Today, MGX Minerals Inc. reported to have completed a NI43-101 Technical Report on its 100% owned Lithium Brine Properties in different parts of Alberta, Canada, encompassing more than 243,000 hectares. All of these properties are generally situated in areas where the oil and gas sector is active year round providing comprehensive infrastructure. Highlights from the Technical Report: Historic fluid geochemistry from wells that were spudded on MGX’s properties shows that mineralization consists of a lithium-rich sodium-calcium brine hosted in aquifers within the Devonian carbonate reef complexes. Samples from this aquifer were collected from depths between 1,665 to 3,666 m on MGX’s property and selected wells contained 140 mg/L lithium (21 separate well analysis averaged 100 mg/L). Potassium was recorded in 4 separate Devonian wells yielding between 4,570 and 7,270 mg/L on MGX’s Red Deer Properties. Formation water from a well was analyzed for bromide (956 mg/L) and iodide (18 mg/L). A total of 4,969 oil, gas and water wells have been spudded on MGX’s properties. To date, MGX has not conducted any exploration, drilling, sampling, mineral processing or mineral resource estimations, however management plans to complete all that in the upcoming months with today’s NI43-101 Technical Report in hand, as it provides a positive basis to move the project forward.
The new NI43-101 Technical Report has shown that historical formation water geochemical analyses within MGX’s Properties contain up to 140 mg/L lithium, which is equivalent to the highest lithium-enriched brine samples documented to date in Devonian aquifers of the Western Canada Sedimentary Basin.

The Technical Report recommends, therefore, that MGX conducts a 2-phased program to verify and assess lithium brine at its properties.

The total estimated cost of both phases is $600,000 CAD. Recommended Phase-1 work, which is estimated at $180,000 CAD, involves a formation water geochemical sampling program with the objectives of verifying the historical brine chemistry that is presented in this Technical Report.

Pending the results of the Phase-1 exploration work, the purpose and objective of the Phase-2 exploration work is to:

1) prepare inferred mineral resource estimations at selected MGX sub-Properties; and

2) conduct laboratory-scaled test work to explore and optimize the elemental recovery process.

The total cost of the Phase-2 exploration work is estimated at $420,000 CAD.

MGX’s Lithium Oilfield Brine Project in Alberta aquifers are within Devonian reef complexes of the Beaverhill Lake Group (Swan Hills Formation), Woodbend Group (Leduc Formation) and Elk Point Group (Winnipegosis Formation). The brine is currently being pumped to the surface from depths of between 1,600 m and 3,300 m below surface as a waste product of hydrocarbon production. Currently, the extracted brine is separated from the petroleum products and then reinjected back into the subsurface. Hence, the brine represents the largest-volume waste stream associated with oil and gas production. The first major oil discovery in Western Canada was made in the Late Devonian (Frasnian) Leduc Formation of the Woodbend Group near the city of Devon, AB in 1947 (Leduc #1 well).

Oil has been produced from the Devonian petroleum system in the Alberta portion of the Western Canada Sedimentary Basin ever since. The remaining established reserves of conventional crude oil in Alberta is about 288,200,000 cubic meters (more than one third of Canada’s remaining conventional reserves) and the Cretaceous and Devonian reservoirs are the major sources for all remaining conventional oil. The vast Devonian hydrocarbon reserves can largely be attributed to the abundance of mature, excellent to good quality carbonate source rocks. These same porous Devonian rock units host significant volumes of formation water, which can possibly and are currently being assessed for their lithium-enriched brine potential.

As the Devonian petroleum system has generally been subject to hydrocarbon production for decades, many of the fields/pools are classified as mature or have extinguished their hydrocarbon resources. Consequently, an important consideration for lithium brine companies is to investigate Devonian fields/pools with viable petroleum reserves and active hydrocarbon production.
operational lifespan) to ascertain/estimate the lithium brine potential of the associated aquifer going forward. With respect to MGX’s Properties, the Bonnie Glen, Erskine and Wimborne sub-Properties are all reported to have significant remaining established commingled natural gas reserves (15 x 10⁶ m³, 24 x 10⁶ m³, and 629 x 10⁶ m³, respectively; Alberta Energy Regulator, 2015).

In addition, the Fox Creek area is undergoing hydrocarbon resurgence in that hydraulic fracturing technology has made tight oil and gas associated with the Woodbend Group (Duvernay Formation shale) accessible to current and future development. A total of 4,969 oil, gas and water wells – regardless of stratigraphic target age – have been spudded on MGX’s properties. Of the 4,969 wells, 228 wells penetrate the Devonian within the MGX Permits; the current well status of these wells includes:

- 41 active wells;
- 32 suspended wells;
- 148 abandoned wells; and
- 7 wells of unknown status, which are typically related to shallow water wells.

The majority of the Devonian wells, regardless of well status, occur in MGX’s Bonnie Glen, Rimby Homeglen, Wimborne and Erskine sub-Properties (Red Deer group of permits in central Alberta) and Fox Creek group of permits in west-central Alberta. Importantly, production records show that these wells are capable of producing substantial volumes of formation water. For example, well 11/08-14-033-26W4, on the Wimborne sub-Property, produces about 900 bbls of formation water per day.
Figure above: Overview of major Devonian oil and gas fields/pools underlain with the outline of the Devonian reef complexes of the Woodbend Group – Leduc Formation. (Sources: Halbertsma, 1994; Meijer Drees, 1994; Oldale and Munday, 1994; and Switzer et al., 1994).

Source: Technical Report “Geological Introduction to MGX Minerals Inc.’s Lithium Oilfield Brine Project in Alberta, Canada” prepared by D. Roy Eccles (M.Sc., P. Geol.) from APEX Geoscience Ltd. of Edmonton, Alberta; effective June 15, 2016

Figure above: Shaded contour map of lithium-bearing formation waters in west-central Alberta (n = 1511 analyses; Eccles and Jean, 2010; Eccles and Berhane, 2011). Abbreviations for selected west-central Alberta tectonic features: KIA, Kimiwan isotopic anomaly; PRA, boundary of the Devonian Peace River Arch; SAZ, Snowbird Anomaly Zone. White solid line represents the boundary of the Swan Hills (Beaverhill Lake Group) carbonate complex (Oldale et al., 1994). White, semi-transparent polygons represent Leduc (Woodbend Group) carbonate complexes (Switzer et al., 1994).
MGX's Alberta Lithium Properties

Overview

MGX has consolidated a strategic portfolio of lithium properties located throughout the Province of Alberta. The total land package spans more than 300,000 hectares and contains some of the highest reported levels of lithium bearing brine in Province, with lithium levels reaching up to 140 mg/L as reported in the Provincial Industrial Minerals database (1).

All permits and permit applications are geologically associated with current and past oil producing fields. MGX has identified an initial group of 16 past producing wells for test production. These wells are located within the lithium bearing brine pools of the Swan Hills formation near Fox Creek and cover an area of approximately 8 km in length and reach up to 3.2 km in width. Past production of brine in the most recent wellhead production reports for the cluster totaled approximately 17,000 bpd as reported in the GeoScout database. A central well within this cluster reported historical grades of 130 mg/L lithium and 2 additional nearby wells reported historical grades of 117 mg/L and 130 mg/L at 3 km and 10 km, respectively, as reported in the Provincial industrial minerals database.

Location & Infrastructure

All properties surround existing wells that have provided initial historic assays. The properties are generally associated with past producing oil fields that are fully serviced with nearby roads, power and wellheads in place.

6 Permits are located in Alberta's Fox Creek area and include wells with reported historic lithium values ranging from 115-140 mg/L, in the lithium-bearing Leduc and Swan Hills formations. The 6 Permit Applications cover various locations throughout the Province including the Keg River, Winterburn and Woodbend Group formations, with reported historic values ranging between 95-140 mg/L lithium.

Technical Consultants

MGX has engaged industry experts to lead development strategies of these properties, including The Lamar Corporation, Cementation AG and Mr. Derek Stonehouse.

The Lamar Corporation

The Lamar Corporation is led by Dr. Larry Marks, a 35-year industry veteran of the oil and gas sector. Dr. Marks spent 30 years in various executive roles for Shell Canada Ltd. and various Shell Group companies, including General Manager and Vice President of Marketing and Transportation for Shell Canada. He has experience in all facets of the oil and gas business, having worked extensively throughout Canada, Asia, Africa and the Middle East in his career.

While at Shell Canada, Dr. Marks implemented strategies for marketing, sales and transportation of energy and co-products in excess of more than $3 billion in annual revenue.

Cementation AG

Cementation AG (Above Ground Division) has completed a Process Design and Scoping Study for MGX’s Alberta lithium properties.

Derek Stonehouse

Mr. Stonehouse has over 26 years of experience in the oil and gas industry in western Canada, including the identification and drilling of over 140 horizontal wells. In particular, his experience with Northern Blizzard Resources, involving the re-development of an existing oil pool thought to be previously exhausted, and grass roots development of the Montney gas/condensate exploration target for Storm Resources, currently producing 10,000 bpd, are highly relevant to the development of MGX's lithium fields.

(1) All assays referenced are from the geoScout Oil & Gas Industry database as reported by well operators and monitored by the Government of Alberta.
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All statements in this report, other than statements of historical fact should be considered forward-looking statements. Much of this report is comprised of statements of projection. Statements in this report that are forward looking include that magnesium, lithium and metal prices are expected to increase; that MGX Minerals Inc. or its partner(s) can and will start exploring further; that exploration has or will discover a mineable deposit; that the company can raise sufficient funds for exploration or development; that any of the mentioned mineralization indications or estimates are valid or economic. Such statements involve known and unknown risks, uncertainties and other factors that may cause actual results or events to differ materially from those anticipated in these forward-looking statements. Risks and uncertainties respecting mineral exploration and mining companies are generally disclosed in the annual financial or other filing documents of MGX Minerals Inc. and similar companies as filed with the relevant securities commissions, and should be reviewed by any reader of this report. In addition, with respect to MGX Minerals Inc., a number of risks relate to any statement of projection or forward statements, including among other risks: the receipt of all necessary approvals and permits; the ability to conclude a transaction to start or continue development; uncertainty of future magnesium, lithium and metal prices, capital expenditures and other costs; financings and additional capital requirements for exploration, development, construction, and operating of a mine; the receipt in a timely fashion of further permitting for its legislative, political, social or economic developments in the jurisdictions in which MGX Minerals Inc. carries on business; operating or technical difficulties in connection with mining or development activities; the ability to keep key employees, joint-venture partner(s), and operations financed. 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. Accordingly, readers should not place undue reliance on forward-looking information. Rockstone and the author of this report do not undertake any obligation to update any statements made in this report.

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