Canada Carbon Surpasses Purity Threshold for Nuclear Graphite

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VANCOUVER, BRITISH COLUMBIA--(Marketwired - Oct 15, 2013) - **Canada Carbon Inc.** **(the "Company") (TSX VENTURE:CCB)** is pleased to announce the following results from additional chemical characterization of the purified graphite concentrate from its 100% owned Miller hydrothermal lump/vein graphite property. The objective of this additional chemical characterization was to quantify concentrations of impurities in the Miller graphite concentrate and to provide analytical results with lower relative errors than can be achieved using conventional combustion infrared detection techniques.

A sample of graphite concentrate that was purified by SGS Minerals Services in Lakefield (Refer to NR of July 23th, 2013) was submitted for glow discharge mass spectrometer (GDMS) analysis. The results of the GDMS analysis that was conducted by Evan Analytical in Liverpool, New York are presented in the table below. The primary advantages of GDMS are its ability to quantify impurities at trace concentrations in high-purity inorganic solids, and to quantify concentrations of up to 73 contaminant chemical elements in a single analysis. The majority of the contaminant elements in the purified Miller graphite concentrate yielded concentrations that were below the analytical detection limit for each, typically at 0.5 parts per million ("ppm") or grams per tonne ("g/t"), or less. The sum of the concentrations of all elements yielded a concentration of less than 350 ppm (or g/t), which by difference translates to an exceptional concentrate grade of 99.965% total carbon ("C(t)"). Please refer to the Note accompanying Table 1.

TABLE 1: Measured trace element concentrations in graphite by GDMS

ELEMENT	SYMBOL	CONCENTRATION (ppm by weight)	ELEMENT	SYMBOL	CONCENTRATION (ppm by weight)
Boron	B	0.12	Titanium	Ti	0.11
Sodium	Na	39	Chromium	Cr	11
Magnesium	Mg	5.7	Iron	Fe	12
Aluminum	Al	3.7	Nickel	Ni	0.26
Silicon	Si	24	Yttrium	Y	0.12
Phosphorus	P	0.85	Zirconium	Zr	0.25
Sulfur	S	14	Tungsten	W	0.38
Chlorine	Cl	0.81	Thorium	Th	0.01
Calcium	Ca	3.5			

Note: Only 34% (116 ppm) of the total reported impurity content (approximately 350 ppm) arises from actual measured values (tabled here). The concentrations of 56 elements were included in the total contaminant level calculation by using their limit of detection concentrations (not shown), as the measured value was less than the limit of detection, but could not be assumed to be zero. In this way, 200 ppm of the reported net contaminant level was contributed by just two elements with the highest detection limits, Fluorine and Tantalum, whose detection limits are 100 ppm each, but which may be present at much lower concentrations than their detection limits. The total contaminant level of 350 ppm therefore represents the estimated upper limit for the total contaminant concentration, and the true value may be less than 350 ppm.

These exceptional purity results for graphite obtained with a non-optimized flotation and purification process further support earlier indications that the graphite from the Miller deposit may be suitable for applications requiring ultra-pure grades, such as some core components of nuclear reactors. One such nuclear application criterion was evaluated, as follows.

The impurity concentrations obtained by GDMS were used to calculate the Equivalent Boron Content (EBC) of the graphite, as defined in ASTM Method C1233-09, "Standard Practice for Determining Equivalent Boron Contents of Nuclear Materials", in conjunction with ASTM Standard D7219-08, "Standard Specification for Isotropic and Near-isotropic Nuclear Graphites", which lists the 16 elements of concern with respect to the EBC criterion. EBC is a means of estimating the potential for the impurities contained in the graphite to absorb neutrons when exposed to the controlled neutron flux within a nuclear reactor. Any impurities absorbing neutrons would adversely affect the rate and the control of the nuclear chain reaction.

EBC is calculated as the sum of the EBC of each impurity, such that EBC (impurity) = (EBC factor for impurity) (concentration of impurity (ppm)). Each EBC factor was obtained from Table 1 of ASTM Method C1233-09. A number of contaminants of concern were below the detection limit of the GDMS assay procedure, so the concentration associated with each respective detection limit was submitted for the calculation of the EBC of those contaminants, as discussed in paragraph 3.3 of the method. Desired maximum EBC levels are typically between 1 and 3 ppm, depending on the specifications of end-users. The calculated EBC for this graphite sample was 0.94 ppm, a value indicating higher purity than is required by the noted thresholds.

Indium is contained in the binder material that is required to mount the sample for GDMS analysis. Hence, the EBC calculation based on the GDMS assay must disregard this chemical element. Indium has a small EDC factor, and was not expected to be present in any significant amount in this graphite, so this departure from ASTM method C1233-09 is not considered to be significant. In any case, the type and maximum concentration of any impurity is negotiated between the supplier and the buyer. No off-taker of graphite will have identical product specifications, as those specifications depend on the specific use of the graphite. All potential end-users will require a sample of the graphite concentrate to subject it to their specific evaluation process.

R. Bruce Duncan, CEO and Director of Canada Carbon, commented, "The extremely high Miller graphite purity of 100% Cg reported on July 23, 2013 as the result of preliminary metallurgical upgrading conducted by SGS Lakefield, was unprecedented. Even though the sample submitted to GDMS was of lower purity than that previously obtained, we have shown that the graphite could be suitable for use in nuclear reactors, with a calculated EBC of 0.94 ppm, as compared to the required maximum levels, typically between 1 and 3ppm. Graphite suitable for nuclear applications generally sells at a significant premium to all other graphite products, and very few upgraded graphite products can pass the EBC requirement for nuclear use. These results show the high value and quality of the Miller graphite."

Analytical Method

An approximately one gram sample of the upgraded graphite produced earlier during metallurgical test work at SGS Laboratories, Lakefield, Ont., was securely transported to Evans Analytical Group, Liverpool, New York, where it was prepared for analysis by glow-discharge mass spectrometry (GDMS). In this method, the sample (graphite) is mounted as the cathode in an evacuated tube. Argon gas is ionized to form a plasma, which is directed against the surface of the sample. Atoms at the surface of the sample are sputtered off as ions, which are collected and accelerated by a magnetic field, then entering the mass spectrometer. That process continues until a sufficient mass of the sample has been vaporized, to ensure that a representative sample has been analyzed. The mass spectrometer determines the mass of each atomic nucleus, and counts their frequency, thereby identifying the elements present in the sample, and their concentrations. Standard sample analysis is used to determine a relative sensitivity factor for each element, and determines the limit of detection for each.

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Rémi Charbonneau, Ph.D., P. Geo #290 (an Associate of Inlandsis Consultants s.e.n.c.), an Independent Qualified Person under National Instrument 43-101, confirms the technical information provided in this news release.

On Behalf of the Board of Directors

CANADA CARBON INC.

R. Bruce Duncan, CEO and Director

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