months.
- Key financial metrics improved on DFS outcomes (at potash pricing averaging US\$360/ tonne unchanged from the DFS):
  - Kola NPV<sub>10</sub> post tax improved to US\$1.623 billion
  - IRR improved to 20% on ungeared post tax basis
- At a potash price of US\$1000/t MoP CFR Brazil (less than current potash price of approximately US\$1100/t MOP CFR Brazil) the Kola financial metrics improve to:
  - Kola net present value ("NPV")<sub>10</sub> post tax US\$ 9.354 billion
  - Internal rate of return ("IRR") of 49% on ungeared post tax basis
- Kola designed with a nameplate capacity of 2.2 million tonnes per annum ("Mtpa") of Muriate of Potash ("MoP")
- MoP production from Kola scheduled over an initial 31 year project life.



- Kola is designed as a conventional mechanised underground potash mine with shallow shaft access. Ore from underground is transported to the process plant via an overland conveyor approximately 25 km long. After processing, the MoP product is conveyor transported 11 km to the marine export facility. MoP is conveyed from the storage area onto barges via the dedicated barge loading jetty and then trans-shipped into ocean going vessels for export.
- These results support moving to the next phase of the Kola development.
- The Consortium has advised that the EPC contract proposal for the construction of Kola will now be submitted to the Company during August 2022. The EPC proposal will be based on the capital cost and construction schedule from the optimisation study.
- The Consortium advises that it intends to provide the financing proposal for the construction cost of Kola after the Company's receipt of the EPC proposal and agreement on key EPC terms.

# Brad Sampson, Chief Executive Officer of Kore Potash, commented:

"The development of Kola is of global importance. The security of the world's food supply is at risk as a result of disruptions to the supply of fertiliser globally. Recent geopolitical events highlight the risks inherent with potash production concentrated within a small number of companies and locations with operations situated long distances inland far from ports and global customers. New potash producers are required in locations closer to customers. With low capital intensity and low production costs, Kola is ideally situated to supply high quality potash to meet growing global demand.

"The successful completion of the Kola optimisation study moves us closer to production and we eagerly await delivery of the construction contract and financing proposals."

#### **Optimisation Study**

On 6 April 2021, Kore Potash announced the signing of a Memorandum of Understanding ("MoU") with the Consortium for the optimisation, construction and financing of the Kola Project.

The Study, which represented the first part of the financing process, has been undertaken by SEPCO. The key goals of the Study were to improve the value of Kola through reductions in the capital cost and by shortening the construction schedule.

During the Study, SEPCO employed two key sub-contractors, China ENFI Engineering Corporation to review the mining, processing and infrastructure aspects of the Project and CCCC-FHDI Engineering Co Limited to consider the optimisation of the marine facilities.

A summary of the key assumptions adopted in the Optimisation Study and the DFS that related to Mining, Processing, Infrastructure, Capital Cost, Operating Cost and Schedule are detailed in this announcement.



The results of this analysis compared with those of the January 2019 DFS are summarised in Table 1 below.

Result	Unit	DFS Production Target (January 2019)	Optimisation Study Production Target
Total MOP production	Mt	71	66
Initial project life	Years	33	31
Average scheduled mining rate	Mtpa ore	7.12	6.8
KCl recovery in process plant	% KCl	91.9%	90.4%
Average MOP production per year	Mtpa	2.20 Mtpa	2.14 Mtpa
Capital cost EPCM basis <sup>+</sup>	US\$ billion	2.1	-
Capital Cost EPC basis <sup>+</sup>	US\$ billion	2.35	1.83
Deferred capital	US\$ million	76.4	62.4
Sustaining capital	US\$/t MOP	10.98	11.20
Construction schedule	months	46	40
Steady state operating cost (Mine gate)	US\$/t MOP	61.70	63.60
Operating cost (CFR Brazil)	US\$/t MOP	102.50	105.90
Forecast average MoP granular price	US\$/t MOP	360	360
(CFR Brazil)*			
Post tax, real un-geared NPV (10% real)	US\$ million	1,452	1,623
Post tax, real un-geared IRR	%	17.2%	20%
Average EBITDA per annum real	US\$ million	583	545

### Table 1: Key Project Parameters and Assumptions comparison between DFS and Optimisation Study

Notes: \* The capital cost published in conjunction with the DFS was on EPCM basis, the capital cost estimate from optimisation study is on an EPC basis.

\* US\$360/t is the average future potash price CFR Brazil forecast over the project life.

### Table 2: Kola Project financial performance sensitivity to potash pricing

MOP Price	NPV 10	IRR	Average EBIDTA per
US\$/t	US\$ million	%	annum
			US\$ million
300	899	15.6	419
360	1,623	19.6	545
500	3,314	27.6	837
1,000	9,354	49.0	1,882

SEPCO's recommended improvements to Kola potentially reduce the Kola capital cost to US\$1.83 billion on an EPC basis. The US\$1.83 billion capital cost includes US\$118 million for Kore's owner's costs during the EPC phase.



The capital cost for Kola published in conjunction with the DFS was US\$2.1 billion on an Engineering, Procurement and Construction Management ("EPCM") basis. The DFS capital cost on an equivalent Engineering, Procurement and Construction ("EPC") basis to the SEPCO optimisation study capital cost was US\$2.35billion.

The optimisation study has thus identified reductions in the capital cost of Kola of approximately US\$520 million.

Prior to commencement of the Optimisation Study SEPCO set targets to reduce the capital cost to US\$1.65 billion and to shorten the construction schedule by 6 months. The Optimisation Study achieved the targeted reduction in the construction schedule. Despite identifying significant cost savings of US\$520 million, the targeted capital cost of US\$1.65 billion was not achieved mostly as a result of a higher than anticipated inflationary environment.

The Summit consortium has advised that the strongly positive outcomes of the Optimisation Study continue to support their financing of the Kola Project.

The Consortium have further advised the Company that the EPC contract proposal will now be provided to the Company in August 2022. It also advises that the financing proposal for Kola will be provided to the Company within 2 months of Kore's agreement on the terms of the EPC contract.

Key assumptions related to the ore reserves, production target and financial evaluation of the project have been updated in Appendix B of this announcement.

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

The Kola Potash Ore Reserves (Table 3) are based on the Kola Sylvinite Mineral Resources (Table 4) 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 Ore Reserves. All of the Ore Reserves and Mineral Resources reported here for Kola are Sylvinite.

Classification	Ore Reserves	KCl grade	Mg	Insolubles
	(Mt)	(% KCl)	(% Mg)	(% 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 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: Kola Sylvinite Mineral Resources (inclusive of Ore Reserves)

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

This release, inclusive of Appendix A: Summary of Kola Optimisation Study, 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. All material assumptions, including the JORC modifying factors, upon which the Ore Reserves, 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 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 Appendix C).

The production target is based on average scheduled annual production of 2.1 Mtpa MoP over a 31 year life. Ore Reserves form 72% of the processed material and Inferred Mineral Resources form 28% of the processed material underpinning the Production Target. No exploration targets underpin the production target. In particular, following exhaustion of the Ore Reserve during the first 25 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 Production Target includes the mining of Inferred Mineral Resources for a further 6 years. Each of the same modifying factors as used for Ore Reserve determination was considered and applied to this material in preparing the 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.

This announcement has been approved for release by the Board of Kore Potash



#### Market Abuse Regulation

This announcement contains inside information for the purposes of Article 7 of the Market Abuse Regulation (EU) 596/2014 as it forms part of UK domestic law by virtue of the European Union (Withdrawal) Act 2018 ("MAR"), and is disclosed in accordance with the Company's obligations under Article 17 of MAR.

For further information, please visit <u>www.korepo</u>	tash.com or contact:
Kore Potash Brad Sampson – CEO	Tel: +27 84 603 6238
<b>Tavistock Communications</b> Jos Simson Emily Moss Adam Baynes	Tel: +44 (0) 20 7920 3150
<b>SP Angel Corporate Finance</b> – Nomad and Joint Broker Ewan Leggat Charlie Bouverat	Tel: +44 (0) 20 7470 0470
<b>Shore Capital</b> – Joint Broker Toby Gibbs James Thomas	Tel: +44 (0) 20 7408 4050
Questco Corporate Advisory – JSE Sponsor Doné Hattingh	Tel: +27 (11) 011 9205

#### **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 www.korepotash.com. 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 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 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 engaged by Kore Potash Plc 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 review of the Ore Reserves.

The information in this report that relates to Valuation of Mineral Assets reflects information compiled and conclusions derived by Mr. Roodt, who is a qualified Charted Accounted and a member of the South African Institute of Charted Accountants (SAICA) Mr. Roodt is a consultant of the company, working for Fraser McGill (Pty) Ltd (Fraser McGill). Fraser McGill is a mining & minerals advisory firm that offer strategic decision-making tools and provide business case solutions that are technically and financially sound. Fraser McGill do this by translating complex ore body geometries, mining and processing techniques, and logistics and infrastructure considerations into 'executive friendly' decision models and dashboards. Mr. Roodt has sufficient experience relevant to the 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. Roodt consents to the inclusion in the report of the matters based on his information in the form and context in which it appears. Mr. Roodt discloses that nor him or his firm takes any responsibility for any input data in the valuation, as this was obtained directly from the company.

#### 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 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 www.korepotash.com.

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 considering 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



Appendix A: Summary of Kola Optimisation Study - June 2022

# 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 Definitive Feasibility Study ("DFS") announced on 29 January 2019 considers the mining of the Kola Sylvinite, and the production of approximately 2.2 million tons per annum (Mtpa) of Muriate of Potash (MOP) and its export to its target markets and considers all associated infrastructure. It delivers an economic model based on life of project of 33 years that is based upon 23 production years exploiting Ore Reserves of 152.4Mt and 9.7 Mt of Inferred Mineral Resource, and an additional 10 production years exploiting 70 Mt of the remaining Inferred Mineral Resources

In 2019, Kore signed a Memorandum of Understanding ("MoU") with the Summit Consortium ("Consortium") to complete an optimisation study, provide a construction contract proposal and to present a debt and royalty financing proposal for the full construction cost of Kola. The optimisation study undertaken by the engineering partner of the Summit Consortium ("Consortium"), SEPCO Electric Power Construction Corporation ("SEPCO") with a specific task of reducing the capital cost and construction schedule has now been completed.

The Kola Optimisation Study considered the mining of the Kola Sylvinite and the production of up to 2.24 million tonnes per annum (Mtpa) of Muriate of Potash (MOP). It delivers an economic model based on life of project of 31 years that includes 25 production years exploiting Ore Reserves of 152.4Mt and 9.7 Mt of Inferred Mineral Resource mined coincident with Ore Reserves, and an additional 6 production years exploiting of 49Mt of the remaining Inferred Mineral Resources.

During the Study, SEPCO employed two key sub-contractors, China ENFI to review the mining, processing and infrastructure aspects of the project and CCCC-FHDI to consider the optimisation of the marine facilities.



During the DFS, 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"). These have remained unchanged and have been incorporated into the Optimisation Study.



# Figure 1: Location Map showing Optimised Kola Project



### 2. Mineral Resource

The Kola Mineral Resources are summarised 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 statement. Sections 1 to 3 of the JORC 2012 Table 1 Checklist of Assessment and Reporting Criteria for that Mineral Resource estimate remain unchanged as reported to shareholders on 6 July 2017, and can be found in Appendix D.

The Company confirms there has been no material change to those Mineral Resources. The Company advises that the Mineral Resources are inclusive of Mineral Resources to which modifying factors have been applied to be reported as Ore Reserves.

In accordance with JORC 2012, the Competent Persons ("CP") for the Kola Mineral Resources Estimate ("MRE") is:

• Mr. Kirkham P. Geo of MTC. Mr Kirkham is a member of good standing of the Association of Professional Engineers and Geoscientists of British Columbia.

July 2017 - Kola Deposit Potash Mineral Resources - SYLVINITE					
		Million Tonnes	КСІ	Mg	Insoluble
		Mt	%	%	%
	Measured	-	-	-	_
Hanging wall	Indicated	29.6	58.5	0.05	0.16
Seam	Inferred	18.2	55.1	0.05	0.16
	<b>Total Mineral Resources</b>	47.8	57.2	0.02	0.16
	Measured	153.7	36.7	0.04	0.14
Linner Seem	Indicated	169.9	34.6	0.04	0.14
Opper Seam	Inferred	220.7	34.3	0.04	0.15
	<b>Total Mineral Resources</b>	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
	<b>Total Mineral Resources</b>	214.4	30.6	0.13	0.12
	Measured	-	-	-	_
Footwall Seam	Indicated	-	-	-	-
	Inferred	41.2	28.5	0.33	1.03
	Total Mineral Resources	41.2	28.5	0.33	1.03
Total Mineral Res	sources	847.7	34.9	0.07	0.13

# Table 1 July 2017 Kola Mineral Resources for Sylvinite



### 3. Ore Reserves

The Kola Ore Reserves are summarised in Table 2 below.

The Kola Sylvinite Ore Reserves are 152.4 Mt with average grade of 32.5% KCl. Sections 4 of the JORC 2012 Table 1 as reported to shareholders on 19 January 2019 has been updated based on the optimisation study and is included in this announcement in Attachment C.

The original statement of Ore Reserves was prepared by Met-Chem DRA Global and was reported in accordance with JORC 2012.

In conjunction with the Optimisation Study the Ore Reserves have been reviewed and restated in accordance with JORC 2012 by the Competent Person (CP) for the Kola Ore Reserves:

• 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.

There is no change to the Kola Sylvinite Ore Reserves from those previously reported.

Seam	Classification	Ore Reserves Tonnage (Mt)	KCI (%KCI)	Mg (%Mg)	Insolubles (%Insol)
	Proved	47.3	33.43	0.08	0.15
Upper Seam	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	Probable	23.4	28.35	0.08	0.14
Sylvinite	Total	37.9	28.17	0.13	0.14
	Proved				
Hanging	Probable	8.4	52.09	0.47	0.19
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
IUIAL	Total Ore Reserves	152.4	32.54	0.10	0.15

# Table 2: Kola Sylvinite Ore Reserves

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% KCl.



KOLA SYLVINITE DEPOSIT						
	Gross			Net Attributal	ble (90%)	
Mineral Resource Category	Million Tonnes	Grade KCl %	Contained KCl million tonnes	Million Tonnes	Grade KCl %	Contained KCl 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 A	Attributable (9	90%)
Ore Reserve Category	Million Tonnes	Grade KCl %	Contained KCI million tonnes	Million Tonnes	Grade KCl %	Contained KCI million tonnes
Proven	62	32.1	20	56	34.9	19
Probable	91	32.8	30	82	35.7	29
TOTAL	152	32.5	50	137	35.4	49

# Table 3. Kore's Sylvinite Mineral Resources and Ore Reserves

Table 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.

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

#### 4. Mining

The Kola mine design utilised in the optimisation study remains materially unchanged from the design used in the DFS and is described below:

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 a low-risk method. 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 with mining being undertaken by a CM 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 support interval between potash seams to be minimum of 3 m thick,
- 8 m wide pillar between consecutive production rooms (of 8 m each)
- 50 m wide pillar between Production Panels and between the side of the Production Panel and the Main Haulage
- 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')
- o stand-off distance of 20 m from any exploration holes
- stand-off distance of between 30 m 60m from significant geological anomalies
- o pillar of 300 m in radius around Shafts

Mine access is provided by two vertical Shafts, each 8 m in diameter. The shafts will be sunk near 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 7 electrically powered continuous miners. 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 to the shaft. The belt conveyors are distributed in the haulages and into 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 vertical conveyor (Pocket Lift) system located in the Exhaust Shaft.



# 5. Life of Project schedule

The Life of Mine (LoM) production schedule reported in the optimisation study is as summarized below.

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 estimated at 25 years, and full-scale production averaging approximately 2.14 million tonnes per annum of MOP from Ore Reserves occurs for approximately 21 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 25 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 6 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 31 years.

Approximately 17% (58.5 Mt) of the total Inferred Mineral Resources (340Mt) 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 6 years of the economic evaluation. The same underlying operating cost and sustaining capital assumptions for the first 25 years were applied to the final 6 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

The DFS hydrogeological investigations have been used in the optimisation study and there are no changes to the information or assumptions related to hydrogeology. The hydrogeology test work that was carried out, is summarised below:

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 150 m3/hr utilising 5 wells at a depth of 120 m. Similarly, the required water supply at the mine site of 30 m3/hr can be supplied via 2 wells sunk to 120 m 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 aquitard, effectively reinforcing the anhydrite member aquitard layer.
- 3. Understand the impacts of groundwater composition and the aquifers 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 total dissolve solids ("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 24 kilometers long.

A conventional potash flotation plant with a maximum designed production of 2.24 million tonnes per annum of MoP has been designed for the Kola Project. As a result of the low Insolubles content, no separate process circuit is required to remove Insoluble material.

The final MOP product is then transported 11 km by conveyor belt from process plant to the marine export facility at the coast.

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 95.5 %w and that will accommodate the variety of ROM feedstock characteristics expected to be encountered during the Life of the project.

The optimised process design references the DFS metallurgical test work in 2017 and 2018. The description of the test work used in the optimisation study is summarised below.

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 optimisation study determined the minimum process plant KCl recovery will be 90.4% and this recovery has been used in the economic evaluation.

### 8. Marine Facilities

The marine facility used in the optimisation study was based on the DFS design. A summary of the design is given below:

A trans-shipment 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).

Transshipping 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 ship loading.

To ensure sufficient year-round operational availability of the Jetty, a 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") system.

# 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 stream which originates from the insoluble de-brining circuit within the Process Plant. The residue is collected in onshore dissolution/dilution tanks and then discharged at sea via the SWO pipe and diffuser. The discharge stream's dispersion characteristics comply with the applicable environmental criteria.

Ecotoxicological test work of the expected discharge 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. Mine Site – Infrastructure

The Mine Site is located 24 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 11 km inland from the marine facilities, approximately 60 km northwest of Pointe Noire. Run of Mine (ROM) ore is transferred from the Mine Site via the Overland Long Conveyor (OLC).

The Process Plant Site facilities and infrastructure produces granular Muriate of Potash (MOP), which is transferred to the Marine Facilities for export. 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 3 km from the Process Plant and will accommodate up to 850 people.

Operational electrical power will be sourced from the RoC national grid. A 57 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 73 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 formalised post the final investment decision for the project.



Raw water will be supplied from wells located at the Mine Site (2 wells), the process plant site (5 wells) and at the Accommodation Camp (4 wells).

# 11. Environmental and Social Impact Assessment (ESIA)

The ESIA was prepared 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.

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 ESIA for the Kola Mining License was approved on 31 March 2020 granting a 25-year approval.

The change in position of the process plant will now require an amendment to this ESIA and this will be actioned in the 2nd half of 2022.

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.

# 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 and optimisation study demonstrate 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 same selling price that was used in the DFS economic evaluation has been used in the optimisation study.

The design of the processing plant allows Kore to produce red MOPG (Muriate of Potash - Granular) for the Brazil market.



# **13.** Capital and Operating Costs

### a. Capital Cost

The pre-production Capital Cost for the Kola Project is estimated at US\$1.83 billion which includes US\$80 million of Contingency, US\$55million of Escalation and US\$118 million owners' costs.

The Capital Cost Estimates, expressed in US dollars, have been developed for each work breakdown area, and are based on December 2021 prices. The Capital Cost Estimates are based on Erected Quantities determined by ENFI's engineers involved in the optimisation study.

Rates for construction and installation are based on those of similar projects executed in recent years in the local area.

The rates of mine works are in reference to the Chinese Budget Quotes of Non-ferrous Metal Construction Projects (2019 Edition).

The rates for indirect costs are based on Chinese Government-Stipulated Social Average Prices for the Calculation of Indirect Costs in the Non-Ferrous Metals Industry (2019 Edition). The prices of large special equipment have been sourced mainly from tender prices. The prices of a portion of the large equipment comes from Chinese suppliers, and those of other equipment such as the regrind mill are from corresponding non-Chinese suppliers. The prices of medium and small-sized mechanical and electrical equipment are adjusted according to the 2021 Chinese Price Inquiry System of Mechanical and Electrical Products.

The prices of non-standard equipment are adjusted in reference to the Chinese Method for Determining Non-Standard Equipment Prices issued in 2019, as well as recent order prices and delivery prices of the same kind of equipment.

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

- 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.
- Capital Costs (Initial and Deferred) are summarized in Table 4.



Description	Initial Capex (kUSD)	Deferred Capex (kUSD)	Initial plus Deferred Capex (kUSD)
Mine Area	361,671	62,409	424,080
Process Area	453,386		497,667
Tailings Disposal	-	-	-
Roads	51,550	-	62,877
Marine Facilities	166,946	-	179,176
General Infrastructures	236,722	-	309,484
Sub-Total Direct Costs	1,270,277	62,409	1,332,686
Construction Supervision	74,946	0	79,369
Pre-Comm. / Comm- /Start-up Supervision	28,454	0	33,443
Home Office Services	154,338	0-	164,397
Miscellaneous	8,000	0-	10,388
Sub-Total Services & Misc.	265,739	0	287,597
Sub-Total Technical Cost	1,536,016	62,409	1,598,425
Owner's Costs	118,844	-	118,844
Escalation	55,437	0	55,437
Contingency	81,915	0	81,915
EPC margin	35,236	-	35,236
Total Capital Costs	1,827,450	62,409	1,889,859

#### Table 4 - Summary of Optimisation Study Capital Costs

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 trans-shipment vessels.

Sustaining Capital Costs of US\$732 million have been included in the financial analysis, which is equivalent to US\$11.20/t MOP.



# b. Operating Cost

The Operating Costs are expressed in US dollars on a real 2022 basis and are based on average annual production of 2.1 Mtpa of MOP over the life of mine. All costs have been prepared on an owner operated basis and are shown in Table 5.

# Table 5 – Summary of Operating Costs

Cost Category	Real 2022 costs (US\$/t MOP)
Opex	
Mining Cost	21.20
Process Cost	28.90
G&A costs	13.50
Mine Gate Operating Costs	63.60
Sustaining Capex	11.20
Product Realisation Charges and Allowances	3.30
Royalties	8.30
Ex Works Cost	86.40
Logistics to FOB point	4.40
Ocean Shipping	15.10
CFR Cost (Landed in Brazil)	105.90

#### **14.** Economic Evaluation

#### a. Summary Economics

The economic evaluation delivers a post-tax NPV10 (real) of US\$1.623 billion and a real ungeared IRR of 20% on an 90% attributable basis. The evaluation is based on a granular MOP price of US\$360/t MOP CFR Brazil (real 2022) which represents the same pricing scenario used in the DFS. The Quarter 1 average for 2022 CFR Brazil price was US\$876 /t MOP.

The key assumptions underpinning the economic evaluation are as follows:

- Construction start date: 1 January 2023.
- 25-year initial project life from first production based on depletion of Ore Reserves.
- Subsequently an additional 6 year project life based on exploitation of a portion of the Inferred Mineral Resources
- 2.1 Mtpa average production of MOP.
- Granulated MOP represents 100 % of total MOP production and sales.
- All cashflows are on a real 2022 basis
- NPVs are ungeared and calculated after-tax applying a real discount rate of 10%.
- NPVs are calculated at a base date of 1 January 2023 prior to the potential dates for commencement of project construction



- Fiscal regime assumptions are 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).
  - o Exemption from withholding taxes during the term of the Mining Convention.
  - $\circ~$  Exemption from VAT and import duty during construction; and
  - $\circ~$  Congo Government receives 10% of the shares in KPM which owns the Kola Project.

The forecast project cash flow on a 90% attributable basis for 31 years of production is illustrated in Figure 6.



#### Figure 6 – Project Cash Flow Forecast (real 2022) on a 90% Attributable Basis



#### b. Price Sensitivity Analysis

The price sensitivity of the project financial performance to potash pricing is shown in Table 6 below.

Potash Price US\$/tonne	NPV <sub>10%</sub> real (US\$ million)	IRR %	Average Annual EBITDA (US\$ million)
300	899	15.6%	419
360	1 623	19.6%	545
400	2 106	22.0%	628
500	3 314	27.6%	837
600	4 522	32.7%	1 046
700	5 730	37.2%	1 255
800	6 938	41.4%	1 464
900	8 146	45.3%	1 673
1000	9 354	49.0%	1 882

#### Table 6: Sensitivity to potash price based on a 90% attributable basis

# 15. Project Funding

The Directors of Kore have formed the view that there is a reasonable basis to believe that requisite future 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 may 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:

- On the 6th April 2021, in the release "Non-binding Memorandum of Understanding to arrange the full financing required for the construction of the Kola Project", Kore advised details of the Consortium that has undertaken to provide a debt and royalty financing proposal for the full construction cost of Kola. The Summit Consortium consists of Summit (an African strategic advisory and corporate finance investment group) and SEPCO (an international engineering and construction group) as its technical partner. Together they committed to a process to fully fund the construction of Kola. The first key milestone in this process, the optimisation study, has now been completed and is reported in this announcement. The next key milestone is the receipt of an EPC contract proposal from SEPCO and then is to be followed by the financing proposal from the Summit Consortium.
- Kore has two large strategic shareholders on its register: (i) SQM (15.74%): a Chilean company with a market capitalisation in excess of US\$26 B that is an integrated producer and distributor of specialty plant nutrients, including having an established business in the global potash market; and (ii) OIA (19.35%): the sovereign wealth fund of Oman (formerly SGRF), 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 and have continued to invest in the company through additional fundraises and the issue of shares in lieu of cash for technical services totalling US\$19.5 million. 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 optimisation study was completed by SEPCO with their technical consultants China ENFI Engineering corporation (for mining and process) and CCC-FHDI Engineering Co Ltd (Marine facilities). This team has the technical and commercial experience in potash and African projects that supports the successful execution of the Kola project.
- The technical and financial parameters detailed in the Kola Project Optimisation study are robust and economically attractive.
- SQM and OIA 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.
- Kore as 90% owner of Kola retains options for raising the required equity funding including 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 receipt of financing proposal. Kore has reasonable grounds to believe that obtaining requisite funding within this timeline is achievable.



# Appendix B: Summary of Information required under ASX Listing Rule 5.9.1 (Ore Reserves), Listing Rule 5.16.1 (production target) and Listing Rule 15.7.1 (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, the Company provides the following summary information.

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

#### Summary of Material Assumptions – Ore Reserves

Material assumptions relating to the statement of Ore Reserves for the Kola Project are summarised below:

- Production life Life of Mine ("LoM") based on Ore Reserves of 25 years at nominal 2.2 Mtpa MoP production, average 2.1 Mtpa MoP production, this was determined during the execution of the optimisation study and from an aligned production schedule for both mining and processing.
- Product pricing Average MoP price of US\$360/t MoP CFR Brazil (real 2022) for granular product has been assumed which is considered to be highly conservative compared to prevailing prices of \$1100/t MoP CFR Brazil for 2021
- Operating cost average LoM mine gate operating cost US\$63.6/MoP t real as detailed in the optimisation study
- Shipping costs LoM Shipping costs (trans-shipment and sea freight) of US\$19.5 /MoP t were based on information and estimates from the DFS and review during the optimisation study.
- Project duration A project capital expenditure period of 40 months was assumed in the optimisation study and a deferred capital expenditure period from month 49 to month 72. Sustaining capital was assumed in the optimisation study to be spent over a period from month 44 to month 408.
- Project Capital A total nominal Project Capital of US\$1.83 billion (including EPC costs and markup) was estimated in the optimisation study
- Fiscal parameters The mining convention between the Company and the Republic of Congo specifies the fiscal parameters summarised below:
  - Company tax rate (15%),
  - Initial tax rates (5 years at 0% + 5 years at 7.5%)
  - Royalties (3% of revenue) (Mining Convention)
  - Government free carry (10%) (Mining Convention)
  - Other minor duties and taxes (Mining Convention)
- Working capital assumptions Working capital based on 30 days Debtors and Creditors, 60 days Stores.



# Summary of Material Assumptions – production target and forecast financial information based on the optimisation study

Material assumptions relating to the production target and forecast financial information for the Kola Project which incorporate results from the optimisation study are summarised below:

- Production life LoM of 31 years at an average annual production of 2.1 Mtpa MoP production. The production life fully depletes Ore Reserves and incorporates a portion of Inferred Mineral Resource into the production target.
- Product pricing Average MoP price of US\$360/t MoP CFR Brazil (real 2018) for granular product.
- MoP Product The process design is based on a single product type, Red Granular MOP. (The MoP produced will comprise at least 95.3% KCl, with a maximum of 0.2% Mg and 0.3% Insolubles).
- Operating cost mine gate operating cost of US\$63.60/t and export (FOB) cost of US\$90.80/t were reported in the Optimisation Study.
- Project duration A project capital period 40 months was reported in the Optimisation Study.
- Project Capital A Project Capital of US\$1.83 billion (including EPC costs and profit margin) was reported in the optimisation study

# Criteria for Mineral Resource and Ore Reserve Classification

The criteria for Mineral Resource and Ore Reserve Classification remain unchanged from the "Definite Feasibility Study" released on 29<sup>th</sup> January 2019.

The Ore Reserve estimate is based on the Kola Sylvinite Indicated and Measured Mineral Resources reported by Met-Chem DRA in accordance with the JORC Code (2012 edition) and announced by the Company on 6 July 2017.

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

Drill hole data spacing determines 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.



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

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

The Measured and Indicated Mineral Resources for sylvinite are hosted by 3 layers (or 'seams') which are 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**

The mining method and assumptions remain unchanged from the "Kola Definite Feasibility Study" ("DFS") released on 29 January 2019.

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 herringbone) pattern, with Continuous Miners (CM's) mining machines of the drum-cutting type.

Most of the mining will be on 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 accessing panels. 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 design is stable over the LoM and 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.
- 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 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 from Ore Reserves 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 of 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.

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

The changes to the processing method and assumptions arising from the optimisation study are as follows.

- The product will be granular MoP K60, comprising at least 95.3% KCl. The optimisation study design allows for the production of a single product, red granular MOP.
- The process flow sheets were optimised to produce a maximum of 2.2 Mtpa of Muriate of Potash (MOP), at 95.3% KCl purity, with a minimum KCl recovery of 90.4% of the KCl content in the ROM fed to the Process Plant.
- Eight key areas of process design were changed in the optimisation study
  - $\circ$  The crushing circuit was changed from 3 stage crushing to 2 stage crushing
  - o The mixing tanks post crushing were replaced with a combination of screens and tanks
  - The scrubbing capacity has been reduced
  - The thickening capacity has been increased
  - Column cells have been replaced with floatation cells
  - Re-grind flows have been re-routed
  - Tailings centrifuges has been replaced with a belt filters
  - o Compaction circuit has been simplified

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

No new metallurgical test work was carried out in the optimisation study, the test work completed remains as per the DFS released on 29 January 2019, and is summarised below:



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.

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 demonstrated that the new flotation process performed above the project performance minimum target.

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.

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

The cut off grades remain the same as the DFS published on 29th January 2019.

A Cut-off grade ("CoG") of 10% KCl has been calculated within the process to state Ore Reserves. The cut-off grade 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 CoG included:

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

All sylvinite of the Measured and Indicated Resource is above 9.9% KCl (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.



#### **Cost Estimation Methodology**

# **Capital Cost:**

- Capital costs have been estimated for each scope area, expressed in United States dollars (US\$) and based on December 2021 prices.
- Escalation of 3.3% of direct costs (up to project completion) has been modelled, and a Contingency of 5% of direct costs has been added.
- Three capital periods have been defined: Initial (Construction and up to first barge loading, Month +40); Deferred (up to ramp-up completion, Month +65); Sustaining (after Month +65).

# **Operating Cost:**

- Operating Cost covering the Life of Mine (31 years) has been estimated in US dollars and reported in the SEPCO Optimisation Study report 2022. They include costs for Electric power, Fuel, Gas, Labour, Maintenance parts, Operating Consumables, General and Administration costs and Contract for Employee Facilities.
- Transshipment costs were supplied by SEPCO in the optimisation study report based on work done by their marine consultant.
- Ocean Freight Transportation estimate produced were supplied by SEPCO in the optimisation study report based on work done by their marine consultant.
- Mine Closure cost estimated in accordance with the Conceptual Rehabilitation and Closure Plan developed by SRK Consulting.
- Mine Closure duration of 24 months (2 years)
- 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 Environmental and Social Impact Assessment ("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 ESIA for the Kola Mining License was approved on 31 March 2020 for 25 years.

The proposed new position of the process plant resulting from the optimisation study creates a requirement to further amend the ESIA. It is intended that work on this amendment will commence in the second half of 2022.

#### • Status of Mining Tenements and Approvals

Kore 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 ("KPM") and Dougou Potash Mining SA ("DPM"). The Mining Convention includes a requirement for 10% of the shares in KPM and DPM to be assigned to the Government of the Congo. The Company is currently awaiting instructions on how to affect this transfer.

The Kola Deposit is within the Kola Mining Lease which is 100% owned by KPM

- 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, totaling 204.52 km2 falling entirely within the Exploration Permit.

#### • Déclaration d'Utilité Publique" or "DUP

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.

As a result of the proposed optimised processing plant location, a new application, to cover the optimised processing plant location is planned to be submitted to the Government after receipt and acceptance of the financing proposal from Summit

#### • Other Governmental Factors

The Company entered into a mining convention with RoC government on 8 June 2017 and it was gazetted into law on 7 December 2018. The Mining Convention provides certainty and enforceability of the key fiscal arrangements for the development and operation of the Kola Project. This includes clarifying 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 any 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 24 km from the mine and a product and marine export facility at 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.

Changes to the infrastructure requirements that arise from the optimisation study and are thus different from the DFS are summarised below.

- The process plant position has been moved 11 km inland which has allowed optimisation of the foundation design, the resultant infrastructure at the coast consists of the product storage building and marine export facilities. The design of the barge loading jetty has also been optimised.
- Road access to the Kola Potash Project sites will be via the existing Route Nationale 5 (RN5). Two
  external access roads will be built, which are respectively connected from RN5 to the mining site
  and from RN5 to the mineral processing site and living quarter, with a length of 2.0 km and 4.3 km
  respectively. Two maintenance roads for long-distance belt conveyors will be built. One of the
  roads for RoM belt conveyor maintenance is about 24.0 km, connecting Koutou camp and the
  mineral processing site. The other road is for MOP belt conveyor maintenance,
- Raw Water will be supplied from wells located at the Mine Site and at the Accommodation Camp close to the Process Plant Site.
- The Accommodation Camp has been sized for a capacity of 850 beds and will be located 3 km southwest of the Process Plant
- Electrical Power will be sourced from the ROC national grid. A 57 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 and the marine facility at the coast.
- The Natural Gas needed for product drying will be supplied by a 73 km long pipeline from the M'Boundi gas treatment plant.

The infrastructure requirements that have not been modified in the optimisation study and thus remain the same as the DFS are summarised below.

- 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 Kola Potash Project intends to export up to 2.2 Mt MoP to world markets each year. A transshipment solution has been developed, whereby MoP 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

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 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	The Ore Reserves are based on the Indicated and Measured Mineral Resource estimate for sylvinite carried out by Met-
	Resource estimate used as a	Chem DRA and reported in accordance with the JORC Code (2012 edition), announced by the Company on 6 July 2017.
	basis for the conversion to an Ore Reserve.	The Measured Mineral Resource is 216 Mt with an average grade of 35.0% KCI. The Indicated Mineral Resource is 292 Mt with an average grade of 35.7% KCI.
	Clear statement as to whether	The total combined Measured and Indicated Mineral Resources are 508 Mt with an average grade of 35.4% KCI.
Mineral	the Mineral Resources are reported additional to, or inclusive of, the 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).
estimate for conversion to		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).
Ore Reserves		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.



Criteria	JORC Code explanation	Commentary
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. No additional site visits were undertaken for optimisation study.
Study status	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves. 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.	A comprehensive Definitive Feasibility Study (DFS) was completed in 2019 including a Life of Mine (LoM) plan. The DFS considered all relevant modifying factors, to permit the conversion of the Mineral Resources to Ore Reserves. An Optimisation Study that is intended to lead to an EPC contract proposal has been completed in 2022 which included review of material aspects of the project design and costs.
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	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 conservative 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



Criteria	JORC Code explanation	Commentary
		<ul> <li>General and administrative costs</li> <li>All sylvinite of the Measured and Indicated Resource is present at a grade significantly 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.</li> </ul>
		The uniformly very low content of deleterious elements (magnesium and insoluble material) meant that these did not require consideration in the CoG determination.
Mining factors or assumptions	The method and assumptions used as reported in the Pre- Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design). The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc. The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control and pre-production drilling. The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate). The mining dilution factors used	<ul> <li>Mining factors and assumptions have been derived from the historical information available for mature potash mines, the current best mining practices and the outcomes of the various technical studies completed in the DFS and Optimisation Study</li> <li>The Kola orebody will be mined using conventional underground (UG) mining method consisting of room and pillar in a 'chevron' (or herringbone) pattern, with Continuous Miners (CM's) mining machines of the drum-cutting type.</li> <li>The mining equipment selected for the Kola Potash Project Mine are CM's.</li> <li>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.</li> <li>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.</li> <li>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.</li> <li>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 parameters:</li> <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> <li>An 8 m wide pillar between two consecutive production rooms (of 8 m each).</li> <li>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 monin budiane ac</li></ul>
		the production parties and the main hadiage access unit.



Criteria	JORC Code explanation	Commentary
	The mining recovery factors used. Any minimum mining widths used.	<ul> <li>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.</li> </ul>
	The manner in which Inferred	<ul> <li>A stand-off distance of 20 m radius from the exploration holes.</li> </ul>
	Mineral Resources are utilised	• A stand-off distance of 30 m radius from class 2 geological anomalies and 60 m radius from class 3 geological anomalies.
	in mining studies and the	$_{\circ}$ A pillar of 300 m in radius around the exhaust and intake shafts.
	sensitivity of the outcome to their inclusion. The infrastructure requirements of the selected mining methods.	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 excluding the tonnage associated with 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 8 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 (pocket lift configuration) 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- powered Shuttle Cars.
		Underground conveyor belts will be used for materials handling (ore haulage) ore transportation in all the areas of the mine. Conveyor 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 conveyor belts 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.



Criteria	JORC Code explanation	Commentary
		The life-of mine schedule for the Kola Potash Project based on Ore Reserves is 25 years, at an average annual production of 2.1 Mt of MoP production. This Ore Reserves LoM production schedule Mineral Resource contributes 6.0% of the total
		amount of ROM material and is planned to be materially extracted from year 11 onwards. Without the inclusion of this material the LoM is 23 years, with a reduction of NPV10 of approximately USD 34 million and reduction in IRR of 1%
		The Production Target includes the Ore Reserves plus 58.5 Mt of Inferred Mineral Resource. The life-of-mine schedule for the Kola Potash Project based on the Production Target is 31 years, at an average annual production of 2.2 Mt of MoP. The Production Target LoM production schedule and economic analysis includes 9.7 Mt of Inferred Mineral Resources that need to be extracted in conjunction with the Ore Reserves, plus an additional 48.8 Mt of Inferred Mineral Resource scheduled at the end of the mine plan. The total Inferred Mineral Resource contributes 27.7% of the total amount of ROM material and is planned to be materially extracted from year 11 onwards.
	The metallurgical process proposed and the	The final product will be MoP K60, comprising at least 95% KCI. The DFS design allows for the production of this MoP in two forms, standard and granular. The optimised design simplified production to a single product – red granular K60 MOP.
	appropriateness of that process to the style of mineralization.	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.
	Whether the metallurgical process is well-tested technology or novel in nature.	The DFS 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. No further testing was completed during
	The nature, amount and	optimisation.
Metallurgical factors or assumptions	representativeness of metallurgical test work	The process flow sheets were optimised to meet the Kola Potash Project targets of producing 2.2 Mtpa of Muriate of Potash (MoP), at 95.5% KCl purity, with a minimum KCl recovery of 90.4 %
	undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied	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 KCI liberation, characterize the feedstock, perform flotation tests, optimize the operating conditions, optimize reagent consumption for optimum KCI recovery and grade performance, perform a sensitivity test on flotation.
	Any assumptions or allowances made for deleterious elements.	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 works processed in SYSCAD <sup>™</sup> model demonstrated that the new flotation process performed above the project performance minimum target.
	The existence of any bulk sample or pilot scale test work and the degree to which such	With a raw ore feed grade of 31.3% KCI, the material balance confirmed that the project objectives can be met with a production of 2.2 Mtpa with an expected product recovery of 90.4%, and a final product grade of 95.5% KCI.
		Magnesium and insoluble material are considered deleterious. The extremely low content of these materials in the ore mean



Criteria	JORC Code explanation	Commentary
	samples are considered	that their removal is relatively straightforward. Insoluble material is removed by attrition scrubbing and magnesium removed
	representative of the orebody as	by brine purge.
	a whole.	The metallurgical test work campaigns provided a sound foundation for the development of the process design engineering
	For minerals that are defined by	and subsequent project performance, overall engineering studies and the cost estimate.
	a specification, has the Ore	
	Reserve estimation been based	
	on the appropriate mineralogy to meet the specifications?	
	The status of studies of potential	Exploration and data acquisition and activities were undertaken under the auspices of an approved Environmental Impact
	environmental impacts of the mining and processing	Assessment (EIA) and Environmental Management Plan (EMP) set out to international best practice and approved by the RoC regulator.
	operation. Details of waste rock characterisation and the consideration of potential sites, status of design options	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.
		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 and <b>approved on</b> 31 March 2020 for 25 years.
Environmental	applicable, the status of approvals for process residue	The proposed new position of the process plant resulting from the optimisation study creates a requirement to further amend the ESIA. It is planned to commence this amendment once financing for the development of Kola is secured.
	storage and waste dumps should be reported.	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 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.



Criteria	JORC Code explanation	Commentary
		Biodiversity, air quality, social, archeological, water and noise baseline studies have been prepared and incorporated into the ESIA process.
Infrastructure	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 is 24km from the mine site and the marine and product storage facility a further 11km from the plant site, 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 through the Déclaration d'Utilité Publique (" <b>DUP</b> ") process will be applied for based on the new plant position. Road access to the Kola Potash Project sites will be via the existing Route Nationale 5 (RN5). Two external access roads will be built, which are connected from RN5 to the mining site and from RN5 to the mineral processing site and living quarter, with a length of 2.0km and 4.3km respectively. Two maintenance roads for long-distance belt conveyors will be built. One of the roads for ROM belt conveyor maintenance, sabout 25 km, connecting Koutou camp and the mineral processing site. The other 9 km road is for MOP belt conveyor maintenance, Electrical Power will be sourced from the ROC national grid. A 57 km long 220 kV transmission line will be built from the Process Plant Site to the Mine Site from process plant to marine facility. The Natural Gas needed for product drying will be supplied by a 73 km long pipeline from the M'Boundi gas treatment plant. Raw Water for process plant will be a combination of permanent employees, permanent contract services, and part-time contract services for intermittent needs. The total requirement of permanent employees is expected to be 731. Local labour resources will be used for most 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 4km Southwest of the process plant.
Costs	The derivation of, or	Capital Cost:



Criteria	JORC Code explanation	Commentary
	assumptions made, regarding projected capital costs in the	Capital Cost Estimate has been developed by SEPCO for each scope area, expressed in United States dollars (USD) and based on December 2021 prices.
	study.	Rates for construction and installation are based on those of similar projects executed in recent years in the local area.
	The methodology used to estimate operating costs.	The rates of mine works are in reference to the Chinese Budget Quota of Non-ferrous Metal Construction Projects (2019 Edition).
	Allowances made for the content of deleterious elements.	The rates for indirect costs are based on Chinese Government-Stipulated Social Average Prices for the Calculation of Indirect Costs in the Non-Ferrous Metals Industry (2019 Edition).
	The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co- products.	The prices of large special equipment have been sourced mainly from tender prices. The prices of a portion of the large equipment comes from Chinese suppliers, and those of other equipment such as the regrind mill are from corresponding non-Chinese suppliers. The prices of medium and small-sized mechanical and electrical equipment are adjusted according to the 2021 Chinese Price Inquiry System of Mechanical and Electrical Products.
	The source of exchange rates used in the study.	The prices of non-standard equipment are adjusted in reference to the Chinese Method for Determining Non-Standard Equipment Prices issued in 2019, as well as recent order prices and delivery prices of the same kind of equipment.
	Derivation of transportation	Escalation of 3.3% (up to project completion) has been considered, and a total Contingency of 5.0% has been added.
	charges. The basis for forecasting or source of treatment and refining charges, penalties for failure to	Three capital periods have been defined: Initial (Construction and up to first barge loading, Month +40); Deferred (up to ramp- up completion, Month +65); Sustaining (after Month +65)
	meet specification, etc.	Operating Cost:
	The allowances made for rovalties payable, both	Operating costs were estimated by SEPCO after their review of the DFS estimate which was based on first principles using quoted rates, estimated consumption, forecast labour complements and remuneration estimates.
	Government and private.	Operating Cost covering the Life of Mine (31 years) has been estimated in Q12022 USD. They include costs for Electric power, Fuel, Gas, Labour, Maintenance parts, Operating Consumables, General and Administration costs and Contract for Employee Facilities.
		Mine Closure cost estimated in accordance with the Conceptual Rehabilitation and Closure Plan developed by SRK Consulting.
		Mine Closure duration of 24 months (2 years), for the effective dismantling, demolition and rehabilitation works 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 renabilitation works directly based on the Construction Unit rates applied for the



Criteria	JORC Code explanation	Commentary
		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 applies
		Other criteria
		The marketed MoP will comprise at least 95% KCI, with a maximum of 0.2% Mg and 0.3% Insolubles.
	The derivation of, or	Head grade, recovery and product grade forecasts were based on the DFS results.
	assumptions made regarding	Product pricing - Average MoP price of US\$360/t MoP CFR Brazil (real 2022) for granular product has been assumed which
	revenue factors including head	is considered to be highly conservative compared to prevailing prices of \$1100/ t MoP CFR Brazil for 2021
	grade, metal or commodity	
	price(s) exchange rates,	
Revenue	transportation and treatment	
factors	charges, penalties, net smelter	
	The derivation of assumptions	
	made of metal or commodity	
	price(s), for the principal metals,	
	The demand supply and stack	Deced on CDU estimates, slabel notesh demand is faresent to show from 74 0Mt in 2022 to even at 100Mt by 2040 and
	situation for the particular	global nameplate potash capacity to increase from 107.5Mt by the end of 2022, reaching 120Mt by 2040.
	commodity, consumption trends	The Company's current market strategy considers selling to South America and Africa.
	and factors likely to affect supply	MoP price of US\$360/t is the average future potash price CFR Brazil forecast over the project life.
	and demand into the future.	The Quarter 1 average for 2022 CER Brazil price was US\$876 /t MOP
Markat	A customer and competitor	Customer specifications are based on K60 product which means the MeD product has a minimum K20 content of 60%
Markel assessment	analysis along with the	corresponding to a KCI content of 05.0 %. Product will be sampled regularly on site and tested in a site-based laboratory to
assessment	identification of likely market	ensure product grade is consistently met. Product that does not satisfy grade will be removed from the product stream and
	windows for the product.	reprocessed.
	Price and volume forecasts and	
	the basis for these forecasts.	
	For industrial minerals the	
	customer specification, testing	



Criteria	JORC Code explanation	Commentary
	and acceptance requirements	
	prior to a supply contract.	
	The inputs to the economic	Key valuation assumptions and (sources)
	analysis to produce the net	Production - LoM of 31 years at nominal 2.2 Mtpa MoP production.
	present value (NPV) in the study the source and	Single MoP product type – red MOPG (Muriate of Potash - Granular)
	confidence of these economic	Average LoM CFR price of US\$ 360/MoP t
	inputs including estimated	On-mine LoM average operating cost US\$ 63.6/MoP t, Real
	inflation, discount rate, etc.	LoM Shipping (transshipment and sea freight) of US\$ 19.5/MoP t
	NPV ranges and sensitivity to	Project capital period 40 months, deferred capital period 24 months
	variations in the significant	Total Nominal: Project Capital US\$ 1.83 Bn (including Owners Capital)
	assumptions and inputs.	Owners Capital US\$ 118 million
Economic		Deferred Capital US\$ 62 million
		Sustaining Capital US\$ 11.20/MoP t, Real
		Fiscal parameters: Company tax rate (15%), tax holidays (5 years at 0% + 5 years at 7.5%) (Mining Convention)
		Royalties 3% (Mining Convention)
		Government free carry (10%) (Mining Convention)
		Other minor duties and taxes (Mining Convention)
		Working capital: 30 days Debtors and Creditors, 60 days Stores (Kore)
		Payback period: 7.7 years from start of construction
		Highest sensitivities to Price and Capital. A 1% movement in Price has an approximate US\$ 44 M movement in NPV10, and
		a 1% movement in Project Capital has an approximate US\$ 15 M impact on NPV10.
	The status of agreements with	Approval of an ESIA is a prerequisite for beginning construction of a mining project in the Republic of Congo. The Kola ESIA,
Social	key stakeholders and matters	initially approved on 10 October 2013, was amended to reflect the design changes made to the Kola Project as part of the
	leading to social license to	Definitive Feasibility Study ("DFS") and has been amended to include the service corridors for a gas pipeline and overhead
	operale.	power line. The amended ESIA for the concern left and thing License was approved on 51 March 2020 for 25 years.
		the FSIA. It is intended that work on this amendment will commence following receipt and acceptance of the FPC and

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Criteria	JORC Code explanation	Commentary
		Financing proposals.
		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. 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:
		A new application for each corridor for a declaration d'utilite publique (DUP) will be required from 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.
	To the extent relevant, the impact of the following on the project and / or on the	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 optimisation study).
Other	estimation and classification of the Ore Reserves:	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
	Any identified material naturally occurring risks.	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
	The status of material legal agreements and marketing	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.



Criteria	JORC Code explanation	Commentary
	arrangements.	To the best of the Competent Person's knowledge, there is no reason to assume any government permits and licenses or
	The status of governmental	statutory approvals will not be granted. There are no unresolved matters upon which extraction is contingent.
	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	
	the recence is contingent	
	The basis for the classification	Measured Mineral Resources were used for the estimation of the Proved Ore Reserves. Indicated Mineral Resources were
	of the Ore Reserves into varying	used for the estimation of Probable Ore Reserves.
	confidence categories.	The conversion of Measured and Indicated Mineral Resource to Proved and Probable Ore Reserve reflects the Competent
	Whether the result appropriately	Person's view of the deposit.
Classification	reflects the Competent Person's	40.6% of the Ore Reserves are classified in the Proved category and 59.4% of the Ore Reserves are classified in the Probable
	view of the deposit.	category
	The proportion of Probable Ore	
	Reserves that have been	
	derived from Measured Mineral	
	Resources (IT any).	
Audits or	The results of any audits or	DFS deliverables were continually reviewed by an Owner's Team consisting of an inter-discipline engineering team,
reviews	reviews of Ore Reserve	specialists in ESIA and economic modelling and construction experts.



Criteria	JORC Code explanation	Commentary
	estimates.	
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 procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate. 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. Accuracy and confidence discussions should extend to specific discussions of any	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 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 the optimisation study. An EPC proposal is due in August 2022 from SEPCO and the Summit Consortium. Factors that could affect the Ore Reserves locally include; localised changes in salt-back thickness, 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 optimisation study, 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.



Criteria	JORC Code explanation	Commentary
	applied modifying factors that	
	may have a material impact on	
	Ore Reserve viability, or for	
	which there are remaining areas	
	of uncertainty at the current	
	study stage.	
	It is recognized that this may not	
	be possible or appropriate in all	
	circumstances. These	
	statements of relative accuracy	
	and confidence of the estimate	
	should be compared with	
	production data, where	
	available.	



# **APPENDIX D**

Appendix D: JORC 2012 - Table 1, Sections 1 to 3<sup>[1]</sup>

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

## Section 1 Sampling Techniques and Data

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

Criteria	JC	ORC Code explanation	Commentary
1.1 Sampling techniques	•	Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement	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
		tools appropriate to the minerals under investigation, such as	drilled HQ size (63.5 mm core diameter). Sample intervals were between 0.1 and 2.0 metres

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Criteria	JORC Code explanation	Commentary
	<ul> <li>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>	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 were 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 20 g observe for association in the second statement of the second</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).
	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.	KCI 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 preferential loss/gain of fine/coarse material.</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 trisalt (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 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</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 calliper data which correlates



Criteria	JORC Code explanation	Commentary	
	<ul> <li>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>	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 derive 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> <li>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</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 custody was secure from point of sampling to point of reporting.	



Criteria	JORC Code explanation	Commentary
		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). 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 KCI conversion charts which would be 0.0767 for this tool in hole of PQ diameter (125 mm from calliper 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 KCI 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 KCI and thickness, and so the latter was used unreservedly for the Mineral Resource estimation.
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> </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

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Criteria	JORC Code explanation	Commentary
	<ul> <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>	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 KCI grades. In all cases the API derived KCI 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	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. Specification of the grid system used.	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.
	Quality and adequacy of topographic control.	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	Data spacing for reporting of Exploration Results. Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity	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 greater detail below.
		Two sources of seismic data were used to support the Mineral Resource model:



Criteria	JORC Code explanation	Commentary
		<ol> <li>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.</li> </ol>
		2) The Company acquired 55 lines totalling 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 post stack 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



Criteria	JORC Code explanation	Commentary
		at site is 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	The results of any audits or reviews of sampling techniques and data.	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.)

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.	<ul> <li>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.</li> <li>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.</li> </ul>
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 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



Criteria	JORC Code explanation	Commentary
		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 $\geq$ 5 mm). Between 1.0 and 2.5% is comprised of anhydrite (CaSO <sub>4</sub> ) 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 <i>Anhydrite Member</i> and the underlying salt is an unconformity and due 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



Criteria	JORC Code explanation	Commentary
		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 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% <i>sylvite</i> (KCI) throughout. The FWS, forming by introduction of potassium and more variable mode of formation has a higher degree of grade variation and thickness.



Criteria	JORC Code explanation	Commentary
		The original sedimentary layer and 'precursor' potash rock type is Carnallitite and is preserved 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 Carnallitie is 90 percent <i>carnallite</i> (and grades between 24 and 25 percent KCI), 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 KCI ( <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 <i>carnallite</i> ) and below the contact the rock is un-replaced (Carnallitite with no <i>sylvite</i> ). 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. Carnallitie 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> </ul>
		<ul> <li>Gamma data: Carnallitite &lt; 350 API, Sylvinite &gt;350 API</li> </ul>
		<ul> <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> </ul>
		Acoustic televeiwer and calliper data clearly identify Carnallitite from Sylvinite.



Criteria	JORC Code explanation	Commentary
		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.
		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 sylvinite 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 Carnallitie 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 Carnallitie. 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 often is Carnallitite especially within synformal areas giving rise to pockets or troughs of Carnallitie. 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 Carnallitie, 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



Criteria	JORC Code explanation	Commentary
		'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	• 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:	All drill-hole collar information for holes relevant to the Mineral Resource estimate was provided in Table 5 of the announcement (dated 6 July 2017), including historic holes. Hydrological drill-holes are excluded as they were drilled to a shallow depth. All holes except
	$\circ$ easting and northing of the drill hole collar	one were drilled vertically and deflection from this angle was less than 3 degrees for almost all holes. Holes were surveyed with a gyroscope or magnetic deviation tool to obtain
	<ul> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> </ul>	downhole survey data.
	<ul> <li>dip and azimuth of the hole</li> </ul>	
	$\circ$ down hole length and interception depth	
	◦ hole length.	
	• 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.	
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> </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.
	• 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	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.
	some typical examples of such aggregations should be shown in detail.	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
	The assumptions used for any reporting of metal equivalent values should be clearly stated	standard 'length-weighted' compositing.
		No metal equivalents were calculated.
2.6 Relationship between mineralisation	These relationships are particularly important in the reporting of Exploration Results.	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.



Criteria	JORC Code explanation	Commentary
widths and intercept lengths	<ul> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> </ul>	
	<ul> <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>	
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 of Exploration Results.	Not relevant to the reporting of the Mineral Resource Estimate.
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 currently. 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.
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</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



Criteria	JORC Code explanation	Commentary
	Resource estimation.	changes in mineralogy of the evaporite layers and is used to validate or adjust the core logged
	• The use of geology in guiding and controlling Mineral Resource estimation.	depths of the important contacts. The abrupt nature of the contacts, particularly between the Rock-salt, Sylvinite and Carnallitite contributes to above.
	• The factors affecting continuity both of grade and geology.	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 modelling process but generated results that do not honour the drill-hole data as well as the adopted model.
		<ul> <li>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.</li> <li>where the seams are truncated by the anhydrite</li> <li>where the Sylvinite pinches out becoming Carnallitite or vice versa</li> <li>areas where the seams are leached within zones of subsidence</li> </ul>
		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</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



Criteria J	ORC Code explanation	Commentary
	description of computer software and parameters used.	Measured and Indicated Mineral Resource categories are not materially different from the
•	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	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.
•	The assumptions made regarding recovery of by-products.	tonnage is of no consequence to the project's viability.
•	Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).	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
•	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	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.
•	Any assumptions behind modelling of selective mining units.	1. Interpretation of the base of anhydrite surface or salt roof (SALT_R) which is the sale of the second second
•	Any assumptions about correlation between variables.	
•	Description of how the geological interpretation was used to control the resource estimates.	<ol> <li>Interpretation of base of sait, the intra-sait 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.</li> </ol>
•	Discussion of basis for using or not using grade cutting or capping.	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
•	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	observation 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).
		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, considering interference features common in the data in the Salt Member close to the SALT_R</li> </ol>



Criteria	JORC Code explanation	Commentary
		<ol> <li>In all cases drill-hole intersections were honoured. 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>
		<ol> <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> </ol>
		<ol> <li>The US Sylvinite (USS) model was developed by analysing 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> </ol>
		<ol> <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 SALT_R and the dip and relative elevation were assigned greater consideration.</li> </ol>
		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 (IDW <sup>2</sup> ) 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.
		<ol> <li>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</li> </ol>



Criteria	JORC Code explanation	Commentary
		sense, areas of the model with a dip were corrected so that the true thickness was always honoured.
		<ol> <li>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.</li> </ol>
		<ol> <li>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.</li> </ol>
		<ol> <li>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 honours the proportional abundance of Sylvinite as intersected in the drill-holes.</li> </ol>
		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-<i>halite</i> 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 IDW<sup>2</sup> 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> </ol>
		2. Unlike the USS the LSS is often underlain by a layer of Carnallitite. For the LSS model the thickness of the LSS from drill-hole data was gridded using IDW <sup>2</sup> 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 <i>if</i> 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.
		For the US and LS Inferred Resources, the distribution of Sylvinite and Carnallitite was by 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.



Criteria	JORC Code explanation	Commentary
		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> </ol>
		<ol> <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>
		<ol> <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> </ol>
		<ol> <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> </ol>
		<ol> <li>Finally, the HWS was 'pinched' upwards from 4 m below the SALT_R to reflect the geological observation that close to this surface the seam is leached.</li> </ol>
		Modelling of the Footwall Seam (FWS)
		<ol> <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> </ol>
		2. 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.
		As is standard practice in potash mining zones of subsidence which pose a potential risk to mining were identified using seismic and drill-hole data and classified from 1 to 3 depending



Criteria	JORC Code explanation	Commentary
		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:
		• Store the mineralized zone code and percentage of mineralization.
		Apply the density, based on calculated specific gravity.
		<ul> <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> </ul>
		<ul> <li>Include a minimum of one composite 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 ballpark 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



Criteria	J(	DRC Code explanation	Commentary
			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.
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 KCl 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



Criteria	JORC Code explanation	Commentary
		made to the Scoping Study for Dougou which determined similar operating costs for solution mining of Carnallitite and with the application of a \$250/t potash price a COG of 10% KCl 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 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.	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 underground mining machines is viable and that mining thickness as low as 1.8m can be 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 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 test work was performed on all Sylvinite seams (HWSS, USS, LSS and FWSS) at the Saskatchewan Research Council (SRC) which confirmed the viability of processing the Kola ore by conventional flotation.
3.10 Environmental factors or assumptions	<ul> <li>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</li> </ul>	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, archaeological, 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.



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	an explanation of the environmental assumptions made.	Waste management for the project is simplified by the proximity to the ocean, which acts as a 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	<ul> <li>Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or 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>	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 (Carnallite 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	The basis for the classification of the Mineral Resources into varying confidence categories. Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and	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.
	metal values, quality, quantity and distribution of the data).	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



Criteria	JORC Code explanation	Commentary
	Whether the result appropriately reflects the Competent Person's view of the deposit.	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/ confidence	• Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an 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.	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 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.
	• 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.	There is no production data from which to base an opinion with respect to accuracy and confidence.
	• These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	