STARFIELD RESOURCES INC. NEWS

Starfield Resources Extends Contract With SGS Canada

Results of hydromet test work exceed expectations

Toronto, Ontario – Aug 16, 2010 – Starfield Resources Inc. (TSX: SRU) ("Starfield", "the Company") today announced that it has extended its contract with SGS Canada Inc. ("SGS"), located in Lakefield, Ontario, to continue development of an energy efficient and environmentally friendly hydrometallurgical technology for processing massive sulphides from the Company's Ferguson Lake project in Nunavut.

Earlier in 2010, Starfield commissioned SGS to perfect the oxidation and hydrolysis circuits of the hydrometallurgical process on a continuous basis. SGS has completed the initial work, with the continuous oxidation achieving approximately 90% oxidation of the iron in the lixiviant (synthetic primary leach solution) and the continuous hydrolysis producing an iron oxide residue containing 68% iron and 33% hydrochloric acid.

"In Starfield's April 2008 Scoping Study, Scott Wilson RPA identified the hydrolysis and oxidation processes as having the most technological risk in the hydromet process," said Andre Douchane, President and CEO. "Now that we have a clear understanding of the chemistry and the kinetics of the reaction, SGS is able to predict the outcome of the hydrolysis and oxidation tests. Not only do we understand how the oxidation and hydrolysis works, but we have it working beyond our expectations on a continuous basis. We are able to regenerate the hydrochloric acid in sufficient strength that it can be returned directly to the head-end of the circuit for reuse; and the iron oxide that is precipitated out of the process is inert and may have commercial value."

In conjunction with the next set of tests using the actual massive sulphides from Ferguson Lake, SGS is also conducting a series of flotation tests in an effort to lessen the amount of inert or unproductive material (gangue) sent from the mine site to the hydrometallurgical plant. Initial tests indicate that the addition of a flotation circuit at the mine could discard approximately 20% of the hydromet plant feed, yet still pump 99% of the metal to the hydromet plant. Increasing the amount of gangue retained at the mine site, and reducing the amount of material transported via the pipeline to the hydromet plant should result in considerable cost reductions. Removal of the gangue is also expected to substantially reduce the mass of the final solid residue from the leach circuit, thereby significantly raising the grade of precious metals in the final leach residue.

The upcoming test work is scheduled to take between 10 and 12 months at a cost of approximately $2 million and should take the process up to the actual pilot plant stage. "I am confident that the next phase of test work will be successful, and we will see operating design parameters for the Ferguson Lake massive sulphides. During this phase,

we will also recover actual metal (nickel, copper, and cobalt) and provide sufficient PGE sludge to develop recovery techniques for the platinum group elements." added Andre Douchane.

About Starfield

Starfield Resources Inc. is an advanced exploration and development stage company. The Company's primary asset is its Ferguson Lake nickel-copper-cobalt-platinum-palladium property in Nunavut, Canada. Additional assets include a nickel-copper-cobalt-PGE-chrome project in the Stillwater district of Montana with historic copper, nickel, chromite resources (non 43-101 and not to be relied on); the Moonlight copper project in California with significant NI 43-101 copper resources; and a portfolio of eight gold properties in Nevada.

Starfield has also funded the development of a novel, environmentally friendly and energy efficient hydrometallurgical flow sheet to recover metals from massive sulphides.

About SGS

The SGS Group is the global leader and innovator in inspection, verification, testing and certification services. Founded in 1878, SGS is recognized as the global benchmark in quality and integrity. With more than 59,000 employees, SGS operates a network of over 1,000 offices and laboratories around the world.

Forward-Looking Statements

This news release may contain certain information that constitutes forward-looking statements. Forward-looking statements are frequently characterized by words such as "plan," "expect," "project," "intend," "believe," "anticipate" and other similar words, or statements that certain events or conditions "may" or "will" occur. Forward-looking statements are based on the opinions and estimates of management at the date the statements are made, and are subject to a variety of risks and uncertainties and other factors that could cause actual events or results to differ materially from those projected in the forward-looking statements. These factors include the inherent risks involved in the exploration and development of mineral properties, the uncertainties involved in interpreting drilling results and other geological data, fluctuating metal prices and other factors described above and in the Company's most recent annual information form under the heading "Risk Factors" which has been filed electronically by means of the Canadian Securities Administrators' website located at www.sedar.com. The Company disclaims any obligation to update or revise any forward-looking statements if circumstances or management's estimates or opinions should change. The reader is cautioned not to place undue reliance on forward-looking statements.

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