

8th June 2011

Companies Announcement Office
Via Electronic Lodgement

HIGH GRADE URANIUM RESULTS AT KAROO SITE 22

- **High grade drilling intercepts from Site 22 included:**

DH 06F0473DD from 32.8ft to 39.4ft intersected **6.6ft @ 3,213ppm** eU₃O₈

DH 06F0802DD from 77.8ft to 83.5ft intersected **5.7 ft @ 3,711ppm** eU₃O₈

DH 06F0864RC from 287.9ft to 294.5ft intersected **6.6 ft @ 2,568ppm** eU₃O₈

DH 06F0866RC from 206.5ft to 210.5ft intersected **4 ft @ 3,823ppm** eU₃O₈

DH 06F0051RC from 66.1ft to 70.3ft intersected **4.2 ft @ 2,964ppm** eU₃O₈

- **Drilling program to be extended over entire historic drilling area**

Summary

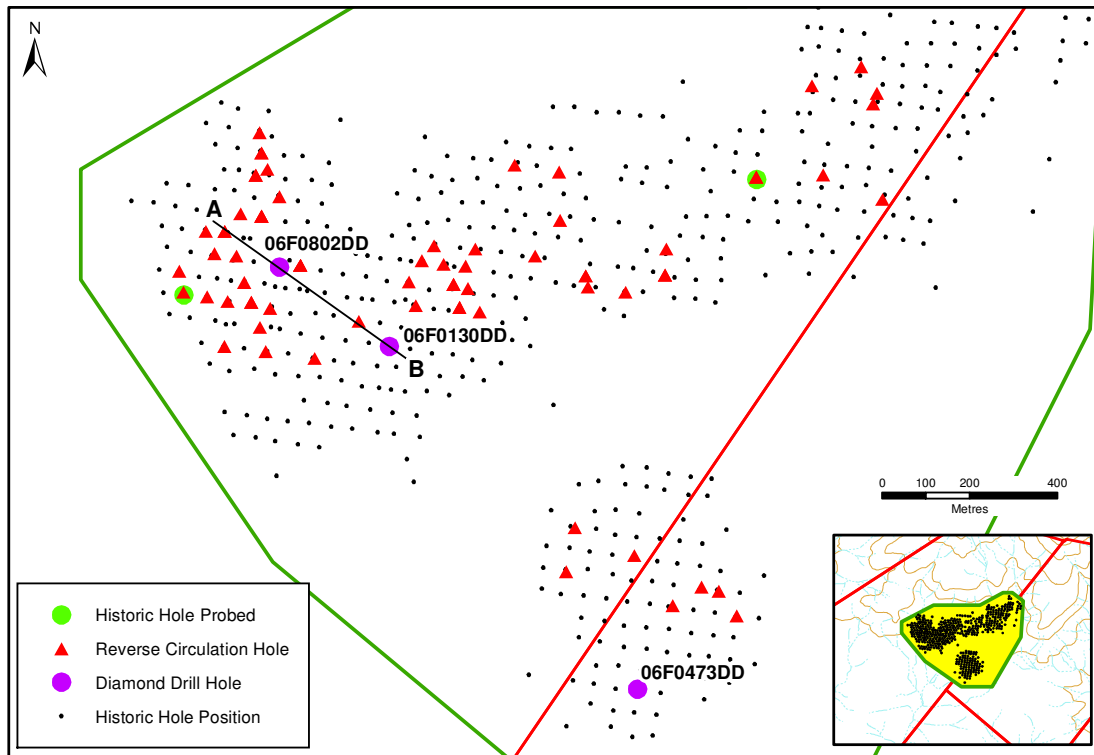
Peninsula Energy Limited (Peninsula) is pleased to announce further high grade results from the exploration program at Site 22 in the Karoo Project in South Africa.

Since the previous release Peninsula has drilled 58 RC holes and 3 diamond core holes, mainly in the western portion of the historic drilling area. However, recent drilling is now extending the program to the north-east with results indicating a more widespread distribution of high grade Uranium throughout the historic area.

As previously announced, chemical assay results have confirmed high grade Molybdenum in association with this Uranium and the latest results are providing compelling evidence that there is the potential to delineate significant levels of both Uranium and Molybdenum at Site 22.

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Figure 1: Site 22 Location Plan



Site 22

Site 22 is located on an escarpment approximately 45km south of Fraserburg (see Figure 3). Peninsula commenced a program in February 2011 comprising the re-logging of the historic JCI boreholes. Since the latest release Peninsula have drilled a further 61 holes and to date a total of 268 holes have been either re-probed, re-drilled or twinned.

Of the 268 holes that have been logged to date, 190 have returned Uranium mineralisation (>100ppm eU₃O₈), 117 of these exceed a grade thickness product of 0.15%ft eU₃O₈ and 56 holes returned multiple mineralised intersections.

In conjunction with the re-logging Peninsula has conducted a program of RC drilling which has provided samples for Uranium and Molybdenum geochemical analysis. This program has established a strong correlation between high grade Molybdenum and Uranium at Site 22 (see announcement 12 May 2011) and supported the decision to expand the RC drilling program to encompass the entire historic drilling area at Site 22.

Since the last release Peninsula has drilled 58 RC holes, the majority in the western portions of the historic drilling area. However, recent drilling has been extended to the north-east to cover the remainder of the historic area and has returned consistent, high grade Uranium results. Given the strong associated levels of Molybdenum the implications for the economics of the project are very positive. The distribution of the mineralised intersections is shown in Figure 1.

The highlights of the latest drilling include DH 06F0473DD which intersected **6.6ft @ 3,213ppm eU₃O₈** from 32.8ft to 39.4ft, DH 06F0802DD which intersected **5.7 ft @ 3,711ppm eU₃O₈** from 77.8ft to 83.5ft., DH 06F0864RC which intersected **6.6 ft @ 2,568ppm eU₃O₈** from 287.9ft to 294.5ft, DH 06F0866RC which intersected **4 ft @ 3,216ppm eU₃O₈** from 46.8ft to 50.8ft, and DH 06F0051RC which intersected **4.2 ft @ 2,964ppm eU₃O₈** from 49.2ft to 50.9ft.

Table 1 lists the most significant results achieved since the initial announcement on 15 March 2011. Appendix 1 lists all results received during that period.

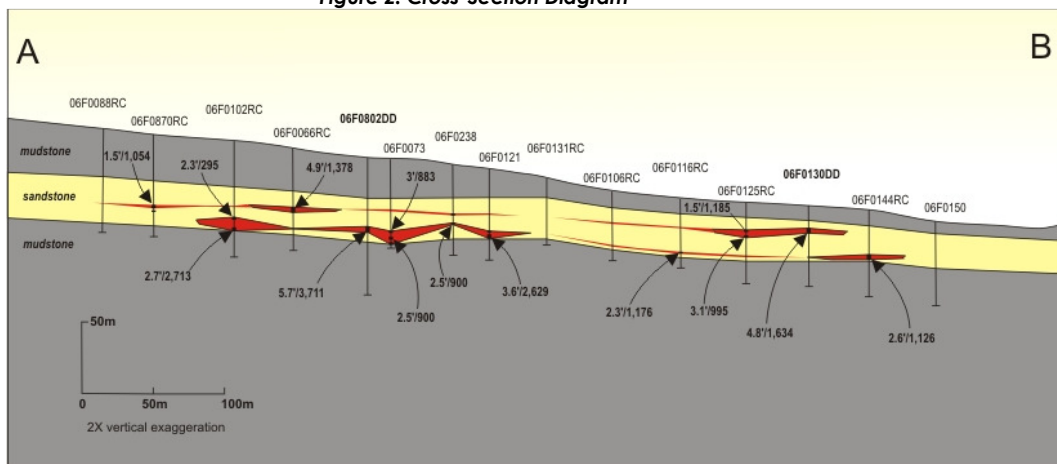
Table 1: Site 22 Re-logging and RC, Diamond Drilling Results (10 highest GT results)

Hole Type	Hole-ID	Easting	Northing	Total Depth Logged (ft)	From (ft)	To (ft)	Interval (ft)	Grade (ppm eU ₃ O ₈)
RC Twin	06F0041RC	62440	-3571509	148	119.8	129.6	9.87	1,132
RC Twin	06F0051RC	62429	-3571799	112	66.1	70.3	4.16	2,964
RC Twin	06F0065RC	62473	-3571813	98	57.4	66.5	9.10	1,132
RC Twin	06F0235RC	62265	-3571728	108	55.8	60.9	5.09	1,963
Exploration RC	06F0864RC	63373	-3571736	315	287.9	294.5	6.63	2,568
Exploration RC	06F0866RC	63192	-3571739	249	206.5	210.5	4.01	3,823
Exploration RC	06F0866RC	63192	-3571739	249	230.8	232.8	2.00	2,621
Diamond Hole Twin	06F0130DD	62745	-3571899	92	24.6	29.4	4.78	1,634
Diamond Hole Twin	06F0473DD	63311	-3572682	131	32.8	39.4	6.63	3,213
Diamond Hole Twin	06F0802DD	62494	-3571718	157	77.8	83.5	5.71	3,711

In addition to the RC holes Peninsula has recently completed three diamond drill holes as part of a six hole program. As expected, high grade gamma-logging results were returned from the completed holes as shown above. These diamond holes provide QAQC data - validating both the grade and thickness reported from the original historic holes and RC twins.

Figure 2 shows a cross section view through a portion of the mineralised sandstone along a line on which diamond holes 06F082DD and 06F0130DD are located.

Figure 2: Cross-Section Diagram



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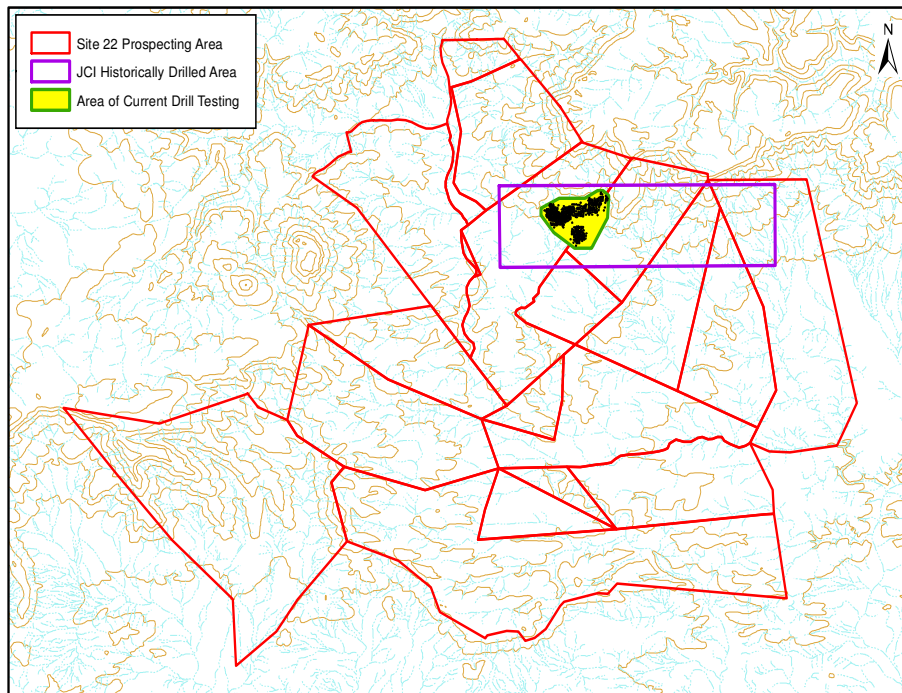
As well as providing accurate QAQC data, the diamond core provides Peninsula the opportunity to conduct metallurgical test-work in the future. In 1982, metallurgical test-work completed by the Atomic Energy Board of South Africa demonstrated that the Uranium and Molybdenum could be successfully recovered via either an acid leach or alkaline leach extraction process.

Conclusion

Peninsula has now completed the initial field program at Site 22 with the results to date clearly indicating the presence of widespread high grade Uranium mineralisation and associated Molybdenum within the drill area. The depth of confirmed mineralisation ranges from 10.2ft (3.1m) to 177ft (75.8m) from surface.

All of the RC intervals have been sampled for both Uranium and Molybdenum analyses and the next round of assay results for the RC drilling are expected shortly.

Figure 3: Site 22 Location Plan



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 eU₃O₈ for 90 – 150m lbs eU₃O₈.

The Company's target over the next 18 months is to delineate 30mlbs of eU₃O₈ (15-25m tonnes @ 700-1,400ppm eU₃O₈). 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.

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 Alf 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 eU₃O₈ 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 eU₃O₈ 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: 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.

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APPENDIX 1: Karoo Site 22: Re-logging and RC Drilling Results April -June 2011

Hole Type	Hole-ID	Easting	Northing	Total Depth Logged (ft)	From (ft)	To (ft)	Interval (ft)	Grade (ppm eU308)
Historic Re-logged	06F0314	63583	-3571518	176.1				nsr
Historic Re-logged	06F0013	62276	-3571782	73.8	52.0	53.5	1.5	1,008
Historic Re-logged	QFN0142	-34382	-3590140	71.1				nsr
Historic Re-logged	QFN0297	-34297	-3590100	62.6				nsr
Historic Re-logged	QFN0143	-34317.938	-3590149.1	65.7				nsr
Diamond Hole Twin	06F0130DD	62745	-3571899	91.9	24.6	29.4	4.78	1,634
Diamond Hole Twin	06F0473DD	63311	-3572682	131.2	32.8	39.4	6.63	3,213
Diamond Hole Twin	06F0802DD	62494	-3571718	157.5	77.8	83.5	5.71	3,711
Exploration RC	06F0860RC	63857	-3571321	423.2	398.0	402.1	4.16	892
Exploration RC	06F0861RC	63709	-3571305	413.4				nsr
Exploration RC	06F0862RC	63734	-3571508	406.8				nsr
Exploration RC	06F0863RC	63821	-3571261	413.4				nsr
Exploration RC	06F0864RC	63373	-3571736	315.0	283.1	285.0	1.85	1,184
Exploration RC	06F0864RC	63373	-3571736	315.0	287.9	294.5	6.63	2,568
Exploration RC	06F0865RC	63198	-3571764	262.5				nsr
Exploration RC	06F0866RC	63192	-3571739	249.3	206.5	210.5	4.01	3,823
Exploration RC	06F0866RC	63192	-3571739	249.3	230.8	232.8	2.00	2,621
Exploration RC	06F0867RC	63134	-3571611	183.7				nsr
Exploration RC	06F0868RC	63077	-3571693	196.9	170.9	171.2	0.31	247
Exploration RC	06F0870RC	62369	-3571637	118.1	83.5	86.4	2.93	254
Exploration RC	06F0870RC	62369	-3571637	118.1	89.6	91.1	1.54	1,054
RC Re-drill	06F0254RC	63284	-3571776	295.3	264.1	269.2	5.09	459
RC Re-drill	06F0257RC	63377	-3571677	315.0	278.5	284.4	5.86	595
RC Re-drill	06F0274RC	63849	-3571346	413.4	392.1	397.0	4.93	794
RC Re-drill	06F0314RC	63582	-3571513	331.4	299.2	300.3	1.08	391
RC Re-drill	06F0314RC	63582	-3571513	331.4	302.7	304.4	1.70	1,153
RC Re-drill	06F0354RC	63870	-3571564	383.9	363.2	366.9	3.70	642
RC Twin	06F0013RC	62275	-3571776	98.4	51.7	53.5	1.85	959
RC Twin	06F0024RC	62329	-3571786	98.4				nsr
RC Twin	06F0036RC	62368	-3571899	72.2	38.4	39.9	1.54	310
RC Twin	06F0037RC	62375	-3571797	108.3				nsr
RC Twin	06F0038RC	62346	-3571688	111.5	52.7	56.7	4.01	619
RC Twin	06F0039RC	62405	-3571597	131.2	98.9	103.4	4.47	768
RC Twin	06F0040RC	62448	-3571411	187.0	130.1	131.9	1.85	1,419
RC Twin	06F0041RC	62440	-3571509	147.6	94.5	100.3	5.86	468
RC Twin	06F0041RC	62440	-3571509	147.6	119.8	129.6	9.87	1,132
RC Twin	06F0044RC	62450	-3571856	101.7				nsr
RC Twin	06F0048RC	62453	-3571458	164.0	120.6	123.7	3.08	310
RC Twin	06F0048RC	62453	-3571458	164.0	126.8	127.0	0.15	214

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Hole Type	Hole-ID	Easting	Northing	Total Depth Logged (ft)	From (ft)	To (ft)	Interval (ft)	Grade (ppm eU308)
RC Twin	06F0051RC	62429	-3571799	111.5	66.1	70.3	4.16	2,964
RC Twin	06F0051RC	62429	-3571799	111.5	91.7	93.2	1.54	1,346
RC Twin	06F0052RC	62396	-3571693	118.1	96.1	99.4	3.24	367
RC Twin	06F0053RC	62453	-3571602	131.2	102.4	102.5	0.15	219
RC Twin	06F0053RC	62453	-3571602	131.2	104.7	105.4	0.77	208
RC Twin	06F0053RC	62453	-3571602	131.2	108.8	110.0	1.23	431
RC Twin	06F0061RC	62494	-3571558	137.8	106.3	113.5	7.25	649
RC Twin	06F0064RC	62462	-3571911	72.2	45.6	49.8	4.16	460
RC Twin	06F0065RC	62473	-3571813	98.4	57.4	66.5	9.10	1,132
RC Twin	06F0081RC	62542	-3571714	131.2	83.0	83.9	0.93	264
RC Twin	06F0081RC	62542	-3571714	131.2	89.2	90.3	1.08	247
RC Twin	06F0081RC	62542	-3571714	131.2	92.8	96.1	3.24	1,490
RC Twin	06F0087RC	62413	-3571753	111.5	68.2	69.6	1.39	705
RC Twin	06F0088RC	62326	-3571637	118.1				nsr
RC Twin	06F0093RC	62574	-3571927	72.2	34.0	34.4	0.46	240
RC Twin	06F0116RC	62675	-3571842	78.7	59.7	62.0	2.31	1,176
RC Twin	06F0139RC	62789	-3571752	114.8	57.4	57.9	0.46	233
RC Twin	06F0153RC	62846	-3571670	114.8	78.4	79.2	0.77	425
RC Twin	06F0157RC	62805	-3571806	105.0				nsr
RC Twin	06F0158RC	62819	-3571704	114.8	62.8	72.1	9.25	761
RC Twin	06F0163RC	62891	-3571758	101.7	82.5	83.7	1.23	565
RC Twin	06F0163RC	62891	-3571758	101.7	86.9	87.3	0.31	216
RC Twin	06F0168RC	62905	-3571810	98.4	47.1	50.3	3.24	581
RC Twin	06F0168RC	62905	-3571810	98.4	80.5	81.5	0.93	440
RC Twin	06F0169RC	62918	-3571716	131.2	71.2	71.7	0.46	301
RC Twin	06F0175RC	62924	-3571767	108.3	86.8	88.3	1.54	850
RC Twin	06F0176RC	62941	-3571677	131.2	100.2	102.5	2.31	836
RC Twin	06F0179RC	62951	-3571821	98.4	81.0	81.7	0.62	340
RC Twin	06F0188RC	63031	-3571486	167.3	141.2	143.2	2.00	876
RC Twin	06F0210RC	63132	-3571501	177.2				nsr
RC Twin	06F0235RC	62265	-3571728	108.3	55.8	60.9	5.09	1,963
RC Twin	06F0248RC	62869	-3571712	118.1	65.1	66.0	0.93	386
RC Twin	06F0431RC	63148	-3572414	49.2	16.7	18.7	2.00	271
RC Twin	06F0466RC	63304	-3572377	78.7				nsr
RC Twin	06F0477RC	63391	-3572491	78.7	41.7	42.6	0.93	218
RC Twin	06F0490RC	63457	-3572449	88.6	65.3	67.6	2.31	245
RC Twin	06F0504RC	63496	-3572458	98.4				nsr
RC Twin	06F0815RC	63168	-3572313	65.6	43.1	47.2	4.01	592
RC Twin	06F0869RC	63538	-3572514	98.4	71.9	73.7	1.85	1,690
RC Twin	06F0871RC	62466	-3571495	167.3	125.8	131.2	5.40	803

nsr : no significant result

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