

First Phosphate Announces Positive Results of Preliminary Economic Assessment at its Bégin-Lamarche Property in Saguenay-Lac-Saint-Jean, Quebec, Canada

written by Raj Shah | December 4, 2024

December 4, 2024 ([Source](#)) – First Phosphate Corp. (CSE: PHOS) (OTCQB: FRSPF) (FSE: KD0) (“**First Phosphate**” or the “**Company**”) is pleased to announce the positive results of its Preliminary Economic Assessment (“**PEA**”) on the Bégin-Lamarche Property (the “**Property**” or the “**Project**”) located 75 km northwest of Saguenay, Quebec, Canada.

The PEA provides a potentially viable case for developing the Property by open pit mining for the primary production of phosphate concentrate and secondary bi-product recovery of magnetite concentrate.

Highlights (all dollar amounts in Canadian dollars on a 100% project ownership basis unless otherwise indicated):

- The Project would produce an annual average of 900,000 tonnes of beneficiated phosphate concentrate at 40% P_2O_5 content and 380,000 tonnes of magnetite at 92% Fe_2O_3 content over a 23-year mine life.
- The Project generates a pre-tax internal rate of return (IRR) of 37.1% and a pre-tax net present value (NPV) of

\$2.100 Billion at an 8% discount rate at an approximate 3-year trailing average phosphate price plus a premium for purity and potential secure source of supply, and a 2-year trailing average magnetite price plus a premium for purity.

- The Project generates an after-tax internal rate of return (IRR) of 33.0% and an after-tax net present value (NPV) of \$1.590 Billion at an 8% discount rate.
- The Project would generate an after-tax cash flow of \$700 Million in years 1 to 3, resulting in a 2.9-year payback period from start of production. Pre-tax cash flow in years 1 to 3 is \$783 Million for a 2.6-year payback period.
- The Project benefits from adjacent paved provincial road access and nearby electrical power line, and year-round accessible deep-sea Port of Saguenay at approximately 85 km driving distance. Initial capex for the Project is limited to \$675 million.
- The PEA used Indicated and Inferred Mineral Resources in its calculations.
- The Project has no outstanding royalties or financing streams registered against it.

“We are pleased with the results and timely completion of this PEA. Existing local infrastructure keeps our capex low, our mine size controlled and our mine economics robust,” says First Phosphate CEO, John Passalacqua. “Our internal Pre-Feasibility work is also near completion and we are now in a position to determine the timing on our Feasibility Study.”

PEA BASE CASE FINANCIAL SUMMARY (all dollar amounts in \$Canadian unless otherwise noted, presented on a 100% ownership basis):

Pre-Tax Net Present Value (8% discount rate)	\$2.100 Billion
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After-Tax Net Present Value (8% discount rate)	\$1.590 Billion
Pre-Tax Internal Rate of Return	37.1%
After-Tax Internal Rate of return	33.0%
After-Tax Payback	2.9 Years
Pre-production Capital	\$675 Million
Sustaining Capital	\$317 Million
Mine Life	23 Years
Process Plant Throughput	18,000 tpd
Concentrate Prices	
Phosphate (40% P ₂ O ₅)	\$350/t USD
Magnetite (92% Fe ₂ O ₃)	\$168/t USD
Exchange Rate \$CAD:\$USD	\$1.37 (0.73)

PEA TECHNICAL SUMMARY

Mine Life						23 years		
Mine Plan Tonnage						150.5 Million tonnes		
Process Plant Feed Grade								
P ₂ O ₅						5.76%		
Fe ₂ O ₃						10.32%		
Strip Ratio (Waste:Process Plant Feed)						1.5:1		
Operating Cost (per tonne of process plant feed)						\$28.31		
Pit-Constrained Mineral Resource Estimate at 2.5% P ₂ O ₅ Cut-off ⁽¹⁻⁴⁾								
Classification	Zone	Tonnes (M)	P ₂ O ₅ (%)	P ₂ O ₅ (kt)	Fe ₂ O ₃ (%)	Fe ₂ O ₃ (Mt)	TiO ₂ (%)	TiO ₂ (kt)

Indicated	Mountain	9.3	8.19	758	9.95	0.9	3.23	299
	Northern	32.2	6.00	1,934	10.91	3.5	3.33	1,073
	Total	41.5	6.49	2,692	10.69	4.4	3.31	1,372
Inferred	Mountain	6.8	8.57	584	10.34	0.7	3.68	251
	Northern	44.3	6.98	3,090	11.14	50	3.26	1,442
	Southern	162.9	5.63	9,177	10.85	17.6	3.73	6,080
	Total	214.0	6.01	12,851	10.89	23.3	3.63	7,773

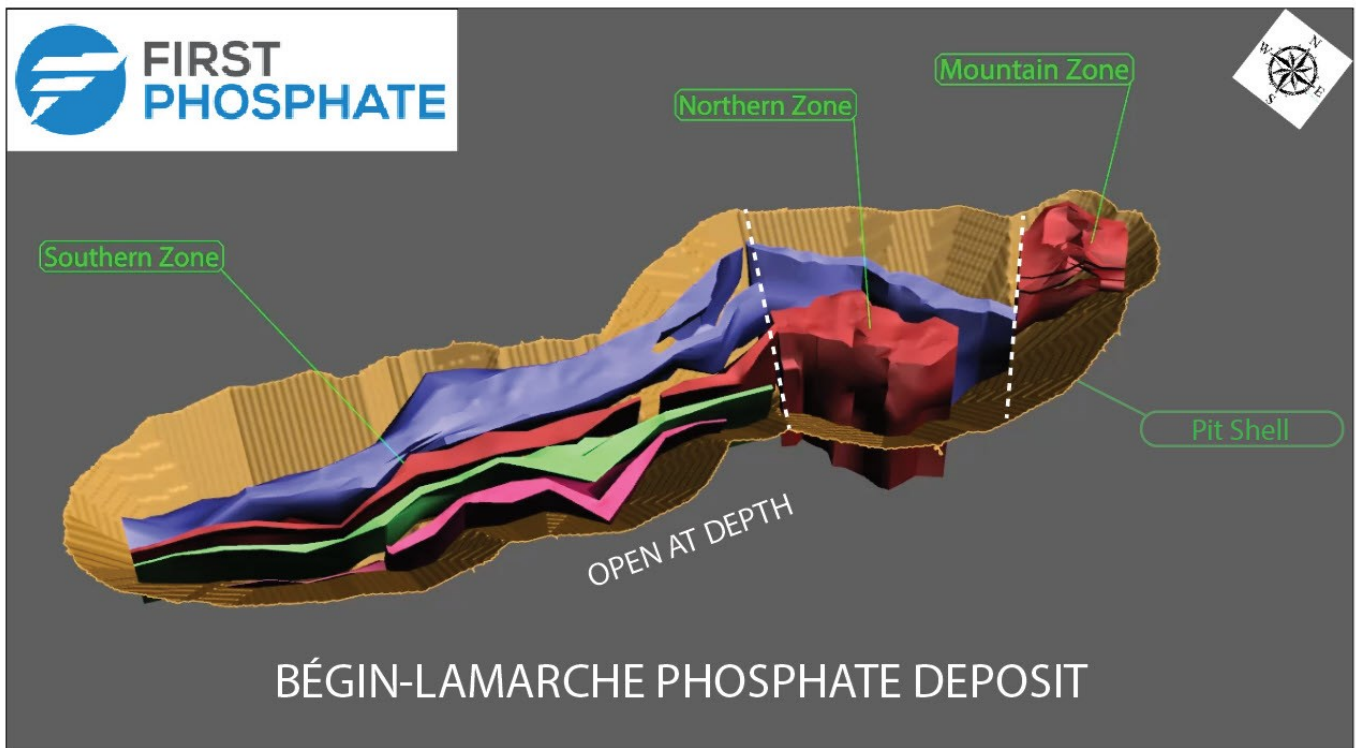
Note: P_2O_5 = phosphorus pentoxide, Fe_2O_3 = iron oxide/ferric oxide, TiO_2 = titanium dioxide.

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 were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions (2014) and Best Practices Guidelines (2019) prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council.



BÉGIN-LAMARCHE PHOSPHATE DEPOSIT

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

https://images.newsfilecorp.com/files/8917/232312_d0716826f4fb49ef_001full.jpg

The mine plan uses conventional truck/shovel open pit methods utilizing 90-tonne capacity haulage trucks and shovels equipped with 10 cubic metre buckets. The open pit will be mined over a period of 22 production years and six months of pre-stripping. Low-grade mineralization that is stockpiled over the life-of-mine will be processed for an additional production year. Mineralized material will be transported by haulage trucks to the nearby process plant, and waste rock will be stored at a facility located approximately 800 metres southeast of the open pit. Backfilling of the mined-out open pit with 61 Mt of waste rock is planned, which will reduce the amount required to be stored on surface and lead to proactive restorative measures. Mining is to be conducted at an initial rate of 15 Million total tonnes per annum (Mtpa), and will reach a peak of 28 Mtpa based

on process plant feed and waste rock removal requirements.

The process plant feed is contained within an optimized subset of the Mineral Resource set out in the table above. The open pit contains 150.5 Mt of process plant feed (inclusive of mining dilution and loss factors) averaging 5.76% P_2O_5 and 10.32% Fe_2O_3 . The process plant feed is associated with 219 Mt of waste rock and overburden resulting in an overall life-of-mine strip ratio of 1.5:1. It is notable that all Mineral Resources considered for mining are in the Indicated and Inferred classifications.

Extensive metallurgical testing was carried out at SGS, Quebec City. The test work has indicated process recoveries of phosphate and magnetite to be reasonably high and relatively consistent. The most recent tests focused on circuit stability and maximizing concentrate recovery. Elements of potential concern in traditional phosphate operations based on sedimentary phosphate deposits used for fertilizers are not an issue since the Bégin-Lamarche Mineral Resource is based on a clean igneous rock deposit. Moreover, the low sulphur content suggests the tailings material would not create an environmental risk for acid generation or for metal leaching. Lastly, dry stack tailings and waste rock management are designed for closure and the elimination of concerns for acid drainage or metal leaching.

Initial Capital Costs (\$Canadian Millions)

Pre-Stripping	6
Process Plant Equipment and Building	262
Mining Equipment (leased)	23
Tailings Management Facility	29
Indirects, EPCM and Owner's Costs	154
Site Infrastructure	89

Contingency	112
Total Initial Capital	675

LOM Sustaining Capital Costs (\$Canadian Millions)

Mining	100
Process Plant	63
Tailings Management Facility	39
Site Infrastructure	45
EPCM	4
Reclamation	16
Contingency	50
Total Sustaining Capital	317

LOM Operating Costs (\$Canadian per tonne)

Mining Cost per Tonne Mined Material (waste and mineralized material)	2.73
Mining Cost per Tonne Process Plant Feed	6.71
Processing Cost per Tonne Feed	12.56
G & A per Tonne Process Plant Feed	1.28
Tailings and Water Management	3.45
Concentrate Handling and Transport	4.31
Total Cost per Tonne Process Plant Feed	28.31

The Project site is within the ancestral lands of the Pekuakamiulnuatsh Takuhikan First Nation, which confers certain rights to indigenous peoples in the area. First Phosphate recognizes the traditional rights of Indigenous people and acknowledges the exercising of treaty rights to preserve their cultural identity and customs. A formal collaboration agreement with Pekuakamiulnuatsh Takuhikan First Nation was signed on April 9, 2024 which includes the ability for the First Nation to

become involved financially in the mining activity and other related downstream facilities to be developed by First Phosphate.

Qualified Persons

The scientific and technical disclosure for First Phosphate included in this News Release have been reviewed and approved by Gilles Laverdière, P.Geo. VP Exploration for First Phosphate and Mr. Eugene Puritch, P.Eng., FEC, CET, President of P&E Mining Consultants Inc. Messrs. Laverdière and Puritch are Qualified Persons under National Instrument 43-101 Standards of Disclosure of Mineral Projects. Mr. Puritch is independent of First Phosphate.

About First Phosphate Corp.

First Phosphate (CSE: PHOS) (OTCQB: FRSPF) (FSE: KD0) is a mineral development company fully dedicated to extracting and purifying phosphate for the production of cathode active material for the Lithium Iron Phosphate (“LFP”) battery industry. First Phosphate is committed to producing at high purity level, in a responsible manner and with low anticipated carbon footprint. First Phosphate plans to vertically integrate from mine source directly into the supply chains of major North American LFP battery producers that require battery grade LFP cathode active material emanating from a consistent and secure supply source. First Phosphate is owner and developer of the Bégin-Lamarche Property in Saguenay-Lac-St-Jean, Quebec, Canada that consists of rare anorthosite igneous phosphate rock that generally yields high purity phosphate material devoid of harmful concentrations of deleterious elements.

About P&E Mining Consultants Inc.

P&E was established in 2004 and provides geological and mine

engineering consulting reports, Mineral Resource Estimate technical reports, Preliminary Economic Assessments and Pre-Feasibility Studies. P&E is affiliated with major Toronto based consulting firms for the purposes of joint venturing on Feasibility Studies. P&E's experience covers over 450 NI 43-101 Technical Reports including First Phosphate's Bégin-Lamarche NI 43-101 Mineral Resource Estimate which was completed in October 2024.

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Forward-Looking Information and Cautionary Statements

This news release contains certain statements and information that may be considered "forward-looking statements" and "forward-looking information" within the meaning of applicable securities laws. In some cases, but not necessarily in all cases, forward-looking statements and forward-looking information can be identified by the use of forward-looking terminology such as "plans", "targets", "expects" or "does not expect", "is expected", "an opportunity exists", "is

positioned", "estimates", "intends", "assumes", "anticipates" or "does not anticipate" or "believes", or variations of such words and phrases or statements that certain actions, events or results "may", "could", "would", "might", "will" or "will be taken", "occur" or "be achieved" and other similar expressions. In addition, statements in this news release that are not historical facts are forward-looking statements, including, among other things,: the Company's planned exploration and production activities; the properties and composition of any extracted phosphate; the Company's plans for vertical integration into North American supply chains; the calculation of mineral resources at the project and the possibility of eventual economic extraction of minerals from the Project; the projected yearly production profile from operations; life of mine sustaining costs; process plant throughput and average grades; the projected economics of the Project, including total sales, premiums, margins, taxes, average annual production; the net present value of the Project; the internal rate of return on the Project; Project payback period, average yearly free cash flow, life of mine unit costs, projected mine life, the total initial capital and sustaining capital costs; and the project design, including the location of the tailings management facility, process plant, infrastructure area, stockpile areas, remediation plans and the proposed mine and transportation plans.

These statements and other forward-looking information are based on assumptions and estimates that the Company believes are appropriate and reasonable in the circumstances, which may prove to be incorrect, include, but are not limited to, the various assumptions set forth herein and in the Company's public disclosure record including the short form base prospectus dated June 5, 2024, as well as: there being no significant disruptions affecting the activities of the Company or inability to access

required Project inputs; permitting and development of the Project being consistent with the Company's expectations; the accuracy of the current mineral resource estimates for the Company and results of metallurgical testing; certain price assumptions for P_2O_5 and Fe_2O_3 ; inflation and prices for Project inputs being approximately consistent with anticipated levels; and the Company's relationship with Pekuakamiulnuatsh Takuhikan First Nation and other Indigenous parties remaining consistent with the Company's expectations.

There can be no assurance that such statements will prove to be accurate, and actual results and future events could differ materially from those anticipated in such statements. There can be no assurance that any opportunity will be successful, commercially viable, completed on time or on budget, or will generate any meaningful revenues, savings or earnings, as the case may be, for the Company. In addition, the Company will incur costs in pursuing any particular opportunity, which may be significant. These factors and assumptions are not intended to represent a complete list of the factors and assumptions that could affect the Company and, though they should be considered carefully, should be considered in conjunction with the risk factors described in the Company's other documents filed with the Canadian and United States securities authorities, including without limitation the "Risk Factors" section of the Company's Management Discussion and Analysis dated October 23, 2024 and Annual Report on 20-F dated July 8, 2024, which are available on SEDAR at www.sedarplus.ca. Although the Company has attempted to identify factors that would cause actual actions, events or results to differ materially from those disclosed in the forward-looking information or information, there may be other factors that cause actions, events or results not to be as anticipated, estimated or intended. The Company does not undertake to update any forward-looking information, except in

accordance with applicable securities laws.

Certain forward-looking statements in this press release may also constitute a “financial outlook” within the meaning of applicable securities laws. A financial outlook involves statements about the Company’s prospective financial performance, financial position or cash flows and is based on and subject to the assumptions about future economic conditions and courses of action and the risk factors in relation to such financial outlook noted in this press release. Such assumptions are based on management’s assessment of the relevant information currently available, and any financial outlook included in this press release is provided for the purpose of helping readers understand the Company’s current expectations and plans for the future. Readers are cautioned that reliance on any financial outlook may not be appropriate for other purposes or in other circumstances and that the risk factors described above, or any other factors may cause actual results to differ materially from any financial outlook. The actual results of the Company’s operations will likely vary from the amounts set forth in any financial outlook and such variances may be material.

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