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Companies Announcement Office  
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## **PENINSULA ANNOUNCES MAJOR RESOURCE UPGRADE AND DFS TIME FRAME**

### **Highlights:**

- **JORC Resource now 41.4Mlbs U<sub>3</sub>O<sub>8</sub>**
- **25% increase in Total Resource Estimate**
- **Measured and Indicated Resource of 11.2Mlbs U<sub>3</sub>O<sub>8</sub>**
- **7% increase in Measured and Indicated Resource**
- **Measured and Indicated U<sub>3</sub>O<sub>8</sub>, increased to 27% of the Total Resource**
- **Ross Permit Area Vanadium Resource upgrade to 2.3Mlbs V<sub>2</sub>O<sub>5</sub>**
- **DFS incorporating updated resource calculation imminent**

### **Summary**

The Directors of Peninsula Energy Limited (**Peninsula**) are pleased to announce a further upgrade to the JORC-compliant Resource Estimate for the Lance uranium projects in Wyoming, USA (**Lance Projects**). This upgrade has been achieved from the February upgrade by the completion of an additional 300 drill holes.

The revised JORC compliant resource estimate of 41.4Mlbs U<sub>3</sub>O<sub>8</sub> represents a 25% increase to the total resource estimate including a 7% increase in Measured and Indicated Resource since the previous upgrade in February 2011.

Completion and publication of the Definitive Feasibility Study (**DFS**) results, which has been held over subject to finalisation of the updated resource numbers and well field design optimisation, is expected shortly.

Executive Chairman Gus Simpson said "We are very pleased with this resource upgrade and the ongoing drill programme. It continues to convert areas of mineral potential into further JORC resource and to enhance resource status from inferred to indicated and measured. This is adding significant value to the Lance project. Importantly, we will now factor this into the DFS model and publish those findings. "

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**Peninsula Energy Limited - ABN: 67 062 409 303**

### Updated Lance JORC-Compliant Resource Estimate – June 2011

Since the release of the updated JORC resource estimate on February 2, 2011, Peninsula has continued resource conversion and exploration drilling with the completion of a further 300 drill holes mostly within and nearby to the Ross Permit Area. This drilling has successfully demonstrated the continuity of the known mineralisation and expanded the limits in these resource areas.

**Table 1: Lance Project Updated Resource Estimate – June 2011**

| Resource Classification | Tonnes Ore (M) | U3O8 kg (M) | U3O8 lbs (M) | Grade (ppm U3O8) |
|-------------------------|----------------|-------------|--------------|------------------|
| Measured                | 3.6            | 1.7         | 3.7          | 478              |
| Indicated               | 7.8            | 3.0         | 7.5          | 439              |
| Inferred                | 33.1           | 13.7        | 30.2         | 418              |
| <b>Total</b>            | <b>44.5</b>    | <b>18.4</b> | <b>41.4</b>  | <b>412</b>       |

**(The JORC resource is reported above a lower grade cut-off of 200ppm and a GT of 0.2).**

*Note figures may not sum due to rounding.*

The resource has been calculated by applying a combined constraint of a grade thickness product (GT) of 0.2 contour and 200ppm U<sub>3</sub>O<sub>8</sub>. These lower cut offs are considered to be appropriate for both calculating and reporting of In-Situ Recovery (ISR) resources at the Lance Projects.

The measured, indicated and inferred resources are located in confined aquifers, (which are a requirement for successful ISR mining) that have demonstrated positive ISR recovery test-work.

Geological modelling of the extensive down-hole geophysical data has accurately defined the impermeable shales and mudstones that form the confining seals to the mineralised aquifers.

At Ross (including the Ross Permit Area) there is now a combined measured, indicated and inferred resource of 26.2Mlbs U<sub>3</sub>O<sub>8</sub>, an increase of 19% from the updated February estimate. Within the Ross Permit Area the combined measured, indicated and inferred resource totals 5.90Mlbs U<sub>3</sub>O<sub>8</sub> at an average grade of 499ppm and an average GT of 0.55.

Since the previous resource estimate, drilling within the permit area has been partly designed to test the resource model by targeting the nose (high grade) portion of the roll front systems. This drilling campaign has produced an overall increase in grade within the permit area from 478ppm to 498ppm U<sub>3</sub>O<sub>8</sub>.

Drilling outside the permit area has largely been focussed on exploration for new roll front systems and on converting inferred resource to indicated resource. As a consequence of this typically wider-spaced exploration drilling, the overall resource grade outside the permit area has marginally decreased, at the same time the overall resources have increased significantly. Future in-fill drilling will be targeted at the nose (high grade) portion of the roll fronts; a general uplift in grade is anticipated.

Resource conversion and exploration drilling will continue with one rotary mud rig employed in the northern Ross area and a second rig engaged at Barber to identify additional uranium mineralisation in the area and increase the resource inventory at Barber.

**Table 2: Lance Project U<sub>3</sub>O<sub>8</sub> Resource Estimate by Area and Category**

| Ross Permit Area | Tonnes           | Grade (ppm U <sub>3</sub> O <sub>8</sub> ) | U <sub>3</sub> O <sub>8</sub> (lbs) | Average Thickness (ft) | Average GT  |
|------------------|------------------|--------------------------------------------|-------------------------------------|------------------------|-------------|
| Measured         | 2,191,691        | 497                                        | 2,399,096                           | 12.1                   | 0.60        |
| Indicated        | 3,047,771        | 501                                        | 3,365,408                           | 10.1                   | 0.51        |
| Inferred         | 109,000          | 500                                        | 120,000                             | 10.0                   | 0.50        |
| <b>Total</b>     | <b>5,348,462</b> | <b>499</b>                                 | <b>5,884,504</b>                    | <b>10.9</b>            | <b>0.55</b> |

| Ross         | Tonnes            | Grade (ppm U <sub>3</sub> O <sub>8</sub> ) | U <sub>3</sub> O <sub>8</sub> (lbs) | Average Thickness (ft) | Average GT  |
|--------------|-------------------|--------------------------------------------|-------------------------------------|------------------------|-------------|
| Measured     | 737,174           | 445                                        | 722,592                             | 11.7                   | 0.52        |
| Indicated    | 2,784,812         | 383                                        | 2,350,366                           | 11.2                   | 0.43        |
| Inferred     | 19,154,600        | 408                                        | 17,235,709                          | 11.0                   | 0.45        |
| <b>Total</b> | <b>22,676,587</b> | <b>406</b>                                 | <b>20,308,667</b>                   | <b>11.0</b>            | <b>0.45</b> |

| Barber       | Tonnes            | Grade (ppm U <sub>3</sub> O <sub>8</sub> ) | U <sub>3</sub> O <sub>8</sub> (lbs) | Average Thickness (ft) | Average GT  |
|--------------|-------------------|--------------------------------------------|-------------------------------------|------------------------|-------------|
| Measured     | 636,302           | 461                                        | 647,045                             | 8.6                    | 0.40        |
| Indicated    | 2,002,184         | 400                                        | 1,765,263                           | 7.7                    | 0.31        |
| Inferred     | 13,840,192        | 420                                        | 12,823,080                          | 7.5                    | 0.32        |
| <b>Total</b> | <b>16,478,678</b> | <b>419</b>                                 | <b>15,235,388</b>                   | <b>7.6</b>             | <b>0.32</b> |

| Total        | Tonnes            | Grade      | U <sub>3</sub> O <sub>8</sub> lbs | Thickness (ft) | GT          |
|--------------|-------------------|------------|-----------------------------------|----------------|-------------|
| Measured     | 3,565,167         | 478        | 3,768,733                         | 11.4           | 0.55        |
| Indicated    | 7,834,767         | 439        | 7,481,037                         | 9.2            | 0.43        |
| Inferred     | 33,103,793        | 418        | 30,178,789                        | 8.5            | 0.40        |
| <b>Total</b> | <b>44,503,727</b> | <b>412</b> | <b>41,428,559</b>                 | <b>8.8</b>     | <b>0.41</b> |

### Vanadium Resource

In early 2011 Peninsula completed a representative diamond drilling and core sampling program over the Ross Permit Area resource in order to obtain sufficient data to define a vanadium resource of 1.74M lbs V<sub>2</sub>O<sub>5</sub>. Based on 90 chemical assays an average U<sub>3</sub>O<sub>8</sub>/V<sub>2</sub>O<sub>5</sub> ratio of 3:1 was used to define the V<sub>2</sub>O<sub>5</sub> resource.

Following further studies specific ratios were applied to different parts of the uranium resource as determined by their respective stratigraphic position and horizontal position within the redox system. The updated vanadium resource for the Ross Permit Area as at June 2011 is summarised in Table 3 below.

**Table 3: Vanadium Resource – June 2011**

| Ross Permit Area* | Tonnes           | Grade (ppm V <sub>2</sub> O <sub>5</sub> ) | V <sub>2</sub> O <sub>5</sub> (lbs) |
|-------------------|------------------|--------------------------------------------|-------------------------------------|
| <b>Measured</b>   | 2,246,296        | 196                                        | 968,973                             |
| <b>Indicated</b>  | 3,051,466        | 196                                        | 1,316,296                           |
| <b>Inferred</b>   | 108,328          | 196                                        | 46,729                              |
| <b>Total</b>      | <b>5,406,089</b> | <b>196</b>                                 | <b>2,331,998</b>                    |

## Definitive Feasibility Study

Completion of the DFS was held over subject to the finalisation of the resource upgrade and a well field design optimisation program. Peninsula now expects the study to be completed and results published shortly.

## Mineralised Potential

The Lance project covers an area of over 120km<sup>2</sup> within which there is a combined total of at least 305 line kilometres (190 miles) of known stacked roll fronts. Of this total, only a small percentage has been explored with over 90% of the drilling concentrated within the more advanced Ross and Barber areas. Based on the historic conversion rate from roll front length to a drill-defined resource the mineralised potential of the Lance Projects, which is in addition to the JORC-compliant resource, is assessed at between 95 and 145 mlbs eU<sub>3</sub>O<sub>8</sub>. The upgrade in mineralised potential from previous estimates is based on an anticipated grade range of 360ppm eU<sub>3</sub>O<sub>8</sub> to 500ppm eU<sub>3</sub>O<sub>8</sub>. This grade range represents the minimum and maximum modelled grades respectively.

### Lance Project Mineralised Potential

| Exploration Areas | Tonnes (M) |       | Grade (ppm eU <sub>3</sub> O <sub>8</sub> ) |     | eU <sub>3</sub> O <sub>8</sub> (Mlbs) |     |
|-------------------|------------|-------|---------------------------------------------|-----|---------------------------------------|-----|
|                   | From       | To    | From                                        | To  | From                                  | To  |
| Total             | 117.7      | 134.7 | 360                                         | 500 | 95                                    | 145 |

## Drilling Program and Resource Confidence

On-going drilling will continue to upgrade existing Inferred Resources to Indicated or Measured Status in addition to converting the numerous areas of mineralised potential. One drilling rig is currently dedicated to the Barber area in order to delineate sufficient mineralisation to support the planned remote ion exchange (IX) plant that will provide additional feed to the central processing plant (CCP) to be located at Ross.

Peninsula controls the majority of the surface and minerals rights in the Oshoto Region and is currently acquiring additional areas that are considered prospective for roll front style uranium mineralisation.

Yours Sincerely



**John (Gus) Simpson**  
Chairman

For further information, please contact our office on (08) 9380 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 Alf Gillman and Mr Jim Guiling. 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 Guiling is a Member of a Recognised Overseas Professional Organisation included in a list promulgated by the ASX (Member of Mining and Metallurgy Society of America and SME Registered Member of the Society of Mining, Metallurgy and Exploration Inc). Mr Guiling is Principal of independent consultants World Industrial Minerals. Both Mr Gillman and Mr Guiling 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 a Competent Person 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 Guiling 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.

Grade/thickness contouring is the most appropriate method to transition resources to reserves when the planned mineral recovery method is ISR.

ISR involves the drilling of clusters of injection, recovery and monitoring wells to facilitate the recycling of oxygen enriched ground water through the mineralised sandstone to re solubilise and mobilize the uranium for pumping it to the surface processing plant for processing into yellow cake.

When mineral content is presented as an amount per tonne it assumes that there is a cost per tonne to mine and process the ore to recover the mineral which has an absolute value.

In ISR mining this is not the case; this recovery method has a cost structure associated with the drilling, casing and perforating of extraction, injection and monitoring well clusters. These, combined with the cost of reagents and processing into yellow cake are deducted from mineral revenues to determine gross margin.

Subsequently it is the grade/thickness (0.20GT) quotient, not parts per tonne, that determine if a bounded mineral zone is to be mined. Once these costs are incurred, it is recovered pounds of mineral that determines the gross margin. Thus when an ISR feasibility study estimates mineral recovery costs it is as a cost per pound recovered (PEN June 2010 PFS estimate total costs at \$30 per pound recovered).

Disequilibrium Explanatory Statement: eU3O8 refers to the equivalent U3O8 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 U3O8, the difference being referred to as disequilibrium. Disequilibrium factors were calculated using the Peninsula PFN database and categorized by area and lithological horizon. Specific disequilibrium factors have been applied to the relevant parts of the resource based on comparative studies between PFN and gamma data. There is an average positive 11% factor applied.

The methodology, estimation details and assumptions used in estimating the Inferred and Indicated Resource and also the Mineralised Potential at the Lance Projects is summarised as follows:

- Each log was scanned by Cadd Services (Denver) and then digitized by Logdigi Inc. (Houston). The gamma curves for each log were further processed in Wyoming to convert each gamma curve to numerical equivalent counts per second and percent grade eU3O8.
- Down-hole grade composites were calculated using a 2.5ft/100ppm cut off. Each grade composite was then extracted to obtain the centroid position of each composite. Every composite was then analysed in 3D and manually classified according to area and vertical horizon.
- Using Surpac, a Voronoi tessellation algorithm was then applied to the respective data from each area and horizon to create a series of polygons each of which were attributed with thickness, volume and tonnage and grade. These polygons were intersected by the 0.2GT contour so that no measured or indicated material was reported outside the GT contour.
- The JORC-compliant resource is reported above a lower grade cut off of 200ppm and a GT of 0.2.

- Disequilibrium factors were calculated using the Peninsula PFN database comprising over 500 determinations and categorized by area and lithological horizon.
- Specific disequilibrium factors have been applied to the relevant parts of the resource based on comparative studies between PFN and gamma data.
- Recovery Rate of 76% (80% from mine in solution and 95% recovery from solution).
- An average bulk density of 2.1, as determined from 66 core samples, has been used for the tonnage calculation.

An average U<sub>3</sub>O<sub>8</sub>/V<sub>2</sub>O<sub>5</sub> ratio based on 90 chemical assays of 3:1 was used to define the V<sub>2</sub>O<sub>5</sub> resource within the Ross Permit Area.