

GoldON Outlines Lithium Pegmatite Discovery Potential at its McInnes Lake Greenstone Belt Property

24.04.2023 | [Newsfile](#)

Elevated lithium values of up to 1,126 ppm in metavolcanic host-rocks distributed proximal to the main plutons triggered comprehensive review

Victoria, April 24, 2023 - [GoldON Resources Ltd.](#) (TSXV: GLD) ("GoldON" or the "Company") is pleased to provide an overview of the fertile peraluminous granite plutons and lithium pegmatite potential at its 100%-owned McInnes Lake property (the "Property") that is located approximately 50 kilometres (km) southwest of Frontier Lithium's Pakeagama Lake area lithium deposits and covers the majority of the McInnes Lake greenstone belt in northwestern Ontario.

Highlights:

- Fertile lithochemical signature recognized in McInnes North pegmatitic granite pluton from GoldON's latest fieldwork on the 11,424-hectare Property.
- Anomalous bulk rock lithium (Li), beryllium (Be), rubidium (Rb), cesium (Cs), tantalum (Ta), and niobium (Nb) in McInnes Lake pluton compare with fertile, peraluminous granite plutons elsewhere in Ontario such as the Allison Lake batholith and the MNW stock in Georgia Lake region.
- Analytical results from the latest fieldwork included a database of 480 bulk rock samples with 67 exceeding 50 parts per million (ppm) lithium.
- Elevated lithium values newly discovered ranging from 50 to 1,126 ppm in metavolcanic host-rocks distributed proximal to the main plutons in the McInnes Lake greenstone belt may reflect exomorphic dispersion outwards from exposed and blind pegmatitic granite plutonic centres.
- Peraluminous granitic magma generation and emplacement are possibly controlled by the inferred northern continuation of a 100 -750 metres (m) wide, deep seismic tapping, E1/E2 extensional shear zones and associated second order shears, which also underlie the Red Lake Mine Complex and greenstone slivers to the north (Red Lake Extension).
- Major fault zone control of peraluminous granite plutons and derivative lithium-rich pegmatites is evident elsewhere in northwestern Ontario, including 50 km to northeast of the McInnes North pluton, along the Bearhead fault system at Pakeagama Lake, where Frontier Lithium¹⁴ has delineated NI 43-101 Measured & Indicated (M&I) resources of 26 million tonnes (mt) of 1.62% Li₂O and Inferred resources of 32.4 mt of 1.41% Li₂O.

Figure 1. Granitic pegmatite sample from >70 m wide pegmatite zone on the east shore of McInnes Lake.

To view an enhanced version of this graphic, please visit:

https://images.newsfilecorp.com/files/7436/163416_54e6804d2458bbcb_001full.jpg

"GoldON's fieldwork has discovered several new showings that confirm the presence of a fertile peraluminous granite setting. Geological similarities include the E1 fault that is inferred to pass right through the pluton area and may have been a controlling structure for the emplacement of fertile granites and related lithium-rich pegmatite melts. This is a similar setting to the Pakeagama Lake peraluminous parent granite and derived LCT-petrogenetic family pegmatites located 50 km to the northeast," said GoldON's Technical Advisor, Frederick Breaks, PhD, P.Geo. "The McInnes Lake project checks all the boxes, and I have

recommended a follow-up fieldwork program to be conducted as soon as possible."

Recognition of fertile peraluminous granites is obviously one important aspect of exploration for potential derivative rare-element pegmatite deposits of the lithium-cesium-tantalum (LCT) petrogenetic family¹. These plutons are widespread in the Superior Province of northern Ontario² and especially in high to granulite metamorphic grade, migmatized, clastic-metasedimentary-dominant belts, such as the English River and Quetico terranes, where 5,000 sq. km of peraluminous granite was delineated in the former by regional mapping programs of the Ontario Geological Survey³.

This news release documents a fertile granite, the McInnes North pluton (MNP), situated in the McInnes Lake greenstone belt (MLGB) of the North Caribou Lake terrane of northwestern Ontario⁴, based upon the compilation of existing published lithochemistry data (480 bulk rock samples) and petrographic attributes stemming from an extensive review of the literature.

Fertile Peraluminous Granite Plutons

The degree of chemical evolution varies significantly in the peraluminous granite suite of S-type affiliation, and consanguineous pegmatites with rare-element mineral potential are largely restricted to terrane boundary zones with lower-grade greenstone belt-rich domains such as the western Uchi terrane and associated with major deep crustal fault systems such as the Sydney Lake-Lake St. Joseph fault⁵.

Examples of fertile granite plutons in this setting are found at the Allison Lake batholith⁵ and Separation Rapids pluton⁷, areas of extensive mineral exploration for lithium mineralization.

A second setting involves peraluminous granite plutons entirely enclosed within greenstone belts, such as the 0.5 sq. km, unnamed pluton of tourmaline-garnet-muscovite pegmatitic granite situated just east of the Musselwhite mine⁶, a plausible source of spodumene pegmatite dykes found in underground workings⁸, and at the McInnes North and Lower Bay plutons.

The size of fertile pegmatitic granite plutons varies considerably from large batholiths such as the 30 by >100 km Glacier Lake batholith⁹ to the 1.5 by 2.8 km Separation Rapids pluton, the latter being the most evolved fertile granite known in Ontario⁷. The McInnes North pluton occurs in the northern part of the Property and, at a minimum size of 1.5 by 1.9 km, is similar in size to the 2,646±2 Ma Separation Rapids pluton. A second, smaller, 0.4 km diameter body, called the Lower Bay pluton, occurs in the southern part of the Property.

Figure 2. Regional map with location of McInnes Lake and GoldON's other properties.

To view an enhanced version of this graphic, please visit:

https://images.newsfilecorp.com/files/7436/163416_54e6804d2458bbcb_002full.jpg

Geological Setting

The MLGB is one of several supracrustal slivers that reside in the core of the predominantly Mesoarchean North Caribou Lake terrane⁴. Cycle 2 intermediate volcanism in the greenstone belt has an age spread of 2,975.4±0.8 Ma to 2,928.7±0.6 Ma¹³. The peraluminous granite plutonism is undated and plausibly developed late in the history of the terrane.

From seismic studies in the Red Lake area^{10,11,12}, it is inferred that the MLGB lies along the northern continuation of the deep crustal E1/E2 extensional shear zone, which also underlies the Red Lake Mine Complex and greenstone slivers to the south of MLGB, called the Red Lake Extension. The Central sliver¹³ 50 km south of the MLGB, is a shear zone approximately 100 -750 m wide and is coincident with a prominent first vertical derivative magnetic low that has numerous second-order shears.

Deep crustal level fault zones may have importantly acted as peraluminous granitic magma generation sites

and conduits for emplacement along the length of the greenstone belt as suggested by the appearance of pegmatite bodies of various sizes distributed in the MLGB over a strike length of at least 30 km.

The Sydney Lake fault, south of Red Lake, demonstrates that significant volumes of peraluminous granitic magma can be generated within major deep crustal fault structures, as exemplified by a conspicuous, linear-shaped, garnet-cordierite-muscovite granite mass, 0.3 to 2 km in breadth and a minimum 130 km in strike length, entirely confined within this major fault system³.

Major fault zone control of peraluminous granite plutons and derivative 2,672 Ma lithium-rich pegmatites is evident elsewhere, as 50 km to northeast of the McInnes North pluton, along the Bearhead fault system at Pakeagama Lake, where Frontier Lithium¹⁴ has delineated NI 43-101 resources of 26 mt (M&I) of 1.62% Li₂O and 32.4 mt (Inferred) 1.41% Li₂O.

McInnes North Pluton

The McInnes North pluton (MNP) was previously briefly described in several Ontario Geological Survey mapping studies^{13,15,16}. Rock types comprise massive, undeformed, medium-grained, two-mica granite and associated pegmatitic granite units such as potassic pegmatite¹⁵. Graphic K-feldspar megacrysts are also present suggestive of pegmatitic leucogranite phases. Mineralogy comprises deep pink, blocky K-feldspar, plagioclase, quartz, accessory muscovite, tourmaline, garnet, and biotite¹³.

The MNP has an apparent exocontact pegmatite swarm that extends for at least 1 km to the southeast¹⁸ into mafic and intermediate metavolcanic host rocks. Dykes of similar rock also occur up to 6 km north of the pluton¹⁸. The Lower Bay pluton, 20 km south, lacks bulk rock chemistry data but appears similar to the MNP, in descriptions of the previous work^{15,16,17}. Peraluminous granitic pegmatite dykes also are evident and occur through the MLGB^{13,15,19}.

Lithochemistry

Published lithochemistry data for the MLGB, with Li, Be, Rb, Cs, Ta, and Nb, comprise 142 bulk rock analyses from the 2006 Far North Initiative Ontario Geological Survey mapping project¹³ and 338 analyses in a 2021 belt-wide mineralization-geochemical investigation¹⁹.

Six bulk rock analyses from the McInnes North pluton were compiled from these sources and summarized in Table 1 with a comparison to various fertile granite plutons in other parts of Ontario previously investigated^{2,5,7}. Key attributes of fertile granites and their internal pegmatitic granite phases were initially documented and classified in the Cat Lake-Winnipeg River pegmatite field of southeast Manitoba²⁰.

Table 1. Summary of Rare-Element Bulk Rock Data for McInnes North Pluton Compared to Other Fertile Peraluminous Granite Complexes in Ontario.

	Lithium (ppm)		Rubidium (ppm)		Cesium (ppm)		Niobium (ppm)		Tantalum (ppm)		K (ppm)	
	Mean	Range	Mean	Range	Mean	Range	Mean	Range	Mean	Range	Mean	Range
McInnes North pluton	65	49 - 99	384	218 - 526	8.6	7.0 - 10.0	16.8	9.7 - 24.7	2.6	2.12 - 3.25	141	125 - 176
Allison Lake batholith	80	18 - 190	226	117 - 587	17.4	2.7 - 90	10.1	2.7 - 58.7	1.2	0.61 - 12.9	176	49 - 118
MNW stock	107	45 - 179	390	314 - 660	35.5	12.7 - 36.3	25.1	16.7 - 82	9	2.05 - 66	118	81 - 106
Barbara Lake stock	108	30 - 415	333	68 - 601	25.6	3.9 - 62.4	23.8	6.9 - 92.1	10.6	1.4 - 91.1	106	51 - 21
Separation Rapids pluton	160	53 - 235	921	726 - 984	30.0	11.8 - 58	73	41 - 94	22.1	9.2 - 28.7	21	0.6
n= number of samples												

n= number of samples

1. MacLachlan, B. and Robertson, C. 2022. [GoldON Resources Ltd.](#) Report on the May to June and Sept 2021 Exploration Programs on the McInnes Lake property. Assessment Work Report, Ontario MNDM: Grab samples 277167 -277171.
2. Buse, S. and Prefontaine, S. 2006. Open File Report 6210, Appendix 2, Sample 06-SP-1104.
3. Tindle, A.G., Selway, J.B. and Breaks, F.W. 2002. Ontario Geological Survey, MRD 111.
4. Tindle, A.G., Breaks, F.W., and Selway, J.B. 2008. Ontario Geological Survey, MRD 231.

5. Breaks, F.W. and Tindle, A.G. (2001). p.172-173 in CIMM Special Volume 53. Industrial Minerals in Canada.

Figure 3. Lithium vs Rubidium ($\log_{10}$) in the McInnes North pluton compared with other fertile granite plutons in the northwestern Superior Province of Ontario.

To view an enhanced version of this graphic, please visit:

https://images.newsfilecorp.com/files/7436/163416_54e6804d2458bbcb_004full.jpg

Figure 3 depicts Rb vs Li variation in MNP compared with other fertile granite plutons in the region. The MNP plots mid-way between the variation fields of the Allison Lake batholith and Separation Rapids pluton and define a trend of increasing fertile granite evolution. The MNP has elevated lithium (mean 65 ppm; range 53-99 ppm), and Rb values (mean 384 ppm; range 218 to 526 ppm) mostly exceed the Allison Lake batholith (Rb mean 226 ppm; range 117 to 587 ppm), albeit with a small overlap in the data fields (Figure 3). Mean Ta and Nb are higher in the MNP versus Allison Lake batholith with lower mean Cs (8.6 vs 15.6 ppm), but the Cs ranges mutually overlap. The Allison batholith, delineated in 2001⁵, contains several rare-element mineral showings including recently discovered spodumene by Green Technology Metals¹⁴.

Lithium Dispersion Halos

Numerous localities along the MLGB trend reveal anomalous lithium values in mafic and intermediate metavolcanic rocks^{13,19} in the range 55 ppm to 1,126 ppm, relative to the Upper Continental Crust mean lithium abundance of 20 ppm²², that may signify exomorphic dispersion outward from fertile pegmatitic granite bodies.

The highest lithium values of 304, 340, and 1,126 ppm¹⁹ are situated within 0.8 to 1 km of the McInnes North pluton, and occur in a fragmental, angular, possible debris flow/conglomerate rock of float origin that may represent disrupted parts of a nearby lithium dispersion halo. Other lithium anomalies, in the 68 to 376 ppm range, were documented in metavolcanic and banded iron formation bedrock within 6 km of the MNP¹⁹ and such anomalies require further field definition as does a lithium value of 180 ppm in metagabbro situated about 10 km southeast of the MNP²³.

Follow-up field investigation focused on lithium mineralization in known peraluminous plutons and related exocontact dykes is planned in the forthcoming field to further unravel the potential for LTC-class pegmatites. The source of the numerous lithium anomalies, which may have developed via dispersion from lithium-rich pegmatites hosted in the metavolcanic and banded iron formation bedrock, is presently unclear and will also require further field investigation.

"We originally staked the underexplored McInnes Lake property for its deep crustal-scale features and similarities to the Red Lake Camp and have been successful in discovering several new gold showings. However, the discovery of elevated lithium values that compare with other fertile, peraluminous granite plutons in Ontario is a pleasant surprise," said Mike Romanik, president of GoldON. "Lithium and rare earth exploration is a specialized field, and we are very fortunate to have Dr. Breaks coordinating our exploration strategy."

The technical information presented in this news release has been reviewed and approved by Frederick W. Breaks, PhD, P. Geo, a qualified person for exploration, as defined by National Instrument 43-101, Standards of Disclosure for Mineral Projects.

About GoldON Resources Ltd.

GoldON is an exploration company focused on discovery-stage properties located in the prolific greenstone belts of northwestern Ontario, Canada. Our current project portfolio includes six properties in the Red Lake Mining District (McDonough, McInnes Lake, Pakwash North, Pipestone Bay, Springpole East, and West Madsen) and a seventh property in the Patricia Mining District (Slate Falls).

For more information, you can visit our website at goldonresources.com, download our investor presentation by clicking [here](#), and follow us on Twitter at <https://twitter.com/GoldONResources>.

ON BEHALF OF THE BOARD

Signed "Michael Romanik"

Michael Romanik, President

[GoldON Resources Ltd.](http://GoldONResourcesLtd.com)

Direct line: (204) 724-0613

Email: info@goldonresources.com

179 - 2945 Jacklin Road, Suite 416

Victoria, BC, V9B 6J9

Forward-Looking Statements:

This news release may contain "forward-looking statements" that involve known and unknown risks, uncertainties, assumptions, and other factors that may cause the actual results, performance, or achievements of the Company to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. Any forward-looking statement speaks only as of the date of this news release and, except as may be required by applicable securities laws, the Company disclaims any intent or obligation to update any forward-looking statement, whether as a result of new information, future events, or results or otherwise.

Neither TSX Venture Exchange nor its Regulation Services Provider (as that term is defined in the policies of the TSX Venture Exchange) accept responsibility for the adequacy or accuracy of this release.

Referenced Sources

1. Černý, P.C. and Ercit, T.S.E. 2005. The Classification of granitic pegmatites revisited. The Canadian Mineralogist Vol. 43, pp. 2005-2026.
2. Breaks, F.W., Selway, J.B. and Tindle, A.G. 2006. Fertile and peraluminous granites and related rare-element mineralization in pegmatites, north-central and northeastern Superior Province, Ontario; Ontario Geological Survey, Open File Report 6195, 143p.
3. Breaks, F.W. and Bond, W.D. 1993. The English River Subprovince - an Archean gneiss belt: geology, geochemistry, and associated mineralization; Ontario Geological Survey, Open File Report, 5846, 882p.
4. Stott, G.M., Corkery, M.T., Percival, J.A., Simard, M. and Goutier J. 2010. A Revised Terrane Subdivision of the Superior Province; in Summary of Field Work and Other Activities 2010, Ontario Geological Survey, Open File Report 6260, p.20-1 to 20-8.
5. Breaks, F.W., Selway, J.B. and Tindle, A.G. 2003. Fertile peraluminous granites and related rare-element mineralization in pegmatite, Superior Province, northwest and northeast Ontario: Operation Treasure Hunt; Ontario Geological Survey, Open File Report 6099, 179p.
6. Breaks, F.W., Osmani, I.A. and deKemp, E.A. 1987. Precambrian geology of the Opapimiskan-Neawagank lakes area, western part (Opapimiskan Lake project), Kenora District (Patricia Portion); Ontario Geological Survey, Preliminary Map P. 3080.
7. Breaks, F.W. and Tindle, A.G. 2002. Rare-element mineralization of the Separation Lake area, northwest Ontario: characteristics of a new discovery of complex-type, petalite-subtype, Li-Rb-Cs-Ta pegmatite; in Industrial minerals of Canada, Canadian Institute of Mining, Metallurgy and Petroleum, Special Volume 53, p.159-178.
8. Taylor, R.P., and Henham, R. (2001): The Nature and Distribution of Tantalum-bearing Minerals in Newly Discovered, Rare-Element Pegmatites at the Musselwhite Mine, Northwestern Ontario. Exploration and Mining Geology 10(1/2), 85-93.
9. Breaks, F.W., Selway, J.B. and Tindle, A.G. 2008. The Georgia Lake rare-element pegmatite field and related S-type, peraluminous granites, Quetico Subprovince, north-central Ontario; Ontario Geological Survey, Open File Report 6199, 176p.

10. Zeng, F., & Calvert, A. J., 2006. Imaging the upper part of the Red Lake greenstone belt, a. northwestern Ontario, with 3-D travel time tomography. Canadian Journal of Earth Sciences, 43(7), p. 849-863.
 11. Lewis, S.O. 2021. Deep tapping seismic structure in the Red Lake district; in Ontario Geological Survey, Resident Geologist Program, Recommendations for Exploration 2020-2021, p.9-13.
 12. Zeng, F. and Calvert, A. 2011. Imaging the upper part of the Red Lake greenstone belt, northwestern Ontario, with 3-D travelttime tomography. Canadian Journal of Earth Sciences, v.43. p.849-863. <https://doi.org/10.1139/e06-027>.
 13. Buse, S. and Préfontaine, S. 2007. Precambrian geology of the McInnes Lake greenstone belt, the supracrustal remnants study area and the Frame Lake pluton, Berens River Subprovince, Ontario; Ontario Geological Survey, Open File Report 6210, 128p.
 14. Frontier Lithium: https://www.frontierlithium.com/_files/ugd/dec7de_844a5e2cc2234a1babbbbea1879ce5573.pdf
 15. Cortis, A.L., Stott, G.M., Osmani, I.A., Atkinson, B. and Thurston, P.C. 1988. A geological re-evaluation of northwestern greenstone belts; in Summary of Field Work and Other Activities 1988, Ontario Geological Survey, Miscellaneous Paper 141, p.28-52.
 16. Stone, D. 1998. Precambrian geology of the Berens River area, northwest Ontario; Ontario Geological Survey, Open File Report 5963, 116p.
 17. Préfontaine, S. and Mumford, T. 2007. Precambrian geology of the McInnes Lake greenstone belt, northwestern Ontario-south sheet; Ontario Geological Survey, Preliminary Map P.3590.
 18. Préfontaine, S. and Mumford, T. 2007. Precambrian geology of the McInnes Lake greenstone belt, Northwestern Ontario-north sheet; Ontario Geological Survey, Preliminary Map P.3589, scale 1:20 000.
 19. MacLachlan, B. and Robertson, C. 2022. [GoldON Resources Ltd.](#) Report on the May to June and September Exploration Programs in the McInnes Lake Property. Assessment Work Report, MNM, Sudbury, Ontario.
 20. &Caron;erný, P. and Meintzer. R.E. 1988. Fertile granites in the Archean and Proterozoic fields of rare-element pegmatites: crustal environment, geochemistry, and petrogenetic relationships; p. 170-206 in Recent Advances in the Geology of Granite-Related Mineral Deposits, The Canadian Institute of Mining and Metallurgy, Special Publication 39.
-
1. Green Technology Metals: <https://www.greentm.com.au/overview>
 2. Taylor, S.R. and McClelland, S.M.1985. The continental crust: its composition and evolution; Blackwell, Oxford.
 3. Stone, D. 1998. Chemical Analyses of Minerals and Rocks of the Berens River Area; Ontario Geological Survey, Miscellaneous Release-Data 32.

To view the source version of this press release, please visit <https://www.newsfilecorp.com/release/163416>

Dieser Artikel stammt von [Rohstoff-Welt.de](#)

Die URL für diesen Artikel lautet:

<https://www.rohstoff-welt.de/news/441394--GoldON-Outlines-Lithium-Pegmatite-Discovery-Potential-at-its-McInnes-Lake-Greenstone-Belt-Property.html>

Für den Inhalt des Beitrages ist allein der Autor verantwortlich bzw. die aufgeführte Quelle. Bild- oder Filmrechte liegen beim Autor/Quelle bzw. bei der vom ihm benannten Quelle. Bei Übersetzungen können Fehler nicht ausgeschlossen werden. Der vertretene Standpunkt eines Autors spiegelt generell nicht die Meinung des Webseiten-Betreibers wieder. Mittels der Veröffentlichung will dieser lediglich ein pluralistisches Meinungsbild darstellen. Direkte oder indirekte Aussagen in einem Beitrag stellen keinerlei Aufforderung zum Kauf-/Verkauf von Wertpapieren dar. Wir wehren uns gegen jede Form von Hass, Diskriminierung und Verletzung der Menschenwürde. Beachten Sie bitte auch unsere [AGB/Disclaimer!](#)

Die Reproduktion, Modifikation oder Verwendung der Inhalte ganz oder teilweise ohne schriftliche Genehmigung ist untersagt!
Alle Angaben ohne Gewähr! Copyright © by Rohstoff-Welt.de -1999-2025. Es gelten unsere [AGB](#) und [Datenschutzrichtlinien](#).