

KWG Resources Inc.: Patent Sought for New Gas Chromite Reduction Method

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TORONTO, ONTARIO--(Marketwired - Oct 25, 2013) - [KWG Resources Inc. \(TSX VENTURE:KWG\)](#) ("KWG") has filed a patent application in advance of discussions to commercialize a new method of refining into ferro chrome the chromite ore of its *Black Horse* deposit by means of natural gas. A partial disclosure of the process, summarized from such application, follows:

Background

The production of stainless and low alloy steels containing chromium has rapidly expanded, particularly in Asia. The source of the chromium in the stainless steel is partly from the recycling of scrap but this is limited by the availability of such materials, particularly in developing countries. Chromium in stainless steels is not open to substitution by other metals. It is essential for the corrosion and heat resistance of the material. The shortfall in the chromium additions required during the steelmaking process is met by the addition of alloys of chromium and iron, collectively known as "ferro chrome". These alloys are produced by the smelting of chromite ores, using solid carbonaceous reductants in a Submerged Electric Arc Furnace (SAF). This process is extremely energy and carbon intensive. Existing plants using "best world practices" consume between 3 and 4 megawatt hours (MWH) of electricity and 200 to 300 kilograms of carbon per tonne of ferro chrome alloy produced. Comprehensive gas cleaning systems are required to meet clean air standards. Large quantities of slag are produced and placed in long term storage in above ground dumps.

The development of huge deposits of natural shale gas in the USA and Canada has led to a fall in the long term cost of natural gas and the prospect of stable pricing for many years to come.

There are no commercially viable deposits of chromite ore in the USA and all ferro chrome used in the production of steel is imported, typically from South Africa and Kazakhstan. Recent discoveries of very large deposits of such ores have been made in Canada, a low cost natural gas producer, in a geographic area known as the "Ring of Fire" where this invention could be exploited.

Technology

Large quantities of Directly Reduced Iron (DRI) are currently produced in many countries using existing processes. The current invention uses a modification of this basic and well established technology to produce a chromium iron alloy by using natural gas to reduce both oxides of chromium and iron contained within the ROF chromite ore, the morphology of which has been shown in testing to facilitate the progress of the reduction reactions.

Process Details

Laboratory work has been completed which demonstrates the validity of the process. Samples of chromite ore concentrates from a deposit within the ROF have been successfully reduced to a highly metallized chromium iron alloy suitable for steelmaking. The temperature required for the reduction of chromium is much higher than that for the reduction of iron alone. In order to enable the reduction process to proceed at an acceptable rate at lower temperatures the use of an accelerator has been determined. The chromite ore concentrate is supplied as fines and needs to be agglomerated prior to the reduction stage. This is accomplished by using a disc pelletizer, commonly available for the production of iron ore pellets. It has been shown that carbon is a required additive to the chromite to facilitate reduction.

Usage in steel production

The process outlined above has been shown to produce metallization levels of chromium and iron of 80% or more. Higher metallization rates for both chromium and iron can be expected with process development. The resulting pellets of reduced chromite are suitable for stainless and alloy steelmaking, either as batch or continuously charged components of the steelmaking charge. Substantial cost advantages are expected when compared to the usage of conventionally produced ferro chrome alloys. The carbon content of the reduced chromite is intended to be considerably lower than the ferro alloys produced in an SAF. This will result in significant process advantages for the steelmaker and therefore lower his cost of production. The reduced chromite pellets can form part of the charge of a conventional SAF furnace producing ferro chrome, with significant cost benefits.

"It would appear that this process, combining North America's newly discovered high grade chromite with its also newly discovered wealth of natural gas, could usher a new paradigm into the stainless steel making world," said KWG President Frank Smeenk. "This process could in any event enable further processing of the Ring of Fire chromite to occur in Ontario, without special exemptions to its domestic electricity price."

About KWG: KWG has a 30% interest in the *Big Daddy* chromite deposit and the right to earn 80% of the *Black Horse* chromite deposit. KWG also owns 100% of Canada Chrome Corporation which has staked claims and conducted a \$15 million surveying and soil testing program for the engineering and construction of a railroad to the *Ring of Fire* from Exton, Ontario.

Forward-Looking Information

This news release contains or refers to forward-looking information. All statements, other than statements of historical fact that address activities, events or developments that KWG believes, expects or anticipates will or may occur in the future are forward-looking information. Such forward-looking information includes statements contained in this news release regarding the exploitation of a possible patent to commercialize a new method of refining chromite into ferro chrome and the advantages relating thereto. This forward-looking information reflects the current expectations or beliefs of KWG based on information currently available to it. Forward-looking information is subject to a number of risks and uncertainties that may cause the actual results of KWG to differ materially from those discussed in the forward-looking information, and even if such actual results are realized or substantially realized, there can be no assurance that they will have the expected consequences to, or effects on KWG. Factors that could cause actual results or events to differ materially from current expectations include, but are not limited to: the failure to obtain, or delays in obtaining, a patent domestically and/or internationally for the new refining process described herein; the failure to achieve any of the anticipated benefits from obtaining such a patent or from the use of the refining process protected by such patent and other factors. Any forward-looking information speaks only as of the date on which it is made and, except as may be required by applicable securities laws, KWG disclaims any intent or obligation to update forward-looking information, whether as a result of new information, future events or results or otherwise. Although KWG believes that the assumptions inherent in the forward-looking information are reasonable, forward-looking information is not a guarantee of future performance and accordingly undue reliance should not be put on such statements due to the inherent uncertainty therein.

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Shares issued and outstanding: 697,577,273

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