



4<sup>th</sup> July 2011

Companies Announcement Office  
*Via Electronic Lodgement*

## **KAROO – HIGH GRADE URANIUM & MOLYBDENUM RETURNED AT SITE 22**

### **HIGHLIGHTS**

- **High grade results returned for Uranium and Molybdenum include:**
  - DH 06F0866RC - **4.9 ft @ 4,022 ppm U<sub>3</sub>O<sub>8</sub> and 1,313 ppm Mo** from 205.1ft
  - DH 06F0866RC - **1.6 ft @ 6,170 ppm U<sub>3</sub>O<sub>8</sub> and 6,160 ppm Mo** from 229.7ft
  - DH 06F0864RC - **23.0 ft @ 1,849 ppm U<sub>3</sub>O<sub>8</sub> and 1,081 ppm Mo** from 280.5ft
  - DH 06F0158RC - **19.7 ft @ 804 ppm U<sub>3</sub>O<sub>8</sub> and 465 ppm Mo** from 62.3ft
  - DH 06F0479RC - **4.9 ft @ 1,251 ppm U<sub>3</sub>O<sub>8</sub> and 2,548 ppm Mo** from 157.5ft
  - DH 06F0432RC - **1.6 ft @ 2,594 ppm U<sub>3</sub>O<sub>8</sub> and 490 ppm Mo** from 36.1ft
- **RC Drilling and Assay Results confirm widespread high grade Uranium and associated Molybdenum over entire historic drilling area at Site 22**
- **High grade Molybdenum has the potential to significantly enhance the economics of the Karoo Project**
- **Initial Drilling Program now completed at Site 22**
- **Assay results validate down hole gamma probe results**

**Peninsula** Energy Limited (Peninsula) is pleased to announce further assay results of reverse circulation (RC) holes completed in the northern and southern portions of the historic drilling area at Site 22 in the Karoo, South Africa. The results indicate a widespread distribution of high grade Uranium and associated high grade Molybdenum. After the outstanding initial results reported in May 2011, Peninsula expanded the RC drilling program to encompass the entire historic drilling area and these latest results confirm that the high grades and positive correlation between Uranium and Molybdenum mineralisation extend across the entire historical drilled area.

In addition to recording the presence of high grade Molybdenum, the assay results also validate the very high grade Uranium reported from the down-hole gamma logging program.

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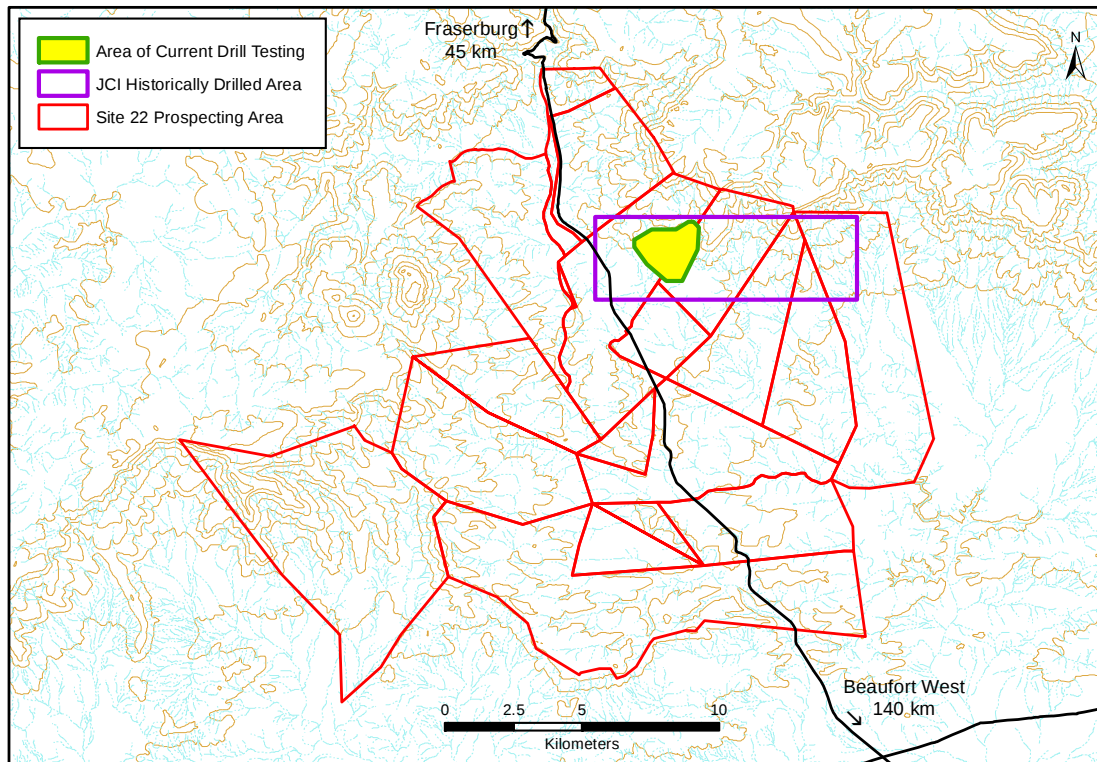
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## Site 22 RC Drilling Program

Site 22 is located on an escarpment approximately 45km south of Fraserburg (see Figure 1). As previously reported, on 19 February 2011 Peninsula commenced a program comprising the relogging of the historic JCI boreholes. In conjunction with the relogging Peninsula began a program of RC drilling designed to provide samples for Uranium and Molybdenum geochemical analysis and to establish the correlation between Uranium and Molybdenum. Historic reports suggest a high ratio of Molybdenum to Uranium within these areas of the Karoo.



**Figure 1: Site 22 Location Plan**

To date, a total of 159 historic drillholes and 188 newly-drilled RC holes have been logged. This comprehensive program has produced a total of 272 intersections that exceed 200ppm eU3O8. A total of 1,699 RC samples have also been collected for assay. The location of the latest assay results are shown in Figure 2. Assay results confirm a widespread distribution of Molybdenum in association with the Uranium.

In addition to validating the high grade Uranium reported from the down-hole gamma logging program, the high grade of the associated Molybdenum is particularly encouraging as it has the potential to add significantly to the economics of any future mineral extraction from this area. Peninsula has also completed several diamond holes at site 22 and is now completing analysis to determine the ratio of Molybdenum to Uranium and to determine any disequilibrium factor from the pending diamond core assays.

The highlights of the RC drilling include:

- DH 06F0864RC which intersected **23.0ft @ 1,849ppm U<sub>3</sub>O<sub>8</sub> and 1,081ppm Mo** from 280.5ft to 303.5ft;
- DH 06F0866RC which intersected **4.9ft @ 4,022ppm U<sub>3</sub>O<sub>8</sub> and 1,313ppm Mo** from 205.1ft to 210.0ft;
- DH 06F0473RC which intersected **6.6 ft @ 3,102ppm U<sub>3</sub>O<sub>8</sub> and 2,549ppm Mo** from 32.8ft to 39.4ft; and
- DH 06F0509RC which intersected **1.6 ft @ 1,972ppm U<sub>3</sub>O<sub>8</sub> and 4,308ppm Mo** from 49.2ft to 50.9ft.

In addition to the numerous high-grade Uranium and Molybdenum assays several holes reported mineralised thicknesses in excess of 10ft with a maximum thickness of 23.0ft returned from DH 06F0864RC and 19.7ft returned from DH 06F0158RC. The highest Uranium intersection received to date is from DH 06F0866RC which reported **1.6 ft grading 6,170ppm U<sub>3</sub>O<sub>8</sub>** and associated Molybdenum of **6,160ppm Mo**.

The initial program at Site 22 is now complete and the results suggest there is potential to delineate a significant level of Molybdenum with very favourable implications for the economics of the project.

Refer to Figure 2 below for the location of the RC and Table 1 for the assay results that exceed 200ppm U<sub>3</sub>O<sub>8</sub>.

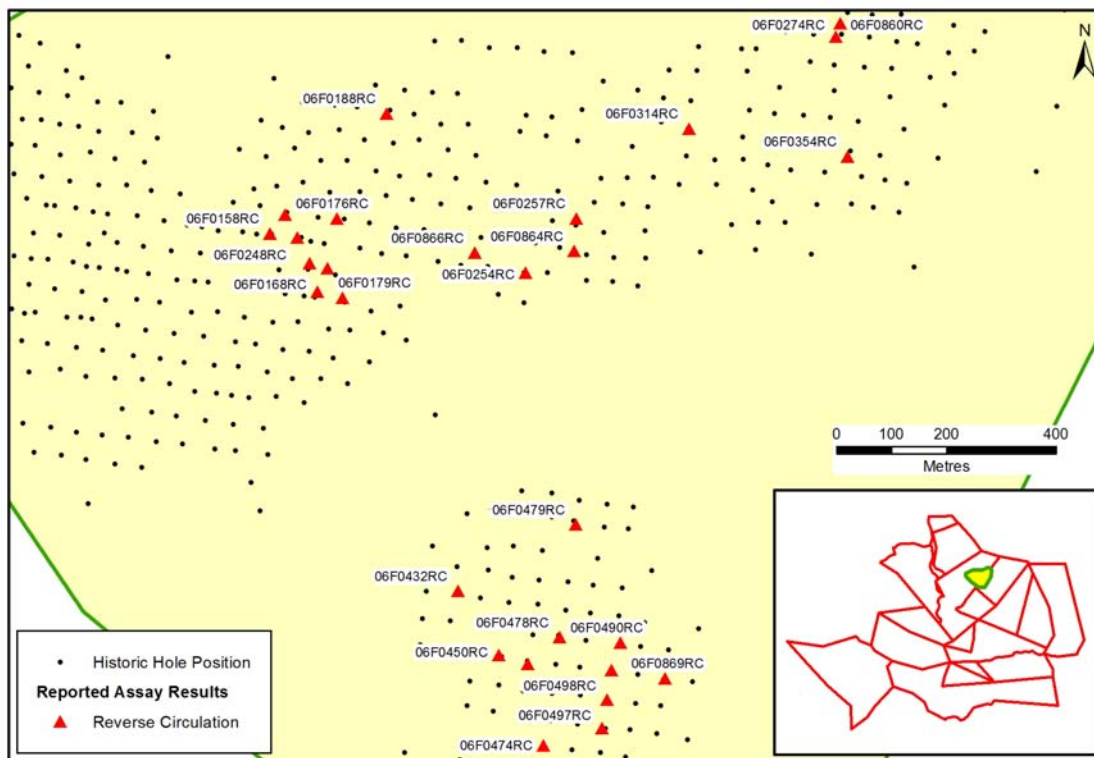


Figure 2: Site 22 RC Drilling Program

### Karoo Projects – Exploration Potential

In addition to the existing resource drilling, ten high ranking drill targets distributed across all six of the Company's Project Areas have been prioritised from the 392 Uranium occurrences generated by the 2008 helicopter-borne radiometric and magnetic surveys. This process has included site mapping, ground sampling and aerial extent studies of the project areas conducted by Peninsula over the last 3 years.

Further targets have been identified following recent acquisition and review of exploration reports compiled by Union Carbide during the 1970s and early 1980s. Peninsula obtained these reports from the South African Nuclear Energy Corporation during the September 2010 quarter.

Preliminary geological studies have estimated a combined exploration potential in the Karoo of 30-60m tonnes @ 700 – 1,400ppm  $eU_3O_8$  for 90 – 150m lbs  $eU_3O_8$ .

The Company's target over the next 18 months is to delineate 30mlbs of  $eU_3O_8$  (15-25m tonnes @ 700–1,400ppm  $eU_3O_8$ ). The source of this material may include the historic mineral occurrences, their extensions and new exploration targets. If this target is achieved a conceptual study has suggested that this quantity of uranium would support the development of a central processing facility near Site 29.

**Table 1 : Karoo Site 22 Assay Results – Uranium and Molybdenum (using a lower grade cut-off of 200ppm U308)**

| HOLE ID   | Easting | Northing   | Total Depth Drilled (ft) | From (ft) | To (ft) | Interval (ft) | U3O8 (ppm) | Mo (ppm) |
|-----------|---------|------------|--------------------------|-----------|---------|---------------|------------|----------|
| 06F0153RC | 62846.0 | -3571670.0 | 114.8                    | 78.7      | 80.4    | 1.6           | 744        | 23       |
| 06F0158RC | 62819.0 | -3571704.0 | 114.8                    | 62.3      | 82.0    | 19.7          | 804        | 465      |
| 06F0163RC | 62891.0 | -3571758.0 | 101.7                    | 82.0      | 83.7    | 1.6           | 443        | 86       |
| 06F0168RC | 62905.0 | -3571810.0 | 98.4                     | 47.6      | 50.9    | 3.3           | 545        | 847      |
| 06F0168RC |         |            |                          | 80.4      | 82.0    | 1.6           | 227        | <20      |
| 06F0175RC | 62924.0 | -3571767.0 | 131.2                    | 86.9      | 88.6    | 1.6           | 1,094      | 2,044    |
| 06F0176RC | 62941.0 | -3571677.0 | 98.4                     | 100.1     | 101.7   | 1.6           | 767        | 121      |
| 06F0179RC | 62951.0 | -3571821.0 | 167.3                    | 80.4      | 82.0    | 1.6           | 782        | 29       |
| 06F0188RC | 63031.0 | -3571486.0 | 118.1                    | 141.1     | 142.7   | 1.6           | 1,141      | 49       |
| 06F0248RC | 62869.0 | -3571712.0 | 295.3                    | 65.6      | 67.3    | 1.6           | 396        | 26       |
| 06F0254RC | 63284.0 | -3571776.0 | 315.0                    | 264.1     | 267.4   | 3.3           | 955        | 1,471    |
| 06F0257RC | 63377.0 | -3571677.0 | 413.4                    | 277.2     | 283.8   | 6.6           | 654        | 467      |
| 06F0274RC | 63849.0 | -3571346.0 | 331.4                    | 388.8     | 393.7   | 4.9           | 987        | 1,562    |
| 06F0314RC | 63582.0 | -3571513.0 | 331.4                    | 296.9     | 303.5   | 6.6           | 446        | 349      |
| 06F0354RC | 63870.0 | -3571564.0 | 383.9                    | 362.5     | 365.8   | 3.3           | 856        | 1,727    |
| 06F0432RC | 63161.0 | -3572355.0 | 85.3                     | 36.1      | 41.0    | 4.9           | 2,594      | 490      |
| 06F0432RC |         |            |                          | 44.3      | 47.6    | 3.3           | 2,537      | 920      |
| 06F0450RC | 63236.0 | -3572471.0 | 78.7                     | 36.1      | 41.0    | 4.9           | 219        | 508      |
| 06F0464RC | 63288.0 | -3572488.0 | 68.9                     | 41.0      | 42.7    | 1.6           | 855        | 2,515    |
| 06F0474RC | 63317.0 | -3572636.0 | 78.7                     | 31.2      | 34.4    | 3.3           | 496        | 810      |

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|           |         |            |       |       |       |      |       |       |
|-----------|---------|------------|-------|-------|-------|------|-------|-------|
| 06F0478RC | 63346.0 | -3572439.0 | 177.2 | 42.7  | 45.9  | 3.3  | 516   | 81    |
| 06F0479RC | 63376.0 | -3572234.0 | 177.2 | 157.5 | 160.8 | 3.3  | 1,251 | 2,548 |
| 06F0490RC | 63457.0 | -3572449.0 | 88.6  | 64.0  | 65.6  | 1.6  | 286   | 33    |
| 06F0497RC | 63423.0 | -3572605.0 | 59.1  | 32.8  | 34.4  | 1.6  | 276   | 128   |
| 06F0498RC | 63433.0 | -3572553.0 | 88.6  | 47.6  | 49.2  | 1.6  | 1,994 | 1,375 |
| 06F0814RC | 63441.0 | -3572499.0 | 98.4  | 44.3  | 45.9  | 1.6  | 2,161 | 2,220 |
| 06F0814RC |         |            |       | 68.9  | 72.2  | 3.3  | 744   | 35    |
| 06F0860RC | 63857.0 | -3571321.0 | 65.6  | 395.3 | 400.3 | 4.9  | 895   | 115   |
| 06F0864RC | 63373.0 | -3571736.0 | 423.2 | 280.5 | 303.5 | 23.0 | 1,849 | 1,081 |
| 06F0866RC | 63192.0 | -3571739.0 | 315.0 | 205.1 | 210.0 | 4.9  | 4,022 | 1,313 |
| 06F0866RC |         |            |       | 229.7 | 231.3 | 1.6  | 6,170 | 6,160 |
| 06F0869RC | 63538.0 | -3572514.0 | 98.4  | 72.2  | 73.8  | 1.6  | 716   | 181   |

Yours sincerely



**John (Gus) Simpson**  
**Executive Chairman**

For further information, please contact our office on +61(0)89380 9920 during normal business hours.

#### Competent Person

The information in this report that relates to Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Mr Alfred Gillman and Mr George van der Walt. Mr Gillman is a Fellow of the Australian Institute of Mining and Metallurgy. Mr Gillman is General Manager Project Development and is a Competent Person under the definition of the 2004 JORC Code. Mr van der Walt is a member of a Recognised Overseas Professional Organisation included in a list promulgated by the ASX (The South African Council of Natural Scientific Professions, Geological Society of South Africa). Mr van der Walt is a Director of Geoconsult International. Both Mr Gillman and Mr van der Walt have sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking as Competent Persons as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Both Mr Gillman and Mr van der Walt consent to the inclusion in the report of the matters based on their information in the form and context in which it appears.

Please note that in accordance with Clause 18 of the JORC (2004) Code, the potential quantity and grade of the "Mineralised Potential" in this announcement must be considered conceptual in nature as there has been insufficient exploration to define a Mineral Resource and it is uncertain if further exploration will result in the determination of a Mineral Resource.

Where  $eU_3O_8$  results are reported, it relates to values obtained from radiometric logging of boreholes. GeoVista and Geotron equipment was used and all the probes were calibrated at the IAEA accepted Pelindaba Calibration facility in South Africa with calibration certificates supplied by Geotron Systems (Pty) Ltd, a geophysical consultancy based in South Africa.

All  $eU_3O_8$  values reported may be affected by issues such as possible disequilibrium and uranium mobility which should be taken into account when interpreting the results, pending confirmatory chemical analyses. Disequilibrium Explanatory Statement:  $eU_3O_8$  refers to the equivalent  $U_3O_8$  grade. This is estimated from gross-gamma down hole measurements corrected for water and drilling mud in each hole. Geochemical analysis may show higher or lower amounts of actual  $U_3O_8$ , the difference being referred to as disequilibrium.

Chemical analyses for uranium and molybdenum were conducted by Scientific Services C.C, Cape Town (ISO9001-2008 certified) using the pressed pellet XRF technique. Calibration curves were established for both  $U_3O_8$  and Mo using an array of certified reference material. The lower level of detection is 20ppm for both  $U_3O_8$  and Mo.