

Critical minerals developer in Canada for a shared climate success story

TSXV: LMR
OTC: LMRMD

Frankfurt: DH8C

January 2025





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### Land Acknowledgement

The land/projects where we operate are located within the traditional land of the Algonquin Anishnaabeg and Cree Eeyou Istchee Peoples.

Our vision is to embrace Indigenous people and Indigenous values within our projects to develop a sustainable approach on our path to critical minerals development while honouring the lives, memories, and hopes of all seven generations close.

The La Loutre graphite project site is located within the Kitigan Zibi Anishinabeg (KZA) First Nation's territory. The KZA First Nation is part of the Algonquin Nation and the KZA traditional territory is situated within the Outaouais and Laurentides regions.

The Bourier lithium project site is located southeast of the Eeyou Istchee James Bay territory in Quebec, near Nemaska Lithium and Critical Elements.





### Lomiko 2025 advantage

#### Exposure to two strategic minerals in demand in North America – graphite and antimony

- ✓ New investment in antimony, silver, gold exploration project in Newfoundland excellent upside in critical mineral that is banned for export from China
- ✓ La Loutre is the seventh biggest graphite deposit close to the US and battery highway; making it the largest undeveloped natural flake graphite project in Canada

#### **Endorsement from Federal, Provincial and Federal grant agencies**

- ✓ \$16M in the grants and investment agreement non-repayable securing 50% of all study funds
- ✓ Project is vetted by the US Department of Defense and the Federal Government

#### **Energy transition and energy security investment opportunity**

- ✓ Chinese export restrictions on graphite and antimony demonstrate tremendous upside potential
- ✓ Battery testing showcases excellent results, meeting and exceeding industry standards.

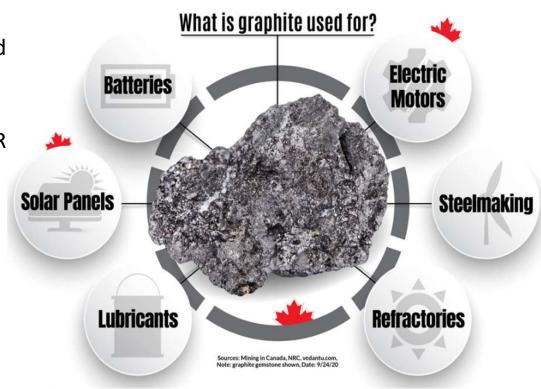


### **Graphite Market**



### Graphite is essential for the energy transition

- Primary Battery Alkaline, primary alkaline lithium, primary lithium Thionyl Chloride
- Secondary Battery EV, Consumer Good Industrial, Aerospace, Solar Panels
- Fuel cells
- Nuclear Industry (Grade Graphite; PBMR Shielding)
- Aerospace (Coatings & Dispersion)
- Graphene oxides, powders, etc.
- Refractories and Steelmaking
- Ceramics
- Advanced Lubricants
- Thermal Plastics (PEEK / PTFE) and plastics
- Construction Industry (reinforced concrete)





### The China dynamic underlines the importance of Lomiko

China is the world's top graphite producer and exporter and refines more than 90% of the world's graphite into the anode material.

- Trade war on critical minerals is escalating China banned shipments of gallium, germanium, antimony, and so-called superhard materials to USA - Critical mineral security is linked to the escalating tech trade war.
- Export permits from China now required for certain graphite products to safeguard national security since December 2023 – tightened measures in December 2024

#### The USA response:

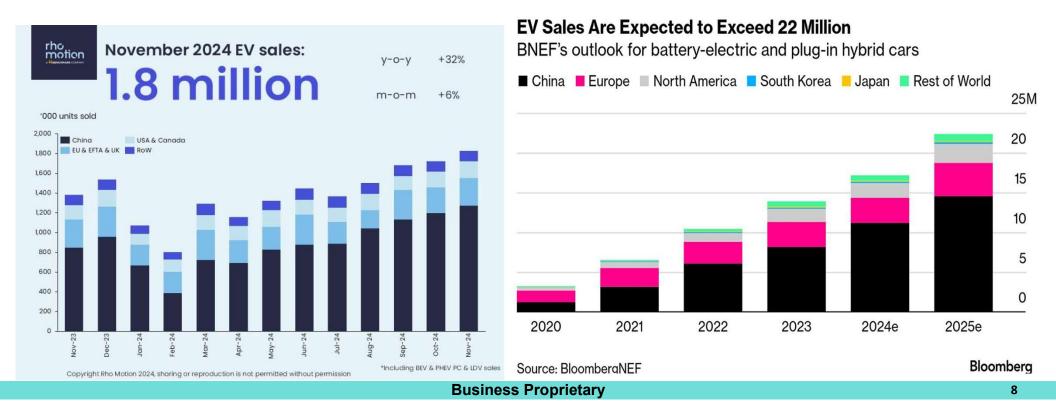
- 1. The tariff rate on lithium-ion EV batteries increase from 7.5% to 25% in 2024
- 2. The tariff rate on lithium-ion non-EV batteries will increase from 7.5% to 25% in 2026
- 3. The tariff rate on battery parts increase from 7.5% to 25% in 2024
- 4. The tariff rate on natural graphite and permanent magnets will increase from zero to 25% in 2026

Canada imposed a 100% surtax on Chinese-made electric vehicles (EVs) on October 1, 2024



# Lomiko: an ideal partner for investment into electrification growth market at 21% growth rate

Outstanding investment opportunity to participate in energy transition and natural flake graphite with government partners with grants from Quebec, the USA Department of Defence and the Canadian Federal government.

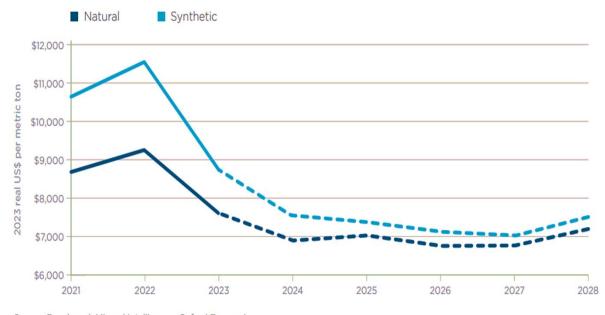




### Lomiko and the graphite market

The graphite customer base is wide with many industrial applications, with the EV sector anticipated to grow in the next 5-15 years, driving the need for natural-flake graphite and anode material for use in batteries.

- P Electric Vehicles (EVs) Lomiko is advancing the qualification process with OEMs and downstream buyers. Polaris and NRC's basic electrochemistry analysis shows potential for La Loutre Flake Graphite to become a feedstock for the anode market.
- Internal Combustion Engines—Primary batteries require high-purity micronized flake graphite and qualifications in 18 months.
- Consumer Goods conductive additives for cathode and anode applications in medical devices, aerospace, defence, and industrial at 99.9%Cg for C & D and AA & AAA Battery Formats 45 & 15 microns
- Energy Storage the fastest-growing sector for grid stabilization, transportation, communications, and aerospace.



Source: Benchmark Mineral Intelligence, Oxford Economics

Actual price in China for Anode Material 2021-2028

**Business Proprietary** 



### Grants and Awards – Non-dilutive capital



# Over CA\$16m concurrent Canadian and USA funding announced May 16

- ✓ These are non-dilutive non-repayable awards!
- ✓ Recipient of a US\$8.35m (CA\$11.2m) R&D (Research & Development) grant from the United States of America Department of Defense ("DoD") and CAN \$4.9m contribution from Natural Resources Canada

### Awards support a de-risked path of development with funding for more than 50% of project costs

- ✓ Announcements are part of the joint Canada-U.S. Energy Transformation Task Force
- ✓ **The DoD grant**, called a Technology Investment Agreement ("TIA") supports studies for La Loutre to complete pre-feasibility (PFS), baseline and metallurgical studies and definitive feasibility study (DFS)
- ✓ The Canadian Critical Mineral Research, Development and Demonstration (CMRDD2) program administered by Natural Resources Canada is to pilot the integrated graphite upgrading process to for cSPG anode grade product



# Summary of CMRDD program administered by Natural Resources Canada

- ✓ Award: CAN\$4.9m
- The CMRDD program administered by Natural Resources Canada is to pilot the integrated graphite
  upgrading process with a 200 mt bulk sample over 3 years for a total contribution agreement of
  CA\$6.6m where Lomiko will contribute 25% of this funding
- It supports four tasks: these tasks complement Phase 2 of the DoD grant
- All work and equipment will be in a Canadian lab setting
- Task 1: Crushing, grinding and flotation of La Loutre graphite
- Task 2: Chemical and thermal purification of graphite concentrate
- Task 3: Micronization and spheriodization of the flotation concentrate
- Task 4: Carbon coating of purified graphite



### La Loutre development

A de-risked path to continued development of this strategic critical mineral asset

 The U.S. DoD has provided a grant for <u>50%</u> of the study costs and NRCan is contributing <u>75%</u> of the pilot program costs, significantly de-risking the project.

Area of focus now: Phase 2 **Phase Four** Construction **Phase Three** Modular in approach commencing with a demo plant and a phased scale up to full production levels, **Definitive Feasibility Study Phase Two** incorporating concentrate to anode grade graphite production Metallurgical studies, battery **Phase One** and bulk testing Pilot program for flake graphite **Pre-Feasibility Study and** upgrade to battery anode **Baseline Data Collection** 



## La Loutre and Graphite Portfolio







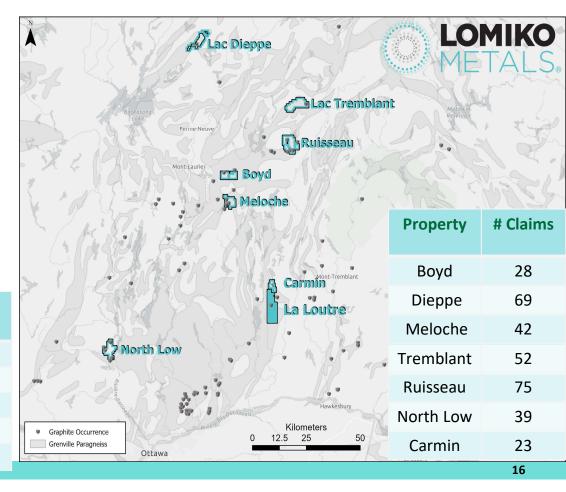
### Regional exploration in Grenville belt Most prospective graphite belt in North America

√ 328 claims in total on 7 early-stage projects covering 18,622 hectares in the Laurentian region of Quebec and within KZA territory central to flagship La Loutre property.

### **Regional Exploration Program 2023**

(field program results displayed below)

Block	#	Min	Max	Comments
	samples	%Cg	%Cg	
Boyd	8	5.61	17.10	8/8 > 5.00% Cg
Dieppe	11	0.15	1.47	
Meloche	6	5.62	12.00	6/6 > 5.00% Cg
Ruisseau	26	0.16	22.90	19/26 > 5.00% Cg
Tremblant	6	<0.05	13.90	4/6 > 5.00% Cg

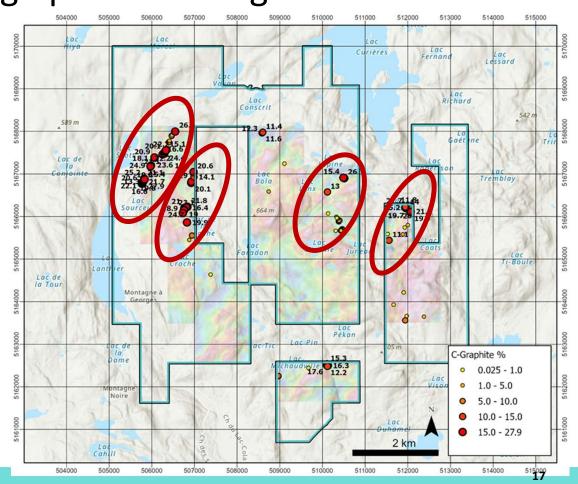




# 2024 field program discovers 4 zones spanning over 3.0 kilometer long grading up to 27.9% Cg at Ruisseau

### 2024 Field Program results for Meloche, Dieppe, Tremblant and Ruisseau

- Ruisseau grades up to 27.9 percent carbon graphite ("% Cg") from four distinct high grade mineralized zones that are over 3km long;
- Meloche grades up to 13.3% Cg from two distinct mineralized clusters;
- Tremblant grades up to 11.6% Cg from numerous, widespread spot anomalies; and
- Dieppe grades up to 6.82% Cg from numerous, widespread spot anomalies and a distinct mineralized cluster.

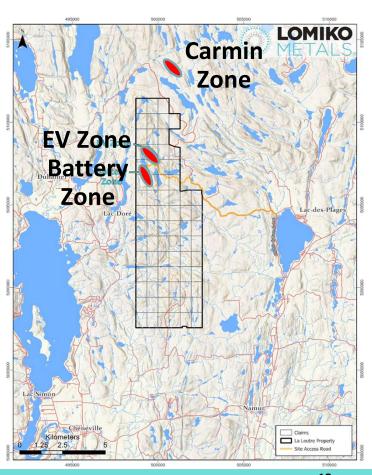




### La Loutre PEA details dated September 2021

- Two known deposits currently being explored: EV
   Zone and Battery Zone
- LOM plant production of 21.8 Mtonnes of mill feed at 6.78% Cg diluted
- Graphite concentrate production at 1.43 Mtonnes grading 95.0% Cg
- 14.7-year mine life producing 100,000tpy of graphite
- Exceeded PEA test with PFS level testing Open circuit variability flotation tests produced concentrate grades between 97.9% and 99.7% Cg with 9.47% recoveries!
- Focused footprint relative to claim size

**Carmin Acquisition – historic PFS** 



**Source:** Company Data

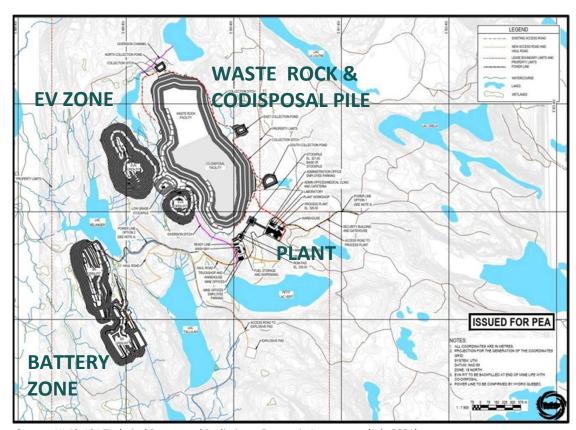
18



### La Loutre: PEA Layout – great base to build on

#### Mine layout and costs – PEA

- Waste rock and tailings co-disposed
- Efficient site water management with no wet tailings
- Pits sequenced to maximize the returns starting from North – EV Pits to South – Battery Pits
- Stockpiles (low grade and ROM) for blending and Flotation Plant
- Mine truck & shovel operation
- Flotation Plant 4,000tpd
- Capex of C \$236M, AISC US \$ 406/t Cg cost



Source: NI 43-101 Technical Report and Preliminary Economic Assessment (July 2021)



# Lomiko advantage: Ranked as the seventh biggest deposit worldwide by Mining.COM

	Property	Country	Owner	Development Status	M+I Resources (mt)	Grade (%)	Contained Graphite (mt)
1.	Balama/Nicanda Hill	Mozambique	Triton Minerals Ltd	Stalled (previously Feasibility)	369	11.3	41.7
2.	Sarytogan	Kazakhstan	Sarytogan Graphite Limited	Prefeasibility	126	28.8	36.3
3.	Lac Gueret (Uatnan)	Canada	Mason Resources Inc	PEA	66	17.19	11.3
4.	Mahenge	Tanzania	Black Rock Mining Ltd	Permitting	116	8.02	9.3
5.	Siviour	Australia	Renascor Resources Limited	Permitting	73	7.14	5.2
6.	Epanko	Tanzania	EcoGraf Ltd	Permitting	63	7.6	4.8
7.	La Loutre	Canada	Lomiko Metals Inc	Prefeasibility	65	4.5	2.9
8.	Malingunde	Malawi	NGX Limited	Prefeasibility	37	7.37	2.7
9.	Balama Central	Mozambique	Tirupa Graphite plc	Permitting	27	10.24	2.7
10.	Bunyu	Tanzania	Volt Resources	Feasibility	40	5.64	2.3



Source: Mining.com

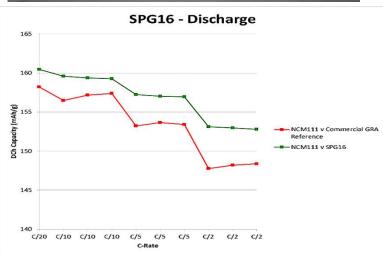
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# La Loutre single-layer pouch full-cell battery testing met and surpassed commercial graphite results

- ✓ Demonstrated that La Loutre material is suitable for battery applications single layer pouch full cell battery testing completed with Polaris Battery Labs, LLC, USA.
- ✓ The single-layer pouch cells constructed with La Loutre graphite anode and standard cathode material: cSPG16 and cSPG20 samples from La Loutre reveal strong performance of the La Loutre cSPG with better discharging capacity compared to commercial graphite material in North America today (358-367mAh) depending on the purification methods
- ✓ Both samples were put through a brief life cycle analysis for 25 cycles at C/2 and performed well.
- ✓ Figure top Lomiko graphite Single layer pouch batteries produced and tested by Polaris
- ✓ Figure bottom SPG20 sample from La Loutre has better charging/discharging capacity compared to commercial graphite in the market today in North America.







### Next Steps – Phase 2 works: metallurgical and battery trials

- CRITM Quebec studies
  - Lab testing to set bulk sample processing conditions
  - Process 1,100kg of the material to generate flotation flakes
  - NRC- 2000-cycle battery tests
- > Polaris
  - Further 500-cycle battery testing
- Air Classification Testing
  - Upgrade crushed ore to +97%Cg without the use of water
  - Use the pressured air to separate waste and graphite
- Graphene testing
  - Produce graphene for use in paints, additives and specialty batteries
- Initiating the 200t bulk sample with local operators
  - To start permitting 4-5 test locations in EV Zone



### **Antimony Exploration**



### **Antimony**

- Antimony is used to increase the hardness of alloys, with lead alloys for batteries, with lead/copper/tin alloys for machine bearings
- It improves the rigidity of lead-alloy plates in lead—acid batteries
- It is also used in automotive clutch and brake parts
- The other major use is as antimony trioxide which is used for the production of flame retardant chemicals
- Antimony is used in the semi-conductor industry for certain silicone wafer, diode, and infra-red detector production
- Small amounts are used in the production of safety matches



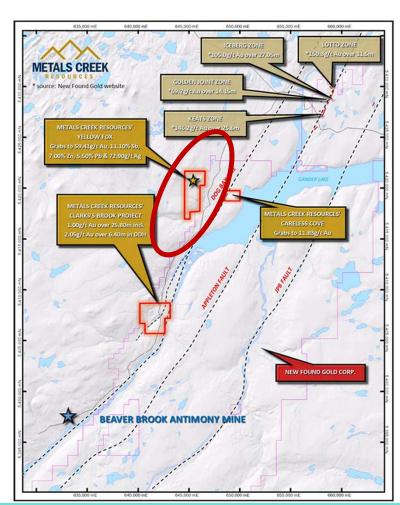


### Yellow Fox antimony, silver and gold potential in

Newfoundland

#### **Historic results**

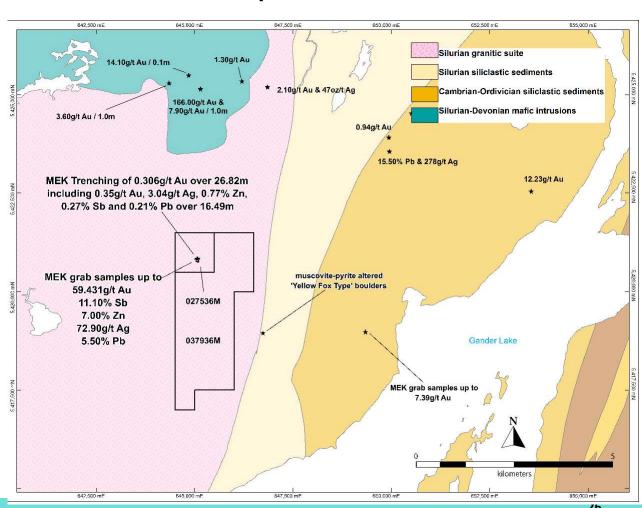
- Yellow Fox is an early-stage exploration property prospective in antimony, gold, and silver where historic works returned samples anomalous in gold (Au), antimony (Sb), lead (Pb), zinc (Zn), and silver (Ag).
- The trenching exposed the rocks, resulting in grab samples to 59.43g/t Au, 11.10% Sb, 7.00% Zn, 72.90g/t Ag, and 5.50% Pb in arsenopyrite-stibnite veins within altered monzogranite.
- This property is on the same trend as the past-producing antimony mine Beaver Brook, which is located 25km southwest of the property and on the same trend.
- Geologically, Yellow Fox exhibits similar traits to that of Beaver Brook with cross-cutting structural zones which show intense carbonate alteration with sulphide-bearing stringers to veins of stibnite and arsenopyrite with similar high-grade tenors of antimony, gold, lead, zinc, and silver. Arsenopyrite is also present in both locations.





### Yellow Fox Next Steps

- Review existing data and plan for the fieldwork program in the spring
- Soil sampling program targeted south of the Yellow Fox gold, showing 59.413 g/t and areas of increased density of interpreted structures
- Approximately 287 soil samples on seven, 1000m long, 250m spaced lines trending approximately 700 with samples taken every 25m along the line.
- Should soil sampling program be proven effective, expansion of the lines and additional lines to the south are warranted





### Share structure



### Share structure

Lomiko has a tight capital structure with 48.7m shares outstanding

#### **Lomiko Metals Inc**

December 12, 2024

Total Issued and Outstanding	48,689,505
Options	2,174,000
Warrants	18,462,420
Broker Warrants	253,470
DSU	779,684
RSU	1,481,228
Fully Diluted	71,840,307



### Lomiko collaborations













**LSTM** 







UNIVERSITÉ

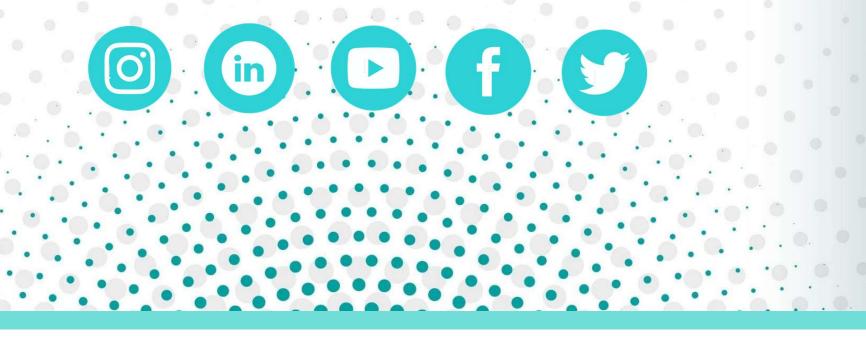
National Research Council Canada Conseil national de recherches Canada







# For more information <a href="mailto:info@lomiko.com">info@lomiko.com</a> Follow us @lomikometals on socials

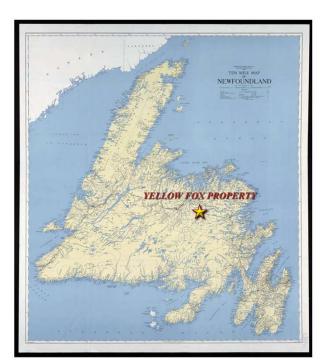




# Yellow Fox antimony, silver and gold potential in Newfoundland

#### **Terms of the Option**

- (a) The Optionee shall have the right to acquire 100% of the right, title and interest in and to the Option Interests by making the following payments:
- (i) in cash totaling \$70,000, according to the following schedule:
- on the Closing Date, \$20,000;
- 2. on or before first anniversary of this Agreement, \$25,000;
- 3. on or before second anniversary of this Agreement, \$25,000; and
- (ii) in common shares of the Optionee (the "LMR Shares") totaling \$355,000, at a price per LMR Share equal to the Market Price on the date of the signature of this Agreement according to the following schedule:
- 1. on the Closing Date, \$55,000 payable in LMR Shares;
- 2. on or before first anniversary of this Agreement, \$125,000 payable in LMR Shares; and
- 3. on or before second anniversary of this Agreement, \$175,000 payable in LMR Shares.

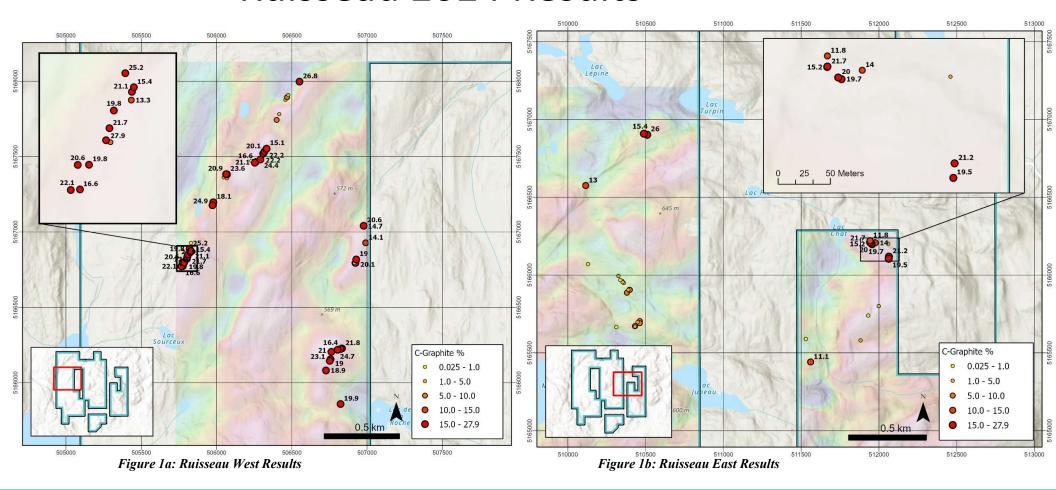




### Graphite Portfolio 2024 Results

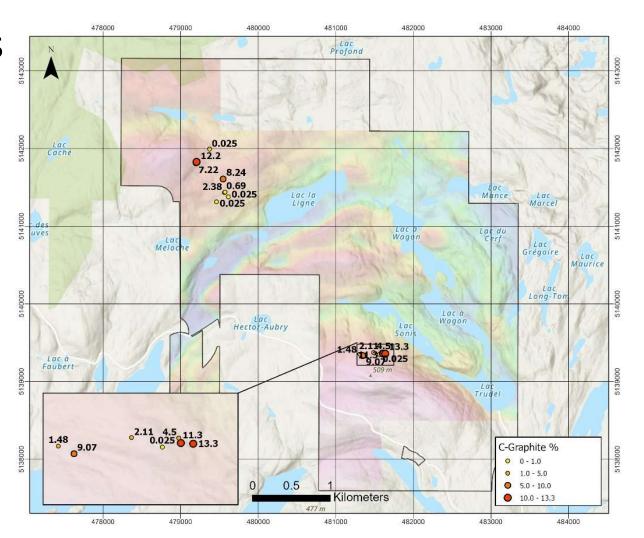


### Ruisseau 2024 Results



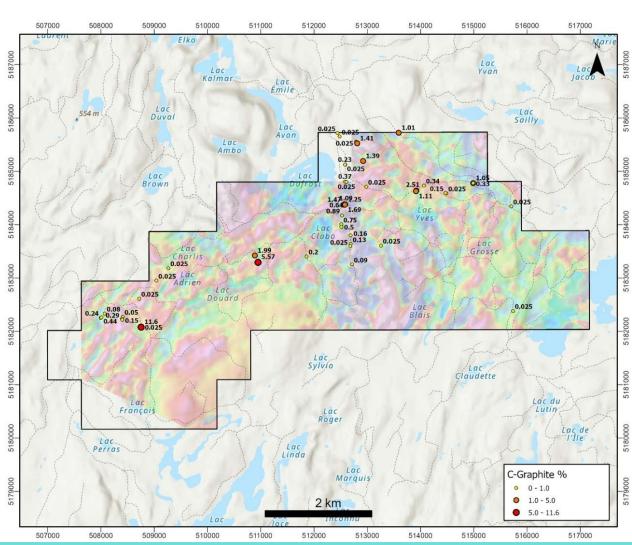


### Meloche 2024 Results



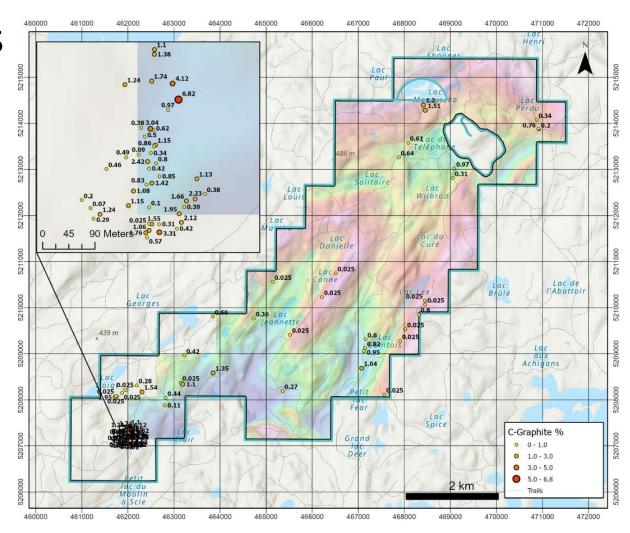


### Tremblant 2024 Results





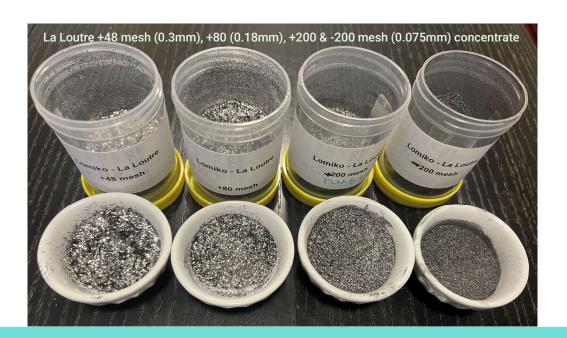
### Dieppe 2024 Results





# SGS Characterization Study, 2023 67% fines content in the flotation concentrate

- La Loutre flake distribution is ~67% fines suitable for anode market 37% growth year over year!
- -100 mesh is used most commonly in SPG (spherical graphite) as a precursor for battery production



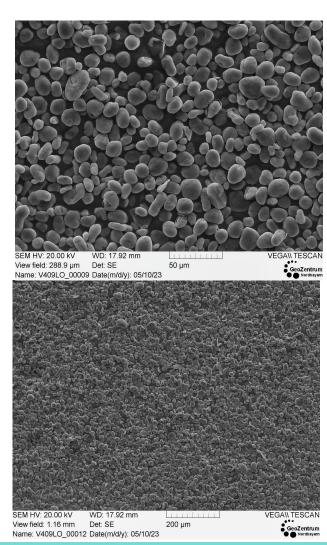
Size Fraction Analysis of Combined Concentrate of LCT – PFS Level MetPro Report Feb 2023

of +100 mesh	Size (Mesh)	Size (µm)	Mass (%)	C(t) (%)	C(t) Distribution (%)
33% of +	32	500	0.4	98.3	0.4
	48	300	5.6	98.7	5.5
က	80	180	18.1	98.3	17.9
	100	150	9.5	98.8	9.4
	150	106	17.0	99.4	17.1
	200	75	18.6	99.6	18.7
	325	45	18.2	99.5	18.2
	-325	-45	12.7	99.1	12.7
	Final Concentrate		100	99.1	100



# La Loutre metallurgical program 99.99% purified graphite content

- ✓ Completed PFS level met testing and optimized flow sheet
- ✓ Completed value-added testing with ProGraphite micronization, spheroidization, and purification:
- ✓ Proved that La Loutre material is suitable for battery applications -Spherical Graphite production yielded excellent results
- ✓ Achieving excellent 99.99%Cg SPG and flake purity
- ✓ All physical characterization tests produced excellent results
- ✓ Achieved continuous and reliable production of micronized products with homogenous properties.
- ✓ Low specific energy input to convert the La Loutre flotation concentrate to micronized material.





### Traditional Graphite Markets Opportunities in addition to EV-ICE and Energy Storage

- Engineered Products include electronics, agriculture, automotive, ceramics, government defence, carbon brushes, and fire retardants that use natural flake graphite. Graphite foils in sheets and rolls are used in electronics, nuclear applications, and other thermal management applications in this market group. Standard 95.0% Cg and High Purity 99.9% Cg
- Expanded graphite LL graphite can be used for primary alkaline batteries, ceramics, and other electrochemistry applications. Expanded graphite can be purified through the Cl/thermal process to produce a high-purity product. Lomiko completed the testing on +50 and +80 mesh meeting and surpassing industry-level results
- **Lubricants** —Applications include grease, dispersions, dry, nuclear-grade, aerospace, agriculture, MIL-SPEC, rail and food-grade lubricants. Traditional and advanced graphite powder additives are used in all applications listed with standard 95.0%Cg and high purity 99.9% Cg grades in various mesh sizes and micron PSDs
- **Polymers and Plastics, rubbers, and coatings** will extend the life of consumer devices, automotive tires, reusable plastics, industrial bearings, and plastics used in antistatic films, coatings, and electronic packaging. Graphite powder is used as a lubricant or conductive additive, including power cables, PTFE, PEEK, seals, bearings, coatings, rubber seals, wiper blades, antistatic packaging, thermal plastics and paints. Based on both Corem and PH analytical reports, there are chemical markers of the La Loutre signature that are unique for use in coatings, seals, thermal plastics, and consumer goods.
- **Graphene** Graphene's manufacturing process uses natural flake graphite to produce a single layer, a few layers, and multi-layer plates. applications in high-frequency electronics, bio, chemical and magnetic sensors, ultra-wide bandwidth photodetectors, and energy storage and generation. Lomiko is undertaking studies to determine La Loutre graphite's suitability for graphene production. Graphene is a transparent and flexible conductor used in many high-tech applications.