STARFIELD RESOURCES INC. NEWS

Starfield Resources Announces Positive Preliminary Test Results For Hydromet Compatibility Of Ferguson Lake Massive Sulfides

Contract Signed to Build & Operate Hydromet Mini-Pilot Plant

Toronto, Ontario – May 24, 2011 – Starfield Resources Inc. (TSX: SRU) (OTCBB: SRFDF) ("Starfield", "the Company") today announced positive preliminary test results on the processing of Ferguson Lake ore.

The hydrometallurgical technology being developed is engineered to recover base metals from massive sulphides at the Company's Ferguson Lake project in Nunavut in an environmentally friendly, cost effective and energy efficient manner.

Testing has been performed by SGS Canada Inc. in Lakefield, Ontario. Phase I testing, completed in the summer of 2010, successfully demonstrated continuous operation of the oxidation and hydrolysis sections of the hydrometallurgical process using a synthetic feed (primary leach solution). Phase II testing began in the fall of 2010 and concluded successfully in April 2011, successfully demonstrating the oxidation and hydrolysis sections using actual feed made from Ferguson Lake massive sulphides.

Results from testing of the primary and secondary leach circuits show recoveries of 97% copper, 96% nickel, and 88% cobalt from a bulk sulphide concentrate produced from Ferguson Lake ore into the leach solution. The remaining metals, including PGEs, were left in the leach residue.

"These are excellent results, far better than any of us could have hoped for at the outset of this last round of test work," said André Douchane, President and CEO of Starfield. "We've now taken the next step and contracted SGS to build and operate a mini-pilot plant at their facilities in Lakefield."

Leach solution generated from the bulk Ferguson Lake concentrate was used to successfully demonstrate stable, continuous, simultaneous operation of the two enabling steps in the hydrometallurgical technology, i.e. oxidation and hydrolysis. The solution from the primary leach was continuously oxidized and the oxidized solution was sent directly to continuous hydrolysis. Two campaigns of one week each were run. The target oxidation level (80% of the ferrous iron in the leach solution) was achieved and in both campaigns reached up to 90%.

The extent of hydrolysis achieved also substantially exceeded expectations - the expected extent was about 30% per pass, compared to just over 70% achieved, with the operation of the hydrolysis reactor remaining stable.

The solution from the oxidation and hydrolysis campaigns was used in a continuous secondary leaching campaign, and the solution from the secondary leach was re-oxidized in a secondary oxidation step in which 97% to 98% of the ferrous iron was oxidized.

Targeted oxidation of the same material at 80% for a single pass was achieved in 18 hours of residence time, with the oxidation level increasing to as much as 90% in the subsequent 30 hours of residence time.

Hydrolysis tests on synthetic solution altered its content to produce from 20% to 26% hydrochloric acid. Higher acid levels in the range of 34% could be produced, but unacceptably high amounts of iron oxide were generated as a by-product. Interim filtration of the solution was used to remove iron oxide, along with acid washing of the same iron oxide to reduce the residual chlorine to less than 1%. The overall efficiency of the oxidation and hydrolysis circuits now approach 100%.

The mini-pilot plant is expected to be operational by early calendar 2012. Including operational testing and construction costs, it is expected that the cost of the plant will be between $4.2 and $4.8 million, depending on how quickly the plant achieves continuously efficient operation. The mini pilot plant will be of sufficient size that a facility capable of processing up to 5,000 tonnes of Ferguson Lake material per day could be engineered.

The technical information in this news release has been reviewed by Ray Irwin, BSc, P.Geo, a Qualified Person in accordance with National Instrument 43-101.

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 NI 43-101 and not to be relied on); the Moonlight copper project in California; and two gold properties currently leased/joint ventured 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.

For further information contact:

André J. Douchane
President and CEO
416-860-0400 ext. 222
adouchane@starfieldres.com

Greg Van Staveren
Chief Financial Officer
416-860-0400 ext. 223
gvanstaveren@starfieldres.com

Investor Relations
416-860-0400
info@starfieldres.com

www.starfieldres.com

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