

# MacDonald Mines Commences Gravity Survey along Alwyn Cu-Au Trend Testing the Presence of Iron-Rich Critical Metals Mineralization at Depth

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TORONTO, Jan. 25, 2023 - [MacDonald Mines Exploration Ltd.](#) (TSX-V: BMK, OTC: MCDMF) ("MacDonald Mines" or the "Company") is pleased to announce the commencement of a broad gravity survey over the Alwyn Copper-Gold ("Cu-Au") Trend ("Alwyn") on its 100% owned SPJ Property ("SPJ") near Sudbury, Ontario.

## Survey Highlights:

- The gravity survey is testing the presence of iron-rich alteration zones in which Cu-Au mineralization could be associated with specular hematite to form iron oxide copper-gold ("IOCG") or affiliated critical metal mineralization that are not detectable with regional magnetic surveys
- Geological indicators from the 2022 drilling program are suggesting the presence of iron-rich alteration zones under the Alwyn prospect
- The gravity survey covers a total of 321.9 ha at 100 m line spacing with line azimuth 45°/225° over 3.2 km along the McLaren Lake Fault Zone to cover the high and moderate priority targets proposed by ALS GoldSpot Discoveries Ltd. ("ALS GoldSpot") (formerly [GoldSpot Discoveries Corp.](#)) in May 2022
- The survey will be conducted by Initial Exploration Services in conjunction with ALS GoldSpot over an estimated 10 days

Greg Romain, President & CEO, commented: "The observations made during our 2022 drill program at the Alwyn mine identified several key indicators of IOCG and affiliated critical mineral mineralization. The gravity survey will be an important tool to test for the presence of non-magnetic iron-rich alteration zones under the Alwyn prospect in which Cu-Au mineralization could be associated with specular hematite. This survey will also provide a better understanding of the footprints at depth of what appears to be a large mineralized system formed along the McLaren Fault Zone along the 2.5 km Alwyn Cu-Au trend identified by ALS GoldSpot in 2022." Mr. Romain added: "We look forward to sharing the results as soon as they become available and our plans to continue exploring along the prospective McLaren Lake Fault Zone."

*Figure 1. Gravity Survey Outline over Alwyn Trend.*

A photo accompanying this announcement is available at <https://www.globenewswire.com/NewsRoom/AttachmentNg/fca0ce88-b123-4cef-ba62-89cb80b8bf5c>

## Alwyn Cu-Au Target

Phase 1 drilling at Alwyn consisted of five oriented diamond drill holes, totalling 693 m. Variably dense and multi-directional networks of quartz-carbonate to carbonate veins, comparable to the networks of veins associated with copper-gold mineralization at surface, were intersected in all five drill holes (for more details see news release dated September 1<sup>st</sup>, 2022). At surface and in diamond drilling in the Alwyn area, sporadic veins comprised of specular hematite + K-feldspar and variably associated with chalcopyrite mineralization were also observed. This iron oxide-bearing + K-feldspar alteration type is indicative of possible IOCG mineralization.

The 321.9 ha gravity survey along the 2.5 km Alwyn Cu-Au trend is testing for the presence of zones of iron

alteration under the Alwyn prospect in which Cu-Au mineralization could be associated with specular hematite to form IOCG mineralization. This survey will help to define the footprint of iron alteration/mineralization, including potassium feldspar, earthy & specular hematite associated with mineralization and veins that were observed in the 2022 drilling program. Regional magnetic surveys indicate several interesting features along the Alwyn trend and McLaren Lake Fault. No gravity surveys have been completed in this area to date which is necessary to detect concentrations of specular hematite or non-magnetic iron-rich minerals. The results of the survey will be integrated into ALS GoldSpot's machine learning technology to generate additional targets for future drilling and exploration.

Figure 2. Location of Alwyn Mine on MacDonald Mines' SPJ Property.

A photo accompanying this announcement is available at  
<https://www.globenewswire.com/NewsRoom/AttachmentNg/81ef022c-dfe0-413e-8175-7fcdae845498>

#### Highlights of Phase 1 Drilling at the Alwyn Prospect

- 0.41 % CuEq (0.17 % Cu, 0.36 g/t Au and 0.28 g/t Ag) over 90.44 m in hole AW-22-102 (Alwyn), within an untested area of Alwyn, including two zones of stronger mineralization
  - Upper zone: 41.53 m at 0.53 % CuEq (0.24 % Cu, 0.43 g/t Au and 0.41 g/t Ag), including 3.99 % CuEq (1.36 % Cu, 3.87 g/t Au and 3.05 g/t Ag) over 3.20 m
  - Lower zone: 13.00 m at 0.84 % CuEq (0.29 % Cu, 0.82 g/t Au and 0.33 g/t Ag)
- Identification of cobalt anomalies in most of the drill holes completed in the Alwyn system with the broadest intersection being 0.015 % Co over 26.50 meters in AW-22-101
- Copper-gold mineralization open in all directions and confirmed over a strike length of 115 m within the 2.5 km Alwyn Copper-Gold Trend interpreted in conjunction with the work of ALS GoldSpot
  - Supports the potential to further expand the Alwyn copper-gold system
- Widest and most significantly mineralized interval intersected during this initial five hole program at Alwyn was located southeast of the Alwyn Mine beyond the historically known footprints of Cu-Au mineralization

Table 1: Collar details for Phase 1 drilling at Alwyn Mine.

Hole ID	Collar location			Hole Attributes		
	Easting (m)	Northing (m)	Elevation (m)	Final Depth (m)	Azimuth	Dip
AW-22-098	5172074	528287.2	283.17	129	25	-45
AW-22-099	5172086	528243.8	287.66	120	45	-45
AW-22-100	5172086	528243.8	287.66	153	65	-60
AW-22-101	5172047	528333.2	278.31	150	0	-62
AW-22-102	5172047	528333.2	278.31	141	30	-45

Table 2: Reported assays - May 2022 drill program at the Alwyn Copper-Gold Trend

Hole ID	From (m)	To (m)	Length (m)*	Au (g/t)	Ag (g/t)	Co (ppm)	Cu (wt. %)	Cu Eq. (%)**	Au Eq. (g/t)**	Co Eq. (ppm)**
AW-22-098	13.0	108.1	95.10	0.16	0.18	66	0.11	0.22		
	Including									
	13.0	50.5	37.50	0.32	0.23	78.6	0.172	0.39		
	Including									
	13.0	22.2	9.20	0.48	0.18	150	0.06			
	92.0	108.1	16.10	0.05	0.07		0.11	0.14		
AW-22-099	13.0	50.5	15.00	0.24	0.15		0.08	0.24		
AW-22-100	38.7	41	2.30	0.11	0.21		0.18	0.26		

AW-22-101	49	59.65	10.65	0.35	0.24	0.13	0.37	
	<i>Including</i>							
	49.0	50.0	1.00	3.32	0.55	0.40		3.92
	76.5	103	26.50	0.04	0.17	153	0.02	229
AW-22-102	41.34	131.78	90.44	0.36	0.28	60	0.17	0.41
	<i>Including</i>							
	41.34	82.87	41.53	0.43	0.41	62	0.24	0.53
	47.0	50.2	3.20	3.87	3.05		1.36	3.99
	118.8	131.7	13.00	0.82	0.33		0.29	0.84

*\*Assay results are presented over core length. As they represent discoveries, additional drilling is necessary to estimate the true width of the discovered zones of mineralization.*

*\*\*Metal equivalency calculations contain only the values presented in this table. All other metal values were deemed below significant values. Metal equivalents are calculated based on metal prices in US dollars of \$8,313/T Cu, \$51,020/T Co, \$18.84/oz Ag and \$1,740/oz Au as reported on August 29<sup>th</sup>, 2022 by London Metals Exchange (copper and cobalt cash prices) and Kitco Metals (gold and silver).*

#### About MacDonald Mines Exploration Ltd.

MacDonald Mines is a Canadian gold and base metal exploration company focused on exploring its 100%-owned, 19,720 ha (197 km<sup>2</sup>) SPJ Project, 20 km southeast of the prolific Sudbury Mining Camp in Northern Ontario. The Company's focus is to locate what it theorizes to be large gold systems with high-grade gold surrounding the past producing Scadding Gold Mine and potential large gold and polymetallic structures surrounding Alwyn, Glade, MacLeod and Norstar. The Company is also focusing on key critical metal systems surrounding Candore and Jerome within the SPJ Project to supply the renewable energy transition, particularly nickel, copper, and PGE's. The demand and need for critical metals is at an all-time high, and Macdonald Mines' believes the SPJ Property Area has the potential to be part of the solution.

#### Qualified Person

Jean-François Montreuil, P.Geo., Chief Geologist of MacDonald Mines, is the Qualified Person as defined by National Instrument 43-101 *Standards of Disclosure for Mineral Projects*, responsible for preparing, supervising, and approving this news release's scientific and technical content.

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