MGX Minerals and Highbury Energy Produce 45% Vanadium Concentrate from Petroleum Coke Ash

VANCOUVER, BRITISH COLUMBIA / March 29, 2018 / **MGX Minerals Inc.** ("MGX" or the "Company") (CSE: XMG / FKT: 1MG / OTCQB: MGXMF) is pleased to report additional assay results of Petroleum Coke ("Petcoke") samples collected from stockpiles produced from the Fort McMurray area mining and upgrading operation as well as the Edmonton refinery. Both samples originated from Delayed Coking operations. Samples were obtained and prepared by **Highbury Energy Inc.** ("Highbury") and metal contents analyzed by Acme Labs of Vancouver, British Columbia using standard ICP analyses.

Ash Content

Ash was determined by weighing residues after burning coke samples of about 200 g in air in a muffle oven over extended periods at 815°C. Table A indicates the average ash content of 6 to 7 samples of each coke.

Table A. Ash Content of Coke Samples

Sample name	Ash content (% wt.)	No. of samples tested
Upgrader Coke A	2.73 ±0.09	6
Refinery Coke B	0.32 ±0.04	7

Upgrader Coke A had about nine times as much ash as was in Refinery Coke B.

Proximate Analyses

The cokes contain over 95 % organic (non-mineral) matter. Thermogravimetric analyses on 10 mg quantities are shown below.

Table B. Proximate Analyses of Coke by the Thermo-gravimetric Analyser Method

Quantity (wt. %)	Upgrader Coke A	Refinery Coke B
Volatile Matter	8.9	10.0
Fixed Carbon	86.9	86.3
Residues	4.3	1.7

Residue refers to residual mineral matter left after the thermo-gravimetric test. Except for the % Residue, the two cokes have similar combustion properties.

Metals Analysis in the Coke Samples

Lithium borate fusion ICP-MS method measures 45 trace metal concentrations in the coke. Results are expressed as (mg/kg) or ppmwt. Table C lists concentrations of selected metals. .

Table C. Selected Metal Concentrations in Coke (mg Metal/kg Coke)

Sample	V	Ni	Cu	Zr	Co	Au	Ag
Upgrader Coke A	421	76.8	86.2	40.5	4.8	0.0011	< 0.1
Refinery Coke B	458	53.4	35.9	1.3	1.3	<0.0005	<0.1

Vanadium is the highest concentration of the 45 trace metals detected in the coke samples.

Ash Analyses

Ash analysis was completed by Bureau Veritas Commodities Canada Ltd. (“BV”) of Vancouver, British Columbia using XRF method (XF701). Results are expressed as % wt. in the ash as oxide. Sixteen elements as oxides, and LOI (loss on ignition) are determined. The ash samples were prepared in Highbury’s laboratory and sent to BV for analysis. The maximum % the analysis method could accommodate was 10.0 % for V_2O_5; therefore ash samples were diluted by mixing with other solids. In the Highbury laboratory both Al_2O_3 and Fe_2O_3 were used.

Table D. Selected Species in the Ash of Each Coke Type

Species (wt. %)	Upgrader Coke Ash A	Refinery Coke Ash B
Al_2O_3	27.7	9.8
SiO_2	42.6	23.6
V_2O_5	6.6	45.1
Fe_2O_3	8.0	2.7
TiO_2	5.7	0.7
K_2O+MgO+CaO	4.0	6.4
LOI	0.0	4.3

SubTotal (wt.%)	90.8	92.5

For Upgrader Coke A, the sum of Al_2O_3 +SiO_2 is about 70 %. V_2O_5 is about 6.6%, according to the ash analyses. For Refinery Coke B, the average % V_2O_5 in the ash is 45 %.

Table E Trace Metals Concentration in Ash (mg Metal/kg Ash) for Selected Species [Two Determinations Average]

Sample	V	Ni	Cu	Zr	Co	Au	Ag	Mo
Upgrader Coke Ash A	34600	740	130	1840	230	0.02	2.5	1405
Refinery Coke Ash B	193000	177000	340	405	620	0.02	0.175	5000

Vanadium metal concentrations are 3.5 % wt. in Upgrader Coke Ash A, and 19.3 % wt. in Refinery Coke Ash B, which is also enriched in Nickel. .

Calculated ash compositions from ICP and XRF methods can show discrepancies due to differences in analytical methods and to the dilution step as used in the present work.

Background

Petcoke is a carbon material by-product of the oil and gas industry that forms during the oil refining process. As refineries have become more efficient at processing extra heavy crude oils (bitumen) over the last two decades, output of Petcoke globally has risen significantly. Because Petcoke originates from heavier petroleum fractions, its denser impurities such as metals and sulphur compounds are concentrated in it.

The majority of Canadian Petcoke output occurs in close proximity to oil sand producing regions, where bitumen is upgraded into synthetic crude oil. Specifically, the Province of Alberta is known to host vast stockpiles of Petcoke. According to the Alberta Energy Regulator, petcoke inventories are estimated to have reached 106 million tonnes in 2016[(1)].

[(1)] Source: Alberta Energy Industry, Alberta Mineable Oil Sands Plant Statistics

While concentrations of individual metals are low in raw petcoke, Highbury is utilizing its advanced knowledge of the thermochemical gasification process and existing large-scale pilot plant experience to assist MGX in designing a process to generate hydrogen gas and concentrate metals in the form of ash byproduct. Highbury has completed a Phase I report on potential processes and markets for primary and secondary byproducts. A Phase II study has

commenced including analyses of locations, laboratory bench top feedstock results, advanced process design and initial plant design parameters.

Qualified Person
The technical portions of this press release were reviewed by Andris Kikauka (P. Geo.), Vice President of Exploration for MGX Minerals. Mr. Kikauka is a non-independent Qualified Person within the meaning of National Instrument 43-101 Standards.

About Highbury Energy
Highbury Energy Inc. is an innovative energy company dedicated to the development and utilization of renewable energy resources through the procurement and conversion of biomass. Highbury has developed a proprietary dual-bed steam gasification technology and patented gas cleanup system that converts biomass into high-grade synthesis or fuel gas. This robust process produces a medium calorific value gas from most types of organic matter, such as wood or agricultural wastes, without need of tonnage oxygen. The cleaned synthesis gas can readily replace natural gas in industrial kilns and furnaces in the mineral, pulp & paper, glass, and cement industries. Alternately, the syngas can fuel an internal combustion engine to make electricity, with waste heat used for refrigeration, or district heating. Syngas can also be converted to high value low carbon liquid fuels such as diesel or jet fuel, or into chemicals such as methanol or ethanol.

About MGX Minerals
MGX Minerals is a diversified Canadian resource company with interests in advanced material and energy assets throughout North America. Learn more at www.mgxminerals.com.

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Forward-Looking Statements
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information provided by the Company is not a guarantee of future results or performance, and that actual results may differ materially from those in forward-looking information as a result of various factors. The reader is referred to the Company's public filings for a more complete discussion of such risk factors and their potential effects which may be accessed through the Company's profile on SEDAR at www.sedar.com.