GREENLAND
MINERALS AND ENERGY LTD

ASX: GGG

Company Announcement, Monday, August 13th, 2012

Technical Update: Continued Beneficiation Success Brings Optionality to the Kvanefjeld Project

Greenland Minerals and Energy Ltd ("GMEL" or "the Company") is pleased to provide an update on the latest metallurgical developments regarding beneficiation, and the positive implications for the Kvanefjeld multi-element project (rare earth elements, uranium, zinc).

Process Development

Following an extensive laboratory development program GMEL is nearing the end of metallurgical development of a beneficiation process to produce a high-grade mineral concentrate. Beneficiation development was aggressively initiated in September 2010 and has resulted in a well-tested process utilizing commercially established froth flotation.

The flotation process is able to concentrate 82% of the rare earth elements in 8.5% (mass pull) of the original ore mass. This effectively increases the in-ground ore grade from notionally 1.2% REO to 12% REO in concentrate. In addition to concentrating the rare earth elements, uranium is concentrated to a grade of approximately 0.2% U_3O_8. Financial analysis indicates there is an economic optimum for the project within a mass pull range of 8-10%.

The high upgrade for the ore is made possible by the favorable mineralogy. The ore minerals are unusual, but increasingly recognized as highly advantageous in that they can be beneficiated effectively, and are amenable to leaching under atmospheric conditions without costly high-temperature mineral cracking. The ores allow for a grind size of 75-100 microns (80% passing size) to be utilized with no de-sliming required.

The design for the Kvanefjeld flotation circuit is simple relative to base metal flotation and flotation circuits of other rare earth projects, with a small number of stages required. Most of the zinc can be removed from the rare earth-uranium mineral concentrate with a pre-float stage to produce a high-grade zinc concentrate. The ore is conditioned with the use of two reagents; a collector and a dispersant. Fast flotation kinetics allow for the use of flotation equipment which produce final concentrate from the first flotation stage. A scavenger flotation stage is used to collect the remaining concentrate which is cleaned to produce additional final concentrate.

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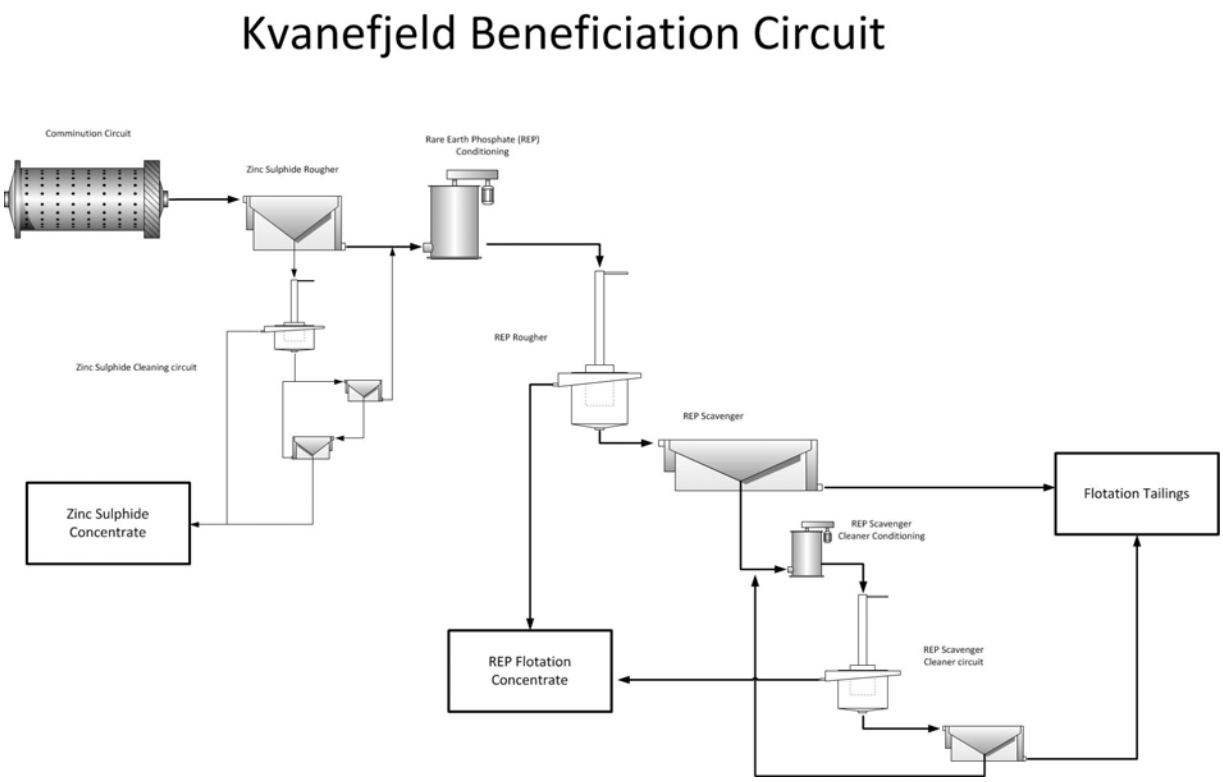

Figure 1: Schematic of the Kvanefjeld Flotation Circuit

Advantages for Greenland Minerals and Energy

The ability to produce a high-grade concentrate brings both cost advantages and optionality to the Kvanefjeld project. The ability to reduce the mass of material treated by a high-cost rare earth hydrometallurgical refinery has significant cost advantages. Both the capital and operating cost are greatly reduced by treating a high-grade mineral concentrate rather than whole of ore.

Processing of the Kvanefjeld ores requires two main steps; beneficiation, followed by hydrometallurgical leaching. In studies to date, GMEL has evaluated conducting both steps in Greenland. Whilst the beneficiation step must take place in close proximity to the ore deposits, the significant grade increase and mass reduction achieved through beneficiation open the option to ship the concentrates to conduct the leaching step outside of Greenland.

Initial studies to evaluate the transport costs of the Kvanefjeld mineral concentrates indicate that it represents approximately 5% of the contained value. This is in-line with the transport

costs of base metal flotation concentrates, which are commonly shipped elsewhere for refining. Notionally, this provides strong confidence in the viability of shipping flotation concentrates from Kvanefjeld. The company is currently conducting studies to investigate the benefits of establishing a hydrometallurgical refinery closer to markets in a lower cost environment. The outcomes can be compared against the costs and logistics established for a base-case hydrometallurgical plant in Greenland.

GMEL sees a number of potential benefits to establishing only the concentrator (beneficiation stage) in Greenland. Firstly, infrastructure requirements in Greenland and associated costs will be reduced substantially. Secondly, it provides greater flexibility in structuring development and investment scenarios with strategic partners.

The Kvanefjeld concentrates are strategic in that they are rich in the high-value heavy rare earth elements. Importantly, the concentrates can be leached under atmospheric conditions without costly, high temperature mineral cracking stages.

Background

On the 11th of October 2011 the Company announced a Technical Breakthrough that the rare earth and uranium minerals could be effectively concentrated using froth flotation. On the basis of the ability to make a mineral concentrate of low mass a Pre-Feasibility Study was completed. The results of the Pre-Feasbility study were released to the market on the 4th of May 2012. The metallurgical flowsheet applied to the Pre-Feasibility study consisted of froth flotation followed by atmospheric leaching of the concentrate. This market release confirms the favourable metallurgy of Kvanefjeld as further development work has been performed which improve, simplify and consolidate the metallurgical flowsheet.

Figure 2: Picture of Kvanefjeld Mineral Concentrate in Larger Scale Testwork

Yours faithfully,

Roderick McIllree
Managing Director
Greenland Minerals and Energy Ltd

Table 1. Statement of Identified Mineral Resources, Kvanefjeld Multi-Element Project.

Multi-Element Resources Classification, Tonnage and Grade										Contained Metal				
Cut-off (U_3O_8 ppm)[1]	**Classification**	**M tonnes** Mt	**TREO**[2] ppm	**U_3O_8** ppm	**LREO** ppm	**HREO** ppm	**REO** ppm	**Y_2O_3** ppm	**Zn** ppm	**TREO** Mt	**HREO** Mt	**Y_2O_3** Mt	**U_3O_8** M lbs	**Zn** 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	**0.24**	2.53	2.63	**178**	0.55
250	**Inferred**	41	12204	324	10929	366	11319	886	2598	**0.04**	0.45	0.46	**29**	0.11
250	**Grand Total**	272	12395	347	10947	431	11378	1017	2398	**0.28**	2.98	3.09	**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 (U_3O_8 ppm)[1]	**Classification**	**M tonnes** Mt	**TREO**[2] ppm	**U_3O_8** ppm	**LREO** ppm	**HREO** ppm	**REO** ppm	**Y_2O_3** ppm	**Zn** ppm	**TREO** Mt	**HREO** Mt	**Y_2O_3** Mt	**U_3O_8** M lbs	**Zn** 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

[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 cut-off 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.

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. An interim report on pre-feasibility studies has demonstrated the potential for a large-scale 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 community 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.