GENERATIONMINING

MARATHON PALLADIUM

PALLADIUM•PLATINUM•GOLD•COPPER PROJECT

GREEN IS THE NEW GOLD

FEBRUARY, 2021

DISCLAIMER

GENERATIONMINING

This presentation (in this projected form and as verbally presented) (Presentation) is provided on the basis that neither Generation Mining Limited (Gen Mining), nor its officers, shareholders, related bodies corporate, partners, affiliates, employees, representatives and advisors make any representation or warranty (express or implied) as to the origin, validity, accuracy, reliability, relevance, currency or completeness of the material contained in the Presentation and no responsibility is taken for any errors or omissions. Nothing contained in the Presentation is, or may be relied upon as, a promise, representation or warranty, whether as to the past or the future.

Gen Mining excludes all warranties (including implied warranties) and all liability that can be excluded by law for any loss, claim, damage, cost or expense of any nature (including that arising from negligence) arising out of the Presentation (or any accompanying or other information) whatsoever, nor by reason of any reliance upon it. Gen Mining accepts no responsibility to update any person regarding any inaccuracy, omission or change in information in this Presentation or any other information made available to a person or any obligation to furnish the person with any further information.

The Presentation contains "forward-looking statements". Where the Presentation expresses or implies an expectation or belief as to future events or results, such expectation or belief is expressed in good faith and is believed to have a reasonable basis. However, forward-looking statements are subject to risks, uncertainties and other factors, which could cause actual results to differ materially from future results expressed, projected or implied by such forward looking statements. Such risks include, but are not limited to, price volatility, currency fluctuations, increased production costs and variances in ore grade, recovery rates or other matters from those assumed in mining plans, as well as political and operational risks and governmental regulation and judicial outcomes. Gen Mining does not undertake any obligation to release publicly any revisions to any "forward-looking statement" to reflect events or circumstances after the date of the Presentation, or to reflect the occurrence of unanticipated events, except as may be required under applicable securities laws. Statements relating to reserve and resource estimates are expressions of judgment, based on knowledge and experience and may require revision based on actual production experience.

Such estimates are necessarily imprecise and depend to some extent on statistical inferences and other assumptions, such as metal prices, cut-off grades and operating costs, which may prove to be inaccurate. Information provided relating to projected costs, capital expenditure, production profiles and timelines are expressions of judgment only and no assurances can be given that actual costs, production profiles or timelines will not differ materially from the estimates contained in this Presentation.

All persons should seek appropriate professional advice in reviewing or considering the Presentation and all other information with respect to Gen Mining and evaluating the business, financial performance and operations of Gen Mining. Neither the provision of the Presentation nor any information contained in the Presentation or subsequently communicated to any person in connection with the Presentation is, or should be taken as, constituting the giving of investment or financial product advice to any person in respect of dealing in Gen Mining securities, and no such information should be taken to constitute a recommendation or statement of opinion that is intended to influence a person in making a decision to deal in Gen Mining securities.

This Presentation does not purport to contain all of the information that may be required to evaluate all of the factors that would be relevant in determining whether to deal in Gen Mining securities, including but not limited to any person's objectives, financial situation or needs. Each person must not rely on the information provided but should make, and will be taken to have made, its own investigation, assessment and analysis of the information in this Presentation and other matters that may be relevant to it in considering whether to deal in Gen Mining securities. Gen Mining owns the copyright in this Presentation.

GREEN IS THE NEW GOLD

GENERATIONMINING

We've got the metals for the green revolution!

PALLADIUM

3.8 million oz*

Palladium is used in part to **scrub nitrous oxide from gasoline exhaust.** Nitrous oxide is 300 times more potent than CO_2 as a greenhouse gas.

COPPER

+1 Billion lbs*

An electric car needs about 180 lbs of copper, more than four times that of a gasoline-powered vehicle. Current mine supply will not suffice.

PLATINUM

+1 Million oz*

Hydrogen Fuel Cells need 1-2 ounces of platinum per vehicle. More is needed in the manufacture of hydrogen fuel.

** Technical Report, Updated Mineral Resource Estimate and Preliminary Economic Assessment of the Marathon Deposit, July 6, 2020*

INVESTMENT HIGHLIGHTS

GENERATIONMINING

PUREPLAY PGM DEVELOPER IN TIER ONE JURISDICTION

- Owns an 80% interest in the largest undeveloped Palladium property in North America
- PEA shows C$1.5 Billion NPV (5%) at US$1900 Pd price; Feasibility Study underway, expected Q1/21*
- 8.6 million ounces (measured and indicated) of Palladium Equivalent plus another 915,000 oz PdEq (inferred)
- Near excellent infrastructure: major highway, rail, power, airport and the mining town of Marathon, ON
- C$13 million in cash (Jan. 19, 2021), listed on TSX under symbol GENM, OTCQB: GENMF

*100% basis

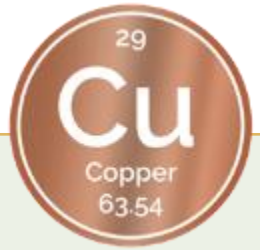
MARATHON M&I + I RESOURCES*

GENERATIONMINING

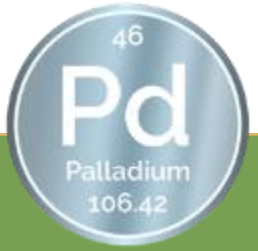
3,828,000
oz PALLADIUM M&I

1,244,000
oz PLATINUM M&I

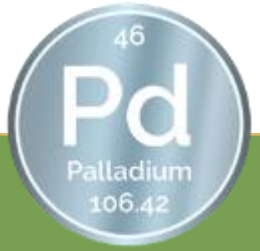
473,000
oz GOLD M&I



1.02 Billion
lbs COPPER M&I



8,668,000
oz PD EQ M&I



915,000
oz PD EQ Inferred

** Open pit Measured, Indicated & Inferred Resources as noted, as estimated by P&E Mining Consultants, Sept 9, 2019 and Dec. 2, 2019. Further detail on page 14. Includes the Marathon, Geordie and Sally deposits.*

MANAGEMENT

GENERATIONMINING

JAMIE LEVY **President, CEO & Director**

25 years in financing and management of Cdn mining companies. Was CEO of Pine Point Mining which was acquired by Osisko Metals. Formerly Vice President of Pinetree Capital.

DREW ANWYLL **M.Eng, P.Eng, COO**

Mining engineer, formerly senior vice-president -- technical services, interim chief operating officer and vice-president operations -- mine general manager at Detour Gold, also senior operating positions at Barrick and Placer Dome

ROD THOMAS, P.Geo. **VP, Exploration & Director**

Geologist with 40 years experience in Canada and abroad. Former Exploration Manager BHP Minerals Eastern NA and General Manager of VM Canada (subsidiary of NEXA Res.) Former president of PDAC.

JOHN MCBRIDE **Senior Exploration Geologist**

Worked on the Company's Marathon Project periodically since 2007, and continuously as project geologist since 2013. He obtained an MSc. in geology from Lakehead in 2010.

KERRY KNOLL **Exec. Chairman & Director**

Co-founded several successful mining companies over 35 years including Wheaton River, Thompson Creek and Glencairn Gold. Former editor of The Northern Miner Magazine.

BRIAN JENNINGS CPA, CA, B.Sc **CFO**

Chartered Accountant with extensive experience in financial management of resource companies, and formerly Vice-President Corporate Restructuring at Ernst and Young.

PATRICIA MANNARD **VP, Finance**

Managed administrative and financial aspects of exploration companies for 30 years, including Pine Point Mining from 1993-2018.

TABATHA LABLANC **Manager of Sustainability**

25 years of environmental & community relations, including TransCanada Pipelines, North American Palladium, Bowater-Abitib & oversaw the environmental assessment at the Marathon Project for Stillwater Canada Inc. in 2012-14.

INDEPENDENT DIRECTORS

GENERATIONMINING

STEPHEN REFORD B.A.Sc, P.Eng **Director**

Geophysicist for 35 years and President of Paterson, Grant & Watson Limited, an international geophysical consulting company.

PAUL MURPHY, B.Comm., FCPA **Director**

Chartered Accountant, Chairman of Alamos Gold; was Chief Financial Officer of Guyana Goldfields during construction, production; former partner and head of Mining Group, Western Hemisphere, for PricewaterhouseCoopers

CASHEL MEAGHER, P.Geo., P.Eng **Director**

Senior Vice President and Chief Operating Officer of Hudbay Minerals Inc. since 2016, overseeing operations, development and exploration in North and South America; led construction and startup of Constancia Mine; previously held several senior positions at Inco.

PHILLIP C. WALFORD P.Geo, P.Eng **Director**

Geologist, Founder and CEO of Marathon Gold from 2009-2019, developing the Valentine gold project. Was CEO and a founder of Marathon PGM Corp. which sold Marathon palladium project to Stillwater in 2010.

CONSULTANTS

STEVE HAGGARTY, P.Eng

Metallurgy & Mining engineer with a strong background in metallurgical processing. Worked with numerous first tier companies including Barrick Gold (VP Operational Support), Homestake, International Corona and Teck. Extensive experience with EPCM and sustaining capital projects, including start-up, commissioning and site optimization.

RUBEN WALLIN, M.Eng, P.Eng

Sustainability Professional with over 30 years of experience in the global mining industry. Held senior leadership roles with Detour, Osisko, Yamana, Barrick and IAMGOLD. Extensive technical, operational, permitting, government and indigenous relations experience.

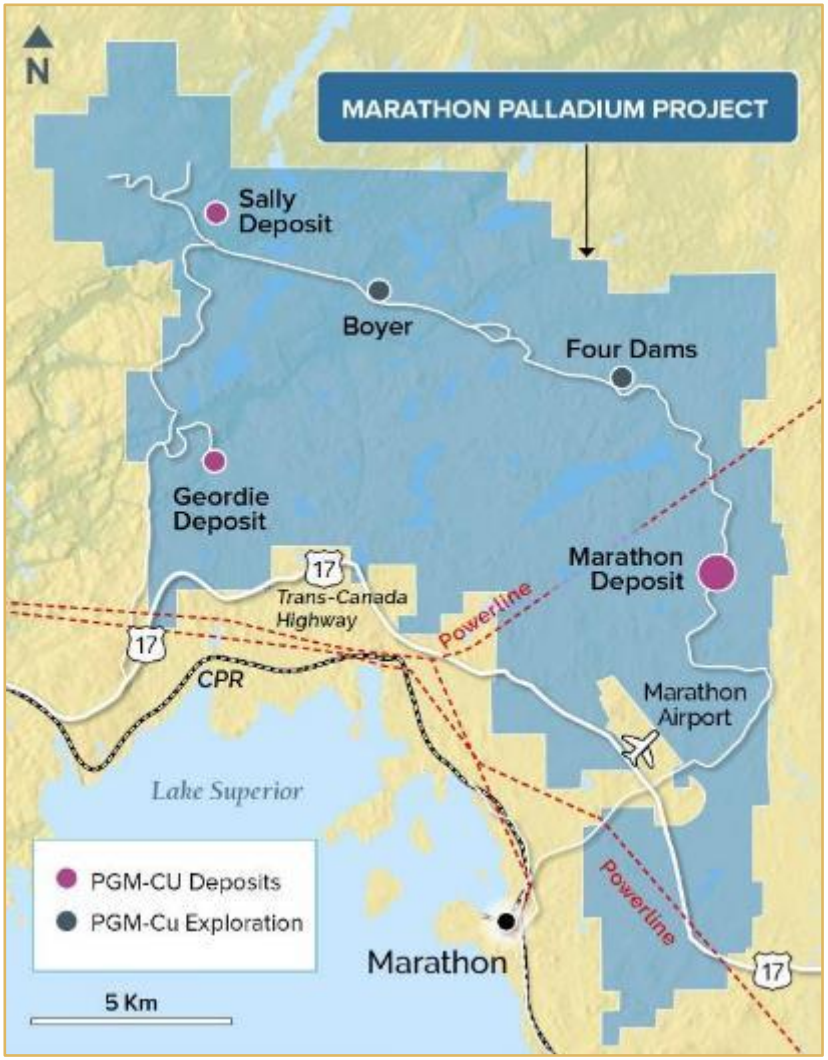
LOCATION

GENERATIONMINING

INFRASTRUCTURE

GENERATIONMINING

- Located on Trans-Canada Highway, served by CPR main rail line
- Property next to Marathon airport
- <10 km from town of Marathon (had population of 5,000, now 3,000) and 30 km from Hemlo gold camp
  - However, workforce far below historic highs
  - Hemlo has solid working relationship with local native groups
- Harte Gold's Sugar Zone Mine located ~100 km from the Property permitted and commissioned in 2018
- New $1B 230 kilo-volt power line from Wawa to Thunder Bay will cross property
  - Previously would have needed power plant and diesel for power generation



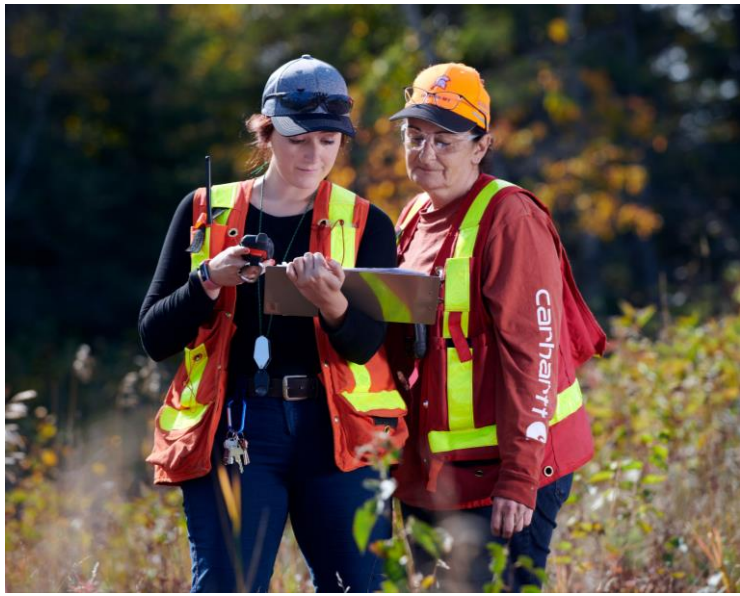
MARATHON HISTORY

- Three feasibility studies done from 2008-2014 @ Pd prices ranging from US$321-$700
- Stillwater took over Marathon in 2010 for US$118 million
- Sold 25% to Mitsubishi for $US81 million in 2012 (Stillwater repurchased that interest in 2015)

- Stillwater put project on care and maintenance in 2014 due to low Pd prices and new Feasibility Study
- Sibanye Gold acquired Stillwater Mining in 2017 for US$2.2 billion
- Over 212,000 metres of drilling in 1,930 holes

MARATHON OWNERSHIP

- Generation Mining bought an initial interest in the Marathon property from Sibanye Stillwater in July, 2019
- Generation increased its interest to 80% in November, 2020, future expenditures will be on an 80%-20% basis
- Sibanye can re-acquire additional 31% (bringing total to 51%) by paying 31% of capex on production decision to the joint venture (approx. $133M based on PEA)



- Sibanye & Generation would then proceed on a 51%-49% basis
- End result would be Sibanye pays 66%, Gen Mining 34% of capex

SIBANYE BACK-IN SCENARIO

GENERATIONMINING

		Total Cost Sibanye	Total Cost Gen Mining
Estimated Capital Cost included in the PEA[1]	431,000,000		
Ownership Increase of 31% elected by Sibanye	31%		
Ownership Increase Right Cost to Sibanye	**133,610,000**	**133,610,000**	**0**
Remaining Capital Cost after Sibanye exercises Ownership Increase Right of 31% noted above	297,390,000		
Sibanye JV Funding Subsequent to Ownership Increase Right	51%		
JV Pro rata funding by Sibanye	**151,668,900**	**151,668,900**	**0**
Gen Mining JV Funding Subsequent to Ownership Increase Right	49%		
JV Pro rata funding by Gen Mining	**145,721,100**	**0**	**145,721,100**
Total Capital Funding	**431,000,000**	**285,278,900**	**145,721,100**
Percentage Contribution		**66%**	**34%**
Percentage Ownership		**51%**	**49%**

[1] Capital costs estimated in the PEA are estimates only and are not intended to be representative of the capital costs which will be included in the Feasibility Study. This analysis is for illustrative purposes only.

PRELIMINARY ECONOMIC ASSESSMENT

GENERATIONMINING

ROBUST ECONOMICS IN TIER ONE JURISDICTION

- PEA indicates14-year mine life producing 194,000 palladium equivalent oz annually
- Upfront capex C$431M, LOM sustaining capex $277M*
- Internal Rate of Return of 30%, after-tax Net Present Value of C$871M (5%) at US$1275 Pd, $3 Cu*, 2.5 year payback
- Internal Rate of Return of 45.8%, after-tax Net Present Value of C$1.54B (5%) at US$1900 Pd, $3 Cu*, 1.5 year payback
- Pd cash opex cost net of byproducts US$504/oz, AISC US$586/oz

*100% basis

2020 MARATHON PALLADIUM PEA (100% BASIS)

GENERATIONMINING

PRODUCTION	
Throughput (initial)	14,000 tpd
Throughput (after expansion)	22,000 tpd
Recovered Pd Equivalent (LOM)	2,716,000 oz
Average Pd Equivalent Output/Year	194,000 oz
Avg Pd Only Output/Year*	107,000 oz
Life of Mine production	89,400,000 t
Palladium Equivalent Grade	1.24 g/t
Palladium Grade	0.69 g/t
Copper Grade	0.22%
Platinum Grade	0.21 g/t
Gold Grade	0.07 g/t
Silver Grade	1.52 g/t
Strip Ratio (Waste to Mill Feed)	3:1
Mine Life	14 Years

** Not including byproducts*
*** Palladium only, net of byproducts*
****Dec 31/19*

VALUATION (BASE CASE)	
Pre-Tax NPV (5%)	C$1,184 million
Pre-Tax IRR	35%
After-Tax NPV (5%)	C$871 million
After-Tax NPV (8%)	C$648 million
After-Tax IRR	30%

VALUATION (RECENT SPOT PRICES***)	
After-Tax NPV (5%)	C$1,541 million
After-Tax IRR	45.8%

CAPEX	
Preproduction Capital (C$)	C$431 million
LOM Average Cash Cost (US$)**	US$504/oz
LOM Average AISC (US$)**	US$586/oz

PAYBACK PERIOD	
2.5 years	$1275 Pd
1.5 years	$1900 Pd

ECONOMIC SENSITIVITIES*

GENERATIONMINING

SENSITIVITY TO PALLADIUM PRICE							
US$/oz Pd	700	900	1,100	1,275	1,500	1,700	1,900
NPV (5% discount after-tax C$M)	255	469	684	871	1,112	1,326	1,540
IRR %	13.4	19.6	25.3	30.0	35.8	40.8	45.7
Payback (years)	6.4	4.0	2.9	2.5	2.1	1.8	1.6

IRR SENSITIVITY TO OPEX AND CAPEX AFTER-TAX (%)					
%	-20	-10	0	+10	+20
OPEX	38.1	33.7	30.0	26.9	24.3
CAPEX	33.9	32.0	30.0	27.9	25.8

NPV SENSITIVITY TO OPEX AND CAPEX AT 5% DISCOUNT RATE AFTER-TAX (C$M)					
%	-20	-10	0	+10	+20
OPEX	973	922	871	820	769
CAPEX	1,048	960	871	782	694

DISCOUNT RATE SENSITIVITY AFTER-TAX (C$M)	
0%	1,427
5%	871
6%	790
8%	648
10%	531

** Presented on a 100% Ownership Basis*

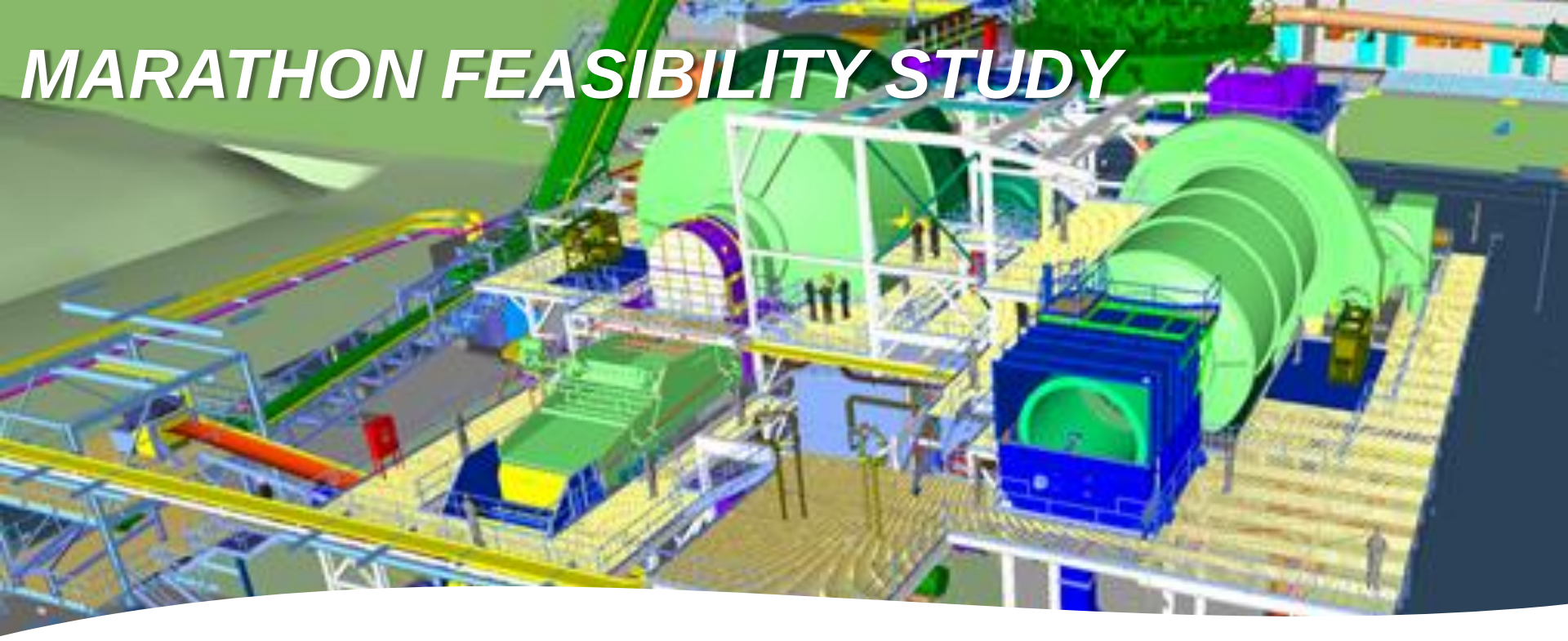
FUTURE OPPORTUNITIES

GENERATIONMINING

- Possibility of locking in higher palladium prices with end users before construction
- Option to sell royalty or stream – no existing royalties on main deposit
- Potential rhodium credit – concentrate contains about one gram/tonne
- Many, many exploration targets – looking for higher grade
- Only 37% of total Marathon Property Resources were used in PEA
  - Deeper Marathon Deposit resources (additional 90 million tonnes, similar grade, higher strip ratio)
  - Geordie Deposit (801,000 oz* indicated, 505,000 oz* inferred)
  - Sally Deposit (767,000 oz* indicated, 389,000 oz* inferred)

** Palladium equivalent*

MARATHON FEASIBILITY STUDY



Top Engineering Firms Contributing to the Study

- *Mine Design and Reserves* → **G-Mining Services**
- *Plant Design* → **Ausenco Canada**
- *Tailings* → **Knight Piesold**
- *Resource Modeling* → **P&E Consultants**
- *Site Infrastructure* → **G-Mining Services**
- *Environment Assessment* → **Stantec, Ecometrics, Northern Bioscience**

MARATHON FEASIBILITY STUDY

GENERATIONMINING

Concepts included in Feasibility Study		Improvements over PEA
Resource model	Improved structural and geological interpretation	*Fit for purpose* for Feasibility Study and into production
Plant Throughput	**Evaluating 8 to 9.2 Mtpa** (PEA had 5Mt increasing to 8Mtpa)	With a larger operation, there will be lower operating costs, but with increased initial capital
Mine Sequencing	Following the anticipated consumption curve	Bring **more Palladium** into the first-half of mine life and Copper into the second-half
Process Plant	Improved Plant design Modernize flowsheet Update to current technology	**Smaller footprint means reduced capital cost** **Improved metal recovery** Improved environment impacts
Tailings Facility	Improved water management	**Improved operating flexibility** Improved environment impacts
Infrastructure Designs (roads, building locations, etc)	Less impact on water More efficient building locations	**Reduced environment impacts** Improved operating costs

MARATHON METALLURGICAL STUDIES

GENERATIONMINING

- Several studies done at metallurgical labs from 1960s - 2014
- 2020 Metallurgical testing done at SGS in support of the feasibility study focused on:
  - Improved recovery by grinding to a smaller initial feed size and using improved reagents
  - Reduction in capital cost by using Woodgrove - Direct Flotation Reactor (DFR) technology
  - Improved flotation circuit operability with improved control and management of rejected pyrite and pyrrhotite
- Will produce a copper concentrate with high palladium grade and low deleterious elements

METAL	2020 STUDY RECOVERIES[1]	RECOVERIES EST. IN PEA
Palladium	86.9%	82.9%
Copper	93.0%	89.7%
Platinum	84.2	74.5%
Gold	72.4	73.2%
Silver	n/a[2]	71.5%

1 estimated recovery based on 2020 Phase 1 Met testing
2 recovery not assessed in Phase 1 Met testing

Direct Flotation Reactors®

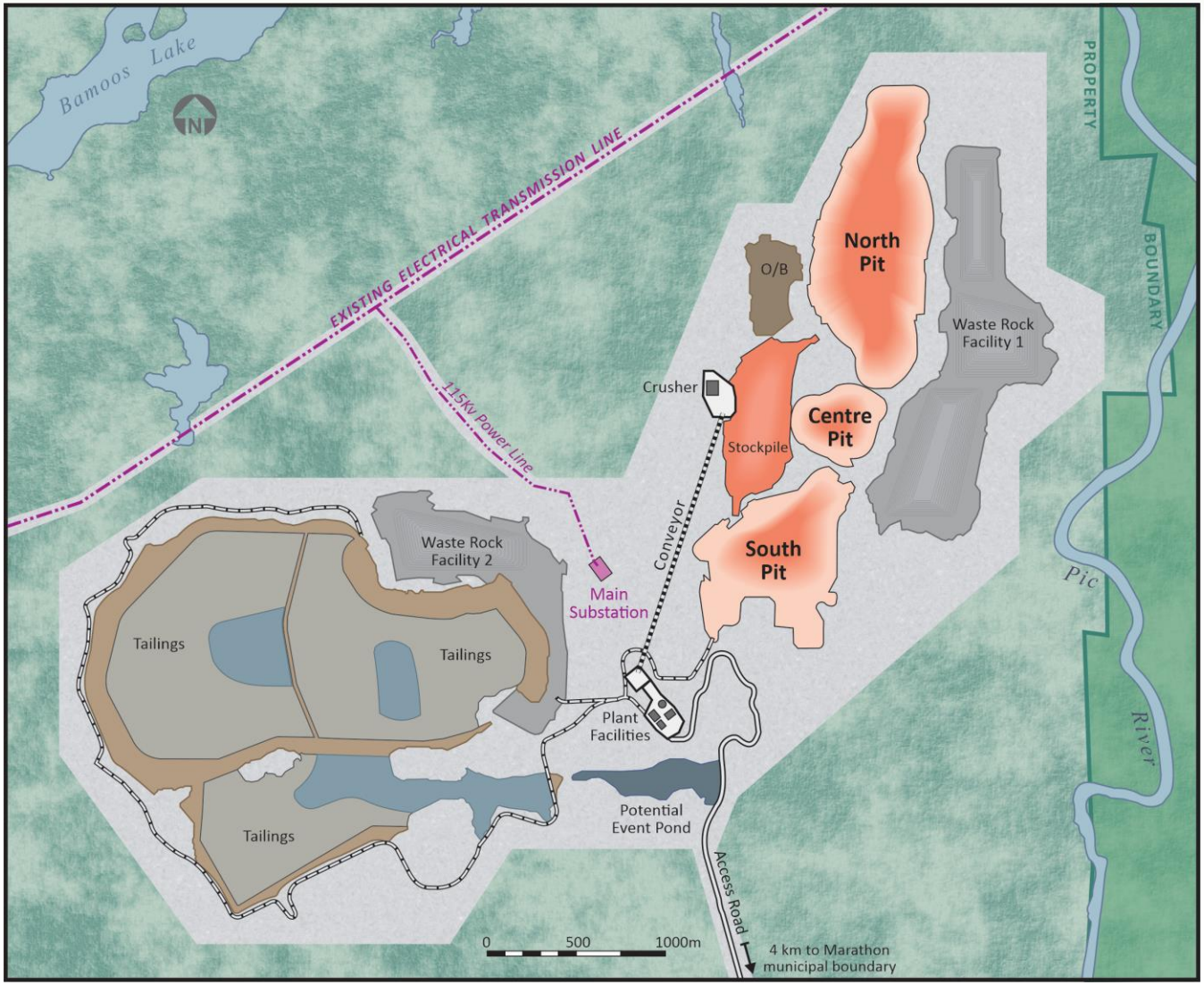
- Developed by Canadian company Woodgrove starting in 2009
- Reduces operating costs, power consumption, and floor space by up to 50%
- Now used at 200 mines worldwide, including Vale, BHP, Barrick, Freeport & Anglo American

Operating Principle:

- A simple analogy of the system is: *a continuously fed, well shaken soda bottle with two outlets*
- A slurry feed enters at the bottom
- Then mixed with gas and reagents
- Mineral of interest are lifted by the bubbles and removed at the top

MARATHON PRELIMINARY SITE PLAN

GENERATIONMINING



PALLADIUM: GREENER AND SAFER

GENERATIONMINING

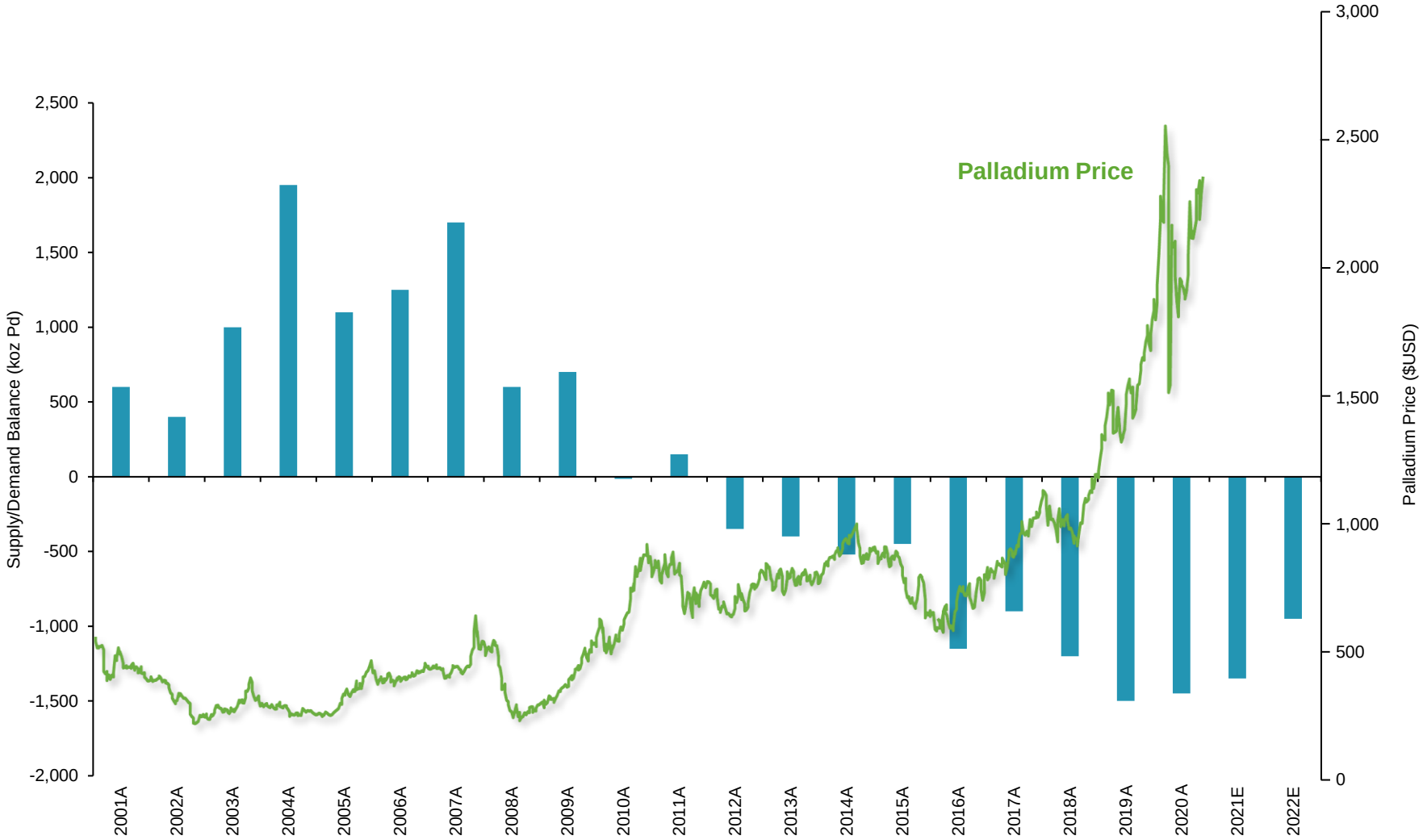
- Autocatalysts use 85% of palladium supply: Required by law in most countries
- A typical automobile uses 3-9 grams palladium
- Modern catalysts convert 98% of carbon monoxide and nitrous oxide
- Carbon monoxide exposure can be fatally toxic
- Nitrous oxide is 300 times more potent than CO2 as greenhouse gas
- Pd loads per vehicle increasing in China, Europe, India & Brazil to convert more gases*
- Annual demand of -/+11 million+ ounces
- In 2019, 6.89M oz mined worldwide (and falling) 3.4M oz recovered from recycling (and rising)*
- Price has increased nearly 400% since 2016

*Johnson Matthey

PALLADIUM MARKET

GENERATIONMINING

Palladium Market Price, Supply and Demand Balance Historic and Forecast



*S&P Global Market Intelligence, Metals Focus

PALLADIUM MARKET

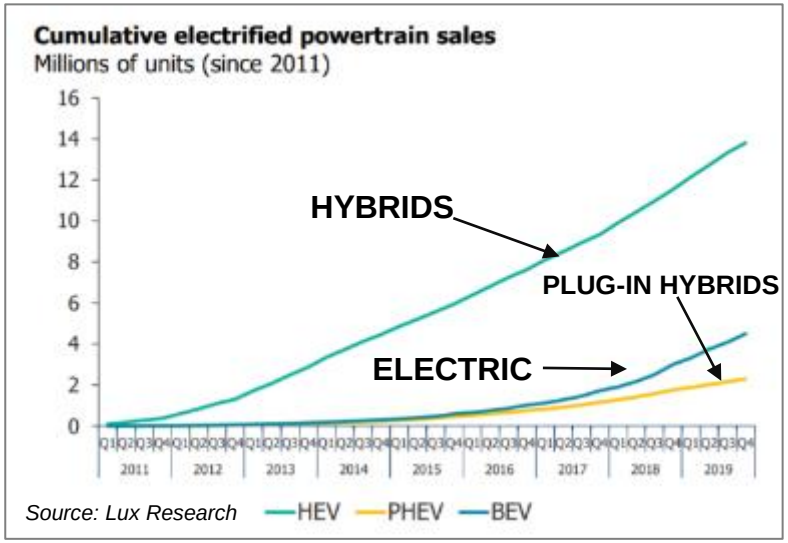
GENERATIONMINING

- Palladium loadings per vehicle increased 14% in 2019 worldwide (Johnson Matthey)
- Substitution by platinum possible, but requires more platinum and rhodium
- Both Pd and Pt were both in deficit pre-Covid
- Substitution of Pd by Pt would likely cause a spike in Pt price, offsetting any gains
- Hybrid cars require 10%-15% more palladium than purely ICE autos
- Fuel cells & LNG require 30-60 gms Pt per vehicle
- Metals Focus predicts $3000 Pd price in 2021

Near-term production increases

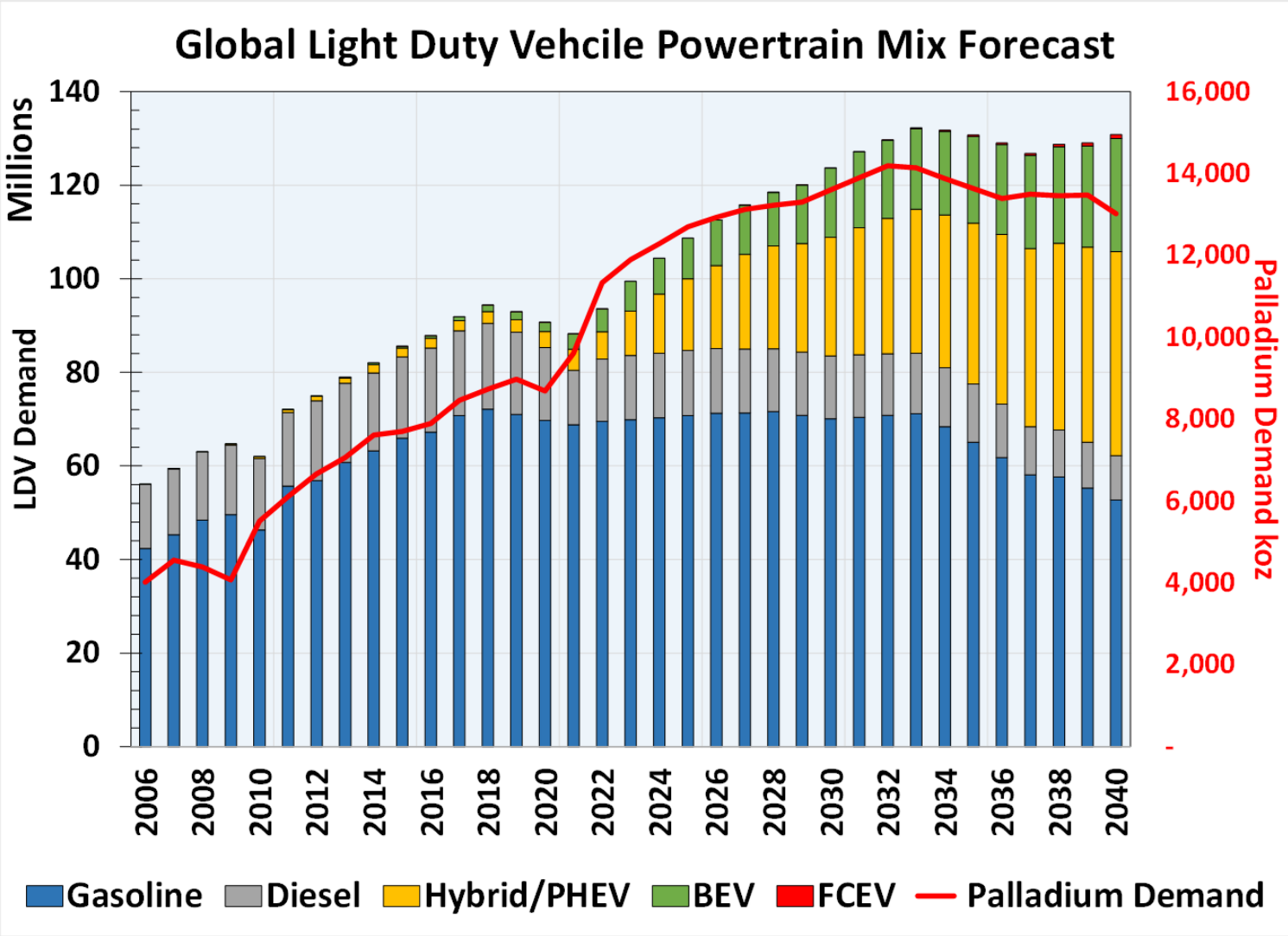
MINE	PRODUCTION INCREASES (OZ)	YEAR
Norilsk	1,000,000	2025*
Platreef	200,000	2021-2
Eurasia	75,000	2021

**JP Morgan*



AUTO & PALLADIUM DEMAND TO 2040

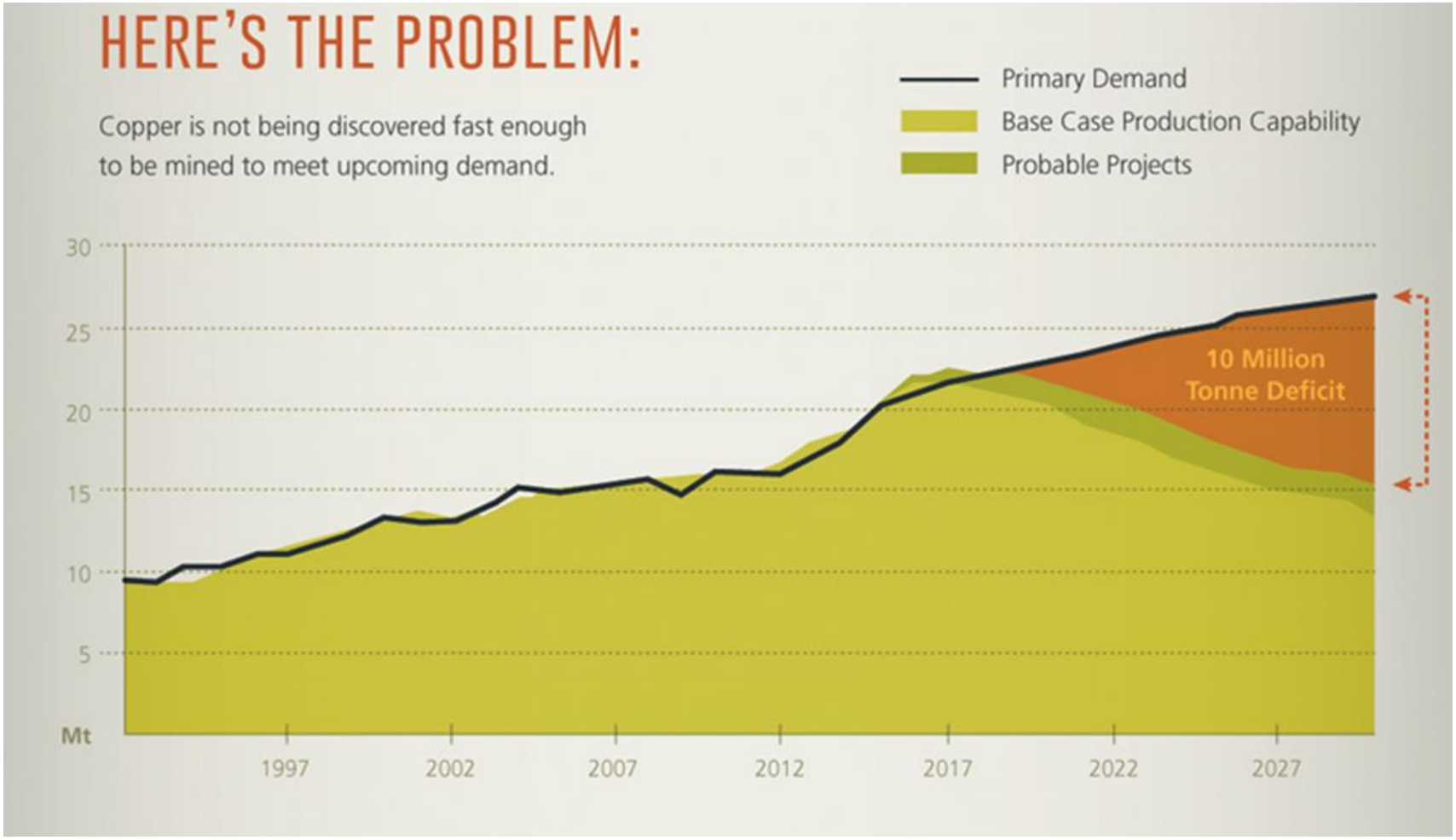
GENERATIONMINING



Prepared by Matt Watson, Precious Metals Commodity Management LLC

COPPER HEADING INTO DEFICIT

GENERATIONMINING

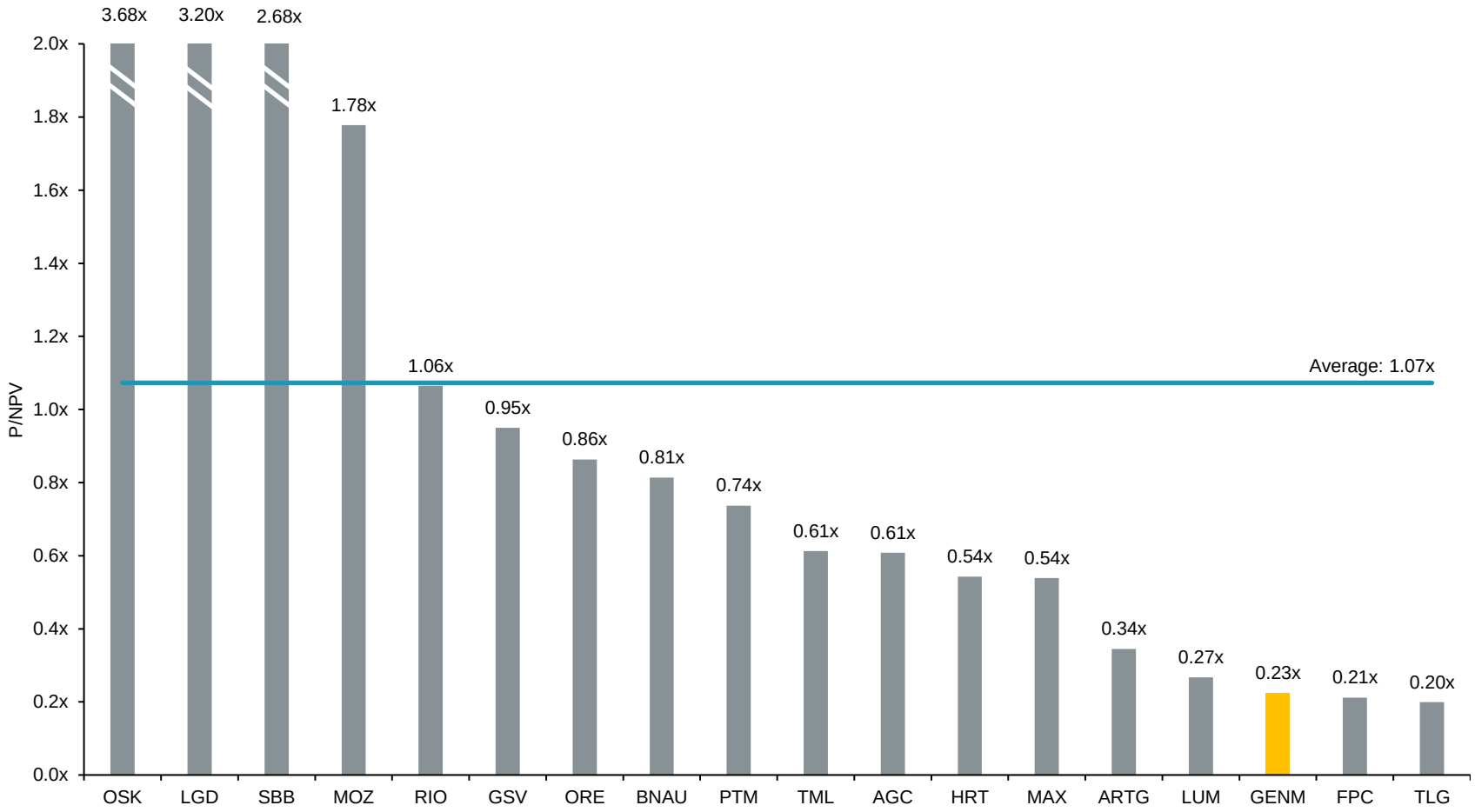


Prepared by Matt Watson, Precious Metals Commodity Management LLC

COMPARABLE DEVELOPERS
GOLD & PGM

GENERATIONMINING

P/NPV | Gold & PGM Developers



Capital IQ | As at January 12, 2021

LEADING PGM DEVELOPMENT PROJECT

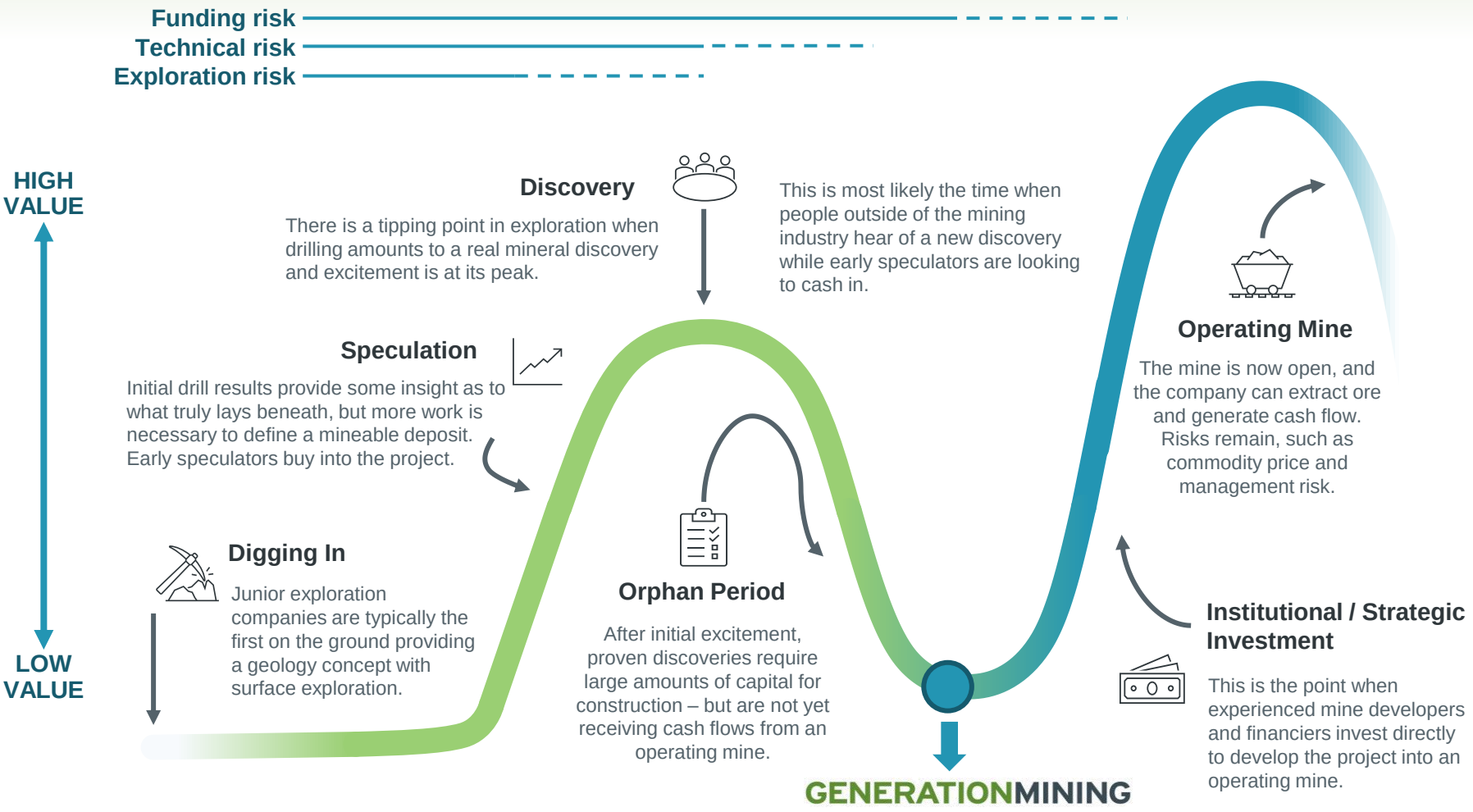
GENERATIONMINING

	GENERATION MINING	PLATINUM GROUP METALS	IVANHOE MINES
Market Capitalization (C$M)	**$102**	**$412**	**$n/a**
Cash (C$M)	$14	$14	n/a
Debt (C$M)	-	$48	n/a
Enterprise Value (C$M)	**$88**	**$446**	**n/a**
Project Name	Marathon	Waterberg	Platreef
Jurisdiction	**Ontario, Canada**	**South Africa**	**South Africa**
Ownership	**80%**	**50%**	**64%**
Development Stage	PEA	DFS	DFS
Annual Production (100% Basis) (koz)	194 (PdEq)	420 (4E)	502 (4E)
Attributable Ann. Production (koz)	**155 (PdEq)**	**210 (4E)**	**321 (4E)**
Palladium Cash Costs (US$/oz)	$504*	$640	$404* (4E)
Initial Capital (100% Basis) (US$M)	$328	$1,104	$1,438
Attributable Initial Capital (US$M)	**$262**	**$552**	**$920**
After-Tax IRR (%)	**30.0%**	**20.7%**	**19.8%**
After-Tax NPV (100% Basis) (US$M)	$662	$982	$1,849
Attributable After-Tax NPV (US$M)	**$530**	**$491**	**$1,183**
Pay-Back Period	**2.5 years**	**8.4 years**	**4.4 years**
Palladium Price Assumption (US$/oz)	$1,275	$1,546	$1,400
Discount Rate Assumption (%)	5%	8%	8%
Timeline to Steady-State Production	**4 years**	**7 years**	**6 years +****
Attributable MI&I Resources (Moz)	7.7 (PdEq)	16.7 (4E)	10.2 (4E)

** Net of byproducts ** Ivanhoe has done PEA on a smaller PGM production through Shaft 1 starting 2024*

LASSONDE CURVE – WHERE ARE WE?
THE DISCOVERY LIFECYCLE

GENERATIONMINING



GENERATION MINING **TIMELINE**

GENERATIONMINING

Key Steps for 2019/2023

TIMELINE (ESTIMATED)

	2019	2020	2021	2022	2023
Asset Acquisition	✓				
Update Resource	✓				
PEA Study	✓	✓			
New Listing		✓			
Feasibility Study		✓			
EA/Permits/Social		✓			
Detailed Engineering					
Mine Financing					
Construction					
Production					

Important note: Construction and production are subject to favorable results in the feasibility study, permitting and financing of the project.

ONTARIO: TIER ONE MINING JURISDICTION

GENERATIONMINING

Ontario Premier Doug Ford and Canadian Prime Minister Justin Trudeau
At the Cote Gold Mine ground-breaking ceremony, Sept 11, 2020

Our government stands ready to work with (mining) companies to build that more resilient, healthier country." Justin Trudeau

It is always a good day when we hear those words, "We have a problem with red tape"...we go through the process and streamline approvals, remove roadblocks and make sure the project gets shovels in the ground." Doug Ford

CORPORATE STRUCTURE

GENERATIONMINING

Capital Structure

Shares Outstanding	136.1M
Warrants *(Weighted average exercise price: C$0.58)*	22.7M
Options *(Weighted average exercise price: C$0.36)*	11.2M
Fully Diluted Shares Outstanding	170.1M
Basic Market Capitalization *(Share price: C$0.85)*	$115M

Key Shareholders

Eric Sprott	~8.5%
Zebra Holdings (Lukas Lundin)	~8.2%
Sibanye Stillwater	~8.1%
Osisko Mining	~4.0%
Officers & Directors	~6.7%

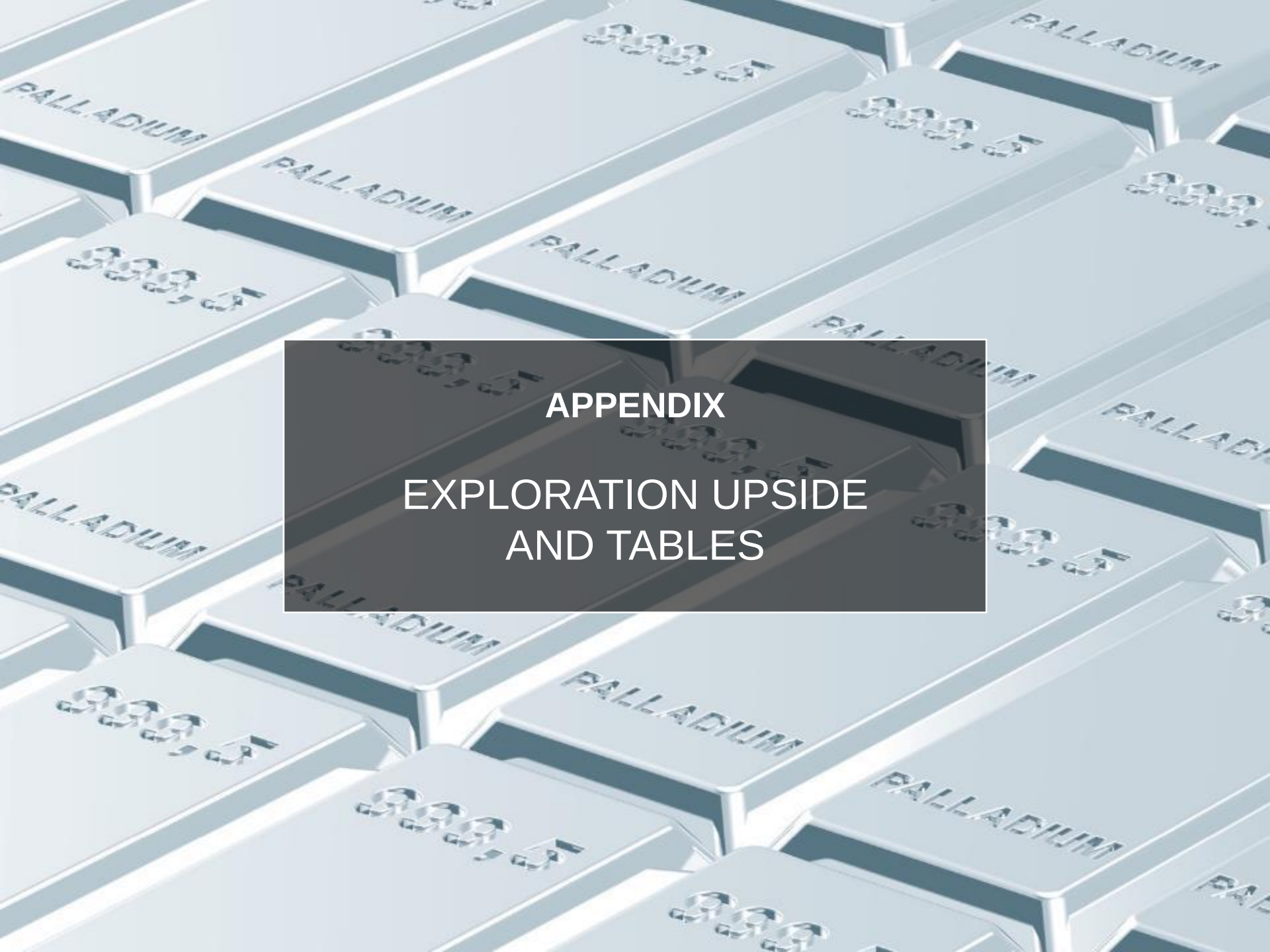
INVESTOR RELATIONS

JAMIE LEVY

President & CEO

jlevy@genmining.com
Phone: 416 567-2440

100 King St West, Suite 7010
Toronto, Ontario, Canada M5X 1B1



APPENDIX

EXPLORATION UPSIDE AND TABLES

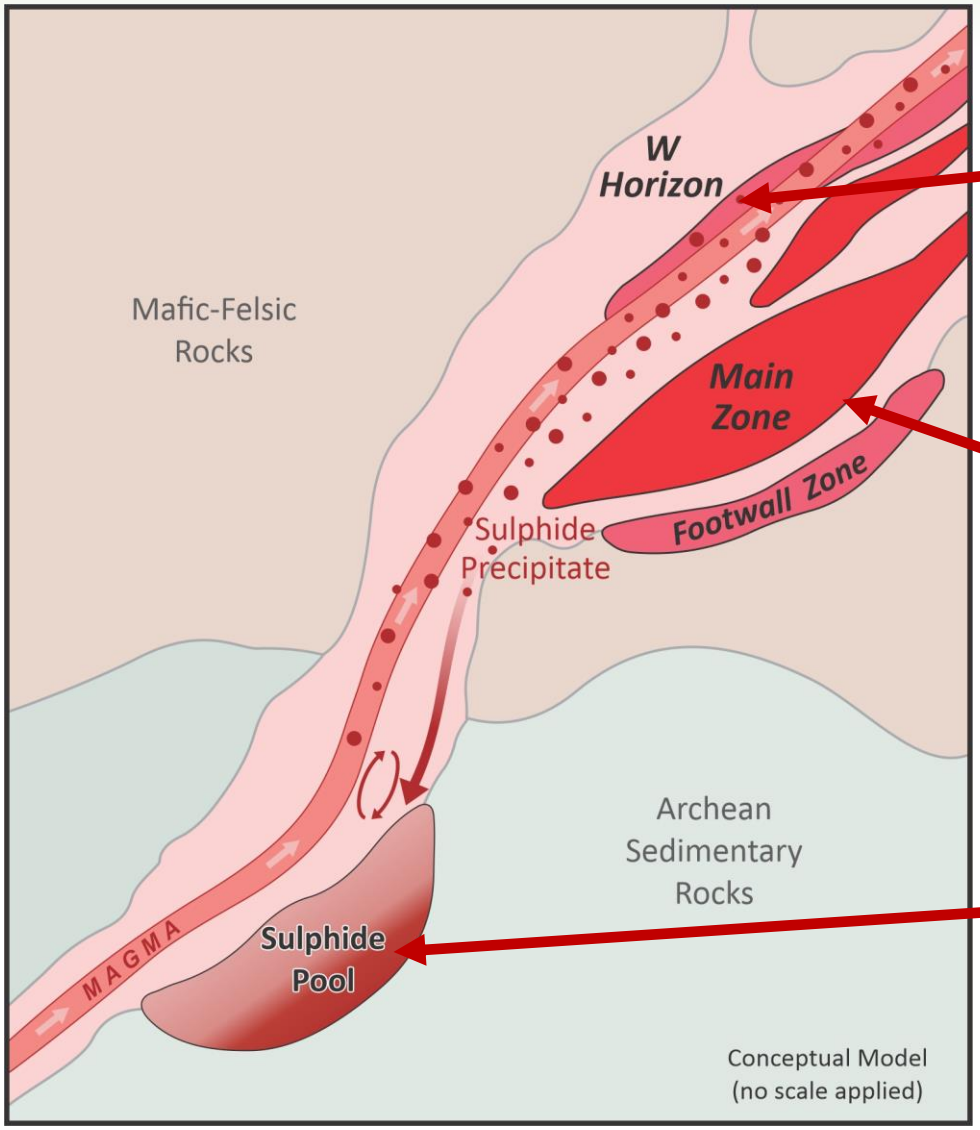
LOOKING FOR **SOURCE OF HIGH GRADE**

GENERATIONMINING

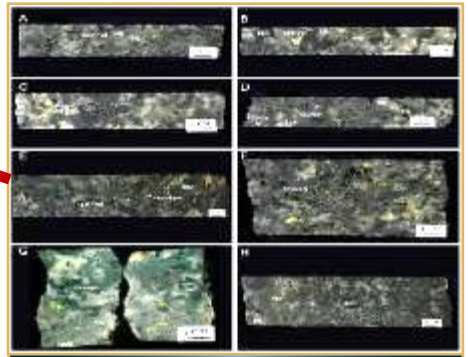
Sample K008054, 188.28g/t TPGM, 9.11% Cu, 0.60% Ni, 6.4% S

COLDWELL MINERALIZATION MODEL

GENERATIONMINING



W Horizon – High Grade

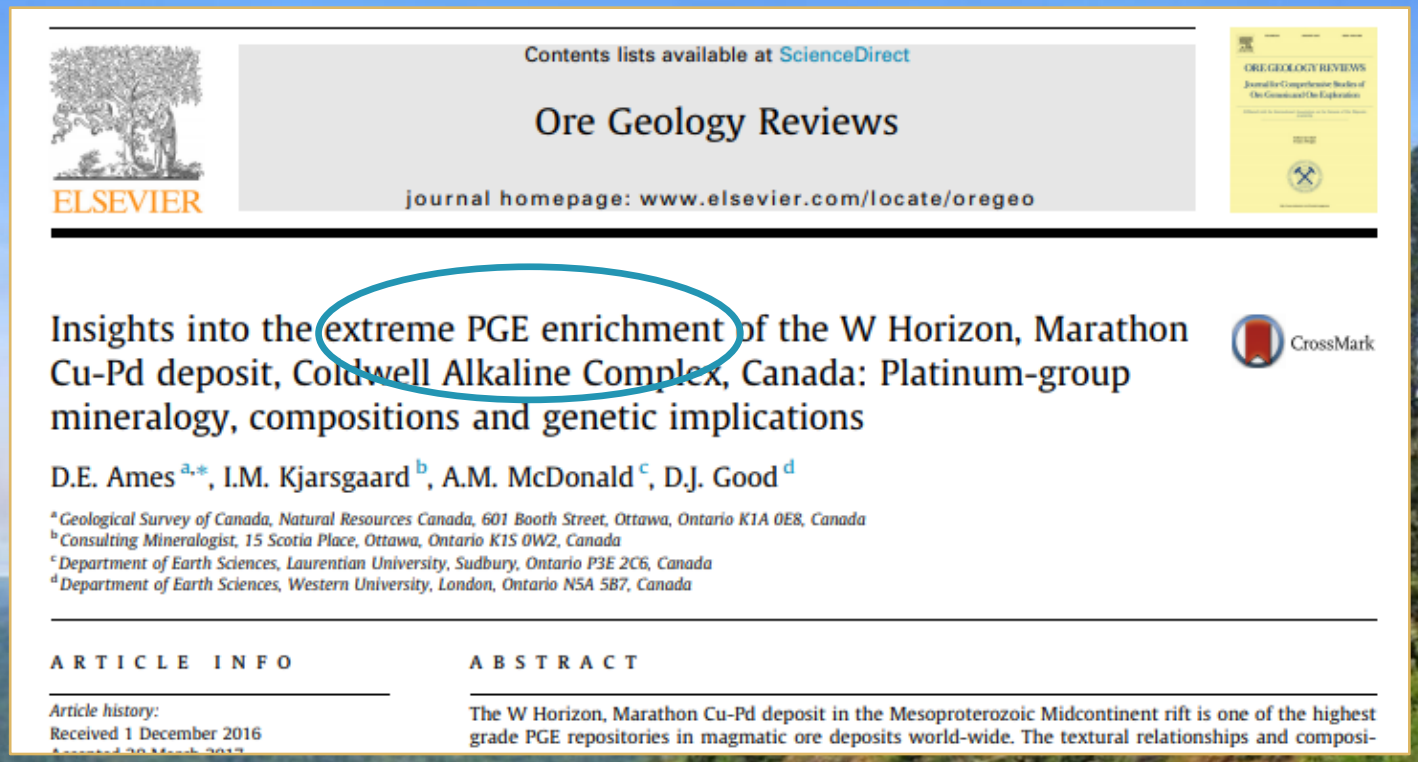


Main Zone Disseminated

Massive Sulphide Model

INVESTIGATION
INTO HIGH GRADE SOURCE

GENERATIONMINING



Contents lists available at ScienceDirect

Ore Geology Reviews

journal homepage: www.elsevier.com/locate/oregeo

Insights into the extreme PGE enrichment of the W Horizon, Marathon Cu-Pd deposit, Coldwell Alkaline Complex, Canada: Platinum-group mineralogy, compositions and genetic implications

D.E. Ames [a,*], I.M. Kjarsgaard [b], A.M. McDonald [c], D.J. Good [d]

[a] Geological Survey of Canada, Natural Resources Canada, 601 Booth Street, Ottawa, Ontario K1A 0E8, Canada
[b] Consulting Mineralogist, 15 Scotia Place, Ottawa, Ontario K1S 0W2, Canada
[c] Department of Earth Sciences, Laurentian University, Sudbury, Ontario P3E 2C6, Canada
[d] Department of Earth Sciences, Western University, London, Ontario N5A 5B7, Canada

ARTICLE INFO

Article history:
Received 1 December 2016

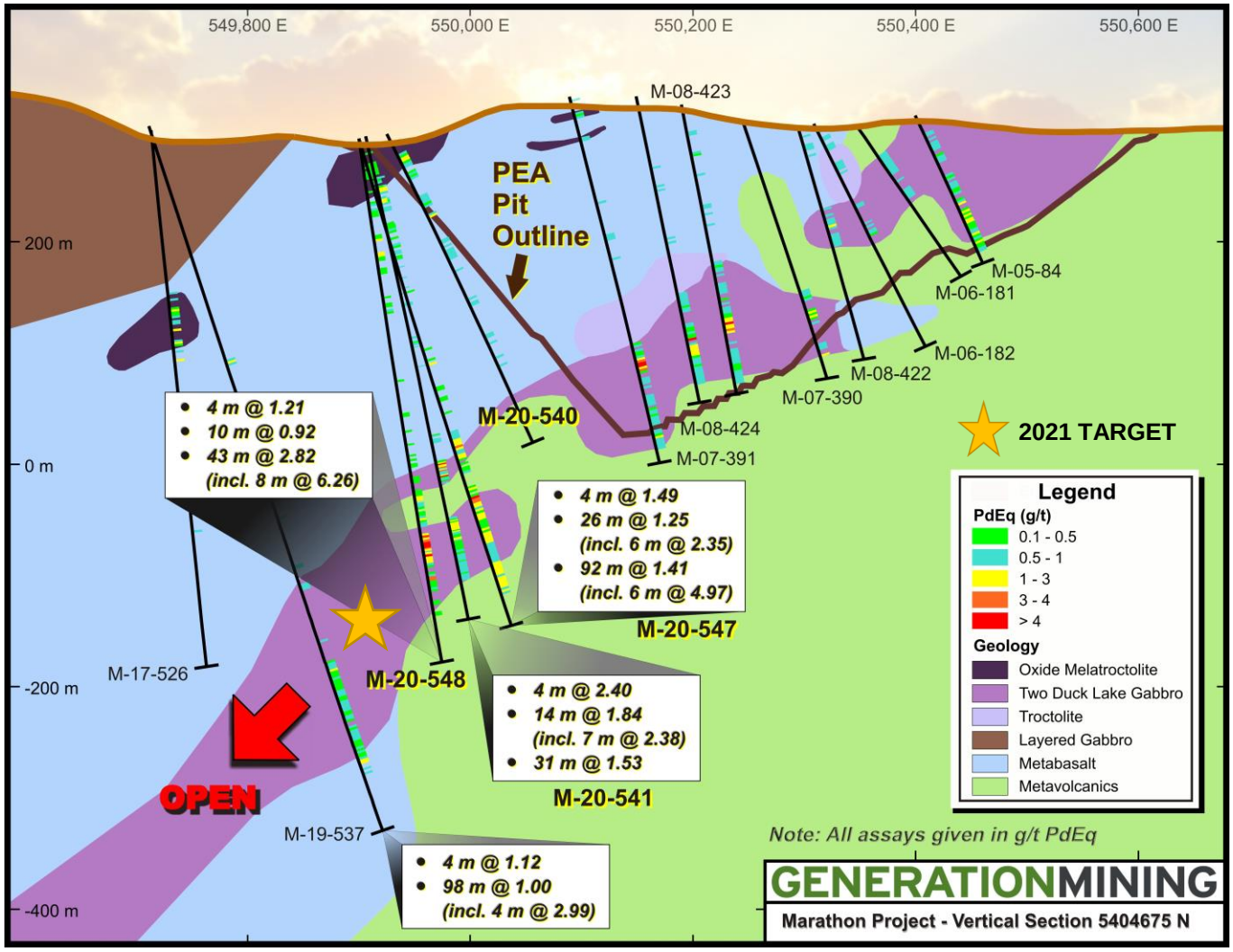
ABSTRACT

The W Horizon, Marathon Cu-Pd deposit in the Mesoproterozoic Midcontinent rift is one of the highest grade PGE repositories in magmatic ore deposits world-wide. The textural relationships and composi-

Conclusion: "conduit-style environments are capable of producing such extreme PGE-enriched orebodies similar to that of Noril'sk ... The formation of these enriched ores likely resulted from early sulfide segregation ... in a deep reservoir.

MARATHON **EXPLORATION**

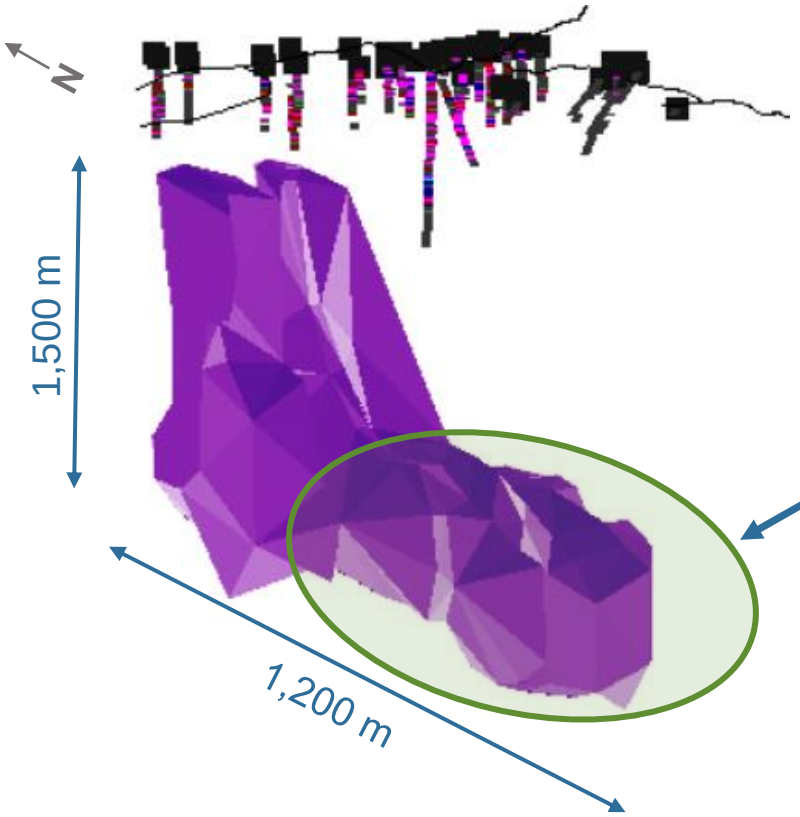
GENERATIONMINING



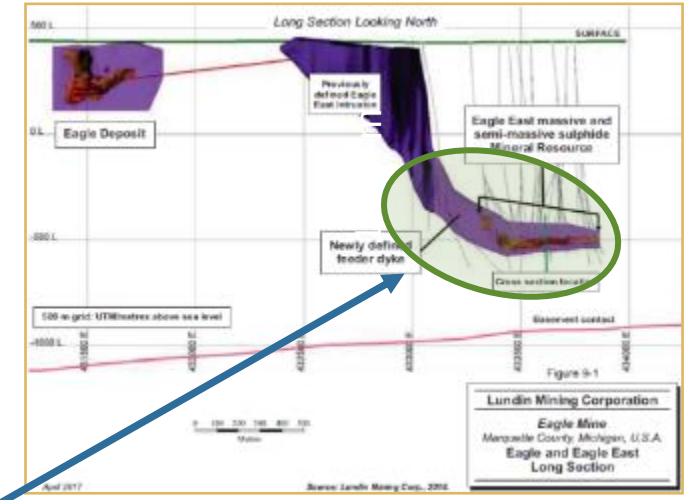
SALLY DEPOSIT **VELOCITY TARGET**

GENERATIONMINING

Sally Deposit

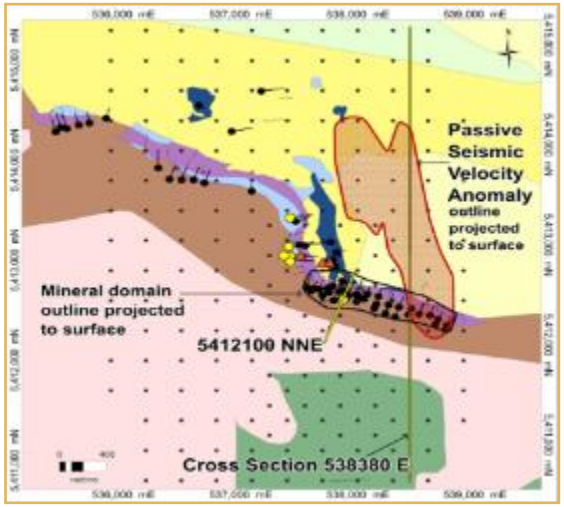


Eagle East Deposit



Lundin Mining Technical Report, 2017

The Sally velocity target will be included in the 2020 MT survey.



Seismic stations and anomaly plan view

GENMINING OPEN PIT RESOURCES

GENERATIONMINING

	Tonnes (k)	Pd (g/t)	Pt (g/t)	Cu (%)	Au (g/t)	Ag (g/t)	PdEq (g/t)	Pd (koz)	Pt (koz)	Cu (Mlb)	Au (koz)	Ag (koz)	PdEq (koz)
MARATHON PIT CONSTRAINED MINERAL RESOURCE ESTIMATE AT C$13/TONNE NSR CUT-OFF [1-7]													
M&I	179,248	0.56	0.18	0.20	0.07	1.6	1.24	3,238	1,064	796	390	9,335	7,130
Inferred	668	0.37	0.12	0.19	0.05	1.4	0.95	8	3	3	1	31	21
MARATHON PIT CONSTRAINED MINERAL RESOURCE ESTIMATE SENSITIVITY AT C$25/TONNE NSR CUT-OFF													
M&I	116,071	0.73	0.23	0.25	0.08	1.7	1.56	2,735	850	639	300	6,326	5,826
Inferred	144	0.62	0.16	0.28	0.05	0.9	1.41	3	1	1	0	4	7
GEORDIE PIT CONSTRAINED MINERAL RESOURCE ESTIMATE AT C$15/TONNE NSR CUT-OFF [8-14]													
Indicated	17,268	0.56	0.04	0.35	0.05	2.4	1.44	312	20	133	25	1,351	801
Inferred	12,899	0.51	0.03	0.28	0.03	2.4	1.22	212	12	80	14	982	505
GEORDIE PIT CONSTRAINED MINERAL RESOURCE ESTIMATE AT C$25/TONNE NSR CUT-OFF													
Indicated	13,852	0.65	0.04	0.40	0.05	2.6	1.65	287	18	122	23	1,168	735
Inferred	6,593	0.61	0.03	0.34	0.04	2.4	1.45	130	7	49	8	508	307
SALLY PIT CONSTRAINED MINERAL RESOURCE ESTIMATE AT C$15/TONNE NSR CUT-OFF [8-14]													
Indicated	24,801	0.35	0.20	0.17	0.07	0.7	0.96	278	160	93	56	567	767
Inferred	14,019	0.28	0.15	0.19	0.05	0.6	0.86	124	70	57	24	280	389
SALLY PIT CONSTRAINED MINERAL RESOURCE ESTIMATE AT C$25/TONNE NSR CUT-OFF													
Indicated	9,875	0.51	0.30	0.18	0.10	0.8	1.24	162	95	39	31	240	395
Inferred	1,295	0.55	0.30	0.19	0.10	0.7	1.31	23	12	5	4	27	54

See Notes on slide 31 of this presentation

NOTES

1. *Mineral Resources which are not Mineral Reserves do not have demonstrated economic viability.*
2. *The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.*
3. *The Inferred Mineral Resource in this estimate has a lower level of confidence than that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.*
4. *The Mineral Resources in this report were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council.*
5. *The Mineral Resource Estimate was based on US$ metal prices of $1,100/oz Pd, $900/oz Pt, $3/lb Cu, $1,300/oz Au and $16/oz Ag. The US$:CDN$ exchange rate used was 0.77.*
6. *The NSR estimates use flotation recoveries of 93% for Cu, 82% for Pd, 80% for Pt, 80% for Au, 75% for Ag and smelter payables of 96% for Cu, 93% for Pd, 88% for Pt, 90% for Au, 90% for Ag .*
7. *The pit optimization used a mining cost of C$2 per tonne, combined processing, G&A and off-site concentrate costs of C$15/tonne and pit slopes of 50°.*

---

8. *Mineral Resources which are not Mineral Reserves do not have demonstrated economic viability.*
9. *The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.*
10. *The Inferred Mineral Resource in this estimate has a lower level of confidence than that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.*
11. *The Mineral Resources in this report were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council.*
12. *The Mineral Resource Estimate was based on US$ metal prices of $1,100/oz Pd, $900/oz Pt, $3/lb Cu, $1,300/oz Au and $16/oz Ag. The US$:CDN$ exchange rate used was 0.77.*
13. *The NSR estimates use flotation recoveries of 93% for Cu, 82% for Pd, 80% for Pt, 80% for Au, 75% for Ag and smelter payables of 96% for Cu, 93% for Pd, 88% for Pt, 90% for Au, 90% for Ag .*
14. *The pit optimization used a mining cost of C$2 per tonne, combined processing, G&A and off-site concentrate costs of C$15/tonne and pit slopes of 50°.*

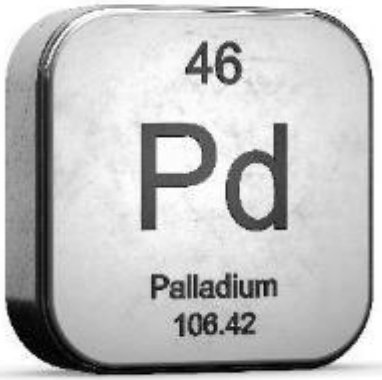
CAPEX AND OPEX

GENERATIONMINING

INITIAL CAPITAL COSTS ($C MILLIONS)	
Pre-Stripping	15.3
Mining	40.6
Processing Plant	272.8
Tailings Management Facility	14.3
Site Infrastructure	54.0
Contingency	34.1
Total Initial Capital	**431.0**

SUSTAINING CAPITAL ($ MILLIONS)	
Mining	128.1
Processing Plant	38.3
Tailings Management Facility	67.0
Closure	30.0
Contingency	13.5
Total Sustaining Capital	**277.0**

LOM OPERATING COSTS ($C PER TONNE)	
Mining Cost per tonne mined material (waste and mineralized material)	2.34
Mining Cost per tonne plant feed	9.23
Processing Cost per tonne plant feed	8.92
G & A per tonne plant feed	0.97
Total Cost per tonne plant feed	**19.12**



MARATHON CONCENTRATE SPECS

GENERATIONMINING

Table 19.2
Marathon PGM Concentrate Expected Analysis

Element	Unit	Grade	Element	Unit	Grade
Cu	%	17 - 19	Cl	ppm	84
Au	g/t	4 - 8	Co	%	0.06
Ag	g/t	40 - 200	Cr	ppm	44
Pt	g/t	10 - 17	F	%	0.025
Pd	g/t	40 - 60	K	ppm	650
Rh	g/t	0.9 - 1.0	Li	ppm	< 5
Ru	ppm	0.1	MgO	%	3.6
Ir	ppm	0.06	Mn	ppm	350
Fe	%	29	Mo	ppm	33
S	%	24	Na	%	0.29
Zn	%	0.12	Ni	%	0.52
Pb	%	0.06	P	ppm	< 200
As	%	0.004	Se	%	0.008
Sb	%	< 0.001	SiO_2	%	6
Bi	%	< 0.002	Sn	ppm	< 20
Hg	ppm	< 0.3	Sr	ppm	110
Al_2O_3	%	1.7	Ti	ppm	650
Ba	ppm	60	Tl	ppm	< 30
Be	ppm	< 0.2	V	ppm	40
CaO	%	1.1	Y	ppm	1.9
Cd	ppm	10	H_2O	%	7 - 10

SIMPLIFIED **PROCESS FLOWSHEET**

GENERATIONMINING