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Companies Announcement Office
Via Electronic Lodgement

Lance Project Low-pH Field Demonstration Progress Update

Peninsula Energy Limited ("**Peninsula**" or "**the Company**") (ASX:PEN, OTCQB:PENMF) is pleased to provide the following update on the MU1A low-pH field demonstration at the Company's flagship, 100% owned Lance Project ("**Lance**") located in Wyoming, USA. The field demonstration of low-pH In-Situ Recovery ("**ISR**") has yielded significantly improved production results since the latest update in mid-May, 2021.

The update on 17 May 2021 outlined actions that had been taken across key focus areas to enhance performance, including changes to the configuration of the injection and recovery well patterns. Since that time the field operations have run consistently and the response has indicated favourable trends. Therefore, no further field layout adjustments have been required.

Commenting on the progress of the field demonstration, Peninsula Managing Director and Chief Executive Officer Wayne Heili said *"In reviewing the results of the field demonstration over the past few weeks, it is clear that the learnings-based adjustments implemented at Lance were well thought-out and appropriate. The composite production stream pH and free acid levels are now meeting our control targets and importantly, the uranium solution grade has responded with a strong improvement. The information gained during the demonstration operations will be applied to the commercial low-pH approach as the Company progresses the Lance Project toward a return to production."*

OPERATIONAL OVERVIEW

The field demonstration operations have continued over the past month without significant disruption. The pH and free acid concentration of the recovery composite stream have reached the target levels. With an Oxygen Reduction Potential ("**ORP**") level consistent at approximately 400 mv, the recovery stream appears to be sufficiently close to the target range of 450 to 600 mv to support higher uranium production grades.

The recovery composite stream uranium grade has recently increased to approximately 40 ppm, and is trending toward continued improvement, compared to the uranium concentration of between 20 and 25 ppm in mid-May.

Achieving and then maintaining the correct operational pH and ORP for the process solutions is critical to successful low-pH ISR uranium operations. With the pH and free acid target now achieved, the rate of acid addition has been reduced to a rate sufficient to maintain current levels. As previously reported, a change in the type of oxidant utilized has delivered significant improvement in the injection and recovery stream ORP levels.

URANIUM CAPTURE - ION EXCHANGE

As previously noted, ion exchange ("**IX**") uranium recovery processes have understood limitations in low pH applications. The success of IX processes is concentration driven and the system technical performance is known to improve with increasing uranium grades. A pilot scale IX system has been on-line since March. The performance of the IX has improved with the upward trending uranium concentration and it is achieving loading results that are consistent with typical levels for low-pH lixiviant applications.

The Company has also continued evaluating several alternative uranium capture/recovery process options which may improve upon standard ion exchange performance. Evaluations of two proprietary innovative concepts have been advanced with completed desktop evaluations. A laboratory benchtop assessment of one technology has been planned to be completed in July, 2021. If successful, the testing may be advanced to pilot scale demonstrations that could be run in conjunction with the current field demonstration. These advanced technologies have the potential to significantly enhance downstream processing performance while reducing operating costs.

Peninsula will provide further updates on the MU1A low-pH field demonstration as additional meaningful results become available.

Sincerely Yours,



Wayne Heili
Managing Director / CEO

This release has been approved by the Board of Directors.

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ABOUT PENINSULA ENERGY LIMITED

Peninsula Energy Limited (PEN) is an ASX listed uranium mining company which commenced in-situ recovery operations in 2015 at its 100% owned Lance Projects in Wyoming, USA. Following a positive feasibility study, Peninsula is embarking on a project transformation initiative at the Lance Projects to change from an alkaline ISR operation to a low-pH ISR operation with the aim of aligning the operating performance and cost profile of the project with industry leading global uranium production projects.