Sandfire Resources America completes an Updated Mineral Resource Estimate for the Johnny Lee Deposit, Black Butte Copper Project

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Key Points:

- The Johnny Lee deposit has a Measured and Indicated Mineral Resource of 10.9 million tonnes (Mt) at an average copper grade of 2.9% for 311 thousand tonnes (kt) of contained copper (Cu) at a 1.0 % Cu cut-off grade;
- The Johnny Lee deposit has an Inferred Mineral Resource of 2.7 Mt at an average copper grade of 3.0% for 80 kt of contained Cu at a 1.0 % Cu cut-off grade;
- Forty-eight diamond drillholes completed by Sandfire Resources America have been used to update the Mineral Resource estimate for the Johnny Lee deposit;
- Metallurgical testing of the Johnny Lee deposit has been integrated with systematic mineralogy to develop a copper recovery model;
- Updated copper cut-off grade of 1.0 % Cu based upon updated recovery studies and price assumptions;
- The Mineral Resource update for the Johnny Lee Deposit excludes the Lowry Deposit. Mineral Resources for the Lowry Deposit remain unchanged and current as of the effective date listed in the Preliminary Economic Assessment, July 12, 2013.

WHITE SULPHUR SPRINGS, Montana, Oct. 25, 2019 -- Sandfire Resources America Inc. (“Sandfire America” or the “Company”, Trading symbols- TSX.V:SFR and OTCQB:SRAFF) is pleased to provide the following announcement related to an updated Mineral Resource estimate for the Black Butte Copper Project, a proposed underground mine located in Montana, USA.

CEO and VP of Project Development Rob Scargill stated: “The updated Mineral Resource estimate, supported by substantial new drill data and geometallurgical investigation, allows project evaluation to proceed using data in which we have an increased level of confidence that will underpin upcoming studies on the Black Butte Copper Project.”

The updated Mineral Resource statement for the Johnny Lee Deposit is summarized in Table 1. This Mineral Resource statement is based upon the Preliminary Economic Assessment (effective date: July 12, 2013) further supported by additional drilling, analyses, geological modeling, and extensive metallurgical studies to provide updated recoveries.

Table 1: Mineral Resource Estimate for the Johnny Lee Deposit as of October 15, 2019.

Category	Quantity (Mt)	Cu (%)	Total Metal (kt)
UCZ			
Measured	1.4	2.6	36.2
Indicated	8.3	2.3	191.3
Measured and Indicated	9.7	2.4	227.5
Inferred	2.2	2.2	49.5
LCZ			
Measured	0.6	5.7	32.9
Indicated	0.6	7.9	50.5
Measured and Indicated	1.2	6.8	83.4

Inferred	0.5	6.3	30.3
Combined UCZ + LCZ			
Measured	2.0	3.5	69.1
Indicated	8.9	2.7	241.8
Measured and Indicated	10.9	2.9	310.9
Inferred	2.7	3.0	79.7

Source: SRK, 2019

- The effective date for this Mineral Resource is October 15, 2019. All significant figures are rounded to reflect the relative accuracy of the estimates. Copper assay values were capped where appropriate;
- Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. Inferred Mineral Resources have a high degree of uncertainty as to their economic and technical feasibility. It cannot be assumed that all or any part of an Inferred Mineral Resources can be upgraded to Measured or Indicated Mineral Resources;
- Metallurgical recovery of copper has been estimated on a block basis in the UCZ, averaging 77.4%, with a consistent 94.0% Cu recovery applied to the LCZ;
- To demonstrate reasonable prospects for eventual economic extraction of Mineral Resources, a cut-off grade of 1.00% copper based on metal recoverability assumptions, long-term copper price assumptions of $3.20/lb, mining costs, processing costs, G&A costs totaling $71/t;
- There are no known legal, political, environmental, or other risks that could materially affect the potential development of the Mineral Resources other than those outlined in the Management Discussion and Analyses of the June 2019 Company Quarterly Report. All Mineral Resources are located within land currently under control or lease to Sandfire Resources America Inc.

The 2019 Mineral Resource update was supervised and reviewed by SRK Consulting (U.S.), Inc. (SRK) and represents the following notable changes in the defined Mineral Resource from the previously defined Mineral Resource estimate contained within the Updated Technical Report and Preliminary Economic Assessment for the Black Butte Copper Project, Montana (effective date: July 12, 2013) due to the following key factors:

- Additional drilling, analytical data, geological and structural modeling, and interpretation of geological and mineralization for improved confidence;
- Extensive metallurgical and geometallurgical studies have allowed for estimates of copper recovery that have a higher level of confidence than previously assumed;
- Removal of Co, Ag, and Au by-products as recent metallurgical test work has indicated that froth flotation does not produce a copper concentrate with cobalt, silver, or gold in payable concentrations; and
- Updated cut-off grade used to define the Mineral Resource using recent metallurgical recovery assumptions for copper and updated price assumptions.

Introduction

Sandfire Resources America Inc. (the Company) is pleased to announce that an updated Mineral Resource estimate has been completed using significant additional drill data for the Johnny Lee Deposit, Black Butte Copper Project, Montana, USA. The updated Mineral Resource has been prepared following the Canadian Institute of Mining, Metallurgy, and Petroleum (CIM) guidelines.

The Mineral Resource estimate incorporates drill data from 140 diamond drillholes completed by its predecessors and, 48 diamond drillholes completed by the Company. The Mineral Resource estimate has been reviewed and approved by SRK of Denver, Colorado, USA under the supervision of Erik Ronald, an Independent Qualified Person under NI 43-101.

Twenty-two metallurgical composite samples, constructed from fourteen drillholes completed by the Company, were used to conduct an extensive metallurgical test work program for the Johnny Lee deposit. The metallurgical test results have been integrated with systematic mineralogy of drillhole samples to develop a metallurgical copper recovery model for the Johnny Lee deposit. Metallurgical testing was conducted at Base Metallurgical Laboratories (Kamloops, British Columbia) under the supervision of Dr. Deepak Malhotra of Resource Development Incorporated, an Independent Qualified Person under NI 43-101.

The Mineral Resource was prepared in accordance with CIM Definition Standards and will be supported by a NI 43-101 Technical Report to be published and filed on the Company’s website and SEDAR profile within 45 days.

Johnny Lee Deposit

The Johnny Lee copper deposit is formed by two zones of mineralization: An Upper Copper Zone (“UCZ”) situated at depths of 40 m – 210 m below surface and an underlying Lower Copper Zone (“LCZ”) at depths of 340 m - 520 m below surface. A Mine Operating Plan (“MOP”) Application for the extraction of mineralized rock from both Zones of the Johnny Lee deposit was submitted to the Montana Department of Environmental Quality (“MT DEQ”) in December 2015 and following revisions was deemed complete and compliant. A draft MOP permit was issued by the Hard Rock Mining Bureau MT DEQ on September 18, 2017 and the Environmental Impact Statement process started soon thereafter. The MOP proposes underground mining of the Johnny Lee Deposit using a drift and fill mining method and production of a copper concentrate by milling and froth flotation. Mill tailings will be used for underground paste-fill support and the surplus deposited in a double lined cemented tailings storage facility.

Resource Estimation Methodology and Parameters

An extensive quality assurance and quality control (QA/QC) program was implemented in order to support the Mineral Resource estimate. Diamond drill core sampling intervals were continuously collected from above the mineralization zones to the end of each drillhole. HQ (2.5 inch) diamond core was sawn into half-core samples for copper analyses. Diamond drill core analyses for copper mineralization was performed at ALS Laboratories (ALS) in Reno, Nevada and metallurgical testing at Base Metallurgical Laboratories in Kamloops, British Columbia, Canada. Approximately 20% of the submitted samples consisted of QA/QC samples including: duplicates, blanks, and certified Reference Materials (CRM). All QA/QC, sampling, drilling, and analytical methodologies have been deemed acceptable by the QP for use in determination of Mineral Resources as per CIM guidelines.

Geological continuity of up to eight, vertically stacked, shallow dipping >1.2% copper mineralized layers in the UCZ has been demonstrated and modeled as wireframe domains in three-dimensions (3D). The >1.2% copper domains in the UCZ are encapsulated within a zone of >0.25% copper mineralization modeled in 3D as wireframe volumes.

Copper mineralization within the LCZ occurs within three discrete >2.0% copper lenses that occur at approximately the same elevation. Each of these lenses has been modeled in 3D as separate wireframe volumes. Compositing and capping were utilized for copper grade estimated into each modeled domain using Ordinary Kriging for both the UCZ and LCZ. Density was estimated into the block model by domain using Ordinary Kriging of composited data. The block models were used to constrain the tonnage and copper grade estimations for the Mineral Resource estimate.

Copper Recovery Estimation

Metallurgical test work using UCZ composites has shown that copper recoveries, using the optimized recovery process, are highly variable. Mineralogical investigation of UCZ metallurgical composites has demonstrated that this variability is due to differences in copper sulfide liberation characteristics. The estimated copper recoveries determined from copper sulfide liberation metrics have been interpolated into a block model using an inverse distance weighting squared process. Estimated copper recoveries for the UCZ range from 68.2% to 87.9%.

Historic and recent metallurgical test work for the LCZ has demonstrated relatively high recoveries with low variability. Accordingly, a 94.0% copper recovery has been applied to the LCZ model.

Determination of Cut-off Grade for Resource

To demonstrate the prospect of eventual economic extraction of Mineral Resources, SRK applied a cut-off

grade that accounts for metallurgical recovery of copper, operational costs, and market-driven copper pricing. The following technical and economic parameters are assumed and accounted for in the determination of cut-off grade:

- Metallurgical recoveries: Estimated variable copper recovery for the UCZ. Assigned mean 94% copper recovery for the LCZ.
- Operational Costs: US$71/tonne. This includes mining, processing and general and administrative costs.
- Copper Price: A long term copper price of US$3.20 per pound (US$7,055 per metric tonne) is based on market consensus forecast for upside copper pricing.

Using these metrics, a cut-off grade of 1.0% Cu based on recovery assumptions was used for the entire Johnny Lee deposit.

Qualified Persons

The technical information contained in this announcement related to the Johnny Lee Deposit has been reviewed and approved by Erik Ronald, M. Eng., P.Geo, RM-SME, Principal Consultant, SRK Consulting (U.S.) Inc. and Deepak Malhotra Ph.D. RM-SME, Resource Development Inc. Messrs. Ronald and Malhotra are Qualified Persons pursuant to NI 43-101 for Mineral Resources and Metallurgical processing respectively. Messrs. Ronald and Malhotra are independent of the Company. For detailed information on the key assumptions, parameters and methods used to estimate the mineral resources, along with other information about the Johnny Lee Deposit, please refer to the Technical Report to be filed.

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Additional information on Sandfire Resources America Inc. can be viewed on SEDAR under the Company’s profile at www.sedar.com or on Sandfire Resources America Inc.’s website at www.sandfireamerica.com

Cautionary Note Regarding Forward-Looking Statements: Certain disclosures in this document constitute “forward looking information” within the meaning of Canadian securities legislation, including statements regarding the mineral resource estimates the completion of the proposed feasibility study, permitting and the Company’s plans for advancing the Black Butte Copper Project and expected outcomes. Forward-looking statements include statements that are predictive in nature, are reliant on future events or conditions, or include words such as "expects", "potential", "anticipates", "plans", "believes", "considers", "significant", "intends", "targets", "estimates", "seeks", attempts", "assumes", and other similar expressions. In making these forward-looking statements, the Company has applied certain factors and assumptions that the Company believes are reasonable, including and in addition to those assumptions previously set out in this news release that the Company will receive required regulatory approvals, the Company’s successful advancement of the Black Butte Copper Project toward feasibility, the expected positive results from the Black Butte Copper Project based on the estimates and findings contained in the Preliminary Economic Assessment from July 12, 2013, that the Company will continue to be able to access sufficient funding to execute its plans, that the Company is able to procure equipment and supplies in sufficient quantities and on a timely basis, that the Company’s exploration and development activities on the Black Butte Copper Project will not be affected by actions of environmental activists or other special interest groups, and that the results of exploration and development activities will be consistent with management’s expectations that capital costs and sustaining costs will be as estimated, that the assumptions underlying mineral resource estimates are valid, and that no unforeseen accident, fire, ground instability, flooding, labor disruption, equipment failure, metallurgical, environmental or other events that could delay or increase the cost of development will occur, that the current price and demand for copper and other metals will be sustained or will improve; that general business and economic conditions will not change in a materially adverse manner; and the continuity of economic and political conditions and operations of the Company. However, the forward-looking statements in this document are subject to numerous risks, uncertainties and other factors, including factors relating to the Company’s operation as a mineral exploration and development company and the Black Butte Copper Project, that may cause future results to

differ materially from those expressed or implied in such forward-looking statements, including that results of exploration and development activities will not be consistent with management’s expectations, uncertainties involved in the interpretation of drilling results and geological tests; delays in obtaining or inability to obtain required government or other regulatory approvals or financing, failure of plant, equipment or processes to operate as anticipated, the risk of accidents, labor disputes, inclement or hazardous weather conditions, unusual or unexpected geological conditions, ground control problems, earthquakes, flooding; interference with the Company’s exploration or development activities by environmental activists or other special interest groups; inability to procure equipment and supplies in sufficient quantities and on a timely basis; and all of the other risks generally associated with the development of mining facilities. There can be no assurance that such statements will prove to be accurate, and actual results and future events could differ materially from those anticipated in such statements. Readers are cautioned not to place undue reliance on forward-looking statements. The Company does not intend, and expressly disclaims any intention or obligation to, update or revise any forward-looking statements whether as a result of new information, future events or otherwise, except as required by law.

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