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**KEEFE PHASE 1 ANALYTICS SHOW SIGNIFICANT URANIUM INDICATORS  
IN SANDSTONE & ANOMALOUS URANIUM IN BASEMENT  
- KEEFE PHASE 2 DRILLING CONTINUES**

Athabasca Uranium Inc. is pleased to report that it has received the analytical results of its 2011 diamond drilling program at the Keefe Lake Uranium Project in the Athabasca Basin region of Saskatchewan. Five holes (1,645 metres total) were completed in Phase 1 drilling conducted in November and December 2011, with two holes encountering significantly anomalous alteration and another containing chloritic alteration at various intervals below the unconformity, a common feature found in the host rocks containing uranium mineralization.

As previously reported in a release dated November 24, 2011, Hole AU4-1 intersected a large zone of alteration that started in the sandstone column, and continued well into the basement. In addition to the visible alteration in the sandstone, elevated levels of uranium indicator metals have been identified, which include: Cobalt (up to 12 times background), Arsenic (up to 3 times background), Lead (up to 5 times background) and Nickel (up to 9 times background).

Samples from basement lithologies within Hole AU4-1 revealed elevated levels of uranium (up to 155 ppm U) within a sheared/fractured granitic pegmatite. The basement of Hole AU4-1 consists predominantly of quartzite with minor intervals of arkosic quartzite, semipelitic gneiss and amphibolite.

The goals for the current Phase 2 drilling are two-fold. The first priority is to intercept the boundary of the quartzite unit where it meets the unconformity in order to test a possible paleo-topographic high that may have provided a conduit for mineralizing fluids. Quartzite ridges have recently been identified as an important feature for localizing uranium mineralization at the unconformity; including the McArthur River mine and the Phoenix Zone.

The second priority will be to test additional high-priority targets from the regional seismic survey and other subsurface conductors on the property.

UAX President Gil Schneider commented: “We are extremely pleased with the results from Keefe Phase 1 - we believe that the identification of a quartzite lithology in addition to the uranium indicator metals in the sandstone marks a significant milestone for the Keefe Lake Project. Our Phase 2 drilling, moving to its second hole at present, will help to validate our theories for the Keefe area”.

Samples were analysed by SRC Geoanalytical Laboratories (an SCC ISO/IEC 17025: 2005 Accredited Facility) of Saskatoon for analysis, which included a 16 element ICP-OES partial digestion, a 46 element ICP-OES total digestion. The uranium content above is uranium by fluorimetry (partial digestion, ICP-OES).

Neil McCallum, P.Geol of Dahrouge Geological Consulting Ltd., a qualified person, has reviewed and approved the disclosure of technical information within this news release.

*About Athabasca Uranium*

Athabasca Uranium Inc. is a uranium exploration and development company exploring an aggregate of over 60,000 hectares strategically located in the uranium-rich Athabasca Basin region of northeast Saskatchewan. The Company’s stated vision is to explore the region using leading-edge technology to become a world-class

uranium mining company. Additional information on Athabasca Uranium and its vision is available on the Company's website at [www.athabascauranium.com](http://www.athabascauranium.com).

ON BEHALF OF THE BOARD OF DIRECTORS

*"Gil Schneider"*

Gil Schneider, President & CEO

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