

Quarterly Report to 30 September 2007



Comprehensive shareholder meeting held 31 July 2007 approved acquisition of joint venture interest (now 61%) in Kvanefjeld, the Company considers this project as being one of the most exciting multi-element deposits in the world.

2007 Field season resulted in more than 10,000 metres of diamond drilling and a major aerial radiometric and magnetic surveying program.

The results extremely promising, identifying major multi-element mineralised zones, samples reported elevated NaF, Li, Nb, Rb, Sn, Th, U, Y, Zn, Zr, La, Pr, Nd. NaF comprising 3.5%.

Longest intersection recorded 232m @ U₃O₈esp Uranium, full list detailed.

Metallurgical test work begins on Villiaumite when samples to hand.

We currently have more than \$10,000,000 on deposit after meeting the costs of acquiring our initial 61% interest and the 2007 exploration program. This is more than sufficient for the 2008 program



Figure One : Project Locality Map

Introduction

The Kvanefjeld project, ("the project") is located on the south west tip of Greenland (Figure 1) and is one of the largest undeveloped multi-element occurrences 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 since 1959 including the OECD International Atomic Energy Agency (IAEA).

The project has been extensively explored in the past including but not limited to more than 11,000 metres of diamond drilling, bulk metallurgical testing, a one kilometer exploratory adit, mapping, radiometrics and surface sampling.

From June to October in 2007 the Company has carried out its own program which resulted in another 10,000 metres of diamond drilling as well as a major radiometric program. The exploration drilling carried out this year to date have only been tested for uranium, thorium and potassium as these results are available immediately, however core from samples transported will be tested for a suite of other minerals know to be associated with the project.

The results to date are extremely promising, identifying major mineralised zones of Uranium which is known to be associated with other minerals and acts as a pathfinder mineral in the deposit. A full description of the exploration results follows in this report.





Figure Three : Kvanefjeld Long Section

Operations at Kvanefjeld - 2007 field season

Field operations ceased during the Quarter.

In all 43 holes were completed for a total of 10,022m of drilling. This is reputed to be the largest single season programme of diamond drilling ever undertaken in Greenland. Almost all holes reached 200m below surface, some as deep as 380m. All core was logged, had bulk density measurements and photographs taken.

All new drill holes and most holes drilled between 1962 and 1977 were open and suitable for down-hole spectral radiometric logging carried out with a "state of art" new spectral logging system constructed by Auslog (domiciled in Brisbane).

Mid-season a low level helicopter borne spectral radiometric 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.

Drill hole locations were picked up by the companies RTK (real time kinematic) DGPS. An accuracy of a few cm's was attained; ensuring quality control of the data used in Resource Estimation and other requirements.

Results for the 2007 Season

Significant mineralisation has been drilled in all holes (including historical holes) and no hole has tested the limits of the mineralisation, and no hole has intersected the base of the intrusion. The single longest mineralised intercept ever recorded at Kvanefjeld was made this year in K099; which was mineralised throughout its entire length. It finished in mineralisation and carried an average of 534ppm U308esp over 232.3m. Higher grade zones are present as exemplified by K108; which intersected 66.5m @ 843ppm U308esp.

The "Mine Area", "Northern Area" and areas between and the southern extension have now been drilled out to a nominal spacing of 160m x 80m. The grades and intercepts made by the 2007 drilling in these areas are in line with historical results. This represents almost twice the surface area when compared to the historical drilling.

A major south-west extension to the mineralisation has been discovered called the "Campsite Area". Available results from 4 of these holes showed they intersected on average 97m of multi-element mineralisation and intercepts of up to 20.9m averaging 560ppm U_3O_8 esp. Multi-element mineralisation has now been intersected over an area 1,900m x 700m and to a depth of between 200-300m. The new areas of multi-element mineralisation are similar in grade, widths and style. That is all mineralisation intersected to date are contiguous and part of one large mineralised body, this can be seen in the attached long-section.

The Multi-element mineralisation is variable in distribution. Villiaumite (NaF) has not been recorded near surface. Lithological logging has shown Villiaumite rich and poor zones; which can be interpreted from hole to hole. The ratio of Thorium to Uranium varies considerably. Within the main Lujavrite the ratio varies from 4:1 down o 1:1; while in the contact zones near pure uranium zones, thorium zones and mixed zones are present. Other minerals and elements of interest are almost certainly shown distributions varying to that of uranium and others. For this reason assaying for other elements will become a major avenue of work in the coming months.

The results are extremely promising, identifying major multielement mineralised zones, samples reported elevated NaF, Li, Nb, Rb, Sn, Th, U, Y, Zn, Zr, La, Pr, Nd. NaF comprising up to 3.5% in a small number of samples analysed to date.

The table below shows that there are number of elements with elevated concentrations and that further metallurgical investigations may show that some of these will prove to be economic by-products or products in their own right. In particular the sample from KO87 from 137m -138m carries 3.5% Sodium Fluoride (NaF), (which is water soluble), and currently sells at +\$900 US a tonne. Different metallurgical recovery methods for target primary minerals may mean that one or more of these elements may become economic byproducts.

The bulk density of the multi-element mineralisation in Lujavrite varied from 2.7 to 2.8 and averaged 2.75; while mixed mineralisation was much more variable but still averaged 2.75. Country rock proved exceptionally variable posting values between 2.6 and 3.1; averaging around 2.85. Naujaite was consistent at about 2.4-2.5.

Matters pertaining to the environment form an important part of any mineral exploration of exploitation programme. Knowledge of the "Environmental Baseline" is necessary to



Villiaumite - is the mineral at Kvanefjeld composed of sodium fluoride.

define the situation before any changes due to exploration, exploitation or for that matter and 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. This year the company was able to obtain the services of a consultant with and enviable record acceptable to Company and Government alike. During a compressed field season the consultant was 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.

| |) | Assay Results for Two Diamond Drill Core Samples - DDH K089 134 to 135m and 137 to 138m | | | | | | | | | | | | | | |
|--------|------------------|---|--------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|
| \sum | Element | Be | NaF (Sol) | Ga | Hf | Li | Мо | Nb | Rb | Sn | Та | Th | U | Y | Zn | Zr |
| | Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| | K089 134-135m | 39 | 121 | 107 | 50 | 743 | 41 | 318 | 768 | 332 | 11 | 325 | 337 | 935 | 2,467 | 3,807 |
| | K089 137-138m | 37 | 34,506 | 99 | 63 | 659 | 43 | 424 | 748 | 304 | 22 | 407 | 293 | 899 | 2,211 | 4,086 |

Kvanefjeld Multi Element Deposit

| Element | La | Ce | Pr | Nd | Sm | Eu | Gd | Tb | Dy | Но | Er | Tm | Yb | Lu |
|------------------|-------|-------|-----|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| K089 134-135m | 2,735 | 3,736 | 334 | 908 | 99 | 10 | 81 | 14 | 105 | 23 | 70 | 11 | 73 | 10 |
| K089 137-138m | 2,795 | 3,945 | 358 | 1,018 | 119 | 12 | 95 | 15 | 109 | 23 | 67 | 11 | 65 | 9 |

Rare Earths

Kvanefjeld Project - Drill holes 2007

| | Hole No | Ν | E | RL | Depth | Az | Dip |
|---------------|---------|----------|---------|----------|--------|----|-----|
| | K0073 | 446239.2 | 6760552 | 603.1439 | 236 | 0 | -90 |
| | K0074 | 446147.7 | 6760280 | 620.1052 | 275 | 0 | -90 |
| | K0075 | 446085.8 | 6760310 | 604.5544 | 272 | 0 | -90 |
| | K0076 | 446025.6 | 6760351 | 593.7452 | 221 | 0 | -90 |
| | K0077 | 445960.5 | 6760382 | 570.7261 | 246 | 0 | -90 |
| \geq | K0078 | 446009.9 | 6760195 | 603.2673 | 281 | 0 | -90 |
| \sim | K0079 | 445896.3 | 6760273 | 585.5926 | 217 | 0 | -90 |
| | K0080 | 445806.2 | 6760159 | 603.7921 | 305 | 0 | -90 |
| | K0081 | 445699 | 6760230 | 563.8499 | 302 | 0 | -90 |
| | K0082 | 445987.6 | 6760040 | 600.5387 | 293 | 0 | -90 |
| | K0083 | 445993.3 | 6760540 | 554.923 | 207 | 0 | -90 |
| | K0084 | 446415.5 | 6760427 | 696.5191 | 398 | 0 | -90 |
| 10 | K0088 | 446159.8 | 6760415 | 600.0994 | 214 | 0 | -90 |
| \mathbb{D} | K0089 | 446049.5 | 6760504 | 563.9482 | 287 | 0 | -90 |
| | K0090 | 445932.6 | 6760581 | 558.3858 | 248 | 0 | -90 |
| \mathcal{D} | K0091 | 446015.2 | 6760695 | 594.5503 | 275 | 0 | -90 |
| | K0092 | 446127 | 6760612 | 582.5367 | 263 | 0 | -90 |
| | К0094 | 446333.6 | 6760661 | 608.0732 | 272 | 0 | -90 |
| | K0095 | 446205.2 | 6760741 | 620.227 | 200 | 0 | -90 |
| | K0096 | 446076.3 | 6760818 | 643.82 | 257 | 0 | -90 |
| | K0098 | 446166.7 | 6760939 | 651.6441 | 230 | 0 | -90 |
| Y | К0099 | 446296.1 | 6760858 | 629.3503 | 233 | 0 | -90 |
| | K0100 | 446404.6 | 6760781 | 622.6493 | 134 | 0 | -90 |
| | K0103 | 446480.5 | 6760894 | 642.4625 | 275 | 0 | -90 |
| | K0105 | 445854.1 | 6760463 | 565.8408 | 270 | 0 | -90 |
| $ \ge$ | К0106 | 445777.5 | 6760339 | 554.8811 | 278 | 0 | -90 |
| \bigcap | K0107 | 445957.7 | 6760233 | 609.3134 | 218 | 0 | -90 |
| /E | K0108 | 446073.6 | 6760143 | 611.6298 | 200 | 0 | -90 |
| | K0109 | 445876.3 | 6760126 | 613.9791 | 200 | 0 | -90 |
| 15 | K0110 | 445753.3 | 6760197 | 583.6292 | 240.25 | 0 | -90 |
| 2 | К0111 | 445643 | 6760265 | 558.9726 | 290 | 0 | -90 |
| \supset | K0112 | 445392.9 | 6760090 | 540.2612 | 242 | 0 | -90 |
| | K0113 | 445526 | 6760005 | 555.9749 | 203 | 0 | -90 |
| | K0114 | 445650.6 | 6759918 | 544.7038 | 200 | 0 | -90 |
| | K0116 | 445394.1 | 6759835 | 557.9835 | 236 | 0 | -90 |
| | K0117 | 445534.1 | 6759747 | 547.8143 | 173 | 0 | -90 |
| $ \ge$ | K0118 | 446085 | 6759981 | 610.2307 | 254 | 0 | -90 |
| | K0119 | 446149 | 6760098 | 634.5304 | 224 | 0 | -90 |
| | K0120 | 446242.1 | 6760219 | 660.9174 | 212 | 0 | -90 |
| | K0122 | 445300.1 | 6759679 | 540.9695 | 203 | 0 | -90 |
| | K0123 | 445567.6 | 6760179 | 540.7768 | 200 | 0 | -90 |
| | K0124 | 445438.2 | 6759630 | 546.8784 | 20 | 0 | -90 |

Kvanefjeld Project - Summary Table drill intersections

| | Hole | Depth | From | То | Thickness | Av Grade |
|-------------|------|-------|--------|--------|-----------|----------------------------|
| | No. | (m) | (m) | (m) | (m) | (ppm U₃O ₈ esp) |
| | K073 | 236 | 2.50 | 21.50 | 18.90 | 366 |
| | | | 84.30 | 103.10 | 18.80 | 435 |
| | K074 | 275 | 0.94 | 21.76 | 20.82 | 364 |
| | | | 46.54 | 76.85 | 30.31 | 372 |
| | | | 97.25 | 150.36 | 53.11 | 504 |
| | K075 | 272 | 9.05 | 102.85 | 33.80 | 529 |
| | | | 108.15 | 138.06 | 29.91 | 433 |
| | | | 157.94 | 162.86 | 4.92 | 394 |
| | | | 221.35 | 273.15 | 51.80 | 305 |
| $(\bigcirc$ | K076 | 221 | 56.80 | 68.30 | 11.40 | 415 |
| | | | 73.60 | 78.30 | 4.70 | 461 |
| | | | 84.30 | 89.10 | 4.80 | 439 |
| | | | 92.10 | 101.10 | 9.00 | 371 |
| | | | 118.60 | 134.70 | 16.10 | 368 |
| (0/) | | | 212.90 | 220.30 | 7.30 | 275 |
| | K077 | 246 | 39.50 | 48.80 | 9.30 | 400 |
| |) | | 53.00 | 164.20 | 111.20 | 454 |
| | K078 | 281 | 37.34 | 42.66 | 5.32 | 533 |
| | 0 | | 50.95 | 80.66 | 29.71 | 529 |
| 60 | 2 | | 84.55 | 96.66 | 12.11 | 426 |
| GU |) | | 112.55 | 115.45 | 2.90 | 440 |
| | 0 | | 124.94 | 162.86 | 37.92 | 397 |
| | 0 | | 195.94 | 232.06 | 36.12 | 363 |
| \square | K080 | 305 | 100.40 | 107.00 | 6.50 | 394 |
| \bigcirc | 7 | | 122.20 | 131.90 | 9.70 | 373 |
| 26 | | | 139.10 | 152.20 | 13.10 | 430 |
| Q 2 | / | | 162.40 | 181.20 | 18.70 | 396 |
| | 0 | | 189.40 | 196.30 | 6.80 | 392 |
| 615 | | | 280.30 | 290.70 | 10.40 | 275 |
| QP | 7 | | 296.90 | 302.80 | 5.90 | 262 |
| \bigcirc | K081 | 302 | 1.45 | 14.45 | 13.00 | 603 |
| | | | 27.14 | 77.76 | 50.62 | 382 |
| ~ | | | 85.25 | 116.66 | 31.41 | 350 |
| | 0 | | 121.75 | 171.83 | 50.09 | 192 |
| \square | K082 | 293 | 12.55 | 56.16 | 43.61 | 593 |
| \bigcirc |) | | 61.54 | 64.06 | 2.52 | 545 |
| Пп | | | 101.05 | 142.65 | 41.60 | 402 |
| | | | 146.55 | 153.15 | 6.60 | 287 |
| | | | 159.25 | 173.06 | 13.81 | 319 |
| | | | 178.35 | 181.65 | 3.30 | 354 |
| | | | 274.54 | 290.26 | 15.72 | 290 |
| | K084 | 398 | 163.40 | 165.60 | 2.10 | 336 |
| | | | 226.90 | 254.10 | 27.10 | 266 |
| | K084 | 398 | 164.41 | 166.51 | 2.10 | 348 |
| | | | 228.00 | 255.01 | 27.01 | 279 |

Kvanefjeld Project - Summary Table drill intersections (continued)

| | Hole | Depth | From | То | Thickness | Av Grade |
|---------------------|----------|-------|--------|--------|-----------|---|
| | No. | (m) | (m) | (m) | (m) | (ppm U ₃ O ₈ esp) |
| | K088 | 214 | 57.00 | 64.40 | 7.30 | 456 |
| | | | 81.30 | 87.00 | 5.70 | 352 |
| | | | 125.40 | 128.10 | 2.60 | 457 |
| | | | 181.60 | 196.80 | 15.20 | 352 |
| | K089 | 287 | 1.30 | 10.70 | 9.40 | 412 |
| \geq | | | 16.80 | 19.60 | 2.80 | 290 |
| | J | | 33.80 | 50.20 | 16.30 | 549 |
| $(\square$ | <u></u> | | 53.50 | 119.50 | 65.90 | 441 |
| | 1 | | 131.40 | 178.30 | 46.90 | 330 |
| \square | | | 210.60 | 241.40 | 30.80 | 202 |
| | K090 | 248 | 117.30 | 123.70 | 6.30 | 230 |
| | | | 126.90 | 129.50 | 2.50 | 229 |
| (1)5 |) | | 198.40 | 207.40 | 9.00 | 187 |
| | K091 | 275 | - | 6.90 | 6.80 | 367 |
| $(\langle \rangle)$ | | | 68.10 | 101.80 | 33.70 | 291 |
| 0 E | /] | | 114.20 | 120.00 | 5.80 | 203 |
| |) | | 124.90 | 129.00 | 4.00 | 219 |
| | | | 192.60 | 215.70 | 23.00 | 199 |
| |] | | 233.40 | 239.10 | 5.70 | 240 |
| | K092 | 263 | 1.20 | 27.90 | 26.70 | 418 |
| <u>UD</u> |) | | 38.50 | 127.90 | 89.30 | 411 |
| | 0 | | 135.10 | 179.70 | 44.60 | 272 |
| | 1 | | 187.10 | 213.20 | 26.10 | 221 |
| \square | K094 | 272 | 0.50 | 31.50 | 31.00 | 461 |
| \bigcirc | / | | 51.00 | 53.80 | 2.70 | 621 |
| an | | | 57.30 | 64.40 | 7.10 | 404 |
| G E | / | | 68.80 | 72.50 | 3.70 | 243 |
| | 0 | | 77.20 | 81.70 | 4.50 | 389 |
| (1)5 | <u> </u> | | 95.10 | 131.40 | 36.30 | 482 |
| QP | / | | 179.40 | 222.20 | 42.80 | 289 |
| (\bigcirc) |) | | 227.40 | 271.40 | 44.00 | 270 |
| | K096 | 257 | 3.60 | 84.40 | 80.80 | 370 |
| (7 | | | 98.80 | 121.90 | 23.00 | 219 |
| | 0 | | 124.70 | 170.20 | 45.50 | 241 |
| $(\bigcirc$ | <u>}</u> | | 173.40 | 180.80 | 7.40 | 221 |
| | / | | 219.40 | 226.70 | 7.20 | 229 |
| | 1/000 | 220 | 253.10 | 256.60 | 3.40 | 236 |
| | K098 | 230 | 2.15 | 67.85 | 65.70 | 327 |
| | | | /5.55 | 90.95 | 15.40 | 247 |
| | | | 154.55 | 161.45 | 6.90 | 203 |
| | | | 169.75 | 1/4.20 | 4.51 | 229 |
| | KOCO | 222 | 196.75 | 206.15 | 9.40 | 217 |
| | K099 | 233 | 1.04 | 233.36 | 232.32 | 534 |
| | K103 | 275 | 4.80 | 6.90 | 2.10 | 317 |
| | | | 9.60 | 20.90 | 11.20 | 310 |

Kvanefjeld Project - Summary Table drill intersections (continued)

|] | Hole | Denth | From | То | Thickness | Av Grade |
|--------------------|---------|-------|--------|--------|-----------|---|
| | No. | (m) | (m) | (m) | (m) | (ppm U ₃ O ₈ esp) |
| · | | | 85.40 | 91 50 | 6.00 | 409 |
| | | | 108.80 | 111 10 | 2 30 | 366 |
| | | | 120.30 | 145.10 | 24.70 | /19 |
| | | | 150.30 | 152 70 | 24.70 | 522 |
| | | | 247.40 | 273.30 | 2.40 | 782 |
| \geq | ¥105 | 270 | 0.20 | 273.30 | 25.90 | 203 |
| | | 270 | 109.20 | 127.20 | 3.50 | 202 |
| \square | 1 | | 142.40 | 137.20 | 28.30 | 275 |
| 2 | | | 161.20 | 140.70 | 6.20 | 250 |
| \square | | | 176.00 | 191 50 | 4.50 | 230 |
| \square |) | | 170.90 | 206.60 | 4.50 | 221 |
| · | | | 203.10 | 200.00 | 3.50 | 210 |
| 615 | K106 | 270 | 234.10 | 240.70 | 14.00 | 105 |
| YU | K100 | 278 | - | 20.90 | 20.90 | 430 |
| RA | } | | 103.90 | 109.20 | 5.20 | 301 |
| 9 E | / | | 152.10 | 154.30 | 2.10 | 257 |
| |] } | | 159.40 | 177.00 | I7.60 | 337 |
| | / | | 180.90 | 186.10 | 5.10 | 2/4 |
| | | | 194.80 | 202.10 | 7.30 | 264 |
| | 1 | | 242.40 | 246.60 | 4.20 | 215 |
| $(\Pi \square$ | <u></u> | | 261.00 | 264.60 | 3.60 | 230 |
| 90 | | 24.0 | 270.50 | 274.60 | 4.10 | 190 |
| | K107 | 218 | /5.30 | //.60 | 2.30 | 565 |
| |] | | 83.70 | 106.20 | 22.50 | 438 |
| $(\bigcirc$ |) | | 111.10 | 119.00 | 7.90 | 289 |
| | <u></u> | | 125.80 | 161.20 | 35.30 | 425 |
| (0) |) | | 165.40 | 172.00 | 6.50 | 361 |
| $\widetilde{\Box}$ | | 200 | 205.30 | 210.50 | 5.20 | 394 |
| | K108 | 200 | 1.64 | 68.16 | 66.52 | 843 |
| ((D) |) | | /9.34 | 102.06 | 22.72 | 461 |
| | | | 106.05 | 172.56 | 66.51 | 480 |
| $(\bigcirc$ |) | | 184.55 | 201.95 | 17.40 | 362 |
| | K109 | 200 | 108.70 | 125.30 | 16.60 | 290 |
| \overline{D} | | 2.12 | 156.40 | 1/1.80 | 15.40 | 489 |
| | K110 | 240 | 99.80 | 106.00 | 6.20 | 452 |
| (\bigcirc) |) | | 110.20 | 114.70 | 4.50 | 333 |
| | / | | 124.40 | 135.40 | 10.90 | 445 |
| | | | 145.60 | 1/6.10 | 30.40 | 385 |
| | K111 | 290 | 10.30 | 33.70 | 23.40 | 410 |
| | | | 41.50 | 45.00 | 3.50 | 431 |
| | | | 51.20 | 77.50 | 26.30 | 485 |
| | K113 | 203 | 1.45 | 22.36 | 20.91 | 560 |
| | | | 25.25 | 34.96 | 9.71 | 474 |
| | | | 111.15 | 146.45 | 35.30 | 473 |
| | | | 153.25 | 165.45 | 12.20 | 238 |
| | | | 172.25 | 203.56 | 31.31 | 213 |

Kvanefjeld Project - Summary Table drill intersections (continued)

| | Hole | Depth | From | То | Thickness | Av Grade |
|------------------|------|-------|--------|--------|-----------|----------------------------|
| | No. | (m) | (m) | (m) | (m) | (ppm U₃O ₈ esp) |
| | K114 | 200 | 1.35 | 4.85 | 3.50 | 264 |
| | | | 7.25 | 18.26 | 11.01 | 411 |
| | | | 24.45 | 31.15 | 6.70 | 356 |
| | | | 119.15 | 139.65 | 20.50 | 452 |
| | | | 142.05 | 155.65 | 13.60 | 314 |
| | K116 | 236 | 1.54 | 48.16 | 46.62 | 470 |
| | | | 74.44 | 78.56 | 4.12 | 325 |
| 1 | | | 107.34 | 135.76 | 28.42 | 477 |
| | | | 150.25 | 174.15 | 23.90 | 270 |
| $(\bigcirc$ | K119 | 224 | - | 71.90 | 71.80 | 552 |
| | | | 75.40 | 96.50 | 21.00 | 455 |
| 615 | | | 104.10 | 171.10 | 67.00 | 448 |
| (QD) |) | | 193.10 | 223.60 | 30.50 | 288 |
| 26 | K122 | 203 | 1.54 | 35.46 | 33.92 | 504 |
| \mathbb{O}^{2} |) | | 51.95 | 75.35 | 23.40 | 389 |
| | R | | 108.15 | 141.06 | 32.91 | 467 |
| | 2 | | 153.94 | 173.86 | 19.92 | 339 |
| | | | 181.85 | 186.65 | 4.80 | 244 |
| | 1 | | 195.55 | 203.95 | 8.40 | 244 |
| | { | | | | | |



Estimation of Uranium & Thorium Grades at Kvanefjeld

High definition spectral radiometric logging of drill holes to determine the grade of naturally radioactive minerals (such as uranium and thorium) are preferable to classic chemical assaying of drill samples since the volume of the sample measured radiometrically is approximately 50 times larger than that measured by chemical assay. This means each radiometric estimate is far more representative of a similar length of core (or chips). These radiometric estimates are repeatable to within a few percent.

Additionally radiometric estimates are taken at each 75mm and are giving positions of boundaries accurate to a few cm and changes over even these short distances.

The grade of uranium and Thorium intersected in diamond drill holes at Kvanefjeld was historically estimated by measuring natural gamma radiation using:

- down-hole spectral logging
- Laboratory scanning of core &.
- Laboratory scanning of crushed chips.

This field season Greenland Minerals & Energy logged accessible historical holes and holes drilled this 2007 field season with an Auslog spectral gamma tool; a sophisticated new generation tool with much greater sensitivity and accuracy compared to that used in historical logging.

The principals involved in all of these techniques are the same and are presented as follows:

Mineralisation at Kvanefjeld contains significant quantities of thorium, small amounts of potassium & uranium. All three have isotopes that emit gamma radiation. Total count gamma radiation counting devices will therefore count thorium and potassium radiation as well as any uranium radiation. Therefore the uranium associated with the Kvanefjeld mineralisation cannot be accurately estimated by measuring the total gamma radiation. "Total Gamma Logging" is a common method used to estimate uranium grade ("U₃O₈e") where the contribution from thorium and potassium is very small. Calcrete and sandstone uranium deposits are usually of this type.

The gamma radiation from potassium, uranium and thorium is dominated by gamma rays emitted with specific energy levels. These energy levels are sufficiently well separated such that they can be measured independently of each other. They are typically measured as narrow energy bands that contain the specific energy levels. In addition there is some scattering of higher energy gamma radiation. Thorium, with the highest energy radiation causes scattering into lower energy parts of the spectrum; mixing (masking) with the uranium radiation. This scattered radiation must also be taken into account and is calculated using suitable calibration procedures. The calculated total radiation is then stripped from the spectrum and this uranium radiation used to calculate the amount of uranium present.

An example of where these types of measurement are commonly used is in airborne radiometric surveys to distinguish the contributions from potassium, uranium and thorium. The measurements are termed spectral gamma measurements because they separate the three energy levels into their "spectral" energy bands. Similar measurements can be performed on drill samples (called Spectral Gamma Logging) as described within this announcement as noted as "U₃O₈esp".

Uranium, over time, breaks down through a series of elements (uranium decay chain), which are the products of its nuclear decay (called "Daughter Products"). The gamma radiation that is used to estimate the quantity of uranium present is not directly from uranium itself. The gamma radiation from





the decay of uranium is dominated by that of its Daughter Products – predominantly Bismith214.ie Uranium is exhibits relatively low radioactivity. Over time, approximately 2.4 million years, the generation and decay of Daughter Products reaches an equilibrium state where the gamma radiation from the daughters is representative of the concentration of uranium present. Hence an estimation of the Daughter Products will give an accurate estimate of the amount of uranium present.

If any of the Daughter Products in the chain are removed then the process of decay will not be in equilibrium and the amount of Daughter Product present will not relate to the uranium present. This is generally termed Disequilibrium. Disequilibrium can occur when a uranium deposit is in process of being formed, weathered or moved. Groundwater may dissolve either the Daughter Products, or uranium, preferentially and separate them resulting in disequilibrium. Young deposits, such as those in calcretes and sandstones, often show some disequilibrium because they have been formed or moved within the past 2.4 million years.

Mineralisation at Kvanefjeld has been formed within the rock as it was emplaced and cooled. There has been no weathering and there are few if any permeable shear/fault zones where water may dissolve and move the mineralisation. The age of the rocks containing the mineralisation is approximately 1,000 million years. Thus the uranium is in equilibrium with its daughter products and disequilibrium is not expected to be an issue. This has been confirmed by test-work undertaken at Riso in 1970-80s where several hundred samples were assayed at their nuclear facility and showed that there was no measurable disequilibrium. The company will confirm these findings to ensure that the 2007 spectral gamma radiation measurements accurately reflect true uranium & thorium contents at Kvanefjeld.

The Auslog spectral 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.

The radiation due to Thorium is then calculated and stripped from the total radiation spectrum; that which remains being entirely due to uranium. In order to calculate the grade of uranium present the Auslog spectral logging tool was first calibrated against know grade uranium.

This was carried out in Adelaide at the Department of Water, Land and Biodiversity Conservation in calibration pits constructed under the supervision of CSIRO.

The calibration factors so calculated in the Adelaide calibration pits have been applied to the uranium spectral gamma ray readings and converted to equivalent U3O8esp. These factors also take into account differences in hole-size and water content.

Responsibility Statement

The information in this report that relates to calculated uranium grades in Table 2 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 in calibration pits constructed under the supervision of CSIRO. 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 U308esp 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 U308esp 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 measuredgamma radiation will over or under estimate the amount of uranium present. The Kvanefield 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.
- The information in this report that relates to Exploration Results other than the calculated Uranium grades is based on information compiled by Malcolm Mason, BSc FAusIMM.
- Mr. Mason is a director of Greenland Minerals And Energy Limited. Mr. Mason 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'.
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