

MacDonald Mines' Grab Samples Support Iron-Oxide-Copper-Gold Deposit at the SPJ Property

TORONTO, Oct. 01, 2019 -- MacDonald Mines Exploration Ltd. (TSX-V: BMK) ("MacDonald Mines", "MacDonald" or the "Company") announces that the multi-element signature of grab samples collected at the Scadding Mine is likely indicative of an Iron-Oxide-Copper-Gold ("IOCG") deposit. Twelve (12) grab-samples collected on the SPJ Property have returned anomalous cobalt (Co), copper (Cu) and nickel (Ni) in addition to high-grade gold mineralization (Figure 1). The uranium anomaly, that covers two separate zones and extends over 2.5 kilometres, indicates that there is potential for a large system at the Scadding Deposit.

Figure 1. Grab samples results and uranium anomaly at the Scadding Mine

Figure 1 is available at <https://www.globenewswire.com/NewsRoom/AttachmentNg/a26a1319-49a1-4e42-8066-6c0aa92d03a0>

Table 1: Highlights from grab samples*:

*The reader is cautioned that grab samples are selective by nature and may not represent the true mineralization on the property.

Sample ID	Au (g/t)	Co (PPM)	Cu (PPM)	Ni (PPM)	X	Y
802362	18.53	12.5	46.3	7.1	529088	5165553
802366	13.11	18.2	98	2.9	529330	5165508
802357	8.62	29.2	321.1	41.4	529593	5166476
802360	7.46	159.7	62.4	75.2	529262	5166275
802364	7.23	4.8	52.6	3.1	529325	5165502
802359	5.75	19.2	215.3	15.5	529437	5166485
802368	3.89	16.7	77.4	10.5	529099	5165553
802358	3.41	7.7	95	32.8	529424	5166486
802365	2.61	17.4	157.7	6.5	529326	5165504
802352	0.79	1645.1	232.5	2109.5	529817	5166443
802361	0.79	12.1	18.8	26.4	529264	5166271
802356	0.04	250.4	238.6	1243.9	529589	5166464

Multi-Elements Signatures that are Typical of IOCG Deposits

IOCG deposits are enriched in a distinctive, geochemically diverse suite of minor elements including various combinations of Uranium (U), Rare Earth Elements (REE) Fluoride (F), Phosphorus (P), Molybdenum (Mo), Silver (Ag), Barium (Ba), Cobalt (Co), Nickel (Ni) and Arsenic (As) (*Williams et al., 2005*).

An airborne spectrometry survey, conducted by previous operators around the Scadding Mine, has enabled MacDonald Mines to identify a distinct Uranium anomaly that is spatially associated with the Scadding Deposit as well as other identified gold showings on the property (Figure 1).

While the cause of uranium enrichment in certain IOCG deposits remains unknown, available data in the literature suggests that the uranium grade of IOCG deposits may be primarily related to the uranium content of their unaltered host rocks. The fluids that generate IOCG deposits are thought to be capable of leaching and transporting significant uranium. In fact, many IOCG deposits appear to have an enrichment in uranium that is approximately 10 to 40 times that of background levels (*Hitzman and Valenta, 2005*).

Quentin Yarie, MacDonald's President and CEO commented: *"The anomalous uranium levels from a previous airborne survey correlate very well with both the Scadding Deposit and our sampling results. Research shows that exploration for IOCG deposits should focus on areas with anomalous high uranium contents in host rock sequences. The irregular footprint of the uranium anomaly is also typical of what we would expect from our interpretation of a high-grade gold IOCG deposit model at Scadding."*

Update on 2019 Drilling Program

MacDonald Mines continues to advance its 2,000-metres drill program, announced on August 1, 2019, at its 100%-owned Scadding Mine. The Company reported **52 g/t gold over 12 metres** in hole 2019-SM-001 on September 26, 2019. To date, five (5) holes have been completed at an average depth of 125 metres. Preliminary observations indicate that visible gold was present in all 5 holes. In hole 2019-SM-005, flecks of **visible gold** were observed at 49m, 50m, 73m, and 106 m depth - the deepest observation of gold to date. Assay results are pending.

On-site Quality Assurance/Quality Control ("QA/QC") Measures

Drill core samples were transported in security-sealed bags for analyses to Bureau Veritas. in Timmins, Ontario. Individual samples are labeled, placed in plastic sample bags and sealed. Groups of samples are then placed into durable rice bags and then shipped. The remaining coarse reject portions of the samples remain in storage if further work or verification is needed.

MacDonald has implemented a quality-control program to comply with best practices in the sampling and analysis of drill core. As part of its QA/QC program, MacDonald inserts external gold standards (low to high grade) and blanks every 20 samples in addition to random standards, blanks, and duplicates. All samples over 10 g/t gold or the samples with abundant visible gold are analysed by 1Kg screen metallic.

SPJ Property highlights

- 100% ownership
- Over 10,000 hectares in excellent mining jurisdiction and close to infrastructure
- Multi-element IOCG
- Hosts the high-grade past producing Scadding Gold Mine
- Significant cobalt-copper, silver, nickel and rare earth showings outside of the Scadding Deposit footprint
- Optimize Group contracted to redevelop the Scadding Deposit

Historically, the Scadding Mine produced 914 kilograms of gold from 127,000 tonnes of mineralized material grading 7.2 g/t (OFR 5771). MacDonald's reinterpretation of the geological model at the Scadding Deposit and larger SPJ property indicates that it could host a gold-rich Iron-Oxide-Copper-Gold deposit and that significant gold structures may have been missed by previous operators' drilling campaigns (2009-2011).

Qualified Person

Quentin Yarie, P Geo. is the qualified person responsible for preparing, supervising and approving the scientific and technical content of this news release.

About MacDonald Mines Exploration Ltd.

MacDonald Mines Exploration Ltd. is a mineral exploration company headquartered in Toronto, Ontario focused on gold exploration in Canada. The Company recently acquired the high-grade past-producing and permitted Scadding Gold Mine and is focused on developing its large SPJ Project in Northern Ontario.

The Company's common shares trade on the TSX Venture Exchange under the symbol "BMK".

To learn more about MacDonald Mines, please visit www.macdonaldmines.com

For more information, please contact:

Quentin Yarie, President & CEO, (416) 364-4986, qyarie@macdonaldmines.com

Or Mia Boiridy, Investor Relations, (416) 364-4986, mboiridy@macdonaldmines.com

Hitzman, Murray & Valenta, Richard. (2005). Uranium in iron oxide-copper-gold (IOCG) systems. Economic Geology. 100. 1657-1661. 10.2113/gsecongeo.100.8.1657.

Williams PJ, Barton MD, Johnson DA, Fontbote L, de Haller A, Mark G, Oliver NHS, Marschik R (2005) Iron oxide copper gold deposits; geology, space-time distribution, and possible modes of origin: Econ Geol 100:371-406 (100th Ann Vol).

This News Release contains forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as "may", "should", "expects", "plans", "anticipates", "believes", "estimates", "predicts", "potential" or "continue" or the negative of these terms or other comparable terminology. These statements are only predictions and involve known and unknown risks, uncertainties and other factors that may cause our or our industry's actual results, levels of activity, performance or achievements to be materially different from any future results, levels of activity, performance or achievements expressed or implied by these forward-looking statements.

Although the Company believes that the assumptions and factors used in preparing the forward-looking information in this news release are reasonable, undue reliance should not be placed on such information, which only applies as of the date of this news release. The Company disclaims any intention or obligation to update or revise any forward-looking information, whether as a result of new information, future events or otherwise, other than as required by law.