

# **March 2021 Quarterly Report**

Friday 30th April 2021

## **Key Points:**

- Kvanefjeld statutory public consultation commences.
  - Exploitation license application accepted as meeting Greenland Guidelines for public consultation on 17 December 2020
  - Greenland Guidelines draw on international standards of best practice
  - Public consultation initiated by the government on 18 December 2020
  - Consultation period extended until 1 June, 2021
  - Public meetings held in townships of southern Greenland in early February 2021
- Snap national election held in Greenland, new coalition government
  - > Inuit Ataqatigiit (IA) and Naleraq parties, will form a new coalition Government
  - GGG will initiate discussions with the new Government when in place
  - The Company plans to continue its public consultation process for the project

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## **Contents**

March 2021 Quarterly Activities	1
Kvanefjeld Public Consultation	2
Background to Licensing Process	2
New Greenland Government	2
Greenland's Role in New Rare Earth Supply Chains	3
About the Kvanefjeld Project	5
Tenure, Permitting, and Location	6
Capital Structure	7
Kvanefjeld Project - Statement of Identified Mineral Resources	8

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## **March 2021 Quarterly Activities**

Greenland Minerals Ltd ('GGG' or 'the Company') would like to update on Q1 2021 activities and developments. The primary focus has been on the public consultation for the Company's 100% owned Kvanefjeld rare earth project. The statutory public consultation was initiated on 18 December 2020 and is scheduled to run through to June 1, 2021.

In February, a snap national election was called in Greenland, with the election subsequently held on April 6<sup>th</sup>. This has led to the formation of a new coalition government made up of the Inuit Ataqatigiit (IA) and Naleraq parties. The new coalition holds 16 of 31 seats. The Company will look to initiate discussions with the new government regarding the outlook for the Kvanefjeld Project. The IA party had previously led a coalition government in the period from 2009-2013.

The Kvanefjeld Project, 100% owned by GGG, is underpinned by a JORC-code compliant resource of >1 billion tonnes, and an ore reserve estimate of 108 million tonnes to sustain an initial 37-year mine life. Kvanefjeld offers a new, simpler path to rare earth production than traditional refractory sources.

The recovery of a series of by-products during the production of a rare earth intermediate product rich in critical magnet rare earths including **neodymium**, **praseodymium**, **terbium** and **dysprosium**, will ensure low rare earth production costs.

The Kvanefjeld Project is located near the southern tip of Greenland near existing infrastructure, including an international airport, and has year-round direct shipping access to the project area.

### **Kvanefjeld Public Consultation**

On the 17<sup>th</sup> of December 2020 the Greenland Government approved the commencement of the statutory public hearing of the Environmental Impact Assessment (EIA) and the Social Impact Assessment (SIA) for the Kvanefjeld Project. This followed that **the key application documents** for an exploitation (mining) license met the Greenland Guidelines for public consultation.

This is an important milestone in the Greenlandic Government's formal decision-making process in relation to the issuance of an exploitation license for the Kvanefjeld Project.

The consultation documents consist of the Environmental and Social Impact Assessments in English, Greenlandic and Danish. The studies have been through comprehensive reviews by the Greenland Government and their advisors, and have been accepted as meeting the Greenland Guidelines.

The Greenlandic Minerals Act stipulates that it is a requirement that the EIA and SIA reports are subject to a public consultation period. The public consultation started on the 18<sup>th</sup> of December 2020 with



Greenlandic, Danish, and English versions of the EIA and the SIA made available on the Greenland Governments public hearing portal (<a href="https://naalakkersuisut.gl/en/Hearings/Current-Hearings">https://naalakkersuisut.gl/en/Hearings/Current-Hearings</a>), and is scheduled to run through to June 1, 2021.

Public meetings, an important part of the broader public consultation process for the Kvanefjeld rare earth project were held in three major towns in southern Greenland between February 5<sup>th</sup> to 9<sup>th</sup>. The meetings are managed by Greenland's administration, and were attended by representatives of the Ministry for Mineral Resources, the Environmental Agency for Mineral Resource Activities, a representative of the Danish Centre for Environment (independent advisor to the Greenland Government), and Company representatives. The meetings represent an important part of the stakeholder engagement process to explain and discuss the outcomes of the environmental and social impact assessments.

#### **Background to the Licensing Process**

GGG has systematically advanced the Kvanefjeld Project under all governments since the commencement of operations in Greenland in 2007. The Company operates in accordance with Greenland's Minerals Act.

Acceptance of a mining license application comes after the Environmental and Social Impact Assessments were accepted as meeting the Greenland Guidelines for public consultation. With respect to the EIA, fulfilment of the Guidelines means that all aspects of the Kvanefjeld Project are based on international environmental standards and the principles of 'Best Available Technology' and 'Best Environmental Practice'.

Independent scientific reviews of the Kvanefjeld EIA were conducted by the Danish Centre for Environment (DCE) with assistance from the Greenland Institute of Natural Resources (GINR). In a comment published during the consultation period, the DCE and GINR concluded that the Kvanefjeld Project 'with a high probability can be completed without further significant adverse effects than the ones described in the EIA report.' Impacts are presented and investigated thoroughly in the EIA report and supporting technical studies, along with mitigation strategies.

The Terms of Reference (ToR) for the Kvanefjeld Project were approved in 2015, following a public consultation process undertaken in 2014. The ToR defined the scope of the impact assessments. At the end of the hearing period the Company is required to address all hearing comments in a White Paper.

#### **New Greenland Government**

The Inuit Ataqatigiit (IA) and Naleraq parties, have formed a new coalition Government following Greenland's national election in on 6 April 2021. The new Government's leadership has publicly stated a political intention to cease development of GGG's Kvanefjeld rare earth project.

The Kvanefjeld project is based on an exploration licence granted under the Greenland Mineral Resources Act. It has been operated by GGG in close dialogue with all Greenland governments since commencing operations in 2007.



GGG has applied for an exploitation (mining) licence and taken advice from senior Danish legal counsel as to its legal rights in respect of its application.

Following a multi-year investigation process, on 17 December 2020, the former Greenland government approved GGG's Environmental Impact Assessment (EIA) and the Social Impact Assessment (SIA) reports as meeting the requirements for initiating the statutory public consultation process. This process was determined by the authorities to take place in the period from 18 December 2020 to 1 June 2021.

GGG intends to continue the public consultation process and will initiate a dialogue with the new Government when in place over the protection and enforcement of GGG's legal position, rights and assets, including the right to be granted an exploitation licence.

The independent scientific review of the Kvanefjeld EIA and supporting technical studies concluded in 2020, with the EIA assessed to meet the requirements of the EIA Guidelines to commence the statutory public hearing. Fulfilment of the Guidelines means that all aspects of the Kvanefjeld Project are based on international environmental standards and the principles of 'Best Available Technology' and 'Best Environmental Practice'. Independent scientific reviews of the Kvanefjeld EIA were conducted by the Danish Centre for Environment with assistance from the Greenland Institute of Natural Resources.

GGG will keep the market informed of any material developments upon its application for an exploitation licence.

## **Greenland's Role in New RE Supply Chains**

GGG has been operating in Greenland, with a focus on the Kvanefjeld rare earth project since 2007. The project has been systematically investigated, and today, Kvanefjeld is one of the world's most important emerging rare earth projects, and is well positioned to see Greenland become a globally significant supplier of materials that are key to an energy efficient, and environmentally sustainable future.

They Kvanefjeld Project is founded on a unique geological environment in southern Greenland, that contains vast mineral resources enriched in critical rare earth metals. At a planned processing rate of 3 million tonnes/year, Kvanefjeld will be a globally significant producer of light RE magnet metals neodymium and praseodymium (combined Nd-Proxide of 5,690t/a) as well as being a significant producer of the strategically significant heavy RE's terbium and dysprosium (44t/a and 270t/a respectively). Rare earth production costs will be low owing to favourable metallurgy, coupled with additional revenue streams generated through the by-production of uranium, zinc and fluorspar (metspar).

Kvanefjeld has an initial mine life of 37 years, based on a 108 million tonne ore reserve (JORC 2012), however, this represents only 10% of the broader resource based. There is clear scope to expand production and extend the project mine life.

The Kvanefjeld Project has been systematically put together drawing on a collective of specialist expertise from around the world. This includes leading technical and metallurgical input from major shareholder



(9.5%) and leading international rare earth company Shenghe Resources Holding Co. Extensive stakeholder engagement has shaped the development strategy. Studies into environmental and social impacts have been undertaken by independent special consultancies in close communication with Greenland regulatory bodies.

-ENDS-

Authorised for release by the Board of Greenland Minerals Ltd.

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## **About the Kvanefjeld Project**

The Kvanefjeld Project is centred on the northern Ilimaussaq Intrusive Complex in southern Greenland. The project includes several large-scale multi-element resources including Kvanefjeld, Sørensen and Zone 3. Global mineral resources now stand at **1.01** billion tonnes (JORC-code 2012 compliant).

The deposits are characterised by thick, persistent mineralisation hosted within sub-horizontal lenses that can exceed 200m in true thickness. Highest grades generally occur in the uppermost portions of deposits, with overall low waste-ore ratios.

Less than 20% of the prospective area has been evaluated, with billions of tonnes of lujavrite (host-rock to defined resources) awaiting resource definition. Extensive resources of other rare minerals enriched in critical elements also occur within the license area.

While the resources are extensive, a key advantage to the Kvanefjeld project is the unique rare earth and uranium-bearing minerals. These minerals can be effectively beneficiated into a low-mass, high value concentrate, then leached with conventional acidic solutions under atmospheric conditions to achieve particularly high extraction levels of rare earths. This contrasts to the highly refractory minerals that are common in many rare earth deposits that require technically challenging and costly processing. The rigorously developed process route for Kvanefjeld has been the subject of several successful pilot plant campaigns. Uranium and zinc will be recovered as by-products are low incremental costs.

The Kvanefjeld project area is located adjacent to deep-water fjords that allow for shipping access directly to the project area, year-round. An international airport is located 35km away, and a nearby lake system has been positively evaluated for hydroelectric power.

Rare earth elements (REEs) are used in a wide variety of applications. Most notably, rare earth elements make the world's strongest permanent magnets. The magnet industry continues to be a major growth area, owing to the essential requirement of high-powered magnets in electric cars, renewable energy sources such as wind turbine, along with many common place electrical applications.

Magnetism is the force that converts electricity to motion, and vice-versa in the case of renewable energy such as wind power. In recent years growth in rare earth demand has been limited by end-user concerns over pricing instability and surety of supply; however, demand has returned and the outlook continues to strengthen.

Kvanefjeld provides an excellent opportunity to introduce a large, stable supplier at prices that are readily sustainable to end-users. In addition, rare earths from Kvanefjeld will be produced in an environmentally sustainable manner further differentiating it as a preferred supplier of rare earth products to end-users globally. These factors serve to enhance demand growth.

## **Tenure, Permitting and Project Location**

#### **Tenure**

Greenland Minerals Ltd (ABN 85 118 463 004) is a company listed on the Australian Securities Exchange. The Company has conduct extensive exploration and evaluation of license EL2010/02. The Company controls 100% of EL2010/02 through its Greenlandic subsidiary.

The tenement is classified as being for the exploration of minerals. The project hosts significant uranium, rare earth element, and zinc mineral resources (JORC-code compliant) within the northern Ilimaussaq Intrusive Complex.

Historically the Kvanefjeld deposit, which comprises just a small portion of the Ilimaussaq Complex, was investigated by the Danish Authorities. GGG has since identified a resource base of greater than 1 billion tonnes, including the identification and delineation of two additional deposits. The Company has conducted extensive metallurgical and process development studies, including large scale pilot plant operations.

#### Permitting

Greenland Minerals Limited is permitted to conduct all exploration activities and feasibility studies for the Kvanefjeld. The company's exploration license is inclusive of all economic components including both REEs and uranium.

A pre-feasibility study was completed in 2012, and a comprehensive feasibility study completed in 2016. A mining license application was handed over to the Greenland Government in December 2015, which addresses an initial development strategy. The project offers further development opportunities owing to the extensive mineral resources.

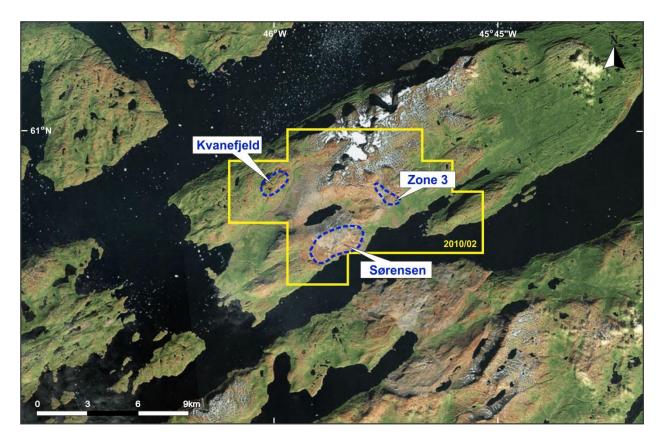
#### Location

The exploration lease covers an area of 80km<sup>2</sup> in Nakkaalaaq North on the southwest coast of Greenland. The project is located around 46° 00'W and 60 55'N.

The town of Narsaq is located approximately 8 kilometres to the south west of the license area. Narsaq is connected to Narsarsuaq International Airport by commercial helicopter flights operated by Air Greenland. Local transport between settlements is either by boat or by helicopter.

The Company has office facilities in Narsaq where storage, maintenance, core processing, and exploration and environmental activities are managed.

Access to the Kvanefjeld plateau (at approximately 500m asl) is generally gained by helicopter assistance from the operations base located on the edge of the town of Narsaq. It is possible to access the base of the plateau by vehicle and then up to the plateau by a track.



Overview of GGG's 100% controlled license EL2010/02. A mining license application has been lodged.

<b>Exploration License</b>	Location	Ownership						
EL 2010/02	Southern Greenland	Held by Greenland Minerals A/S, a fully owned subsidiary of GGG.						
Capital Structure – As a	Capital Structure – As at 31 March 2021							
Total Ordinary shares 1,341,552,								
Employee performance rights 6,								

Please visit the company's website at <a href="www.ggg.gl">www.ggg.gl</a> where recent news articles, commentary, and company reports can be viewed.

GREENLAND
MINERALS LTD
Statement of Identified Mineral Resources, Kvanefjeld Project, Independently Prepared by SRK Consulting (February, 2015)

	Multi-Element Resources Classification, Tonnage and Grade											tained Me	etal					
<b>Cut-off</b>	Classification	M tonnes	TREO <sup>2</sup>	U <sub>3</sub> O <sub>8</sub>	LREO	HREO	REO	Y <sub>2</sub> O <sub>3</sub>	Zn	TREO	HREO	$Y_2O_3$	U <sub>3</sub> O <sub>8</sub>	Zn				
(U₃O <sub>8</sub> ppm)¹		Mt	ppm	ppm	ppm	ppm	ppm	ppm	ppm	Mt	Mt	Mt	M lbs	Mt				
Kvanefjeld - Fe	bruary 2015																	
150	Measured	143	12,100	303	10,700	432	11,100	978	2,370	1.72	0.06	0.14	95.21	0.34				
150	Indicated	308	11,100	253	9,800	411	10,200	899	2,290	3.42	0.13	0.28	171.97	0.71				
150	Inferred	222	10,000	205	8,800	365	9,200	793	2,180	2.22	0.08	0.18	100.45	0.48				
150	Total	673	10,900	248	9,600	400	10,000	881	2,270	7.34	0.27	0.59	368.02	1.53				
200	Measured	111	12,900	341	11,400	454	11,800	1,048	2,460	1.43	0.05	0.12	83.19	0.27				
200	Indicated	172	12,300	318	10,900	416	11,300	970	2,510	2.11	0.07	0.17	120.44	0.43				
200	Inferred	86	10,900	256	9,700	339	10,000	804	2,500	0.94	0.03	0.07	48.55	0.22				
200	Total	368	12,100	310	10,700	409	11,200	955	2,490	4.46	0.15	0.35	251.83	0.92				
250	Measured	93	13,300	363	11,800	474	12,200	1,105	2,480	1.24	0.04	0.10	74.56	0.23				
250	Indicated	134	12,800	345	11,300	437	11,700	1,027	2,520	1.72	0.06	0.14	101.92	0.34				
250	Inferred	34	12,000	306	10,800	356	11,100	869	2,650	0.41	0.01	0.03	22.91	0.09				
250	Total	261	12,900	346	11,400	440	11,800	1,034	2,520	3.37	0.11	0.27	199.18	0.66				
300	Measured	78	13,700	379	12,000	493	12,500	1,153	2,500	1.07	0.04	0.09	65.39	0.20				
300	Indicated	100	13,300	368	11,700	465	12,200	1,095	2,540	1.34	0.05	0.11	81.52	0.26				
300	Inferred	15	13,200	353	11,800	391	12,200	955	2,620	0.20	0.01	0.01	11.96	0.04				
300	Total	194	13,400	371	11,900	471	12,300	1,107	2,530	2.60	0.09	0.21	158.77	0.49				
350	Measured	54	14,100	403	12,400	518	12,900	1,219	2,550	0.76	0.03	0.07	47.59	0.14				
350	Indicated	63	13,900	394	12,200	505	12,700	1,191	2,580	0.87	0.03	0.07	54.30	0.16				
350	Inferred	6	13,900	392	12,500	424	12,900	1,037	2,650	0.09	0.00	0.01	5.51	0.02				
350	Total	122	14,000	398	12,300	506	12,800	1,195	2,570	1.71	0.06	0.15	107.45	0.31				

## Statement of Identified Mineral Resources, Kvanefjeld Project, Independently Prepared by SRK Consulting (February, 2015)

	Multi-Ele	ement Resour	ces Classif	ication, To	onnage ar	nd Grade					Cont	ained Me	etal	
Cut-off	Classification	M tonnes	TREO <sup>2</sup>	U₃O <sub>8</sub>	LREO	HREO	REO	$Y_2O_3$	Zn	TREO	HREO	$Y_2O_3$	U₃O <sub>8</sub>	Zn
(U₃O <sub>8</sub> ppm)¹		Mt	ppm	ppm	ppm	ppm	ppm	ppm	ppm	Mt	Mt	Mt	M lbs	Mt
Sørensen - Ma	rch 2012													
150	Inferred	242	11,000	304	9,700	398	10,100	895	2,602	2.67	0.10	0.22	162.18	0.63
200	Inferred	186	11,600	344	10,200	399	10,600	932	2,802	2.15	0.07	0.17	141.28	0.52
250	Inferred	148	11,800	375	10,500	407	10,900	961	2,932	1.75	0.06	0.14	122.55	0.43
300	Inferred	119	12,100	400	10,700	414	11,100	983	3,023	1.44	0.05	0.12	105.23	0.36
350	Inferred	92	12,400	422	11,000	422	11,400	1,004	3,080	1.14	0.04	0.09	85.48	0.28
Zone 3 - May 2	012													
150	Inferred	95	11,600	300	10,200	396	10,600	971	2,768	1.11	0.04	0.09	63.00	0.26
200	Inferred	89	11,700	310	10,300	400	10,700	989	2,806	1.03	0.04	0.09	60.00	0.25
250	Inferred	71	11,900	330	10,500	410	10,900	1,026	2,902	0.84	0.03	0.07	51.00	0.20
300	Inferred	47	12,400	358	10,900	433	11,300	1,087	3,008	0.58	0.02	0.05	37.00	0.14
350	Inferred	24	13,000	392	11,400	471	11,900	1,184	3,043	0.31	0.01	0.03	21.00	0.07
All Deposits – (	Grand Total													
150	Measured	143	12,100	303	10,700	432	11,100	978	2,370	1.72	0.06	0.14	95.21	0.34
150	Indicated	308	11,100	253	9,800	411	10,200	899	2,290	3.42	0.13	0.28	171.97	0.71
150	Inferred	559	10,700	264	9,400	384	9,800	867	2,463	6.00	0.22	0.49	325.66	1.38
150	<b>Grand Total</b>	1010	11,000	266	9,700	399	10,100	893	2,397	11.14	0.40	0.90	592.84	2.42

<sup>&</sup>lt;sup>1</sup>There is greater coverage of assays for uranium than other elements owing to historic spectral assays. U<sub>3</sub>O<sub>8</sub> has therefore been used to define the cutoff grades to maximise the confidence in the resource calculations.

## Kvanefjeld Ore Reserves Estimate - April 2015

Class	Inventory (Mt)	TREO (ppm)	LREO (ppm)	HREO (ppm)	Y₂O₃ (ppm)	U₃O <sub>8</sub> (ppm)	Zn (ppm)
Proven	43	14,700	13,000	500	1,113	352	2,700
Probable	64	14,000	12,500	490	1,122	368	2,500
Total	108	14,300	12,700	495	1,118	362	2,600

<sup>&</sup>lt;sup>2</sup>Total Rare Earth Oxide (TREO) refers to the rare earth elements in the lanthanide series plus yttrium.

Note: Figures quoted may not sum due to rounding.



#### ABOUT GREENLAND MINERALS LTD.

Greenland Minerals Ltd (ASX: GGG) is an exploration and development company focused on the development of the world-class Kvanefjeld Rare Earth Project. A comprehensive feasibility study was completed in 2015 and updated following pilot plant operations in 2016. The studies demonstrated the unique and highly advantageous strengths of the Kvanefjeld Project and outlined the potential for Kvanefjeld to be developed as a long-life, low cost, and large-scale producer of rare earth elements; key enablers to the electrification of transport systems.

Since 2017 GML has worked closely with major shareholder Shenghe Resources Holding Co Ltd, a leader in rare earth processing, to develop Kvanefjeld as a cornerstone of future rare earth supply. In 2017-18, GML undertook technical work programs with Shenghe Resources Holding Co Ltd that improved the metallurgical performance and simplified the development strategy and infrastructure footprint in Greenland, with optimised Feasibility Study outcomes announced in mid-2019. This defined a significantly enhanced project cost-structure and a direct alignment with downstream processing.

An exploitation (mining) license application for the initial development strategy was reviewed by the Greenland Government through 2016 -2020 and was formally accepted as meeting Greenland Guidelines in late 2020. Fulfilment of the Guidelines means that all aspects of the Kvanefjeld Project are based on international environmental standards and the principles of 'Best Available Technology' and 'Best Environmental Practice'. Statutory public consultation for the project commenced in December 2020.

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.

#### For Further Information Contact:

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### 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 12<sup>th</sup>, 2015. The ore reserve estimate was released in a Company Announcement on June 3<sup>rd</sup>, 2015. There have been no material changes to the resource estimate, or ore reserve since the release of these announcements.