Company Announcement, July 11th, 2018

Optimisation Test Work Progressing to Final Pilot Plant Stage

Hightlights:

- **Shenghe coordinates two leading Chinese laboratories to visit Perth in preparation for final pilot plant operations**
- **Each group has developed a flotation method to significantly increase REO mineral concentrate grades to >23% REO**
- **Results on track to deliver simpler, more efficient flotation circuit to reduce capital and operating costs**
- **Best performing method will be selected by the Shenghe- Greenland Minerals Technical Committee**
- **Bulk sample material has been exported from Greenland is being delivered to Perth**

Managing Director Dr John Mair commented:

"It is fantastic to have two established rare earth specialist groups assisting Shenghe in the optimisation program and final pilot plant specification. Each group has a pedigree in metallurgical work for production assets in China and delivered exceptional initial results for Kvanefjeld. The approach taken will ensure the establishment of the most efficient and cost-competitive concentrator circuit."

Greenland Minerals Ltd ('GML" or "the Company') is pleased to update on continued optimisation of the Kvanefjeld Project. Kvanefjeld is projected to be one of the largest producers globally of key magnet metals including **neodymium, praseodymium, dysprosium** and **terbium**, along with by-production of uranium and zinc.

Technical optimisation of Kvanefjeld is part of an on-going program of co-operation with leading rare earth company and major shareholder **Shenghe Resources Holding Co Ltd** (Shenghe). This strategy sees the integration of world-leading Chinese rare earth processing technology with one the world's most significant rare earth projects, with the aim of developing a simpler, lower cost rare earth value chain.

PERTH: Unit 7, 100 Railway Road, Subiaco Western Australia 6008 **POSTAL**: PO Box 2006, Subiaco WA 6904
Telephone: +61 8 9382 2322 Facsimile: +61 8 9382 2788
GREENLAND: PO Box 156, Narsaq, Greenland 3921
WEB: www.ggg.gl **EMAIL**: info@ggg.gl **ABN**: 85 118 463 004

Shenghe selected leading laboratories in China to develop and enhance the flotation circuit. Both laboratories have delivered excellent results, with improvements in mineral concentrate grade in the order of 60%.

The next phase has involved transferring the development work to Australia, overseen by technical teams from each of Chinese laboratories. Based on results, the preferred of the two new methodologies will then be selected for pilot plant operation.

This significant increase in mineral concentrate grade with a reduced mass of solids will result in substantial reductions in the size of equipment leading to lower capital and operating costs of the processing plant (atmospheric leach) circuit

Optimisation Test Work Overview

The Institute of Multipurpose Utilisation of Mineral Resources – Chinese Academy of Geological Sciences (IMUMR) based in Chengdu in Sichuan Province was the first institute engaged. They have developed flotation reagents and methods which have been successfully commercialised at Shenghe's operating mines.

Baotou Meng Rong Fine Materials Co Ltd (BTMR) was the second group engaged. They are a privately-owned technology and technical service provision company based in Baotou, Inner Mongolia.

Initial test work by both technical groups produced substantially enhanced mineral concentrate grade approaching 25% REO. Notably, the Kvanefjeld Feasibility Study uses a mineral concentrate grade of 14% REO; well below the grades achieved by the revised flotation processes now under development.

IMUMR – Perth Visit

A technical delegation from the IMUMR visited Perth in April to oversee and co-ordinate flotation test work on Kvanefjeld ore. The work was performed at the independent laboratory ALS located in Perth, Australia.

The delegation consisted of flotation metallurgists and reagent development chemists. A program of intensive flotation test work was performed to optimise and validate the results which were achieved at the IMUMR's laboratories in Chengdu, China.

A range of different types of tests were performed using the IMUMR supplied flotation reagents. Initial tests were simple batch tests to confirm the reagent scheme was working. Then a number of locked cycle flotation tests were performed to show more complete metallurgical performance.

The locked cycle tests include recycle streams from within a proposed flotation circuit. This gives slower floating particles the chance to report to the final product stream boosting recovery. These tests are very typical for flotation of both sulphide and oxide ores in order to produce a laboratory test which more closely resembles the performance of a commercial circuit.

Two separate locked cycle flotation tests were performed as part of this program to develop the conditions for pilot plant operations.

Upgrading of the Kvanefjeld ore from 1.4% REO to 20-25% REO in the mineral concentrate was observed in the optimised locked cycle test work. This process also results in the rejection of gangue elements such as aluminium from 7% in the ore to less than 2% in the mineral concentrate. This results in less acid consumption in the leach process and less mass for transport purposes.

BTMR – Perth Visit

A technical delegation from the BTMR is currently in Perth to oversee and co-ordinate flotation test work to further develop their optimised flotation method for Kvanefjeld. The delegation similarly consists of flotation metallurgists and reagent development chemists. The BTMR produce their own range of specialty flotation collectors. This allows them to customise the chemistry of their collectors to target specific minerals selectively. The selectivity reduces the amount of gangue minerals which float and increases the grade of resulting concentrates. Improved selectivity of these customised collectors has been one of the keys to the high grades of concentrates achieved.

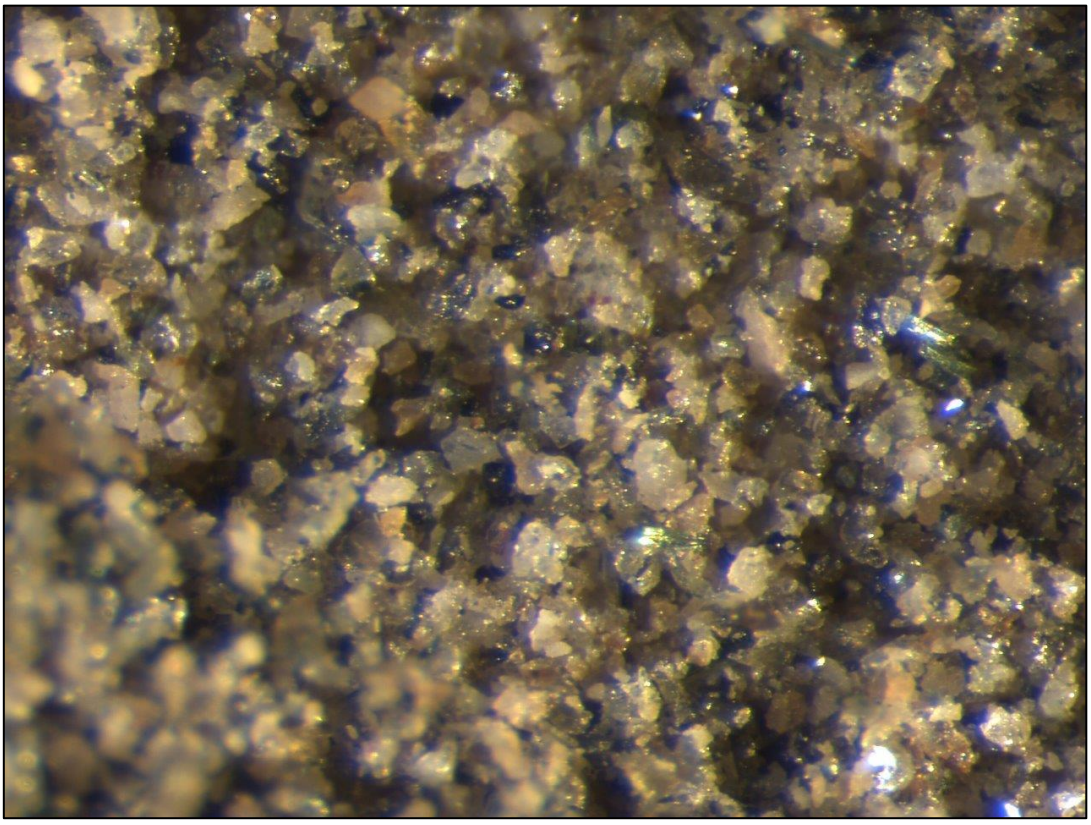

Figure 1. Steenstrupine mineral concentrate produced from BTMR test work, conducted in Perth laboratories.

The BTMR approach is ideal for the unique nature of the REE ore minerals at Kvanefjeld, which will be the first large-scale non -refractory source of rare earth materials. A customised approach is therefore required.

Pilot Plant Operations

Planning and design for pilot plant operations in Perth is underway. The results from the Perth based test work using the methods devised by the Chinese Technical Institutes of IMUMR and BTMR will be assessed with the most suitable method and reagent scheme to be selected for use in the pilot plant work.

The Company is in discussions with a number of Perth laboratories to perform this flotation pilot plant. A flowsheet for the pilot plant is being developed and is designed to be applied in Greenlandic conditions (Figure 2). The use of high temperature high intensity conditioning is not required for the flotation reagents that are currently under evaluation. The highly selective nature of the Chinese reagent schemes has allowed for improved flotation performance without intense conditioning that had been required for the previous reagent scheme assumed for the 2016 Feasibility Study.

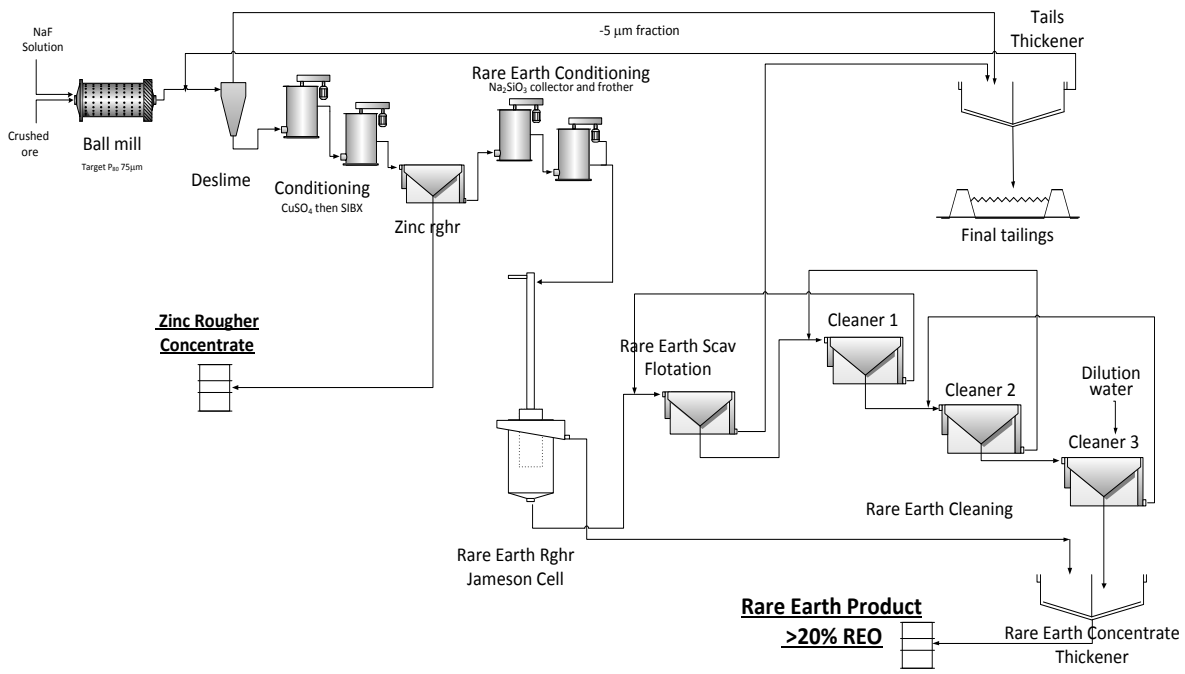

Figure 2. Enhanced flotation process flowsheet, drawing on optimisation test work.

A 5-tonne sample of ore has been prepared and is currently being shipped to Perth. This ore material is from a bulk sample that was crushed and blended by GTK of Finland in 2014 as part of pilot plant operations for the EURARE program. The metallurgical performance of this sample is well known as it has been extensively tested. This include mineralogical liberation studies. The sample is on schedule to arrive in Perth in late July 2018.

-ENDS-

PERTH: Unit 7, 100 Railway Road, Subiaco Western Australia 6008 **POSTAL**: PO Box 2006, Subiaco WA 6904
Telephone: +61 8 9382 2322 Facsimile: +61 8 9382 2788
GREENLAND: PO Box 156, Narsaq, Greenland 3921
WEB: www.ggg.gl **EMAIL**: info@ggg.gl **ABN**: 85 118 463 004

ABOUT GREENLAND MINERALS LTD.

Greenland Minerals Ltd (ASX: GGG) is an exploration and development company focused on developing high-quality mineral projects in Greenland. The Company's flagship project is the Kvanefjeld Rare Earth Project (rare earth elements, uranium, zinc). A pre-feasibility study was finalised in 2012, and a comprehensive feasibility study was completed in 2015 and updated following pilot plant operations in 2016. The studies highlight the potential to develop Kvanefjeld as a long-life, low cost, and large-scale producer of rare earth elements; key enablers to the electrification of transport systems.

GML is working closely with major shareholder and strategic partner Shenghe Resources Holding Co Ltd to develop Kvanefjeld as a cornerstone of future rare earth supply. An exploitation (mining) license application for the initial development strategy has been undergoing review by the Greenland Government through the latter part of 2016 and through 2017.

In 2017-18, GML continues to undertake technical work programs with Shenghe Resources Holding Co Ltd that aim to improve the metallurgical performance, simplify the development strategy and infrastructure footprint in Greenland, enhance the cost-structure, and ensure that Kvanefjeld is aligned with downstream processing. In addition, the Company continues its focus on working closely with Greenland's regulatory bodies on the processing of the mining license application and maintaining regular stakeholder updates.

Dr John Mair
Managing Director
+61 8 9382 2322

Christian Olesen
Rostra Communication
+45 3336 0429

Greenland Minerals Ltd will continue to advance the Kvanefjeld project in a manner that is in accord with both Greenlandic Government and local community expectations and looks forward to being part of continued stakeholder discussions on the social and economic benefits associated with the development of the Kvanefjeld Project.

Competent Person Statement – Mineral Resources Ore Reserves and Metallurgy

The information in this report that relates to Mineral Resources is based on information compiled by Mr Robin Simpson, a Competent Person who is a Member of the Australian Institute of Geoscientists. Mr Simpson is employed by SRK Consulting (UK) Ltd ("SRK") and was engaged by Greenland Minerals Ltd on the basis of SRK's normal professional daily rates. SRK has no beneficial interest in the outcome of the technical assessment being capable of affecting its independence. Mr Simpson has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Robin Simpson consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in the statement that relates to the Ore Reserves Estimate is based on work completed or accepted by Mr Damien Krebs of Greenland Minerals Ltd and Mr Scott McEwing of SRK Consulting (Australasia) Pty Ltd. The information in this report that relates to metallurgy is based on information compiled by Damien Krebs.

Damien Krebs is a Member of The Australasian Institute of Mining and Metallurgy and has sufficient experience that is relevant to the type of metallurgy and scale of project under consideration, and to the activity he is undertaking, to qualify as Competent Persons in terms of The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code, 2012 edition). The Competent Persons consent to the inclusion of such information in this report in the form and context in which it appears.

Scott McEwing is a Fellow and Chartered Professional of The Australasian Institute of Mining and Metallurgy and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration, and to the activity he is undertaking, to qualify as Competent Persons in terms of The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code, 2012 edition). The Competent Persons consent to the inclusion of such information in this report in the form and context in which it appears.

The mineral resource estimate for the Kvanefjeld Project was updated and released in a Company Announcement on February 12th, 2015. The ore reserve estimate was released in a Company Announcement on June 3rd, 2015. There have been no material changes to the resource estimate, or ore reserve since the release of these announcements. .

Appendix 1. Kvanefjeld Project, JORC 2012 Table 1.

The following section is provided to ensure compliance with the JORC (2012) requirements for the reporting of exploration results

Section 1: Sampling Techniques and Data

Criteria	JORC Code Explanation	Commentary
Sampling Techniques	*Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.*	The rock material used for the testwork was stockpiled rock extracted from an exploratory adit that runs through the Kvanefjeld mineral resource for approximately 950m. Rock extracted from the adit is stored in series of stockpiles below the adit entrance. Three stockpiles were selected as being representative based on geochemical evaluation, and a 34 tonne bulk sample was collected. A 200 kg sub-sample from the bulk sample was used for this specific testwork program.
Sampling Techniques Continued	*Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*	The geochemistry and metallurgical behaviour of the bulk sample used is well understood. The bulk sample material has been used for both laboratory bench-scale testwork and pilot plant work performed in 2012 and 2015 respectively. The metallurgical behaviour of the bulk sample is consistent with that sourced from drill cores.
	Aspects of the determination of mineralisation that are Material to the Public Report. *In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.*	The samples were produced with small scale mining, from a horizontal adit. The horizontal adit was undertaken to produce mine like samples. These samples are logged with horizontal extent and have all been sampled for chemical assay. The location and geochemistry of the adit samples were correlated with the geochemistry from exploration drill cores to ensure representivity.
Drilling Techniques	*Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. 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.).*	No drilling performed specific to this work.
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.*	No drilling performed specific to this work.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	No drilling performed specific to this work.
	Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to	No drilling performed specific to this work.

	preferential loss/gain of fine/coarse material.	
Logging	*Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.*	No drilling performed specific to this work.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	No drilling performed specific to this work.
	The total length and percentage of the relevant intersections logged.	No drilling performed specific to this work.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	No drilling performed specific to this work.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	Dry crushed and rotary split suing a mechanical splitter.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	No drilling performed specific to this work.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	All samples were crushed to minus 3 mm before being split out with a rotary sampling device. No grab samples or large rock samples were taken.
	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.	Previous metallurgical testwork has been performed on the ore samples to demonstrate their behaviour was representative.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	The grain size of the target value mineral is 75 micometers on average. The ore provides was all crushed to minus 3 mm prior to sub-sampling using a mechanical splitter to produce the delivered sample.
Quality of assay data and laboratory tests	*The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*	The testwork was performed at the independent laboratory ALS Metallurgy located in Balcatta, Perth, Western Australia. https://www.alsglobal.com/locations/asia-pacific/pacific/australia/western-australia/perth-balcatta-metallurgy ALS Metallurgy has extensive experience with testing froth flotation. Chemical assaying is performed by the ALS Metallurgical laboratory which is ISO 9001-2008 certified. The testwork results are total and represent locked cycle testwork and not a single batch flotation test. An

		elemental mass balance was performed around the locked cycle results. The back calculated head grade from the testwork products was calculated to be close to 100% indicating good assay accuracy. Other testwork was performed by BaoTou MengRong Fine Material Co Ltd (BTMR). The are based in Baotou City, Inner Mongolia. BTMR have significant experience in the beneficiation of rare earth ores. Batch testwork and locked cycle flotation work were performed as part of their services.
	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.	No site geophysical tools used.
	Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	ALS Metallurgy Quality Control systems were used to ensure the accuracy of the chemical assays performed for the Australian based work. Chemical analysis for the BTMR testwork was performed by the China Metrology Accreditation (CMA) to ensure quality control procedures and suitable standards were used.
Verification of Sampling and Assaying	*The verification of significant intersections by either independent or alternative company personnel.*	No drilling performed specific to this work.
	The use of twinned holes.	No drilling performed specific to this work.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	No drilling performed specific to this work.
	Discuss any adjustment to assay data.	No drilling performed specific to this work.
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.*	No drilling performed specific to this work.
	Specification of the grid system used.	No drilling performed specific to this work.
	Quality and adequacy of topographic control.	No drilling performed specific to this work.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	No drilling performed specific to this work.

	Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.	No drilling performed specific to this work.
	Whether sample compositing has been applied.	No drilling performed specific to this work.
Orientation of data in relation to geological structure	*Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.*	No drilling performed specific to this work.
	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.	No drilling performed specific to this work.
Sample Security	*The measures taken to ensure sample security.*	The chain of custody of the samples was managed by GMEL. A whole of journey courier with tracking was used to transport the samples from Greenland to China. Once in a China a customs agent was used to facilitate their transport to the registered laboratories (BTMR). Australian laboratory testwork utilised samples which were stored at ALS Metallurgy prior to work. ALS Metallurgy is a competent laboratory which has secured storage for testwork samples.
Audits or Reviews	*The results of ay audits or reviews of sampling techniques and data.*	No additional audits were completed other than the routine quality control tests with assaying standards at the laboratory.