



September 2013 Quarterly Report

Thursday 31st October, 2013

Highlights

- Major landmark development - Greenland repeals the long-standing zero-tolerance uranium policy
- This pivotal move clears the path for Kvanefjeld, one of the world's largest undeveloped resources of rare earth elements and uranium, to move in the permitting stage and toward mine development
- Technical work programs continue to advance the Kvanefjeld atmospheric-leach refinery circuit that extracts uranium and rare elements and generates clean concentrates
- The non-refractory ore minerals present a major advantage, which allows for a circuit that draws on simple, industry-proven metallurgical techniques, and does not require complex high-temperature mineral cracking processes commonly needed to treat many rare earth ores
- For rare earth recovery, control and management of impurities in the leach stream including radionuclides is now clearly understood and tested, allowing for the production of clean, high-purity rare earth concentrates
- Important work programs in Greenland include ongoing environmental baseline monitoring across the broader Kvanefjeld project area
- A further round of stakeholder engagement was completed, and an all-important tour of the regional settlements outside the main townships of south Greenland was undertaken to ensure that forums have been provided for all local stakeholders to discuss the Kvanefjeld project



Contents

Introduction	1
September Quarter Activities	2
Atmospheric Leach Refining Circuit	3
Recent Work Programs in Greenland	5
Greenland Repeals Zero-Tolerance Uranium Policy	8
Tenure, Location and Permitting	10
Other Exploration Licenses	11
Capital Structure	12
Kvanefjeld Project - Statement of Identified Mineral Resources	13

Introduction

Greenland Minerals and Energy Ltd ('GMEL' or 'the Company') is a mineral exploration and development company operating in southern Greenland. The Company is primarily focused on advancing the 100% owned Kvanefjeld multi-element project (*both light and heavy rare earth elements, uranium, and zinc*) through the feasibility and permitting phase and into mine development.

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 **956 Mt** (JORC-code 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.

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 both heavy rare earths and uranium. This contrasts to the highly refractory minerals that are common in many rare earth deposits.

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.

GMEL finalised a comprehensive, multi-year pre-feasibility program in March 2012 that focussed on identifying and evaluating the best possible process flow sheet for the Kvanefjeld project, taking into account economic metrics, environmental considerations, technical and market risk. A feasibility-level Mine and Concentrator Study has since been finalised further reducing capital costs. The study outcomes are extremely positive and reiterate the potential for Kvanefjeld to become a long-life, cost competitive operation. A large heavy REE output and significant uranium output differentiate Kvanefjeld from other potential emerging RE producers.

Rare earth elements (REEs) are now recognised as being critical to the global manufacturing base of many emerging consumer items and green technologies. Uranium forms an important part of the global base-load energy supply, with demand set to grow in coming years as developing nations expand their energy capacity.

September Quarter Activities

During the September Quarter, GMEL conducted important work programs in Greenland that primarily focussed on environmental baseline studies, and stakeholder engagement. Data collected for baseline studies builds on that collected in previous years with the aim of generating a comprehensive understanding of the local environment in order to assess the impacts of mining.

GMEL continued its stakeholder engagement program, with presentations made in Nuuk, the local townships of south Greenland, as well as a tour of the regional settlements of south Greenland. Further meetings were also held with representatives of Greenland's Bureau of Minerals and Petroleum (BMP), to aid in focussing an exploitation license application for the Kvanefjeld project, with an emphasis on the environmental and social impact assessments.

Test work on the refinery circuit for Kvanefjeld continued to yield positive results, and serves to reinforce the quality and effectiveness of the rigorously-developed process flow-sheet. It utilises simple and elegant chemistry and stands as one of the key strengths for the Kvanefjeld project.

The Company will look to provide an update in the coming weeks on the overall status of the refinery circuit which will soon be ready for pilot plant testing.

On October 24th, Greenland's parliament made the land-mark decision to repeal the long-standing zero-tolerance policy toward uranium. The significance of this move cannot be overestimated; as the Kvanefjeld project provides Greenland with the opportunity to become a substantial long-term uranium producer, but also for Greenland to become one of the world's major suppliers of rare earth elements. For Greenland, this critical decision reflects the forward looking direction from their leaders and populace, and comes after several years of discussion on issues surrounding uranium exploitation at both community and political levels.

Atmospheric-Leach Refining Circuit

An effective hydrometallurgical process route has been developed for the treatment of the rare earth- and uranium-rich mineral concentrates generated via froth flotation. The refinery utilises simple equipment and elegant chemistry, with scaled-up test work now having produced a high purity rare earth intermediate product.

The flowsheet utilises a sulphuric acid leach that achieves high extraction levels of both uranium and rare earth elements; in particular the heavy rare earth elements. The uranium is stable in solution in the leach liquor, whereas the rare earths react to form solid REE salts that remain with the leach residue. This creates a very effective break between the uranium recovery, and further treatment steps to generate a clean, high purity rare earth product.

A recent full flowsheet laboratory test run on the Kvanefjeld mineral concentrate has produced 1.1 kg of a high-purity mixed rare earth carbonate.

The mixed rare earth intermediate product is a chemical precipitate formed by the addition of sodium carbonate to a purified rare earth chloride stream. This produces a mixed rare earth carbonate intermediate product. It is low in impurities and contains 94% rare earth oxide (REO) after calcination. The rare earth carbonate product has a favourable REO distribution with 14.75% of the contained rare earths being the more valuable heavy RE elements (see Table 1).

Low levels of calcium (1.26%), aluminium (0.12%) and silica (0.5%) were the most significant impurities. Very low levels of uranium (11 ppm), lead (1.4 ppm) and thorium (2.5 ppm) were measured in the sample which reveals how well these radionuclides were controlled by the impurity removal processes.

The successful production of a significant quantity of rare earth carbonate displays the effectiveness of the Kvanefjeld refining process in producing a high quality product. All process steps in the refining process have now been tested at bench scale or small continuous scale. The process engineering for the refinery is well advanced with key process design documents completed. The non-refractory nature of the Kvanefjeld ore minerals allows for simple, atmospheric acid leach circuits, without the complex high-temperature acid back or caustic cracking processes that are required in many RE operations.

With the process to produce a high-quality RE intermediate product now well established, the Company is working on the evaluation of processes to isolate cerium and lanthanum from the ‘critical’ rare earths (Pr, Nd, Eu, Dy, Tb, Y). The demand outlook for critical rare earths is strong, with ongoing supply concerns and strong pricing forecasts. The de-coupling of the critical rare earths from the bulk light rare earths in cerium and lanthanum provides greater marketing flexibility and value recognition.

Table 1. Distribution of rare earth elements in the intermediate rare earth carbonate produced from Greenland’s Kvanefjeld project. The product contains a favourable distribution of the important heavy REO’s (Eu – Y).

Element	% REO Distribution	
La	27.19%	
Ce	37.15%	
Pr	4.57%	
Nd	13.42%	
Sm	2.92%	
Eu	0.20%	14.75% HREO Distribution
Gd	1.76%	
Tb	0.31%	
Dy	1.36%	
Ho	0.23%	
Er	0.60%	
Tm	0.07%	
Yb	0.30%	
Lu	0.02%	
Y	9.89%	

Recent Work Programs in Greenland

Environmental Baseline Studies

GMEL has been conducting extensive environmental baseline studies in the Kvanefjeld project area for several years, as a basis to evaluate the potential environmental impacts of a mining operation. The baseline studies provide an indication of the natural chemistry of the broader project area, and the background concentrations of many chemical elements in soil, water, dust and biological matter. The Ilimaussaq Alkaline Complex is the geological entity that hosts defined mineral resources, and is renowned for its unusual minerals and chemistry. Rocks of the Ilimaussaq Complex are actively eroded into the Narsaq valley and surrounding areas, resulting in naturally elevated levels of a number of trace elements (Figure 1).

The environmental baseline studies have been conducted in conjunction with Orbicon, GMEL's primary environmental consultant. This year a botanical survey was completed and marine biota along the fjord at the base of the Narsaq valley were sampled for analysis of ecotoxicological and radioactive components. Freshwater and stream sediment sampling stations were revisited to build on data gathered in previous years, with samples also to be analysed for ecotoxicology and radioactivity. Terrestrial sampling stations were also revisited with samples of both soils and lichens collected.

Background Radiation Monitoring

Comprehensive background radiation monitoring was also undertaken in the broader project area along with the town of Narsaq, and builds on data gathered over several years.

Short term (several days) passive monitoring of radon and thoron was conducted and long term (three month) monitoring devices will be collected sequentially over the coming months. Water and soil samples were also collected for radionuclide analyses. High volume air samplers have recently been installed for the purpose of dust and air monitoring.

A gamma radiation survey was also conducted to repeat the surveys carried out in previous years. New additional points in the Narsaq valley were included to provide more detailed coverage from the town of Narsaq to where ore material outcrops on the Kvanefjeld plateau.



Figure 1. An overview of the Narsaq Peninsula, south Greenland, and the broader Kvanefjeld project area. Infrastructure to support the proposed mining operation would mostly be located within the Narsaq valley. The Ilimaussaq Complex is comprised of extremely alkaline and unusual rock types that have been actively eroded into the surrounding environment. JORC-code compliant mineral resources have been established at Kvanefjeld, Sørensen and Zone 3. Mining is proposed to commence at the Kvanefjeld deposit which is conducive to simple open-pit mining methods.

Geotechnical Mapping

Geological and geotechnical mapping programs were undertaken in areas that are currently being investigated as potential infrastructure sites. These programs set out to assess foundation conditions including rock and soil types, as well as identifying potential geohazards and areas that require further geotechnical drilling. The outcomes provide important information to support the selection of infrastructure locations.

Stakeholder Engagement Program

GMEL has maintained an active stakeholder engagement program in relation to the Kvanefjeld project since 2008. This has primarily focussed on participating in community hall meetings in the main townships of south Greenland, which includes Narsaq, Qaqortoq, and Nanortalik. The aim of these meetings is to provide updates on the Kvanefjeld project and potential development scenarios, and importantly to identify the key areas of interest from the local populace. These forums provide the opportunity for local stakeholders to put forward questions, voice concerns and identify areas where they would like further information.

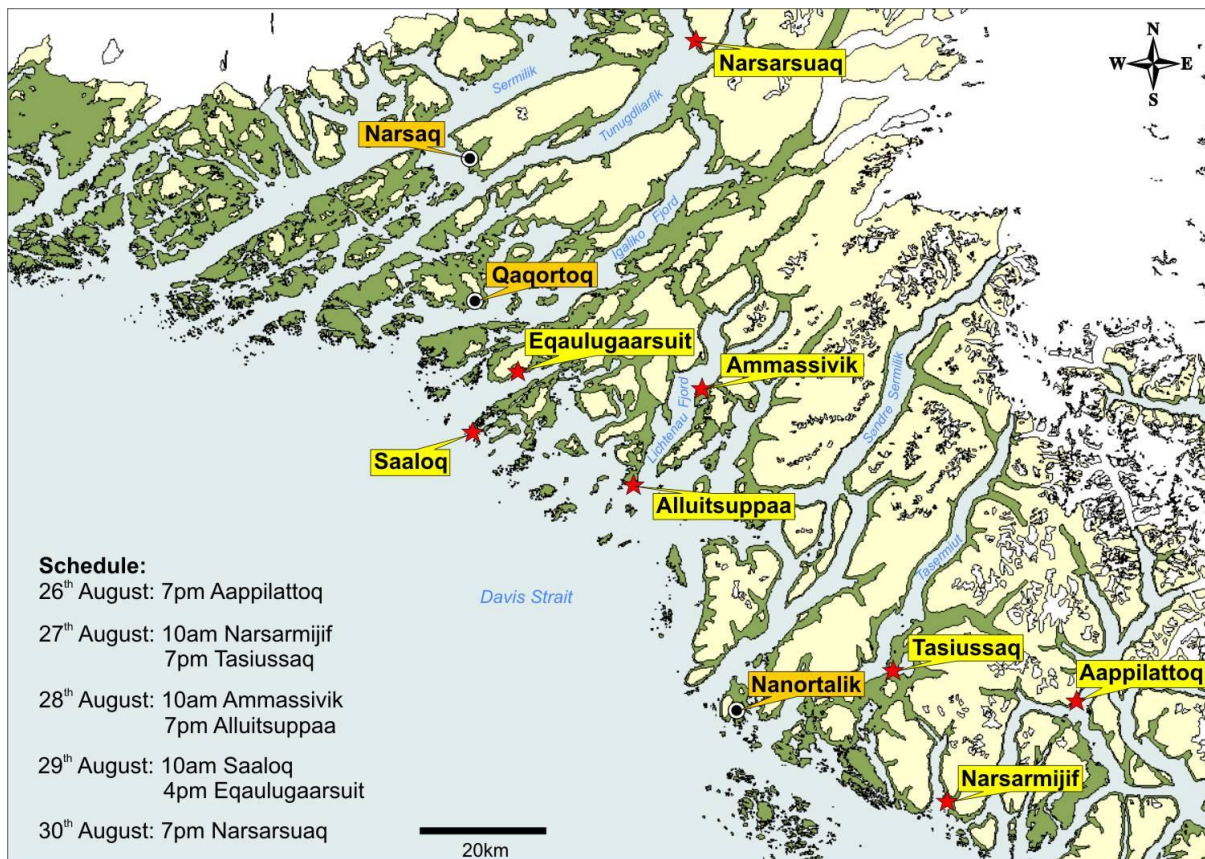


Figure 2. An overview of southern Greenland highlighting the three major towns of Qaqortoq, Narsaq and Nanortalik, and the communities visited on GMEL's recent settlement tour. The Kvanefjeld project is located approximately 10km to the northeast of Narsaq. The exercise represented an important part of the Company's broader stakeholder engagement program, and ensures that efforts have been made to provide forums to discuss the Kvanefjeld project with the majority of the south Greenland populace.

In south Greenland, the majority of the populace live in the three major towns, however, a considerable proportion lives in settlements outside of these townships. GMEL personnel recently undertook a tour of these regional settlements to present overviews of the Kvanefjeld project, and to provide a forum in which people could put forward questions. The settlement tour was aimed to ensure that all local stakeholders in south Greenland are included in the ongoing dialogue surrounding the potential development of the Kvanefjeld project.

Eight settlements were visited where presentations were made and followed by informal discussions (Figure 2). The presentations focussed on the potential development scenarios for the Kvanefjeld project, and the work programs involved in the environmental and social impact assessments. The meetings were all well attended, with the most frequently asked questions focussed on employment opportunities, and the environmental and social impacts.

In early 2014, GMEL is aiming to finalise the configuration of the Kvanefjeld project with input from Greenland stakeholders and all regulatory bodies. The Company will then look to finalise an exploitation license application for the Kvanefjeld project. Continued stakeholder engagement initiatives will be carried out through this important period.

Greenland Repeals Long-Standing Zero-Tolerance Uranium Policy

On Thursday 24th October, Greenland's parliament voted in favour of removing a long-standing zero-tolerance policy concerning uranium and other radioactive elements ("the zero-tolerance policy"). This landmark decision represents a significant moment for Greenland, as it places Greenland on the path to uranium-producer status, and thereby opens up coincident resources of rare earth elements to exploitation. The removal of the zero-tolerance policy is in alignment with Greenland's broader intent to develop mining projects as a core to its future economic prosperity.

Kvanefjeld is widely recognised as one of the world's largest undeveloped resources of rare earth metals and uranium that is ideally located with direct shipping access, year-round in south Greenland. The Preliminary Feasibility Study on Kvanefjeld, released by GMEL in 2012, outlined a long-life, internationally cost-competitive operation that would stand to make Greenland a major supplier of REEs and a substantial long-term supplier of uranium oxide. For

these reasons Kvanefjeld represents one of Greenland's most significant, and strategically important mining opportunities.

The decision to abolish the zero-tolerance policy comes after several years in which uranium has been the subject of political and community discussions in Greenland (see Company announcement 25th October, 2013). The timing is important for GMEL and the Kvanefjeld Project. Metallurgical process development is well-advanced, and several years of environmental baseline studies have been completed. The Company is now looking to work closely with regulatory bodies to lock in the configuration of the Kvanefjeld project, which then allows for the finalisation of environmental and social impact assessments and the lodging of an exploitation license application. Key decisions that are to be finalised in conjunction with Greenland stakeholders and regulatory bodies focus on how much processing is to take place in Greenland, which potentially influences how much Greenland stands to benefit from the development of Kvanefjeld in the long term.

Greenland is preparing to be appropriately equipped to process the exploitation license application, in parallel to establishing a regulatory framework to effectively manage uranium production.

The Company looks forward to continuing discussions on the Kvanefjeld project with Greenland stakeholders and all regulatory bodies in order to finalise the development strategy of what is emerging as a world-class mining opportunity in Greenland.

Tenure, Permitting and Project Location

Tenure

Greenland Minerals and Energy Ltd (ABN 85 118 463 004) is a company listed on the Australian Securities Exchange. The Company is conducting exploration of license EL2010/2. The Company controls 100% of EL2010/2 through its Greenlandic subsidiary.

The tenement is classified as being for the exploration of minerals. The project hosts significant multi-element mineralisation within the Ilimaussaq Intrusive Complex.

Historically the Kvanefjeld deposit, which comprises just a small portion of the Ilimaussaq Complex, was investigated by the Danish Authorities. The project has received significant past exploration and feasibility evaluation in the form of drilling, geophysics, geochemistry, an exploratory adit and numerous and varying metallurgical test work and technical papers.

Permitting

Greenland Minerals and Energy Limited is permitted to conduct all exploration activities and feasibility studies for the Kvanefjeld REE-uranium project. The company's exploration license is inclusive of all economic components including uranium and REEs. The Company holds the right to apply to exploit the Kvanefjeld project. The approval of an exploitation license is largely dependent on establishing an economically robust, and environmentally and socially acceptable development scenario.

Location

The exploration lease covers an area of 80km² 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 activities are managed. This office supports the operational camp located on the Kvanefjeld Plateau above the town where the operational staff are housed.

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.

Other Exploration License Holdings

As announced on 18 May 2011 GMEL had applied for, and was granted license holdings to consolidate its ground position in the Kvanefjeld area. The new license areas occur immediately adjacent to the Ilimaussaq Complex and may be prospective for specialty metal mineralization hosted near the margins of the complex (see Figure 3). GMEL aims to conduct evaluations to assess the potential for mineralization, in conjunction with sterilising key areas that are under assessment for plant and infrastructure locations. The Company is considering a number of possible locations for key infrastructure items, which include areas adjacent to the Kvanefjeld resource, as well as the broad area on the northeastern side of the Ilimaussaq Complex. Stakeholder input and environmental considerations are critically important to the site selection process.

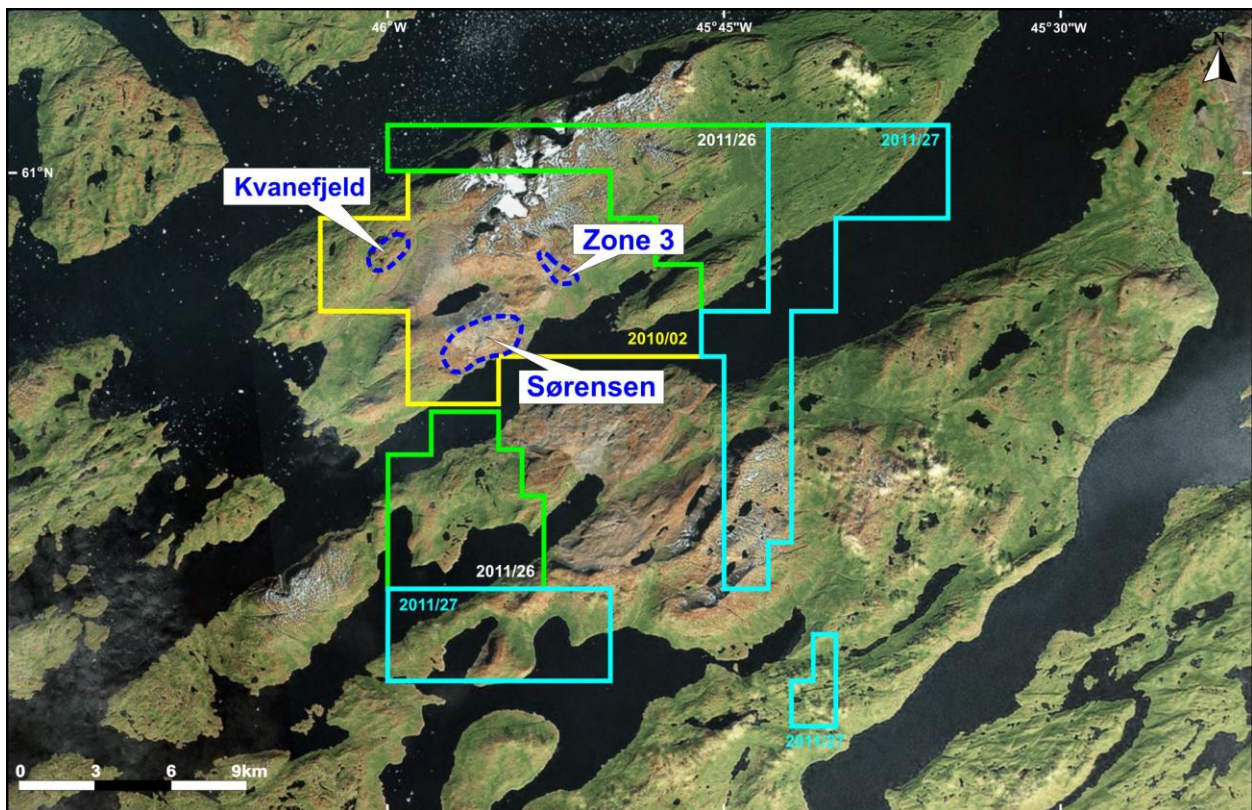


Figure 3. GMEL's license holdings over and adjacent to the Ilimaussaq complex in south Greenland. All licences are held outright by GMEL.

Capital Structure – As at 30th September, 2013

<u>Total Ordinary shares:</u>	572,720,096
Quoted options exercisable at \$0.60	25,769,191
Unquoted options exercisable at \$0.75	4,999,520
Performance rights (refer to announcement 21/10/2011 for terms)	16,860,000

Please visit the company's website at www.ggg.gl where recent news articles, commentary, and company reports can be viewed.

Yours faithfully,



Roderick McIlree

Managing Director

Greenland Minerals and Energy Ltd.

Statement of Identified Mineral Resources, Kvanefjeld Multi-Element Project (Prepared by SRK Consulting)

Multi-Element Resources Classification, Tonnage and Grade										Contained Metal				
Cut-off	Classification	M tonnes	TREO ²	U ₃ O ₈	LREO	HREO	REO	Y ₂ O ₃	Zn	TREO	HREO	Y ₂ O ₃	U ₃ O ₈	Zn
(U ₃ O ₈ ppm) ¹		Mt	ppm	ppm	ppm	ppm	ppm	ppm	ppm	Mt	Mt	Mt	M lbs	Mt
Kvanefjeld - March 2011														
150	Indicated	437	10929	274	9626	402	10029	900	2212	4.77	0.18	0.39	263	0.97
150	Inferred	182	9763	216	8630	356	8986	776	2134	1.78	0.06	0.14	86	0.39
150	Grand Total	619	10585	257	9333	389	9721	864	2189	6.55	0.24	0.53	350	1.36
200	Indicated	291	11849	325	10452	419	10871	978	2343	3.45	0.12	0.28	208	0.68
200	Inferred	79	11086	275	9932	343	10275	811	2478	0.88	0.03	0.06	48	0.20
200	Grand Total	370	11686	314	10341	403	10743	942	2372	4.32	0.15	0.35	256	0.88
250	Indicated	231	12429	352	10950	443	11389	1041	2363	2.84	0.10	0.24	178	0.55
250	Inferred	41	12204	324	10929	366	11319	886	2598	0.46	0.02	0.03	29	0.11
250	Grand Total	272	12395	347	10947	431	11378	1017	2398	3.33	0.12	0.27	208	0.65
300	Indicated	177	13013	374	11437	469	11906	1107	2414	2.30	0.08	0.20	146	0.43
300	Inferred	24	13120	362	11763	396	12158	962	2671	0.31	0.01	0.02	19	0.06
300	Grand Total	200	13025	373	11475	460	11935	1090	2444	2.61	0.09	0.22	164	0.49
350	Indicated	111	13735	404	12040	503	12543	1192	2487	1.52	0.06	0.13	98	0.27
350	Inferred	12	13729	403	12239	436	12675	1054	2826	0.16	0.01	0.01	10	0.03
350	Grand Total	122	13735	404	12059	497	12556	1179	2519	1.68	0.06	0.14	108	0.31
Sørensen - March 2012														
150	Inferred	242	11022	304	9729	398	10127	895	2602	2.67	0.10	0.22	162	0.63
200	Inferred	186	11554	344	10223	399	10622	932	2802	2.15	0.07	0.17	141	0.52
250	Inferred	148	11847	375	10480	407	10887	961	2932	1.75	0.06	0.14	123	0.43
300	Inferred	119	12068	400	10671	414	11084	983	3023	1.44	0.05	0.12	105	0.36
350	Inferred	92	12393	422	10967	422	11389	1004	3080	1.14	0.04	0.09	85	0.28
Zone 3 - May 2012														
150	Inferred	95	11609	300	10242	396	10638	971	2768	1.11	0.04	0.09	63	0.26
200	Inferred	89	11665	310	10276	400	10676	989	2806	1.03	0.04	0.09	60	0.25
250	Inferred	71	11907	330	10471	410	10882	1026	2902	0.84	0.03	0.07	51	0.2
300	Inferred	47	12407	358	10887	433	11319	1087	3008	0.58	0.02	0.05	37	0.14
350	Inferred	24	13048	392	11392	471	11864	1184	3043	0.31	0.01	0.03	21	0.07
Project Total														
Cut-off	Classification	M tonnes	TREO ²	U ₃ O ₈	LREO	HREO	REO	Y ₂ O ₃	Zn	TREO	HREO	Y ₂ O ₃	U ₃ O ₈	Zn
(U ₃ O ₈ ppm) ¹		Mt	ppm	ppm	ppm	ppm	ppm	ppm	ppm	Mt	Mt	Mt	M lbs	Mt
150	Indicated	437	10929	274	9626	402	10029	900	2212	4.77	0.18	0.39	263	0.97
150	Inferred	520	10687	272	9437	383	9820	867	2468	5.55	0.20	0.45	312	1.28
150	Grand Total	956	10798	273	9524	392	9915	882	2351	10.33	0.37	0.84	575	2.25

¹There is greater coverage of assays for uranium than other elements owing to historic spectral assays. U₃O₈ has therefore been used to define the cut-off grades to maximise the confidence in the resource calculations.

²Total 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 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 is rapidly emerging as a premier specialty metals project. A comprehensive pre-feasibility study has demonstrated the potential for a large-scale, cost-competitive, multi-element mining operation. 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.

The information in this report that relates to exploration targets, exploration results, geological interpretations, appropriateness of cut-off grades, and reasonable expectation of potential viability of quoted rare earth element, uranium, and zinc resources is based on information compiled by Mr Jeremy Whybrow. Mr Whybrow is a director of the Company and a Member of the Australasian Institute of Mining and Metallurgy (AusIMM). Mr Whybrow has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined by the 2004 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Whybrow consents to the reporting of this information in the form and context in which it appears.

The geological model and geostatistical estimation for the Kvanefjeld and Zone 2 deposits were prepared by Robin Simpson of SRK Consulting. Mr Simpson is a Member of the Australian Institute of Geoscientists (AIG), and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined by the 2004 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Simpson consents to the reporting of information relating to the geological model and geostatistical estimation in the form and context in which it appears.