# **Buchans**Resources

# MANAGEMENT DISCUSSION AND ANALYSIS

For the six-month period ended June 30, 2019

Dated August 28, 2019

(Form 51-102F1)

Date: August 28, 2019

## GENERAL

The following management discussion and analysis ("MD&A") of financial condition and results of operations of Buchans Resources Limited ("Buchans" or the "Company"), should be read in conjunction with the condensed interim consolidated financial statements and the notes thereto for the six-month period ended June 30, 2019, which have been prepared in accordance with International Financial Reporting Standards ("IFRS"). All dollar amounts are stated in Canadian dollars, unless otherwise noted.

For a more complete understanding of the Company's financial condition and results of operations, this MD&A should be read together with the audited consolidated financial statements and the accompanying notes for the year ended December 31, 2018, a copy of which is filed on the SEDAR website.

## **COMPANY OVERVIEW**

Buchans Resources Limited was incorporated on May 8, 2015 under the laws of the Province of Ontario, Canada. The Company's head office is located at 55 University Ave, Suite 1805, Toronto, Ontario, M5J 2H7.

Buchans has interests in zinc-lead-silver properties located in Canada, Ireland and the United Kingdom; gold properties in Newfoundland and Labrador; nickel-copper-cobalt properties in Labrador; a battery metal manganese project in New Brunswick; and, indirectly through its 22% shareholding in Xtierra Inc. (TSXV: "XAG"), in base metal and silver projects in Mexico.

## *Newfoundland – Base Metals*

Buchans holds an extensive mineral land package in the Buchans district of central Newfoundland with interests in four undeveloped base metal deposits, including the large, lower grade, Lundberg stockwork sulphide deposit, as well as three smaller, higher grade, volcanogenic massive sulphide ("VMS") "satellite" deposits, each with excellent exploration potential.

# Lundberg Deposit – Internal Scoping Study

On March 1, 2019 Buchans announced a new updated pit-constrained Mineral Resource Estimate for its lowergrade bulk tonnage, Lundberg base metal deposit, located at the former Lucky Strike mine site, and a NI 43-101 Technical Report was filed on April 15, 2019. The 2019 Mineral Resource Estimate, containing more than 1.25 billion pounds Zinc Equivalent, with 98.7% of the Mineral Resources in the Indicated category, is currently being assessed within an internal scoping evaluating potential options for stand-alone open-pit resource development. The project possesses a low strip ratio and is optimally situated on a brownfields site with excellent infrastructure. The internal scoping study is expected to be complete in September and will be used to determine the Company's strategy at Buchans.

At this time, as Lundberg has now been delineated at a high level of confidence; the Company anticipates refocusing its future exploration efforts on discovery of new Buchans-style high-grade deposits similar to those previously mined at Buchans by ASARCO, who produced more than 16.2 million tonnes from five separate deposits, with a combined average grade of 14.51% Zn, 7.65% Pb, 1.33% Cu, 126 g/t Ag, and 1.37g/t Au, before exhaustion of ore reserves and mine closure in 1984.

#### Buchans - VMS exploration

Buchans is confident that its Newfoundland mineral properties hold potential for discovery of new VMS deposits comparable to historically mined orebodies in the Buchans camp, where previous operators, ASARCO, mined more than 16.2 million tonnes of high-grade base metal ore from five separate deposits before mine closure in 1984.

In 2018, a total of 8,000 metres of drilling was completed in 38 holes exploring the Buchans and Tulks North base metal properties in central Newfoundland. Drilling at four target areas located within a radius of 3.5 kilometres of the Lundberg/Lucky Strike Deposits returned favourable results warranting further exploration for additional higher-grade resources. The Company is undertaking additional investigation of these areas through expansion of its core relogging program to best determine appropriate step out directions as well as evaluate additional target areas to be tested by future exploration drilling. Since initiating its core relogging program in 2014, Buchans has relogged more than 123,000 m of core from 652 holes drilled by previous operators and continues to revise its geological model for the project as a means of identifying additional exploration targets.

At Tulks North, located 20 km south of Lundberg, drilling completed in 2018 returned encouraging results highlighted by the intersection of semi-massive to massive sulphide mineralization down plunge of the Bobbys and Daniels deposits indicating both zones remain open at depth. Both deposits have mineral resource estimates supported by NI 43-101 technical reports and have been favourably assessed by bench-scale metallurgical test work completed in 2017. Also in 2018, the Company completed SkyTEM airborne geophysical surveys over the property as exploration for additional VMS deposits. In July, the Company undertook preliminary follow-up investigations of several prospective anomalies identified by the 2018 SkyTEM survey and is awaiting results from soil geochemical surveys undertaken as part of these investigations.

# Exploring for gold in Newfoundland and Labrador and nickel-copper-cobalt in Labrador

Exploration programs were also undertaken on several of the Company's other base metal and gold properties in Newfoundland and Labrador in 2018, including the Lake Douglas gold property in Newfoundland, the Tasiuyak gold property in Labrador, and the South Voisey's Bay nickel-copper-cobalt property in Labrador. The Company may undertake additional follow-up work within its Lake Douglas property in the fall of 2019.

## Zinc exploration in Ireland - Joint Ventures with Boliden

In Ireland, Buchans is continuing exploration for zinc, both in joint venture with Boliden Tara Mines near Navan and on its own licences at Moate. Buchans also entered into a new exploration agreement with Boliden Tara Mines on six Prospecting Licences in Galway.

Buchans is participating at 20% in a joint venture with Boliden Tara Mines at 80% on Licence 1440R, which lies immediately adjacent to Boliden's large 130 million tonnes Tara zinc-lead mine at Navan. Buchans is also participating in a joint venture with Boliden Tara on Licence 3373, contiguous to the west with Licence 1440R, where Buchans can earn up to a 75% interest.

# Battery Grade Manganese in New Brunswick

In New Brunswick, Canadian Manganese Company Inc., a wholly owned subsidiary of Buchans Resources, holds the Woodstock manganese property containing the Plymouth manganese-iron deposit that hosts a NI 43-101 Inferred Resource and on which a positive preliminary economic assessment ("PEA") technical report was completed in 2014.

Metallurgical development programs for Woodstock have focused on the production of high-grade electrolytic manganese metal and the intermediate production of purified manganese sulphate solution as an interim step, enabling the add-on production of manganese chemicals, manganese catalyst, battery grade manganese dioxide and high-purity manganese metal for electronics. Electrowinning tests consistently produced electrolytic manganese metal with a metallic manganese content of greater than 99.99% and a total manganese content ranging from 99.70% to 99.76% Mn.

Advancements in electric vehicle manufacturing are transforming the entire global automobile industry driving increased battery demand and NMC (nickel-manganese-cobalt) batteries are becoming the rechargeable battery of choice for next-generation automotive and industrial uses. Manganese is a key component in the

formulations of the cathode material used in high-performance lithium-ion batteries and in utility bulk energy storage facilities, which are expected to create strong demand for high-purity manganese products.

#### **CENTRAL NEWFOUNDLAND BASE METAL PROJECTS**

The Company continues to explore its central Newfoundland VMS base metal properties and is currently conducting additional work as follow-up to drilling and geophysical surveys undertaken in 2018. These programs include on-going expansion of the Company's relogging of historic drill cores in select target areas at Buchans, as well as follow-up of anomalies identified by SkyTEM airborne geophysical surveys undertaken by the Company in 2018.

In June, the Company also contracted Stantec Consulting Limited of Fredericton, New Brunswick to complete an internal economic scoping study of its Lundberg deposit in Buchans using its 2019 Mineral Resource Estimate. This revised resource estimate contains more than 1.25 billion pounds Zinc Equivalent, with 98.7% of the Mineral Resources in the Indicated category, and is being assessed as a potential stand-alone open-pit resource development.

## Lundberg Deposit - Buchans

On April 15, 2019, Buchans filed a Technical Report prepared in accordance with NI 43-101 regarding the updated pit-constrained Mineral Resource Estimate for its Lundberg base metal deposit. The Technical Report is filed under the Company's profile on SEDAR at www.sedar.com.

The current Mineral Resource Estimate, effective February 28, 2019, includes In-pit Indicated Mineral Resources of 16,790,000 tonnes grading 1.53% Zn, 0.64% Pb, 0.42% Cu, 5.69 g/t Ag and 0.07 g/t Au (3.38% Zn Eq) and In-pit Inferred Mineral Resources of 380,000 tonnes grading 2.03% Zn, 1.01% Pb, 0.36% Cu, 22.35 g/t Ag and 0.31 g/t Au (4.46% Zn Eq). The Resource Estimate is estimated within an optimized pit shell at a cut-off grade of US\$20/t NSR and is considered to reflect reasonable prospects for economic extraction in the foreseeable future using conventional open-pit mining methods.

The 2019 Mineral Resource Estimate was prepared by Mercator Geological Services Limited. The pit shell was developed and optimized by MineTech International Limited. Projected metal recoveries are based on the previous Central Milling Facility Assessment by Thibault & Associates Ltd and the net smelter return ("NSR") calculator as prepared by Stantec Consulting.

In summary, the Lundberg deposit is now estimated to host In-pit Indicated Mineral Resources containing 1.25 billion pounds Zinc Equivalent as well as In-pit Inferred Mineral Resources containing 0.037 billion pounds Zinc Equivalent using an NSR cut-off at US\$20 per tonne. These resources are contained within an optimized model pit shell measuring 860 metres by 650 metres and extends to a maximum depth of 240 metres. The In-Pit constrained resource has a strip ratio of 2.9 of which approximately 98.7% of the resources are assigned to the Indicated category resources.

While the 2019 Mineral Resource Estimate excludes significant volumes of mineralization within the Lundberg deposit from classification as Mineral Resources, it should be noted that much of the excluded volume lies beneath the bottom of the current pit shell and has potential to be included in future optimized pit shells subject to changes in metal prices or other parameters defined for future optimization and mineral resource estimation.

The 2019 Mineral Resource Estimate updated the Lundberg deposit to a more robust, pit-constrained resource, that is exemplified by its large inventory of Indicated category resources and represents a significant improvement over previous resource estimates. The 2019 Mineral Resource Estimate reflects a 97.8% conversion of 2011 PEA Ultimate Pit Design Inferred Mineral Resources to Indicated Mineral Resources at comparable grades and a slightly lower strip ratio.

#### **Recommendations from Technical Report**

Based on work carried out for the 2019 Mineral Resource estimation, Mercator is of the opinion that the Lundberg deposit has been sufficiently delineated by drilling to support Pre-feasibility (PFS) or Feasibility level studies, and that additional infill resource delineation drilling is not required for this purpose.

Mercator's primary recommendation arising from the current Mineral Resource Estimate program is that an updated assessment of the Lundberg deposit's economic potential be completed as the next phase of project evaluation. This could take the form of a new Preliminary Economic Assessment or an internal economic study leading to a decision to proceed directly to a PFS assessment of Lundberg Deposit economics.

Additional metallurgical testing would be required to support a future Preliminary Economic Assessment or Pre-Feasibility Study Assessment. Pre-concentration using dense media separation or ore sorting will improve mill feed grades, reduce the size of the milling facility or reduce mill feed transportation requirements should an off-site milling facility be considered. Future economic studies are therefore recommended to determine any potential savings with pre-concentration versus metal loss from the upgrading process.

## **Internal Scoping Study Underway**

Based on recommendations of the 2019 Mineral Resource Estimate, the Company has engaged Stantec Consulting Limited of Fredericton, New Brunswick to undertake an internal scoping study of the Lundberg deposit evaluating potential options for Lundberg's development as a stand-alone open-pit resource. The study will incorporate updated parameters determined by the Company's continued technical assessments of the deposit since completion of a Preliminary Economic Assessment of the project in August of 2011. These parameters include revised metallurgical assumptions including assumptions determined by bench-scale metallurgical test work completed in 2017. In addition to applying prevailing metal pricing forecasts, and currency exchange rates, Stantec will also source additional inputs relating to capital and operating costs as well as other operational considerations including concentrate sales.

The study is expected to be completed in September and will be used to determine the Company's strategy at Buchans.

The Lundberg deposit is favourably situated on a brownfields site with excellent infrastructure, including access by provincially maintained paved roads, power, water and other infrastructure. The Lundberg project is located in the Province of Newfoundland and Labrador, one of the top mining jurisdictions in Canada, and the Company has established a positive and cooperative relationship with the immediately adjacent, former mining town of Buchans.

# **CENTRAL NEWFOUNDLAND VMS Target Areas – Buchans Mining District**

Buchans core holding within the Buchans mining district of central Newfoundland includes mineral rights covering 127 km<sup>2</sup> (12,750 hectares) considered prospective for VMS Zn-Pb-Cu-Ag-Au base metal deposits. This extensive land package includes several undeveloped deposits including the large, lower grade, Lundberg stockwork deposit located beneath the former Lucky Strike massive sulphide orebody at Buchans, as well as several smaller "satellite deposits", composed of higher-grade, volcanogenic massive sulphide mineralization. The latter include the Company's Daniels and Bobbys deposits, each with excellent exploration potential and located within the Company's Tulks North property, 20 km south of Lundberg.

# **New Properties Acquired**

As a result of recent competitive staking the Company has acquired two new properties totalling 494 claims (123.5 km<sup>2</sup>) near its Tulks North property. The newly staked properties, known as the Tulks South and South Tally properties, cover favourable geology along strike of NorZinc's Lemarchant and Boomerang deposits and occur within the same geological terrain that hosts the former Duck Pond mine where Teck Resources recently mined approximately 5 million tonnes averaging 4.4% Zn, 2.7% Cu, 53 g/t Ag, and 0.6 g/t Au between 2007 and 2015.

## **Exploration Strategy**

Buchans' exploration strategy in Newfoundland is to continue to build on its existing resource base with the aim of developing either a stand-alone open pit mine centred on the larger lower grade Lundberg stockwork deposit, or a number of smaller higher grade VMS deposits that could be developed simultaneously and processed in a central milling facility, similar to past-producing mines at Buchans or Duck Pond.

Buchans is optimistic that its Newfoundland mineral properties hold potential for discovery of new VMS deposits comparable to historically mined orebodies in the Buchans camp, where Asarco mined more than 16.2 million tonnes from five separate deposits, with a combined average grade of 14.51% Zn, 7,65% Pb, 1.33% Cu, 126 g/t Ag, and 1.37g/t Au, before mine closure in 1984. In 2018, a total of 8,000 metres of drilling was completed in 33 holes exploring the Buchans and Tulks North base metal properties in central Newfoundland.

## 2019 Plans

The Company is currently focused on undertaking follow-up work in response to work undertaken within its Buchans and Tulks North properties in 2018. At this time, no field programs are anticipated for the new properties for the remainder of 2019, though further consideration is being given to undertaking exploration programs within the new properties in 2020.

# LAKE DOUGLAS GOLD, NEWFOUNDLAND

Buchans owns 100% interest in the 2,075-hectare Lake Douglas gold project in central Newfoundland. This property is located 40 km south-southeast of Buchans and 20 km southeast of the Company's Daniels and Bobbys deposits. Buchans' Lake Douglas property is located 15 km northeast along strike of Marathon Gold Corporation's Valentine Lake project that covers a 20-kilometre long system of gold bearing veins including four near-surface deposits with Measured and Indicated resources totaling 2.69 million ounces of gold at 1.85 g/t and Inferred resources totaling 1.53 million ounces of gold at 1.77 g/t as reported by Marathon Gold.

Since staking the property in 2016, Buchans has conducted preliminary reconnaissance work including a compilation of previous work from historic assessment files. This work confirms the presence of unexplored favourable hosts rocks on the Lake Douglas property that are akin to the rocks hosting gold mineralization on adjacent properties. Results from limited prospecting include one anomalous gold assay from quartz float assaying 913 ppb Au (0.9 g/t Au). In July 2018, Buchans completed soil geochemical surveys over a portion of the property covering favourable geology and structure. Results include detection of a 200 m long anomaly with values up to 137 ppb Au and a second anomaly defined as a single line, 3-station anomaly with values up to 317 ppb Au.

Given these positive results, the Company is considering additional work for this project in 2019.

# TASIUYAK GOLD PROPERTY, LABRADOR

In 2018, Buchans undertook a limited prospecting and sampling program on its Tasiuyak gold property in Labrador. This 100% Buchans-owned property, located 10 km south of Vale's Voisey's Bay nickel-copper-cobalt mine, includes mineral rights to 11.5 km<sup>2</sup> covering a historic gold prospect discovered by previous explorers during the Voisey's Bay exploration rush in the mid-1990s.

The prospect, known as the VBE2 gold prospect, consists of a 90 m long bedrock exposure of sulphide-rich iron formation and returned historic sampling results that include chip samples assaying up to 18.9 grams per tonne gold over 1 metre, as well as drilled intercepts over a 275 metre strike that include 5.5 g/t Au over 2.1 m, 4.2 g/t Au over 3.0 m, and 4.1 g/t over 2.1 m.

Bedrock sampling undertaken by Buchans at the VBE-2 gold prospect in 2018 returned positive results from the main outcrop exposure and along strike in both strike directions. Sawn bedrock channel samples collected from the main exposure returned assays averaging **8.51 g/t Au & 0.93 g/t Ag over 4.8 m, including 31.91 g/t Au over** 

**0.85 m, as well as 15.83 g/t Au over 0.65 m**. These results exceed historic surface sample assays derived from chip sampling of the showing in the 1990's.

In addition, the prospect's host paragneiss horizon has now been traced over a 3-kilometre strike where limited prospecting returned anomalous assays, including sawn channel sample assays of up to 0.69 g/t Au over 0.50 m, 2 km south along strike of the VBE-2 prospect.

Buchans believes this mineralization may be analogous to mineralisation at the former Homestake mine in South Dakota and believes the property represents an excellent exploration opportunity for discovery of new gold deposits in a frontier area. As such, the Company is currently seeking a joint venture partner to advance this project in 2020.

# LABRADOR NICKEL-COPPER-COBALT PROPERTIES

Since 2016, Buchans has staked several properties in Labrador considered prospective for Voisey's Bay-style nickelcopper-cobalt deposits, including 38 claims (9.5 km<sup>2</sup>) covering prospective troctolitic gabbros of the Pants Lake Intrusive Suite at South Voisey's Bay, and 5 claims (1.25 km<sup>2</sup>) covering mineralized troctolite at Voisey's Bay itself.

## South Voisey's Bay:

The South Voisey's Bay property is located 80 km south of Vale's Voisey's Bay mine and covers mineralized troctolitic gabbros comparable in age and composition to rocks hosting the Voisey's Bay mine.

Previous explorers identified several showings and prospects within Buchans' property, including drilled intercepts of 1.1 m of 11.9% Ni, 9.6% Cu, and 0.43% Co, 0.65 m of 1.93% Ni, 1.07% Cu and 0.26% Co, and 15.7 m averaging 1.13% Ni, 0.78% Cu, 0.20% Co drilled in the late 1990s.

Since acquiring this 9 km<sup>2</sup> property, Buchans has initiated a compilation of past work on the property, largely focused on assessing previous geophysical surveys within Buchans' claims and the surrounding area. This recently completed compilation was led by a leading consultant geophysicist. Results of the compilation indicate previous geophysical surveys detected geophysical anomalies warranting further follow-up as potential targets for buried Voisey's Bay style magmatic sulphide deposits.

Buchans South Voisey's Bay property is surrounded by a much larger, 292 km<sup>2</sup> property held by Fjordland Exploration Inc. under a joint venture with Commander Resources Ltd. The Fjordland-Commander property is currently subject to a strategic partnership agreement with an affiliate of privately-owned High Power Exploration Inc. ("HPX"). Through this strategic partnership, HPX is a 29.5% shareholder in Fjordland and retains rights to earn up to 65% interest in the project by providing up to \$7.4 million in expenditures and \$290,000 in property payments. To date, the joint venture/partnership has completed two drilling campaigns on the property.

# Voisey's Bay (Luk):

On December 14, 2018, Buchans announced acquisition by staking of five claims (1.25 km<sup>2</sup>) located approximately 8 km southwest of Vale's Voisey's Bay nickel-copper-cobalt mine in northern Labrador.

Known as the Luk Property, this property is reported to cover prospective troctolitic rocks of the same intrusive body that hosts the Voisey's Bay mine.

Historic information on the property indicate surface gossan samples collected within or immediately adjacent to Buchans' property returned grab sample assays of up to 1.86% Ni, 0.95% Cu, 0.165% Co, as well as drilled intercepts of up to 7.4 m averaging 0.45% Ni, 0.18% Cu, 0.03% Co (historic assays not confirmed by Buchans).

Buchans' property is surrounded by mineral claims that comprise Vale's Voisey's Bay mine property, where Vale recently announced a \$US2 billion mine expansion to develop two additional deposits as underground mines adjacent to the currently operating Voisey's Bay Ovoid open pit mine.

Buchans plans to review available historic data on the Luk property prior to determining a strategy to advance this prospective nickel-copper-cobalt property.

## **IRELAND - ZINC LEAD EXPLORATION**

In Ireland, Buchans is continuing exploration for zinc, both in joint venture with Boliden Tara Mines near Navan and on its own licences at Moate. Buchans also entered into a new exploration agreement with Boliden Tara Mines on six Prospecting Licences in Galway.

## Zinc Exploration – Navan, County Meath – Joint Venture with Boliden on Licence 1440R

Buchans, through a wholly owned subsidiary, holds a 20% interest in Licence 1440R (Tatestown), which is being explored under a Joint Venture with Boliden Tara Mines Limited (80%), and which hosts part of the small Tatestown–Scallanstown zinc-lead mineral deposit. Licence 1440R is located immediately adjacent to Boliden's large 130 million tonnes Tara zinc-lead mine at Navan, County Meath, about 50 km northwest of Dublin.

At the end of 2018 Boliden Tara drilled one-deep hole of 1,225 metres on Licence 1440R, approximately two kilometres to the north of the Tatestown-Scallanstown deposit. The hole intersected the Navan Pale Beds between 1,000 and 1,200 metres down hole which were extensively calcite veined and brecciated with pervasive low-grade mineralization of sphalerite-galena common throughout. The encouraging results of this deep hole supports the concept of a continuous mineralized corridor extending north-northwest from Tatestown, which, in turn, might reflect a larger property scale northwest-southeast trend extending through the main Navan Mine area to the new Tara Deep deposit in the southeast.

# Joint Venture with Boliden on Licence 3373 (Kells) Adjacent to Tara Mine

Buchans, through its wholly owned subsidiary Minco Ireland Limited, has entered into a joint venture agreement with Boliden Tara Mines on Licence 3373, contiguous to the west with Licence 1440R. Under terms of this agreement, Buchans can earn a 75% interest through expenditure of €250,000 in staged programmes, by March 1, 2024. Boliden has the right of off-take to purchase or toll process all ore that may be produced from the Licence area.

Licence 3373, located approximately 10 km northwest of the Navan orebody covers an area of approximately 30 square km and constitutes the north-western quadrant of a contiguous block of ground currently being explored by Boliden Tara Mines. Exploration on Licence 3373 has focused on the search for zinc-lead mineralization within the Navan Group (Pale Beds).

Buchans, through Minco Ireland, completed two diamond drill holes in 2018 to depths of 283 metres and 346 metres, respectively. The objective of the drilling was to better constrain the location of the main extension fault controlling the boundary of the major east-west fault.

Four structurally defined drill targets with potential for late epigenetic mineralisation, comparable to that at the nearby Tatestown-Scallanstown deposit, have been identified lying to the south of the controlling boundary fault and offset sinisterly by a series of north east striking faults. The four drill target areas are located eight to fifteen kilometres west of the Tara Mine, at estimated depths of 550 to 800 metres below surface.

These four target areas are the focus of ongoing exploration during 2019. Work programs on the four target areas include re-interpretation of previous seismic survey data based on 2018 drilling, soil geochemistry, and integration of new geological re-interpretation with that of Boliden's on adjacent Licence 1440R to the east, to create a large

"Boundary Fault Corridor" targeting project. One shallow hole was drilled and abandoned in Spring 2019 and further diamond drilling is planned to refine the geology and test these targets.

#### WOODSTOCK MANGANESE PROJECT – BATTERY GRADE METAL

Canadian Manganese Company Inc., a wholly owned subsidiary of Buchans Resources Limited, holds the Woodstock manganese property in New Brunswick, containing the Plymouth Mn-Fe deposit, which hosts an Inferred Resource and on which a positive Preliminary Economic Assessment (PEA) was completed in 2014.

The Plymouth Mn-Fe deposit is located 5 km west of the town of Woodstock, in west-central New Brunswick, near the junction of the Trans Canada and US Interstate I-95 highways, and approximately 9 km from the border with the state of Maine, USA.

In 2014 a PEA was completed by Tetra Tech and Thibault & Associates Inc. in compliance with National Instrument 43-101 based on an updated mineral resources estimate prepared by Mercator Geological Services. The PEA Technical Report is filed on SEDAR at www.sedar.com.

Metallurgical development programs for Woodstock have focused on the production of high-grade electrolytic manganese metal, and the intermediate production of purified manganese sulphate solution as an interim step, enabling the add-on production of manganese chemicals, manganese catalyst, battery grade manganese dioxide and high-purity manganese metal for electronics.

Advancements in electric vehicle manufacturing are transforming the entire global automobile industry driving increased battery demand and NMC (nickel/manganese/cobalt) batteries are becoming the rechargeable battery of choice for next-generation automotive and industrial uses. Manganese is a key component in the formulations of the cathode material used in high-performance lithium-ion batteries, and in utility bulk energy storage facilities, which are expected to create strong demand for high-purity manganese products.

The process technology defined for processing of the Plymouth mineralization is based on technology to achieve an ultra-pure solution of manganese sulfate. With various tests to optimize the electrowinning cell performance relative to current efficiency and metal quality, the electrowinning tests consistently produced electrolytic manganese metal with a metallic manganese content (based on trace metal analysis) of greater than 99.99% and a total manganese content (base on trace metals and non-metallic trace elements such as oxygen, nitrogen and hydrogen) ranging from 99.70% to 99.76% Mn.

<b>EXPLORATION AND</b>	EVALUATION ASSETS

For the six-month period ended June 50, 2019											
	June 30	Additions	December 31	Impairment	Additions	December 31					
	2019		2018			2017					
	\$	\$	\$	\$	\$	\$					
Buchans	12,357,982	215,677	12,142,305	-	2,593,004	9,549,301					
Woodstock	4,641,940	4,607	4,637,333	-	14,447	4,622,886					
Ireland	1,116,712	4,755	1,111,957	-	319,583	792,374					
Total	18,116,634	225,039	17,891,595	(2,842,933)	2,927,034	16,782,167					

#### For the six-month period ended June 30, 2019

# **XTIERRA INC.**

Buchans holds 30 million shares in Xtierra Inc. ("Xtierra"), a company listed on the TSX Venture Exchange under the symbol "XAG", now representing an approximate 22% interest. The market value of the Xtierra shares at June 30, 2019 based on the market price of Xtierra shares on the TSX Venture Exchange was \$1,350,000.

Xtierra holds the Bilbao polymetallic sulphide and oxide replacement silver-lead-zinc-copper property, located in the Central Mineral Belt of Mexico, in the southeastern part of the State of Zacatecas, approximately 500 km northwest of Mexico City.

At June 30, 2019, the Company held secured Notes receivable from Xtierra in the amount of US\$796,477 (\$1,043,028).

## **RESULTS OF OPERATIONS**

The Company recorded no revenue in the periods ended June 30, 2019 or June 30, 2018.

For the three-month period ended June 30, 2019, the Company recorded a loss of \$285,371, compared to a gain of \$943,791 for the three-month period ended June 30, 2018. The loss for the three-month period ended June 30, 2019 included a loss in fair value of the Xtierra warrants in the amount of \$82,537, \$61,435 depreciation and \$17,604 finance costs in accordance with IFRS 16, Leases.

For the six-month period ended June 30, 2019, the Company recorded a loss of \$618,100, compared to a loss of \$218,857 for the six-month period ended June 30, 2018. The loss for the six-month period ended June 30, 2019 included a loss in fair value of the Xtierra warrants in the amount of \$214,013, \$102,392 depreciation and \$29,881 finance costs in accordance with IFRS 16, Leases.

The loss for the three-month period ended June 30, 2018 included a gain in market value of marketable securities in the amount of \$1,053,880.

Administrative expenses, excluding foreign exchange, for the six-month period ended June 30, 2019 amounted to \$324,660 compared to \$487,599 for the six-month period ended June 30, 2018.

During the period ended June 30, 2019, Buchans invested \$220,284 (2018 - \$411,148) on exploration of its mineral properties, of which the largest amounts were expended on the Buchans zinc lead project in central Newfoundland.

Expressed in \$000's, Except for per share amounts	June 30 2019 \$	Mar. 31 2019 \$	Dec. 31 2018 \$	Sept. 30 2018 \$	June 30 2018 \$	March 31 2018 \$	Dec. 31 2017 خ	Sept. 30 2017 \$
amounts	Ŷ	Ŷ	Ļ	Ŷ	Ŷ	Ŷ	Ŷ	Ļ
Net (loss) gain	(285)	(333)	280	(102)	943	(1,163)	(3,036)	(1,462)
Net (loss) gain per share - basic and diluted	(0.005)	(0.006)	0.005	(0.002)	0.017	(0.023)	(0.065)	(0.031)
Total assets Working capital	22,334 1,944	22,677 2,234	22,455 2,761	22,521 4,142	22,297 5,355	21,506 4,780	22,541 6,318	24,992 4,705

# SUMMARY OF QUARTERLY RESULTS

• The loss for the quarter ended September 30, 2017 included a loss in market value of marketable securities of \$1,189,136 and foreign exchange loss of \$85,438

• The loss for the quarter ended December 31, 2017 included an impairment provision against exploration assets in the amount of \$2,842,933.

- The loss for the quarter ended March 31, 2018 included a loss in market value of marketable securities of \$866,023.
- The gain for the quarter ended June 30, 2018 included a gain in market value of marketable securities of \$1,053,879.
- The loss for the quarter ended September 30, 2018 included a gain on disposal of marketable securities of \$156,180.
- The gain for the quarter ended December 31, 2018 included an audit adjustment recording the fair value of Xtierra warrants received in February 2018 in the amount of \$406,912.
- The loss for the quarter ended March 31, 2019 included a loss in fair value of the Xtierra warrants in the amount of \$131,476, \$40,957 depreciation and \$12,276 finance costs in accordance with IFRS 16, Leases.
- The loss for the quarter ended June 30, 2019 included a loss in fair value of the Xtierra warrants in the amount of \$82,537, \$61,435 depreciation and \$17,604 finance costs in accordance with IFRS 16, Leases.

# LIQUIDITY AND CAPITAL RESOURCES

At June 30, 2019, Buchans held \$2,248,353 (December 31, 2018- \$2,895,188) in cash and cash equivalents and had a working capital surplus of \$1,944,447, net of a \$225,548 lease obligation liability, compared to a working capital surplus of \$2,760,648 at December 31, 2018.

At June 30, 2019, Buchans held mineral properties with a combined book value of \$18,116,634. The balance sheet values for these assets may not represent that which could be obtained if the assets were to be offered for sale.

# **RELATED PARTY TRANSACTIONS**

No fees were paid by the Company to directors for their services as directors of the Company in the periods ended June 30, 2019 or 2018.

During the six-month period ended June 30, 2019, the Company paid or accrued \$45,486 to Steenberglaw Professional Corporation, a corporation controlled by Neil Steenberg, Secretary of the Company, for legal services. Included in accounts payable and accrued liabilities at June 30, 2019 is \$35,310 payable to Steenberglaw Professional Corporation for legal services.

# COMMITMENTS

In connection with the private placement completed in December 2017, Buchans entered into an Investor Rights Agreement to provide certain liquidity and anti-dilution rights to the Funds which acquired the placement shares. If the Company's shares have not been listed on a recognized stock exchange by June 30, 2018, the Funds shall be issued an additional 0.10 of a share for each Placement share at no additional cost and similarly at the end of each successive quarterly interim period after June 30, 2018. A total of 1,336,000 shares were issued to the Funds pursuant to this agreement in 2018 and an additional 1,336,000 shares were issued to the Funds subsequent to year-end.

The Company has entered into a lease for its office premises, which expires on January 31, 2022. The yearly rental payments amount to approximately \$286,000, approximately half of which the Company expects to recover from other corporations with some common directors and officers that share part of the office premises.

#### **CRITICAL ACCOUNTING ESTIMATES**

The Company's financial statements are prepared in accordance with IFRS and require management to make estimates and assumptions about future events that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities, if any, at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Such estimates and assumptions affect the carrying value of assets, impact decisions as to when exploration and development costs should be capitalized or

expensed and affect estimates for asset retirement obligations and reclamation costs. Other significant estimates made by the Company include factors affecting valuation of tax accounts. The Company regularly reviews its estimates and assumptions; however, actual results could differ from these estimates and these differences could be material.

# **Adoption of New Accounting Standards**

The standards and interpretations within IFRS are subject to change. For further details, please refer to Note 4 of the December 31, 2018 audited consolidated financial statements.

## PRINCIPAL RISKS AND UNCERTAINTIES

The realization of mineral exploration assets is dependent on the development of economic ore reserves and is subject to a number of significant potential risks including:

## Exploration, Development and Operating Risk

Resource exploration and development is a speculative business, characterized by a number of significant risks including, among other things, unprofitable efforts resulting not only from the failure to discover mineral deposits but also from finding mineral deposits that, though present, are insufficient in quantity and quality to return a profit from production. The marketability of minerals acquired or discovered by Buchans may be affected by numerous factors that are beyond the control of Buchans and that cannot be accurately predicted, such as market fluctuations, the proximity and capacity of milling facilities, mineral markets and processing equipment, and such other factors as government regulations, including regulations relating to royalties, allowable production, importing and exporting minerals and environmental protection, the combination of which factors may result in Buchans not receiving an adequate return of investment capital. Many of the properties in which Buchans holds an interest are in the exploration stage only and are without a known body of commercial ore. Development of the subject mineral properties would follow only if favourable exploration results are obtained and a positive feasibility study is completed.

The business of exploration for minerals and mining involves a high degree of risk. Few properties that are explored are ultimately developed into producing mines. There is no assurance that Buchans' mineral exploration and development activities will result in any discoveries of commercial bodies of ore. The long-term profitability of Buchans' operations will in part be directly related to the costs and success of its exploration and development programs, which may be affected by a number of factors.

Substantial expenditures are required to establish reserves through drilling and to develop the mining and processing facilities and infrastructure at any site chosen for mining. Although substantial benefits may be derived from the discovery of a major mineralized deposit, no assurance can be given that minerals will be discovered in sufficient quantities to justify commercial operations or that funds required for development can be obtained on a timely basis and at an acceptable cost.

In addition to the above, there can be no assurance that current exploration programs will result in profitable mining operations. The recoverability of the carrying value of interests in mineral properties and Buchans' continued existence is dependent upon the preservation of its interests in the underlying properties, the discovery of economically recoverable reserves, the achievement of profitable operations, or the ability of Buchans to raise additional financing, if necessary, or alternatively upon Buchans' ability to dispose of its interests on an advantageous basis. Changes in future conditions could require material write-downs of the carrying values.

## No Assurance of Production

Buchans has limited experience in placing resource properties into production, and its ability to do so will be dependent upon using the services of appropriately experienced personnel or entering into agreements with other major resource companies that can provide such expertise. There can be no assurance that Buchans will have available to it the necessary expertise when and if Buchans places its resource properties into production and whether it will produce revenue, operate profitably or provide a return on investment in the future.

# **Fluctuating Mineral Prices**

Metal prices are subject to significant fluctuation and are affected by a number of factors which are beyond the control of Buchans. The principal factors include: diminished demand which may arise if economic growth in North America, Europe and/or China are not sustained; supply interruptions due to changes in government policies in base and precious metals, war, or international trade embargos; increases in supply resulting from the alleviation of professional and skilled labour shortages experienced by the world's largest producers; and, increases in supply resulting from the discovery and the development of new sources of base and precious metals. The effect of these factors on Buchans' operations cannot be predicted.

## Factors beyond Buchans' Control

The exploration and development of mineral properties and the marketability of any minerals contained in such properties will be affected by numerous factors beyond the control of Buchans. These factors include government regulation, high levels of volatility in market prices, availability of markets, availability of adequate transportation and refining facilities and the imposition of new or amendments to existing taxes and royalties. The effect of these factors cannot be accurately predicted.

## **Failure to Obtain Additional Financing**

While Buchans has sufficient financial resources necessary to undertake its currently planned activities, there can be no assurance that Buchans will be successful in obtaining any additional required funding necessary to conduct additional exploration or evaluation, if warranted, on Buchans' current exploration properties or any properties that may be acquired or to develop mineral resources on such properties, if commercially mineable quantities of such resources are located thereon. Failure to obtain additional financing on a timely basis could cause Buchans to forfeit its interest in such properties. If additional financing is raised through the issuance of equity or convertible debt securities of Buchans, the interests of shareholders in the net assets of Buchans may be diluted.

#### **Environmental Risks and Hazards**

Buchans' operations are subject to environmental regulations in the various jurisdictions in which it operates. Environmental legislation provides for restrictions and prohibitions on spills, releases or emissions of various substances produced in association with certain mining industry operations, such as seepage from tailings disposal areas, which would result in environmental pollution. A breach of such legislation may result in the imposition of fines and penalties. In addition, certain types of operations require the submission and approval of environmental impact assessments. Environmental legislation is evolving in a manner that means standards are stricter, and enforcement, fines and penalties for non-compliance are more stringent. Environmental assessments of proposed projects carry a heightened degree of responsibility for companies and directors, officers and employees. The cost of compliance with changes in governmental regulations has a potential to reduce the profitability of operations.

#### Competition

The mining industry is intensely competitive in all its phases, and Buchans competes with other mining companies in connection with the acquisition of properties producing or capable of producing, precious and base metals. Many of these companies have greater financial resources, operational experience and technical facilities than Buchans. Competition could adversely affect Buchans' ability to acquire suitable properties or prospects in the future. Consequently, Buchans' operations and financial condition could be materially adversely affected.

#### Management

The success of Buchans is currently largely dependent on the performance of its directors and officers. There is no assurance Buchans can maintain the services of its directors and officers or other qualified personnel required to operate its business. The loss of the services of these persons could have a material adverse effect on Buchans and its prospects. Some of the directors and officers also serve as directors and/or officers of other companies which are engaged and will continue to be engaged in the search for additional business opportunities on behalf of other companies, and situations may arise where these directors and officers will be in direct competition with Buchans. Conflicts, if any, will be dealt with in accordance with the relevant provisions of applicable corporate and securities laws.

Recruiting and retaining qualified personnel is critical to Buchans' success. The number of persons skilled in the acquisition, exploration and development of mining properties is limited and competition for such persons is intense. As Buchans' business activity grows, additional key financial, administrative and mining personnel as well as additional operations staff will be required. Although Buchans believes it will be successful in attracting, training and retaining qualified personnel, there can be no assurance of such success. If Buchans is not successful in attracting, training ant retaining and retaining qualified personnel, the efficiency of operations could be affected.

#### FINANCIAL RISK MANAGEMENT

#### Fair value

The carrying amounts for cash and cash equivalents, marketable securities amounts receivable and accounts payable and accrued liabilities on the consolidated statements of financial position approximate fair value because of the limited term of these instruments.

#### Interest rate risk

Buchans finances its operations through the issue of equity shares and has no fixed interest rate agreements. Buchans had \$2,582,997 in cash and no cash equivalents at June 30, 2019. A one percent change in interest rates will result in a corresponding change in interest income of approximately \$Nil based on cash equivalent balances existing at June 30, 2019.

#### Liquidity risk

Buchans' liquidity exposure is confined to meeting obligations under short term trade creditor agreements. This exposure is financed from a combination of cash, additional issues of ordinary equity shares and other financing arrangements.

#### Credit risk

With respect to credit risk arising from financial assets of Buchans, which comprise of cash and cash equivalents, cash deposits give risk to credit risks on the amounts due from counter-parties. The Company controls and monitors the distribution of this exposure by ensuring that all financial instruments are held with reputable and financially secure institutions and that exposure to credit risk is distributed across a number of institutions. At June 30, 2019 all cash and short-term deposits had a maturity date of 30 days or less. Credit risk is actively managed across the portfolio of institutions by ensuring that material surplus funds are placed with counter-parties that have a credit rating of at least BBB-.

#### Foreign currency risk

Buchans has exposure to currency exchange fluctuations and restrictions as Buchans' currencies are spread over Canadian Dollars (Cdn\$), US Dollars (US\$), Sterling Pounds (£), and Euro ( $\in$ ). Buchans seeks to minimize its exposure to currency risk by closely monitoring exchange rates. Buchans does not presently utilize swaps or forward contracts to manage its currency exposures, although such facilities may be used where appropriate in the future.

Further details of Buchans' financial risk management policies are set out in Note 18 and 19 of the December 31, 2018 audited financial statements.

#### **OFF-BALANCE SHEET ARRANGEMENTS**

There are no off-balance sheet arrangements.

#### **FINANCIAL INSTRUMENTS**

The Company has cash balances and no interest-bearing debt. The Company's current policy is to invest excess cash in investment-grade short-term deposit certificates issued by major banks. The Company periodically monitors the investments it makes and is satisfied with the credit ratings of its banks.

The Company has designated its cash and cash equivalents as held-for-trading, which are measured at fair value. Fair value estimates of financial assets and liabilities are made at the balance sheet date, based on relevant market information and information about the financial instrument. These estimates involve uncertainties and are subjective in nature. Other financial instruments included in current assets are classified as loans and receivables, which are measured at amortized costs. Accounts payable and accrued liabilities are classified as other financial liabilities, which are measured at amortized cost. As at June 30, 2019, the carrying and fair value amounts of the Company's financial instruments were the same.

#### **OUTSTANDING SHARE CAPITAL**

The Company has authorized an unlimited number of common shares.

At June 30, 2019 and August 28, 2019, 58,532,716 common shares were issued and outstanding.

#### ADDITIONAL INFORMATION

Additional information about the Company is available on the Company's website at www.BuchansResources.com.

#### FORWARD-LOOKING STATEMENTS

This management's discussion and analysis contains certain forward-looking statements relating to, but not limited to, the Company's expectations, intentions, plans and beliefs. Forward-looking information can often be identified by forward-looking words such as "anticipate", "believe", "expect", "goal", "plan", "intend", "estimate", "may" and "will" or similar words suggesting future outcomes, or other expectations, beliefs, plans, objectives, assumptions, intentions or statements about future events or performance. Forward-looking information may include reserve and resource estimates, estimates of future production, unit costs, costs of capital projects and timing of commencement of operations, and is based on current expectations that involve a number of business risks and uncertainties. Factors that could cause actual results to differ materially from any forward-looking statement include, but are not limited to, failure to establish estimated resources and reserves the grade and recovery of ore which is mined varying from estimates, capital and operating costs varying significantly from estimates, delays in obtaining or failures to obtain required governmental, environmental or other project approvals, delays in the development of projects changes in exchange rates, fluctuations in commodity prices, inflation and other factors. Forward-looking statements are subject to risks, uncertainties and other factors that could cause actual results to differ materially from expected results. Shareholders and prospective investors should be aware that these statements are subject to known and unknown risks uncertainties and other factors that could cause actual results to differ materially from those suggested by the forward-looking statements. Shareholders are cautioned not to place undue reliance on forward-looking information. By its nature, forward-looking information involves numerous assumptions, inherent risks and uncertainties, both general and specific, that contribute to the possibility that the predictions, forecasts, projections and various future events will not occur. The Company undertakes no obligation to update publicly or otherwise revise any forward-looking information whether as a result of new information, future events or other such factors which affect this information, except as required by law.

Date: August 28, 2019