

With North America's Highest-Grade Manganese Deposit in Emily, Minnesota, Electric Metals Is Advancing Domestic Production of High-Purity Manganese Products for the EV, Defense, Technology, and Industrial Markets — Strengthening U.S. Manufacturing and National Security.

June 2025

TSXV: EML OTCQB: EMUSF

www.electricmetals.com



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Manganese...the less talked about critical mineral



The 4th most used metal on the planet. It's used in making:

- Steel
- Metal Alloys
- Batteries
- Aluminum Cans
- Fertilizer
- Animal Feed
- Wastewater Treatment
- Water Purification

Mangan	Manganese is used in 60% of all EV batteries, including:				
NMC	nickel manganese cobalt				
LMFP	lithium manganese iron phosphate				
LMR	lithium and manganese-rich				
LMO	lithium manganese oxide				
LMNO	lithium manganese nickel oxide				
NMCA	nickel manganese cobalt aluminum				
NMX	nickel manganese other				

Manganese Demand by Battery Chemistry



The electrification of the global transportation fleet coupled with other energy storage applications will drive incremental demand for high-purity manganese products.



BENCHMARK

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The U.S. is Reliant on Manganese Imports from Foreign Entities of Concern

U.S. imports 100% of its manganese

China controls ~96% of global HPMSM production capacity

Manganese ore is being shipped to China mainly from Africa for processing into high-purity products and then shipped to the United States.

This elongated supply chain adds to carbon emissions and is in direct conflict with mandated climate change policies.

A closed-loop, domestic U.S. supply chain would lessen supply disruptions, lower emissions and reduce the reliance on foreign imports.



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Why Domestic Supply Matters



National Security

- Designated critical mineral
- Used in making steel, batteries, and industrial applications.
- There is **NO domestic production**
- 100% manganese imported

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• China controls ~96% of HPMSM production



Technological Advancement

- Essential component in batteries, particularly lithiumion batteries used in EV's and renewable energy storage systems
- As demand grows, ensuring a stable domestic supply is crucial for maintaining technological advancement and competitiveness



Environmental Concerns

• Reduces reliance on foreign suppliers

- Mining and processing can have environmental impact
- Producing domestically ensures adherence to stricter environmental regulations and more sustainable mining and processing practices
- Reduces carbon emissions

Economic Stability

Ensures stability of supply

• Stimulates economic growth

Creates jobs

Growing Legislative Support



Executive Order Invoking Section 232 of the Trade Expansion Act (April 2025)

 Launches investigation into U.S. reliance on imported processed critical minerals. Underscores the urgent need for a secure domestic supply of strategic materials

Executive Order: Immediate Measures to Increase American Mineral Production (March 2025)

 Major federal policy shift to accelerate domestic critical mineral production through faster permitting, land prioritization, and Defense Production Act funding

Minnesota's H.F. 8 Environmental Permitting Bill (March 2025)

• Streamlines environmental permitting with stricter timelines, improved transparency, and an ombudsman to assist businesses

Protecting Domestic Mining Act (February 2025)

Introduced to strengthen American mining and restore domestic energy independence

Critical Minerals Security Act of (November 2024)

- Required reports on critical mineral and rare earth element resources globally
- Mandated the development of strategies for advanced mining, refining, separation, and processing technologies

Mining Regulatory Clarity Act of (April 2023)

- Established a process to allow mining operations to use, occupy, and conduct activities on federal lands
- Aimed to provide regulatory clarity and streamline the permitting process for mining projects

39 North American Battery Initiatives

"The USA depends on unreliable foreign sources for many of the strategic and critical minerals necessary for the clean energy transition. Demand for such materials is projected to increase exponentially as the world transitions to a clean energy economy"¹

¹ Presidential Action under U.S. Defense Production Act, 2022



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Mission



Become a leading producer of high-value, high-purity manganese chemical and metal products from North America's highest-grade deposit in Emily, Minnesota, serving the electric vehicle, defense, technology, and industrial sectors to strengthen American manufacturing and advance national security objectives.

To support this mission, Electric Metals is actively evaluating strategic acquisitions that complement our focus on supply chain resilience, domestic production, and long-term value creation.



Highly Differentiated Resource



Highest-Grade Manganese Deposit in North America

- NI 43-101 resource with 10% cutoff grade averages 19.3% manganese at indicated levels and 17.5% at inferred levels
- Several historical drill holes have intersected grades above 50% manganese

Large Deposit

- Roughly 2.1 million tonnes of contained manganese in indicated and inferred classifications assuming 10% cutoff grade; roughly 4.2 million tonnes assuming 5% cutoff grade (based on NI 43-101)
- Independent modelling of over 70 historical drill holes suggests a much larger deposit
- Resource could allow for well over 50-year mine life

Location, Location, Location

- Strategically located near the industrial heartland of America
- Infrastructure and local ecosystem in place due to long history of mining in the region
- Avoids costly, unreliable and complex overseas supply chains

Significant Capital Already Invested

- Millions invested in technical studies, drilling, local infrastructure, process development and pilot processes
- Provides valuable knowledge about the resource as well as mill buildings that can be leveraged

Compelling Industry Dynamics

Favorable Regulatory and Operating Environment

- Manganese added to the U.S. Government Critical Elements list in 2018
- The U.S. government is moving to increase domestic production of critical minerals by reducing bureaucracy, streamlining permitting and approval processes, and offering financial incentives and funding assistance through the U.S. Infrastructure Investment and Jobs Act (2021) and Inflation Reduction Act (2022)
- Significant tax incentives, grants, and low/no interest loans potentially available
- Minnesota has a long history of favorable mining laws and support of new "oxide' projects

Recession Resistant

• Demand for high purity manganese is expected to surge ten-fold by 2030 due to demand for electric vehicles

Low Substitution Risk

- Battery chemistries with manganese are expected to continue to dominate the EV market
- New manganese-rich cathode formulations are expected to reduce cost with good range, power, safety, and charging performance

Domestic Supply Constraints

- The U.S. currently imports 100% of its manganese
- There are no North American suppliers of manganese, no stockpiles, no substitutes, and no active mines



Emily Manganese Project Location







POWER & GAS

- Adjacent 69 AC power line and three larger lines nearby
- Major trunk gas pipeline 20 miles south

MAJOR HIGHWAYS

Site located off State Highway 6 and ~100 miles to I-35 and 150 miles to I-94

AIRPORTS

Proximity to regional and international airports

SKILLED MINING WORKFORCE

Minnesota supplies > 90% of domestic U.S. iron ore production; Emily can leverage off the existing skilled workforce.



Major transportation centers for the shipment of bulk commodities



Tier One BNSF Railroad nearby

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How the Emily District was Formed



Superior-type Iron Formations (Stromatolite horizons releasing free oxygen)





Extensive Historical Drilling



Historical drilling was completed by companies that were renowned for putting into production profitable mines. Most of the drill core and related assay data are preserved and archived in Hibbing, Minnesota at the MN DNR drill core repository.



Emily Mineral Resource Footprint



The upgraded Mineral Resource Estimate is based on a geological model incorporating data from 29 diamond core holes drilled by NSM in 2023 in the eastern and central portion of the Emily Manganese Deposit, and historical drilling data from 7 diamond core holes drilled in 2011 and 2012 in the eastern portion of the deposit, as shown below.



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Confirmed High-Grade NI 43-101 Resource

NI 43-101 EMILY MANGANESE PROJECT RESOURCE ESTIMATE CALCULATED BY FORTE DYNAMICS, MAY 2024

Class	Cutoff (Mn%)	Metric Tons (kt)	Density (g/cm³)	Mn (%)	Fe (%)	SiO ₂ (%)
	15	4,264	3.08	22.3	21.7	25.8
Indicated	10	6,234	3.10	19.3	22.4	29.4
	5	14,475	2.98	12.1	22.2	38.0
	15	3,185	3.12	20.3	20.4	29.7
Inferred	10	4,915	3.15	17.5	20.4	32.3
	5	9,603	3.01	12.1	20.3	33.8

Mineral Resources are not Mineral Reserves and have not been demonstrated to have economic viability. There is no certainty that the Mineral Resource will be converted to Mineral Reserves. The quantity and grade or quality is an estimate and is rounded to reflect the fact that it is an approximation. Quantities may not sum due to rounding.

Emily Metallurgical Test Work Results

Achieved >95% HPMSM Leach Extractions

- Confirmed the potential for producing High-purity Manganese Sulfate Monohydrate (HPMSM), Electrolytic Manganese Metal (EMM), Electrolytic Manganese Dioxide (EMD / MnO₂) from the Emily manganese deposit
- ✓ Manganese extraction rates exceeded 95% in leach tests
- Effective removal of impurities, including iron, potassium, and other trace elements, was achieved
- Crystallization tests yielded HPMSM aimed for the battery-materials market
- ✓ The test work provides a strong foundation for the future development of a full-scale processing plant, including flowsheet refinement and further process optimization

Historical Metallurgical Test Work

- United States Bureau of Mines 1990 1992
- Coleraine Minerals Research Laboratory 1995, 2009, 2011
- Barr Engineering Process Development 2013

Barr Engineering Test Work Produced:

EMM	Electrolytic Manganese Metal
EMD	Electrolytic Manganese Dioxide
MnCO ₃	Manganese Carbonate



Emily Manganese Project

Preliminary Economic Assessment Initial Results

Initial Highlights of Ongoing PEA Conducted by Forte Dynamics

- **Mining Method:** Underground, underhand Cut-and-Fill confirmed as the most effective method
- **Resource Extraction:** 88% of estimated resources recoverable
- Manganese Recovery: 89% of contained manganese extractable
- Additional analysis may further refine these figures and improve cost-recovery-cutoff parameters.



Isometric view Emily Project Mine Design (looking northeast, not to scale)

Emily Manganese Project

Preliminary Economic Assessment Initial Results

Mining Method & Project Design Underground Underhand Cut-and-Fill

- Selectively mines higher-grade ore deposits
- Reduces surface footprint by reusing waste rock as backfill
- Ensures high ore extraction with minimal dilution.
- Initial PEA results anticipate two mining levels an upper zone and a lower zone, based on a 10% Mn cut-off grade

Next Steps

- Further refinement of resource recovery and cost-efficiency
- Advancing towards Pre-Feasibility Study



Cross Section of Emily Project (looking northeast, not to scale)

Emily Project Phased Development

Phase I

- Design drill program to upgrade to measured resources and obtain other technical data
- Initiate minerology, ore characterization, crushing, and grinding studies for mine design and environmental studies
- Advance metallurgical test work, flow sheet assessment, and initial production of commercial chemical products for product development
- Initiate scoping study for processing plant design, including site identification
- Initiate baseline environmental studies for Emily site
- Continue to engage stakeholders, foster transparency, and build support for the project

Phase II

- Undertake geological, geotechnical and environmental drilling program
- Initiate scoping study on preliminary mine design
- Metallurgical test work and flow sheet design
- Develop mine permitting plan and initiate ore and waste characterization studies
- Complete scoping study for processing plant design and site location
- Optimize processing plant design and initiate pre-feasibility study for processing plant
- Continue to engage stakeholders, foster transparency, and build support for the project

Phase III

- Prepare NI 43-101 resource
 update
- Finalize pre-feasibility study for processing plant development
- Continue baseline environmental studies at Emily site and ore and waste characterization studies
- Advance pre-feasibility study for mine development
- Advance mine and plant permitting
- Continue to engage stakeholders, foster transparency, and build support for the project

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Near Term Catalysts for Revaluation

- Positive scoping study for high-grade Emily Manganese Deposit
- Potential non-dilutive funding: Department of Defense and/or Department of Energy grants, royalty financing
- Strategic Partnerships: Offtake agreements with battery and auto manufacturers
- Design and construction decision of HPMSM plant





Corporate Snapshot



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CAPITAL STRUCTURE AT MAY 28, 2025

Shares Outstanding	184,650,013				
Options Outstanding (Weighted average exercise price of C\$0.26)	11,800,000				
Warrants Outstanding (Weighted average exercise price of C\$0.30)	39,512,463				
Deferred Share Units	793,376				
Fully Diluted Shares Outstanding	227,655,853				
Market Capitalization	C\$25.8M				
MAJOR SHAREHOLDERS					
Green Mineral Investors LLC	13.3%				
Gary Lewis	8.9%				
Eric Sprott	7.8%				

MULTI-DISCIPLINARY EXECUTIVE TEAM & BOARD

Mr. Brian C Savage CEO & DIRECTOR

Entrepreneurial business executive with a history of identifying, building, growing, and transforming mining and metals businesses.

Ms. Natasha Tsai bcom cpa CFO

Chartered Professional Accountant with corporate finance and listed company experience in a number of sectors.

Ms. Michèle McCarthy DIRECTOR

An accomplished corporate director with significant corporate restructuring and regulatory compliance experience.

Dr. Sylvia Chen Phd MBA DIRECTOR

Vice President of Finance at Dundee Precious Metals. An accomplished finance professional with a successful career spanning across global Canadian companies.

Dr. Quinton Hennigh CHAIRMAN

Internationally renowned exploration geologist with 33+ years of experience. He holds an MS and PhD in geology and geochemistry from Colorado School of Mines.

Dr. Henry J. Sandri PhD MA BS DIRECTOR

+40 years in metals and minerals, energy, power and transportation industries in global public and private companies.

Mr. Steve Durbin

Managing Partner of Quail Bend Capital Partners, a private equity firm focused on companies in the mining and financial technology sectors.

Mr. Tyson Hall

More than 20 years of global experience and a decade of executive leadership in specialty chemicals, manufacturing, mining, agriculture, and start-ups.

Key Takeaways

- Highest-grade manganese deposit in North America
- Potential for producing HPMSM from Emily manganese deposit confirmed
- Multi-disciplined and highly accomplished management team and board
- 96% of HPMSM produced in China creates U.S. national security issue
- Resource Extraction: 88% of estimated resources recoverable
- Manganese Recovery: 89% of contained manganese extractable
- Green energy transition is happening, but not without manganese
- Social mood, government regulation, incentives and support are driving the electrification of everything
- Electrification of vehicles is driving demand for lithium-ion batteries
- 60% of EV batteries produced in 2022 included manganese
- High-purity manganese Sulfate Monohydrate (HPMSM) demand expected to increase 29x by 2050
- Domestic supply of HPMSM is a dream scenario for North American battery manufacturers





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