

# Greenland Minerals and Energy Ltd



2008 Annual Report





Capital: Nuuk Population (July 2007 est): 56,344. Greenland (Kalaallisut: Kalaallit Nunaat, meaning "Land of the Greenlanders"; Danish: Grønland) is a self-governing Danish province located between the Arctic and Atlantic Oceans, east of the Canadian Arctic Archipelago. Greenland is, by area, the world's largest island which is not a continent in its own right.



Though ethnically an Arctic island nation and geographically a part of the continent of North America, politically and historically Greenland is associated with Europe, specifically Iceland, Norway, and Denmark. In 1978, Denmark granted home rule to Greenland.

A further self-government referendum will be held in Greenland on 25 November 2008. The further increase in the level of self government would not entail a withdrawal from the Danish state but the assumption of further areas of responsibility, including mining and minerals law.

Source: Wikipedia

#### CORPORATE DIRECTORY

#### DIRECTORS

Dr. Hans Kristian (Hank) Schønwandt Mr Simon Cato Mr Roderick McIllree Mr Jeremy Whybrow Mr Malcolm Mason Mr Simon Stafford-Michael Mr Tony Ho

COMPANY SECRETARY Mr Bruce Acutt

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## CONTENTS

Company Objectives	4
Letter from the Chairman	6
Review of Operations	8
The Kvanefjeld Project	8
The 2007 Field Season	12
Environmental Studies	22
The 2008 Field Season	24
Mineralogical Studies	34
Occupational Health and Safety 🕺	42
Rare Earths at Kvanefjeld	44
'Rare Earths at the crossroads'	
- reprint of a recent article in Industrial Minerals m	agazine 46
Spectral Gamma Logging	- 51
Directors Report	56
Audit Independence Declaration	68
Income Statement	69
Balance Sheets	70
Statement of Change in Equity	71
Statement of Cash Flows	72
Notes to the Financial Statements	73
Directors Declaration	100
Independent Audit Report	101
Corporate Governance Statement	103
Tenement List	106
ASX additional information	107
Table of Signficant Events	109



# THIS YEAR

**Acquisition**~ The first key objective achieved during the year was to acquire and fund exploration for the Kvanefjeld multi element project in Greenland.

**Funding**~ During the financial year we raised in excess of \$35,000,000 of which approximately half has been used to acquire the project and fund exploration to date.

**Resource identification**~ The major key exploration objective achieved for this financial year was to identify a major Joint Ore Reserve Committee compliant rare earth and sodium fluoride resource at Kvanefjeld and to confirm the previous known occurrence of uranium.

In May (ASX announcement 5 May 2008) we announced our first resource statement: 338mt @ 0.03%  $U_3O_8$  (150ppm  $U_3O_8$  cutoff), 90mt @ 1.09% REO, 79mt @ 1.69% NaF. Equating to inferred mineral resources of: 104,000t  $U_3O_8$ , 980,000t REO and 1.3mt NaF.

In August (ASX announcement 26 August 2008) this was increased to: 334mt @ 0.03%  $U_3O_8$  (150ppm  $U_3O_8$  cutoff), 215mt @ 1.21% REO, 201mt @ 1.11% NaF.

Equating to inferred mineral resources of: 100,960t  $U_3O_8$ , 2.59mt of REO and 2.21mt NaF. **Regional exploration**~ Other exploration successes included a regional program which demonstrated the widespread presence of lujavrite, (the main mineral bearing rock type at Kvanefjeld) within our tenement.

**Identifying multi element mineralisation**~ We were also able to identify the other main economic minerals at Kvanefjeld as having potentially a much greater value than the uranium previously known to exist. This makes Kvanefjeld a truly multi element resource which includes many specialty metals necessary for a cleaner, greener world.

# **NEXT YEAR**

**Exploration**~ The exploration focus will be on the wider regional setting with an objective of finding further Kvanefjeld sized resources from the number of firm leads obtained by regional exploration drilling using uranium as a pathfinder.

**Development**~ The development focus will be on scoping studies and a prefeasibility study examining the economics of mining at Kvanefjeld.

**Investigation of key markets**~ We will continue to investigate market opportunities for our rare earths and sodium fluoride. The scale of our resource means that once in production we may well be a world leader in the production of these commodities.

**Corporate**~ Listing in Canada, Europe or North America will bring us into closer contact with key players who understand our resource and its importance.



## **Speciality Metals for a Greener World**

Today's world faces many challenges, but perhaps the greatest concern is the state of our environment. The earth's atmosphere is warming at an alarming rate, a phenomenon that scientists largely attribute to the burning of hydrocarbons, or fossil fuels. This is altering the composition of the atmosphere to produce the so-called greenhouse effect, and will inevitably have a profound impact on the world as we know it. In addition to the greenhouse effect, the burning of hydrocarbons releases numerous toxic gasses into the atmosphere, poisons which are then inhaled by all terrestrial life forms.

Means and ways to combat mans influence on climate change is now a major political issue. Drastic changes to transportation methods and energy sources, in an effort to reduce greenhouse gas emissions, cannot be implemented instantly due to social, economic and political constraints. However, gradual changes are taking place; changes that are being facilitated by the emergence of new technologies.

In the automotive industry, a number of key new environmentally-friendly applications rely on the unique physical and chemical properties of rare earth elements. Of particular note are hybrid vehicles, which utilize rare earth elements in both the electric engines as well as the rechargeable batteries that power them.

Rare earth elements are also used in catalytic converters fitted to the exhaust system of a combustion engine reduce the toxicity of emissions. These converters reduces toxic nitrogen oxides to harmless nitrogen and oxygen, oxidizes toxic carbon monoxide to carbon dioxide, and additionally oxidizes unburnt hydrocarbons. Tighter vehicle emission laws are being introduced throughout the world, and by 2010 it is predicted that 95% of all cars manufactured will have catalytic converters.

Global demand for Rare Earth Elements is already outweighing supply. The world needs new, long-term stable suppliers of REEs to meet the burgeoning demand.

Rare earth elements are also used in another form of catalyst,

commonly referred to as a fluid-cracking catalyst. These are being utilised increasingly in the oil industry as they enhance the efficiency of separating various fractions from oil during the refining process.

The use of REEs in magnets, rechargeable batteries and catalysts accounts for over 60% of REE consumption with demand expected to increase significantly in all these areas. Global demand for REEs is already outweighing supply. China currently contributes over 90% of global REE supply, and already consumes over 60%. With significant growth forecast for many applications that utilize REEs, the world needs new, long-term stable suppliers of REEs to meet the burgeoning demand.

The Kvanefjeld REE deposit in southern Greenland is growing rapidly to become one of, if not the largest deposit of REEs in the world. It has the potential to meet the world's rapidly growing demand for REEs, and in doing so, can become a major contributor to the Greenland economy for decades to come. At Greenland Minerals and Energy, we believe that the Kvanefjeld deposit is a truly world class ore body, that can be developed in a responsible, environmentally conscious manner, to become one of the world's major sources of rare earth elements – "Specialty Metals for a Greener World".

# Letter from the Chairman



# The financial year ending 30 June 2008 has been momentous for the company.

Not only did we settle the acquisition of the Kvanefjeld project we also completed one very successful exploration season, commenced another season and also, following completion of sufficient assays of the 2007 season drilling, outlined, world class rare earths and sodium fluoride resources which we had predicted were coincident with the known uranium resource at Kvanefjeld.

In the same time rare earth commodity prices have increased substantially and the "in ground" value of our known JORC compliant, inferred resources of rare earths is now substantially above that of uranium. An initial JORC compliant resource of the rare earths, sodium fluoride and uranium was announced in May 2008. Since then a further major upgrade has been announced based on further assays from the 2007 season.

We have been able to truly substantiate the multi-element aspect of Kvanefjeld.

To the date of this report we have completed another 19,334 metres of diamond drilling at Kvanefjeld in the 2008 season. The stored core from holes drilled by the Danish exploration teams have also been made available to us. We expect, following assay of the 2008 season core and historical core to have a further sizeable upgrade in the scale of all elements in our resource.



As Chairman it falls to me to pay tribute to the immense amount of work done by our employees and our board this year. In particular our directors and key employees spent long periods overseeing and completing the vital exploration we carried out during this financial year in Greenland.

The success of our exploration program hinged on support from the people of Narsaq; who welcomed us to their town and provided accommodation and many services. Townspeople were also active in our operations. Our service company in Greenland provided drilling crews, equipment, helicopter access and logistic support; at all times to a high international standard



## The 2009 season

We are looking forward to the 2009 season. Reviewing the achievements of the 2007 and 2008 seasons, (both of which occurred substantially within the financial year to which this report relates), which were attained from a virtual standing start, we believe we have an excellent base for a further exploration and development push next year. Our goals for next year are set out on page 2 of this annual report. We are already putting in place the team required to achieve them.

Mr Hank Schønwandt (Chairman)











## Introduction to the Company

Greenland Minerals and Energy Limited is an exploration company with a majority interest in the Kvanefjeld Project. Kvanefjeld is an advanced multi element exploration project in Greenland.

The Company called a comprehensive shareholder meeting held on the 31 July 2007 to approve the acquisition of a joint venture interest (now 61%) in our Kvanefjeld project as well as a number of ancillary resolutions relating to raising capital, changes to the board and issues of shares and options to a number of parties including directors. All resolutions were passed at the meeting.

Our drilling program revealed for the first time that the rare earth and sodium fluoride resources were extensive and it also confirmed by chemical assay the uranium resource previously identified by spectral analysis. The Company considers this project as being one of the most exciting multi-element deposits in the world.

## The Kvanefjeld project

The Kvanefjeld project, ("the project") is located on the south west tip of Greenland and is one of the largest undeveloped multielement occurrences of uranium and rare earth elements (REE) in the world.

The project has been the subject of numerous published scientific papers written by bodies that include Danish and Greenlandic governmental agencies, and independent scientific researchers including the OECD International Atomic Energy Agency (IAEA).



#### Project locality map

The project had been extensively explored prior to 2007 with work including more than 11,000 metres of diamond drilling, bulk metallurgical testing, driving a 960m exploratory adit, surface mapping, ground radiometry and surface sampling.

From June 2007 to September 2008 the Company carried out two exploration programs which included another 30,000 metres of diamond drilling. Principally designed to test for the occurrences of rare earths, sodium fluoride, and other economic minerals exploration confirmed and extended the historical uranium resources.

The rare earths and sodium fluoride were predicted to be coincident with the previously identified uranium resource. However no previous work had been done to confirm the scale and grade of the coincident rare earth and sodium fluoride resources.

Our drilling program revealed for the first time that the rare earth and sodium fluoride resources were extensive and it also confirmed by chemical assay the uranium resource previously identified by spectral analysis.





Above: The town of Narsaq. Middle: Camp facilities on Kvanefjeld Plateau.

Bottom: Office and operations facilities in Narsaq.



This has been a major achievement and has in one year effectively placed Kvanefjeld among the largest rare earth resources in the world. It also changes the focus at Kvanefjeld from being simply another uranium project to being a major source of rare earths outside China.

#### **Current resource**

334mt @ 0.03% **(U**₃O<sub>8</sub> at 150ppm cutoff) 215mt @ 1.21% REO 201mt @ 1.11% NaF

Total inferred resources: 2.59mt of REO, 2.21mt of NaF and 100,960t of U<sub>3</sub>O<sub>8</sub>.

Importantly for shareholders the identification of the rare earths also vastly increases the potential economic value of the resource. The in ground value of the rare earths now exceeds that of uranium by a considerable margin.

Later in this annual report we explain in detail the rare earth characteristics of the deposit and also the current relevance of these very important minerals to the world economy.

#### **Financial position**

We currently have more than \$16,000,000 on deposit after meeting the costs of most of the 2008 exploration program. This is more than sufficient for the planned 2009 program; however the board will retain a flexible approach to ensure we always have sufficient funds for our activities.



Above: Rod McIllree and John Mair in the field.

### **Board and management**

The board consists of:

- Mr Hank Schønwandt
- Mr Roderick McIllree
- Mr Simon Cato
- Mr Jeremy Whybrow
- Mr Malcolm Mason
- Mr Tony Ho
- Mr Simon Stafford-Michael

(Chairman) (Managing Director) (Executive Director) (Exploration Director) (Technical Director) (Non Executive Director) (Non Executive Director)



Top: Radio shack at the Kvanefjeld campsite.

Left: Malcolm Mason in the Greenland office.

Below: Jeremy Whybrow and Hank Schønwandt in the field.

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## Operations at Kvanefjeld - 2007 and 2008 field seasons

This annual report is for the year 1 July 2007 to 30 June 2008 we have therefore reported on the total work in the two seasons.

## Summary of Earlier Work (pre 2007)

Historical work had focused on seeking an economic deposit of uranium. Rare earths and sodium fluoride (as well as a number of other minerals) although noted at the time were considered subeconomic (rare earth demand 30 years ago was entirely different to today) or not of priority. No systematic chemical assaying of the old drill core was ever undertaken. Uranium mineralisation was routinely estimated by spectral radiometry of core.

Operations first commenced in 1955 and followed by drilling programs in 1956, 1962, 1969 and 1977; which delineated mineralisation in two areas termed the "Mine Area" and the "Northern

The main objective for the 2007 program was to collect sufficient data to allow a resource estimate to JORC standard

Shipping samples from Narsaq.

Area". A total of 66 holes were drilled at Kvanefjeld for an advance of just over 10,000m. The "Mine Area" has been drilled on an irregular pattern at approximately 50m spacing to around 100m depth. The "Northern Area" was drilled on a more regular pattern with holes nominally on a 160m x 160m pattern with almost all holes reaching 200m below surface.

This exploration identified a uranium resource of approximately 50,700 tonnes of  $U_3O_8$ .

There followed an extended hiatus in exploration with no activities between 1983 and early 2007.

# The 2007 Field Season

Field operations commenced in May with the mobilisation of the camp and office facilities in Narsaq. Greenland Mining Services, our service provider, quickly had all facilities in working order.

The first drill rig arrived early in June and after unpacking and assembly was transported to the inaugural drill-hole; the first core being recovered on the 13th June. A second drill rig arrived on the 7th of July when the operation moved to four drilling shifts per day.

In 2007 the Company completed 43 holes for a total of 10,022m of drilling. The deepest hole reached 398m. Most holes were drilled to approximately 300m. All drill holes intersected the mineralised lujavrite unit.

The main objective for the 2007 program was to collect sufficient data to allow a resource estimate to JORC standard.

Drilling was initially concentrated on the "Mine Area" and "Northern Area". This would allow comparison to the resource estimates carried out pre-1981.





In addition drilling was to extend into untested areas in order to delineate new mineralisation and add to the already significant resource, as shown on page 15.

- Drilling between the "Mine Area" and "Northern Area" (i.e. merging the two areas).
- Drilling southwards of the "Mine Area" and "Northern Area" (i.e. a lateral extension).
- Drilling to depth (i.e. depth extensions especially beneath the shallow historical 'Mine Area" drilling pattern).

# Drilling operations were completed on the 4 October and all equipment dismantled, transported to Narsaq and stored ready for the 2008 season.

As drilling progressed it became obvious that mineralisation was more extensive than originally appreciated and many holes were completed in mineralisation. It was therefore determined that where possible & without jeopardising the original plans, drill holes would continue to 300m depth. The nominal spacing of 160m x 160m of deeper intersections would allow the deeper mineralisation to be included in the resource estimate.

Mid-season, a low level helicopter borne spectral radiometric and magnetic survey was undertaken. The survey, with a line spacing of 100m over Kvanefjeld showed significant anomalies extending to the south-west for at least 1,000m.

Clearly an important development it was decided that drilling should extend into this area to allow

inclusion of this mineralisation into the Resource estimate. It also pinpointed the Steenstrupfjeld area and others as regional targets for next year.

Seven holes tested the "Mine Area", while a total of 27 holes were completed in the "Northern Area" and between "Northern Area" and "Mine Area". Eight holes were drilled in the new "Campsite Area" to the south-west.

Drilling operations were completed on the 4 October and all equipment dismantled, transported to Narsaq and stored ready for the 2008 season.

To the credit of all personnel, consultants and service providers all of our objectives (original and later inclusions) were attained within a short field season where weather proved trying.

Field reconnaissance in early June recovered all but one of the 70 historical diamond drill-hole collars. Those holes drilled in



1958, all in the "Mine Area", were uncased open and generally found to be blocked near surface. Holes drilled between 1962 and 1977 had been secured with steel-casing and capped. Almost all of these holes were opened and found suitable for down-hole spectral radiometric logging.

It was hoped that valuable data could be obtained about these holes by gaining access to the original core stored at RISO in Denmark (for lithological logging and assaying of samples) and by spectral radiometric logging down the now open holes. This logging was to be carried out with a state of art spectral logging system; then (May - June, 2007) under construction by the Auslog Company; which is domiciled in Brisbane, Australia.







## Radiometric logging 2007 season

After successful testing and calibration in the Adelaide test-pits Auslog's newly constructed prototype spectral logging system arrived on-site in July 2007. Radiometric logging continued with success through to the 14 October when all equipment was brought to the Narsaq office, checked and stored ready for the 2008 season.

Apart from a few inaccessible holes, logging was completed to full depth down most holes drilled in the 2007 season.

Perhaps even more significant was the successful logging of many of the 1960 – 1977 era drill holes. At 46mm these were significantly smaller in diameter than the 56mm holes of the 2007 campaign. The specifically designed 33mm probe proved an ideal tool and 21 holes were logged. Logging of the historical holes has allowed comparison with data collected by the early explorers and inclusion of this data into the current database.

#### Core logging

Company geologists logged all core using a standardised set of lithological codes compiled by personnel familiar with the geology. Knowledge advanced as each hole was logged and was to be of great value when logging and reinterpreting the historical core commenced. This logging was interpreted onto sections and finally become the wireframe used in the resource estimate.



Routine colour photography was completed on all drill-core and is of sufficient quality as to allow re-interpretation of any core when questions later arose. These photographs proved to be a valuable and easily accessible documentation of the drilling.

The bulk density of mineralisation (and to a lesser extent country rock) needs to be accurately known in three dimensions; especially for resource tonnage estimation.

Some sections of the multi-element mineralisation contain significant quantities of villiaumite (NaF). Since NaF readily dissolves in water and is strongly corrosive sections of the core are not amenable

to the wet method. To solve this issue an innovative dry method of estimation was devised.

These two methods of determining bulk density are now routinely used at Kvanefjeld.

The dry method involves measuring the dry weight and volume of a piece of core and dividing the weight in gms by the volume in ccs. A micrometer screw gauge averages the diameter of the core to 0.1mm and a ruler the average length to 1mm.

The wet method involves measuring the weight of a piece of core in air and in water. Dividing the weight in air by the difference in weight wet and dry gives the density.



## Uranium as a pathfinder mineral

Rare earth values dip with falling uranium values.

We have set out above a diagram plotting uranium and various elements encountered at Kvanefjeld against a range of rare earths. This shows how the rare earths coincide with the radioactive element and supports previous work and our use of radioactive elements as a pathfinder mineral.

#### **Spectral logs**

Uranium unlike Thorium does not emit gamma rays but its daughter products do. Among them Bismuth<sup>214</sup> and Lead<sup>214</sup> are the strongest emitters showing strong peaks at 352keV, 609keV, 1120keV and 1764keV. The excellent energy resolutions produces precise data.

All the loggers work by picking up the entire gamma spectrum and then software analyses the spectrum for the uranium signature as indicated below.





A number of samples in each hole are measured by both techniques and compared graphically. Remarkably good correlation was obtained through all holes and those estimates by wet method alone can be accepted to be of high accuracy.

The mineralised rock at Kvanefjeld is Lujavrite, which has an average density between 2.75 to 2.80. Naujaite a common associate has a density of 2.4 - 2.5. Country rock is generally a basic extrusive that varies in composition from a near pure feldspar rock to normal basaltic rocks. This variation is reflected in the density, which varies from 2.7 to 3.1.

Geographic location of drill data is of paramount importance particularly for the resource estimation. All drill locations were initially set out by hand held GPS and once sites are permanent (such as drill hole collars) their location picked up by the Company's RTK (real time kinematic) DGPS with an accuracy to a few centimetres.

#### Chemical Assays

Samples are taken by longitudinally splitting the core with a hand powered blade press and then transported to Perth for analysis by UltraTrace and Genalysis Laboratories. Standard quality assurance is undertaken involving internal and external routine testwork. Hellman and Schofield, our resource consultants audit the quality of the results by reviewing and monitoring all aspects.

Each sample was analysed for Be, Ga, Li, Mo, Pb, Rb, Se, Sn, Ta, Th, U, Y, Zr, Zn, Na, S, Al, Ca, K, Mn, Mg Se (Fus), Sn (Fus), Ta (Fus), Th (Fus), U (Fus), Y (Fus), Zr (Fus), La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Hf, Nb. Fe, P, Ti & F.



#### **Resource Calculations**

Hellman & Schofield were retained to complete the resource estimation at the Kvanefjeld project for the Company. The resources were estimated by ordinary kriging with the search aligned parallel to the strike and dip of the mineralisation. The strike was set at 036 with an undulating to flat dip mimicking the layered sequence of the intrusive complex as shown in the diagram to the left.

 $U_3O_8$  ppm, REO ppm, F ppm, Na ppm, NaF ppm, Sn ppm, Th ppm, Ti ppm, Zr ppm, Li ppm, Ta ppm, Zn ppm were estimated using a block size of 35m by 70m by 1mRL

The initial resource estimate was completed in May 2008 and contained 338Mt @ 0.03% U<sub>3</sub>O<sub>8</sub> (@150ppm cut-off), inclusive of 90Mt @ 1.09% REO, and 79Mt @ 1.69% NaF. The resource model was under sampled awaiting the remainder of the assays and this is why the tonnages for the REO and NaF is below the uranium tonnage.

The metal content of the orebody increased from 50,700 tonnes of  $U_3O_8$ , to 104,000 tonnes of  $U_3O_8$ , and 988,000 tonnes of REO, and 1.3Mt of NaF.





Above: Packing core boxes.

Left: Field exposure of naujaite (white) and lujavrite (black) at one of the Company's regional drill targets.

Below: Core box showing naujaite (top four rows) and lujavrite (bottom two rows). Core from the 2007 - 2008 seasons is held in approximately 6,000 core boxes.







### **Airborne Radiometry**

Airborne radiometry were completed over the Kvanefjeld area; but due to inclement weather was not extended to the southern part of the Project area. The uranium channels, illustrated by red and yellow colouring, showed significant anomalies over the known Kvanefjeld and Steenstrupfjeld mineralisation and to the south of Lake Taseq. At Kvanefjeld the area of the anomaly extended south and westwards past the campsite. Subsequent drilling proved that significant mineralisation occurred beneath these anomalous areas.

The results from the survey provided the Company with several walk up drill targets for the 2008 field season.

The graphics on this page show the regional air radiometrics to the left and above a panoramic photograph of a portion of the area surveyed. The black scree is lujavrite and is the material drilled in one of the regional drill holes (S001).









Above: Black rock at the front of the panorama photo is lujavrite.

Left: Regional radiometrics on DTM showing lujavrite as hot spot.

#### **Environmental Studies**

Matters pertaining to the environment form an important part of any mineral exploration or exploitation program. Knowledge of the "Environmental Baseline" i.e. definition of the current environmental situation is a necessary prerequisite. Comparison to the Environmental Baseline allows estimation of any changes due to exploration, exploitation or for that matter any third party effects (such as climate change). These studies are studies of change with time and necessarily require collection of baseline information over a number of years.

The Company obtained the services of Orbicon, a Greenland based environmental consultant and during a compressed field season they were able to collect sufficient samples from surrounding fjords, streams and hills to form a detailed database of samples. Many samples are stored until later when they are tested and investigated to give a total knowledge without incurring the costs of a full investigation before it is certain that the operation may proceed to exploitation.

The Company benefits from access to earlier environmental studies completed by previous explorers and have been advised that this could hasten the approvals process.

This baseline study will continue for a number of years.



Matters pertaining to the environment form an important part of any mineral exploration or exploitation program.



# The 2008 Field Season

The 2008 Field season began early in March with the processing of several thousand metres of core from the historical drilling at Kvanefjeld. This core was shipped from Denmark to the Company facilities in Narsaq and processed in accordance with the standard methods used on core from the 2007 drilling program.

This early start allowed the Company to prepare its personnel and equipment for what was to be an aggressive exploration program; which included an intensive drilling campaign.

Camp mobilisation began in May with the cold weather causing some minor problems. The re-sited camp, now visible from town and within mobile telephone range was more user friendly for the exploration staff and equipped with all modern facilities.

The drill rig already in Greenland from last season was prepared upon arrival of the drillers from Canada. A second drill arrived in Greenland not long after and by the 22nd of May continuous drilling operations were underway with double shifting on both rigs.

Drilling commenced south of the camp area, proximal to the camp such that teething problems and weather interruptions could be kept to minimum during the early colder part of the season.

Drilling resources were then concentrated on the more challenging eastern and northern flanks of Kvanefjeld; taking advantage of the best available weather conditions and before water resources began to dry out.

Drilling then moved into the main Kvanefjeld area carrying out:

- a. infill drilling, to better define mineralisation,
- b. extending drilling to depth in some areas; where holes had stopped prematurely,
- c. check drilling, such as twinning and close spaced drilling to show continuity of mineralisation over short intervals,
- d. deep stratigraphic holes to define the rock types and structure beneath the known mineralisation.

In mid-season one of the rigs was sent out to the regional areas; firstly the nearby Steenstrupfjeld Prospect then to N2N, S1 and finally the Lake Taseq area.

A total of 76 holes, all vertical, were completed for an advance of 19,334 metres. The deepest holes were K174 at Kvanefjeld which reached 500m, S001 which reached 389m and V001 at Lake Taseq which attained 500 metres.









### Regional Exploration Program

The regional exploration program was developed in Perth; based upon results from the 2007 exploration program, the 2007 aerial magnetic and radiometric survey and historical mapping. Six coherent prospects were targeted for ground based surveys; the targets to be further refined based upon these results. General prospecting was to be completed as time permitted in areas displaying a similar geological setting to Kvanefjeld.

Results from the regional exploration far exceeded expectations. Wide zones of mineralisation of long strike extent were defined at surface and thick mineralised intersections at all prospects drilled. All warrant extensive drilling in 2009 sufficient to allow a JORC resource estimate.

Ground based GPS controlled radiometric traversing was completed on all 6 prospects. Significant radiometric anomalies were found at three of the prospects and in-filled with closer spaced lines. All had anomalies with strike lengths of greater that 500m. Surface geological mapping was commissioned on two targets. Three of the targets were drilled when a rig was released from Kvanefjeld. The third target to be drilled had the best results but due to its precarious location only one scout hole was drilled. The other prospects showed anomalism but were prioritised into next year's drilling campaign.

Results from the Regional Exploration far exceeded expectations. All prospects drilled warrant extensive drilling in 2009 sufficient to allow a JORC Resource Estimate. The first prospect to be tested was the historically documented prospect Steenstrupfjeld, where in 1977 two inclined holes and two vertical holes (K044, K051-3) were drilled. This prospect was a radiometric anomaly only partially covered by the 2007 low level aerial helicopter survey. This provided an opportunity to confirm the aerial survey by ground survey and seven ground radiometric traverses were carried out.

The anomaly was defined over a strike of 650m and width of 250m and coincided with a ridge top parallel to the adjacent near vertical intrusive contact.

The ridge top was interpreted to comprise the more highly mineralised area and had not been tested by previous explorers. Their 4 holes had drilled beneath the high grade ridge top thus only intersecting lower grade units.

The Company sited four vertical holes upon the ridge top. As expected the top 50m of these four holes (K152-4 & K156) were well mineralised; the grade moderating at depth. The holes drilled had mineralised lujavrite as their main constituent.

During drilling three of the historical holes in the prospect were located in good standing and were probed for inclusion in the resource estimate.

The second target to be tested regionally was Prospect N2N; which was located by Company geologists when a planned traverse missed an expected lujavrite horizon. Field checking to the north of the planned traverse found outcropping black lujavrite over 700m and in places it was more than 300m wide. Eleven traverses were sited on this prospect; with a line spacing down to approximately 50m.







Mapping of this prospect suggested a massive block of basalt wall had dropped back into the still fluid intrusive forcing mineralised lujavrite upwards through naujaite and as such had a an irregular base brecciated with naujaite. Five drill holes (N001-5) were sited into this target and again all holes intersected mineralised lujavrite, N003 for the majority of its 215m length. The drilling conditions were difficult due to the nature of the geology (generally steeply dipping rocks with many microbreccia shear zones and open joints/alteration zones; in part relating to a deep water table). Only one hole reached target depth.

Kvanefjeld deposit and Steenstrupfjeld and N2N Prospects are all located adjacent to the intrusive enclosing meta-basalt contact and near the roof of the intrusive. Regional target S1 was the first to be located well within and away from the contact zone of the intrusive.

Regional drill hole (S001) was drilled on a small aerial radiometric anomaly and near coincident very high ground based radiometric anomaly. Literature research found mention of Steenstrupine rich lujavrite bands nearby; interpreted to be a target at the top of the hole.

S001 hole was drilled to 389m intersecting broad zones of well mineralised lujavrite to full depth. Intervening rock was naujaite. This was the first hole to intersect good grade mineralisation away from the intrusive contact and is the longest sequence of multi-element mineralisation intersected to date.



Surface mapping by Dr John Fergusson had interpreted lujavrite as a flat lying unit beneath outcropping naujaite throughout the main, undeformed areas of he intrusive. Hole V001 was drilled on the shore of Lake Taseq to 500m. Mineralised lujavrite was intersected from approx 300m to end of the hole. The hole confirms that mineralised lujavrite underlies most of the naujaite zones of the intrusive. Radiometric logging to approx 315m (hole blocked at this depth) tested only the top few metres of the lujavrite but returned U/Th values indicative of grades similar to those intersected at Kvanefjeld and the other drilled prospects. There is little doubt that the entire area underlain by the intrusive on the company's licence is prospective for multi-element mineralisation. Exploration next year will be aiming at locating those areas where lujavrite is present outcropping or at shallow depth.

#### Surface Geological Mapping

Was carried out at Kvanefjeld, Steenstrupfjeld and N2N Prospects as time allowed and utilised the services of several geologists from Curtin University WA and one from Calgary, Canada.

Kvanefjeld had been mapped at a scale of 1:5,000 in 1971. The mapping was of good quality but needed checking in the field and then expanded to cover areas such as the contact zone; which had not been mapped. In particular the season was planned to refine the understanding of the geological control of the mineralisation and locate the contact positions more accurately; thence adding to sectional interpretation. This is important for both geological and elevation control to give sufficient confidence to raise the JORC resource estimate category.





Steenstrupfjeld two km north-east along the intrusive contact from Kvanefjeld was mapped for the first time. Mineralised lujavrite outcropped along a 1km ridge separated from the contact by a steeply dipping sheared zone containing varied and mixed rock types.

Prospect N2N adjacent and parallel to the Intrusive eastern contact is located 7km east of Kvanefjeld. Mapping showed a large slab of country rock had sheared off and dropped into the still plastic intrusive. Lujavrite had intruded upwards through the less dense naujaite forming a now outcropping complexly dipping body surrounded by naujaite. Drilling & mapping confirmed that mineralised lujavrite extended along strike for over 1,000m and to depths of at least 180m below surface.



#### **Resource Estimate**

An updated resource was completed in August 2008 and contained 334Mt @ 0.03% U<sub>3</sub>O<sub>8</sub>, inclusive of 215Mt @ 1.21% REO, and 201 million tonnes @ 1.11% NaF. The REO component of the model is under sampled compared against the geophysical results available for the uranium grade.

The metal content of the orebody changed from 104,000 tonnes of  $U_3O_8$ , and 988,000 tonnes of REO, and 1.3Mt of NaF, to 100,960 tonnes of  $U_3O_8$ , and 2.59 million tonnes of REO, and 2.21 million tonnes of NaF.

#### Processing of Core

The processing of core at the Company facilities in Narsaq was to be similar to that conducted during the 2007 field season but with some specific refinements and streamlining. It was recognised early that additional personnel would be required to be dedicated to the task of processing the core to a high standard such that they were not interrupted by other tasks.

The core after being slung to the office was laid out on tables where it was appraised for errors and all abutting pieces joined where possible. Following this the core was measured, based on drillers' runs and metre marks were drawn onto the core with wax pencil. The boxes were then labelled with hole number, box number, and the metres from and to present in the box.



Geological logging of core samples.

Pieces to be measured for specific gravity work were marked as were fractures in the core from natural breaks (ie by geological processes and not by drillers breaking the core). The specific gravities were then measured by either dry or wet method based on lithology and depth.

The core was geologically logged for lithology and structural defects of note. The geologist would then mark the metres to be sampled and where 50mm long petrological samples were to be taken from the core.

#### Geo-mechanical samples

RQD (rock quality descriptors) are measured from each run of core based on the cumulative length of pieces of core greater than 10cm long not including breaks caused by the drilling process. The results generated by this process become

important when mine design begins and stability of wall angles has to be predicted. The lack of overburden and nature of the intrusive rocks bodes well for stable walls.

Where continuous lengths of core are to be split (generally in mineralisation) core sections of approximately 200mm are left every 10 to 20m. These samples are available for rock strength and other geo-mechanical testing.

Each core box is then photographed in order both while dry and then once sprayed with water. These photos have proved invaluable as a record of the drill holes and also to correlated geology and as a check on the logging.

The core which is to be sampled was then longitudinally split using a manual splitter and replaced in the tray. Samples are then taken from selected whole metre intervals and placed in calico bags. Several calico bags are placed in larger plastic bags; these are loaded into barrels, which are in-turn loaded into a container for transport to Perth.







Top: Splitting cores using manual splitters. Below: Loading core for transport.

The samples are prepared robotically at Genalysis and are then digested in a mixture of four acids to simulate complete digestion. The samples were tested for the following elements: Be, Ga, Li, Mo, Pb, Rb, Se, Sn, Ta, Th, U, Y, Zr, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Hf, Nb are determined by Inductively Coupled Plasma (ICP) Mass Spectrometry. Zn, Na, S, Al, Ca, K, Mn, Mg Fe, P, Ti are determined by Inductively Coupled Plasma (ICP) Optical Emission Spectrometry. F has been determined using specific ion electrode.

The Company uses both Genalysis and UltraTrace to complete the required assays. Part of the assaying process is to include duplicates, blanks and standards into assay jobs and also to check labs by submitting one sample in ten to the other lab.

The cased 70 historical holes offered an opportunity for gathering further information. Some 35 of these holes were drilled in the Northern Area and had steel standpipes and bolted on steel caps. Removal of these caps gave access for down-hole logging. The remaining holes, of a much earlier vintage, were drilled in the Mine Area and were uncased (without a stand pipe or cap). A wooden plug had originally sealed the hole but often had been removed or weathered away. All holes are now equipped with a standpipe and steel cap.

Many of these holes were partially filled with cuttings and debris which has accumulated over the years.

A method was devised to:

- a. remove this debris to gain access to the full depth of the hole,
- b. wash the top air filled portion of the hole down to the water level,
- c. replace the column of water with fresh lake water.

Water is initially pumped into the collar of the hole in order to displace any radon gas and wash any radioactive daughter products from the hole walls. Then a hose is inserted down the hole by hand as far as possible. Water from the nearest lake is pumped down the hole washing debris etc out of the hole or into the adjacent wall rocks. The hose is then pushed further down the hole and the process repeated until the hole is flushed clean to the bottom and the water column replaced. With radon

and daughter products removed the holes can then be accurately logged by the spectral probe. This is followed by the deviation probe which measures the course of the hole.

Holes are currently being renovated to a maximum of 200m. The hose and fittings are then transported by helicopter to the next site; an imposing scene with over 250m of hose and sling-line hanging far beneath the helicopter.

To further the knowledge of the mineralisation at a close spacing the Company has drilled both duplicate holes and also a series of holes on a much closer spacing that in other places in the deposit. This information will give an indication of the internal variability of the mineralisation and vital to refine that statistics and continuity of the mineralisation.

To test the depth extent of the mineralisation at Kvanefjeld a drill hole was placed in a low stratigraphic position and drilled to 500m. This drill hole intersected lujavrite below where it has been previously encountered and it ended in mineralised lujavrite.





into the collar of the drill

## **Environmental Studies**

The environmental baseline studies were continued this season with the consultants arriving in August for one week of intensive collection of data and samples. All objectives were completed. The company is in a good standing with its environmental commitments.

## **Other Studies**

## **Mineralogical Studies**

The Kvanefjeld deposit occurs within the Ilimaussaq Intrusive; which comprises a suite of minerals that are unusual, rare and in some cases unique. The mineralogy and petrology is therefore uncommon and in addition has been rarely worked on in the past decades. The Company has been most fortunate in being able to secure the services of Dr. Roger Townend, one of the few mineralogist/petrologists with significant experience on Ilimaussaq.

He has been appointed as the Company's Consultant with objectives of:

 Identifying the many minerals that are present and training company geologists to recognise them by the naked eye, under the hand lens or binocular microscope and in core, hand specimen or outcrop. This allows accurate lithological logging of drill core and surface rocks leading to compilation of good quality geological drill logs, cross sections and geological maps.



- Determining the mineral composition of the rock types that make up the intrusive or comprise the older country rock. This is especially important at Kvanefjeld as some rock types occur in different spatial or structural positions and are accordingly ascribed a different rock name.
- 3. Determining any different phases (or types) of each rock type. Particular attention being paid to the mineralised rock type (Lujavrite). Lujavrite is the rock type that contains the multi-elements of economic interest. It is a rock that varies widely in appearance and mineral composition. It has been formed at differing periods; varies widely in colour, grain size, mineral species and ratio of minerals present.
- 4. Investigating samples submitted for metallurgical investigation. Identifying the different economic minerals & elements present, their relationship to surrounding minerals & importantly where they "present to" during metallurgical testing.

Rock types outside of the intrusive have now been described in hand specimen and microscopically such that training of new personnel is now routine and has led to a much clearer understanding of the geology at Kvanefjeld and regionally.

As operations have expanded away from Kvanefjeld many new rock types (especially near the intrusive contact) have been encountered and described.


Steenstrupine in lujavrite from hole 089 from 210m depth



*Lujavrite with sphalerite (zinc sulphide, villaumite NaF, and sodalite from hole K073 from 145m depth* 



Vitusite from drill-hole K075 at depth 77m a Rare Earth Phospho-silicate with no uranium.

# Review of Operations by the Managing Director

The mineragraphy work is helping in a number of areas and is still at an early stage of understanding. Lujavrite the main mineralised rock type has been especially scrutinised. Examples of success to date are.

- a. NaF (villaumite) is now clearly defined as occurring only below the water table.
- b. It is well known that U content of lujavrite decreases with depth, while Zr increases and Th decreases at a more rapid rate than U. The Th:U ratio changes from 2:1 near surface to as low as 1:2 below 150m. This can now be equated to changes in the mineralogy. Steenstrupine (rich in U, Th REE) is dominant near surface but decrease with depth while a new unknown Zr, U rich silicate mineral takes over.
- c. Several new minerals have been identified. Cerite and vitusite are REE rich minerals which are important economical minerals.
- d. A list of minerals identified at Kvanefjeld is set out on page 37.

This improved knowledge has resulted in a much better understanding of the complexity of the metallurgical response of the lujavrite mineralisation.



Sealed entrance to the 1980 tunnel.

A viable whole ore flow sheet was developed for Kvanefjeld ore in early the 1980's.

Extensive and intensive metallurgical studies have been undertaken on Kvanefjeld ores by the Danish Ministry of Energy at their Riso National Laboratory; particularly in the period from 1978-1983. Uranium was the only product sought. A number of other elements were considered to be of interest; amongst which were tin, niobium, lithium, beryllium, zirconium, yttrium and REE. No resource estimates or metallurgical investigations were carried out for these elements.

The dominant rock is lujavrite (a nepheline syenite) containing the dominant multielement bearing mineral Steenstrupine (a phospho-silicate).

**1980 tunnel.** Beneficiation of the lujavrite was investigated; testing a number of methods including flotation, gravity & magnetic separation. Results were generally poor, variable and inconclusive and further metallurgical investigations used "direct ore" with no pre-concentration.

Initial uranium extraction trials focussed on acid leaching; using a gaseous sulphate roasting process. This process gave poor recoveries generally less than 50%; even at high temperature and pressures. Reports suggest that an unreactive rind formed around the uranium bearing steenstrupine, inhibiting further attack. In effect the sodium rich silicate minerals are broken down by the acid more easily than the steenstrupine consuming an inordinate amount of the acid.

Acid leaching was not considered further and attention moved to alkali leaching methods; in particular carbonate pressure leaching (CPL). CPL was developed at Riso; culminating in construction of a pilot plant.

Representative ore samples for uranium extraction trials were first obtained from a 20m adit driven in the mine area. However the larger sample required for the pilot plant resulted in driving of a 960m long tunnel (in 1980) through the deposit. The tunnel was located half way up the cliff face at an elevation of 480m above sea level and at an average depth of 150m below surface.



It passed through the full width of the Mine & Northern Areas. A bulk sample of round 4,000 tonne was extracted and transported by ship to Denmark.

The pilot plant comprised a pipe reactor 2,550m in length and heat exchange of +4,000m length. A chemical-mechanical process formed the core of the method. The Steenstrupine was mechanically disintegrated rather than dissolved by the sodium carbonate/bi-carbonate reagents. Extraction rates were affected by chemical factors (reaction temperature, carbonate concentration, oxygen pressure) and mechanical factors (comminution grain size, liquid/solid ratio and turbulence.

# The trial results confirmed Kvanefjeld ore can be processed on a commercial scale by then available technology and equipment at a recovery of 80% of the uranium.

The fall in the price of uranium in the 1980's heralded a long period of inactivity at Kvanefjeld.

Not until the Company's arrival in 2007 did an interest in Kvanefjeld reappear. Such a period of inactivity has led to a dearth of specialists with a comprehensive knowledge of Kvanefjeld metallurgy. Even metallurgists with a experience in uranium, let alone REE were few and far between.

A search by the Company led to the appointment of Peter Bartsch an experienced metallurgist who has a comprehensive knowledge and experience with uranium deposits such as Ranger, Lake Maitland/Centipede, and Honeymoon, rare earth deposits such as Mt Weld and of multi-element REE/Uranium bearing deposits in particular Olympic Dam.

He was appointed metallurgical consultant to the Company in late 2007 with the aim of identifying a process route to produce REE, uranium and sodium fluoride. Other minor products such as tin, zinc, lithium, were to be investigated as appropriate. He formulated and has supervised the current studies; searching first for and refining a beneficiation route for the Kvanefjeld ore and then a process route for metal extraction.

#### Current Metallurgical Investigations

The objective of the 2007/8 metallurgical investigation is to demonstrate a viable flow sheet sufficiently robust to form the basis of a Scoping/Pre-feasibility Study.

The workable Flow Sheet demonstrated in 1983 was aimed only at uranium in addition the intervening 25 years has seen the advent of new technologies, reagents and experience particularly in the area of REE's it therefore was agreed to start from scratch and look for better alternatives, i.e. the full spectrum of new opportunities were to be come part of the investigation.

The basic generic steps which make up a flow sheet are:

- 1. Beneficiation of the mineralised rock to form a concentrate.
- 2. Extraction of the minerals/elements of economic interest from the concentrate. In our case bringing them into solution.
- 3. Recovery of the economic elements/minerals from solution in a form that is saleable or suitable for a refining stage.

Efforts were first directed to obtaining and reviewing all results from historical metallurgical investigations.

# Review of Operations by the Managing Director

Beneficiation was of immediate interest as known technologies had been significantly improved and new techniques introduced. Beneficiation would form the foundation element of the new round of metallurgical investigations. Clearly removal of any gangue minerals would give a concentrate, which would use more economical, smaller sized equipment and consume much less reagents.

Beneficiation attempts commence by identifying the presence of any gangue minerals. Lujavrite, the rock which carries the Kvanefjeld multi-element bearing minerals, comprises a number of nonmineralised gangue minerals. These include albite feldspar, potassium feldspar, arfvedsonite, aegerine & naujakasite and are collectively termed gangue minerals.

The next step in beneficiation is to identify a way to remove a significant proportion of one or more of the gangue minerals; retaining the majority of the economically interesting minerals.

Historically steenstrupine was considered to be the only major mineral of economic interest. Within a short time it became obvious that other minerals carried uranium and REE and were present in significant quantities. Cerite, vitusite and an unnamed previously unknown mineral have been identified. A number of minor minerals have also been located.

Lujavrite does have pre-requisites for effective beneficiation. It is fine to coarse grained with a poor to little foliation. The mineral species do have differing densities, colour, magnetic susceptibility etc and thereby offer a number of beneficiating avenues that warrant investigation.

T1, the first series of tests, was aimed at investigating the simplest method of separation, gravity. A bulk sample was formed by compositing a number of metre intervals from K092. Results were disappointing agreeing with results of beneficiation testwork of the 1970s-80's. There was a concentration of Arfvedsonite (Black & iron rich) into the denser fractions and the feldspars tended to remain behind. However REE's and U were spread throughout. Results of testwork beneficiation by magnetic separation gave similar results.

It was recognised that a majority of the uranium & REE's were hosted by phospho-silicates offering the potential for successfully flotation by phosphate collectors. Flotation became the primary focus of T2 using a bulk sample by compositing individual 1m samples from K095. Flotation testwork successfully collected the majority of the REE's, and around 75% of the uranium.

This successful beneficiation is considered an important breakthrough for Kvanefjeld ore.

The concentrate also preferentially collected arfvedsonite.

Investigations to improve the uranium recovery identified a previously unknown uranium bearing, colourless mineral carrying no phosphorous and little REE's. Promising testwork continues.

T3 testwork was aimed at refining the method of beneficiation by flotation and then producing sufficient concentrate as to allow Stage two of the Flow Sheet to go ahead. I.e. treating the concentrate to extract the sought after elements into solution. This time two composite samples were produced. One low in NaF the other with high NaF content. Individual samples from 5 holes scattered around the deposit were composited. As in previous tests each of the samples were washed; removing all of the NaF; the only Fluorine being present tied up in the silicate lattice (and therefore insoluble in water). Recoveries into the flotation product were the same as for T2. The metallurgical response is pH dependant in particular affecting the NaF rich mineralisation.



Further refinement of the beneficiation method is continuing.

T1 & T2 testwork was carried out by AMDEL (Adelaide) and T3 by SGS-Lakefield (Perth). Both organisations carried out their work to very high standards as is now expected of any Australian based organisation operating in the mineral industry.

In October the company's metallurgical expertise has been further strengthened with the appointment of Project Manager Shaun Bunn; a qualified metallurgist.

Metallurgical investigations will continue as a high priority through 2009 and steady progress as experienced in 2008 is anticipated.

Density	Colour	Mineral and Chemical Formula
(g/cm <sup>3</sup> )		
2.2	light	Analcime NaAlSi 2O6.H2O
2.3	light	Sodalite Na <sub>4</sub> Si <sub>3</sub> Al <sub>3</sub> O <sub>12</sub> Cl
2.6	light	Albite NaAlSi 308
2.6	light	Nepheline (Na,K)AlSiO <sub>4</sub>
2.6	light	Microcline KAlSi 308
2.6	dark	Litvinskite Na 2(Na,Mn)Zr(Si 6O12(OH,O) 6)
3.0	dark	Eudialyte Na $_{15}$ Ca $_{6}$ Fe $_{3}$ Zr $_{3}$ Si $_{26}$ O $_{73}$ (O,OH,H $_{2}$ O) $_{3}$ (Cl,OH) $_{2}$
3.2	dark	Neptunite KNa 2Li(Fe,Mg,Mn) 2Ti2Si 8O24
3.0	dark	Steenstrupine Na 14(Ce,Th,U) 6Mn2Fe 2Zr(PO 4)7Si 12O36(OH) 2.3H 2O
3.6	light	Vitusite-(Ce) Na 3(Ce,La,Nd)(PO 4)2
4.9	light	Cerite-(La) (La,Ce,Ca) 9(Mg,Fe +++)(SiO 4)6[SiO 3(OH)](OH) 3
5.0	dark	Monazite-(Ce) (Ce,La,Nd,Th)PO 4
5.0	dark	Thorite (Th,U)SiO <sub>4</sub>
4.0	dark	Sphalerite ZnS
3.5	dark	Aegirine NaFeSi 2O6
3.4	dark	Arfvedsonite Na <sub>3</sub> (Fe + <sup>2</sup> ,Mg) <sub>4</sub> Fe + <sup>2</sup> Si <sub>8</sub> O <sub>22</sub> (OH, F) <sub>2</sub>
2.8	water	Villiaumite NaF
	soluble	

#### Kvanefjeld minerals, their chemical composition and some physical characteristics

# Review of Operations by the Managing Director



#### Scoping/Project Feasibility Study

A Pre-feasibility study was carried out 1981-83; the results of which were published in a comprehensive series of reports in 1983. Due to the low price of uranium the project did not proceed and all operations ceased.

The company has now collected sufficient data such that a scoping study can commence. This is an important development and necessarily requires obtaining the services of a well respected project manager. It is pleasing to report that Mr Shaun Bunn will help put together and head up the scoping study team.

#### Groundwater

Ground water levels vary dramatically through Kvanefjeld reflecting in part the steep variable topography. However it is common to find the water level in drill holes to be much deeper than the water level of a lake which may be only a few meters away; while just a short distance away the opposite is true.

An initial water level survey has now been completed with all accessible holes reaching the water table having been measured. It is intended to carry out further surveys at the beginning (May) middle (July) and end (September) next year.



The Kvanefjeld area has been subject to intensive glaciations, which have carved out deep pockets now lakes filled with water from annual rain and snow. The underlying rocks carry widely spaced fractures and rare alteration zones; which means that not all the groundwater is interconnected; hence explaining the presence of perched water tables.

The water table varies from as little as 5m below surface to as deep as 120m. The main visual change is the presence of small holes through the core above the water table. Here villaumite has been dissolved by water percolating through the rock mass.

#### **Porosity**

Porosity of the rocks at Kvanefjeld has been investigated by measuring the weight of water saturated core and the weight of oven dries core when all of the pore water has been removed. Results show that below the water table the porosity of the rocks are low being at about 0.2-4%.

Only above the water table do we have measureable porosity. Lujavrite is the only rock with significant porosity and that relates directly to the original villaumite content. The cavities left by the villaumite equate to the original villaumite content. Porosities are still low and rarely attain a few percent.





The camp, the lake and weather station.





#### **Occupational Health and Safety**

The occupational health and safety of our employees and contractors employees is of great importance to us.

Our exploration planning from the start has taken into account two fundamental issues relevant to exploration at Kvanefjeld. These are the need to measure the effects of exposure to the low level radiation emitted by the radioactive elements of the resource and also to ensure we control exposure to the sodium fluoride known from the beginning to be a component of the resource.

All safety plans have been submitted and approved of by The Bureau of Minerals and Petroleum in Greenland. In both seasons we were visited by personnel from the Bureau who examined safety issues among other matters.

#### **Radiation monitoring**

We have had in place for both seasons a comprehensive radiation management plan prepared and overseen by experts from Australia. We assess exposure of all staff who regularly visit the exploration camp and also have taken steps to ensure that the camp is located in a radioactive low.

#### Sodium fluoride

Sodium fluoride can be poisonous in concentrated amounts and all our core recovery, handling and core splitting work has been done to industry standard protocols.

#### **Exploration footprint**

Our exploration footprint results in a very small surface footprint. For example all drill movements are helicopter assisted so we have done no road works. Clean up of all drill and exploration sites is a part of the Company's normal operating procedures.





Above: Hank with the tunnel miners.

Community life around Narsaq.

#### **Rare Earths**

#### Introduction

The purpose of this section is to identify the rare earths, explain why our deposit of rare earths is different (chemically and geologically) to many other rare earth deposits, then to explain the uses and major products for rare earths.

We will also examine the economic impact of the rare earths on the multi element complex at Kvanefjeld.

#### What are the rare earths

By strict definition the thirty rare earth elements are composed of the lanthanide and actinide series. One element of the lanthanide series and most of the elements in the actinide series are called "transuranium", which means synthetic or man-made in this context. All of the rare earth metals are found in group 3 of the periodic table.



For our purposes the rare-earth elements we are concerned with are a group of chemical elements composed of scandium, yttrium, and the lanthanides. The lanthanides are a group of 15 chemically similar elements with atomic numbers 57 through 71, inclusive. Although not a lanthanide, Yttrium, atomic number 39, is included in the rare earths because it often occurs with them in nature, having similar chemical properties. Promethium (Pm) atomic number 61 is the trans-uranium element on the Lanthanide series. It is not stable in nature has been only synthetically produced in small quantities. It is highly radioactive and not relevant in our rare earth discussion.



Despite their name rare earths in the Lanthanide series are not particularly "rare" in the sense that gold and silver are rare although they have only been relatively recently known to man. Of the Rare Earths we are interested in the earliest element discovered was Yttrium (1789), followed by Cerium (1803) the last discovered was Neodymium (1925). However it is only in recent times that useful applications in electronics and many other specialised fields have prompted larger scale usage

Rare-earths production is often derived from the rare-earths ores bastnasite, monazite, xenotime, and ion-adsorption clay. Bastnasite is the world's principal source of rare earths and is the source of most Rare Earths produced in China and the United States. Significant quantities of rare earths are also recovered from the mineral monazite. Xenotime and ion-adsorption clays account for a much smaller part of the total production but are important sources of yttrium and other heavy-group rare earths.

#### Rare earths and the Kvanefjeld multi element deposit

The Kvanefjeld multi element deposit is unusual as it occurs within the Ilimaussaq Complex a primary alkaline intrusive which intruded into an existing granitic and gneissic basement and a continental series of sandstones and lavas during the Precambrian period, about 1,042mya. This nepheline syenite (1) complex comprises three separate intrusions. Firstly, an augite<sup>2</sup> syenite which forms a shell along the roof and sides, an alkali granite/alkali syenite near the top of the body, and finally the largest part and centre of the intrusion comprising a layered series of under-saturated syenite rocks.

The complex is rich in a variety of elements including radioactive elements, lithium, beryllium, zirconium and REEs. The area is also prospective for sodalite (sodium aluminium silicate) tugtupite (beryllosodalite) a gemstone, fenite which is a source of niobium, tantalum, copper and zinc, commonly occurring as strata bound lenses, and eudialyte, a complex mineral containing sodium, zirconium, niobium, tantalum and REEs.

The rare earths are also contained in a series of unique minerals called steenstrupine, vitusite and cerite. These are distinct from bastnasite, monazite and xenotime as the Kvanefjeld minerals are more complex with many different elements in their make up.

The unusual mineral types at Kvanefjeld are partly the result of the minerals forming in a silica poor environment, creating different crystals to those forming in more "normal" (silica rich) environments. The silica poor environment makes the deposit softer than normal intrusions allowing for faster drilling speeds and perhaps, in the future, slightly lower mining costs.

Ion –adsorption clay deposits are deposits which over time have selectively absorbed rare earths through a process of ion exchange. It is known that clay deposits and other weathered and oxide deposits are more costly to treat because they are relatively more impermeable to liquids that material ground to a desired size from original magmatic rocks. The Kvanefjeld deposit may have an advantage over ionic clays and other weathered deposits because of this although beneficiation and metallurgical testing is yet to be completed.

1. Nepheline, also called nephelite is a feldspathoid: a silica-undersaturated aluminosilicate, Na3KAl4Si4O16, that occurs in intrusive and volcanic rocks with low silica.

Syenite is a coarse-grained intrusive igneous rock of the same general composition as granite but with the quartz either absent or present in relatively small amounts.

2. Augite is a single chain inosilicate mineral described chemically as (Ca,Mg,Fe)SiO3 or calcium magnesium iron silicate.

This article is a reprint of a recent article in Industrial Minerals magazine.

Rare

+hS

# Rare earths at the crossroads

Earths

Increased domestic consumption by China and stockpiling by Japan could raise rare earth prices as global demand swells for the manufacture of high tech goods. *Dudley J Kingsnorth* looks at the world market and sees how the industry is coping with present and future demands

RARE EARTHS (RE), which are perhaps more correctly referred to as lanthanides after lanthanum the first element in the series of 15 elements, are a group of materials that have unique magnetic, fluorescent and chemical properties that make them indispensable in the manufacture of many items of modern day living such as laptops, LCDs, autocatalysts, energy efficient lighting and hybrid vehicles.

Yttrium and scandium, which are chemically similar to the lanthanides, are also included in the "family" of RE, taking the total to 17 elements.

#### **RE market dimensions**

The estimated size of the global RE market in 2008 is forecast to be 132,500 tonnes rare earth oxides (REO), with an estimated value of \$1,750m. Over the past decade, with the exception of the technology crash in 2001/02, global demand has grown at 8-13% per annum. Over this period demand in China has grown at ~15% per annum, compared with growth in the rest of the world of 2-5% per annum.

Given the likely slowdown in growth in the USA it is forecast that growth over the next five years will moderate to 10-15% per annum in China and 2-4% in the rest of the world, with a consolidated aggregate growth in demand of 8-11% per annum.

China supplies 92-94% of global demand, a figure that is likely to fall over the next few years as the West broadens its sources of supply. This shift in the sources of supply will be enhanced by the fact that China now recognises its RE resources are finte; so it has placed an effective cap on the rate of growth of development of new projects through a combination of production quotas, expo quotas and export taxes.

In order to meet the need to create jok for the millions of people migrating from the country to the urbanised areas Chinc has effectively adopted a policy whereb "China's RE are primarily for China's manufacturing industries."

The success of this strategy is exemplified by the changing focus of RE exports over the past 40 years. In the 1970s, exports were dominated by mineral concentrates. Then in the 1980s by mixed rare earth chemicals (eg. carbonates and chlorides).

By the early 1990s, focus shifted to separated RE (eg. oxides and metals) and in the late 1990s, processed RE (eq phosphor powders, magnets). In the 2000s, the focus is on RE products (eg. TVs, computers, electric motors).

# Pie chart 1: REO Consumption by value 2006

## Pie chart 2: REO Consumption by value 2006



#### Table 1: Estimated 'gross value' of rare earths market in 2008

Application	Average Value	Gross Value \$m.	Market Share by Value
Catalysts	\$3/kg REO	75	4%
Glass	\$2/kg REO	25	1%
Polishing	\$5/kg REO	75	4%
Metal Alloys	\$8/kg REO	200	12%
Magnets	\$25/kg REO	750	44%
Phosphors	\$50/kg REO	500	29%
Ceramics	\$7½/kg REO	50	3%
Other	\$5/kg REO	50	3%
Total	13/kg REO avg	\$1600-1800m.	100%

Past & future RE demand

As shown in the Table 2, since the beginning of the decade the RE industry has grown by 50%, during which time China's share of global consumption has grown from 25% to 50%.

In estimating demand in 2012 the following assumptions were made:

- Global demand for RE will grow at 8-11% per annum over the next 5 years.
- Demand will increase at 10-15% per annum in China, 3-5% in Japan and 2-4% in the rest of the world.
- Lynas will successfully commission the Mt Weld RE Project (in Australia/ Malaysia) in 2009.
- It is assumed that Chevron will re-start full operations at its Mountain Pass mine in California.
- Growth in demand by the various sectors under which the industry is generally classified will be as follows:
  - Metal alloys by 15-20% per annum
  - Magnets by 10-16% (constrained by supply)
  - Phosphors by 7-10%
  - Ceramics and other applications by 7-9%
  - Catalysts and polishing by 6-8%
  - Glass at a negligible rate.

Source: Roskill, CREIC and IMCOA

#### Table 2: Total global rare earths demand in 2000, 2008 and 2012

Application	China	China Ja			Japan		USA		Others			Total			
	2000	2008 (forecast)	2012 (forecast)												
Catalysts	2,000	10,750	15,500	1,750	2,750	4,000	9,500	6,000	6,250	4,250	5,000	5,250	17,500	24,500	31,000
Glass	2,000	7,750	8,000	6,500	3,000	2,500	2,500	1,000	1,000	3,000	1,500	1,500	14,000	13,250	13,000
Polishing	2,000	8,250	12,250	4,000	5,500	6,000	2,000	1,000	1,000	3,500	1,500	1,750	11,500	16,250	21,000
Metal Alloys	5,500	15,500	33,500	2,750	5,750	7,750	1,750	1,500	2,000	2,500	1,250	1,750	12,500	24,000	45,000
Magnets	3,500	22,000	37,500	3,500	5,000	6,000	1,500	500	1,250	2,000	750	1,250	10,500	28,250	46,000
Phosphors	1,000	6,000	9,000	2,500	3,000	2,500	500	500	750	2,000	500	750	6,000	10,000	13,000
Ceramics	750	2,750	4,250	1,250	2,500	3,250	500	1,250	1,250	500	750	750	3,000	7,250	9,500
Other	3,250	7,000	8,500	500	1,500	2,000	150	250	500	100	300	500	4,000	9,000	11,500
Tota	20,000	80,000	128,500	22,750	29,500	34,000	18,400	12,000	14,000	17,850	11,500	13,500	79,000	132,500	190,000

Source: Roskill, CREIC and IMCOA

#### **Global RE supply**

The major ongoing issue for the RE industry is balance, owing to the mismatch between the ratios of the individual RE produced and consumed.

On the basis of the known analyses of the major resources it is considered that total production would probably have to exceed 220,000 tonnes REO in 2012 to meet projected demand of 190,000 tonnes REO, with any shortfall to be drawn from stocks, as illustrated in Table 3, where critical shortages are shown in red.

From this table, it is evident that europium, terbium, dysprosium and vttrium will be in short supply, even with the extra production. As praseodymium can be substituted for neodymium in magnets it appears that a shortage of these important RE for permanent magnets could be partially alleviated by the increased production.

Forecast supply and demand in absolute terms are shown in Graph 1, which indicates a shortage in 2012 if current demand trends continue, China continues to restrict supply in accordance with recent pronouncements and the non-Chinese are developed in keeping with the reasonable timetables.

#### China

The current dominance of China as the major player in the RE industry is not in question as it supplies more than 92% of global demand and consumes 60% of the demand. Hence as the major supplier and consumer the country is able to have a significant influence on the future of the industry, with clear indications that China is using this dominance to assist its own manufacturing industries.

During the last 12 months China has made some fundamental changes to the taxes on RE exports and to the export quotas. The changes have caused Japanese, European and US customers to place greater emphasis on identifying and supporting alternative non-Chinese suppliers.

The specific developments in China, the aim of which is to promote value adding industries (which appear to be having the desired effect from recent export statistics) are outlined.

#### Table 3: Forecast global demand for individual rare earths in 2012

Daves Fronth Osciale	Demo	and <sup>1</sup>	Supply/Production <sup>2</sup>			
Kare Earth Oxide	REO Tonnes	%	REO Tonnes	%		
Lanthanum	54,000	28.0%	59,000	27.0%		
Cerium	69,500	37.0%	89,000	40.0%		
Praseodymium	7,000	4.0%	10,500	5.0%		
Neodymium	39,000	20.0%	36,000	16.0%		
Samarium	2,000	1.0%	4,500	2.0%		
Europium	1,100	0.5%	1,000	0.4%		
Gadolinium	200	0.1%	3,500	1.6%		
Terbium	600	0.3%	300	0.15%		
Dysprosium	2,500	1.4%	2,000	0.9%		
Erbium	850	0.5%	1,000	0.4%		
Yttrium	13,000	7.0%	12,000	5.5%		
Ho-Tm-Yb-Lu	250	0.2%	1,200	1.15%		
Tota	190,000	100.0%	220,000	100.0%		
			Source:	Roskill and IMCOA		

Notes: 1. Figures have been rounded 2. Analysis based on current industry average grades.

#### Table 4: Japanese production of items containing rare earths, 2005-2007

End-product	Uni	2005	2006	2007	2006/07 yr-on-yr change
HEVs (world sales	000 unit	29	38	43	+13%
Sintered rare earth magnets	tonnes	8,500	10,000	11,250	+11%
Sintered Nd-Fe-B Alloys	tonnes	14,000	16,500	18,750	+14%
Digital camera	000 unit	28,88	37,15	46,76	+26%
Ceramic capacitor	M unit	463,90	576,80	677,80	+18%
Plasma television	000 unit	82	1,10	1,29	+17%
LCD Television	000 unit	4,35	5,97	7,31	+22%

Source: Roskill's Letters from Japan July 2007 & May2008 and IMCOA

#### Table 5: Japanese imports of rare earths by product, 2003-2007 (gross tonnes)

Rare Earth Produc	2005	2006	2007	2006/07 yr-on-yr change
Yttrium oxide	1,226	1,603	1,805	+ 11%
Cerium oxide	6,147	11,489	11,013	-4%
Cerium compound	7,21	9,06	8,01	-12%
Lanthanum oxid	1,80	2,14	3,31	+54%
Rare earth metal	8,38	9,45	9,32	-1%
Rare earth compounds	5,73	7,66	6,62	-14%
Ferro-cerium	592	548	840	+ 53%
Total	31,106	41,964	40,564	-3%

Source: Roskill's Letters from Japan July 2007 & May2008 and IMCOA

#### Table 6: Comparison of rare earth prices for second quarter 2006-08

Dave Earth Oxide	Rare Earth Prices \$/kg REO								
Kare carin Oxiae	Q2 2006	Q2 2007	Q2 2008						
Lanthanum oxide	\$1.45	\$1.70	\$8.50						
Cerium oxide	\$1.35	\$1.30	\$4.30						
Neodymium oxide	\$11.20	\$29.20	\$32.40						
Europium oxide \$260		\$280	\$480						
Terbium oxide	\$455	\$550	\$730						

Greenland Minerals and Energy Ltd Annual Report 2008

#### **RE export taxes**

In late 2006 the Chinese government introduced a tax on RE exports of 10%, which was increased to 15% on selected RE in 2007. In December 2007 the authorities increased the export taxes on all rare earth exports, with effect from 1 January 2008, to the following levels:

- Europium, terbium, dysprosium, yttrium as oxides, carbonates or chlorides – 25%
- All other rare earth oxides, carbonates and chlorides – 15%
- Neodymium metal 15%
- All other rare earth metals 25%

#### Abolition of export VAT refund

In 2007 China withdrew the refund of value added tax (VAT, 16%) on RE exports, while the refund on value added exports such as magnets and phosphors remains in place.

The effect of this decision, when

#### New, potential, & conceptual RE projects

As a result of the long term uncertainties associated with the supply/export of RE from China there are a number of new projects (ie. under commissioning or construction), potential projects (ie. still in the feasibility stage and awaiting commitment/financing), and conceptual projects (ie. in the very early stage of assessment with limited data on a resource and on the economics of processing the ore).

Based on the publicly available information an attempt has been made to list projects in the order in which they could, if proven commercially feasible, come on-stream:

#### New projects

Mountain Pass (Chevron Mining Inc.) Resource (JORC equiv.): 50m. tonnes (8-9% REO; 5% cutoff). 4.3m. tonnes contained REO. Mine and processing in California. Capacity: 2008-11, based on processing the Lanthanum Concentrates Pond followed by processing the current stocks of bastnaesite concentrates: 3-500 tpa Nd<sub>2</sub>O<sub>3</sub>/ Pr<sub>5</sub>O<sub>11</sub> + 1,200-1,800 tpa La cons. This latter operation has now been successfully commissioned, with 10,000 tpa REO "full production" expected to commence in 2012.

#### Mt Weld (Lynas Corp.)

**Resource** (JORC equiv): 7.7m. tonnes (12%

considered with the export tax regime above, is that non-Chinese RE processors such as cerium polishing powder producers and RE magnet producers pay 31-40% more for their RE raw materials (plus transport and storage costs).

#### **RE** export quotas

The Chinese Ministry of Commerce recently announced the RE export quotas granted to Chinese RE enterprises for the second half of 2008 (although the term has changed from February 2009 to December 2008); which effectively amount to a 6% reduction in quotas compared with 2007 on an annualised basis.

The size of the reduction in the annual RE export quotas is in keeping with the history of the quotas since they were introduced in 2004:

2004: 48,500 tonnes REO 2005: 48,300 tonnes REO - 0.5% reduction 2006: 45,000 tonnes REO - 7% reduction

REO; 8% cutoff). 0.92m. tonnes contained REO. Mine and concentrator in Australia. Processing in Malaysia.

**Capacity:** Start-up in Q4 2009 with a nominal capacity of 10,000 tpa REO (Stage #1), with the potential to increase to 20,000 tpa REO in 2011/12 (Stage #2). **Capex:** \$375m. (Stage #1 + infrastructure).

#### Potential projects Dubbo Zirconia Project (Alkane Resources Ltd)

**Resource** (JORC equiv): 73m. tonnes (0.9%REO; Zr cut-off). 0.65m. tonnes contained REO. Mine and processing in Australia.

Capacity (REO): 1-2,000 tpa REO in 2011 (not finalised yet) Capex: \$100-200m. (depending on capacity)

#### Nolans (Arafura Resources Ltd)

**Resource** (JORC): 18.6m. tonnes (3.1% REO; 1% cutoff). 0.58m. tonnes contained REO. Mining and processing in Australia. **Capacity:** 5,000 tpa REO in 2011, building up to 20,000 tpa REO in 2013 **Capex:** \$675m. (±30%, incl. infrastructure).

## 2007: 43,575 tonnes REO - 3% reduction 2008: 41,000 tonnes REO - 6% reduction

The potential impact of the reduction in the export quotas may be put in context when it is recognised that the forecast for Japan's RE consumption in 2008 alone is greater that 40,000 tonnes RE materials (ie. not REO), which is close to the current total export quota.

If China continues to reduce the export quotas, as it has indicated; then in the absence of new non- Chinese projects the situation will clearly get worse.

Foreign companies also receive separate quotas, which are not widely publicised.

#### Toll trading of RE

Toll trading of RE in China has been banned since November 2006, which effectively means the toll treating of RE is also banned; a primary reason for Lynas Corp. moving the location of its secondary processing facilities from China to Malaysia in 2007.

#### Hoidas Lake (Great Western Minerals Group)

Resource (JORC equiv): 1.2m. tonnes (2.8%REO; 1.5% cutoff). 0.03m. tonnes contained REO. Mining and processing in Canada. Capacity: 3-5,000 tpa REO in 2011/12 is

goal.

#### Thor Lake (Avalon Ventures)

Resource (prelim.): 14m. tonnes (1.2% REO) 0.2m. tonnes contained REO Mining and processing in Canada. Capacity: 3-5,000 tpa REO in 2012/13

#### **Conceptual projects**

- Cummins Range (Australia Navigator Resources Ltd)
- Kangankunde Hil (Malawi Lynas Corp.)
- Bear Lodge Project (USA Rare Element Resources Ltd)
- Mt Weld Polymetallic Project (Australia - Lynas Corp.)
- Kvanefjeld Project (Greenland -Greenland Minerals and Energy Ltd)
- Elliott Lake Project (Canada Pele Mountain Resources)
- Vietnam (Phong Tho district, Bat Xat district and Van Yen district, north-west Vietnam; see IM April '08, p.73

#### **RE demand in Japan**

Whereas China consumes ~60% of the global demand for RE, Japan is the second largest consumer with estimated demand equivalent to ~25% of global demand. Hence Japan is seen as the major destination for RE produced by the non-Chinese projects in operation, under construction and the subject of feasibility studies.

The demand for RE in Japan is driven by the high growth in demand for hitech products such as hybrid electric vehicles (HEVs), LCDs and plasma display panels (PDPs) as shown in Table 4. There is every indication that the high growth in demand for these items will continue.

The demand for the items oultined in Table 4 is the driving force for the increasing demand for the RE shown in Table 5.

The average annual increase in imports in recent years has been 10-15% per annum; which does not necessarily reflect increased demand as it is known that the major Japanese consumers have been stockpiling RE for the last few years.

A review of the table indicates an apparent discrepancy with the global estimates shown elsewhere, which is primarily due the fact that the latter tables reflect net consumption.

In essence, the tables appear to overestimate the consumption of RE in Japan for the following reasons:

- Japan exports finished RE products, which can lead to "double counting".
- stockpiling by the major Japanese consumers.
- the rare earth metals and alloys 'convert' to lower REO values.
- the rare earth compounds are expressed in absolute tonnes, not REO tonnes and so "convert" to lower REO values.

#### **RE Prices**

As a result of increasing demand, the above measures, the increasing enforcement of environmental standards in China, and stockpiling by Japanese companies, there has been a steady increase in prices over the past three years, but more importantly a distortion in prices.

#### Graph 1: Rare earth supply and demand



The distortion is caused by the price attached to export quotas, which may be sold within China at \$1.5-2/kg REO, and the natural tendency of RE processors to maximise their profit.

So, while the sale of terbium at \$750/kg may realise a profit of \$100-200/kg, the export of cerium at \$3/ kg, compared with internal prices of \$1.25/kg has limited appeal. Hence at present export sales of cerium at US\$4-6/kg occur on a regular basis.

Table 6 shows the steady increase in RE prices over the past two years; a trend that is expected to continue if the current constraints on supply remain in place.

#### Conclusions

There is a clear warning that there could be a shortfall in supply in 2012, which could lead to significant price increases. However, Industrial Minerals Co. of Australia Pty Ltd is of the view that China would increase production and export quotas to ensure that any price increases were not of a magnitude that would encourage illegal mining and the associated environmental problems.

To reduce their dependence on China the non-Chinese RE customers are giving every encouragement to new and potential producers in the rest of the world.

If the past is any guide then there are likely to be significant delays to the current development schedules. This would give China the opportunity to increase its share of RE based manufacturing, with the associated perception of increased sovereign risk.

It is evident that if China's dominance of the industry is to be brought under control then the new projects have a responsibility to meet their current development schedules.

**Contributor:** Dudley J Kingsnorth, executive director at Industrial Minerals Co. of Australia Pty Ltd (djk@imcoa.com.au).

## Forward looking statement included at IMCOA's request

The statements in this article represent the considered views of the Industrial Minerals Company of Australia Pty Ltd (IMCOA). It includes certain statements that may be deemed "forward-looking statements." All statements in this article, other than statements of historical facts, that address future market developments, government actions and events, are forwardlooking statements. Although IMCOA believes the outcomes expressed in such forward-looking statements are based on reasonable assumptions, such statements are not guarantees of future performance and actual results or developments may differ materially from those in forwardlooking statements. Factors that could cause actual results to differ materially from those in forward-looking statements include new rare earth applications, the development of economic rare earth substitutes and general economic, market or business conditions. While, IMCOA has made every reasonable effort to ensure the veracity of the information presented it cannot expressly guarantee the accuracy and reliability of the forecast and conclusions contained therein. Accordingly, the statements in the article should be used for general guidance only.

#### **Spectral Natural Gamma Logging**

At Kvanefjeld the gamma radiation is predominantly from uranium and thorium isotopes. The gamma radiation from potassium is much smaller and considered to be a constant. The challenge was how to separate the uranium gamma radiation from the thorium and scattered thorium gamma radiation. This mixture of gamma radiation forms a 'spectrum' from high energy gamma rays to low energy gamma rays.

In other spectral logging systems the usual practice has been to acquire the data in four windows. The se were a total spectrum window and discrete potassium, uranium and thorium windows. The discrete windows were placed over the dominant potassium, uranium and thorium peaks. Stripping factors were then calculated from calibration information, such that the resulting potassium, uranium and thorium gamma radiation was free from the scattered radiation from each of the other two. The use of fixed narrow windows meant that the spectral response of the tools had to be very stable and drift free. This is not easy to achieve in practice. The new spectral logging tools used at Kvanefjeld measures the whole gamma ray spectrum into 4,000 channels and is very stable and drift free.

To use the same processing windows for the Kvanefjeld spectral data could have resulted in some very low counting statistics in the windows. Although the new spectral tools have low drift due to temperature and/or high count rates, a small error in the fixed, but narrow windows could result in large errors in calculated grades. An alternative approach was to sum the counts in all channels between the main thorium peak at 2615keV and the combined uranium and thorium peak near 600keV. This provided a sum of the gamma ray count rates in approximately 2,500 channels. This provided much better counting statistics and less error in the positioning of the window boundaries. A broad window over the thorium peak at 2615kev provided the thorium reference level for stripping from the larger uranium plus thorium window.

Using this approach we were able to accurately match the assay data for some of the test holes and provide much greater detail than possible from the assays.

#### Spectral Natural Gamma probe calibrations in Colorado

Calibration in Adelaide in 2007 had proved sufficient for the initial work in 2007 however Colorado offered a variety of better test pits including for thorium work and greater accuracy overall, enhancing our standard of ore grade extimation.

Between May 18th to 25th Consultant Geophysicist David Wilson and the Company's Technical Director visited the USA Government's facility for calibration of down-hole radiometric logging tools (probes). The facility boasts many different "calibration pits" containing a variety of zones of natural radioactive material with precisely know grades and thicknesses. The facility is arguably the premier location for calibration of spectral logging tools and ideally suited to calibrating the Company's two 38mm and one 33mm diameter probes.

The following calibration procedures were carried out:

- 1. U, Th & K grade estimation:
  - a. Uranium Grade Calibration: Several holes containing uranium (& no other naturally radioactive elements), of known but differing grades, were logged. The amount of radiation measured by the probe is directly proportional to the amount (i.e. grade) of uranium present. The amount of radiation was measured for each hole for a particular probe and then plotted on a graph against the known grades. A line of best fit can then be constructed; which can also be represented as a simple mathematical equation. By logging and measuring the amount of natural gamma radiation, in a hole containing only uranium the grade of that uranium can be estimated by that particular (calibrated) probe.

Note: The amount of radiation measured by any probe is primarily proportional to the volume of the radiation collecting crystal and to a lesser extent the probes circuitry and construction. For this reason each probe needs to be calibrated individually.

- b. Thorium Grade Calibration: Thorium is intimately associated with the Kvanefjeld multi-element mineralisation; often occurring in greater concentrations than uranium. A similar procedure was therefore applied with each probe being run down holes containing pure Th and a calibration graph (factor) constructed.
- c. Potassium Grade (factor) Calibration: Calibration logging for K was also undertaken as K (potassium) is the third of the three elements that are radioactive and naturally emit gamma rays. K emits much less radiation than U & Th.
- 2. Hole Size Factor: Water absorbs gamma radiation. The thicker the water column between the probe and that rock the more radiation is absorbed (attenuated). The rate of attenuation of radiation is directly proportional to the diameter of the hole and the same factor will apply to all probes. Therefore one of the probes was employed to log several water filled holes of different diameter; which holes had penetrated a zone of mineralisation of constant grade. The logging results allowed construction of a graph and calculation of a "Hole Size Factor".
- 3. Air factor: Drill holes generally comprise two sections. That part which is full of water (ie below the water table) and that above which comprises an air column. Air does not significantly attenuate natural gamma radiation. To calculate the Air Correction Factor water was drained from the same holes as above and relogged. The correction factor is constant ie unrelated to the size of the hole or the particular probe.
- 4. Casing factor: Steel absorbs gamma radiation; the greater the thickness of steel the greater the absorption. Casing of varying thickness were hung in a hole of constant diameter and the change in radiation measured and plotted against the thickness of the casing. Thence a casing factor calculated.
- 5. Lanthanum Correction Factor: The measuring crystal of the probe includes Lanthanum in its construction. This is slightly radioactive and being part of the crystal does add some minor but constant radiation to that measured during logging. A probe was placed within a very thick metal pipe and the radiation measured over a long period of time. This amount of radiation proved to be so small that no formal correction factor was deemed necessary.





#### **Onsite Down-hole logging**

Down-hole spectral natural gamma and deviation logging was carried out during the 2008 season using the companies Auslog logging system. Equipment comprises two winch systems with 600m and 300m of cable respectively. Each is housed in purpose built insulation lined aluminium boxes. The boxes are self contained and along with an electrical generator are transported form drill site to drill site by helicopter. A single technician operates from inside the box allowing logging in even adverse conditions.

The operator has access to 2 x 38mm diameter spectral probes, a 33mm diameter spectral probe and a 33mm diameter deviation probe.

Once a hole has reached full depth the driller washes the hole ensuring it is clean of cuttings and the water column is fresh lake water. Once the platform has been dragged clear of the collar (about half way through a rig shift) the box is slung onto site and logging commences. A spectral probe is the first tool used except where a hole is "unsafe". The hole may be unsafe for a variety of reasons including shear/alteration zones, closely spaced joints or abandoned drilling items. In this case the deviation tool would be run first.

The 38mm diameter tool is preferred except where the hole may be deemed unsafe or the hole is of small diameter. Many vof the 1950 era holes are of small diameter.

The spectral probe is run down the hole at a rapid speed (7 metres/minute "m/m") until full depth is reached. The expected drilled depth (as estimated by the drillers) is usually accurate though errors of 3m (i.e. miss labelling a 3m run somewhere in the hole) does occur. The probe is then retrieved at 0.8m/m while measuring the gamma radiation.

The deviation probe is then run down the hole and back up again. Measurements at 7m/m are taken on the way up and on the way down. The time taken to complete logging varies according to depth. Apart for the 30-60min to set up and rig down logging takes about 180min/100m depth of the hole. Logging was completed as soon as possible leading to the operator often working late into the night.

Radon gas, formed from the breakdown of Th & U bearing minerals is present throughout the areas drilled during the year. Radon being a gas can move through the rock mass and tends to accumulate in open water filled (or air filled cavities above the water table). Joints & fractures can allow radon gas to move into the open drill holes and can accumulate to levels that will affect the spectral logging measurements. For this reason spectral logging

is undertaken as soon as is practical after drilling ceases. If logging takes place after an elapse of greater than 48 hours the results are scrutinised and set aside if there are indications of radon affecting the results.

In rare cases holes were not logged due to lack of time. In other cases holes were not logged or only partially logged due being blocked by abandoned rod strings, or partial blockage of the hole (rock fragment lodged).

#### Responsibility Statement

The information in this report that relates to calculated uranium grades is based on information compiled by David Wilson BSc MSc MAusIMM from 3DExploration Ltd based in Western Australia.

- Diamond drill holes at Kvanefjeld were logged with an Auslog spectral gamma tool. The gamma tool was calibrated in Adelaide at the Department of Water, Land and Biodiversity Conservation and at the Department of Energy, Grand Junction, Colorado, USA calibration pits. The Department of Water, Land and Biodiversity Conservation calibration pits constructed under the supervision of CSIRO. The Department of Energy, Grand Junction, Colorado, USA calibration pits were constructed a various times (1969 to 1981) by supervising scientists from the Department of Energy and its predecessors. The gamma tool measures the total gamma ray flux in the drill hole. Readings are typically averaged over 7.5 centimetre intervals and the reading and depth recorded on a portable computer.
- At Kvanefjeld, there is a contribution to the gamma radiation from the decay of thorium. The thorium spectral signature is dominated by a high energy gamma radiation peak and lower energy gamma radiation resulting from the scattering of the high energy gamma rays with the surrounding rocks. This thorium spectrum is measured by the spectral tool and 'stripped' from the uranium gamma radiation spectrum. The remaining uranium spectral gamma ray readings are then converted to equivalent U3O8esp readings by using the calibration factors derived in the Adelaide calibration pits. These factors also take into account differences in hole-size and water content. The grade and calibration was calculated by David Wilson.
- The gamma radiation used to calculate the equivalent U3O8esp is predominately from the daughter products in the uranium decay chain. When a deposit is in equilibrium, the measurement of the gamma radiation from the daughter products is representative of the uranium present. It takes approximately 2.4M years for the uranium decay series to reach equilibrium. Thus, it is possible that these daughter products, such as radium, may have moved away from the uranium or not yet have achieved equilibrium if the deposit is younger than 2.4M years. In these cases the measured gamma radiation will over or under estimate the amount of uranium present. The Kvanefjeld deposit is approximately 1,000M years old and is considered to be in radiometric equilibrium. Tests conducted by the Danish Government have confirmed that the deposit is in equilibrium.
- The calculated uranium grades, of this report, are based on information compiled by David Wilson BSc MSc MAusIMM from 3D Exploration Ltd based in Western Australia.
- Mr. Wilson is a full-time employee of 3D Exploration Pty Ltd, a consultant to Greenland Minerals and Energy Limited. Mr. Wilson 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. Wilson consents to the inclusion in the report of the matters based on their information in the form and context in which it appears.



Your directors present their report on the Company and its consolidated entity for the year ended 30 June 2008.

On 2 August 2007 the Company changed its name from The Gold Company Ltd to Greenland Minerals and Energy Ltd.

#### Directors

The names of directors in office at any time during or since the end of the year are:

Simon Kenneth Cato	-	appointed on February 21 2006
Jeremy Sean Whybrow	-	appointed on February 21 2006
Miles Simon Guy	-	appointed on April 12 2006, resigned 23 March 2007
Roderick Claude McIllree	-	re-appointed on 23 March 2007
Hans Kristian Vinding Schonwandt	-	appointed on August 9 2007
Malcolm Geoffrey Mason	-	appointed on August 9 2007
Anthony Ho	-	appointed on August 9 2007
Simon Alexander Stafford Michael	-	appointed on August 9 2007

#### **Company Secretary**

The following person held the position of Company secretary at the end of the financial year:

Bruce Richard Acutt – Bruce trained and worked as an accountant with major accounting firms in the audit and resources sector. He has been associated with the mining and exploration sector for over twenty years.

#### **Principal Activities**

The principal activity of the consolidated group during the financial year was resources mineral exploration.

There were no significant changes in the nature of the consolidated group's principal activities during the financial year.

#### **Operating Results**

The net loss of the consolidated group after providing for income tax amounted to \$38,355,139.

#### Subsequent Events

For disclosure of events occurring subsequent to year end, refer to note 18 of the financial statements.

#### **Future Developments**

Disclosure of information regarding likely developments in the operations of the consolidated group in future financial periods and the expected results of those operations is likely to result in unreasonable prejudice to the consolidated group. Accordingly, this information has not been disclosed in this report.

#### **Environmental Issues**

The consolidated group operates within the resources sector and conducts its business activities with respect for the environment while continuing to meet the expectations of shareholders, customers, employees and suppliers. The consolidated group's exploration activities are currently regulated by significant environmental regulation under laws of the Commonwealth and states and territories of Australia. The consolidated group aims to ensure that the highest standard of environmental care is achieved, and that it complies with all relevant environmental legislation.

The directors are not aware of any particular or significant environmental issues, which have been raised in relation to the consolidated group's operations during the year covered by this report.

#### Dividends

In respect of the financial year ended 30 June 2008, no dividends have been paid or declared since the start of the financial year and the directors do not recommend the payment of a dividend in respect of the financial year.

#### **Review of Operations**

On 20 June 2006 the Company's shares commenced trading on ASX.

In December 2006 we were suspended from trading at our request to allow us to concentrate on due diligence and contract negotiations leading to our agreeing to enter into the Kvanefjeld project.

On 23 May 2007 we were reinstated to quotation after completing due diligence and entering into the agreements which following shareholder approval on 31 July 2007 saw us acquire our interest in the Kvanefjeld project. Specific details of the contracts are summarized in the Subsequent Events section of these accounts.

From June 2007 we commenced our exploration program in Greenland at Kvanefjeld, this exploration is still continuing as at the date of this report.

Exploration announcements have been made to the market as and when they are available on both projects during the year.

#### Significant Changes in State of Affairs

The following significant changes in the state of affairs of the Company occurred during the financial year.

- 1. The acquisition of the Kvanefjeld project as described above.
- 2. The sale of our Three Sisters project in Queensland.

#### **Financial Position**

The net assets of the consolidated group were \$111,076,416 at year end arising as a result of capital raisings and acquisition of a mineral tenement.

The consolidated group was in a strong financial position at the end of the financial year with sufficient financial resources to undertake its objectives. The consolidated group's objective is to locate new mineral discoveries that significantly upgrade the value of its projects and consider other opportunities in the resources sector.

Information on Directors         Simon Kenneth Cato         Qualifications         Experience	Executive Director B.A. Appointed a director on 21 February 2006. Mr Cato has had over 25 years capital markets experience in broking, regulatory roles and as director of listed companies. He initially was employed by the ASX in Sydney and in Perth. Over the last 17 years he has been an executive director and/or responsible executive of 3 stockbroking firms and in those roles he has been involved in many aspects of broking including management issues such as credit control and reporting to regulatory bodies in the securities industry. As a broker he has also been involved in the underwriting of a number of initial public offers and has been through the process of an initial public offer listing in a dual role of broker and director. Currently he holds a number of executive and non executive roles with listed companies in Australia
Interest in Shares & Options -	920,100 Ordinary Shares in Greenland Minerals and Energy Ltd, 800,100 options and 6.600,000 unvested unlisted options.
Special Responsibilities - Directorships held in other- listed entities	Mr Cato is an executive director of the Company. Mr Cato is a director of Bentley International Limited, Convergent Minerals Limited, Scarborough Equities Limited and Queste Communications Ltd. Mr Cato is a Chairman of Convergent Minerals Limited (since 25 July 2006) and Advanced Share Begistry (since 22 August 2007)
Ieremy Sean Whybrow -	Exploration Director
Qualifications -	B.Sc. (Mineral Exploration and Mining Geology), G.Dip(Minerals Economics), M.Aus I.M.M.
Experience -	Mr Whybrow has had over 12 years experience in the mining industry both domestically and internationally. Mr Whybrow has worked for companies such as Sons of Gwalia Ltd, PacMin Ltd, Teck Australia Ltd, Mount Edon Gold Mines Ltd and Croesus Mining NL. His experience has been mainly in the operational environment and includes significant exposure to exploration and mining operations, project evaluation and feasibility studies.
	Previously, Mr Whybrow has worked internationally in China, Africa and the Philippines as well as numerous localities in Australia.
Interest in Shares & Options -	750,100 Ordinary Shares of Greenland Minerals and Energy Ltd, 710,100 listed options and 6,600,000 unvested unlisted options
Directorships held in other - entities	Mr Whybrow is also an executive director of Convergent Minerals Limited.

Hans Kristian Vinding Schonwandt Qualifications Experience	-	Executive Chairman Nil Dr Schønwandt has been involved in mineral exploration and
		geological mapping in Greenland since 1963. He has contributed to the mining society's attention to Greenland's mineral potential through numerous international publications and presentations at mining conferences. As head of the Department of Economic Geology he streamlined the Geological Survey's service to the mining industry by a number of initiatives including a mineral database, core library, and a quick presentation of survey data through the "Open file Report" and an archive for the mining industries assessment reports. He was technical adviser to the committee which recommended a modernisation of the Mineral Resource Act for Greenland in 1990, a modernisation which became the starting point of an increased mineral exploration activity in Greenland. As associate professor Dr Schønwandt consulted for various mining companies in Greenland and elsewhere. He was a permanent consultant for the Nordic Mining Company Ltd on activities in Greenland and was also permanent consultant for Norsk Hydro Ltd's Prospecting Department in Oslo, Norway where he was deeply involved in the discovery and development of porphyry molybdnium deposits in the Oslo Rift. As deputy minister he was responsible for establishing the Bureau of Minerals and Petroleum (BMP) in Nuuk, Greenland and to advise the politicians in Greenland and Denmark on all aspects concerning the raw material sector. He took the initiative and was responsible for the authority's strategy within the hydrocarbon and mineral sector which was approved by the government of Greenland and the government of Denmark in 2003 and 2004 respectively.
Interest in Shares & Options Directorships held in other entities	-	1,000,000 Ordinary Shares of Greenland Minerals and Energy Ltd. Nil
Roderick McIllree Qualifications	-	Managing Director B.Sc. (Mineral Exploration and Mining Geology), Grad Dip. (Mineral Economics) MAusIMM
Experience	-	Mr McIllree graduated from Curtin University of Technology in 1996 with a Bachelor of Science degree (Mineral Exploration and Mining Geology) and commenced a career in the mining industry where he worked for major mining companies both domestically and internationally, gaining experience in mineral exploration and in all facets of mining. Mr McIllree moved to the finance sector in 2000 and worked as an analyst and advisor for broking houses active in capital markets. Mr McIllree has experience in international capital raisings having initiated several successful mining companies with assets both domestically and overseas. He was instrumental in sourcing the Kvanefjeld Project for the Company.

Interest in Shares & Options	-	3,102,295 Ordinary Shares of Greenland Minerals and Energy Ltd, 2,112,000 listed options and 6,600,000 unlisted unvested options.
Directorships held in other entities	-	Executive director of Convergent Minerals Limited.
Simon Stafford Michael Qualifications Experience	-	Non-Executive Director Nil Mr Stafford-Michael practised as a barrister in the United Kingdom from 1982 to 2005. He developed a commercial practice, with particular emphasis on financial services, banking, tax, corporate and commercial and insurance and reinsurance. Mr Stafford-Michael had a substantial advisory practice in the United Kingdom concerning regulation and compliance issues arising under the Banking, Financial Services and Insurance (Companies) Acts and the rules and regulations of the securities markets; compliance with the Money Laundering Regulations; the conduct of fraud and money laundering investigations; and the duties and liabilities of Company directors and their professional advisers under the Companies and Insolvency Acts. His corporate clients included a substantial number of major oil and mining corporations, particularly in connection with insurance claims predicated on environmental risks
Interest in Shares & Options Directorships held in other entities	-	1,000,000 Ordinary Shares of Greenland Minerals and Energy Ltd. Nil
Tony Ho Qualifications Experience	-	Non-Executive Director B.Comm, CA, FAICD, FCIS Mr Ho is an experienced Company director having held executive directors and chief financial officer roles with a number of publicly listed companies. Tony was executive director of Arthur Yates & Co Limited, retiring from that position in April 2002. His corporate and governance experience include being chief financial officer/finance director of M.S. McLeod Holdings Limited, Galore Group Limited, the Edward H O'Brien group of companies and Volante Group Limited. Mr Ho was a past non-executive director of Brazin Limited (September 1997 to January 2007) where he was also a member of the Audit and Remuneration Committees. Prior to joining commerce, Mr Ho was a partner of Cox Johnston & Co, Chartered Accountants, which has since merged with Ernst & Young. Mr Ho holds a Bachelor of Commerce degree from the University of New South Wales and is a member of the Institute of Chartered Accountants in Australia and a fellow of both the Chartered Institute of Company Secretaries and the Institute of Company Directors.
Interest in Shares & Options	-	50,000 Ordinary Shares of Greenland Minerals and Energy Ltd.

Directorships held in other entities	-	Non-executive director of Dolomatrix International Limited where he chairs the Audit and Compliance Committee. He is also the non-executive chairman of St George Community Housing Limited, the largest community housing Company in New South Wales. Chairman of Esperance Minerals NL from September 1 2008. Director of Quality Improvements Council Limited.
Malcolm Mason	_	Technical Director
Qualifications	-	B.Sc Hons and MAus IMM
Experience	-	Mr Mason has had more than 40 years experience in the Australian and international exploration and mining industries. His experience covers gold, base metals and non-metallic minerals. Since 1995 he has specialised in uranium. As a principal he has investigated many known deposits in Australia and overseas. His depth of experience extends from acquiring projects and prospects through application or negotiation to mounting intensive and extensive exploration into evaluation programmes and completing fractibility studies
		In 1996, Mr Mason formed Acclaim Uranium NL, which successfully listed on the ASX. As Managing Director he implemented his "uranium only" strategy and acquired an extensive portfolio of Australian uranium projects. Among the projects were Millipede/Abercromby, Nowthanna and Lake Maitland calcrete deposits. In 1998, Mr Mason helped identify the Langer Heinrich deposit for Acclaim Uranium NL which then drilled and completed a feasibility study. In early 2005 he joined Redport Limited as Strategic Adviser, assisted the Company to acquire the Lake Maitland uranium deposit, and was involved in its exploration and evaluation
Interest in Shares & Options	-	600,000 Ordinary Shares of Greenland Minerals and Energy Ltd,
•		180,000 options and 3,000,000 unvested options.
Directorships held in other entities	-	Nil

#### **Remuneration Report - Audited**

This report details the nature and amount of remuneration for each director of Greenland Minerals and Energy Ltd and for the executives receiving the highest remuneration.

#### **Remuneration Policy**

The remuneration policy of Greenland Minerals and Energy Ltd has been designed to align director and executive objectives with shareholder and business objectives by providing a fixed remuneration component and offering specific long-term incentives based on key performance areas affecting the consolidated group's financial results. The board of Greenland Minerals and Energy Ltd believes the remuneration policy to be appropriate and effective in its ability to attract and retain the best executives and directors to run and manage the consolidated group, as well as create alignment of interests between directors, executives and shareholders.

The board's policy for determining the nature and amount of remuneration for board members and senior executives of the consolidated group is as follows:

All executives receive a base salary (which is based on factors such as length of service and experience) and superannuation.

The executive directors and executives receive a superannuation guarantee contribution required by the government, which is currently 9% and do not receive any other retirement benefits.

All remuneration paid to directors and executives is valued at the cost to the Company and expensed. Shares given to directors and executives are valued as the difference between the market price of those shares and the amount paid by the director or executive. Options are valued using the Black-Scholes methodology.

The board policy is to remunerate non-executive directors with a base fee and, for special exertion, at market rates for time, commitment and responsibilities. The board as a whole, fulfilling the role of the remuneration committee determines payments to the non-executive directors and reviews their remuneration annually, based on market practice, duties and accountability. The maximum aggregate amount of fees that can be paid to non-executive directors is subject to approval by shareholders at the Annual General Meeting. Fees for non-executive directors are not linked to the performance of the Company. However, to align directors' interests with shareholder interests, the directors are encouraged to hold shares in the Company.

#### **Details of Remuneration**

The remuneration for each director and each of the executive officers of the entity receiving the highest remuneration during the year was as follows:

		Short-term		Post-	
	Salary	Directors Fees	Shares/ Options	employment Superannuation	Total
2008	\$	\$	\$	\$	\$
Simon Kenneth Cato	64,052	40,000	11,385,000*	* 7,650	11,496,702
Jeremy Sean Whybrow	197,600	-	11,385,000*	<sup>*</sup> 9,450	11,592,050
Roderick Claude McIllree	199,990	-	11,385,000*	<sup>*</sup> 10,350	11,595,340
Simon Stafford-Michael	-	33,980	1,300,000	-	1,333,980
Anthony Ho	-	40,678	-	3,661	44,339
Hans Kristian Vinding					
Schonwandt	171,500	40,000	1,300,000	-	1,511,500
Malcolm Mason	157,527	40,000	-	-	197,527
Total	790,669	194,658	36,755,000	31,111	37,771,438
2007					
Simon Kenneth Cato	40,000	-	-	3,600	43,600
Jeremy Sean Whybrow	90,495	-	-	3,600	94,095
Miles Simon Guy	15,000	-	-	1,350	16,350
Roderick Claude McIllree	17,873	-	-	900	18,773
Total	163,368	_	-	9,450	172,818

\* Options subject to vesting conditions as detailed in Note 20.

Directors and Ke	y Managen	nent Personne	el – Option V	Valuation P	arameters				
30 June 2008	No	Date	Expiry	Exercise	Fair Value	Price of	Volatility	Risk Free	Value
		Granted	Date	Price \$	S	option on Grant Date	%	Interest Rate	\$
						S			
Directors									
S Cato	6,600,000	31.07.2007	30.06.2011	0.20	1.725	1.87	70	6.12	11,385,000
J Whybrow	6,600,000	31.07.2007	30.06.2011	0.20	1.725	1.87	70	6.12	11,385,000
R McIllree	6,600,000	31.07.2007	30.06.2011	0.20	1.725	1.87	70	6.12	11,385,000
M Mason	3,000,000	31.07.2007	30.06.2011	0.20	1.725	1.87			

Greenland Minerals and Energy Ltd Annual Report 2008

#### **Employment Contracts and arrangements**

Hank Schønwandt, Non Executive Chairman

- **I** Term of contract service agreement for 3 years.
- Director fee excluding superannuation for the year ended 30 June 2008 of \$40,000.
- Entitled to a living allowance and a daily rate for performing and part of their services outside the country's residence of 6,000 Danish Kroner per day.

#### Simon Stafford-Michael, Non Executive Director

- **I** Term of contract service agreement for 3 years.
- Director fee excluding superannuation for the year ended 30 June 2008 of \$30,000.
- Entitled to a living allowance and a daily rate for performing and part of their services outside the country's residence of £600 per day.

#### Roderick McIllree, Managing Director

- Term and type of contract service agreement subject to annual review.
- Base salary, inclusive of superannuation for the year ended 30 June 2008 of \$230,000 and is paid monthly in arrears.
- **I** Entitled to be reimbursed for all out of pocket expenses necessarily incurred in the performance of their duties including relating to travel, entertainment, accommodation, meals and telephone.
- **I** Either the Company or the director may terminate their engagement without cause by giving the other party three months written notice.
- The Company has issued 6,600,000 incentive options with an exercise price of 20 cents and an expiry date of 30 June 2011.
- **I** Remuneration will be reviewed every 12 months or as otherwise agreed between the parties.

#### Jeremy Whybrow, Managing Director

- **I** Term and type of contract service agreement subject to annual review.
- Base salary, inclusive of superannuation for the year ended 30 June 2008 of \$180,000 and is paid monthly in arrears.
- Entitled to be reimbursed for all out of pocket expenses necessarily incurred in the performance of their duties including relating to travel, entertainment, accommodation, meals and telephone.
- **I** Either the Company or the director may terminate their engagement without cause by giving the other party three months written notice.
- The Company has issued 6,600,000 incentive options with an exercise price of 20 cents and an expiry date of 30 June 2011.
- **D** Remuneration will be reviewed every 12 months or as otherwise agreed between the parties.

#### Simon Cato, Managing Director

- **I** Term and type of contract service agreement limited to a maximum of 80 hours per month subject to annual review.
- Base salary, inclusive of superannuation for the year ended 30 June 2008 of \$90,000 and is paid monthly in arrears.
- **I** Entitled to receive a separate directors fee of \$40,000 per annum.
- **I** Entitled to be reimbursed for all out of pocket expenses necessarily incurred in the performance of their duties including relating to travel, entertainment, accommodation, meals and telephone.
- Either the Company or the director may terminate their engagement without cause by giving the other party three months written notice.
- The Company has issued 6,600,000 incentive options with an exercise price of 20 cents and an expiry date of 30 June 2011.
- **D** Remuneration will be reviewed every 12 months or as otherwise agreed between the parties.

64

Tony Ho, Non-Executive Director

- No fixed term.
- **I** \$80,000 per annum.

#### Malcolm Mason, Technical Director

- **I** Term of contract consultancy service agreement with Missoni Investments Pty Ltd.
- Engagement is for a minimum term of 18 months within which the Company may only terminate the agreement upon limited events akin to poor performance, misconduct or incapacity.
- After the minimum term either party may terminate the agreement upon three months written notice.
- Missoni Investments Pty ltd will be paid a consultancy fee of \$1,500 per day when services are performed overseas and \$1,000 per day when services performed in Australia subject to a maximum of \$180,00 in each 12 month period.
- Missoni Investments Pty Ltd will be reimbursed for all out of pocket expenses necessarily incurred in the performance of the services including reasonable expenses relating to travel, entertainment, accommodation, meals and telephone.
- **I** Mr Mason will be paid a separate directors fee of \$40,000.
- The Company has issued 3,000,000 incentive options with an exercise price of 20 cents and an expiry date of 30 June 2011.

#### Company performance, shareholder wealth and director and executive remuneration

The remuneration policy has been tailored to align the interests of shareholders, directors and executives. To achieve this aim, the entity may issue options to the majority of directors and executives to encourage the alignment of personal and shareholder interests. The Company notes that all directors are shareholders at present and that the Company has no present intention to issue incentive shares or options to directors.

The following table shows the gross revenue and profits for the period from incorporation to 30 June 2008 for the listed entity, as well as the share price at the end of the financial year.

Remuneration Report	2008	2007
Revenue	1,334,340	228,241
Net Loss	(38,346,379)	(199,700)
Share Price at Year-end	0.66	1.76

#### Non-audit Services

The board of directors, is satisfied that the provision of non-audit services during the year is compatible with the general standard of independence for auditors imposed by the Corporations Act 2001. The directors are satisfied that the services disclosed below did not compromise the external auditor's independence for the following reasons:

- all non-audit services are reviewed and approved by the audit committee prior to commencement to ensure they do not adversely affect the integrity and objectivity of the auditor; and
- the nature of the services provided do not compromise the general principles relating to auditor independence as set out in the Institute of Chartered Accountants in Australia and CPA Australia's Professional Statement F1: Professional Independence

\$4,200 for non-audit services were paid/payable to the external auditors during the year ended 30 June 2008 for tax advice.

#### **Meetings of Directors**

During the financial year, 4 meetings of directors were held. Attendances by each director during the year were as follows:

Director	Directors Meetings		
	Number eligible to	Number	
	attend	attended	
S K Cato	4	4	
J S Whybrow	4	4	
R McIllree	4	4	
H K V Schonwandt	4	4	
M G Mason	4	4	
АНо	4	4	
S A S Michael	4	4	

#### Indemnifying Officers

During or since the end of the financial year the Company has given an indemnity or entered into an agreement to indemnify, or paid or agreed to pay insurance premium to insure the directors against liabilities for costs and expenses incurred by them in defending any legal proceedings arising out of their conduct while acting in the capacity of the director of the Company, other than conduct involving a wilful breach of duty in relation to the Company.

#### Shares

During the year ended 30 June 2008, the following ordinary shares of Greenland Minerals and Energy Ltd were issued as detailed in Note 11 to the financial report.

The total number of shares on issue was 193,008,540 (2007: 37,201,931).

The total number of shares issued during the year was 155,806,609.

#### Options

During the year ended 30 June 2008 the options of Greenland Minerals and Energy Limited were issued as detailed in Note 12(a) to the financial report.

No person entitled to exercise the option had or has any right by virtue of the option to participate in any share issue of any other body corporate.

As at the date of this report there are 169,020,902 options on issue, including the directors options.

A total of 137,222,233 were issued during the year.

#### Proceedings on Behalf of Company

No person has applied for leave of Court to bring proceedings on behalf of the Company or intervene in any proceedings to which the Company is a party for the purpose of taking responsibility on behalf of the Company for all or any part of those proceedings.

The Company was not a party to any such proceedings during the year.

#### Auditor's Independence Declaration

The auditor's independence declaration for the year ended 30 June 2008 has been received and is included in the financial report.

Signed in accordance with a resolution of the Board of Directors.

S Cato Chairman

Date: 30 September 2008

#### AUDITOR'S INDEPENDENCE DECLARATION UNDER SECTION 307C OF THE CORPORATIONS ACT 2001 TO THE DIRECTORS OF GREENLAND MINERALS AND ENERGY LTD AND CONTROLLED ENTITIES

I declare that, to the best of my knowledge and belief, during the year ended 30 June 2008 there have been:

- no contraventions of the auditor independence requirements as set out in the Corporations (i) Act 2001 in relation to the audit; and
- (ii) no contraventions of any applicable code of professional conduct in relation to the audit.

mack & LO

Mack & Co **Chartered Accountants** 2nd Floor, 35 Havelock Street West Perth WA 6005

Calor N A Calder, Partner

30 September 2008 Date:

Greenland Minerals and Energy Ltd Annual Report 2008

Note Conse		Consolidate	Par	ent
		2008 \$	2008 \$	2007 \$
Revenue	2	1,334,340	1,334,332	228,241
Directors' fees and salaries		(373,778)	(373,778)	(132,630)
Occupancy expenses		(73,981)	(73,981)	(45,981)
Share based payments		(37,162,550)	(37,162,550)	-
Expenses	3	(2,079,170)	(2,056,700)	(249,330)
Loss before income tax expense		(38,355,139)	(38,332,676)	(199,700)
Income tax expense	4			
Loss after related income tax expense	3	(38,355,139)	(38,332,676)	(199,700)
Loss attributable to minority equity interest		8,760		
Loss attributable to members of the parent entity		(38,346,379)	(38,332,676)	(38,322,676)
Basic loss per share Diluted loss per share		Cents (0.24) (0.24)	Cents (0.24) (0.24)	Cents (0.62) (0.62)

The accompanying notes form part of these financial statements.

### Balance Sheet As at 30 June 2008

	Note	Consolidate	Pare	nt
		2008	2008	2007
CURRENT AGGETS			\$	\$
Curkeni Asseis	5	22 665 063	22 658 805	2 411 202
Trade and other receivables	5	22,003,003 561 401	22,038,803	2,411,392
TOTAL CURRENT ASSETS	0	23,226,464	23,128,274	2,483,550
				, <u>,</u>
NON CURRENT ASSETS				
Trade and other receivables	6	-	35,000,000	-
Plant and equipment	7	404,522	404,522	119,425
Exploration, evaluation and development	0	97 704 020	12 272 025	0 700 011
Expenditure Einopoiol assots	8	87,704,929	15,272,055	2,728,811
TOTAL NON CURRENT ASSETS	9	88 100 / 51	88 176 557	2 8/18 236
IOTAL NON CORRENT ASSETS		00,109,431	00,170,557	2,040,230
TOTAL ASSETS		111,335,915	111,304,831	5,331,786
CUDDENT I LABILITIES				
Trade and other navables	10	259 499	248 845	152 754
TOTAL CURRENT LIABILITIES	10	259 499	248,845	152,754
			210,010	102,701
TOTAL LIABILITIES		259,499	248,845	152,754
NET ASSETS		111 076 416	111 055 986	5 179 032
NET NODETO		111,070,410	111,055,700	5,177,052
EOUITY				
Issued capital	11	114,896,075	114,896,075	5,238,229
Reserves	12	34,692,602	34,692,611	140,827
Accumulated losses		(38,546,403)	(38,532,700)	(200,024)
Minority interest		34,142		-
TOTAL EQUITY		111.076.416	111.055.986	5,179,032
		111,070,110		0,117,000

The accompanying notes form part of these financial statements.
	Issued Capital	Option Becorve	Accumulate	Total
	S Sapital	Keseive \$	u Losses \$	\$
Parent Entity				
Balance at 1 July 2006	4,050,844	-	(324)	4,050,520
Loss for year	-	-	(199,700)	(199,700)
Contributions of equity net of				
transaction costs	1,187,385	-	-	1,187,385
costs	_	140.827	-	140 827
Balance at 30 June 2007	5,238,229	140,827	(200,024)	5,179,032
Loss for year	-	-	(38,332,676)	(38,332,676)
Contributions of equity net of				
Issue of options net of transaction	109,657,846	-	-	109,657,846
	_	34,551,784	-	34,551,784
Balance at 30 June 2008	114,896,075	34,692,611	(38,532,700)	111,055,986
				<u> </u>
Issued	Option	Accumulate	Foreign	Total

	Capital	Reserve	d Losses	Currency Translation Reserve	1000
	\$	\$	\$	\$	\$
Consolidated Group					
Balance at 1 July					
2007	5,238,229	140,827	(200,024)	-	5,179,032
Loss for year	-	-	(38,346,379)		(38,346,379)
Contributions of equity net					
of transaction costs	109,657,846	-	-	-	109,657,846
Issue of options net of					
transaction costs	-	34,551,784	-	-	34,551,784
Minority Interest	-	-	34,142	-	34,142
Adjustments from					
translation of foreign					
controlled entities		-	-	(9)	(9)
Balance at 30 June	114 896 075	34 692 611	(38 512 261)	(9)	111 076 416
2000	111,070,075	51,072,011	(30,312,201)	()	111,070,410

The accompanying notes form part of these financial statements.

# Statement of Cash Flow For the year ended 30 June 2008

	Note	Consolidate d 2008	Pare	nt 2007
		\$	\$	\$
CASH FLOWS FROM OPERATING ACTIVITIES		Ψ	Ψ	Ψ
Receipts from customers		14,637	14,629	-
Payments to suppliers and employees		(2,330,955)	(2,330,951)	(284,561)
Interest received		1,023,588	1,023,588	193,979
Payments for set up of subsidiaries		(137) (24500)	(137) (24500)	-
r dymonts for set up of substatutes		(21,300)	(21,300)	
Net cash used in operating activities	14	(1,317,387)	(1,317,391)	(90,582)
CASH FLOWS FROM INVESTING ACTIVITIES				
Payments for property, plant and equipment		(366,938)	(366,938)	(133,024)
Payments for exploration and development		(10,518,724)	(10,518,724)	(2,396,944)
Payments for acquisition of subsidiary		(3,000,000)	(1,000,000)	-
Net cash used in investing activities		(13,885,662)	(11,885,662)	(2,529,968)
CASH FLOWS FROM FINANCING				
ACTIVITIES		20.015.520	20.015.520	1 2 40 9 20
Proceeds from issue of shares/options		38,915,538	38,915,538	1,340,828
Loans to related parties		(3,303,870) (101,196)	(2,101,196)	(12,017)
Loans from related parties		6,254	(2,101,190)	-
- 				
Net cash provided by in financing activities		35 456 720	33 450 466	1 328 211
		33,430,720	55,450,400	1,320,211
Net increase/(decrease) in cash held		20,253,671	20,247,413	(1,292,339)
Cash and cash equivalents at beginning of				
financial year		2,411,392	2,411,392	3,703,731
Cash and cash equivalents at end of financial	5			
year		22,665,063	22,658,805	2,411,392

The accompanying notes form part of these financial statements.

### NOTE 1: SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The financial report is a general purpose financial report that has been prepared in accordance with Australian Accounting Standards, other authoritative pronouncements of the Australian Accounting Standards Board and the Corporations Act 2001.

The financial report covers Greenland Minerals and Energy Ltd is a listed Company, trading on the Australian Securities Exchange, limited by shares, incorporated and domiciled in Australia.

The financial report of Greenland Minerals and Energy Ltd complies with Australian Accounting Standards and International Financial Reporting Standards (IFRS).

The following is a summary of the material accounting policies adopted by the Company in the preparation of the financial report. The accounting policies have been consistently applied unless otherwise stated.

### **Basis of Preparation**

The financial report has been prepared on an accruals basis and is based on historical costs and does not take into account changing money values or, except where stated, current valuations of non-current assets. Cost is based on the fair values of the considerations given in exchange for assets.

### **Accounting Policies**

### (a) Income tax

The charge for current income tax expense is based on the profit for the year adjusted for any non-assessable or disallowed items. It is calculated using tax rates that have been enacted or are substantively enacted by the balance sheet date.

Deferred tax is accounted for using the balance sheet liability method in respect of temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the financial statements. No deferred income tax will be recognised from the initial recognition of an asset or liability, excluding a business combination, where there is no effect on accounting or taxable profit or loss.

Deferred tax is calculated at the tax rates that are expected to apply to the period when the asset is realised or liability is settled. Deferred tax is credited in the income statement except where it relates to items that may be credited directly to equity, in which case the deferred tax is adjusted directly against equity.

Deferred income tax assets are recognised to the extent it is probable that future tax profits will be available against which deductible temporary differences can be utilised.

The amount of benefits brought to account or which may be realised in the future is based on the assumption that no adverse change will occur in income taxation legislation and the anticipation that the Company will derive sufficient future assessable income to enable the benefit to be realised and comply with the conditions of deductibility imposed by the law.

# (b) Impairment of assets

At each reporting date, the Company reviews the carrying values of its tangible and intangible assets to determine whether there is any indication that those assets have been impaired. If such an indication exists, the recoverable amount of the asset, being the higher of the asset's fair value less costs to sell and value in use, is compared to the asset's carrying value. Any excess of the asset's carrying value over it recoverable amount is expensed to the income statement.

Impairment testing is performed annually for goodwill and intangible assets with indefinite lives.

Where it is not possible to estimate the recoverable amount of an individual asset, the Company estimates the recoverable amount of the cash-generating unit to which the asset belongs.

# (c) Revenue

Interest revenue is recognised on a proportional basis taking into account the interest rates applicable to the financial assets.

All revenue is stated net of the amount of goods and services tax (GST).

# (d) Trade and other receivables

Collectibility of receivables is reviewed on an ongoing basis. Debts which are known to be uncollectible are written off. A provision for doubtful debts is raised when some doubt as to collection exits.

# (e) Trade and other payables

These amounts represent liabilities for goods and services provided to the entity prior to the end of the financial period and which are unpaid. The amounts are unsecured and are usually paid within 30 days of recognition.

# (f) Cash and cash equivalents

Cash and cash equivalents include cash on hand, deposits held at call with financial institutions and other highly liquid investments with original maturities of three months or less and bank overdrafts. Bank overdrafts are shown within short term borrowings in current liabilities on the balance sheet.

# (g) Financial instruments

The entity classifies its investments in the following categories: financial assets at fair value through profit or loss, loans and receivables, and available-for-sale financial assets. The classification depends on the purpose for which the investments were acquired. Management determines the classification of its investments at initial recognition and re-evaluates this designation at each reporting date.

All regular way purchases and sales of financial assets are recognised on the trade date i.e. the date that the Company commits to purchase the asset. Regular way purchases or sales are purchases or sales of financial assets under contracts that require delivery of the assets within the period established generally by regulation or convention in the marketplace.

- (i) Financial assets at fair value through profit or loss Financial assets classified as held for trading are included in the category 'Financial assets at fair value through profit or loss'. Financial assets are classified as held for trading if they are acquired for the purpose of selling in the near term. Derivatives are also classified as held for trading unless they are designated as effective hedging instruments. Gains or losses on investments held for trading are recognised in profit or loss.
- (ii) Held-to-maturity investments

Non-derivative financial assets with fixed or determinable payments and fixed maturity are classified as held-to-maturity when the Company has the positive intention and ability to hold to maturity. Investments intended to be held for an undefined period are not included in this classification. Investments that are intended to be held-to-maturity, such as bonds, are subsequently measured at amortised cost. This cost is computed as the amount initially recognised minus principal repayments, plus or minus the cumulative amortisation using the effective interest method of any difference between the initially recognised amount and the maturity amount. This calculation includes all fees and points paid or received between parties to the contract that are an integral part of the effective interest rate, transaction costs and all other premiums and discounts. For investments carried at amortised cost, gains and losses are recognised in profit or loss when the investments are derecognised or impaired, as well as through the amortisation process.

(iii) Loans and receivables

Loans and receivables are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market. Such assets are carried at amortised cost using the effective interest method. Gains and losses are recognised in profit or loss when the loans and receivables are derecognised or impaired, as well as through the amortisation process.

(iv) Available-for-sale investments

Available-for-sale investments are those non-derivative financial assets that are designated as available-for-sale or are not classified as any of the three preceding categories. After initial recognition available-for sale investments are measured at fair value with gains or losses being recognised as a separate component of equity until the investment is derecognised or until the investment is determined to be impaired, at which time the cumulative gain or loss previously reported in equity is recognised in profit or loss.

The fair value of investments that are actively traded in organised financial markets is determined by reference to quoted market bid prices at the close of business on the balance sheet date. For investments with no active market, fair value is determined using valuation techniques. Such techniques include using recent arm's length market transactions; reference to the current market value of another instrument that is substantially the same; discounted cash flow analysis and option pricing models

### (h) Goods and services tax (GST)

Revenues, expenses and assets are recognised net of the amount of GST, except where the amount of GST incurred is not recoverable from the Australian Tax Office. In these circumstances the GST is recognised as part of the cost of acquisition of the asset or as part of an item of the expense. Receivables and payables in the balance sheet are shown inclusive of GST.

Cash flows are presented in the cash flow statement on a gross basis, except for the GST component of investing and financing activities, which are disclosed as operating cash flows.

# (i) Capitalisation of exploration and evaluation expenditure

Exploration, evaluation and development expenditure incurred is accumulated in respect of each identifiable area of interest. These costs are only carried forward to the extent that they are expected to be recouped through the successful development of the area or where activities in the area have not yet reached a stage that permits reasonable assessment of the existence of economically recoverable reserves.

Accumulated costs in relation to an abandoned area are written off to the income statement in the year in which the decision to abandon the area is made.

When production commences, the accumulated costs for the relevant area of interest will be amortised over the life of the area according to the rate of depletion of the economically recoverable reserves.

A regular review is undertaken of each area of interest to determine the appropriateness of continuing to carry forward costs in relation to that area of interest.

Costs of site restoration are provided over the life of the facility from when exploration commences and are included in the costs of that stage. Site restoration costs include the dismantling and removal of mining plant, equipment and building structures, waste removal, and rehabilitation of the site in accordance with clauses of the mining or petroleum permits. Such costs have been determined using estimates of future costs, current legal requirements and technology on an undiscounted basis.

Any changes in the estimates for the costs are accounted on a prospective basis. In determining the costs of site restoration, there is uncertainty regarding the nature and extent of the restoration due to community expectations and future legislation. Accordingly the costs have been determined on the basis that the restoration will be completed within 1 year of abandoning the site.

### (j) Acquisition of assets

The purchase method of accounting is used for all acquisitions of assets regardless of whether equity instruments or other assets are acquired. Cost is determined as the fair value of the assets given up, shares issued or liabilities undertaken at the date of acquisition plus incidental costs directly attributable to the acquisition.

#### (k) Share based payments

The fair value of options and shares of the Company is recognised as an expense in the financial statements in relation to the granting of these options.

#### (1) Earnings per share

#### *(i)* Basic earnings per share

Basic earnings per share is determined by dividing the net profit after income tax attributable to members of the Company, excluding any costs of servicing equity other than ordinary shares, by the weighted average number of ordinary shares outstanding during the financial period, adjusted for bonus elements in ordinary shares issued during the period.

#### (ii) Diluted earnings per share

Diluted earnings per share adjusts the figures used in the determination of basic earnings per share to take into account the after income tax effect of interest and other financing costs associated with dilutive potential ordinary shares and the weighted average number of shares assumed to have been issued for no consideration in relation to dilutive potential ordinary shares.

#### (m) Issued capital

Ordinary shares are classified as equity.

Incremental costs directly attributable to the issue of new shares or options are shown in equity as a deduction, net of tax, from the proceeds. Incremental costs directly attributable to the issue of new shares or options, or for the acquisition of a business, are included in the cost of the acquisition as part of the purchase consideration.

### (n) Critical accounting estimates and judgement

The directors evaluate estimates and judgements incorporated into the financial report based on historical knowledge and best available current information. Estimates assume a reasonable expectation of future events and are based on current trends and economic data, obtained both externally and within the Company.

#### *Key Estimates – Impairment*

The Company assesses impairment at each reporting date by evaluating conditions specific to the Company that may lead to impairment of assets. Where an impairment trigger exists, the recoverable amount of the asset is determined. Value-in-use calculations performed in assessing recoverable amounts incorporate a number of key estimates.

### (o) Plant and Equipment

Each class of plant and equipment is carried at cost or fair value less, where applicable, any accumulated depreciation and impairment losses.

Cost includes expenditure that is directly attributable to the acquisition of the item. In the event that settlement of all or part of the purchase consideration is deferred, cost is determined by discounting the amounts payable in the future to their present value as at the date of acquisition.

The carrying amount of plant and equipment is reviewed annually by directors to ensure it is not in excess of the recoverable amount from these assets. The recoverable amount is assessed on the basis of the expected net cash flows that will be received from the assets employment and subsequent disposal. The expected net cash flows have been discounted to their present values in determining recoverable amounts.

Subsequent costs are included in the asset's carrying amount or recognised as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the item will flow to the Company and the cost of the item can be measured reliably. All other repairs and maintenance are charged to the Income Statement during the financial period in which they are incurred.

#### Depreciation

The depreciable amount of all fixed assets is depreciated over their useful lives to the Company commencing from the time the asset is held ready for use.

The depreciation rates used for each class of depreciable assets are:

Class of Fixed Asset	Depreciation Rate
Plant and equipment	33%
Office furniture and equipment	10%

The estimated useful lives, residual values and depreciation method is reviewed at the end of each annual reporting period.

An asset's carrying amount is written down immediately to its recoverable amount if the asset's carrying amount is greater than its estimated recoverable amount.

Gains and losses on disposals are determined by comparing proceeds with the carrying amount. These gains and losses are included in the Income Statement. When revalued assets are sold, amounts included in the revaluation reserve relating to that asset are transferred to retained earnings.

### (p) Comparatives

There is no comparatives for the consolidated amounts at 30 June 2007 as the Company had not made the acquisitions to form a consolidated group.

	Consolidate d	Parent	
	2008 \$	2008 \$	2007 \$
NOTE 2: OTHER REVENUE			
Revenue from outside operating activities			
- Interest	1,324,932	1,324,932	201,641
- rental income	9,400	9,400	26,600
- other	8	-	-
Revenue	1,334,340	1,334,332	228,241

	Consolidate	Parent		
	2008 \$	2008 \$	2007 \$	
<b>NOTE 3: LOSSES</b> Loss from operations have been arrived after charging the following items:	Ŧ	•	Ŧ	
- depreciation of property, plant and equipment	81,841	81,841	13,599	
Other Significant Expenses Employee benefits expense				
- salaries		138,525	17,300	
- superannuation		27,450	0	
Total employee benefits expense	-	165,975	17,300	
Finance Costs				
-external		4,084	1,862	
-related parties		-	-	
-other related parties			-	
Total finance costs		4,084	1,862	
Travel and accommodation		893,394	-	
Corporate Advisory Fees		185,000	0	
Marketing & PR Consultancy		171,698	0	
Admin Expense		268,156	112,982	
	Consolidate	Parei	nt	
	d 2008	2008	2007	
	\$	\$	\$	
NOTE 4: INCOME TAX	+	4	Ŷ	
(a) Tax expense				
Current tax	-	-	-	
Deferred tax			_	
			-	
(b) The prima facie income tax expense on pre-tax accounting profit from operations reconciles to the income tax expense in the financial statements as follows:				
Prima facie tax benefit on loss at 30% (2007: 30%)	(11,506,542)	(11,499,803)	(59,910)	
Add:				
1ax effect of:	160 415	160 415	5 055	
- other non-allowable items	109,413 11 149 745	109,413	5,255	
- share based payments	11,148,703	11,148,703	- 2 210	
- provisions and accidats	- 3 455 080	- 3 448 341	2,319	
- revenue rosses not recognised	14 773 260	14 766 521	898 447	

	Consolidate d	Parer	ıt
	2008 \$	2008 \$	2007 \$
NOTE 4: INCOME TAX(cont)			
Less:			
Tax effect of:			
expenditure	3,155,617	3,155,617	818.643
- provisions and accruals	5,400	5,400	-
- capital raising costs	17,596	17,596	17,596
- accrued income	88,105	88,105	2,298
	3,266,718	3,266,718	838,537
Income tax expense	<u>-</u>	<u> </u>	
The applicable average weighted tax rates are as follows:	0%	0%	0%
<ul> <li>(c) The following deferred tax balances have not been recognised: Deferred tax assets: At 30%</li> </ul>			
Carry forward revenue losses	4,358,595	4,351,856	903,515
Capital raising costs	35,948	35,948	53,544
Provisions and accruals		-	5,400
	4,394,543	4,387,804	962,459

The tax benefits of the above deferred tax assets will only be obtained if:

- (a) The Company derives future assessable income of a nature and of an amount sufficient to enable the benefits to be utilised;
- (b) The Company continues to comply with the conditions for deductibility imposed by law; and
- (c) No change in income tax legislation adversely affect the Company in utilising the benefits.

				Consolidated	Pare	nt
				2008 \$	2008 \$	2007 \$
Deferred tax li	abilities:					
At 30%						
Exploration,	evaluation	and	development	3,974,261	3,974,261	
expenditure						818,643
Accrued incom	ne			90,403	90,403	2,298
				4,064,664	4,064,664	820,941

The above deferred tax liabilities have not been recognised as they have given rise to the carry forward revenue losses for which the deferred tax asset has not been recognised.

	Consolidate d	Parent	
	2008 \$	2008 \$	2007 \$
NOTE 5: CASH AND CASH EOUIVALENTS			
Cash on hand	1,000	1,000	-
Cash at bank	664,063	657,805	1,178,535
Deposits maturing within 4 months	21,000,000	21,000,000	1,232,857
Monies held in trust	1,000,000	1,000,000	-
	22,665,063	22,658,805	2,411,392

Cash at bank is earning interest on floating interest rates between zero and 6.45%. Deposits are earning interest at rates ranging from 8.03% to 8.10%.

	Consolidate d	Parei	nt
	2008 \$	2008 \$	2007 \$
NOTE 6: TRADE AND OTHER RECEIVABLES			
Current			
Other debtors (i)	142,247	50,315	34,785
GST recoverable (i)	66,614	66,614	37,373
Loan to related party	51,196	51,196	-
Accrued interest	301,344	301,344	-
Total Current Trade & Other Receivables	561,401	469,469	72,158
Non current			
Loan to subsidiary (ii)		35,000,000	-

Terms and conditions relating to the above financial instruments:

(i) Trade and sundry debtors are non-interest bearing unsecured and generally on 30 day terms.

(ii) Provided as an interest free and unsecured loan. Refer to note 9 for further details.

	Consolidate d	Parent	
	2008 \$	2008 \$	2007 \$
NOTE 7: PLANT AND EQUIPMENT			
At cost	499,962	499,962	133,024
Accumulated depreciation	(95,440)	(95,440)	(13,599)
-	404,522	404,522	119,425

### (a) Movements in carrying amounts

Movements in the carrying amounts for each class of plant and equipment between the beginning and the end of the period.

	Consolidate	Pare	nt
	2008 \$	2008 \$	2007 \$
Plant and equipment			
Carrying amount at 1 July 2007	119,425	119,425	-
Acquisitions	366,938	366,938	133,024
Depreciation expense	(81,841)	(81,841)	(13,599)
Carrying amount at 30 June 2008	404,522	404,522	119,425
	Consolidate	Pare	nt
	d 2008 \$	2008 \$	2007 \$
NOTE 8: EXPLORATION, EVALUATION AND DEVELOPMENT EXPENDITURE			
Costs carried forward in respect of interests in:	2,728,811	2,728,811	331,867
Exploration and/or evaluation phase in the current year	10,476,118	10,543,224	2,396,944

Exploration and/or evaluation phase in the current year Acquisition of 100% of Chahood Capital Limited (i) Acquisition of 61% interest in the Kvanefjeld Joint Venture (ii)

(i) and (ii) Refer to Note 9 for details of acquisitions.

Please note that the sale of the Three Sisters Project was completed during September 2008, no adjustment has been made for this sale.

39,500,000

35,000,000 87,704,929

13,272,035

2,728,811

### **NOTE 9: FINANCIAL ASSETS**

(a) On 31 July 2007, Greenland Minerals and Energy Limited acquired 100% of Chahood Capital Limited.

(i) Purchase consideration

	Number of shares	Fair Value per security	Fair value
Consideration		\$	\$
Cash			1,000,000
Shares issued	35,000,000	1.10	38,500,000
Total costs of consideration			39,500,000
(ii) Assets and liabilities acquired			
		Acquiree's carrying amount \$	Fair value \$
Cash		2	2
Net assets		2	2

(b) On 31 July 2007, Greenland Minerals and Energy Limited acquired a 61% interest in the Kvanefjeld Joint Venture .

(i) Purchase consideration

	Number	Fair Value per security	Fair value
Consideration		\$	\$
Cash			2,000,000
Shares issued	30,000,000	1.10	33,000,000
Total costs of combination			35,000,000

	Consolidate d	Parent		
	2008 \$	2008 \$	2007 \$	
<b>NOTE 10: TRADE AND OTHER PAYABLES</b> Trade and other payables	253,245	248,845	152,754	
Amounts payable to related parties	6,254			
	259,499	248,845	152,754	

Terms and conditions relating to the above financial instruments.

(i)

- Trade creditors are non-interest bearing and generally on 60 day terms. Other creditors are non-interest bearing and have no fixed repayment terms. (ii)
- (iii) Amounts relate to directors fees owing at year end and are payable within 30 days.

	Consolidate d	Parent		
	2008 \$	2008 \$	2007 \$	
NOTE 11: ISSUED CAPITAL				
Balance brought forward:	5,238,229	5,238,229	4,330,060	
Issues of ordinary shares during the year	38,225,001	38,225,001	1,189,835	
Ordinary shares issued to corporate advisors for				
achievement of milestones	104,800,000	104,800,000	-	
Ordinary shares issued to directors	2,600,000	2,600,000	-	
Ordinary share issued as a result of exercise of options	493,321	493,321	-	
Less costs of issue	(36,480,476)	(36,480,476)	(281,665)	
	114,876,075	114,876,075	5,238,229	

NOTE II: ISSU	ED CAPITAL (CONT)			
Novements in is	Detail	Icono	Number	¢
Date	Detail	Issue	Number	Φ
		price		
21/02/2006	Issued on incorporation	0.20	300	60
10/04/2006	Seed capital	0.01	11,000,000	110,000
14/06/2006	Ordinary shares for cash	0.20	20,000,000	4,000,000
14/06/2006	Ordinary shares for exploration		, ,	, ,
	permit	0.20	1,100,000	220,000
25/10/2006	Options converted	0.20	22,900	4,580
25/10/2006	Transfer of options from option		,	,
	premium reserve	0.005	-	115
28/06/2007	Placement	0.25	3,200,000	800,000
29/06/2007	Options converted	0.20	1,878,731	375,746
29/06/2007	Transfer of options from option			
	premium reserve	0.005	-	9,394
30/06/2007	Balance		37,201,931	5,519,895
	Less: capital raising costs			(281,666)
	1 0			5.238.229
06/09/2007	Issue of share to corporate advise	rs		
	securities issued on achievement of	of		
	vesting hurdles	1.02	15,000,000	15,300,000
08/08/2007	Exercise of options	0.20	99,141	19,828
08/08/2007	Placement	1.00	8,800,000	8,800,000
16/08/2007	Issue of shares	0.25	30,000,000	7,500,000
17/08/2007	Issue of shares to vendors	1.10	65,000,000	71,500,000
16/10/2007	Exercise of options	0.20	830,057	166,011
	Issue of shares to Corporate			
	Adviser securities issued on			
30/10/2007	achievement of milestones.	1.20	15,000,000	18,000,000
17/12/2007	Exercise of options	0.20	1,224,047	244,809
17/12/2007	Placement	1.25	5,180,000	6,475,000
17/12/2007	Issue of shares to directors	1.30	2,000,000	2,600,000
18/12/2007	Placement	1.25	12,320,000	15,400,000
20/12/2007	Placement	1.25	40,001	50,001
15/02/2008	Options Exercised	0.20	67,651	13,530
11/04/2008	Options Exercised	0.20	80,900	16,180
15/05/2008	Options Exercised	0.20	50,000	10,000
30/06/2008	Options Exercised	0.20	114,812	22,962
	Balance		193,008,540	151,356,550
	Less: capital raising costs			(36,480,476)
				114,876,075

# NOTE 11. ISSUED CADITAL (cont)

### **Capital Management**

Management controls the capital of the Company in order to maintain a good debt to equity ratio, provide the shareholders with adequate returns and ensure that the Company can fund its operations and continue as a going concern.

### NOTE 11: ISSUED CAPITAL (cont)

There are no externally imposed capital requirements.

Management effectively manages the Company's capital by assessing the Company's financial risk and adjusting its capital structure in response to changes in these risks and in the market. These responses include the management of debt levels and share issues.

There have been no changes in the strategy adopted by management to control the capital of the Company since the prior year.

	Consolidate d	Parent		
	2008 \$	2008 \$	2007 \$	
NOTE 13: RESERVES				
a) Option premium reserve				
Balance at beginning of financial period	140,827	140,827	160,502	
Issue of options to corporate advisors	82,500,000	82,500,000	-	
Issue of options to directors	34,155,000	34,155,000	-	
Issue of options to consultants	407,550	407,550	-	
Options converted	(10,766)	(10,766)	(9,509)	
Cost of raising options to corporate advisors	(82,500,000)	(82,500,000)	(10,166)	
Balance at end of financial period	34,692,611	34,692,611	140,827	

The option premium reserve records items recognised as expenses on valuation of employee share options.

#### NOTE 12: RESERVES (cont)

Movements d	uring the period:			
Date	Detail	Issue Price	Number	\$
13/07/2006	Issue pursuant to prospectus	0.005	32,100,300	160.502
25/10/2006	Options converted		(22,900)	(115)
28/06/2007	Placement		1.600.000	-
29/06/2007	Options converted		(1,878,731)	(9,394)
30/06/2007	Balance	-	31,798,669	150,993
06/09/2007	Issue of options to corporate advisers securities issued on achievement of	-		,
	vesting hurdles.	0.20	75,000,000	56,250,000
08/08/2007	Exercise of options	0.20	(99,141)	(496)
16/08/2007	Issue of 15mil free attaching options			
	(with the issue of 30mil shares)	0.20	15,000,000	-
23/08/2007	Issue of unlisted options to directors	0.20	19,800,000	34,155,000
	Issue of unlisted options to directors	0.20	3,000,000	
16/10/2007	Exercise of options	0.20	(830,057)	(4,150)
30/10/2007	Issue of options to Corporate Adviser securities issued on achievement of			
	milestones.	0.20	25,000,000	26,250,000
28/11/2007	Issue of options to Grant Wilson	1.50	200,000	148,200
28/11/2007	Issue of options to Martin Helean	1.50	200,000	148,200
28/11/2007	Issue of options to Bill Peters	1.50	150,000	111,150
17/12/2007	Exercise of options	0.20	(1,224,047)	(6,120)
20/12/2007	Issue of options	1.50	1	-
15/02/2008	Options Excercised	0.20	(67,651)	-
12/03/2008	Options issued as part of capital raising			
	fee exercised at \$1.50	-	1,338,840	-
11/04/2008	Options exercised	0.20	(80,900)	-
15/05/2008 30/06/2008	Options Exercised	0.20	(50,000)	-
	Options Exercised	0.20	(114,812)	-
	Balance	_	169,020,902	117,202,777
	Less: option issue costs			(82,510,166)
			-	34,692,611
		Consolidate d	Parer	nt
		2008	2008	2007
		\$	\$	\$
b) Foreign cur	rrency translation reserve			

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(9)

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Balance at beginning of financial period Adjustments from translation of foreign controlled entities (9)

Balance at end of financial period

-

#### NOTE 12: RESERVES (cont) Option premium reserve

The option premium reserve is used to accumulate proceeds received from the issuing of options and accumulate the value of options issued in consideration for services rendered and to record the fair value of options issued but not exercised. The reserve is transferred to accumulated losses upon expiry or recognised as share capital if exercised.

# Foreign currency translation reserve

The foreign currency translation reserve is used to record currency differences arising from the translation of the financial statements of the foreign subsidiary.

# **NOTE 13: DIVIDENDS**

No dividends have been proposed or paid during the year.

	Consolidate d 2008	idate Parent	
		2008 \$	2007 \$
NOTE 14: NOTE TO STATEMENT OF	•	т	Ŧ
CASH FLOWS			
Reconciliation of cash flows from operations with loss			
after income tax.			
Loss after income tax	(38,355,139)	(38,332,676)	(199,700)
Non cash items			
Depreciation	81,841	81,841	13,599
Share based payments	37,162,550	37,162,550	-
Changes in operating assets and liabilities			
Decrease/(increase) in trade and other receivables	(284,304)	(296,117)	(22,141)
Decrease/(increase) in other assets	(24,500)	(24,500)	-
Increase/(decrease) in trade and other payables	106,745	96,091	117,660
Prior year correction to option premium reserve	(4,580)	(4,580)	-
Net cash from/(used in) operating activities	(1,317,387)	(1,317,391)	(90,582)

# NOTE 15: FINANCIAL RISK MANAGEMENT AND POLICIES

The Company's principal financial instruments comprise cash and short term deposits. The main purpose of the financial instruments is to earn the maximum amount of interest at a low risk to the economic entity. The Company also has other financial instruments such as trade debtors and creditors which arise directly from its operations. For the period under review, it has been the Company's policy not to trade in financial instruments

### NOTE 15: FINANCIAL RISK MANAGEMENT AND POLICIES (cont)

The main risks arising from the Company's financial instruments are interest rate risk and credit risk. The board reviews and agrees policies for managing each of these risks and they are summarised below:

#### (a) Interest Rate Risk

The Company is exposed to movements in market interest rates on short term deposits. The policy is to monitor the interest rate yield curve out to 120 days to ensure a balance is maintained between the liquidity of cash assets and the interest rate return. The Company does not have short or long term debt, and therefore this risk is minimal.

(b) Credit Risk

Credit risk refers to the risk that a counter party will default on its contractual obligations resulting in financial loss to the Company. The Company has adopted the policy of only dealing with credit worthy counterparties and obtaining sufficient collateral or other security where appropriate, as a means of mitigating the risk of financial loss from defaults.

The Company does not have any significant credit risk exposure to any single counterparty or any Company of counterparties having similar characteristics. The carrying amount of financial assets recorded in the financial statements, net of any provisions for losses, represents the Company's maximum exposure to credit risk.

#### (c) Liquidity Risk

The Company manages liquidity risk by monitoring forecast cash flows.

### NOTE 16: FINANCIAL INSTRUMENTS

### (a) Interest rate risk exposures

The Company's exposure to interest rate risk, which is the risk that a financial instruments value will fluctuate as a result of changes in market interest rates and the effective weighted average interest rates on those financial assets and financial liabilities in as follows:

	Average Effective	Floating Interest Rate	Non-Interest Bearing	Fixed Interest Maturing	Total
	Interest		e	Less Than 1	
	Rate			Year	
Consolidated	%	\$	\$	\$	\$
30 June 2008					
FINANCIAL ASSETS					
Cash and cash equivalents	5.88	22,665,063	-		22,665,063
Trade and other receivables	-	-	561,401	-	561,401
Other assets	-		-		-
Total financial assets		22,665,063	561,401		23,226,464
FINANCIAL LIABILITIES					
Trade and other payables	-		259,499	-	259,499
Total financial liabilities			259,499	-	259,499

# NOTE 16: FINANCIAL INSTRUMENTS (cont)

	Average Effective Interest	Floating Interest Rate	Non-Interest Bearing	Fixed Interest Maturing Less Than 1	Total
Depent	Rate	¢	¢	Y ear	¢
Parent	%	Ф	Ф	Φ	Φ
FINANCIAI ASSETS					
Cash and cash equivalents	6.40	22.658.805	-	-	22.658.805
Trade and other receivables	0110		409,469	-	469,469
Other assets		-	35,000,000	-	35,000,000
Total financial assets		22,658,805	35,469,469	-	58,128,274
FINANCIAL LIABILITIES					
Trade and other payables			248,845	-	248,845
Total financial liabilities			248,845	-	248,845
30 June 2007					
FINANCIAL ASSETS					
Cash and cash equivalents	5.96	2,411,392	-	_	2,411,392
Trade and other receivables		-	72,158	-	72,158
Other assets		-	-	-	-
Total financial assets		2,411,392	72,158	-	2,483,550
FINANCIAL LIABILITIES			1 5 2 5 5 4		150 754
Trade and other payables			152,754	-	152,754
I otal financial habilities		-	152,754	-	152,754
		С	onsolidate	Pare	nt
			a 2008	2009	2007
			2008 \$	2008 \$	2007 \$
Trade and sundry payables are	e expected to	o he naid as	φ	ዋ	φ
follows:	e expected to	o oo pulo us			
Less than 6 months			259,499	248,845	152,754

### Less than 6 months

#### **Financial** assets (b)

Trade receivables from other entities are carried at nominal amounts less any provision for doubtful debts.

Other receivables are carried at nominal amounts due. Interest is taken up as income on an accruals basis.

#### (c) **Financial liabilities**

Liabilities are recognised for amounts to be paid in the future for goods and services received, whether or not billed to the Company.

# NOTE 16: FINANCIAL INSTRUMENTS (cont)

#### (d) Equity

Ordinary share capital is recognised at the fair value of the consideration received by the Company.

### (e) Credit risk exposures

The credit risk on financial assets of the Company has been recognised on the balance sheet and is generally the carrying amount net of any provisions for doubtful debts.

The Company does not have any material credit risk exposure to any single debtor or group of debtors under financial instruments entered into.

#### (f) Net fair value of financial assets and liabilities

The carrying amount of financial assets and liabilities approximates fair value because of their short-term maturity.

#### (g) Sensitivity analysis

#### Interest Rate Risk, Foreign Currency Risk and Price Risk

The Company has performed sensitivity analysis relating to its exposure to interest rate risk at balance date. This sensitivity analysis demonstrates the effect on the current year results and equity post tax which could result from a change in these risks.

#### Interest Rate Sensitivity Analysis

At 30 June 2008, the effect on profit and equity as a result of changes in the interest rate, with all other variables remaining constant would be as follows:

	Consolidate	Parent	
	d 2008 \$	2008 \$	2007 \$
Change in profit			
Increase in interest rate by 1% (100 basis points)	226,650	226,650	24,114
Decrease in interest rate by 1% (100 basis points)	(226,650)	(226,650)	(24,114)
Change in equity			
Increase in interest rate by 1% (100 basis points)	226,650	226,650	24,114
Decrease in interest rate by 1% (100 basis points)	(226,650)	(226,650)	(24,114)

#### NOTE 17: SEGMENT INFORMATION

The Company operates in one geographical segment, being Greenland, and in one business segment being exploration for minerals.

### NOTE 18: EVENTS SUBSEQUENT TO BALANCE DATE

On the 8 September 2008 the Company received full settlement of the outstanding amounts due for the sale of its Three Sisters Project in Queensland.

# NOTE 19: COMMITMENTS FOR EXPENDITURE

In order to maintain current rights of tenure to exploration licences, the Company is required to perform minimum exploration work to meet the minimum expenditure requirements.

If the Company decides to relinquish certain licences and/or does not meet these obligations, assets recognized in the balance sheet may require review to determine the appropriateness of the carrying values. The sale, transfer or farm-out of exploration rights to third parties will reduce or extinguish these obligations.

	Consolidate d	Parent		
	2008 \$	2008 \$	2007 \$	
Not longer than 1 year Longer than 1 year, but not longer than 5 years Longer than 5 years	200,000 800,000	200,000 800,000	63,885 157,721	
	1,000,000	1,000,000	221,606	

# NOTE 20: RELATED PARTIES

Key management personnel

On the 23 August 2007 the composition of the board became:

Dr. Hans Kristian (Hank) Schønwandt **Chairman** Mr Roderick McIllree **Managing director** Mr Simon Cato **Executive director** Mr Jeremy Whybrow **Exploration director** 

Mr Malcolm Mason Technical director

Mr Tony Ho Non-Executive director

Mr Simon Stafford-Michael Non-Executive director

# Director Incentive Options

At the 31<sup>st</sup> July 2007 General Meeting incentive Options were approved to be issued to Simon Cato, Roderick McIllree and Jeremy Whybrow as existing Directors and to Malcolm Mason as a proposed Director.

The Options to be issued to each of Messrs Cato, McIllree and Whybrow were issued on the 23 August 2007 but will be constituted by three tranches. Details of the vesting hurdles and the exercise price of the three tranches for each of Messrs Cato, McIllree and Whybrow are as follows:

Tranche	Number of Options	Vesting Hurdle*	Exercise Price
$1^{st}$	2,200,000	The volume weighted average price of the Shares is	20 cents
		50 cents or more for 20 consecutive trading days	
$2^{nd}$	2,200,000	The volume weighted average price of the Shares is	20 cents
		\$1.00 or more for 20 consecutive trading days	
$3^{rd}$	2,200,000	The volume weighted average price of the Shares is	20 cents
		\$1.50 or more for 20 consecutive trading days	

### NOTE 20: RELATED PARTIES (cont)

Once the Share price criteria is satisfied, the Options will only vest upon delivery of subsequent written notification of vesting from the Option holder to the Company.

The Options to be issued to Malcolm Mason or his nominee were issued on the 23 August 2007 but will be constituted by two tranches. Details of the vesting hurdles and the exercise price of the two tranches are as follows:

Tranche	Number of Options	Vesting Hurdle*	Exercise Price
1 <sup>st</sup>	2,000,000	Malcolm Mason continues to serve as a Director of the Company for 12 consecutive months and makes himself available to provide technical geological services including field services upon the Kvanefjeld Project	20 cents
2 <sup>nd</sup>	1,000,000	Malcolm Mason continues to serve as a Director of the Company for 18 consecutive months and makes himself available to provide technical geological services including field services upon the Kvanefjeld Project.	20 cents

\* The vesting criteria will be waived so that the criteria is satisfied in the event a takeover or scheme of arrangement is successfully completed in relation to the Company or Malcolm Mason dies. Once the vesting criteria is satisfied, the Options will only vest upon delivery of subsequent written notification of vesting from the Option holder to the Company.

Otherwise, the terms of the Options to be issued to each of Messrs Cato, McIllree, Whybrow and Mason are as follows:

- (a) Each Option entitles the holder to one Share.
- (b) Subject to the vesting, the Options are exercisable at any time prior to 5pm Western Standard Time on 30 June 2011 (Expiry Date).
- (c) The exercise price of the Options is 20 cents per Option.
- (d) Until the Options are vested, the Options will be unlisted and will not be transferable except with the approval of the Board. Once the Options are vested, the Company will apply to have the Options listed and the Options will be freely transferable.
- (e) The Company will provide to each Options holder a notice that is to be completed when exercising the Options (Notice of Exercise). Subject to these terms, the Options may be exercised wholly or in part by completing the Notice of Exercise and delivering it together with payment to the secretary of the Company to be received any time prior to the Expiry Date. The Company will process all relevant documents received at the end of every calendar month.
- (f) Upon the exercise of an Option and receipt of all relevant documents and payment, the holder in accordance with paragraph (e) will be allotted and issued a Share ranking pari passu with the then issued Shares.

# NOTE 20: RELATED PARTIES (cont)

- (g) There will be no participating rights or entitlements inherent in the Options and the holders will not be entitled to participate in new issues of capital which may be offered to Shareholders during the currency of the Options. However, the Company will ensure that for the purposes of determining entitlements to any such issue, the record date will be at least 7 business days after the issue is announced. This will give Optionholders the opportunity (where available) to exercise their Options prior to the date for determining entitlements to participate in any such issue.
- (h) If there is a bonus issue (Bonus Issue) to Shareholders, the number of Shares over which an Option is exercisable will be increased by the number of Shares which the holder would have received if the Option had been exercised before the record date for the Bonus Issue (Bonus Shares). The Bonus Shares must be paid up by the Company out of profits or reserves (as the case may be) in the same manner as was applied in the Bonus Issue, and upon issue will rank equally in all respects with the other Shares on issue as at the date of issue of the Bonus Shares.
- (i) In the event of any reconstruction (including consolidation, sub-division, reduction or return) of the issued capital of the Company prior to the Expiry Date, all rights of an Optionholder are to be changed in a manner consistent with the Listing Rules.
- (j) In the event that the Company makes a pro rata issue of securities, the exercise price of the Options will be adjusted in accordance with the formula set out in Listing Rule 6.22.2.

# Loans to key management personnel and their related parties

There were no loans outstanding at the reporting date to key management personnel and their related parties.

# Other transactions with the Company

No director has entered into a material contract (apart from employment) with the Company since the incorporation of the Company and there were no material contracts involving directors' interests subsisting at year end.

# Director related entities

- Whybrow Consulting, a Company which Mr Jeremy Whybrow is a director was paid director fees of \$92,600. Of that total, \$70,800 was related to consultancy fees.
- Roderick Millree, a Company of which Mr Roderick Mcillree is a director was paid director fees of \$84,990 during the year. Of this amount, \$62,100 was related to consultancy fees.
- Westrip Holdings Ltd a Company of which Mr Simon Stafford Michael is a director was paid directors and consultancy fees of \$33,980 during the year. This amount is included in the remuneration report.
- Mineralhunt Services APL a Company of which Mr Hans Kristian Vinding Schonwandt is a director was paid directors and consultancy fees of \$211,500 during the year. This amount is included in the remuneration report.
- Missoni Investments Pty Ltd a Company of which Mr Malcolm Mason is a director was paid directors and consultancy fees of \$197,527 during the year. This amount is included in the remuneration report.

Ο

	Consolidate	Parent	
NOTE 21: AUDITORS' REMUNERATION	2008 \$	2008 \$	2007 \$
Amounts received or due and receivable by Mack & Co for:			
- an audit of the financial report	31,050	31,050	31,000
- taxation matters	4,200	4,200	1,850
	35,250	35,250	32,850

# NOTE 22: CRITICAL ACCOUNTING ESTIMATES & JUDGEMENTS

In preparing this Financial Report the Company has been required to make certain estimates and assumptions concerning future occurrences. There is an inherent risk that the resulting accounting estimates will not equate exactly with actual events and results.

#### a) Significant accounting judgements

In the process of applying the Company's accounting policies, management has made the following judgements, apart from those involving estimations, which have the most significant effect on the amounts recognised in the financial statements:

### Capitalisation of exploration and evaluation expenditure

The Company has capitalised significant exploration and evaluation expenditure on the basis either that this is expected to be recouped through future successful development (or alternatively sale) of the Areas of Interest concerned or on the basis that it is not yet possible to assess whether it will be recouped.

#### Deferred tax assets

The Company expects to have carried forward tax losses which have not been recognised as deferred tax assets as it is not considered sufficiently probable at this point in time, that these losses will be recouped by means of future profits taxable in the relevant jurisdictions.

#### b) Significant accounting estimates and assumptions

The carrying amounts of certain assets and liabilities are often determined based on estimates and assumptions of future events. The key estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of certain assets and liabilities within the next annual reporting period are:

#### Impairment of capitalised exploration and evaluation expenditure

The future recoverability of capitalised exploration and evaluation expenditure is dependent on a number of factors, including whether the Company decides to exploit the related lease itself or, if not, whether it successfully recovers the related exploration and evaluation asset through sale.

Factors that could impact the future recoverability include the level of reserves and resources, future technological changes, costs of drilling and production, production rates, future legal changes (including changes to environmental restoration obligations) and changes to commodity prices.

As at 30 June 2008, the carrying value of capitalised exploration expenditure is \$847,594.

# NOTE 23: CHANGE IN ACCOUNTING POLICY

The following Australian Accounting Standards have been issued or amended and are applicable to the Company but are not yet effective. They have not been adopted in preparation of the financial statements at reporting date.

Referenc e	Title	Summary	Applicatio n date of standard	Impact on Company financial report	Applicatio n date of Company
AASB 2007-3	Amendments to Australian Accounting Standards arising from AASB 8 [AASB 5, AASB 6, AASB 102, AASB 107, AASB 119, AASB 127, AASB 134, AASB 136, AASB 1023 & AASB 1038]	Amending standard issued as a consequence of AASB 8 <i>Operating</i> <i>Segments</i>	1 January 2009	AASB 8 is a disclosure standard so will have no direct impact on the amounts included in the Group's financial statements. However the new standard may have an impact on the segment disclosures included in the Group's financial report.	1 July 2009
AASB 8	Operating Segments	This new standard will replace AASB 114 Segment Reporting and adopts a management approach to segment reporting.	1 January 2009	Refer to AASB 2007-3 above.	1 July 2009
AASB 2007-6	Amendments to Australian Accounting Standards arising from AASB 123 [AASB 1, AASB 101, AASB 107, AASB 111, AASB 116 & AASB 138 and Interpretations 1 & 121	Amending standard issued as a consequence of AASB 123 (revised) Borrowing Costs.	1 January 2009	As the Group does not currently construct or produce any qualifying assets which are financed by borrowings the revised standard will have no impact	1 July 2009

NULE 23	Title	CCOUNTING PULL		Transater	A == 1: +: -
e	11110	Summary	n date of standard	financial report	n date of Company
AASB 123	Borrowing Costs	AASB 123 previously permitted entities to choose between expensing all borrowing costs and capitalizing those that were attributable to the acquisition, construction or production of a qualifying asset. The revised version of AASB 23 requires borrowing costs to be capitalized if they are directly attributable to the acquisition, construction or production of a qualifying asset.	1 January 2009	Refer to AASB 2007-6 above.	1 July 2009
AASB 101 (revised) and AASB 2007-8	Presentation of Financial Statements and consequential amendments to other Australian Accounting Standards	Introduces a statement of comprehensive income. Other revisions include impacts on the presentation of items in the statement of changes in equity, new presentation requirements for restatements or reclassifications of items in the financial statements, changes in the presentation requirements for dividends and changes to the titles of the financial statements.	1 January 2009	These amendments are only expected to affect the presentation of the group's financial report and will not have a direct impact on the measurement and recognition of amounts disclosed in the financial report. The group has not determined at this stage whether to present a single statement of comprehensive income or two separate	1 July 2009

Referenc e	Title	Summary	Applicatio n date of standard	Impact on Company financial report	Applicatio n date of Company
AASB 2008-1	Amendments to Australian Accounting Standard – Share- based Payments: Vesting Conditions and Cancellations	The amendments clarify the definition of 'vesting conditions', introducing the term 'non-vesting conditions' for conditions other than vesting conditions as specifically defined and prescribe the accounting treatment of an award that is effectively cancelled because a non-vesting condition is not satisfied.	1 January 2009	The group does not make share based payments. As such there will be no financial impact.	1 July 2009
AASB 3 (revised)	Business combinations	The revised standard introduces a number of changes to the accounting for business combinations	1 July 2009	The group has no planned business combinations. As such there will be no financial impact.	1 July 2009
AASB 2008-3	Amendments to Australian Accounting Standards arising from AASB 3 and AASB 127	Amending standard issued as a consequence of revisions to AASB 3 and AASB 127.	1 July 2009	Refer to AASB 3 (revised) and AASB 127 (revised) above.	1 July 2009
AASB 2007-2	Amendments to Australian Accounting Standards arising from AASB Interpretation 12	Amending standard issued as a consequence of AASB Interpretation 12 Service Concession Arrangements.	1 January 2008	As the Group currently has no service concession arrangements or public-private- partnerships (PPP), it is expected that this Interpretation will have no impact on its financial report	1 July 2008

# NOTE 24: CONTINGENT ASSETS / LIABILITIES

Subject to further review of the Western Australian Payroll Tax Assessment Act 2002 and how it may apply to the equity and remuneration of employees, the Company may have a contingent liability in respect of the granting of those equity instruments of approximately \$1,100,000.

# NOTE 25: COMPANY DETAILS

The registered office and principal place of business of the Company is:

Ground Floor 33 Colin Street West Perth, WA, 6005. The directors of the Company declare that:-

- (a) The financial statements, notes and the additional disclosures included in the directors' report designated as audited, of the Company are in accordance with the Corporations Act 2001, including:
  - (i) giving a true and fair view of the Company's financial position as at 30 June 2008 and of their performance for the period ended on that date; and
  - (ii) comply with Accounting Standards and Corporations Regulations 2001; and
- (b) the Chief Executive Officer and Chief Financial Officer have declared that:
  - (i) the financial records of the Company for the financial year have been properly maintained in accordance with section 286 of the Corporations Act 2001;
  - (ii) the financial statements and notes for the financial year comply with the Accounting Standards; and
  - (iii) the financial statements and notes for the financial year give a true and fair view.
- (c) there are reasonable grounds to believe that the Company will be able to pay its debts as and when they become due and payable; and

The directors have been given the declarations required by s.295A of the Corporations Act 2001 for the financial period ended 30 June 2008.

This declaration is made in accordance with a resolution of the directors.

S Cato Chairman

Date: 30 September 2008

### INDEPENDENT AUDIT REPORT TO THE MEMBERS OF GREENLAND MINERALS AND ENERGY LTD

#### Report on the Financial Report

We have audited the accompanying financial report of Greenland Minerals and Energy Ltd (the Company) and Controlled Entities (the Consolidated Entity) which comprises the balance sheet as at 30 June 2008, and the income statement, statement of changes in equity and cash flow statement for the year ended on that date, a summary of significant accounting policies and other explanatory notes and the directors' declaration.

#### Directors' Responsibility for the Financial Report

The directors of the Company are responsible for the preparation and fair presentation of the financial report in accordance with Australian Accounting Standards (including the Australian Accounting Interpretations) and the Corporations Act 2001. This responsibility includes establishing and maintaining internal control relevant to the preparation and fair presentation of the financial report that is free from material misstatement, whether due to fraud or error; selecting and applying appropriate accounting policies; and making accounting estimates that are reasonable in the circumstances. In Note 1, the directors also state, in accordance with Accounting Standard AASB 101: Presentation of Financial Statements, that compliance with the Australian equivalents to International Financial Reporting Standards (IFRS) ensures that the financial report, comprising the financial statements and notes, complies with IFRS.

#### Auditor's Responsibility

Our responsibility is to express an opinion on the financial report based on our audit. We conducted our audit in accordance with Australian Auditing Standards. These Auditing Standards require that we comply with relevant ethical requirements relating to audit engagements and plan and perform the audit to obtain reasonable assurance whether the financial report is free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial report. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial report, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial report in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by the directors, as well as evaluating the overall presentation of the financial report.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

#### Independence

In conducting our audit, we have complied with the independence requirements of the Corporations Act 2001. We confirm that the independence declaration required by the Corporations Act 2001, provided to the directors of Greenland Minerals and Energy Ltd would be on the same terms if provided to the directors as at the date of this auditor's report.

# Independent Audit Report

*Audit Opinion* In our opinion:

- a. the financial report of Greenland Minerals and Energy Ltd and its Controlled Entities is in accordance with the Corporations Act 2001, including:
  - i. giving a true and fair view of the Company's and Consolidated Entiy's financial position as at 30 June 2008 and of its performance for the year ended on that date; and
  - ii. complying with Australian Accounting Standards (including the Australian Accounting Interpretations) and the Corporations Regulations 2001; and
- b. the financial report also complies with International financial Reporting Standards as disclosed in Note 1.

#### **Report on the Remuneration Report**

We have audited the Remuneration Report included in the directors' report under the heading "Remuneration Report – Audited" for the year ended 30 June 2008.

The directors of the Company are responsible for the preparation and presentation of the Remuneration Report in accordance with section 300A of the Corporations Act 2001. Our responsibility is to express an opinion on the Remuneration Report, based on our audit conducted in accordance with Australian Auditing Standards.

#### Audit Opinion

In our opinion the remuneration report of Greenland Minerals and Energy Ltd for the year ended 30 June 2008 complies with section 300A of the Corporations Act 2001.

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Mack & Co Chartered Accountants 2nd Floor, 35 Havelock Street West Perth WA 6005

Calor A

N A Calder, Partner

september 2008

Date:

#### Principles of Best Practice Recommendations commentary

The Board of Director's are responsible for the overall strategy, governance and performance of Greenland Minerals & Energy Ltd. (hereafter GGG or the Company). The Company is an exploration Company whose strategy is to add substantial shareholder value through the acquisition, exploration, development and commercialization of projects in Greenland with a focus on the Kvanefjeld project. The Board has adopted a corporate governance framework which it considers to be suitable given the size, history and strategy of the Company.

#### Principles of Best Practice Recommendations

In accordance with ASX Listing Rule 4.10, GGG is required to disclose the extent to which it has followed the Principles of Best Practice Recommendations during the financial year. Where GGG has not followed a recommendation, this has been identified and an explanation for the departure has been given.

#### Principle 1: Lay solid foundations for management and oversight

The Board has established a framework within the Group that:

- I enables it to provide strategic guidance and effective supervision of management;
- I clarifies the respective roles and responsibilities of Board members and senior executives;
- l ensures a balance of authority so that no single individual has unfettered powers; and
- I identifies significant business risks and ensures that those risks are well managed.

The day-to-day management of the Group has been delegated to the Chief Executive Officer, Mr Roderick McIllree.

The Board has also adopted a Board Charter which details the functions and responsibilities of the Board and those delegated to management. In addition, letters of appointment have been signed by non-executive directors and each executive director has signed an employment agreement. A copy of the Board Charter has been placed on the Company's website.

#### Principle 2: Structure the Board to add value

The Board has been structures so that it has effective composition, size and commitment to adequately discharge its responsibilities and duties. The names and qualifications of the Directors are stated in the annual report along with the date of appointment. Each Director is entitled to receive independent professional advice at the Company's expense.

Mr Tony Ho, Mr Simon Stafford-Michael and Mr Hank Schønwandt are independent Directors who fulfill the independence criteria outlines in the guidelines.

Mr Schønwandt has been appointed Chairman by the board on 22<sup>nd</sup> August 2007.

The Board believes that it is able to exercise independence and judgment and does possess the necessary skills, expertise and experience required to effectively discharge their duties. The focus has been on the ability of the Board to add value by effectively exercising independence and discharging their duties, rather than on meeting the independence test in the guidelines.

The roles of the Chairman and the Chief Executive Officer are exercised by Mr Schønwandt and Mr Rod McIllree.

The Board maintains the roles of Audit, Nomination and Risk Management Committees to itself as it considers the Company not appropriate in size to justify these as subcommittees.

#### Principle 3: Promote ethical and responsible decision-making

Ethical and responsible decision-making is promoted by the Board in a top-down approach.

The Board has adopted a Code of Conduct to guide the Directors, the Chairman, the Chief Executive Officer and other key executives as to practices necessary to maintain confidence in the Company's integrity and to the responsibility and accountability of individuals for reporting and investigating reports of unethical behavior.

The Board has also adopted a Securities Trading Policy, to guide investment decisions. The Company has not adopted compliance standards and procedures to facilitate the implementation and assessment of the Code of Conduct and Securities Trading Policy. Given the Company's size, history and strategy it was not considered appropriate to adopts these policies during the reporting period. The Company will largely comply with these recommendations during future reporting periods.

A copy of the Copy of Conduct and Securities Trading Policy has been placed on the Company's website.

#### Principle 4: Safeguard integrity in financial reporting

The integrity of the Company's financial reporting is a critical aspect of GGG's corporate governance and structures have been implemented during the reporting period to verify and safeguard the integrity of the Company's financial reporting.

It is the policy of the Board that the Company's financial statements be reviewed or audited, at a minimum, each half year. The financial statements are reviewed by the Board which operates under formal terms of reference which is placed on the website.

The Board has requested that the Chief Executive Officer and Finance Director state in writing that the financial statements present a true and fair view, in all material respects, of the Company's financial condition and operational results and are prepared in accordance with International Financial Reporting Standards.

#### Principle 5: Make timely and balanced disclosure

The Board promotes timely and balanced disclosure of all material matters concerning the Company.

The Company has formalized its policy to promote a culture whereby all senior management understands the processes in relation to the timely disclosure of information.

A copy of the Reporting Policy has been placed on the Company's website.

#### Principle 6: Respect the rights of shareholders

The Board respects the rights of all shareholders and, to facilitate the effective exercise of those rights, the Company is committed to effective communication with shareholders. This occurs by electronic ASX releases to the market, through GGG e-list email communications (registration is available via the Company's website) and by the provision to shareholders of balanced and understandable information in relation to corporate proposals.

#### Principle 7: Recognise and manage risk

The Company recognizes the importance of managing risk and has established systems to assess, monitor and manage risk based on the Company's size, history and strategy. The exploration and development of natural resources is a speculative activity that involves a high degree of financial risk.

The Company has formalized its policy to identify, monitor and manage risk.

The Chief Executive Officer and Company Secretary are responsible for the identification and management of business risks. The Board has obtained a written confirmation from the Chief Executive Officer and the Company Secretary that the statement in relation to principle 4 above is founded on a sound system of risk management and internal compliance and control. The Board has obtained a statement confirming that the systems are operating efficiently and effectively in all material respects.

#### Principle 8: Encourage enhanced performance

The board is principally made up of executives who have full time, executive responsibility for the operations of the Company.

The operations are split into 3 sections:

The Managing Directors role in allocating priorities and tasks to the executives of the Company, leading the Company generally, raising capital as required and public relations at all levels.

The exploration and development effort.

Other corporate support.

Each executive (whether or not a director) reports on his activities to the Managing Director who monitors their role and then reports to the board as required. The board as a whole monitors the Managing Directors work.

The board will undertake annual performance reviews of the director's performance.

#### Principle 9: Remunerate fairly and responsibly

The Board is committed to ensuring that the level and composition of remuneration is sufficient and reasonable and that its relationship to corporate and individual performance is defined.

#### **Executive Remuneration Policy**

The Company remunerates its senior executives in a manner that is market competitive, consistent with best practice and aligned to the interests of shareholders. Remuneration comprises a fixed salary, determined from a market review, to reflect core performance requirements and expectations of the relevant position and statutory superannuation where applicable.

#### Non-Executive Remuneration Policy

Non-Executive Directors are paid a fixed fee out of the maximum aggregate amount which has been approved by shareholders. Non-executive Directors are entitled to statutory superannuation where applicable.

There are no schemes for retirement benefits, other than statutory superannuation, for any non-executive Director.

# Principle 10: Recognise the legitimate interest of stakeholders

The Board recognizes legal and other obligations to all legitimate stakeholders. The Company has formalized its policy accordingly.

A copy of the Code of Conduct has been placed on the Company's website.

# **Tenement List**

#### **Exploration License 2008/28**

#### **Substantial Shareholders**

1	GCM Nominees Limited	35,000,000
2	Westrip Holdings Limited	30,000,000
3	Gravner Limited	29,000,000
### Shareholder Information

Shares Spread	Holders	Units	Percent
1 - 1,000	58	42,961	0.02%
1,001 - 5,000	219	664,894	0.34%
5,001 - 10,000	294	2,625,843	1.36%
10,001 - 100,000	381	13,679,959	7.09%
100,001 - 999,999,999	116	175,994,883	91.19%
Total	1,068	193,008,540	100.00%

Top 20 Listing

For Class Greenland Minerals and Energy Ltd Fully Paid Shares

RANK	NAME	UNITS
1	GCM Nominees Limited	35,000,000
2	Westrip Holdings Limited	30,000,000
3	Gravner Limited	29,000,000
4	Citicorp Nominees Pty Limited	10,097,296
5	ANZ Nominees Limited	20,194,592
6	HSBC Custody Nominees	9,031,320
7	National Nominees Limited	7,275,160
8	Falfaro Investments Ltd	3,000,000
9	Mr Roderick Claude Mcillree	2,756,095
10	Worldpower Pty Ltd	2,190,000
11	Rochford Limited	2,079,600
12	NEFCO Nominees Pty Ltd	1,953,000
13	NIDD Valley Company Limited	1,900,000
14	Mr Garry William Thomas and Mrs Nancy-Lee Thomas	1,620,000
15	Mr Cameron John French	1,478,000
16	South Asian Commodity Holdings Limited	1,457,504
17	Mr Paul Gabriel Sharbanee	1,000,000
18	Mr Simon Stafford-Michael	1,000,000
19	Mr Hans Kristian Schonwandt	1,000,000
20	Mr Jeffrey Maxwell Jones	920,000

#### Shareholder Information

Options Spread	Holders	Units	Percent
1 - 1,000	9	5,732	0.00%
1,001 - 5,000	78	311,484	0.22%
5,001 - 10,000	155	1,425,979	0.99%
10,001 - 100,000	210	8,873,166	6.15%
100,001 - 999,999,999	78	133,715,701	92.64%
Total	530	144,332,062	100.00%

Top 20 Listing

For Class Greenland Minerals and Energy Ltd Options

RANK	NAME	UNITS
1	Gravner Limited	84,700,000
2	Citicorp Nominees Pty Limited	5,760,000
3	Mr Cameron John French	5,517,439
4	NEFCO Nominees Pty Ltd	4,433,200
5	South Asian Commodity Holdings	2,939,295
6	Worldpower Pty Ltd	2,535,000
7	Mr John Lefroy Mair	2,500,000
8	Rochford Limited	1,839,800
9	Mr Roderick Claude Mcillree	1,647,000
10	Mr Garry William Thomas and Mrs Nancy-Lee Thomas	1,620,000
11	NIDD Valley Company Limited	950,000
12	RBC Dexia Investor Services	939,875
13	Mr Jeffrey Maxwell Jones	920,000
14	Mr Richard Homsany and Mrs Rosa Diana Marisa Homsany	850,000
15	Mr Stephen Frederick Schmedje	800,000
16	Mr Jeremy Sean Whybrow	710,100
17	The Old Brewery Company Pty Ltd	650,000
18	Redmont Resources Pty Ltd	650,000
19	Mr Mario Claude Frichot	585,000
20	Mr Simon Kenneth Cato	550,100

#### Table of Significant Events

	Corporate Event			Exploration Event
		Drilling	Geophysics	Other
May-07	Contract signature and announcement of acquisition intention.		Auslog commissioned to supply Spectral tools	Initial recon trip to Greenland
	Re quotation of the company.	Old holes located, new holes sited		
	Exploration services agreements signed			
Jun-07	Preparation, approval and issue of the notice of meeting .			Camp established, field operations commence
	Organisation of the 8,800,000 share issue at \$1.00 per share	First rig arrives and drilling commences		Radiation safety measurement badges distributed
Jul-07	Preparation, approval and issue of the prospectus.	Second drill arrives	Down-hole spectral logger arrives in Greenland and logging begins	
	Shareholder approval			
Aug-07	Settlement of the capital raisings and the acquisitions	drilled		
	Re-quotation as Greenland	unica		
	Minerals and Energy Limited			
Sep-07			Aerial Geophysical survey commences	
	GEUS agrees to allow access to old core			
Oct-07		Cumulative 10,000 metres drilled		First samples dispatched to Perth for assay
	H&S contracted to complete resource estimation	Drilling ceases 42 holes drilled.	Down-hole spectral logging ends	
Nov-07				
Dec-07				
Jan-08				
Feb-08			Droho colibration	First batch of bistoriaal
Iviar-08			Probe calibration	core sampled
Apr-08		Commencement of field season		Camp mobilisation
May-08		First 1,000 metres drilled	Commence logging	Initial resource estimate 338Mt @ 0.03% U308 90Mt @ 1.09% REO 79Mt @ 1.69% NaF
Jun-08				Regional Drilling commenced
Jul-08		Cumulative7,000 metres drilled		
Aug-08			Log deepest hole 500m	Resource upgrade 334Mt @ 0.03% U308 215Mt @ 1.21% REO 201Mt @ 1.11% NaF
Sep-08		Cumulative 15,000 metres reached		Regional drilling completed



## Greenland Minerals and Energy Ltd



Above left: Marty Helean (Operations Manager) in the West Perth office.

Above right: Roderick McIllree (Managing Director), Simon Cato (Executive Director) and Jeremy Whybrow (Exploration Director) at the Narsaq office.

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