

Advancing Kvanefjeld, the world's premier specialty metals project, toward development

Kvanefjeld is favorably located near the southern tip of Greenland

457 Mt JORC compliant multi-element resource (REE, U, Zn, NaF) 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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Kvanefjeld Resource Update

Company Announcements

Australian Securities Exchange Limited

18 June 2009

Substantial Resource Increase at Kvanefjeld Multi-Element Project, Greenland

Highlights:

- *New resource statement confirms Kvanefjeld as one of the largest rare earth resources in the world at 4.79mt REO.*
- *Multi-element resource inclusive of rare earth oxide (REO), zinc, uranium* and sodium fluoride.*
- *79% of REO, zinc and uranium resources are in the Indicated category, with 21% Inferred*

The new Resource Statement estimates the inventory of contained metal within a **457,000,000** tonne ore body to be:

4.91 Mt of Total Rare Earth Oxide

0.99 Mt of Zinc

0.12 Mt of Uranium Oxide

3.09 Mt of Sodium Fluoride

The mineral resource estimate has been prepared by Hellman and Schofield Pty Ltd.

** There is currently a 0 tolerance towards Uranium exploration and exploitation in Greenland.*



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Introduction

Greenland Minerals & Energy Limited (the “Company” or “Greenland Minerals”) is pleased to announce a major multi-element resource upgrade at the Kvanefjeld project in southern Greenland.

The new resource statement sees a significant increase in resource tonnage (457,000,000 Mt) as well as an improvement in the resource category with 79% of rare earth oxide (REO), zinc and uranium resources now in the *Indicated* category. The new resource statement is based on a substantial increase in the coverage of geochemical assay data, following the large-scale exploration program carried out on the Kvanefjeld project during the 2008 field season.

This new resource statement (Table 1) confirms the large size and strength of the resource base at Kvanefjeld, which is currently the subject of a Pre-Feasibility Study (PFS). The PFS is on-schedule for completion late in the third quarter, 2009. The strategic importance of rare earth elements to the manufacture and development of many green technologies and consumer electronic items is now widely recognized, and with China holding a virtual monopoly on the supply of rare earth elements, the world needs new long-term stable producers to restore balance to the global supply of these increasingly important metals. The successful development of Kvanefjeld will ensure a steady supply of these specialty metals to European, Japanese, Korean and North American markets.

Preliminary metallurgical testwork has confirmed the suitability of an alkaline leach approach for separating and recovering the rare earths. Zinc is included in this estimate after indicative metallurgical test-work suggests that the metal will report with the rare earths, where it could be recovered as a separate product. Further details regarding the geology and style of mineralization at Kvanefjeld, along with an update on metallurgical testwork are discussed below.

Current Resource Statement, June 2009

Table 1. Statement of identified mineral resources, Kvanefjeld multi-element project, Greenland.

At U ₃ O ₈ % cutoff grades ¹	Tonnes (million)	U ₃ O ₈ % ²	U ₃ O ₈ 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 cut-off 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.

Table 2. Inferred resources of sodium fluoride (NaF) at cutoff grades of 1000, 5000, and 10 000 ppm NaF.

At NaF% cutoff grades	Tonnes (million)	NaF%	Resource category
0.10	363	0.85	Inferred
0.50	191	1.36	Inferred
1.00	116	1.77	Inferred

1- Sodium fluoride remains under sampled in comparison to the constituents listed in Table 1, and, therefore the resource category is only inferred. The NaF resource is contained within the same geological model as that used to calculate the U₃O₈, TREO and Zn resources.

The new resource statement has significantly increased the amount of total contained metal within the Kvanefjeld deposit, as well as increasing the confidence in the resource with 79% of REO, U₃O₈ and Zn resources now in the *Indicated* category. Table 3 summarises the increases in contained minerals since the previous resource statement was completed in August 2008. It should be noted that prior to Greenland Minerals acquiring the project in 2007, no resources were defined for REO, Zn or NaF.

Table 3. Comparisons of the total contained (in-situ) TREO, U₃O₈, Zn and NaF reported in the August 2008 and June 2009 resource statements.

	August 2008	June 2009*	% Increase
TREO (Mt)	2.59	4.91	88
U₃O₈ (Mlbs)	223	283	27
Zn (Mt)	0	0.99	-
NaF (Mt)	2.2 1	3.09	40

*Note that 79% of TREO, U₃O₈ and Zn resources in the June 2009 resource statement are in the *Indicated* category with the balance in the *Inferred* category, whereas all previous resources were all in the *Inferred* category.

Summary of Resource Statement

Geology

The Kvanefjeld multi-element deposit is hosted within the Ilimaussaq intrusive complex, located near the southwest tip of Greenland. The Ilimaussaq complex is a layered alkaline intrusive complex that was emplaced in a continental-rift setting during the Mesoproterozoic. The complex is considered to have been generated by approximately four successive pulses of magma, and it is the last pulse which formed an extremely unusual rock type called lujavrite; a variety of strongly undersaturated nepheline syenite. Lujavrites of the Ilimaussaq complex are extremely enriched in rare earth elements, uranium, zinc and fluorine as well as several other elements including niobium and zirconium. Kvanefjeld is located inside the northwest margin of the Ilimaussaq Complex on a broad plateau where lujavrite outcrops extensively at surface (Fig. 1). Throughout the Kvanefjeld deposit, lujavrite forms thick sub-horizontal layers that are continuous for hundreds of metres (Fig. 2).

The majority of multi-element mineralisation (REEs, U, Zn and NaF) occurs as disseminations within the lujavrite, with a small component hosted in veins and disseminations in wallrocks adjacent to the lujavrite. Steenstrupine, an unusual phospho-silicate mineral, is the dominant host to both REEs and uranium, with the minerals cerite and vitusite also hosting REEs in portions of the deposit. Sodium fluoride is largely hosted by the mineral villuamite that is disseminated through some lujavrites. Zinc is hosted in the mineral sphalerite that also occurs as disseminations within lujavrite.

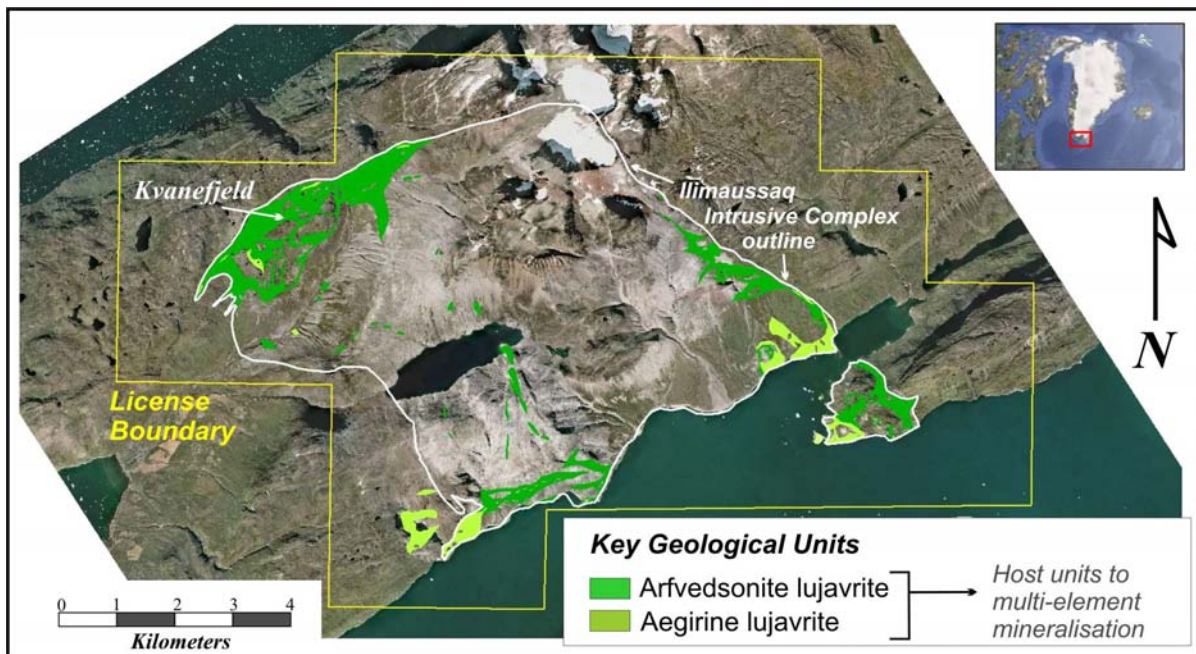


Figure 1. Aerial photograph over the northern part of the Ilimaussaq intrusive complex highlighting the occurrence of lujavrite; the unit that is host to multi-element mineralisation. Kvanefjeld is located immediately inside the NW-margin of the complex. Naujaite, a feldspar-rich rock, is the unit within the complex that dominates surface exposure. Numerous lines of evidence suggest that lujavrite underlies the naujaite through much of the complex, and is, therefore, much more extensive at depth than at surface.

The current resource model extends from ground surface to 280m depth, and occupies an area approximately 2 x 1 km in plan. The NW margin of the deposit is bounded by the contact between the Ilimaussaq complex and adjacent wallrocks; however, the deposit remains open to the east and at depth. Weathering of the deposit is minimal with near-fresh rock exposed at surface.

Metallurgical Testwork and Process Development

The development of a viable and economic metallurgical flowsheet has been a major focus of the Company over the past twelve months. Metallurgical testwork commenced in February 2008, at AMDEL Mineral Laboratories, Adelaide. AMDEL completed two programs of testwork, focusing initially on whole of ore leach and then various beneficiation techniques. In July 2008, a third stage of testwork commenced at SGS Lakefield Oretest, Perth. The testwork program focused on beneficiation via froth flotation, and the subsequent acid digestion of the concentrate. Based on the conclusions generated from the first three stages of test work the Company commenced its current, fourth stage of testwork. This program, undertaken jointly by SGS Lakefield Oretest, CSIRO (Perth) and ANSTO (Sydney), has identified a metallurgical processing route that effectively leaches the uranium from the principle minerals of interest and allows for the subsequent concentration, separation, and recovery of the rare earths into a separate stream. Beneficiation test work has indicated that REEs can be effectively concentrated by froth floatation to minimize reagent consumption during the subsequent REE leach step. REEs will then be recovered to produce a light- and heavy-REE concentrate. Batch testwork on this process route is continuing and further testwork is required to optimize and define each process step.

In order to develop the metallurgical flowsheet further, the Company has initiated a sampling program as part of its planned 2009 drilling field season. Up to 2000m of HQ diamond drilling will be carried out across the ore body, to collect representative samples of the various known ore zones and to allow metallurgical variability testing to commence later this year. In addition to the core samples, the Company intends to excavate up to ten (10) tonnes of bulk sample for comminution and ore characterisation testwork.

Resource Estimation Methodology

The lujavrite that was intersected in drill cores and mapped at ground surface was wire framed utilising Micromine™ software to create a three dimensional geological model. The resource estimates completed by Hellman and Schofield Pty Ltd (H&S) used a three pass, 3D ordinary kriging approach by the application of an octant search strategy and expansion factor for indicated and inferred passes 2 and 3. The search aligned parallel to the strike and dip of the mineralisation. H&S's proprietary software, GS3, was used for the estimation. The results were validated against the original data on section and in plan. Variables modelled included REEs + yttrium, F, U₃O₈, Be, Na, Nb, Sn, Th, Ti, Zn, Zr, Li, and Ta using Ordinary Kriging with search radii of 70mE by 70mN by 5mRL for measured and 140mE by 140mN by 10mRL for indicated and inferred resource categories. The block grades from GS3 were then imported into a Micromine 3D model and trimmed to the existing geological model wireframe.

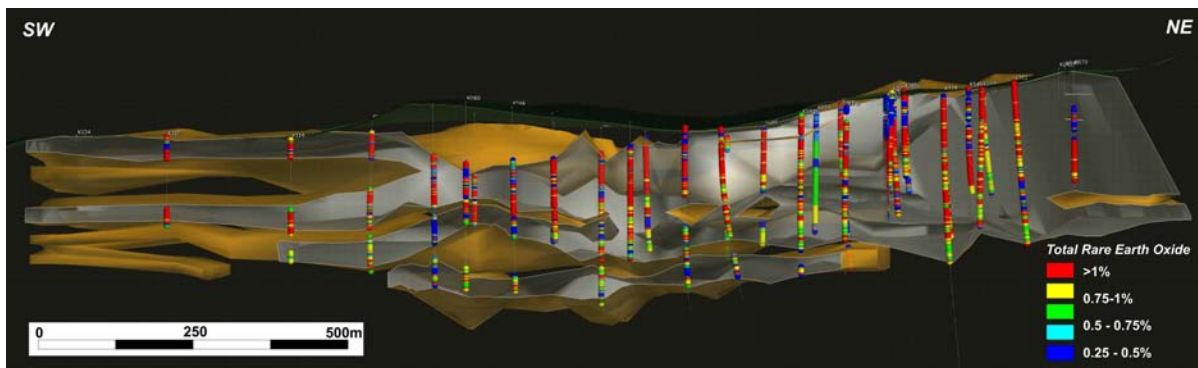


Figure 2. A long section through the Kvanefjeld resource model with drill strings coloured by Total REO grades. The section is orientated NE-SW. The deposit mostly outcrops at surface.

Project Background

When Greenland Minerals and Energy acquired the Kvanefjeld project in August 2007 the existing, but non-compliant, resources had been based only on spectral analyses of drill cores. Rare earth elements (REEs) were known to be present throughout the project area, however in the 1970's and 1980's when the project was initially investigated as a potential uranium source, REEs did not have the applications and economic significance they have today and consequently were not investigated.

The Company's opinion was that the rare earths, and other potentially economic minerals, would add significant value to the deposit as they are coincident, in many cases occurring in the same mineral. The Company focused exploration to primarily evaluate the potential for Kvanefjeld to contain a significant multi-element resource. The Company maintains the perspective that Kvanefjeld will most-likely work best as a multi-commodity mine with revenue streams coming from several products. This is particularly important when considering China's dominant position in the REE supply side.

Two resource statements were released by the Company following the 2007 exploration program during which 11,000m of core were drilled. These resource statements were the first multi-element estimates developed for Kvanefjeld, and instantly highlighted the enormous potential of the project. The Company's first resource statement was produced in late April 2008, and demonstrated the multi-element nature of the Kvanefjeld resource:

334 Mt @ 0.03% U₃O₈, inclusive of 90 Mt @ 1.09% REO and 79 Mt @ 1.69% NaF at a 150ppm U₃O₈ cut-off grade.

A subsequent resource statement, based on additional assay data, was completed in August 2008, which contained an estimated resource of:

334 Mt @ 0.03% U₃O₈, inclusive of 215 Mt @ 1.21% REO, and 201 million tonnes @ 1.11% NaF at a 150ppm U₃O₈ cut-off grade.

The REO and NaF components of this model were still under sampled in comparison to uranium owing to the additional uranium assays derived from historic spectral analyses.

The 2008 drill program was aimed to improve the resource category, as well as increasing the overall resource, and in light of these aims, the new resource statement is considered by the Company as an extremely positive result.

ABOUT GREENLAND MINERALS AND ENERGY LTD.

Tenure

Greenland Minerals and Energy Ltd (the “Company” ABN 85 118 463 004) is 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 and is the operator. The tenement is classified as being for the exploration of minerals. The project hosts significant multi-element mineralisation within the Ilimaussaq intrusion. Historically the Kvanefjeld Project was operated by Greenlandic and Danish Authorities. The geology and resources were investigated by the Greenland Geological Survey (GEUS), and metallurgy and process development studies were undertaken by the Danish Atomic Energy Agency (RISO). The project has had significant exploration in the form of an exploratory adit, drilling, geophysics, geochemistry, and numerous and varying test work and technical papers.

Location

The 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 preparation, and exploration activities are managed. This office supports the operational (drilling) camp located on the Kvanefjeld Plateau that is utilized during the Greenlandic summer when exploration takes place.

Corporate Profile

Greenland Minerals and Energy (ASX – GGG) is an exploration and development company focussed on unlocking the mineral potential of southern Greenland. The company’s flagship project is the Kvanefjeld multi-element deposit (Rare Earth Elements, Sodium Fluoride, Uranium), where the company has established a world class resource through ongoing exploration and an aggressive drilling program. Kvanefjeld is now the subject of a pre-feasibility study that is scheduled for completion late in 2009. For further information on Greenland Minerals and Energy visit <http://www.ggg.gl> or contact:

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Qualifying Statements

The information in this report which relates to exploration results, quality of data, geological interpretations, reasonable expectation of potential viability of quoted uranium, rare earth element and sodium fluoride resources, comments on metallurgy and marketing and appropriateness of cut-off grades is based on information compiled by Jeremy Whybrow who is Exploration Director of the Company and who is a Member of the Australasian Institute of Mining and Metallurgy. Mr 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”. Mr Whybrow consents to the reporting of this information in the form and context in which it appears.

Information in this report that relates to mineral resource estimation reflects information compiled by Mr Robert Spiers and Arnold van der Heyden. Resource estimation was undertaken by Mr Spiers who with Mr van der Heyden are full time employees of Hellman and Schofield Pty Ltd. Mr Spiers is a Member of the Australian Institute of Geoscientists and Mr van der Heyden is a member of the AusIMM. Mr Spiers and Mr van der Heyden have sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as Competent Persons as defined in the 2004 Edition of the “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves”. Mr Spiers and Mr van der Heyden consent to the reporting of this information in the form and context in which it appears.