A R M S T R O N G Energy, LLC

September 28, 2016

Delivered by FedEx and electronically via e-mail

Andrew T. Mack, Commissioner Alaska Department of Natural Resources 550 West 7th Avenue, Suite 1400 Anchorage, AK 99501-3554 Rex Rock, Sr., President Arctic Slope Regional Corporation 1230 Agvik Street Barrow, AK 99723-0129

Subject: Pikka Unit 2016-2017 Plan of Exploration

Ladies and Gentlemen:

The State of Alaska, in a Decision dated November 5, 2015, approved the Pikka Unit 2015-2016 Plan of Exploration ("2015-2016 POE"). The approval requires that the 2016-2017 update to the Pikka Unit Plan of Exploration ("2016-2017 POE") be submitted to your offices on or before October 1, 2016.

Since the approval of the 2015-2016 POE, pre-stack merge processing of the Nigliq-Fiord and Tabasco North 3D seismic surveys covering portions of the Pikka Unit was finalized. The processing program included 3D de-multiple, 5D interpolation, and OVT migration on the merged high density 3D seismic surveys. Upon completion, interpretation, amplitude/AVO analysis, rock physics studies, and a simultaneous elastic inversion were initiated. Additionally, detailed stratigraphic analysis and the first phase of special core analysis was completed. Capillary pressure and relative permeability data from the special core analysis has been integrated into full field static and dynamic reservoir models. A second phase of special core analysis has been initiated in order to further refine the reservoir model. Preliminary geo-mechanical analysis has been conducted within the Pikka Unit area to assist in wellbore placement within the reservoir simulator.

Armstrong Energy, LLC ("Armstrong"), as Operator of the Pikka Unit, requests this letter serve as the 2016-2017 POE as outlined below.

- Armstrong intends to finalize the interpretation, amplitude/AVO analysis, rock physics studies, and a simultaneous elastic inversion of the Nigliq-Tabasco Merge 3D.
- A scoping study using the Nigliq-Tabasco Merge 3D OVT gathers is planned to test the viability of using this seismic data to map stress orientation within the Pikka Unit area. If the scoping study is successful, the seismic data will be integrated into a geo-mechanical study currently in the scoping phase.

- The full-field gco-mechanical study is planned to be completed by the end of 2017. The study will focus on insitu stress orientation as it relates to wellbore placement and orientation. The results will be integrated into the reservoir model to determine wellbore placement for optimal hydraulic fracture propagation and water flood sweep efficiency.
- Results of the Nigliq-Tabasco Merge 3D interpretation and inversion will be integrated with other licensed 3D seismic surveys covering the Pikka Unit area.
- Second phase special core analysis is planned to be conducted on cores collected from Qugruk 8 and Qugruk 5 wells. These analyses will include additional capillary pressure and relative permeability studies and flow assurance analysis. The flow assurance work will include both fluid sensitivity analysis as well as a study of fines migration related to fluid flow velocity. Results of the special core analysis will be integrated into the static and dynamic reservoir simulations to better predict well performance and ultimately to assist in facility design.

Should you have any questions or require additional information, please don't hesitate to call the undersigned at (303) 623-1821, or email <u>Nate@armstrongoilandgas.com</u>.

Very Truly Yours, Tate C Lawe

Nathan C. Lowe Land Manager

Cc: Teresa Imm, Arctic Regional Slope Corporation