

Horizonte Minerals Plc: Positive Metallurgical Testwork Results For The Vermelho Nickel Cobalt Project

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LONDON, March 14, 2019 - [Horizonte Minerals Plc](#), (AIM: HZM, TSX: HZM) ("Horizonte" or "the Company") the nickel development company focussed in Brazil, is pleased to announce positive results from metallurgical and smelting test work on the Vermelho nickel cobalt project, located in the southern part of the Carajás mining district in Pará state, northern Brazil.

Highlights:

- Tests of Vermelho saprolite samples returned an average ferronickel grade of 31.8% nickel;
- The ferro nickel product was of high quality, being low in trace elements and meeting the commercial requirement of stainless-steel manufacturers;
- The results confirm the suitability of the conventional Rotary Kiln Electric Furnace ("RKEF") for processing Vermelho saprolite ore.

Horizonte CEO Jeremy Martin said, "We are pleased to report the test work has confirmed that it is possible to produce high grade, commercial specification ferronickel from the saprolite and transition ore at Vermelho. These results confirm the suitability of the proposed conventional Rotary Kiln Electric Furnace ("RKEF") process selected for the Company's Araguaia ferronickel project is also suitable for processing Vermelho ore. In parallel the test work at SGS Lakefield on limonite samples from Vermelho to demonstrate its suitability for production of high purity nickel and cobalt sulphate to supply the EV battery markets is at an advanced stage and we look forward to reporting on the results of this work.

We currently have a prefeasibility underway for the project and the data from this test work and the work being undertaken by SGS Lakefield, will be incorporated into the study with the objective of demonstrating a robust set of economics for the selected process route.

Elsewhere we continue to advance the construction financing on the Araguaia Project. Against a backdrop of global growth in nickel consumption running at around 4 to 5% per year with stainless steel currently accounting for two thirds of demand. Going forwards and coupled with this continued growth in stainless steel, nickel use in battery chemistry is set to increase significantly. This robust demand story for nickel positions Horizonte well, owning 100% of two Tier 1 nickel projects, within trucking distance of each other with the potential to produce 40,000 to 50,000 tonnes per year of nickel.

Detailed Information

The Company carried out metallurgical testwork at Kingston Process Metallurgy Inc. (KPM) in Ontario, Canada during Q4 2018 into early Q1 2019 on representative samples of Vermelho saprolite and transition ore. After riffing and splitting, the ore samples were crushed to 2mm. A portion of this material was pulverised at approximately 325 mesh to provide samples for thermogravimetric analysis (TGA) and also chemical analysis. A sample of the crushed material was also tested for particle size distribution.

A portion of the material at 85% passing 2mm was placed in a refractory crucible and then calcined in an air atmosphere at 850°C for 2 hours; the calcining temperature was based on the results of the TGA testing.

Analysis of the as-received transition and saprolite ore and the calcine produced after initial testing is presented in Table 1.

Table 1. Chemical analysis of Vermelho nickel saprolite ore and calcine

Sample Analysis, wt. % (dry basis)

	Ni	Co	SiO ₂	Fe	MgO	Al ₂ O ₃	CaO	MnO	Cr ₂ O ₃	P ₂ O ₅	LOI	SiO ₂ /MgO
Ore	2.03	0.05	40.7	13.58	22.4	0.90	0.01	0.13	0.62	0.01	13.8	1.81
Calcine	2.30	0.05	46.7	15.12	25.4	1.06	0.02	0.14	0.71	0.01	1.81	1.84

Note: Generally, the assay of the calcine was consistent with the ore assay after taking into account the loss of chemical water. However, in some cases there was a slight divergence, e.g, as with Co; this difference was not considered material for the tests.

The smelting tests were carried out using a calcine charge of approximately 200 grams and a weighed amount of coal as pre-calculated for the reduction of the iron and nickel oxides in the calcined. Following furnace heat-up, smelting was carried out at 1550°C for a period of 2 hours with a small flow of nitrogen to provide a protective atmosphere. After this time, the furnace was allowed to cool under nitrogen, the crucible was then removed and samples of metal and slag were submitted to the laboratory for chemical analysis.

A series of tests were undertaken to produce a lower grade and a higher grade of ferronickel, with the average representing 31.8% Ni – a typical commercial grade. The analysis of metal showed low levels of trace elements (Table 3), indicating that with minimum conventional refining, the ferronickel would readily meet the requirements of commercial stainless-steel plants. It should be noted that cobalt is not payable in the ferronickel product but would be payable in high purity nickel and cobalt sulphate

Table 3. Analysis of ferronickel

Sample	Analysis, wt. % for Ni, Co, Fe, C and S, ppm for the remainder										
	Ni	Co	Fe	C	S	Cr	Cu	Zn	P	Si	Mn
Test 1	19.5	0.437	77.2	0.13	0.24	838	238	40	443	86	7.9
Test 2	44.0	0.881	50.5	NA	NA	61	436	276	551	NA	4.3
Average	31.8	0.66	63.9			450	337	158	497		6.1

NA=Not available

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About Horizonte Minerals:

[Horizonte Minerals Plc](#) is an AIM and TSX-listed nickel development company focused in Brazil. The Company is developing the Araguaia project, as the next major ferronickel mine in Brazil, and the Vermelho nickel-cobalt project, with the aim of being able to supply nickel and cobalt to the EV battery market. Both projects are 100% owned.

CAUTIONARY STATEMENT REGARDING FORWARD LOOKING INFORMATION

Except for statements of historical fact relating to the Company, certain information contained in this press release constitutes "forward-looking information" under Canadian securities legislation. Forward-looking information includes, but is not limited to, the ability of the Company to complete the Acquisition as described herein, statements with respect to the potential of the Company's current or future property mineral projects; the success of exploration and mining activities; cost and timing of future exploration, production and development; the estimation of mineral resources and reserves and the ability of the Company to achieve its goals in respect of growing its mineral resources; the ability of the Company to complete the Placing as described herein, and the realization of mineral resource and reserve estimates. Generally, forward-looking information can be identified by the use of forward-looking terminology such as "plans", "expects" or "does not expect", "is expected", "budget", "scheduled", "estimates", "forecasts", "intends", "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" or "will be taken", "occur" or "be achieved". Forward-looking information is based on the reasonable assumptions, estimates, analysis and opinions of management made in light of its experience and its perception of trends, current conditions and expected developments, as well as other factors that management believes to be relevant and reasonable in the circumstances at the date that such statements are made, and are inherently subject to known and unknown risks, uncertainties and other factors that may cause the actual results, level of activity, performance or achievements of the Company to be materially different from those expressed or implied by such forward-looking information, including but not limited to risks related to: the inability of the Company to complete the Acquisition as described herein, exploration and mining risks, competition from competitors with greater capital; the Company's lack of experience with respect to development-stage mining operations; fluctuations in metal prices; uninsured risks; environmental and other regulatory requirements; exploration, mining and other licences; the Company's future payment obligations; potential disputes with respect to the Company's title to, and the area of, its mining concessions; the Company's dependence on its ability to obtain sufficient financing in the future; the Company's dependence on its relationships with third parties; the Company's joint ventures; the potential of currency fluctuations and political or economic instability in countries in which the Company operates; currency exchange fluctuations; the Company's ability to manage its growth effectively; the trading market for the ordinary shares of the Company; uncertainty with respect to the Company's plans to continue to develop its operations and new projects; the Company's dependence on key personnel; possible conflicts of interest of directors and officers of the Company, the inability of the Company to complete the Placing on the terms as described herein, and various risks associated with the legal and regulatory framework within which the Company operates. Although management of the Company has attempted to identify important factors that could cause actual results to differ materially from those contained in forward-looking information, there may be other factors that cause results not to be as anticipated, estimated or intended. There can be no assurance that such statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements.

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