GREENLAND MINERALS AND ENERGY LTD

ASX: GGG

Company Announcement, February 12th, 2015

Kvanefjeld Project – Mineral Resource Update:

143 Million Tonnes Defined In 'Measured' Category, Global Resources Over 1 Billion Tonnes

Greenland Minerals and Energy Ltd ('GMEL' or 'the Company') is pleased to present an updated mineral resource estimate for the Kvanefjeld project. The project area has three established mineral resources at Kvanefjeld, Sørensen and Zone 3. The new estimate was undertaken following an increase in the density of geochemical data at the Kvanefjeld deposit that was generated from the recent assay program on historically drilled cores. The resource estimates for the Sørensen and Zone 3 deposits remain unchanged. All mineral resources are compliant with the JORC-code 2012.

Kvanefjeld Deposit:

- **Increase in overall resources to 673 million tonnes (8.7% increase), containing 368 million pounds U_3O_8 (5% increase), 7.4 million tonnes Total Rare Earth Oxide (12% increase)**
- **143 million tonnes in 'Measured' category @ 303ppm U_3O_8, 1.2% TREO and 0.24% zinc**
- **This includes 54 million tonnes @ 403ppm U_3O_8, 1.4% TREO and 0.24% zinc**
- **Measured category resources form the uppermost part of the Kvanefjeld deposit, and are readily accessible for mining**

Global Resources (All Three Deposits)

- **Project global resources now stands at 1.01 billion tonnes containing 593 million pounds U_3O_8, 11.13 million tonnes TREO**

The Kvanefjeld deposit is the focus of the feasibility study that is nearing completion, and will be the start point of mining operations. Following the finalisation of the feasibility study, the measured category resources will provide the basis for establishing an initial mine reserve.

The mineral resource estimate has been carried out by SRK Consulting, who will soon have also finalised a new mine schedule, with improved grades expected. Drill intercepts from outside Kvanefjeld, Sørensen and Zone 3 resource shells highlight the extent of widespread mineralisation throughout the northern Ilimaussaq Complex, and the resource upside (Figure 1).

This mineral resource update confirms that the Kvanefjeld project is underpinned by one of the world's largest undeveloped JORC-code compliant resources of both rare earth elements and uranium.

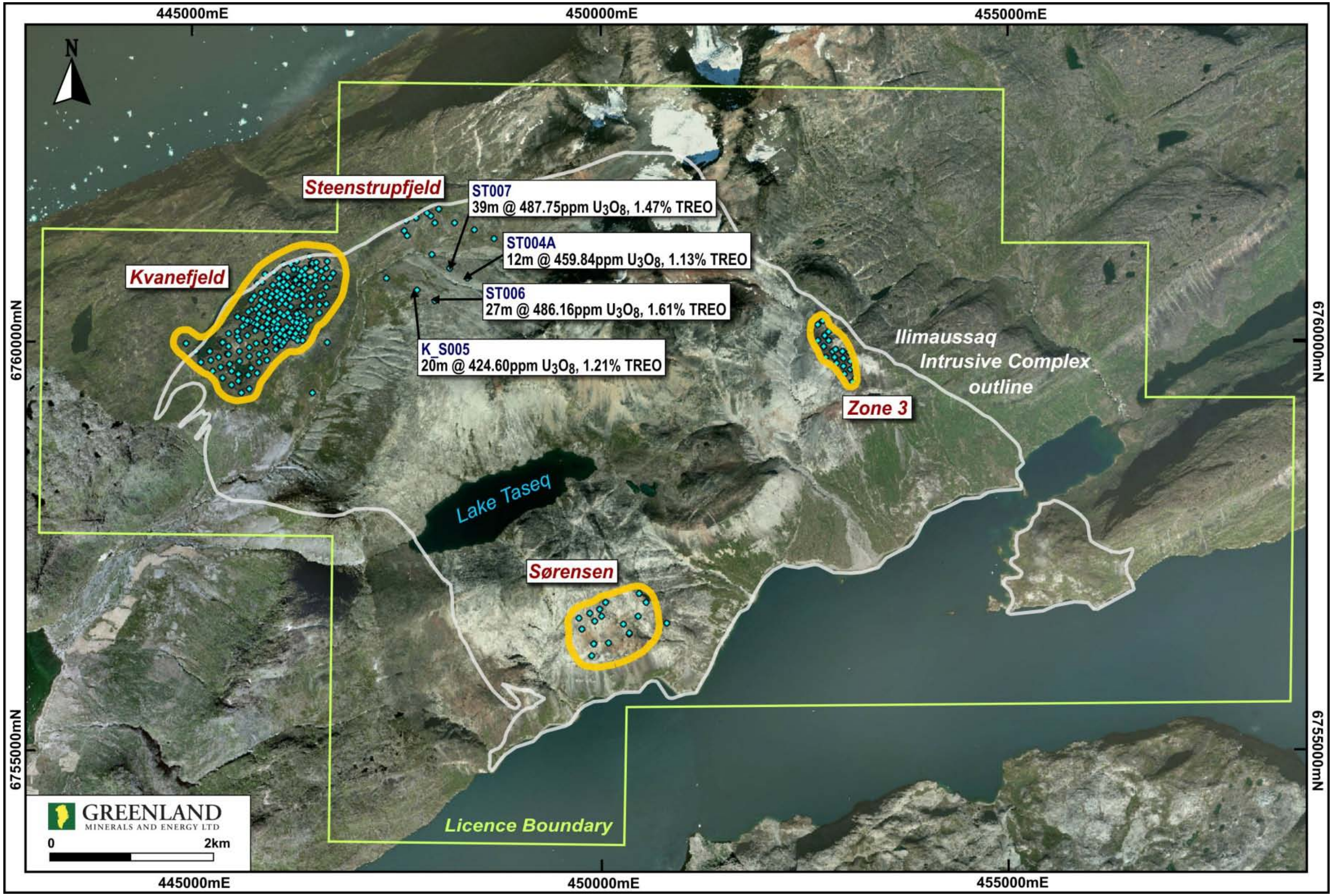

Figure 1. Overview of the Kvanefjeld project area, centred on the northern Ilimaussaq Complex in south Greenland. Three JORC-code (2012) compliant resources have been defined; Kvanefjeld, Sørensen, and Zone 3. Numerous mineralised drill intercepts occur outside the resource shells, highlighting the clear potential for further increases to the resource base.

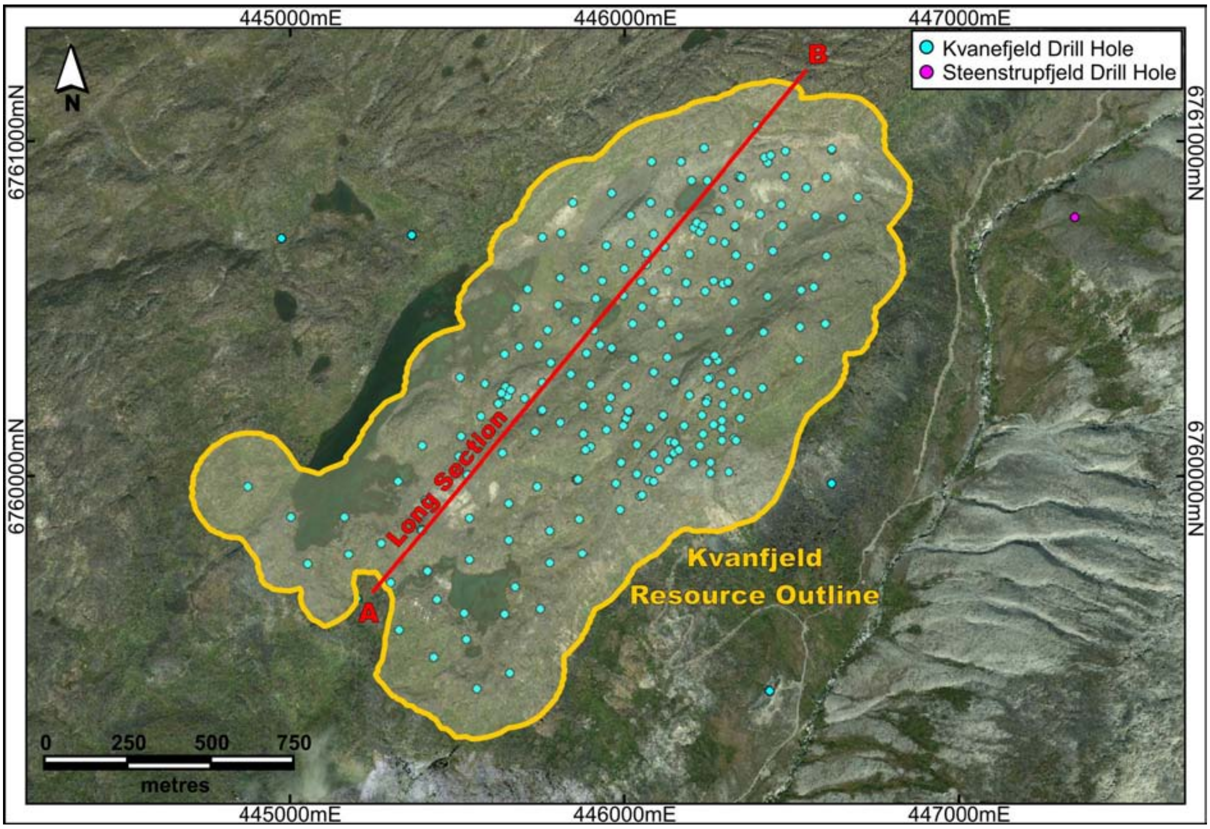

Figure 2. An overview of the Kvanefjeld plateau, highlighting drill collars, the outline of the Kvanefjeld resource model, and long-section line A-B (see Figure 3).

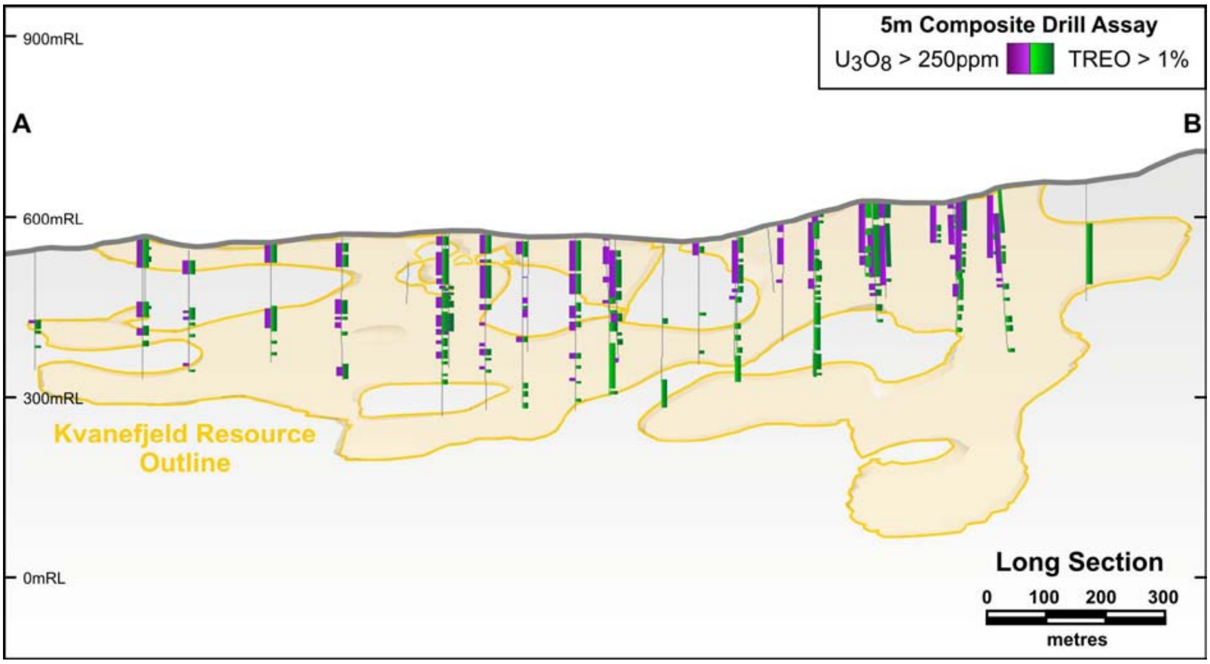

Figure 3. Long-section through the Kvanefjeld deposit highlighting the outline of the resource model. The Kvanefjeld deposit outcrops extensively, with highest grades, and 'measured' category resources in the uppermost parts of the deposit.

Statement of Identified Mineral Resources, Kvanefjeld Project, Independently Prepared By SRK Consulting

		Multi-Element Resources Classification, Tonnage and Grade								Contained Metal				
Cut-off	**Classification**	**M tonnes**	**TREO**[2]	**U_3O_8**	**LREO**	**HREO**	**REO**	**Y_2O_3**	**Zn**	**TREO**	**HREO**	**Y_2O_3**	**U_3O_8**	**Zn**
(U_3O_8 ppm)[1]		Mt	ppm	ppm	ppm	ppm	ppm	ppm	ppm	Mt	Mt	Mt	M lbs	Mt
Kvanefjeld - February 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

Multi-Element Resources Classification, Tonnage and Grade										Contained Metal				
Cut-off	**Classification**	**M tonnes**	**TREO**[2]	**U_3O_8**	**LREO**	**HREO**	**REO**	**Y_2O_3**	**Zn**	**TREO**	**HREO**	**Y_2O_3**	**U_3O_8**	**Zn**
(U_3O_8 ppm)[1]		Mt	ppm	ppm	ppm	ppm	ppm	ppm	ppm	Mt	Mt	Mt	M lbs	Mt
Sørensen - March 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 2012														
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	**Grand Total**	1010	11,000	266	9,700	399	10,100	893	2,397	**11.14**	0.40	0.90	**592.84**	2.42

[1]There is greater coverage of assays for uranium than other elements owing to historic spectral assays. U_3O_8 has therefore been used to define the cutoff grades to maximise the confidence in the resource calculations.

[2]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.

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ABOUT GREENLAND MINERALS AND ENERGY LTD.

Greenland Minerals and Energy 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 multi-element deposit (Rare Earth Elements, Uranium, Zinc), that stands to be the world's premier specialty metals project. A comprehensive pre-feasibility study was finalised in 2012, and the feasibility study will be completed in 2015. The studies demonstrate the potential for a large-scale, cost-competitive, multi-element mining operation. Through 2015, GMEL is focussed on completing a mining license application in order to commence project permitting, in parallel to advancing commercial discussions with development partners. For further information on Greenland Minerals and Energy visit http://www.ggg.gl or contact:

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Greenland Minerals and Energy 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

The information in this report that relates to Mineral Resources is based on information compiled by 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 and Energy 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.

JORC Code, 2012 Edition – Table 1 report template

Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *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 (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	• The Kvanefjeld deposit has been sampled by diamond drilling. Since 2007, Greenland Minerals and Energy Ltd ("GMEL") has drilled approximately 37,000m of core. Over 31,000m of this total is from holes designed specifically for resource definition. The remainder includes holes primarily intended for geotechnical assessment, metallurgical sampling and sterilization. In addition to GMEL's drill holes, the Kvanefjeld drill hole database includes approximately 10,000m of historical diamond drilling (1977 and earlier). Much of the historical core was preserved and available to GMEL for re-sampling. • Kvanefjeld drill hole spacing is variable, but is approximately 70m by 70m across most of the northeast part of the deposit, and 140m by 140m in the southwest. The drill holes are generally vertical or close to vertical, and most are between 200m and 300m deep. The deepest hole (K174) extends 500m from surface. • From the approximately 21,000m of Kvanefjeld core logged as the key lujavrite mineralized rock type, 85% has been half-core sampled by GMEL and sent to Genalysis Laboratory Services Pty Ltd ("Genalysis") or Ultra Trace Pty Ltd ("Ultra Trace"), both in Perth, Australia, for analysis of a suite of elements and oxides, including U_3O_8, rare earth oxides ("REO"), Y_2O_3 and Zn. For 8% of the lujavrite, no chemical sampling is available, but U_3O_8 values derived from historical gamma-ray spectrometry are stored in the database. Approximately 7% of the core logged as lujavrite has not been sampled. • For Sørensen, GMEL has drilled 23 diamond core holes, from 2008 to 2011, for approximately 10,000m of core. Almost 5,000m of this core was selected for sampling. • For Zone 3, GMEL has drilled 28 diamond core holes, in 2008 and 2011, for approximately 6,500m of core. Approximately 4,500m of this core was selected for sampling.
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).*	• The resource definition diamond drilling done by GMEL was mostly at BQ size, maintaining a 41mm core diameter and a 56mm hole diameter. NQ size was used for sterilization and geotechnical drilling, and HQ was employed for collecting metallurgical core. Most holes were designed to be vertical and therefore are not oriented; the only core oriented is the core from the 12 Kvanefjeld geotechnical drill holes. Orientation was by means of a REFLEX™ ACT instrument.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *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.*	• The lujavrite host rock for mineralisation, and the surrounding waste rocks are fresh, competent igneous rock types, and excellent core recoveries should be expected from the Northern Ilimaussaq deposits. From viewing core photos and personal inspection of the core on site, it is apparent that recoveries are generally 100% or close to 100%. Sample bias due to poor recovery is not considered to be a significant risk for the Northern Ilimaussaq deposits.
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of*	• The core samples have been geologically and geotechnically logged in sufficient detail to support

Criteria	JORC Code explanation	Commentary
	detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	Mineral Resource estimation, mining studies and metallurgical studies. • The core is routinely photographed, and both qualitative and quantitative logging fields are used. • The full lengths of all holes drilled by GMEL have been logged. In addition, GMEL has been able to obtain about 50% of the historical Kvanefjeld drill core and GMEL geologists have re-logged this. For the portion of the historical core GMEL could not recover, the historical logging is used in the database.
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *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.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• For both GMEL and historical drill holes, the core was selectively sampled, to target intersections identified by the geologists as potentially hosting U and rare earth element ("REE") mineralisation. • Half core was taken by longitudinal splitting using rotary hand splitters. The reason for not using a core saw or any other wet method of core cutting was to limit the loss of water soluble fluoride minerals. • The usual sample preparation applied to the GMEL samples was: crush to <3mm, rotary split to 1kg, pulverize to <75µm, then scoop a 150g subsample. • GMEL's quality control procedures include taking duplicate samples, from both the coarse residual before the 1kg split, and from the pulverized material. These duplicates were submitted blind to the primary laboratory for analysis. • Robin Simpson, of SRK Consulting (UK) Ltd ("SRK"), and the Competent Person responsible for preparing the Kvanefjeld Mineral Resource estimation, carried out an inspection of the Genalysis' laboratory in Perth, during processing of samples from GMEL's 2010 field season. • The sample preparation technique is appropriate, given the grain size, mineralisation style and grade of the elements of interest.
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.* • *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.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• For most samples, dissolution was achieved by four acid digest – a near-total technique. Mineralogical studies by Genalysis for GMEL have shown that that the key minerals hosting Kvanefjeld REE and U mineralisation are non-refractory, therefore four acid digest is an appropriate laboratory procedure. • Analysis was by both inductively coupled plasma mass spectrometry (ICP-MS, for U, REE and Y); and inductively coupled plasma optical emission spectrometry (ICP-OES, for Zn and other elements). • GMEL's quality control procedures included regular use of off-the-shelf certified reference materials, purchased from Ore Research Pty Ltd in Australia. GMEL also used Ultra Trace and Genalysis laboratories and umpire laboratories to check on each other's results; a selection of pulps from one laboratory would be resubmitted to the other laboratory. • The results from the quality control samples imply that the Northern Ilimaussaq assay have suitable levels of accuracy and precision to support Mineral Resource estimation. • The minor component of gamma-ray spectrometry results in the Kvanefjeld database came from analyses done by the Danish Atomic Energy Commission in the 1970s on samples prepared from 1m drill core lengths. The 3-4cm diameter core was passed through two opposing NaI (Tl) detectors at speeds ranging from one to several metres per hour. Resulting gamma ray spectra, as recorded with a multi-channel analyser, were

Criteria	JORC Code explanation	Commentary
		computer processed and furnished as scale diagrams showing individual U and Th content of the core. • The overall quality of data from spectrometry have been verified by GMEL, based on the resampling and chemical analyses undertaken by GMEL on the available portion of historical core, and by down hole radiometric surveys which GMEL has been able carry out on most historical drill holes.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• The nature of the mineralisation style in the North Ilimaussaq deposits means that the Mineral Resource estimates are not strongly dependent on a few high grade intersections. • GMEL has not drilled twin holes to verify the historical Kvanefjeld drilling; instead verification has occurred via an extensive program of resampling historical core. • Mineralised intersections have been verified by both independent and alternative company personnel. • GMEL have in place rigorous data handling and storage protocols, which have been reviewed by several external consultants, and tested over the course of five phases of Mineral Resource estimation since 2007. • No chemical assay data required adjustment.
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.* • *Quality and adequacy of topographic control.*	• The grid system used for the project is UTM, Projection WGS84, Zone 23N. • ASIAQ, a Greenland-based survey company, visited site in 2008 and 2011, established control points, and surveyed the collars of GMEL resource development holes using real time kinematic differential GPS, with an expected accuracy of a few centimetres. Other GMEL drilling collars were located in the field using a Garmin GPS 60CSx, with an expected accuracy of about ±2m. • GMEL surveyed the collars of most historical holes using real time kinematic differential GPS, with an expected accuracy of a few centimetres. • The GMEL resource development holes were generally drilled as vertical holes. The majority of GMEL holes from 2007 and 2008, and seven of the historical holes, were down-hole surveyed.by an Auslog slim line Model A698, S/N T178 Deviation Tool. The 51 GMEL holes that have not been down hole surveyed (including most of the 2010 drilling program) are stored in the database with their design (that is, vertical) orientation. Using these design orientations in the resource estimation is unlikely to be a significant source of uncertainty (relative to the drill hole spacing and estimation block size), because the holes that do have downhole measurements show little deviation from design. • The downhole surveys for historical holes are based either on assuming the designed (vertical) orientation, or single shot Eastman camera surveys from the end of hole. • The most recent digital surface model for the Northern Ilimaussaq project area was supplied by Geoimage Pty Ltd in December 2011. The topography surface used for the Mineral Resource estimation is based on Geoimage's 1m gridded DSM. • The vertical differences between the topographic surface and the surveyed drill hole collar elevations are mostly less than 3m, which is not significant compared to the block dimensions used for resource estimation.
Data	• *Data spacing for reporting of Exploration Results.*	• Drill hole spacing over the Kvanefjeld deposit

Criteria	JORC Code explanation	Commentary
spacing and distribution	• *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.* • *Whether sample compositing has been applied.*	generally ranges from 70 x 70m to 140 x 140m. The down hole sampling length is 1m. • Drill hole spacing over the Sørensen deposit is approximately 200 x 200m. The down hole sampling length is 1m. • Drill hole spacing over the Zone 3 deposit is approximately 100 x 100m. The down hole sampling length is 1m. • These sample spacings are sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource estimation procedures and classifications applied.
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.* • *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.*	• The generally vertical or steeply dipping drill holes are expected be close to optimum orientation for unbiased sampling, given that for the Northern Ilimaussaq deposits the primary geological controls and the orientation of mineralisation continuity are flat or shallow dipping.
Sample security	• *The measures taken to ensure sample security.*	• Core is delivered by helicopter from the drill site to GMEL's office complex in Narsaq, a journey of about 10km. • The half core samples bagged in calico; the calico bags are grouped in plastic bags; the plastic bags are packaged in 100L watertight plastic barrels with a sample manifest in each barrel; the barrels are strapped to pallets; the pallets are stored in sea containers for shipping from Narsaq to the laboratories in Perth, Australia. • The Competent Person has visited the Kvanefjeld drilling site, visited GMEL's facilities in Narsaq, and also viewed unloading of samples at the primary laboratory in Perth, and is satisfied that sample security is not a significant risk.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• The drilling, sampling, sample preparation and analysis, quality control, logging and other data collection and handling methods have been reviewed by SRK, and found to be appropriate.

Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *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.* • *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.*	• All drilling has been completed within exploration license 2010/02 in accordance with the license terms outlined by Greenland's Mineral Licence and Safety Authority (MLSA). The tenement is classified as being for the exploration of minerals. The Holder is Greenland Minerals and Energy A/S a wholly owned subsidiary of Greenland Minerals and Energy Ltd. • The tenure is in good standing with no impediments.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• The Kvanefjeld deposit was discovered in 1956 during a systematic radiometric reconnaissance survey of the entire Ilimaussaq complex. • From 1958 to 1977 the Danish Atomic Energy Commission (AEK) undertook several diamond drilling campaigns, and drilled 70 holes for almost 10,000m of core. For these campaigns, U was the main element of economic interest. • This historical work is reasonably well documented, and GMEL has been able to further verify the quality of the historical data, from identifying and resurveying the original collars,

Criteria	JORC Code explanation	Commentary
		carrying out down hole radiometric logging of the AEK holes, and relogging and resampling the AEK core. • The databases for the Sørensen and Zone 3 deposits do not include any historical (pre-2007) drilling.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The Ilimaussaq intrusive complex is a large layered alkaline intrusion, and Mesoproterozoic in age. The complex is the type locality of agpaitic nepheline syenite and hosts a variety of rock and mineral types that are unique or almost unique to this intrusion.
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:* o *easting and northing of the drill hole collar* o *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* o *dip and azimuth of the hole* o *down hole length and interception depth* o *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.*	• The purpose of this report is to support a statement of Mineral Resources rather than to present Exploration Results. The Mineral Resource estimations are based on the results from 227 drill holes (Kvanefjeld); 23 drill holes (Sørensen); and 28 drill holes (Zone 3). Tabulating detailed information for each hole is not considered Material to reporting the Mineral Resources.
Data aggregation methods	• *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.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• As noted above, the purpose of this report is to support a statement of Mineral Resources rather than to present Exploration Results. Significant intersections are not listed; therefore, a discussion of data aggregation methods is not applicable. • Metal equivalent values are not used in this report.
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *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').*	• The Northern Ilimaussaq drilling is mostly close to perpendicular to the geometry of mineralisation; therefore, downhole intersection lengths should be close to true thicknesses.
Diagrams	• *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.*	• Appropriate maps and sections are included with this report.
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.*	• As noted above, the purpose of this report is to support a statement of Mineral Resources rather than to present Exploration Results; tabulating detailed information for each hole is not considered Material to reporting the Mineral Resources.
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*	• In 2009 GMEL drilled 12 geotechnical holes and 14 metallurgical holes into the Kvanefjeld deposit. The implications of these holes have been considered as part of the Mineral Resource estimation (Section 3); the results from this drilling are not considered material for reporting

Criteria	JORC Code explanation	Commentary
	characteristics; potential deleterious or contaminating substances.	Exploration Results.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• The current Kvanefjeld drill holes appear to define the lateral extents of the main body of mineralisation. No further exploration work is planned for the main Kvanefjeld deposit. • The southeast part of Sørensen is exposed in the steep northwestern wall of the Tunugdliarfik Fjord. The deposit is not closed off to the northwest, in the direction of the main Kvanefjeld lujavrite body some 6km away. • Zone 3 remains open laterally and at depth.

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
Database integrity	• *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.* • *Data validation procedures used.*	• Data are imported, managed, stored and validated in DataShed software from Maxwell Geoservices. Built in to the database are validation workflows for quality control. If a batch of new data is rejected by the import criteria, then these data are quarantined until all problems have been identified and resolved. An audit trail function automatically records all additions and modifications to the database.
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.*	• Mr Robin Simpson of SRK, the Competent Person responsible for the Mineral Resource estimation, visited site in August 2010. During this visit Mr Simpson inspected the drill sites on the Kvanefjeld deposit; lujavrite at other locations on the Northern Ilimaussaq deposit; stockpiles of mineralized material from exploration adits cut by the Danish Atomic Energy Commission in the 1970s; GMEL's core handling and storage facilities in Narsaq; and GMEL's offices in Narsaq. In December 2010 Mr Simpson also visited GMEL's primary assay laboratory in Perth (Genalysis) during processing of Kvanefjeld samples.
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	• The Competent Person has high confidence in the geological interpretation of the deposit, due to: o 100% exposure of fresh rocks at surface, with a clear visual contrast between the mineralized black lujavrite, and the barren white naujaite; o Drill hole spacing that is usually well within the scale significant geological variability; and o Thorough and systematic logging, backed up chemical analyses that frequently provide sample grades for 40 elements. • The geological models used to constrain the Mineral Resource estimations are based on interpretation from a combination of multi-element geochemical assays and categorical logging data. • The interpretation of the geological domains, in particular the lujavrite contacts for Kvanefjeld, has been revised several times by different consultants since GMEL reported its first Kvanefjeld Mineral Resource estimate, in 2007. The overall mean estimated grades for REO and U within the Kvanefjeld lujavrite have not changed substantially between the various models. A change that occurred for the previous (2011)

Criteria	JORC Code explanation	Commentary
		Kvanefjeld Mineral Resource estimation was splitting the lujavrite into sub-domains, and creating a model that had greater differences between the higher and lower grade zones of the deposit. For the 2015 Kvanefjeld Mineral Resource estimation, the geological model was again reworked, to take into account new data since 2011. Globally, the differences between the 2015 and 2011 Kvanefjeld Mineral Resource estimations are small for both tonnes and grade. • Geological domains were modeled using Leapfrog™ software. The overall mineralized domain was based on the logged intervals of lujavrite. For Kvanefjeld, his domain was subdivided into five units based on the ratio of Hf to Yb. This geochemical ratio was found to be a useful marker that defined coherent volumes with distinct statistical distributions for REO and U. • For Sørensen, the lujavrite domain was divided into upper and lower subdomains, based on similar marker, of the Hf to Yb ratio, as was recognized for Kvanefjeld. • The Ilimaussaq complex is a layered intrusive complex; layering on the scale of tens of metres thick is the main control on continuity of grade and geology.
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.*	• The main body of lujavrite that hosts mineralisation at Kvanefjeld is a stack of sub-horizontal lenses, widely in contact with each other, with a total thickness ranging from tens of metres to over 200m in thickness. The lateral extents of the Kvanefjeld lujavrite body are about 2200m SW-NE and 1000m NW-SE. • At Sørensen, the area covered by drilling is about 1000m SW-NE and 500m NW-SE. The shallow-dipping lujavrite is exposed in the wall of the Tunugdliarfik Fjord. For drill holes collared from the top of the plateau above the fjord, there is about 100m to 300m of unmineralised material above the lujavrite. The mineralized lujavrite is open at depth, although (as for Kvanefjeld) the higher grade U and REE mineralisation appears to be concentrated in the upper 100m of the lujavrite. Mineralisation is open laterally in all directions. • At Zone 3, the area covered by drilling is about 800m NW-SE and 200m NE-SW. Most drill holes are 250m to 300m deep. Mineralised lujavrite is exposed at surface, open at depth, and open laterally in all directions. Similar to Kvanefjeld, the highest grade U and REE mineralisation is concentrated in the zone from surface to 150m deep.
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* • *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* • *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).* • *In the case of block model interpolation, the block*	• The variables reported in the Mineral Resource statement are: o LREO (light rare earth oxides, the sum of the oxides of La, Ce, Pr, Nd, Sm); o HREO (heavy rare earth oxides, the sum of the oxides of Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu); o REO (sum of LREO and HREO); o TREO (total sum of REO and Y_2O_3); o U_3O_8; and o Zn • For Kvanefjeld, the variables estimated were the individual REO, Y_2O_3, U_3O_8 and Zn. • For Sørensen and Zone 3, instead of estimating individual REO, LREO and HREO were estimated directly. • The geological wireframes to constrain estimation were constructed using Zaparo Leapfrog and

Criteria	JORC Code explanation	Commentary

	size in relation to the average sample spacing and the search employed.
	• *Any assumptions behind modelling of selective mining units.*
	• *Any assumptions about correlation between variables.*
	• *Description of how the geological interpretation was used to control the resource estimates.*
	• *Discussion of basis for using or not using grade cutting or capping.*
	• *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*
		Geovia Surpac™ software. The geostatistical estimation was prepared in Geovariances Isatis® software.
		• The raw sample data were composited to 5m for statistical analysis and estimation.
		• No grade cutting or capping was applied: for all domains and variables, distributions are closer to normal than lognormal, the very highest and lowest values are not far removed from the mean, and the coefficients of variation (ratio of standard deviation to mean) for the composites are typically in the range 0.3 to 0.5.
		• Grades for the variables of interest were estimated into block models.
		  o The Kvanefjeld model has lateral block dimensions of 35m x 35m, and a block height of 10m. The framework of the Kvanefjeld block model was rotated 40° clockwise to align with the drilling grid. The lateral block dimensions are equivalent to about half the drill hole spacing in the more densely drill parts of the deposit.
		  o For Sørensen, the block dimensions are 80m x 80m x 10m, with no rotation.
		  o For Zone 3, the block dimensions are 50m x 50m x 10m, with no rotation.
		• Kvanefjeld block grades were estimated by co-kriging each variable with U_3O_8. Sørensen and Zone 3 block grades were estimated by ordinary kriging.
		• U_3O_8 is the most completely informed variable in the Kvanefjeld sampling database, and has a moderate to strong correlation with the other variables estimates. These correlations were appropriately accounted for during modeling of the cross-variograms required for co-kriging.
		• The lujavrite contacts, and the various subdomain boundaries defined on the basis of Hf to Yb ratios, were used as hard boundaries to constrain the interpolation.
		• Blocks grades were estimated in two passes. For Kvanefjeld, the axes of the ellipsoid search neighbourhood for the first were 250m x 250m x 50m, with a minimum of 10 composites required and a maximum of 32 composites. Approximately 90% of eligible blocks were populated with grades from the first pass estimate. The remaining blocks were populated with grades from a 500m x 500m x 150m search ellipsoid, selecting a maximum 32 composites.
		• Sørensen and Zone 3 were estimated using similar neighbourhoods to Kvanefjeld.
		• The estimation methods used do not require a selective mining unit to be defined.
		• The block model estimation was validated by visual and statistical checks again the composites and raw samples, and (in the case of Kvanefjeld) by comparison against the block model from the previous (2011) Mineral Resource estimation.
		• No reconciliation data are available.

Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• The tonnages are reported on a dry basis. The fresh, crystalline, and low porosity nature of the main rock types in the Ilimaussaq Complex means that the difference between wet and dry bulk densities are typically <1%.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• The range of cut-off grades presented is considered to be reasonable given the geostatistical variability of lujavrite-hosted REE and U mineralisation of the Ilimaussaq complex. For this range of cut-off grades, detailed metallurgical studies have been conducted, a

Criteria	JORC Code explanation	Commentary
		process flow sheet has been developed, and economic evaluations have returned positive project metrics, based on independent pricing forecasts.
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.*	• As part of a 2011 update to the Kvanefjeld pre-feasibility study, GMEL commissioned a mining study from Coffey Mining Pty Ltd ("Coffey"). This mining study was based on the 2011 Kvanefjeld Mineral Resource estimation. The crusher feed target for the study was 7.2Mtpa, with a waste to ore strip ratio of 1.1 to 1. Coffey's assessment was that the base case mining method for the prefeasibility study should be a standard drill, blast, truck shovel open pit operation. • The methods, assumptions and parameters used for preparing the 2015 Kvanefjeld Mineral Resource estimation were guided by this base case of a standard open pit operation. The choice of a 5m block height and composite length for the block model estimation was influenced by the provisional 5m bench height given in the Coffey report.
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.*	• GMEL and their consultants have undertaken extensive metallurgical studies on the lujavrite hosted REE and U mineralisation, and a process flowsheet has been rigorously developed. The process flow sheet involves a concentrator circuit that utilises froth flotation to generate a concentrate rich in minerals bearing REE and U, as well as a zinc concentrate rich in sphalerite. The REE and U mineral concentrate is then leached in sulphuric acid under atmospheric conditions to produce U, La and Ce products, and a high-purity carbonate concentrate of other REE. The flow sheet has been the basis for a number of studies including a prefeasibility study, and a feasibility-level study on the mine and concentrator circuit.
Environmen-tal factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	• The focal points for environmental studies have been the management of fluorine that occurs naturally in the orebody, and of residual radioactive minerals. • The fluorine goes into solution during the flotation stage, and is complexed with Ca to form fluorspar, for which there is an industrial market. • Approximately 90% of the material processed will be discarded as tailings from the flotation circuit, before the chemical treatment stages. This material will mainly be comprised of common silicate minerals such as amphibole and feldspar, with some residual U- and Th-bearing minerals. The U and Th will remain locked within these stable mineral structures. • Tailings from the leach circuit, approximately 10% of the ore mined, will contain chemically-treated minerals and residual thorium. Storage of such residues will follow industry-standard and established methodologies. • An environmental impact assessment for the Kvanefjeld project is scheduled to be completed in Q3 2015.
Bulk density	• *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.* • *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*	• For Kvanefjeld, a dry bulk density value of 2.75t/m^3 was applied to all mineralized and waste domains to convert volumes to tonnages. This assigned value was also used for the previous Mineral Resource estimations, and is based on 4,212 bulk density measurements, taken by GMEL on core samples, using the water immersion method. • For Sørensen, a dry bulk density value of 2.8t/m^3

Criteria	JORC Code explanation	Commentary
	within the deposit. • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	was used, based on 484 core measurements. • No bulk density measurements specific to Zone 3 were taken; the Kvanefjeld dry bulk density factor was applied to this deposit. • The low porosity of the rocks of the Ilimaussaq complex means that the relative difference between dry and wet bulk densities is likely to be less than 1%.
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• Most of the Kvanefjeld Mineral Resource is classified as Indicated. In the zone of closer-spaced drilling (70 x 70m), a portion of the Mineral Resource is classified as Measured. • Mineralisation outside the main Kvanefjeld lujavrite body, and on the edges of the Kvanefjeld drilling pattern, is classified as Inferred. • The Competent Person has a high level of confidence in the quality of the input data, the geological interpretation underlying the modeling, and the appropriateness of the bulk density factor, therefore data spacing (relative to the geological and geostatistical variability) is the key determinant of classification category.
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• The Mineral Resources estimates reported here have not yet been reviewed externally to GMEL and SRK.
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 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.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• The Measured, Indicated and Inferred classifications applied to separate parts of the Mineral Resource estimate are considered sufficient to represent the relative accuracy and confidence. No quantitative study of confidence limits has been undertaken. • The Ilimaussaq deposits have not yet been mined, so no production data are available.