



June 6, 2016

SOLITARIO PURCHASES NSR ROYALTY ON PROSPECTIVE PROPERTIES IN MONTANA

Denver, Colorado: Solitario Exploration & Royalty Corp. ("Solitario;" NYSE MKT: XPL; TSX: SLR) announces that it has purchased a 1.5% Net Smelter Return ("NSR") royalty on 15,831 acres of highly prospective mineral properties in Montana. The royalties were purchased from Atna Resources Inc. ("Atna") as part of its Chapter 11 bankruptcy auction process.

In 2012, Atna evaluated the mineral potential on approximately 830,000 acres of mineral rights that it held in western Montana to create a portfolio of NSR royalty properties. Atna's criteria for creating royalty properties from this vast mineral holding were the presence of surface mineralization, historical mining and favorable geology defined by exploration programs conducted by Anaconda Copper, Phelps Dodge and several other companies. Atna identified 11 properties with the highest mineral potential and created a 1.5% NSR royalty on these parcels. With this purchase, Solitario now owns the royalty on these 11 properties.

Chris Herald, President and CEO of Solitario stated: "This acquisition is a building block to the royalty segment of our company. What is unique about these royalties are that they pertain to private deeded property and are thus perpetually titled. We were very pleased that our \$2.50 per acre bid won the royalty rights on these 15,831 acres. The purchase price is the only investment we will ever have to make to retain these royalties in perpetuity. Voluminous technical information suggests excellent potential for Cu, Cu-Au, Cu-Ag and polymetallic mineralization on these properties that is consistent with the largest mineral deposits located in western Montana."

About Solitario

Solitario is an exploration and royalty company traded on the NYSE MKT ("XPL") and on the Toronto Stock Exchange ("SLR"). Solitario has a joint venture with Minera Milpo (a Peruvian zinc miner) on its high-grade Bongará zinc project in Peru and a 9.97% equity interest in Vendetta Mining. Solitario's Management and Directors hold approximately 7.6% (excluding options) of the Company's 39.0 million shares outstanding. Solitario's cash balance at end of the first quarter of 2016 was approximately US\$17 million. Additional information about Solitario is available online at www.solitarioxr.com.

FOR MORE INFORMATION AT SOLITARIO CONTACT:

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Cautionary Statement Regarding Forward Looking Information

This press release contains forward-looking statements within the meaning of the U.S. Securities Act of 1933 and the U.S. Securities Exchange Act of 1934, and as defined in the United States Private Securities Litigation Reform Act of 1995 (and the equivalent under Canadian securities laws), that are intended to be covered by the safe harbor created by such sections. Forward-looking statements are statements that are not historical fact. They are based on the beliefs, estimates and opinions of the Company's management on the date the statements are made and address activities, events or developments that Solitario expects or anticipates will or may occur in the future, and are based on current expectations and assumptions. Forward-looking statements involve a number of risks and uncertainties. Consequently, there can be no assurances that such statements will prove to be accurate and actual results and future events could differ materially from those anticipated in such statements. It can give no assurance that these expectations will prove correct. Additional risk factors are discussed in Solitario's filings with the U.S. Securities and Exchange Commission (the "SEC") including Solitario's latest Annual Report on Form 10-K and its other SEC filings (and Canadian filings) including, without limitation, its latest Quarterly Report on Form 10-Q. The Company does not intend to publicly update any forward-looking statements, whether as a result of new information, future events, or otherwise, except as may be required under applicable securities laws.