



Exploring the highly-prospective Ilimaussaq Intrusive Complex, favourably located near the southern tip of Greenland

457 Mt JORC compliant multi-element resource (REE, U, Zn, NaF) defined at Kvanefjeld plateau, with huge upside potential

Pre-Feasibility Study scheduled for completion late 2009

Greenland Minerals and Energy Ltd is an mineral exploration and development company focused on unlocking the mineral riches of southern Greenland. The company is listed on the Australian Securities Exchange.

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June 2009 Quarterly Report

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Highlights

- *Resource upgrade at Kvanefjeld multi-element project highlights world-class resource potential. 79% of all rare earth oxide (REO), zinc, and uranium resources now in the 'indicated' category.*
- *Update on geological framework and overall resource potential of license area 2005/28 over the northern Ilimaussaq Intrusive Complex*
- *2009 fieldwork program commences in Greenland, with work programs progressing on schedule.*
- *Pre-feasibility study continues on Kvanefjeld multi-element project with significant advances on process development; updates to be announced in coming months.*



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Introduction

Greenland Minerals and Energy (“Greenland Minerals” or the “Company”) is a mineral exploration and development company actively exploring in southern Greenland. The Company is primarily focused on exploring its license area 2005/28 over the northern Ilimaussaq Intrusive Complex; a unique geological entity with extraordinary resource potential. A large JORC-compliant multi-element resource (rare earth elements, zinc, uranium and sodium fluoride) has been rapidly defined at Kvanefjeld plateau, which clearly highlights the world-class resource potential of the Ilimaussaq Complex. A pre-feasibility study is currently underway, with a focus on defining a process route to extract the elements of interest from these unique multi-element ores in an economically viable and environmentally responsible way.

The Company’s vision is one of the big picture; to be a significant producer of commodities of fundamental strategic importance and value to tomorrow’s world. Rare earth elements are now recognised as being critical to the global manufacturing base of many emerging consumer items. However, China has successfully monopolised global REE supply, raising serious concerns to non-Chinese consumers over the long-term stability of REE supply and pricing. Electricity from nuclear power continues to gain acceptance internationally as the clean base-load energy supply of the future; owing to rapidly increasing power demands coupled with concerns over carbon-based energy sources, greenhouse gas emissions and global warming. As the nuclear renaissance continues to gain momentum, the strategic importance of uranium resources will continue to emerge.

The northern Ilimaussaq Complex offers the potential for multi-element resources of unparalleled scale; resources that could restore balance to the global supply of rare earth elements, and provide energy security to Europe for many decades.

June Quarter Activities

During the June quarter, the main activities undertaken by the Greenland Minerals and Energy involved the commencement of a fieldwork program in Greenland, and the finalisation of an updated resource statement for Kvanefjeld that was released to the Australian Securities Exchange on June 18. Work programs relating to a pre-feasibility study that is scheduled for completion late in 2009 are ongoing.

Updated Resource Statement

Late in the June quarter, the Company released an updated resource statement for the Kvanefjeld multi-element project. Kvanefjeld is the first defined resource within the Company’s exploration license area over the northern Ilimaussaq Complex in southern Greenland. The resource update was based on geochemical assay data that was generated from the substantial diamond drill program conducted during the 2008 field season in Greenland. The 2008 drill program had aimed to improve the resource category, as well as to expand the overall resource base. In consideration of these aims, the 2008 drill program and resulting resource upgrade can be regarded as extremely successful. Following the extensive exercise of data validation for the large multi-element dataset, a new resource estimate was generated by consultants Hellman and Schofield Pty Ltd. The updated resource statement confirms the

size and quality of the multi-element resource at Kvanefjeld, with 79% of all rare earth oxide (REO), uranium and zinc resources now in the 'indicated' category. The new resource statement contains **4.79 Mt REO, 0.9 Mt zinc and 283 Mlbs U₃O₈**. Significantly, Kvanefjeld represents just a small region within the Company's exploration license that covers the highly-prospective northern portion of the Ilimaussaq Intrusive Complex (Fig. 1).

Kvanefjeld Multi-Element Resource Statement, June, 2009

At U₃O₈% cutoff grades¹	Tonnes (million)	U₃O₈%²	U₃O₈ lb/t	TREO%³	Zn%	Resource category
0.015	365	0.028	0.62	1.06	0.22	Indicated
	92	0.027	0.59	1.12	0.22	Inferred
	457	0.028	0.62	1.07	0.22	TOTAL
0.020	276	0.032	0.70	1.13	0.23	Indicated
	63	0.031	0.69	1.21	0.24	Inferred
	339	0.032	0.70	1.14	0.23	TOTAL
0.025	207	0.035	0.77	1.20	0.23	Indicated
	43	0.036	0.78	1.31	0.25	Inferred
	250	0.035	0.77	1.22	0.24	TOTAL

1. *There is greater coverage of assays for uranium than other elements owing to historic spectral assays. U₃O₈ has therefore been used to define the cutoff grades to maximise the confidence in the resource calculations.*
 2. *Additional decimal places do not imply an added level of precision.*
 3. *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.*

Update on Geological Framework and Resource Potential

In the geological world alkaline magmatism is known to be associated with some of the world's most prolific mineral deposits. Alkaline intrusions host a variety of mineral deposit types that include phosphate deposits, specialty metal deposits inclusive of REEs, niobium, tantalum, and titanium, and some alkaline complexes are also associated with prolific copper and gold deposits.

The Ilimaussaq intrusive Complex is the world's type-example of a particularly unusual group of alkaline rocks that are referred to as agpaitic nepheline syenites. Similar alkaline igneous complexes include the Khibina Complex in Sweden that hosts the world's largest apatite deposits (phosphate ores), and the Lovozero Complex in Russia (Kola Peninsula) that hosts vast loparite deposits that are rich in niobium and titanium. The Ilimaussaq Complex is unique, in that it is comprised of almost purely agpaitic rocks. For these reasons, it has been the subject of extensive studies from scientists worldwide. Henning Sørensen, one of the world's most highly regarded geoscientists, devoted a significant portion of his career to understanding the Ilimaussaq Complex and its economic significance. In a paper published in 1992 Sørensen theorised that agpaitic rocks could contain vast resources of rare elements that could be exploited in a multi-element capacity. As the work programs of Greenland Minerals and Energy progress, the results are starting to indicate that Sørensen's theory may well be correct.

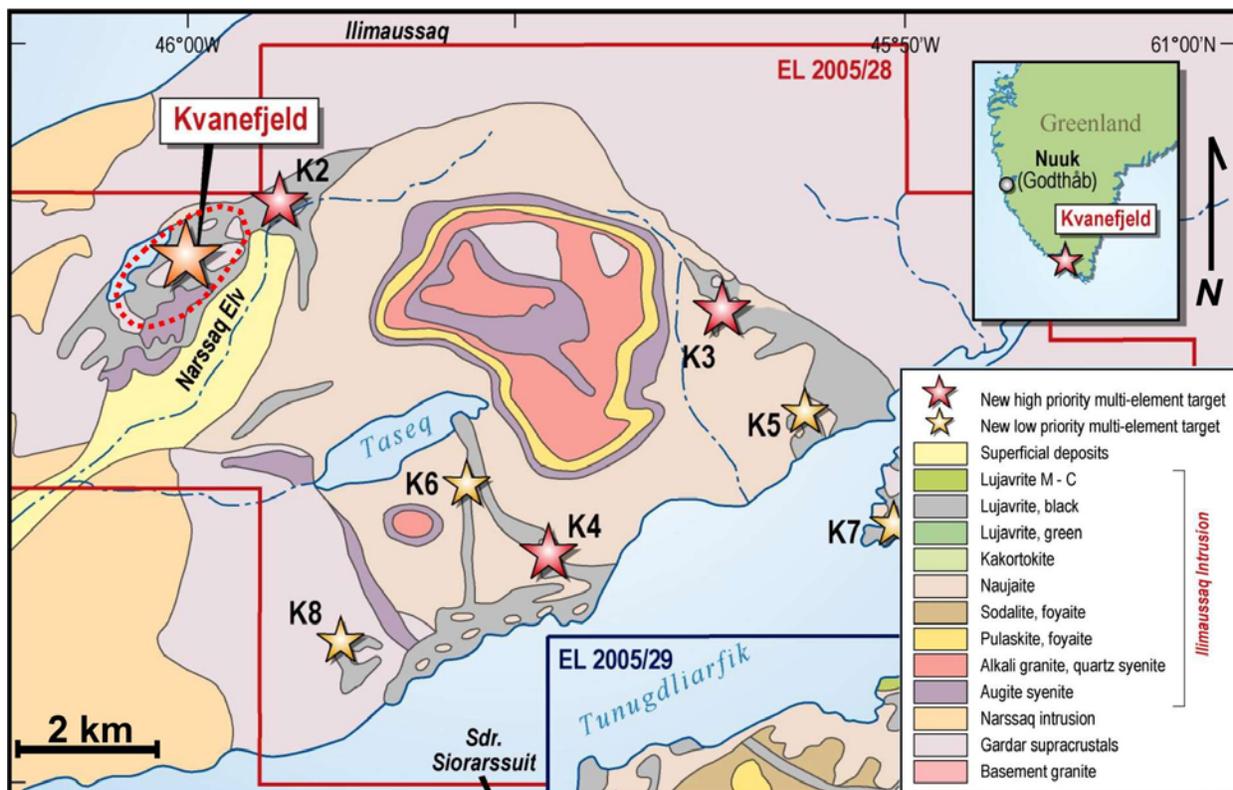


Figure 1. Schematic geological map of the northern Ilimaussaq Intrusive Complex (after Anderson, 1964). Black lujavrite is host to REE, uranium, zinc and sodium fluoride mineralisation. A JORC-compliant 457Mt resource has been defined at Kvanefjeld (highlighted by stippled red line). Targets K2 to K8 were defined on the basis of radiometric surveys, and geological mapping. Black lujavrite underlies naujaite through much of the northern part of the complex.

Ongoing geological studies by the Company have built on the existing knowledge base to improve the understanding of ore-genesis within the Ilimaussaq Intrusive Complex. The northern half of the complex preserves the uppermost levels, which are the most prospective areas for bulk-tonnage, multi-element resources. The southern half of the complex is more deeply eroded, exposing basal units referred to as *kakortokites* that contain the zirconium-rich mineral eudialyte. Black lujavrite, the dominant host to REEs, uranium, zinc and sodium fluoride mineralisation at Kvanefjeld, is now known to be widespread through the northern part of the complex. Whilst black lujavrites are mineralised throughout, the grades of REEs, uranium and zinc are highest in the uppermost portions of the black lujavrite where they have been concentrated by magmatic processes. The Company is working to identify broad domal upwellings of black lujavrite where new bulk-tonnage ore zones are likely to occur. As the geological understanding improves, the Company is increasingly confident of the immense resource potential of Ilimaussaq Complex. In this sense, Kvanefjeld can be considered as the first multi-element resource defined within the broader *Ilimaussaq ore field*.

2009 Field Activities in Greenland

In June, the Company commenced a field program in Greenland that is primarily focused on generating information that will be utilised in the various studies relating to the broader feasibility process. This includes sterilisation drilling, geotechnical drilling, as well as drilling for metallurgical samples. The metallurgical drill holes are designed to sample various ore-types across the resource. This material will be used in ongoing metallurgical testwork. To date this season 3,337m of core have been drilled in total.

In addition, data collection for environmental studies continues, and builds on data collected during the previous two field seasons. Collectively, this data forms the basis of an *Environmental Baseline Study*.

Whilst actively operating in Greenland, the Company conducts community meetings to update community representatives on the current status of the Company's exploration activities in southern Greenland. These community meetings provide an excellent forum for the community to raise any queries and concerns, which can then be discussed by all stakeholders.

Update on the Pre-Feasibility Study

Following the two highly successful exploration campaigns and rapid resource growth, Greenland Minerals and Energy launched a pre-feasibility study on the Kvanefjeld multi-element project in late 2008. The study is scheduled for completion late in 2009. The recently upgraded resource statement confirms the world class potential of Kvanefjeld, and emphasizes the importance of the pre-feasibility process to the evolution of the project. Given the unique nature of the geology and the multi-element ores, it is a critical milestone for the Company is to develop a process route that can extract the elements of interest in an economically viable manner.

The mining study component is being conducted by Coffey Mining Pty Ltd and covers the mine design and ore scheduling, geotechnical issues, hydrogeology and tailings management. The engineering study component is being conducted by GRD Minproc and includes the process design, engineering design and capital and operating costs of a milling and processing plant consisting of a rare earth refinery and

uranium recovery plant. Environmental studies are also underway with Coffey Natural Systems preparing a strategy for the Environmental and Social Impact Assessment and Orbicon, a Danish based environmental sciences group, undertaking field work and base-line monitoring.

Previous work by the Danish Atomic Energy Agency (RISO) identified a viable way to extract uranium. However, given the emerging economic and strategic significance of specialty metals, such as rare earths, the Company is taking a multi-element approach with other process routes being evaluated to maximise specialty metal recoveries and enhance the economic viability of the project.

During the June Quarter, metallurgical testwork continued, and the work programs were implemented in Greenland to generate data pertinent to the feasibility process. ANSTO (Australian Nuclear Services and Technology Organisation) have commenced work on process development specifically for REE metallurgical behaviour and recovery. The results of ANSTO's current work program will feed into the broader process development and plant design that is being conducted by GRD Minproc.

Review of Historic Work

During the 1970's and early 1980's the Danish government, through RISO (Danish Atomic Energy Agency) and the Geological Survey of Greenland, commissioned a series of high quality studies to assess the viability of Kvanefjeld as a potential uranium resource. Their work included exploration and resource definition, detailed environmental studies, socio-economic impact studies, infrastructure studies that included investigations into hydro-electric power. Mine plans were established, which included the plant location and potential sites for tailings disposal. A series of metallurgical programs were run to identify a viable route to extract uranium. This culminated in the development of a pilot plant to test high pressure carbonate leaching on bulk samples extracted from Kvanefjeld. Despite the extensive studies and significant technical advances made, work on the project ceased in the early 1980's due to a change in the political sentiment toward nuclear energy that emerged globally at that time.

Given the extensive and successful research program and pilot plant operation conducted by RISO on the Kvanefjeld project Greenland Minerals strategy is to build on this knowledge and to use this as the basis of its pre-feasibility study. With this in mind the company has recently engaged Mr. Jorgen Jensen, the former project manager of the Kvanefjeld project for RISO through the late 1970's and early 1980's. Mr Jensen will contribute to the Company's metallurgical studies, and ensure that the results of all the previous test work are incorporated into the current metallurgical program.

Company representatives have recently concluded a series of successful technical review meetings in Copenhagen with a number of the research scientists and explorers who have worked previously on the project. The level of in-depth knowledge and experience gained from these meetings has added enormous value to the mineralogical and metallurgical understanding of the orebody. The quantity and quality of technical data that is available from this period of intensive research, which ran for many years and culminated in a large scale pilot plant, is quite extraordinary and would be difficult and prohibitively expensive to try and replicate in today's economic climate. This information is currently being collated, ready for interrogation by Greenland Minerals and Energy's expert consultants, GRD Minproc.

Mineralogical Studies and Ore-Type Classification

As part of the pre-feasibility study, the Company is undertaking a detailed mineralogical and geochemical study of the Kvanefjeld ore body. This will enable ore types to be classified on the basis of mineralogy and geochemistry. The various ore types will then be metallurgically tested at a bench scale level, to ensure that the optimal process route is confirmed and that variations in ore type are fully accounted for. During previous studies, variations in the ore body were not sufficiently understood nor accurately mapped as there was no multi-element geochemical coverage. This was essentially due to a lack of geochemical data as the drill core was only analysed spectrally during that phase of the study carried out by RISO. Greenland Minerals now has a more complete geochemical coverage of the deposit allowing ore types to be clearly identified and mapped in three dimensions. The vast multi-element dataset has been investigated geostatistically, and modelled in three dimensions with Leapfrog™ software. This has led to the development of a three-dimensional geochemical and mineralogical model of the resource as it is currently defined.

Metallurgical Testwork

As part of the ongoing metallurgical development program the Company engaged Perth based SGS Lakefield Oretest to carry out a fourth stage of testwork (T4), following on from the initial T1 and T2 research programs conducted at Amdel, in South Australia and the T3 research program recently carried out by SGS Lakefield Oretest.

The T3 program showed that the rare earths could be beneficiated by froth flotation, and uranium to a lesser extent. The recovery of REEs and uranium to a flotation concentrate equated to over 90% and 70% respectively.

The objective of the T4 program was to further evaluate and optimise process parameters for the recovery of REEs and uranium via two main processing options, namely:

- Flotation/Sulphation Roast/Water Leaching :-looking to improve selectivity/minimise acid consumption; and
- Carbonate Pressure Leaching (CPL):-based on the process flowsheet developed by RISO during 1983 pre-feasibility Study.

The key findings from the tests to date on the T4 program are as follows:

Flotation/Sulphation Roast/Water Leaching

The Company finalised its investigations into a sulphation roast process during the quarter. It was decided that a sulphation recovery process was unfeasible due to the alkaline nature of the ore type. This process has now considered a secondary option to the carbonate (alkaline) leach flow sheet developed by the Danes. The Company has made significant advances and incorporated new

technology into the carbonate leach process since the pilot plant was built in the late 1970's to early 80's and expects to refine this process further.

Carbonate Pressure Leach Testwork

- The CPL test program was carried out jointly by SGS Lakefield Oretest and CSIRO. The program confirmed much of the historical information generated by RISO during the 1983 study. Uranium extraction was largely consistent with the results achieved by RISO. Of more importance is that this work has allowed the behaviour of the REEs in the CPL route to be studied, something not carried out during the RISO research program.
- Initial tests on CPL residues show that the REEs can be effectively recovered in a float concentrate. Further work is required to optimise the recovery of REE-bearing minerals into a concentrate;
- Preliminary leaching test of CPL residue, both with and without a flotation step, shows that REEs can be recovered using a dilute hydrochloric acid leach. Overall, the advances on REE metallurgy made to date are considered as extremely encouraging.

Tenure, Permitting and Project Location

Tenure

Greenland Minerals and Energy Ltd (the “Company” ABN 85 118 463 004) is a company listed on the Australian Securities Exchange. The Company is conducting exploration of EL2005/28 in accordance with a joint venture agreement. The Company currently controls 61% of the license (with options to move to 100%). The Company, through its subsidiary, is also the operator of the project.

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 in the form of drilling, geophysics, geochemistry, an exploratory adit and numerous and varying metallurgical test work and technical papers.

Permitting

Currently there is a zero-tolerance toward uranium mining of any kind in Greenland. However Greenland Minerals and Energy have been fully permitted in all their exploration activities at Kvanefjeld to date by the Bureau of Minerals and Petroleum. The Company is exploring for, and evaluating, specialty metal resources in the northern Ilimaussaq Intrusive Complex. Mineral resources that have been identified by the Company to date are multi-element, or polymetallic, in nature and are inclusive of uranium-bearing minerals.

The Company conducts its work programs with the understanding that under the current regulations multi-element deposits such as those defined at Kvanefjeld to date cannot be exploited. The Company is working closely with the relevant authorities to define acceptable development scenarios.

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 7 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 600m asl) where exploration activities are focussed 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.

Capital Structure

Quoted Ordinary Shares:	151,508,552
Restricted Ordinary shares:	67,000,000
Total Ordinary shares:	218,508,552
<i>Quoted</i> options exercisable 20c:	144,332,050
Unquoted options exercisable 10c:	750,000
Unquoted options exercisable 20c:	24,300,000
Unquoted options exercisable 50c:	3,500,000
Unquoted options exercisable 1.00:	3,500,000
Unquoted options exercisable 1.50:	1,888,840

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

ABOUT GREENLAND MINERALS AND ENERGY LTD.

Greenland Minerals and Energy (ASX – GGG) is an exploration and development company focused on unlocking the mineral riches of southern Greenland. The Company's flagship project is the Kvanefjeld multi-element deposit (Rare Earth Elements, Zinc, Sodium Fluoride, Uranium), that is rapidly emerging as the world's premier specialty metals project. Kvanefjeld has now entered the pre-feasibility phase that will ultimately map out a path to development and timeline to production. For further information on Greenland Minerals and Energy visit <http://www.ggg.gl> or contact:

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The information in this report that relates to Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Jeremy Whybrow, who is a Member or Fellow of The Australasian Institute of Mining and Metallurgy or the Australian Institute of Geoscientists or a 'Recognised Overseas Professional Organisation' ('ROPO') included in a list promulgated by the ASX from time to time.

Jeremy Whybrow is a director of the company.

Jeremy Whybrow has sufficient experience which is 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 in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Jeremy Whybrow consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.